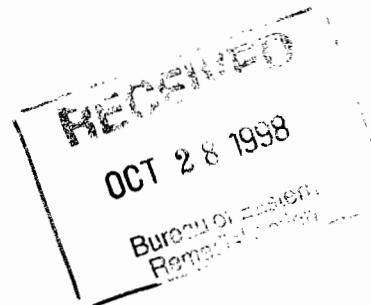


**PHASE I
INVESTIGATION OF POTENTIAL
SOURCES OF CONTAMINATION**

**AT
100 OSER AVENUE**

**PREPARED FOR
ANORAD CORPORATION**



JULY 1990

fanning, phillip

TABLE OF CONTENTS

<u>Section</u>	<u>Title</u>	<u>Page #</u>
	Disclaimer	i
1.0	Introduction	1
2.0	Land Use History	3
3.0	Environmental Setting	13
4.0	Site Inspection	16
5.0	Shallow Soil Sampling	19
5.1	Shallow Soil Sampling Procedures	19
5.2	Shallow Soil Sampling Results	24
6.0	Groundwater Sampling	26
6.1	Groundwater Sampling Procedures	26
6.2	Groundwater Sampling Results	31
7.0	Discussion and Conclusions	33
7.1	Discussion	33
7.2	Conclusions	34
8.0	Recommendations	37
	<u>Appendices</u>	
A	Summary of Spills on File at NYSDEC	
B	Regulatory Compliance of EMR Circuits and Computer Circuits	
C	Field Reports	
D	Laboratory Reports	

DISCLAIMER

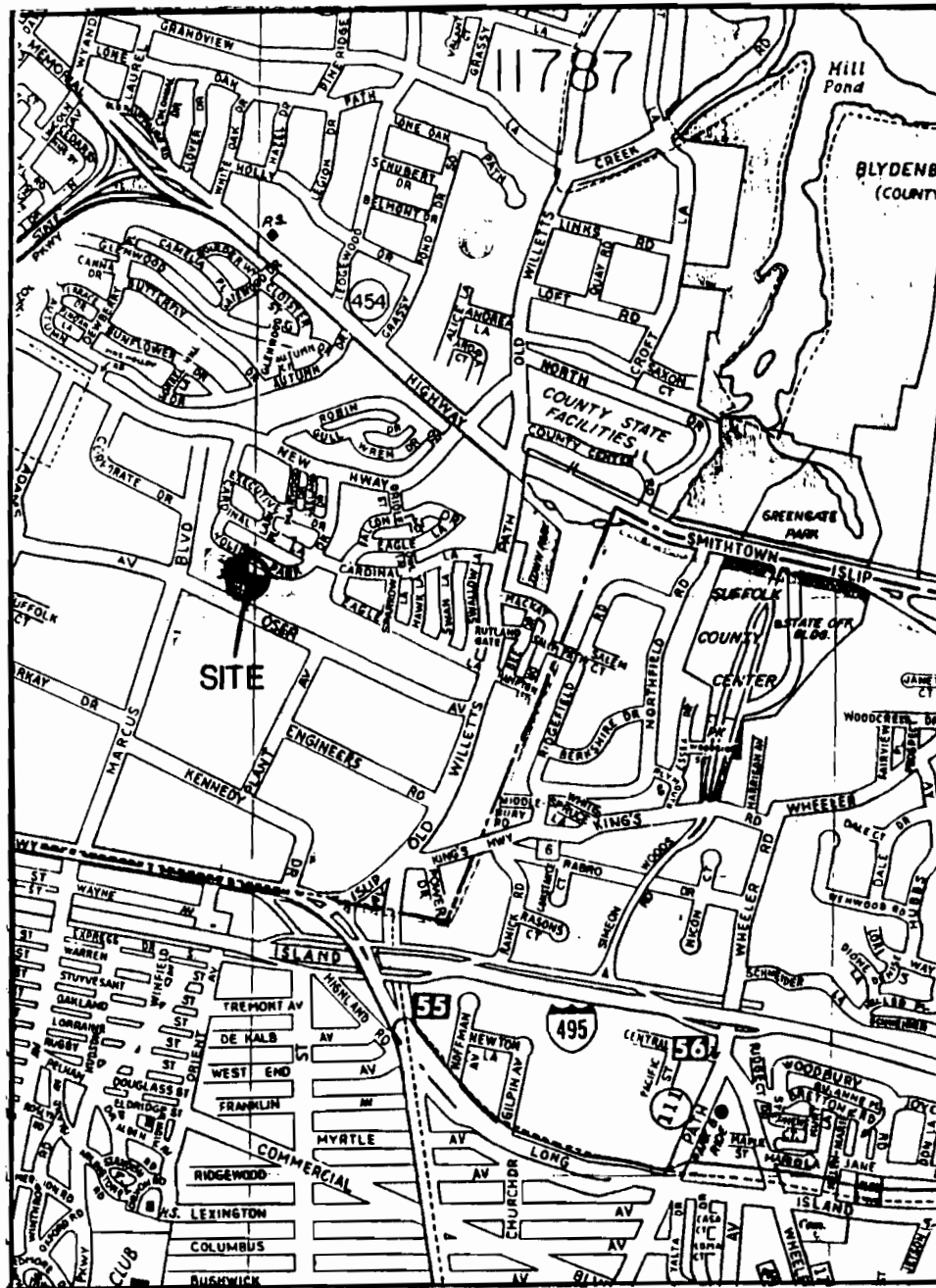
These findings are based upon a detailed sampling procedure that has been formulated in accordance with U.S. E.P.A. procedures both for sampling and for laboratory analysis. Conclusions from this data are limited to those areas focused on in the study and represents our best judgment using analytical techniques and our past experience. Even though our investigation has been scientific and thorough, it is possible that certain areas of this site may pose environmental concerns that as yet are undiscovered. In addition, environmental regulations may change in the future and could have an effect on our conclusions.

**SECTION 1.0
INTRODUCTION**

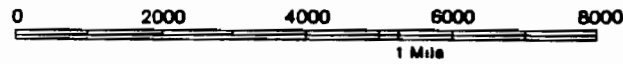
Fanning, Phillips and Molnar was contracted to prepare a sampling plan for their property at 100 Oser Avenue, Hauppauge, New York (see Figure 1.1 for site location).

To accomplish this, a file review was conducted concerning prior activities on the site. Areas of concern were identified based on previous site operations, practices, and sampling analysis data. In addition, the environmental setting was investigated through the file review for surrounding industry.

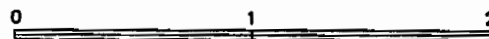
Finally, soil/sediment sampling locations were identified and samples tested to determine potential sources of contamination at the site.



Scale in Feet (Approximate)



Scale in Kilometers (Approximate)



F,P&M

FIGURE 1.1 - SITE LOCATION

**SECTION 2.0
LAND USE HISTORY**

The purpose of this portion of the study is to identify potential areas of concern on the site, due to past chemical storage, leakage, spillage, or operation processes. For this purpose, several regulatory agencies were contacted and file information reviewed.

The Smithtown Tax Assessors department records indicate that the site is located in District 0800, Section 185, Block 1, Lot 60.2 in Hauppauge, Town of Smithtown, New York.

The Suffolk County Tax Assessors and Deeds Department was contacted and their information showed that the land was owned by Vanderbilt Industrial Park in 1973. In September, 1985, the property was sold to Anwar Chitayat (Anorad) through the Suffolk County Industrial Development Agency (IDA).

Aerial photographs were obtained from the Smithtown Planning Department for the years 1968, 1976, 1984, and 1988. The 1968 photograph shows the site to be vacant and wooded. The 1976 photo shows the existence of a building on the site (which was occupied by the previous tenant, Sands Textiles). The 1984 photo shows no significant changes on site, however, to the west, the building now also occupied by the Anorad Corporation is seen. The 1988 photo shows no significant changes.

Information gained from Anorad personnel indicates that Anorad moved into the building at 110 Oser Avenue in 1980 and then expanded into the 100 Oser Avenue site in 1987 after the building was renovated (which began in 1985).

The New York State Department of Environmental Conservation

(NYSDEC) was contacted for information concerning chemical spills on, and in the vicinity of, the site. A summary of the spill information is presented in Appendix A. The spill information shows that numerous spills have occurred in the vicinity of the site and one spill has occurred on the site in 1981. This spill of #2 fuel oil was the result of an oil delivery overfill in which 25 to 50 gallons were estimated to have been spilled. Suffolk County Department of Health Services (SCDHS) files concerning this spill indicated that this spill occurred on the south side of the building (front lawn) and that contaminated soil was removed.

Files were obtained from the Suffolk County Department of Health Services concerning the site at 100 Oser Avenue and the previous tenant, Sands Textile. Two businesses have occupied the site since its construction: Anorad Corporation, which is involved in the manufacturing of technical rotational positioning equipment and has owned the site since September of 1985; and Sands Textiles which occupied the site prior to Anorad and were involved with bulk dry cleaning of textiles. The SCDHS file summary for the site is as follows:

- 11-22-77- the open sump on the west side of the building was sampled and was found to contain 1.7 parts per million (ppm) iron. No volatile organic compounds (VOCs) were tested for.
- 10-4-78- A SCDHS investigator noted a puddle on the ground on the west side of the building. The liquid was identified as having a perchloroethylene (a.k.a tetrachloroethylene) odor. Perchloroethylene was noted to have been stored on the west side of the building, outdoors, in two above-ground

storage tanks.

- 3-9-79- An additional dry cleaning machine was installed without proper air permits.
- 6-12-79- The concrete sump on the west side of the building was sampled and found to contain 20 ppm iron.
- 10-1-79- A SPDES permit was issued for the following outfalls:

001- Boiler Blowdown- no discharge allowed.

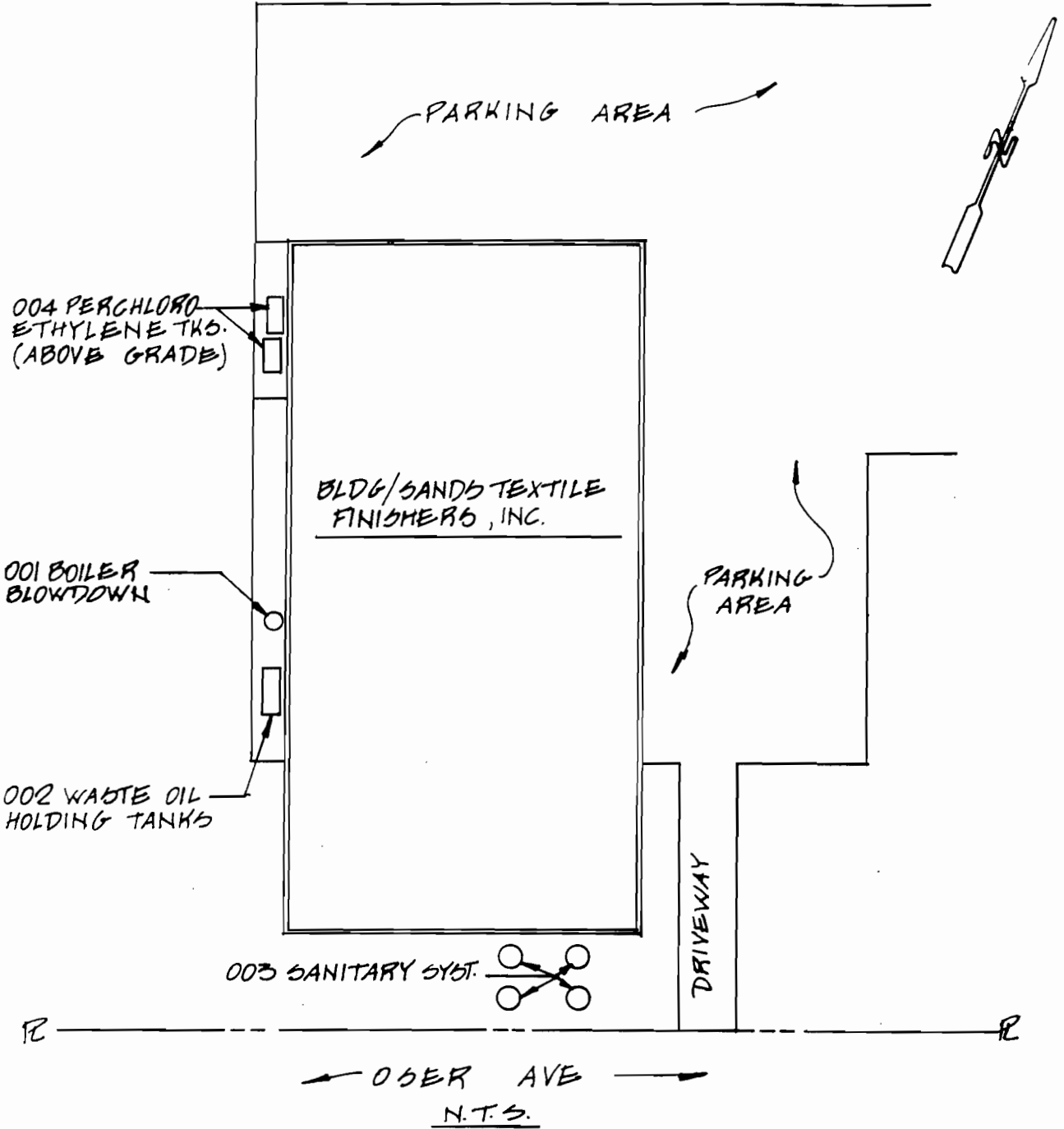
002- Waste Oil Tank- no discharge allowed.

003- Sanitary waste only.

004- Perchloroethylene- no discharge allowed.

The location of these outfalls can be found in Figure 2.1. Materials in outfalls 001 and 002 were picked up by a scavenger periodically.

- 7-24-79- A storm drain on the north side of the building was sampled and found to have iron at 3.4 ppm and a pH of 11.1.
- 1979- Certificate to operate an air contamination source was issued for perchloroethylene at 11.6 lbs/year.
- 8-18-80- Outside storage tanks and waste holding tanks have been removed. The system has been converted to self-contained distilling and recycling.
- 7-28-81- Article 12 Violations occurred concerning discharges of boiler blowdown and discharge of organic solvents.
- 7-29-81- Two holes in the concrete floor inside the building exposed soil. These areas were identified as areas where floor-washing water was directed. Perchloroethylene was noted to have been stored near these holes.



SOURCE: SCDHS

F,P,M

FIGURE 2.1-LOCATIONS OF SPDES OUTFALLS IDENTIFIED IN 1979 SPDES PERMIT

- 8-5-81- Collection drum inside building (used for collection prior to discharge to roof drain was found to contain copper at 2.6 ppm and tetrachloroethylene at 100,000 ppb in violation of their SPDES permit. Site plans for the building indicate that the roof drain is connected to a storm drain collection system which discharges stormwater for the industrial park into a recharge basin located to the rear of the property located at 80 Oser Avenue. A tracer dye test performed by the SCDHS to confirm this was inconclusive, however, a sample was obtained from the recharge basin was found to contain 66 ppb of tetrachloroethylene which is also inconclusive since numerous industries contribute stormwater to the recharge basin..
- 10-5-81- Letter from SCDHS to Sands indicates one 1,000 gallon waste oil tank requiring registration.
- 2-22-82- Sands Textiles signed an Order on Consent concerning discharges of tetrachloroethylene.
- 3-26-85- Open holes in concrete floor inside the building were cleaned out (perchloroethylene contaminated soil was removed) and re-concreted. The files indicate that other discharge holes in cement had previously existed. These have not been identified.
- 5-2-85- Sample of the septic tank on south side of property found dichloroethene at 30,000 ppb, trichloroethane at 1,800 ppb, trichloroethylene at 5,400 ppb, and tetrachloroethylene at 49,000 ppb.
- 5-6-85- Sanitary leaching pool on the south side of the building, just west of the septic tank was sampled and was found to contain copper at 16 ppm, lead at 1 ppm, cadmium at 0.05 ppm,

- and dichlorobenzene at 32 ppb in violation of their SPDES permit.
- 6-20-85- Sanitary septic system was sampled and found to contain trichloroethane at 23,000 ppb, trichloroethylene at 2,200 ppb, tetrachloroethylene at 97,000 ppb, cis-dichloroethylene at 19,000 ppb, dichlorobenzene at 3,200 ppb, dichloroethane at 870 ppb, copper at 1.4 ppm, iron at 44 ppm, zinc at 24 ppm, lead at 0.4 ppm, and cadmium at 0.05 ppm in violation of their SPDES permit and Article 12.
 - 8-9-85- Four drums, three empty and one full (containing an unidentified oil), were identified in the rear of the building. the inspector noted stressed vegetation in the area where the drums were located.
 - 8-20-85- The contaminated sanitary septic system was pumped out and cleaned to the satisfaction of the SCDHS.
 - 10-30-85- Two leaking oil drums were identified to the rear of the building.
 - 3-19-87- Site inspection indicated underground storage tank on site.
 - 9-10-87- A 10,000 gallon #2 fuel oil UST was registered and removed in accordance with SCDHS, Article 12.
 - 1-22-88- Site inspection indicates that no industrial waste discharge was noted on the site. The drums of waste oil were stored indoors for chemical use at 100 Oser Avenue. These chemicals were:
 - 1- Flux, solder
 - 2- Freon
 - 3- Wipe on alcohol

- 4- Varnish, solder and acetone
- 5- Alcohol, epoxy resin
- 6- Epoxy resin, parts
- 7- 30 gallons of alcohol and acetone

- 5-8-89- Due to a past chemical spill at PALL RAI, Inc., (located across Oser Avenue and upgradient of Anorad), a groundwater monitoring well W-13 was drilled on the Anorad site under the supervision of Donnelly Engineering. During drilling, a sample soil was obtained at 10 feet. The soil sample was detected with 1,2-Dichloroethene, at 27 ppb and tetrachloroethene at 820 ppb.

- 5-12-89- Monitoring well W-14 was installed under the supervision of Donnelly Engineering. Soils were sampled at a 55 foot depth and detected with trichloroethylene at 1,400 ppb and tetrachloroethene at 10,000,000 ppb.

- 5-15-89- Monitoring well W-12 was drilled. Soil was sampled at a 60 foot depth. Soil was detected with tetrachloroethylene at 200,000 ppb.

- 5-25-89- Groundwater samples were obtained from W-12, W-13, and W-14 and tested for VOCs. Sample W-12 was detected with methylene chloride at 90 ppb, carbon tetrachloride at 630 ppb, and tetrachloroethylene at 41,000 ppb. W-13 was detected with carbon tetrachloroethylene at 40 ppb and tetrachloroethylene at 19,000 ppb. Monitoring well W-14 was detected with methylene chloride at 800 ppb, carbon tetrachloride at 450 ppb, and tetrachloroethylene at 42,000 ppb.

- 6-30-89- W-16 was tested for VOCs and detected with methylene

chloride at 3 ppb, carbon tetrachloride at 43 ppb, and tetrachloroethylene at 13,000 ppb.

- 8-89- In the files at the SCDHS, a report prepared by Donnelly Engineering, entitled "Groundwater Contamination Investigation Status Report", prepared for PALL RAI, Inc., 225 Marcus Blvd., Hauppauge, NY, August 1989 was noted. In review of this report, the four wells that were previously mentioned were installed on the Anorad property, 3 wells on the west side of the building and 1 in the northeast corner of the property (see Figure 2.2 for well location). PALL RAI, Inc., is located across the street to the southwest of Anorad and is presently investigating a groundwater contaminant plume, which is ostensibly emanating from their property. This plume is reported to contain toluene, carbon tetrachloride, tetrachloroethylene, trichloroethene, methylene chloride, chloroform, and 1,1,1-trichloroethane. During the installation of wells on the Anorad site, tetrachloroethylene was detected in the soils of the vadose zone.

- 8-18-89- Letter from SCDHS to Anorad Corp. stating that samples of groundwater were obtained from test wells #15 and #16 and were noted with levels of contaminants above the maximum allowed in groundwater discharged standards. A preliminary hearing was scheduled for 9/13/89.

- 9-13-89- A hearing was held and a proposed Order on Consent #IW 89-87 was issued but not signed by either party.

- 11-7-89- Letter from Fanning, Phillips and Molnar to SCDHS responding to proposed Order on Consent. The letter responds to mitigation items #A-1, #A-2, and #A-3.

REGIONAL WATER
GROUND DIRECTION
FLOW

MARCUS BLVD.

MW1
MW4

PALL RAI, INC.
#229 MARCUS BLVD.

MW5
MW6

MW8
MW3
MW7

OSER AVE.

MW10
MW9
MW2

MW12
MW14
MW13

ANDRAD
#100 OSER AVE.

MW15

MW16



LEGEND
⊗ - MON. WELL

SCALE: 1" = 80'

fanning, phillips & molnar
ENGINEERS
NEW YORK
ROCKONOMA

FIGURE 2.1 - WELL LOCATIONS
AT PALL RAI, INC.
AND 100 OSER AVENUE

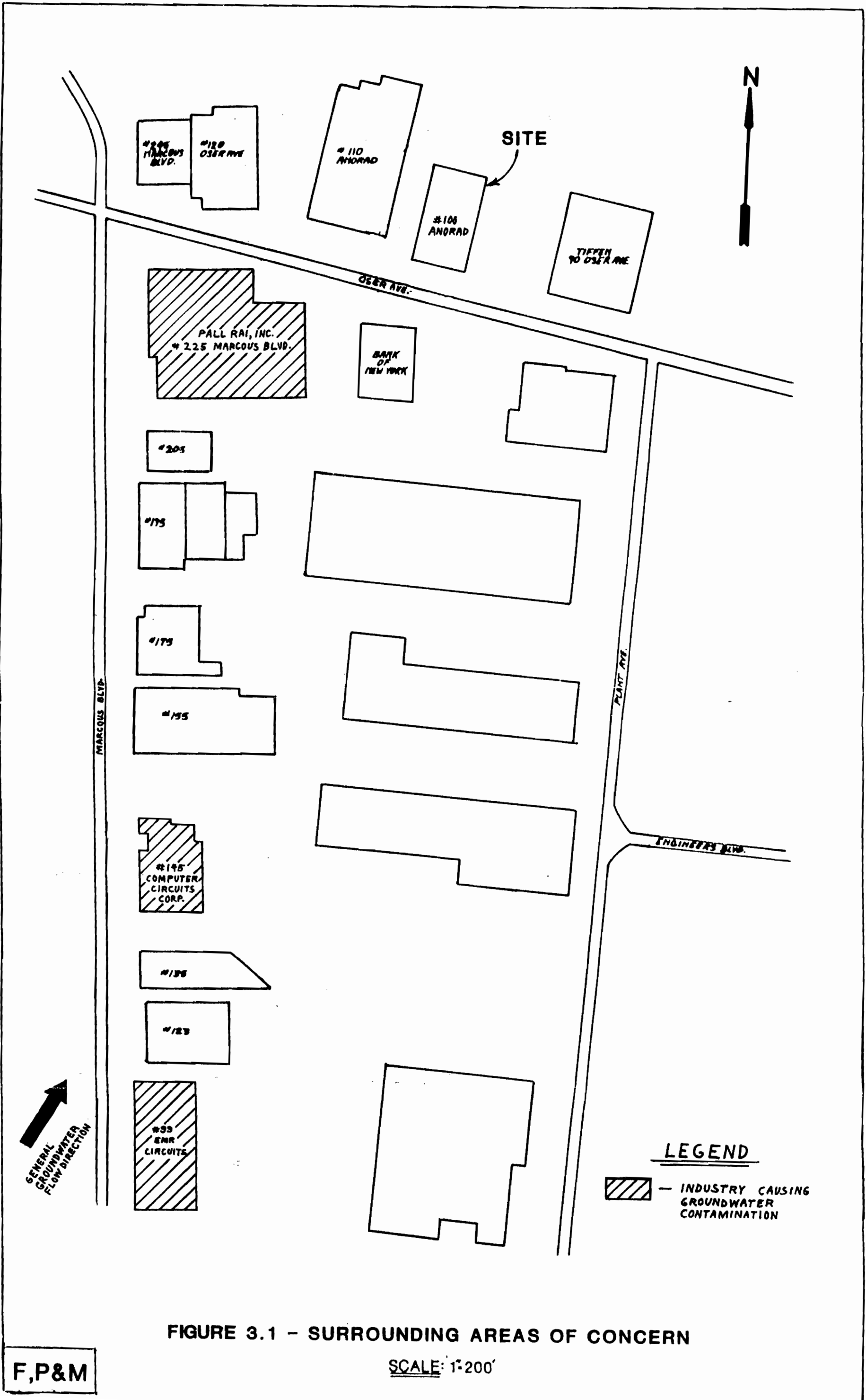


FIGURE 3.1 - SURROUNDING AREAS OF CONCERN

SCALE: 1"=200'

F,P&M

- **11-15-89-** Letter from SCDHS to Fanning, Phillips and Molnar stating that the cleaning of the septic system is satisfactory.
- **11-17-89-** Work plan for "Phase I Investigation of Potential Sources of Contamination at 100 Oser Avenue" was submitted to the SCDHS by Fanning, Phillips and Molnar.
- **3-7-90-** Letter from SCDHS to Fanning, Phillips and Molnar commenting on work plan. Comments included:
 - Statement regarding the drummed soils from the drill cuttings during the installation of W-12, W-13 and W-14 and the disposal as hazardous waste.
 - Sample groundwater from the four wells on the Anorad site.
 - Proceed with work plan.
- **4-11-90-** Letter from Fanning, Phillips and Molnar to SCDHS giving notice of sampling of the four wells on the site.

SECTION 3.0
ENVIRONMENTAL SETTING

The purpose of this section is to provide information on the environmental setting of the industrial park, in which Anorad Corporation is located. In review of the files at the SCDHS and NYSDEC, three sites within the industrial park and upgradient of the 100 Oser Avenue facility have been identified as potential sources of contaminants in the groundwater (see Figure 3.1 for location).

The companies that have been identified as potential sources of groundwater contamination are: EMR Circuits; Computer Circuits; and Pall RAI, Inc (see Table 3.1 for summary of these facilities). Thus, it is shown that a number of potentially responsible parties have possibly tainted the groundwater quality in this region.

**TABLE 3.1 *
SUMMARY
POTENTIAL AREAS
OF
CONCERN**

COMPANY NAME	ADDRESS	CHEMICALS USED
EMR Circuits (1) NYS Superfund (Class 2a)	99 Marcus Boulevard	Trichloroethane Trichloroethylene Tetrachloroethylen Ethyl Toluene Xylene Trimethylbenzene Trichlorobenzene Methylethyl-Ketone Copper, Nickel, Lead, Chromium
Computer Circuits (1) NYS Superfund (Class 2)	145 Marcus Boulevard	Process Waste Planting Waste Heavy Metals Solvents
Pall RAI, Inc.	225 Marcus Boulevard	Toluene Methylene Chloride Solvents

* See Figure 3.1 for locations of companies

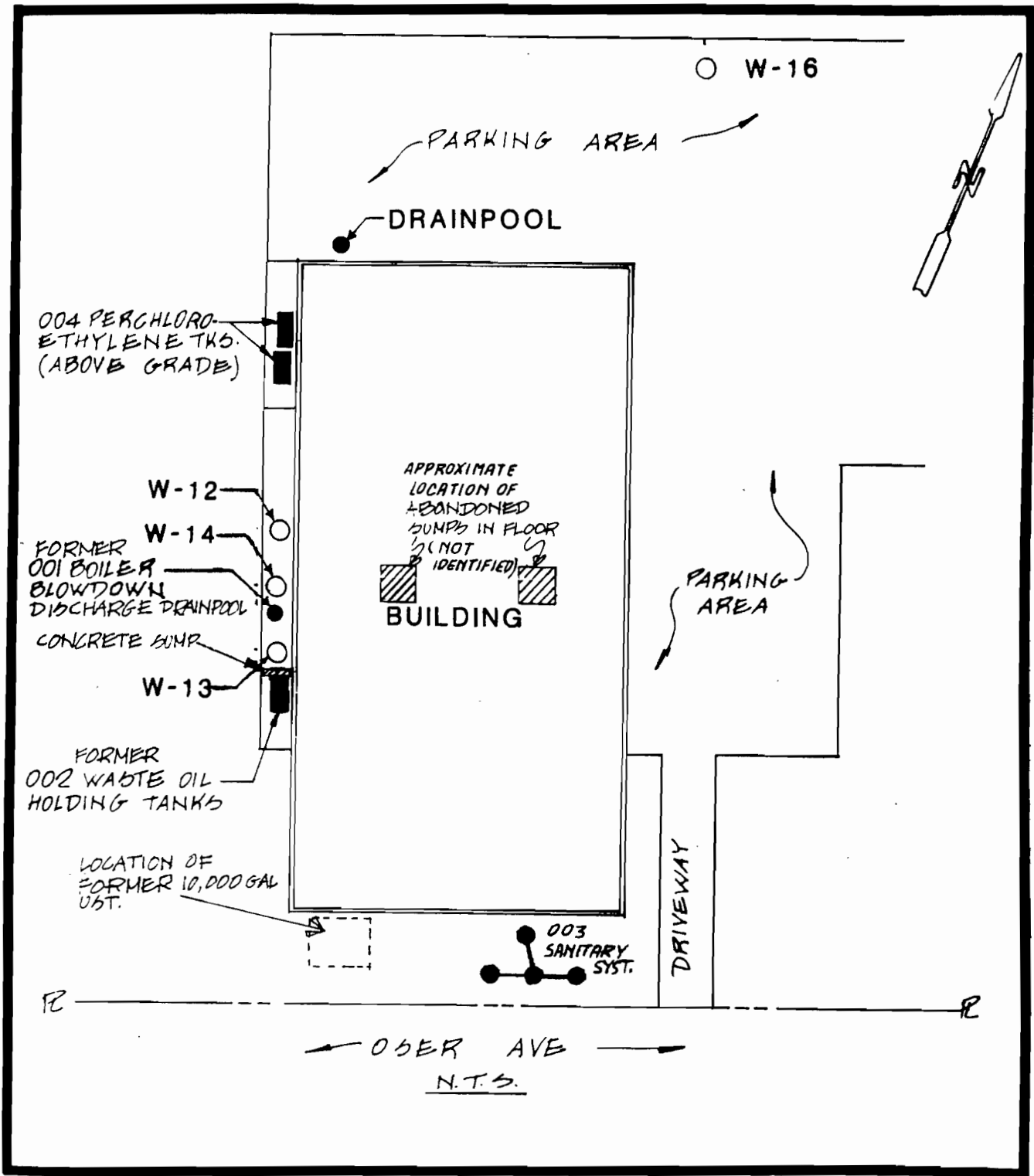
(1) See Appendix B for more detail on the regulatory compliance for this site.

**SECTION 4.0
SITE INSPECTION**

The purpose of this portion of the study was to confirm present site activity and to locate the potential areas of concern or sources of contamination as identified in the file review. Figure 4.1 was constructed to identify the locations of potential concern as identified from the file review and site inspection. The locations shown on Figure 4.1 will be discussed further in Section 5.0 of this report, which presents the shallow soil sampling plan for the Anorad site.

Based upon the results of the site inspection, the following was noted:

1. The former location of the 10,000 gallon #2 fuel oil UST, was noted to have been in the southwest corner of the facility. Presently, this area is identified as the front lawn where there is a retaining wall (approximately 3' high) for an elevated landscape abutting the building. The fuel oil tank has been removed and soils excavated in accordance with the SCDHS.
2. Inspection of the rear of the facility indicated that there were no stained areas on the asphalt. However, within the loading dock area (on the northwest corner of the building) a clogged drainpool at the base of the loading dock was identified.
3. Inspection along the west side of the facility indicated the presence of a cement sump (with a pipe running through it). This sump was determined to be a housing for a pump that was once used to circulate water through machines in the plant. Also noted along the west side of the building was the location of the former waste oil tank and the tetrachloroethylene tanks. There



LEGEND

○ - GROUNDWATER MONITORING WELL

was a location along the west side of the building where new disturbed asphaltting was noted as well as the presence of a drainpool. A pipe was noted to enter the drainpool from the east.

4. The sanitary septic system was identified on the front lawn in the southeast portion of the site. This sanitary system was pumped out and steamed cleaned in accordance with the SCDHS in 10/13/89.
5. Inspection inside of the building indicated two roof drains, one in the warehouse portion of the building and one in the office space. The roof drain located in the warehouse was investigated to determine whether it drained to the drainpool along the west side of the facility. This was done by pouring water into the drain from the roof and observing the drainpool (pipe within the drainpool). No water was noted to enter the drainpool (see Appendix C for field report). This was further investigated through a file search at the Town Building Department. Drainage plans indicate that the roof drains are connected to a 12" diameter storm sewer, which services Oser Avenue.
6. The locations of the former floor drains/sumps could not be located in the office portion of the building due to the tiled floor. However, these floor drains had been cleaned in accordance with the SCDHS as indicated in the files on 3/26/85, during an inspection.

SECTION 5.0
SHALLOW SOIL SAMPLING

Based upon the file information reviewed at the SCDHS and NYSDEC, and the site inspection, six areas of concern have been identified (see Table 5.1). These areas are all related to past operation practices of the former Sands Textiles prior to 1985, when Anorad Corporation had purchased the property. Table 5.1 lists the six areas of concern. Based upon the potential areas of concern, Fanning, Phillips and Molnar obtained six soil samples for Target Compound List (TCL) volatile organic compounds (VOCs) analysis as per USEPA method 8240. Table 5.2 was prepared in order to present the area of concern, the proposed depth of soil sampling and laboratory analysis. In addition, field and trip blanks were also prepared for submittal to the laboratory and tested for TCL VOCs as per USEPA method 624.

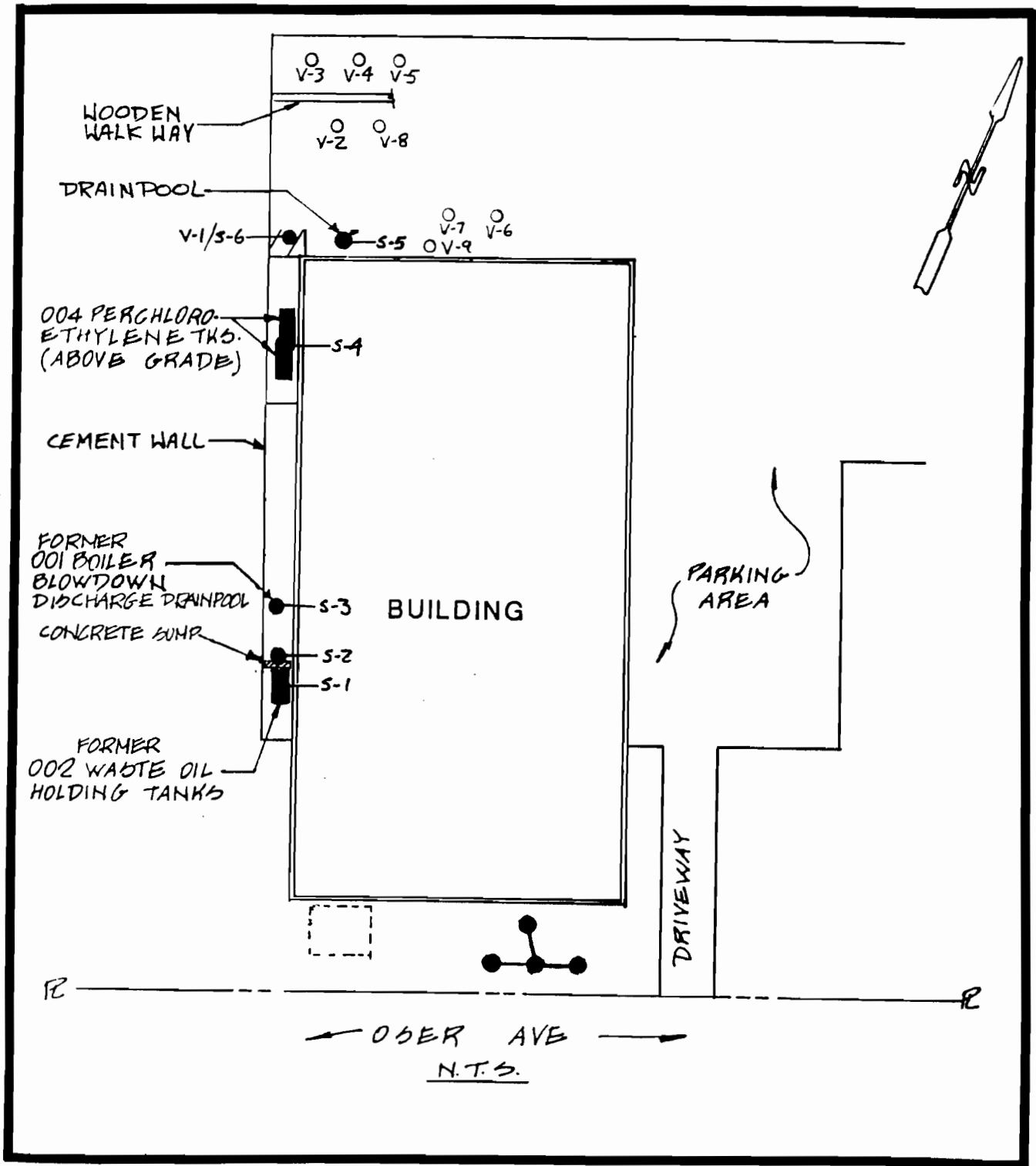
5.1 Shallow Soil Sampling Procedures

A total of six (6) samples were obtained by use of clean hand auger. The locations of the sampling points are located on Figure 5.1. Each sample was contained in a laboratory prepared sample jar, labeled and tested for TCL VOCs as per USEPA Method 8240. The laboratory that was used for this project was H2M Labs, Inc., a NYSDEC certified USEPA contract laboratory. Each sample was labeled and stored in a cooler at 4°C. Prior to sampling, the hand auger was cleaned following the procedures below:

1. Wipe with clean paper towel to remove visual contamination.
2. Tap water and liquinox detergent wash.
3. Tap water rinse.

TABLE 5.1*
AREAS OF CONCERN

<u>LOCATION</u>	<u>DESCRIPTION OF CONCERN</u>
1. SPDES Outfall #001 (former boiler blowdown discharge location)	Wastewater contaminants with Tetrachloroethylene was allegedly discharged into the drainpool on the west side of the building.
2. SPDES Outfall #002 (former waste oil holding tank)	Waste oil was stored outdoors in an above-ground tank (1,000 gallon). Staining was noted on the west wall of the building where the former tank existed.
3. SPDES Outfall #004 (former tetrachloroethylene storage tanks)	Tetrachloroethylene was stored in two above-ground storage tanks.
4. Drainpool in loading dock on north side of the building	This drainpool is reported to have a pH of 11.1. Possibly accepted spills in the past.
5. Former drum storage area on the north portion of the site	Two incidents of improper drum storage are noted in the files. Exact location of the former drum storage is unknown.
6. Concrete sump on west side of the building	Accepts runoff from asphalt, which may have contained waste oil and/or tetrachloroethylene.
* See Figure 5.1 for sampling locations.	



LEGEND

- - S-1 SHALLOW SOIL SAMPLING LOCATIONS
- - V-1 SOIL VAPOR SAMPLING LOCATIONS

FIGURE 5.1- SOIL VAPOR AND SHALLOW SOIL SAMPLING LOCATIONS

FP&M

**TABLE 5.2
SOIL SAMPLING LOCATIONS**

AREA OF CONCERN	SAMPLING PLAN	LABORATORY ANALYSIS
1. SPDES Outfall #001	sediment sample to be obtained 0'-5 feet below the sediment surface.	- Volatile Organic Compounds (USEPA method 8240).
2. SPDES Outfall #002	Soil sample at 0'-5 feet below grade through asphalt at location of former waste oil tank.	- Volatile Organic Compounds (USEPA method 8240).
3. SPDES Outfall #004	Soil sample at 0'-5 feet below grade through asphalt at location of former waste oil tank.	- Volatile Organic Compounds (USEPA method 8240).
4. Drainpool on north side of building	Sediment sample at 1 foot below sediment surface.	- Volatile Organic Compounds (USEPA method 8240).
5. Former drum storage area on the north portion of of the site	Since this exact location was not known, a soil vapor analysis in 10 locations for organic vapors was performed. A soil sample at 0'-5 ft. was taken at a location determined by the soil vapor survey.	- Volatile Organic Compounds (USEPA method 8240).
6. Concrete Sump	Sediment sample from bottom of sump.	- Volatile Organic Compounds (USEPA method 8240).

4. Spectrographic grade methanol rinse, followed by hexane rinse.
5. Air dry.
6. Distilled water rinse.
7. Air dry.
8. Wrapped in clean aluminum foil.

For each sampling event, a new pair of disposable plastic surgical gloves was used. The sample was obtained by use of a clean trowel or knife that was cleaned in accordance with the above-listed procedure. Samples were carefully transferred from the auger to the sample bottles to minimize the potential for aeration. Each bottle was labeled with the following information:

- A. Owner/Client
- B. Well Number or Designation
- C. Sample Identification Number or Designation
- D. Date
- E. Time
- F. Type of Laboratory Analysis
- G. Name of Person Collecting the Sample

Full and labeled sample bottles were placed in a cooler packed with ice or chemical ice packs to maintain temperature at 4°C. The chain of custody and recording procedures were as follows:

- A. To ensure the integrity of samples taken, a strict chain of custody record was maintained on each sample. This began after sampling with entry, in ink, in the sampler's field log book of the sampling details.
- B. Sample location.

- C. The unique sample number, size and containers used.
- D. Sample description.
- E. Analysis requested.

After the sample was taken and the container labeled, the container was sealed properly. The chain of custody form accompanied the sample throughout its trip to the laboratory.

Quality Assurance and Quality Control (QA/QC) was performed by cleaning all equipment prior to use and maintaining a chain of custody, as discussed previously. In addition, a field blank was prepared during the day of sampling. The field blank was prepared by running distilled water over the cleaned hand auger prior to sampling. The water was captured in laboratory prepared sample jars and tested for the same parameters as the sample. Water samples were tested as per USEPA Method 624.

A trip blank also accompanied the samples in the cooler. The trip blank was not opened and remained in the cooler to travel with the sample bottles from and back to the laboratory. The trip blank was analyzed for TCL VOCs as per USEPA Method 624.

All field work was documented in a field log book and field reports were prepared (see Appendix C).

5.2 Shallow Soil Sampling Results

The laboratory results of the shallow soil sampling are presented in Table 5.3. As Table 5.3 shows, concentrations of TCL VOCs were detected in all six soil samples obtained on the site. Section 7.0 of this report will present the discussion and conclusions of these sampling results.

TABLE 5.3
DETECTED COMPOUNDS*
IN SOILS
100 OSER AVENUE
HAUPPAUGE, NEW YORK

DETECTED COMPOUND	S-1 5-2-90	S-2 5-2-90	S-3 5-2-90	S-4 5-2-90	S-5 5-2-90	S-6 5-2-90	FIELD BLANK 5-2-90	TRIP BLANK 5-2-90
Target Compound List (TCL)								
Volatile Organic Compounds (VOCs) (1)								
Vinyl Chloride	84	ND	5,800	ND	ND	ND	ND	ND
1,1-Dichloroethene	30	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	44	ND	ND	ND	ND	ND	ND	ND
cis/trans-1,2-Dichloroethene	6,400	12,000	50,000	ND	6,200	ND	ND	ND
Chloroform	76	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	1,900	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	48,000	15,000	6,200	ND	170,000	ND	ND	ND
Tetrachloroethene	2,700,000	130,000	8,400	4,500	12,000,000	ND	ND	ND
Toluene	31	ND	ND	ND	ND	ND	ND	ND
Xylenes	37	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	ND	1,500	ND	ND	ND	ND	ND	ND
Acetone	ND	3,100	13,000	2,600	5,900	ND	ND	ND
2-Butanone (MEK)	ND	4,000	8,300	9,600	11,000	2,800	ND	ND
Styrene	ND	ND	ND	ND	1,300	ND	ND	ND
Total TCL VOCs	2,756,602	165,600	91,700	16,700	12,194,400	2,800	ND	ND

*See Figure 5.1 for sampling locations and Appendix D for Laboratory Report.

(1) All values in this table are in ug/kg or parts per billion (ppb).

ND Indicates not detected.

SECTION 6.0 GROUNDWATER SAMPLING

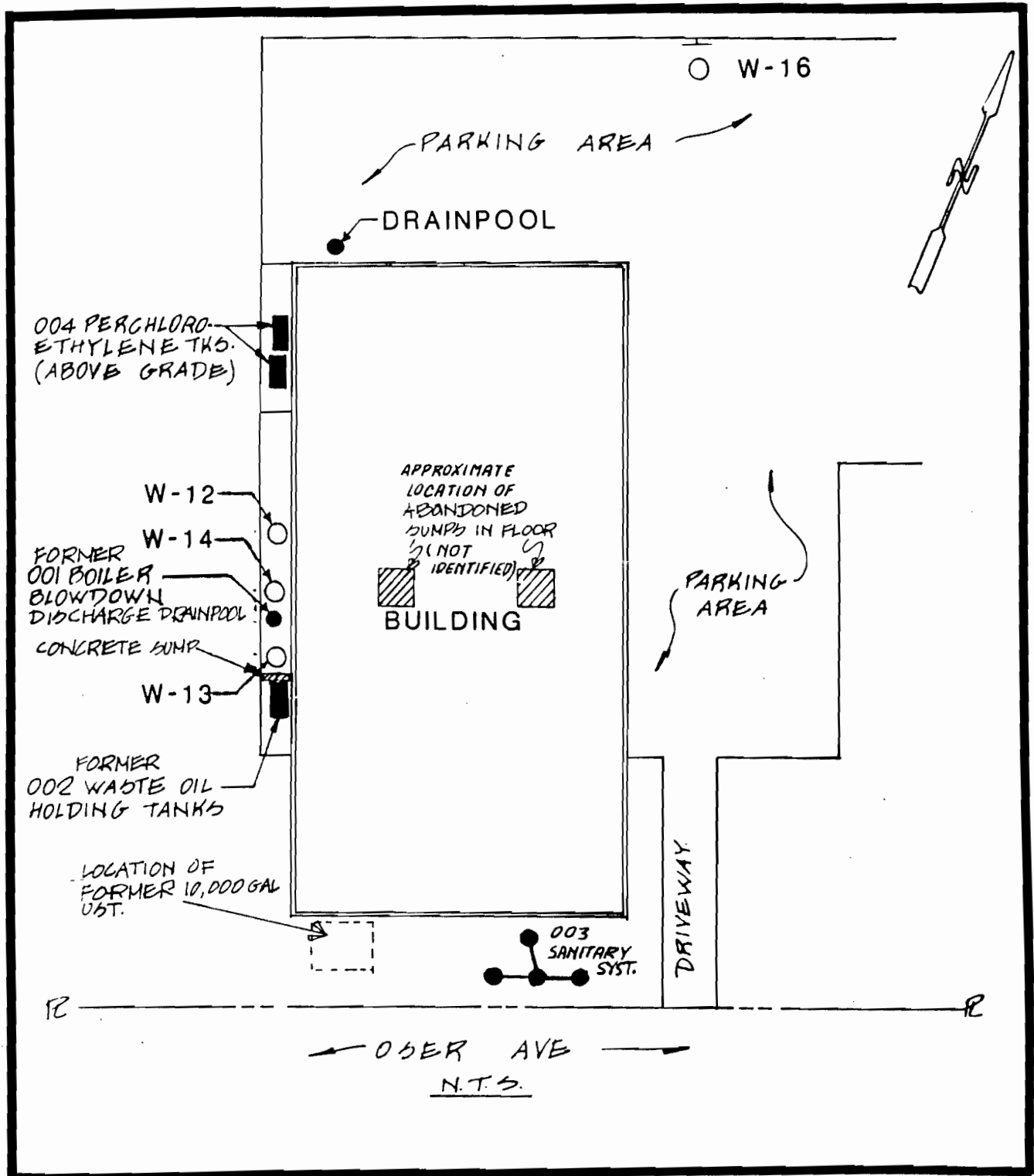
In accordance with the SCDHS, four groundwater monitoring wells located on the Anorad site were sampled. These wells were installed during the groundwater contamination investigation at the PALL RAI site. It was that study which led to the investigation now presented. Each groundwater sample was tested by H2M Labs, Inc., for TCL VOCs as per USEPA Method 624. Section 6.1 will present the groundwater sampling procedures and 6.2 will present the results.

6.1 Groundwater Sampling Procedures

A total of four (4) groundwater samples were obtained from the monitoring wells on the Anorad site (see Figure 6.1 for well locations). Prior to groundwater sampling, the depth to the static water level in each well was measured with an electric water-level indicator equipped with calibrated tape or cable to the nearest 0.01' foot and recorded (see Table 6.1 for summary of groundwater sampling). The depth to the bottom of the well from the top of the PVC casing was also measured and recorded. To avoid cross-contamination between wells, the indicator probe and the immersed portion of the tape or cable was decontaminated.

The laboratory-provided sample-bottle cooler (shuttle) was inspected to ensure that all the required bottles were present and labeled.

Using a clean dedicated teflon bailer, the wells were purged. During well purging, pH, temperature, and specific conductance were monitored. Sample development occurred after all three characteristics stabilized. Stability was achieved when each



LEGEND

○ - GROUNDWATER MONITORING WELL

TABLE 6.1
 SUMMARY OF GROUNDWATER SAMPLING*
 100 OSER AVENUE
 HAUPPALUCE, NEW YORK

Well ID#	Date Sampled	Total Depth of Well (ft)	Depth to Water (ft)	Volume of Water Removed	Temp (°F)	pH	Conductivity (umhos/cc)	Specific
W-12	4-19-90	80.90	66.54	1	54	6.13	601	
				2	54	5.87	608	
				3	54	5.84	615	
W-13	4-19-90	83.80	66.53	1	53	5.80	617	
				2	55	5.82	600	
				3	53	5.86	562	
W-14	4-19-90	80.71	66.33	1	53	6.10	691	
				2	53	6.04	651	
				3	52	5.94	668	
W-16	4-19-90	78.29	66.76	1	54	6.86	232	
				2	54	6.71	200	
				3	54	6.46	198	

* See Figure 6.1 for well locations and Appendix C for field report.

parameter is within plus or minus 10 percent of the previous value (see Table 6.1). Sampling of the groundwater then commenced.

A cleaned, dedicated teflon bailer, equipped with a Teflon check valve, was used to obtain a water sample from each well. Prior to initial use, each bailer was cleaned in accordance with the procedures described below:

1. Wipe with clean paper towel to remove visual contamination.
2. Tap water and liquinox detergent wash.
3. Tap water rinse.
4. Spectrographic-grade methanol rinse followed by hexane rinse.
5. Air dried.
6. Distilled water rinse.
7. Air dried.
8. Wrapped in clean aluminum foil.

All groundwater samples were taken from the bailer after it was acclimated to the observation well by gently removing at least three bail volumes of water. The bailer was then lowered into the well very carefully so as not to disturb the water surface in an attempt to obtain the most representative sample of the groundwater. A dedicated polypropylene line was used to slowly lower the bailer by hand with the slack portion of the line left to lie in a clean container, placed next to the well. The bailer was lowered until it was approximately opposite the central portion of the well screen. The first three bailers of groundwater were discarded before the samples are collected. All water from each well was contained in a separate NYS DOT drum, labeled and stored inside the building.

For each well sampled, the bailer was handled with a new pair of disposable plastic surgical gloves. Water samples were carefully transferred from the bailer to the sample bottles to minimize the potential for aeration of the sample.

Each bottle was labeled with the following information:

- A. Owner/Client
- B. Well Number or Designation
- C. Sample Identification Number or Designation
- D. Date
- E. Time
- F. Type of Laboratory Analysis (i.e., TCL VOCs)
- G. Name of person Collecting the Sample

A separate jar was filled with well water to perform the field tests after each well volume was purged. The field tests included temperature, pH, and specific conductivity. The tests were performed using portable meters. Prior to the tests, the instruments were calibrated according to the manufacturers' specifications. The probes were then inserted into the container while the sample was gently agitated. The readings were recorded when the meter display stabilized. After each use, the probes were cleaned and prepared for further use. Full and labeled sample bottles were placed in the cooler packed with ice packs to maintain temperature at 4°C.

A chain-of-custody was completed to ensure the integrity of the samples (see Appendix C for field report and chain-of-custody form). For QA/QC, a field blank was prepared by pouring distilled water over a cleaned, dedicated bailer and captured in laboratory prepared sample bottles. The field blank was tested for TCL VOCs. In addition, a

trip blank was also submitted to the laboratory for TCL VOC analysis.

6.2 Groundwater Sampling Results

The laboratory results of the groundwater sampling are presented in Table 6.2. As Table 6.2 shows, a number of TCL VOCs have been detected in the four wells on the Anorad site.

Section 7.0 of this report will present the discussion and conclusions of the sampling results.

**TABLE 6.2
DETECTED COMPOUNDS*
IN GROUNDWATER
100 OSER AVENUE
HAUPPAUGE, NEW YORK**

Detected Compound	Detection Limit	W-12	W-13	W-14	W-16	Field Blank	Trip Blank
Target Compound List (TCL)							
Volatile Organic Compounds (VOCs) (1)							
cis/trans-1,2-Dichloroethene	5	580	71	900	2,700	ND	ND
Vinyl Chloride	10	ND	ND	10	11	ND	ND
Methylene Chloride	5	1,000	1,700	51	19	13	13
Trichloroethene	5	210	33	380	1,200	ND	ND
Chloroform	5	17	ND	5	12	ND	ND
Carbon Tetrachloride	5	710	360	70	ND	ND	ND
Benzene	5	5	ND	ND	ND	ND	ND
Tetrachloroethene	5	14,000	11,000	32,000	36,000	ND	ND
Toluene	5	460	2,800	46	21	ND	ND
1,1,1-Trichloroethane	5	83	14	130	850	ND	ND
1,1-Dichloroethene	5	ND	ND	ND	13	ND	ND
1,1-Dichloroethane	5	ND	ND	ND	9	ND	ND
Total TCL VOCs		17,065	15,978	33,592	40,835	13	13

* See Figure 6.1 for well locations and Appendix D for laboratory report.

(1) All values in this table are in ug/l or parts per billion (ppb).

**SECTION 7.0
DISCUSSION AND CONCLUSIONS**

This section of the report will present the discussion and conclusions of this investigation.

7.1 Discussion

Soils

Based upon the file search of past chemical use at the former Sands Textile (presently Anorad facility) and the site inspection, a number of sampling locations were identified. A total of six (6) shallow soil samples were obtained for TCL VOC analysis. The results of this shallow soil sampling indicated the presence of TCL VOCs at concentrations ranging from 12,194.4 mg/kg at S-5 to 2.8 mg/kg at S-6.

Among the TCL VOCs detected in the soils, tetrachloroethene and MEK were the most frequent (detected in 5 out of 6 samples). It should be noted that the majority of chemicals detected are chlorinated (with the exception of toluene, xylenes, and MEK).

In addition, out of all TCL VOCs detected in the soils, acetone is the only compound that is used at 100 Oser Avenue. Past land use (prior to 1985 as Sands Textiles) has shown trichloroethane, trichloroethylene, tetrachloroethylene, cis-dichloroethylene, dichlorobenzene, and dichloroethane detected in the sanitary septic system. Compounds such as dichloroethene and vinyl chloride are commonly present among chlorinated organics due to chemical transformation processes.

Groundwater

A total of four (4) groundwater samples from the existing monitoring wells on site were obtained for TCL VOC analysis. The

results indicated the presence of VOCs in all four wells. While tetrachloroethene was detected at the highest concentration in each sample, other TCL VOCs were also detected.

By comparing the water quality results of the PALL RAI upgradient wells and the wells on the 100 Oser Avenue site, the number of TCL VOCs detected in the groundwater increase in a downgradient direction. The presence of 1,1-dichloroethene, cis/trans-1,2-dichloroethene, and vinyl chloride may be indicative of abiotic and biotic transformation of chlorinated compounds.

Concentrations of tetrachloroethene detected in the groundwater samples from wells on the Anorad site also showed an increase in a downgradient direction with W-16 being the highest.

7.2 Conclusions

Based upon this Phase I investigation the following conclusions are drawn:

1. Prior to 1985, the site was occupied by Sands Textile. Sands Textile operated as a textile dry cleaning operation.
2. Chlorinated volatile organic compounds were widely used and generated at the former Sands Textile facility.
3. Article 12 and SPDES permit violations were issued to Sands Textile by the SCDHS regarding improper storage and discharge of chlorinated organic solvents.
4. The sanitary septic system, floor drains, and 10,000 gallon #2 fuel oil UST were remediated in accordance with SCDHS order.
5. Anorad purchased the site (100 Oser Avenue) in September 1985. This purchase was done through the Suffolk County

Industrial Development Agency (IDA).

6. In 1989, PALL RAI, Inc., located directly upgradient of 100 Oser Avenue had experienced a chemical spill (toluene). Other chemicals (both chlorinated and non-chlorinated volatile organics) were (are) stored and used at this facility.
7. The Anorad site is located within an industrial park which is occupied by numerous potentially responsible parties (PRPs). At the present time, the file at the SCDHS and NYSDEC indicate 2 inactive hazardous waste sites located upgradient of 100 Oser Avenue. In addition, the SCDHS has ordered PALL RAI, Inc., to perform extensive groundwater and soil investigation and remediation. These industries utilize such contaminants that have been detected in the groundwater in this area.
8. During an extensive soil and groundwater investigation under the direction of the SCDHS, PALL RAI, Inc., discovered contaminated soils and groundwater at the Anorad facility (100 Oser Avenue). This was discovered during the drilling of 3 groundwater monitoring wells along the west side of the building on site.
9. Anorad was contacted by the SCDHS and issued a proposed order on consent #IW 89-87.
10. A Phase I investigation plan was approved by the SCDHS in March 1990.
11. The results of this site history and file review indicated six areas of concern. Shallow soil samples were obtained at all six locations and were detected with TCL VOCs.

12. The results of groundwater resampling from the four wells on the Anorad site indicated the presence of TCL VOCs.
13. Past land use at 100 Oser Avenue has resulted in an area which has been affected by the discharge of a number of chlorinated volatile organics into the soils. Concentrations of similar compounds have been detected in the groundwater. However, concentrations of numerous VOCs have been detected in the groundwater upgradient of the Anorad site, namely: methylene chloride, chloroform, 1,1,1 trichloroethane, carbon tetrachloride, trichloroethene, tetrachloroethene, and toluene.

SECTION 8.0
RECOMMENDATIONS

Based upon the conclusions of this Phase I Investigation, the following recommendations are made:

1. Perform four (4) deep soil borings (to the water table) and construct vapor wells at these locations. Three (3) of these borings will be located along the west side of the building on site (see Figure 8.1) and one (1) will be placed at a location to be determined in the field (see recommendation 2). During boring, soil samples will be obtained at select depth intervals and screened with a photoionization detector (PID) for total volatile organic vapors. Four (4) soil samples will be laboratory tested by H2M Labs for target compound list VOCs as per USEPA method 8240. Vapor wells will be installed at all deep boring locations for the purpose of implementing a soil gas stripping remediation (see Figure 8.2 for Schematic of Insitu Soil Venting System).
2. A soil vapor survey (SVS) will be performed on the east and northern portions of the site (see Figure 8.1). This will be completed on a 25' grid and soil vapor will be tested with a PID for total volatile organic vapors.
3. Three (3) shallow soil borings will be performed to a 5' depth. Soils will be tested from select locations and depths based upon the results of the SVS (Recommendation 2). Soil samples will be tested for TCL VOCs as per USEPA method 8240.

4. Pursue a mutually acceptable plan with potentially responsible parties (PRPs) (Pall RAI, Inc., EMR Circuits, and Computer Circuits) for groundwater off-site investigation with SCDHS.

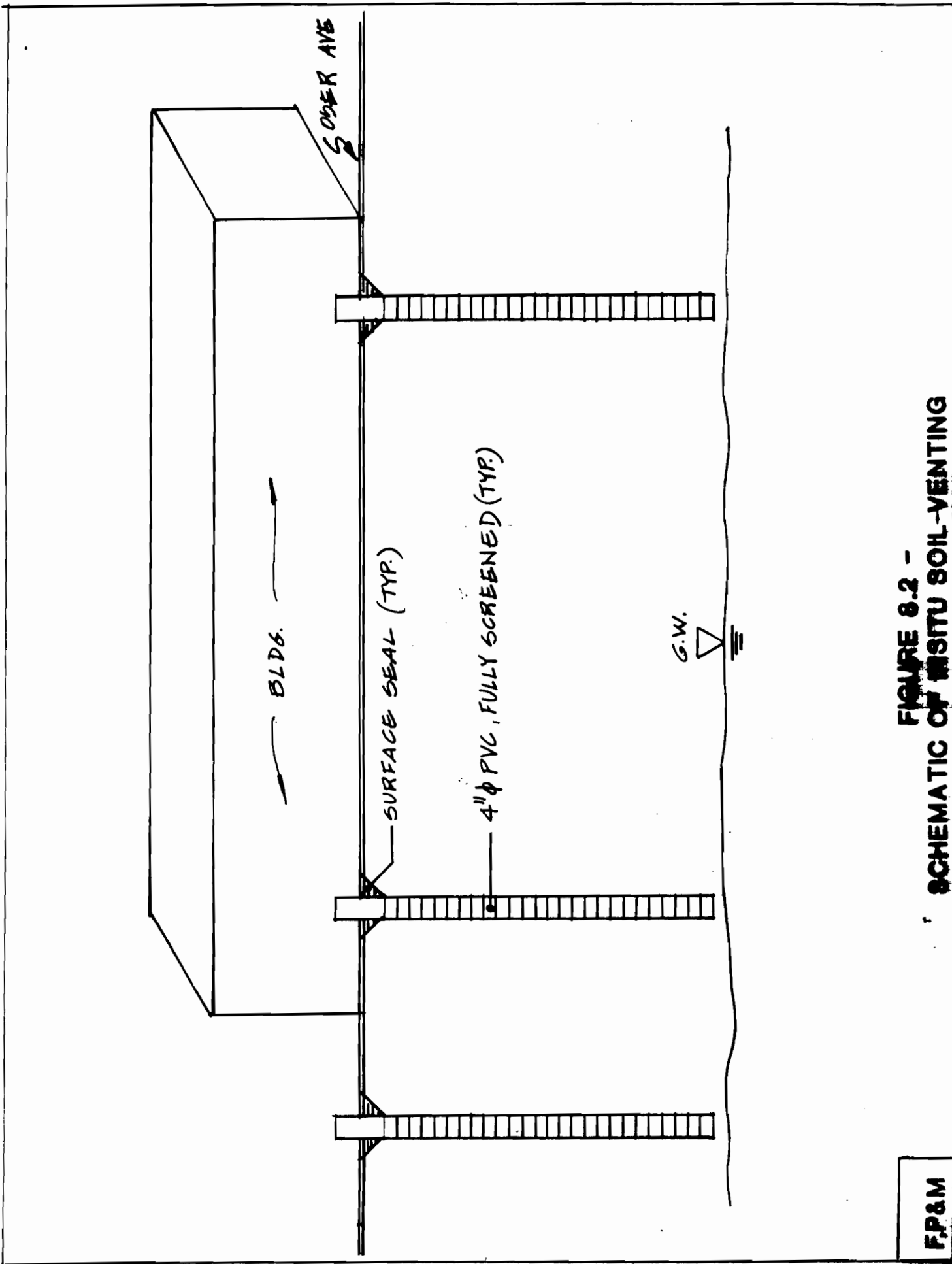
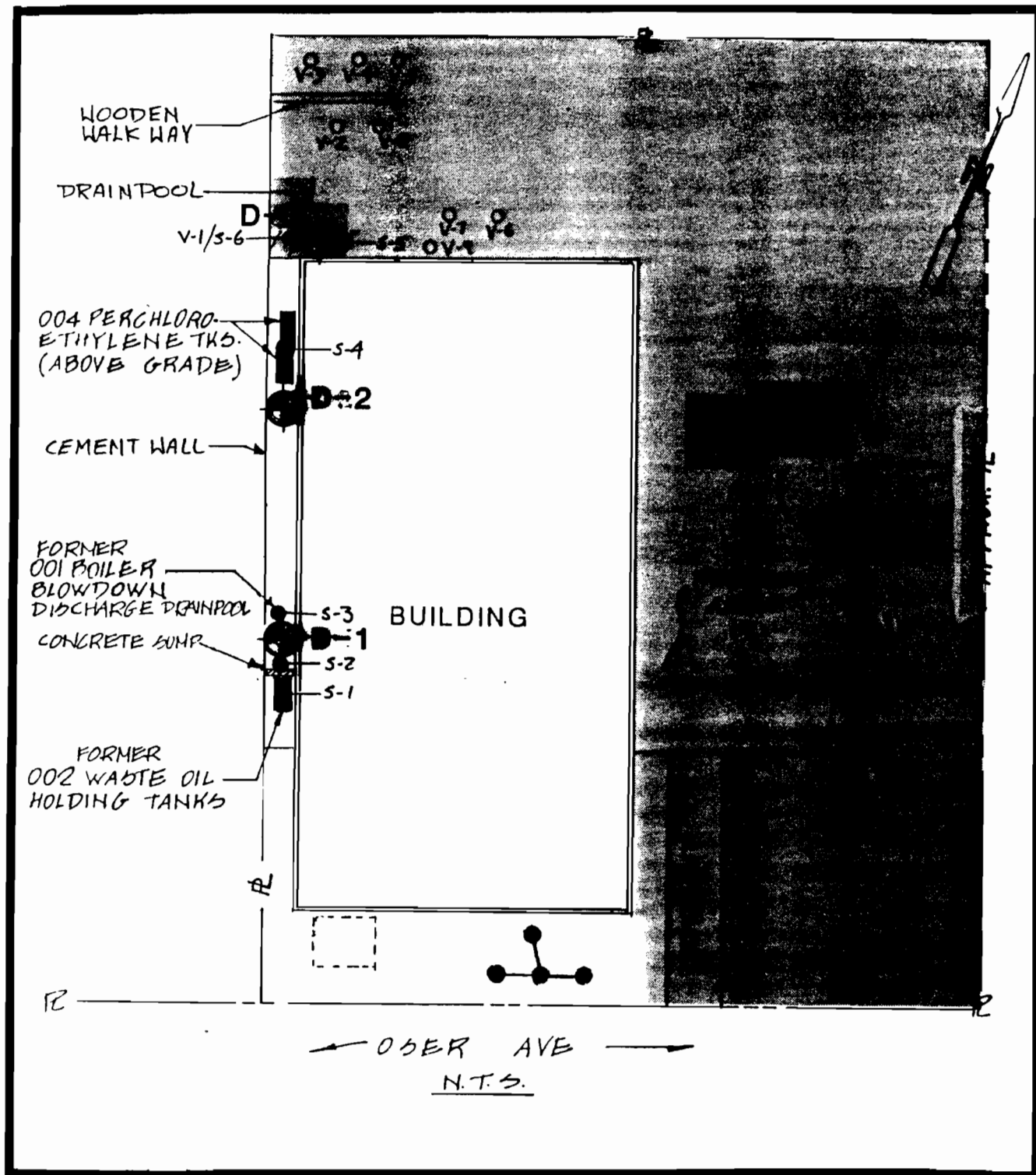


FIGURE 8.2 - SCHEMATIC OF INSITU SOIL-VENTING

FP&M



LEGEND

- SOIL VAPOR SURVEY AREA (25' GRID)
- - D-1 DEEP SOIL BORING
- - S-1 SHALLOW SOIL SAMPLING LOCATIONS
- - V-1 SOIL VAPOR SAMPLING LOCATIONS

FP&M

FIGURE 8.1 - SOIL VAPOR AND PROJECTED LOCATIONS OF DEEP SOIL BORINGS

APPENDIX A
SUMMARY OF SPILLS ON FILE AT NYSDEC

SPILLS ON SITE AND IN THE VICINITY OF SITE

File No.	Date	Location	Comments	Investigation
S-432 791428	2-13-80	Lincoln Blvd & Vets Highway Hauppauge	- 10-70 gals of diesel fuel spilled into roadway	NYS DOT invest. closed 5-19-81
S/451/ 791608	3-24-80	Islip Landfill Hauppauge	- Waste oil 10 gals - Oil on ground and in recharge basin	NYS DEC invest. closed 7-9-80
S/587 801078	10-24-80	County Center Old Willets Path	- Gasoline tank leak unknown amount of gasoline in ground	NYS DOT invest. closed 2/9/89
S 673 801487	1-18-81	County Rd. & Wheeler Rd. Hauppauge	- 100 gals of diesel fuel spilled - oil spilled into ground	NYS DOT invest. closed 6/2/89
S 712* 81-03 47	5-29-81	100 Oser Ave. Hauppauge	- #2 fuel oil, 25-50 gals on ground	closed 2-6-87
S-828 81-1089	10-20-81	Rt. 111 No. of LIE Dairy Queen	- Benzene in well	NYS DOT invest. closed 2/17/87
S-1016 87-0566	6-24-82	Texaco station Wheeler Rd. & Town Line Rd.	- Gasoline system leak	NYS DOT invest. closed 11-7-84
S-1054 82/0894	8-19-82	Texaco station Rt. 111 & Town Line Road	- Motor oil 5 gals Texaco cleaned up on ground	NYS DOT invest. closed 4-24-83
S-1128 82-1372	11-10-82	Spirit Lane	- Contaminated well	Open
S-1211 82-1899	2-14-83	Arkay Packaging 22 Arkay Drive	- 150 isopropyl alcohol system leak	SCDHS invest.
83-0781	7-12-83	LILCO Trans- former 651 Old Willets Path	- LILCO cleaned up	closed 1-21-87
83-1171	9-2-83	Advanced Digital Co., 100 Marcus Blvd.	- Fuel oil tank leak	NYS DOT invest. closed 10-7-83

(CONTINUED)

File No.	Date	Location	Comments	Investigation
83-1817	12-9-83	400 Oser Ave.	- Dumpster Truck,	DEC invest. closed 4-27-86
84-1655	9-21-84	35 Marcus Blvd.	- Fuel oil, unknown amt. - Groundwater possibly affected	NYSDOT invest. closed 4-22-87
85-3715	1-23-86	245 Oser Ave. Jericho Labs	- Unknown amt. of chemicals - Groundwater possibly affected	SCDH notified 1-24-86
85-4256	2-19-86	681 Old Willets Path	- Tank leak methylene chloride /1,1,1 Trichloro- ethylene inside building	SCDH invest. closed 4-27-86
86-7981 86-7936	3-28-87	135 Engineers Rd., Hauppauge	- Tank failure Neumnx Electronic #2 fuel oil - Tank to be emptied - Groundwater possibly affected	7-3-87
86-7959	3-26-87	129 Oser Ave. Arrow Electronic	- Tank Overfill #2 fuel oil 110 gals on ground	SCDHS invest. 4-3-87
86-7321	3-3-87	75 Oser Ave.	- Photographic waste groundwater possibly affected	SCDH notified 7-8-87

(CONTINUED)

File No.	Date	Location	Comments	Investigation
86-6298	1-9-87	100 Marcus Blvd. Northville Industries	- Tank overfill #2 fuel oil, 50-100 gals	1-12-87
86-6106	12-30-86	35 Marcus Blvd.	- EQ failure, Micro System Corp. - Ethylene glycol 20% solution < 300 gals on ground - groundwater possibly affected	SCDH invest. 12-31-86
86-5913	12-17-86	60 Hoffman Ave. EQ failure LILCO	- No PCB, oil unknown amt. on ground	2-2-87
86-5921	12-17-86	45 Oser Ave. Hauppauge LAS Energy Corp.	- #2 fuel oil 40-50 gals - On ground drainage - Spiller cleaned up	12-18-86
86-4625	10-19-86	Motor Pkway. & LIE, Hauppauge mobile 515	- Waste oil in storm drains	10-21-86
86-4398	10-8-86	35 Marcus Blvd. EQ failure standard micro Systems	- Ethylene glycol - Clean up on ground	SCDHS invest. closed 10-8-86
86-1452	5-30-86	250 Kennedy Dr.	- 10,000 gal oil tank #2 fuel oil, unknown amt. - Failed test - Groundwater possibly affected	Retest 10-1-86
86-0938	4-1-87	400 Oser Ave. Hauppauge Electro Test	- Unknown chemical spills - Groundwater possibly affected - Drainages	SCDH invest. closed 4-28-87

(CONTINUED)

File No.	Date	Location	Comments	Investigation
87-10923	3-29-88	Rt 347 & Rt 111	<ul style="list-style-type: none"> - Tank removal (4-10K) soil contaminated - Unknown amt. of gasoline - Groundwater possibly affected - Site well to be installed 	Open
87-8574	1-7-88	681 Old Willets Path EQ failure (broken valve) Chemical Inc.	<ul style="list-style-type: none"> - 20 gals spilled - spiller will clean up 	4-14-87
87-8182	12-11-87	35 Marcus Blvd. Standard Micro System	<ul style="list-style-type: none"> - Tank failure - Waste Acid, Sulfuric, 500-1000 gals on ground 	SCDH invest. 1-14-88
87-5521	9-30-87	90 Oser Ave.	<ul style="list-style-type: none"> - Tank test failure line leak G & M Dege Tester - #2 fuel oil - Groundwater possibly affected 	1-11-88
87-3394	2-27-87	35 Marcus Blvd. Hauppauge Standard Micro Systems	<ul style="list-style-type: none"> - EQ failure - 10% ethylene glycol approx. 25 gals 	Chemical Mgt. Clean up 7-27-87
87-2539	6-29-87	110 Marcus Blvd. Standard Micro Systems	<ul style="list-style-type: none"> - Tank test failure - #2 fuel oil - Groundwater possibly affected 	8-27-87
87-1812	6-3-87	735 Old Willets Path, Hauppauge	<ul style="list-style-type: none"> - Tank test failure Glato Inc. - Groundwater possibly affected 	10-14-87
87-0160	4-4-87	35 Marcus Blvd. Standard Micro Systems	<ul style="list-style-type: none"> - Sulfuric acid, unknown amount 	5-8-87

(CONTINUED)

File No.	Date	Location	Comments	Investigation
87-0099	4-3-87	180 Marcus Blvd.	- Tank test failure - #2 fuel oil - groundwater possibly affected	5-26-87
89-04594	8-8-89	20 Oser Ave. LILCO	- EQ failure transformer, no PCBs, oil	clean up DEC 8-8-89
89-03934	7-20-89	136 Wayne Ave.	- Gel like substance w/white fringe - Ground drainage	Open
89-03295	6-29-89	30 Oser Ave. Neumnx Electronics	- Unknown amt. of kerosene leaked on ground	7-10-89
89-00715	5-1-89	89 Arkay Dr.	- Tank overfill #2 fuel oil on ground	6-1-89
89-00785	4-25-89	35 Gilpin Ave.		
88-07652	12-19-88	255 Oser Ave. Prestige Lab, Inc.	- Mixed chemicals - solvents, paint, ink in drainage	SCDH 12-30-88
88-07253	12-21-88	30 Gipin Ave.	- Traffic accident diesel 110 gas on ground	Open
38-05140	9-13-88	180 Oser Ave. Heartland	- #2 fuel oil	cleaned up 10-17-88
38-02091	6-7-88	Lincoln Ave. Hauppauge High School	- Tank test failure (20k) #2 fuel oil - Groundwater possibly affected	Open
88-00116	4-81-88	80 Arkay Dr. Standard Micro Systems	- Tank failure - Unknown amt. of diesel - Groundwater possibly affected	12-9-88

(CONTINUED)

File No.	Date	Location	Comments	Investigation
88-00094	4-4-88	80 Arkay Dr. Standard Micro Systems	- Tank test failure (10k), #2 fuel - Groundwater possibly affected	12-12-88

APPENDIX B
REGULATORY COMPLIANCE OF EMR CIRCUITS AND COMPUTER CIRCUITS

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
 DIVISION OF HAZARDOUS WASTE REMEDIATION
 INACTIVE HAZARDOUS WASTE DISPOSAL REPORT

CLASSIFICATION CODE: 2a

REGION: 1

SITE CODE: 152105
 EPA ID:

NAME OF SITE : EMR Circuits, Inc.
 STREET ADDRESS: 99 Marcus Blvd.
 TOWN/CITY: Hauppauge

COUNTY: Suffolk

ZIP: 11788

SITE TYPE: Open Dump- Structure-X Lagoon- Landfill- Treatment Pond-
 ESTIMATED SIZE: 1 Acres

SITE OWNER/OPERATOR INFORMATION:

CURRENT OWNER NAME....: Grenlein Company
 CURRENT OWNER ADDRESS.: c/o N. Klein 175 Great Neck Road, Great Ne
 OWNER(S) DURING USE...: Grenlein Realty Company
 OPERATOR DURING USE...: EMR Circuits
 OPERATOR ADDRESS.....: 99 Marcus Blvd., Hauppauge, NY
 PERIOD ASSOCIATED WITH HAZARDOUS WASTE: From Feb 1981 To Present

SITE DESCRIPTION:

Circuit board manufacturing facility with discharge of wastes to two underground leach pools.

EMR Circuits moved to 89 Cabot Court, Hauppauge, NY 11788 after vacating 99 Marcus Blvd. The company is now out of business. In 1983, EMR had the leach pools pumped out, the wells and leaching slots cleaned with a high pressure water spray, and all sludge removed. Both pools were then filled with clean sand and gravel.

In 1985, a monitoring well next to the pools indicated contamination of groundwater, but there is no ambient data to compare.

Phase I study has been submitted for review. There is documentation that hazardous wastes were disposed of on site. Phase I completed.

HAZARDOUS WASTE DISPOSED: TYPE	Confirmed-X	Suspected- QUANTITY (units)
-----	-----	-----
trichloroethane		Unknown
trichloroethylene		
tetrachloroethylene		
ethyltoluene		
xylene		
trimethylbenzene		
trichlorobenzene		
methylethyl-ketone		
copper, nickel		
lead, chromium		

ANALYTICAL DATA AVAILABLE:

Air- Surface Water- Groundwater-X Soil- Sediment-

CONTRAVENTION OF STANDARDS:

Groundwater-X Drinking Water- Surface Water- Air-

LEGAL ACTION:

TYPE.: Criminal State- X Federal-
STATUS: Negotiation in Progress- X Order Signed-

REMEDIAL ACTION:

Proposed- Under design- In Progress- Completed-X
NATURE OF ACTION:

GEOTECHNICAL INFORMATION:

SOIL TYPE: Sand
GROUNDWATER DEPTH: 100 feet to glacial aquifer

ASSESSMENT OF ENVIRONMENTAL PROBLEMS:

heavy discharge to ground through hidden leaching pools for a four year period into central part of deep recharge area. This has caused significant groundwater contamination but no plume exploration has yet been accomplished.

ASSESSMENT OF HEALTH PROBLEMS:

ANALYTICAL DATA AVAILABLE:

Air- Surface Water- Groundwater-X Soil- Sediment-X

CONTRAVENTION OF STANDARDS:

Groundwater- Drinking Water- Surface Water- Air-

LEGAL ACTION:

TYPE.: Consent Order. State- X Federal-
 STATUS: Negotiation in Progress- Order Signed- X

REMEDIAL ACTION:

Proposed- Under design- In Progress-X Completed-
 NATURE OF ACTION: RI-FS.

GEOTECHNICAL INFORMATION:

SOIL TYPE:

GROUNDWATER DEPTH:

ASSESSMENT OF ENVIRONMENTAL PROBLEMS:

Potential groundwater contamination from wastewater discharged to leaching pools. This wastewater often contained excessive concentration of heavy metals.

ASSESSMENT OF HEALTH PROBLEMS:

The site is an active office building with 80 employees in 1985. The leaching pools have been removed and some areas on the site have been paved. However, other unpaved areas on the site may be contaminated due to the unknown quantity of wastewater that was spilled on the ground surface or flowed over the surface when the leaching pools overflowed. Employees and workers from adjacent buildings could be exposed to contaminated soil. Groundwater is the primary source of drinking water in the area and groundwater contamination is likely. Groundwater level is approximately 18m deep. The Suffolk County Water Authority Falcon Drive Wellfield is 100m to the NE of the site. Wells S-14326 (69m deep) and S-44774 (89m deep) have shown contamination with organics, including 1,1,1-trichloroethane and tetrachloroethane up to 10 ug/l. This is above NYS drinking water standards, and the wells are not in use pending start up of treatment expected in the summer of 1989.

APPENDIX C
FIELD REPORTS

**FIELD REPORT
ANORAD**

DATE: April 19, 1990
WEATHER: 60°, Sunny
PRESENT: Peter Dermody, Fanning, Phillips and Molnar
OBJECTIVE: To sample wells W-12, 13, 14, & 16 and Anorad at 100 Oser Avenue, Hauppauge.

DETAILS: Arrived on site at 9:45 am and met with Dave McManus of Anorad. I previously picked up 4 new, D.O.T approved, 30-gallon polyethylene drums to store exhausted well water. Dave opened the four well locks and sampling commenced. A plastic bailer was used to remove well water. Each drum was marked with the corresponding well number.

The sampling data is as follows:

W-13

Total depth of well- 83.80 (feet)
Depth to Water- 66.53
Column of Water- 17.27
Volume of Water- 2.81 (gal), 3 volumes exhausted.

Stability Parameters:

<u>Trial</u>	<u>Temp (F°)</u>	<u>pH</u>	<u>S.C. (Umhos/cc)</u>
1	53	5.80	617
2	55	5.82	600
3	53	5.86	562

W-14

Total Depth of Well- 80.71 (feet)
 Depth to Water- 66.33
 Column of Water- 14.38
 Volume of Well 2.35 (gal), 3 volumes exhausted.

Stability Parameters:

<u>Trial</u>	<u>Temp(°F)</u>	<u>pH</u>	<u>S.C. (Umhos/cc)</u>
1	53	6.10	691
2	53	6.04	651
3	52	5.94	668

W-12

Total Depth of Well- 80.90 (feet)
 Depth to Water- 66.54
 Column of Water- 14.36
 Volume of Water- 2.34 (gal), 3 volumes exhausted.

Stability Parameters:

<u>Trial</u>	<u>Temp(°F)</u>	<u>pH</u>	<u>S.C. (Umos/cc)</u>
1	54	6.13	601
2	54	5.87	608
3	54	5.84	615

W-16

Total Depth of Well- 78.29 (feet)
 Depth to Water- 66.76
 Column of Water- 11.53
 Volume of Water- 1.88 (gal), 3 volumes exhausted.

Stability Parameters:

<u>Trial</u>	<u>Temp (°F)</u>	<u>pH</u>	<u>S.C. (Uhmhos/cc)</u>
1	54	6.86	232
2	54	6.71	200
3	54	6.46	198

Each sample consisted of 2 VOC vials to be analyzed for TCL VOCs (method 624). Before leaving the site, I informed Dave McManus that the 4 drums would have to be moved indoors and remain at 100 Oser Avenue. Each drum contained 10-15 gallons of exhausted water. The exhausted water appeared to contain a solvent as swirling micro-currents could be seen.

**FIELD REPORT
100 OSER AVENUE
HAUPPAUGE, NY**

DATE: May 2, 1990

WEATHER: 60° and Sunny

PRESENT: Peter Dermody- Fanning, Phillips and Molnar
Hydrogeologist

OBJECTIVE: To obtain six (6) soil samples from the area of concern at 100 Oser Avenue.

DETAILS:

Arrived at the site at 9:30 AM. Notified Stan Squires that I would be sampling the soils at 100 Oser Avenue, and I went over and located soil sampling location S-1, which is 127 feet south of the northwest corner of the building at 100 Oser Avenue, and 2 feet off the building. This is the site of the former waste oil storage tank and the soil boring location was right next to a stained area on the wall. The log of the boring: 0-3" was asphalt; 3-6" was dark brown, moist, fine sand and silt; 6"-1' was gray-brown, moist silty clay with pebbles; 1'-4' brown, medium silty sand with pebbles, moist. A strong chemical odor was noted at the breathing level and throughout all the soil sample. The sample was taken at 4' and placed in two (2) 40ml vials for analysis for TCL VOCs, as per USEPA method 8240. H2M will be doing the analysis.

Sample S-2 was obtained from the concrete sump on the west side of the building, which is located 112' south of the northwest corner of the building. There was 6" of water in this sump. I removed the cover on the sump and there was a pipe running through the sump. The bottom of the sump consisted of soil and other debris. I took a sample at 1' into the soil at the bottom of the sump. I could not

continue due to an obstruction and the sample consisted of light brown, coarse sand with streaks of rusty orange sand and streaks of gray-black silts. A chemical odor was noted.

Sample S-3 was taken in the drainpool on the west side of the building, which is located 95' south of the northwest corner of the building. Water existed in the drainpool approximately 3' below grade. There is a pipe outfall entering the drainpool which was suspected to emanate from the roof drain. This will be checked in a future Field Visit Tracer Test. A hand auger was used and the water was found to be approximately 7' deep overlying the sediment. The sediment was encountered at a depth of 10' below grade. Sample S-3 was taken at 12' below grade, and the sample consisted of black, silty organic material with gravel. No odor was noted, and a slight petroleum sheen was noted on the drainpool water.

Sample S-4 was taken in the asphalted area, 47' south of the northwest corner of the building and 8' off the building. The log of this boring; 0-3" was asphalt; 3"-4' was silty, brown sand with pebbles and a chemical odor; 4'-5' consisted of blond, medium well-sorted outwash. Sample was taken at 5' and no chemical odor was noted in the sample.

Sample S-5 was taken in the drainpool at the base of the loading dock at the north side of the building. This drainpool was clogged and filled with water to a level of approximately 1' above the drainpool cover. I removed the drainpool cover and took a sample at approximately 2' below the depth of the cover. The sample consisted of a black silt and organic material with gravel, and a chemical odor was noted.

Soil Sample S-6 was taken by first performing a Soil Vapor Survey with a Photovac Microtip photoionization detector (PID) at 10 locations to the north of the building, in the rear parking lot. This was done to locate possible areas of former drum storage or spillage. Figure 1 shows the soil vapor survey locations, and Table 1 shows the results.

TABLE 1 SOIL VAPOR SURVEY RESULTS *

LOCATION	CONCENTRATION of total organic vapors (ppm) (1)
1	95
2	22
3	5
4	9
5	4
6	0
7	0
8	0
9	0

* See Figure 1 for survey locations.

(1) The total organic vapors are recorded in parts per million relative to a 99% isobutylene standard. A photoionization detector (PID) was used for this survey.

Soil Sample S-6 was taken at Soil Survey Location 1 due to the high organic vapors detected there. A 55 gallon drum imprint was noticeable near the corner of the building and the sample was taken 10' north of the northwest corner of the building. The sample boring log: 0-3" was asphalt; 3"-4' consisted of medium, light brown, well-sorted sand, no chemical odor was noted.

A field blank was prepared by first decontaminating the auger following the protocol outlined in the work plan. Then the field blank water was poured through the auger and captured in the VOC vials at the other end of the auger.

A trip blank was also included for this sampling effort. At 3:00 I left the Anorad site and delivered samples to H2M at 3:30 PM.

A Chain of Custody form was filled out upon arrival at the laboratory.

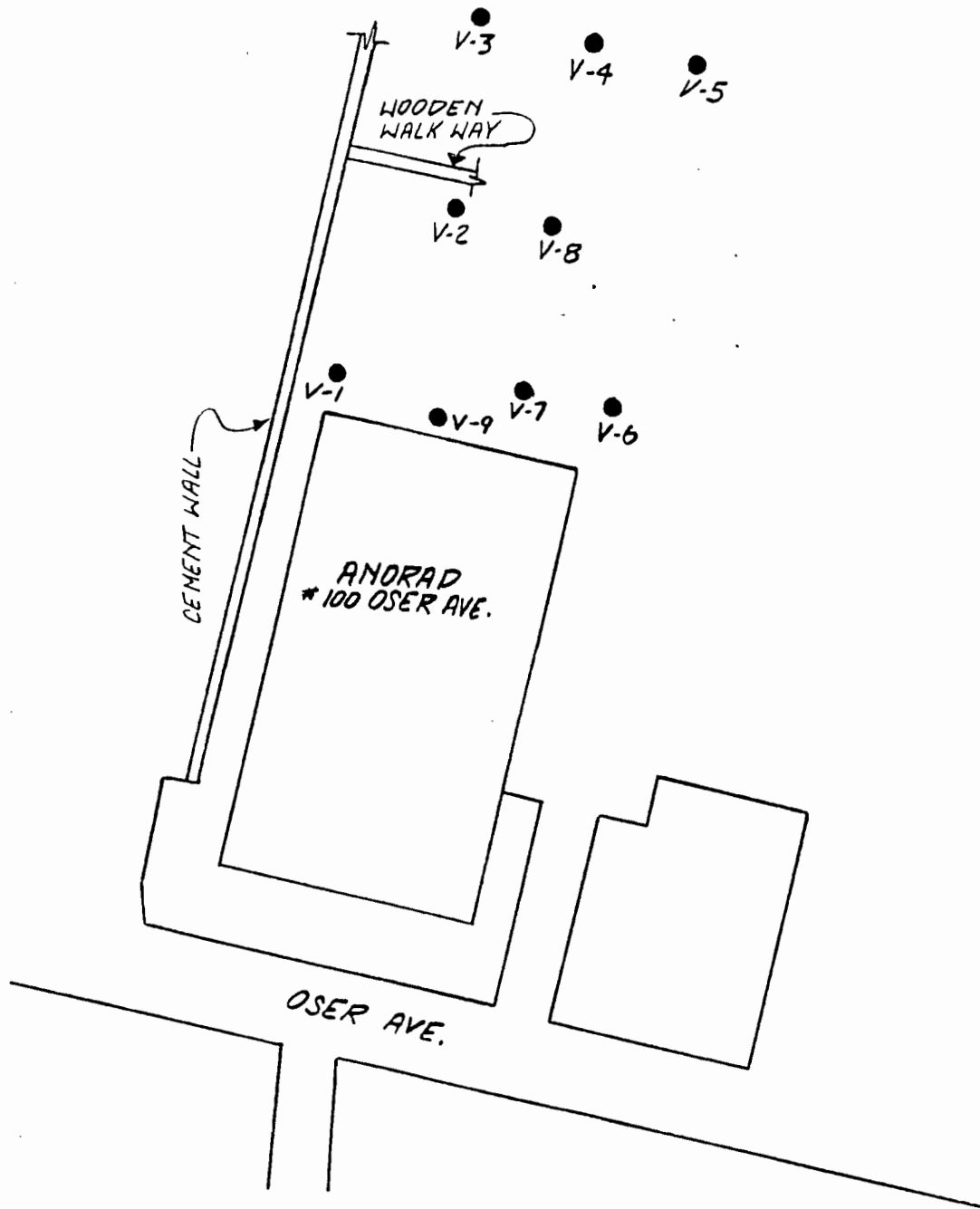


FIGURE OVA SAMPLING LOCATIONS

APPENDIX D
LABORATORY REPORTS

ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

Fanning, Phillips, & Molnar
909 Marconi Ave.
Ronkonkoma, NY 11779

Sample Lab No. 758188DL
Date Collected: 5/9/90
Date Received: 5/9/90
Type: Miscellaneous
Point: Anorad Soil Samples S-1
Collected By: CL 99

TARGET COMPOUND LIST PURGEABLES

Compound	ug/kg	
Chloromethane	1) ND	
Bromomethane	1) ND	
Vinyl Chloride	1) ND	
Chloroethane	1) ND	
Methylene Chloride	ND	
Trichlorofluoromethane	ND	
1,1-Dichloroethene	ND	
1,1-Dichloroethane	ND	Quantification
cis/trans-1,2-Dichloroethene	6400	limit: 2900ug/kg
Chloroform	ND]	
1,2-Dichloroethane	ND	ND - Under Quantification Limit
1,1,1-Trichloroethane	ND	
Carbon Tetrachloride	ND	
Bromodichloromethane	ND	1) Quantification
1,2-Dichloropropane	ND	limit: 5800ug/kg
trans-1,3-Dichloropropane	ND	
Trichloroethene	48000:	
Dibromochloromethane	ND	
1,1,2-Trichloroethane	ND	
cis-1,3-Dichloropropane	ND	
Benzene	ND	
2-Chloroethylvinyl Ether	1) ND	
Bromoform	ND	
1,1,2,2-Tetrachloroethane	ND	
Tetrachloroethene	*	*Saturated
Toluene	ND	
Chlorobenzene	ND	
Ethylbenzene	ND	
1,2-Dichlorobenzene	ND	
1,3-Dichlorobenzene	ND	
1,4-Dichlorobenzene	ND	
Acetone	ND	
Carbon disulfide	ND	
2-Butanone (MEK)	1) ND	
Vinyl Acetate	1) ND	*****
2-Hexanone	1) ND	* * *
4-Methyl-2-Pentanone	1) ND	<i>John J. Molloy</i> * * *
Styrene	ND	*****
Xylenes	ND	
Date Analyzed: 5/10/90		
Date Reported: 5/14/90		

John J. Molloy, P.E.
Laboratory Director


ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

Fanning, Phillips, & Molnar
909 Marconi Ave.
Ronkonkoma, NY 11779

Sample Lab No. 758188
Date Collected: 5/2/90
Date Received: 5/2/90
Type: Miscellaneous
Point: Anorad Soil Samples S-1
Collected By: CL 99

TARGET COMPOUND LIST PURGEABLES

<u>Compound</u>	<u>ug/kg Dry Wt</u>	
Chloromethane	1) ND	
Bromomethane	1) ND	
Vinyl Chloride	1) 84	
Chloroethane	1) ND	
Methylene Chloride	ND	
Trichlorofluoromethane	ND	
1,1-Dichloroethene	30	
1,1-Dichloroethane	44	Quantification
cis/trans-1,2-Dichloroethene	*	limit: 7 ug/kg
Chloroform	76	
1,2-Dichloroethane	ND	ND - Under Quantification Limit
1,1,1,-Trichloroethane	1900	
Carbon Tetrachloride	ND	
Bromodichloromethane	ND	1) Quantification
1,2-Dichloropropane	ND	limit: 14 ug/kg
trans-1,3-Dichloropropene	ND	
Trichloroethene	*	
Dibromochloromethane	ND	
1,1,2-Trichloroethane	ND	
cis-1,3-Dichloropropene	ND	
Benzene	ND	
2-Chloroethylvinyl Ether	1) ND	
Bromoform	ND	
1,1,2,2-Tetrachloroethane	ND	
Tetrachloroethene	*	*Saturated
Toluene	31	
Chlorobenzene	ND	
Ethylbenzene	ND	
1,2-Dichlorobenzene	ND	
1,3-Dichlorobenzene	ND	
1,4-Dichlorobenzene	ND	
Acetone	ND	
Carbon disulfide	ND	
2-Butanone (MEK)	1) ND	
Vinyl Acetate	1) ND	*****
2-Hexanone	1) ND	*
4-Methyl-2-Pentanone	1) ND	*
Styrene	ND	*****
Xylenes	37	
Date Analyzed: 5/8/90		
Date Reported: 5/14/90		

*  *
*

John J. Molloy, P.E.
Laboratory Director

ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

Fanning, Phillips, & Molnar
909 Marconi Ave.
Ronkonkoma, NY 11779

Sample Lab No. 758188DL
Date Collected: 5/9/90
Date Received: 5/9/90
Type: Miscellaneous
Point: Anorad Soil Samples S-1
Collected By: CL 99

TARGET COMPOUND LIST PURGEABLES

<u>Compound</u>		<u>ug/kg</u>	
Chloromethane	1)	ND	
Bromomethane	1)	ND	
Vinyl Chloride	1)	ND	
Chloroethane	1)	ND	
Methylene Chloride		ND	
Trichlorofluoromethane		ND	
1,1-Dichloroethene		ND	
1,1-Dichloroethane		ND	Quantification
cis/trans-1,2-Dichloroethene		ND	limit:15000ug/kg
Chloroform		ND]	
1,2-Dichloroethane		ND	ND - Under Quantification Limit
1,1,1,-Trichloroethane		ND	
Carbon Tetrachloride		ND	
Bromodichloromethane		ND	1) Quantification
1,2-Dichloropropane		ND	limit:29000ug/kg
trans-1,3-Dichloropropene		ND	
Trichloroethene		ND	
Dibromochloromethane		ND	
1,1,2-Trichloroethane		ND	
cis-1,3-Dichloropropene		ND	
Benzene		ND	
2-Chloroethylvinyl Ether	1)	ND	
Bromoform		ND	
1,1,2,2-Tetrachloroethane		ND	
Tetrachloroethene		2700000	
Toluene		ND	
Chlorobenzene		ND	
Ethylbenzene		ND	
1,2-Dichlorobenzene		ND	
1,3-Dichlorobenzene		ND	
1,4-Dichlorobenzene		ND	
Acetone		ND	
Carbon disulfide		ND	
2-Butanone (MEK)	1)	ND	
Vinyl Acetate	1)	ND	
2-Hexanone	1)	ND	
4-Methyl-2-Pentanone	1)	ND	
Styrene		ND	
Xylenes		ND	

Date Analyzed: 5/10/90
Date Reported: 5/14/90

*  *

John J. Molloy, P.E.
Laboratory Director

ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

Fanning, Phillips, & Molnar
909 Marconi Ave.
Ronkonkoma, NY 11779

Sample Lab No. 758189
Date Collected: 5/2/90
Date Received: 5/2/90
Type: Miscellaneous
Point: Anorad Soil Samples S-2
Collected By: CL 99

TARGET COMPOUND LIST PURGEABLES

<u>Compound.</u>	<u>ug/kg Dry Wt</u>	
Chloromethane	1) ND	
Bromomethane	1) ND	
Vinyl Chloride	1) ND	
Chloroethane	1) ND	
Methylene Chloride	ND	
Trichlorofluoromethane	ND	
1,1-Dichloroethene	ND	
1,1-Dichloroethane	ND	Quantification
cis/trans-1,2-Dichloroethene	12000	limit: 760 ug/kg
Chloroform	ND	
1,2-Dichloroethane	ND	ND - Under Quantification Limit
1,1,1-Trichloroethane	ND	
Carbon Tetrachloride	ND	
Bromodichloromethane	ND	1) Quantification
1,2-Dichloropropane	ND	limit:1500 ug/kg
trans-1,3-Dichloropropene	ND	
Trichloroethene	15000	
Dibromochloromethane	ND	
1,1,2-Trichloroethane	ND	
cis-1,3-Dichloropropene	ND	
Benzene	ND	
2-Chloroethylvinyl Ether	1) ND	
Bromoform	ND	
1,1,2,2-Tetrachloroethane	ND	
Tetrachloroethene	130000	
Toluene	ND	
Chlorobenzene	ND	
Ethylbenzene	ND	
1,2-Dichlorobenzene	1500	
1,3-Dichlorobenzene	ND	
1,4-Dichlorobenzene	ND	
Acetone	3100	
Carbon disulfide	ND	
2-Butanone (MEK)	1)4000	
Vinyl Acetate	1) ND	*****
2-Hexanone	1) ND	* * *
4-Methyl-2-Pentanone	1) ND	* * *
Styrene	ND	*****
Xylenes	ND	
Date Analyzed: 5/8/90		
Date Reported: 5/14/90		

* * *
* * *

John J. Molloy, P.E.
Laboratory Director

ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

Fanning, Phillips, & Molnar
909 Marconi Ave.
Ronkonkoma, NY 11779

Sample Lab No. 758190
Date Collected: 5/9/90
Date Received: 5/9/90
Type: Miscellaneous
Point: Anorad Soil Samples S-3
Collected By: CL 99

TARGET COMPOUND LIST PURGEABLES

<u>Compound</u>	<u>ug/kg</u>	
Chloromethane	1) ND	
Bromomethane	1) ND	
Vinyl Chloride	1) 5800	
Chloroethane	1) ND	
Methylene Chloride	ND	
Trichlorofluoromethane	ND	
1,1-Dichloroethene	ND	
1,1-Dichloroethane	ND	Quantification
cis/trans-1,2-Dichloroethene	50000	limit:1600 ug/kg
Chloroform	ND	
1,2-Dichloroethane	ND	ND - Under Quantification Limit
1,1,1,-Trichloroethane	ND	
Carbon Tetrachloride	ND	
Bromodichloromethane	ND	1) Quantification
1,2-Dichloropropane	ND	limit:3200 ug/kg
trans-1,3-Dichloropropene	ND	
Trichloroethene	6200	
Dibromochloromethane	ND	
1,1,2-Trichloroethane	ND	
cis-1,3-Dichloropropene	ND	
Benzene	ND	
2-Chloroethylvinyl Ether	1) ND	
Bromoform	ND	
1,1,2,2-Tetrachloroethane	ND	
Tetrachloroethene	8400	
Toluene	ND	
Chlorobenzene	ND	
Ethylbenzene	ND	
1,2-Dichlorobenzene	ND	
1,3-Dichlorobenzene	ND	
1,4-Dichlorobenzene	ND	
Acetone	13000	
Carbon disulfide	ND	
2-Butanone (MEK)	1) 8300	
Vinyl Acetate	1) ND	
2-Hexanone	1) ND	
4-Methyl-2-Pentanone	1) ND	
Styrene	ND	
Xylenes	ND	
Date Analyzed: 5/10/90		
Date Reported: 5/14/90		

*  *
* *

John J. Molloy, P.E.
Laboratory Director

ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

Fanning, Phillips, & Molnar
909 Marconi Ave.
Ronkonkoma, NY 11779

Sample Lab No. 758191
Date Collected: 5/9/90
Date Received: 5/9/90
Type: Miscellaneous
Point: Anorad Soil Samples S-4
Collected By: CL 99

TARGET COMPOUND LIST PURGEABLES

<u>Compound</u>	<u>ug/kg</u>	
Chloromethane	1) ND	
Bromomethane	1) ND	
Vinyl Chloride	1) ND	
Chloroethane	1) ND	
Methylene Chloride	ND	
Trichlorofluoromethane	ND	
1,1-Dichloroethene	ND	
1,1-Dichloroethane	ND	Quantification
cis/trans-1,2-Dichloroethene	ND	limit: 140 ug/kg
Chloroform	ND	
1,2-Dichloroethane	ND	ND - Under Quantification Limit
1,1,1-Trichloroethane	ND	
Carbon Tetrachloride	ND	
Bromodichloromethane	ND	1) Quantification
1,2-Dichloropropane	ND	limit: 270 ug/kg
trans-1,3-Dichloropropene	ND	
Trichloroethene	ND	
Dibromochloromethane	ND	
1,1,2-Trichloroethane	ND	
cis-1,3-Dichloropropene	ND	
Benzene	ND	
2-Chloroethylvinyl Ether	1) ND	
Bromoform	ND	
1,1,2,2-Tetrachloroethane	ND	
Tetrachloroethene	4500	
Toluene	ND	
Chlorobenzene	ND	
Ethylbenzene	ND	
1,2-Dichlorobenzene	ND	
1,3-Dichlorobenzene	ND	
1,4-Dichlorobenzene	ND	
Acetone	2600	
Carbon disulfide	ND	
2-Butanone (MEK)	1) 9600	
Vinyl Acetate	1) ND	*****
2-Hexanone	1) ND	* * *
4-Methyl-2-Pentanone	1) ND	* * *
Styrene	ND	*****
Xylenes	ND	
Date Analyzed: 5/10/90		
Date Reported: 5/14/90		

* * *
* * *

John J. Molloy, P.E.
Laboratory Director

ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

Fanning, Phillips & Molnar
909 Marconi Avenue
Ronkonkoma, NY 11779

Sample Lab No. 758192
Date Collected: 5-2-90
Date Received: 5-2-90
Type: Misc.
Point: S-5
Anorad Soil Sample
Collected By: CL 99

TARGET COMPOUND LIST VOLATILE ORGANICS

<u>Compound</u>	<u>ug/kg Dry Weight</u>	
Chloromethane	1) ND	
Bromomethane	1) ND	
Vinyl Chloride	1) ND	
Chloroethane	1) ND	
Methylene Chloride	ND	
Trichlorofluoromethane	ND	
1,1-Dichloroethene	ND	
1,1-Dichloroethane	ND	Quantification
cis/trans-1,2-Dichloroethene	6200	limit: 900 ug/kg
Chloroform	ND	
1,2-Dichloroethane	ND	ND - Under Quantification Limit
1,1,1,-Trichloroethane	ND	
Carbon Tetrachloride	ND	
Bromodichloromethane	ND	1) Quantification
1,2-Dichloropropane	ND	limit: 1800 ug/kg
trans-1,3-Dichloropropene	ND	
Trichloroethene	*	* Saturated
Dibromochloromethane	ND	
1,1,2-Trichloroethane	ND	
cis-1,3-Dichloropropene	ND	
Benzene	ND	
Bromoform	ND	
1,1,2,2-Tetrachloroethane	ND	
Tetrachloroethene	*	
Toluene	ND	
Chlorobenzene	ND	
Ethylbenzene	ND	
1,2-Dichlorobenzene	ND	
1,3-Dichlorobenzene	ND	
1,4-Dichlorobenzene	ND	
Acetone	5900	
Carbon disulfide	ND	
2-Butanone (MEK)	11000	
Vinyl Acetate	ND	*****
2-Hexanone	ND	*
4-Methyl-2-Pentanone	ND	*
Styrene	1300	*****
Total Xylenes	ND	John J. Molloy, P.E.
Date Analyzed: 5-9-90		Laboratory Director
Date Reported: 5-15-90		


ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

Fanning, Phillips, & Molnar
909 Marconi Ave.
Ronkonkoma, NY 11779

Sample Lab No. 758192DL
Date Collected: 5/9/90
Date Received: 5/9/90
Type: Miscellaneous
Point: Anorad Soil Samples S-5
Collected By: CL 99

TARGET COMPOUND LIST PURGEABLES

<u>Compound</u>	<u>ug/kg</u>	
Chloromethane	1) ND	
Bromomethane	1) ND	
Vinyl Chloride	1) ND	
Chloroethane	1) ND	
Methylene Chloride	ND	
Trichlorofluoromethane	ND	
1,1-Dichloroethene	ND	
1,1-Dichloroethane	ND	Quantification
cis/trans-1,2-Dichloroethene	ND	limit:45000ug/kg
Chloroform	ND]	
1,2-Dichloroethane	ND	ND - Under Quantification Limit
1,1,1,-Trichloroethane	ND	
Carbon Tetrachloride	ND	
Bromodichloromethane	ND	1) Quantification
1,2-Dichloropropane	ND	limit:90000ug/kg
trans-1,3-Dichloropropene	ND	
Trichloroethene	170000	
Dibromochloromethane	ND	
1,1,2-Trichloroethane	ND	
cis-1,3-Dichloropropene	ND	
Benzene	ND	
2-Chloroethylvinyl Ether	1) ND	
Bromoform	ND	
1,1,2,2-Tetrachloroethane	ND	
Tetrachloroethene	12000000	
Toluene	ND	
Chlorobenzene	ND	
Ethylbenzene	ND	
1,2-Dichlorobenzene	ND	
1,3-Dichlorobenzene	ND	
1,4-Dichlorobenzene	ND	
Acetone	ND	
Carbon disulfide	ND	
2-Butanone (MEK)	1) ND	
Vinyl Acetate	1) ND	
2-Hexanone	1) ND	
4-Methyl-2-Pentanone	1) ND	
Styrene	ND	
Xylenes	ND	
Date Analyzed:	5/10/90	
Date Reported:	5/14/90	

*  *

John J. Molloy, P.E.
Laboratory Director

ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

Fanning, Phillips & Molnar
909 Marconi Avenue
Ronkonkoma, NY 11779

Sample Lab No. 758194
Date Collected: 5-2-90
Date Received: 5-2-90
Type: Misc.
Point: Field Blank
Anorad Soil Sample
Collected By: CL 99

TARGET COMPOUND LIST VOLATILE ORGANICS

<u>Compound</u>	<u>ug/l</u>	
Chloromethane	1) ND	
Bromomethane	1) ND	
Vinyl Chloride	1) ND	
Chloroethane	1) ND	
Methylene Chloride	ND	
Trichlorofluoromethane	ND	
1,1-Dichloroethene	ND	
1,1-Dichloroethane	ND	Quantification
cis/trans-1,2-Dichloroethene	ND	limit: 5 ug/l
Chloroform	ND	
1,2-Dichloroethane	ND	ND - Under Quantification Limit
1,1,1,-Trichloroethane	ND	
Carbon Tetrachloride	ND	
Bromodichloromethane	ND	1) Quantification
1,2-Dichloropropane	ND	limit: 10 ug/l
trans-1,3-Dichloropropene	ND	
Trichloroethene	ND	
Dibromochloromethane	ND	
1,1,2-Trichloroethane	ND	
cis-1,3-Dichloropropene	ND	
Benzene	ND	
Bromoform	ND	
1,1,2,2-Tetrachloroethane	ND	
Tetrachloroethene	ND	
Toluene	ND	
Chlorobenzene	ND	
Ethylbenzene	ND	
1,2-Dichlorobenzene	ND	
1,3-Dichlorobenzene	ND	
1,4-Dichlorobenzene	ND	
Acetone	ND	
Carbon disulfide	ND	
2-Butanone (MEK)	ND	
Vinyl Acetate	ND	
2-Hexanone	ND	
4-Methyl-2-Pentanone	ND	
Styrene	ND	
Total Xylenes	ND	
Date Analyzed: 5-08-90		
Date Reported: 5-15-90		

*
* *John J. Molloy* *
*

John J. Molloy, P.E.
Laboratory Director

ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

Fanning, Phillips & Molnar
909 Marconi Avenue
Ronkonkoma, NY 11779

Sample Lab No. 758195
Date Collected: 5-2-90
Date Received: 5-2-90
Type: Misc.
Point: Trip Blank
Anorad Soil Sample
Collected By: CL 99

TARGET COMPOUND LIST VOLATILE ORGANICS

<u>Compound</u>	<u>ug/l</u>	
Chloromethane	1) ND	
Bromomethane	1) ND	
Vinyl Chloride	1) ND	
Chloroethane	1) ND	
Methylene Chloride	ND	
Trichlorofluoromethane	ND	
1,1-Dichloroethene	ND	
1,1-Dichloroethane	ND	Quantification
cis/trans-1,2-Dichloroethene	ND	limit: 5 ug/l
Chloroform	ND	
1,2-Dichloroethane	ND	ND - Under Quantification Limit
1,1,1,-Trichloroethane	ND	
Carbon Tetrachloride	ND	
Bromodichloromethane	ND	1) Quantification
1,2-Dichloropropane	ND	limit: 10 ug/l
trans-1,3-Dichloropropene	ND	
Trichloroethene	ND	
Dibromochloromethane	ND	
1,1,2-Trichloroethane	ND	
cis-1,3-Dichloropropene	ND	
Benzene	ND	
Bromoform	ND	
1,1,2,2-Tetrachloroethane	ND	
Tetrachloroethene	ND	
Toluene	ND	
Chlorobenzene	ND	
Ethylbenzene	ND	
1,2-Dichlorobenzene	ND	
1,3-Dichlorobenzene	ND	
1,4-Dichlorobenzene	ND	
Acetone	ND	
Carbon disulfide	ND	
2-Butanone (MEK)	ND	
Vinyl Acetate	ND	
2-Hexanone	ND	
4-Methyl-2-Pentanone	ND	
Styrene	ND	
Total Xylenes	ND	
Date Analyzed: 5-08-90		
Date Reported: 5-15-90		

*
* *John J. Molloy* *
*

John J. Molloy, P.E.
Laboratory Director


ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

Fanning, Phillips & Molnar
909 Marconi Avenue
Ronkonkoma, NY 11779

Sample Lab No. 757108
Date Collected: 4-19-90
Date Received: 4-19-90
Type: Miscellaneous
Point: W-12
Anorad Job
Collected By: CL 99

PURGEABLE ORGANICS ANALYSIS

<u>Compound</u>	<u>ug/l</u>	
Chloromethane	1) ND	
Bromomethane	1) ND	
Vinyl Chloride	1) ND	
Chloroethane	1) ND	
Methylene Chloride	2) 1000	
Trichlorofluoromethane	ND	
1,1-Dichloroethene	ND	
1,1-Dichloroethane	ND	Quantification
cis/trans-1,2-Dichloroethene	580	limit: 5 ug/l
Chloroform	17	
1,2-Dichloroethane	ND	ND - Under Quantification Limit
1,1,1,-Trichloroethane	83	
Carbon Tetrachloride	710	1) Quantification
Bromodichloromethane	ND	limit: 10 ug/l
1,2-Dichloropropane	ND	
trans-1,3-Dichloropropene	ND	2) Analyte detected in
Trichloroethene	210	method blank at a
Dibromochloromethane	ND	concentration of 9 ug/l
1,1,2-Trichloroethane	ND	
cis-1,3-Dichloropropene	ND	
Benzene	5	
2-Chloroethylvinyl Ether	1) ND	
Bromoform	ND	
1,1,2,2-Tetrachloroethane	ND	
Tetrachloroethene	14000	
Toluene	460	
Chlorobenzene	ND	
Ethylbenzene	ND	
1,2-Dichlorobenzene	ND	
1,3-Dichlorobenzene	ND	
1,4-Dichlorobenzene	ND	

*  *
*

John J. Molloy, P.E.
Laboratory Director

Date Reported: 5-4-90

ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

Fanning, Phillips & Molnar
909 Marconi Avenue
Ronkonkoma, NY 11779

Sample Lab No. 757109
Date Collected: 4-19-90
Date Received: 4-19-90
Type: Miscellaneous
Point: W-13
Anorad Job
Collected By: CL 99

PURGEABLE ORGANICS ANALYSIS

<u>Compound</u>	<u>ug/l</u>	
Chloromethane	1) ND	
Bromomethane	1) ND	
Vinyl Chloride	1) ND	
Chloroethane	1) ND	
Methylene Chloride	2) 1700	
Trichlorofluoromethane	ND	
1,1-Dichloroethene	ND	
1,1-Dichloroethane	ND	Quantification
cis/trans-1,2-Dichloroethene	71	limit: 5 ug/l
Chloroform	ND	
1,2-Dichloroethane	ND	ND - Under Quantification Limit
1,1,1,-Trichloroethane	14	
Carbon Tetrachloride	360	1) Quantification
Bromodichloromethane	ND	limit: 10 ug/l
1,2-Dichloropropane	ND	
trans-1,3-Dichloropropene	ND	2) Analyte detected in
Trichloroethene	33	method blank at a
Dibromochloromethane	ND	concentration of 9 ug/l
1,1,2-Trichloroethane	ND	
cis-1,3-Dichloropropene	ND	
Benzene	ND	
2-Chloroethylvinyl Ether	1) ND	
Bromoform	ND	
1,1,2,2-Tetrachloroethane	ND	
Tetrachloroethene	11000	
Toluene	2800	
Chlorobenzene	ND	
Ethylbenzene	ND	
1,2-Dichlorobenzene	ND	
1,3-Dichlorobenzene	ND	
1,4-Dichlorobenzene	ND	

* *John J. Molloy* *
* *John J. Molloy* *

John J. Molloy, P.E.
Laboratory Director

Date Reported: 5-4-90

ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

Fanning, Phillips & Molnar
909 Marconi Avenue
Ronkonkoma, NY 11779

Sample Lab No. 757110
Date Collected: 4-19-90
Date Received: 4-19-90
Type: Miscellaneous
Point: W-14
Anorad Job
Collected By: CL 99

PURGEABLE ORGANICS ANALYSIS

<u>Compound</u>	<u>ug/l</u>	
Chloromethane	1) ND	
Bromomethane	1) ND	
Vinyl Chloride	1) 10	
Chloroethane	1) ND	
Methylene Chloride	2) 51	
Trichlorofluoromethane	ND	
1,1-Dichloroethene	ND	
1,1-Dichloroethane	ND	Quantification
cis/trans-1,2-Dichloroethene	900	limit: 5 ug/l
Chloroform	5	
1,2-Dichloroethane	ND	ND - Under Quantification Limit
1,1,1,-Trichloroethane	130	
Carbon Tetrachloride	70	1) Quantification
Bromodichloromethane	ND	limit: 10 ug/l
1,2-Dichloropropane	ND	
trans-1,3-Dichloropropene	ND	2) Analyte detected in
Trichloroethene	380	method blank at a
Dibromochloromethane	ND	concentration of 9 ug/l
1,1,2-Trichloroethane	ND	
cis-1,3-Dichloropropene	ND	
Benzene	ND	
2-Chloroethylvinyl Ether	1) ND	
Bromoform	ND	
1,1,2,2-Tetrachloroethane	ND	
Tetrachloroethene	32000	
Toluene	46	
Chlorobenzene	ND	
Ethylbenzene	ND	
1,2-Dichlorobenzene	ND	
1,3-Dichlorobenzene	ND	
1,4-Dichlorobenzene	ND	

Date Reported: 5-4-90

*  *

John J. Molloy, P.E.
Laboratory Director


ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

Fanning, Phillips & Molnar
909 Marconi Avenue
Ronkonkoma, NY 11779

Sample Lab No. 757111
Date Collected: 4-19-90
Date Received: 4-19-90
Type: Miscellaneous
Point: W-16
Anorad Job
Collected By: CL 99

PURGEABLE ORGANICS ANALYSIS

<u>Compound</u>	<u>ug/l</u>	
Chloromethane	1) ND	
Bromomethane	1) ND	
Vinyl Chloride	1) 11	
Chloroethane	1) ND	
Methylene Chloride	2) 19	
Trichlorofluoromethane	ND	
1,1-Dichloroethene	13	
1,1-Dichloroethane	9	Quantification
cis/trans-1,2-Dichloroethene	2700	limit: 5 ug/l
Chloroform	12	
1,2-Dichloroethane	ND	ND - Under Quantification Limit
1,1,1,-Trichloroethane	850	
Carbon Tetrachloride	ND	1) Quantification
Bromodichloromethane	ND	limit: 10 ug/l
1,2-Dichloropropane	ND	
trans-1,3-Dichloropropene	ND	2) Analyte detected in
Trichloroethene	1200	method blank at a
Dibromochloromethane	ND	concentration of 9 ug/l
1,1,2-Trichloroethane	ND	
cis-1,3-Dichloropropene	ND	
Benzene	ND	
2-Chloroethylvinyl Ether	1) ND	
Bromoform	ND	
1,1,2,2-Tetrachloroethane	ND	
Tetrachloroethene	36000	
Toluene	21	
Chlorobenzene	ND	
Ethylbenzene	ND	
1,2-Dichlorobenzene	ND	
1,3-Dichlorobenzene	ND	
1,4-Dichlorobenzene	ND	

*  *

John J. Molloy, P.E.
Laboratory Director

Date Reported: 5-4-90


ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

Fanning, Phillips & Molnar
909 Marconi Avenue
Ronkonkoma, NY 11779

Sample Lab No. 757112
Date Collected: 4-19-90
Date Received: 4-19-90
Type: Miscellaneous
Point: Field Blank
Anorad Job
Collected By: CL 99

PURGEABLE ORGANICS ANALYSIS

<u>Compound</u>	<u>ug/l</u>	
Chloromethane	1) ND	
Bromomethane	1) ND	
Vinyl Chloride	1) ND	
Chloroethane	1) ND	
Methylene Chloride	2) 13	
Trichlorofluoromethane	ND	
1,1-Dichloroethene	ND	
1,1-Dichloroethane	ND	Quantification
cis/trans-1,2-Dichloroethene	ND	limit: 5 ug/l
Chloroform	ND	
1,2-Dichloroethane	ND	ND - Under Quantification Limit
1,1,1,-Trichloroethane	ND	
Carbon Tetrachloride	ND	1) Quantification
Bromodichloromethane	ND	limit: 10 ug/l
1,2-Dichloropropane	ND	
trans-1,3-Dichloropropene	ND	2) Analyte detected in
Trichloroethene	ND	method blank at a
Dibromochloromethane	ND	concentration of 9 ug/l
1,1,2-Trichloroethane	ND	
cis-1,3-Dichloropropene	ND	
Benzene	ND	
2-Chloroethylvinyl Ether	1) ND	
Bromoform	ND	
1,1,2,2-Tetrachloroethane	ND	
Tetrachloroethene	ND	
Toluene	ND	
Chlorobenzene	ND	
Ethylbenzene	ND	
1,2-Dichlorobenzene	ND	
1,3-Dichlorobenzene	ND	
1,4-Dichlorobenzene	ND	

*  *

John J. Molloy, P.E.
Laboratory Director

Date Reported: 5-4-90

ENVIRONMENTAL and INDUSTRIAL ANALYTICAL LABORATORY

Fanning, Phillips & Molnar
909 Marconi Avenue
Ronkonkoma, NY 11779

Sample Lab No. 757113
Date Collected: 4-19-90
Date Received: 4-19-90
Type: Miscellaneous
Point: Trip Blank
Anorad Job
Collected By: CL 99

PURGEABLE ORGANICS ANALYSIS

<u>Compound</u>	<u>ug/l</u>	
Chloromethane	1) ND	
Bromomethane	1) ND	
Vinyl Chloride	1) ND	
Chloroethane	1) ND	
Methylene Chloride	2) 13	
Trichlorofluoromethane	ND	
1,1-Dichloroethene	ND	
1,1-Dichloroethane	ND	Quantification
cis/trans-1,2-Dichloroethene	ND	limit: 5 ug/l
Chloroform	ND	
1,2-Dichloroethane	ND	ND - Under Quantification Limit
1,1,1,-Trichloroethane	ND	
Carbon Tetrachloride	ND	1) Quantification
Bromodichloromethane	ND	limit: 10 ug/l
1,2-Dichloropropane	ND	
trans-1,3-Dichloropropene	ND	2) Analyte detected in
Trichloroethene	ND	method blank at a
Dibromochloromethane	ND	concentration of 9 ug/l
1,1,2-Trichloroethane	ND	
cis-1,3-Dichloropropene	ND	
Benzene	ND	
2-Chloroethylvinyl Ether	1) ND	
Bromoform	ND	
1,1,2,2-Tetrachloroethane	ND	
Tetrachloroethene	ND	
Toluene	ND	
Chlorobenzene	ND	
Ethylbenzene	ND	
1,2-Dichlorobenzene	ND	
1,3-Dichlorobenzene	ND	
1,4-Dichlorobenzene	ND	

*
* *J. Molloy* *

John J. Molloy, P.E.
Laboratory Director

Date Reported: 5-4-90

909 MARCONI AVENUE, RONKONKOMA, NEW YORK 11779

(516) 737-6200

(718) 767-3337