PHASE II INVESTIGATION REPORT
PENETREX SITE
GLENWOOD LANDING, NEW YORK

Order on Consent No. W1-0026-8405

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1.0 INTRODUCTION

Blasland & Bouck Engineers, P.C. (Blasland & Bouck) were retained by Mr. Saul Weinberger of K&W Associates in April of 1989 to implement a Phase II sampling and analysis program at the Penetrex site located at One Shore Road, Glenwood Landing, NY (Figure 1) as required by Order on Consent No. W1-0026-8405. The Phase II Work Plan (revised October 1988) was prepared by ERM-Northeast, NY, approved by the New York State Department of Environmental Conservation (NYSDEC), and incorporated as Appendix B to the above referenced Order on Consent. The Department also approved the substitution of Blasland & Bouck for ERM-Northeast to perform the Phase II investigation, and the substitution of Nytest Environmental, Inc. for Envirotest Laboratories to perform the analytical testing.

A copy of the Work Plan is provided as Attachment A. At the request of Mr. John Barnes the NYSDEC representative at the site, the locations of two soil borings (SB-4 and SB-5) were changed in the field and drilled into existing drywells DW-2 and DW-3 respectively. The final locations and depths of all soil borings and monitoring wells were approved by the on-site NYSDEC representative at the time of the investigation.

The objective of this investigation was to collect soil and ground-water analytical data to be used in the final preparation of the Hazard Ranking System (HRS) score of the site so that it can be properly classified. This

report is being submitted pursuant to paragraph III of the Order on Consent, and is founded upon Blasland & Bouck's performance of the work described in Appendix B to the Order.

The Work Plan contains methodologies (acknowledged by NYSDEC to be in accordance with "Requisite Technology" as defined by the Order) for conducting this Phase II investigation. All sampling procedures used for this investigation were in conformance with New York State Department of Environmental Conservation (NYSDEC) protocols, and all samples were analyzed and results reported following contract laboratory practices (CLP) and deliverables. The analytical results generated from the soil and ground-water sampling program were reviewed and evaluated by comparison to NYSDEC Ambient Water Quality Standards and Guidance Values (April 1, 1987) and the New Jersey Environmental Cleanup Responsibility Act (ECRA) Guidelines for soil.

2.0 SITE HISTORY

Situated on the site is a two-story brick building which has been partitioned by two separate operations and owned and leased by K&W Associates, Roslyn, NY. The western half of the building is occupied by the Nameplate Manufacturing of America Company. The eastern portion of the building, currently occupied by an auto-body repair shop, was previously operated by the Penetrex Processing Company (Penetrex).

Penetrex operated at the site until August, 1984 and was a dry cleaning business that reportedly used standard dry cleaning solvents. Wastewater generated by Penetrex was allegedly discharged into an on-site drywell/cesspool prior to August 1984. Results of soil samples collected on December 3, 1984 from the bottom of the drywell by the Nassau County Department of Health (NCDH) detected tetrachloroethene, trichloroethene, 1,1-dichloroethene, 1,1,1-trichloroethane, trichlorofluoroethane and toluene. To comply with NYSDEC requirements, K&W Associates conducted a clean-up program at the site. The program consisted of the: removal of 2,300 gallons of liquid from the drywell; excavation of 13 cubic yards of soil from the bottom of the drywell; and the removal of one 30 gallon and four 55-gallon drums stored on-site in the parking lot.

In May of 1989, Blasland & Bouck implemented the Phase II Work Plan (after giving proper notice to NYSDEC pursuant to paragraph IX of the Order) which

included an air monitoring survey; the drilling of six soil borings; volatile organic screening of soil samples; installation of four monitoring wells; laboratory analysis of soil and ground-water samples; testing and evaluation of ground-water flow velocity, direction and hydraulic conductivity; characterization of potential contaminant sources and pathways; and the calculation of a Hazard Ranking System (HRS) score for the site.

3.0 METHODS OF INVESTIGATION

3.1 Background Air Monitoring

The suspected contamination sources at the site were subsurface discharges, therefore, air is not considered to be an exposure route of concern. However, for verification purposes, a site walk-through was conducted using a portable photionization detector (PID) equipped with an 11.7 eV lamp. Readings were recorded continuously (every 10 seconds) for 4 minutes at a constant walking pace covering the entire site. Using a relatively constant walking velocity and a constant time interval, designated locations were derived (23 locations). All locations, times and results are presented in Table 1. All of the background air monitoring readings were zero thus confirming that there are no adverse environmental impacts to air quality caused from this site.

3.2 Soil Borings and Soil Sampling

Six soil borings (SB-1 to SB-6) were drilled into the unconsolidated deposits on May 8, 1989 (Figure 2). Soil boring SB-4 was drilled in existing drywell DW-2 to 10 feet below the bottom (12 feet below land surface), soil boring SB-5 was hand augered in existing drywell DW-3 to one-foot below the bottom (Figure 2) and soil boring SB-6 was hand augered 3.0 feet below land

surface. Soil borings SB-1, 2, and 3 were drilled to 27, 18, and 10 feet below land surface respectively.

Delta Well and Pump Co., Inc., Ronkonkoma, NY was contracted to conduct the drilling operations under the supervision of a geologist from Blasland & Bouck. A truck-mounted hollow stem auger rig was used to drill borings (SB-1 to SB-4) and collect continuous (every 2 feet) split-spoon samples. Once the borehole (approximately 8 inches in diameter) was advanced to a desired depth for sampling, a split-spoon sampler was lowered down through the open axial stem of the hollow stem augers. The split-spoon sampler was then advanced beyond the lead auger section into the undisturbed formation by a hammer-drop system. This method drives the split-spoon sampler into the formation by the impact of a 140 - pound weight falling a distance of 30 inches. Each drop of the weight or blow was recorded to measure the resistance of the sediments to penetration by the sampler.

Split-spoon samples were collected continuously from each borehole until the water table was encountered. Split-spoon samples were collected in accordance with the American Society for Testing and Materials (A.S.T.M.) standard practice.

In order to minimize the potential for cross contamination, decontamination (decon) activities were carried out in a designated area. This decon station, which was lined with plastic, was utilized in the containment (prevention of

run-off) of all decontamination waste-materials. All drilling and sampling equipment (auger sections, drill rods, samplers, etc.) were cleaned with high pressure steam between each borehole. Before use, splits-spoon samplers were individually washed using the following decontamination procedures:

1. Non-phosphate detergent and tap water wash.
2. Tap water rinse.
3. Distilled/Deionized water rinse.
4. 10% Nitric acid rinse (used only when samples were to be analyzed for metals)
5. Distilled/Deionized water rinse.
6. Acetone (pesticide grade) rinse.
7. Total air dry.
8. Distilled/Deionized water rinse.

All waste-material generated by the decontamination procedures was collected and stored in DOT-approved 55-gallon drums and stored on site.

All soil samples collected during the soil boring program were screened in the field for relative concentrations of volatile organic compounds (VOCs) using the PID. After a sample was collected the sampler was removed from the borehole and opened, the soil sample was immediately placed (using disposable polyvinyl gloves) into the appropriate sampling containers to avoid the potential escape of VOCs from the sample. Each soil sample was split

into two sections with one split being placed into precleaned laboratory supplied containers and the other half into a glass jar. The soil samples were then screened in the field for VOCs following the protocol provided as Attachment B. Upon the completion of this process the geologist logged the sediments in detail for geology and evidence of contamination (odor, staining, texture). Detailed geologic logs are provided as Attachment C.

Soil samples retained for possible laboratory analysis were immediately placed into an insulated cooler (maintained at 4°C) while their splits were being screened for VOCs using the PID. The sample jars were heated in a hot water bath for five minutes. Immediately after removing the sample jar from the heat source, the aluminum foil seal was pierced with the extension probe of the PID and the headspace tested for relative concentrations of VOCs. The PID was calibrated daily prior to use.

The purpose of this soil screening is two-fold: to aid in ascertaining the vertical and horizontal extent of VOCs in the unsaturated zone; and by reviewing soil screening responses a determination can be made as to which samples are to be retained for laboratory analysis. Based on this screening, a total of 6 soil samples were selected for laboratory analysis. All samples were analyzed for volatile organic compounds by EPA Method 8240 plus 15 additional peaks, total petroleum hydrocarbons by NYSDEC Method 310 and the 8 RCRA metals. The 8 RCRA metals were analyzed for by the following EPA Method numbers:

Arsenic: EPA, Method 7061

Barium: EPA, Method 6017

Cadmium: EPA, Method 7130

Chromium: EPA, Method 6010 or 7190

Lead: EPA, Method 7421

Mercury: EPA, Method 7471

Selenium: EPA, Method 7741

Silver: EPA, Method 6010 or 7760

All samples were analyzed following contract laboratory practices (CLP) protocols and deliverables.

Table 2 summarizes the soil screening results including which samples were selected for laboratory analysis and analytical methods performed. Soil samples were picked up by the laboratory, Nytest Environmental Inc., Port Washington, NY at the end of the sampling day maintaining a strict chain of custody. Chain-of-custody forms for soil samples are included in the laboratory reports provided as Attachment D.

Borehole materials or cuttings transported to the surface during drilling were placed into DOT-approved 55-gallon drums and stored on-site pending the evaluation of the laboratory results.

3.3 Monitoring Well Installation

On May 8 and 9, 1989, four monitoring wells (MW-1 to MW-4) were installed. Monitoring well MW-1 was installed in soil boring SB-1 (Figure 2). Split-spoon soil samples were collected at 5-foot intervals during the drilling for MW-4. However, due to overhead electrical wires, and after consultation with the on-site NYSDEC representative, it was decided that it would be too dangerous to conduct split-spoon sampling procedures during the drilling of MW-2 and MW-3.

Upon the completion of each borehole, a monitoring well was inserted through the hollow center of the auger column. Well construction materials consist of 4-inch diameter, schedule 40, flush joint, NSF approved, threaded PVC casing with approximately 10 feet of 0.020-inch slotted screen. A sand pack, consisting of uniform, well-sorted clean Morie #1 grade silica sand, was used to fill the annular space surrounding the well screen and two feet above the screen. The purpose of the sand pack is to filter out fine material from the formation adjacent to the screen and facilitate water flow into the well.

A two-foot thick hydrated bentonite pellet seal was then placed immediately above the sand pack. This impermeable seal hydraulically isolates the well screen, thus, protecting against the migration of surface water down the borehole annulus. The remaining annular space was then filled to the surface with a cement grout within which was installed a one-foot long, 8-inch

diameter, protective steel curb box. All monitoring wells were installed following NYSDEC specifications. Well construction details are provided as Attachment E.

Following the completion of well construction, each well was developed by pumping until turbidity levels measured below 50 NTU's. Well development ensures a good hydraulic connection between the screen zone and the formation. All water generated during this process was placed in DOT-approved 55-gallon drums, labelled accordingly, and stored on-site.

A designated measuring point was marked on each well casing and the elevation of this reference point was surveyed to an accuracy of $\pm$0.01 feet relative to the National Geodetic Vertical Datum (N.G.V.D.). All wells and borings were surveyed in vertically and horizontally by Albert W. Tay, Plainview, NY, a New York State licensed surveyor. All wells were given a unique number by Blasland & Bouck and are clearly marked.

3.4 Ground-Water Sampling

On May 25, 1989, two weeks after well development, ground-water samples were collected from each monitoring well. All ground-water samples were analyzed for volatile organic compounds by EPA Method 624 plus 15 additional peaks, 8 RCRA metals and Total Petroleum Hydrocarbons (TPHCs) following the same methods that were used to analyze the soil samples. All

samples were analyzed following CLP protocols.

Prior to the collection of the ground-water samples each well was purged (three well casing volumes or until well was dry) to remove standing well water thus ensuring the collection of representative ground-water samples. Well purging was achieved using bottom-loading teflon bailers. Field monitoring of conductivity, pH and temperature were recorded during each well evacuation (Table 3). All purge water was contained in DOT-approved 55-gallon drums and stored on-site.

Ground-water samples were collected with the teflon bailers and placed in precleaned laboratory supplied containers with necessary preservatives and stored in an insulated cooler iced to 4°C. Field measurements of pH, specific conductivity and temperature were recorded from each well immediately after sampling was completed (Table 3). Ground-water samples were picked up by Nytest Environmental Inc. maintaining a strict chain of custody. Chain-of-custody forms are included in the ground-water sampling laboratory report provided as Attachment D.

Decontamination of the bailers was performed prior to sampling each well. Procedures used in cleaning the bailers was identical to that used for cleaning the split-spoon samplers.

3.5 Rising Head Permeability Tests

On June 20, 1989 rising head permeability tests were conducted on monitoring wells MW-1 and MW-3. This involved bailing the wells until drawdown of the water level was observed and the subsequent measuring of water level recovery rates at a predetermined schedule (30 second intervals) until the water level returned to near static conditions. The measurements of the rise in water levels over time was used to calculate the permeability of the sediments surrounding the well screens.

A derived version of the computer program HVRLV1 (developed by the National Hydrology Research Institute, Calgary) was implemented facilitating efficient evaluation and permitting sensitivity analyses of field data obtained. A description and derivation of the HVRLV1 program is included in Attachment F.

3.6 QA/QC Sampling Program

As part of the sample Quality Assurance/Quality Control (QA/QC) program trip blanks, field blanks, and split samples where collected for analysis. A brief description of each follows:

Trip blank: The trip blank consisting of a sample of distilled or deionized water in a 40 ml. VOA vial was supplied by the laboratory prior to arriving at the site and then handled in the same manner as the actual samples. These samples are used as an indicator of sample contamination during the entire sampling process. A total of two trip blanks where sampled and analyzed for volatile organic compounds + 15.

Field blank: A sample of laboratory supplied distilled and deionized water was poured over the sampling equipment and then into a sample bottle while on site. The sample was then handled in the same manner as the actual samples. This blank is used as an indicator of sample contamination from on-site activities, such as decontamination procedures, or contaminated sampling equipment. A total of two field blanks where collected and analyzed for volatile organic compounds + 15, 8 RCRA metals, and total petroleum hydrocarbons.

Split samples: Split samples were taken from a single sample of water and/or soil. These were submitted to the laboratory "blind" for comparison of analytical results. A total of two split samples were collected and analyzed for volatile organic compounds + 15, 8 RCRA metals, and total petroleum hydrocarbons.

3.7 Surface-Water Investigation

Although surface water does not exist at the site, due to its close proximity to Hempstead Harbor, the site's drainage system was inventoried. This involved a record search of the Town of North Hempstead Building Department and the Nassau County Department of Public Works files. Only one map was available for inspection. This was a plot plan dating back to January 26, 1955 (Attachment G). According to the plan in 1955 all discharge from the building was to a septic tank and two leaching pools located on the south side of the building. The new building (currently occupied by Nameplate Manufacturing) was built over the area of the septic tank and leaching pools.

All surface-water runoff at the site drains into the five (5) drywells located throughout the parking lot (Figure 2). There is no drainage from the site directly to Hempstead Harbor.

4.0 HYDROGEOLOGY

4.1 Regional Hydrogeology

The site is locatd in the Atlantic Coastal Plain Physiographic Province. The subsurface geology consists of unconsolidated sand, silt, clay, and gravel layers overlying crystalline bedrock. These layers dip to the southeast and generally follow the contours of the bedrock surface.

The site is located to the north of the ground-water divide that runs east-west across the center of Long Island and is west of the principal divide that runs northwest-southeast from Locust Valley to Brookville, Long Island. Regional ground-water flow in this area is westward towards Hempstead Harbor (Kilburn and Krulikas, 1987).

The site is underlain by unconsolidated material of Cretaceous and Quaternary Age. These deposits are over 500 feet thick under the site and overlie crystalline bedrock. From oldest (deepest) to youngest (shallowest) these sediments have been identified and divided into a series of hydrogeologic units: the Lloyd aquifer; the Raritan clay confining unit; the Magothy aquifer (not present under the site); the Port Washington aquifer; the Port Washington confining unit; and the Upper Glacial aquifer. Only the Upper Glacial aquifer is of significance in this investigation and is described in some detail below.

The Upper Glacial aquifer consists of late Pleistocene and Holocene age sand, gravel, silt, and clay deposits that overlie the Port Washington confining unit. The upper surface of the upper glacial deposits comprise present day land surface except in areas such as the Penetrex Site where they are overlain by recent Holocene deposits and/or fill materials. The water table at the site is found in this aquifer.

The Upper Glacial aquifer can be divided into two geologic units of Holocene and upper Pleistocene age. The Holocene deposits are the more recent deposits and consist of sand, gravel, silt, clay, organic mud, peat, loam, and shells. Colors are gray, green, black and brown. These deposits, which include undifferentiated artificial fill, salt-marsh and swamp deposits, stream alluvium and shore deposits, typically range in thickness from 10-50 feet (Kilburn and Krulikas, 1987).

The Upper Pleistocene deposits are moraine (till), composed of unsorted clay, sand, gravel and boulders. These deposits may contain outwash deposits of stratified brown sand and gravel, and local lacustrine or marine deposits consisting of clay, silt, and sand. These were deposited by glacial action during the late Pleistocene age (Kilburn and Krulikas, 1987).

The average horizontal hydraulic conductivity of the upper glacial aquifer is 270 ft/day (2000 gpd/ft^2) and the average vertical hydraulic conductivity is 27 ft/day (200 gpd/ft^2) (Franke and Cohen, 1972). Several large-capacity public-

supply wells screened in the aquifer have been reported to yield from 436 to 1,410 gal/min. The specific capacities of these wells range from 10 to 73 gal/min per foot of drawdown (Kilburn, 1979).

4.2 Site Hydrogeology

All soil borings for this study were drilled or hand augered into the morainal deposits of the Upper Glacial aquifer. The morainal deposits are estimated to be approximately 110 feet thick beneath the site and are assumed to directly overlie the Port Washington confining unit. The borings range in depth from 1 foot (SB-5, hand augered inside DW-3) down to 27 feet (SB-1/MW-1). Geologic logs for all of the borings are given as Attachment C.

The morainal deposits at the site consist predominantly of well to moderately sorted fine sand with some medium sand. At approximately 12 feet deep at MW-1 traces of silty sand are present. This silty deposit becomes more dominant and extends across the site, varying in thickness from two feet at MW-1 to 10 feet at MW-3. This deposit is wedge-shaped and increase in clay content and thickness in the southwest direction (Figure 3). This silty to clayey matrix reduces the horizontal and vertical permeability of this unit as indicated by comparison of falling head permeability tests.

4.3 Ground-Water Flow

Water-level measurements were recorded on May 25, 1989. The depths to water at this time and the elevation of the piezometric surface are provided on Table 4. From these data a water-table contour map has been prepared (Figure 4). It can be seen by this map that ground-water flow at the site is to the west towards Hempstead Harbor with a slight component of flow to the north.

The shallow ground-water gradient (dimensionless) at the site varies from 0.012 to the east of monitoring well MW-3 to 0.10 to the west of this well. This can be explained by the shallow geology of the site, monitoring well MW-1 is screened predominantly in fine sand deposits, whereas monitoring wells MW-2, 3 and 4 are screened in less permeable silty and clayey sands (Figure 3).

As part of this investigation the permeability of the formation opposite selected wells was determined by conducting rising lead permeability tests. These tests were conducted on monitoring wells MW-2 and MW-3 and were completed by bailing each well until drawdown was observed at which time water-level recovery rates were measured on a pre-determined schedule and recorded in the field book. These data were then reduced and inputed into a computer model which makes use of both the Bower and Rice, and Hvorslev formulas for computing permeability for rising head permeability tests.

A copy of the computer model test results is provided as Attachment F. In summary the permeability of the sediments ranges from approximately 7.6-12.1 gallons per day per foot squared (gpd/ft^2). Using the highest permeability measured of 12.1 gpd/ft^2 and the gradient in this area of the site of 0.10, the ground-water flow rate has been determined to be approximately 0.54 feet per day.

5.0 SUMMARY OF ANALYTICAL RESULTS

5.1 Soil

A total of six soil samples were collected for laboratory analysis of volatile organic compounds (VOCs), 8 RCRA metals, and total petroleum hydrocarbons. All samples were analyzed following CLP protocols (November 1987). In addition to the six samples analyzed, an additional sample SB-7 (0-1') was collected as a duplicate sample of SB-5 (0-1') and submitted blindly to the laboratory as part of the QA/QC program.

The results of the analysis indicated that three (3) soil samples contained total VOCs above the 1.0 ppm level of concern as stated on Table 4-1 in the Phase II Work Plan proposed by ERM-Northeast. These samples are SB-2 (4-6'), SB-5 (0-1'), and SB-6 (2.6-3.0') (Figure 5). The concentrations of total VOCs in these samples are 1.652, 889.6 and 14.0 ppm respectively (Table 5). The remaining three samples contained concentrations of total VOCs below the 1.0 ppm level of concern.

The results of the 8 RCRA metals analysis showed that none of the metals were detected above the levels of concern as listed on Table 4-2 in the ERM Work Plan (Table 6). The only exception was lead which was detected at 565 ppm in sample SB-6 (2.6-3.0'). The level of concern for lead as stated in the Work Plan is 250 ppm.

The only soil sample which contained detectable total petroleum hydrocarbons (TPHCs) was the one collected at SB-5 (0-1.0'). This sample contained 2,750 ppm TPHCs which is above the level of concern of 100 ppm. It should be noted that this sample was collected from a drywell and that the TPHCs may be the result of surface water runoff from the parking lot.

5.2 Ground Water

The results of the ground-water sampling indicated that there are three (3) volatile organic compounds present in the ground water under the site, they are 1,2-dichloroethene (total), trichloroethene, and tetrachloroethene (Table 7). 1,2-dichloroethene (total) was detected at low levels in monitoring wells MW-1 and MW-2 at 13.0 and 6.0 ppb respectively (Figure 6). In monitoring well MW-3, 1,2-dichloroethene (total) was detected at a concentration of 74.0 ppb (Figure 6). There are no New York State ambient ground-water quality standards or guidance values for 1,2-dichloroethene (total), only for trans-1,2-dichloroethene at 50 ppb.

Trichloroethene was also detected at low levels in monitoring wells MW-1 and MW-2 at 8.0 and 6.0 ppb respectively (Figure 7). In monitoring well MW-3, trichloroethene was detected at 22.0 ppb which is above the New York State Standard of 10.0 ppb (Figure 7).

Tetrachloroethene was detected at concentrations above the New York State Guidance value of 0.7 ppb in all wells. The highest concentration was found in the upgradient direction monitoring well MW-1 at 560 ppb (Figure 8). The three downgradient wells all contained lesser concentrations of tetrachloroethene (Figure 8). This along with the detection of 1,2-dichloroethene (total) and trichloroethene in this well indicates that background ground-water quality may be degraded by volatile organic compounds from off-site source(s).

In addition, two of the compounds previously detected in the Penetrex drywell by the Nassau County Department of Health Services (e.g., 1,1,1-trichloroethane and toluene) prior to the removal of contaminated soil and water in the drywell were not detected in any of the soil or ground-water samples collected by Blasland & Bouck. This further supports the possibility of an off-site source of volatile organics in the ground water.

Acetone was detected in the sample collected from monitoring well MW-3 at 490 ppb. This was the only sample which indicated detectable levels of acetone. The occurrence of acetone in this sample may be due to residuals left on the sampling equipment after decontamination and probably does not reflect true ground-water quality.

Of the remaining parameters analyzed for in the ground-water samples, with regards to the 8 RCRA metals none were detected above New York State

ambient water quality standards or guidance value, and there were no detections of TPHCs in any of the samples (Table 8). The only metals detected were trace levels of arsenic, barium, chromium, and mercury. Arsenic was detected in monitoring wells MW-2, 3, and 4 at 11.0, 8.0 and 9.0 ppb respectively. Barium was detected in monitoring wells MW-1, 2, and 3 at 297, 54.3, and 66.8 ppb respectively. Chromium was detected in monitoring wells MW-1 and 2 at 10.6 and 7.8 ppb respectively. Mercury was detected at trace levels in monitoring well MW-2 (0.4 ppb).

6.0 PRELIMINARY HAZARD RANKING SYSTEM (HRS)

The Penetrex site has been evaluated using the Hazard Ranking System (HRS) scoring process. Application of the HRS is the principal mechanism for including a site on the EPA National Priorities List (NPL). Inclusion of a site on the NPL is intended primarily to guide EPA in determining which sites warrant further investigation for possible cleanup under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). Sites that score 28.50 or greater on the HRS allow rough prioritization of the sites according to the risks posed to public health and the environment.

The HRS assigns three scores to a facility:

(1) Migration Score (S_M) - This score is a composite of three separate route scores - ground water (S_{gw}), surface water (S_{sw}) and air (S_a). The S_M reflects the potential for harm to humans or the environment from migration of a hazardous material away from the facility.

(2) Fire and Explosion Score (S_{FE}) - reflects the potential for harm from materials that may explode or cause fires.

(3) Direct Contact Score (S_{DC}) - reflects the potential for harm from direct contact with hazardous material at the facility.

The Migration Score (S_M) is primarily used in determining the ranking of a facility for remedial action. The Fire and Explosion Score (S_{FE}) and Direct Contact Score (S_{DC}) are often used to identify facilities requiring emergency action.

HRS scores for the Penetrex site consisted of a Migration Score (S_M) of 10.12. The Migration Score (S_M) for the site was the direct result of a Ground-Water Route Score (S_{gw}) of 17.50. Both the Surface Water Route Score (S_{sw}) and Air Route Score (S_a) were zero. Values developed for the Fire and Explosion (S_{FE}) and Direct Contact (S_{DC}) scores were also zero.

The results of the HRS scoring give the site a numerical ranking of 10.12 which is well below the critical value of 28.5 used to list a site on the Superfund program.

Documentation records and work sheets required to develop an HRS score for the Penetrex site are given in Attachment H.

Tables

TABLE 1:

BACKGROUND AIR MONITORING RESULTS

Penetrex Site, Glenwood Landing, NY

May 8, 1989

Location	Time	PPM	Status
1	0845	0000	
2	0845	0000	
3	0845	0000	
4	0845	0000	
5	0845	0000	
6	0845	0000	
7	0846	0000	
8	0846	0000	
9	0846	0000	
10	0846	0000	
11	0846	0000	
12	0847	0000	
13	0847	0000	
14	0847	0034	Field induced spike
15	0847	0000	
16	0847	0000	
17	0847	0000	
18	0848	0000	
19	0848	0000	
20	0848	0000	
21	0848	0000	
22	0848	0000	
23	0849	0000	

TABLE 2:

SUMMARY OF VOLATILE ORGANIC

SCREENING RESULTS FOR SOIL

Penetrex Site, Glenwood Landing, NY

Boring Location	Depth (ft)	Photoionization Reading (ppm)
SB-1	0.5-2	17.6
	2-4*	200
	4-6	1.2
	6-8	0.4
	8-10	1.2
	10-12	0.1
	12-14	0
	14-16	0.8
	20-22	-
	25-27	-
SB-2	0.5-2	9.0
	2-4	3.0
	4-6*	17.2
	6-8	14.0
	8-10	0.8
	10-12	1.9
	12-14	10.1
	14-16	2.0
	16-18	4.2
SB-3	0.5-2	17.1
	2-4	5.0
	4-6	14.9
	6-8	4.8
	8-10*	16.2
SB-4	2-4	1.3
	4-6	0.4
	6-8*	0.4
	8-10	0
	10-12	0

- No HNU reading recorded
* Sample analyzed for EPA Method 8240 + 15, total petroleum hydrocarbons and 8 RCRA Metals.

Table 2 (Continued)

Boring Location	Depth (ft)	Photoionization Reading (ppm)
SB-5	0-1'*	-
SB-6	0-2.2	220
	2.2-2.6	18.8
	2.6-3.0*	240
	3.0-4.0	12.6
SB-7	0-1*	-

- No HNU reading recorded

* Sample analyzed for EPA Method 8240 +15, total petroleum hydrocarbons and 8 RCRA metals.

TABLE 3

SPECIFIC CONDUCTIVITY, pH AND TEMPERATURE

MEASUREMENTS FOR GROUND WATER (During Purging of Wells)

Penetrex Site, Glenwood Landing, NY

Well No.	Purge Volume (Gallons)	Cond. (micromhos)	pH	Temp.(°C)
MW-1	18	278	6.45	12
MW-2	.75	486	5.75	18
	8	520	6.46	15
MW-3	.25	410	6.79	14
	9.5	386	6.86	14
MW-4*	.25	670	6.45	15
	6.74	870	6.70	14
	7.25	280	6.80	13
	**	232	7.33	15

* Well was evacuated dry

** Let well recharge for approximately 1 hour and 30 minutes before taking samples.

TABLE 4

SUMMARY OF WATER-LEVEL MEASUREMENTS

Penetrex Site, Glenwood Landing, NY

May 25, 1989

Well No.	M.P. Elev. (1)	D.T.W.	W.T. Elev.(1)
MW-1	31.02	18.45	12.57
MW-2	20.81	11.43	9.38
MW-3	20.79	10.70	11.09
MW-4	21.42	9.65	11.77

M.P - Measuring Point (Top of PVC casing).

(1) In feet relative to N.G.V.D.

TABLE 5

SUMMARY OF VOLATILE ORGANIC COMPOUNDS (VOCs) DETECTED IN SOIL

Concentrations in ppm

Penetrex Sit, Glenwood Landing, NY

Parameter	SB-1(2-4')	SB-2(4-6')	SB-3(8-10')	SB-4(6-8')
1,2-Dichloroethene (total)	ND	0.016	ND	ND
Trichloroethene	ND	0.033	ND	ND
Tetrachloroethene	0.220	1.60	0.002(J)	ND
Methylene Chloride	0.004(J)	ND	ND	ND
Acetone	0.007(BJ)	0.003(BJ)	0.330(B)	0.037(B)
Toluene	0.004(J)	ND	ND	ND
Total VOCs	**0.235**	**1.652**	**0.332**	**0.037**

Parameter	SB-5(0-1')	SB-6(2.6-3')	SB-7(0-1')
1,2-Dichloroethene (total)	9.60	ND	26.0
Trichloroethene	50.0	ND	86.0
Tetrachloroethene	830.0	14.0	1,200.0
Methylene Chloride	ND	ND	ND
Acetone	ND	ND	ND
Toluene	ND	ND	ND
Total VOCs	**889.6**	**14.0**	**1,312.0**

ND - Not Detected, refer to laboratory report for parameter detection limits.
(J) Indicates an estimated value, result is less than specified detection limit but greater than zero.
(B) Parameter found in blank as well as sample, indicates possible/probable blank contamination.
SB-7(0-1') - Duplicate sample of SB-5(0-1').

8589323S

TABLE 6

SUMMARY OF RCRA METALS AND

TOTAL PETROLEUM HYDROCARBONS (TPHC'S)

DETECTED IN SOIL

Concentrations in ppm

Penetrex Site, Glenwood Landing, NY

Parameter	SB-1(2-4')	SB-2(4-6')	SB-3(8-10')	SB-4(6-8')
Arsenic	2.3	2.1	ND	0.76(B)
Barium	50.2	47.6	ND	7.3(B)
Cadmium	ND	ND	ND	ND
Chromium	11.6	9.6	1.5	3.5
Lead	63.0	34.7	ND	ND
Mercury	ND	ND	ND	ND
Selenium	ND	ND	ND	ND
Silver	ND	ND	ND	ND
TPHCs	ND	ND	ND	ND

Parameter	SB-5(0-1')	SB-6(2.6-3.0')	SB-7(0-1')
Arsenic	2.9	12.2	1.8
Barium	52.3	63.9	37.1
Cadmium	ND	ND	0.5
Chromium	28.0	11.1	25.3
Lead	155	565	122
Mercury	0.04	0.02	ND
Selenium	0.5	ND	ND
Silver	ND	ND	ND
TPHCs	2,750	ND	7,270

ND - Not detected, refer to laboratory report for parameter detection limits.

(B) - Parameter found in blank as well as sample, indicates possible/probable blank contamination.

SB-7 (0-1') - Duplicate sample of SB-5 (0-1').

TABLE 7

SUMMARY OF VOLATILE ORGANIC COMPOUNDS

DETECTED IN GROUND WATER

Concentrations in ppb

Penetrex Site, Glenwood Landing, NY

Parameter	MW-1	MW-2	MW-3	MW-4	MW-5
1,2-Dichloroethene (total)	13.0	6.0	74.0	ND	11.0
Trichloroethene	8.0	6.0	22.0(J)	ND	8.0
Tetrachloroethene	560	8.0	120	7.0	530
Chloroform	ND	5.0	ND	ND	ND
Acetone	ND	ND	490	ND	ND
Total VOCs	**581.0**	**25.0**	**706.0**	**7.0**	**549.0**

ND - Not detected, see laboratory report for parameter detection limits.

(J) Indicates an estimated value, result is less than specified detection limit but greater than zero.

MW-5 - Duplicate sample of MW-1.

TABLE 8

SUMMARY OF RCRA METALS AND

TOTAL PETROLEUM HYDROCARBONS (TPHCS)

DETECTED IN GROUND WATER

Concentrations in ppb

Penetrex Site, Glenwood Landing, NY

Parameter	MW-1	MW-2	MW-3	MW-4	MW-5
Arsenic	ND	11.0	8.0(B)	9.0(B)	ND
Barium	297	54.3 (B)	66.8(B)	ND	60.5(B)
Cadmium	ND	ND	ND	ND	ND
Chromium	10.6	7.8(B)	ND	ND	ND
Lead	ND	ND	ND	ND	ND
Mercury	ND	0.4	ND	ND	ND
Selenium	ND	ND	ND	ND	ND
Silver	ND	ND	ND	ND	ND
TPHCs	ND	ND	ND	ND	ND

ND - Not detected, refer to laboratory report for parameter detection limits

(B) - Parameter found in blank as well as sample, indicates possible/probable blank contamination.

MW-5 - Duplicate Sample of MW-1.

Figures

FIGURE 1

K & W ASSOCIATES
GLENWOOD LANDING, NEW YORK

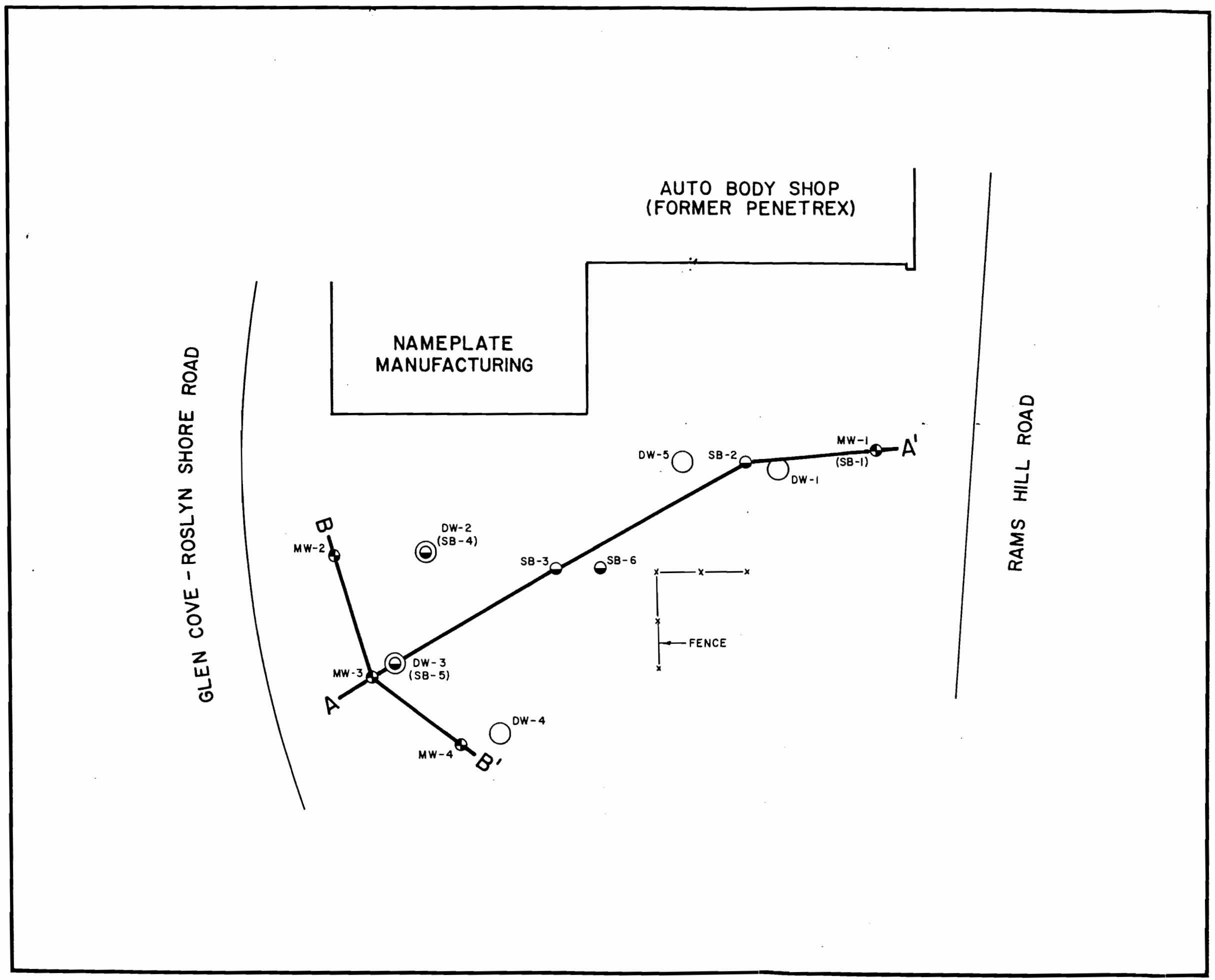
SITE LOCATION PLAN

SCALE

2000' 0 2000'

BLASLAND & BOUCK ENGINEERS, P.C.
ENGINEERS & GEOSCIENTISTS

FIGURE 2



LEGEND

- DRY WELL
- SOIL BORING
- MONITORING WELL
- A—A' CROSS SECTION LOCATION

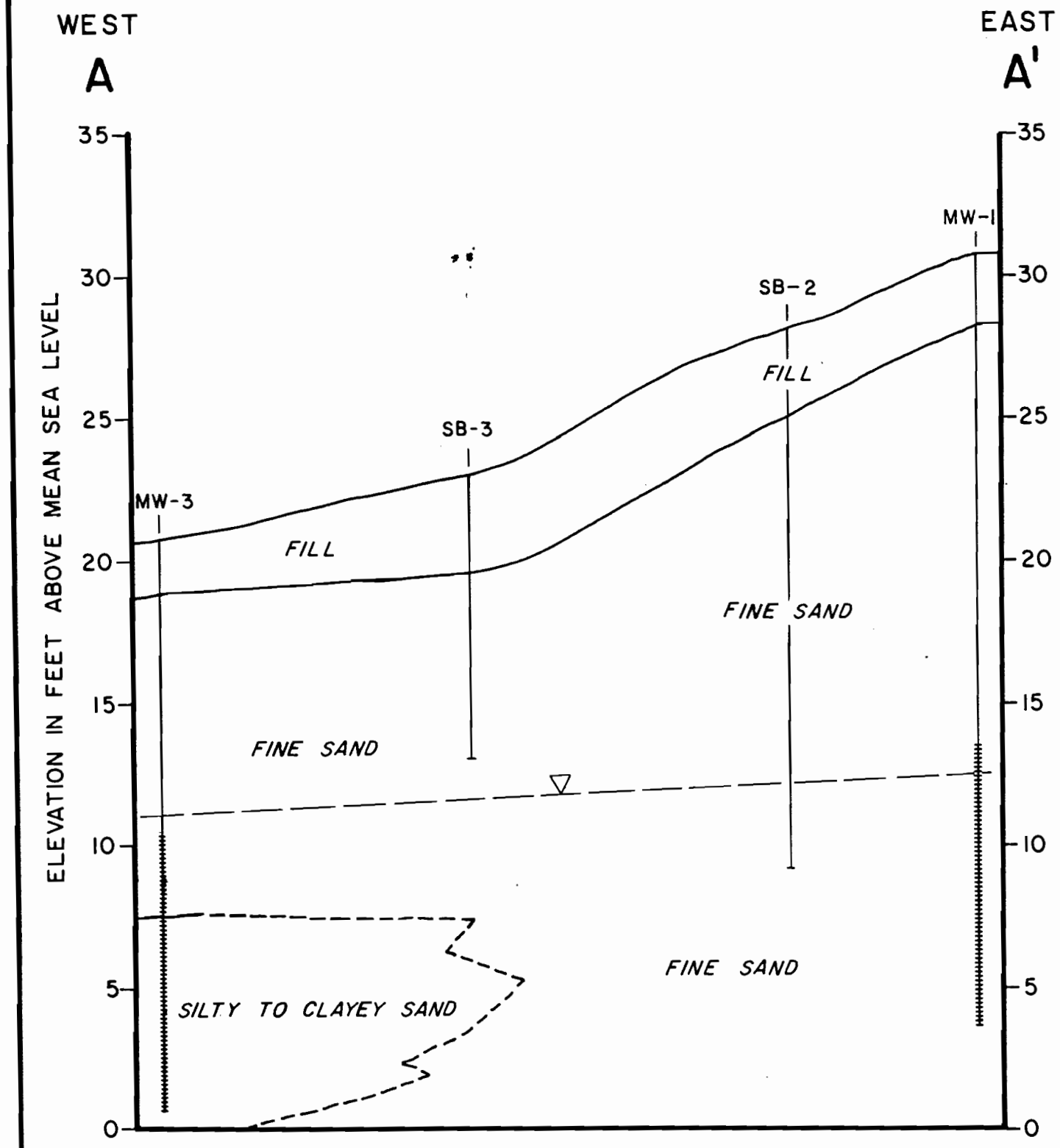
K & W ASSOCIATES
GLENWOOD LANDING, NEW YORK

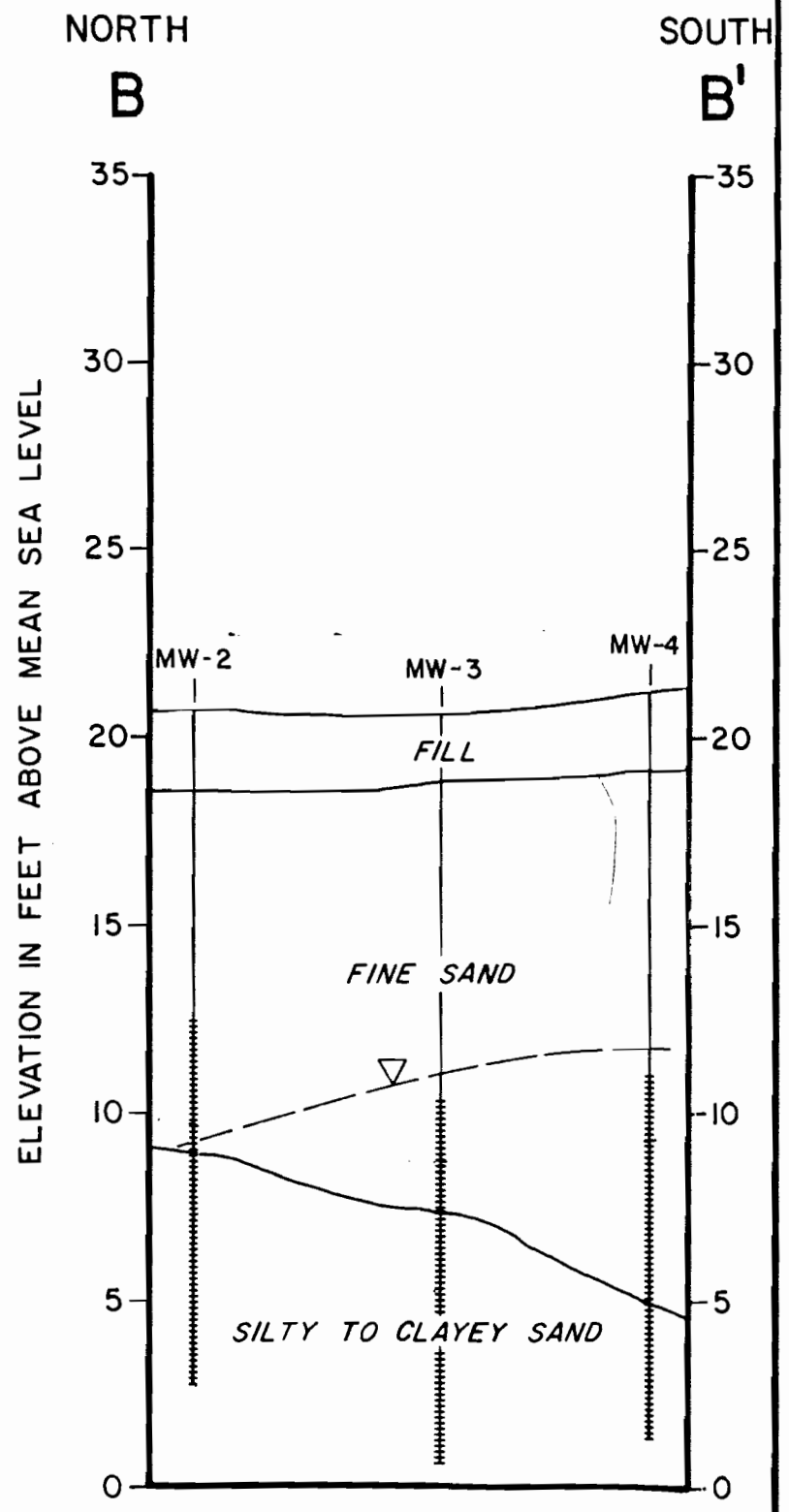
SITE PLAN

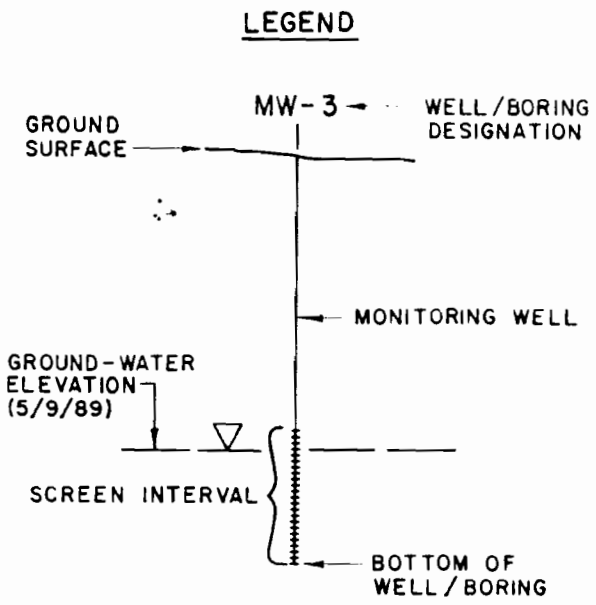
SCALE
30' 0 30'

BLASLAND & BOUCK ENGINEERS, P.C.
ENGINEERS & GEOSCIENTISTS

FIGURE 3







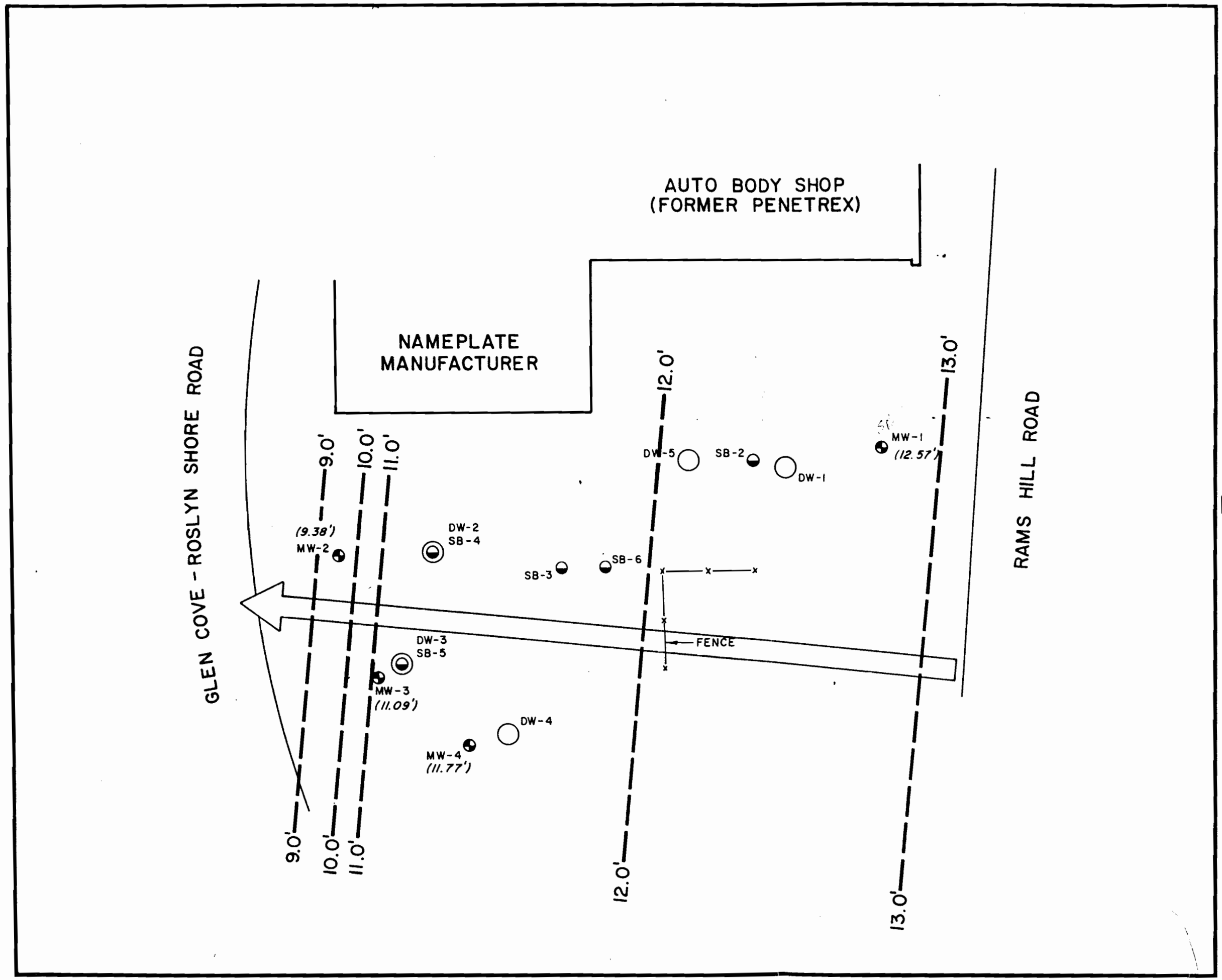
K & W ASSOCIATES
GLENWOOD LANDING, NEW YORK

GEOLOGIC CROSS SECTIONS

HORIZONTAL SCALE
30' 0 30'

BLASLAND & BOUCK ENGINEERS, P.C.
ENGINEERS & GEOSCIENTISTS

FIGURE 4



LEGEND

- DRY WELL
- SOIL BORING
- MONITORING WELL
- (11.77') GROUND-WATER ELEVATION
- 12.0' GROUND-WATER CONTOUR LINE, DASHED WHERE INFERRED
- DIRECTION OF GROUND-WATER FLOW

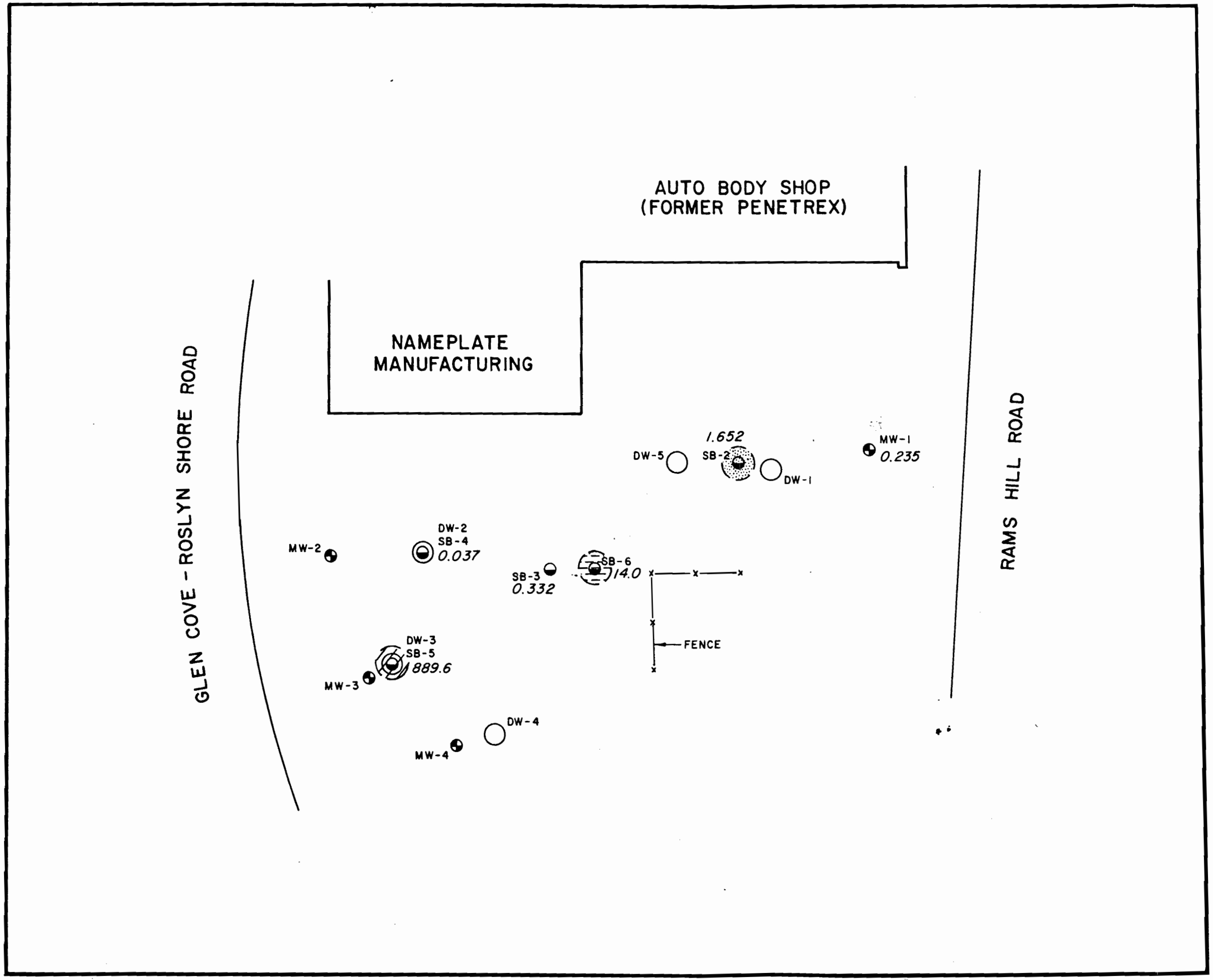
K & W ASSOCIATES
GLENWOOD LANDING, NEW YORK

GROUND-WATER FLOW MAP
MAY 25, 1989

SCALE
30' 0 30'

BLASLAND & BOUCK ENGINEERS, P.C.
ENGINEERS & GEOSCIENTISTS

FIGURE 5



LEGEND

- DRY WELL
- SOIL BORING
- MONITORING WELL
- ⊿100.0 p.p.m.
- ⊿10.0-100.0 p.p.m.
- ⊿1.0 - 10 p.p.m.

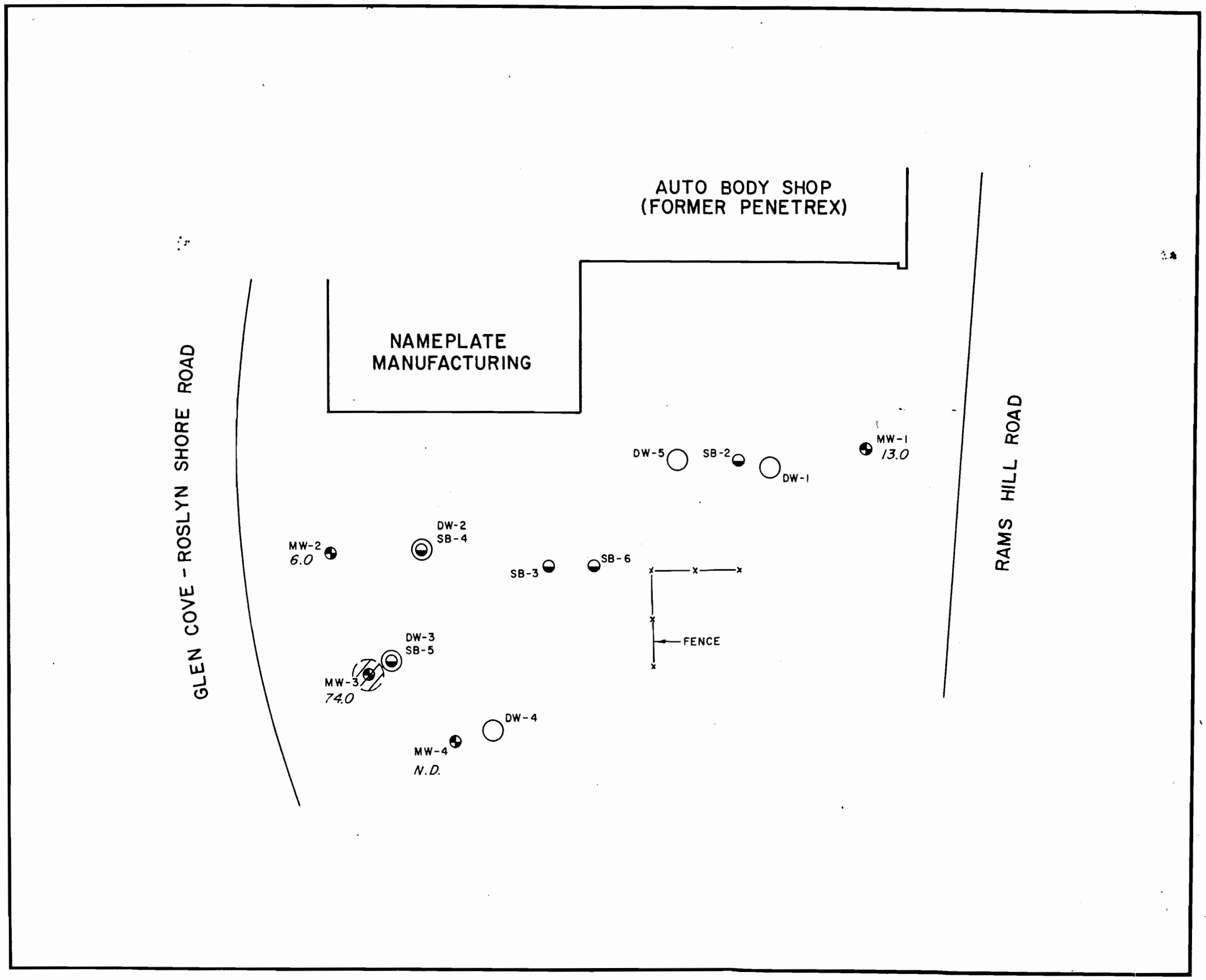
K & W ASSOCIATES
GLENWOOD LANDING, NEW YORK

CONCENTRATION OF TOTAL VOLATILE ORGANIC COMPOUNDS IN SOIL (p.p.m.)

SCALE
30' 0 30'

BLASLAND & BOUCK ENGINEERS, P.C.
ENGINEERS & GEOSCIENTISTS

FIGURE 6



LEGEND

- DRY WELL
- SOIL BORING
- MONITORING WELL
- 150 p.p.b.

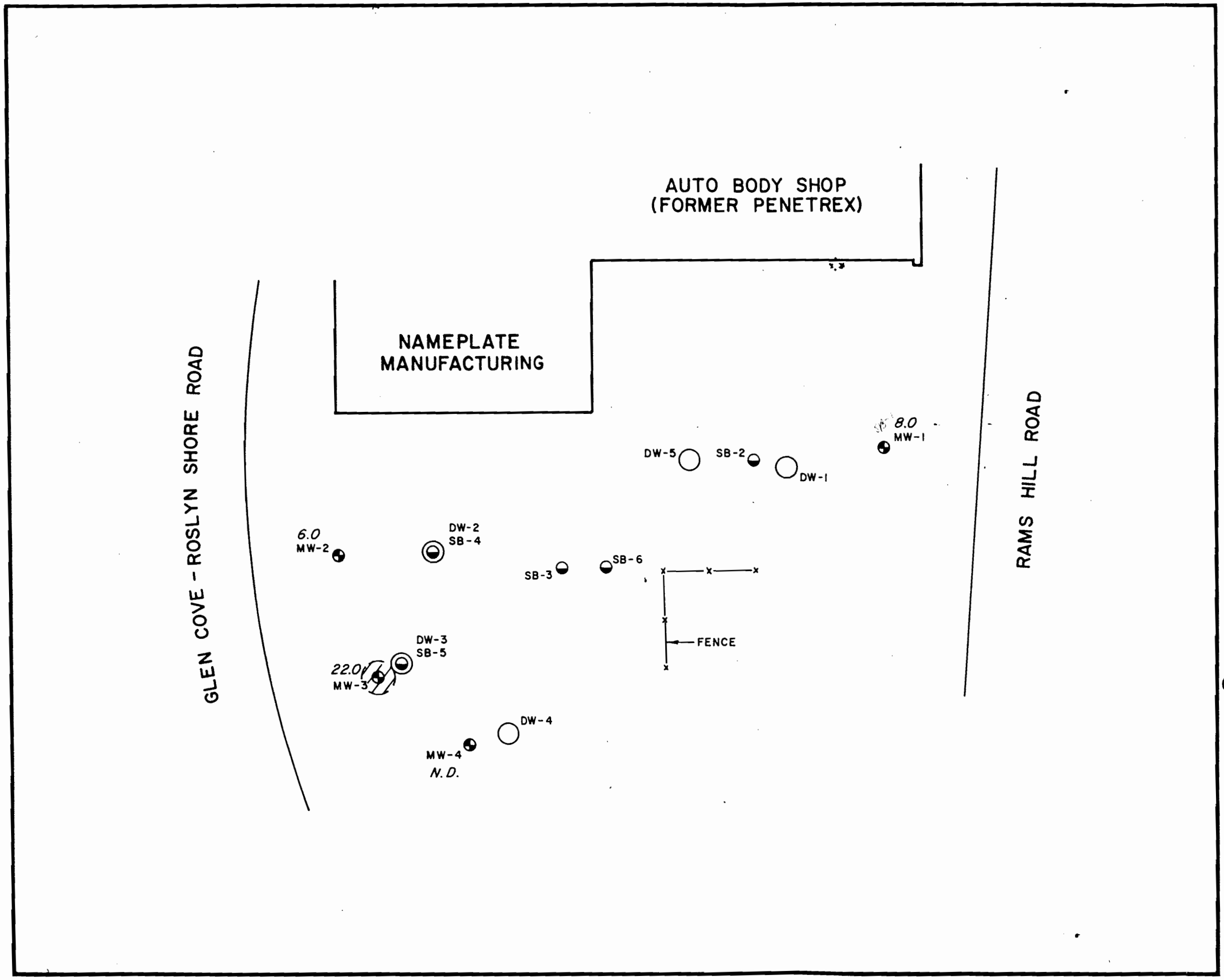
K & W ASSOCIATES
GLENWOOD LANDING, NEW YORK

CONCENTRATIONS OF 1,2 DICHLOROETHENE (TOTAL) IN GROUND-WATER (p.p.b.) MAY 25, 1989

SCALE
30' 0 30'

BLASLAND & BOUCK ENGINEERS, P.C.
ENGINEERS & GEOSCIENTISTS

FIGURE 7



LEGEND

- DRY WELL
- SOIL BORING
- MONITORING WELL
- ⊥ 10.0 p.p.b.

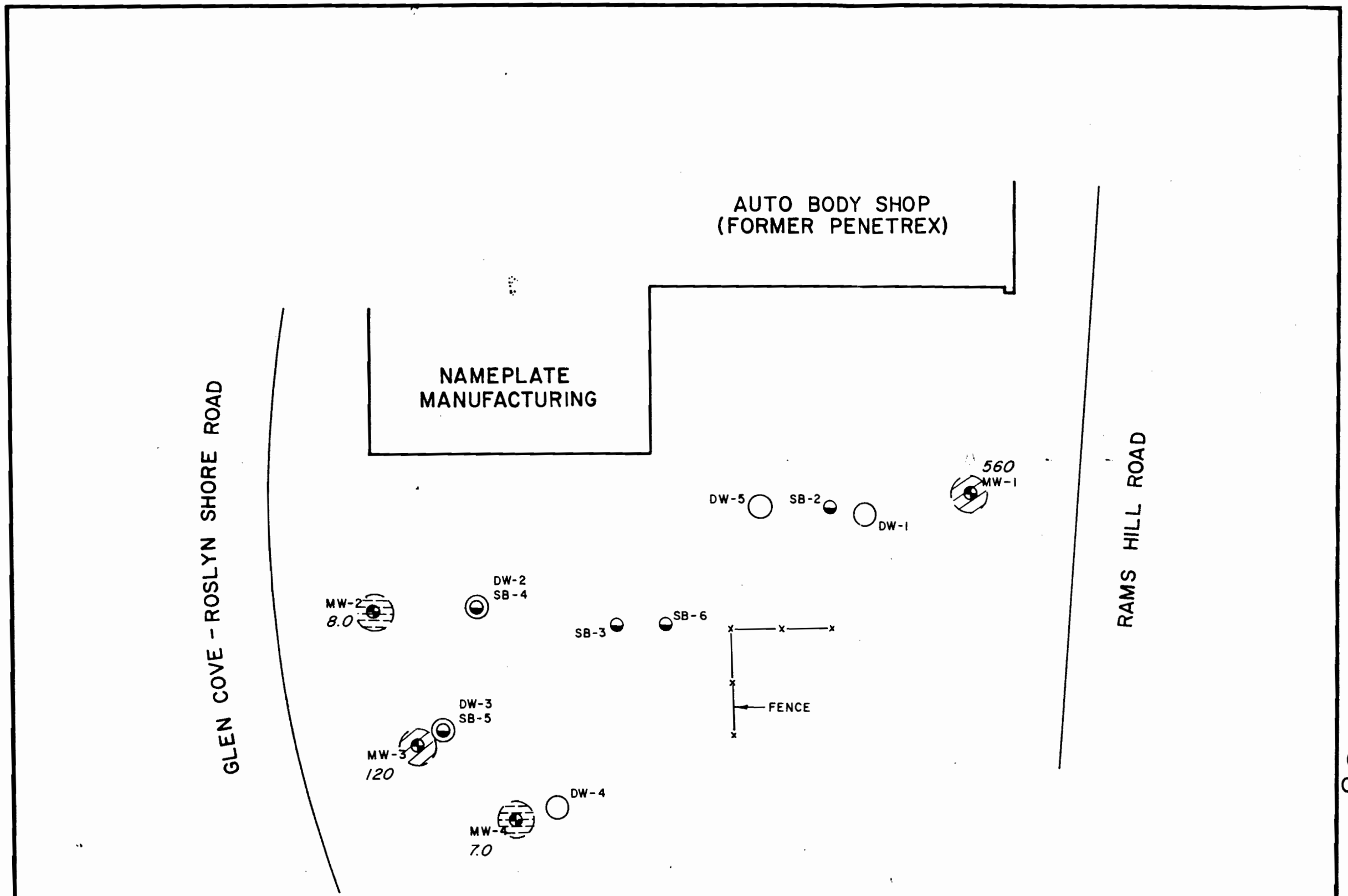
K & W ASSOCIATES
GLENWOOD LANDING, NEW YORK

CONCENTRATIONS OF TRICHLORO-ETHENE IN GROUND-WATER (p.p.b.)
MAY 25, 1989

SCALE
30' 0 30'

BLASLAND & BOUCK ENGINEERS, P.C.
ENGINEERS & GEOSCIENTISTS

FIGURE 8



LEGEND

- DRY WELL
- SOIL BORING
- MONITORING WELL
- ⊿100 p.p.b.
- 1.0 - 10.0 p.p.b.

K & W ASSOCIATES
GLENWOOD LANDING, NEW YORK

CONCENTRATIONS OF TETRACHLOR-OETHENE IN GROUND-WATER (p.p.b.)
MAY 25, 1989

SCALE
30' 0 30'

BLASLAND & BOUCK ENGINEERS, P.C
ENGINEERS & GEOSCIENTISTS

Attachments

ATTACHMENT A

ERM - NORTHEAST PHASE II WORK PLAN

ERM-Northeast

PHASE II WORK PLAN
PENETREX SITE
GLENWOOD LANDING, NEW YORK

REVISED OCTOBER 1988

PREPARED FOR:

SHEA & GOULD
1251 6TH AVENUE
NEW YORK, NY 10020-1193

PREPARED BY:

ERM-NORTHEAST, INC.
88 SUNNYSIDE BOULEVARD
PLAINVIEW, NEW YORK 11803

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LIST OF APPENDICES

1.0 INTRODUCTION

ERM-Northeast has been retained by Shea and Gould, on behalf of its client K & W Associates to prepare a revised Phase II Work Plan for submission to the New York State Department of Environmental Conservation (NYSDEC) regarding the Penetrex Site, Glenwood Landing, New York. An initial work plan was previously submitted to NYSDEC for its consideration. The contents of this submission reflect NYSDEC comments that were mutually agreed upon by ERM, Shea and Gould and NYSDEC representatives at a meeting on November 10, 1987. Further clarification of the agreed scope of work was made during a site reconnaissance by ERM and NYSDEC representatives on March 30, 1988. Final revisions respond to NYSDEC comments in their letter of September 30, 1988.

The organization of this work plan is as follows:

SECTION 2.0 - WORK PLAN OBJECTIVES

SECTION 3.0 - REVIEW OF HISTORICAL DATA

SECTION 4.0 - FIELD INVESTIGATION PLAN

- Task 1: Background Air Monitoring
- Task 2: Soil Quality Investigation
- Task 3: Installation and Sampling of Monitoring Wells
- Task 4: Surface Water Investigation

Task 5: Evaluation of Data and HRS Scoring

Task 6: Report Preparation

SECTION 5.0 - SCHEDULE

APPENDICES - A: SAMPLING PROCEDURES

B: HEALTH AND SAFETY PLAN

2.0 WORK PLAN OBJECTIVES

The primary objective of this Phase II Work Plan is to collect environmental sampling data so that a final HRS score can be prepared and the Penetrex site can be properly classified. Based on prior site operating practices and the existing analytical data base, the work plan will primarily address the presence and severity of soil and ground water contamination that may exist at the site.

Data quality objectives are selected primarily to facilitate HRS scoring, and to provide rigorous data for NYSDEC and Health Department review. Therefore, analytical methodologies and data reporting will conform to CLP practices and deliverables.

The new analytical results will be evaluated by comparison to appropriate established guidelines. The NYSDEC Ambient Water Quality Standards and Guidance Values (updated 4/1/87) will be utilized for ground water data, and New Jersey ECRA Guidelines for soil. These guidelines shall represent conservative, contaminant-specific "levels of concern" and will be used as comparison benchmarks to indicate the possible need for further study. They are not intended to be utilized as action or cleanup levels.

3.0 REVIEW OF HISTORICAL DATA

The Penetrex Processing Company leased the eastern portion of a two-story brick building located at One Shore Road in Glenwood Landing, New York from K & W Associates. The western half of the building was reportedly occupied by Nameplate Manufacturing of America Company. Penetrex operated at the site until August, 1984. The site was reportedly used for dry cleaning operations including the use of standard dry cleaning solvents. These solvents include tetrachloroethylene and trichloroethylene.

It was alleged that Penetrex personnel disposed of solvents into a dry well prior to August, 1984.

On July 16, 1985 K & W Associates conducted cleanup operations at the site in accordance with a NYSDEC approved work plan. The cleanup included the removal of 2,300 gallons of liquid from a dry well, the excavation of 13 cubic yards of soil from the bottom of the dry well and the removal of six drums. Samples collected from the soils in the bottom of the dry well with analysis by the Nassau County Department of Health found the following compounds: tetrachloroethylene; trichloro-fluoromethane; trichloroethylene; 1,2 dichloroethylene; 1,1,1 trichloroethane and toluene.

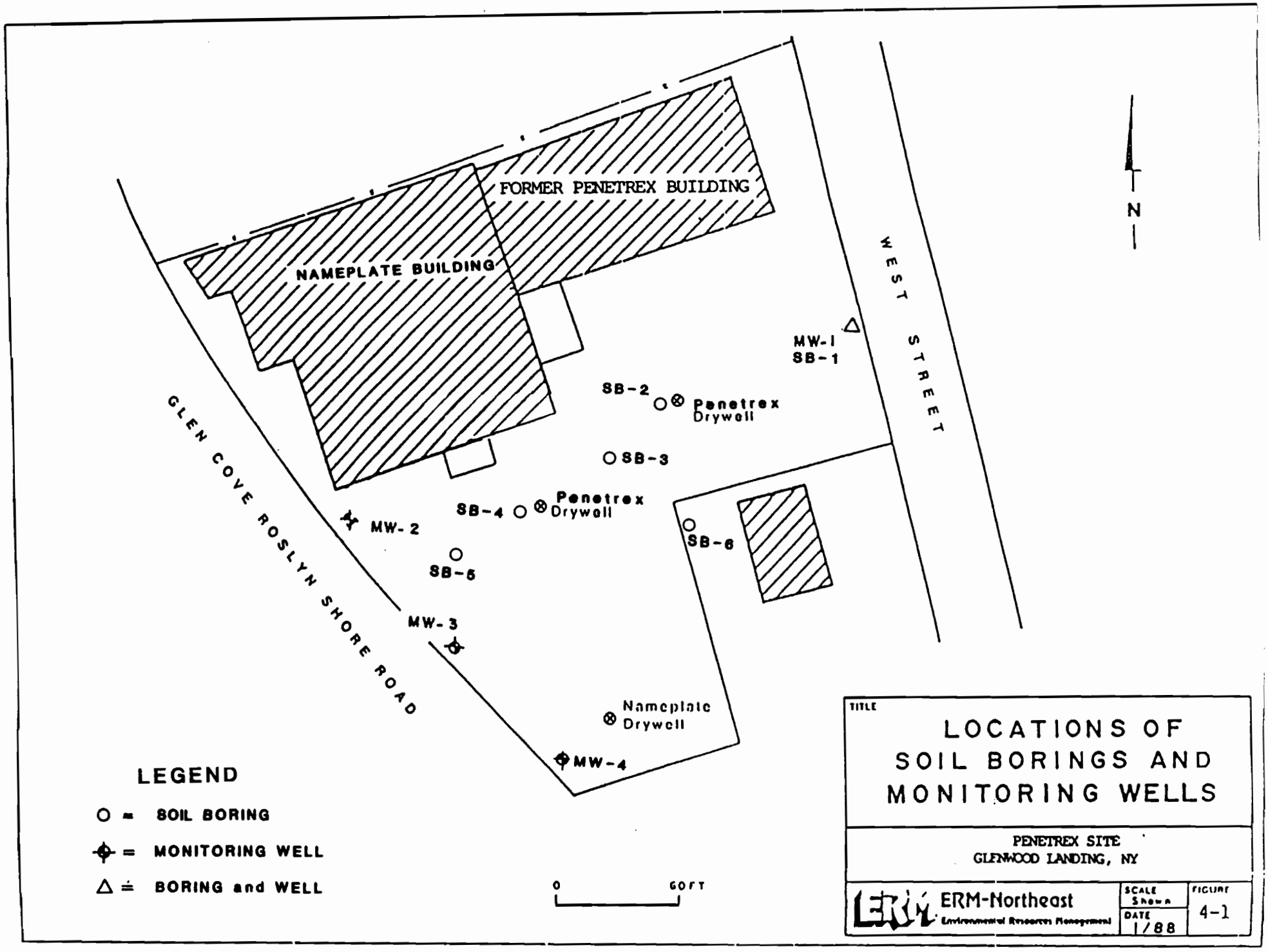
4.0 FIELD INVESTIGATION PLAN

Task 1: Background Air Monitoring

In order to properly compile the HRS score, a background air monitoring program will be required. Because the principal suspected contamination sources at this site are subsurface discharges, air is not an environmental media of concern. However, in order to verify this, a site walk-through will be performed using an organic vapor analyzer (OVA - Foxboro Model 128) to monitor air quality on the property.

Task 2: Soil Quality Investigation

The purpose of the soil quality investigation is to determine the severity of soil contamination (if any) at the site. The installation of test borings with in-field OVA screening and sensory inspection of soil samples, coupled with laboratory analysis of selected samples will be the method used to determine the extent of any contaminated soil. A total of six soil borings (SB-1 through SB-6) will be installed as shown in Figure 4-1. The principal suspected contaminant sources that will be investigated include the two dry wells also shown on Figure 4-1.


FORMER PENETREX BUILDING
NAMEPLATE BUILDING
WEST STREET
GLEN COVE ROSLYN SHORE ROAD
N
MW-1
SB-1
SB-2
Penetrex
Drywell
SB-3
SB-4
Penetrex
Drywell
MW-2
SB-6
SB-5
MW-3
Nameplate
Drywell
MW-4
LEGEND
O = SOIL BORING
⊕ = MONITORING WELL
△ = BORING and WELL
0
60FT
TITLE
LOCATIONS OF
SOIL BORINGS AND
MONITORING WELLS
PENETREX SITE
GLENWOOD LANDING, NY
ERM-Northeast
Environmental Resources Management
SCALE
Shown
DATE
1/88
FIGURE
4-1

A truck-mounted hollow stem auger rig will be used to install the borings under the supervision of an ERM hydrogeologist. A split-spoon core barrel sampler will be used to collect continuous sediment samples to 10 feet below the bottom of the dry wells, or to appropriate depths as determined in the field by the hydrogeologist. The only exception to this shall be boring SB-6 which will consist of a 2-3 foot deep hand augered hole. All samples will be screened in the field for the presence of volatile organic compounds using a flame ionization detector (Foxboro Model 128). Screening methods are described in Appendix A. A minimum of five samples will be selected for laboratory analysis. The selection process will be based on the OVA readings and by visual examination of the samples. Those selected for laboratory analysis will be agreed upon in the field by the NYSDEC and ERM representatives. Laboratory analytical parameters will include: Volatile Organic Compounds (+15), eight RCRA metals and Total Petroleum Hydrocarbons. Samples obtained for volatile organics analysis will be taken at a minimum depth of 24". A summary of analytical methodologies is presented as Table 4-1. The method detection limits associated with these methodologies are listed along with the contaminant-specific "levels of concern" in Table 4-2.

TABLE 4-1

METHODS OF SAMPLE ANALYSIS
PENETREX PHASE II INVESTIGATION
GLENWOOD LANDING, NY

Analyte	Method Reference	Holding Time
VOCs	EPA SW846, Method 8240	7 days
Total Pet. Hydrocarbons	NYSDEC Method 310	Extract: 7 days Analyze: 70 days
Arsenic	EPA SW846, Method 7061	6 mos.
Barium	EPA SW846, Method 6017	6 mos.
Cadmium	EPA SW846, Method 7130	6 mos.
Chromium	EPA SW846, Method 6010 or 7190	6 mos.
Lead	EPA SW846, Method 7421	6 mos.
Mercury (water)	EPA SW846, Method 7470	28 days
Mercury (soil)	EPA SW846, Method 7471	28 days
Selenium	EPA SW846, Method 7741	6 mos.
Silver	EPA SW846, Method 6010 or 7760	6 mos.

TABLE 4-2

LISTING OF METHOD DETECTION LIMITS AND LEVELS OF CONCERN
PENETREX PHASE II INVESTIGATION
GLENWOOD LANDING, NY

Analyte	Method Detection Limit[1] Soil	Water	Level of Concern[1] Soil	Water
Chloromethane	5	5	*	--
Bromomethane	5	5	*	--
Vinyl Chloride	5	5	*	5
Chloroethane	5	5	*	--
Methylene Chloride	5	5	*	50
Acetone	5	5	*	--
Carbon Disulfide	5	5	*	--
1,1-Dichloroethene	5	5	*	--
1,1-Dichloroethane	5	5	*	50
T-1,2-Dichloroethene	5	5	*	50
Chloroform	5	5	*	100
1,2-Dichloroethane	5	5	*	0.8
2-Butanone	5	5	*	--
1,1,1-Trichloroethane	5	5	*	50
Carbon Tetrachloride	5	5	*	5
Vinyl Acetate	5	5	*	--
Bromodichloromethane	5	5	*	50
1,2-Dichloropropane	5	5	*	50
T-1,2-Dichloropropene	5	5	*	--
Trichloroethene	5	5	*	10
Dibromochloromethane	5	5	*	50
1,1,2-Trichloromethane	5	5	*	--
Benzene	5	5	*	ND
C-1,3-Dichloropropene	5	5	*	--
2-Chloroethyl-vinylether	5	5	*	--
Bromoform	5	5	*	50
4-Methyl-2-Pentanone	5	5	*	--
2-Hexanone	5	5	*	50
Tetrachloroethene	5	5	*	0.7
1,1,2,2-Tetrachloroethane	5	5	*	0.2
Toluene	5	5	*	50
Chlorobenzene	5	5	*	20
Ethylbenzene	5	5	*	50
Styrene	5	5	*	931
Total Xylenes	5	5	*	50

TABLE 4-2 (CONTINUED)

LISTING OF METHOD DETECTION LIMITS AND LEVELS OF CONCERN
PENETREX PHASE II INVESTIGATION
GLENWOOD LANDING, NY

	Method Detection Limit[1]		Level of Concern[1]	
	Soil	Water	Soil	Water
Arsenic	1000	10	20000	25
Barium	5000	50	400000	1000
Cadmium	500	5	3000	10
Chromium	1000	10	100000	50
Lead	500	5	250000	25
Mercury	80	0.4	1000	2
Selenium	500	2	4000	20
Silver	1000	10	5000	50
Total Petroleum Hydrocarbons	20000	100	100000	1000[2]

NOTES:
(1) units are ug/l for water, ug/kg for soil
(2) TPH aqueous guideline from New Jersey ECRA guidelines
ND = Non detectable
-- = No listing in New York State Ambient Water Quality Guidelines
* = Level of Concern is 1000 ug/kg for sum of these analytes

Detailed sediment collection protocols are given in Appendix A. Since the soil borings will be in paved areas, they will be patched with asphalt or other suitable material upon completion. All cuttings from the soil borings program will be drummed and stored on-site pending determination of proper disposal methods based on composite sample results.

The determination of whether soil has been impacted or not will be based on the in-field OVA results plus the laboratory analyses. EnviroTest Labs of Newburgh, NY, an NYSDEC certified lab, will be used to perform the soil analyses and ground water analyses during this project. Soil sampling, equipment decontamination, sample handling and documentation procedures are discussed in Appendix A. Additionally, the collection of quality assurance samples is described in Appendix A.

During the implementation of the soil boring program and all other field work at the Penetrex site, ERM personnel and their subcontractors will follow the Health and Safety Plan outlined in Appendix B.

Task 3: Installation and Sampling of Monitoring Wells

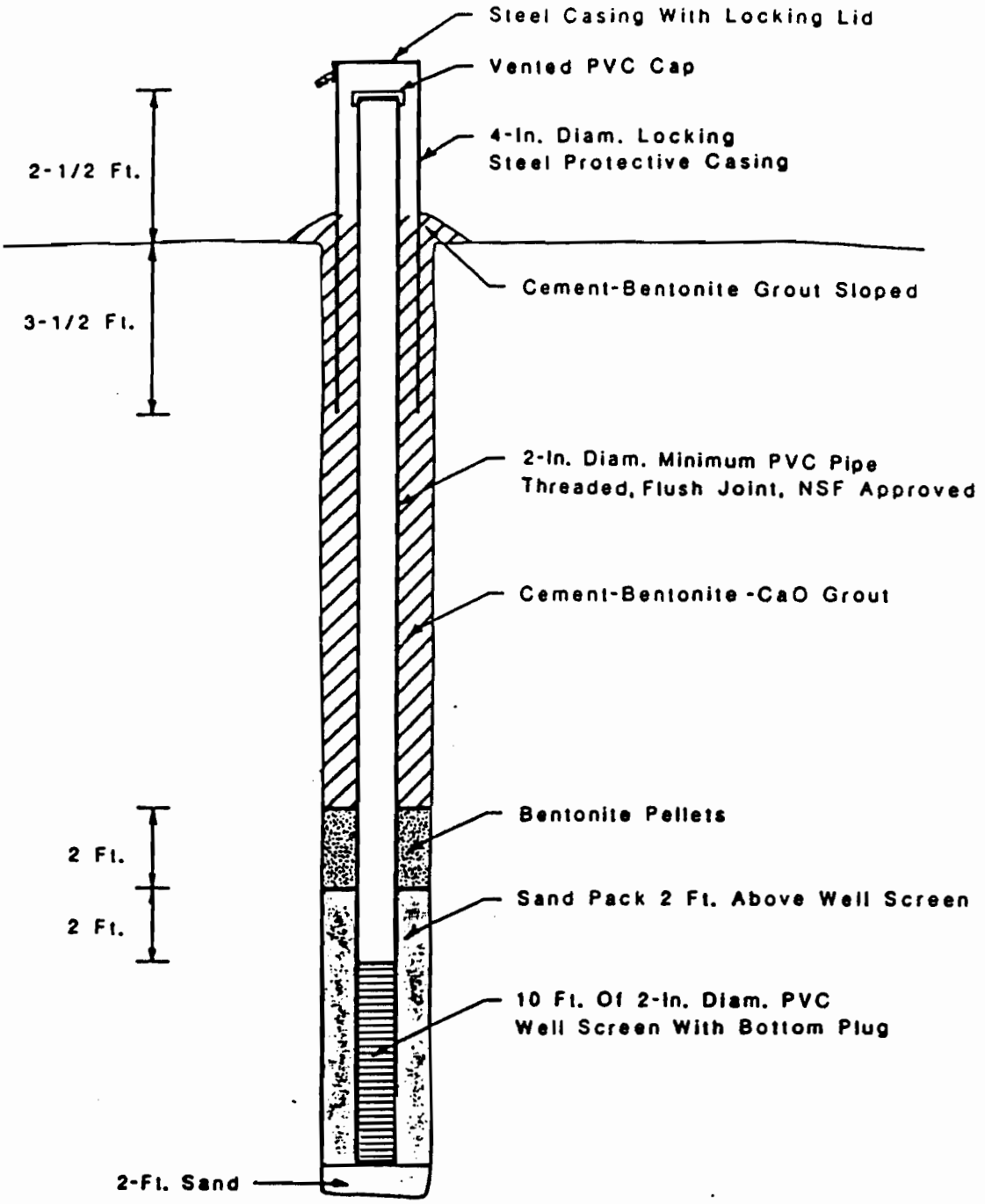
Four monitoring wells will be installed at the site to determine the quality of ground water both upgradient and downgradient of the suspected source areas. The locations of the proposed wells are shown on Figure 4-1. The locations are based on an estimated direction of flow to the west.

The monitoring wells will be installed and constructed in accordance with NYSDEC specifications using the hollow stem auger drilling technique. Split spoon samples will be taken at five foot intervals (except on well/boring MW-1/SB-1, in which at least the uppermost ten feet will be sampled continuously). Upon completion of the borehole, a 4-inch diameter, SCH 40, PVC, screw coupled screen and riser pipe will be installed. The wells will consist of ten-foot lengths of well screen that are set in the upper ten feet of saturated deposits. The screen slot size will be selected in the field based upon the character of the uppermost saturated materials underlying the site. The annular space from the base of the well screen to two feet above the top of the well screen will be gravel packed with a No. 2 Morie sand. A two foot bentonite seal will be installed on top of the gravel pack followed by a cement/bentonite grout mixture which will extend to within 2 foot of grade. The well will be finished at

grade inside a locking flush mounted steel protective casing cemented in place so that drainage is away from the well. A schematic of these design specifications is given as Figure 4-2. All drill cuttings produced will be drummed for appropriate disposal based on composite soil sample results.

The wells will be developed by pumping and surging with a submersible pump. The waters will be pumped into a clean 55 gallon drum(s), allowed to settle, and then be pumped back into the well as surge water. Development will proceed until the pumped water reaches a turbidity of 50 ntu's or less. This will be determined in the field by the use of a portable nephelometer. Any excess water produced from well development will be drummed and stored on site. Based on the results of the water quality analysis, the drummed waters will be disposed of accordingly.

Following installation and development, the wells will be surveyed by a licensed surveyor with vertical elevation established to within 0.01 foot relative to mean sea level and 0.1 foot horizontal control. Water level measurements will be used to establish the ground water gradient and verify the direction of flow across the site. Falling head permeability tests will be conducted. The empirically determined permeability values will be used to estimate the rate of flow across the site.



TITLE

NEW YORK STATE MONITORING WELL SPECIFICATIONS

PREPARED FOR

Shea and Gould

Penetrex Phase II Study	SCALE None	FIGURE 4-2
	DATE 10/86	

The four monitoring wells will be sampled a minimum of one week after development is complete. The samples will be analyzed for Volatile Organic Compounds (+15), Total RCRA Metals (unfiltered) and Total Petroleum Hydrocarbons. Analytical methodologies are summarized in Table 4-1. An outline of the entire sampling plan (soil + ground water) is given as Table 4-3. A detailed description of the ground water sampling procedures, sample handling procedures, quality assurance samples and QA/QC plan are described in Appendix A.

Task 4: Surface Water Investigation

No surface water exists at the site. However, due to the proximity of the property to Hempstead Harbor, the site's drainage system will be inventoried. This will involve obtaining plans of the drainage system from the Town of North Hempstead (or other appropriate sources) and determining where the site's drainage is discharging.

Task 5: Evaluation of Collected Data and HRS Scoring

All collected field data will be reviewed and evaluated to determine the extent and severity of soil and ground water

TABLE 4-3

SUMMARY OF SAMPLING PROGRAM
PENETREX PHASE II INVESTIGATION
GLENWOOD LANDING, NY

Sample Location	Matrix	Probable # of Samples	Analytes
SB-1	Soil	1	TPH, VO+15, RCRA Metals
SB-2	Soil	1	TPH, VO+15, RCRA Metals
SB-3	Soil	1	TPH, VO+15, RCRA Metals
SB-4	Soil	1	TPH, VO+15, RCRA Metals
SB-5	Soil	1	TPH, VO+15, RCRA Metals
SB-6	Soil	1	TPH, VO+15, RCRA Metals
MW-1	Groundwater	1	TPH, VO+15, RCRA Metals
MW-2	Groundwater	1	TPH, VO+15, RCRA Metals
MW-3	Groundwater	1	TPH, VO+15, RCRA Metals
MW-4	Groundwater	1	TPH, VO+15, RCRA Metals
QA/QC Samples:	Soil -	1 Trip Blank 1 Field Blank 1 Duplicate	
	Groundwater -	1 Trip Blank 1 Field Blank 1 Duplicate	

contamination, if present. Specific outputs from this task are expected to include:

- o three dimensional delineation of soil quality conditions;
- o estimated volume of contaminated soil, if any;
- o preliminary estimate of ground water flow direction and rate;
- o determination of ground water quality flowing off of the site;
- o identification of contaminant sources, if present.

Environmental sampling results will also be used to complete the HRS scoring sheets for the Penetrex site. The final HRS score for the site will be calculated to permit proper site classification.

Task 6: Report Preparation

ERM will prepare a technical report documenting all field procedures and analytical results. Laboratory data will be reported according to CLP deliverables. ERM will present its conclusions relative to the extent of any existing contamination, HRS scoring, and the need for additional investigation.

5.0 SCHEDULE

ERM can initiate field work approximately 10 to 15 days after the receipt of NYSDEC approval for the Phase II investigation. NYSDEC representatives will be notified a minimum of two weeks prior to initiation of field work. ERM anticipates that soil borings and wells can be installed within one week. Assuming a three week laboratory turnaround, a final report will be ready for submittal to NYSDEC approximately 120 days following Department approval.

APPENDIX A

SAMPLING METHODOLOGY

The soil and ground water sampling techniques are discussed below. Ground water sampling will be conducted as per USEPA SW-611, "Procedures Manual for Ground Water Monitoring at Solid Waste Disposal Facilities". Soil sampling procedures will conform to the specifications of USEPA SW-846 "Test Methods for Evaluating Solid Waste" (3rd Edition). Samples will be prepared, preserved and stored as specified in the USEPA "Guidelines Establishing Test Procedures for the Analysis of Pollutants" (40 CFR Part 136).

All efforts will be made to eliminate sample cross-contamination and maximize the reliability of the analytical results. These efforts include proper cleaning and use of sampling equipment and sample containers to eliminate sample contamination, use of a quality assurance program to maximize accuracy and precision of the analytical results, proper installation of ground water monitoring wells, and development of a methodology to track the samples from source to analysis and minimize the opportunity for tampering. A sample chain-of-custody form is provided as Figure A-1.

ERM-Northeast
Environmental Resources Management

Chain Of Custody Record

○ 88 Sunnyside Boulevard · Plainview · New York 11803 ☎ (516) 349-0050
○ 283 Franklin Street · Boston · Massachusetts 02110 ☎ (617) 542-7839

Project No. / I.D. _____ Sheet No. _____

Sampler(s) _____ Bottles Supplied By _____

Date Sampled _____ Bottle Batch No. _____

Sample I.D.	Sample Description	Sample Type	Sampling Method	Time	No. Of Containers	Analysis Requested	Remarks

Relinquished By (Signature)	Received By (Signature)	Date/Time	Reason for Transfer

Copies: White - Sampler; Yellow - Lab

FIGURE A-1

Sample Chain of Custody Form

A.1 Soil Sampling Procedures and Equipment

Sample containers will be provided by the contracted NYSDEC-Certified Laboratory. The containers, as provided, will have been cleaned using standard, in-house procedures prior to shipment. Soil samples will be collected using either a stainless steel hand auger/trowel or split spoon sampler. All soil sampling equipment will be cleaned using the following decontamination procedure:

1. Non-phosphate detergent and tap water wash.
2. Tap water rinse.
3. Distilled/Deionized water rinse.
4. 10% acidic solution rinse.*

   * Only if sample is to be analyzed for metals.
5. Distilled/Deionized water rinse.
6. Acetone (pesticide grade) rinse.
7. Total air dry or nitrogen blow out.
8. Distilled/Deionized water rinse.

Downhole drilling tools will be steam cleaned before use at each boring/well. Sampling equipment decontamination and steam cleaning operations will be conducted in a staging area located in the southern portion of the site (see Figure 4-1). This area

is downslope from most of the sampling locations. Spent solvents from decontamination of the sampling gear will be contained in a 5-gallon plastic bucket. These solvents will subsequently be transferred to a 55-gallon drum along with all cleaning and rinse water from this process. Steam cleaning operations will be conducted over an impermeable containment structure. These fluids will also be transferred to 55-gallon drums.

A.2 OVA Screening Procedures

In order to determine which soil samples will be sent to the laboratory for VOC analysis, a Foxboro Model 128 Organic Vapor Analyzer (OVA) will be used. All soil samples collected during the investigation will be field screened using the following procedures:

1. The split spoon sampler or hand auger will be removed from the boring and the contents immediately placed into the laboratory-supplied containers, plus an additional clean glass jar.

2. This jar will be covered by aluminum foil with a screw-on cap placed tightly over the foil.

3. These jars will subsequently be placed in a bath of boiling water for a period of five minutes.

4. Upon removal from the bath, the cap will be removed and the foil pierced by the OVA probe. The concentration of organic vapor in the head space will then be recorded.

A.3 Ground Water Sampling

Ground water will be sampled using a dedicated, bottom-loading, PVC bailers after the monitoring wells have been installed, developed by pumping, and allowed to equilibrate to in-situ aquifer conditions. This requires a minimum period of seven days between development and sampling.

Three to five well volumes of water will be removed by bailer or submersible pump prior to sampling. Specific conductivity, pH and temperature will be monitored during the well evacuation. If a bailer is used for purging, one will be dedicated to each well, and used for both purging and sampling.

If used, purge pumps will be cleaned prior to use and between wells. Cleaning will be conducted as described in A.1.

A.4 Quality Assurance Samples

A quality assurance program has been developed to ensure precision and accuracy of the analytical results. The NYSDEC Certified Laboratory maintains its own quality assurance program based on replicate analysis, spiked samples, blank analysis and daily instrument calibration. The laboratory quality assurance program is available for inspection.

Duplicate and blank samples will be analyzed by the laboratory to serve as a check on the laboratory and on field sampling techniques. These samples will be coded similarly to the other samples to minimize the chance the laboratory will identify them. The additional samples will consist of a duplicate sample of both soil, ground water for each analysis, travel blanks and field blanks.

A duplicate sample for each media and for each parameter submitted for analysis daily will be included for quality assurance. If greater than 20 samples are submitted for analyses in any one day, an additional travel blank and duplicate will be included for every additional group of 20 samples. A travel blank will be included in the shipments and analyzed for volatile organic compounds. The travel blanks will be prepared

by the laboratory by filling the sample container with distilled water. Field blanks for the appropriate medium will be collected daily. The blanks will be made by collecting deionized water poured over decontaminated sampling equipment. The field blanks will be analyzed for all of the parameters to be run that day.

All samples will be analyzed by:

EnviroTest Laboratories, Inc.
315 Fullerton Avenue
Newburgh, New York 12550
(914) 562-0890

A.5 Documentation Procedures

All samples--soil, water and quality assurance--will be sent to the analytical laboratory from the site under rigid controls to minimize the opportunity for tampering and to maximize their tractability. Information about each sample will be recorded in a field notebook and on the sample container.

The information to be recorded for each sample is as follows:

- Sample Source
- Sample Location (*)

- Sampler's Identity
- Time and Date of Sampling
- Depth of Sample (soil samples) (*)
- Preservative
- Analysis to be Performed

* May be coded with information recorded in field notebook to minimize bias in analysis.

The laboratory will assign a sample number upon receipt and will report the analytical results using both their number and the sample code provided on the sample.

The same information will be recorded on a chain-of-custody form. The form will be used to record the names of all personnel handling the sample and their affiliation. A chain-of-custody form will accompany each container of samples sent to the laboratory. All personnel responsible for sampling, receiving and analyzing the samples will sign the form. Where practical, the samples will be kept within a secure area such as a locked vehicle, room or refrigerator. When transportation of the samples is by overnight carrier, the samples will be shipped in an ice chest sealed with "evidence" tape. The tape will be such that it cannot be removed in one piece.

A.6 Site Specific QA/QC Plan

A site specific quality assurance/quality control program is described below. As mentioned above, duplicate and blank samples will be submitted to the laboratory for analysis. In addition, specific actions in the field will be undertaken to maximize the quality of the data from this sampling plan.

The drilling contractor shall conduct all work under the guidance of a certified driller. All subsurface work performed by the contractor shall be observed by an on-site hydrogeologist or engineer representing the owner. Work will start after adequate notification to the NYSDEC (maximum of one week) to allow for an on-site representative to oversee the sampling and monitoring well installation.

The subsurface work will be performed in a manner so as to give the on-site overseer(s) every opportunity to obtain adequate samples, accurate depth measurements, and develop a stratigraphy record.

The owner's on-site observer shall be a degreed hydrogeologist, geologist or equivalent, or an engineer registered in the State of New York. The observer will be

qualified in environmental studies. The observer's duties are outlined below:

- Ensure soil samples are representative of the actual conditions in the field. All split-spoon samples will be inspected in the field to evaluate subsurface stratigraphy. A discrete sample from the sampler will be collected by removing a 6-inch long sample at the top and one at the bottom of the sampler.

- The location of each sample will be noted in the field log book. The location will be in reference to some fixed location, grid system or other control mechanism. A photograph may be taken of a sampling site if required to clarify the sample location or soil type.

To ensure that representative ground water samples are obtained, the following procedures will be implemented:

- Monitoring wells will not be sampled for a minimum of one week following installation.

- Each monitoring well will be purged prior to sampling by removing a minimum of three to five well volumes.

Any device put down the well to extract water will either be dedicated to that well or will be thoroughly cleaned between wells to avoid cross contamination.

- Sample collection will be performed with one PVC bailer dedicated to each well.

In addition, the chain-of-custody form, described above, will accompany all samples to the laboratory. Also, the depth to ground water will be measured prior to sampling. A measuring point on all monitoring wells will be surveyed by a New York registered land surveyor to the nearest 0.01 foot to an on-site datum point. Using this measuring point and the depth to water, the ground water elevation will be monitored in the monitoring wells and surface water locations prior to sampling.

APPENDIX B

HEALTH AND SAFETY

General

ERM-Northeast maintains a Health and Safety Program that consists of three integral parts: (1) a Health and Safety Manual, (2) medical monitoring and (3) OSHA required training. All ERM employees involved in field investigations participate in the Program as a condition of employment. The details of the medical monitoring program and the personnel training program are presented in the firm's Health and Safety Manual along with many standard operational and emergency procedures. This manual is available upon request.

ERM does not assume responsibility for the training or medical monitoring of any subcontract personnel. This is considered to be the responsibility of the subcontractor.

Site-Specific

The ERM Site Safety Officer will be responsible for the field implementation, evaluation, and any necessary field modification of the Health and Safety Plan. The Safety Officer,

has the authority to suspend site operations due to any ineffectiveness of this Health and Safety Plan. Mr. Michael Teetsel shall be the ERM field representative and will act as Site Operations Manager and Site Safety Officer.

Based on the analytical data collected during previous remedial action at the Penetrex site, it assumed that Level D protection will be appropriate for all field activities. During the soil and ground water sampling phases of the investigation, air quality in the work space will be monitored using the OVA. An action level of 25 parts per million has been established to upgrade the level of protection. This is based on the lowest ACGIH Threshold Limit Value for the Volatile Organic Compounds identified during the previous remedial activities, minus a safety factor of 50 percent. (See Section 3.0 - Review of Historical Data for list of identified compounds.) OVA readings of 25 ppm or greater will trigger an upgrade to Level C. Because several of the identified compounds are NIOSH designated carcinogens, repeated or prolonged readings of 25 ppm or greater will require an upgrade to Level B or the suspension of site activities.

Attached is a form sheet that presents the details of all pertinent elements of the Site Health and Safety Plan.

FORM C

SITE SPECIFIC HEALTH AND SAFETY PLAN

This form must be completed a minimum of one (1) week prior to the start of work. It is the responsibility of the Project Manager to complete Items 1 through 10 and 14 and 15. All project personnel must receive a copy of this form and familiarize themselves with its contents.

1. Site name: Penetrex, Glenwood Landing, NY
2. Work Order No.: 272-01
3. Location (attach site map): See Figure 4-1
4. Project Manager: Craig Werle
5. Project Engineer(s)/Scientist(s): Mike Teelsel
6. Period over which work is to be conducted: 1 week period
7. Site description (include pertinent features on site map): 2 story warehouse-type bldg + parking lot; see Figure 4-1
8. List of known contaminants (include locations and concentrations on site map):

Constituents	Location	Media	Concentration/ Volume	Depth
See Section 3.0 Review of Historical Data	Dry wells in parking lot	soil	unknown, most contaminated soil allegedly removed	~10'

9. Planned site activities (be specific; include on site map and identify personnel per task): soil borings + well installation See Figure 4-1.
10. Plant required health and safety procedures (i.e., hard hats, long-sleeved shirts, eyewear, etc...):

None.

ATTACHMENT B

PROTOCOL FOR FIELD SCREENING OF SOIL SAMPLES FOR VOLATILE ORGANIC COMPOUNDS

PROTOCOL FOR VOLATILE ORGANIC SCREENING OF SOIL SAMPLES

A) Immediately place soil sample into a glass jar to avoid the potential escape of VOCs from the sample. To maintain a sufficient headspace the jar is only filled half-way.

B) Place an aluminum foil seal between the glass and metal lid and screw tight.

C) Jars will be labeled with the location number, depth of sample and date of collection. In addition, the hydrogeologist will ensure that:

* samples are taken at the appropriate depth
* unrepresentative portions of the sample are discarded properly
* that the sampler is decontaminated properly between use
* the driller or backhoe operator uses proper methods during sample collection and does not use oil or grease on tools entering the borehole or test pit.

D) Log the sample in detail and record sediment characteristics (color, odor, moisture, texture, density, consistency, layering).

E) Heat samples in a controlled environment (sterno, hot plate, hot water bath, etc.) for a period of one minute.

F) Remove sample from heat source and potential sources of interference (ie. Drilling exhaust, sterno fumes, etc.).

G) Pierce the aluminum foil with the extension probe of the portable photoionization meter and record results in field notebook.

ATTACHMENT C

GEOLOGIC LOGS

BLASLAND & BOUCK ENGINEERS, P.C.

SUBSURFACE LOG

PROJECT : Penetrex, Glenwood Landing, NY

PROJECT NO : 412.01

LOCATION

DATE 5-8-89

BORING No. SB-1/MW-1

RECORD BY J. Patrick Byrnes

DRILL TYPE Hollow Stem Auger

WEATHER Cloudy; 45°F

SAMPLE No.	TIME	DEPTH From	DEPTH To	RECOV.	No. OF BLOWS / N		SOIL DESCRIPTION AND BORING LOG	HNU
	14:37	0	0.5				Asphalt & fill.	
1		0.5	2	1.4'	9,7 11 / 6"		Brown & Light brown fine to coarse sand; little gravel (Fill).	17.6
2	14:57	2	4	1.2'	10,9 11,7 / 6"	2-2.6	Gray to brown fine sand; some med. to coarse sand & gravel; brick chips (Fill).	200
						2.6-3.2	Orange brown fine sand; little med. to coarse sand; trace gravel; moist; no odor.	
3	15:03	4	6	1.6'	7,9 11,15 / 6"		Same as above.	1.2
4		6	8	2'	8,8 7,9 / 6"		Same as above.	0.4
5	15:19	8	10	0.8'	5,9 12,15		Light brown fine sand; little med. to coarse sand; trace gravel; moist; no odor.	1.2
6	15:23	10	12	1.3'	6,8 12,17 / 6"		Same as above; finer grained.	0.1
7		12	14	1.0'	7,10 10,14 / 6'		Light brown fine sand; some silt; trace coarse sand & gravel.	0
8		14	16	1.2'	7,14,17 21 / 6'		Light brown to Buff fine sand; some silt; trace fine gravel; moist.	0.8

REMARKS

BLASLAND & BOUCK ENGINEERS, P.C.

SUBSURFACE LOG

PROJECT :

PROJECT NO :

LOCATION

DATE

BORING No. SB-1/MW-1

RECORD BY

DRILL TYPE

WEATHER

SAMPLE No.	TIME	DEPTH From	DEPTH To	RECOV.	No. OF BLOWS / N	SOIL DESCRIPTION AND BORING LOG	HNU
9		20	22	1.5'	9,12 / 17,21 / 6"	Light brown fine sand; little silt; trace gravel; WET @ 19-19.5'.	
10	16:00	25	27	2'	7,5 / 9,11 / 6"	Buff well sorted fine sand; trace light orange laminae.	
						BOB - 27'.	

REMARKS

Wiley-Fisk Form 8-10

BLASLAND & BOUCK ENGINEERS, P.C.

SUBSURFACE LOG

SHEET 1 OF 1

PROJECT : Penetrex, Glenwood Landing, NY

PROJECT NO : 412.01

LOCATION

DATE 5-9-89

BORING No. MW-2

RECORD BY J. Patrick Byrnes

DRILL TYPE Hollow Stem Auger

WEATHER Clear, 45°F

SAMPLE No.	TIME	DEPTH From	DEPTH To	RECOV.	No. OF BLOWS / N	SOIL DESCRIPTION AND BORING LOG	HNU
	10:16	0	1			Asphalt (thin layer); broiwn fine to coarse sand & gravel. Boulder @ 1'.	
		1	2			Dark brown fine loamy sand & gravel.	
		2	4			Light brown fine sand; little silt; dry; oyster shells @ 4'.	
		4	6			Orange brown fine sand.	
		6	11			Light brown very fine sand; little silt.	
		11	18			Light brown very fine sand & some silt (silty fine sand); thin layer of silty clayey fine sand @ 15-17"? WET @ 11'. BOB - 18'.	

REMARKS Geology was logged from auger cuttings brought to land surface during drilling.

Wiley-Fisk Form 8-10

BLASLAND & BOUCK ENGINEERS, P.C.

SUBSURFACE LOG

PROJECT : Penetrex, Glenwood Landing, NY

PROJECT NO : 412.01

LOCATION

DATE 5-9-89

BORING No. MW-3

RECORD BY J. Patrick Byrnes

DRILL TYPE Hollow Stem Auger

WEATHER Clear, 45°F

SAMPLE No.	TIME	DEPTH From	DEPTH To	RECOV.	No. OF BLOWS N	SOIL DESCRIPTION AND BORING LOG	HNU
	13:00	0	1'			Thin asphalt layer; dark brown fine loamy soil & gravel.	
		1	6'			Black fine sand; little silt; trace clay; friable; v. moist; slight "asphalt" odor*	
		6	12'			Dark brown fine sand; some coarse sand & gravel; moist; no odor.	
		12	15			Gray to light brown silty fine sand; WET @ 12;.	
		15	20			Same as above, however, about 1 ft thick silty clay to clayey silt layer exists from approximately 15 to 20'.	
						BOB - 20'.	

REMARKS Geology logged from auger cuttings brought to land surface during drilling.

* Black material was screened by HNU & no VOCs were detected.

BLASLAND & BOUCK ENGINEERS, P.C.

SUBSURFACE LOG

PROJECT : Penetrex, Glenwood Landing, NY
PROJECT NO : 412.01

LOCATION

DATE 5-10-89
BORING No. MW-4
RECORD BY J. Patrick Byrnes
DRILL TYPE Hollow Stem Auger
WEATHER Overcast, rain, 45°F

SAMPLE No.	TIME	DEPTH From	DEPTH To	RECOV.	No. OF BLOWS	N	SOIL DESCRIPTION AND BORING LOG	HNU
	7:35	0	2				Thin asphalt layer; dark brown fine sand; some coarse sand & gravel; (fill).	
		2	5				Dark brown fine sand; little silt; coarse sand & gravel.	
1		5	7	1.3'	5,5 7,9	6"	Dark brown fine sand; some silt; trace coarse sand & gravel; friable; roots; moist no odor.	
2		10	12	1.8'	6,7 10,9	6"	10-10.4 - Same as above; trace black color. 10.4-11.8 - Light brown to light orange brown fine to med. sand; trace gravel; WET @ 11-12'; no odor.	
3		15	17	1.4'	6,9 10,12	6"	15-15.4 - Same as above. 15.4-16 - Light orange brown clayey silt; some fine sand. 16-16.4 - Light gray silty fine sand.	
4		18	20	1.4'			18-19 Light gray with seams of orange brown clayey silty fine sand with lenses of gray silty CLAY (1/2-1" in thickness).	

REMARKS

Wiley-Fisk Form 8-10

BLASLAND & BOUCK ENGINEERS, P.C.

SUBSURFACE LOG

PROJECT :

PROJECT NO :

LOCATION

DATE

BORING No. MW-4

RECORD BY

DRILL TYPE

WEATHER

SAMPLE No.	TIME	DEPTH From	DEPTH To	RECOV.	No. OF BLOWS / N		SOIL DESCRIPTION AND BORING LOG	HNU
						19-19	4 - Light gray silty fine sand with orange brown layering.	
							BOB - 20'.	

REMARKS

BLASLAND & BOUCK ENGINEERS, P.C.

SUBSURFACE LOG

SHEET 1 OF 1

PROJECT : Penetrex, Glenwood Landing, NY
PROJECT NO : 412.01

LOCATION

DATE 5-8-89
BORING No. SB-2
RECORD BY J. Patrick Byrnes
DRILL TYPE Hollow Stem Auger
WEATHER Mostly Cloudy, 45°F

SAMPLE No.	TIME	DEPTH From	DEPTH To	RECOV.	No. OF BLOWS / N		SOIL DESCRIPTION AND BORING LOG	HNU
		0	0.5				Asphalt & fill.	
1		0.5	2	0.7'	10,9,11 / 6"	.5-.8 .8-1.2	Dark brown loamy fine soil. Light brown fine sand; no odor.	9.0
2	10:10	2	4	0.8'	11,10 / 9,7 6"		Dark brown fine to med. sand; chips of coal & brick (fill); no odor.	3.0
3	10:20	4	6	1.5'	17,12 / 11,10 6"		Dark brown fine sand; some silt; little coarse sand; v. moist; friable; no odor.	17.2
4		6	8	0.1'	8,10 / 11,7 6"		Rock in spoon top; dark brown loose sand & gravel.	14.0
5	10:40	8	10	1.4'	8,6 / 11,9 6"		Light brown fine sand; little silt; moist (natural material).	0.8
6	10:48	10	12	13.'	7,9 / 11,21 6"		Same as above; no odor.	1.9
7	10:55	12	14	1.3'	8,10 / 12,13 6'		Buff fine sand; well sorted, little silt; moist; no odor.	10.1
8	11:05	14	16	1.2'	10,12 / 8,17 6"		Same as above; trace of dark green streaks.	2.0
9	11:12	16	18	1.5'	12,9 / 10,14 6'		Buff fine sand; little silt; no odor; wet @ 16-16.5'; BOB-18'	4.2

REMARKS

Wiley-Fisk Form 8-10

BLASLAND & BOUCK ENGINEERS, P.C.

SUBSURFACE LOG

SHEET 1 OF 1

PROJECT : Penetrex, Glenwood Landing, NY

PROJECT NO : 412.01

LOCATION

DATE 5-8-89

BORING No. SB-3

RECORD BY J. Patrick Byrnes

DRILL TYPE Holow Stem Auger

WEATHER Mostly cloudy; 45°F

SAMPLE No.	TIME	DEPTH From	DEPTH To	RECOV.	No. OF BLOWS / N		SOIL DESCRIPTION AND BORING LOG	HNU
		0	0.5				Asphalt; brown loamy soil	
1		0.5	2	0.7'	18,17 / 17	6"	.5-1' Brown coarse sand & gravel fill; dry. 1-1.2' Brown fine sand; moist.	17.1
2		2	4	0.9'	19,7 / 9,6	6"	Brown med. to fine sand & gravel; asphalt chips (Fill).	5.0
3	12:08	4	6	2'	4,3 / 5,6	6"	4-5' Brown fine sand; loamy soil; roots. 5-6' Orange brown fine sand; trace coarse sand & fine gravel; friable; moist to dry.	14.9
4		6	8	1.3'	6,10 / 11,13	6"	Same as above.	4.8
5	12:20	8	10	1.2'	8,5 / 7,11	6"	Buff fine sand; well sorted; trace coarse sand.	16.2
							B.O.B. - 10'	

REMARKS

Wiley-Fisk Form 8-10

BLASLAND & BOUCK ENGINEERS, P.C.

SUBSURFACE LOG

SHEET 1 OF 1

PROJECT : Penetrex, Glenwood Landing, NY
PROJECT NO : 412.01

LOCATION

DATE 5-8-89
BORING No. SB-4 (inside Drywell #2)
RECORD BY J. Patrick Byrnes
DRILL TYPE Hollow Stem Auger
WEATHER Cloudy; 45°F

SAMPLE No.	TIME	DEPTH From	DEPTH To	RECOV.	No. OF BLOWS / N		SOIL DESCRIPTION AND BORING LOG	HNU
1	13:35	2	4	1.5'	6,6 / 5,4	6"	2-2.2 Black organic humus material; leaves. 2.2-3.5 Brown fine to med. sand & gravel; trace yellow streaks (Fill).	1.3
2	13:40	4	6	1.2'	5,4 / 3,2	6"	4-5.1 Orange brown fine sand; well sorted; trace gravel "natural" laminations. 5.1-5.2 Buff fine sand.	0.4
3	13:50	6	8	1.3'	10,7 / 7,10	6"	Buff fine sand; well sorted with thin orange brown layering; no odor.	0.4
4	13:55	8	10	1.4'	6,8 / 9,11	6"	8-8.2 Same as above. 8.2-9.4 Buff v. fine sand; little silte; WET & 10'.	0
5	14:05	10	12	1.5'	13,8 / 9,11	6"	Same as above; WET BOB-12'	0

REMARKS

Wiley-Fisk Form 8-10

BLASLAND & BOUCK ENGINEERS, P.C.

SUBSURFACE LOG

SHEET 1 OF 1

PROJECT : Penetrex, Glenwood Landing, NY

PROJECT NO : 412.01

LOCATION

DATE 5-8-89

BORING No. SB-5 (inside Drywell #3)

RECORD BY J. Patrick Byrnes

DRILL TYPE Hand Auger

WEATHER Cloudy, 45°F

SAMPLE No.	TIME	DEPTH From	DEPTH To	RECOV.	No. OF BLOWS / N		SOIL DESCRIPTION AND BORING LOG	HNU
1		0	1'				Dark gray to black silty fine sand, coarse fine sand, coarse sand & gravel; assorted garbage; strong hydrocarbon odor & sheen. BOB - 1'.	

REMARKS

Wiley-Fisk Form 8-10

BLASLAND & BOUCK ENGINEERS, P.C.

SUBSURFACE LOG

SHEET 1 OF 1

PROJECT : Penetrex, Glenwood Landing, NY

PROJECT NO : 412.01

LOCATION

DATE 5-8-89

BORING No. SB-6

RECORD BY J. Patrick Byrnes

DRILL TYPE Hand Auger

WEATHER Cloudy; 45°F

SAMPLE No.	TIME	DEPTH From	DEPTH To	RECOV.	No. OF BLOWS / N	SOIL DESCRIPTION AND BORING LOG	HNU
1	12:50	0	2.2			Brown loamy soil & gravel; roots; clam shells.	220
2	12:55	2.2	2.6			Same as above; some dark gray clayey silt "sludge" material; no odor.	18.8
3	13:00	2.6	3'			Brown loamy fine soil & gravel with less gray staining.	240
4		3	4'			Brown loamy fine sand; little coarse sand & gravel; roots; no gray coloration.	12.6
						BOB - 4'	

REMARKS

Wiley-Fisk Form 8-10

ATTACHMENT D

LABORATORY REPORTS AND CHAIN-OF-CUSTODY FORMS

BLASLAND & BOUCK ENGINEERS, P.C.

CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

FILE NO. 412.01
PROJECT Penetrex, Glenwood Landing, NY
B & B CONTACT J. Byrnes

LABORATORY NEF
ADDRESS Port Washington, NY
CONTACT M. Brenner, J. Goepel

B & B SAMPLE NO.	LABORATORY SAMPLE NO.	SAMPLING DATE	SAMPLING TIME	SAMPLE DEPTH	SAMPLE TYPE	VOA+15	BNA	METALS	PEST/PCB	TPH						NO. OF CONTAINERS	COMMENTS (SPECIAL INSTRUCTIONS, CAUTIONS, ETC.)
SB-1		5-8-89		2-4'	Soil	X		X		X							All samples to be
SB-2		"		4-6'	"	X		X		X							analyzed for
SB-3		"		8-10'	"	X		X		X							VOA + 15, TPH &
SB-4		"		6-8'	"	X		X		X							RCRA Metals
SB-5		"	16:40	0-1'	"	X		X		X							Following CLP
SB-6		"		2.6-3'	"	X		X		X							
SB-7		"	16:00	0-1'	"	X		X		X							
Field Blk #1		"			Water	X		X		X							
Trip Blk #1		"			Water	X											

ANALYSES

I. SAMPLED AND RELINQUISHED BY
SIGN
PRINT James A. Schiltz
FIRM Blasland & Bouck
DATE 5-9-89 TIME 9:56

I. RECEIVED BY
SIGN
PRINT Gene Strem
FIRM NY Test
DATE 5-9-89 TIME 9:56

II. RELINQUISHED BY
SIGN
PRINT Gene Strem
FIRM
DATE 5/9/89 TIME 1206

II. RECEIVED BY
SIGN
PRINT Customer Suppl
FIRM UY Test
DATE 5/9 TIME 12:06

III. RELINQUISHED BY
SIGN
PRINT
FIRM
DATE TIME

III. RECEIVED BY
SIGN
PRINT
FIRM
DATE TIME

IV. RELINQUISHED BY
SIGN
PRINT
FIRM
DATE TIME

IV. RECEIVED BY
SIGN
PRINT
FIRM
DATE TIME

EVIDENCE SAMPLES TAMPERED WITH ☐ NO ☐ YES ☐ N/A
IF YES EXPLAIN IN REMARKS

	VOA+15	BNA	METALS	PEST/PCB	TPH						
VOA VIAL	X										LIQUID
GLASS BOTTLE					X						
PLASTIC BOTTLE			X								
PRESERVATIVE											
CONTAINER VOLUME											
VOA VIAL	X										SOLID
GLASS JAR			X			X					
PLASTIC JAR											
PRESERVATIVE											
CONTAINER VOLUME											

NOTE. SAMPLE BOTTLES SUPPLIED BY LAB, UNLESS INDICATED

PRESERVATION KEY: A - SAMPLE CHILLED, B - FILTERED,
C - ACIDIFIED WITH _____
D - NaOH, E - NaTHIOSULFATE, F - OTHER.

REMARKS: (SAMPLE STORAGE, NONSTANDARD SAMPLE BOTTLES)

0004

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SB1

Lab Name: NYTEST ENV INC Contract: 89-15772

Lab Code: NYTEST Case No.: 1305 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: N96311

Sample wt/vol: 5.0 (g/mL) G Lab File ID: D8219

Level: (low/med) LOW Date Received: 05/09/89

% Moisture: not dec. 7 Date Analyzed: 05/11/89

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	4	J
67-64-1	Acetone	7	BJ
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	11	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	220	
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	4	J
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene (total)	5	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SB1

Lab Name: NYTEST ENV INC Contract: 89-15772

Lab Code: NYTEST Case No.: 1305 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: N96311

Sample wt/vol: 5.0 (g/mL) G Lab File ID: D8219

Level: (low/med) LOW Date Received: 05/09/89

% Moisture: not dec. 7 Date Analyzed: 05/11/89

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SB2

Lab Name: NYTEST ENV INC Contract: 89-15772

Lab Code: NYTEST Case No.: 1305 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: N96313

Sample wt/vol: 5.0 (g/mL) G Lab File ID: D8220

Level: (low/med) LOW Date Received: 05/09/89

% Moisture: not dec. 12 Date Analyzed: 05/11/89

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
74-87-3	Chloromethane	11	U	
74-83-9	Bromomethane	11	U	
75-01-4	Vinyl Chloride	11	U	
75-00-3	Chloroethane	11	U	
75-09-2	Methylene Chloride	5 ~~2~~	~~U~~ U	PS 5/11
67-64-1	Acetone	3	BJ	
75-15-0	Carbon Disulfide	6	U	
75-35-4	1,1-Dichloroethene	6	U	
75-34-3	1,1-Dichloroethane	6	U	
540-59-0	1,2-Dichloroethene (total)	16		
67-66-3	Chloroform	6	U	
107-06-2	1,2-Dichloroethane	6	U	
78-93-3	2-Butanone	11	U	
71-55-6	1,1,1-Trichloroethane	6	U	
56-23-5	Carbon Tetrachloride	6	U	
108-05-4	Vinyl Acetate	11	U	
75-27-4	Bromodichloromethane	6	U	
78-87-5	1,2-Dichloropropane	6	U	
10061-01-5	cis-1,3-Dichloropropene	6	U	
79-01-6	Trichloroethene	33		
124-48-1	Dibromochloromethane	6	U	
79-00-5	1,1,2-Trichloroethane	6	U	
71-43-2	Benzene	6	U	
10061-02-6	trans-1,3-Dichloropropene	6	U	
75-25-2	Bromoform	6	U	
108-10-1	4-Methyl-2-Pentanone	11	U	
591-78-6	2-Hexanone	11	U	
127-18-4	Tetrachloroethene	510	E	
79-34-5	1,1,2,2-Tetrachloroethane	6	U	
108-88-3	Toluene	6	U	
108-90-7	Chlorobenzene	6	U	
100-41-4	Ethylbenzene	6	U	
100-42-5	Styrene	6	U	
1330-20-7	Xylene (total)	6	U	

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SB2

Lab Name: NYTEST ENV INC Contract: 89-15772

Lab Code: NYTEST Case No.: 1305 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: N96313

Sample wt/vol: 5.0 (g/mL) G Lab File ID: D8220

Level: (low/med) LOW Date Received: 05/09/89

% Moisture: not dec. 12 Date Analyzed: 05/11/89

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SB2DL

Lab Name: NYTEST ENV INC Contract: 89-15772

Lab Code: NYTEST Case No.: 1305 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: N96312

Sample wt/vol: 4.0 (g/mL) G Lab File ID: V9853

Level: (low/med) MED Date Received: 05/09/89

% Moisture: not dec. 12 Date Analyzed: 05/10/89

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	1400	U
74-83-9	Bromomethane	1400	U
75-01-4	Vinyl Chloride	1400	U
75-00-3	Chloroethane	1400	U
75-09-2	Methylene Chloride	710	U
67-64-1	Acetone	1400	U
75-15-0	Carbon Disulfide	710	U
75-35-4	1,1-Dichloroethene	710	U
75-34-3	1,1-Dichloroethane	710	U
540-59-0	1,2-Dichloroethene (total)	710	U
67-66-3	Chloroform	710	U
107-06-2	1,2-Dichloroethane	710	U
78-93-3	2-Butanone	5 ~~25000~~	U
71-55-6	1,1,1-Trichloroethane	710	U
56-23-5	Carbon Tetrachloride	710	U
108-05-4	Vinyl Acetate	1400	U
75-27-4	Bromodichloromethane	710	U
78-87-5	1,2-Dichloropropane	710	U
10061-01-5	cis-1,3-Dichloropropene	710	U
79-01-6	Trichloroethene	710	U
124-48-1	Dibromochloromethane	710	U
79-00-5	1,1,2-Trichloroethane	710	U
71-43-2	Benzene	710	U
10061-02-6	trans-1,3-Dichloropropene	710	U
75-25-2	Bromoform	710	U
108-10-1	4-Methyl-2-Pentanone	1400	U
591-78-6	2-Hexanone	1400	U
127-18-4	Tetrachloroethene	1600	
79-34-5	1,1,2,2-Tetrachloroethane	1400	U
108-88-3	Toluene	710	U
108-90-7	Chlorobenzene	710	U
100-41-4	Ethylbenzene	710	U
100-42-5	Styrene	710	U
1330-20-7	Xylene (total)	710	U

PS 1/11

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SB20L

Lab Name: NYTEST ENV INC Contract: 89-15772

Lab Code: NYTEST Case No.: 1305 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: N96312

Sample wt/vol: 4.0 (g/mL) G Lab File ID: V9853

Level: (low/med) MED Date Received: 05/09/89

% Moisture: not dec. 12 Date Analyzed: 05/10/89

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	26.07	1500	J
2.		UNKNOWN	26.64	2300	J
3.		UNKNOWN	29.47	940	J
4.		UNKNOWN ALKENE	32.67	2400	J
5.		UNKNOWN	33.32	1400	J

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SB3

Lab Name: NYTEST ENV INC Contract: 89-15772

Lab Code: NYTEST Case No.: 1305 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: N96313

Sample wt/vol: 5.0 (g/mL) G Lab File ID: D8221

Level: (low/med) LOW Date Received: 05/09/89

% Moisture: not dec. 3 Date Analyzed: 05/11/89

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	330	BE
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	2	J
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene (total)	5	U

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SB3

Lab Name: NYTEST ENV INC Contract: 89-15772

Lab Code: NYTEST Case No.: 1305 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: N96313

Sample wt/vol: 5.0 (g/mL) G Lab File ID: D8221

Level: (low/med) LOW Date Received: 05/09/89

% Moisture: not dec. 3 Date Analyzed: 05/11/89

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SB4

Lab Name: NYTEST ENV INC Contract: 89-15772

Lab Code: NYTEST Case No.: 1305 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: N96314

Sample wt/vol: 5.0 (g/mL) G Lab File ID: D8222

Level: (low/med) LOW Date Received: 05/09/89

% Moisture: not dec. 8 Date Analyzed: 05/11/89

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	37	B
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	11	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene (total)	5	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SB4

Lab Name: NYTEST ENV INC Contract: 89-15772

Lab Code: NYTEST Case No.: 1305 SAS No.: SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: N96314

Sample wt/vol: 5.0 (g/mL) G Lab File ID: D8222

Level: (low/med) LOW Date Received: 05/09/89

% Moisture: not dec. 8 Date Analyzed: 05/11/89

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

0022

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SB5

Lab Name: NYTEST ENV INC Contract: 89-15772

Lab Code: NYTEST Case No.: 1305 SAS No.: SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: N96315

Sample wt/vol: 4.0 (g/mL) G Lab File ID: V9842

Level: (low/med) MED Date Received: 05/09/89

% Moisture: not dec. 20 Date Analyzed: 05/10/89

Column: (pack/cap) PACK Dilution Factor: 20

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	31000	U
74-83-9	Bromomethane	31000	U
75-01-4	Vinyl Chloride	31000	U
75-00-3	Chloroethane	31000	U
75-09-2	Methylene Chloride	16000	U
67-64-1	Acetone	31000	U
75-15-0	Carbon Disulfide	16000	U
75-35-4	1,1-Dichloroethene	16000	U
75-34-3	1,1-Dichloroethane	16000	U
540-59-0	1,2-Dichloroethene (total)	9600	J
67-66-3	Chloroform	16000	U
107-06-2	1,2-Dichloroethane	16000	U
78-93-3	2-Butanone	31000	U
71-55-6	1,1,1-Trichloroethane	16000	U
56-23-5	Carbon Tetrachloride	16000	U
108-05-4	Vinyl Acetate	31000	U
75-27-4	Bromodichloromethane	16000	U
78-87-5	1,2-Dichloropropane	16000	U
10061-01-5	cis-1,3-Dichloropropene	16000	U
79-01-6	Trichloroethene	50000	
124-48-1	Dibromochloromethane	16000	U
79-00-5	1,1,2-Trichloroethane	16000	U
71-43-2	Benzene	16000	U
10061-02-6	trans-1,3-Dichloropropene	16000	U
75-25-2	Bromoform	16000	U
108-10-1	4-Methyl-2-Pentanone	31000	U
591-78-6	2-Hexanone	31000	U
127-18-4	Tetrachloroethene	830000	E
79-34-5	1,1,2,2-Tetrachloroethane	31000	U
108-88-3	Toluene	16000	U
108-90-7	Chlorobenzene	16000	U
100-41-4	Ethylbenzene	16000	U
100-42-5	Styrene	16000	U
1330-20-7	Xylene (total)	16000	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SB5

Lab Name: NYTEST ENV INC Contract: 89-15772

Lab Code: NYTEST Case No.: 1305 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: N96315

Sample wt/vol: 4.0 (g/mL) G Lab File ID: V9842

Level: (low/med) MED Date Received: 05/09/89

% Moisture: not dec. 20 Date Analyzed: 05/10/89

Column (pack/cap) PACK Dilution Factor: 20

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SB60L

Lab Name: NYTEST ENV INC Contract: 89-15772

Lab Code: NYTEST Case No.: 1305 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: N96316

Sample wt/vol: 4.0 (g/mL) G Lab File ID: V9854

Level: (low/med) MED Date Received: 05/09/89

% Moisture: not dec. 12 Date Analyzed: 05/10/89

Column: (pack/cap) PACK Dilution Factor: 10

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	14000	U
74-83-9	Bromomethane	14000	U
75-01-4	Vinyl Chloride	14000	U
75-00-3	Chloroethane	14000	U
75-09-2	Methylene Chloride	7100	U
67-64-1	Acetone	14000	U
75-15-0	Carbon Disulfide	7100	U
75-35-4	1,1-Dichloroethene	7100	U
75-34-3	1,1-Dichloroethane	7100	U
540-59-0	1,2-Dichloroethene (total)	7100	U
67-66-3	Chloroform	7100	U
107-06-2	1,2-Dichloroethane	7100	U
78-93-3	2-Butanone	14000	U
71-55-6	1,1,1-Trichloroethane	7100	U
56-23-5	Carbon Tetrachloride	7100	U
108-05-4	Vinyl Acetate	14000	U
75-27-4	Bromodichloromethane	7100	U
78-87-5	1,2-Dichloropropane	7100	U
10061-01-5	cis-1,3-Dichloropropene	7100	U
79-01-6	Trichloroethene	7100	U
124-48-1	Dibromochloromethane	7100	U
79-00-5	1,1,2-Trichloroethane	7100	U
71-43-2	Benzene	7100	U
10061-02-6	trans-1,3-Dichloropropene	7100	U
75-25-2	Bromoform	7100	U
108-10-1	4-Methyl-2-Pentanone	14000	U
591-78-6	2-Hexanone	14000	U
127-18-4	Tetrachloroethene	14000	U
79-34-5	1,1,2,2-Tetrachloroethane	14000	U
108-88-3	Toluene	7100	U
108-90-7	Chlorobenzene	7100	U
100-41-4	Ethylbenzene	7100	U
100-42-5	Styrene	7100	U
1330-20-7	Xylene (total)	7100	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SB6DL

Lab Name: NYTEST ENV INC Contract: 89-15772

Lab Code: NYTEST Case No.: 1305 SAS No.: SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: N96316

Sample wt/vol: 4.0 (g/mL) G Lab File ID: V9854

Level: (low/med) MED Date Received: 05/09/89

% Moisture: not dec. 12 Date Analyzed: 05/10/89

Column (pack/cap) PACK Dilution Factor: 10

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN ALKANE	29.07	850000	J

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SB7DL

Lab Name: NYTEST ENV INC Contract: 89-15772

Lab Code: NYTEST Case No.: 1305 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: N96317

Sample wt/vol: 4.0 (g/mL) G Lab File ID: V9856

Level: (low/med) MED Date Received: 05/09/89

% Moisture: not dec. 23 Date Analyzed: 05/10/89

Column: (pack/cap) PACK Dilution Factor: 20

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	32000	U
74-83-9	Bromomethane	32000	U
75-01-4	Vinyl Chloride	32000	U
75-00-3	Chloroethane	32000	U
75-09-2	Methylene Chloride	16000	U
67-64-1	Acetone	32000	U
75-15-0	Carbon Disulfide	16000	U
75-35-4	1,1-Dichloroethene	16000	U
75-34-3	1,1-Dichloroethane	16000	U
540-59-0	1,2-Dichloroethene (total)	26000	
67-66-3	Chloroform	16000	U
107-06-2	1,2-Dichloroethane	16000	U
78-93-3	2-Butanone	32000	U
71-55-6	1,1,1-Trichloroethane	16000	U
56-23-5	Carbon Tetrachloride	16000	U
108-05-4	Vinyl Acetate	32000	U
75-27-4	Bromodichloromethane	16000	U
78-87-5	1,2-Dichloropropane	16000	U
10061-01-5	cis-1,3-Dichloropropene	16000	U
79-01-6	Trichloroethene	86000	
124-48-1	Dibromochloromethane	16000	U
79-00-5	1,1,2-Trichloroethane	16000	U
71-43-2	Benzene	16000	U
10061-02-6	trans-1,3-Dichloropropene	16000	U
75-25-2	Bromoform	16000	U
108-10-1	4-Methyl-2-Pentanone	32000	U
591-78-6	2-Hexanone	32000	U
127-18-4	Tetrachloroethene	1200000	E
79-34-5	1,1,2,2-Tetrachloroethane	32000	U
108-88-3	Toluene	16000	U
108-90-7	Chlorobenzene	16000	U
100-41-4	Ethylbenzene	16000	U
100-42-5	Styrene	16000	U
1330-20-7	Xylene (total)	16000	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SB70L

Lab Name: NYTEST ENV INC Contract: 89-15772

Lab Code: NYTEST Case No.: 1305 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: N96317

Sample wt/vol: 4.0 (g/mL) G Lab File ID: V9856

Level: (low/med) MED Date Received: 05/09/89

% Moisture: not dec. 23 Date Analyzed: 05/10/89

Column (pack/cap) PACK Dilution Factor: 20

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	38.29	200000	J

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FB1

Lab Name: NYTEST ENV INC Contract: 89-15772

Lab Code: NYTEST Case No.: 1305 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: N96319

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: E3911

Level: (low/med) LOW Date Received: 05/09/89

% Moisture: not dec. ____ Date Analyzed: 05/13/89

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene (total)	5	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FB1

Lab Name: NYTEST ENV INC Contract: 89-15772

Lab Code: NYTEST Case No.: 1305 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: N96319

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: E3911

Level: (low/med) LOW Date Received: 05/09/89

% Moisture: not dec. ____ Date Analyzed: 05/13/89

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB1

Lab Name: NYTEST ENV INC Contract: 89-15772

Lab Code: NYTEST Case No.: 1305 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: N9-6318

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: E3910

Level: (low/med) LOW Date Received: 05/09/89

% Moisture: not dec. ____ Date Analyzed: 05/13/89

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene (total)	5	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TB1

Lab Name: NYTEST ENV INC Contract: 89-15772

Lab Code: NYTEST Case No.: 1305 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: N9-6318

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: E3910

Level: (low/med) LOW Date Received: 05/09/89

% Moisture: not dec. ____ Date Analyzed: 05/13/89

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

INORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SB-1

Lab Name: NYTEST ENVIRONMENTAL, INC. Contract: 8915572

Lab Code: 5-30-89 Case No.: _____ SAS No.: _____ SDG No.: 11

Matrix (soil/water): Soil Lab Sample ID: N96911

Level (low/med): Low Date Received: 5-9-89

% Solids: 92.8

Concentration Units (ug/L or mg/Kg dry weight): mg/kg

CAS No.	Analyte	Concentration	C	M	Q
7429-90-5	Aluminum				
7440-36-0	Antimony				
7440-38-2	Arsenic	2.3		F	
7440-39-3	Barium	50.2		P	
7440-41-7	Beryllium				
7440-43-9	Cadmium	0.5	U	P	
7440-70-2	Calcium				
7440-47-3	Chromium	11.6		P	
7440-48-4	Cobalt				
7440-50-8	Copper				
7439-89-6	Iron				
7439-92-1	Lead	63.0		P	
7439-95-4	Magnesium				
7439-96-5	Manganese				
7439-97-6	Mercury	0.02	U	CV	
7440-02-0	Nickel				
7440-09-7	Potassium				
7782-49-2	Selenium	0.5	U	F	
7440-22-4	Silver	1.0	U	P	
7440-23-5	Sodium				
7440-28-0	Thallium				
7440-62-2	Vanadium				
7440-66-6	Zinc				
	Cyanide				

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

_____

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INORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SB-2

Lab Name: NYTEST ENVIRONMENTAL, INC. Contract: 8915772

Lab Code: 5-30-89 Case No.: _____ SAS No.: _____ SDG No.: 11

Matrix (soil/water): Soil Lab Sample ID: N96312

Level (low/med): Low Date Received: 5-9-89

% Solids: 88.4

Concentration Units (ug/L or mg/Kg dry weight): mg/kg

CAS No.	Analyte	Concentration	C	M	Q
7429-90-5	Aluminum				
7440-36-0	Antimony				
7440-38-2	Arsenic	2.1		F	
7440-39-3	Barium	47.6		P	
7440-41-7	Beryllium				
7440-43-9	Cadmium	0.5	U	P	
7440-70-2	Calcium				
7440-47-3	Chromium	9.6		P	
7440-48-4	Cobalt				
7440-50-8	Copper				
7439-89-6	Iron				
7439-92-1	Lead	34.7		P	
7439-95-4	Magnesium				
7439-96-5	Manganese				
7439-97-6	Mercury	0.02	U	CV	
7440-02-0	Nickel				
7440-09-7	Potassium				
7782-49-2	Selenium	0.5	U	F	
7440-22-4	Silver	1.0	U	P	
7440-23-5	Sodium				
7440-28-0	Thallium				
7440-62-2	Vanadium				
7440-66-6	Zinc				
	Cyanide				

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

INORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.: SB-3

Lab Name: NYTEST ENVIRONMENTAL, INC. Contract: 8915772

Lab Code: 5-30-89 Case No.: _____ SAS No.: _____ SDG No.: 11

Matrix (soil/water): SOIL Lab Sample ID: N96313

Level (low/med): Low Date Received: 5-9-89

% Solids: 97.5

Concentration Units (ug/L or mg/Kg dry weight): mg/kg

CAS No.	Analyte	Concentration	C	M	Q
7429-90-5	Aluminum				
7440-36-0	Antimony				
7440-38-2	Arsenic	0.5	U	F	
7440-39-3	Barium	5.0	U	P	
7440-41-7	Beryllium				
7440-43-9	Cadmium	0.5	U	P	
7440-70-2	Calcium				
7440-47-3	Chromium	1.5		P	
7440-48-4	Cobalt				
7440-50-8	Copper				
7439-89-6	Iron				
7439-92-1	Lead	5.0	U	F	
7439-95-4	Magnesium				
7439-96-5	Manganese				
7439-97-6	Mercury	0.02	U	CV	
7440-02-0	Nickel				
7440-09-7	Potassium				
7782-49-2	Selenium	0.5	U	F	
7440-22-4	Silver	1.0	U	P	
7440-23-5	Sodium				
7440-28-0	Thallium				
7440-62-2	Vanadium				
7440-66-6	Zinc				
	Cyanide				

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

INORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SB-4

Lab Name: NYTEST ENVIRONMENTAL, INC. Contract: 8915772

Lab Code: 5-30-89 Case No.: _____ SAS No.: _____ SDG No.: 11

Matrix (soil/water): SOIL Lab Sample ID: N96314

Level (low/med): LOW Date Received: 5-9-89

% Solids: 92.1

Concentration Units (ug/L or mg/Kg dry weight): mg/kg

CAS No.	Analyte	Concentration	C	M	Q
7429-90-5	Aluminum				
7440-36-0	Antimony				
7440-38-2	Arsenic	0.76	B	F	
7440-39-3	Barium	7.3	B	P	
7440-41-7	Beryllium				
7440-43-9	Cadmium	0.5	U	P	
7440-70-2	Calcium				
7440-47-3	Chromium	3.5		P	
7440-48-4	Cobalt				
7440-50-8	Copper				
7439-89-6	Iron				
7439-92-1	Lead	5.0	U	F	
7439-95-4	Magnesium				
7439-96-5	Manganese				
7439-97-6	Mercury	0.02	U	CV	
7440-02-0	Nickel				
7440-09-7	Potassium				
7782-49-2	Selenium	0.5	U	F	
7440-22-4	Silver	1.0	U	P	
7440-23-5	Sodium				
7440-28-0	Thallium				
7440-62-2	Vanadium				
7440-66-6	Zinc				
	Cyanide				

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

INORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SB-5

Lab Name: NYTEST ENVIRONMENTAL, INC. Contract: 8915772

Lab Code: 5-30-89 Case No.: _____ SAS No.: _____ SDG No.: 11

Matrix (soil/water): Soil Lab Sample ID: N96315

Level (low/med): Low Date Received: 5-9-89

% Solids: 80.1

Concentration Units (ug/L or mg/Kg dry weight): mg/kg

CAS No.	Analyte	Concentration	C	M	Q
7429-90-5	Aluminum				
7440-36-0	Antimony				
7440-38-2	Arsenic	2.9		F	
7440-39-3	Barium	52.3		P	
7440-41-7	Beryllium				
7440-43-9	Cadmium	0.5	U	P	
7440-70-2	Calcium				
7440-47-3	Chromium	28.0		P	
7440-48-4	Cobalt				
7440-50-8	Copper				
7439-89-6	Iron				
7439-92-1	Lead	155		P	
7439-95-4	Magnesium				
7439-96-5	Manganese				
7439-97-6	Mercury	0.04		CV	
7440-02-0	Nickel				
7440-09-7	Potassium				
7782-49-2	Selenium	0.5		F	
7440-22-4	Silver	1.0	U	P	
7440-23-5	Sodium				
7440-28-0	Thallium				
7440-62-2	Vanadium				
7440-66-6	Zinc				
	Cyanide				

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

INORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SB-6

Lab Name: NYTEST ENVIRONMENTAL, INC. Contract: 8915772

Lab Code: 5-30-89 Case No.: _____ SAS No.: _____ SDG No.: 11

Matrix (soil/water): SOIL Lab Sample ID: N96316

Level (low/med): LOW Date Received: 5-9-89

% Solids: 87.9

Concentration Units (ug/L or mg/Kg dry weight): mg/Kg

CAS No.	Analyte	Concentration	C	M	Q
7429-90-5	Aluminum				
7440-36-0	Antimony				
7440-38-2	Arsenic	12.2		F	
7440-39-3	Barium	63.9		P	
7440-41-7	Beryllium				
7440-43-9	Cadmium	0.5	U	P	
7440-70-2	Calcium				
7440-47-3	Chromium	11.1		P	
7440-48-4	Cobalt				
7440-50-8	Copper				
7439-89-6	Iron				
7439-92-1	Lead	56.5		P	
7439-95-4	Magnesium				
7439-96-5	Manganese				
7439-97-6	Mercury	0.02		CV	
7440-02-0	Nickel				
7440-09-7	Potassium				
7782-49-2	Selenium	0.5	U	F	
7440-22-4	Silver	1.0	U	P	
7440-23-5	Sodium				
7440-28-0	Thallium				
7440-62-2	Vanadium				
7440-66-6	Zinc				
	Cyanide				

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

INORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SB-7

Lab Name: NYTEST ENVIRONMENTAL, INC. Contract: 8915772

Lab Code: 5-30-9 Case No.: _____ SAS No.: _____ SDG No.: 11

Matrix (soil/water): Soil Lab Sample ID: N96317

Level (low/med): Low Date Received: 5-9-89

% Solids: 77.3

Concentration Units (ug/L or mg/Kg dry weight): mg/kg

CAS No.	Analyte	Concentration	C	M	Q
7429-90-5	Aluminum				
7440-36-0	Antimony				
7440-38-2	Arsenic	1.8		F	
7440-39-3	Barium	37.1		P	
7440-41-7	Beryllium				
7440-43-9	Cadmium	0.5		P	
7440-70-2	Calcium				
7440-47-3	Chromium	25.3		P	
7440-48-4	Cobalt				
7440-50-8	Copper				
7439-89-6	Iron				
7439-92-1	Lead	122		P	
7439-95-4	Magnesium				
7439-96-5	Manganese				
7439-97-6	Mercury	0.02	U	CV	
7440-02-0	Nickel				
7440-09-7	Potassium				
7782-49-2	Selenium	0.5	U	F	
7440-22-4	Silver	1.0	U	P	
7440-23-5	Sodium				
7440-28-0	Thallium				
7440-62-2	Vanadium				
7440-66-6	Zinc				
	Cyanide				

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

INORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FB #1

Lab Name: NYTEST ENVIRONMENTAL, INC. Contract: 8915772

Lab Code: 5-30-89 Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix (soil/water): WATER Lab Sample ID: N96318

Level (low/med): Low Date Received: 5-9-89

% Solids: 0

Concentration Units (ug/L or mg/Kg dry weight): mg/L

CAS No.	Analyte	Concentration	C	M	Q
7429-90-5	Aluminum				
7440-36-0	Antimony				
7440-38-2	Arsenic	5.0	U	F	
7440-39-3	Barium	50.0		P	
7440-41-7	Beryllium				
7440-43-9	Cadmium	5.0	U	P	
7440-70-2	Calcium				
7440-47-3	Chromium	5.0	U	P	
7440-48-4	Cobalt				
7440-50-8	Copper				
7439-89-6	Iron				
7439-92-1	Lead	5.0	U	F	
7439-95-4	Magnesium				
7439-96-5	Manganese				
7439-97-6	Mercury	0.2	U	CV	
7440-02-0	Nickel				
7440-09-7	Potassium				
7782-49-2	Selenium	0.5	U	F	
7440-22-4	Silver	10.0	U	P	
7440-23-5	Sodium				
7440-28-0	Thallium				
7440-62-2	Vanadium				
7440-66-6	Zinc				
	Cyanide				

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

nytest environmental inc

REPORT OF ANALYSIS

Project No.:89-15772

We find as follows:
Results in mg/kg (Dry Wt. Basis)
Except where noted

Sample Identification			Parameter(s)
			TPHC
SB-1	N9-6311		< 10
SB-2	N9-6312		< 10
SB-3	N9-6313		< 10
SB-4	N9-6314		< 10
SB-5	N9-6315		2750
SB-6	N9-6316		< 10
SB-7	N9-6317		7270
FB#1	N9-6318	(mg/l)	< 0.2
METHOD BLANK		(mg/l)	< 0.2

0073

CHAIN OF CUSTODY RECORD

BLASLAND & BOUCK ENGINEERS, P.C.

PAGE 1 OF 1

FILE NO. 412.01.03
PROJECT Penetrex, Gilgwood Landing, NY
B & B CONTACT J. Schaefer

LABORATORY NET
ADDRESS Port Washington, N.Y.
CONTACT M. Brennan, Jos. Caramiso

B & B SAMPLE NO.	LABORATORY SAMPLE NO.	SAMPLING DATE	SAMPLING TIME	SAMPLE DEPTH	SAMPLE TYPE	VOA + 15	BNA	METALS	PEST/PCB	TPH						NO. OF CONTAINERS
MW-1		5-25-89	8:12 AM		Water	X		X		X						
MW-2		"	2:35 PM		"	X		X		X						
MW-3		"	12:48 PM		"	X		X		X						
MW-4		"	1:10 PM		"	X		X		X						
MW-5		"	8:12 AM		"	X		X		X						
Field Blk #1		"			"	X		X		X						
Trip Blk #1		"			"	X										

COMMENTS (SPECIAL INSTRUCTIONS, CAUTIONS, ETC.)

All samples to be analyzed for volatile organic compounds (+15) total RCRA metals (unfiltered) and total petroleum hydrocarbons

I. SAMPLED AND RELINQUISHED BY
SIGN [signature]
PRINT J. Schaefer
FIRM B&B
DATE 5-25-89 TIME 3:17

I. RECEIVED BY
SIGN
PRINT
FIRM B&B
DATE 5-25-89 TIME 3:17

II. RELINQUISHED BY
SIGN
PRINT
FIRM
DATE TIME

II. RECEIVED BY
SIGN
PRINT
FIRM
DATE TIME

III. RELINQUISHED BY
SIGN
PRINT
FIRM
DATE TIME

III. RECEIVED BY
SIGN
PRINT
FIRM
DATE TIME

IV. RELINQUISHED BY
SIGN
PRINT
FIRM
DATE TIME

IV. RECEIVED BY
SIGN
PRINT
FIRM
DATE TIME

EVIDENCE SAMPLES TAMPERED WITH ☐ NO ☐ YES ☐ N/A
IF YES EXPLAIN IN REMARKS

VOA VIAL															LIQUID
GLASS BOTTLE															
PLASTIC BOTTLE															
PRESERVATIVE															
CONTAINER VOLUME															
VOA VIAL															SOLID
GLASS JAR															
PLASTIC JAR															
PRESERVATIVE															
CONTAINER VOLUME															

NOTE: SAMPLE BOTTLES SUPPLIED BY LAB, UNLESS INDICATED

PRESERVATION KEY: A - SAMPLE CHILLED, B - FILTERED,
C - ACIDIFIED WITH _____
D - NaOH, E - NaTHIOSULFATE, F - OTHER.

REMARKS: (SAMPLE STORAGE, NONSTANDARD SAMPLE BOTTLES)

2000

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW1

Lab Name: NYTEST ENV INC Contract: 89-15772

Lab Code: NYTEST Case No.: 1466 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: N97218

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: E4023

Level: (low/med) LOW Date Received: 05/25/89

% Moisture: not dec. ____ Date Analyzed: 05/26/89

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	5	U
75-34-4	1,1-Dichloroethene	5	U
75-35-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	13	
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	8	
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	640	E
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylenes (total)	5	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW1

Lab Name: NYTEST ENV INC Contract: 89-15772

Lab Code: NYTEST Case No.: 1466 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: N97218

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: E4023

Level: (low/med) LOW Date Received: 05/25/89

% Moisture: not dec. ____ Date Analyzed: 05/26/89

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

0013

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW1DL

Lab Name: NYTEST ENV INC Contract: 89-15772

Lab Code: NYTEST Case No.: 1466 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: N97218

Sample wt/vol: 0.50 (g/mL) ML Lab File ID: E4034

Level: (low/med) LOW Date Received: 05/25/89

% Moisture: not dec. ____ Date Analyzed: 05/27/89

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	100	U
74-83-9	Bromomethane	100	U
75-01-4	Vinyl Chloride	100	U
75-00-3	Chloroethane	100	U
75-09-2	Methylene Chloride	50	U
67-64-1	Acetone	100	U
75-15-0	Carbon Disulfide	50	U
75-35-4	1,1-Dichloroethene	50	U
75-34-3	1,1-Dichloroethane	50	U
540-59-0	1,2-Dichloroethene (total)	50	U
67-66-3	Chloroform	50	U
107-06-2	1,2-Dichloroethane	50	U
78-93-3	2-Butanone	100	U
71-55-6	1,1,1-Trichloroethane	50	U
56-23-5	Carbon Tetrachloride	50	U
108-05-4	Vinyl Acetate	100	U
75-27-4	Bromodichloromethane	50	U
78-87-5	1,2-Dichloropropane	50	U
10061-01-5	cis-1,3-Dichloropropene	50	U
79-01-6	Trichloroethene	50	U
124-48-1	Dibromochloromethane	50	U
79-00-5	1,1,2-Trichloroethane	50	U
71-43-2	Benzene	50	U
10061-02-6	Trans-1,3-Dichloropropene	50	U
75-25-2	Bromoform	50	U
108-10-1	4-Methyl-2-Pentanone	100	U
591-78-6	2-Hexanone	100	U
127-18-4	Tetrachloroethene	560	
79-34-5	1,1,2,2-Tetrachloroethane	50	U
108-88-3	Toluene	50	U
108-90-7	Chlorobenzene	50	U
100-41-4	Ethylbenzene	50	U
100-42-5	Styrene	50	U
1330-20-7	Xylenes (total)	50	U

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

MW1DL

Lab Name: NYTEST ENV INC Contract: 89-15772

Lab Code: NYTEST Case No.: 1466 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: N97218

Sample wt/vol: 0.50 (g/mL) ML Lab File ID: E4034

Level: (low/med) LOW Date Received: 05/25/89

% Moisture: not dec. ____ Date Analyzed: 05/27/89

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN ALKANE	11.26	370	J
2.		UNKNOWN ALKANE	13.66	9300	J

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW1DLMS

Lab Name: NYTEST ENV INC Contract: 89-15772

Lab Code: NYTEST Case No.: 1466 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: N97218

Sample wt/vol: 0.50 (g/mL) ML Lab File ID: E4035

Level: (low/med) LOW Date Received: 05/25/89

% Moisture: not dec. ____ Date Analyzed: 05/27/89

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	100	U
74-83-9	Bromomethane	100	U
75-01-4	Vinyl Chloride	100	U
75-00-3	Chloroethane	100	U
75-09-2	Methylene Chloride	50	U
67-64-1	Acetone	100	U
75-15-0	Carbon Disulfide	50	U
75-35-4	1,1-Dichloroethene	50	U
75-34-3	1,1-Dichloroethane	50	U
540-59-0	1,2-Dichloroethene (total)	50	U
67-66-3	Chloroform	50	U
107-06-2	1,2-Dichloroethane	50	U
78-93-3	2-Butanone	100	U
71-55-6	1,1,1-Trichloroethane	50	U
56-23-5	Carbon Tetrachloride	50	U
108-05-4	Vinyl Acetate	100	U
75-27-4	Bromodichloromethane	50	U
78-87-5	1,2-Dichloropropane	50	U
10061-01-5	cis-1,3-Dichloropropene	50	U
79-01-6	Trichloroethene	50	U
124-48-1	Dibromochloromethane	50	U
79-00-5	1,1,2-Trichloroethane	50	U
71-43-2	Benzene	50	U
10061-02-6	Trans-1,3-Dichloropropene	50	U
75-25-2	Bromoform	50	U
108-10-1	4-Methyl-2-Pentanone	100	U
591-78-6	2-Hexanone	100	U
127-18-4	Tetrachloroethene	510	
79-34-5	1,1,2,2-Tetrachloroethane	50	U
108-88-3	Toluene	50	U
108-90-7	Chlorobenzene	50	U
100-41-4	Ethylbenzene	50	U
100-42-5	Styrene	50	U
1330-20-7	Xylenes (total)	50	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW1DLMSD

Lab Name: NYTEST ENV INC Contract: 89-15772

Lab Code: NYTEST Case No.: 1466 SAS.No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: N97218

Sample wt/vol: 0.50 (g/mL) ML Lab File ID: E4036

Level: (low/med) LOW Date Received: 05/25/89

% Moisture: not dec. ____ Date Analyzed: 05/27/89

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	100	U
74-83-9	Bromomethane	100	U
75-01-4	Vinyl Chloride	100	U
75-00-3	Chloroethane	100	U
75-09-2	Methylene Chloride	50	U
67-64-1	Acetone	100	U
75-15-0	Carbon Disulfide	50	U
75-35-4	1,1-Dichloroethene	50	U
75-34-3	1,1-Dichloroethane	50	U
540-59-0	1,2-Dichloroethene (total)	50	U
67-66-3	Chloroform	50	U
107-06-2	1,2-Dichloroethane	50	U
78-93-3	2-Butanone	100	U
71-55-6	1,1,1-Trichloroethane	50	U
56-23-5	Carbon Tetrachloride	50	U
108-05-4	Vinyl Acetate	100	U
75-27-4	Bromodichloromethane	50	U
78-87-5	1,2-Dichloropropane	50	U
10061-01-5	cis-1,3-Dichloropropene	50	U
79-01-6	Trichloroethene	50	U
124-48-1	Dibromochloromethane	50	U
79-00-5	1,1,2-Trichloroethane	50	U
71-43-2	Benzene	50	U
10061-02-6	Trans-1,3-Dichloropropene	50	U
75-25-2	Bromoform	50	U
108-10-1	4-Methyl-2-Pentanone	100	U
591-78-6	2-Hexanone	100	U
127-18-4	Tetrachloroethene	540	
79-34-5	1,1,2,2-Tetrachloroethane	50	U
108-88-3	Toluene	50	U
108-90-7	Chlorobenzene	50	U
100-41-4	Ethylbenzene	50	U
100-42-5	Styrene	50	U
1330-20-7	Xylenes (total)	50	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW2

Lab Name: NYTEST ENV INC Contract: 89-15772

Lab Code: NYTEST Case No.: 1466 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: N97219

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: E4024

Level: (low/med) LOW Date Received: 05/25/89

% Moisture: not dec. ____ Date Analyzed: 05/26/89

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	5	U
75-34-4	1,1-Dichloroethene	5	U
75-35-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	6	
67-66-3	Chloroform	5	
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	6	
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	8	
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylenes (total)	5	U

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

MW2

Lab Name: NYTEST ENV INC Contract: 89-15772

Lab Code: NYTEST Case No.: 1466 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: N97219

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: E4024

Level: (low/med) LOW Date Received: 05/25/89

% Moisture: not dec. Date Analyzed: 05/26/89

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	13.66	9.9	J

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW3

Lab Name: NYTEST ENV INC Contract: 89-15772

Lab Code: NYTEST Case No.: 1466 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: N97220

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: E4025

Level: (low/med) LOW Date Received: 05/25/89

% Moisture: not dec. ____ Date Analyzed: 05/26/89

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	270	E
75-15-0	Carbon Disulfide	5	U
75-34-4	1,1-Dichloroethene	5	U
75-35-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	58	
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	19	
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	93	
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylenes (total)	5	U

1E

EPA SAMPLE NO.

MW3

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: NYTEST ENV INC Contract: 89-15772

Lab Code: NYTEST Case No.: 1466 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: N97220

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: E4025

Level: (low/med) LOW Date Received: 05/25/89

% Moisture: not dec. ____ Date Analyzed: 05/26/89

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW3DL

Lab Name: NYTEST ENV INC Contract: 89-15772

Lab Code: NYTEST Case No.: 1466 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: N97220

Sample wt/vol: 1.0 (g/mL) ML Lab File ID: E4037

Level: (low/med) LOW Date Received: 05/25/89

% Moisture: not dec. ____ Date Analyzed: 05/27/89

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	50	U
74-83-9	Bromomethane	50	U
75-01-4	Vinyl Chloride	50	U
75-00-3	Chloroethane	50	U
75-09-2	Methylene Chloride	25	U
67-64-1	Acetone	490	
75-15-0	Carbon Disulfide	25	U
75-35-4	1,1-Dichloroethene	25	U
75-34-3	1,1-Dichloroethane	25	U
540-59-0	1,2-Dichloroethene (total)	74	
67-66-3	Chloroform	25	U
107-06-2	1,2-Dichloroethane	25	U
78-93-3	2-Butanone	50	U
71-55-6	1,1,1-Trichloroethane	25	U
56-23-5	Carbon Tetrachloride	25	U
108-05-4	Vinyl Acetate	50	U
75-27-4	Bromodichloromethane	25	U
78-87-5	1,2-Dichloropropane	25	U
10061-01-5	cis-1,3-Dichloropropene	25	U
79-01-6	Trichloroethene	22	J
124-48-1	Dibromochloromethane	25	U
79-00-5	1,1,2-Trichloroethane	25	U
71-43-2	Benzene	25	U
10061-02-6	Trans-1,3-Dichloropropene	25	U
75-25-2	Bromoform	25	U
108-10-1	4-Methyl-2-Pentanone	50	U
591-78-6	2-Hexanone	50	U
127-18-4	Tetrachloroethene	120	
79-34-5	1,1,2,2-Tetrachloroethane	25	U
108-88-3	Toluene	25	U
108-90-7	Chlorobenzene	25	U
100-41-4	Ethylbenzene	25	U
100-42-5	Styrene	25	U
1330-20-7	Xylenes (total)	25	U

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

MW3DL

Lab Name: NYTEST ENV INC Contract: 89-15772

Lab Code: NYTEST Case No.: 1466 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: N97220

Sample wt/vol: 1.0 (g/mL) ML Lab File ID: E4037

Level: (low/med) LOW Date Received: 05/25/89

% Moisture: not dec. ____ Date Analyzed: 05/27/89

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		12 DICHLORO 112 TRIFLUORO ET	11.26	190	J
2.	76131	112 TRICHLORO 122 TRIFLUORO	13.66	4600	J

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW4

Lab Name: NYTEST ENV INC Contract: 89-15772

Lab Code: NYTEST Case No.: 1466 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: N97221

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: E4026

Level: (low/med) LOW Date Received: 05/25/89

% Moisture: not dec. ____ Date Analyzed: 05/26/89

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	5	U
75-34-4	1,1-Dichloroethene	5	U
75-35-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	7	
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylenes (total)	5	U

1E

EPA SAMPLE NO.

MW4

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: NYTEST ENV INC Contract: 89-15772

Lab Code: NYTEST Case No.: 1466 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: N97221

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: E4026

Level: (low/med) LOW Date Received: 05/25/89

% Moisture: not dec. ____ Date Analyzed: 05/26/89

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	76131	112 TRICHLORO 122 TRIFLUORO	13.63	10	J

0025

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.: MW5

Lab Name: NYTEST ENV INC Contract: 89-15772

Lab Code: NYTEST Case No.: 1466 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: N97222

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: E4027

Level: (low/med) LOW Date Received: 05/25/89

% Moisture: not dec. ____ Date Analyzed: 05/26/89

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS. (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	5	U
75-34-4	1,1-Dichloroethene	5	U
75-35-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	11	
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	8	
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	610	E
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylenes (total)	5	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW5

Lab Name: NYTEST ENV INC Contract: 89-15772

Lab Code: NYTEST Case No.: 1466 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: N97222

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: E4027

Level: (low/med) LOW Date Received: 05/25/89

% Moisture: not dec. ____ Date Analyzed: 05/26/89

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

MW5DL

Lab Name: NYTEST ENV INC Contract: 89-15772

Lab Code: NYTEST Case No.: 1466 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: N97222

Sample wt/vol: 0.50 (g/mL) ML Lab File ID: E4038

Level: (low/med) LOW Date Received: 05/25/89

% Moisture: not dec. ____ Date Analyzed: 05/27/89

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	100	U
74-83-9	Bromomethane	100	U
75-01-4	Vinyl Chloride	100	U
75-00-3	Chloroethane	100	U
75-09-2	Methylene Chloride	50	U
67-64-1	Acetone	100	U
75-15-0	Carbon Disulfide	50	U
75-35-4	1,1-Dichloroethene	50	U
75-34-3	1,1-Dichloroethane	50	U
540-59-0	1,2-Dichloroethene (total)	50	U
67-66-3	Chloroform	50	U
107-06-2	1,2-Dichloroethane	50	U
78-93-3	2-Butanone	100	U
71-55-6	1,1,1-Trichloroethane	50	U
56-23-5	Carbon Tetrachloride	50	U
108-05-4	Vinyl Acetate	100	U
75-27-4	Bromodichloromethane	50	U
78-87-5	1,2-Dichloropropane	50	U
10061-01-5	cis-1,3-Dichloropropene	50	U
79-01-6	Trichloroethene	50	U
124-48-1	Dibromochloromethane	50	U
79-00-5	1,1,2-Trichloroethane	50	U
71-43-2	Benzene	50	U
10061-02-6	Trans-1,3-Dichloropropene	50	U
75-25-2	Bromoform	50	U
108-10-1	4-Methyl-2-Pentanone	100	U
591-78-6	2-Hexanone	100	U
127-18-4	Tetrachloroethene	530	
79-34-5	1,1,2,2-Tetrachloroethane	50	U
108-88-3	Toluene	50	U
108-90-7	Chlorobenzene	50	U
100-41-4	Ethylbenzene	50	U
100-42-5	Styrene	50	U
1330-20-7	Xylenes (total)	50	U

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

MW5DL

Lab Name: NYTEST ENV INC Contract: 89-15772

Lab Code: NYTEST Case No.: 1466 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: N97222

Sample wt/vol: 0.50 (g/mL) ML Lab File ID: E4038

Level: (low/med) LOW Date Received: 05/25/89

% Moisture: not dec. ____ Date Analyzed: 05/27/89

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FB

Lab Name: NYTEST ENV INC Contract: 89-15772

Lab Code: NYTEST Case No.: 1466 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: N97223

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: E4022

Level: (low/med) LOW Date Received: 05/25/89

% Moisture: not dec. ____ Date Analyzed: 05/26/89

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	5	U
75-34-4	1,1-Dichloroethene	5	U
75-35-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylenes (total)	5	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FB

Lab Name: NYTEST ENV INC Contract: 89-15772

Lab Code: NYTEST Case No.: 1466 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: N97223

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: E4022

Level: (low/med) LOW Date Received: 05/25/89

% Moisture: not dec. ____ Date Analyzed: 05/26/89

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB

Lab Name: NYTEST ENV INC Contract: 89-15772

Lab Code: NYTEST Case No.: 1466 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: N97224

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: E4021

Level: (low/med) LOW Date Received: 05/25/89

% Moisture: not dec. Date Analyzed: 05/26/89

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	5	U
75-34-4	1,1-Dichloroethene	5	U
75-35-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylenes (total)	5	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TB

Lab Name: NYTEST ENV INC Contract: 89-15772

Lab Code: NYTEST Case No.: 1466 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: N97224

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: E4021

Level: (low/med) LOW Date Received: 05/25/89

% Moisture: not dec. ____ Date Analyzed: 05/26/89

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

INORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-1

Lab Name: NYTEST ENVIRONMENTAL, INC. Contract: 8915772

Lab Code: 6/26/89 Case No.: _____ SAS No.: _____ SDG No.: 127

Matrix (soil/water): WATER Lab Sample ID: N97218

Level (low/med): LOW Date Received: 5/25/89

% Solids: 0

Concentration Units (ug/L or mg/Kg dry weight): ug/L

CAS No.	Analyte	Concentration	C	M	Q
7429-90-5	Aluminum				
7440-36-0	Antimony				
7440-38-2	Arsenic	5.0	U	F	
7440-39-3	Barium	297		P	
7440-41-7	Beryllium				
7440-43-9	Cadmium	5.0	U	P	
7440-70-2	Calcium				
7440-47-3	Chromium	10.6		P	
7440-48-4	Cobalt				
7440-50-8	Copper				
7439-89-6	Iron				
7439-92-1	Lead	5.0	U	F	
7439-95-4	Magnesium				
7439-96-5	Manganese				
7439-97-6	Mercury	0.2	U	CV	
7440-02-0	Nickel				
7440-09-7	Potassium				
7782-49-2	Selenium	5.0	U	F	
7440-22-4	Silver	10.0	U	P	
7440-23-5	Sodium				
7440-28-0	Thallium				
7440-62-2	Vanadium				
7440-66-6	Zinc				
	Cyanide				

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

INORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-2

Lab Name: NYTEST ENVIRONMENTAL, INC. Contract: 8915772

Lab Code: 6/26/89 Case No.: _____ SAS No.: _____ SDG No.: 127

Matrix (soil/water): WATER Lab Sample ID: N91219

Level (low/med): LOW Date Received: 5/25/89

% Solids: 0

Concentration Units (ug/L or mg/Kg dry weight): ug/L

CAS No.	Analyte	Concentration	C	M	Q
7429-90-5	Aluminum				
7440-36-0	Antimony				
7440-38-2	Arsenic	11.0		F	
7440-39-3	Barium	54.3	B	P	
7440-41-7	Beryllium				
7440-43-9	Cadmium	5.0	U	P	
7440-70-2	Calcium				
7440-47-3	Chromium	7.9	B	P	
7440-48-4	Cobalt				
7440-50-8	Copper				
7439-89-6	Iron				
7439-92-1	Lead	5.0	U	F	
7439-95-4	Magnesium				
7439-96-5	Manganese				
7439-97-6	Mercury	0.4		CV	
7440-02-0	Nickel				
7440-09-7	Potassium				
7782-49-2	Selenium	5.0	U	F	
7440-22-4	Silver	10.0	U	P	
7440-23-5	Sodium				
7440-28-0	Thallium				
7440-62-2	Vanadium				
7440-66-6	Zinc				
	Cyanide				

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

INORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-3

Lab Name: NYTEST ENVIRONMENTAL, INC. Contract: 8915772

Lab Code: 6/26/89 Case No.: _____ SAS No.: _____ SDG No.: 127

Matrix (soil/water): WATER Lab Sample ID: N97220

Level (low/med): LOW Date Received: 5/25/89

% Solids: 0

Concentration Units (ug/L or mg/Kg dry weight): ug/L

CAS No.	Analyte	Concentration	C	M	Q
7429-90-5	Aluminum				
7440-36-0	Antimony				
7440-38-2	Arsenic	8.0	B	F	
7440-39-3	Barium	66.8	B	P	
7440-41-7	Beryllium				
7440-43-9	Cadmium	5.0	U	P	
7440-70-2	Calcium				
7440-47-3	Chromium	5.0	U	P	
7440-48-4	Cobalt				
7440-50-8	Copper				
7439-89-6	Iron				
7439-92-1	Lead	5.0	U	F	
7439-95-4	Magnesium				
7439-96-5	Manganese				
7439-97-6	Mercury	0.2	U	CV	
7440-02-0	Nickel				
7440-09-7	Potassium				
7782-49-2	Selenium	5.0	U	F	
7440-22-4	Silver	10.0	U	P	
7440-23-5	Sodium				
7440-28-0	Thallium				
7440-62-2	Vanadium				
7440-66-6	Zinc				
	Cyanide				

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

INORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-4

Lab Name: NYTEST ENVIRONMENTAL, INC. Contract: 8915772

Lab Code: 6/26/89 Case No.: _____ SAS No.: _____ SDG No.: 127

Matrix (soil/water): WATER Lab Sample ID: N97221

Level (low/med): LOW Date Received: 5/25/89

% Solids: 0

Concentration Units (ug/L or mg/Kg dry weight): ug/L

CAS No.	Analyte	Concentration	C	M	Q
7429-90-5	Aluminum				
7440-36-0	Antimony				
7440-38-2	Arsenic	9.0	U	F	
7440-39-3	Barium	50.0	U	P	
7440-41-7	Beryllium				
7440-43-9	Cadmium	5.0	U	P	
7440-70-2	Calcium				
7440-47-3	Chromium	5.0	U	P	
7440-48-4	Cobalt				
7440-50-8	Copper				
7439-89-6	Iron				
7439-92-1	Lead	5.0	U	F	
7439-95-4	Magnesium				
7439-96-5	Manganese				
7439-97-6	Mercury	0.2	U	CV	
7440-02-0	Nickel				
7440-09-7	Potassium				
7782-49-2	Selenium	5.0	U	F	W
7440-22-4	Silver	10.0	U	P	
7440-23-5	Sodium				
7440-28-0	Thallium				
7440-62-2	Vanadium				
7440-66-6	Zinc				
	Cyanide				

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

INORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-5

Lab Name: NYTEST ENVIRONMENTAL, INC. Contract: 8915772

Lab Code: 6/26/89 Case No.: _____ SAS No.: _____ SDG No.: 127

Matrix (soil/water): WATER Lab Sample ID: N97222

Level (low/med): LOW Date Received: 5/25/89

% Solids: 0

Concentration Units (ug/L or mg/Kg dry weight): ug/L

CAS No.	Analyte	Concentration	C	M	Q
7429-90-5	Aluminum				
7440-36-0	Antimony				
7440-38-2	Arsenic	5.0	U	F	S
7440-39-3	Barium	60.5	B	P	
7440-41-7	Beryllium				
7440-43-9	Cadmium	5.0	U	P	
7440-70-2	Calcium				
7440-47-3	Chromium	5.0	U	P	
7440-48-4	Cobalt				
7440-50-8	Copper				
7439-89-6	Iron				
7439-92-1	Lead	5.0	U	F	
7439-95-4	Magnesium				
7439-96-5	Manganese				
7439-97-6	Mercury	0.2	U	CV	
7440-02-0	Nickel				
7440-09-7	Potassium				
7782-49-2	Selenium	5.0	U	F	
7440-22-4	Silver	10.0	U	P	
7440-23-5	Sodium				
7440-28-0	Thallium				
7440-62-2	Vanadium				
7440-66-6	Zinc				
	Cyanide				

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

INORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FB - #1

Lab Name: NYTEST ENVIRONMENTAL, INC. Contract: 8915772

Lab Code: 6/26/89 Case No.: _____ SAS No.: _____ SDG No.: 127

Matrix (soil/water): WATER Lab Sample ID: N97223

Level (low/med): LOW Date Received: 5/25/89

% Solids: 0

Concentration Units (ug/L or mg/Kg dry weight): ug/L

CAS No.	Analyte	Concentration	C	M	Q
7429-90-5	Aluminum				
7440-36-0	Antimony				
7440-38-2	Arsenic	5.0	U	F	
7440-39-3	Barium	50.0	U	P	
7440-41-7	Beryllium				
7440-43-9	Cadmium	5.0	U	P	
7440-70-2	Calcium				
7440-47-3	Chromium	5.0	U	P	
7440-48-4	Cobalt				
7440-50-8	Copper				
7439-89-6	Iron				
7439-92-1	Lead	5.0	J	F	
7439-95-4	Magnesium				
7439-96-5	Manganese				
7439-97-6	Mercury	0.2	U	CV	
7440-02-0	Nickel				
7440-09-7	Potassium				
7782-49-2	Selenium	5.0	U	F	
7440-22-4	Silver	10.0	U	P	
7440-23-5	Sodium				
7440-28-0	Thallium				
7440-62-2	Vanadium				
7440-66-6	Zinc				
	Cyanide				

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

nytest environmental inc.

REPORT OF ANALYSIS

Project No.: 89-15772

We find as follows:
Results in mg/l:

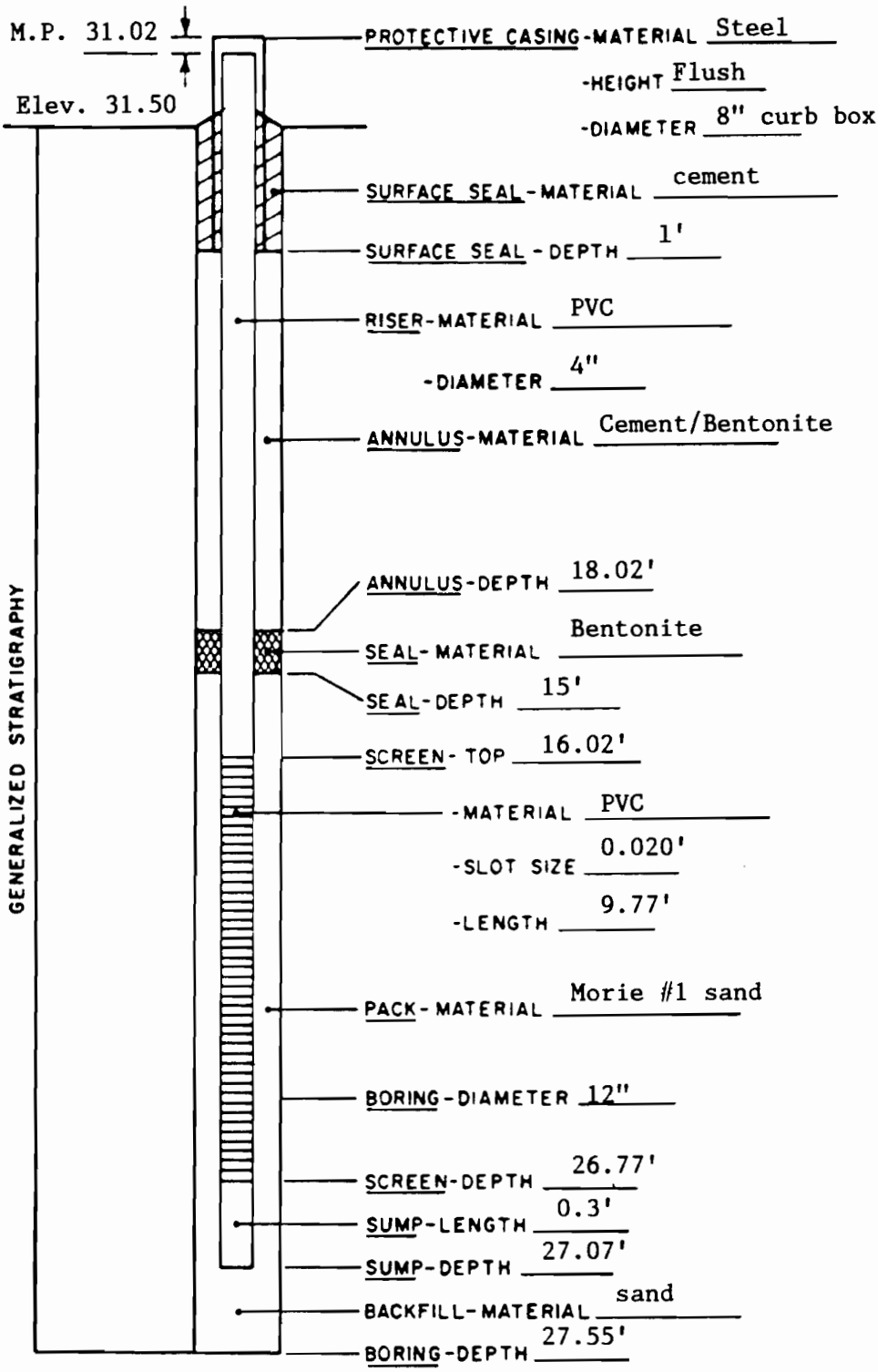
Sample Identification		Parameter(s)
		Total Petroleum Hydrocarbons
MW-1	N9-7218	< 0.2
MW-2	N9-7219	< 0.2
MW-3	N9-7220	< 0.2
MW-4	N9-7221	< 0.2
MW-5	N9-7222	< 0.2
FB-#1	N9-7223	< 0.2

ATTACHMENT E

WELL CONSTRUCTION DIAGRAMS

SUBSURFACE FIELD LOG
MONITORING WELL CONSTRUCTION DETAILS

SHEET 1 OF 1



PROTECTIVE CASING-MATERIAL Steel
-HEIGHT Flush
-DIAMETER 8" curb box
SURFACE SEAL-MATERIAL cement
SURFACE SEAL-DEPTH 1'
RISER-MATERIAL PVC
-DIAMETER 4"
ANNULUS-MATERIAL Cement/Bentonite
ANNULUS-DEPTH 18.02'
SEAL-MATERIAL Bentonite
SEAL-DEPTH 15'
SCREEN-TOP 16.02'
-MATERIAL PVC
-SLOT SIZE 0.020'
-LENGTH 9.77'
PACK-MATERIAL Morie #1 sand
BORING-DIAMETER 12"
SCREEN-DEPTH 26.77'
SUMP-LENGTH 0.3'
SUMP-DEPTH 27.07'
BACKFILL-MATERIAL sand
BORING-DEPTH 27.55'

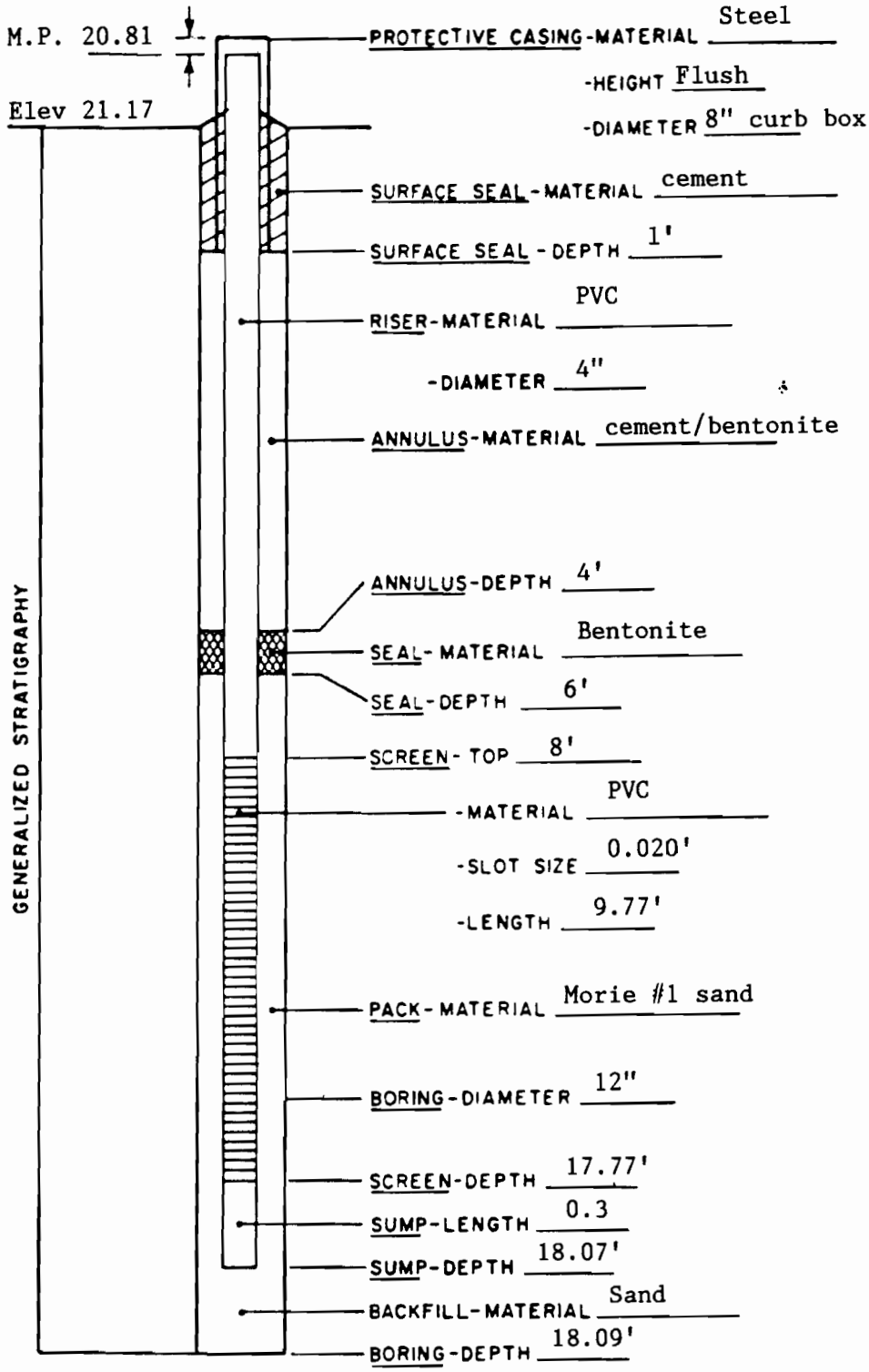
WELL NO MW-1
PROJECT Penetrex
PROJECT NO 412.01
BY J.Patrick Byrnes
DATE 5-9-89

WATER LEVEL UPON COMPLETION _____
DRILLER Delta Well & Pump
METHOD Hollow Stem Auger
RIG TYPE Truck Mounted Auger
SAMPLING METHOD Split-spoon
DEVELOPMENT DATE 5-10-89
DEVELOPMENT METHOD pumping

BLASLAND & BOUCK ENGINEERS, P.C.

SUBSURFACE FIELD LOG
MONITORING WELL CONSTRUCTION DETAILS

SHEET 1 OF 1



PROTECTIVE CASING-MATERIAL Steel
-HEIGHT Flush
-DIAMETER 8" curb box
SURFACE SEAL-MATERIAL cement
SURFACE SEAL-DEPTH 1'
RISER-MATERIAL PVC
-DIAMETER 4"
ANNULUS-MATERIAL cement/bentonite
ANNULUS-DEPTH 4'
SEAL-MATERIAL Bentonite
SEAL-DEPTH 6'
SCREEN-TOP 8'
-MATERIAL PVC
-SLOT SIZE 0.020'
-LENGTH 9.77'
PACK-MATERIAL Morie #1 sand
BORING-DIAMETER 12"
SCREEN-DEPTH 17.77'
SUMP-LENGTH 0.3
SUMP-DEPTH 18.07'
BACKFILL-MATERIAL Sand
BORING-DEPTH 18.09'

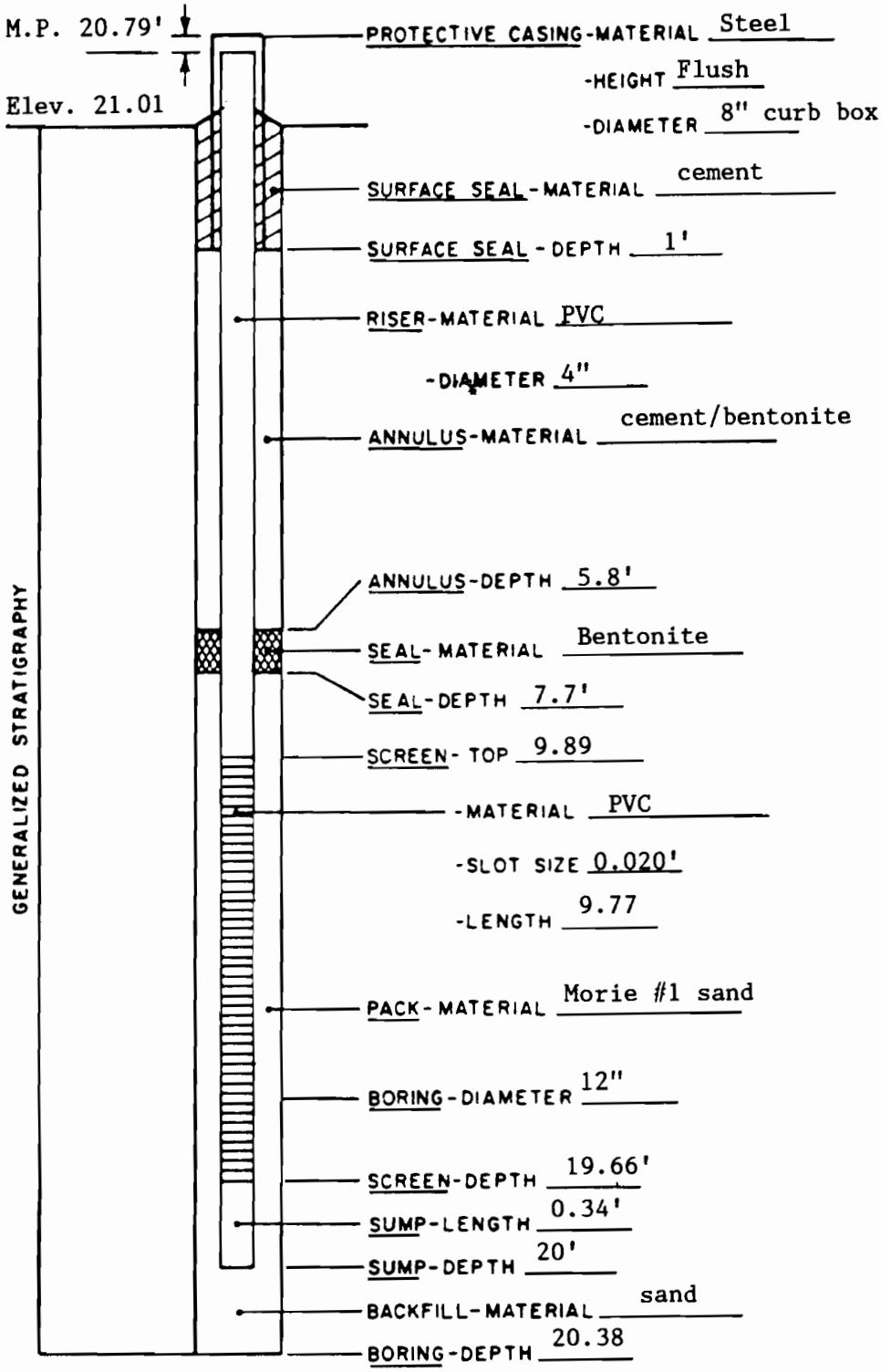
WELL NO MW-2
PROJECT Penetrex
PROJECT NO 412.01
BY J.Patrick Byrnes
DATE 5-9-89

WATER LEVEL UPON COMPLETION _____
DRILLER Delta Well & Pump
METHOD Hollow stem Auger
RIG TYPE Truck Mounted Auger
SAMPLING METHOD Split-spoon
DEVELOPMENT DATE 5-10-89
DEVELOPMENT METHOD pumping

BLASLAND & BOUCK ENGINEERS, P.C.

SUBSURFACE FIELD LOG
MONITORING WELL CONSTRUCTION DETAILS

SHEET 1 OF 1



PROTECTIVE CASING-MATERIAL Steel
-HEIGHT Flush
-DIAMETER 8" curb box
SURFACE SEAL-MATERIAL cement
SURFACE SEAL-DEPTH 1'
RISER-MATERIAL PVC
-DIAMETER 4"
ANNULUS-MATERIAL cement/bentonite
ANNULUS-DEPTH 5.8'
SEAL-MATERIAL Bentonite
SEAL-DEPTH 7.7'
SCREEN-TOP 9.89
-MATERIAL PVC
-SLOT SIZE 0.020'
-LENGTH 9.77
PACK-MATERIAL Morie #1 sand
BORING-DIAMETER 12"
SCREEN-DEPTH 19.66'
SUMP-LENGTH 0.34'
SUMP-DEPTH 20'
BACKFILL-MATERIAL sand
BORING-DEPTH 20.38

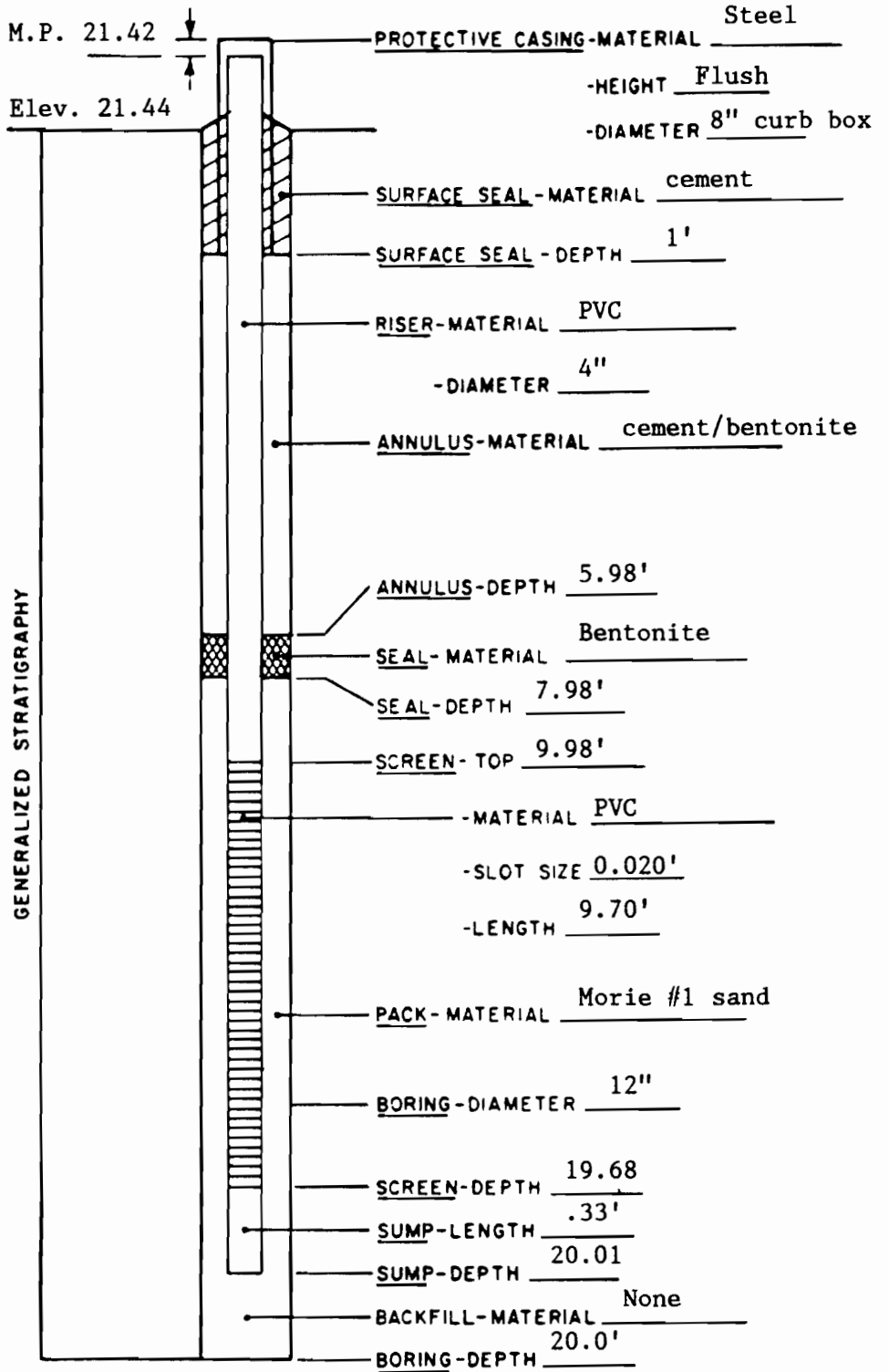
WELL NO MW-3
PROJECT Penetrex
PROJECT NO 412.01
BY J.Patrick Byrnes
DATE 5/9/89

WATER LEVEL UPON COMPLETION _____
DRILLER Delta Well & Pump
METHOD Hollow Stem Auger
RIG TYPE Truck Mounted Auger
SAMPLING METHOD Split-spoon
DEVELOPMENT DATE 5-10-89
DEVELOPMENT METHOD pumping

BLASLAND & BOUCK ENGINEERS, P.C.

SUBSURFACE FIELD LOG
MONITORING WELL CONSTRUCTION DETAILS

SHEET 1 OF 1



PROTECTIVE CASING-MATERIAL Steel
-HEIGHT Flush
-DIAMETER 8" curb box
SURFACE SEAL-MATERIAL cement
SURFACE SEAL-DEPTH 1'
RISER-MATERIAL PVC
-DIAMETER 4"
ANNULUS-MATERIAL cement/bentonite
ANNULUS-DEPTH 5.98'
SEAL-MATERIAL Bentonite
SEAL-DEPTH 7.98'
SCREEN-TOP 9.98'
-MATERIAL PVC
-SLOT SIZE 0.020'
-LENGTH 9.70'
PACK-MATERIAL Morie #1 sand
BORING-DIAMETER 12"
SCREEN-DEPTH 19.68
SUMP-LENGTH .33'
SUMP-DEPTH 20.01
BACKFILL-MATERIAL None
BORING-DEPTH 20.0'

WELL NO MW-4
PROJECT Penetrex
PROJECT NO 412.01
BY J.Patrick Byrnes
DATE 5-10-89

WATER LEVEL UPON COMPLETION _____
DRILLER Delta Well & Pump
METHOD Hollow Stem Auger
RIG TYPE Truck Mounted Auger
SAMPLING METHOD Split-Spoon
DEVELOPMENT DATE 5-10-89
DEVELOPMENT METHOD pumping

BLASLAND & BOUCK ENGINEERS, P.C.

ATTACHMENT F

RESULTS OF PERMEABILITY TESTING

Project: PENETREX
Project N: 412.01
Well No.:MW-2
Test Date: JUNE 20 1989
Formation Tested: UPPER GLACIAL AQUIFER
Rising (R) or Falling (F) Head Test:R

			(cm)	
Datum height (ft)	-0.36		-10.97	
Static Water Level (ft)	11.92		363.32	374.29 SW
Depth to bottom of screen (ft from ground level)	17.77		541.63	167.34 H
Boring Diameter (in)	12.00		30.48	15.24 Rw
Casing Diameter (in)	4.00		10.16	5.08 Rc
Screen Diameter (in)	4.00		10.16	10.16 DS
Screen Length (ft)	9.77		297.79	297.79 L
Depth to Boundary	600.00		18288.00	17913.71 D
Delta H at time 0 (ft)	2.68		81.69	81.69 H0
Delta H at Time t (ft)	0.32		9.75	9.75 Ht
Time t (seconds)	840			840.00 T
Ratio Kh/Kv	1			1.00 M
Porosity of Filter Pack	0.3			0.30 P

	cm/sec	gpd/ft2
K (Bouwer-Rice)	5.7E-04	12.1
K (Hvorslev Time Lag)	3.3E-04	6.9
K (Hvorslev Variable Head)	3.3E-04	6.9

W O R K S H E E T

Bouwer-Rice Computation		Hvorslev Time Lag		Hvorslev Variable Head	
9.37	Rc			3.26E-04	K
19.54	L/Rw			6.909738	K
0.01	H/D	392.98	T		
2.10	A	9.77	AH		
0.29	B	2.13	HR		
1.50	C	2.97	BH		
7.06	Pp'	3.3E-04	K		
6.00	Pp	6.95	K		
1.53	RR'ab				
1.87	RR'c				
1.53	RR				
5.7E-04	KK				
12.1	K				

Project: PENETREX
Project N: 412.01
Well No.:MW-3
Test Date: JUNE 20 1989
Formation Tested: UPPER GLACIAL AQUIFER
Rising (R) or Falling (F) Head Test:R

			(cm)	
Datum height (ft)	-0.22		-6.71	
Static Water Level (ft)	10.00		304.80	311.51 SW
Depth to bottom of screen (ft from ground level)	19.66		599.24	287.73 H
Boring Diameter (in)	12.00		30.48	15.24 Rw
Casing Diameter (in)	4.00		10.16	5.08 Rc
Screen Diameter (in)	4.00		10.16	10.16 DS
Screen Length (ft)	9.77		297.79	297.79 L
Depth to Boundary	600.00		18288.00	17976.49 D
Delta H at time 0 (ft)	5.08		154.84	154.84 H0
Delta H at Time t (ft)	1.59		48.46	48.46 Ht
Time t (seconds)	840			840.00 T
Ratio Kh/Kv	1			1.00 M
Porosity of Filter Pack	0.3			0.30 P

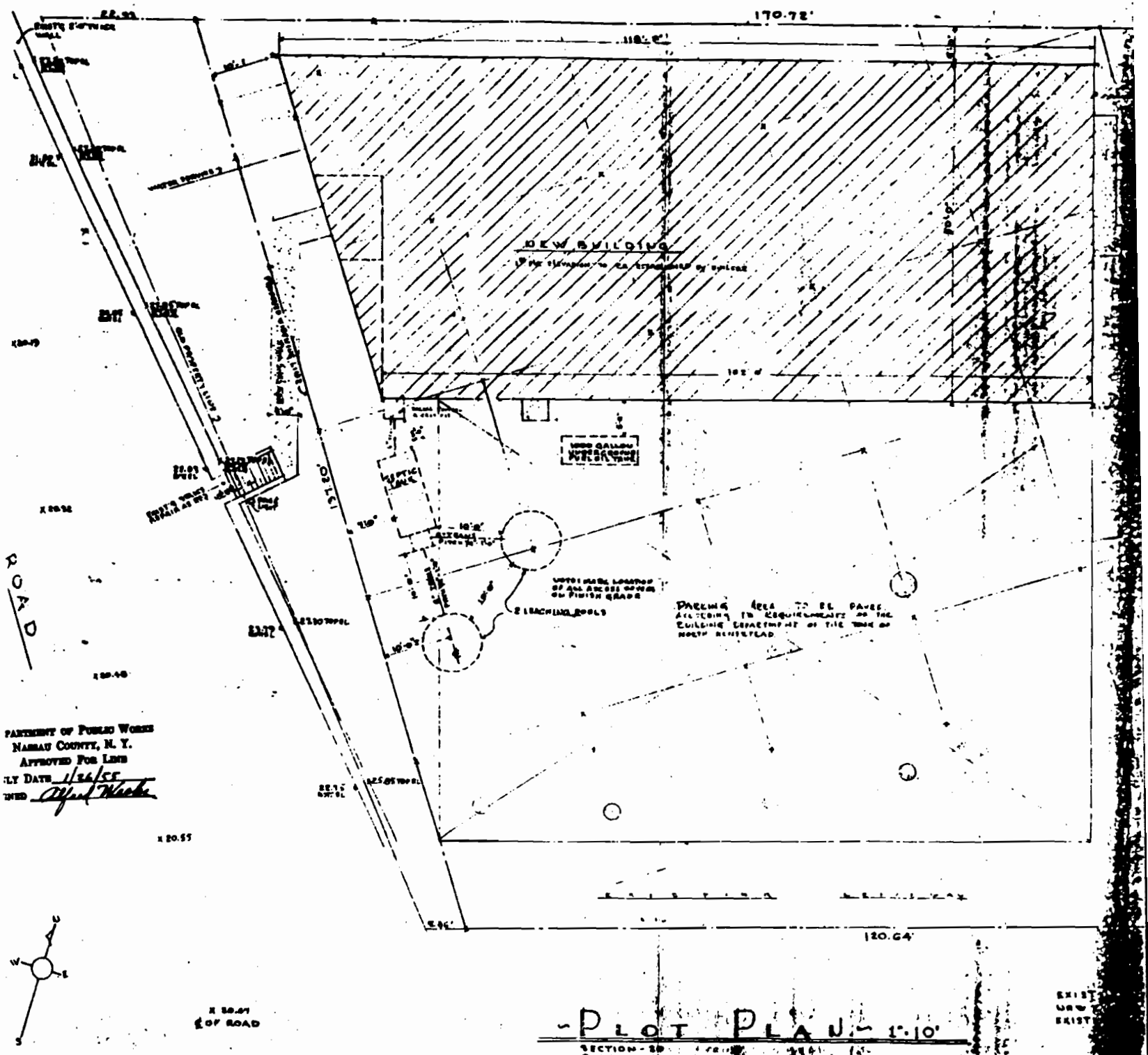
	cm/sec	gpd/ft2
K (Bouwer-Rice)	3.6E-04	7.6
K (Hvorslev Time Lag)	1.8E-04	3.8
K (Hvorslev Variable Head)	1.8E-04	3.8

W O R K S H E E T

Bouwer-Rice Computation		Hvorslev Time Lag		Hvorslev Variable Head	
9.37	Rc			1.78E-04	K
19.54	L/Rw			3.776586	K
0.02	H/D	719.00	T		
2.10	A	9.77	AH		
0.29	B	1.16	HR		
1.50	C	2.97	BH		
7.06	Pp'	1.8E-04	K		
6.00	Pp	3.80	K		
1.75	RR'ab				
2.22	RR'c				
1.75	RR				
3.6E-04	KK				
7.6	K				

ATTACHMENT G

SITE PLOT PLAN


170.72'
NEW BUILDING
ROAD
PARKING AREA TO BE PAVED
2 LEACHING POOLS
DEPARTMENT OF PUBLIC WORKS
NASSAU COUNTY, N. Y.
APPROVED FOR LIEU
120.64'
PLOT PLAN - 1"=10'

ATTACHMENT H

HAZARD RANKING SYSTEM (HRS) REPORT

DOCUMENTATION RECORDS FOR HAZARD RANKING SYSTEM

INSTRUCTIONS: The purpose of these records is to provide a convenient way to prepare an auditable record of the data and documentation used to apply the Hazard Ranking System to a given facility. As briefly as possible, summarize the information you used to assign the score for each factor (e.g., The source of information should be provided for each entry and should be a bibliographic-type reference that will make the document used for a given data point easier to find. Include the location of the document and consider appending a copy of the relevant page(s) for ease in review.

FACILITY NAME: Former Penetrex Processing Co.

LOCATION: Town of North Hempstead, Nassau Co., NY

Facility name: Former Penetrex Processing Co.

Location: One Shore Rd., Glenwood Landing, Nassau Co., NY

EPA Region: I I

Person(s) in charge of the facility: Mr. Saul Weinberger

K & W Associates

P.O. Box 1356, Roslyn Height, NY

Name of Reviewer: Blasland & Bouck Engineers, PC Date: 11 July 1989

General description of the facility:

(For example: landfill, surface impoundment, pile, container; types of hazardous substances; location of the facility; contamination route of major concern; types of information needed for rating; agency action, etc.)

The Penetrex Processing Co. was a dry cleaning establishment which operated on a portion of the site until about 1984. Unauthorized discharges of industrial wastewater into an on-site cesspool had resulted in elevated levels of organic contaminants in said cesspool.

Scores: S_M = (S_{gw} = 17.50 S_{sw} = 0 S_a = 0)

S_{FE} = N/A

S_{DC} = 0 Max. S_m = 10.12

FIGURE 1
HRS COVER SHEET

Ground Water Route Work Sheet						
Rating Factor	Assigned Value (Circle One)		Multi-plier	Score	Max. Score	Ref. (Section)
1 Observed Release	(0)	(45)	1	~~0~~	45	3.1
If observed release is given a score of 45, proceed to line 4. If observed release is given a score of 0, proceed to line 2.						
2 Route Characteristics						3.2
Depth to Aquifer of Concern	0 1 2 (3)		2	6	6	
Net Precipitation	0 1 (2) 3		1	2	3	
Permeability of the Unsaturated Zone	0 ~~1~~ (2) 3		1	~~1~~ 2	3	
Physical State	0 1 2 (3)		1	3	3	
Total Route Characteristics Score			13	~~12~~	15	
3 Containment	0 1 2 3		1	~~1~~	3	3.3
4 Waste Characteristics						3.4
Toxicity/Persistence	0 3 6 9 12 15 (18)		1	18	18	
Hazardous Waste Quantity	0 (1) 2 3 4 5 6 7 8		1	1	8	
Total Waste Characteristics Score				19	26	
5 Targets						3.5
Ground Water Use	0 1 2 (3)		3	9	9	
Distance to Nearest Well/Population Served	0 4 6 8 10 / 12 16 18 20 / 24 30 32 (35) 40		1	35	40	
Total Targets Score				44	49	
6 If line 1 is 45, multiply 1 x 4 x 5 / If line 1 is 0, multiply 2 x 3 x 4 x 5				~~10,032~~ 17,628	57,330	
7 Divide line 6 by 57,330 and multiply by 100			S_{gw} =	~~17.50~~ 30.7		

FIGURE 2
GROUND WATER ROUTE WORK SHEET

Surface Water Route Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
1 Observed Release	(0) 45	1	0	45	4.1
If observed release is given a value of 45, proceed to line 4. If observed release is given a value of 0, proceed to line 2.					
2 Route Characteristics					4.2
Facility Slope and Intervening Terrain	(0) 1 2 3	1	0	3	
1-yr. 24-hr. Rainfall	0 1 (2) 3	1	2	3	
Distance to Nearest Surface Water	0 1 2 (3)	2	6	6	
Physical State	0 1 2 (3)	1	3	3	
Total Route Characteristics Score			11	15	
3 Containment	(0) 1 2 3	1	0	3	4.3
4 Waste Characteristics					4.4
Toxicity/Persistence	0 3 6 9 12 15 (18)	1	18	18	
Hazardous Waste Quantity	0 (1) 2 3 4 5 6 7 8	1	1	8	
Total Waste Characteristics Score			19	26	
5 Targets					4.5
Surface Water Use	0 1 (2) 3	3	6	9	
Distance to a Sensitive Environment	0 1 2 (3)	2	6	6	
Population Served/Distance to Water Intake Downstream	(0) 4 6 8 10 12 16 18 20 24 30 32 35 40	1	0	40	
Total Targets Score			12	55	
6 If line 1 is 45, multiply 1 x 4 x 5 If line 1 is 0, multiply 2 x 3 x 4 x 5			0	64,350	
7 Divide line 6 by 64,350 and multiply by 100		S_{sw} =	0		

FIGURE 7
SURFACE WATER ROUTE WORK SHEET

Air Route Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
[1] Observed Release	(0) 45	1	0	45	5.1
Date and Location:					
Sampling Protocol:					
If line [1] is 0, the S_a = 0. Enter on line [5]. If line [1] is 45, then proceed to line [2].					
[2] Waste Characteristics					5.2
Reactivity and Incompatibility	0 1 2 3	1		3	
Toxicity	0 1 2 3	3		9	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1		8	
	Total Waste Characteristics Score			20	
[3] Targets					5.3
Population Within 4-Mile Radius	0 9 12 15 18 21 24 27 30	1		30	
Distance to Sensitive Environment	0 1 2 3	2		6	
Land Use	0 1 2 3	1		3	
	Total Targets Score			39	
[4] Multiply [1] x [2] x [3]				35,100	
[5] Divide line [4] by 35,100 and multiply by 100		S_a = 0			

FIGURE 9
AIR ROUTE WORK SHEET

even if ① is given, score only factors

	S	S^2
Groundwater Route Score (S_{gw})	17.50	306.25
Surface Water Route Score (S_{sw})	0	0
Air Route Score (S_a)	0	0
$S_{gw}^2 + S_{sw}^2 + S_a^2$		306.25
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2}$		17.50
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2} / 1.73 = S_M =$		10.12

FIGURE 10
WORKSHEET FOR COMPUTING S_M

Fire and Explosion Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
1 Containment	1 3	1		3	7.1
2 Waste Characteristics					7.2
Direct Evidence	0 3	1		3	
Ignitability	0 1 2 3	1		3	
Reactivity	0 1 2 3	1		3	
Incompatibility	0 1 2 3	1		3	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1		8	
Total Waste Characteristics Score				20	
3 Targets					7.3
Distance to Nearest Population	0 1 2 3 4 5	1		5	
Distance to Nearest Building	0 1 2 3	1		3	
Distance to Sensitive Environment	0 1 2 3	1		3	
Land Use	0 1 2 3	1		3	
Population Within 2-Mile Radius	0 1 2 3 4 5	1		5	
Buildings Within 2-Mile Radius	0 1 2 3 4 5	1		5	
Total Targets Score				24	
4 Multiply 1 x 2 x 3				1,440	
5 Divide line 4 by 1,440 and multiply by 100		S_{FE} = 0			

FIGURE 11
FIRE AND EXPLOSION WORK SHEET

all T. P.'s for Explosion

State why not scoring

Direct Contact Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multiplier	Score	Max. Score	Ref. (Section)
1 Observed Incident	(0) 45	1	0	45	8.1
If line 1 is 45, proceed to line 4 If line 1 is 0, proceed to line 2					
2 Accessibility	(0) 1 2 3	1	0	3	8.2
3 Containment	(0) 15	1	0	15	8.3
4 Waste Characteristics Toxicity	0 1 2 (3) ✓	5	18	15	8.4
5 Targets					8.5
Population Within a 1-Mile Radius	0 1 2 3 4 (5) ✓	4	20	20	
Distance to a Critical Habitat	(0) ✓ 1 2 3	4	0	12	
Total Targets Score			20	32	
6 If line 1 is 45, multiply 1 x 4 x 5 If line 1 is 0, multiply 2 x 3 x 4 x 5			0	21,600	
7 Divide line 6 by 21,600 and multiply by 100	S_{DC} = 0				

FIGURE 12
DIRECT CONTACT WORK SHEET

GROUND WATER ROUTE

cover sheet for documentation and data for HRS

1 OBSERVED RELEASE

Contaminants detected (5 maximum):

No direct evidence of release of substances of concern from the facility to ground water have been observed. The upgradient well at the site contains the same volatile organic compounds that are detected in the downgradient wells, and in most cases at higher concentrations. Thus there is no direct evidence that ground water at the site contains concentrations of contaminants at a significantly higher level than background levels.

Rationale for attributing the contaminants to the facility:

Not applicable.

Assigned value = 0.

2 ROUTE CHARACTERISTICS

Depth to Aquifer of Concern

The Magothy and Upper glacial aquifers are designated as the aquifers of concern within a 3-mile radius of the site. The Magothy aquifer consists

mainly of fine to medium sand and the Upper glacial aquifer is made up of fine to coarse sand and gravel.

The depth(s) from ground surface to the highest seasonal level of the saturated zone (water table) of the aquifer of concern:

In monitoring wells installed on-site as part of this study, the shallowest depth to water from land surface is 9.65 feet.

Assigned value = 3.

Reference: Phase II Investigation, 1989, Blasland & Bouck Engineers, P.C. (see attached report).

Depth from the ground surface to the lowest point of waste disposal/storage:

Unknown

Net Precipitation

Mean annual or seasonal precipitation:

45 inches

Reference: Isbister, J. 1966. Geology and Hydrogeology of Northeastern Nassau County, Long Island, New York. Geological Survey Water-Supply Paper 1825 (Appendix A1).

Mean annual lake or seasonal evaporation:

30 inches.

Reference: U.S. EPA 1984. Uncontrolled Hazardous Waste Site Ranking System. A Users Manual (HW-10). Originally published in the July 16, 1982, Federal Register (Appendix A2).

Net precipitation (subtract the above figures):

15 inches.

Assiend value = 2.

Permeability of Unsaturated Zone

Soil Type in unsaturated zone:

Morainal deposits of moderately sorted fine to medium sand with lenses of clayey and silty fine sand.

Permeability associated with soil type:

5.7 $x10^{-5}$ cm/sec.

Assigned value = ~~1.~~ 2

Reference: Phase II Investigation, 1989, Blasland & Bouck Engineers, P.C. (see attached report).

Physical State of Waste

Physical State of substances at time of disposal (or at present time for generated gases):

Washwater containing cleaning solvents disposed of in on-site drywell.

Assigned value = 3. ✓

Reference: Affidavit by J. Woodworth of NYSDEC (Appendix A3).

Containment

Method(s) of waste or leachate containment evaluated:

No Hazardous waste stored on-site. — not the question what type of containment was there for what is/was typical disposal

4 WASTE CHARACTERISTICS

Toxicity and Persistence

Analytical results of sediment and ground-water samples analyzed as part of Phase II Investigation.

Compound(s) evaluated:

tetrachloroethene,

1,2-dichloroethene,

trichloroethene,

Compound with highest score:

Tetrachloroethene

Assigned value = 18

References: Sax, N.I. and Lewis, R.S. 1987, Hazardous Chemicals Desk Reference (Appendix A4).

Hazardous Waste Quantity

Total quantity of hazardous substances at the facility, excluding those with a containment score of 0 (Give a reasonable estimate even if quantity is above maximum):

Estimated 1-10 cu. yd.

Assigned value = 1

Basis of estimating and/or computing waste quantity:

There are no hazardous wastes currently being stored on-site, however, because organic contaminants have been detected in soil at the site a quantity has been estimated. Based on analytical results of sediment samples, it has been estimated that 1 to 10 cubic yards (1-40 drums) of waste material exists.

Reference: Phase II Investigation, 1989, Blasland & Bouck Engineers, P.C.

5 TARGETS

Ground-Water Use

Use(s) of aquifer(s) of concern within a 3-mile radius of the facility:

Drinking water.

Assigned value = 3

Reference: Swarzenski, W.V. 1963. Hydrogeology of Northwestern Queens Counties. Long Island, New York (Appendix A5).

Distance to Nearest Well

Location of nearest well drawing from aquifer(s) of concern or occupied building not served by a public water supply:

A public-supply well N-5201 (County I.D.) or number 11 (Jericho Water Dist. I.D.) is located approximately 2,200 feet east of the site.

Assigned value = 3.

References: Kilburn, C. 1982. Ground-Water Pumpage in Nassau County, Long Island, New York, 1920-77. Geological Survey Open-file Report 81-499 (Appendix A6).

USGS. 1968. 7.5-Minute Series Topography Sea Cliff Qud.

Jericho Water District, Jericho, NY, Oral Communication 1989.

Population served by Ground-Water Wells within a 3-Mile Radius

Identified water-supply well(s) drawing from aquifer(s) of concern within a 3-mile radius and populations served by each:

Public Water Supplies:

Sea Cliff Water Co. - 7 pumping wells
Jericho Water District - 2 pumping wells
Roslyn Water District - approximately 7 wells located east of Hempstead Harbor (which creates a discontinuity in the aquifer).

Computation of land area irrigated by supply well(s) drawing from aquifer(s) of concern within a 3-mile radius, and conversion to population (1.5 people per acre):

None reported.

Rationale for population estimate:

Jericho Water District serves 57,000 people with 21 wells, thus an average of 2,700 people per well. About 16 wells are within the 3-mile radius of concern, thus an estimate of 43,200 people are served by ground water.

Asigned value = 5

Combined value = 35

References: Kilburn, C. 1982. Ground-water Pumpage in Nassau County, Long Island, New York, 1920-77. USGS Open-File Report 81-499 (Appendix A6).

Jericho Water District, Jericho, NY. Oral Communication. 1989.

SURFACE WATER ROUTE

1 OBSERVED RELEASE

Contaminants detected in surface water at the facility or downhill from it (5 maximum):

No data available to confirm release.

Assigned value = 0.

Rationale for attributing the contaminants to the facility:

N/A

2 ROUTE CHARACTERISTICS

Facility Slope and Interventing Terrain

Average slope of facility in percent:

Average slope = 5-8%

Name/description of nearest downslope surface water:

Hempstead Harbor lies approximately 1,000 feet west.

Average slope of terrain between facility and above-cited surface water body in precent:

Average slope < 3%

Is the facility located either totally or partially in surface water:

No

Is the facility completely surrounded by areas of higher elevation:

No

Assigned value = 0.

Ratoinale for assigned value:

Therre are no longer any hazardous waste materials stored or used on-site, thus there is no potential for surface water runoff of these contaminants.

Reference: Phase II Investigation, 1989, Blasland & Bouck Engineers, P.C.

<u>1-Year, 24-Hour Rainfall in Inches</u>

2.5 - 3.0 inches.

Assigned value = 2.

Reference: U.S. EPA 1984. Uncontrolled Hazardous Waste Site Ranking System. A Users Manual (HW-10). Originally published in the July 16, 1982 <u>Federal Register</u> (Appendix A7).

Distance to Nearest Downslope Surface Water

Hempstead Harbor is approximately 1,000 feet west of site.

Assigned value = 3.

Reference: USGS. 1968. 7.5-Minute Series Topographic: Sea Cliff Quad.
USGS. 1967. 7.5-Minute Series Topographic: Hicksville Quad.

Physical State of Waste

Wastewater containing organic volatile compounds (solvents)

Assigned value = 3.

3 CONTAINMENT

Method(s) of waste or leachate containment evaluated:

The Penetrex dry cleaning operation has ceased at the site. No wastes are contained or handled at the site.

Assigned value = 0

what was method of containment before clean up, what is site now?

Reference: Phase II Investigation, 1989 Blasland & Bouck Engineers, P.C.

4 WASTE CHARACTERISTICS

Toxicity and Persistence

Compound(s) evaluated

Analytical data from discharged wastes, sediment and ground water at the site detected concentrations of tetrachloroethene, 1,2-dichloroethene, trichloroethene.

Compound with highest score:

Tetrachloroethene.

Assigned value = 18

Reference: Sax, R.L. 1987. Condensed Chemical Dictionary (Appendix A4). U.S. EPA. Uncontrolled Hazardous Waste Site Ranking System. A Users Manual (HW-10). Originally published in the July 16, 1982 Federal Register (Appendix A4).

Hazardous Waste Quantity

Total quantity of hazardous substances at the facility, excluding these with a containment score of 0 (Give a reasonable estimate even if quantity is above maximum):

Estimated 1-10 cu. yd.

Assigned value = 1.

Basis of estimating and/or computing waste quantity:

See Ground Water.

Population Served by Surface Water

Location(s) of surface water with water intake within 3 miles (free-flowing) or 1 mile (static) downstream from facility and population served:

None.

Reference: USGS. 1967. 7.5-Minute Series Topographic: Hicksville Quad.
USGS. 1968. 7.5-Minute Series Topographic: Sea Cliff Quad.

5 TARGETS

Surface Water Use

Use(s) of surface water within 3 miles downstream of the hazardous substance:

Hempstead Harbor is located approximately 1,000 feet west of the site. The harbor is used for boating and fishing.

Assigned value = 2.

Reference: USGS. 1967. 7.5-Minute Series Topographic: Hicksville Quad.

USGS. 1968. 7.5-Minute Series Topographic: Sea Cliff Quad.

Is there tidal influence:

Unknown

Distance to a Sensitive Environment

Distance to 5-acre (minimum) coastal wetland, if 2 mile or less:

Hempstead Harbor.

Assigned value = 3. ✓

Distance to 5-acre (minimum) fresh-water wetland, if 1 mile or less:

None

0

Distance to critical habitat of an endangered species or national wildlife refuge, if 1 mile or less:

None

0

Population Served/Distance to Water Intake Downstream

Location(s) of water-supply intake(s) within 3 miles (free flowing bodies) or 1 mile (static water bodies) downstream of the hazardous substance and population served by each intake:

None known.

Land area irrigated by above-cited intake(s) and conversion to population (1.5 people per acre):

None.

Assigned value = 0

Total population served:

N/A

Assigned value = 0.

Name/description of nearest above water bodies:

N/A

Assigned value = 0.

Distance to surface water intakes:

N/A

Assigned value = 0.

Combined value = 0.

AIR ROUTE

1 OBSERVED RELEASE

Contaminants detected:

An air monitoring survey was completed, using a photoionization meter (OVM), during Phase II Investigation. No volatiles were detected above background readings. No other data available.

Assigned value = 0.

Date and location of detection of contaminants:

N/A

Methods used to detect the contaminants:

N/A

Rationale for attributing the contaminants to the site:

N/A

2 WASTE CHARACTERISTICS

Reactivity and Incompatibility

Most reactive compound:

N/A

Most incompatible pair of compounds:

N/A

Toxicity

Most toxic compound:

N/A

Hazardous Waste Quantity

Total quantity of hazardous waste:

N/A

Basis of estimating and/or computing waste quantity:

N/A

3 TARGETS

Population Within 4-Mile Radius

Circle radius used, give population, and indicate how determined:

0 to 4 mi 0 to 1 mi 0 to 1/2 mi 0 to 1/4 mi

N/A.

Distance to a Sensitive Environment

Distance to 5-acre (minimum) coastal wetland, if 2 miles or less:

N/A.

Distance to a 5-acre (minimum) freshwater wetland, if 1 mile or less:

N/A.

Distance to critical habitat of an endangered species, if 1 mile or less:

N/A.

Land Use

Distance to commercial/industrial area, if 1 mile or less:

N/A.

Distance to national or state park, forest, or wildlife reserve if 2 miles or less:

N/A.

Distance to residential area, if 2 miles or less:

N/A.

Distance to agricultural land in production within past 5 years, if 1 mile or less:

N/A.

Distance to prime agricultural land in production within past 5 years, if 2 miles or less:

N/A.

Is a historic or landmark site (National Register of Historic Places and National Natural Landmarks) within the view of the site?

N/A.

DIRECT CONTACT

1 OBSERVED INCIDENT

Date, location, and pertinent details of incident:

Not reported.

Assigned value = 0.

2 ACCESSIBILITY

Describe type(s) of barrier(s):

No wastes are contained of stored on-site from the former Penetrex operation.

Assigned value = 0.

Reference: Phase II Investigation, 1989, Blasland & Bouck Engineers, P.C. (see attachment report)

3 CONTAINMENT

Type of containment:

No wastes are contained or stored on-site from the former Penetrex operation.

Assigned value = 0.

Reference: Phase II Investigation, 1989, Blasland & Bouck Engineers, P.C. (see attached report).

4 WASTE CHARACTERISTICS

Toxicity

Analytical data from sediment and ground-water samples indicate the presence of tetrachloroethene, 1,2-dichloroethene, trichloroethene.

Compound with highest score:

tetrachloroethene.

Assigned = 3.

5 TARGETS

Population Within 1-Mile Radius

Population of Nassau County is approximately 1,321,582. Nassau County conists of about 298 sq. mi. thus:

$\frac{1,321,582}{298}$ = 4,435 people per sq. mi.

1-mile Radius = r^2=3.14 sq. mi.

3.14 sq. mi x 4,435 people per sq. mi. = approximately 14,000 people within a 1-mile radius.

Reference: Nassau County Hagstrom Atlas. 1988. Nassau County Population Estimation for Nassau Co. (Appendix A8).

Assigned value = 5.

Distance to a Critical Habitat (of an Endangered Species)

N/A.

Assigned value = 0.

FIRE AND EXPLOSION

1 CONTAINMENT

Hazardous substances present:

N/A.

give justification
p. 19 - HRS manual

Type of containment, if applicable:

N/A

2 WASTE CHARACTERISTICS

Direct Evidence

Type of instrument and measurements:

N/A

Ignitability

Compound used:

N/A

Reactivity

Most reactive compound:

N/A

Incompatibility

Most incompatible pair of compounds:

N/A

Hazardous Waste Quantity

Total quantity of hazardous substances at the facility:

N/A

Basic of estimating and/or computing waste quantity:

N/A

3 TARGETS

Distance to Nearest Population

N/A

Distance to Nearest Building

N/A

Distance to Sensitive Environment

Distance to wetlands:

N/A

Distance to critical habitat:

N/A

Distance to commercial/industrial area, if 1 mile or less:

N/A

Distance to national or state park, forest, or wildlife reserve, if 2 miles or less:

N/A

Distance to residential area, if 2 miles or less:

N/A

Distance to agricultural land in production within past 5 years, if 1 mile or less:

N/A

Distance to prime agricultural land in production within past 5 years, if 2 miles or less:

N/A

APPENDICES

A1-1

Geology and Hydrology of Northeastern Nassau County Long Island, New York

By JOHN ISBISTER

GEOLOGICAL SURVEY WATER-SUPPLY PAPER 1825

Prepared in cooperation with the Nassau County Department of Public Works and the New York State Water Resources Commission

UNITED STATES GOVERNMENT PRINTING OFFICE, WASHINGTON : 1966

Recent deposits are not used as sources of freshwater because they generally either occur above the water table, contain salt water, or are so close to salt water that pumping from them would induce rapid intrusion of salty water. The beds of silt and clay, which are presently accumulating in Long Island Sound and its harbors, form an important seal that retards both leakage of fresh water from underlying strata and encroachment of salt water into them.

HYDROLOGY

HYDROLOGIC CYCLE

The hydrologic cycle denotes the circulation of water from the sea, through the atmosphere, to the land, and back to the sea by overland and subsurface routes, and in part by way of the atmosphere. Some of the water which falls on the study area as precipitation moves overland to the sea, a part returns to the atmosphere through the process of evaporation, a part moves into the roots of growing plants and returns to the atmosphere by transpiration; the remainder moves downward to the zone of saturation, and eventually reaches the sea either by discharge into effluent streams, by submarine discharge in Long Island Sound and adjoining bays, or as sewage effluent. The amount of replenishment, or the process by which water moves into the zone of saturation, is defined as recharge. Evaluation of the ground-water resources of an area involves an appraisal of the recharge-discharge relation. If withdrawals exceed recharge, water is removed from storage, water levels decline, and, in an area such as Long Island, sea water begins to move landward into previously fresh-water aquifers.

Recharge on Long Island is derived entirely from precipitation. Early theories that considered Connecticut as the source of Long Island's ground water have been disproved (Veatch and others, 1906, p. 67–68; Lusczynski, 1950). There is no connection between the aquifers of Long Island and those of Connecticut, and a study of water levels on Long Island has shown that the regional direction of ground-water movement is generally north and south from the area of the main ground-water divide near the center of the island.

PRECIPITATION

Records of precipitation are available for four stations in and near the report area (fig. 3). The stations at Manhasset and Huntington Station are indicative of precipitation in the northern part of the area, and those at Bethpage and Garden City, in the southern part.

A simple and adequate method of estimating areal rainfall is to compute the arithmetic mean of the recorded values at all stations, provided that variation in rainfall relative to small Rou 1950, p. 276). During the period 1955–61 the mean annual precipitation for the four stations ranged from 37.04 to 56.33 inches and averaged 46.21 inches (table 7). Inspection of annual data from the four stations indicates that Garden City, which has the longest precipitation record and is centrally located, adequately represents conditions in the report area.

A summary of the record at Garden City shows the mean annual precipitation (table 8).

Although the 1955–61 mean is about 4 percent higher than that for the 1939–54 period, the long-term record 1939–61 is considered more representative. Mean annual precipitation in the report area is therefore estimated to be about 45 inches, or 2 mgd per sq mi (million gallons per day per square mile).

TABLE 7.—*Annual precipitation, in inches, in and near northeastern Nassau County, 1955–61*

[Data for Manhasset from Nassau County Dept. Public Works]

Year	Precipitation station				Arithmetic mean
	Bethpage	Huntington Station	Manhasset	Garden City	
1955	47.22	48.31	43.41	46.75	46.42
1956	45.65	44.63	39.10	43.23	43.15
1957	37.66	39.43	34.72	36.35	37.04
1958	52.47	60.66	55.29	56.88	56.33
1959	42.59	44.16	39.67	39.60	41.51
1960	51.81	55.69	48.70	49.61	51.45
1961	52.48	45.09	45.07	47.66	47.58
Mean	47.13	48.28	43.71	45.73	46.21

TABLE 8.—*Precipitation at Garden City, Nassau County*

Period	Mean annual precipitation (inches)
1939–54	44.08
1955–61	45.73
1939–61	44.58

EVAPOTRANSPIRATION

Evapotranspiration is the phase of the hydrologic cycle which accounts for that part of precipitation that is returned to the atmosphere by evaporation of moisture and transpiration by plants. Evaporation is the process by which water changes from the liquid state into the gaseous state, and transpiration is the process by which plants utilize water and discharge it to the atmosphere.

The evaporation rate varies with the temperature of the air and water, relative humidity, and wind velocity. Water evaporates

almost continually from streams, ponds, and marshes in the report area. Water is evaporated intermittently from recharge basins and from rooftops and paved areas following precipitation. Vegetation tends to reduce evaporation of soil moisture by shading the ground, but also increases the opportunity for evaporation by intercepting precipitation on its leaves and branches.

The transpiration rate varies with air temperature, amount of soil moisture, duration and intensity of insolation, soil chemistry, amount of vegetation, and plant type. Transpiration in the report area is greatest from May to November, which is the main growing season on Long Island.

There are no available data pertaining to evapotranspiration rates in northeastern Nassau County, and a detailed study is beyond the scope of this report. However, a reasonable estimate can be made by using an indirect method developed by Meyer (1944, p. 445–57) and by considering previous work done in similar nearby areas.

Meyer developed two graphs showing evaporation and transpiration with respect to monthly mean temperature. Values obtained from these curves must be modified by using coefficients applicable to the report area. Meyer's method suggests annual evapotranspiration ranging from about 22 to 26 inches.

Evapotranspiration (evaporation plus transpiration) in the Upton area of central Suffolk County ranges from about 15 inches per year in areas where vegetation is scanty to about 30 inches per year near streams and swampy areas; the average is 22 inches per year (M. A. Warren and N. J. Lusczynski, 1958, written commun.). Because the water table in northeastern Nassau County is below the root zone in all but a small area near the shore, and ponds and marshes are few, evapotranspiration is probably less than 30 inches. Total water losses along the coastal plain of New Jersey, which is climatically comparable to Long Island, range from about 15 to 30 inches (Hely and others, 1961, pl. 3).

From the foregoing it is estimated that the mean annual evapotranspiration for northeastern Nassau County ranges between 19 and 26 inches and that the mean is about 22 inches.

SURFACE WATER

GENERAL CHARACTERISTICS

The surface waters of northeastern Nassau County include several small streams, numerous small ponds and marshes, and salt water in Long Island Sound and its embayments.

Surface water is classed as perched if it is held up by a zone of relatively impermeable material and separated from the main zone of saturation by a zone of aeration (after Meinzer 1923, p. 57). Nonperched surface water is in direct hydraulic connection with the main zone of saturation.

Numerous small perched ponds and marshes occur in clay- and till-bottomed kettles and other depressions on, between, and north of the terminal and end moraines (pl. 2). In the Bethpage and Woodbury areas, perched water is held up by beds of Cretaceous silt and clay. Reported and probable locations of perched water in northeastern Nassau are shown on figure 7. Some of the ponds at lower altitudes near the stream valleys and the north shore are not perched and are fed by water from the zone of saturation.

The highlands composed of the Ronkonkoma terminal moraine, the Harbor Hill end moraine, and the Wheatley and Mannetto Hills (pl. 2) contain the headwaters of several small streams that drain the report area. The stream valleys are well formed and were probably created under conditions that existed at the close of the Wisconsin Glaciation. It is unlikely that the small present-day streams could have eroded the valleys that they now occupy.

Baseflow in the upper reaches of the streams is generally intermittent and is sustained by seepage of perched water. During periods of prolonged or heavy precipitation, flow is supplemented by direct runoff. As the streams descend from the highlands, flow is influent and at places ceases entirely.

The south-flowing streams descend abruptly from the Ronkonkoma terminal moraine to the flat outwash plain (pl. 2), and surface flow disappears within a short distance as the water infiltrates into the highly permeable sand and gravel deposits. These streams do not reappear in the report area.

Influent flow in the north-flowing streams also diminishes downstream but at a somewhat slower rate because the surficial deposits north of the moraines are generally less permeable than those underlying the outwash plain. About 1 mile from the north shore the stream valleys intersect the zone of saturation, and the flow becomes both effluent and perennial. Effluent flow increases downstream, probably some distance seaward of tidal flooding. Base flow in the northern streams is almost entirely ground water, and the rate of flow depends upon the ground-water contributing area rather than the topographic drainage area. The ground-water contributing area is three dimensional, and an accurate appraisal must consider ground water moving upward from the principal aquifer as well as ground water flowing laterally. For example, base flow of Mill River at Oyster Bay (pl. 1) increased 2.8 cfs (cubic feet per second), or 1.8 mgd, in about 3,000 feet on November 6, 1959. Most of this pickup

Received from Perry Katz
USEPA Region I
3/6/86

A2-1

[redacted]

Uncontrolled Hazardous Waste Site Ranking System

A Users Manual

MITRE

A2-2

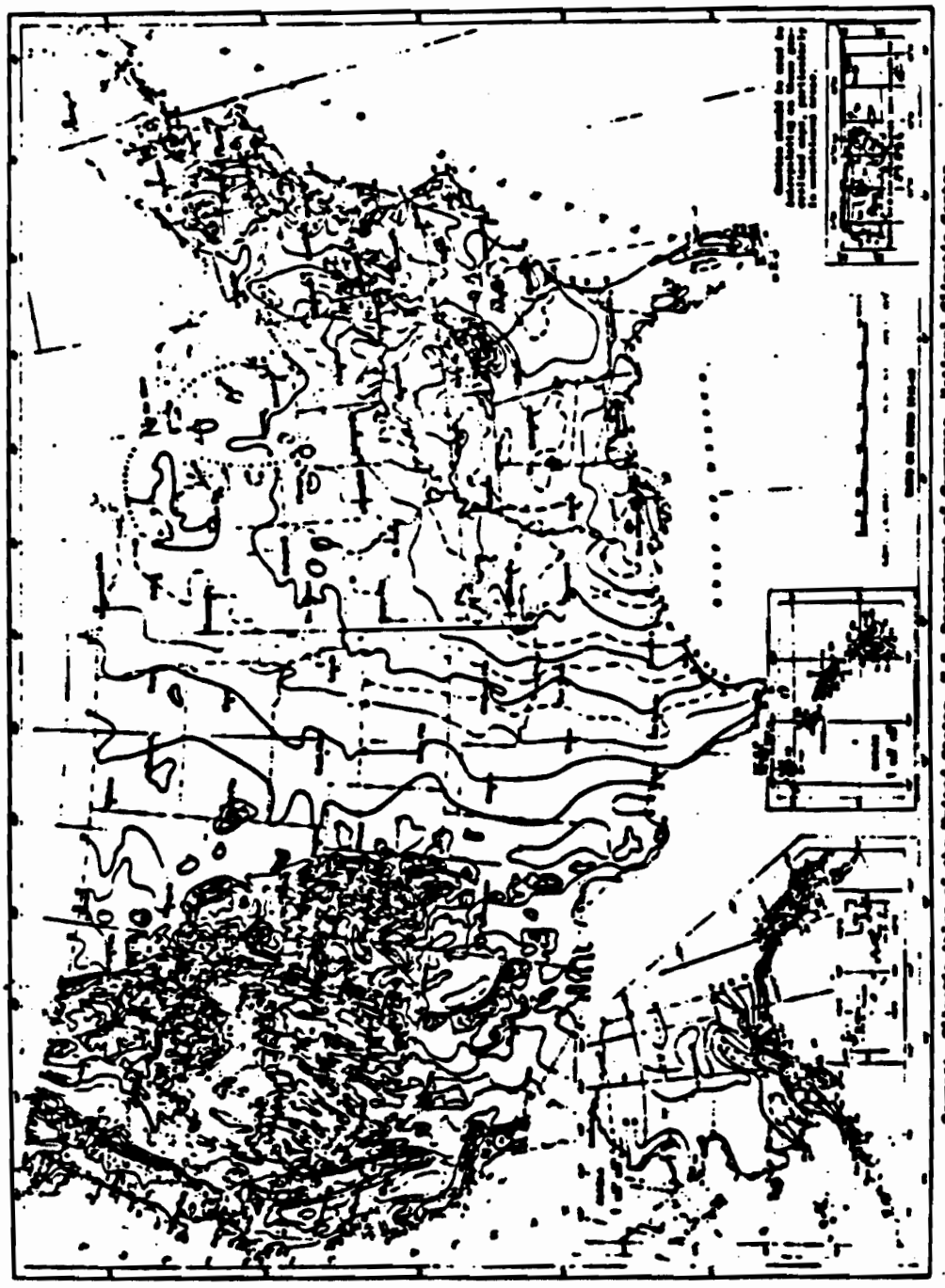
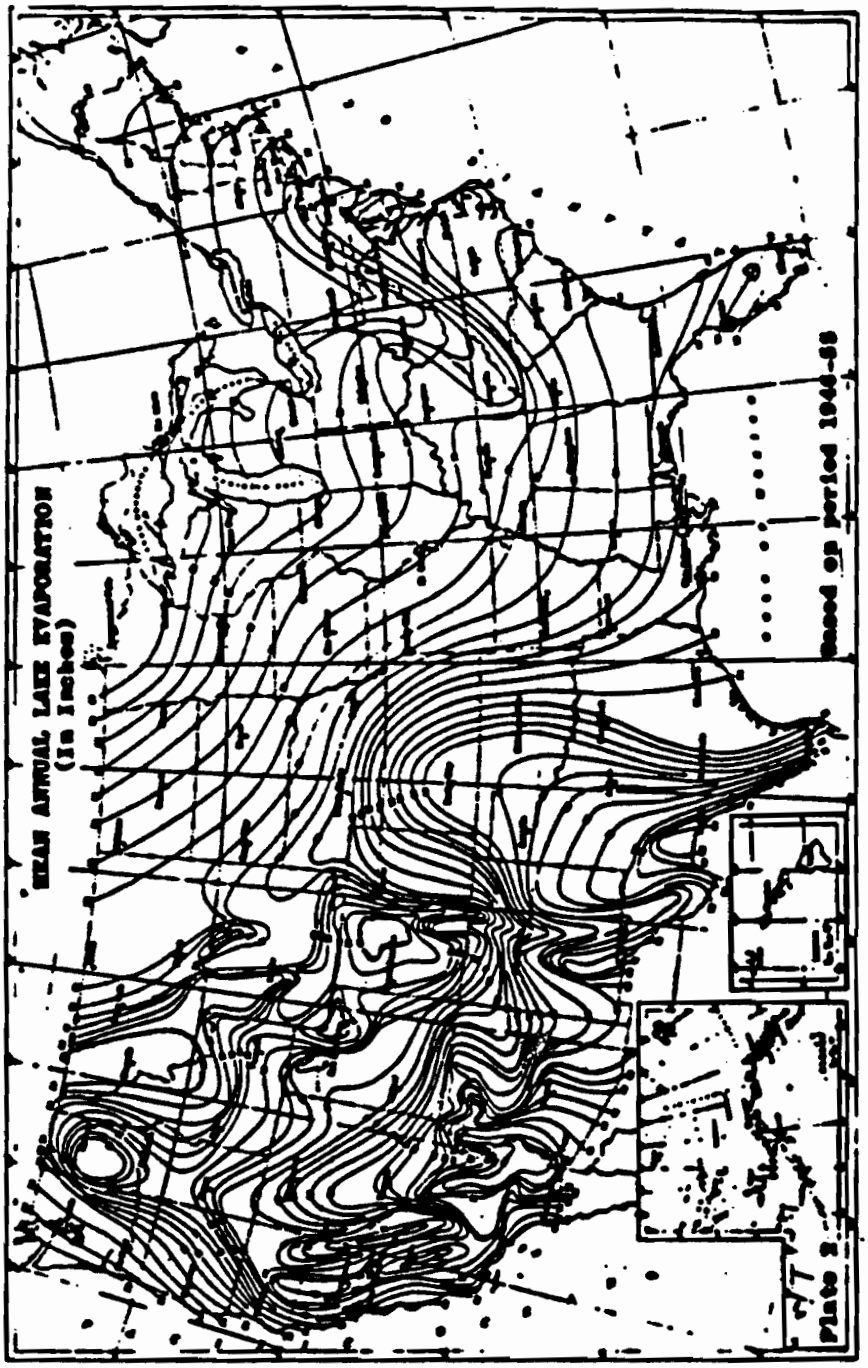


FIGURE 5
NORMAL ANNUAL TOTAL PRECIPITATION (INCHES)

A2-3



Source: Climatic Atlas of the United States, U.S. Department of Commerce, National Climatic Center, Asheville, N.C., 1979.

FIGURE 4
MEAN ANNUAL LAKE EVAPORATION
(IN INCHES)

A3-1

STATE OF NEW YORK

DEPARTMENT OF ENVIRONMENTAL CONSERVATION

In the Matter of the Summary Abatement, pursuant to Section 71-0301 of the Environmental Conservation Law of the State of New York (the "ECL") of a Condition or Activity which presents an Imminent Danger to the Health and Welfare of the People of the State of New York or is Likely to Result in Irreversible or Irreparable Damage to Natural Resources, Maintained and Engaged in By

AFFIDAVIT

SAUL WEINBERGER,

Respondent

STATE OF NEW YORK)
COUNTY OF SUFFOLK) ss:

JOHN WOODWORTH, being duly sworn, deposes and says:

1. I am an Environmental Conservation Investigator in the Bureau of Environmental Conservation Investigations (BECI) in the Division of Law Enforcement of the New York State Department of Environmental Conservation (the "Department"). I am assigned to the BECI's White Plains Field Unit, White Plains, New York. I have held that position continuously since October 1982. In the course of my duties, I investigate known and suspected violations of the ECL and regulations promulgated pursuant thereto.

2. The following matters are within my personal knowledge, or have been related to me by other staff of the Department, or other individuals, in the course of my investigation into the matters described herein.

3. The Department has jurisdiction over the management of industrial and hazardous waste within the State of New York, pursuant to Article 27, Title 9 of the ECL. The Department also has jurisdiction over the regulation of the discharge of pollutants from outlets or point sources into the waters of the State of New York, pursuant to Article 17, Title 8 of the ECL. In addition, pursuant to Article 17, Title 8 of the ECL, the Department issues permits for such discharges, under a program known as the State Pollutant Discharge Elimination System (SPDES). Said permits will hereinafter be referred to as "SPDES permits."

4. The Department is authorized, empowered, and directed to enter upon and inspect property within the State of New York for the purpose of investigating those areas where the existence of pollution is known or suspected, and for the purpose of ascertaining compliance or non-compliance with any provision of the ECL, or any rule or regulation promulgated thereto. Such inspections are authorized by Section 3-0301(2)(g) of the ECL. Furthermore, Section 17-0829 of the ECL authorizes the Department to enter upon any premises at which any point source

of the discharge of industrial pollutants is located, for the purpose of inspection, and for the purpose of ascertaining compliance or non-compliance with any provision of Article 17, Title 8 of the ECL, any rule or regulation promulgated pursuant thereto, and any permit or order issued thereunder.

5. The Nassau County Department of Health (NCDH) is a duly authorized agent of the Department for the purpose of conducting the inspections described in Paragraph 4, above, within the County of Nassau.

6. Since September 1984, in the course of my official duties, I have been conducting an investigation into environmental conditions, and possible violations of the ECL and regulations promulgated pursuant thereto, occurring at premises operated as a commercial facility by Penetrex Processing Company ("Penetrex"), located at 1 Shore Road, in Glenwood Landing, Town of North Hempstead, County of Nassau, State of New York (the "Facility").

7. I am informed by Allen Fitzgerald, Public Health Sanitarian for NCDH, that Penetrex operated the Facility as a dry cleaning establishment, and that NCDH conducted several inspections, during the spring of 1984, at the Facility, pursuant to Section 17-0829 of the ECL. In the course of said inspections, NCDH determined that unauthorized discharges into an on-site cesspool had resulted in elevated concentrations of

various contaminants in said cesspool, in excess of guidelines established by the New York State Department of Health (NYSDOH). In the course of said inspections, NCDH further determined that unpermitted industrial wastewater discharges were occurring at the Penetrex facility, specifically: 1) the discharge of non-contact cooling water into an on-site cesspool; and 2) the discharge of separator water from dry cleaning equipment directly to said cesspool. Said cesspool was located fifty (50) feet south of the building in which Penetrex conducted its operations. Such discharges are unlawful unless authorized by SPDES permits. According to official records of the Department, at no time did Penetrex obtain or possess any SPDES permits authorizing any such discharges at the Facility. I am further informed by Allen Fitzgerald that, between May 1984 and August 1984, NCDH attempted to compel Penetrex to remediate the contamination described above. However, no such remediation was, or has been accomplished.

8. Upon information and belief, the property at which Penetrex operated the Facility is owned by an individual named Saul Weinberger, who maintains offices at 390 Willis Avenue, Roslyn Heights, New York. Said property shall hereinafter be referred to as the "Site." I am informed by Michael Weinberger, the son and authorized representative of Saul Weinberger, that Penetrex no longer operates the Facility, and has not done so since August 1984.

9. On September 27, 1984, in the course of my official duties, I went to the Site. I observed a two-story building on the premises of the Site. It appeared that said building was divided into two (2) portions. One of said portions was the Facility, formerly occupied by Penetrex. The other portion appeared to be operated by a company called Name Plate Manufacturing Co. of America. I spoke to an individual named Prisco, who identified himself as the owner and operator of said company. Mr. Prisco stated that his company's facility had in-ground septic tanks for waste water and sanitary waste and that said tnks were separate from the discharge system serving the former Penetrex Facility. He also stated that the space formerly used by Penetrex was unoccupied.

10. On the above date, in the course of my official duties, I further observed that the Site is approximately one-~~half (1/2) mile~~ THOUSAND FEET to the east of Hempstead Harbor.

11. On October 11, 1984, in the course of my official duties, I drove past the Site. In front of the Facility I observed four (4) 55-gallon drums and one (1) 30-gallon drum.

12. According to official records of the Department, neither the Facility nor the Site is a permitted facility for the treatment, storage or disposal of industrial-commercial waste, or hazardous waste, pursuant to the provisions of Article 27, Titles 7 and 9 of the ECL, and Part 360 of Title 6 of the

Official Compilation of Codes, Rules and Regulations of the State of New York ("6 NYCRR").

13. On November 29, 1984, I applied for a Search Warrant authorizing personnel of the Department, and of NCDH, to enter upon the premises of the Site, to collect samples from the cesspool described in Paragraph 7, above, and from the drums described in Paragraph 11, above, and to subsequently transport said samples to an independent laboratory for chemical analysis. On the above date, said Search Warrant was issued by the Hon. Abbey L. Boklan, Judge of the County Court of Nassau County. On December 3, 1984, said Search Warrant was duly executed, and the above described samples were collected, and subsequently transported to an independent laboratory for chemical analysis. On February 11, 1985, a report on the results of said chemical analysis was received at the Department's White Plains Office.

14. On February 15, 1985, in the course of my official duties, I again went to the Site. I observed that the drums described in Paragraph 11, above, were still on the Site. It appeared that said drums were in the same locations on the Site where I had observed them in the course of executing the above-described Search Warrant.

15. On the above date, in the course of my visit to the Site, I learned that a company named R & A Supply Company ("R & A") is presently occupying the Facility. I am informed

by the President of R & A, Fred Shelty, that R & A has occupied the Facility since January 1, 1985, and that R & A engages in the business of the distribution of dry cleaning equipment.

John a Woodworth
JOHN WOODWORTH

Sworn to before me this 19th day of February, 1985

Anne Claire Scrocco
Notary Public

ANNE CLAIRE SCROCCO
Notary Public, State of New York
No. 44-4799925
Qualified in Rockland County
Commission Expires March 30, 1985

A4-1

HAZARDOUS CHEMICALS DESK REFERENCE

N. IRVING SAX
RICHARD J. LEWIS, SR.

VNR VAN NOSTRAND REINHOLD COMPANY
New York

A4-2

TETRACHLOROACETONE HR: 3

NIOSH: UC 3815000

mf: $C_3H_2Cl_4O$ mw: 195.85

PROP: Liquid; bp: 180°-182° sltly decomp; very sol in benzene, alc, ether.

THR: An experimental teratogen. Mutagenic data. When heated to decomposition it emits toxic fumes of Cl^-.

1,1,1,2-TETRACHLOROETHANE HR: 3

CAS: 630-20-6 NIOSH: KI 8450000

mf: $C_2H_2Cl_4$ mw: 167.84

PROP: Liquid; d: 1.588 @ 20°/4°; bp: 129°-130°; sol in water; misc in alc, ether.

SYN: NCI-C52459

THR: A suspected carcinogen. Severe eye irritant and moderate skin irritant. When heated to decomposition it emits very toxic fumes of Cl^-. Incompatible with dinitrogen tetraoxide. For further information see Vol. 4, No. 3 of *DPIM Report*.

1,1,2,2-TETRACHLOROETHYLENE HR: 3

CAS: 127-18-4 NIOSH: KX 3850000

DOT: 1897

mf: C_2Cl_4 mw: 165.82

PROP: Colorless liquid, chloroform-like odor. Mp: −23.35°, bp: 121.20°, d: 1.6311 @ 15°/4°, vap press: 15.8 mm @ 22°, vap d: 5.83.

SYNS: CARBON BICHLORIDE • CARBON DICHLORIDE • CZTEROCHLOROETYLEN (POLISH) • DOW-PER • ETHYLENE TETRACHLORIDE • NCI-C04580 • PERCHLOORETHYLEEN, PER (DUTCH) • PERCHLORAETHYLEN, PER (GERMAN) • PERCHLORETHYLENE, PER (FRENCH) • PERCHLOROETHYLENE • PERCLENE • PERCLOROETILENE (ITALIAN) • TETRACHLOORETHEEN (DUTCH) • TETRACHLORAETHEN (GERMAN) • TETRACHLOROETHYLENE (DOT) • TETRACLOROETENE (ITALIAN)

OSHA PEL: TWA 100 ppm; CL 200; Pk 300/5M/3H

DFG MAK: 50 ppm (345 mg/m³); BAT: blood 100 ug/dl

DOT Classification: ORM-A (IMO: Poison B), Label: None

THR: Poison by intravenous route. Moderately toxic by inhalation, ingestion, skin contact, and subcutaneous routes. The liquid can c... ries to the eyes; however, with proper ... tions it can be handled safely. The sy... of acute intoxication from this material ... result of its effects upon the nervous ... Can cause dermatitis, particularly after r... or prolonged contact with the skin. Irrit... gastrointestinal tract upon ingestion. An ... mental carcinogen. Mutagenic data. It ... handled in the presence or absence of air, ... and light with any of the common constr... materials at temperatures up to 140°C. Th... terial is extremely stable and resists hydro... A common air contaminant. Reacts viol... with Ba; Be; Li; N_2O_4; metals; NaOH. D... ous; when heated to decomposition it ... highly toxic fumes of chlorides. For further ... formation see perchloroethylene Vol. 1, N... of *DPIM Report*.

TETRACHLOROISOPHTHALONITRILE HR:

CAS: 1897-45-6 NIOSH: NT 260000

mf: $C_8Cl_4N_2$ mw: 265.90

SYNS: CHLORTHALONIL (GERMAN) • NCI-C00102 • M-TETRACHLOROPHTHALONITRILE

THR: An experimental carcinogen. Moderately toxic by intraperitoneal route and slightly toxic by ingestion. When heated to decomposition it emits very toxic fumes of Cl^-, NO_x, and CN^-.

TETRACHLORONAPHTHALENE HR: 3

CAS: 1335-88-2 NIOSH: QK 3700000

mf: $C_{10}H_4Cl_4$ mw: 265.94

PROP: Crystals. Mp: 182°.

OSHA PEL: TWA 2 mg/m³ (skin)

THR: Poison by inhalation and skin contact. See also chlorinated naphthalenes and polychlorinated biphenyls. Dangerous; when heated to decomposition it emits highly toxic fumes of Cl^-. For further information see Vol. 6, No. 5 of *DPIM Report*.

TETRACHLORONITROANISOLE HR: 3

CAS: 2438-88-2 NIOSH: BZ 9625000

mf: $C_7H_3Cl_4NO_3$ mw: 290.91

SYNS: BENZENE, 1,2,4,5-TETRACHLORO-3-METHOXY-6-NITRO- (9CI) • ENT 22,335 • NCI-C03032 • 4-NITRO-2,3,5,6-TETRA-

Received from Perry Katz
USEPA Region I
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AA4-3

[redacted]

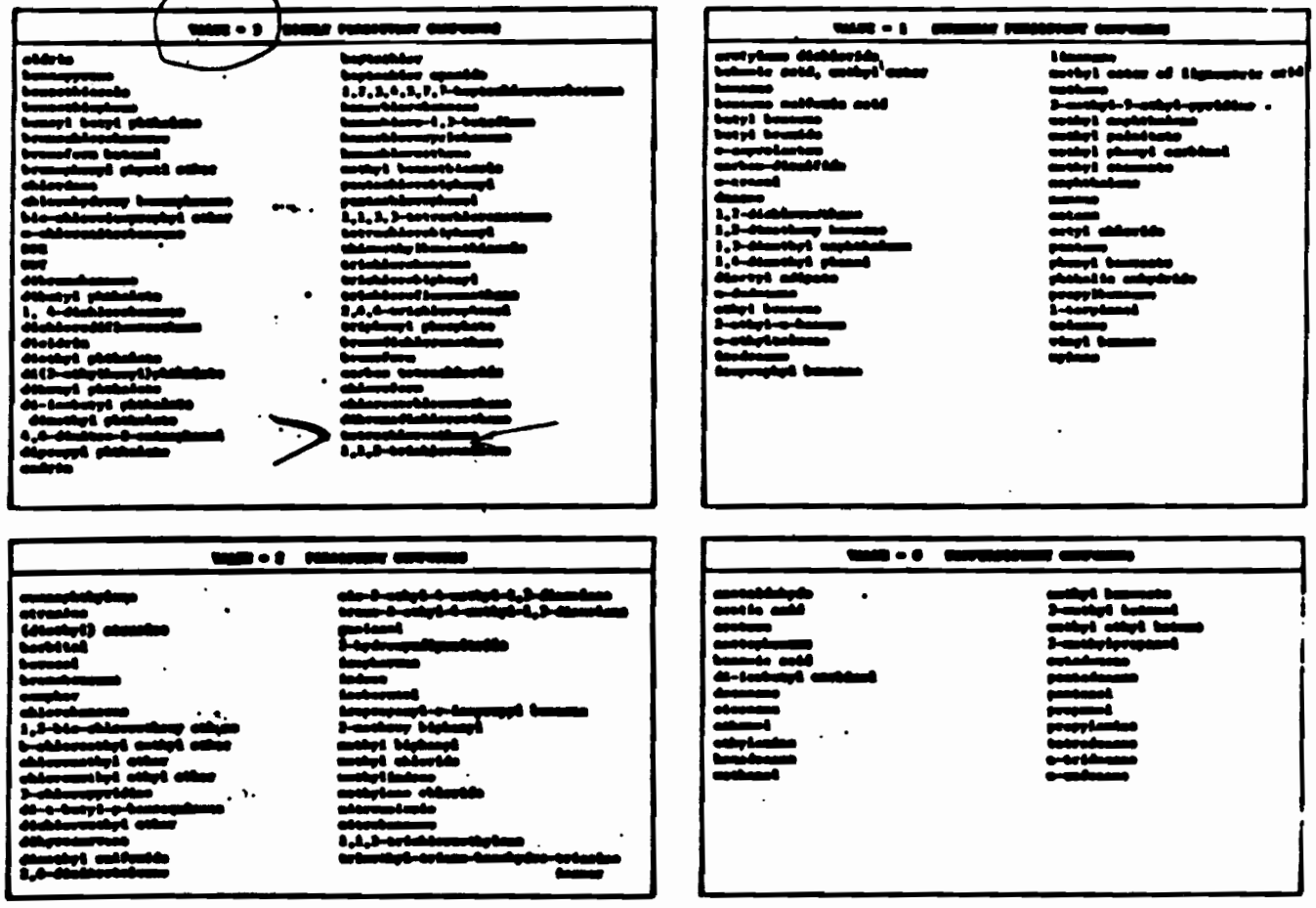
Uncontrolled Hazardous Waste Site Ranking System

A Users Manual

MITRE

TABLE 5

PERSISTENCE (BIODEGRADABILITY) OF SOME ORGANIC COMPOUNDS*



A5

Hydrogeology of Northwestern Nassau and Northeastern Queens Counties Long Island, New York

By WOLFGANG V. SWARZENSKI

GEOLOGICAL SURVEY WATER-SUPPLY PAPER 1657

Prepared in cooperation with the Nassau County Department of Public Works and the New York State Water Resources Commission

With special reference to water in Cretaceous and Pleistocene aquifers

UNITED STATES GOVERNMENT PRINTING OFFICE, WASHINGTON : 1963

A6-1

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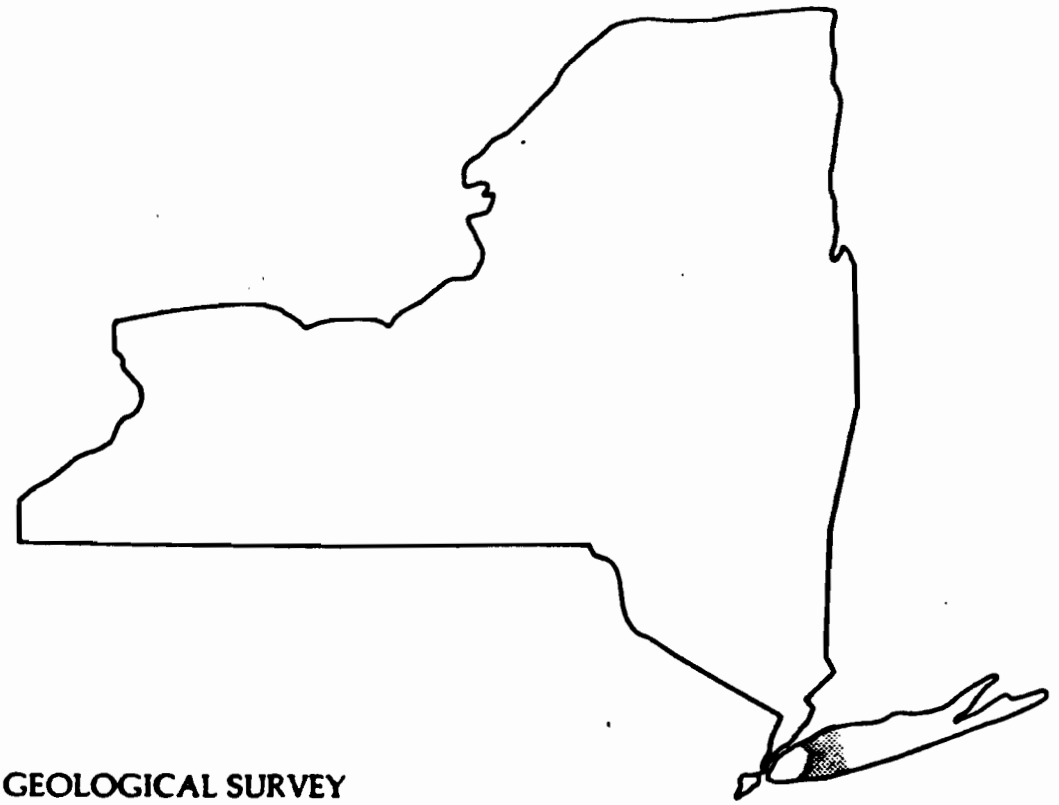
GROUND-WATER PUMPAGE IN NASSAU COUNTY, LONG ISLAND, NEW YORK, 1920-77

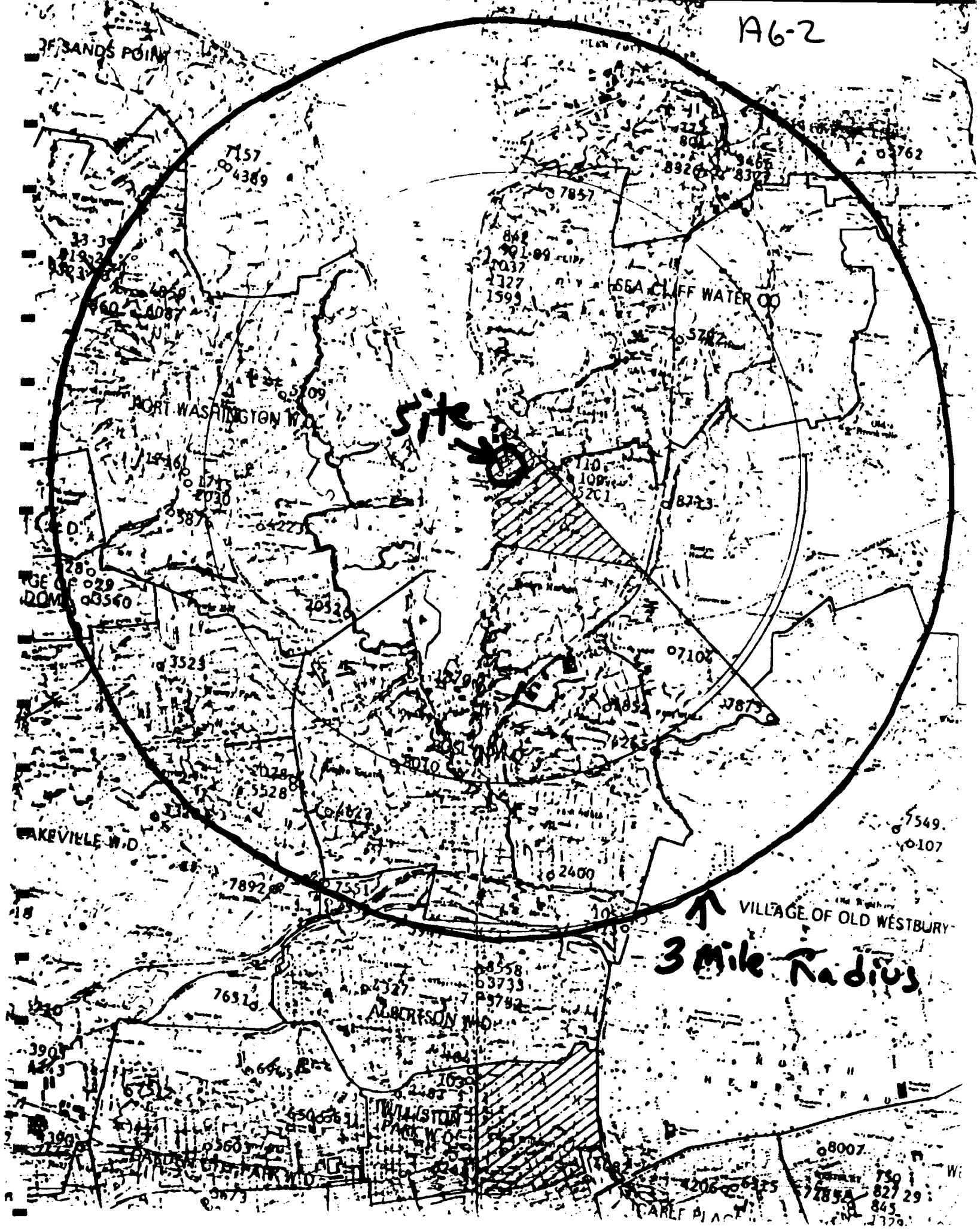
Introduction and User's Guide to the Data Compilation



U.S. GEOLOGICAL SURVEY
Open File Report 81-499

Prepared in cooperation with
NASSAU COUNTY DEPARTMENT OF PUBLIC WORKS

A6-2


SANDS POINT
PORT WASHINGTON W.D.
site
LAKEVILLE W.D.
ALBERTSON W.D.
WILLISTON PARK W.D.
GARDEN CITY PARK W.D.
VILLAGE OF OLD WESTBURY
3 Mile Radius


A6-3
site
N-520
Roslyn Harbor
Roslyn
Roslyn Pond
North Hempstead Country Club
Engineers Country Club
North Shore Country Club
South Glenwood Landing
Bar Beach
Tidal Flat
Water Tank
Pumping Sta
Reservoir
INTERCHANGE
USGS
1968
Sea Cliff Quad

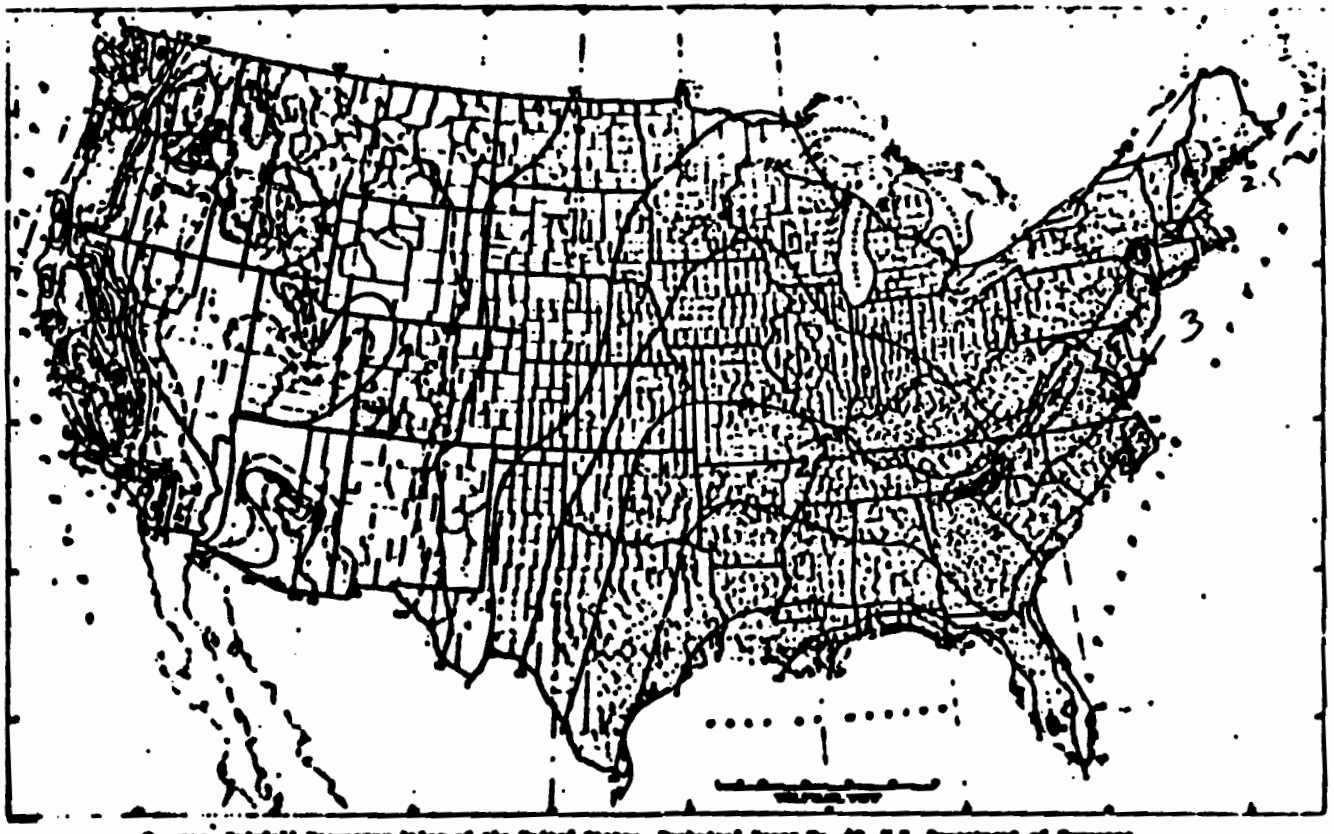
USEPA Region I
2/6/86

A7-1

Uncontrolled Hazardous Waste Site Ranking System

A Users Manual

MITRE



Source: Rainfall Frequency Atlas of the United States, Technical Paper No. 40, U.S. Department of Commerce, U.S. Government Printing Office, Washington, D.C., 1961.

FIGURE 8
1-YEAR 24-HOUR RAINFALL
(INCHES)

A7-2

Hagstrom

Nassau County Atlas

FIRST LARGE SCALE EDITION

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at a Glance

Nassau, once the legal name for all Long Island, was named in honor of King William III of England, son of King William II of Nassau and Prince of Orange. First settled in 1643 by a hardy band of colonists from Stamford, Connecticut led by John Carman, Nassau County was incorporated in 1899, when the eastern towns of the original Queens County, Hempstead, North Hempstead, and Oyster Bay, declined to join greater New York. There are 64 incorporated villages and numerous unincorporated communities within the 298 square mile area of Nassau.

Nassau was the first county in New York State to operate under a charter form of government. The charter in its present form is known country-wide as one of the best documents of its kind. Under the charter, which prevents the State legislature from enacting laws affecting the County as a whole, the County government is responsible for all the over-all services: Public health, welfare, police, planning, public works, fire protection, hospitals and parks. The County government is headed by a county executive. The County's legislative and administrative body is the Board of Supervisors, made up of the County Executive and the Supervisors of the three towns and the two cities. Its court system is made up of four parts: District, County, Surrogate, and Supreme.

Nassau County's natural beauty is unusual and of great variety, from the wooded height of the north shore overlooking Long Island Sound, to the sandy beaches on the south shore. One of the widest and smoothest bathing beaches on the Atlantic Coast extends along the South Shore and includes Atlantic Beach, Long Beach, and Jones Beach State Park.

Nassau County has many public and private golf, country, polo and yacht clubs. Bethpage State Park, with tennis courts, a polo field, and five golf courses, offers the general public all the advantages of a private country club. Nassau has developed a 930-acre Country Park, Eisenhower Park, on Salisbury Plains, south of Westbury.

A network of well-maintained highways connects Nassau County with New York City and extends eastward into Suffolk County. Southern State and Northern State Parkways and the Long Island Expressway are important east-west arteries. Cross-Island, Meadowbrook, and Wantagh Parkways, and the Oyster Bay Expressway connect the north and south shores.

Nassau's natural attractions for commerce and industry, homemaking, and recreation are the chief reason for its astonishing growth. With the rapid expansion of residential developments, there has come a remarkable increase in local business, light manufacturing, distribution, service trades, and modern retail centers.

Public school facilities have been widely expanded to meet the needs of increased population. Additional parochial schools have also been provided. Hofstra University, Adelphi University, and C.W. Post, co-educational institutions, are three of the many facilities for higher education in Nassau. Fifty-five public and many school libraries render free service.

Nassau County Population

Town of Hempstead	738,517
Town of North Hempstead	218,624
Town of Oyster Bay	305,750
Total County Population	1,321,582

Photo of Bethpage Race Track courtesy

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