SUPPLEMENTAL REMEDIAL INVESTIGATION

Shore Realty Site
Glenwood Landing, New York

Volume I of III

April 1990

Prepared for:

Third-Party Defendants
Common Defense Group
State of New York v. Shore Realty
c/o Teitelbaum, Hiller, Rodman, Paden, & Hibsher, P.C.
260 Madison Avenue
New York, New York

Prepared by:

ROUX ASSOCIATES, INC.
775 Park Avenue
Huntington, New York 11743

Doc #SR07401Y.4.10

ROUX

CONTENTS

1.0 EXECUTIVE SUMMARY 1

2.0 INTRODUCTION 3

3.0 METHODS OF INVESTIGATION 5
3.1 Soil Borings 5
3.1.1 Soil Borings Required by the State 5
3.1.2 Post Screening/Field Investigation Soil Borings 6
3.2 Soil Gas Measurements 7
3.3 Sediment Sampling 8
3.4 Well Installation 10
3.5 Ambient Air Samples 11

4.0 HYDROGEOLOGY 12
4.1 Horizontal Ground-Water Flow 12
4.2 Vertical Ground-Water Flow 13

5.0 SOIL QUALITY ANALYSIS 15

6.0 SEDIMENT SAMPLE ANALYSIS 19

7.0 GROUND-WATER QUALITY 21
7.1 Water-Table Wells 21
7.2 Ground-Water Monitoring Wells 22

8.0 SUMMARY OF FINDINGS 23

9.0 REFERENCES 25

TABLES

1. Water Level Measurements
2. Soil Sample Depths and Analyses
3. Summary of Soil Sample Analytical Results
4. Summary of Sediment Sample Analytical Results
5. Ground Water Samples and Analyses
6. Summary of Water-Table Well Analytical Results
7. Summary of Ground-Water Analytical Results

FIGURES

1. Location of Site
2. Boring Locations
3. Sediment Sample Locations
4. Locations of Wells and Piezometers
5. Water-Table Configuration Low Tide, March 19, 1990
6. Piezometric Surface, Low Tide, March 19, 1990
7. Hydrographs for Wells DW-1, SW-2, WT-6 and Hempstead Harbor
8. Hydrographs for Wells DW-2, SW-1 and Hempstead Harbor
9. ETX Levels in Soil Near the Water Table
10. ETX Levels in Soil Approximately 10 feet Below the Water Table
11. ETX Levels in Soil Approximately 20 feet Below the Water Table.
12. Total ETX in Cross Section A-A'
13. Total ETX in Cross Section B-B'
14. Total ETX in Cross Section C-C'

APPENDICES

A. Geologic Logs and Construction Details of Wells
B. Ambient Air Sampling Report

Volume II
C. Soil Analyses - Laboratory Reports
D. Soil and Sediment Analyses - Quality Assurance Review

Volume III
E. Sediment Analyses - Laboratory Reports
F. Ground-Water Analyses - Laboratory Reports
G. Ground-Water Analyses - Quality Assurance Review

1.0 EXECUTIVE SUMMARY

Roux Associates, Inc. (Roux Associates) has completed a Supplemental Remedial Investigation of the Shore Realty Site (Site) in Glenwood Landing, New York. This Supplemental Investigation was undertaken to supplement data obtained during the initial 1987-88 Remedial Investigation.

The Site is listed on the National Priorities List. Both the initial Remedial Investigation and the Supplemental Investigation were conducted on behalf of a group of third-party defendants in a legal action regarding the Site, State of New York v. Shore Realty, et al. The methods and results of the combined investigations are described in this report and in an August 1988 report titled "Remedial Investigation, Shore Realty Site, Glenwood Landing, New York" (RI Report). A description of the Site and its history are included in the RI Report.

The Supplemental Investigation described in this report included the installation and sampling of two new wells, resampling of 16 previously installed wells, collection and analysis of 32 soil and 17 sediment samples, collection of five air samples for organic vapor analysis, and a ground-water contamination and flow assessment. The Supplemental Investigation was carried out by Roux Associates during the period October 1989 through March 1990.

Chemical analyses of soil and of floating organics found in certain locations on the water table confirm the 1988 findings that ethylbenzene, toluene and xylene are the principal

chemicals present. Only substantially lower levels of other compounds, including bis (2-ethylhexyl) phthalate, naphthalene and several phenolic compounds, were found in the soils.

Very shallow ground water was sampled from wells that bridged the water table and in some cases contained layers of organic liquid. Some of these samples contained substantial levels of organic compounds. Shallow ground water (10-20 feet below mean sea level) was clean except for low levels of several chlorinated solvents in wells SW-1 and SW-6. It is believed that some or all of these solvents are from an off-site source. Deeper ground-water (50 to 60 feet below sea level) was uncontaminated.

Sediments from Hempstead Harbor and Motts Cove contained low ppm levels of two classes of semi volatile organic compounds, but no significant volatile organics or metals and no PCBs. The significance of the findings of ETX in soil and semi volatile compounds in sediments will be addressed in the FS.

The next step in the process of Site remediation is a Feasibility Study to evaluate and compare all available remedial options that may be applicable to the Shore Site. A Feasibility Study is currently being prepared by Roux Associates.

2.0 INTRODUCTION

In February 1987, Roux Associates was retained by a group of third-party defendants to conduct a Remedial Investigation/Feasibility Study (RI/FS) for the Shore Realty Property located at One Shore Road, Glenwood Landing, New York. The location of the Site is shown on Figure 1.

In May 1987, Roux Associates submitted a Work Plan for the RI/FS to the New York State Department of Law and the Department of Environmental Conservation (State). The Work Plan was approved in September 1987 and the Remedial Investigation was begun on October 13, 1987. The RI Report was submitted to the State in August 1988. The RI Report includes a Site description and history, the results of a hazardous substances investigation, a hydrogeologic investigation, a preliminary discussion of potential health and environmental impacts and recommendations for a Feasibility Study.

During the initial screening of remedial alternatives for the Feasibility Study, it became apparent that additional data were needed to fully evaluate alternative remedial measures. These data included additional soil borings to better define the extent of contaminated soil at the Site and bench scale biotreatability tests to evaluate the feasibility of this remedial option.

In addition, based upon its review of the RI Report, the State determined that five additional tasks were required: 1) additional soil gas measurements; 2) two additional deep wells; 3) resampling DW-1; 4) ambient air sampling; and 5) additional sediment

sampling. Also, as a result of a review of the analytical methods and QA/QC procedures, the State required additional soil and water samples.

In October 1989 a Work Plan titled, "Additional Investigation, Remedial Investigation/Feasibility Study, Shore Realty Site, Glenwood Landing, New York" (Supplemental Work Plan) was submitted to the State. The Supplemental Work Plan incorporated numerous comments made by the State on a previously submitted draft Work Plan. The Supplemental Work Plan was subsequently approved by the State.

In November 1989 the Supplemental Investigation described in the Supplemental Work Plan was begun. Field work was completed in January 1990 and analytical results received from the laboratory in March 1990. All the work except for drilling, surveying, air sampling, laboratory analyses, and biotreatability laboratory testing was conducted by Roux Associates personnel. Drilling was done by R&L Drilling, Islip, New York. Surveying was done by Albert Tay Land Surveyors, Plainview, New York. Air sampling was done by C.A. Rich Consultants, Glen Head, New York. Laboratory analyses were run by Nytest Environmental Services, Port Washington, New York.

This report describes the work accomplished during the Supplemental Investigation and the results of analyses of data obtained. It is intended to be a supplement to the August 1988 RI Report. For that reason the two reports together constitute the Remedial Investigation Report for the Shore Realty Site.

3.0 METHODS OF INVESTIGATION

The investigations described in this section are soil borings, soil gas measurements, sediment sampling, well installation and sampling, and ambient air sampling. The results of these tasks are discussed in subsequent sections of this report.

3.1 Soil Borings

Two different sets of soil borings were drilled as part of the Supplemental Investigation. There were 18 soil borings required by the State to replicate analyses of previous samples; and there were seven soil borings proposed by Roux Associates to yield additional information for the Feasibility Study. A total of 32 soil samples were collected from these 25 borings. Figure 2 shows the location of the 25 new soil borings as well as the 38 borings drilled during the 1987 Remedial Investigation. The geologic logs of the borings are reproduced in Appendix A.

3.1.1 Soil Borings Required by the State

The State required that shallow soil samples (approximately at the depth of the water table) be collected from 18 locations at the Shore Realty Site. The locations of these samples, designated C-1 through C-18, are indicated on Figure 2. All soil borings were completed by R&L Drilling using a truck-mounted hollow stem auger rig. Split-spoon samplers were used to collect the soil samples, one from each boring. The split spoon samples were collected ahead of the auger flights from undisturbed sediments. Immediately

after collection, a sample for volatile analysis was taken. The sample jar was filled so that no headspace remained, then sealed and placed on ice. The remaining sample from each split spoon was split lengthwise. One half of the sample, intended for non-volatile analyses, was placed in a clean glass jar, sealed and placed on ice. Non-volatile soil samples were homogenized before being placed in the sample jars using a stainless steel spatula and a stainless steel mixing bowl. This equipment was decontaminated between samplings following the procedures in Appendix C of the Supplemental Work Plan. The other half of the sample was screened for volatile organics in accordance with Appendix A of the Supplemental Work Plan. Protocols for sample collection are given in Appendix B of the Supplemental Work Plan.

Soil samples from each location were collected and preserved in accordance with the requirements of the specific analyses to be run. To avoid cross contamination between borings, all drilling equipment, including auger flights, rods and any other tools and equipment used for drilling, were steam cleaned prior to the first boring and between all subsequent borings. Soil sampling equipment was decontaminated in accordance with the procedures listed in Appendix C of the Supplemental Work Plan.

3.1.2 Post Screening/Field Investigation Soil Borings

To complete the Feasibility Study it was necessary to more fully characterize the lateral and vertical extent of soil contamination. To accomplish this, seven additional soil borings were

drilled. In addition, deeper (below the water table) soil samples were collected in five of the State requested borings. The locations of the seven additional borings (designated D-1 through D-7) are shown on Figure 2.

The additional soil borings were completed in the same manner as previously described. After sampling was completed, all shallow soil borings were backfilled with cuttings from that boring. Deeper borings (C-4, C-6, C-15, D-1, D-2, D-3, and D-4) were backfilled with a clean material with a permeability lower than the formation. The three deepest borings C-10, C-11 and D-5 were pressure grouted through a tremi pipe from the bottom of the hole.

Also shown on Figure 2 are 38 soil borings drilled in 1987 during the RI. These borings are designated: B-1 through B-21; B-23, 24, 27, 29 and 30; SW-1, SW-3 through SW-6; DW-1; and P-1 through P-6. The B-series borings were used for soil sampling only. The SW-series and DW borings were used to install wells and the P-series borings were used to install piezometers. The location of all RI borings are shown because chemical data from soil samples collected from these borings are used in this report to help define the extent of contaminated soil at the Site.

3.2 Soil Gas Measurements

To better characterize soil gas data developed during the Remedial Investigation, additional field measurements and laboratory analysis of soil gas were planned as part of this Supplemental Investigation. All soil gas measurements were negative, including an area

that had positive readings during the 1987 investigation. It is concluded that either: 1) the soil gas previously detected is no longer present; or 2) the cold, wet conditions encountered during this second survey were not conducive to detecting soil gas.

To evaluate these two possibilities, it was decided to conduct the soil gas survey again in the spring of 1990 during warm, dry conditions. The results of this work will be reported in the Feasibility Study.

3.3 Sediment Sampling

Additional sampling of sediments in Hempstead Harbor and Motts Cove was conducted to:

1. further characterize the concentrations and types of organic chemicals and metals which may be present in the sediments;

2. further characterize the extent and distribution of organic chemicals and metals in sediments relative to the site; and

3. determine if the organic chemicals detected in sediment analyses are primarily related to a thin organic layer on the surface of the sediments and are therefore transient, or are distributed throughout a thick section of sediments possibly representing more persistent contamination.

To accomplish these objectives, Roux Associates collected 17 sediment samples at the locations shown on Figure 3. The locations of previously collected samples (1987) are also shown on Figure 3. The sample locations are based upon previous sampling data obtained by both Roux Associates and the State. In addition, actual sampling locations were selected in the field (by State and Roux Associates personnel) to include, to the extent possible, areas with a surface sheen and areas where there is a relatively thick layer of fine-grained sediments (indicating an area of sediment deposition).

At each of the locations shown on Figure 3, either one or two samples were collected depending on location relative to the Site. At single-sample locations, the sample was collected at 0-1 inches below the surface. At two-sample locations, samples were collected at 0-1 inches and at 1.5-2.0 feet below the surface. A cylindrical plastic ring was placed around the sampling point and pressed into the sediment to prevent running surface water from disturbing the sample during collection. The surface sample was intended to represent the effects of the organic liquid discharging to the surface of the sediments and which will be quickly degraded or flushed by tidal action. The deeper sample was intended to represent the condition of the sediments below the active tidal flushing area.

The surface samples were collected using a stainless steel spatula. The 1.5-2.0 foot sediment samples were collected by pushing a stainless steel auger to the required depth. The auger was then withdrawn and the sediment core removed. Sediment samples from the appropriate interval in each core were placed in the appropriate laboratory jars for shipping. All samples were placed on ice immediately after collection.

3.4 Well Installation

The locations of all wells installed during the 1987 RI are shown on Figure 4. Two additional monitoring wells were installed during this supplemental investigation. Well DW-2 was installed adjacent to existing well SW-1 (Figure 4). The purpose of DW-2 was to determine if the observed downward gradient between WT-2 and SW-1, identified during the RI, continues or reverses with depth.

When the borehole at DW-2 was completed, a 2-inch diameter PVC well with a 10-foot screen was installed at the same depth (50 feet below sea level) as DW-1. DW-2 was drilled and constructed in the same manner as DW-1 (see RI Report) and as described in Appendix F of the Supplemental Work Plan. The geologic log and construction details for DW-2 are given in Appendix A of this report.

To more fully determine the ground-water conditions beneath the site, a third deep well was installed in the northeast corner of the site (Figure 4). This well, DW-3, was screened at the same depth, and constructed in the same manner, as the other two deep wells (see Appendix A).

The two new wells were developed by surging and pumping until the pumped water had a turbidity of less than 50 Nephelometric Turbidity Units (NTU). In addition, other wells at the Site which were to be resampled were redeveloped to ensure that sediment free water could be obtained. Water levels were measured in both the new and previously installed wells.

Ground-water samples were collected from the new and previously installed monitoring wells for analysis following the protocols in Appendix G of the Supplemental Work Plan. This synoptic round of ground-water samples is intended to evaluate any changes in ground-water quality which may have occurred since the completion of the 1987-88 Remedial Investigation.

3.5 Ambient Air Samples

At the request of the State, ambient air samples were collected above the mud flats during low tide and analyzed for volatile and semi-volatile contaminants. The ambient air samples were collected by C.A. Rich Consultants. Three samples were taken west of the Site and two south of the Site. The methods of collection, sample locations and analytical results are described in Appendix B of this report.

4.0 HYDROGEOLOGY

The regional and Site hydrogeology are described in the August 1988 RI Report. The data presented in that discussion raised several questions. Specifically, the horizontal component of ground-water flow in the deeper portion of the aquifer (screened by DW-1) could not be measured, and the component of vertical ground-water flow at SW-1 could not be determined. Also, the effects of tidal changes on both horizontal and vertical ground-water flow could not be fully evaluated. This report supplements the hydrogeology section of the RI Report by addressing each of these areas. In addition, overall ground-water flow patterns in 1990 are presented for comparison with 1987 flow patterns.

4.1 Horizontal Ground-Water Flow

Water levels in the new wells, along with water levels in many of the pre-existing wells, were measured at both high and low tide on the same day. These measurements are given in Table 1. In addition, automatic water level measuring devices were installed in selected wells and an automatic tide gauge was constructed. This allowed continuous readings of ground-water levels at various depths in the aquifer to be compared with changes in tide level over a full tidal cycle.

A water table contour map depicting conditions during low tide on March 19, 1990 (using the shallowest wells at the Site), is shown on Figure 5. As shown by this figure, shallow ground-water mounds in the center of the Site and flows to both Hempstead Harbor and

Motts Cove. This confirms the 1987 data. A comparison of low and high tide water level data (Table 1) shows that the water table configuration is the same under both conditions.

Figure 6 shows the piezometric surface during low tide on March 19, 1990 for the SW-series wells. High tide readings for those wells are given on Table 1. Ground-water flow in the SW-series wells at both low and high tide is from east to west across the Site. The gradient is similar at low and high tide since the wells respond to tidal changes in a similar manner. The one exception is SW-1 which responds more like a water table well than do the other SW wells. This affects ground-water flow in the vicinity of SW-1 at high tide but does not change the overall pattern of flow under the Site.

The approximate horizontal flow direction during low tide at the level of the three deeper wells (DW-1, DW-2 and DW-3) is also east to west (Table 1). As with the SW-series wells, the DW wells have the same relative response to tidal changes so the horizontal component of flow will be from east to west.

4.2 Vertical Ground-Water Flow

The principal effect of the tidal cycle on ground-water flow is that it reverses the vertical flow direction of the upper few feet of the shallow aquifer. The well cluster of DW-1, SW-2, and WT-6 shows an upward component of ground-water flow between SW-2 (screened 10-20 feet below the water table) and WT-6 (screened above and below the water table) at high tide, and a downward component of flow at low tide. This effect is illustrated by the hydrograph shown on Figure 7. It should be noted that the deep well DW-1,

constantly shows an upward component of flow when compared to SW-2, but does fluctuate with respect to the water-table well WT-6 (A-15), as shown on Figure 8. Thus, even though the Site is in a regional ground-water discharge area, at low tide it becomes a local recharge area over the upper few feet of the aquifer. The vertical component of flow between SW-1 and DW-2 is upward at all times (Figure 8). The RI Report noted a continuous downward component of flow between water table wells near SW-1 and WT-2. The upward potential between DW-2 and SW-1 shows that this is only a very shallow phenomenon. Similarly, measurements at SW-6 and DW-3 (Table 1) show an upward component of flow in this area as well.

The upward vertical component of flow is a critical factor at this Site because it prevents surface contaminants from migrating into deeper portions of the aquifer. As a result, contaminated ground water is limited to the upper few feet of the aquifer as it flows toward and discharges into Hempstead Harbor and Motts Cove.

5.0 SOIL QUALITY ANALYSIS

Soil samples were screened for volatile organics with a photoionization meter (Appendix A) and selected samples were analyzed in the laboratory (Table 2). A similar set of photoionization readings and laboratory analyses for soil samples from the 1987 investigation is given in the RI Report. Because the laboratory analyses are considered the more reliable indicator of the level of contamination in the soil, only these measurements are discussed in this section. Both the 1987 and 1989 laboratory results for ethylbenzene, toluene and xylene (ETX) are included to define the distribution of contaminated soil.

Thirty-three soil samples were submitted to Nytest Environmental Services for analysis. The locations of the soil borings are shown on Figure 2 and the depths of the samples and analyses run for each sample are shown in Table 2. The results of these analyses are given in Appendix C (Volume II) and are summarized in Table 3. The quality assurance review of the Nytest soil results conducted by Environmental Standards, Inc. is presented in Appendix D (Volume II).

Because they are by far the most prevalent compounds found in the soil, ETX, taken together, represent the best indicators of the extent of soil contamination at this Site. Table 4 lists the levels of ETX in each soil sample that was analyzed. Figures 9, 10, and 11 show the distribution of ETX levels at three depths in the subsurface at the Site from both the 1987 and 1989 sampling periods.

Figure 9 shows the distribution of ETX in the soil near the water table. The significance of this depth is that the ETX compounds, as a separate phase, are less dense than water and therefore, float on the water table. For this reason, soil in the vicinity of the water table will be the most contaminated of any depth at the Site. Figure 9, therefore, represents the areal extent of the most highly contaminated soil layer.

Figure 10 shows the distribution of ETX in soil samples collected at a depth of approximately 10 feet below the water table. As illustrated, soils at this depth contain relatively little ETX compared to the soils near the water table (Figure 9). This is consistent with the water samples taken from the SW-series wells at approximately the same depth as the soil samples shown on Figure 10.

Figure 11 shows the ETX in soil samples from approximately 20 feet below the water table. These samples are essentially clean, again confirming that the upward flow of ground water at this site is protecting the deeper portions of the aquifer.

The vertical distributions of ETX from both 1987 and 1989 soil sample analyses are illustrated on a series of three cross sections, the locations of which are shown on Figure 2. The cross sections, shown on Figures 12, 13 and 14 depict levels of ETX in soil at various depths below the surface.

Figure 12 is a section that extends around the western, southern and eastern borders of the Site. The vertical extent of soil with high ETX readings is limited to approximately the upper 5 feet of the section between B-1 and B-18. Much lower readings are present at

approximately 10 feet below land surface between DW-2 and C-10. Deeper samples contain only very low levels of ETX.

Figure 13 shows the vertical distribution of ETX along a section through the center of the Site from north to south. As can be seen from this section, the area of readings above 100 ppm occurs only near the water table between B-18 and B-29. D-7 has a lower reading near the water table. Deeper samples are all essentially clean.

Figure 14 shows the vertical distribution of ETX levels along section C-C' through the center of the Site from west to east. This section again shows the higher readings are limited to the vicinity of the water table with a 10 foot deep sample at C-4 having a moderate reading.

The soil samples contain very low levels of other organic chemicals. In 1987, naphthalene and 2-methylnapthalene were present at levels up to 21 ppm and phthalates, especially bis-2-ethylhexylphthalate, were present at levels up to 14 ppm. In the 1989 samples, naphthalenes, phthalates and phenols were detected at low ppm levels.

All soil samples were analyzed for EP Toxicity metals. Levels of the seven metals that are regulated in soils by the State of New York (cadmium, chromium, copper, lead, mercury, nickel, zinc) were all well below the Maximum Concentrations (MC) set by the State (6 NYCRR, 360-4.4). All metals that were detected were at levels that are commonly found in soil (U.S. Environmental Protection Agency, November, 1984).

Based on the combined 1987 and 1989 analyses, the extent of contaminated soil has been defined adequately to complete the Feasibility Study.

6.0 SEDIMENT SAMPLE ANALYSIS

Seventeen samples of bottom sediment were collected from Hempstead Harbor and Motts Cove at locations near the Site (Figure 3). All of these samples were analyzed for the Targeted Compound List constituents. Table 4 lists all of the compounds detected in the samples. The complete analytical results are presented in Appendix E (Volume III). The quality assurance review is presented in Appendix D (Volume II).

As can be seen from Table 4, volatile organic compounds are not detectable in all but two samples. Ethylbenzene and xylene are present at very low ppm levels in S-9 shallow and deep. Semi-volatile organic compounds were present at levels up to 1.2 ppm in S-10 deep, S-17 deep and S-14. The semi-volatile organics found in the sediments are from two classes, phthlates and poly-aromatic hydrocarbons (PAHs). Phthalates, based on the levels detected and distribution levels, are believed to be sampling or lab contaminants. Di-n-butylphthalate was detected at less than 2 ppm in every sample except one. This distribution is highly unlikely to actually exist at the Site but suggests sample contamination. Bis (2-ethylhexyl) phthalate was detected in every sample and also in the field blank suggesting that this compound is a laboratory contaminant.

The PAHs are typical of coal tar and creosote and would not be expected at this Site, either from the solvent recovery operations or from the former oil terminal operations. It is possible that the PAHs have been leached from the wooden bulkhead which was probably treated with creosote prior to installation. Organic solvents at the Site would enhance the

leaching of the creosote compounds into the harbor. Once in the sediment, the PAHs will not volatilize or degrade as quickly as the solvents. PAHs are found, however, only in very limited areas.

Lead levels were within the range typical of sediments and soils in industrial areas (Connor, 1975; National Academy of Science, 1977).

PCBs were not detected in any of the sediment samples.

7.0 GROUND-WATER QUALITY

The two monitoring wells installed for this investigation and 14 existing monitoring wells were sampled on January 9, 10 and 11, 1990. The wells sampled and the analyses run are listed on Table 5. All ground-water and water-table well sample quality results are given in the laboratory reports included in Appendix D. Detections are summarized on Tables 6 and 7. The Quality Assurance Review is given in Appendix G (Volume III).

7.1 Water-Table Wells

Of the sixteen wells sampled, seven are constructed to bridge the water table (WT-series) and are designed to monitor any free organic liquid which may be floating on the water table. Thus, these wells are not suitable for monitoring actual ground-water quality under the Site. The results of analyses of samples from these wells are summarized on Table 6.

Wells WT-2, WT-3, WT-5 and WT-6 all contained high levels of one or more ETX compound. This is as expected since these wells are all located in the highly contaminated soil area as depicted on Figure 9. Three of these wells, WT-2, WT-3 and WT-5, also contained phenols and phthalate compounds and WT-3 contains benzoic acid. The significance of these compounds will be addressed in the FS.

Well WT-13 contained 7 ppb tetrachloroethane and well WT-14 contained tetrachloroethane (49 ppb), 1, 2-dichloroethane (77 ppb) and trichloroethane (12 ppb).

These wells are at the upgradient edge of the Site and these chlorinated solvents appear to be from off-site. The significance of this finding will also be addressed in the FS.

7.2 Ground-Water Monitoring Wells

Nine ground-water monitoring wells, including six shallow ground-water monitoring wells (SW-series) and three deeper wells (DW-series), were sampled. These wells are designed to monitor ground-water quality below the water table rather than water at the water table where a floating organic layer may be present. The results of these analyses are given in Appendix D and summarized on Table 7.

The three deep wells, DW-1, DW-2 and DW-3 are clean, except for bis (2-ethylhexyl) phthalate, which was also found in the field blank and is therefore considered a laboratory artifact.

Shallow wells SW-2, SW-3, SW-4 and SW-5 contained no detectable organic compounds. Well SW-6 contained 6 ppb of 1,1,1-trichloroethane, apparently associated with the chlorinated solvents found in WT-14. None of these solvents appear to be from the Site based on ground-water flow direction.

Shallow well SW-1 contains low ppb of several chlorinated solvents. These compounds may also be from off-site since SW-1 is generally downgradient from SW-6. The detections in SW-1 are consistent with findings in the 1987-88 Remedial Investigation.

8.0 SUMMARY OF FINDINGS

Principal findings from this Supplemental RI are outlined below.

1. Deeper ground-water beneath the Site (50 to 60 feet below sea level) flows from east to west and is uncontaminated.

2. The vertical gradient between the deeper (50-60 ft) ground-water and shallow ground-water (0-10 feet below sea level) is upward.

3. High levels of ETX in soil are limited to shallow soils (near the water table) and to the western portion of the site.

4. Sediments adjacent to the Site in Hempstead Harbor and Motts Cove contain very low but detectable levels of ETX at only one location (S-9), and no other volatile organic contaminants. Sediments contain no detectable PCBs, and no metals above expected background levels. Two classes of semi-volatile organics (phthalates and PAHs) were detected in sediments at low ppm levels.

The supplemental investigation confirms the results obtained from the 1987-88 Remedial Investigation. A Feasibility Study is required for this Site. The Feasibility Study will follow the outline and format presented in the May 1987 Work Plan. No further Site investigations are needed to complete the Feasibility Study.

Respectfully Submitted,
ROUX ASSOCIATES, INC.

Paul H. Roux
President

Frederick Corn
Engineer

9.0 REFERENCES

Connor, J., and Shacklette, H., 1975, Background Geochemistry of Some Rocks, Soils, Plants and Vegetables in the Conterminous United States: U.S. Geological Survey, Professional Paper 574-F, U.S. Government Printing Office, Washington, D.C.

Lead: National Academy of Science, Washington, D.C., 1977

Official Compilation of Codes, Rules and Regulations of the State of New York, Solid Waste Management Facilities, Title 6, 360-4.4 (a). December 31, 1988.

U.S. Environmental Protection Agency. November 1984. "Review of In-Place Treatment Techniques for Contaminated Surface Soils," Volume 2, EPA-540/2-84-0036.

Table 1. Water Level Measurements, March 19, 1990.

Well Number	Measuring Point Elevation	Low Tide		High Tide	
		Depth to Water	Water Table Elevation	Depth to Water	Water Table Elevation
SW-1	7.76	2.75	5.01	2.20	5.56
WT-2	7.98	1.95	6.03	1.95	6.03
DW-2	10.82	5.15	5.67	3.23	7.59
WT-3	8.29	2.99	5.30	2.95	5.34
WT-5	8.55	3.13	5.42	3.14	5.41
DW-1	10.57	6.13	4.44	3.68	6.89
SW-2	10.47	6.81	3.66	4.20	6.27
WT-6	8.21	3.78	4.43	3.69	4.52
WT-7	8.84	3.65	5.19	3.86	4.98
WT-9	8.53	5.20	3.33	5.25	3.28
SW-3	8.46	4.65	3.81	2.02	6.44
WT-10	8.29	3.39	4.90	2.84	5.45
WT-4	9.74	5.91	3.83	5.28	4.46
SW-4	11.92	5.28	6.64	3.30	8.62
WT-12	9.59	4.30	5.29	4.25	5.34
SW-5	13.74	7.05	6.69	5.33	8.41
WT-13	13.61	8.96	4.65	9.00	4.61
SW-6	18.80	11.08	7.72	9.84	8.96
WT-14	18.68	10.77	7.91	10.09	8.59
DW-3	19.28	8.85	10.43	7.36	11.92
P-1	24.90	17.82	7.08	17.83	7.07
P-2	22.49	15.78	6.71	15.75	6.74
P-3	24.03	17.33	6.70	17.28	6.75
P-4	23.11	16.20	6.91	16.23	6.88
P-5	22.61	15.48	7.13	15.41	7.20

* Measurements in feet, NGUD.

Table 2. Soil Sample Depth and Analyses

Boring #	DEC Designation	Estimated Sample Depth (ft)	VOA	BNA	PCBs	CN	Total Phenols	Total Metals	EP TOX Metals
C-1	1E	3-5			X			X	O
C-2	1D	3-5			X	X	X	X	O
C-3	1C	3-5			X	X	X		O
C-4	1B	3-5		X	X	X	X		O
	--	10-15	O		O				O
C-5	1A	3-5			X			X	O
C-6	1F	3-5			X				O
	--	10-15	O		O				O
C-7	2C	3-5			X				O
C-8	2A	3-5			X				O
C-9	2B	3-5			X			X	O
C-10	3A	3-5		X	X	X	X		O
	--	10-15	O	O	O	O	O		O
	--	25-30	O		O				O
C-11	3B	3-5			X			X	O
	--	10-15	O		O			X	O
	--	25-30	O		O				O
C-12	3C	3-5			X				O
C-13	4A	3-5			X				O
C-14	4B	3-5			X			X	O
C-15	6A	10-15	X	X	X	X	X	X	O
C-16	5A	5-10			X				O
C-17	5B	5-10			X				O
C-18	6B	5-10	X		X			X	O
D-1	--	10-15	O		O				O
D-2	--	10-15	O		O				O
D-3	--	10-15	O		O				O
D-4	--	10-15	O		O				O
D-5	--	25-30	O		O				O
	--	35-40	O		O				O
D-6	--	10-15	O		O				O
D-7	--	10-15	O		O				O
DW-2	--	10-15	O		O				O

X - Required by DEC
O - Proposed by Roux

Table 3. Summary of Soil Samples Analytical Results

Well Designation:	C-10	C-10	C-10	C-11	C-11	C-15	C-4
Sample Depth (ft):	3-4	25-27	10-12	10.5-12	25-27	15-17	11-12.5
Parameter (Concentration in ppm)							
Toluene	NA	0.009	23	ND	ND	17	25
Xylenes	NA	0.01	21	ND	ND	68	39
Ethylbenzene	NA	ND	ND	ND	ND	73	7.4
Naphthalene	12	NA	ND	NA	NA	6.2	NA
2-Methylnaphthalene	13	NA	ND	NA	NA	9.6	NA
Di-n-butylphthalate	1.5	NA	ND	NA	NA	ND	NA
Bis (2-ethylhexyl) phthalate	12 *	NA	ND	NA	NA	0.74 *	NA
Phenanthrene	ND	NA	ND	NA	NA	0.41	NA
4,4-DDE	ND	ND	ND	ND	ND	ND	ND
Total phenols	4.37	NA	<0.61	NA	NA	<0.43	NA

Well Designation:	C-6	D-2	D-3	D-4	D-5	D-5	DW-2
Sample Depth (ft):	10-11	10-12	10-12	10-12	25-26.8	35-36.5	10-12
Parameter (Concentration in ppm)							
Toluene	2.5	0.43	3.2	0.11	0.009	41	0.52
Xylenes	ND	0.71	3.3	0.17	0.011	0.045	3.7
Ethylbenzene	2.6	0.15	ND	ND	ND	0.011	0.57
Naphthalene	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	NA	NA	NA	NA	NA	NA	NA
Bis (2-ethylhexyl) phthalate	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	NA	NA	NA	NA	NA	NA	NA
4,4-DDE	ND	ND	ND	ND	ND	ND	ND
Total phenols	NA	NA	NA	NA	NA	NA	NA

Well Designation:	C-4	C-13	C-2
Sample Depth (ft):	2.5-3.5	3-5	3.5-4
Parameter (Concentration in ppm)			
Toluene	NA	NA	NA
Xylenes	NA	NA	NA
Ethylbenzene	NA	NA	NA
Naphthalene	3.1	NA	ND
2-Methylnaphthalene	3.7	NA	ND
Di-n-butylphthalate	0.79	NA	ND
Bis (2-ethylhexyl) phthalate	3.7	NA	ND
Phenanthrene	0.45	NA	ND
4,4-DDE	ND	0.14	ND
Total phenols	1.15	NA	<0.51

* Detected in blank
ND Not detected
NA Not analyzed for this compound

Table 4. Summary of Sediment Sample Analytical Results

Well Designation:	S-9 Shallow	S-9 Deep	S-10 Shallow	S-10 Deep	S-11 Shallow	S-12 Shallow	S-13 Shallow
Parameter (Concentrations in ppm)							
Di-n-butylphthalate	0.59	0.72	0.77	0.6	0.98	0.79	0.82
Pyrene	ND	ND	ND	1.1	ND	ND	ND
Benzo anthracene	ND	ND	ND	0.47	ND	ND	ND
Chrysene	ND	ND	ND	0.63	ND	ND	ND
Benzo fluoranthene	ND	ND	ND	0.54	ND	ND	ND
Fluoranthene	ND	ND	ND	1.2	0.51	ND	ND
Bis (2-ethylhexyl) phthalate	2.5 *	3.1 *	3.4 *	5.5 *	2.5 *	1.8 *	2.8 *
Ethylbenzene	0.15	0.016	ND	ND	ND	ND	ND
Xylenes	1.4	0.015	ND	ND	ND	ND	ND

Well Designation:	S-13 Deep	S-14 Shallow	S-15 Shallow	S-15 Deep	S-16 Shallow	S-16 Deep	S-17 Shallow
Parameter (Concentrations in ppm)							
Di-n-butylphthalate	1.1	ND	1.0	0.72	0.95	1.8	0.71
Pyrene	ND	0.97	ND	ND	ND	ND	ND
Benzo anthracene	ND	ND	ND	ND	ND	ND	ND
Chrysene	ND	ND	ND	ND	ND	ND	ND
Benzo fluoranthene	ND	ND	ND	ND	ND	ND	ND
Fluoranthene	ND	0.97	ND	ND	ND	ND	ND
Bis (2-ethylhexyl) phthalate	3.0 *	6.6 *	8.1 *	3.8 *	2.3 *	6.9 *	5.2 *
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND
Xylenes	ND	ND	ND	ND	ND	ND	ND

Well Designation:	S-17 Deep	S-18 Shallow	S-18 Deep
Parameter (Concentrations in ppm)			
Di-n-butylphthalate	0.84	0.68	0.53
Pyrene	0.61	ND	ND
Benzo anthracene	0.49	ND	ND
Chrysene	0.64	ND	ND
Benzo fluoranthene	0.44	ND	ND
Fluoranthene	0.7	ND	ND
Bis (2-ethylhexyl) phthalate	3.9 *	2.4 *	4.2 *
Ethylbenzene	ND	ND	ND
Xylenes	ND	ND	ND

* Detected in blank
ND Not detected

Table 5. Ground-Water Samples and Analyses

Sample Number	Matrix	VOA	BNA	PCBs	CN	Total Phenols	Metals	Biotreatability Analysis
WT-2	Ground-Water	+	X		X	X	X	
WT-3	Ground-Water	+	X		X	X	X	
WT-5	Ground-Water	+	X		X	X	X	
WT-6 (A-15)	Ground-Water	+						
WT-12	Ground-Water	+	X		X	X	X	
WT-13	Ground-Water	+					X	
WT-14	Ground-Water	+					X	
SW-1	Ground-Water		Targeted Compound List					+
SW-2	Ground-Water	+					X	
SW-3	Ground-Water	+					X	
SW-4	Ground-Water	X					X	
SW-5	Ground-Water	+					X	
SW-6	Ground-Water	+					X	
DW-1	Ground-Water		Targeted Compound List					
DW-2	Ground-Water		Targeted Compound List					
DW-3	Ground-Water		Targeted Compound List					

X Required by DEC
+ Proposed by Roux Associates, Inc.

Table 6. Summary of Water-Table Well Analytical Results

Well Designation:	WT-2	WT-3	WT-5	WT-6	WT-12	WT-13	WT-14
Parameter (Concentrations in ppm)							
Toluene	19	50	0.33	270	ND	ND	ND
Ethylbenzene	5.4	2.7	ND	4.2	ND	ND	ND
Xylene	28	18	5.8	25	ND	ND	ND
Tetrachloroethene	ND	ND	ND	ND	ND	0.007	0.049
1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	0.077
Trichloroethene	ND	ND	ND	ND	ND	ND	0.012
2-Methylphenol	0.1	0.49	ND	NA	ND	NA	NA
4-Methylphenol	0.047	0.13	ND	NA	ND	NA	NA
2,4-Dimethylphenol	0.39	0.23	0.12	NA	ND	NA	NA
Di-n-butylphthalate	0.11	0.072	0.07	NA	0.073	NA	NA
Benzoic acid	ND	0.12	ND	NA	ND	NA	NA
Naphthalene	ND	0.029	0.04	NA	ND	NA	NA

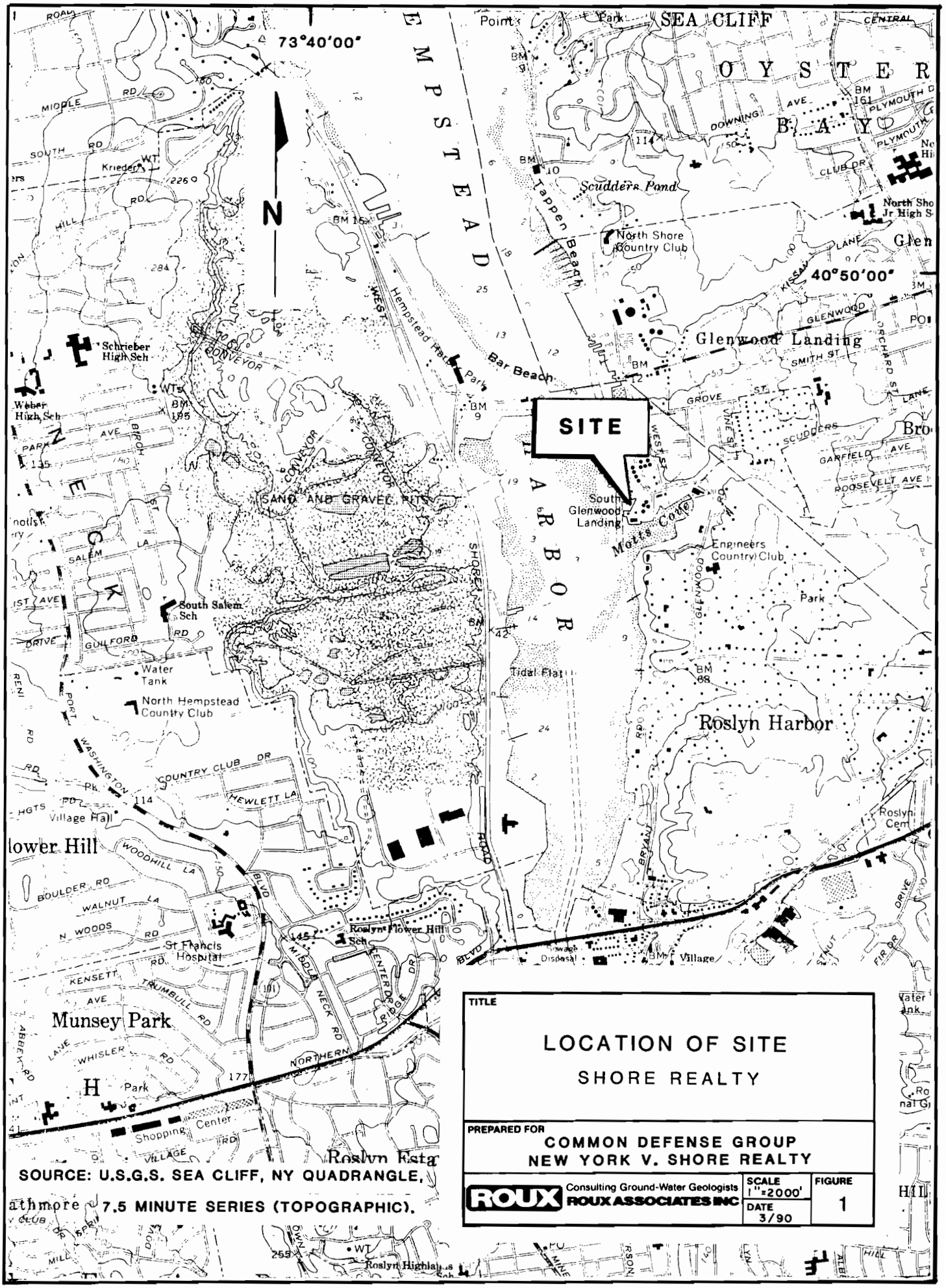
* Detected in blank
ND Not detected
NA Not analyzed for this compound

Table 7. Summary of Ground-Water Analytical Results

Well Designation:	DW-1	DW-2	DW-3	SW-1	SW-2
Parameter (Concentrations in ppm)					
1,2-Dichloroethene	ND	ND	ND	0.01	ND
Trichloroethene	ND	ND	ND	0.009	ND
Tetrachloroethene	ND	ND	ND	0.022	ND
1,1,1-Trichloroethane	ND	ND	ND	ND	ND
Di-n-butyl phthalate	ND	ND	ND	0.073 *	NA
Bis (2-ethylhexyl) phthalate	ND	0.02 *	0.01 *	ND	NA

Well Designation:	SW-3	SW-4	SW-5	SW-6
Parameter (Concentrations in ppm)				
1,2-Dichloroethene	ND	ND	ND	ND
Trichloroethene	ND	ND	ND	ND
Tetrachloroethene	ND	ND	ND	ND
1,1,1-Trichloroethane	ND	ND	ND	0.006
Di-n-butyl phthalate	NA	NA	NA	NA
Bis (2-ethylhexyl) phthalate	NA	NA	NA	NA

* Detected in blank
ND Not detected
NA Not analyzed for this compound



TITLE

LOCATION OF SITE

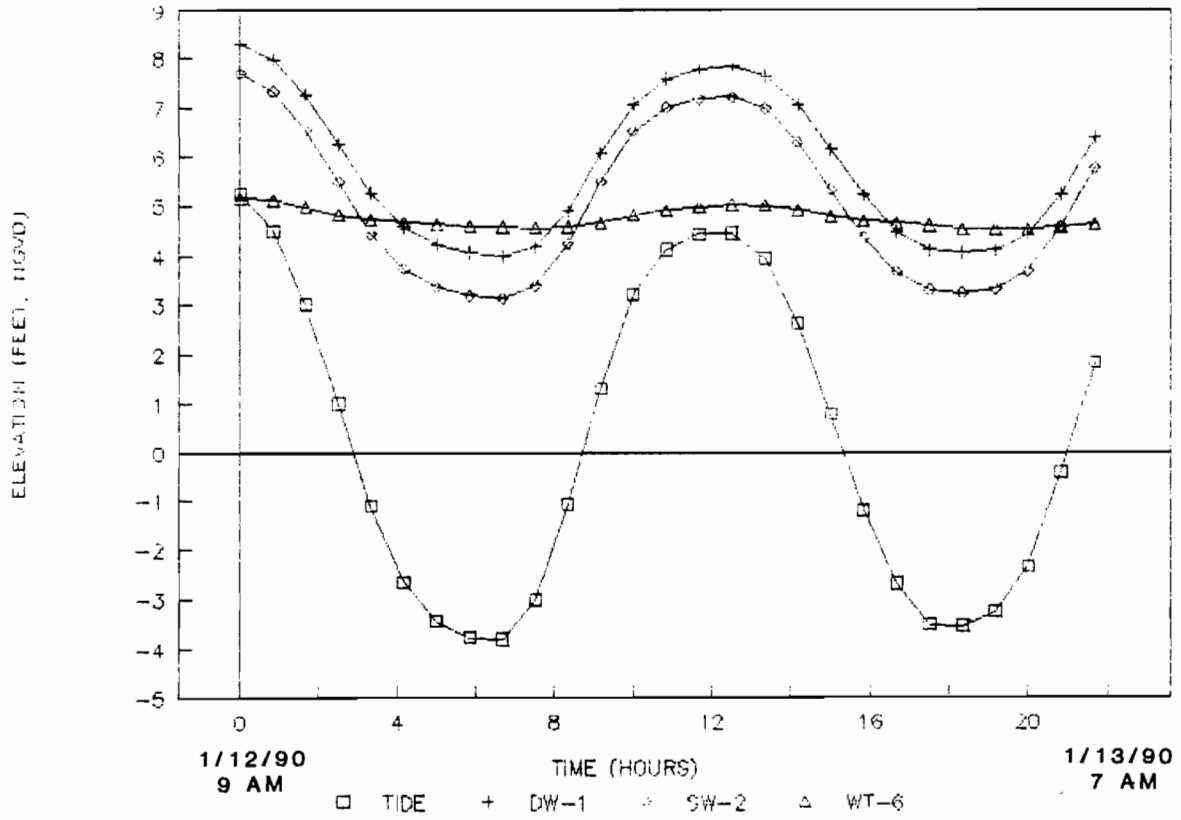
SHORE REALTY

PREPARED FOR

COMMON DEFENSE GROUP
NEW YORK V. SHORE REALTY

ROUX Consulting Ground-Water Geologists
ROUX ASSOCIATES INC

SCALE	FIGURE
1"=2000'	1
DATE 3/90	



Title:

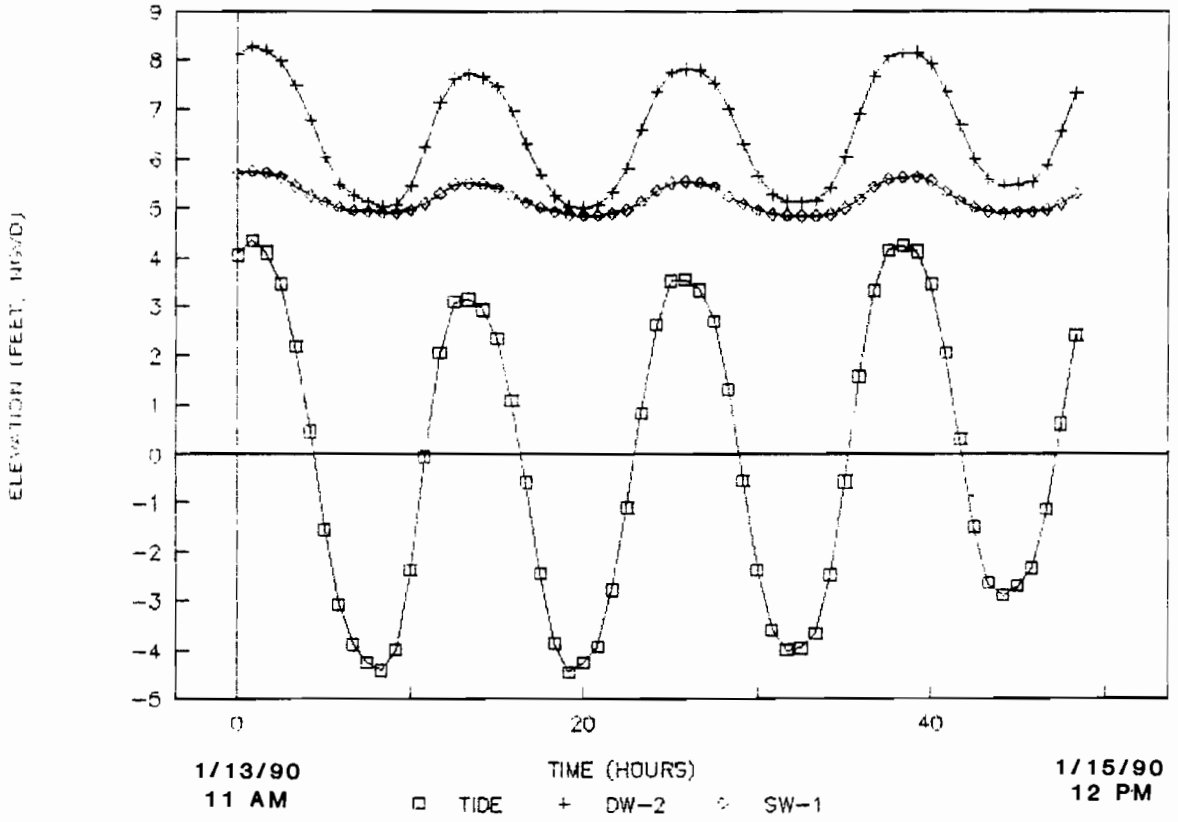
HYDROGRAPH FOR WELLS DW-1, SW-2, WT-6, AND HEMPSTEAD HARBOR

SHORE REALTY

Prepared for: **COMMON DEFENSE GROUP**
NEW YORK V. SHORE REALTY

ROUX
ROUX ASSOCIATES INC
Consulting Ground-Water Geologists & Engineers

Compiled by: F.C.	Date: 3/90	Figure
Prepared by: V.M.	Scale: SHOWN	7
Project Mgr: P.R.	Revision: 0	
File No: 07401Y		



Title:

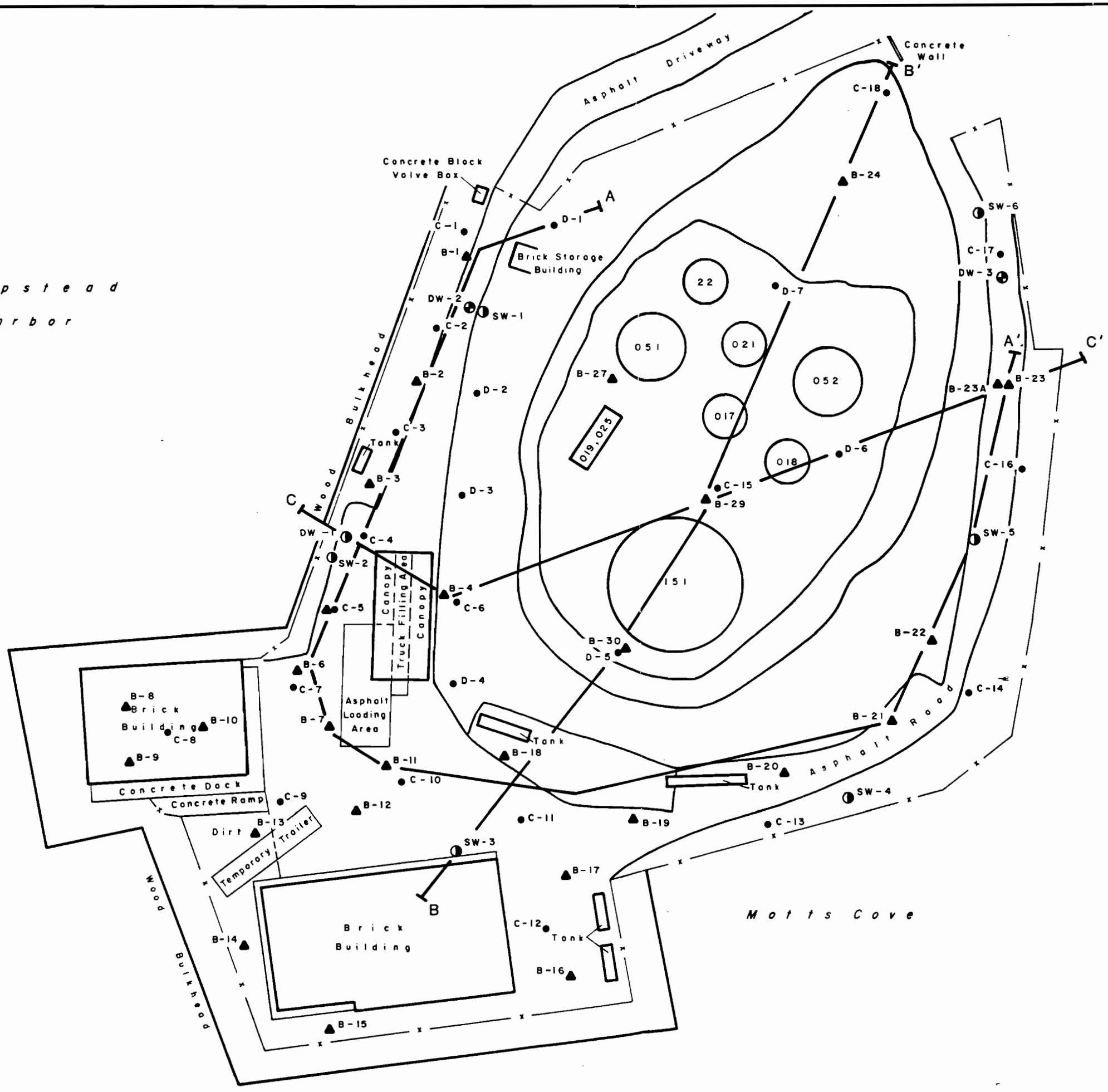
HYDROGRAPH FOR WELLS DW-2, SW-1, AND HEMPSTEAD HARBOR

SHORE REALTY

Prepared for:

COMMON DEFENSE GROUP
NEW YORK V. SHORE REALTY

ROUX ASSOCIATES INC Consulting Ground-Water Geologists & Engineers	Compiled by: F. C.	Date: 3 / 90	Figure 8
	Prepared by: V. M.	Scale: SHOWN	
	Project Mgr: P. R.	Revision: 0	
	File No: 07401Y		



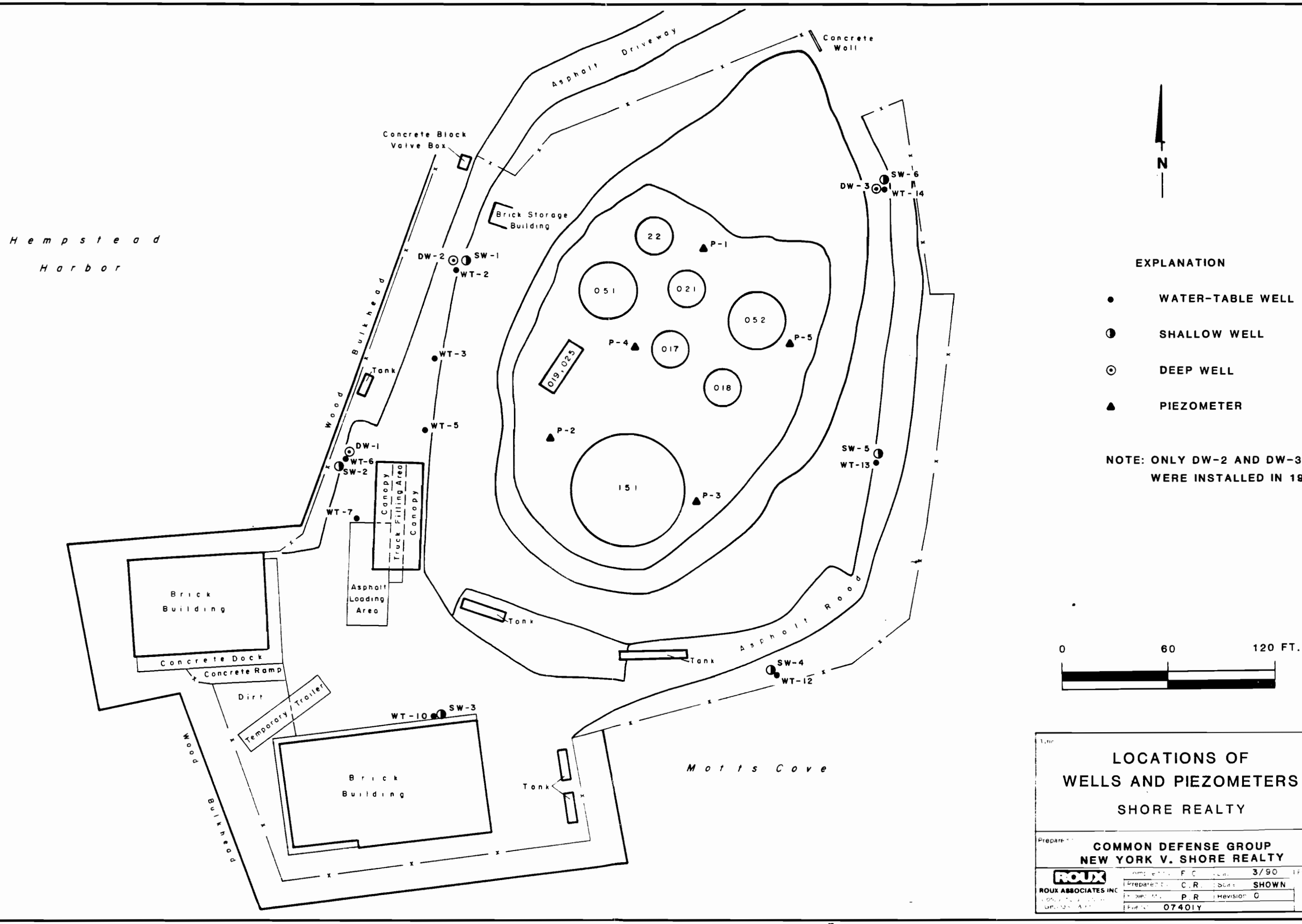
Title

BORING LOCATIONS

SHORE REALTY

Prepared for **COMMON DEFENSE GROUP**
NEW YORK V. SHORE REALTY

ROUX ASSOCIATES INC Consulting Ground-Water Geologists & Engineers	Compiled by F.C.	Date 3/90	Figu
	Prepared by C.R.	Scale SHOWN	2
	Project Mgr P.R.	Revision 0	
	File No: 07401Y		



LOCATIONS OF WELLS AND PIEZOMETERS

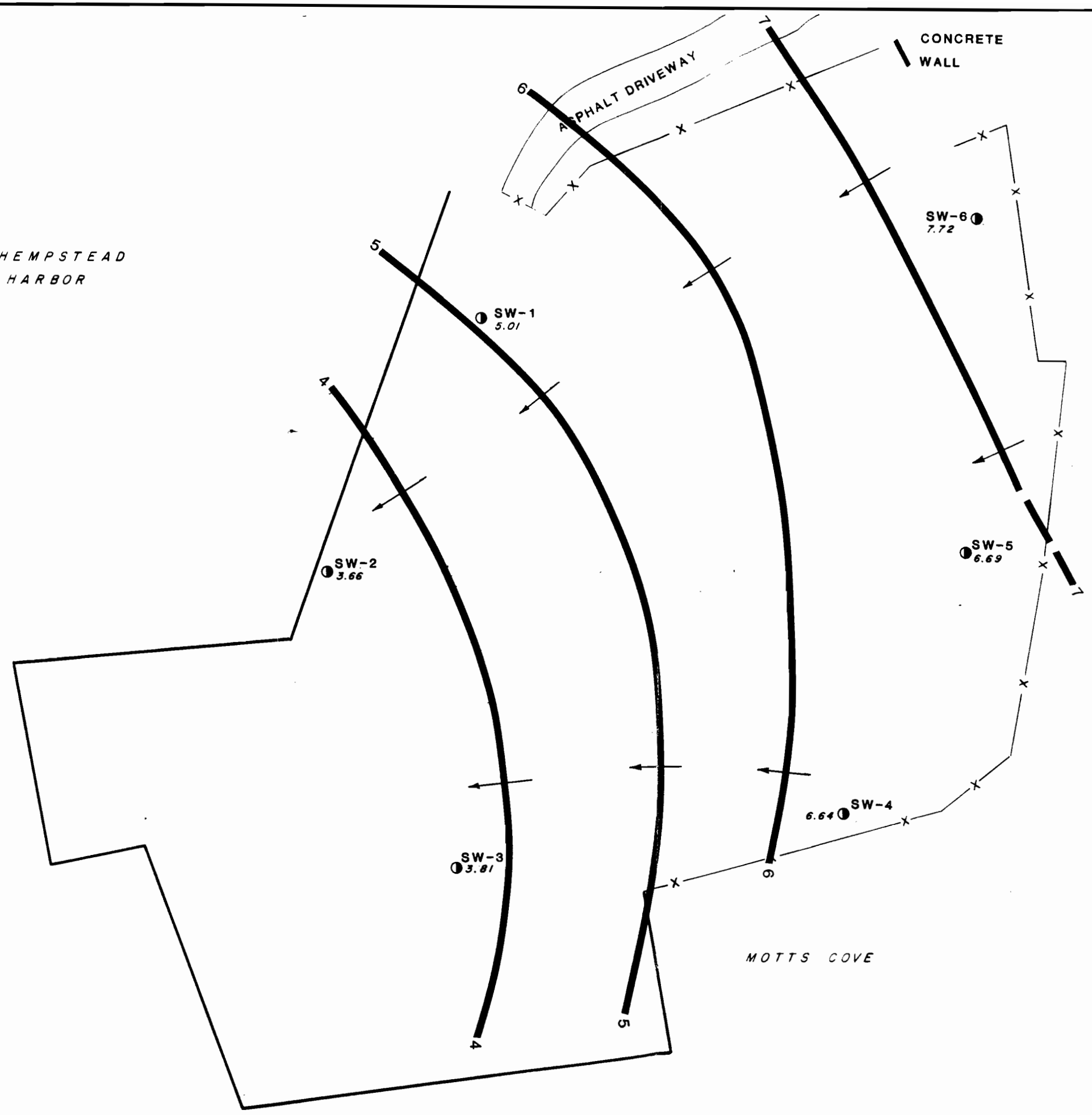
SHORE REALTY

COMMON DEFENSE GROUP
NEW YORK V. SHORE REALTY

ROUX ASSOCIATES INC

	F.C.		3/90
Prepared:	C.R.	Scale:	SHOWN
	P.R.	Revision:	0
File No.	07401Y		

4



Title

PIEZOMETRIC SURFACE LOW TIDE MARCH 19,1990

SHORE REALTY

Prepared for COMMON DEFENSE GROUP
NEW YORK V. SHORE REALTY

ROUX ASSOCIATES INC
Consulting Ground Water Geologists & Engineers

Compiled by F.C.	Date 2/90	Figure 6
Prepared by V.M.	Scale SHOWN	
Project Mgr P.R.	Revision 0	
File No 07401Y		

HEMPSTEAD HARBOR

ASPHALT DRIVEWAY

CONCRETE WALL

N

EXPLANATION

- ● BORING LOCATION SAMPLED IN 1989
- ▲ BORING LOCATION SAMPLED IN 1987
- 20 TOTAL ETX IN SOIL IN PPM
- ND ETX NOT DETECTED
- 10 LINE OF EQUAL ETX CONCENTRATIONS IN PPM

0 60 120 FT.

B-1 10,700
SW-1 90.3
B-2 4,920
B-3 24
DW-1 91.8
B-4 979
B-5 3,290
B-6 211
B-7 896
B-8 ND
B-9 ND
B-10 3
B-11 451
B-13 ND
SW-3 ND
B-14 ND
B-17 24
B-18 120.9
B-20 ND
B-21 ND
B-23 ND
B-27 229
B-29 167
B-30 747
C-15 158
D-6 25
D-7 62
SW-5 ND

100 100 100 10 10 10

MOTTS COVE

Title

ETX LEVELS IN SOIL
NEAR THE WATER TABLE
SHORE REALTY

Prepared for COMMON DEFENSE GROUP
NEW YORK V. SHORE REALTY

ROUX ASSOCIATES INC
Consulting Ground Water Geologists & Engineers

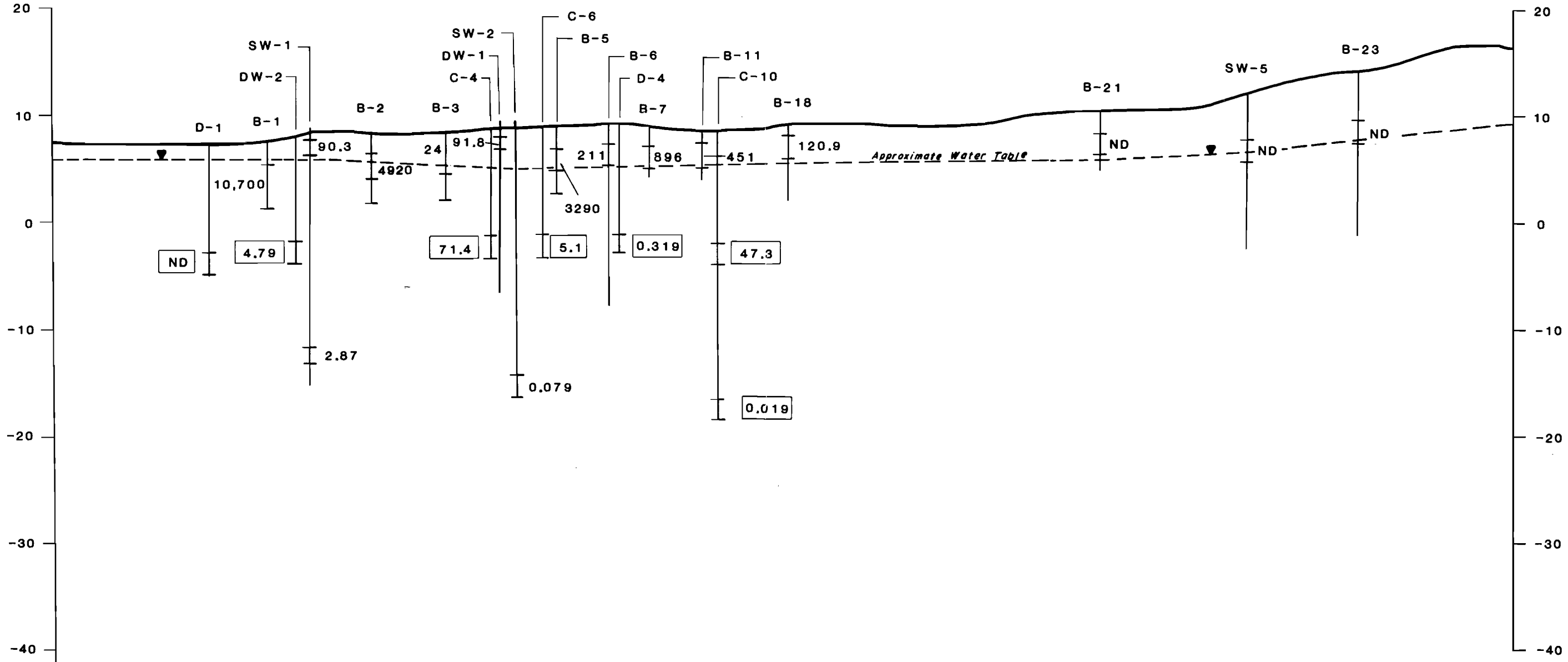
Compiled by F.C.	Date 2/90	Figure 9
Prepared by V.M.	Scale SHOWN	
Project Mgr P.R.	Revision 0	
File No 07401Y		

A
NORTH

SOUTH/WEST

EAST/SOUTH

A′
NORTH

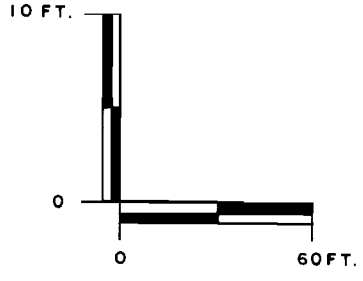


ND	4.79
71.4	5.1
0.319	47.3

EXPLANATION

‡	BORING LOCATION
47.3	TOTAL ETX IN PPM IN 1989
211	TOTAL ETX IN PPM IN 1987
ND	ETX NOT DETECTED

NOTE: SEE FIGURE 2 FOR CROSS SECTION LOCATION



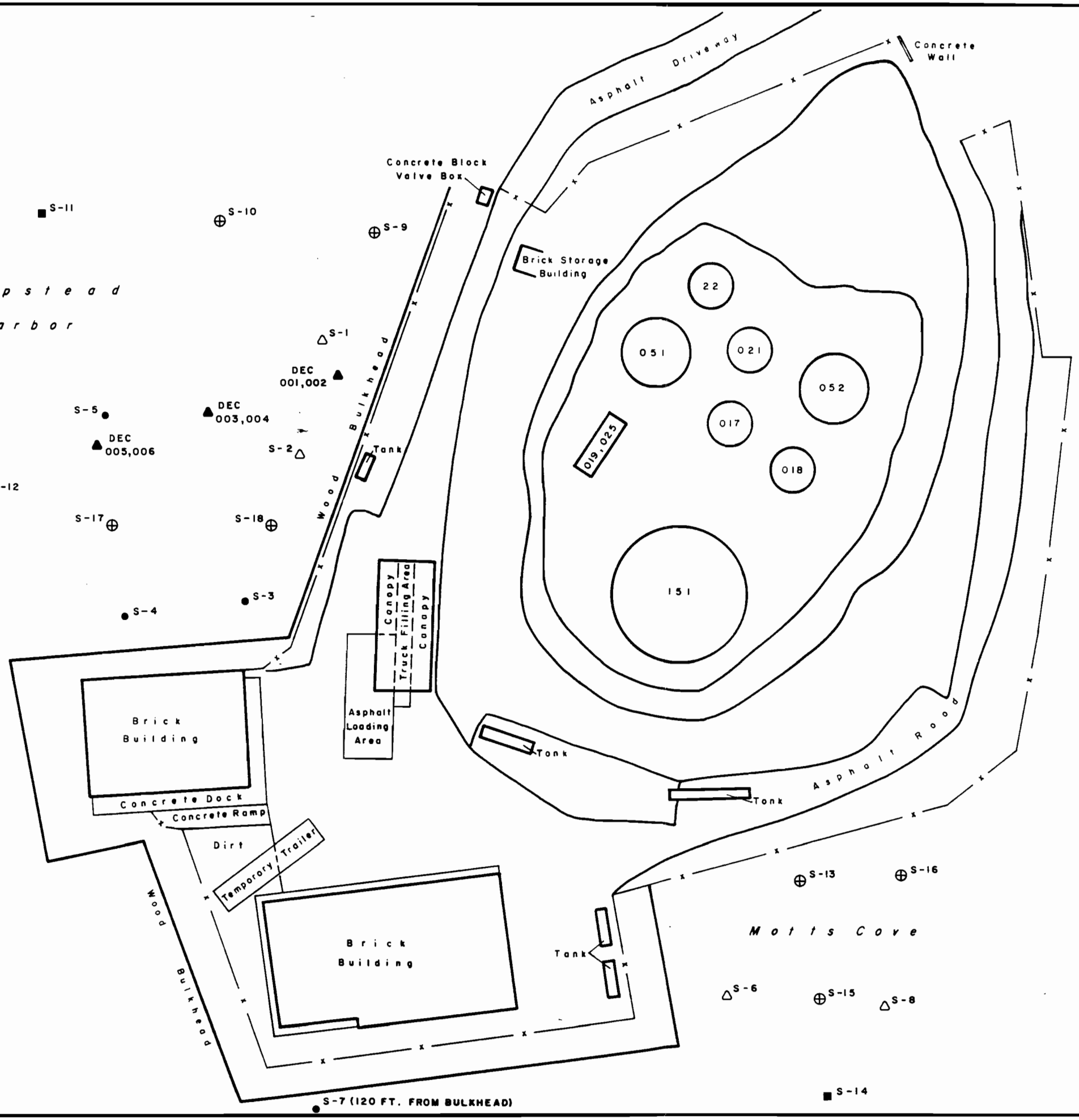
Title:

TOTAL ETX
IN CROSS SECTION A-A′
SHORE REALTY

Prepared for: **COMMON DEFENSE GROUP**
NEW YORK V. SHORE REALTY

ROUX ASSOCIATES INC
Consulting Ground-Water Geologists & Engineers

Compiled by: F.C.		Date: 3/90	Figure
Prepared by: C.R.		Scale: SHOWN	12
Project Mgr: P.R.		Revision: 0	
File No: 07401Y			



N

EXPLANATION

1989 SAMPLES

- ■ SINGLE DEPTH SAMPLE
- ⊕ TWO DEPTH SAMPLE

1987 SAMPLES

- ▲ DEC SAMPLE
- ● ROUX FIRST ROUND SAMPLE
- △ ROUX FIRST ROUND SAMPLE SPLIT WITH DEC

0 60 120 FT.

Title

SEDIMENT SAMPLE LOCATIONS

SHORE REALTY

Prepared for

COMMON DEFENSE GROUP
NEW YORK V. SHORE REALTY

ROUX ASSOCIATES INC
Consulting Ground-Water Geologists & Engineers

Compiled by F.C.	Date 3/90	Figure 3
Prepared by C.R.	Scale SHOWN	
Project Mgr P.R.	Revision 0	
File No 07401Y		

Hempstead Harbor

Asphalt Driveway

Concrete Wall

WT-14 8.59

P-1 7.07

WT-2 6.03 WT-2

WT-3 5.34

P-4 6.88

P-5 7.20

WT-5 5.41

P-2 6.74

WT-6 4.52

WT-13 4.61

P-3 6.75

OW-19 4.98

WT-12 5.34

WT-9 3.28

WT-10 5.45

WT-4 4.46

Motts Cove

N

EXPLANATION

- WT-3 — WATER-TABLE MONITORING WELL
- P-5 — PIEZOMETER LOCATION
- 6.88 — ELEVATION OF THE WATER TABLE IN FEET NGVD
- 7 — LINE OF EQUAL ELEVATION OF THE WATER TABLE
- DIRECTION OF GROUND-WATER FLOW

0 60 120 FT.

Title:

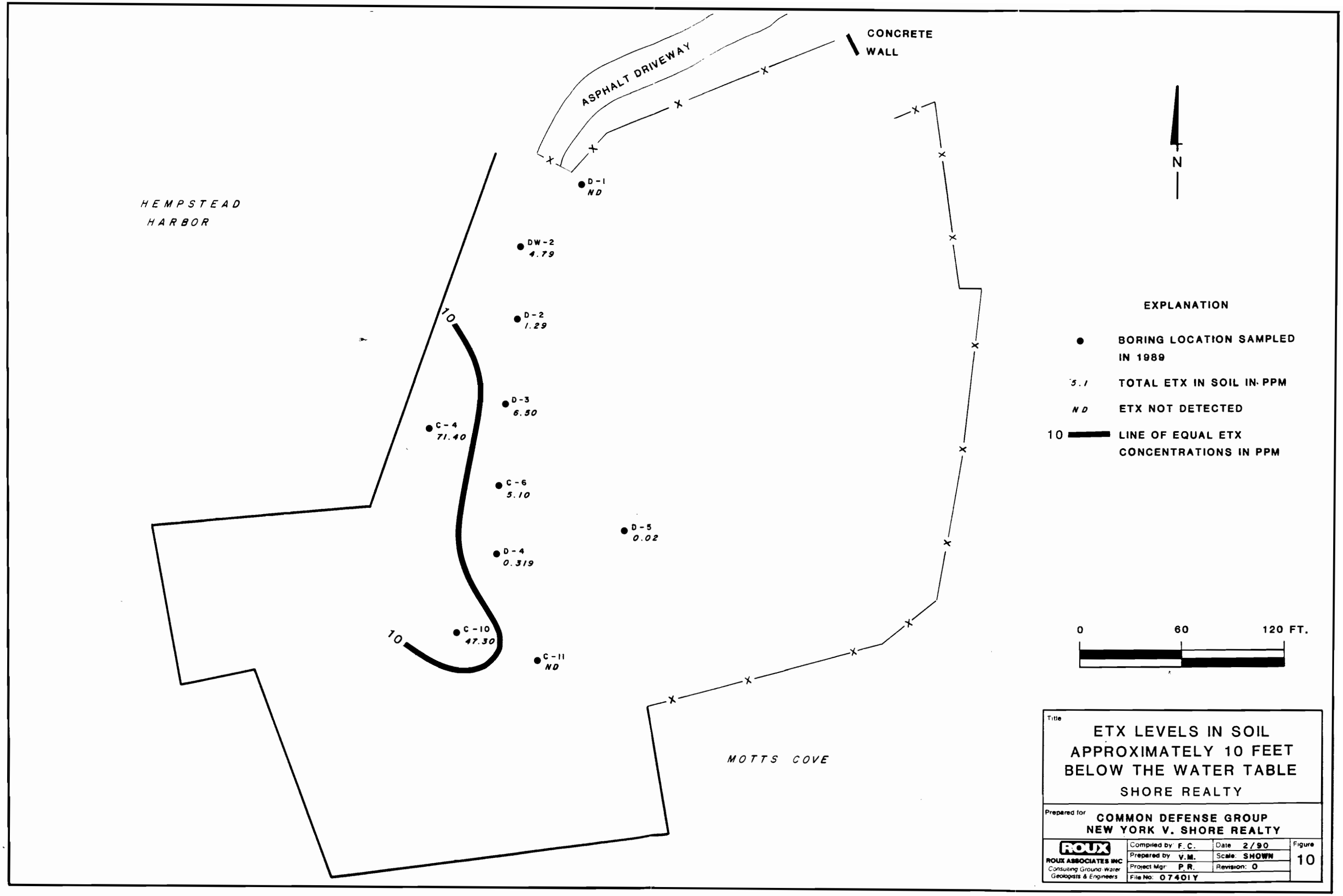
WATER-TABLE CONFIGURATION LOW TIDE MARCH 19,1990

SHORE REALTY

Prepared for: COMMON DEFENSE GROUP
NEW YORK V. SHORE REALTY

ROUX ASSOCIATES INC
Consulting Ground-Water Geologists & Engineers

Compiled by: F.C.	Date: 3/90	Figure: 5
Prepared by: V.M.	Scale: SHOWN	
Project Mgr: P.R.	Revision: 0	
File No. 07401Y		



Title

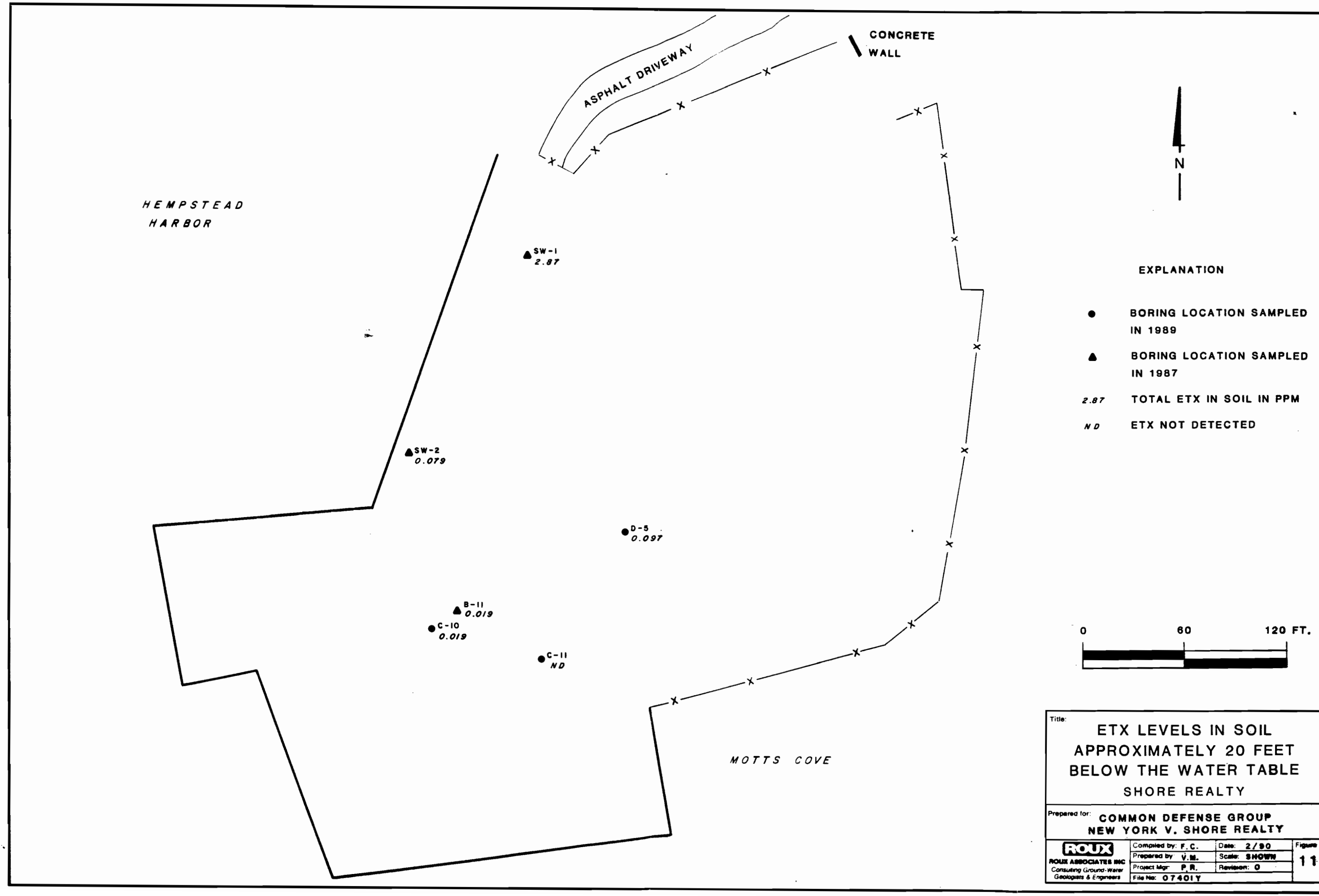
ETX LEVELS IN SOIL APPROXIMATELY 10 FEET BELOW THE WATER TABLE

SHORE REALTY

Prepared for COMMON DEFENSE GROUP
NEW YORK V. SHORE REALTY

ROUX ASSOCIATES INC
Consulting Ground-Water Geologists & Engineers

Compiled by: F. C.	Date: 2/90	Figure 10
Prepared by: V.M.	Scale: SHOWN	
Project Mgr: P.R.	Revision: 0	
File No: 07401Y		



Title:

ETX LEVELS IN SOIL APPROXIMATELY 20 FEET BELOW THE WATER TABLE

SHORE REALTY

Prepared for: COMMON DEFENSE GROUP
NEW YORK V. SHORE REALTY

ROUX ASSOCIATES INC
Consulting Ground-Water Geologists & Engineers

Compiled by: F.C.	Date: 2/90	Figure 11
Prepared by: V.M.	Scale: SHOWN	
Project Mgr: P.R.	Revision: 0	
File No: 07401Y		

B
SOUTHWEST

B′
NORTHEAST

ELEVATION IN FEET RELATIVE TO NATIONAL GEODETIC VERTICAL DATUM

30
20
10
0
-10
-20
-30

SW-3
C-11
B-18
D-5
B-30
TANK 151
C-15
B-29
TANK 021
D-7
C-18

0
ND
121
747
158
167
62
ND
0.02
0.097
ND

Approximate Water Table

EXPLANATION

BORING LOCATION

62 TOTAL ETX IN PPM IN 1989

121 TOTAL ETX IN PPM IN 1987

ND ETX NOT DETECTED

NOTE: SEE FIGURE 2 FOR CROSS SECTION LOCATION

10 FT.
0
0
30 FT.

Title:
TOTAL ETX
IN CROSS SECTION B-B′
SHORE REALTY

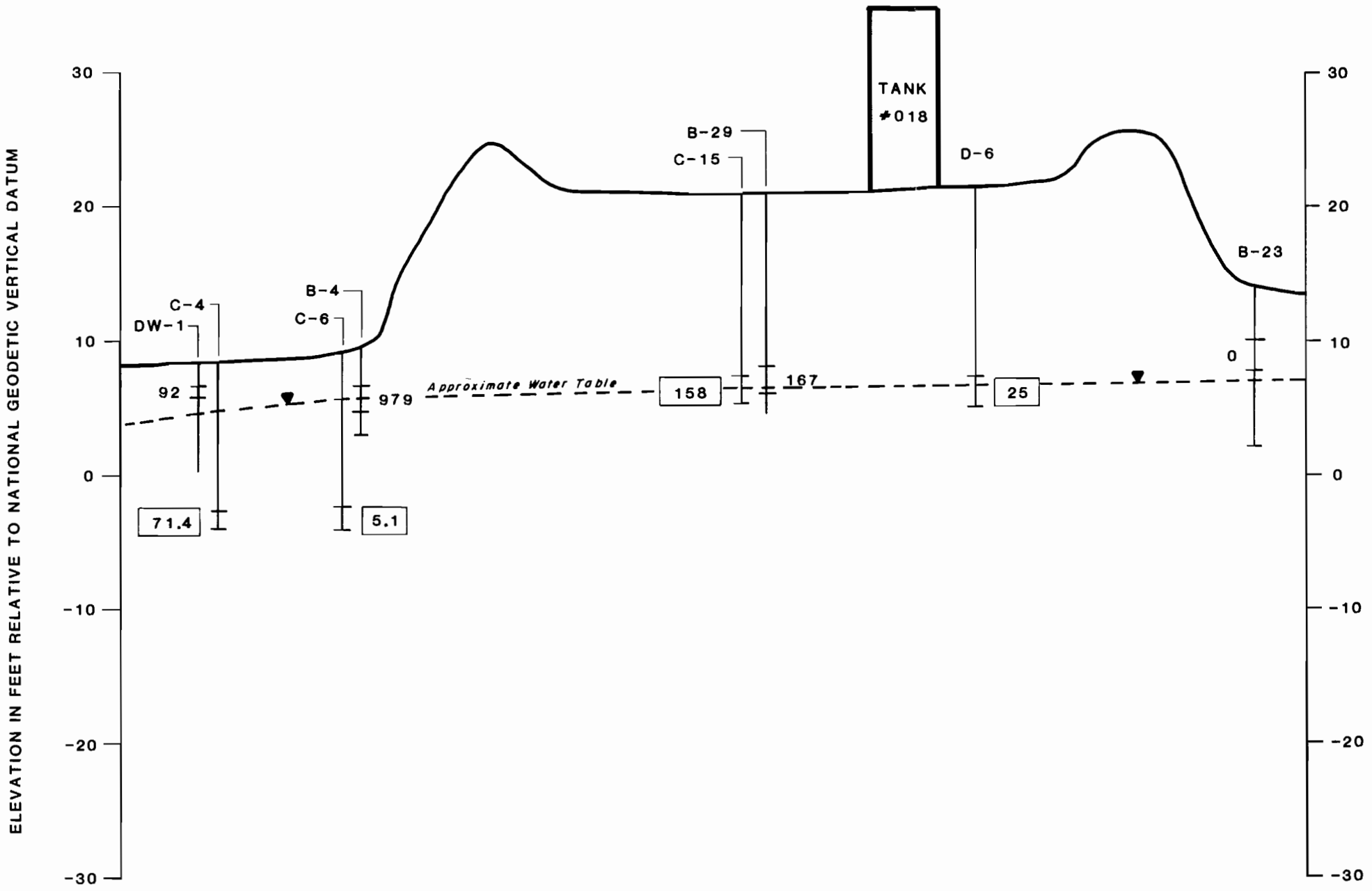
Prepared for: COMMON DEFENSE GROUP
NEW YORK V. SHORE REALTY

ROUX ASSOCIATES INC
Consulting Ground-Water Geologists & Engineers

Compiled by: F.C.	Date: 3/90	Figure
Prepared by: C.R.	Scale: SHOWN	13
Project Mgr: P.R.	Revision: 0	
File No: 07401Y		

C
WEST

C′
EAST



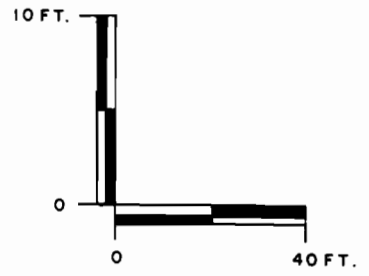
EXPLANATION

BORING LOCATION

158 TOTAL ETX IN PPM IN 1989

167 TOTAL ETX IN PPM IN 1987

NOTE: SEE FIGURE 2 FOR CROSS SECTION LOCATION



Title:

TOTAL ETX
IN CROSS SECTION C-C′
SHORE REALTY

Prepared for: COMMON DEFENSE GROUP
NEW YORK V. SHORE REALTY

ROUX ASSOCIATES INC
Consulting Ground-Water Geologists & Engineers

Compiled by: F.C.	Date: 3/90	Figure
Prepared by: C.R.	Scale: SHOWN	14
Project Mgr: P.R.	Revision: 0	
File No: 07401Y		

APPENDIX A

Geologic Logs and Construction Details of Wells

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 07401Y Date 11-30-89
Project Shore Realty
Client Teitelbaum & Hiller
Page 1 of 1
Logged By Martha Smith
Well No. C-!
Loc.
M.P. Elevation
Drilling Started 1132 Ended 1155
Driller R & L Well Drilling
Type Of Rig hollow stem auger

WELL DATA

Hole Diam. (in.)
Final Depth (ft.)
Casing Diam. (in.)
Casing Length (ft.)
Screen Setting (ft.)
Screen Slot & Type
Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev.W.T.

SAMPLER

Type split spoon
Hammer 130 lb.
Fall 30 in.

DEVELOPMENT

SAMPLE No.	SAMPLE Rec.	SAMPLE Depth (ft.)	SAMPLE Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
		0-5				asphalt, gravel, sand
		.5-1.5			1	sand-gravel, brown
		.5-2.0				sand, gravel dark gray and fuel oil
	1.0	2-3	45-51-27-157		2	smell; 40ppm measured even cuttings.
						2-2.5;sand (70%) gravel(30%);gray-brown; loose.
					3	2.5-3.0;sand (50%) gravel/shells (50%) black, oily, loose wet.
					4	Rock in tip of split spoon, only 1ft. of sample collected.
					5	-water at 2.7'.
						-sample collected 2'-3';sent to Nytest for analysis of PCBs, total metals, EPTOX metals.
						-Headspace volatiles on composite sample from 2'-3' =151ppm.

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS

ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 07401Y Date 11-16-89
Project Shore Realty
Client Teitelbaum & Hiller
Page 1 of 1
Logged By Martha Smith
Well No. C-2
Loc.
M.P. Elevation
Drilling Started 0935 Ended 0945
Driller R & L Well Drilling
Type Of Rig hollow stem auger

WELL DATA

Hole Diam. (in.)
Final Depth (ft.)
Casing Diam. (in.)
Casing Length (ft.)
Screen Setting (ft.)
Screen Slot & Type
Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev.W.T.

SAMPLER

Type split spoon
Hammer 130 lb.
Fall 30 in.

DEVELOPMENT

SAMPLE No.	SAMPLE Rec.	SAMPLE Depth (ft.)	SAMPLE Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
		0-1		Sandy Soil		Soil, Sandy, Gray - odor of toluene
		1-2		Gravel	1	gravel, odor of toluene
		1'-4'	6-14-8-8	Clay	2	2.0-2.7 Clay(60%) Sand(40%) dark gray, brown, hard but crumbly.
				Clay	3	2.7-3.5 clay(70%) silt(30%) pebbles Mixed in, gray-brown, compact, hard, becomes sandier and darker color around 3.2-3.5
				Clay	4	3.5-4.0 Clay(90%) silt(10%) gray with a little orange iron staining, slightly plactic, moderately compact. Intermittant cobbles.
					5	
					6	-Water at 3.5
					7	-Sample collected at 3.5'-4.0',
					8	sent to Nytest for analyses of PCBs, Phenols, OM, EP Tox metals.
						- Headspace volatiles on composite sample from 3.5'-4.0' =246 ppm.

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS

ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 07401Y Date 11/15/89
Project Shore Realty
Client Teitelbaum & Hiller
Page 1 Of 1
Logged By Martha Smith
Well No. C-3
Loc.
M.P. Elevation
Drilling Started 1555 Ended 1605
Driller R & L Well Drilling
Type Of Rig Hollow stem auger

WELL DATA

Hole Diam. (in.)
Final Depth (ft.)
Casing Diam. (in.)
Casing Length (ft.)
Screen Setting (ft.)
Screen Slot & Type
Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev.W.T.

SAMPLER

Type split spoon
Hammer 130 lb.
Fall 30 in.

DEVELOPMENT

SAMPLE No.	SAMPLE Rec.	SAMPLE Depth (ft.)	SAMPLE Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
		0-0.5		sand-gravel		sand, gravel, gray-brown, rebar in hole.
		0.5-1.5		sand	1	sand, gravel gray, moist.
	1.8	1.5-3.5	14-16-4-12	sand		1.5-1.9 sand (70%) gravel (30%), gray brown.
				clay	2	1.9-2.5 clay (95%) silt (5%), medium gray, some orange iron staining,
					3	dense, hard.
				clay		2.5-3.0 clay (80%) silty (10%) gravel
					4	(10%) brown, compact, moist.
				sand		3.0-3.4 as above, but wet.
					5	3.4-3.5 sand (85%) silt (15%) coarse medium grain size, slightly compact wet.
						Water at 3.0'.
						Sample collected at 2' - 3', sent to Nytest for PCB's, total metals, EPTOX metals.

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS

ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 07401Y Date 11/16/89
Project Shore Realty
Client Teitelbaum & Hiller
Page 1 of 1
Logged By Martha Smith
Well No. C-4
Loc.
M.P. Elevation
Drilling Started 1040 Ended 1345
Driller R & L Well Drilling
Type Of Rig Hollow stem auger

WELL DATA

Hole Diam. (in.)
Final Depth (ft.)
Casing Diam. (in.)
Casing Length (ft.)
Screen Setting (ft.)
Screen Slot & Type
Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev.W.T.

SAMPLER

Type split spoon
Hammer 130 lb.
Fall 30 in.

DEVELOPMENT

SAMPLE No.	SAMPLE Rec.	SAMPLE Depth (ft.)	SAMPLE Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
		0-1				gravel, asphalt
		1-1.8		Sand	1	sand, tan, loose
		1.8-2.0		Sand		sand gray, loose
	1.8	2.0-4.0	9-11-8-8	Sand	2	2.0-2.2 sand, gray, medium grain size loose (as above)
				Cinders		2.2-2.5 cinders, gravel, black, loose
				Clay	3	2.5-3.0 clay, gray-brown; compact, but crumbly.
				Sand	4	3.0-4.0 sand (90%), silt (10%) with bits of shell, gray, loose, wet.
				sand debris	5	
						Water at 3.01'.
					6	
					7	Sample collected 2.5-3.5' sent to Nytest for EPTOX metals, BNA, PCB's CN, Phenols, Total metals.
					8	Headspace volatiles on composite sample from 2.5-3.5'= 206ppm on Photovac Tip.
					9	
					10	
	1.0	11-12.5	47-46-114	Sand	11	11-12.3 sand mixed with shells light tan-gray, medium grain size, medium compact.
				moist debris	12	12.3-12.5 piece of wood in bottom of spoon tip.
					13	
						Sample collected 11-12.5 sent to Nytest for volatile organics, PCB's EP TOX metals.
						Headspace volatiles on composite sample from 11-12.5=650ppm on Photovac Tip.

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS

ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 07401Y Date 11-15-89
Project Shore Realty
Client Teitelbaum & Hiller
Page 1 Of 1
Logged By Martha Smith
Well No. C-5
Loc.
M.P. Elevation
Drilling Started 1403 Ended 1420
Driller R & L Well Drilling
Type Of Rig hollow stem auger

WELL DATA

Hole Diam. (in.)
Final Depth (ft.)
Casing Diam. (in.)
Casing Length (ft.)
Screen Setting (ft.)
Screen Slot & Type
Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev. W.T.

SAMPLER

Type split spoon
Hammer 130 lb.
Fall 30 in.

DEVELOPMENT

SAMPLE No.	SAMPLE Rec.	SAMPLE Depth (ft.)	SAMPLE Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
		0-1		asphalt, gravel, sand		asphalt, gravel, sand
		1-2.5		sand	1	sand(70%) gravel(30%) gray-brown, loose moist
					2	
	1.8	2.5-4.5	16-16-17-6	sand	3	2.5-3.0 sand (70%), gravel (30%) gray medium to coarse grain size, loose, moist.
				shells	4	3.0-3.7 shells (60%), gravel(25%), sand (15%)
					5	3.7-4.0 sand (70%), gravel (30%) tan, medium coarse grain size, wet.
						4.0-4.5 sand, light gray, grades to medium gray in bottom of core, medium grain size with clay stringers at 4.0 ' and 4.2', wet.
						Water at 3.4'
						Sample collected at 3.0-4.0', sent to Nytest for PCB's, total metals, EPTOX Metals
						Headspace volatiles on composite sample from 3.0'-4.0=356ppm on OVM

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS

ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 07401Y Date 11-18-89
Project Shore Realty
Client Teitelbaum & Hiller
Page 1 Of 1
Logged By Martha Smith
Well No. C-6
Loc.
M.P. Elevation
Drilling Started 1030 Ended 1105
Driller R & L Drilling
Type Of Rig hollow stem auger

WELL DATA

Hole Diam. (in.)
Final Depth (ft.)
Casing Diam. (in.)
Casing Length (ft.)
Screen Setting (ft.)
Screen Slot & Type
Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev.W.T.

SAMPLER

Type split spoon
Hammer 130 lb.
Fall 30 in.

DEVELOPMENT

SAMPLE No.	SAMPLE Rec.	SAMPLE Depth (ft.)	SAMPLE Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
		0-1		soil, sand gravel		soil, sand, gravel
		1-2		sand-gravel	1	sand, gravel, tan, loose, furl oil odor
	1.3	2-4	15-16-24-24	sand	2	2.0-3.2 Sand(60%) gravel(40%) tan sand-coarse grain size.
				sand	3	3.2-4.0 sand, gray, coarse grain size loose, fuel oil smell
					4	
				sand		-Water at 3.2'
				5'-6' sand gravel	5	Sample collected 2'-4'; sent to Nytest for analyses
					6	of
						-Headspace volatiles on sample from 2'-4'
					7	= 460 ppm with TIP
				8-0- sand, oily	8	
					9	
		10-11		sand	10	10-10.6 sand, gray, coarse grain size, loose
	1.0		43-165	clay	11	10.6-10.8 Clay, lt. gray,tan,orange,black -varigated, soft,sticky
					12	10.8-11.0 Sand(50%) Clay(50%) gray,soft.
						Sample collected 10'-11'; sent to Nytest for Analyses of PCBs and EP tox metals.
						Headspace volatiles on sample from 10'-11' = 416 ppm onTIP

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS

ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 07401Y Date

Project Shore Realty

Client Teitelbaum & Hiller, P.C.

Page 1 Of 1

Logged By Martha Smith

Well No. C-7

Loc.

M.P. Elevation

Drilling Started 1135 Ended 1205

Driller R & L Well Drilling

Type Of Rig Hollow stem auger

WELL DATA

Hole Diam. (in.)

Final Depth (ft.)

Casing Diam. (in.)

Casing Length (ft.)

Screen Setting (ft.)

Screen Slot & Type

Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev.W.T.

SAMPLER

Type split spoon

Hammer 130 lb.

Fall 30 in.

DEVELOPMENT

SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
		0-1		asphalt		asphalt, gravel, sand, loose, toluene
				gravel & sand		odor (4.8ppm in hole)
		1-1.5		sand	1	sand, shells, gravel, gray
	1.0	1.5-3.0	11-22-23-27	sand		1.5-2.0 sand, gray brown, medium
					2	grain size, loose, toluene odor.
				shells		2.0-3.0 shells (80%) sand (20%)
						dark gray, compact, strong odor
					3	of toluene
	1.7	3.0-5.0	8-15-17-28	sand		3.0-4.1 sand light tan with clay
					4	stringer at 3.5' medium grain size,
						loose, strong toluene odor, 400ppm
					5	when spoon opened.
				shells		4.1-4.5 shells (80%), sand (20%)
						black, oily compact
				sand		4.5-5.0 sand, black, oily, medium
						grain size, loose wet.
						Water at 3.7'.
						sample collected at 3.5'-4.5' sent to Nytest for PCB's, EPTOX metals analysis.
						Headspace volatiles on composite sample from 3.5-4.5' = 500ppm OVM

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS

ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 07401Y Date 11-30-89
Project Shore Realty
Client Teitelbaum & Hiller
Page 1 of 1
Logged By Martha Smith
Well No. C-8
Loc. Under building
M.P. Elevation
Drilling Started 0830 Ended 0900
Driller
Type Of Rig hand auger

WELL DATA

Hole Diam. (in.)
Final Depth (ft.)
Casing Diam. (in.)
Casing Length (ft.)
Screen Setting (ft.)
Screen Slot & Type
Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev.W.T.

SAMPLER

Type hand auger
Hammer N/A lb.
Fall N/A in.

DEVELOPMENT

SAMPLE No.	SAMPLE Rec.	SAMPLE Depth (ft.)	SAMPLE Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
		0-2		Fill		gravel, sand, cobbles, lt. tan-brown
					1	
					2	gravel, sand, cobbles, bricks, brown sand (70%) with gravel (30%) brown loose, moist-wet.
					3	sand (70%0 gravel (30%) black, oily loose fuel oil odor.
					4	
					5	-water at 2.7'. -sample collected 2.7-3.2 and sent to Nytest for analysis of PCBs and EPTOX metals. - Headspace volatiles on composite sample collected 2.7-3.2'= 125ppm - sample collected by digging down to 2.5' with shovel, and then hand augering to 3.2'.

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS

ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 07401Y Date 11-15-89
Project Shore Realty
Client Teitelbaum & Hiller
Page 1 Of 1
Logged By Martha Smith
Well No. C-9
Loc.
M.P. Elevation
Drilling Started 1035 Ended 1050
Driller R & L Drilling
Type Of Rig Hollow stem auger

WELL DATA

Hole Diam. (in.)
Final Depth (ft.)
Casing Diam. (in.)
Casing Length (ft.)
Screen Setting (ft.)
Screen Slot & Type
Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev. W.T.

SAMPLER

Type split spoon
Hammer 130 lb.
Fall 30 in.

DEVELOPMENT

SAMPLE No.	SAMPLE Rec.	SAMPLE Depth (ft.)	SAMPLE Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
		0-1		asphalt gravel		asphalt, gravel, toluene odor.
		1-1.5		sand gravel	1	sand (70%), gravel (30%) tan, medium grain size, loose.
		1.5-2.0		sand gravel		sand (70%) gravel (30%) gray, loose.
	.5	2.0-2.5			2	sand (80%) gravel (20%) gray moist.
					3	
					4	
					5	
						Sample collected at 2.0-2.5'
						Sent to Nytest for PCB's, Total metals and EPTOX metals.
						No headspace volatiles performed due to not enough sample.

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS

ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 07401Y Date 11-17-89
Project Shore Realty
Client Teitelbaum & Hiller
Page 1 of 2
Logged By Martha Smith
Well No. C-10
Loc.
M.P. Elevation
Drilling Started 1400 Ended 1540
Driller R & L Well Drilling
Type Of Rig Hollow stem auger

WELL DATA

Hole Diam. (in.)
Final Depth (ft.)
Casing Diam. (in.)
Casing Length (ft.)
Screen Setting (ft.)
Screen Slot & Type
Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev.W.T.

SAMPLER

Type split spoon
Hammer 130 lb.
Fall 30 in.

DEVELOPMENT

SAMPLE No.	SAMPLE Rec.	SAMPLE Depth (ft.)	SAMPLE Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
		0-0.5		asphalt gravel		asphalt, gravel
		0.5-1.0		sand		Sand, tan-brown, loose, moist
	1.6	1-3		gravel sand	1	1-1.5 loose gravel (50%), sand (50%) medium grain size, moist.
				sand	2	1.5-2.5 snad (70%), gravel (30%) tan; sand is medium grain size loose.
				sand	3	2.5-3.0 sand, gravel, as above except strong fuel oil odor.
	2.0	3-5	12-14-14-16	sand	4	3.0-3.5 sand, tan, medium to fine grain size moist
				sand		3.5-4.1 sand, tan, as above except wet.
				clay	5	4.1-5.0 clay, gray, bands of pink at 5.0' medium hard, slightly plastic dry at 5.0'.
					6	Water at 3.5'
				clay		Sample collected at 3-4' sent to Ntest for analyses of BNA, PCB's, CN,
					7	Total phenols, EPTOX metals.
					8	Headspace volatiles on composite sample from 3-4'=162ppm.
					9	
	2.0	10-12	38-21-31-20	clay	10	10-11 clay (95%) gravel (5%) gray, some iron staining, medium soft no odor.
				sand	11	11-12 sand (quartz), light gray white, coarse grain size, loose
					12	
					13	Sample collected at 10-12'; sent to Nytest for analyses of VOA,BNA, PCB's
					14	CN, total phenols EPTOX metals.
					15	Headspace volatiles on composite sample from 10-12' = 282ppm

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 07401Y Date 11-17-89
Project Shore Realty
Client Teitelbaum & Hiller
Page 2 Of 2
Logged By Martha Smith
Well No. C-10
Loc.
M.P. Elevation
Drilling Started 1400 Ended 1540
Driller R & L Well Drilling
Type Of Rig Hollow stem auger

WELL DATA

Hole Diam. (in.)
Final Depth (ft.)
Casing Diam. (in.)
Casing Length (ft.)
Screen Setting (ft.)
Screen Slot & Type
Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev.W.T.

SAMPLER

Type split spoon
Hammer 130 lb.
Fall 30 in.

DEVELOPMENT

SAMPLE No.	SAMPLE Rec.	SAMPLE Depth (ft.)	SAMPLE Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
					16	
				sand and clay	17	
					18	
					19	
					20	
					21	
					22	
					23	
					24	
	1.3	25-27	14-48-30-51	clay	25	25-25.5 clay gray with some iron staining medium stiff plastic
				sand	26	25.5-27.0 sand, (quartz) white light gray, coarse grain size, loose saturated.
					27	Sample collected from 25-27' sent to Nytest for analyses of VOA, PCB's, EPTOX metals.

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 07401Y Date 11-17-89
Project Shore Realty
Client Teitelbaum & Hiller
Page 1 of 2
Logged By Martha Smith
Well No. C-11
Loc.
M.P. Elevation
Drilling Started 0900 Ended 1015
Driller
Type Of Rig Hollow stem auger

WELL DATA

Hole Diam. (in.)
Final Depth (ft.)
Casing Diam. (in.)
Casing Length (ft.)
Screen Setting (ft.)
Screen Slot & Type
Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev.W.T.

SAMPLER

Type split spoon
Hammer 130 lb.
Fall 30 in.

DEVELOPMENT

SAMPLE No.	SAMPLE Rec.	SAMPLE Depth (ft.)	SAMPLE Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
		0-1		asphalt gravel		asphalt - gravel
		1-1.5		sand	1	sand, tan, moist.
		1.5-2.0		sand		sand, gray moist.
	1.7	2-4	17-29-15-10	sand	2	2.0-2.7 sand (70%), gravel(30%) loose, moist
				sand	3	2.7-4.0 sand (95%) gravel (pebbles) (5%) gray, coarse grain size, loose wet.
					4	Water at 2.7'
					5	Collect sample 2.5-3.5; sent to Nytest for analyses of PCB's, Total metals EPTOX metals.
					6	
					7	Headspace volatiles on sample from 2.5-3.5'=60ppm with tip
					8	
					9	
	1.3	10-11.7	11-15-22-126	sand	10	10-11.5 sand, gray-tan, coarse grain size-a few gravel pieces, slightly compact.
					11	
				clay	12	11.5-11.6 clay (80%) silt (20%) orange, moderately hard.
				sand		11.6-11.7 sand, light gray, fine grain
					13	size , loose
					14	Collect sample 10-11.7' sent to Nytest for analyses of VOA, PCB's, EPTOX metals
					15	Headspace volatiles on sample from 10-11.7'=48ppm

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 07401Y Date 11-17-89
Project Shore Realty
Client Teitelbaum & Hiller
Page 2 of 2
Logged By Martha Smith
Well No. C-11
Loc.
M.P. Elevation
Drilling Started 0900 Ended 1015
Driller R & L Well Drilling
Type Of Rig Hollow stem auger

WELL DATA
Hole Diam. (in.)
Final Depth (ft.)
Casing Diam. (in.)
Casing Length (ft.)
Screen Setting (ft.)
Screen Slot & Type
Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev.W.T.

SAMPLER
Type split spoon
Hammer ____ lb.
Fall ____ in.

DEVELOPMENT

SAMPLE No.	SAMPLE Rec.	SAMPLE Depth (ft.)	SAMPLE Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
				sand and clay	17	
					18	
					19	
					20	
					21	
					22	
					23	
					24	
	2.0	25-27	60-38-35-28	sand	25	25-25.6 sand (quartz) white light gray coarse grain size
				sand	26	25.6-25.9 sand (70%) silt (30%) gray, coarse medium grain size
				sand		25.9-26.9 sand white coarse grain size slightly compact
				sand	27	26.9-27.0 sand; orange, iron stained coarse grain size, slightly compact
						Collect sample from 25-27' sent to Nytest for analyses of VOA, PCB's, EPTOX metals.
						Head space volatiles on sample from 25-27'=5.6ppm

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS

ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 07401Y Date 11-15-89
Project Shore Realty
Client Teitelbaum & Hiller
Page 1 Of 1
Logged By Martha Smith
Well No. C-12
Loc.
M.P. Elevation
Drilling Started 0925 Ended 0945
Driller R & L Well Drilling
Type Of Rig Hollow stem auger

WELL DATA

Hole Diam. (in.)
Final Depth (ft.)
Casing Diam. (in.)
Casing Length (ft.)
Screen Setting (ft.)
Screen Slot & Type
Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev.W.T.

SAMPLER

Type split spoon
Hammer 130 lb.
Fall 30 in.

DEVELOPMENT

SAMPLE No.	SAMPLE Rec.	SAMPLE Depth (ft.)	SAMPLE Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
		0-1		asphalt gravel sand		asphalt, gravel, sand
		1-2.5		sand	1	sand (80%), gravel (20%), tan, loose
	1.0	2.5-4.0	11-17-45	sand	2 3	2.5-3.5 sand (80%), gravel (80%) tan loose damp
	1.5	3.5-5.5	50-27-20-37	shells	4	3.5-4.0 shells (80%) sand (20%) black compact hard.
				shells cinders	5	4.0-4.7 as above. 4.7-5.1 Cindery material, gravel size, black moist, ?diesel? no odor.
				sand	6 7	5.1-5.5 sand, gray medium grain size moderately compact, wet.
					8	Water at 5.1'.
					9 10	Sample collected from 4.5'-5.5' sent to Nytest for PCB's, EPTOX metals analysis.

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 07401Y Date 11-14-89
Project Shore Realty
Client Teitelbaum & Hiller
Page 1 of 1
Logged By Martha Smith
Well No. C-13
Loc.
M.P. Elevation
Drilling Started 1600 Ended 1615
Driller R & L Well Drilling
Type Of Rig Hollow Stem Auger

WELL DATA
Hole Diam. (in.)
Final Depth (ft.)
Casing Diam. (in.)
Casing Length (ft.)
Screen Setting (ft.)
Screen Slot & Type
Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev.W.T.

SAMPLER
Type split spoon
Hammer 130 lb.
Fall 30 in.

DEVELOPMENT

SAMPLE No.	SAMPLE Rec.	SAMPLE Depth (ft.)	SAMPLE Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
		0-0.5		gravel		Gravel
		0.5-2.0		sand		Sand, tan, loose
					1	
		2.0-3.0		sand	2	Sand, gray, gravelly, strong odor of ?diesel?.
	1.7	3.0-5.0	16-20-13-13	sand	3	3.0-3.3 sand (70%) silt (30%) gray, medium to fine grain size, crumbly loose, damp.
				sand/gravel	4	3.3-4.0 sand (50%) gravel (50%) tan; sand is fine grained; crumbly loose texture, damp.
					5	4.0-5.0 sand (60%) cobbles (30%) gravel (10%) dark gray-black moderately compact texture oily coating on gravel & cobbles, strong odor of ?diesel?-bottom .5' has finer grained sand and has more compact texture.
						Water at 4.0'.
						Sample collected from 3.5-4.5' sent to Nytest for PCB's and EPTOX metals analyses.
						Headspace volatiles on composite sample from 3.5-4.0' = 105ppm on OVM.

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 07401Y Date 11-14-89
Project Shore Realty
Client Teitelbaum & Hiller, P.C
Page 1 Of 1
Logged By Martha Smith
Well No. C-14
Loc.
M.P. Elevation
Drilling Started 1455 Ended 1515
Driller R & L Well Drilling
Type Of Rig Hollow Stem Auger

WELL DATA

Hole Diam. (in.)
Final Depth (ft.)
Casing Diam. (in.)
Casing Length (ft.)
Screen Setting (ft.)
Screen Slot & Type
Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev. W.T.

SAMPLER

Type split spoon
Hammer 130 lb.
Fall 30 in.

DEVELOPMENT

SAMPLE No.	SAMPLE Rec.	SAMPLE Depth (ft.)	SAMPLE Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
		0-1		asphalt, gravel, sand		Asphalt; gravel; sand, gray, loose.
		1-3		sand	1	Sand, tan, brown gravelly.
					2	
		3-4			3	Sand, gray, gravelly
	1.9	4-6	4-12-20-13	sand	4	4.0-4.4' sand (80%) silt (15%) gravel (5%) gray, loose, crumbly damp.
				clay	5	4.4-4.5' clay, gray, soft, slightly plastic, moist.
				sand	6	4.5-5.2' sand, tan, medium grain size, loose moist
				sand	7	5.2-5.8' sand (75%) gravel (20%) silt (5%) tan some iron staining medium to coarse grain size, wet.
				sand	8	5.8-6.0' sand (70%) silt (20%), gravel (10%) gray, trace of iron
					9	staining moserately compact stiff texture.
					10	Water at 5.2'.
						Sample collected at 5-6'; sent to Nytest for PCB"s, total metals, and EPTOX metals.
						Headspace volatiles on composite sample from 5-6' = 2.7ppm on OVM

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS

ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 07401Y Date 11-20-89

Project Shore Realty

Client Teitelbaum & Hiller

Page 1 of 1

Logged By Martha Smith

Well No. C-15

Loc.

M.P. Elevation

Drilling Started 1545 Ended 1615

Driller R & L Well Drilling

Type Of Rig Hollow Stem Auger

WELL DATA

Hole Diam. (in.) 10

Final Depth (ft.)

Casing Diam. (in.)

Casing Length (ft.)

Screen Setting (ft.)

Screen Slot & Type

Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev.W.T.

SAMPLER

Type split spoon

Hammer 130 lb.

Fall 30 in.

DEVELOPMENT

SAMPLE No.	SAMPLE Rec.	SAMPLE Depth (ft.)	SAMPLE Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
		0-13		sand	1	Sand, tan-brown, medium to fine grain size, damp.
					2	
					3	
					4	
					5	
					6	
					8	
					10	
					12	
	1.7	13-15	5-26-15-16	sand	14	Sand, brown, medium to fine grain size, damp, fuel oil smell at 15'.
	1.6	15-17	4-5-17-24	sand	16	15-15.8 sand, tan, medium grain size woose, wet, fuel oil odor.
				sand		15.8-16.2 sand, gray to black, coarse grain size, loose.
				gravel	18	16.2-17' gravel (90%) sand (10%) sand is coarse grain size black, loose, oily, wet. 30ppm over core on tip.
					20	
					22	Water at 15'.
					24	Collect sample from 15-17' for analyses of VOA, BNA, PCB's, CN, Total phenols, total metals, EPTOX metals.
						Headspace volatiles on sample from 15-17' =406ppm

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 07401Y Date 11-14-89
Project Shore Realty
Client Teitelbaum & Hiller
Page 1 Of 1
Logged By Martha Smith
Well No. C-16
Loc.
M.P. Elevation
Drilling Started 1305 Ended 1315
Driller R & L Well Drilling
Type Of Rig Hollow Stem Auger

WELL DATA

Hole Diam. (in.)
Final Depth (ft.)
Casing Diam. (in.)
Casing Length (ft.)
Screen Setting (ft.)
Screen Slot & Type
Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev.W.T.

SAMPLER

Type split spoon
Hammer 130 lb.
Fall 30 in.

DEVELOPMENT

Elev. (1)	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
			0-1		gravel		gravel
			1-8		sand	1	sand, tan-brown, loose
						2	
						3	
						4	
						5	
						6	
						7	
						8	Sand (80%) cobbles (20%); tan-gray;
			8-10	5-13-10-10	sand		fine-medium grain size, moist.
					sand		Sand, tan, coarse grained, loose, wet
					sand	9	Sand, tan, as above but grades to medium-fine grain size.
					sand-silt	10	Sand (70%) silt (30%) gray-brown medium to fine grain size, slightly
						11	laminated, compact texture.
							Water at 9'.
							Sample collected at 8.5-9.5', sent to Nytest for PCB's and EPTOX metals.
							Headspace volatiles on composite sample from 8.5-9.5' = 0.3ppm on OVM

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS

ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 07401Y Date 11-14-89
Project Shore Realty
Client Teitelbaum & Hiller, P.C.
Page 1 Of 1
Logged By Martha Smith
Well No. C-17
Loc.
M.P. Elevation
Drilling Started 1140 Ended 1215
Driller R & L Well Drilling
Type Of Rig Hollow Stem Auger

WELL DATA

Hole Diam. (in.)
Final Depth (ft.)
Casing Diam. (in.)
Casing Length (ft.)
Screen Setting (ft.)
Screen Slot & Type
Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev.W.T.

SAMPLER

Type split spoon
Hammer 130 lb.
Fall 30 in.

DEVELOPMENT

SAMPLE No.	SAMPLE Rec.	SAMPLE Depth (ft.)	SAMPLE Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
		0-1		asphalt		asphalt
				gravel bed		
		1-2		sand brown tan, loose damp	1	sand
	.5	2-4	13-17-12-25	sand	2	Sand (70%), gravel (30%); brown-gray loose, moist, Fe staining at 3.8-4.0'
					3	
	.5	4-6	16-11-18-10	sand	4	Sand; brown, medium grain size, loose, moist,
					5	
		6-9		sand	6	Sand, as above.
					7	
					8	
	2.0	9-11	49-28-50-8	sand	9	Sand (90%) gravel (10%) orange brown with dark brown bands, medium
					10	to coarse grain size, rounded gravel bits, loose moist.
				sand with shells	11	Sand(50%) shells (50%), some organic matter, brown-gray, medium gra coarse grain size, wet.
						Water table at 10.5'.
						Sample collected at 10-11', sent to Nytest for PCB & EPTOX metal analyses
						Headspace volatiles on composite sample from 10-11' =2.7ppm on OVM

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS

ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 07401Y Date 11-29-89
Project Shore Realty
Client Teitelbaum & Hiller
Page 1 of 1
Logged By Martha Smith
Well No. C-18
Loc.
M.P. Elevation
Drilling Started 1140 Ended 1150
Driller R & L Well Drilling
Type Of Rig Hollow Stem Auger

WELL DATA

Hole Diam. (in.)
Final Depth (ft.)
Casing Diam. (in.)
Casing Length (ft.)
Screen Setting (ft.)
Screen Slot & Type
Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev. W.T.

SAMPLER

Type split spoon
Hammer 130 lb.
Fall 30 in.

DEVELOPMENT

SAMPLE No.	SAMPLE Rec.	SAMPLE Depth (ft.)	SAMPLE Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
		0-2		sandy soil		Soil, sandy, brown
					1	
		2-4		sand	2	Sand, tan, medium grain size.
					3	
					4	
	1.6	5-7		sand	5	5.0-5.8 Sand (50%) gravel (50%) brown loose, dry.
				sand	6	5.8-7.0 sand, tan-brown, fine to medium grain size, loose, dry.
					7	
					8	Collect sample 5-7' and send in to Nytest for analyses of VOA, PCB's, total metals, EPTOX metals.
					9	
					10	Headspace volatiles on sample 5-7' = 0ppm.

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 07401Y Date 11-29-89
Project Shore Realty
Client Teitelbaum & Hiller
Page 1 Of 1
Logged By Martha Smith
Well No. D-1
Loc.
M.P. Elevation
Drilling Started 0945 Ended 1015
Driller R & L Well Drilling
Type Of Rig Hollow Stem Auger

WELL DATA
Hole Diam. (in.)
Final Depth (ft.)
Casing Diam. (in.)
Casing Length (ft.)
Screen Setting (ft.)
Screen Slot & Type
Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev. W.T.

SAMPLER
Type split spoon
Hammer 130 lb.
Fall 30 in.

DEVELOPMENT

SAMPLE No.	SAMPLE Rec.	SAMPLE Depth (ft.)	SAMPLE Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
		0-2		sandy soil		Sandy soil, black
	1.5	2-4	4-5-8-8	sandy soil	2	2-3.1 soil, sandy, black-brown, organic material, soft, wet.
				sand	3	3.1-3.3 Sand (50%) shells (50%) black 3.3-4.0 Sand (90%) gravel (10%)
		4-10		sand	4	black, medium grain size, loose, soft. Sand, black grades to tan.
					5	
					6	
					7	
					8	
					9	
	1.5	10-12	54-40-86-72	sand	10	Sand, tan, medium grain size, loose, wet. Bits of shells at 11.6-11.7'.
					11	
					12	
						Water at 2'.
						Sample collected at 2-4' for bioremediation study.
						Sample collected 10-12' and sent to Nytest for analyses of VOA, PCB's EPTOX metals.
						Headspace volatiles on composite sample 10-12' = 18ppm

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS

ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 07401Y Date 11-18-89
Project Shore Realty
Client Teitelbaum & Hiller
Page 1 of 1
Logged By Martha Smith
Well No. D-2
Loc.
M.P. Elevation
Drilling Started 1355 Ended 1430
Driller R & L Well Drilling
Type Of Rig Hollow Stem Auger

WELL DATA

Hole Diam. (in.)
Final Depth (ft.)
Casing Diam. (in.)
Casing Length (ft.)
Screen Setting (ft.)
Screen Slot & Type
Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev.W.T.

SAMPLER

Type split spoon
Hammer 130 lb.
Fall 30 in.

DEVELOPMENT

SAMPLE No.	SAMPLE Rec.	SAMPLE Depth (ft.)	SAMPLE Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
		0-1		asphalt gravel		Asphalt, gravel, sand
		1-2		sand gravel	1	Sand, gravel, shells, brown changes to gray.
	1.6	2-4	28-31-22-31	shells	2	2.0-2.8 shells(60%), sand (40%) gray
				sand		2.8-3.0 sand, brown-gray, coarse grain size.
				sand	3	3.0-3.4 sadn (60%) gravel (40%) black, loose, oily, fuel oil odor.
				sand	4	3.4-3.9 sand gray with brown and tan bands, coarse grain size, loose.
				sand	5	3.9-4.0 sand (80%), gravel (20%) black, loose.
		4-10		sand	6	Sand, gray, coarse to medium grain ize, oily, fuel oil odor.
					7	
					8	
					9	
	1.5	10-12	29-38-75-88	sand	10	10-11 Sand, gray medium to fine grain size, loose fuel oil odor.
				gravel shells	11	11-11.1 gravel-shells (60%) sand (40%) gray, sand medium to fine grain size loose, fuel oil odor.
				sand	12	11.1-12 sand, alternating .1-.2 thick tan and gray bands, medium grain size, moderate consistency
						Sample collected 10-12' and sent to Nytest for VOA, PCB's and EPTOX metals.
						Headspace volatiles on sample.from 10-12' =545 ppm on Tip.

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS

ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 07401Y Date 11-18-89
Project Shore Realty
Client Teitelbaum & Hiller
Page 1 Of 1
Logged By Martha Smith
Well No. D-3
Loc.
M.P. Elevation
Drilling Started 1215 Ended 1335
Driller R & L Well Drilling
Type Of Rig Hollow Stem Auger

WELL DATA

Hole Diam. (in.)
Final Depth (ft.)
Casing Diam. (in.)
Casing Length (ft.)
Screen Setting (ft.)
Screen Slot & Type
Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev. W.T.

SAMPLER

Type split spoon
Hammer 130 lb.
Fall 30 in.

DEVELOPMENT

SAMPLE No.	SAMPLE Rec.	SAMPLE Depth (ft.)	SAMPLE Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
		0-1		asphalt gravel sand		Asphalt, gravel, sand.
		1-2		sand	1	Sand, tan, medium grain size.
	.1	2-4	16-40-56-27	gravel	2	Gravel, sand (very little recovery)
					3	
		4-7		sand	4	Sand, tan, medium-coarse grain size
					5	
					6	
		7-8.5		sand	7	Sand, gray, medium-coarse grain size
					8	
				sand	9	Sand, gray, medium-coarse grain size oily, fuel oil odorr
	1.5	10-12	50-21-30-54	sand	10	10-11.8 sand, light gray, coarse to medium grain size, loose, fuel oil odor
				sand	11	11.8-12.0 sand, black, medium grain size, loose, fuel oil odor.
					12	
					13	Sample collected 10-12' and sent to Nytest for VOA, PCB's and EPTOX metals analyses.
					14	Headspace volatiles on sample from 10-12' = 45ppm on Photovac TIP.
					15	

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS

ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 07401Y Date 11-18-89
Project Shore Realty
Client Teitelbaum & Hiller
Page 1 Of 1
Logged By Martha Smith
Well No. D-4
Loc.
M.P. Elevation
Drilling Started 0850 Ended 0945
Driller
Type Of Rig

WELL DATA

Hole Diam. (in.)
Final Depth (ft.)
Casing Diam. (in.)
Casing Length (ft.)
Screen Setting (ft.)
Screen Slot & Type
Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev. W.T.

SAMPLER

Type split spoon
Hammer 130 lb.
Fall 30 in.

DEVELOPMENT

Elev. (1)	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
			0-1		asphalt gravel		Asphalt, gravel, sand, strong fuel oil smell (20ppm over cuttings.)
			1-2		sand	1	Sand, tan, moist, fuel oil smell
		1.9	2-4	12-13-14-14	clay	2	2.0-2.5 clay (70%) sand (30%) gray moderately stiff, fuel oil odor
					sand	3	2.5-3.0 sand (60%) clay (40%) gray moderate consistency medium grain size.
					clay	4	3.0-3.4 clay (90%) sand (10%) gray with some orange iron staining moderately stiff
					sand	5	3.4-3.5 sand (90%) clay (10%) orange iron stained medium grain size.
						6	3.5-4.0 clay, gray, loderately stiff, plastic
						7	Water at 2.4'.
						8	Sample collected at 2-4' for bioremediation analyses
						9	
		1.7	10-12	25-40-90-120	sand	10	10-10.6 sand, gray-brown, coarse grain size, quartz (95%) loose
					clay	11	10.6-10.9 clay, gray, stiff, thin (0.1') bed of sand with iron staining
					sand	12	10.9-11.6 sand (50%) clay (50%) gray with maroon-pink thin bands, some thin orange bands, stiff
					clay	13	11.6-12.0 clay, brown-gray, plastic stiff-some sandy lamination in bottom .2' with iron staining.
						14	Sample collected from 10-12' and sent to Nytest for analyses of
						15	Headsplace volatiles, 10-12'= 198 TIP

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS

ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 07401Y Date 11/20/89
Project Shore Realty
Client Teitelbaum & Hiller
Page 1 Of 3
Logged By Martha Smith
Well No. D-5
Loc.
M.P. Elevation
Drilling Started 1000 Ended 1210
Driller R & L Drilling
Type Of Rig Hollow Stem Auger

WELL DATA

Hole Diam. (in.) 10
Final Depth (ft.)
Casing Diam. (in.) N/A
Casing Length (ft.) N/A
Screen Setting (ft.) N/A
Screen Slot & Type N/A
Well Status N/A

G W READINGS(1)

Date	DTW MP(2)	Elev.W.T.

SAMPLER

Type split spoon
Hammer 130 lb.
Fall 30 in.

DEVELOPMENT

SAMPLE No.	SAMPLE Rec.	SAMPLE Depth (ft.)	SAMPLE Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
		0-3		sandy soil		Sandy soil, brown, dry.
					1	
					2	
		3-5		sandy clay and gravel	3	Sandy clay & gravel; gray; slight hydrocarbon (fuel oil) odor.
					4	
		5-8		sand	5	sand (90%), clay (10%), fuel oil odor-48ppm over cuttings.
					6	
					7	
		8-9		sand	8	sand (70%), cobbles-gravel (30%), gray, loose, fuel oil odor.
		9-12			9	sand, orange-brown, medium grain size.
					10	
					11	
		12-13		sand	12	sand, brown-gray, medium grain size.
		13-16		sand	13	sand, orange-brown, medium grain size, odor of toluene 45-ppm on cuttings
					14	
					15	Water at 16.0 feet.

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS

ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 07401Y Date 11/20/89
Project Shore Realty
Client Teitelbaum & Hiller
Page 2 Of 3
Logged By Martha Smith
Well No. D-5
Loc.
M.P. Elevation
Drilling Started 1000 Ended 1210
Driller R & L Drilling
Type Of Rig Hollow stem auger

WELL DATA

Hole Diam. (in.)
Final Depth (ft.)
Casing Diam. (in.)
Casing Length (ft.)
Screen Setting (ft.)
Screen Slot & Type
Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev.W.T.

SAMPLER

Type split spoon
Hammer 130 lb.
Fall 30 in.

DEVELOPMENT

SAMPLE No.	SAMPLE Rec.	SAMPLE Depth (ft.)	SAMPLE Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
		16-20		sand	17	sand, gray, medium to coarse grain size, fuel oil smell; 135ppm over cuttings.
					18	
					19	
		20-25			20	No recovery-cuttings in split spoon.
					21	
					22	
					23	
					24	
	1.8	25-26.8	5-15-54-120	sand	25	25-25.8 sand, orange, coarse grain size, loose
				clayey sand	26	25.8-26.1 orange sand above grades into sand (50%), clay (50%), gray
				clay	27	26.1-26.2 clay (70%), sand (30%), brown
				clay		26.2-26.4 clay (70%), sand (30%) gray
				clay	28	26.4-26.5 clay (70%), sand (30%) brown laminations of sandier layers.
				clay	29	26.5-26.8 clay (70%) sand (30%) gray sandier bands.
					30	
					31	

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS

ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 07401Y Date 11-20-89
Project Shore Realty
Client Teitelbaum & Hiller
Page 3 Of 3
Logged By Martha Smith
Well No. D-5
Loc.
M.P. Elevation
Drilling Started Ended
Driller R & L Drilling
Type Of Rig hollow stem auger

WELL DATA

Hole Diam. (in.) 10
Final Depth (ft.)
Casing Diam. (in.)
Casing Length (ft.)
Screen Setting (ft.)
Screen Slot & Type
Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev.W.T.

SAMPLER

Type split spoon
Hammer 130 lb.
Fall 30 in.

DEVELOPMENT

SAMPLE No.	SAMPLE Rec.	SAMPLE Depth (ft.)	SAMPLE Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
					33	
					34	
	1.5	35-36.5	70-72-120		35	35-35.4 sand, orange-brown, coarse grain size, loose.
						35.4-35.6 sand, orange and gray varigated, medium to fine grain size
						35.6-36.1 sand, gray medium to coarse
					36	grain size, moderately compact
						36.1-36.2 sand (15%)clay (5%),orange white layer.
						36.2-36.5 sand, gray, medium to
					37	coarse grain size, moderately compact

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS

ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 07401Y Date 11-29-89
Project Shore Realty
Client Teitelbaum & Hiller
Page 1 Of 1
Logged By Martha Smith
Well No. D-6
Loc.
M.P. Elevation
Drilling Started 1510 Ended 1520
Driller R & L Well Drilling
Type Of Rig Hollow Stem Auger

WELL DATA

Hole Diam. (in.)
Final Depth (ft.)
Casing Diam. (in.)
Casing Length (ft.)
Screen Setting (ft.)
Screen Slot & Type
Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev. W.T.

SAMPLER

Type split spoon
Hammer 130 lb.
Fall 30 in.

DEVELOPMENT

Elev. (1)	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
			0-1		sandy soil		Soil, sandy, brown
			1-4.5		sand	1	Sand, trace of clay, light brown
						2	
						3	
						4	
			4.5-6		gravel/ shells	5	Gravel/shells (80%), sand, light brown
			6-14.5		sand	6	Sand, light brown
						7	
						8	Water at 15.3'.
						9	Sample collected 14-16' and sent to Nytest for analysis of VOA PCB's, and EPTOX metals.
						10	
						11	Headspace volatiles on sample 14-16' =275ppm.
						12	
						13	
			14.5-16.5	4-4-7-9	sand	14	14.5-15.2 sand, light brown, medium grain size loose, dry
					sand	15	15.2-16.5 sand, light gray-white loose, wet, fuel odor.

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS

ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 07401Y Date 11-29-89
Project Shore Realty
Client Teitelbaum & Hiller
Page 1 Of
Logged By Martha Smith
Well No. D-7
Loc.
M.P. Elevation
Drilling Started 1400 Ended 1415
Driller R & L Well Drilling
Type Of Rig Hollow Stem Auger

WELL DATA

Hole Diam. (in.)
Final Depth (ft.)
Casing Diam. (in.)
Casing Length (ft.)
Screen Setting (ft.)
Screen Slot & Type
Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev.W.T.

SAMPLER

Type Split Spoon
Hammer 130 lb.
Fall 30 in.

DEVELOPMENT

Elev. (1)	SAMPLE No.	Rec.	Depth (ft.)	Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
			0-1		sandy soil		sandy soil, brown, dry
			1-9		sand	1	sand, tan, medium to fine grain size, loose, dry
						2	
						3	
						4	-Water at 15.5'
						5	-Sample collected 14'-16' and sent to Nylest for analysis of VOA, PCB's, EP tox metals.
						6	-Headspace volatiles on composite sample 14'-16' = 460 ppm
						7	
						8	
			9-13		sand	9	sand, trace of clay, tan-orange
						10	
						11	
						12	
			13-14		sand	13	sand, tan, slight odor of toluene
		1.8	14-16	5-5-13-17	sand	14	14-15.1 sand, tan, fine grain size, loose, odor of toluene, silty-clay lamination at 14'-orange color.
					sand	15	15.1-16.0 sand, lightgrey, medium grain size, loose, odor of toluene, moist-wet. Clayey lamination- pink, orange at 16'

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS

ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 07401Y Date 11-21-89
Project Shore Realty
Client Teitelbaum & Hiller
Page 1 Of 4
Logged By Martha Smith
Well No. DW-2
Loc.
M.P. Elevation
Drilling Started 0830 Ended 1400
Driller R & L Drilling
Type Of Rig hollow stem auger

***WELL DATA**

Hole Diam. (in.) 10
Final Depth (ft.) 55
Casing Diam. (in.) 2
Casing Length (ft.)
Screen Setting (ft.) 54-44
Screen Slot & Type 1 slot
Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev.W.T.

SAMPLER

Type split spoon
Hammer 130 lb.
Fall 30 in.

DEVELOPMENT

SAMPLE No.	SAMPLE Rec.	SAMPLE Depth (ft.)	SAMPLE Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
		0-2		Sandy soil		Sandy soil, brown
					1	
		2-3		Sandy Clay	2	Sandy Clay, gray, moist to wet
		3-5		Sandy Clay	3	Sandy clay, black, wet, fuel oil smell.
					4	
	1.1	5-7	17-20-24-27	Sand	5	5.6 sand(80%) gravel & shells(20%) medium grain size loose, wet
				Sand	6	6-7 sand, gray to black, medium to fine grain size, loose, oily
					7	
					8	
					9	
	1.7	10-12	19-46-84-120	Sand	10	10-10.5 Sand, gray, medium to coarse grain size loose
				Sand	11	10.5-12.0 sand, dark gray, medium to fine grain size
					12	
					13	
					14	
					15	

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

*Due to difficulties, during well installation well as installed adjacent to the boring that is logged here.

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 07401 Y Date 11-21-89
Project Shore Realty
Client Teitelbaum & Hiller
Page 2 of 4
Logged By Martha Smith
Well No. DW-2
Loc.
M.P. Elevation
Drilling Started Ended
Driller R & L Drilling
Type Of Rig hollow stem auger

WELL DATA
Hole Diam. (in.)
Final Depth (ft.)
Casing Diam. (in.)
Casing Length (ft.)
Screen Setting (ft.)
Screen Slot & Type
Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev.W.T.

SAMPLER
Type split spoon
Hammer 130 lb.
Fall 30 in.

DEVELOPMENT

SAMPLE No.	SAMPLE Rec.	SAMPLE Depth (ft.)	SAMPLE Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
		15-17	60-70-120-130	Sand	15	15-16.8, sand, light gray, medium grain size, loose
					16	
				Sand		16.8-17.0 sand, light gray, medium grain size, with tan sandy clay nodules and bands.
					17	
					18	
					19	
	2.0	20-22	14-16-19-25	Sand	20	20-21.4 Sand(70%), Clay(30%); tan
					21	
				Sand		21.4-22 Sand(50%) Clay(40%) Shells(10%) tan
					22	
					23	
					24	
		25-27			25	-refusel of split spoon
					26	
					27	
					28	
					29	
	.8	30-31	20-160	Clay	30	30-30.5 Clay(90%) Sand(10%), fight tan, hard, sticky, plastic
				Sandy Clay		30.5-31 Clay(50%0, Sand(30%) Gravel(20%) tan, loose.

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 07401Y Date 11/21/89
Project Shore Realty
Client Teitelbaum & Hiller
Page 3 Of 4
Logged By Martha Smith
Well No. DW-2
Loc.
M.P. Elevation
Drilling Started Ended
Driller
Type Of Rig Hollow Stem Auger

WELL DATA
Hole Diam. (in.)
Final Depth (ft.)
Casing Diam. (in.)
Casing Length (ft.)
Screen Setting (ft.)
Screen Slot & Type
Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev.W.T.

SAMPLER
Type split spoon
Hammer 130 lb.
Fall 30 in.

DEVELOPMENT

SAMPLE No.	SAMPLE Rec.	SAMPLE Depth (ft.)	SAMPLE Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
					32	
					33	
					34	
	1.0	35-36	25-160	Sand	35	Sand, light gray-white, very coarse grain size, loose. Layer of clayey sand at bottom, orange.
					36	
					37	
					38	
					39	
	1.0	40-41	45-60	Sand	40	Sand, white to light gray, coarse grain size. Gravel/shells (20%) at 41'.
					41	
					42	
					43	
					44	
	2.0	45-47	34-62-65-100	Sand	45	45-45.8 sand; white grades into orange coarse grain size, loose.
				Sand	46	46.8-47 sand (70%) clay (30%) gray with thin bands of maroon and orange, stiff.
					47	

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 07401Y Date 11/21/89
Project Shore Realty
Client Teitelbaum & Hiller
Page 4 of 4
Logged By Martha Smith
Well No. DW-2
Loc.
M.P. Elevation
Drilling Started Ended
Driller R & L Drilling
Type Of Rig Hollow stem auger

WELL DATA
Hole Diam. (in.)
Final Depth (ft.)
Casing Diam. (in.)
Casing Length (ft.)
Screen Setting (ft.)
Screen Slot & Type
Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev.W.T.

SAMPLER
Type split spoon
Hammer 130 lb.
Fall 30 in.

DEVELOPMENT

SAMPLE No.	SAMPLE Rec.	SAMPLE Depth (ft.)	SAMPLE Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
					48	
					49	
	-	50-52			50	Refusal of split spoon
					51	
					52	
					53	
					54	
	1.4	55-57	55-60-100-100	Sand	55	Sand, tan with maroon bands/ laminations, coarse to medium grain size, loose.
					55-55.9	
				Clay	56	55.9-57 Clay with silty laminations light gray, stiff.
					57	
					58	
					59	
	1.5	60-62	56-46-100 100		60	Clay, gray with cream bands approxiximately every .2', hard dense , slightly plastic.
					61	
					62	

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS

ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 07401Y Date 11/27-11/28/89
Project Shore Realty
Client Teitelbaum & Hiller
Page 1 Of 5
Logged By Martha Smith
Well No. DW-3
Loc.
M.P. Elevation
Drilling Started Ended
Driller
Type Of Rig

WELL DATA

Hole Diam. (in.)
Final Depth (ft.)
Casing Diam. (in.)
Casing Length (ft.)
Screen Setting (ft.)
Screen Slot & Type
Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev.W.T.

SAMPLER

Type
Hammer lb.
Fall in.

DEVELOPMENT

SAMPLE No.	SAMPLE Rec.	SAMPLE Depth (ft.)	SAMPLE Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
		0-2				asphalt, gravel.
		2-5				sandy soil, brown
	.6	5-7	14-15-31-14			5-6';gravel/shells (50%),sand (50%) dark tan, medium to fine grain size loose dry. 6-7 sand 90%,gravel 10% tan, medium grain size, loose dry.
	.5	10-12	18-10-21-22			Fill sand and debris piece of metal stuck in tip prevents good sample.

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 07401Y Date 10/27-11/28/89
Project Shore Realty
Client Teitelbaum & Hiller
Page 2 of 5
Logged By Martha Smith
Well No. DW-3
Loc.
M.P. Elevation
Drilling Started Ended
Driller R & L Well Drilling
Type Of Rig hollow Stem auger

WELL DATA

Hole Diam. (in.)
Final Depth (ft.)
Casing Diam. (in.)
Casing Length (ft.)
Screen Setting (ft.)
Screen Slot & Type
Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev.W.T.

SAMPLER

Type
Hammer lb.
Fall in.

DEVELOPMENT

SAMPLE No.	SAMPLE Rec.	SAMPLE Depth (ft.)	SAMPLE Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
	1.2	15-17	9-25-35-75		15	15-15.2;sand (40%)clay(40%) shells (20%) gray, moderately compact.
					16	15.2-15.4;clay (50%)sand (50%) splotches of orange, pink, gray.
					17	15.4-15.9 sand, gray-brown, medium gray size, loose
					18	15.9-16.0 clay (90%) sand (10%)gray 16.0-16.8; sand, tan, medium grain size, soft, some iron staining.
					19	16.8-17.0; sand (70%), clay (30%) gray soft.
	1.7	20-21	21-29-66-102		20	20.0-20.6;sand, gray, medium to coarse grain size, soft.
					21	20.6-21.0;sand (80%)clay (20%)pink moderately firm.
					22	21.0-21.1;sand, (60%)clay (40%) gray moderately firm.
					23	21.1-22.0;sand, gray-tan grades to orange coarse to medium grain size, loose.
					24	
					25	25.0-25.6;sand 990%)gravel (10%); light gray, coarse grain size, loose
					26	25.6-26.0;sand (70%)clay (30%), tan medium to fine grain size, moderately compact.
					27	26-27;sand, tan grades to orange medium to coarse grain size loose.
					28	Clay lamination-thin layer at 26.0 white orange.
					29	
					30	

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS
ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 07401Y Date
Project Shore Realty
Client Teitelbaum & Hiller
Page 3 of 5
Logged By Martha Smith
Well No. DW-3
Loc.
M.P. Elevation
Drilling Started Ended
Driller R & L Well Drilling
Type Of Rig hollow stem auger

WELL DATA

Hole Diam. (in.)
Final Depth (ft.)
Casing Diam. (in.)
Casing Length (ft.)
Screen Setting (ft.)
Screen Slot & Type
Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev.W.T.

SAMPLER

Type split spoon
Hammer 130 lb.
Fall 30 in.

DEVELOPMENT

SAMPLE No.	SAMPLE Rec.	SAMPLE Depth(ft.)	SAMPLE Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
	1.5	30-32	20-60-60-120		30	sand, with several clayey layers .03-.05';thick, light gray grades to light orange, coarse to medium grain size, soft.
					31	
					32	
					33	
					34	
	1.8	35-37	22-70-65-100		35	sand;white-light gray, coarse grain size, loose, with a thin orange and white clay layer at 36'.
					36	
					37	
					38	
					39	
	1.8	40-42	22-30-40-46		40	sand; white, coarse grain size, loose; with orange sand (70%)clay (30%) bands at 41.2' and 42'.
					41	
					42	
					43	
					44	
					45	

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS

ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 07401Y Date

Project Shore Realty

Client Teitelbaum & Hiller

Page 4 Of 5

Logged By Martha Smith

Well No. DW-3

Loc.

M.P. Elevation

Drilling Started Ended

Driller R & L Drilling

Type Of Rig hollow stem auger

WELL DATA

Hole Diam. (in.)

Final Depth (ft.)

Casing Diam. (in.)

Casing Length (ft.)

Screen Setting (ft.)

Screen Slot & Type

Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev.W.T.

SAMPLER

Type

Hammer lb.

Fall in.

DEVELOPMENT

SAMPLE No.	SAMPLE Rec.	SAMPLE Depth (ft.)	SAMPLE Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
	1.7	45-47	20-27-35-42		45	sand, white very coarse grain size, loose, with thin clayey band.
					46	
					47	
					48	
					49	
	2.0	50-52	10-17-50-150		50	sand, white-light tan, very coarse to medium grain size, loose; Clayey (50%)sand (50%) white-orange layer at 52'.
					51	
					52	
					53	
					54	
	1.5	55-56.5	36-130-150		55	sand (50%) clay (50%) light greenish gray, moderately compact with .01 orange pink approximately every thick 2.
					56	
					57	
					58	
					59	
					60	

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

CONSULTING GROUND WATER GEOLOGISTS

ROUX ASSOCIATES INC

GEOLOGIC LOG

Study No. 07401Y Date

Project Shore Realty

Client Teitelbaum & Hiller

Page 5 of 5

Logged By Martha Smith

Well No. DW-3

Loc.

M.P. Elevation

Drilling Started Ended

Driller R & L Well Drilling

Type Of Rig hollow stem auger

WELL DATA

Hole Diam. (in.)

Final Depth (ft.)

Casing Diam. (in.)

Casing Length (ft.)

Screen Setting (ft.)

Screen Slot & Type

Well Status

G W READINGS(1)

Date	DTW MP(2)	Elev.W.T.

SAMPLER

Type

Hammer lb.

Fall in.

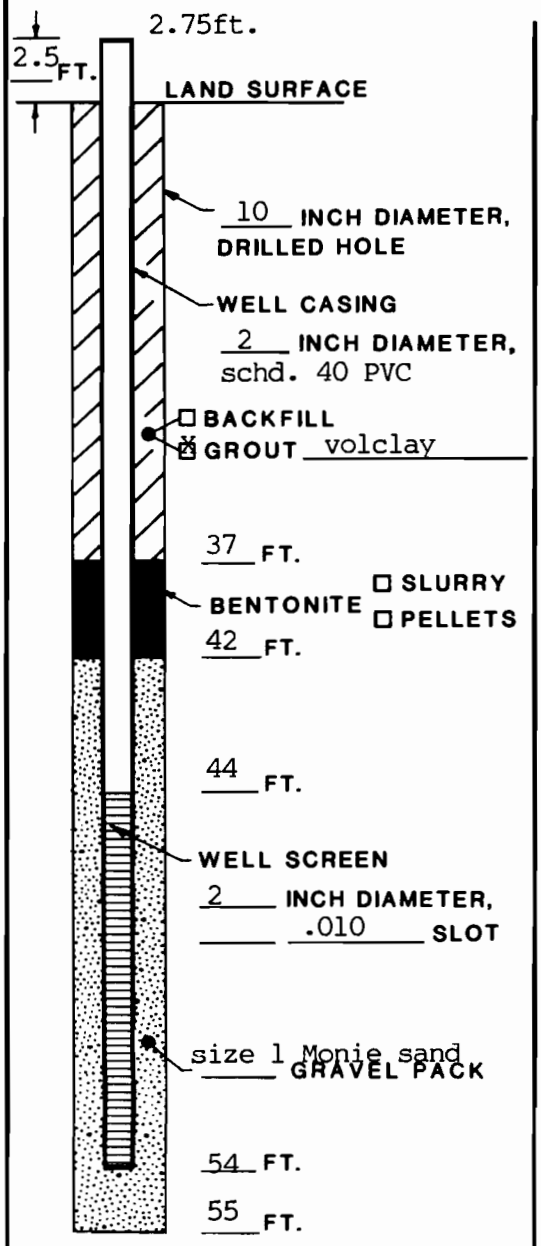
DEVELOPMENT

SAMPLE No.	SAMPLE Rec.	SAMPLE Depth(ft.)	SAMPLE Blows/6"	Strata Change & Gen. Desc.	Depth (ft.)	SAMPLE DESCRIPTION
	2.0	60-62	18-30-50-50	sand	60	60-60.6;sand, tan grading to orange medium to fine grain size.
				clayey sand	61	60.6-61.4;sand (50%)clay (50%) orange, firm, with clayey laminations, iron concretions at 61.4'.
				sand	62	61.4-61.8;sand(90%) clay (10%) light gray, medium grain size.
					63	61.8-62;sand, light gray, very coarse grain size.
					64	
	1.9	65-67	30-70-80-120		65	65-65.5;sand, tan-gray, medium grain size. 20% clay in bottom .05 feet.
					66	65.5-66;sand, orange-gray, coarse to very coarse grain size, loose.
					67	66-67;silt(50%) clay(30%) sand (20%) gray, moderately firm, with .01 thick orange and white laminations
					68	every .05' thick.
					69	
	2.0	70-72	20-34-45-200		70	70-71.1sand; light gray, medium grain size, moderately firm, orange
					71	band at 71' with iron concretions
						71.1-71.7;sand; orange, light gray and pink bands 0.1-0.2' thick.
					72	71.7-72;sand, orange-pink, very coarse to medium grain size, loose.
					73	
					74	
					75	

REMARKS: (1) in feet relative to a common datum
(2) from top of PVC casing

ROUX
Consulting Ground-Water Geologists
ROUX ASSOCIATES INC

MONITORING WELL
CONSTRUCTION LOG



NOTE:
ALL DEPTHS IN FEET
BELOW LAND SURFACE

PROJECT NAME Shore Realty NUMBER 07401Y
WELL NO. DW-2 PERMIT NO. not applicable
TOWN/CITY Glen Cove
COUNTY Nassau STATE New York
LAND-SURFACE ELEVATION
AND DATUM _____ FEET ☐ SURVEYED
_____ ☐ ESTIMATED
INSTALLATION DATE(S) November 27, 1989
DRILLING METHOD hollow stem auger
DRILLING CONTRACTOR R & L Well Drilling
DRILLING FLUID Glen Cove Municipal Water

DEVELOPMENT TECHNIQUE(S) AND DATE(S)
Surged with sand bailer and pumped on 12/4/89 (gallons) and 12/6/89 (gallons)

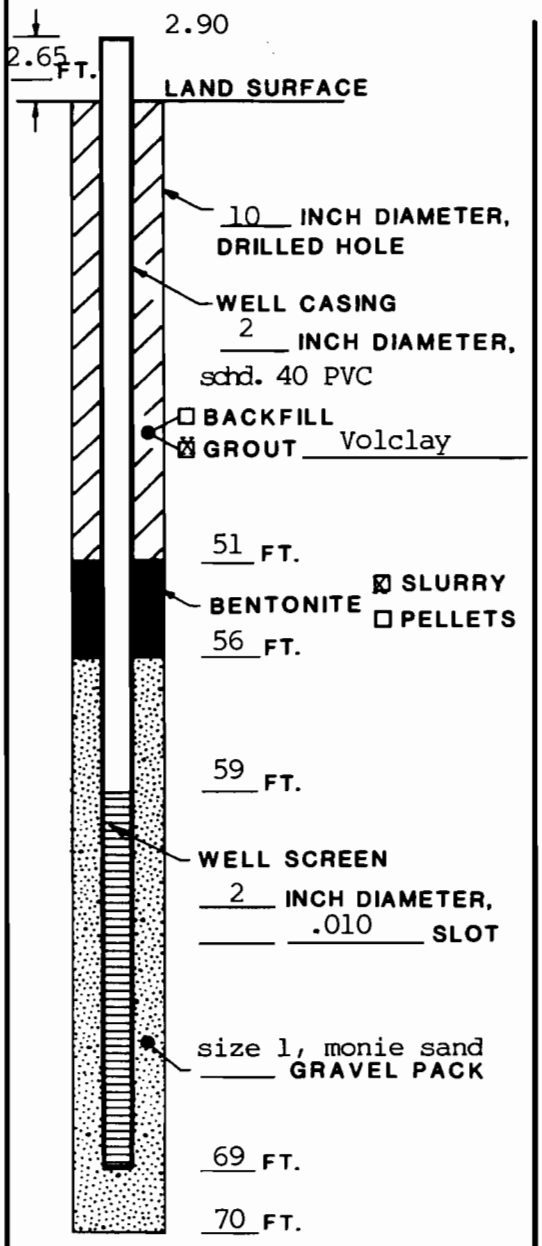
FLUID LOSS DURING DRILLING _____ GALLONS
WATER REMOVED DURING DEVELOPMENT _____ GALLONS
STATIC DEPTH TO WATER _____ FEET BELOW M.P.
PUMPING DEPTH TO WATER _____ FEET BELOW M.P.
PUMPING DURATION _____ HOURS
YIELD _____ GPM _____ DATE _____
SPECIFIC CAPACITY _____ GPM/FT.
WELL PURPOSE To determine direction of ground water flow.

REMARKS

HYDROGEOLOGIST Martha M. Smith

ROUX
Consulting Ground-Water Geologists
ROUX ASSOCIATES INC

MONITORING WELL CONSTRUCTION LOG



NOTE:
ALL DEPTHS IN FEET
BELOW LAND SURFACE

PROJECT NAME Shore Realty NUMBER 07401Y
WELL NO. DW-3 PERMIT NO. not applicable
TOWN/CITY Glen Cove
COUNTY Nassau STATE New York
LAND-SURFACE ELEVATION
AND DATUM _____ FEET ☐ SURVEYED
_____ ☐ ESTIMATED
INSTALLATION DATE(S) November 28, 1989
DRILLING METHOD hollow stem auger
DRILLING CONTRACTOR R & L Well Drilling
DRILLING FLUID Glen Cove Municipal Water

DEVELOPMENT TECHNIQUE(S) AND DATE(S)
Surged with sand bailer and pumped on 12/4/89 (gallons) and 12/6/89 (gallons)

FLUID LOSS DURING DRILLING _____ GALLONS
WATER REMOVED DURING DEVELOPMENT _____ GALLONS
STATIC DEPTH TO WATER _____ FEET BELOW M.P.
PUMPING DEPTH TO WATER _____ FEET BELOW M.P.
PUMPING DURATION _____ HOURS
YIELD _____ GPM _____ DATE _____
SPECIFIC CAPACITY _____ GPM/FT.
WELL PURPOSE To more fully determine ground water characteristics beneath site.

REMARKS

HYDROGEOLOGIST Martha Smith

APPENDIX B

Ambient Air Sampling Report

CA RICH CONSULTANTS, INC.

Certified Ground-Water and Environmental Specialists

February 22, 1990

Roux Associates
775 Park Avenue, Suite 255
Huntington, New York 11743

Attention: Mr. Fred Corn

Ambient Air Sampling
Shore Realty Site
Sea Cliff, New York

Dear Fred:

Ambient air sampling was completed on November 22, 1989 at the Shore Realty Site, Sea Cliff, New York. Laboratory analyses (CLP) are attached to this letter.

Xylene and Benzene exhibited concentration slightly above New York State Department of Environmental Conservation, Division of Air Resources' Air Guide - 1 interim ambient air levels.

Results are as follows: (ug/l)

A-1

Compound	Detected	AAL
1,1 Dichloroethane	0.35	N/A
Xylene	2.0	1.5
Benzene	2.0	0.1
Toluene	2.0	7.5

A-2

Compound	Detected	AAL
Benzene	3.0	0.1

A-3

Compound	Detected	AAL
Benzene	3.0	0.1

A-4

Compound	Detected	AAL
Benzene	3.0	0.1
Toluene	4.0	7.5
Ethyl Benzene	2.0	1.5

A-5

Compound	Detected	AAL
Benzene	4.0	0.1

404 Glen Cove Avenue, Sea Cliff, New York 11579 • Tel. 516 674-3889 • FAX 516 674-3901

Benzene detected at a concentration of 2.0 ug/l was also detected in one method blank.

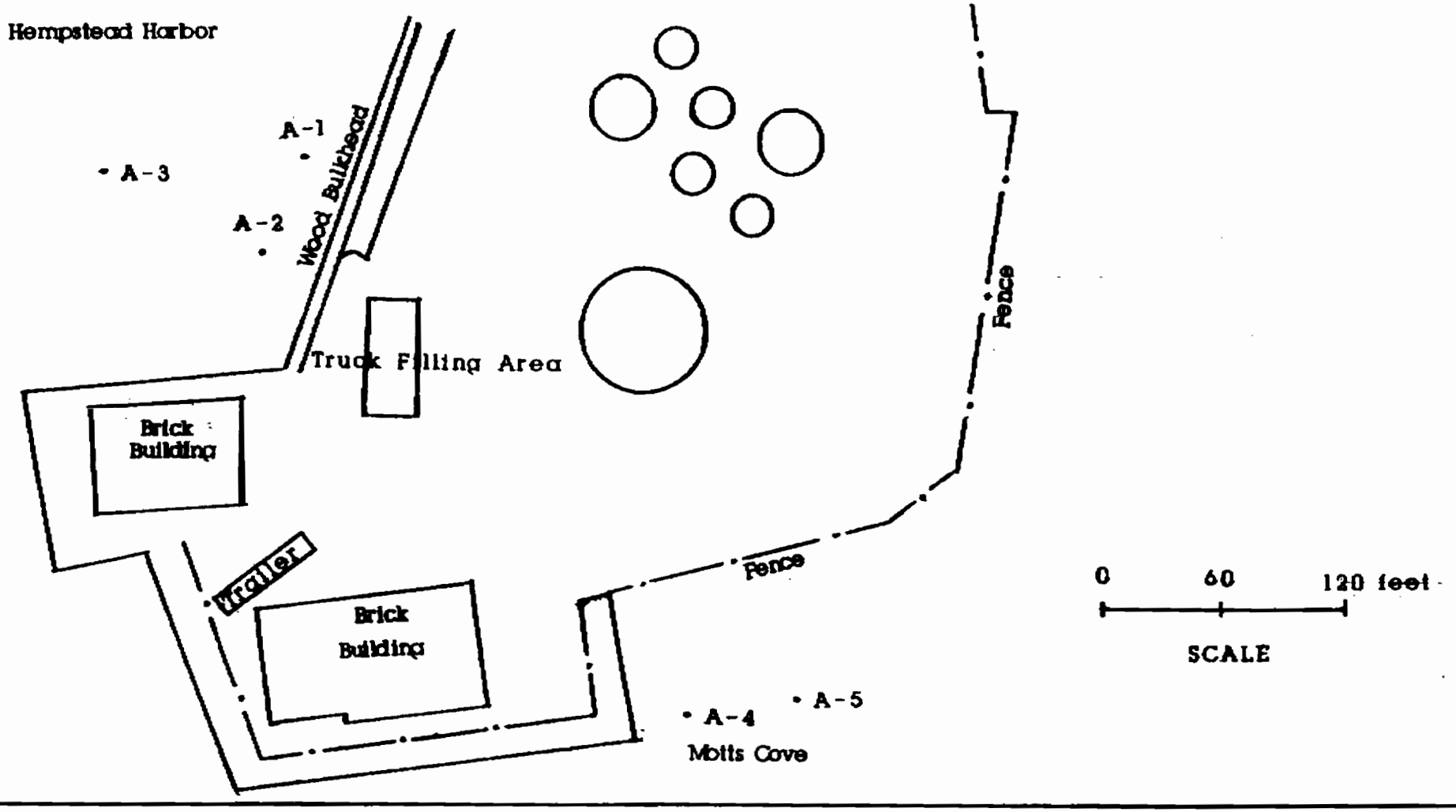
If we could be of any further help in this matter please feel free to contact our office.

Sincerely,

CA RICH CONSULTANTS, INC.

Bruce M. Beck
Environmental Engineer

BMB:mg



AIR SAMPLING LOCATIONS AT THE SHORE REALTY SITE

CA RICH CONSULTANTS, INC Certified Ground-Water and Environmental Specialists	Roux Associates Project # 07401Y
	Prepared By: MTY — Date: 2-23-90
404 Glen Cove Avenue, Sea Cliff, N.Y. 11579	Reviewed By: BMB — Figure:

nytest environmental inc.

VOLATILE ORGANICS: METHOD 311-2

Project No.: 8916348

Sample ID:3117001
Lab Sample ID No.:A-1

Parameter(s)	Cas #	MDL (ug/l)	Found (ug/l)
1.1-Dichloroethane	75-46-7	1.0	0.35
trans-1.2-Dichloroethene	156-60-5	1.0	ND
1.2-Dichloropropane	78-87-5	1.0	ND
Tetrachloroethene	127-18-4	1.0	ND
1.1.1-Trichloroethane	71-55-6	1.0	ND
Xylenes	1330-20-7	1.0	2
Vinyl Chloride	75-01-4	1.0	ND
Benezene	71-43-2	1.0	2
Toluene	108-88-3	1.0	2
Ethyl Benzene	100-41-4	1.0	ND

nytest environmental inc.

VOLATILE ORGANICS: METHOD 311-2

Project No.: 8916348

Sample ID:A-2
Lab Sample ID No.:3117002

Parameter(s)	Cas #	MDL (ug/l)	Found (ug/l)	
1.1-Dichloroethane	75-46-7	1.0	ND	
trans-1.2-Dichloroethene	156-60-5	1.0	ND	
1.2-Dichloropropane	78-87-5	1.0	ND	
Tetrachloroethene	127-18-4	1.0	ND	
1.1.1-Trichloroethane	71-55-6	1.0	ND	
Xylene?	1330-20-7	1.0	ND	
Vinyl Chloride	75-01-4	1.0	ND	
Benezene	71-43-2	1.0	3	./ NAL
Toluene	108-88-3	1.0	ND	
Ethyl Benzene	100-41-4	1.0	ND	
1.2-Dichloropropane	78-85-5	1.0	ND	

nytest environmental inc

VOLATILE ORGANICS: METHOD 311-2

Project No.: 896348

Sample ID:A-3
Lab Sample ID No.:3117003

Parameter(s)	Cas #	MDL (ug/l)	Found (ug/l)
1.1-Dichloroethane	75-46-7	1.0	ND
trans-1.2-Dichloroethene	156-60-5	1.0	ND
1.2-Dichloropropane	78-87-5	1.0	ND
Tetrachloroethene	127-18-4	1.0	ND
1.1.1-Trichloroethane	71-55-6	1.0	ND
Xylene	1330-20-7	1.0	ND
Vinyl Chloride	75-01-4	1.0	ND
Benezene	71-43-2	1.0	3
Toluene	108-88-3	1.0	ND
Ethyl Benzene	100-41-4	1.0	ND
1.2-Dichloropropane	78-87-5	1.0	ND

nytest environmental inc.

VOLATILE ORGANICS: METHOD 311-2

Project No.: 8916348

Sample ID:A-4
Lab Sample ID No.:3117004

Parameter(s)	Cas #	MDL (ug/l)	Found (ug/l)	
1.1-Dichloroethane	75-46-7	1.0	ND	
trans-1.2-Dichloroethene	156-60-5	1.0	ND	
1.2-Dichloropropane	78-87-5	1.0	ND	
Tetrachloroethene	127-18-4	1.0	ND	
1.1.1-Trichloroethane	71-55-6	1.0	ND	
Xylene ?	1330-20-7	1.0	ND	
Vinyl Chloride	75-01-4	1.0	ND	
Benezene	71-43-2	1.0	3	.1AAL
Toluene	108-88-3	1.0	4	
Ethyl Benzene	100-41-4	1.0	2	1.5AAL
1.2-Dichloropropane	78-87-5	1.0	ND	

00027

nytest environmental inc

VOLATILE ORGANICS: METHOD 311-2

Project No.: 8916348

Sample ID:A-5
Lab Sample ID No.:3117005

Parameter(s)	Cas #	MDL (ug/l)	Found (ug/l)
1.1-Dichloroethane	75-46-7	1.0	ND
trans-1.2-Dichloroethene	156-60-5	1.0	ND
1.2-Dichloropropane	78-87-5	1.0	ND
Tetrachloroethene	127-18-4	1.0	ND
1.1.1-Trichloroethane	71-55-6	1.0	ND
Xylene ?	1330-20-7	1.0	ND
Vinyl Chloride	75-01-4	1.0	ND
Benezene	71-43-2	1.0	4 ./ PAL
Toluene	108-88-3	1.0	ND
Ethyl Benzene	100-41-4	1.0	ND
1.2-Dichloropropane	78-87-5	1.0	ND

nytest environmental inc

VOLATILE ORGANICS: METHOD 311-2

Project No.: 8916348

Sample ID: Method Blank 12/1/89

Parameter(s)	Cas #	MDL (ug/l)	Found (ug/l)
1.1-Dichloroethane	75-46-7	1.0	ND
trans-1.2-Dichloroethene	156-60-5	1.0	ND
1.2-Dichloropropane	78-87-5	1.0	ND
Tetrachloroethene	127-18-4	1.0	ND
1.1.1-Trichloroethane	71-55-6	1.0	ND
Xylene	1330-20-7	1.0	ND
Vinyl Chloride	75-01-4	1.0	ND
Benezene	71-43-2	1.0	2 .1 AAL
Toluene	108-88-3	1.0	ND
Ethyl Benzene	100-41-4	1.0	ND
1.2-Dichloropropane	78-87-5	1.0	ND

nytest environmental inc.

VOLATILE ORGANICS: METHOD 311-2

Project No.: 8916348

Sample ID: Method Blank 12/7/89

Parameter(s)	Cas #	MDL (ug/l)	Found (ug/l)
1.1-Dichloroethane	75-46-7	1.0	ND
trans-1.2-Dichloroethene	156-60-5	1.0	ND
1.2-Dichloropropane	78-87-5	1.0	ND
Tetrachloroethene	127-18-4	1.0	ND
1.1.1-Trichloroethane	71-55-6	1.0	ND
Xylene	1330-20-7	1.0	ND
Vinyl Chloride	75-01-4	1.0	ND
Benezene	71-43-2	1.0	ND
Toluene	108-88-3	1.0	ND
Ethyl Benzene	100-41-4	1.0	ND
1.2-Dichloropropane	78-87-5	1.0	ND

nytest environmental inc.

VOLATILE ORGANICS: METHOD 311-2

Project No.: 8916348

Sample ID:Method Blank 12/8/89

Parameter(s)	Cas #	MDL (ug/l)	Found (ug/l)
1.1-Dichloroethane	75-46-7	1.0	ND
trans-1.2-Dichloroethene	156-60-5	1.0	ND
1.2-Dichloropropane	78-87-5	1.0	ND
Tetrachloroethene	127-18-4	1.0	ND
1.1.1-Trichloroethane	71-55-6	1.0	ND
Xylene	1330-20-7	1.0	ND
Vinyl Chloride	75-01-4	1.0	ND
Benezene	71-43-2	1.0	ND
Toluene	108-88-3	1.0	ND
Ethyl Benzene	100-41-4	1.0	ND
1,2-Dichloropropane	78-87-5	1.0	ND