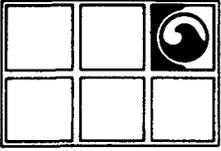


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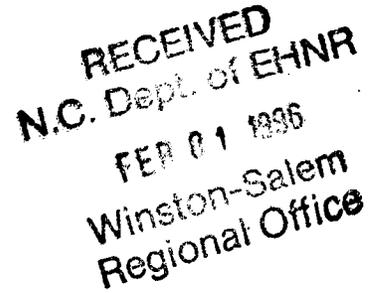
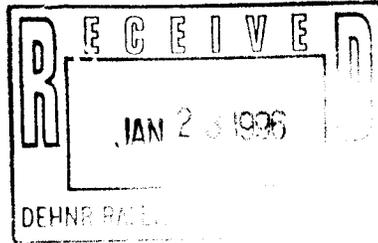
GROUNDWATER TECHNOLOGY®

Groundwater Technology, Inc.

1000 Perimeter Park Drive, Suite I, Morrisville, NC 27560 USA
Tel: (919) 467-2227 Fax: (919) 467-2299

January 22, 1996

Mr. Daniel P. Shine
Environmental Engineer
Sun Company, Inc.
4041 Market Street
Aston, PA 19014



**RE: REVISED COMPREHENSIVE SITE ASSESSMENT
FORMER SUNOCO STATION #0275-7516
2903 SOUTH ELM STREET
GREENSBORO, NORTH CAROLINA
DUNS #0275-7516
GTI JOB # 05324-0102
NCDEHNR INCIDENT # 10076**

Dear Mr. Shine

Attached is the Revised Comprehensive Site Assessment for the above referenced site. Also attached is a copy of the cover page, stamped recieved on January 19, 1996, by the Guilford County Health Department.

If you have any questions regarding this project, please contact myself or Herb Berger at (919) 467-2227.

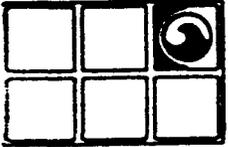
Sincerely,
GROUNDWATER TECHNOLOGY, INC.


Karen A. Trimberger
Geologist

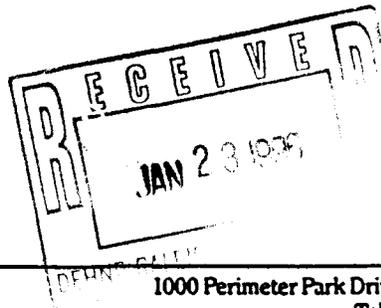

Herbert E. Berger
Project Manager

Attachments

cc: file



**GROUNDWATER
TECHNOLOGY**



Groundwater Technology, Inc.

1000 Perimeter Park Drive, Suite I, Morrisville, NC 27560 USA
Tel: (919) 467-2227 Fax: (919) 467-2299

REVISED COMPREHENSIVE SITE ASSESSMENT

**FORMER SUNOCO STATION
DUNS # 0275-7516
2903 SOUTH ELM STREET
GREENSBORO, NORTH CAROLINA
GROUNDWATER INCIDENT NUMBER 10076
GROUNDWATER TECHNOLOGY PROJECT # 05324-0102**

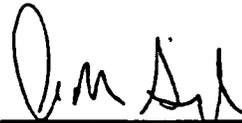
January 19, 1996

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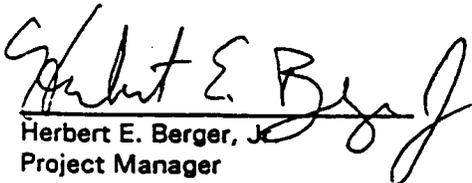
**Mr. Daniel Shine
Environmental Coordinator
Sun Company, Incorporated
4041 Market Street
Aston, Pennsylvania 19014**

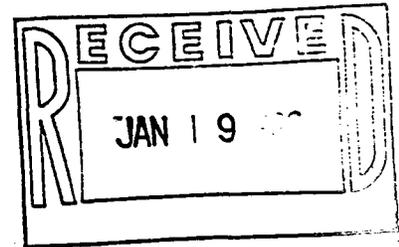
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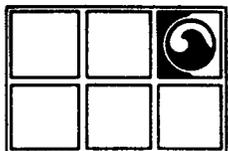

Karen A. Trimberger
Geologist


Art. M. Ingalls, P.G.
Project Geologist




Herbert E. Berger, Jr.
Project Manager
Project Geologist





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REVISED COMPREHENSIVE SITE ASSESSMENT

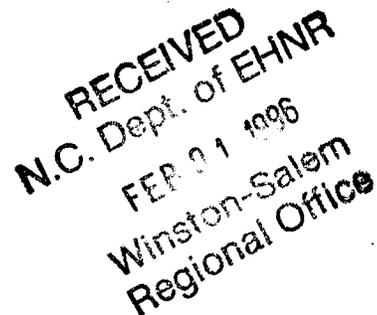
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DUNS # 0275-7516
2903 SOUTH ELM STREET
GREENSBORO, NORTH CAROLINA
GROUNDWATER INCIDENT NUMBER 10076
GROUNDWATER TECHNOLOGY PROJECT # 05324-0102**



January 19, 1996

Prepared for:

**Mr. Daniel Shine
Environmental Coordinator
Sun Company, Incorporated
4041 Market Street
Aston, Pennsylvania 19014**



Prepared by
GROUNDWATER TECHNOLOGY, INC


Karen A. Trimberger
Geologist


Art. M. Ingalls, P.G.
Project Geologist




Herbert E. Berger, Jr.
Project Manager
Project Geologist

EXECUTIVE SUMMARY

During December 1995 and January 1996, Groundwater Technology, Inc. (Groundwater Technology) performed additional assessment activities at the former Sunoco station located at 2903 South Elm Street in Greensboro, North Carolina. These activities were conducted on behalf of Sun Company, Inc. (Sun) to complete the comprehensive site assessment (CSA) program. The additional CSA activities included:

- Sampling soils in the vicinity of the former 1,000-gallon fuel oil underground storage tank (UST) to evaluate the extent of petroleum impacted soils in the tank basin area;
- Sampling groundwater in select monitoring wells to monitor site groundwater quality;
- Gauging groundwater levels in the site wells to monitor groundwater flow; and
- Conducting an inflow permeability (slug) test to evaluate the hydraulic conductivity of the saprolite aquifer.

The following is a summary of the findings from the additional activities, and from previous CSA investigations.

Site Description

The former Sunoco station is located at the intersection of South Elm Street and Seneca Road in Greensboro, Guilford County, North Carolina. The site is currently operated as a used car lot. Land use in the immediate vicinity of the subject site is primarily commercial. The land surface in the site area slopes gradually to the southeast towards South Buffalo Creek which is located approximately 150 feet to the south of the site.

Potential Receptors

Water supply wells and underground basements have not been observed in the site vicinity. The closest surface water body, South Buffalo Creek, is located approximately 150 feet south of the site. The most probable identified potential route for vapor-phase hydrocarbon migration is via underground utilities identified in the vicinity of the former fuel oil UST and in the Elm Street right-of-way..

Site Geology

The subsurface materials beneath the site included an approximate 30-foot thick veneer of fill and/or alluvial soils overlying saprolite. The fill and alluvial soils generally consist of clays, sandy clays, clayey silts, clayey sands, and silty sands. The saprolite generally consists of slightly clayey sands. Competent bedrock was not encountered at the monitoring well or soil boring locations.

Soil Quality

The results from the CSA soil investigations have confirmed the presence of adsorbed-phase petroleum hydrocarbons in the vicinity of the former fuel oil underground storage tank. TPH 3550 concentrations in soils sampled alongside the underground sanitary sewer line at a location topographically downgradient from the former UST basin exceed the proposed soil cleanup level of 960 mg/Kg . The extent of TPH-impacted soils has not yet been defined to NCDEHNR action levels.

Groundwater Occurrence and Flow

Based on the December 20, 1995 gauging data from the shallow monitoring wells (Table 3), shallow groundwater is present in the alluvial soils and saprolite beneath the site at depths which ranged from approximately 12 feet below the top of well casing in well MW-6 to 15 feet below the top of the well casing in well MW-1. The overall direction of shallow groundwater flow was to the southeast under an average hydraulic gradient of 0.02 ft/ft. A comparison the groundwater elevation data from adjacent shallow and vertical definition monitoring wells indicates the potential for a slight upward vertical hydraulic gradient in the water-table aquifer in the central portion of the site. The estimated rate of shallow groundwater movement at the site is 0.25 ft/day or 93 ft/year.

Groundwater Quality

The most recent groundwater analytical results from the site monitoring wells indicates that low concentrations of dissolved petroleum compounds are present in site monitoring wells MW-1 through MW-3 and MW-6. Lead concentrations are present in monitoring wells MW-1, MW-2, and MW-6. The horizontal and vertical extent of dissolved compounds has been adequately defined.

Recommendations

Based on the results from the site investigations, it appears that corrective action based on the natural processes of degradation and attenuation of contaminants is the most appropriate remedial option for this site. In order to obtain site-specific data to support this remedial alternative, Groundwater Technology recommends:

- Collection of a saturated soil sample from a background area for total organic carbon (TOC) and grain size analysis.
- Testing groundwater in the monitoring wells for pH, dissolved oxygen, and carbon dioxide;
- Gauging and then sampling the site monitoring wells to monitor groundwater quality and flow; and

- **Sampling surface water in South Buffalo Creek at two locations in the Creek; one upstream of the site and the second downstream of the site.**

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1.0 INTRODUCTION

This revised comprehensive site assessment (CSA) report was prepared on behalf of Sun Company, Inc. (Sun) for the former Sunoco station located at 2903 South Elm Street in Greensboro, North Carolina. An initial CSA report and a follow-up project update report were submitted to the North Carolina Department of Environmental, Health, and Natural Resources (NCDEHNR) Winston-Salem Regional Office on July 20, 1993 and September 29, 1995, respectively. In a letter dated November 20, 1995, the NCDEHNR requested additional assessment activities. This CSA report presents the results of the additional activities which were conducted in December 1995 and January 1996 and included:

- Sampling soils in the vicinity of the former 1,000-gallon fuel oil underground storage tank (UST) to evaluate the extent of petroleum impacted soils in the tank basin area;
- Sampling groundwater in select monitoring wells to monitor site groundwater quality;
- Gauging groundwater levels in the site wells to monitor groundwater flow; and
- Conducting an inflow permeability (slug) test to evaluate the hydraulic conductivity of the saprolite aquifer.

This report is organized into sections to include a brief description of the site (Section 2.0), a summary of the results from the previous site investigations (Section 3.0), details from the additional activities performed after receipt of the NCDEHNR letter (Sections 4.0 through 6.0), and conclusions and recommendations (Section 7.0).

2.0 BACKGROUND INFORMATION

2.1 General

The former Sunoco station (hereinafter designated the site) is located at the intersection of South Elm Street and Seneca Road in Greensboro, Guilford County, North Carolina. A site location map is included as Figure 1.

The site was previously operated as a Sunoco service station until March 1993. The site is currently operated as a used car dealership. The present layout of the site is illustrated on Figure 2.

2.2 Adjacent Properties

Land use in the immediate vicinity of the subject site is primarily commercial (Figure 3). Properties in the immediate vicinity of the site include a Howard Johnson motel to the northeast, an Amoco Service Station to the south, a Texaco service station to the west, and Interstates 85 and 40 to the north.

2.3 Topographic Setting

Topographic coverage of the site is provided by the United States Geological Survey (USGS) 7.5 minute Greensboro, North Carolina topographic map (photorevised in 1968). The map (Figure 1) indicates that the land surface in the site area slopes gradually to the southeast. The total topographic relief across the site is less than 20 feet. The closest identified surface water body is South Buffalo Creek which is located approximately 150 feet to the southeast of the site.

2.4 Area Hydrogeology

The subject site is located within the Piedmont Physiographic Province of North Carolina. The Piedmont Province is a northeast trending zone of igneous and metamorphic rocks. The Piedmont is divided into several northeast trending geologic belts. The site is located in the Carolina Slate Belt which is characterized by unconsolidated to consolidated sediments overlying metamorphic and igneous bedrock. Based on the Geologic Map of North Carolina (Brown, Philip, et al., Geological Survey, 1985), the bedrock in the site area predominantly consists of a metamorphosed and well foliated granite.

Soils in the Carolina Slate Belt include residual soils, alluvial soils, and fill material. Residual soils have developed from in-situ chemical weathering of underlying bedrock. The residual soils may contain relict structure, texture, and minerals from parent rocks and are commonly referred to as saprolite. Alluvial soils, or water-deposited sediments, are commonly present near streams and rivers. Fill material is typically present in developed areas.

A transitional zone termed "weathered rock" is normally found overlying the parent bedrock. Partially weathered rock is defined, for engineering purposes, as residual materials with a standard penetration resistance in excess of 100 blows per foot.

The hydrogeologic system includes both the sediments and the underlying bedrock. Groundwater in the sediments is present in pores between the individual sediment grains. In the underlying bedrock, groundwater is present predominately in horizontal and subhorizontal fractures and near-vertical stress fractures. Fractures are typically wider and more numerous near the surface and decrease in size and abundance with depth.

Groundwater is recharged primarily by precipitation during the fall and winter. Recharge replaces groundwater lost from the system due to year round discharge to streams, evapotranspiration, and human and industrial consumption. General groundwater movement is typically from recharge areas on hills and ridges to discharge areas in streams and valleys.

3.0 PREVIOUS INVESTIGATIONS

This section includes a chronological summary of environmental activities, including source characterization activities, completed prior to the additional December 1995-January 1996 assessment program. A reference list of previously submitted site environmental reports is included in Section 8.0.

3.1 Divestment Assessment (December 1992)

In December 1992, Law Engineering (Law) conducted initial assessment activities at the site as part of the property divestment. The initial assessment included:

- Conducting a site receptor survey;
- Sampling soils at five locations across the site for total petroleum hydrocarbons (TPH) and benzene, toluene, ethylbenzene, and xylenes (BTEX compounds);
- Installing a Type II groundwater monitoring well (currently designated MW-1); and
- Sampling groundwater in the well for dissolved BTEX compounds and TPH.

The results from this initial assessment are presented in the Law report titled *Report of Mid-State Oil Company Divestment* dated March 8, 1993 and indicated that:

- The area in the vicinity of the site was predominantly commercial. Monitoring wells and an apparent groundwater remediation system were identified on an adjacent Amoco property. The site and surrounding properties were served by the municipal water system. No private or municipal water supply wells were observed in the vicinity of the site;
- Adsorbed-phase petroleum hydrocarbons were detected in soils sampled near the underground storage tanks (USTs) and fuel dispenser islands;
- Dissolved benzene (13 ug/L) was detected in MW-2. Dissolved TPH (resembling diesel) was also detected in MW-2.

3.2 Soil and Groundwater Assessment (June 1993)

During June 1 and 2, 1993, Groundwater Technology, Inc. conducted additional site investigation activities at the site. These assessment activities included:

- Installing three additional Type II groundwater monitoring wells (MW-2 through MW-4) and one Type III well (VMW-5) to evaluate the lateral and vertical extent of dissolved petroleum hydrocarbons;

- Sampling soils in the monitoring well borings for TPH analysis;
- Sampling groundwater in the existing and new monitoring wells for purgeable halocarbons, purgeable aromatic volatile organic compounds (VOC), and semi-volatile organic compound (SVOC) analysis; and
- Gauging groundwater levels in the wells to evaluate shallow groundwater flow.

The results from these activities, which were presented in the Groundwater Technology report titled *Comprehensive Site Assessment* dated July 20, 1993, indicated that:

- Liquid-phase hydrocarbons were not detected in any of the site monitoring wells;
- Only low concentrations of TPH (below the NCDEHNR action levels) were detected in the sampled soils;
- Low levels of dissolved petroleum compounds were detected in wells MW-1 through MW-4 and VMW-5. The purgeable halocarbon chloroform, a suspected laboratory contaminant, was also detected in well VMW-5; and
- The overall direction of shallow groundwater flow was to the south.

3.3 Removal of Fuel Oil UST and Confirmation Sampling (April 1993)

In April 1993, Griffith Enterprises, Inc. removed the 1,000-gallon single-wall steel fuel oil UST. During the removal, ¼-inch diameter holes were observed in the bottom section of the tank. In addition, perched groundwater was encountered in the tank excavation. Soils in the bottom of the tank excavation were sampled for TPH. The groundwater in the excavation was sampled for dissolved BTEX compounds, SVOCs, and lead.

The results of the removal activities were presented in the report titled *Tank Excavation Assessment Report* dated August 24, 1993 and indicated that:

- TPH as gasoline and diesel were detected above the NCDEHNR action levels in the sampled soils; and
- Dissolved benzene (9 µg/L), toluene (12 µg/L), ethylbenzene (49 µg/L), xylenes (112 µg/L), and lead (1020 µg/L) were detected in the excavation groundwater sample.

3.4 Site Groundwater Sampling (March 1995)

On March 22, 1995, Groundwater Technology sampled groundwater in site monitoring wells MW-1 through MW-4 and VMW-5. The collected samples were submitted to GTEL Environmental Laboratories, Inc. for analysis of dissolved BTEX compounds and methyl-tertiary-butyl-ether (MTBE) by EPA Method 602 (modified). The results of this sampling event, which were presented in the Groundwater Technology report titled *Project Update Report* dated September 29, 1995 indicated that:

- Dissolved benzene was detected in well MW-1 at a concentration of 4.7 $\mu\text{g/L}$;
- Dissolved ethylbenzene was detected in well MW-2 at a concentration of 4.4 $\mu\text{g/L}$; and
- Dissolved MTBE was detected in well MW-2 at a concentration of 200 $\mu\text{g/L}$.

3.5 Source Area Assessment (August 1995)

During August 1995, Groundwater Technology conducted additional source assessment activities at the site. These included:

- Installing an additional groundwater monitoring well (MW-6) in the former 1,000 gallon fuel oil tank basin;
- Sampling soils in the former gasoline UST basin for TPH; and
- Sampling groundwater in well MW-6 for dissolved SVOCs.

The results from the source assessment activities are presented in the Groundwater Technology report titled *Project Update Report* dated September 29, 1995, and indicated that:

- TPH was not detected at concentrations above the NCDEHNR action levels in the soils sampled in the former gasoline UST basin; and
- Dissolved SVOCs were not detected in the groundwater sample obtained from well MW-6.

4.0 POTENTIAL RECEPTORS AND ROUTES OF MIGRATION

4.1 Potential Receptors

Potential receptors, as applied herein, are defined as features such as water supply wells, surface water bodies, or basements that could be adversely affected by the presence of the petroleum compounds detected at the site. The results of several potential receptor surveys performed by Law and Groundwater Technology in the site area indicate that:

- The land use surrounding the site is primarily commercial (Figure 3);
- Underground basements were not observed on the site property or on adjacent properties;
- Municipal or private water supply wells were not identified on properties within a 1,500-foot radius of the site; and
- The closest surface water body, South Buffalo Creek, is located approximately 150 feet south of the site.

4.2 Routes of Migration

In general, following a release to the subsurface, the greatest mass of petroleum hydrocarbons is present in the soil adsorbed phase. However, the most mobile phases are the vapor and dissolved phases.

The most probable routes for vapor-phase hydrocarbon migration are via underground utilities. Previous site visits have identified an underground sanitary sewer line near the former 1,000-gallon fuel oil tank basin, and an underground water supply line and storm sewer line in the Elm Street right-of-way.

The most probable route for dissolved-phase hydrocarbon migration is via transport in the shallow groundwater system. As previously discussed, the overall direction of shallow groundwater flow is to the southeast. An estimate of the rate of shallow groundwater movement is provided in Section 6.2.

5.0 ADDITIONAL SOILS INVESTIGATION

This section details the additional soil assessment activities conducted by Groundwater Technology in December 1995 and January 1996. These activities included sampling soils in the former 1000-gallon fuel oil UST basin for TPH analysis to evaluate the extent of petroleum impacted soils in this area.

5.1 Soil Borings and Sampling

On December 20, 1995 and January 8, 1996, Groundwater Technology drilled a total of six soil borings (designated TB-2 through TB-7) in the vicinity of the former 1,000-gallon fuel oil tank basin to evaluate the extent of adsorbed-phase petroleum hydrocarbons in the basin area. Approximate soil boring locations are shown on Figure 6.

Borings TB-2 and TB-3 were drilled to a total depth of 10 feet below grade using a drill rig equipped with hollow stem augers. Due to the steepness of the land surface south of the tank basin, borings TB-4 through TB-7 were drilled to total depths ranging from 4 to 10 feet below grade using a stainless steel hand auger.

During the drilling of the borings, 2-foot samples were collected continuously from each boring. A portion of each sample was placed in a laboratory prepared container. The remainder of each sample was screened for organic vapors with a photoionization detector (PID) and classified for soil lithology. Results of the PID screening and soil classifications are presented on the boring logs in Appendix A.

The unsaturated soil sample from each boring that exhibited the highest PID response was submitted to GTEL Environmental Laboratories in Tampa, Florida for analysis of TPH by modified EPA Method 8015 using extraction method 5030 (TPH 5030) for TPH as gasoline and extraction method 3550 (TPH 3550) for TPH as diesel.

5.2 Geologic Conditions

The characteristics of the subsurface materials beneath the site were evaluated from information obtained during the drilling of monitoring well borings MW-1 through MW-4 and VMW-5, and soil borings TB-2 through TB-7.

The subsurface materials encountered during the drilling activities included an approximate 30-foot thick veneer of fill and/or alluvial soils overlying saprolite. The fill and alluvial soils generally consists of clays, sandy clays, clayey silts, clayey sands, and silty sands. The saprolite generally consists of slightly clayey sands. Competent bedrock was not encountered at the monitoring well or soil boring locations.

Two geologic cross sections have been prepared from the monitoring well drill logs. A north-southwest (profile line A-A' on Figure 4) subsurface profile is included as Figure 5. A northwest-southeast (profile line B-B' on Figure 4) subsurface profile is included as Figure 6. Also included on the subsurface profiles are groundwater elevations at the selected monitoring well locations.

5.3 Soil Analytical Results

The analytical results from soil samples obtained from borings TB-2 and TB-3 on December 20, 1995 and from borings TB-4 through TB-7 on January 8, 1996 are summarized in Table 2. Also summarized in Table 2 are soil analytical results from the previous investigations. Laboratory analytical reports for the additional samples are provided in Appendix B.

The results from the additional samples indicate that:

- TPH 3550 (reported by the laboratory as diesel) was detected in boring TB-2 at a concentration of 110 mg/Kg; and
- TPH 3550 (reported by the analytical laboratory as an unknown hydrocarbon that is heavier than diesel) was detected in borings TB-3 through TB-7 at concentrations ranging from 15 mg/Kg to 970 mg/Kg.

Because the NCDEHNR action level of 40 mg/Kg for TPH 3550 was exceeded in several samples, a Site Sensitivity Evaluation (SSE) was performed to calculate the final cleanup level for TPH 3550 impacted soils at the site (Appendix C). The proposed cleanup level (960 mg/Kg) is based on the following site-specific conditions or assumptions:

- Unsaturated soils encountered in the UST basin area consist predominately of a clayey material;
- The top of competent bedrock is located below the water table;
- The distance between the deepest contaminated soil and the water table is assumed to be less than 5 feet;
- Water supply wells were not identified within 1,500 feet of the site; and
- Underground utilities were identified along Elm Street and next to the former fuel oil UST basin. These utilities are located above the water table.

A comparison of the soil analytical results (Table 2) with the proposed clean-up level for TPH 3550 indicates that one soil sample (TB-7) slightly exceeds the cleanup level.

5.4 Extent of Impacted Soils

The distribution of TPH in soils is summarized in Table 2 and illustrated on Figure 7. The distribution data indicates that 1) the bulk of the detected adsorbed-phase hydrocarbons are TPH 3550, and 2) the lateral extent of impacted soils appears to be limited to areas in the immediate vicinity of the former fuel oil UST. No other potential secondary source areas were identified on-site.

It is noted that the extent of impacted soils has not yet been defined to the NCDEHNR action level of 40 mg/Kg for TPH 3550.

6.0 ADDITIONAL GROUNDWATER INVESTIGATION

6.1 Additional Monitoring Well Installation

In their letter dated November 20, 1995, the NCDEHNR requested an additional monitoring well installation in the former fuel oil UST basin. This request was based on information in previous environmental reports which depicted the former fuel oil UST basin at a location north of monitoring well MW-6. However, a recent conversation with Mr. Maynard Hill, the current manager of the property, indicates that the actual location of the former basin is in the area that includes MW-6. Mr. Hill was present during the August 1993 UST removal. The revised basin location is shown on Figure 2.

Based on this new information, it is proposed that the additional monitoring well requested in the NCDEHNR letter is not necessary.

6.2 Monitoring Well Gauging and Sampling

On December 20, 1995, the site monitoring wells (MW-1 through MW-4, VMW-5, and MW-6) were gauged for depth to water using an electric water level meter. After gauging, monitoring wells MW-1, MW-2, and MW-6 were purged and sampled using disposable polyethylene bailers. Monitoring wells MW-3, MW-4, and VMW-5 were not sampled during this event.

Purging procedures included removal of at least three well volumes of standing water from each well. After purging, groundwater samples were collected from each well and placed in laboratory supplied containers. The containers were then placed on ice in coolers and shipped to GTEL Environmental Laboratories, Inc. (GTEL) in Tampa, Florida for analysis of aromatic VOCs by EPA Method 602 and lead by EPA Method 239.2 (using a Method 3030C sample extraction). In addition, the samples collected from well MW-6 were submitted for analysis of SVOCs by EPA Method 625 (including the 10 highest tentatively identified compounds). Appropriate chain-of-custody documentation was maintained during sample shipment and receipt.

6.2 Inflow Permeability Testing

In order to estimate the hydraulic conductivity of the shallow water-table aquifer, an inflow permeability (slug) test was performed on monitoring well MW-4 using the following procedures:

- Step 1: The monitoring well was gauged for total depth and depth to water.
- Step 2: A Hermit™ 2000 pressure transducer probe was lowered into the well to near well bottom.
- Step 3: The water column in the well was allowed to equilibrate to near-static conditions.

Step 4: When static water level conditions return, the datalogger was reset and the slug removed simultaneously. Recovery rate versus time data was recorded by the datalogger.

Step 6: The slug test data were evaluated using procedures presented in Bower and Rice (1976) and Bouwer (1989) to calculate the hydraulic conductivity value for the well.

The results from the inflow permeability test (Appendix D) indicates a hydraulic conductivity value of 8.8×10^{-4} ft/min. Based on Fetter (1980), this value is typical of a clayey sand.

6.3 Groundwater Occurrence and Flow

Based on the December 20, 1995 gauging data from the shallow monitoring wells (Table 3), shallow groundwater is present in the alluvial soils and saprolite beneath the site at elevations which ranged from 581.98 feet mean sea level (msl) in monitoring well MW-3 to 584.62 feet msl in well MW-6. These groundwater elevations correspond to depths ranging from approximately 12.07 feet below the top of well casing in well MW-6 to 14.69 feet below the top of the well casing in well MW-1.

A water-table elevation contour map was generated from the December 20, 1995 data from the shallow monitoring wells. This map (Figure 8) indicates that the overall direction of shallow groundwater flow was to the southeast under an average hydraulic gradient of 0.02 ft/ft.

The potential for a vertical hydraulic gradient in the water-table aquifer was evaluated by comparing the groundwater elevation data from shallow monitoring well MW-1 (582.35 feet msl) and adjacent vertical definition monitoring well VMW-5 (582.82 feet msl). A comparison of this data indicates the potential for a slight upward vertical hydraulic gradient in the shallow aquifer in the central portion of the site.

The rate of shallow groundwater movement across the site was estimated using the Darcy Equation: $V = Ki/ne$; where V is the linear groundwater velocity, K is the hydraulic conductivity (8.8×10^{-4} ft/min), I is the horizontal hydraulic gradient (0.02 ft/ft), and ne is the estimated effective porosity for a clayey sand (0.1 based on Fetter, 1980). Using these input parameters, the estimated rate of groundwater movement at the site is approximately 0.25 ft/day or 93 ft/year.

6.4 Groundwater Analytical Results

The analytical results from the groundwater samples collected from wells MW-1, MW-2, and MW-6 on December 20, 1995, and a summary of the groundwater analytical results from previous investigations are presented in Tables 4, 5, and 6. Laboratory analytical reports are provided in Appendix E.

The December 20, 1995 analytical results indicate that:

- Dissolved benzene was detected in the groundwater samples obtained from wells MW-1 (4.1 $\mu\text{g/L}$), MW-2 (1.5 $\mu\text{g/L}$), and MW-6 (1.2 $\mu\text{g/L}$);
- Dissolved toluene was detected in the groundwater samples obtained from wells MW-2 (1.6 $\mu\text{g/L}$) and MW-6 (2.3 $\mu\text{g/L}$);
- Dissolved ethylbenzene was detected in the groundwater sample obtained from well MW-2 (1.8 $\mu\text{g/L}$);
- Dissolved xylenes were detected in the groundwater sample collected from well MW-2 (5.0 $\mu\text{g/L}$);
- Dissolved MTBE was detected in the groundwater samples obtained from wells MW-1 (110 $\mu\text{g/L}$) and MW-2 (150 $\mu\text{g/L}$);
- Dissolved lead was detected in the groundwater samples obtained from wells MW-1 (4.1 $\mu\text{g/L}$), MW-2 (17 $\mu\text{g/L}$), and MW-6 (16 $\mu\text{g/L}$); and
- Five unknown tentatively identified semivolatile organic compounds were detected in the groundwater sample obtained from well MW-6 at estimated concentrations ranging from 4.0 $\mu\text{g/L}$ to 16.0 $\mu\text{g/L}$.

A comparison of the detected dissolved concentrations with the corresponding NC 2L groundwater quality standards is provided in Tables 4 through 6.

6.5 Extent of Impacted Groundwater

An evaluation of the distribution of dissolved purgeable aromatic hydrocarbon concentrations in the site monitoring wells (summarized in Table 4 and illustrated on Figure 8) indicates that the highest concentrations were detected in monitoring well MW-1. MW-1 is located in the vicinity of the former gasoline dispensing island. The lateral extent of dissolved compounds appears to be adequately defined by monitoring wells MW-3 and MW-4. The vertical extent of dissolved hydrocarbons appears to be adequately defined by vertical definition well VMW-5.

7.0 CONCLUSIONS AND RECOMMENDATIONS

7.1 Summary of Conclusions

The following are conclusions drawn from the additional soil and groundwater investigations.

1. Water supply wells and underground basements were not identified in the site vicinity. The closest identified receptor is South Buffalo Creek which is located approximately 150 feet south of the site. Potential migration pathways identified in the site vicinity include underground utilities which are located on-site near the former 1000-gallon fuel oil UST, and immediately adjacent to the site in the Elm Street right-of-way.
2. The subsurface materials beneath the site generally consist of fill and/or alluvial soils underlain by saprolite. The fill and alluvial soils are primarily composed of clays and sandy clays. The saprolite is primarily composed of a slightly clayey sand. Bedrock was not encountered during the drilling activities.
3. Shallow groundwater occurs in the alluvial soils beneath the site at elevations ranging from approximately 584 feet msl in the northern portion of the site to approximately 582 feet msl in the southeastern portion of the site. Based on groundwater elevation data from the shallow monitoring wells, the overall direction of shallow groundwater flow is to the southeast under an average hydraulic gradient of 0.02 ft/ft. Based on groundwater elevation data from adjacent shallow and vertical definition monitoring wells, there is the potential for a slight upward vertical hydraulic gradient in the central portion of the site.
4. The analytical results from the site soil investigations indicate that TPH 3550 (identified by the analytical laboratory as both a diesel and an unknown hydrocarbon heavier than diesel) have been detected in the vicinity of the former fuel oil UST at concentrations exceeding the NCDEHNR action level of 40 mg/Kg. No other potential secondary source areas for petroleum hydrocarbons have been identified at the site. The highest TPH 3550 concentration (970 mg/Kg) was detected in shallow (6 to 8 feet below grade) soils collected alongside the sanitary sewer line at a location topographically downgradient of the former UST basin. The TPH 3550 concentration in this sample only slightly exceeds the proposed final soil clean-up level of 960 mg/Kg.
5. The analytical results from the most recent groundwater sampling event (December 20, 1995) indicated the presence of dissolved benzene in monitoring wells MW-1 (4.1 $\mu\text{g/L}$), MW-2 (1.5 $\mu\text{g/L}$), and MW-6 (1.2 $\mu\text{g/L}$). The results also indicated dissolved lead in monitoring wells MW-2 (17 $\mu\text{g/L}$) and MW-6 (16 $\mu\text{g/L}$).

7.2 Recommendations

Additional Assessment

NCDEHNR guidelines require that the extent of TPH 3550 impacted soils be defined to the action level of 40 mg/Kg. Therefore, additional soil investigation will be performed both topographically upgradient and downgradient of the former fuel oil UST basin, especially alongside the underground sanitary sewer line. Soil borings will be advanced using either a stainless steel hand auger or direct-push sampling device. Soil samples collected from each boring will be screened for organic vapors using a flame ionization detector (FID). Based on the results of the FID screening, at least one sample from each boring will be submitted for laboratory analyses of TPH 3550.

The results from the additional soils investigation will be used to evaluate the need for soil corrective action, and will be included in the site corrective action plan.

Corrective Action

Current NC 2L regulations allow sites to propose corrective action programs based on either:

- Natural processes of degradation and attenuation of contaminants (ie, groundwater monitoring only);
- Remediation of source areas and monitoring of the plume edges; and
- Remediation of the contaminant plume.

Based on the results from the site investigations, it appears that corrective action based on the natural processes of degradation and attenuation of contaminants is the most appropriate remedial option for this site. In order to obtain site-specific data to support this remedial alternative, Groundwater Technology recommends:

- Collection of a background soil sample from the saturated zone for total organic carbon (TOC) and grain size analysis. This sample will be collected from a boring drilled to a depth several feet below the shallow water table at a location outside and topographically upgradient of the area of soil impact.
- Testing groundwater in the monitoring wells for pH, dissolved oxygen, and carbon dioxide using field meters;
- Gauging and then sampling the site monitoring wells to monitor groundwater quality and flow. The collected samples will be analyzed for aromatic VOCs by EPA Method 602 and total lead by EPA Method 7421 (method 3030C sample extraction). The samples collected from monitoring wells located in the vicinity of the impacted soil area (wells MW-3 and MW-6) will also be analyzed for SVOCs by EPA Method 625; and

- Sampling surface water in South Buffalo Creek at two locations in the Creek; one upstream of the site and the second downstream of the site. The collected surface water samples will be analyzed for aromatic VOCs by EPA Method 602.

Following receipt of analytical results from the above activities, a CAP will be prepared and submitted to the NCDEHNR. The CAP will include a summary of the results from the additional assessment activities and a description of the proposed remedial alternative.

8.0 REFERENCES

Brown, Philip M., et al, *Geologic Map of North Carolina*, North Carolina Department of Natural Resources and Community Development, Division of Land Resources, 1985

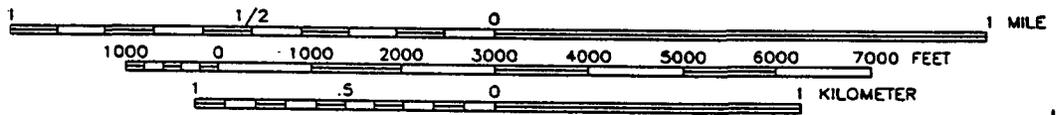
Law Engineering, March 1993. *Divestment Report*, Sunoco Station #0275-7516, 2903 South Elm Street, Greensboro, North Carolina.

Griffith Enterprises, Inc., August 24, 1993. *Tank Excavation Report*, Sunoco Station #0275-7516, 2903 South Elm Street, Greensboro, North Carolina.

Groundwater Technology, Inc., July 20, 1993. *Comprehensive Site Assessment*. Sunoco Station #0275-7516, 2903 South Elm Street, Greensboro, North Carolina.

Groundwater Technology, Inc., September 29, 1995. *Project Update Report*, Sunoco Station #0275-7516, 2903 South Elm Street, Greensboro, North Carolina.

FIGURES



QUADRANGLE LOCATION

GREENSBORO, NC
 7.5' QUADRANGLE
 36079-A7-TF-024
 1968

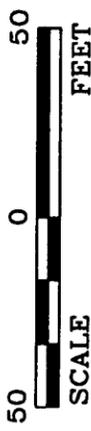
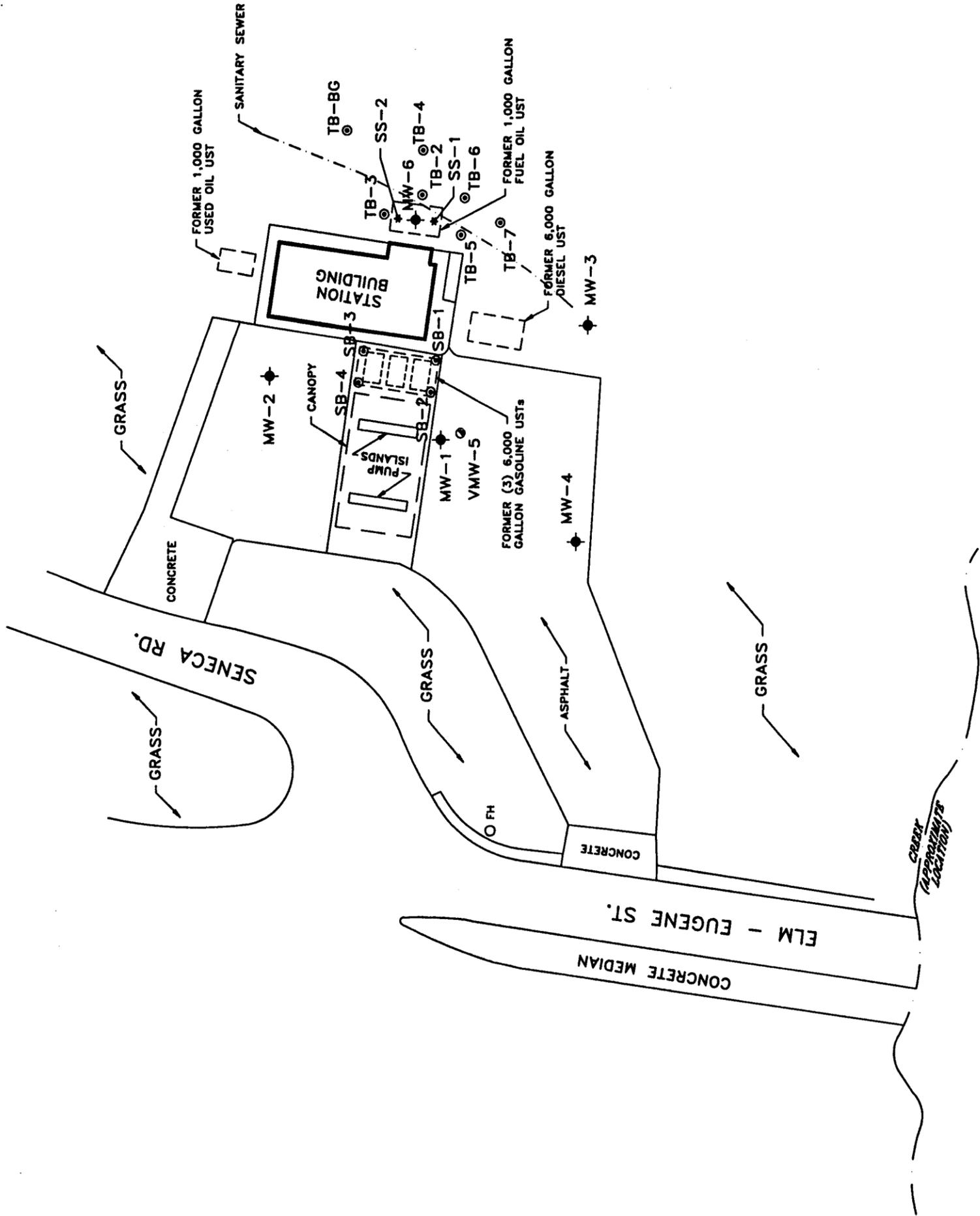
FIGURE 1
SITE LOCATION MAP
SUN COMPANY, INC.
 2903 S. ELM ST.
 GREENSBORO, NC
 053245455



**GROUNDWATER
 TECHNOLOGY, INC.**

LEGEND

- ◆ MONITORING WELL
- VERTICAL DEFINITION MONITORING WELL
- FH FIRE HYDRANT
- ⊙ SOIL BORINGS
- * TANK EXCAVATION SAMPLES

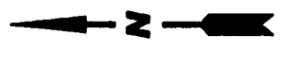
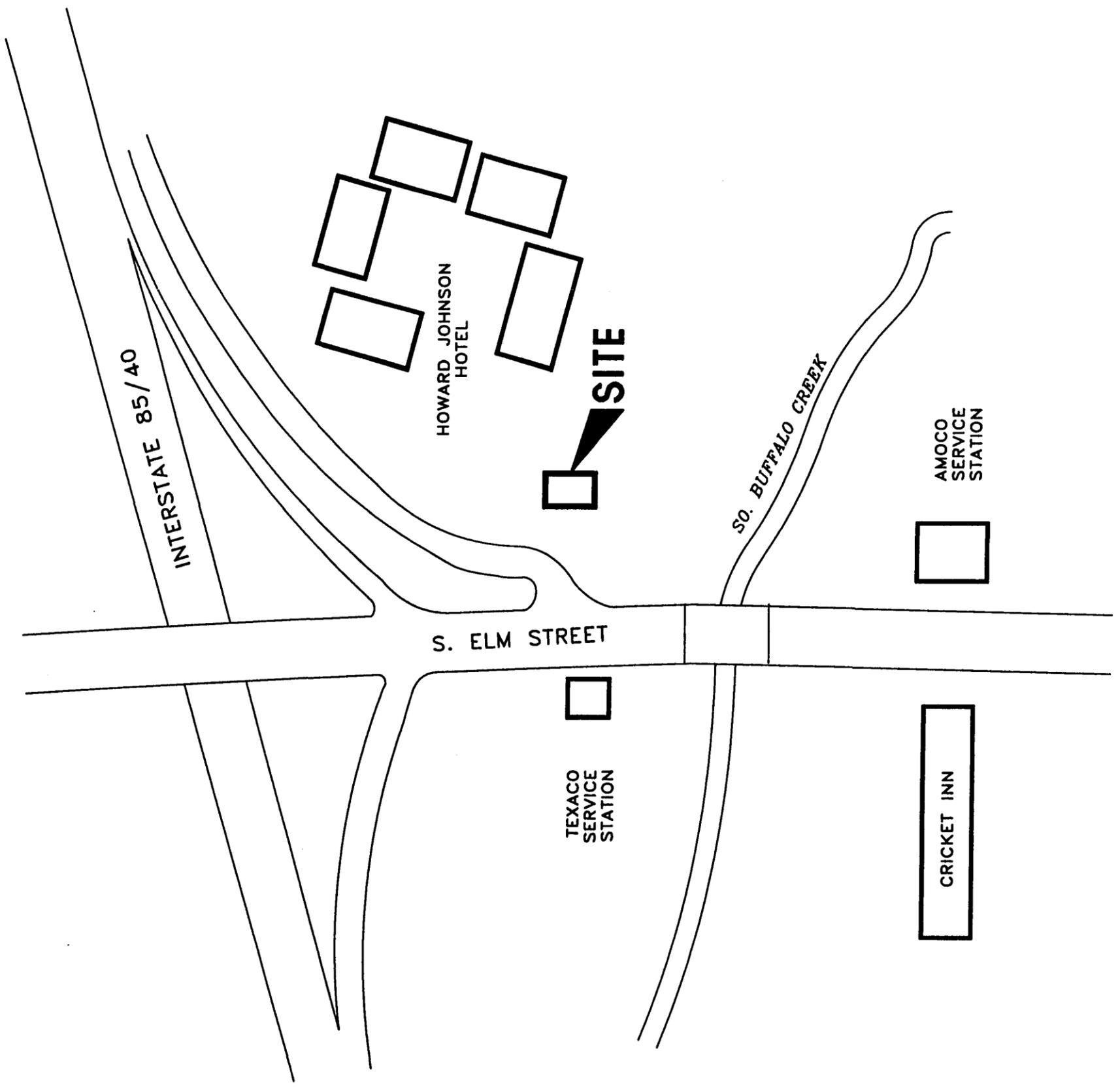


SOURCE: JAMES L. HAINES & ASSOC. - 6/16/93 SURVEY

	1000 PERIMETER PARK DR SUITE 1 MORRISVILLE, NC 27560 (919) 467-2227	
	REV. NO.:	DRAWING DATE: 01/06/95

SITE MAP

CLIENT:	SUN COMPANY, INC.		PM:
LOCATION:	2903 S. ELM ST. GREENSBORO, NC		PE/RG:
DESIGNED:	KAT	PROJECT NO.:	053245455
	RTJ		FIGURE: 2



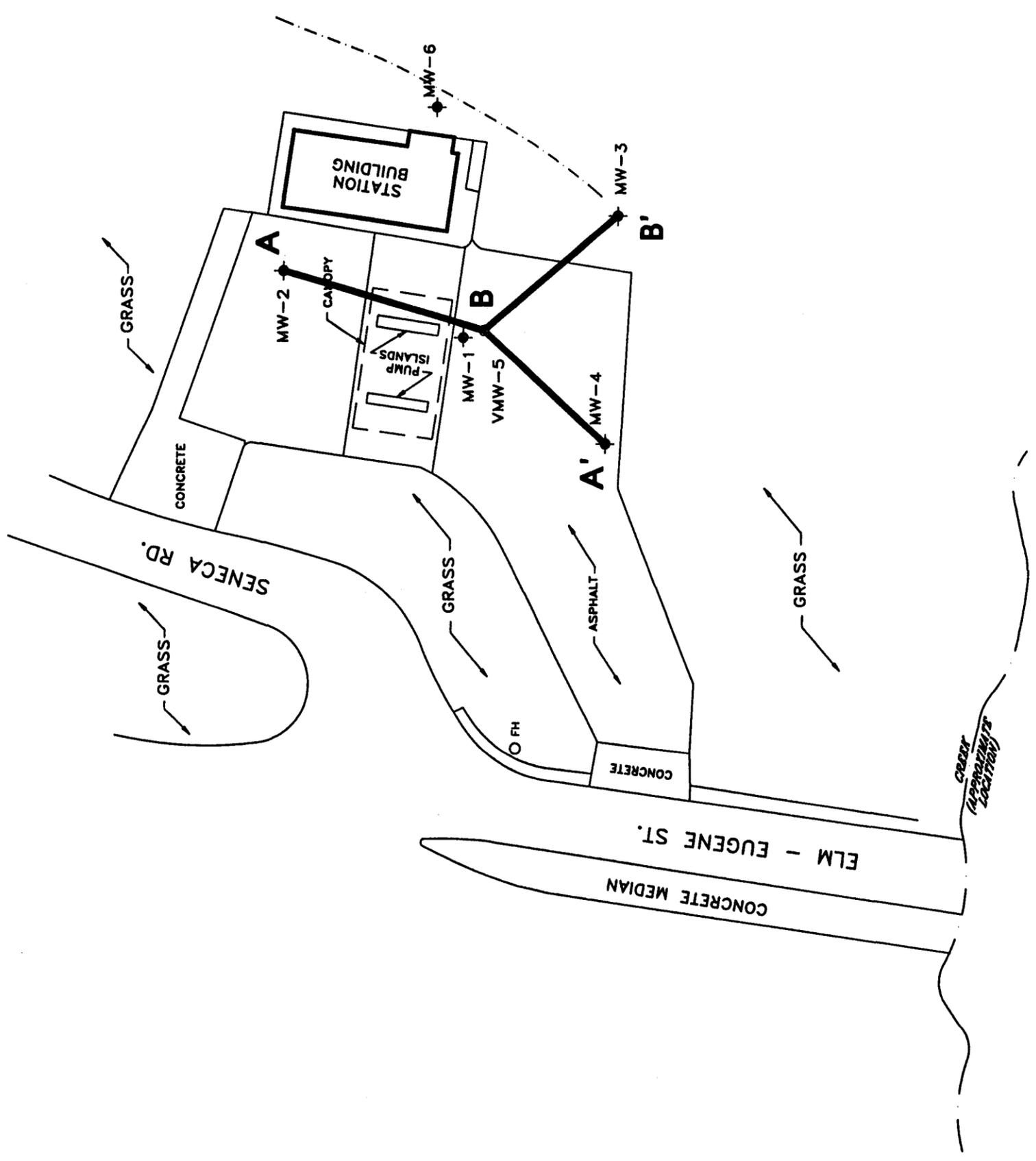
■ NOT TO SCALE ■

SOURCE: WELL LOG INFORMATION

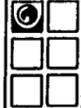
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REV. NO.:	DRAWING DATE: 6/28/93	ACAD FILE:	5455-ARE
AREA MAP			
CLIENT:	SUN COMPANY, INC.		PM:
LOCATION:	2903 S. ELM ST. GREENSBORO, NC		PE/RG:
DESIGNED:	TLW	PROJECT NO.:	053245455
		FKP	FIGURE: 3

LEGEND

- ◆ MONITORING WELL
- VERTICAL DEFINITION MONITORING WELL
- FH FIRE HYDRANT



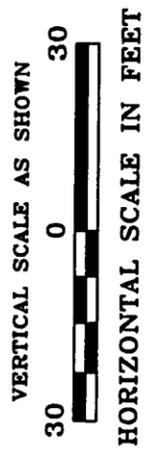
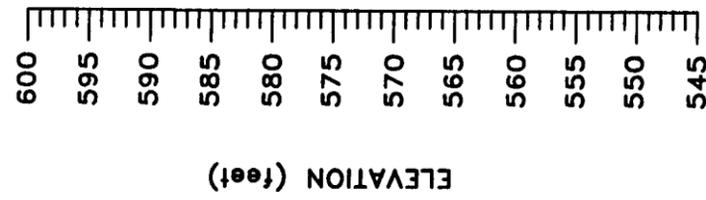
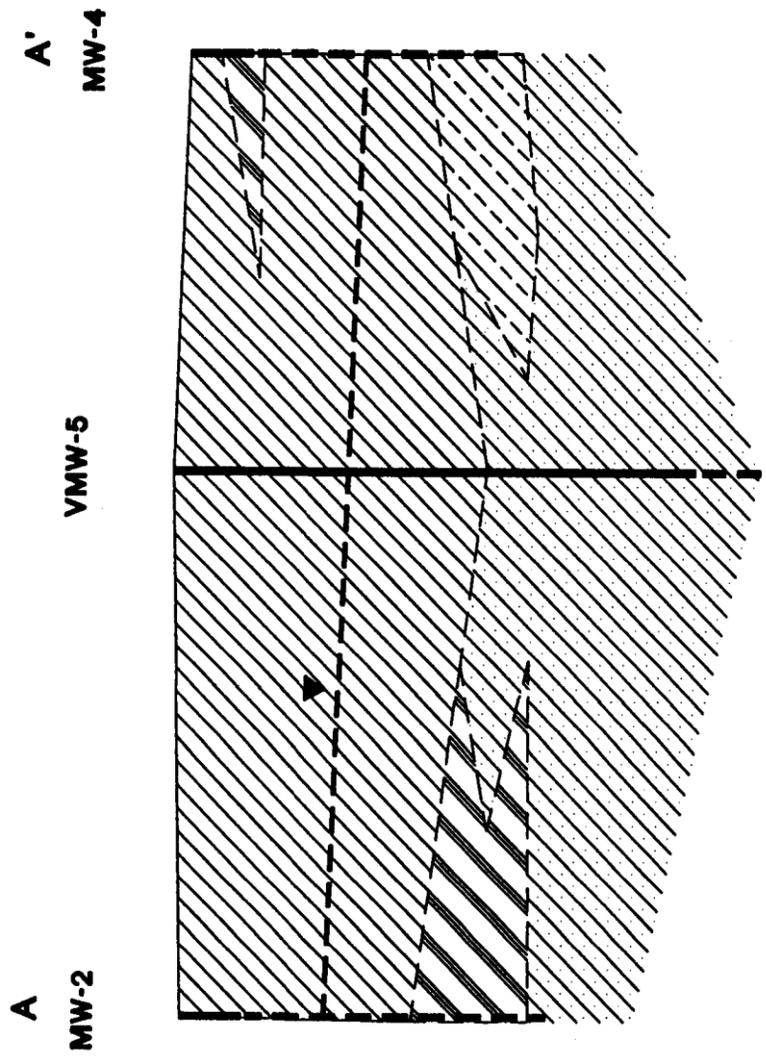
SOURCE: JAMES L. HAINES & ASSOC. - 6/16/93 SURVEY


GROUNDWATER TECHNOLOGY
 1000 PERIMETER PARK DR.
 SUITE 1
 MORRISVILLE, NC 27560
 (919) 467-2227

REV. NO.:
 DRAWING DATE: 01/06/95
 ACAD FILE: 01021295

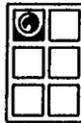
LINES OF GEOLOGIC CROSS-SECTION A-A' & B-B'

CLIENT:	SUN COMPANY, INC.	PM:
LOCATION:	2903 S. ELM ST. GREENSBORO, NC	PE/RG:
DESIGNED:	KAT	PROJECT NO.:
RTJ	053245455	FIGURE:
		4



SOURCE: WELL LOG INFORMATION

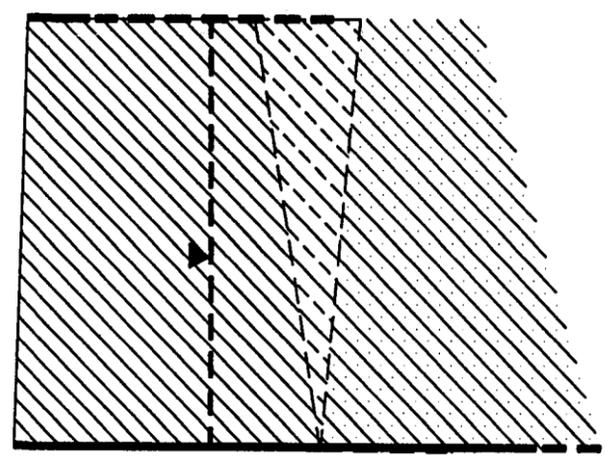
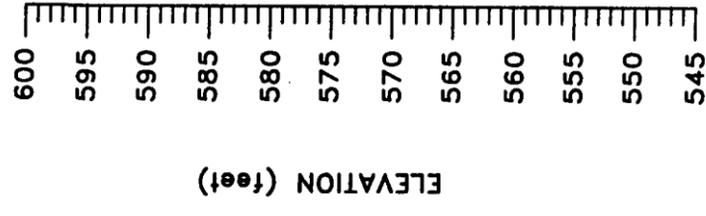
- LEGEND**
-  SANDY CLAY
 -  SILTY CLAY
 -  CLAY
 -  CLAYEY SAND
 -  WATER-TABLE ELEVATION (feet) (12/20/95)

 **GROUNDWATER TECHNOLOGY**
 1000 PERIMETER PARK DR.
 SUITE 1
 MORRISVILLE, NC 27560
 (919) 467-2227

REV. NO.: DRAWING DATE: 6/28/93 ACAD FILE: 5455-XAA

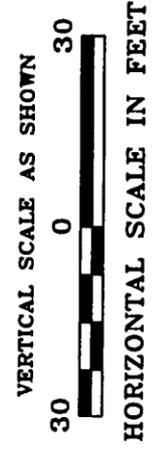
GEOLOGIC CROSS-SECTION A-A'	
CLIENT:	SUN COMPANY, INC.
LOCATION:	2903 S. ELM ST. GREENSBORO, NC
DESIGNED:	TLW
PE/RG:	PM:
PROJECT NO.:	053245455
FIGURE:	5

B VMW-5 B' MW-3

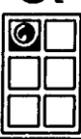


LEGEND

-  SANDY CLAY
-  SILTY CLAY
-  CLAYEY SAND
-  WATER-TABLE ELEVATION (feet) (12/20/95)

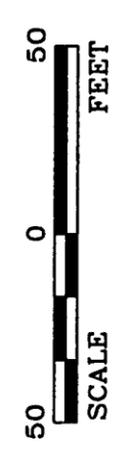
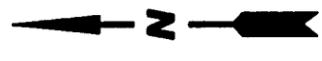
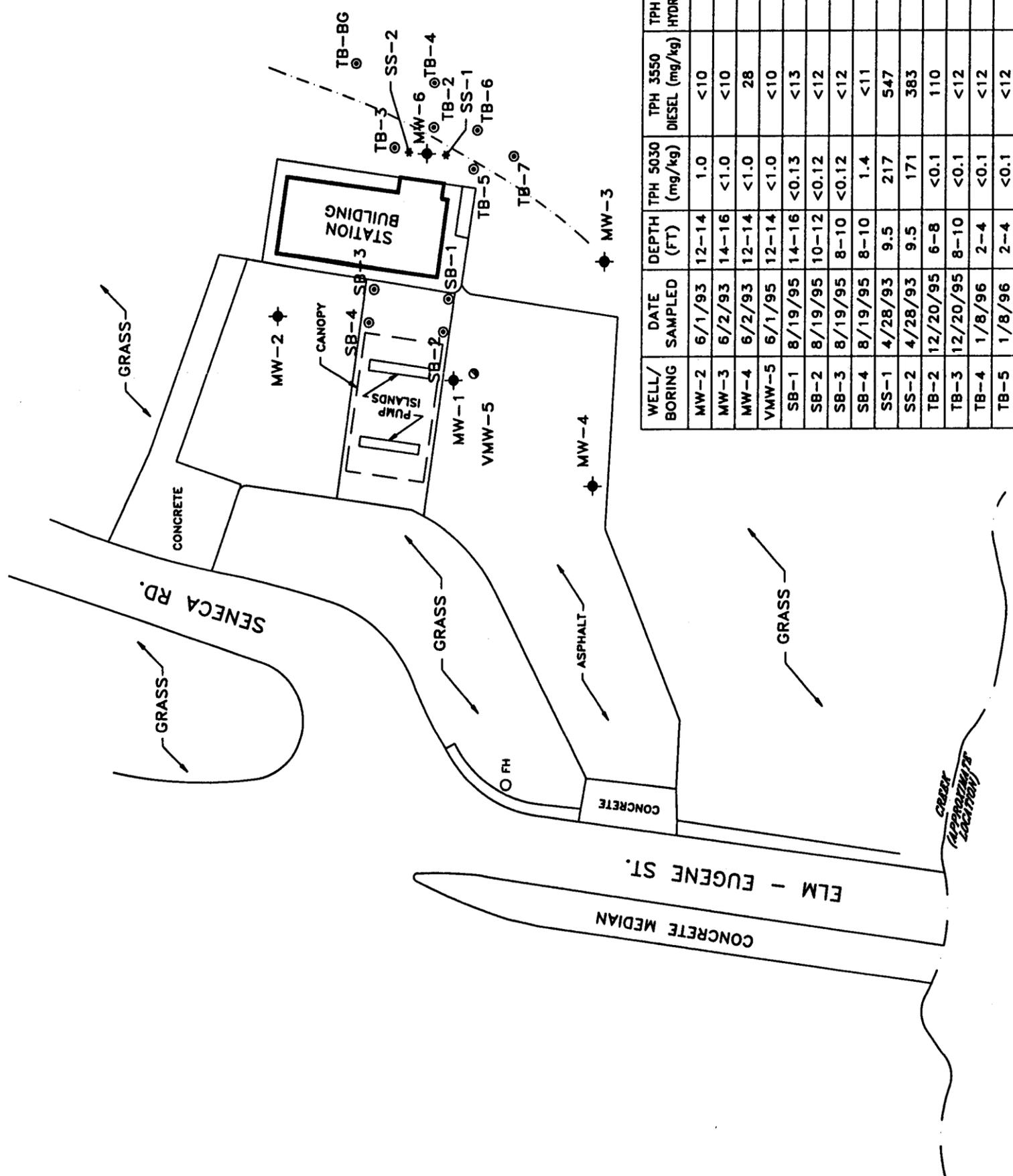


SOURCE: WELL LOG INFORMATION

		1000 PERIMETER PARK DR SUITE 1 MORRISVILLE, NC 27560 (919) 467-2227	
REV. NO.:	DRAWING DATE:	ACAD FILE:	5455-XBB
	6/28/93		
GEOLOGIC CROSS-SECTION B-B'			
CLIENT:	SUN COMPANY, INC.		
LOCATION:	2903 S. ELM ST. GREENSBORO, NC		
DESIGNED:	TLW	PROJECT NO.:	053245455
		PE/RG:	
		FIGURE:	6

LEGEND

- ◆ MONITORING WELL
- VERTICAL DEFINITION MONITORING WELL
- FH FIRE HYDRANT
- ⊙ SOIL BORINGS
- * TANK EXCAVATION SAMPLES
- NA NOT ANALYSED



SOURCE: JAMES L. HAINES & ASSOC. - 6/16/93 SURVEY

GROUNDWATER TECHNOLOGY
1000 PERIMETER PARK DR.
SUITE 1
MORRISVILLE, NC 27560
(919) 467-2227

REV. NO.: DRAWING DATE: ACAD FILE: 01021295
01/06/95

TOTAL PETROLEUM HYDROCARBONS IN SOIL CONCENTRATION MAP

CLIENT: SUN COMPANY, INC.
LOCATION: 2903 S. ELM ST. GREENSBORO, NC
DESIGNED: KAT
DETAILED: RTJ
PROJECT NO.: 053245455
FIGURE: 7

WELL/BORING	DATE SAMPLED	DEPTH (FT)	TPH 5030 (mg/kg)	TPH 3550 DIESEL (mg/kg)	TPH 3550 UNKNOWN HYDROCARBON (mg/kg)
MW-2	6/1/93	12-14	1.0	<10	NA
MW-3	6/2/93	14-16	<1.0	<10	NA
MW-4	6/2/93	12-14	<1.0	28	NA
VMW-5	6/1/95	12-14	<1.0	<10	NA
SB-1	8/19/95	14-16	<0.13	<13	NA
SB-2	8/19/95	10-12	<0.12	<12	NA
SB-3	8/19/95	8-10	<0.12	<12	NA
SB-4	8/19/95	8-10	1.4	<11	NA
SS-1	4/28/93	9.5	217	547	NA
SS-2	4/28/93	9.5	171	383	NA
TB-2	12/20/95	6-8	<0.1	110	<12
TB-3	12/20/95	8-10	<0.1	<12	15
TB-4	1/8/96	2-4	<0.1	<12	180
TB-5	1/8/96	2-4	<0.1	<12	120
TB-6	1/8/96	4-6	<0.1	<12	370
TB-7	1/8/96	6-8	<0.1	<13	970
TB-BG	1/8/96	4-6	<0.1	<12	170

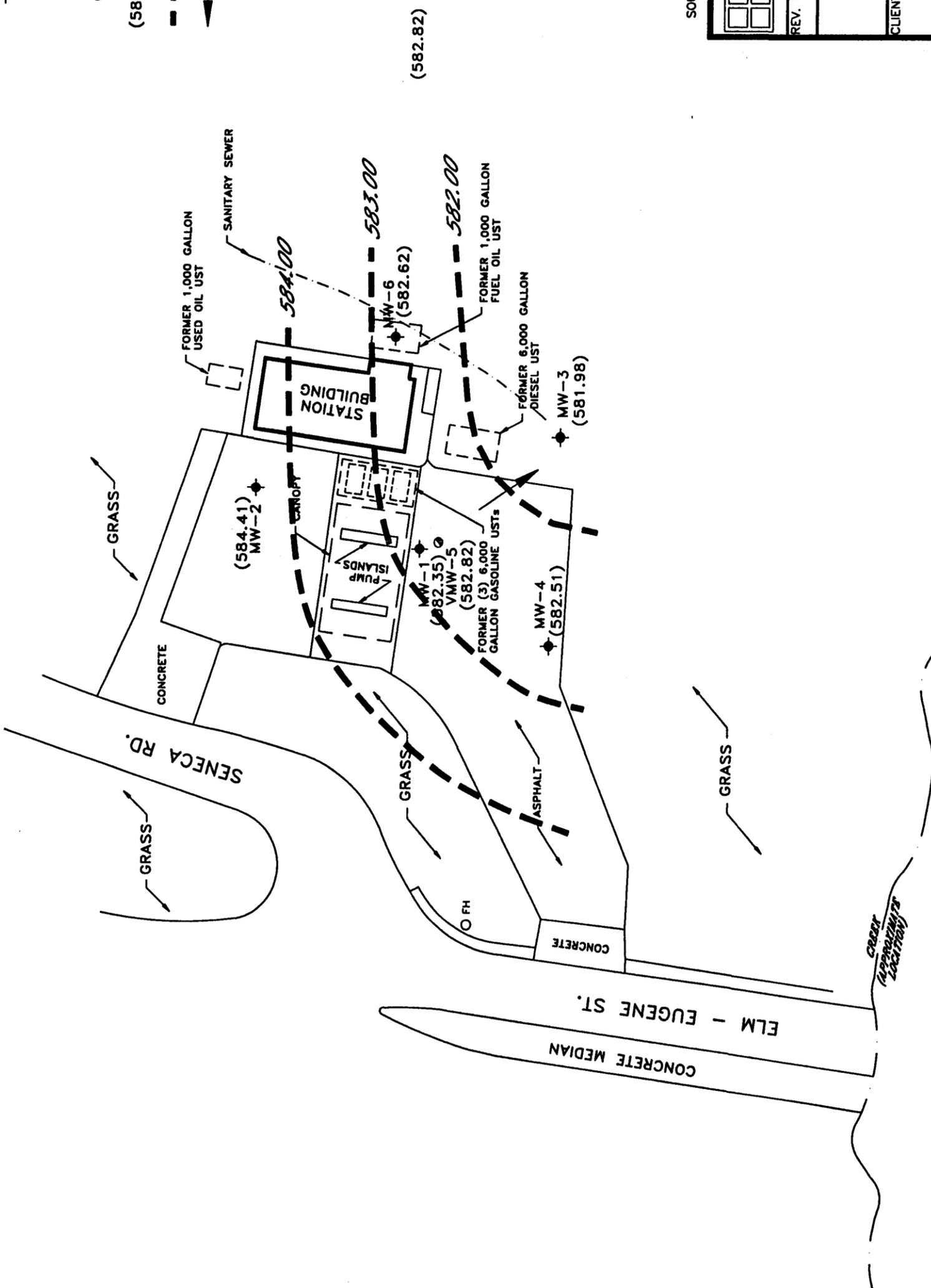
LEGEND

- ◆ MONITORING WELL
- VERTICAL DEFINITION MONITORING WELL
- FH FIRE HYDRANT

(582.82) WATER-TABLE ELEVATION (FT)

--- INFERRED CONTOUR

→ GENERALIZED DIRECTION OF SHALLOW GROUNDWATER FLOW



SOURCE: JAMES L. HAINES & ASSOC. - 6/16/93 SURVEY

GROUNDWATER TECHNOLOGY
1000 PERIMETER PARK DR.
SUITE 1
MORRISVILLE, NC 27560
(919) 467-2227

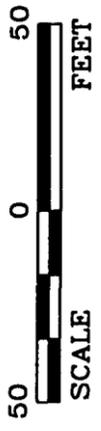
REV. NO.: DRAWING DATE: ACAD FILE: 01021295
01/06/95

**WATER-TABLE ELEVATION CONTOUR MAP
DECEMBER 20, 1995**

CLIENT:	SUN COMPANY, INC.	PM:	
LOCATION:	2903 S. ELM ST. GREENSBORO, NC	PE/RG:	
DESIGNED:	KAT	DETAILED:	RTJ
PROJECT NO.:	053245455	FIGURE:	8

LEGEND

- ◆ MONITORING WELL
- VERTICAL DEFINITION MONITORING WELL
- FH FIRE HYDRANT
- <RL BELOW LABORATORY REPORTING LIMIT



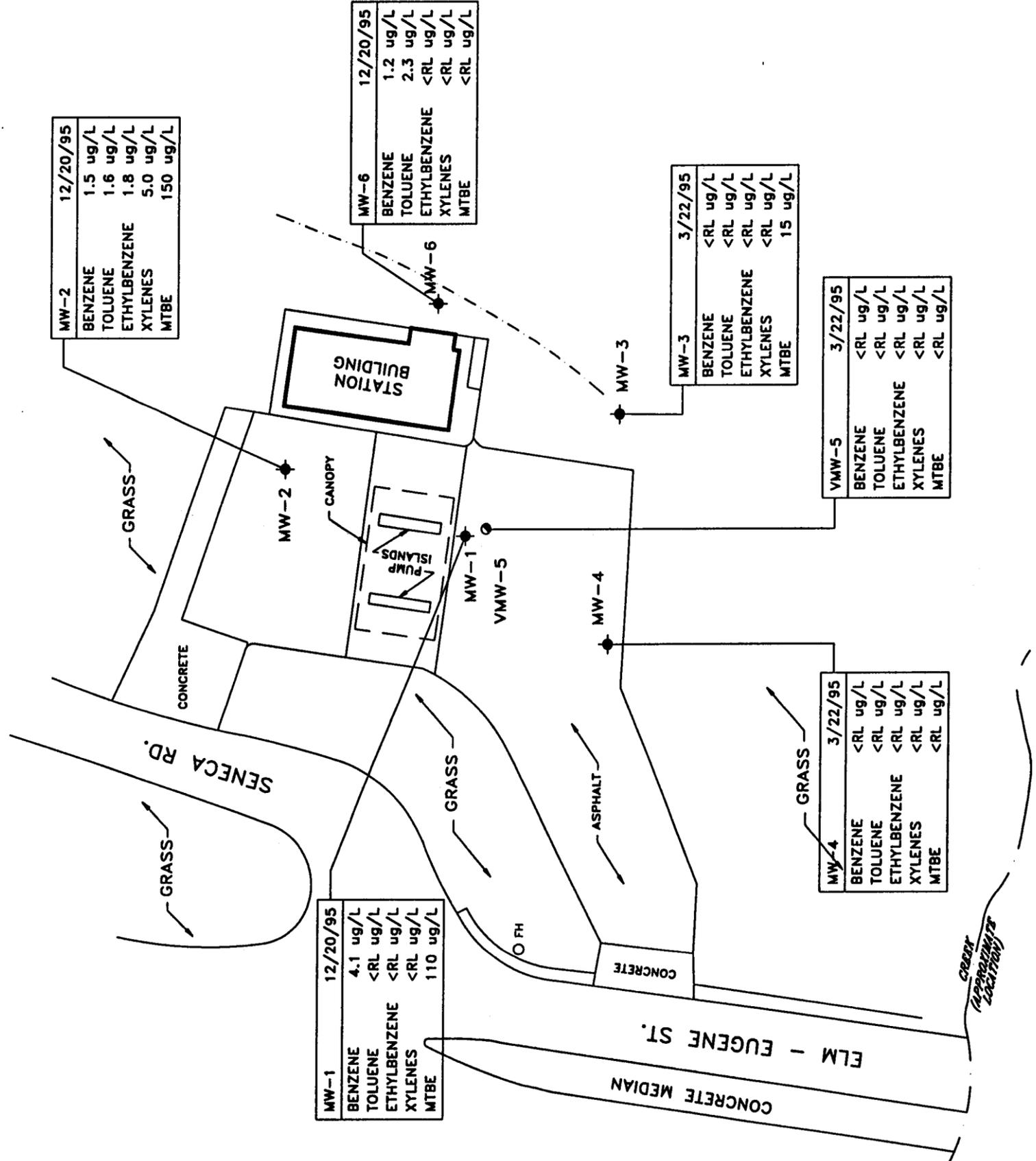
SOURCE: JAMES L. HAINES & ASSOC. - 6/16/93 SURVEY

GROUNDWATER TECHNOLOGY
1000 PERIMETER PARK DR.
SUITE 1
MORRISVILLE, NC 27560
(919) 467-2227

REV. NO.: DRAWING DATE: ACAD FILE: 01021295
01/06/95

**DISSOLVED VOLATILE ORGANIC COMPOUNDS CONCENTRATION MAP
DECEMBER 20, 1996**

CLIENT: SUN COMPANY, INC. PM:
LOCATION: 2903 S. ELM ST. PE/RG:
GREENSBORO, NC
DESIGNED: KAT PROJECT NO.: 053245455
RTJ
FIGURE: 9



CROPY
(APPROXIMATE LOCATION)

TABLES

TABLE 1
Monitoring Well Construction Details

2903 South Elm Street
Greensboro, North Carolina

Well Designation	Total Depth (Feet)	Screened Interval (Feet)	Casing Diameter (Inches)	Well Type
MW-1	25	10-25	4	Type II
MW-2	30	5-30	4	Type II
MW-3	25	5-25	4	Type II
MW-4	25	5-25	4	Type II
VMW-5	48	43-48	4	Type III
MW-6	20	5-20	2	Type I

Note
All measurements are in feet below ground surface.

TABLE 2
Summary of Soil Analytical Results

2903 South Elm Street
Greensboro, North Carolina

Sample Location	Date	Sample Depth (feet)	PID Response (ppm Equivalent)	TPH 5030 (mg/kg)	TPH as Diesel (mg/kg)	TPH 3550 (mg/kg)
MW-2	06/01/93	12-14	21	1	<10	NA
MW-3	06/02/93	14-16	13	<1.0	<1.0	NA
MW-4	06/02/93	12-14	89	<1.0	28	NA
VMW-5	06/01/95	12-14	6	<1.0	<10	NA
SS-1	04/28/93	9.5	5.6	217	547	NA
SS-2	04/24/93	9.5	2.4	171	383	NA
SB-1	08/19/95	14-16	64	<0.13	<13	NA
SB-2	08/19/95	10-12	54	<0.12	<12	NA
SB-3	08/19/95	8-10	100	<0.12	<12	NA
SB-4	08/19/95	8-10	900	1.4	<11	NA
TB-2	12/20/95	6-8	1000+	<0.1	110	<12
TB-3	12/20/95	8-10	1000+	<0.1	12	15
TB-4	01/08/96	2-4	9.5	<0.1	<12	180
TB-5	01/08/96	2-4	9.5	<0.1	<12	120
TB-6	01/08/96	4-6	5.8	<0.1	<12	370
TB-7	01/08/96	6-8	5.8	<0.1	<13	970
TB-BG	01/08/96	4-6	2	<0.1	<12	170

Notes

mg/kg = Milligrams per kilograms

NA = Not Applicable

SELM-2.WK4

TABLE 3
Water-Table Elevations
December 20, 1995

2903 South Elm Street
Greensboro, North Carolina

Well ID	Date	Well Head Elevation (feet/ msl)	Depth to Water (feet)	Groundwater Elevation (feet/ msl)
MW-1	12/20/95	597.04	14.69	582.35
MW-2	12/20/95	596.61	12.20	584.41
MW-3	12/20/95	596.36	14.38	581.98
MW-4	12/20/95	596.47	13.96	582.51
VMW-5	12/20/95	597.10	14.28	582.82
MW-6	12/20/95	596.69	12.07	584.62

Notes

Depth to water measurements are in feet below top of well casing
msl = Mean sea level

TABLE 4
Summary of Groundwater Analytical Results (ug/L)
EPA Method 602

2903 South Elm Street
Greensboro, North Carolina

Well ID	Sampling Date	Benzene *(1 ug/L)	Toluene *(1,000 ug/L)	Ethyl- benzene *(29 ug/L)	Xylenes (total) *(530 ug/L)	MTBE *(200 ug/L)	Isopropyl- ether **
MW1	06/15/93	5.0	8.0	<RL	<RL	230	33
	09/24/93	1.0	<RL	<RL	0.7	300	—
	12/07/93	0.9	<RL	0.3	<RL	410	—
	02/15/94	0.7	<RL	<RL	<RL	290	—
	06/15/94	7.1	<RL	<RL	<RL	160	—
	03/22/95	4.7	<RL	<RL	<RL	130	—
	12/20/95	4.1	<RL	<RL	<RL	110	—
MW2	06/15/93	<RL	<RL	<RL	<RL	290	<RL
	09/24/93	<RL	<RL	<RL	0.5	220	—
	12/07/93	<RL	<RL	<RL	<RL	270	—
	02/15/94	<RL	<RL	<RL	<RL	280	—
	06/15/94	<RL	<RL	<RL	<RL	210	—
	03/22/95	<RL	<RL	<RL	4.4	200	—
	12/20/95	1.5	1.6	1.8	5.0	150	—
MW3	06/15/93	<RL	1.0	<RL	<RL	5.0	<RL
	09/24/93	0.4	0.9	<RL	0.8	24	—
	12/07/93	<RL	<RL	<RL	<RL	19	—
	02/15/94	<RL	<RL	<RL	<RL	<RL	—
	06/15/94	<RL	<RL	<RL	<RL	12	—
	03/22/95	<RL	<RL	<RL	<RL	15	—
MW4	06/15/93	<RL	<RL	<RL	<RL	<RL	3.0
	09/24/93	<RL	<RL	2	1	<RL	—
	12/07/93	<RL	<RL	0.7	0.7	<RL	—
	02/15/94	<RL	<RL	<RL	<RL	<RL	—
	06/15/94	<RL	<RL	<RL	1.3	<RL	—
	03/22/95	<RL	<RL	<RL	<RL	<RL	—
VMW5	06/15/93	0.3	0.3	<RL	0.5	5	<RL
	09/24/93	<RL	<RL	<RL	<RL	<RL	—
	12/07/93	<RL	<RL	<RL	<RL	<RL	—
	02/15/94	<RL	<RL	<RL	<RL	<RL	—
	06/15/94	<RL	<RL	<RL	<RL	<RL	—
	03/22/95	<RL	<RL	<RL	<RL	<RL	—
MW-6	12/20/95	1.2	2.3	<RL	<RL	<RL	—

Notes

ug/L - Micrograms per liter

<RL-Below laboratory reporting limit

*North Carolina Administrative Code Subchapter 2L Groundwater Standard

**No 2L Standard; the standard is considered the detection limit



TABLE 5
Summary of Groundwater Analytical Results (ug/L)
EPA Method 601

2903 South Elm Street
Greensboro, North Carolina

Well ID	Sampling Date	EPA 601 Parameters
VMW5	02/15/94	<RL
MW1	02/15/94	<RL
MW2	02/15/94	<RL
MW3	02/15/94	<RL
MW4	02/15/94	<RL

Notes:

ug/L - Micrograms per liter

<RL-Below laboratory reporting limit

TABLE 6
Summary of Groundwater Analytical Results (ug/L)
EPA Methods 625 and 239.2

2903 South Elm Street
Greensboro, North Carolina

Well ID	Sampling Date	Lead *(15 ug/L)	Naphthalene *(21 ug/L)
VMW-5	06/15/93	--	<RL
MW1	06/15/93 12/20/95	-- 4.1	<RL -
MW2	06/15/93 12/20/95	-- 17	<RL -
MW3	06/15/93	--	19
MW4	06/15/93	--	<RL
MW6	08/19/95 12/20/95	-- 16	<RL <RL

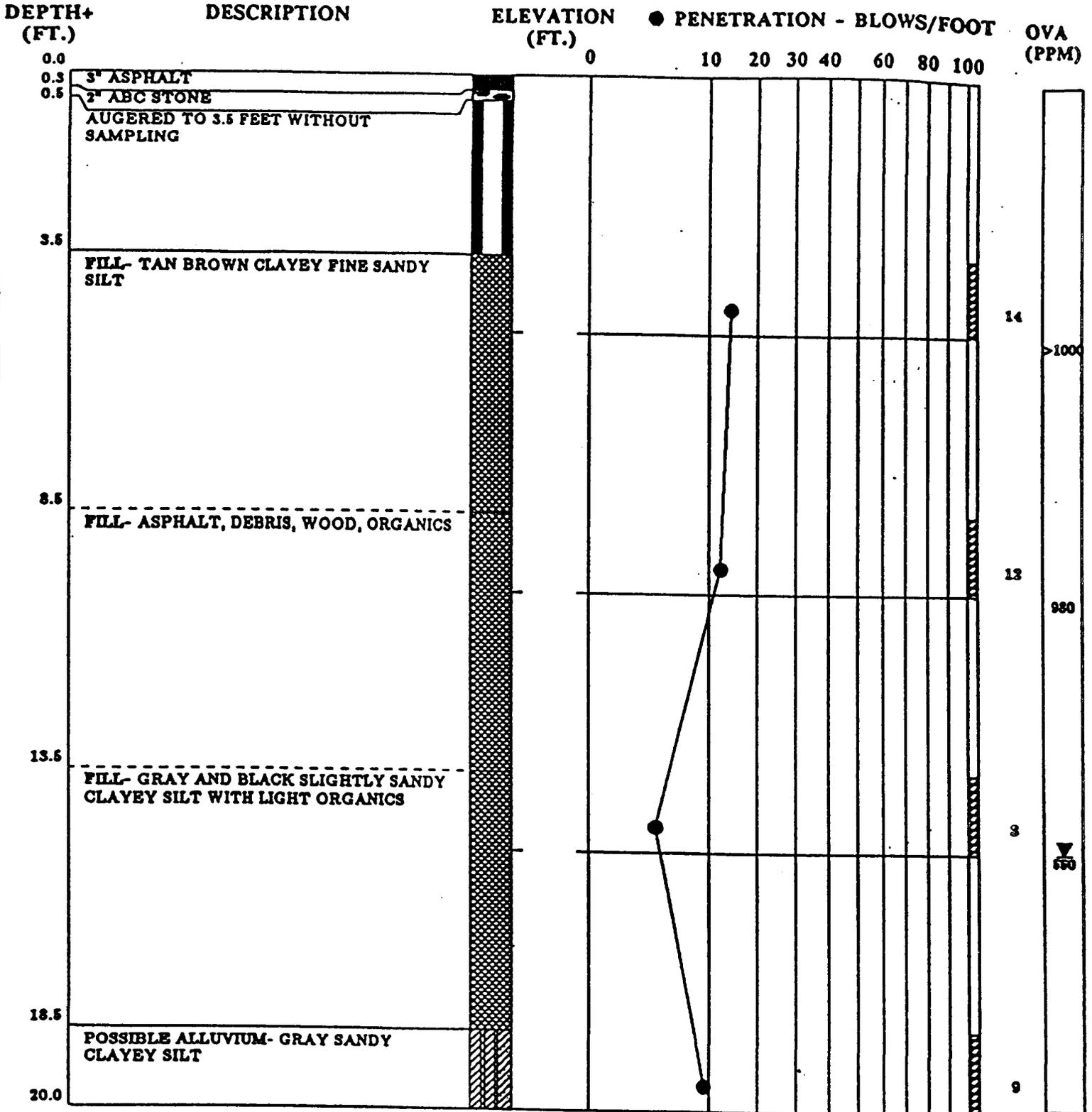
Notes:

ug/L - Micrograms per liter

<RL-Below laboratory reporting limit

*North Carolina Administrative Code Subchapter 2L Groundwater Standard
 For 625 Analysis, tentatively identified compounds have not been included.

**APPENDIX A
DRILLING LOGS**



REMARKS:

TEST BORING RECORD	
BORING NUMBER	MW-2
DATE DRILLED	December 1, 1992
PROJECT NUMBER	259-97516-01
PROJECT	SOUTH ELM ST. SUNOCO
PAGE 1 OF 2	
 LAW ENGINEERING	

SEE KEY SHEET FOR EXPLANATION OF SYMBOLS AND ABBREVIATIONS USED ABOVE

DEPTH+
(FT.)

DESCRIPTION

ELEVATION
(FT.)

● PENETRATION - BLOWS/FOOT
0 10 20 30 40 60 80 100

OVA
(PPM)

ALLUVIUM- CLAY WITH ORGANICS

30.0

BORING TERMINATED AT 30 FEET
DRY AT TIME OF BORING
WATER ENCOUNTERED AT 15 FEET AT 24
HOURS AFTER TERMINATION OF DRILLING
WELL SET TO 29 FEET OVERNIGHT THEN
PULLED TO 26 FEET
TOP SCREEN AT 10 FEET
SAND AT 9 FEET
PLUG 9 TO 8 FEET
GROUT 8 FEET TO SURFACE

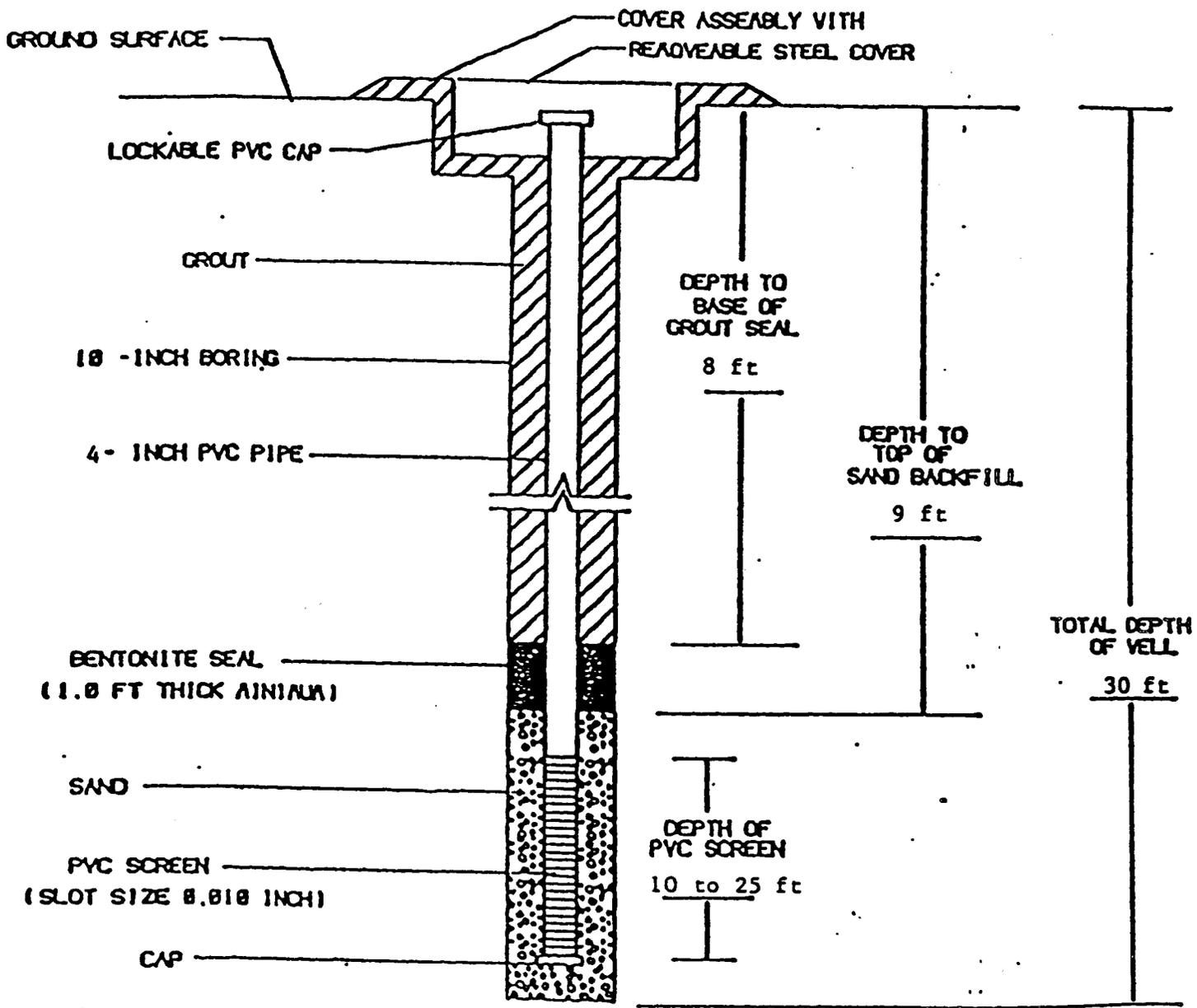
REMARKS:

TEST BORING RECORD	
BORING NUMBER	MW-2
DATE DRILLED	December 1, 1992
PROJECT NUMBER	259-97516-01
PROJECT	SOUTH ELM ST. SUNOCO
PAGE 2 OF 2	
▲ LAW ENGINEERING	

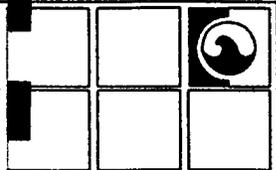
SEE KEY SHEET FOR EXPLANATION OF
SYMBOLS AND ABBREVIATIONS USED ABOVE

GROUND-WATER MONITORING WELL INSTALLATION RECORD

JOB NAME South Elm St. Sunoco **JOB NUMBER** 259-97516-01
WELL NUMBER MW-2 **GROUND SURFACE ELEVATION** _____
LOCATION Greensboro, North Carolina
INSTALLATION DATE December 2, 1993



NOTE: ALL PVC PIPE JOINTS HAVE SCREW CONNECTORS



GROUNDWATER TECHNOLOGY INC.

CLIENT: SUN COMPANY, INC.
 PROJECT NAME: SUN - ELM ST.
 PROJECT NUMBER: 053245445
 LOCATION: 2903 S. ELM ST.
GREENSBORO, NC
 DRILLER: FISHBURNE DRILLING, INC.

DATE 07/08/93 WELL NUMBER MW-2
 CASSED FROM 0 TO 5' WITH SCH 40 PVC
 SCREENED FROM 5' TO 30' WITH 0.020" SLOT
 WELL DEPTH 30' WELL DIAMETER 4"
 ELEVATION 596.61'

DRILL RIG CME 75
 DRILL METHOD HOLLOW STEM AUGER
 DATE(S) DRILLED JUNE 1, 1993
 LOGGED BY DOUG YEATS

ANNULUS COMPLETION SANDPACK 30'-3'; BENTONITE 3'-1'; GROUT 1'-0
 OTHER WELL COMPLETED WITH CONCRETE EMBEDDED MANHOLE COVER & LOCKING CAP

WELL DETAIL	DEPTH	GRAPHIC COLUMN	LITHOLOGICAL DESCRIPTION	SAMPLE	COMMENTS		
	5		ASPHALT/crusher-run to 5", SANDY CLAY: Brown, some gravel, mod. stiff, dry	0-2'	BC=7-11-11-9 PID=7		
			SANDY CLAY: Brown-red, stiff, dry	2-4'	BC=20-22-18-12 PID=8		
			SANDY CLAY: Drk brn to drk grey, some gravel fill material, dry	4-6'	BC=9-11-50/3 PID=16		
			SANDY CLAY W/ASPHALT & GRAVEL: Fill material	6-8'	BC=5-50/3 PID=8		
			SANDY CLAY: Green to white, mottled, moist, soft, slightly friable	8-10'	BC=5-5-5-6 PID=8		
			SANDY CLAY: Tan-brown, moist, soft	10-12'	BC=3-3-3-4 PID=8		
			SANDY CLAY: As above, orange-tan-grey, mottled, very moist (Lab Sample)	12-14'	BC=5-4-4-5 PID=21		
			SANDY CLAY: Light green to tan, very soft very moist to saturated	14-16'	BC=4-3-4-4 PID=11		
			CLAY: Very dark grey w/brown mottles, plastic, very tight, saturated, mod. soft	19-21'	BC=3-3-5-4 PID=5		
			CLAY: As above, slightly sandy	24-26'	BC=3-4-4-4 PID=8		
			SAPROLITE:	29-31'	BC=30-18-10-6 PID=3		

GROUNDWATER TECHNOLOGY INC.

CLIENT: SUN COMPANY, INC.

PROJECT NAME: SUN - ELM ST.

PROJECT NUMBER: 053245445

LOCATION: 2903 S. ELM ST.
GREENSBORO, NC

DRILLER: FISHBURNE DRILLING, INC.

DATE 07/08/93

WELL NUMBER MW-3

CASED FROM 0 TO 5' WITH SCH 40 PVC

DRILL RIG CME 75

SCREENED FROM 5' TO 25' WITH 0.020" SLOT

DRILL METHOD HOLLOW STEM AUGER

WELL DEPTH 25' WELL DIAMETER 4"

DATE(S) DRILLED JUNE 2, 1993

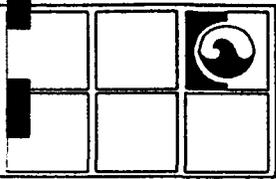
ELEVATION 596.36'

LOGGED BY DOUG YEATS

ANNULUS COMPLETION SANDPACK 25'-3'; BENTONITE 3'-1'; GROUT 1'-0

OTHER WELL COMPLETED WITH CONCRETE EMBEDDED MANHOLE COVER & LOCKING CAP.

WELL DETAIL	DEPTH	GRAPHIC COLUMN	LITHOLOGICAL DESCRIPTION	SAMPLE	COMMENTS
			TOPSOIL to 4", SILTY SANDY CLAY: dry, friable, fill material	0-2'	BC=9-8-7-6 PID=12
			SILTY SANDY CLAY: As above with asphalt in fill material	2-4'	BC=7-6-4-5 PID=7
	5		SANDY CLAY: Brn-reddish grey, gravelly, fill material, sl moist to dry, mod. soft	4-6'	BC=2-3-5-7 PID=2
			SANDY CLAY: Greenish drk brn, w/under- composed plant matter, sl moist, cohesive	6-8'	BC=24-26-12-8 PID=12
	10		SANDY CLAY: As above, with substantial rock debris, sl moist	8-10'	BC=12-8-7-12 PID=1
			SANDY CLAY: As above	10-12'	BC=12-7-3-2 PID=0
			SANDY CLAY: As above	12-14'	BC=11-8-7-5 PID=9
	15		SANDY CLAY: Greenish brn, very moist to saturated, some undercomposed plant matter, soft (Lab Sample)	14-16'	BC=2-2-2-2 PID=13
	20		SILTY CLAY: Greenish grey to brn, mottled saturated, mod. soft, mod. tight	19-21'	BC=6-6-7-8 PID=3
	25		SILTY CLAY: Greenish grey to brn, very silty, saturated, very tight	24-26'	BC=4-5-5-6
	30				



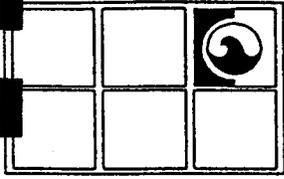
**GROUNDWATER
TECHNOLOGY INC.**

CLIENT: SUN COMPANY, INC.
 PROJECT NAME: SUN - ELM ST.
 PROJECT NUMBER: 053245445
 LOCATION: 2903 S. ELM ST.
GREENSBORO, NC
 DRILLER: FISHBURNE DRILLING, INC.

DATE 07/08/93 WELL NUMBER MW-4
 CASSED FROM 0 TO 5' WITH SCH 40 PVC
 SCREENED FROM 5' TO 25' WITH 0.020" SLOT
 WELL DEPTH 25' WELL DIAMETER 4"
 ELEVATION 596.47'
 ANNULUS COMPLETION SANDPACK 25'-3'; BENTONITE 3'-1'; GROUT 1'-0
 OTHER WELL COMPLETED WITH CONCRETE EMBEDDED MANHOLE COVER & LOCKING CAP

DRILL RIG CME 75
 DRILL METHOD HOLLOW STEM AUGER
 DATE(S) DRILLED JUNE 2, 1993
 LOGGED BY DOUG YEATS

WELL DETAIL	DEPTH	GRAPHIC COLUMN	LITHOLOGICAL DESCRIPTION	SAMPLE	COMMENTS
			ASPHALT/crusher-run to 5", SANDY CLAY:	0-2'	BC=6-5-5-6 PID=360
			Red, mst & cohesive - dry & friable, soft		
			SANDY CLAY: Grn-brn, sl moist, soft to	2-4'	BC=5-4-4-5 PID=120
	5		2.5', CLAY: Blk, saturated, org. rich w/ some undercomposed plant matter 2.5-3.5'		
			CLAY: As above to 5.5', SANDY CLAY: Tan-	4-6'	BC=4-4-5-9 PID=186
			brn v F to C-gr, dry, friable, mod. stiff		
			SANDY CLAY: Tan-greenish brn, v F to C-	6-8'	BC=10-8-10-7 PID=54
	10		grained, sl moist sl friable, mod. stiff		
			SANDY CLAY: Lt grn-tan to off wht,	8-10'	BC=4-6-8-6 PID=51
			mottled, saprolitic, v moist, mod. stiff		
			SANDY CLAY: As above, with orange-tan	10-12'	BC=3-4-4-5 PID=40
			mottles		
	15		SANDY CLAY: Brn, soft, plastic, v moist to saturated (Lab Sample)	12-14'	BC=5-5-6-7 PID=89
			SANDY CLAY: Tree material from 13-14.5', solid wood then, brn, v soft, saturated	14-16'	BC=30-18-4-3 PID=47
	20		SILTY CLAY: Dark grey, organic rich, saturated, very soft	19-21'	BC=3-2-1-2 PID=67
	25				
			SILTY CLAY: As above	24-26'	BC=5-4-3-5 PID=52
	30				



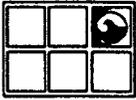
GROUNDWATER TECHNOLOGY INC.

CLIENT: SUN COMPANY, INC.
 PROJECT NAME: SUN - ELM ST.
 PROJECT NUMBER: 053245445
 LOCATION: 2903 S. ELM ST.
GREENSBORO, NC
 DRILLER: FISHBURNE DRILLING, INC.

DATE 07/08/93 WELL NUMBER VMW-5
 CASED FROM 0 TO 43' WITH SCH 40 PVC
 SCREENED FROM 43' TO 48' WITH 0.020" SLOT
 WELL DEPTH 48' WELL DIAMETER 2"
 ELEVATION 597.10'
 ANNULUS COMPLETION SANDPACK 48'-41'; BENTONITE 41'-39'; GROUT 39'-0
 OTHER COMPLETED W/CONCRETE EMBEDDED MH COVER & LOCKING CAP. 6" OUTER CASING TO 35'

DRILL RIG CME 75
 DRILL METHOD HOLLOW STEM AUGER & AIR ROTARY
 DATE(S) DRILLED JUNE 1, 1993
 LOGGED BY DOUG YEATS

WELL DETAIL	DEPTH	GRAPHIC COLUMN	LITHOLOGICAL DESCRIPTION	SAMPLE	COMMENTS
	5 10 15 20 25 30 35 40 45 50		ASPHALT/crusher-run to 5". SANDY CLAY: Red-brn to blk, s gravel, dry, mod. stiff	0-2'	BC=5-7-5-9 PID=9
			SANDY CLAY: As above, moist, mod. soft	2-4'	BC=6-5-5-20 PID=22
			SANDY CLAY: Drk brn, mod. soft, sl moist	4-6'	BC=5-6-6-8 PID=4
			SANDY CLAY: Drk grn-grey to brn w/under- composed plant matter, sl mst, mod. soft	6-8'	BC=12-7-9-11 PID=3
			SANDY CLAY: Lt grn-grey to brn, organic- rich, very soft, very moist	8-10'	BC=2-3-3-2 PID=2
			SANDY CLAY: As above	10-12'	BC=3-3-2-3 PID=2
			SANDY CLAY: Brk brn to blk, soft, very moist to saturated (Lab Sample)	12-14'	BC=5-7-7-6 PID=6
			SANDY CLAY: As above, Lt brn to grey	14-16'	BC=2-5-6-3 PID=2
			SANDY CLAY: Grey, soft, saturated	16-18'	BC=3-3-3-4 PID=2
			SANDY CLAY: Lt grey, very soft, saturated	18-20'	BC=1-1-1-1 PID=4
			CLAYEY SAND: Lt grey, fine to medium- grained, loose, soft, saturated	25-27'	BC=3-2-3-4 PID=4
			CLAYEY SAND: As above, some gravel	30-32'	BC=2-2-3-3 PID=2
			CLAYEY SAND: As above to 34.5' then	34-36'	BC=15-13-19-22 PID=4
			SAPROLITE: Orange-tan-off white, slightly clayey fine to coarse-grained sand, highly weathered, sharp contact, saturated		



GROUNDWATER
TECHNOLOGY

Drilling Log

Monitoring Well **MW-6**

Project Sun/Elm St. Owner Sunoco
 Location 2903 S. Elm St., Greensboro, NC Proj. No. 05324-00102
 Surface Elev. _____ Total Hole Depth 20 ft. Diameter 8 in.
 Top of Casing _____ Water Level Initial _____ Static _____
 Screen: Dia 2 in. Length 5 ft. Type/Size 20 SLOT in.
 Casing: Dia 2 in. Length 15 ft. Type PVC
 Fill Material SAND Rig/Core CME 75
 Drill Co. Rock-Ray Drilling Method HOLLOW STEM AUGER
 Driller R. Schmon Log By J. KIRKPATRICK Date 8/19/95 Permit # _____
 Checked By _____ License No. _____

See Site Map
For Boring Location

COMMENTS:

Depth (ft.)	Well Completion	FID (ppm)	Sample ID Blow Count/ % Recovery	Graphic Log	USCS Class.	Description
						(Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						(0-25') Asphalt
2						(0-25') Grass and roots.
4						(.25-2") Slightly silty fine to medium SAND; Fill; dry
6		98	9/100%			(2-4') Green, gray, black silty fine to coarse sandy CLAY with organics (wood fragments) and gravel; moist; strong odor of diesel fuel.
8		700	14/100%			(4-6') Little recovery - looks like slough.
10		1000+	39/100%		ML	(6-8') Greenish gray silty, fine to coarse sandy CLAY with gravel; moist; no odor.
12		1000+	7/100%			(8-10') Greenish-gray fine to medium sandy CLAY with gravel; moist; no odor.
14		98	8/100%			(10-12') Same as above; moist to wet; no odor.
16		280	3/100%			(12-14') Same as above; wet; no odor.
18		1000+	10/100%			(14-16') Tan, orange, and gray fine to coarse sandy silty CLAY; Alluvium; wet
20		1000+	10/100%			(16-18') Dark gray to black silty CLAY with wood fragments; wet; no odor.
22						(18-20') Dark gray to black fine sandy CLAY with wood fragments; moist to wet; no odor.
24						(16-17') Same as above.
26						(17-18') Light brown SILT; wet.
28						(18-20') Same as above.
30						



GROUNDWATER
TECHNOLOGY

Drilling Log

Soil Boring SB-1

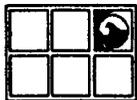
Project Sun/Em St. Owner Sunoco
 Location 2903 Elm St. Proj. No. 053240102
 Surface Elev. NA ft. Total Hole Depth 20 ft. Diameter 4 in.
 Top of Casing NA ft. Water Level Initial NA ft. Static NA ft.
 Screen: Dia NA in. Length NA ft. Type/Size NA in.
 Casing: Dia NA in. Length NA ft. Type NA
 Fill Material NA Rig/Core CME-75
 Drill Co. Rock-Ray Drilling Inc. Method HSA
 Driller Rocky Schmon Log By J. Kirkpatrick Date 08/19/95 Permit # _____
 Checked By _____ License No. _____

See Site Map
For Boring Location

COMMENTS:

NA = not applicable

Depth (ft.)	FID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description
						(Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						(0-.5') Concrete
2					ML	(.5-4') Light brown silty fine to coarse SAND with gravel.
4						(4-6') Grayish-green silty fine to very coarse SAND; dry.
6	4.0		4			(6-8') Concrete fill.
8	4.0		50/3		CL	(8-10') Same as above.
10			50/0			(10-12') Grayish-green silty fine to very coarse SAND; Fill, dry.
12	100		7			(12-14') Rods fell through void.
14					ML	(14-16") Dark gray-black fine to medium sandy silty CLAY; Alluvium; moist to wet with wood fragments.
16	84		7		SC	(16-18") Dark gray-black fine sandy CLAY; wet.
18	1000+		9			
20	25		10		ML	(18-20") Medium gray fine sandy clayey SILT; wet. (29-31') Hard, white, gray, and black fine to medium quartz sandy SILT; fine black mineral grains.
22						
24						
26						
28						
30						



GROUNDWATER
TECHNOLOGY

Drilling Log

Soil Boring **SB-2**

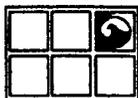
Project Sun/Elm St. Owner Sunoco
 Location 2903 Elm St. Proj. No. 053240102
 Surface Elev. NA ft. Total Hole Depth 20 ft. Diameter 4 in.
 Top of Casing NA ft. Water Level Initial NA ft. Static NA ft.
 Screen: Dia NA in. Length NA ft. Type/Size NA in.
 Casing: Dia NA in. Length NA ft. Type NA
 Fill Material NA Rig/Core CME-75
 Drill Co. Rock-Ray Drilling Inc. Method HSA
 Driller Rocky Schmon Log By J. Kirkpatrick Date 08/19/95 Permit # _____
 Checked By _____ License No. _____

See Site Map
For Boring Location

COMMENTS:

NA - not applicable

Depth (ft.)	FID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description
						(Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						(0-.5') Concrete
2	0.4		18		GW	(.5-4') Light brown silty fine to coarse SAND with gravel.
4	0.4		10		SP	
6	48		50/3		ML	(4-6') Brown gray fine to medium sandy silty CLAY; moist.
8			50/3			(6-8') Gray-green silty fine to very coarse SAND; moist.
10			50/0		SM	(8-10') Concrete fill.
12	54		12			(10-12') Gray-green silty fine to very coarse SAND; saturated.
14						
16						
18						
20						
22						
24						
26						
28						
30						



GROUNDWATER
TECHNOLOGY

Drilling Log

Soil Boring **SB-3**

Project Sun/Elm St. Owner Sunoco
 Location 2903 Elm St. Proj. No. 053240102
 Surface Elev. NA ft. Total Hole Depth 20 ft. Diameter 4 in.
 Top of Casing NA ft. Water Level Initial NA ft. Static NA ft.
 Screen: Dia NA in. Length NA ft. Type/Size NA in.
 Casing: Dia NA in. Length NA ft. Type NA
 Fill Material NA Rig/Core CME-75
 Drill Co. Rock-Ray Drilling Inc. Method HSA
 Driller Rocky Schmon Log By J. Kirkpatrick Date 08/19/95 Permit # _____
 Checked By _____ License No. _____

See Site Map
For Boring Location

COMMENTS:

NA = not applicable

Depth (ft.)	FID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description
						(Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						(0-.5') Concrete
2						
4						(.5-6') Gray-green silty fine to very coarse SAND with gravel; dry.
6	180		5			(6-8') Same as above; moist.
8	320		3		GM	(8-10') Same as above.
10	100		3			(10-12') Same as above.
12	50		2			(12-14') Same as above.
14	150		14			
16						
18						
20						
22						
24						
26						
28						
30						



GROUNDWATER
TECHNOLOGY

Drilling Log

Soil Boring SB-4

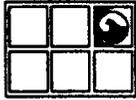
Project Sun/Elm St. Owner Sunoco
 Location 2903 Elm St. Proj. No. 053240102
 Surface Elev. NA ft. Total Hole Depth 20 ft. Diameter 4 in.
 Top of Casing NA ft. Water Level Initial NA ft. Static NA ft.
 Screen: Dia NA in. Length NA ft. Type/Size NA in.
 Casing: Dia NA in. Length NA ft. Type NA
 Fill Material NA Rig/Core CME-75
 Drill Co. Rock-Ray Drilling Inc. Method HSA
 Driller Rocky Schmon Log By J. Kirkpatrick Date 08/19/95 Permit # _____
 Checked By _____ License No. _____

See Site Map
For Boring Location

COMMENTS:

NA = not applicable

Depth (ft.)	FID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
						-2
0						(0-.5') Concrete
2	180		15			(.5-2') Gray-green silty fine to very coarse SAND with gravel; dry.
4	50		4		SP	(2-4') Same as above.
6	120		5			(4-6') Same as above.
8	110		4			(6-8') Same as above; moist.
10	900		8		SC	(8-10') Dark gray fine to coarse sandy silty CLAY; wet.
12	752		7			(10-12') Same as above.
14	880		5		GC	(12-14') Same as above; with gravel.
16	780		5		ML	(14-16') Dark gray fine to coarse sandy silty CLAY; wet.
18						
20						
22						
24						
26						
28						
30						



GROUNDWATER
TECHNOLOGY

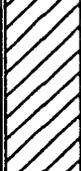
Drilling Log

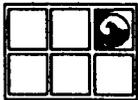
Soil Boring TB-2

Project Sun/Elm St. Owner Sunoco
 Location 2903 Elm St. Proj. No. 053240102
 Surface Elev. NA ft. Total Hole Depth 10 ft. Diameter 2 in.
 Top of Casing NA ft. Water Level Initial NA ft. Static NA ft.
 Screen: Dia NA in. Length NA ft. Type/Size NA in.
 Casing: Dia NA in. Length NA ft. Type NA
 Fill Material NA Rig/Core CME-75
 Drill Co. McCall Brothers, Inc. Method HSA
 Driller _____ Log By B. Viscuso Date 12/20/95 Permit # _____
 Checked By _____ License No. _____

See Site Map
For Boring Location

COMMENTS:

Depth (ft.)	FID (ppm)	Sample ID Blow Count/ % Recovery	Graphic Log	USCS Class.	Description
					(Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2					
0				GR	(0-.5') Grass
2	85	4/4			Medium stiff to stiff, brown/tan/gray, CLAY, Alluvium mottled, wet
4	1000+	3/4		CL	Soft, black/gray, Silty CLAY, some sand, wet
6	1000+	8/10			Grades medium stiff to stiff
8	300	5/7			Grades stiff
10					



GROUNDWATER
TECHNOLOGY

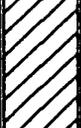
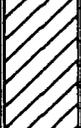
Drilling Log

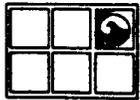
Soil Boring TB-3

Project Sun/Elm St. Owner Sunoco
 Location 2903 Elm St. Proj. No. 053240102
 Surface Elev. NA ft. Total Hole Depth 10 ft. Diameter 2 in.
 Top of Casing NA ft. Water Level Initial NA ft. Static NA ft.
 Screen: Dia NA in. Length NA ft. Type/Size NA in.
 Casing: Dia NA in. Length NA ft. Type NA
 Fill Material NA Rig/Core CME-75
 Drill Co. McCall Brothers, Inc. Method HSA
 Driller _____ Log By B. Viscuso Date 12/20/95 Permit # _____
 Checked By _____ License No. _____

See Site Map
For Boring Location

COMMENTS:

Depth (ft.)	FID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description
						(Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0					GR	(0-.5') Grass
2	800		5/10			Medium stiff, brown/tan/gray, Silty CLAY, Alluvium mottled, wet
4	10		4/8			Grades soft to medium stiff
6	220		4/4		CL	No sample, rock in split spoon
8	1000+		8/3			Grades medium stiff
10						



GROUNDWATER
TECHNOLOGY

Drilling Log

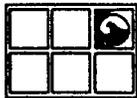
Soil Boring TB-4

Project Sun/Elm St. Owner Sunoco
 Location 2903 Elm St. Proj. No. 053240102
 Surface Elev. NA ft. Total Hole Depth 4 ft. Diameter 1 in.
 Top of Casing NA ft. Water Level Initial NA ft. Static NA ft.
 Screen: Dia NA in. Length NA ft. Type/Size NA in.
 Casing: Dia NA in. Length NA ft. Type NA
 Fill Material NA Rig/Core _____
 Drill Co. _____ Method Hand Auger
 Driller Aaron Hill Log By J. Leaver Date 1/08/96 Permit # _____
 Checked By _____ License No. _____

See Site Map
For Boring Location

COMMENTS:

Depth (ft.)	FID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
						-2
0					GR	(0-.5') Grass
2	5.4				ML	SILT, Fill
4	9.5					SIIT, Fill, some medium gravel
6						
8						
10						



GROUNDWATER
TECHNOLOGY

Drilling Log

Soil Boring TB-5

Project Sun/Elm St. Owner Sunoco
 Location 2903 Elm St. Proj. No. 053240102
 Surface Elev. NA ft. Total Hole Depth 8 ft. Diameter 1 in.
 Top of Casing NA ft. Water Level Initial NA ft. Static NA ft.
 Screen: Dia NA in. Length NA ft. Type/Size NA in.
 Casing: Dia NA in. Length NA ft. Type NA
 Fill Material NA Rig/Core _____
 Drill Co. _____ Method Hand Auger
 Driller Aaron Hill Log By J. Leaver Date 1/08/96 Permit # _____
 Checked By _____ License No. _____

See Site Map
For Boring Location

COMMENTS:

Depth (ft.)	FID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
						-2
0					GR	(0-.5') Grass
2	5.4				ML	SILT, Fill
4	9.5					Gray, CLAY, Alluvium
6	4.5				CL	Gray/green, CLAY, some medium sand
8	4.1					
10						



GROUNDWATER
TECHNOLOGY

Drilling Log

Soil Boring **TB-6**

Project Sun/Elm St. Owner Sunoco
 Location 2903 Elm St. Proj. No. 053240102
 Surface Elev. NA ft. Total Hole Depth 6 ft. Diameter 1 in.
 Top of Casing NA ft. Water Level Initial NA ft. Static NA ft.
 Screen: Dia NA in. Length NA ft. Type/Size NA in.
 Casing: Dia NA in. Length NA ft. Type NA
 Fill Material NA Rig/Core _____
 Drill Co. _____ Method Hand Auger
 Driller Aaron Hill Log By J. Leaver Date 1/08/96 Permit # _____
 Checked By _____ License No. _____

See Site Map
For Boring Location

COMMENTS:

Depth (ft.)	FID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0					GR	(0-.5') Grass
2	3.3				SM	SILT, Fill
4	5.2				NL	Dark gray, clayey SILT, Alluvium
6	5.8					Auger refusal
8						
10						

APPENDIX B
SOIL ANALYTICAL REPORTS



ENVIRONMENTAL
LABORATORIES, INC.

Southeast Region
10500 University Center Drive, Suite 160
Tampa, FL 33612
(813) 979-9092 800-933-GTEL (4835)
FAX: 813-979-6914

January 17, 1996

Herb Berger
Groundwater Technology Inc.
1000 Perimeter Park Drive #I
Morrisville, NC 27560

RE: GTEL Client ID: 053240102
Login Number: F5120312
Project ID (number): 053240102
Project ID (name): SUN/ELM STREET, GREENSBORO, NC

Dear Herb Berger:

This report, previously dated 01/12/96, is a reissue.

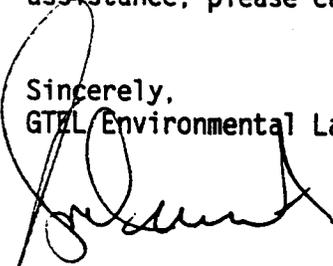
Enclosed please find the analytical results for the samples received by GTEL Environmental Laboratories, Inc. on 12/22/95 under Chain-of-Custody Number(s) 24837.

A formal Quality Assurance/Quality Control (QA/QC) program is maintained by GTEL, which is designed to meet or exceed the EPA requirements. Analytical work for this project met QA/QC criteria unless otherwise stated in the footnotes. This Analytical report shall not be reproduced except in full.

GTEL is certified (approved) by the State of Florida under Certification Number HRS E84196, by the State of South Carolina under Certificate Number 96025, and by the State of Tennessee for UST list.

If you have any questions regarding this analysis, or if we can be of further assistance, please call our Customer Service Representative.

Sincerely,
GTEL Environmental Laboratories, Inc.



Harold Vernon
Laboratory Director

ANALYTICAL RESULTS

**Total Petroleum Hydrocarbons in Soil
by GC/FID^a**

GTEL Sample Number		120312-04	120312-05	--	--
Client Identification		TB 2 6-8'	TB 3 8-10'	--	--
Date Sampled		12-20-95	12-20-95	--	--
Date Extracted		01-02-96	01-02-96	--	--
Date Analyzed		01-02-96	01-03-96	--	--
Total Petroleum Hydrocarbons as:	RL, mg/kg ^b	Concentration, mg/kg			
Diesel	10	110*	<12	--	--
Unknown Hydrocarbons	10	<12	15	--	--
Dilution Multiplier ^c		1	1	--	--

- * Result was also contributed by unknown hydrocarbons.
- a Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA September 1986; Methylene chloride extraction by EPA Method 3550. CA-LUFT Manual, DOHS-CA, Oct. 1989. Results reported on a dry weight basis.
- b RL = Reporting Limit.
- c The Dilution Multiplier indicates the factor necessary for the adjustment of the reporting limits due to sample dilutions.



GTEL

ENVIRONMENTAL
LABORATORIES, INC.

Southeast Region
10500 University Center Drive, Suite 160
Tampa, FL 33612
(813) 979-9092 (800) 933-GTEL (4835)
Fax: (813) 979-6914

RECEIVED
JAN 15 1996

January 11, 1996

Herb Berger
GROUNDWATER TECHNOLOGY INC.
1000 Perimeter Park
Morrisville, NC 27560

RE: GTEL Client ID: 053245454
Login Number: F6010092
Project ID (number): 053245454
Project ID (name): SUN/ELM ST., GREENSBORO, NC

Dear Herb Berger:

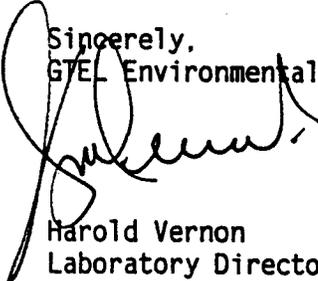
Enclosed please find the analytical results for the samples received by GTEL Environmental Laboratories, Inc. on 01/10/96 under Chain-of-Custody Number(s) 25498.

A formal Quality Assurance/Quality Control (QA/QC) program is maintained by GTEL, which is designed to meet or exceed the EPA requirements. Analytical work for this project met QA/QC criteria unless otherwise stated in the footnotes. This Analytical report shall not be reproduced except in full.

GTEL is certified (approved) by the State of Florida under Certification Number HRS E84196, by the State of South Carolina under Certificate Number 96025, and by the State of Tennessee for UST list.

If you have any questions regarding this analysis, or if we can be of further assistance, please call our Customer Service Representative.

Sincerely,
GTEL Environmental Laboratories, Inc.



Harold Vernon
Laboratory Director

GTEL Client ID: 053240102
Login Number: F5120312
Project ID (number): 053240102
Project ID (name): SUN/ELM STREET, GREENSBORO, NC

ANALYTICAL RESULTS

Volatiles Organics
Method: TENNESSEE
Matrix: Low Soil

GTEL Sample Number	F5120312-04	F5120312-05
Client ID	TB-206-B	TB-306-10
Date Sampled	12/20/95	12/20/95
Date Analyzed	12/28/95	12/28/95
Dilution Factor	1.00	1.00

Analyte	Reporting Limit	Units	Concentration	Dry Weight
Gasoline Range Organics	100	ug/kg	< 120	< 120
Percent Solids	--	%	80.4	81.2

Notes:

Dilution Factor:

Dilution factor indicates the adjustments made for sample dilution.

TENNESSEE:

"Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846, Third Edition including Update 1. Analyte list modified to include additional compounds. Gasoline Range Hydrocarbons (TPH) quantitated by GC/FID with purge and trap.

GTEL Client ID: 053245454
 Login Number: F6010092
 Project ID (number): 053245454
 Project ID (name): SUN/ELM ST., GREENSBORO, NC

ANALYTICAL RESULTS

Volatiles Organics
 Method: 8020/DOHS,
 Matrix: Low Soil

GTEL Sample Number	F6010092-01	F6010092-02	F6010092-03	F6010092-04
Client ID	TB-4	TB-5	TB-6	TB-7
Date Sampled	01/08/96	01/08/96	01/08/96	01/08/96
Date Analyzed	01/10/96	01/11/96	01/11/96	01/11/96
Dilution Factor	1.00	1.00	1.00	1.00

Analyte	Reporting		Concentration:Wet Weight			
	Limit	Units				
Benzene	1.0	ug/kg	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	2.0	ug/kg	< 2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	2.0	ug/kg	< 2.0	< 2.0	< 2.0	< 2.0
Xylenes (total)	4.0	ug/kg	< 4.0	< 4.0	< 4.0	< 4.0
TPH as Gasoline	100	ug/kg	< 100	< 100	< 100	< 100
Percent Solids	--	%	86.4	81.0	84.0	79.5

Notes:

Dilution Factor:

Dilution factor indicates the adjustments made for sample dilution.

8020/DOHS, CA LUFT:

"Test Methods for Evaluating Solid Waste. Physical/Chemical Methods". SW-846. Third Edition including Update 1. Analyte list modified to include additional compounds. Gasoline Range Hydrocarbons (TPH) quantitated by GC/FID with purge and trap.

GTEL Client ID: 053245454
Login Number: F6010092
Project ID (number): 053245454
Project ID (name): SUN/ELM ST.,GREENSBORO,NC

ANALYTICAL RESULTS

Volatiles Organics
Method: 8020/DOHS,
Matrix: Low Soil

GTEL Sample Number F6010092-05
Client ID TB-EG
Date Sampled 01/08/96
Date Analyzed 01/10/96
Dilution Factor 1.00

Analyte	Reporting Limit	Units	Concentration	Wet Weight
Benzene	1.0	ug/kg	< 1.0	-- -- --
Toluene	2.0	ug/kg	< 2.0	-- -- --
Ethylbenzene	2.0	ug/kg	< 2.0	-- -- --
Xylenes (total)	4.0	ug/kg	< 4.0	-- -- --
TPH as Gasoline	100	ug/kg	< 100	-- -- --
Percent Solids	--	%	82.6	-- -- --

Notes:

Dilution Factor:

Dilution factor indicates the adjustments made for sample dilution.

8020/DOHS, CA LUFT:

"Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846, Third Edition including Update 1. Analyte list modified to include additional compounds. Gasoline Range Hydrocarbons (TPH) quantitated by GC/FID with purge and trap.

ANALYTICAL RESULTS

Total Petroleum Hydrocarbons in Soil by GC/FID^a

GTEL Sample Number		010092-01	010092-02	010092-03	010092-04
Client Identification		TB 4	TB 5	TB 6	TB 7
Date Sampled		01-08-96	01-08-96	01-08-96	01-08-96
Date Extracted		01-10-96	01-10-96	01-10-96	01-10-96
Date Analyzed		01-11-96	01-11-96	01-11-96	01-11-96
Total Petroleum Hydrocarbons as:	RL, mg/kg ^b	Concentration, mg/kg			
Diesel	10	<12	<12	<12	<13
Unknown Hydrocarbons	10	180	120	370	970
Dilution Multiplier ^c		5	5	5	5

- a Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA September 1986; Methylene chloride extraction by EPA Method 3550. CA-LUFT Manual, DOHS-CA, Oct. 1989. Results reported on a dry weight basis.
- b RL = Reporting Limit.
- c The Dilution Multiplier indicates the factor necessary for the adjustment of the reporting limits due to sample dilutions.

ANALYTICAL RESULTS

**Total Petroleum Hydrocarbons in Soil
by GC/FID^a**

GTEL Sample Number		010092-05	--	--	--
Client Identification		TB-BG	--	--	--
Date Sampled		01-08-96	--	--	--
Date Extracted		01-10-96	--	--	--
Date Analyzed		01-11-96	--	--	--
Total Petroleum Hydrocarbons as:	RL, mg/kg ^b	Concentration, mg/kg			
Diesel	10	<12	--	--	--
Unknown Hydrocarbons	10	170	--	--	--
Dilution Multiplier ^c		5	--	--	--

- a Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA September 1986; Methylene chloride extraction by EPA Method 3550. CA-LUFT Manual, DOHS-CA, Oct. 1989. Results reported on a dry weight basis.
- b RL = Reporting Limit.
- c The Dilution Multiplier indicates the factor necessary for the adjustment of the reporting limits due to sample dilutions.

RESULTS
PERCENT SOLIDS

GTEL Sample Number	010092-01	010092-02	010092-03	010092-04	010092-05
Client Identification	TB 4	TB 5	TB 6	TB 7	TB BG
	Percent				
Percent Solids	86.4	81.0	84.0	79.5	82.6



10500 UNIVERSITY CENTER DRIVE
TAMPA, FL 33612
(813) 979-9092

CHAIN-OF-CUSTODY RECORD
AND ANALYSIS REQUEST

25498

ANALYSIS REQUEST OTHER

Company Name: **GTI**
 Phone #: (919) 967-2227
 FAX #: (919) 967-2299
 Site Location: **MORRISVILLE, NC**
 Project Manager: **HELLS BEBER**
 Client Project ID: (#) **05224-576Y**
 (NAME) **SUN/BEAR ST**
 Sampler Name (Print): **JEFF LEAVER**

Field Sample ID	GTEL Lab # (Lab Use only)	# CONTAINERS	Matrix				Method Preserved				Sampling				
			WATER	SOIL	AIR	SLUDGE	PRODUCT	OTHER	HCl	HNO ₃	H ₂ SO ₄	ICE	Other (Specify)	DATE	TIME
TB-4	01	1	X	X					X	X	X			1/8	1200
TB-5	02	1	X	X					X	X	X			13/0	1310
TB-6	03	1	X	X					X	X	X			1430	1430
TB-7	01	1	X	X					X	X	X			1540	1540
TB-6G	05	1	X	X					X	X	X			1630	1630

<input type="checkbox"/> BTEX 602 <input type="checkbox"/> 8020 <input type="checkbox"/> with MTBE	<input type="checkbox"/> BTEX/Gas Hydrocarbons PID/FID <input type="checkbox"/> with MTBE	<input type="checkbox"/> Hydrocarbons GC/FID Gas <input type="checkbox"/> Diesel <input type="checkbox"/> Screen	<input type="checkbox"/> Hydrocarbon Profile (SIMDIS)	<input type="checkbox"/> Oil and Grease 413.1 <input type="checkbox"/> 413.2 <input type="checkbox"/> SM-503	<input type="checkbox"/> TPH/R 418.1 <input type="checkbox"/> SM 503	<input type="checkbox"/> EDB by 504 <input type="checkbox"/> DBCP by 504	<input type="checkbox"/> EPA 503.1 <input type="checkbox"/> EPA 502.2	<input type="checkbox"/> EPA 601 <input type="checkbox"/> EPA 8010	<input type="checkbox"/> EPA 602 <input type="checkbox"/> EPA 8020	<input type="checkbox"/> EPA 608 <input type="checkbox"/> 8080 <input type="checkbox"/> PCB only	<input type="checkbox"/> EPA 624/PPL <input type="checkbox"/> 8240/TAL <input type="checkbox"/> NBS (+15)	<input type="checkbox"/> EPA 625/PPL <input type="checkbox"/> 8270/TAL <input type="checkbox"/> NBS (+25)	<input type="checkbox"/> EPA 610 <input type="checkbox"/> 8310	<input type="checkbox"/> EP TOX Metals <input type="checkbox"/> Pesticides <input type="checkbox"/> Herbicides	<input type="checkbox"/> TCLP Metals <input type="checkbox"/> VOA <input type="checkbox"/> Semi-VOA <input type="checkbox"/> Pest <input type="checkbox"/> Herb	<input type="checkbox"/> EPA Metals - Priority Pollutant <input type="checkbox"/> TAL <input type="checkbox"/> RCRA	<input type="checkbox"/> CAM Metals TLLC <input type="checkbox"/> STLC	<input type="checkbox"/> Lead 239.2 <input type="checkbox"/> 200.7 <input type="checkbox"/> 7420 <input type="checkbox"/> 7421 <input type="checkbox"/> 6010	<input type="checkbox"/> Organic Lead	<input type="checkbox"/> Corrosivity <input type="checkbox"/> Flash Point <input type="checkbox"/> Reactivity
--	---	--	---	--	--	--	---	--	--	--	---	---	--	--	---	---	--	--	---------------------------------------	---

REMARKS:

SPECIAL DETECTION LIMITS

SPECIAL REPORTING REQUIREMENTS
 FAX

Lab Use Only Lot #: **3**
 Storage Location: **SA-2**
 Work Order #: **F101092**

<input type="checkbox"/> Priority (24 hr) <input type="checkbox"/> Expedited (48 hr) <input type="checkbox"/> 7 Business Days <input type="checkbox"/> Other: STD Business Days	<input type="checkbox"/> Blue <input type="checkbox"/> CLP <input type="checkbox"/> Other <input type="checkbox"/>	Relinquished by Sampler: Jeff Leaver Relinquished by: Jeff Leaver Relinquished by:	Date: 1/9/96 Time: 1620 Date: Time: Date: 1/10/96 Time: 10:30
---	--	--	---

CUSTODY RECORD

Received by Laboratory: **Hellie Veatch**
 Waybill #

APPENDIX C
SITE SENSITIVITY EVALUATION

Table 1
Site Sensitivity Evaluation (SSE)
 Site Characteristics Evaluation (Step 1)

Characteristic	Condition	Rating	
Grain Size*	Gravel	150	0
	Sand	100	
	Silt	50	
	Clay	0	
Are relict structures, sedimentary structures, and/or textures present in the zone of contamination and underlying "soils"?	Present and intersecting the water table.	10	50
	Present but <u>not</u> intersecting the water table.	5	
	None present.	0	
Distance from location of deepest contaminated soil** to water table.	0 -5 feet (C, D & E sites only)	20	20
	5 - 10 feet	20	
	>10 - 40 feet	10	
	> 40 feet	0	
Is the top of bedrock or transmissive indurated sediments located above the water table?	Yes	20	0
	No	0	
Artificial conduits present within the zone of contamination.	Present and intersecting the water table.	10	5
	Present but <u>not</u> intersecting the water table.	5	
	Not present.	0	

Total Site Characteristics Score: 30

* Predominant grain size based on Unified Soil Classification System or U.S. Dept. of Agriculture's Soil Classification Method.

** (>10 ppm TPFH by Method 5030; >40 ppm TPFH by Method 3550; >250 ppm O&G by Method 9071)

3/10/93

Table 2

Site Sensitivity Evaluation (SSE)
 Initial Cleanup Level (Step 2) Final Cleanup Level (Step 3)

EPA Method 5030 for Low Boiling Point Hydrocarbons such as Gasoline, Aviation Fuels, Gasohol

Total Site Characteristics Score	Initial Cleanup Level TPFH (ppm)	Select Site Category*	Category A & B (Multiply initial cleanup level by 1)	Final Cleanup Level
>150	≤10		↓ Select Site Category* →	1 x _____ = _____ ppm
121-150	20	2 x _____ = _____ ppm		
91-120	40	3 x _____ = _____ ppm		
61-90	60			
31-60	80			
0-30	100			

EPA Method 3550 for High Boiling Point Hydrocarbons such as Kerosene, Diesel, Varsol, Mineral Spirits, Naphtha

Total Site Characteristics Score	Initial Cleanup Level TPFH (ppm)	Select Site Category*	Category A & B (Multiply initial cleanup level by 1)	Final Cleanup Level
>150	≤40		↓ Select Site Category* →	1 x _____ = _____ ppm
121-150	80	2 x _____ = _____ ppm		
91-120	160	3 x <u>320</u> = <u>960</u> ppm		
61-90	240			
31-60	320			
0-30	400			

EPA Method 9071 for Heavy Fuels - Oil & Grease (O&G) such as Fuel Oil #4, #5, #6, Motor Oil, Hydraulic Fluid

Total Site Characteristics Score	Initial Cleanup Level O&G (ppm)	Select Site Category*	Category A & B (Multiply initial cleanup level by 1)	Final Cleanup Level
>150	≤250		↓ Select Site Category* →	1 x _____ = _____ ppm
121-150	400	2 x _____ = _____ ppm		
91-120	550	3 x _____ = _____ ppm		
61-90	700			
31-60	850			
0-30	1000			

* See Site Category Descriptions, Table 3

**APPENDIX D
SLUG TEST DATA**

A:\elmstcse.rpt

MW-4 Run 0

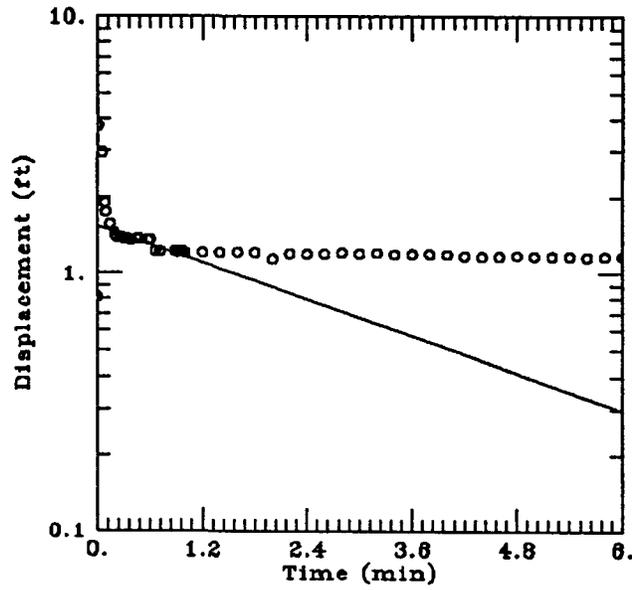
Time

Time

0.08	3.75
0.058	2.94
0.09	1.89
0.1	1.74
0.15	1.56
0.2	1.42
0.22	1.388
0.26	1.394
0.28	1.388
0.3	1.375
0.33	1.372
0.38	1.357
0.45	1.369
0.48	1.366
0.58	1.354
0.6	1.36
0.66	1.224
0.716	1.211
0.88	1.224
0.9	1.217
0.916	1.217
0.93	1.22
0.95	1.224
0.96	1.22
0.98	1.22
1	1.208
1.2	1.208
1.4	1.211
1.6	1.214
1.8	1.211
2	1.14
2.2	1.199
2.4	1.196
2.6	1.196
2.8	1.208
3	1.199

3.2	1.205
3.4	1.19
3.6	1.193
3.8	1.196
4	1.19
4.2	1.174
4.4	1.165
4.6	1.168
4.8	1.177
5	1.171
5.2	1.168
5.4	1.168
5.6	1.159
5.8	1.165
6	1.165
6.2	1.155
6.4	1.155
6.6	1.159
6.8	1.162
7	1.152
7.2	1.152
7.4	1.149
7.6	1.146
7.8	1.143
8	1.143
8.2	1.14
8.4	1.14
8.6	1.137
8.8	1.137
9	1.137
9.2	1.134
9.4	1.134
9.6	1.13
9.8	1.131
10	1.13
12	1.12

Elm Street MW-4



DATA SET:

elmw4
01/17/96

AQUIFER TYPE:

Unconfined

SOLUTION METHOD:

Bouwer-Rice

ESTIMATED PARAMETERS:

$K = 0.0008803$ ft/min
 $yB = 1.521$ ft

TEST DATA:

$H0 = 0.01$ ft
 $rc = 0.17$ ft
 $rw = 0.42$ ft
 $L = 11.$ ft
 $b = 11.$ ft
 $H = 11.$ ft

APPENDIX E
GROUNDWATER ANALYTICAL REPORTS



ENVIRONMENTAL
LABORATORIES, INC.

Southeast Region
10500 University Center Drive, Suite 160
Tampa, FL 33612
(813) 979-9092 800-933-GTEL (4835)
FAX: 813-979-6914

January 12, 1996

Herb Berger
Groundwater Technology Inc.
1000 Perimeter Park Drive #1
Morrisville, NC 27560

RE: GTEL Client ID: 053240102
Login Number: F5120312
Project ID (number): 053240102
Project ID (name): SUN/ELM STREET, GREENSBORO, NC

Dear Herb Berger:

Enclosed please find the analytical results for the samples received by GTEL Environmental Laboratories, Inc. on 12/22/95 under Chain-of-Custody Number(s) 24837.

A formal Quality Assurance/Quality Control (QA/QC) program is maintained by GTEL, which is designed to meet or exceed the EPA requirements. Analytical work for this project met QA/QC criteria unless otherwise stated in the footnotes. This Analytical report shall not be reproduced except in full.

GTEL is certified (approved) by the State of Florida under Certification Number HRS E84196, by the State of South Carolina under Certificate Number 96025, and by the State of Tennessee for UST list.

If you have any questions regarding this analysis, or if we can be of further assistance, please call our Customer Service Representative.

Sincerely,
GTEL Environmental Laboratories, Inc.

Harold Vernon
Laboratory Director

GTEL Client ID: 053240102
 Login Number: F5120312
 Project ID (number): 053240102
 Project ID (name): SUN/ELM STREET, GREENSBORO, NC

ANALYTICAL RESULTS

Volatile Organics
 Method: EPA 602
 Matrix: Aqueous

GTEL Sample Number	F5120312.01	F5120312.02	F5120312.03
Client ID	MW-1	MW-2	MW-6
Date Sampled	12/20/95	12/20/95	12/20/95
Date Analyzed	12/29/95	12/29/95	12/29/95
Dilution Factor	1.00	1.00	1.00

Analyte	Reporting Limit	Units	Concentration:		
Benzene	0.5	ug/L	4.1	1.5	1.2
Toluene	1.0	ug/L	< 1.0	1.6	2.3
Ethylbenzene	1.0	ug/L	< 1.0	1.8	< 1.0
Xylenes (total)	2.0	ug/L	< 2.0	5.0	< 2.0
MTBE	10.	ug/L	110	150	< 10.

Notes:

Dilution Factor:

Dilution factor indicates the adjustments made for sample dilution.

EPA 602:

"Test Procedures for Analysis of Organic Pollutants", Code of Federal Regulations, 40CFR Part 136, Appendix A. Analyte list modified to include additional compounds.

GTEL Client ID: 053240102

ANALYTICAL RESULTS

Login Number: F5120312

Project ID (number): 053240102

Project ID (name): SUN/ELM STREET, GREENSBORO, NC

Method: EPA 239.2
Matrix: Aqueous

GTEL Sample Number	F5120312-01	F5120312-02	F5120312-03
Client ID	MW-1	MW-2	MW-5
Date Sampled	12/20/95	12/20/95	12/20/95
Date Analyzed	01/03/96	01/03/96	01/03/96
Dilution Factor	0.996	1.00	0.996

Analyte	Reporting Limit	Units	Concentration:
Lead	4.0	ug/L	4.1 17. 16.

Notes:

Dilution Factor:

Dilution factor indicates the adjustments made for sample dilution.

EPA 239.2:

"Methods for Chemical Analysis of Water and Wastes". EPA 600/4-79-020. USEPA ENSL. Cincinnati, OH. Revised, March 1983. Digestion for Acid-Extractable Metals by Standard Method 3030C.

GTEL Tampa, FL
F5120312:1

GTEL Client ID: 053240102

ANALYTICAL RESULTS

Login Number: F5120312

Semivolatile Organics

Project ID (number): 053240102

Method: EPA 625

Project ID (name): SUN/ELM STREET, GREENSBORO, NC

Matrix: Aqueous

GTEL Sample Number	F5120312-03
Client ID	M-6
Date Sampled	12/20/95
Date Analyzed	01/12/96
Date Prepared	12/27/95
Dilution Factor	1.00

Analyte	Reporting Limit	Units	Concentration:
N-Nitrosodimethylamine	10.	ug/L	< 10. -- --
Phenol	10.	ug/L	< 10. -- --
bis(2-Chloroethyl) ether	10.	ug/L	< 10. -- --
2-Chlorophenol	10.	ug/L	< 10. -- --
1,3-Dichlorobenzene	10.	ug/L	< 10. -- --
1,4-Dichlorobenzene	10.	ug/L	< 10. -- --
1,2-Dichlorobenzene	10.	ug/L	< 10. -- --
bis(2-Chloroisopropyl) ether	10.	ug/L	< 10. -- --
N-Nitrosodi-n-propylamine	10.	ug/L	< 10. -- --
Hexachloroethane	10.	ug/L	< 10. -- --
Nitrobenzene	10.	ug/L	< 10. -- --
Isophorone	10.	ug/L	< 10. -- --
2-Nitrophenol	10.	ug/L	< 10. -- --
2,4-Dimethylphenol	10.	ug/L	< 10. -- --
bis(2-Chloroethoxy)methane	10.	ug/L	< 10. -- --
2,4-Dichlorophenol	10.	ug/L	< 10. -- --
1,2,4-Trichlorobenzene	10.	ug/L	< 10. -- --
Naphthalene	10.	ug/L	< 10. -- --
Hexachlorobutadiene	10.	ug/L	< 10. -- --
4-Chloro-3-methylphenol	20.	ug/L	< 20. -- --
Hexachlorocyclopentadiene	10.	ug/L	< 10. -- --
2,4,6-Trichlorophenol	10.	ug/L	< 10. -- --
2-Chloronaphthalene	10.	ug/L	< 10. -- --
Dimethyl phthalate	10.	ug/L	< 10. -- --
Acenaphthylene	10.	ug/L	< 10. -- --
2,6-Dinitrotoluene	10.	ug/L	< 10. -- --
Acenaphthene	10.	ug/L	< 10. -- --
2,4-Dinitrophenol	50.	ug/L	< 50. -- --
4-Nitrophenol	50.	ug/L	< 50. -- --
2,4-Dinitrotoluene	10.	ug/L	< 10. -- --
Diethyl phthalate	10.	ug/L	< 10. -- --
4-Chlorophenyl phenyl ether	10.	ug/L	< 10. -- --
Fluorene	10.	ug/L	< 10. -- --
4,6-Dinitro-2-methylphenol	50.	ug/L	< 50. -- --
N-Nitrosodiphenylamine	10.	ug/L	< 10. -- --
4-Bromophenyl phenyl ether	10.	ug/L	< 10. -- --
Hexachlorobenzene	10.	ug/L	< 10. -- --
Pentachlorophenol	50.	ug/L	< 50. -- --

GTEL Tampa, FL

F5120312:1

GTEL Client ID: 053240102
 Login Number: F5120312
 Project ID (number): 053240102
 Project ID (name): SUN/ELM STREET, GREENSBORO, NC

ANALYTICAL RESULTS

Semivolatile Organics
 Method: EPA 625
 Matrix: Aqueous

GTEL Sample Number F5120312-03
 Client ID MM-6
 Date Sampled 12/20/95
 Date Analyzed 01/12/96
 Date Prepared 12/27/95
 Dilution Factor 1.00

Analyte	Reporting Limit	Units	Concentration:
Phenanthrene	10.	ug/L	< 10. -- --
Anthracene	10.	ug/L	< 10. -- --
Di-n-butyl phthalate	10.	ug/L	< 10. -- --
Fluoranthene	10.	ug/L	< 10. -- --
Pyrene	10.	ug/L	< 10. -- --
Butyl benzyl phthalate	10.	ug/L	< 10. -- --
3,3'-Dichlorobenzidine	20.	ug/L	< 20. -- --
Benzo[a]anthracene	10.	ug/L	< 10. -- --
Chrysene	10.	ug/L	< 10. -- --
bis(2-Ethylhexyl) phthalate	10.	ug/L	< 10. -- --
Di-n-octyl phthalate	10.	ug/L	< 10. -- --
Benzo[b]fluoranthene	10.	ug/L	< 10. -- --
Benzo[k]fluoranthene	10.	ug/L	< 10. -- --
Benzo[a]pyrene	10.	ug/L	< 10. -- --
Indeno[1,2,3-cd]pyrene	10.	ug/L	< 10. -- --
Dibenzo[a,h]anthracene	10.	ug/L	< 10. -- --
Benzo[g,h,i]perylene	10.	ug/L	< 10. -- --

Notes:

Dilution Factor:

Dilution factor indicates the adjustments made for sample dilution.

EPA 625:

"Test Procedures for Analysis of Organic Pollutants". Code of Federal Regulations, 40CFR Part 136, Appendix A. Analyte list modified to include additional compounds. N-Nitrosodiphenylamine cannot be separated from Diphenylamine.

1,2-Diphenylhydrazine is quantified as azobenzene.

**ANALYTICAL RESULTS
TENTATIVELY IDENTIFIED COMPOUNDS**

Semi-Volatile Organics in Water

		GTEL File ID	F5120312-03
		Date Analyzed	01-12-96
CAS Number	Compound	SCAN	Estimated Concentration, ug/L ^a
1.	UNKNOWN	48	8.0
2.	UNKNOWN	592	5.0
3.	UNKNOWN	637	4.0
4.	UNKNOWN	736	5.0
5.	UNKNOWN	1339	16.0
--	--	--	--

a All compounds have estimated concentration due to TIC's not having calibrations.

RESULTS
PERCENT SOLIDS

GTEL Sample Number	120312-04	120312-05	--	--	--
Client Identification	TB 2 6-8'	TB 3 8-10'	--	--	--
	Percent				
Percent Solids	80	81	--	--	--



GTEL

ENVIRONMENTAL
LABORATORIES, INC.

Southeast Region

10500 University Center Drive, Suite 160
Tampa, FL 33612
(813) 979-9092 800-933-GTEL (4835)
FAX: 813-979-6914

January 12, 1996

Herb Berger
Groundwater Technology Inc.
1000 Perimeter Park Drive #1
Morrisville, NC 27560

RE: GTEL Client ID: 053240102
Login Number: F5120312
Project ID (number): 053240102
Project ID (name): SUN/ELM STREET, GREENSBORO, NC

Dear Herb Berger:

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If you have any questions regarding this analysis, or if we can be of further assistance, please call our Customer Service Representative.

Sincerely,
GTEL Environmental Laboratories, Inc.

Harold Vernon
Laboratory Director

GTEL Client ID: 053240102

ANALYTICAL RESULTS

Login Number: F5120312

Volatile Organics

Project ID (number): 053240102

Method: EPA 602

Project ID (name): SUN/ELM STREET, GREENSBORO, NC

Matrix: Aqueous

GTEL Sample Number	F5120312-01	F5120312-02	F5120312-03	--
Client ID	MW-1	MW-2	MW-6	--
Date Sampled	12/20/95	12/20/95	12/20/95	--
Date Analyzed	12/29/95	12/29/95	12/29/95	--
Dilution Factor	1.00	1.00	1.00	--

Analyte	Reporting		Concentration:			
	Limit	Units				
Benzene	0.5	ug/L	4.1	1.5	1.2	--
Toluene	1.0	ug/L	< 1.0	1.6	2.3	--
Ethylbenzene	1.0	ug/L	< 1.0	1.8	< 1.0	--
Xylenes (total)	2.0	ug/L	< 2.0	5.0	< 2.0	--
MTBE	10.	ug/L	110	150	< 10.	--

Notes:

Dilution Factor:

Dilution factor indicates the adjustments made for sample dilution.

EPA 602:

"Test Procedures for Analysis of Organic Pollutants", Code of Federal Regulations, 40CFR Part 136, Appendix A. Analyte list modified to include additional compounds.

GTEL Client ID: 053240102
Login Number: F5120312
Project ID (number): 053240102
Project ID (name): SUN/ELM STREET, GREENSBORO, NC

ANALYTICAL RESULTS

Metals
Method: EPA 239.2
Matrix: Aqueous

GTEL Sample Number	F5120312-01	F5120312-02	F5120312-03	--
Client ID	MW-1	MW-2	MW-6	--
Date Sampled	12/20/95	12/20/95	12/20/95	--
Date Analyzed	01/03/96	01/03/96	01/03/96	--
Dilution Factor	0.996	1.00	0.996	--

Analyte	Reporting Limit	Units	Concentration:			
Lead	4.0	ug/L	4.1	17.	16.	--

Notes:

Dilution Factor:

Dilution factor indicates the adjustments made for sample dilution.

EPA 239.2:

"Methods for Chemical Analysis of Water and Wastes". EPA 600/4-79-020, USEPA EMSL, Cincinnati, OH, Revised, March 1983. Digestion for Acid-Extractable Metals by Standard Method 3030C.

GTEL Client ID: 053240102 ANALYTICAL RESULTS
 Login Number: F5120312
 Project ID (number): 053240102
 Project ID (name): SUN/ELM STREET, GREENSBORO, NC

Semivolatiles Organics
 Method: EPA 625
 Matrix: Aqueous

GTEL Sample Number	F5120312-03	--	--	--
Client ID	MW-6	--	--	--
Date Sampled	12/20/95	--	--	--
Date Analyzed	01/12/96	--	--	--
Date Prepared	12/27/95	--	--	--
Dilution Factor	1.00	--	--	--

Analyte	Reporting Limit	Units	Concentration:			
N-Nitrosodimethylamine	10.	ug/L	< 10.	--	--	--
Phenol	10.	ug/L	< 10.	--	--	--
bis(2-Chloroethyl) ether	10.	ug/L	< 10.	--	--	--
2-Chlorophenol	10.	ug/L	< 10.	--	--	--
1,3-Dichlorobenzene	10.	ug/L	< 10.	--	--	--
1,4-Dichlorobenzene	10.	ug/L	< 10.	--	--	--
1,2-Dichlorobenzene	10.	ug/L	< 10.	--	--	--
bis(2-Chloroisopropyl) ether	10.	ug/L	< 10.	--	--	--
N-Nitrosodi-n-propylamine	10.	ug/L	< 10.	--	--	--
Hexachloroethane	10.	ug/L	< 10.	--	--	--
Nitrobenzene	10.	ug/L	< 10.	--	--	--
Isophorone	10.	ug/L	< 10.	--	--	--
2-Nitrophenol	10.	ug/L	< 10.	--	--	--
2,4-Dimethylphenol	10.	ug/L	< 10.	--	--	--
bis(2-Chloroethoxy)methane	10.	ug/L	< 10.	--	--	--
2,4-Dichlorophenol	10.	ug/L	< 10.	--	--	--
1,2,4-Trichlorobenzene	10.	ug/L	< 10.	--	--	--
Naphthalene	10.	ug/L	< 10.	--	--	--
Hexachlorobutadiene	10.	ug/L	< 10.	--	--	--
4-Chloro-3-methylphenol	20.	ug/L	< 20.	--	--	--
Hexachlorocyclopentadiene	10.	ug/L	< 10.	--	--	--
2,4,6-Trichlorophenol	10.	ug/L	< 10.	--	--	--
2-Chloronaphthalene	10.	ug/L	< 10.	--	--	--
Dimethyl phthalate	10.	ug/L	< 10.	--	--	--
Acenaphthylene	10.	ug/L	< 10.	--	--	--
2,6-Dinitrotoluene	10.	ug/L	< 10.	--	--	--
Acenaphthene	10.	ug/L	< 10.	--	--	--
2,4-Dinitrophenol	50.	ug/L	< 50.	--	--	--
4-Nitrophenol	50.	ug/L	< 50.	--	--	--
2,4-Dinitrotoluene	10.	ug/L	< 10.	--	--	--
Diethyl phthalate	10.	ug/L	< 10.	--	--	--
4-Chlorophenyl phenyl ether	10.	ug/L	< 10.	--	--	--
Fluorene	10.	ug/L	< 10.	--	--	--
4,6-Dinitro-2-methylphenol	50.	ug/L	< 50.	--	--	--
N-Nitrosodiphenylamine	10.	ug/L	< 10.	--	--	--
4-Bromophenyl phenyl ether	10.	ug/L	< 10.	--	--	--
Hexachlorobenzene	10.	ug/L	< 10.	--	--	--
Pentachlorophenol	50.	ug/L	< 50.	--	--	--

GTEL Tampa, FL
 F5120312:1

GTEL Client ID: 053240102 ANALYTICAL RESULTS
 Login Number: F5120312
 Project ID (number): 053240102
 Project ID (name): SUN/ELM STREET, GREENSBORO, NC

Semivolatile Organics
 Method: EPA 625
 Matrix: Aqueous

GTEL Sample Number	F5120312-03	--	--	--
Client ID	MH-6	--	--	--
Date Sampled	12/20/95	--	--	--
Date Analyzed	01/12/96	--	--	--
Date Prepared	12/27/95	--	--	--
Dilution Factor	1.00	--	--	--

Analyte	Reporting		Concentration:			
	Limit	Units				
Phenanthrene	10.	ug/L	< 10.	--	--	--
Anthracene	10.	ug/L	< 10.	--	--	--
Di-n-butyl phthalate	10.	ug/L	< 10.	--	--	--
Fluoranthene	10.	ug/L	< 10.	--	--	--
Pyrene	10.	ug/L	< 10.	--	--	--
Butyl benzyl phthalate	10.	ug/L	< 10.	--	--	--
3,3'-Dichlorobenzidine	20.	ug/L	< 20.	--	--	--
Benzo[a]anthracene	10.	ug/L	< 10.	--	--	--
Chrysene	10.	ug/L	< 10.	--	--	--
bis(2-Ethylhexyl) phthalate	10.	ug/L	< 10.	--	--	--
Di-n-octyl phthalate	10.	ug/L	< 10.	--	--	--
Benzo[b]fluoranthene	10.	ug/L	< 10.	--	--	--
Benzo[k]fluoranthene	10.	ug/L	< 10.	--	--	--
Benzo[a]pyrene	10.	ug/L	< 10.	--	--	--
Indeno[1,2,3-cd]pyrene	10.	ug/L	< 10.	--	--	--
Dibenzo[a,h]anthracene	10.	ug/L	< 10.	--	--	--
Benzo[g,h,i]perylene	10.	ug/L	< 10.	--	--	--

Notes:

Dilution Factor:

Dilution factor indicates the adjustments made for sample dilution.

EPA 625:

"Test Procedures for Analysis of Organic Pollutants". Code of Federal Regulations, 40CFR Part 136, Appendix A. Analyte list modified to include additional compounds. N-Nitrosodiphenylamine cannot be separated from Diphenylamine.

1,2-Diphenylhydrazine is quantified as azobenzene.

ANALYTICAL RESULTS
TENTATIVELY IDENTIFIED COMPOUNDS

Semi-Volatile Organics in Water

		GTEL File ID	F5120312-03
		Date Analyzed	01-12-96
CAS Number	Compound	SCAN	Estimated Concentration, ug/L ^a
1.	UNKNOWN	48	8.0
2.	UNKNOWN	592	5.0
3.	UNKNOWN	637	4.0
4.	UNKNOWN	736	5.0
5.	UNKNOWN	1339	16.0
--	--	--	--

a All compounds have estimated concentration due to TIC's not having calibrations.

RESULTS
PERCENT SOLIDS

GTEL Sample Number	120312-04	120312-05	--	--	--
Client Identification	TB 2 6-8'	TB 3 8-10'	--	--	--
	Percent				
Percent Solids	80	81	--	--	--



10500 UNIVERSITY CENTER DRIVE
TAMPA, FL 33612
(813) 979-9092

Company Name: **GTL**
 Phone #: 919 467 2277
 Company Address: 1000 Perimeter Dr. E
 FAX #: 919 467 2299
 Site Location: **Greensboro, NC**
 Project Manager: **HERB BERGER**
 Client Project ID: (#) 053240102
 (NAME) **SUN-ELM ST.**
 Sampler Name (Print): **Brian Visuso**

I attest that the proper field sampling procedures were used during the collection of these samples.

Field Sample ID	GTEL Lab # (Lab Use only)	# CONTAINERS	Matrix						Method Preserved				Sampling			
			WATER	SOIL	AIR	SLUDGE	PRODUCT	OTHER	HCl	HNO ₃	H ₂ SO ₄	ICE	SUPRE-SERVED	OTHER (Specify)	DATE	TIME
MW-1	01	1													12/2/95	12:00
MW-2	02	1													12/2/95	13:00
MW-6	03	1														
TB-206	01	2														
TB-306	02	2														

SPECIAL DETECTION LIMITS
EPA 625 + 10 highest TICs

SPECIAL REPORTING REQUIREMENTS
FAX

Special Handling
 GTEL Contact _____
 Quote/Contract # _____
 Confirmation # _____
 P.O. # _____

QA/QC Level
 Blue CLP Other

CUSTOMY RECORD

Relinquished by Sampler: *B. Visuso*

Relinquished by: _____

Relinquished by: _____

Date: 12/22/95 Time: 1:00

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

24837

ANALYSIS REQUEST

BTX/Gas Hydrocarbons PID/FID <input type="checkbox"/> with MTBE <input type="checkbox"/>	Hydrocarbons GC/FID Gas <input type="checkbox"/> Diesel <input type="checkbox"/> Screen <input type="checkbox"/>	Oil and Grease 413.1 <input type="checkbox"/> 413.2 <input type="checkbox"/> SM-503 <input type="checkbox"/>	TPH/IR 418.1 <input type="checkbox"/> SM 503 <input type="checkbox"/>	EDB by 504 <input type="checkbox"/> DBCP by 504 <input type="checkbox"/>	EPA 503.1 <input type="checkbox"/> EPA 502.2 <input type="checkbox"/>	EPA 601 <input type="checkbox"/> EPA 8010 <input type="checkbox"/>	EPA 602 <input type="checkbox"/> EPA 8020 <input type="checkbox"/>	EPA 608 <input type="checkbox"/> 8080 <input type="checkbox"/> PCB only <input type="checkbox"/>	EPA 624/PPL <input type="checkbox"/> 8240/TAL <input type="checkbox"/> NBS (+15) <input type="checkbox"/>	EPA 625/PP <input checked="" type="checkbox"/> 8270/TAL <input type="checkbox"/> NBS (+25) <input type="checkbox"/> +TICS	EPA 610 <input type="checkbox"/> 8310 <input type="checkbox"/>	EP TOX Metals <input type="checkbox"/> Pesticides <input type="checkbox"/> Herbicides <input type="checkbox"/>	TCLP Metals <input type="checkbox"/> VOA <input type="checkbox"/> Semi-VOA <input type="checkbox"/> Pest <input type="checkbox"/> Herb <input type="checkbox"/>	EPA Metals - Priority Pollutant <input type="checkbox"/> TAL <input type="checkbox"/> RCRA <input type="checkbox"/>	CAM Metals TLLC <input type="checkbox"/> STLC <input type="checkbox"/>	Lead 239.2 <input type="checkbox"/> 200.7 <input type="checkbox"/> 7420 <input type="checkbox"/> 7421 <input type="checkbox"/> 6010 <input type="checkbox"/>	Organic Lead <input type="checkbox"/>	Corrosivity <input type="checkbox"/> Flash Point <input type="checkbox"/> Reactivity <input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

REMARKS:
FOR SUN AL.

Lab Use Only Lot #: _____

Work Order #: _____

Storage Location: S1-1, 4-41b S-4

Received by: **AIRBORNE**

Received by: _____

Received by Laboratory: **glomano**

Waybill # _____

OTHER



Southeast Region
10500 University Center Drive, Suite 160
Tampa, FL 33612
(813) 979-9092 800-933-GTEL (4835)
FAX: 813-979-6914

January 17, 1996

Herb Berger
Groundwater Technology Inc.
1000 Perimeter Park Drive #1
Morrisville, NC 27560

RE: GTEL Client ID: 053240102
Login Number: F5120312
Project ID (number): 053240102
Project ID (name): SUN/ELM STREET, GREENSBORO, NC

Dear Herb Berger:

This report, previously dated 01/12/96, is a reissue.

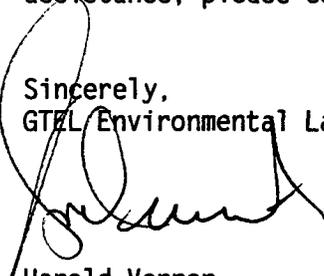
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If you have any questions regarding this analysis, or if we can be of further assistance, please call our Customer Service Representative.

Sincerely,
GTEL Environmental Laboratories, Inc.



Harold Vernon
Laboratory Director

ANALYTICAL RESULTS

Total Petroleum Hydrocarbons in Soil
by GC/FID^a

GTEL Sample Number	120312-04	120312-05	--	--
Client Identification	TB 2 6-8'	TB 3 8-10'	--	--
Date Sampled	12-20-95	12-20-95	--	--
Date Extracted	01-02-96	01-02-96	--	--
Date Analyzed	01-02-96	01-03-96	--	--
Total Petroleum Hydrocarbons as:	RL, mg/kg ^b	Concentration, mg/kg		
Diesel	10	110*	<12	--
Unknown Hydrocarbons	10	<12	15	--
Dilution Multiplier ^c		1	1	--

* Result was also contributed by unknown hydrocarbons.

a Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA September 1986; Methylene chloride extraction by EPA Method 3550. CA-LUFT Manual, DOHS-CA, Oct. 1989. Results reported on a dry weight basis.

b RL = Reporting Limit.

c The Dilution Multiplier indicates the factor necessary for the adjustment of the reporting limits due to sample dilutions.



10500 UNIVERSITY CENTER DRIVE
TAMPA, FL 33612
(813) 979-9092

**CHAIN-OF-CUSTODY RECORD
AND ANALYSIS REQUEST**

24837

OTHER

Company Name: **GTEL** Phone #: 919 467 2227
 Company Address: 1000 Perimeter Pt Dr. Site Location: **Morrisville, NC 27560**
 Project Manager: **HERB BERGER** Client Project ID: (#) 05324102
 (NAME) **SUN-ELU ST.**
 Sampler Name (Print): **Brian Visco**

I attest that the proper field sampling procedures were used during the collection of these samples.

Field Sample ID	GTEL Lab # (Lab Use only)	# CONTAINERS	Matrix			Method Preserved			Sampling							
			WATER	SOIL	AIR	SLUDGE	PRODUCT	OTHER	HCl	HNO3	H2SO4	ICE	UNPRE-SERVED	OTHER (Specify)	DATE	TIME
MW-1		1													12/29/95	5:45
MW-2		1														
MW-6		1														
TB-206		2													12/29	
TB-306		2													13/01	

REMARKS: **FOR SUN AL.**

SPECIAL DETECTION LIMITS
EPA 625 + 10 highest TCs

SPECIAL REPORTING REQUIREMENTS
FAX

Lab Use Only Lot #: _____ Storage Location: **51-1 4-415 5-4**

Work Order #: _____

Received by: **AIRBORNE** Date: **12/29/95** Time: **4:50P**

Received by: _____ Date: _____ Time: _____

Received by Laboratory: **Stromano** Date: **12/22/95** Time: **1:00**

Waybill #: _____

CUSTODY RECORD

Relinquished by Sampler: **B. Visco**
 Relinquished by: _____
 Relinquished by: _____

GTEL
ENVIRONMENTAL
LABORATORIES, INC.

Southeast Region
10500 University Center Drive, Suite 160
Tampa, FL 33612
(813) 979-9092 (800) 933-GTEL (4835)
Fax: (813) 979-6914

RECEIVED
JAN 15 1996

January 11, 1996

Herb Berger
GROUNDWATER TECHNOLOGY INC.
1000 Perimeter Park
Morrisville, NC 27560

RE: GTEL Client ID: 053245454
Login Number: F6010092
Project ID (number): 053245454
Project ID (name): SUN/ELM ST., GREENSBORO, NC

Dear Herb Berger:

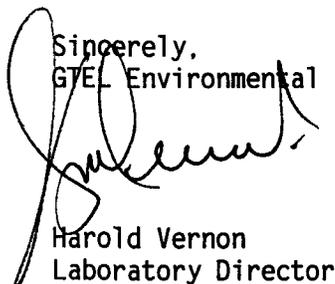
Enclosed please find the analytical results for the samples received by GTEL Environmental Laboratories, Inc. on 01/10/96 under Chain-of-Custody Number(s) 25498.

A formal Quality Assurance/Quality Control (QA/QC) program is maintained by GTEL, which is designed to meet or exceed the EPA requirements. Analytical work for this project met QA/QC criteria unless otherwise stated in the footnotes. This Analytical report shall not be reproduced except in full.

GTEL is certified (approved) by the State of Florida under Certification Number HRS E84196, by the State of South Carolina under Certificate Number 96025, and by the State of Tennessee for UST list.

If you have any questions regarding this analysis, or if we can be of further assistance, please call our Customer Service Representative.

Sincerely,
GTEL Environmental Laboratories, Inc.



Harold Vernon
Laboratory Director

GTEL Client ID: 053240102 ANALYTICAL RESULTS
 Login Number: F5120312
 Project ID (number): 053240102
 Project ID (name): SUN/ELM STREET, GREENSBORO, NC

Volatiles Organics
 Method: TENNESSEE
 Matrix: Low Soil

GTEL Sample Number	F5120312-04	F5120312-05	--	--
Client ID	TB-206-8'	TB-308-10'	--	--
Date Sampled	12/20/95	12/20/95	--	--
Date Analyzed	12/28/95	12/28/95	--	--
Dilution Factor	1.00	1.00	--	--

Analyte	Reporting		Concentration: Dry Weight		
	Limit	Units			
Gasoline Range Organics	100	ug/kg	< 120	< 120	--
Percent Solids	--	%	80.4	81.2	--

Notes:

Dilution Factor:

Dilution factor indicates the adjustments made for sample dilution.

TENNESSEE:

"Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846, Third Edition including Update 1. Analyte list modified to include additional compounds. Gasoline Range Hydrocarbons (TPH) quantitated by GC/FID with purge and trap.

GTEL Client ID: 053245454
 Login Number: F6010092
 Project ID (number): 053245454
 Project ID (name): SUN/ELM ST.,GREENSBORO,NC

ANALYTICAL RESULTS

Volatiles Organics
 Method: 8020/DOHS,
 Matrix: Low Soil

GTEL Sample Number	F6010092-01	F6010092-02	F6010092-03	F6010092-04
Client ID	TB-4	TB-5	TB-6	TB-7
Date Sampled	01/08/96	01/08/96	01/08/96	01/08/96
Date Analyzed	01/10/96	01/11/96	01/11/96	01/11/96
Dilution Factor	1.00	1.00	1.00	1.00

Analyte	Reporting		Concentration:Wet Weight			
	Limit	Units				
Benzene	1.0	ug/kg	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	2.0	ug/kg	< 2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	2.0	ug/kg	< 2.0	< 2.0	< 2.0	< 2.0
Xylenes (total)	4.0	ug/kg	< 4.0	< 4.0	< 4.0	< 4.0
TPH as Gasoline	100	ug/kg	< 100	< 100	< 100	< 100
Percent Solids	--	%	86.4	81.0	84.0	79.5

Notes:

Dilution Factor:

Dilution factor indicates the adjustments made for sample dilution.

8020/DOHS, CA LUFT:

"Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846, Third Edition including Update 1. Analyte list modified to include additional compounds. Gasoline Range Hydrocarbons (TPH) quantitated by GC/FID with purge and trap.

GTEL Client ID: 053245454
 Login Number: F6010092
 Project ID (number): 053245454
 Project ID (name): SUN/ELM ST., GREENSBORO, NC

ANALYTICAL RESULTS

Volatiles Organics
 Method: 8020/DOHS,
 Matrix: Low Soil

GTEL Sample Number	F6010092-05	--	--	--
Client ID	TB-BG	--	--	--
Date Sampled	01/08/96	--	--	--
Date Analyzed	01/10/96	--	--	--
Dilution Factor	1.00	--	--	--

Analyte	Reporting		Concentration:Wet Weight			
	Limit	Units				
Benzene	1.0	ug/kg	< 1.0	--	--	--
Toluene	2.0	ug/kg	< 2.0	--	--	--
Ethylbenzene	2.0	ug/kg	< 2.0	--	--	--
Xylenes (total)	4.0	ug/kg	< 4.0	--	--	--
TPH as Gasoline	100	ug/kg	< 100	--	--	--
Percent Solids	--	%	82.6			

Notes:

Dilution Factor:

Dilution factor indicates the adjustments made for sample dilution.

8020/DOHS, CA LUFT:

"Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846, Third Edition including Update 1. Analyte list modified to include additional compounds. Gasoline Range Hydrocarbons (TPH) quantitated by GC/FID with purge and trap.

ANALYTICAL RESULTS

**Total Petroleum Hydrocarbons in Soil
by GC/FID^a**

GTEL Sample Number		010092-01	010092-02	010092-03	010092-04
Client Identification		TB 4	TB 5	TB 6	TB 7
Date Sampled		01-08-96	01-08-96	01-08-96	01-08-96
Date Extracted		01-10-96	01-10-96	01-10-96	01-10-96
Date Analyzed		01-11-96	01-11-96	01-11-96	01-11-96
Total Petroleum Hydrocarbons as:	RL, mg/kg ^b	Concentration, mg/kg			
Diesel	10	<12	<12	<12	<13
Unknown Hydrocarbons	10	180	120	370	970
Dilution Multiplier ^c		5	5	5	5

- a Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA September 1986; Methylene chloride extraction by EPA Method 3550. CA-LUFT Manual, DOHS-CA, Oct. 1989. Results reported on a dry weight basis.
- b RL = Reporting Limit.
- c The Dilution Multiplier indicates the factor necessary for the adjustment of the reporting limits due to sample dilutions.

ANALYTICAL RESULTS

Total Petroleum Hydrocarbons in Soil
by GC/FID^a

GTEL Sample Number		010092-05	--	--	--
Client Identification		TB-BG	--	--	--
Date Sampled		01-08-96	--	--	--
Date Extracted		01-10-96	--	--	--
Date Analyzed		01-11-96	--	--	--
Total Petroleum Hydrocarbons as:	RL, mg/kg ^b	Concentration, mg/kg			
Diesel	10	<12	--	--	--
Unknown Hydrocarbons	10	170	--	--	--
Dilution Multiplier ^c		5	--	--	--

- a Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA September 1986; Methylene chloride extraction by EPA Method 3550. CA-LUFT Manual, DOHS-CA, Oct. 1989. Results reported on a dry weight basis.
- b RL = Reporting Limit.
- c The Dilution Multiplier indicates the factor necessary for the adjustment of the reporting limits due to sample dilutions.

RESULTS
PERCENT SOLIDS

GTEL Sample Number	010092-01	010092-02	010092-03	010092-04	010092-05
Client Identification	TB 4	TB 5	TB 6	TB 7	TB 8G
	Percent				
Percent Solids	86.4	81.0	84.0	79.5	82.6



10500 UNIVERSITY CENTER DRIVE
TAMPA, FL 33612
(813) 979-9092

**CHAIN-OF-CUSTODY RECORD
AND ANALYSIS REQUEST**

25498

OTHER

Company Name: **GTI**
 Phone #: (919) 467-2227
 FAX #: (919) 467-2299
 Site Location: **MORRISVILLE, NC**
 Project Manager: **HERE BERBER**
 Client Project ID: **#05324-5454**
 (NAME) **SUN LEAN ST**
 Sampler Name (Print): **JEFF LEAVER**

I attest that the proper field sampling procedures were used during the collection of these samples.

Field Sample ID	GTEL Lab # (Lab Use only)	# CONTAINERS	Matrix						Method Preserved						Sampling	
			WATER	SOIL	AIR	SLUDGE	PRODUCT	OTHER	HCl	HNO ₃	H ₂ SO ₄	ICE	UNPRE-SERVED	OTHER (Specify)	DATE	TIME
TB-4	01	1	X								X	X			1/8	1200
TB-5	02	1	X								X	X			1310	
TB-6	03	1	X								X	X			1410	
TB-7	011	1	X								X	X			1540	
TB-6G	05	1	X								X	X			1630	

BTEX 602 <input type="checkbox"/> 8020 <input type="checkbox"/> with MTBE <input type="checkbox"/>	BTEX/Gas Hydrocarbons PID/FID <input type="checkbox"/> with MTBE <input type="checkbox"/>	Hydrocarbons GC/FID Gas <input type="checkbox"/> Diesel <input type="checkbox"/> Screen <input type="checkbox"/>	Hydrocarbon Profile (SIMDIS) <input type="checkbox"/>	Oil and Grease 413.1 <input type="checkbox"/> 413.2 <input type="checkbox"/> SM-503 <input type="checkbox"/>	TPH/IR 418.1 <input type="checkbox"/> SM 503 <input type="checkbox"/>	EDB by 504 <input type="checkbox"/> DBCP by 504 <input type="checkbox"/>	EPA 503.1 <input type="checkbox"/> EPA 502.2 <input type="checkbox"/>	EPA 601 <input type="checkbox"/> EPA 8010 <input type="checkbox"/>	EPA 602 <input type="checkbox"/> EPA 8020 <input type="checkbox"/>	EPA 608 <input type="checkbox"/> 8080 <input type="checkbox"/> PCB only <input type="checkbox"/>	EPA 624/PPL <input type="checkbox"/> 8240/TAL <input type="checkbox"/> NBS (+15) <input type="checkbox"/>	EPA 625/PPL <input type="checkbox"/> 8270/TAL <input type="checkbox"/> NBS (+25) <input type="checkbox"/>	EPA 610 <input type="checkbox"/> 8310 <input type="checkbox"/>	EP TOX Metals <input type="checkbox"/> Pesticides <input type="checkbox"/> Herbicides <input type="checkbox"/>	TCLP Metals <input type="checkbox"/> VOA <input type="checkbox"/> Semi-VOA <input type="checkbox"/> Pest <input type="checkbox"/> Herb <input type="checkbox"/>	EPA Metals - Priority Pollutant <input type="checkbox"/> TAL <input type="checkbox"/> RCRA <input type="checkbox"/>	CAM Metals TTLC <input type="checkbox"/> STLC <input type="checkbox"/>	Lead 239.2 <input type="checkbox"/> 200.7 <input type="checkbox"/> 7420 <input type="checkbox"/> 7421 <input type="checkbox"/> 6010 <input type="checkbox"/>	Organic Lead <input type="checkbox"/>	Corrosivity <input type="checkbox"/> Flash Point <input type="checkbox"/> Reactivity <input type="checkbox"/>
--	---	--	---	--	---	--	---	--	--	--	---	---	--	--	---	---	--	--	---------------------------------------	---

TPH 3550/5030

TAT
 Priority (24 hr)
 Expedited (48 hr)
 7 Business Days
 Other **5D**
 Business Days

Special Handling
 GTEL Contact **342/441/2000**
 Quote/Contract # _____
 Confirmation # _____
 P.O. # _____

QA/QC Level
 Blue CLP Other

SPECIAL DETECTION LIMITS

REMARKS

Lab Use Only Lot #: **3**

Work Order #: **F601092**

Storage Location **SS-2**

CUSTODY RECORD

Relinquished by Sampler: **Jeff Leaver**

Relinquished by: _____

Relinquished by: _____

Date: **1/9/96** Time: **1620**

Date: **1/10/96** Time: **10:30**

Received by: **AIRBORNE**

Received by Laboratory: **Julie Vought**

Waybill # _____