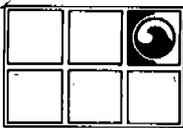


MSK



# GROUNDWATER TECHNOLOGY

# Letter of Transmittal

Groundwater Technology, Inc.  
1000 Perimeter Park Dr., Suite I, Morrisville, NC 27560  
(919) 467-2227

DATE	W.O. NO.
ATTENTION	
RE: RECEIVED N.C. Dept. of EHNR OCT 12 1995 Winston-Salem Regional Office	

TO Ms. Sherri Knight  
NCDEHNR  
Winston Salem Regional Office  
Winston Salem NC  
27107-2241

**GENTLEMEN:**

- WE ARE SENDING YOU  Attached  Under separate cover via \_\_\_\_\_ the following items:
- Shop drawings     Prints     Plans     Samples     Specifications
- Copy of letter     Change order     \_\_\_\_\_

COPIES	DATE	NO.	DESCRIPTION
1	10/11/95		CSA Addendum Report 1103 Summit Ave, Greensboro, NC

THESE ARE TRANSMITTED as checked below:

- For approval     Approved as submitted     Resubmit \_\_\_\_\_ copies for approval
- For your use     Approved as noted     Submit \_\_\_\_\_ copies for distribution
- As requested     Returned for corrections     Return \_\_\_\_\_ corrected prints
- For review and comment     \_\_\_\_\_
- FOR BIDS DUE \_\_\_\_\_ 19 \_\_\_\_\_  PRINTS RETURNED AFTER LOAN TO US

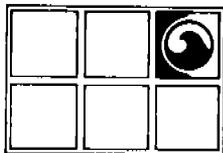
REMARKS Dear Ms. Knight,

Please find enclosed 1 copy  
of the CSA Addendum Report  
for Summit Ave.

Thank you,  
SIGNED: Jamie Fulcher

COPY TO \_\_\_\_\_

*If enclosures are not as noted, kindly notify us at once.*



# GROUNDWATER TECHNOLOGY®

Groundwater Technology, Inc.

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

October 11, 1995

Ms. Sherri Knight  
North Carolina Department of Environmental, Health, and Natural Resources  
Winston Salem Regional Office  
Winston Salem, NC 27107-2241

**RE: Comprehensive Site Assessment Addendum  
Former Sunoco Station  
1103 Summit Avenue  
Greensboro, North Carolina  
Duns #0276-0007**

Dear Ms. Knight:

## 1.0 INTRODUCTION

This project update report summarizes the results of the soil and groundwater assessment activities conducted by Groundwater Technology, Inc. (Groundwater Technology), on behalf of Sun Company, at the above referenced site. The site location is shown on Figure 1. Area properties are depicted on Figure 2 and a map of the site is provided as Figure 3. Initial site activities (conducted by Law Engineering in December 1992) identified petroleum compounds in the subsurface at the subject site. The additional assessment activities discussed herein were performed during August 1995 to evaluate the extent of subsurface petroleum hydrocarbons.

## 2.0 OVERVIEW OF PROJECT HISTORY

The following is a summary of results from previous site investigations.

- During December 1992, the initial assessment conducted at the site by Law Engineering (Law) included a site sensitive receptor survey, the drilling of four soil borings (converted to Type II groundwater monitoring wells designated MW-1 through MW-4), the collection of four soil samples (designated MW-1 through MW-4) and four groundwater samples (designated MW-1 through MW-4). Soil samples collected during the installation of the monitoring wells were submitted on December 3, 1992 for laboratory analysis of benzene, toluene, ethylbenzene, and xylenes (BTEX constituents) by EPA Method 8020 and total semi-volatile petroleum hydrocarbons by EPA Method 8015. A summary of the analytical results from the December 1992 soil sampling event are presented in Table 1. The four groundwater samples (designated MW-1 through MW-4) were submitted on December 17, 1992 for laboratory analysis of BTEX constituents by EPA Method 602 and TPH by EPA Method 8015. A summary of the analytical results from the December 1992 groundwater sampling event are presented in Table 2.

- As part of the preliminary assessment, Law evaluated adjacent properties for potential environmental concerns. According to Law's report, evidence of USTs on surrounding properties were observed at the Crown Service Station east of the site. Review of the NCDEHNR Pollution Incident Report (dated 10/6/92) by Law identified several facilities in the vicinity of the site as having a documented contamination incident. The only facility identified on this list that was located within a 1,000 foot radius of the site was the Crown Service Station located to the east of the site. The EPA North Carolina National Priorities List (superfund sites), current as of October 1, 1992. No listed sites were located within one-half mile radius of the subject site.
- Griffith Enterprises, Inc. hired Jerry Kelly, Inc., of Elizabeth City, North Carolina as a subcontractor for conducting tank excavation activities. The removal activities at the site occurred on April 27, 1993. The activities included the removal of one (1) 550 gallon single-wall steel fuel oil UST which contained numerous 1/4" holes along the bottom. No groundwater was encountered in the UST excavation at a depth of approximately 9 feet below ground surface. No releases were recognized from the UST. Two soil samples (designated S-1 and S-2) were collected during the UST removal activities. The soil samples were submitted for laboratory analysis for TPH as gasoline (EPA Method 5030) and TPH as diesel (EPA Method 3550). Laboratory analytical results for soil sample S-1 detected gasoline at a concentration of 63.3 ppm and detected diesel at a concentration of 180 ppm. Laboratory analytical results for soil sample S-2 detected gasoline at a concentration of 55.1 ppm and detected diesel at a concentration of 730 ppm. Verbal communication with Mr. William Shipton of Mid-State Oil on September 21, 1995 confirmed that the retail gasoline distribution system consisting of four 4,000-gallon USTs were removed during 1985 before tank excavation activities were regulated and tank closure reports were required.
- During May 27, 1993, one Type III vertical groundwater monitoring well (designated VMW-5) was installed by Groundwater Technology to assess the vertical extent of the dissolved hydrocarbon plume. One Type II shallow groundwater monitoring well (designated MW-6) was installed to further delineate the lateral extent of petroleum impacted soil. Soil samples collected during the installation of the monitoring wells were submitted for laboratory analysis of BTEX constituents by EPA 8020 and TPH by modified EPA Method 8015. A summary of the analytical results from the May 1993 soil sampling event are presented in Table 1. Groundwater samples (designated VMW-5 and MW-6) were collected from the newly installed monitoring wells as well as monitoring wells MW-1 through MW-4 on June 13, 1993 and were submitted for laboratory analysis for BTEX constituents including MTBE and IPE by EPA Methods 5030 and 602, EDB (1,2-Dibromoethane) by EPA Method 504, semi-volatile organics by EPA Method 625, and purgeable halocarbons by EPA Method 601. A summary of the analytical results from the June 1993 groundwater sampling event are presented in Table 2.
- During December 9, 1993, Groundwater Technology drilled one Type II groundwater monitoring well designated MW-7. A single soil sample was collected during the installation of the monitoring well and was submitted for laboratory analysis of TPH by modified EPA Method 8015. A summary of the analytical results from the December 1993 soil sampling event are presented in Table 1. A groundwater sample was collected December 21, 1993 and was submitted for laboratory

analysis for BTEX constituents including MTBE and IPE by EPA Methods 5030 and 602, EDB (1,2-Dibromoethane) by EPA Method 504, semi-volatile organics by EPA Method 625, and purgeable halocarbons by EPA Method 601. A summary of the analytical results from the December 1993 groundwater sampling event are presented in Table 2.

- During August 17, 1994, one Type III vertical groundwater monitoring well (designated VMW-8) was installed to further assess the vertical extent of the dissolved hydrocarbon plume. The following day (August 18, 1994), Groundwater Technology drilled one Type II groundwater monitoring well (designated MW-9) and three soil borings (designated SB-1 through SB-3). A total of six soil samples (designated VMW-8, MW-9, SB-1, SB-2A, SB-2B, and SB-3) were collected during the drilling events and submitted for laboratory analysis of TPH by modified EPA Method 8015. A summary of the analytical results from the August 1994 soil sampling event are presented in Table 1. Groundwater samples (designated VMW-8 and MW-9) were collected from the newly installed monitoring wells as well as monitoring wells MW-1 through MW-7 on August 23, 1994. The samples were submitted for laboratory analysis for BTEX constituents including MTBE and IPE by EPA Methods 5030 and 602, EDB (1,2-Dibromoethane) by EPA Method 504, semi-volatile organics by EPA Method 625, and purgeable halocarbons by EPA Method 601. A summary of the analytical results from the August 1994 groundwater sampling event are presented in Table 2.

### **3.0 SCOPE OF ADDITIONAL WORK**

This section presents a summary of the additional investigative activities completed by Groundwater Technology at the site during August 1995.

An additional offsite groundwater monitoring well (MW-10) was installed at the adjacent Electrolux™ Vacuum Sales and Service parking lot on August 18, 1995 to further evaluate the extent of the dissolved hydrocarbons. Groundwater monitoring well MW-10 was constructed as a shallow Type II monitoring well to assess the lateral extent of subsurface petroleum hydrocarbons potentially emanating from the former UST basin. Monitoring well MW-10 may also be used to evaluate the potential for offsite sources of petroleum hydrocarbons migrating onto the subject site. The new monitoring well location is shown on the site map (Figure 3). Monitoring well construction details are illustrated in the drilling logs which are presented in Appendix A.

Detailed descriptions of the field methodologies used for each investigative activity are presented in Appendix B. A brief summary of the results from previous investigations and recommendations for additional activities are provided below.

### **4.0 SUMMARY OF RESULTS**

#### **4.1 Surrounding Area**

Land use in the immediate vicinity of the subject site consists primarily of commercial businesses (Figure 2). Several small businesses are located northeast of the site along Summit Avenue including the Electrolux™ Vacuum Sales and Service adjacent to the Citgo station. A Crown retail petroleum station and Libby Hill Seafood Restaurant are located east and southeast of the site, across Summit Avenue. A McDonalds restaurant is adjacent to the southwest side of the property,

and the Summit Garden Center is located further southwest, across 3rd Street toward Wendover Avenue.

Surface drainage in the area is consistent with the topography of the site and flows in a southeast direction toward Muddy Creek, which is located approximately one-half mile to the southeast of the site.

#### 4.2 Source Characterization

The results of the initial and additional assessment activities have identified the fuel oil USTs as an on-site source of the dissolved petroleum constituents.

#### 4.3 Potential Receptors

Soil-absorbed hydrocarbons are likely to be confined to the area surrounding or immediately downgradient from the contaminant source area. Because the site is paved around the former tank field and pump islands, direct contact with soil-adsorbed hydrocarbons is unlikely. Potential migration of dissolved-phase hydrocarbons is restricted to subsurface migration routes. Vapor-phase hydrocarbons have the potential to migrate more readily than phase-separated or dissolved-phase hydrocarbons. Potential migration routes for subsurface petroleum hydrocarbons at the site include underground utilities that run along Summit Avenue. However, these utilities do not intersect the water-table, which is located at approximately 9 to 12 feet below grade. Potable water is supplied to the surrounding properties by the City of Greensboro, which obtains its water supply from reservoirs located in Guilford County. No municipal or private potable water wells were identified within a 2,500-foot radius of the site. A Baptist church located approximately 400 feet north of the site was the only building with a basement identified within the 1,500 foot radius.

#### 4.4 Site Geology and Hydrogeology

The subject site is located in the Charlotte and Milton Belts of the Piedmont Physiographic Province of the central North Carolina. This portion of the Piedmont is characterized by igneous to meta-igneous rock with two dominant groups of intrusions: the diorite-gabbro group and the granitic plutons. The Charlotte belt consists of rocks of a higher metamorphic grade sandwiched between lower grade rocks of the Kings Mountain belt and Carolina Slate belt. The Milton belt, formerly the northern part of the Charlotte belt, consists of strongly foliated gneiss and schist. The city of Greensboro is underlain by predominantly medium to coarse-grained, equigranular to porphyritic quartz monzonite and granodiorite with lesser amounts of granite, tonalite and quartz diorite. The rock is massive to well-foliated with common shearing and recrystallization. The rocks of the Piedmont are, for the most part, metamorphosed and deeply weathered.

To date, ten groundwater monitoring wells have been installed at the site. The soils encountered during drilling activities are characterized as silty, clayey sand grading to sandy silt at approximately 6 to 8 feet below grade, with saprolite (silty sand) encountered at 25 to 35 feet below grade.

During well drilling operations, saturated soils were encountered at depths ranging from 8 to 12 feet below grade. Shallow groundwater was encountered at depths ranging between approximately 10 to 12 feet below grade.

#### 4.5 Groundwater Flow

The liquid level data collected during the August 30, 1995 monitoring well sampling events are presented in Table 3. A water-table elevation contour map was generated using the August site visit is presented as Figure 4. Liquid-phase hydrocarbons were not detected in any of the wells during the gauging event.

The water-table elevation contour map indicates that the major component of shallow groundwater flow beneath the site appears to be to the south towards Muddy Creek, which is similar to the topographic slope in the vicinity of the site.

#### 4.6 Soil Analytical Results

During the drilling MW-10, a soil sample was collected and submitted to GTEL Environmental Laboratories in Tampa, Florida for analysis of TPH as gasoline (EPA Method 5030) and TPH as diesel (EPA Method 3550). Copies of the soil analytical reports are included in Appendix C.

Analytical results indicate that both TPH as gasoline and TPH as diesel were below the corresponding laboratory detection limits of 10 mg/kg.

#### 4.7 Groundwater Analytical Results

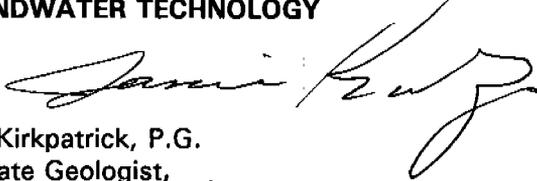
Groundwater samples were obtained from all site wells on June 14, 1995 and August 30, 1995. Copies of the original laboratory reports are included in Appendix D. During the June 1995 sampling event, collected groundwater samples from all of the monitoring wells (except MW-10) were submitted for laboratory analysis of BTEX constituents, MTBE, IPE, and naphthalene by EPA Method 602. During the August 30, 1995 sampling event, a groundwater sample was collected from MW-10 and submitted for laboratory analysis of BTEX constituents, MTBE, and IPE by EPA Method 601 and 602. During this same sampling event, collected groundwater samples from all monitoring wells were submitted for laboratory analysis of Total Lead by EPA Method 7421. A summary of the analytical results from the June 1995 and August 1995 groundwater sampling event are presented in Table 2.

#### 4.8 Recommendations

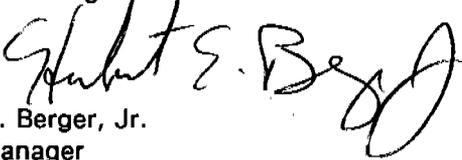
Based on the results of the recent assessment activities, site remediation appears necessary. Remediation pilot testing has been completed at the site. Soil vapor extraction combined with air sparging appear to offer the most cost effective remedial technologies applicable at the site. A Corrective Action Plan is being developed for this site. The CAP will be submitted to the NCDM upon completion.

Please do not hesitate to contact Herb Berger at (919) 467-2227 if you have any questions regarding this project.

Sincerely,  
**GROUNDWATER TECHNOLOGY**



Jamie Kirkpatrick, P.G.  
Associate Geologist



Herbert E. Berger, Jr.  
Project Manager  
Lead Geologist



CC: Dan Shine (Sun Company, Inc.)  
Rabbi and Mrs. Richard Hammerman  
Herb Berger (Groundwater Technology)  
file

**TABLES**

**TABLE 1**  
**Summary of Historical Soil Analytical Results (mg/kg)**  
**EPA Method 8020/8015**  
**Mid-State/Sun**  
**1103 Summit Avenue, Greensboro, North Carolina**

Well ID	Benzene	Toluene	Ethyl- benzene	Xylenes	TPH as Gas	TPH as Diesel
<b>MW-1</b> 12/3/92	0.059	0.27	0.29	1.3	69	240
<b>MW-2</b> 12/3/92	ND	ND	ND	ND	ND	ND
<b>MW-3</b> 12/3/92	ND	0.0028	ND	ND	ND	ND
<b>MW-4</b> 12/3/92	0.047	0.011	0.078	0.092	11	70
<b>VMW-5</b> 5/27/93	ND	ND	ND	ND	<1	<10
<b>MW-6</b> 5/27/93	ND	ND	ND	ND	<1	<10
<b>MW-7</b> 12/9/93	--	--	--	--	<1	<10
<b>VMW-8</b> 8/17/94	--	--	--	--	NA	NA
<b>MW-9</b> 8/18/94	--	--	--	--	<1	<10
<b>MW-10</b> 8/18/95	--	--	--	--	<140	<14
<b>SB-1</b> 8/18/94	--	--	--	--	1200	130
<b>SB-2A</b> 8/18/94	--	--	--	--	160	<5
<b>SB-2B</b> 8/18/94	--	--	--	--	<10	<1
<b>SB-3</b> 8/18/94	--	--	--	--	<10	<1

**Notes:**

mg/kg - Milligrams per Kilogram

\*\*No 2L Standard adopted

ND - Not Detected

-- Not Analyzed

**TABLE 2 (continued)**  
 Summary of Historical Groundwater Analytical Results (ug/L)  
 EPA Method 602/625  
 Mid-State/Sun  
 1103 Summit Ave., Greensboro, NC

Well ID	Sampling Date	Benzene *(1 ug/L)	Toluene *(1,000 ug/L)	Ethyl- benzene *(29 ug/L)	Total Xylenes *(530 ug/L)	MTBE *(200 ug/L)	IPE **	Naphthalene *(21 ug/L) Method 625 & 8270	TPH as Gasoline	TPH as Diesel
MW-1	12/17/92	<RL	<RL	1.6	<RL	--	--	--	1300***	<RL
	06/15/93	0.7	<RL	<RL	<RL	140	29	<RL	--	--
	08/23/94	0.9	<RL	<RL	<RL	220	20	<RL	--	--
	12/16/94	<RL	<RL	<RL	<RL	280	22	--	--	--
	06/14/95	<RL	0.6	<RL	<RL	270	21	<RL	--	--
MW-2	12/17/92	230	<RL	<RL	<RL	--	--	--	<RL	<RL
	06/15/93	120	<RL	<RL	<RL	<RL	82	<RL	--	--
	08/23/94	130	<RL	<RL	<RL	<RL	120	<RL	--	--
	12/16/94	69	<RL	<RL	<RL	<RL	180	<RL	--	--
	06/14/95	75	<RL	<RL	<RL	<RL	130	<RL	--	--
MW-3	12/17/92	<RL	<RL	<RL	<RL	--	--	--	<RL	<RL
	06/15/93	<RL	<RL	<RL	<RL	<RL	<RL	<RL	--	--
	08/23/94	<RL	<RL	<RL	<RL	<RL	<RL	--	--	--
	12/16/94	<RL	<RL	<RL	<RL	<RL	<RL	--	--	--
	06/14/95	<RL	<RL	<RL	<RL	<RL	<RL	<RL	--	--
MW-4	12/17/92	32	<RL	<RL	3.3	--	--	--	<RL	<RL
	06/15/93	33	2	0.7	21	770	430	19	--	--
	08/23/94	<RL	<RL	<RL	1.0	1000	140	--	--	--
	12/16/94	<RL	<RL	<RL	<RL	550	320	--	--	--
	06/14/95	<RL	4.4	<RL	<RL	750	250	<RL	--	--
VMW-5	06/15/93	54	<RL	<RL	<RL	<RL	30	<RL	--	--
	08/23/94	75	<RL	<RL	<RL	<RL	49	--	--	--
	12/16/94	<RL	<RL	<RL	<RL	<RL	25	--	--	--
	06/14/95	0.4	<RL	<RL	<RL	<RL	7.2	<RL	--	--
MW-6	06/15/93	820	5	10	5	1800	<RL	17	--	--
	08/23/94	520	7.4	6.0	20	1600	14	--	--	--
	12/16/94	340	<RL	6.9	18	1600	23	17	--	--
	06/14/95	710	7.4	10	33	2000	<RL	31	--	--
MW-7	12/21/93	<RL	<RL	<RL	<RL	<RL	99	--	--	--
	08/23/94	<RL	<RL	<RL	<RL	6.4	67	--	--	--
	12/16/94	<RL	<RL	<RL	<RL	<RL	94	--	--	--
	06/14/95	0.3	<RL	<RL	<RL	9.1	97	<RL	--	--
VMW-8	08/23/94	2.2	<RL	<RL	<RL	8.8	18	--	--	--
	12/16/94	<RL	<RL	<RL	<RL	<RL	40	--	--	--
	06/14/95	<RL	<RL	<RL	<RL	<RL	19	<RL	--	--
MW-9	08/23/94	0.7	<RL	<RL	3.6	<RL	<RL	--	--	--
	12/16/94	0.5	<RL	<RL	8.8	<RL	<RL	--	--	--
	06/14/95	2.9	<RL	<RL	7.7	<RL	1.2	<RL	--	--
MW-10	08/30/95	68	2.9	<RL	5	<RL	32	--	--	--

Notes:  
 ug/L - Micrograms per liter  
 <RL - Below laboratory reporting limit  
 \*North Carolina Administrative Code Subchapter 2L Groundwater Standard  
 \*\* No 2L Standard adopted  
 \*\*\* The Chromatogram is in the range of gasoline  
 -- Not analyzed

**TABLE 2**  
**Summary of Historical Groundwater Analytical Results (ug/L)**  
**EPA Method 601**  
**Mid-State/Sun**  
**1103 Summit Ave., Greensboro, NC**

Well ID	Sampling Date	1,2-Dichloro-ethane *(0.38 ug/L)	Trichloro-ethene **	Tetrachloro-ethene *(0.7 ug/L)	Chloroform *(0.19 ug/L)	Bromodi-chloromethane **	1,2-Dichloro-ethene **	1,2-Dibromo-ethane *(0.0004 ug/L) Method 504	Lead *(15 ug/L) Method 7421
MW-1	6/15/93	5	<RL	<RL	<RL	<RL	<RL	<RL	--
	12/16/94	12	<RL	<RL	<RL	<RL	<RL	--	--
	6/14/95	6.3	<RL	<RL	<RL	<RL	<RL	--	--
	08/30/95	--	--	--	--	--	--	--	<RL
MW-2	6/15/93	11	<RL	<RL	<RL	<RL	<RL	<RL	--
	12/16/94	20	<RL	<RL	<RL	<RL	<RL	--	--
	6/14/95	<RL	<RL	<RL	<RL	<RL	<RL	--	--
	08/30/95	--	--	--	--	--	--	--	<RL
MW-3	6/15/93	<RL	<RL	<RL	<RL	<RL	<RL	<RL	--
	12/16/94	<RL	<RL	<RL	<RL	<RL	<RL	--	--
	6/14/95	9.6	<RL	<RL	<RL	<RL	<RL	--	--
	08/30/95	--	--	--	--	--	--	--	<RL
MW-4	6/15/93	9	<RL	<RL	<RL	<RL	<RL	<RL	--
	12/16/94	15	<RL	<RL	<RL	<RL	<RL	--	--
	6/14/95	7.9	<RL	<RL	<RL	<RL	<RL	--	--
	08/30/95	--	--	--	--	--	--	--	<RL
VMW-5	6/15/93	4	<RL	<RL	<RL	<RL	<RL	<RL	--
	12/16/94	4.3	<RL	<RL	<RL	<RL	<RL	--	--
	6/14/95	4.1	<RL	<RL	<RL	<RL	<RL	--	--
	08/30/95	--	--	--	--	--	--	--	<RL
MW-6	6/15/93	120	<RL	<RL	<RL	<RL	<RL	0.58	--
	12/16/94	120	<RL	<RL	<RL	<RL	<RL	--	--
	6/14/95	82	0.7	<RL	<RL	<RL	<RL	--	--
	08/30/95	--	--	--	--	--	--	--	<RL
MW-7	12/21/93	<RL	<RL	<RL	<RL	<RL	30	<RL	--
	12/16/94	33	<RL	<RL	<RL	<RL	<RL	--	--
	6/14/95	22	<RL	<RL	<RL	--	<RL	--	--
	08/30/95	--	--	--	--	--	--	--	21
VMW-8	12/16/94	2.6	<RL	2.2	<RL	<RL	<RL	--	--
	8/23/94	1.6	<RL	1.7	9.4	2.0	<RL	<RL	--
	6/14/95	1.1	<RL	1.4	<RL	<RL	<RL	--	--
	08/30/95	--	--	--	--	--	--	--	<RL
MW-9	12/16/94	<RL	<RL	<RL	<RL	<RL	<RL	--	--
	8/23/94	<RL	<RL	<RL	<RL	<RL	<RL	<RL	--
	6/14/95	<RL	<RL	<RL	<RL	<RL	<RL	--	--
	08/30/95	--	--	--	--	--	--	--	<RL
MW-10	08/30/95	4.5	<RL	<RL	<RL	<RL	<RL	--	<RL

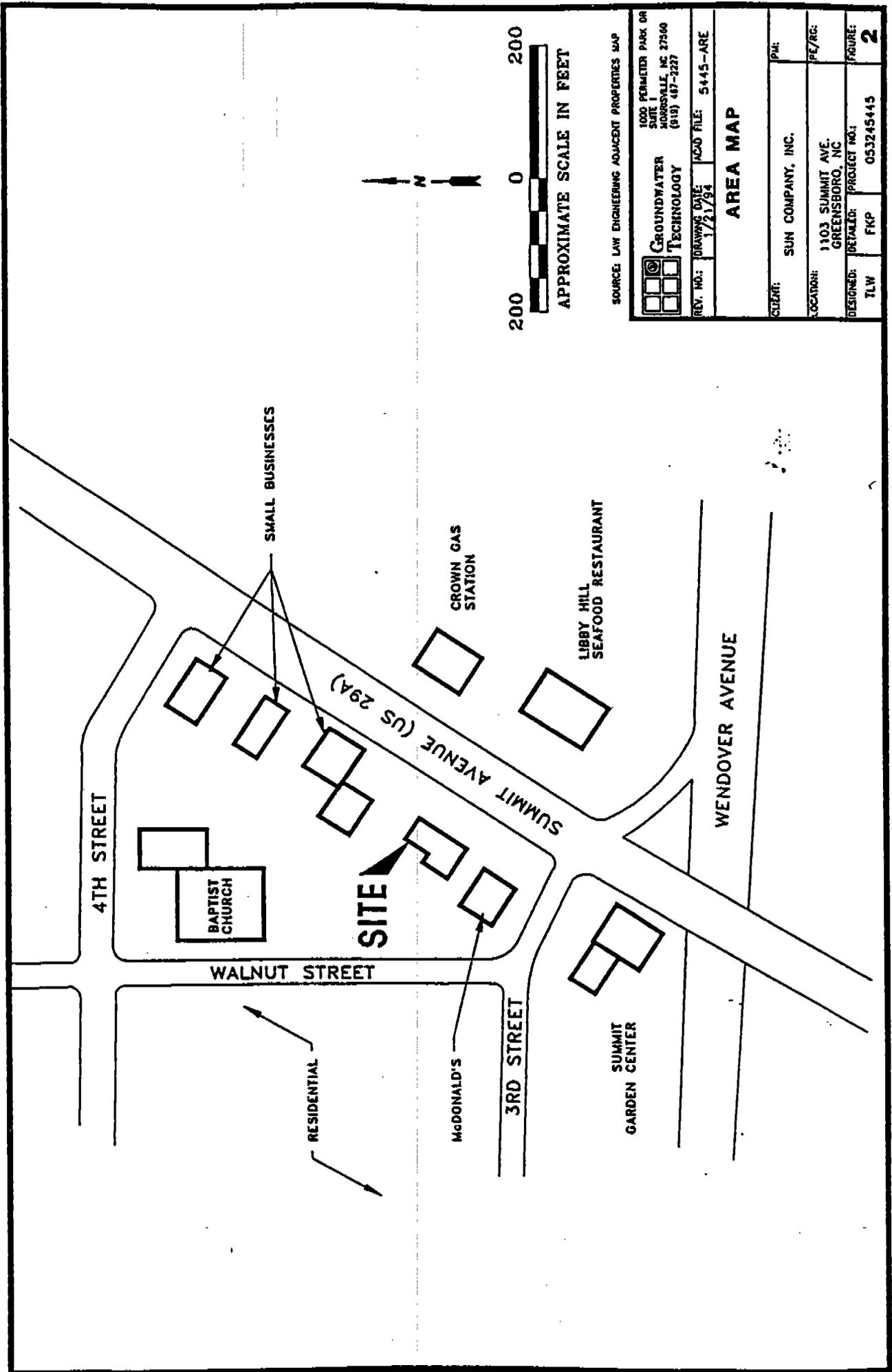
Notes:  
ug/L - Micrograms per liter  
<RL - Below laboratory reporting limit  
\*North Carolina Administrative Code Subchapter 2L Groundwater Standard  
\*\*No 2L Standard Adopted  
-- Not Analyzed

**Table 3**  
**1103 Summit Avenue**  
**Greensboro, North Carolina**  
**Summary of Liquid Level Data**  
**Project Update Report - Third Quarter 1995**

	Well Head Elevation (feet)	Depth to Water (feet)	Groundwater Elevation (feet)
MW-1			
8/30/95	597.61	10.51	587.10
MW-2			
8/30/95	598.53	9.86	588.67
MW-3			
8/30/95	598.84	10.32	588.52
MW-4			
8/30/95	598.56	10.40	588.16
VMW-5			
8/30/95	598.21	9.96	588.25
MW-6			
8/30/95	597.57	12.10	585.47
MW-7			
8/30/95	595.14	10.62	584.52
VMW-8			
8/30/95	597.35	10.91	586.44
MW-9			
8/30/95	597.11	12.08	585.03
MW-10			
8/30/95	598.65	9.64	589.01

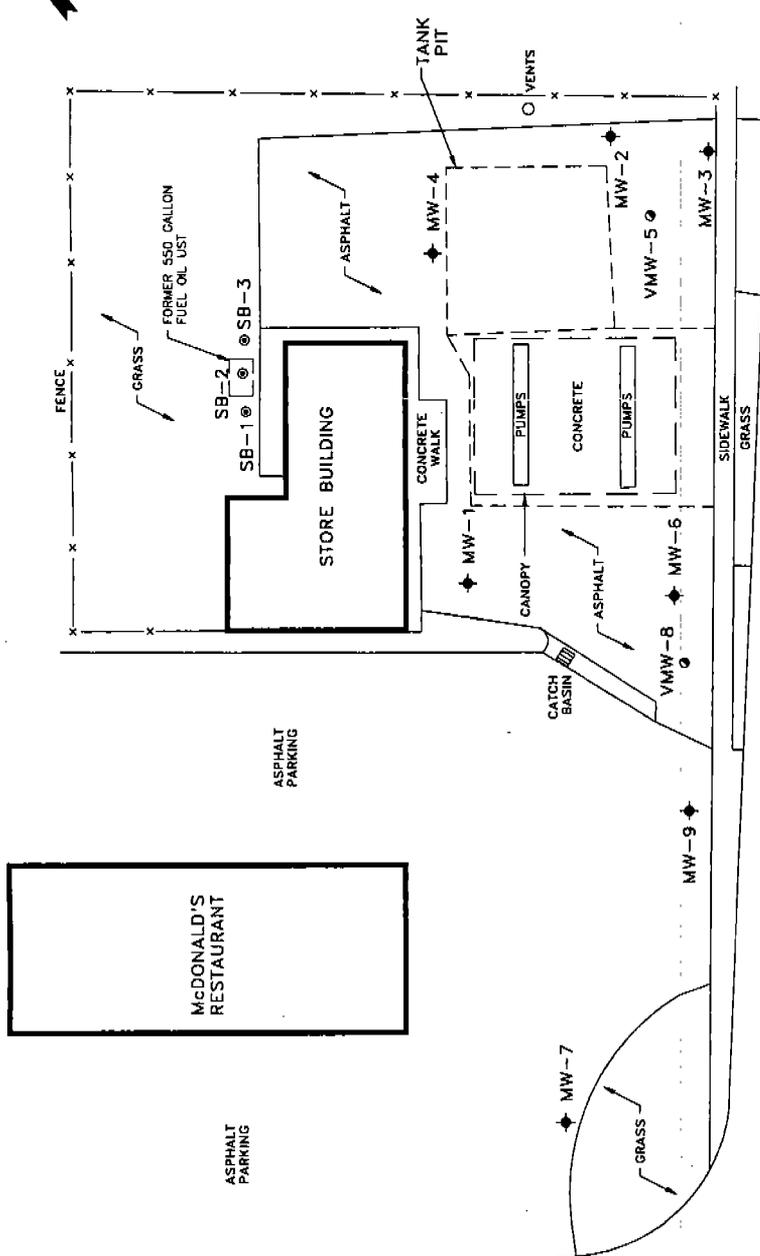
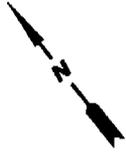
**FIGURES**





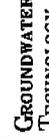
**LEGEND**

- ◆ MONITORING WELL
- VERTICAL DEFINITION MONITORING WELL
- ⊙ SOIL BORING



SOURCE: JAMES L. HAINES & ASSOC. - 6/24/93 SURVEY

1000 PERMIETER PARK DR.  
SUITE 100  
MORRISVILLE, NC 27560  
(919) 467-2227

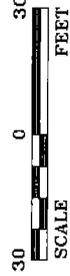


REV. NO.: DRAWING DATE: 6/6/95  
ACAD FILE: 5445695

<b>SITE MAP</b>	
CLIENT:	SUN COMPANY, INC.
LOCATION:	1103 SUMMIT AVE. GREENSBORO, NC
DESIGNED:	JWJK PJC
PROJECT NO.:	053245445
FIGURE:	<b>3</b>

**LEGEND**

- ◆ MONITORING WELL
- VERTICAL DEFINITION MONITORING WELL
- (587.17) ELEVATION OF WATER IN FEET
- INFERRED CONTOUR
- GENERAL DIRECTION OF SHALLOW GROUNDWATER FLOW



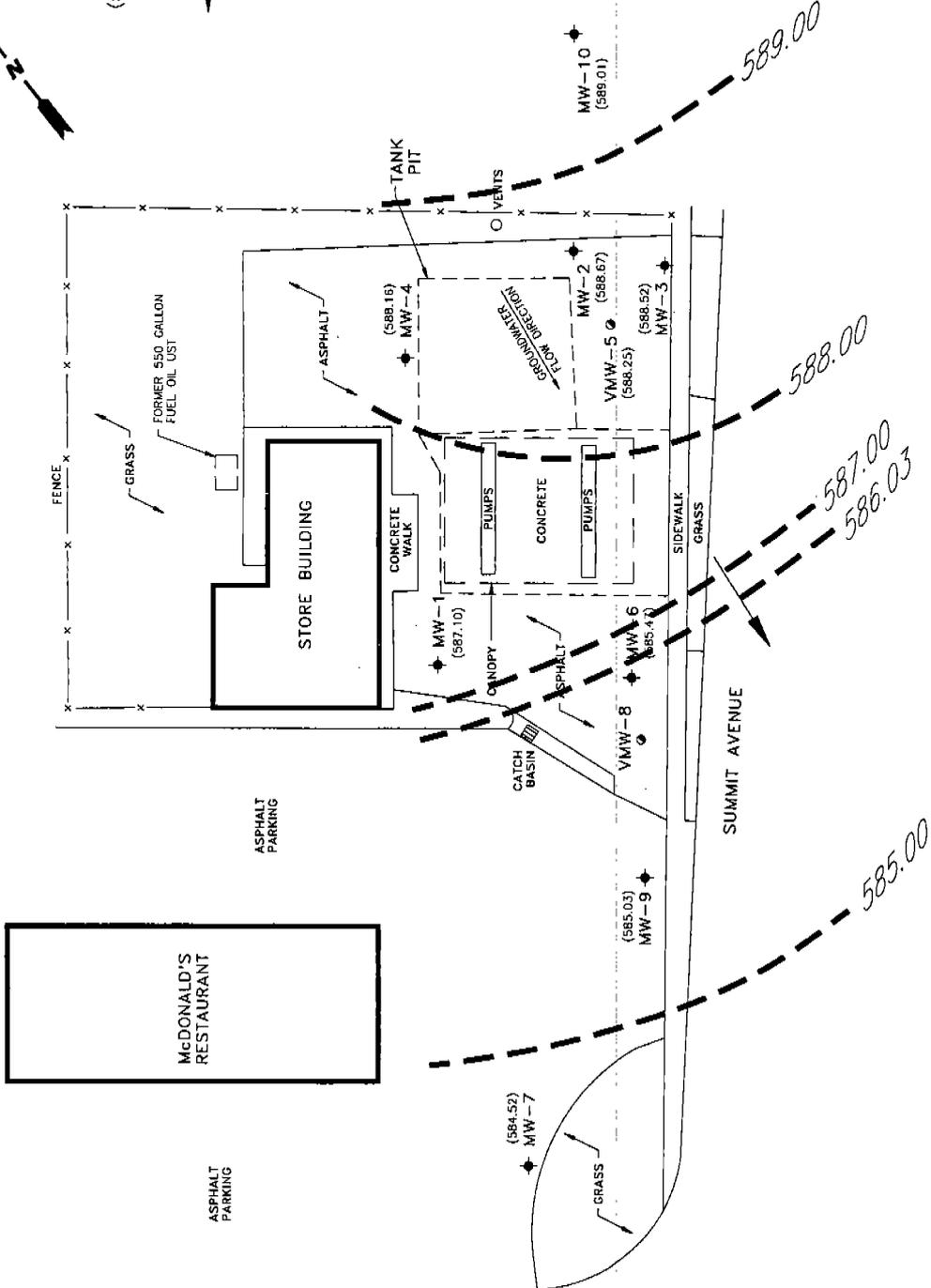
SOURCE: JAMES L. HAINES & ASSOC. - 6/24/93 SURVEY

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

REV. NO.: DRAWING DATE: ACAD FILE: 5445695  
6/6/95

**WATER TABLE ELEVATION CONTOUR MAP (ft.)**  
**AUGUST 30, 1995**

CLIENT:	SUN COMPANY, INC.
LOCATION:	1103 SUMMIT AVE. GREENSBORO, NC
DESIGNED:	JWK
PROJECT NO.:	PJC 053245445
FIGURE:	<b>4</b>



SOURCE: JAMES L. HAINES & ASSOC. - 6/24/93 SURVEY

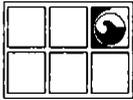
GROUNDWATER TECHNOLOGY  
1000 PERMEER PARK DR  
SUITE 1  
MORRISVILLE, NC 27560  
(919) 467-2227

REV. NO.: DRAWING DATE: ACAD FILE: 5445695  
6/6/95

**WATER TABLE ELEVATION CONTOUR MAP (ft.)**  
**AUGUST 30, 1995**

CLIENT:	SUN COMPANY, INC.
LOCATION:	1103 SUMMIT AVE. GREENSBORO, NC
DESIGNED:	JWK
PROJECT NO.:	PJC 053245445
FIGURE:	<b>4</b>

**APPENDIX A  
DRILLING LOGS**



GROUNDWATER  
TECHNOLOGY

# Drilling Log

Monitoring Well **MW-10**

Project Sun/Summit Ave. Owner Sunoco  
 Location 1103 Summit Ave., Greensboro, NC Proj. No. 05324-0046  
 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 8/18/95 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						(.25-4') Light tan silty clayey fine SAND; dry; no odor.
4						(4-6') Same as above.
6		74	11/75%			(6-8') Light tan silty clayey fine to coarse SAND; moist to wet; no odor.
8		160	10/75%			(8-10') Same as above.
10		95	4/100%		ML	(10-12') Same as above.
12		7.5	4/100%			(12-14') Brown-orange mottled coarse sandy clayey SILT; wet; no odor; Saprolite.
14		0.0	6/100%			
16		0.4	6/100%			(16-17') Same as above.
18		2.8	5/100%			(17-18') Light brown SILT; wet.
20		38	16/100%			(18-20') Same as above.
22						
24						
26						
28						
30						

**APPENDIX B**  
**FIELD METHODS AND PROTOCOLS**

**MONITORING WELL INSTALLATION AND CONSTRUCTION**  
**Shallow (Type II) Wells Completed in Unconsolidated Material**

The shallow (Type II), water-table wells were drilled with a truck-mounted drilling rig equipped with hollow-stem augers. The augers and all drilling equipment were steam cleaned prior to drilling at each location and after completion of the last boring.

Each well was installed through the augers to ensure proper construction and placement, and is constructed of Schedule 40 PVC solid casing and factory slotted well screen (0.02-inch slots) connected by threaded, flush joints. The wells were completed with a sufficient length of well screen so that the screened interval extends approximately 5 feet above and 10 feet below the static depth of the water table. The screen of each well is equipped with a PVC bottom cap. The solid PVC casing of each well extends from the top of the well screen to approximately 6-inches below grade. The annular space of each well is packed with washed sand to a minimum level of 1 foot above the top of the well screen. A one-foot-thick bentonite seal rests on top of the sand pack, above which a Portland cement grout extends to approximately 4 inches below the top of the PVC casing. The PVC casing of each well is equipped with a sealed, locking cap to prevent unauthorized access. In addition, each well casing is protected with a steel, water-tight manhole set to grade within a concrete pad. Each shallow, water-table well was constructed in accordance with NCDEHNR well construction specifications.

## SOIL SAMPLING PROTOCOL

During drilling operations, soil samples were collected using 2-foot-long, split-spoon samplers. The split-spoon samplers were washed with alkaline soap and water and rinsed with distilled water prior to each use. At each drilling location, soil samples were collected in 2-foot intervals at selected depths to the completion depth of drilling. The depths from which soil samples were collected at each location are indicated in the drilling logs presented in Appendix B. The split-spoon samplers were advanced using a 140-pound sliding hammer, and the number of hammer blows required to advance the split spoons in successive 6-inch increments was recorded.

A description of the soils retained in each split-spoon sampler was logged by a geologist, and representative portions of the material were placed into labeled laboratory containers that were promptly placed on ice in a cooler. A separate representative portion of each soil sample was placed in a resealable plastic bag and allowed to equilibrate for a minimum of 15 minutes. After the equilibration period, either a photoionization detector (PID) or a flame ionization detector (FID) probe was inserted into each resealable bag and a headspace reading of total volatile organic compounds (VOCs) was recorded. The PID/FID response values recorded in the field are indicated in the drilling logs presented in Appendix B. After completion of drilling at each location, the PID/FID response values for all soil samples were evaluated in the field. The soil sample from each drilling location that exhibited the highest PID/FID response value was retained and submitted for laboratory analysis along with completed chain-of-custody forms. In the event that no PID/FID response was observed for any of the soil samples collected at a drilling location, the sample collected from immediately above the water table was retained and submitted for laboratory analysis.

## WELL DEVELOPMENT PROTOCOL

Following construction and installation, the monitoring wells were developed using an air lift/purge technique to remove sediment from within the well and annular gravel pack, and to ensure proper hydraulic connection between the well and surrounding aquifer material. The well development assembly consisted of a compressed-air line, equipped with an in-line oil filter, that was passed through the center of an approximately 3-foot length of solid, Schedule 40, PVC casing that was attached to the well head with a PVC slip coupling. The solid casing was fitted with a PVC, side-discharge pipe to allow water purged during development to be conveyed to a steel, 55-gallon drum for containment prior to treatment.

Prior to initiation of the development process at each well, the compressed-air line was washed with alkaline soap and water and was rinsed with distilled water. The free end of the compressed-air line was then lowered into each well below the water table, and the top of the solid casing was sealed with duct tape. Compressed air was then passed through the air line, and water within the well was lifted and purged until the discharge appeared to be free of suspended sediments or for a maximum of two hours. Following completion of development, water contained in the 55-gallon drum was pumped through a portable granular activated carbon (GAC) treatment unit equipped with an in-line sediment filter.

## GROUNDWATER SAMPLING PROTOCOL

Groundwater samples were obtained from the monitoring wells using the following protocol:

- 1) The static water level in each well was measured with an electronic optical INTERFACE PROBE™.
- 2) The volume of standing water (in gallons) in each well was calculated using the following formula:

$$V = [(3.14) r^2 h] \times 7.48 \text{ gal/ft}^3$$

where r is the radius of the well in feet, and h is the height of the water column standing in the well.

- 3) Monitoring wells capable of sustaining sufficient yield were purged of a minimum of three static well volumes of water using a stainless steel submersible pump. Monitoring wells having low yield were purged until dry, and the water level was allowed to recover to a minimum of 80 percent of the static level prior to sampling. Purged water was conveyed to a steel 55-gallon drum for containment and then pumped through a portable granular activated carbon (GAC) treatment unit equipped with an in-line sediment filter prior to being discharged.
- 4) Representative groundwater samples were collected with a stainless steel bailer that was thoroughly cleaned prior to sample collection from each well using an alkaline soap and water wash followed by three distilled water rinses. The first bailer of water retrieved from each well was discarded. All groundwater samples were transferred directly from the bailer to laboratory-prepared containers.
- 5) All sample containers were labeled with the following information:
  - Sample Designation
  - Sampling Date
  - Sampling Time
  - Site Name
  - Requested Analysis/Analyses
  - Type of Preservative Used (if applicable)
- 6) All sample containers were placed on ice in a cooler, along with completed chain-of-custody forms, and shipped via overnight courier to GTEL Environmental Laboratories, Inc. for analysis.

**APPENDIX C**  
**SOIL ANALYTICAL REPORTS**



# 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

September 1, 1995

Herb Berger  
GROUNDWATER TECHNOLOGY, INC.  
1000 Perimeter Park Drive, Suite 1  
Morrisville, NC 27560

---

RE: GTEL Client ID: 053240046  
Login Number: F5080257  
Project ID (number): 053240046  
Project ID (name): SUN SUMMIT AVE

---

Dear Herb Berger:

This report, previously dated 08/28/95, is a reissue.

Enclosed please find the analytical results for the samples received by GTEL Environmental Laboratories, Inc. on 08/22/95 under Chain-of-Custody Number(s) 42038.

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

RECEIVED  
SEP 07 1995

**ANALYTICAL RESULTS**  
**Volatiles Organics**

GTEL Client ID: 053240046  
 gin Number: F5080257  
 Project ID (number): 053240046  
 Project ID (name): SUN SUMMIT AVE

Method: 8020/DOHS, CA LUFT  
 Matrix: Low Soil

GTEL Sample Number	F5080257-01	--	--	--
Client ID	MW 10(6-8')	--	--	--
Date Sampled	08/18/95	--	--	--
Date Analyzed	08/24/95	--	--	--
Dilution Factor	1.00	--	--	--

Analyte	Reporting		Concentration: Dry Weight
	Limit	Units	
TPH as Gasoline	100	ug/kg	< 140
Percent Solids	--	%	69.4

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<sup>a</sup>**

<b>GTEL Sample Number</b>	080257-01	--	--	--
<b>Client Identification</b>	MW-10 (6-8')	--	--	--
<b>Date Sampled</b>	08-18-95	--	--	--
<b>Date Extracted</b>	08-25-95	--	--	--
<b>Date Analyzed</b>	08-25-95	--	--	--
<b>Total Petroleum Hydrocarbons as:</b>	<b>RL, mg/kg<sup>b</sup></b>	<b>Concentration, mg/kg</b>		
DIESEL	10	<14	--	--
<b>Dilution Multiplier<sup>c</sup></b>		1	--	--

- 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**

<b>GTEL Sample Number</b>	<b>080257-01</b>	--	--	--	--
<b>Client Identification</b>	<b>MW-10 (6-8')</b>	--	--	--	--
		<b>Percent</b>			
<b>Percent Solids</b>	<b>69.4</b>	--	--	--	--



4211 MAY AVE.  
WICHITA, KS 67209  
(316) 945-2624  
(800) 633-7936

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

42038

Company Name:

Phone #: 919 467-2227

*GROUNDWATER TECHNOLOGY* FAX #: 919 467-2299

Company Address: *1808 Delaware Dr. Dr. Sr. 1103 Summit Ave. Greenville NC 27560*  
 Site Location: *Greensboro NC*  
 Project Manager: *Heck Berger*  
 Client Project ID: (#) *053290096*

(NAME) *Tina - Summit Ave.*  
 Sampler Name (Print): *Yamie Kirkpatrick*

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						DATE	TIME
		WATER	SOIL	AIR	SLUDGE	PRODUCT	OTHER		
55-6	01		X					95	3/18/00

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

X TPH by EPA 5030 T 3550

**SPECIAL DETECTION LIMITS**

**REMARKS:**

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

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

SPECIAL REPORTING REQUIREMENTS  
 QA/QC Level   
 Blue  CLP  Other

Lab Use Only Lot #: *FS080257 8W*  
 Storage Location: *31-1*

**CUSTODY RECORD**  
 Relinquished by Sampler: *[Signature]*  
 Relinquished by: *[Signature]*  
 Relinquished by: *[Signature]*

Date: *3/21/00*  
 Time: *16:50*

Received by: *[Signature]*  
 Received by Laboratory: *[Signature]*  
 Why? # *[Signature]*

**APPENDIX D  
GROUNDWATER ANALYTICAL REPORTS**



RECEIVED  
JUL 14 1995

4080 Pike Lane  
Concord, CA 94520  
(510) 685-7852  
(800) 544-3422 Inside CA  
(800) 423-7143 Outside CA  
(510) 825-0720 FAX

July 10, 1995

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

---

RE: GTEL Client ID: 053245445  
Login Number: C5060169  
Project ID (number): 053245445  
Project ID (name): Sun/1103 Summit Ave., Greensboro NC

---

Dear Herb Berger:

Enclosed please find the analytical results for the samples received by GTEL Environmental Laboratories, Inc. on 06/15/95 under Chain-of-Custody Number(s) 37808.

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.

GTEL is certified by the state of North Carolina under certification number 385.

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.

*for*  
Rashmi Shah  
Laboratory Director

GTEL Client ID: 053245445  
 Login Number: C5060169  
 Project ID (number): 053245445  
 Project ID (name): Sun/1103 Summit Ave., Greensboro NC

ANALYTICAL RESULTS

Volatile Organics  
 Method: EPA 602  
 Matrix: Aqueous

BTEL Sample Number	C5060169-01	C5060169-02	C5060169-03	C5060169-04
Client ID	MW-1	MW-2	MW-3	MW-4
Date Sampled	06/14/95	06/14/95	06/14/95	06/14/95
Date Analyzed	06/26/95	06/26/95	06/26/95	06/26/95
Dilution Factor	1.00	1.00	1.00	10.0

Analyte	Reporting		Concentration:			
	Limit	Units				
Benzene	0.3	ug/L	< 0.3	75.	< 0.3	< 3.0
Toluene	0.3	ug/L	0.6	< 0.3	< 0.3	4.4
Ethylbenzene	0.3	ug/L	< 0.3	< 0.3	< 0.3	< 3.0
Xylenes (total)	0.5	ug/L	< 0.5	< 0.5	< 0.5	< 5.0
MTBE	5.0	ug/L	270	< 5.0	< 5.0	750
IPE	1.0	ug/L	21.	130	< 1.0	250
Naphthalene	20.	ug/L	< 20.	< 20.	< 20.	< 20.
BFB (Surrogate)	--	%	110.	115.	109.	106.

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.

C5060169-04:

Data obtained from multiple dilutions. Dilution factor noted represents the dilution used for majority of results.

GTEL Concord, CA  
 C5060169:1



GTEL Client ID: 053245445  
 Login Number: C5060169  
 Project ID (number): 053245445  
 Project ID (name): Sun/1103 Summit Ave., Greensboro NC

ANALYTICAL RESULTS

Volatile Organics  
 Method: EPA 602  
 Matrix: Aqueous

GTEL Sample Number	C5060169-05	C5060169-06	C5060169-07	C5060169-08
Client ID	VM-5	MM-6	MM-7	VM-8
Date Sampled	06/14/95	06/14/95	06/14/95	06/14/95
Date Analyzed	06/26/95	06/26/95	06/26/95	06/26/95
Dilution Factor	1.00	5.00	1.00	1.00

Analyte	Reporting		Concentration:			
	Limit	Units				
Benzene	0.3	ug/L	0.4	710	0.3	< 0.3
Toluene	0.3	ug/L	< 0.3	7.4	< 0.3	< 0.3
Ethylbenzene	0.3	ug/L	< 0.3	10.	< 0.3	< 0.3
Xylenes (total)	0.5	ug/L	< 0.5	33.	< 0.5	< 0.5
MTBE	5.0	ug/L	< 5.0	2000	9.1	< 5.0
IPE	1.0	ug/L	7.2	< 5.0	97.	19.
Naphthalene	20.	ug/L	< 20.	31.	< 20.	< 20.
BFB (Surrogate)	--	%	114.	114.	112.	113.

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 Concord, CA  
 C5060169:2

GTEL Client ID: 053245445  
 Login Number: C5060169  
 Project ID (number): 053245445  
 Project ID (name): Sun/1103 Summit Ave., Greensboro NC

ANALYTICAL RESULTS

Volatile Organics  
 Method: EPA 602  
 Matrix: Aqueous

GTEL Sample Number	C5060169-09
Client ID	HN-9
Date Sampled	06/14/95
Date Analyzed	06/26/95
Dilution Factor	1.00

Analyte	Reporting Limit	Units	Concentration:			
Benzene	0.3	ug/L	2.9	--	--	--
Toluene	0.3	ug/L	< 0.3	--	--	--
Ethylbenzene	0.3	ug/L	< 0.3	--	--	--
Xylenes (total)	0.5	ug/L	7.7	--	--	--
MTBE	5.0	ug/L	< 5.0	--	--	--
IPE	1.0	ug/L	1.2	--	--	--
Naphthalene	20.	ug/L	< 20.	--	--	--
BFB (Surrogate)	--	%	113.	--	--	--

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 Concord, CA  
 C5060169:3



GTEL Client ID: 053245445  
Login Number: C5060169  
Project ID (number): 053245445  
Project ID (name): Sun/1103 Summit Ave., Greensboro NC

QUALITY CONTROL RESULTS

Volatile Organics  
Method: EPA 602  
Matrix: Aqueous

Method Blank Results

QC Batch No: Q061795-5  
Date Analyzed: 17-JUN-95

Analyte	Method: EPA 602	Concentration: ug/L
Benzene	< 0.30	
Toluene	< 0.30	
Ethylbenzene	< 0.30	
Xylenes (Total)	< 0.50	
Chlorobenzene	< 1.0	
1,3-Dichlorobenzene	< 1.0	
1,4-Dichlorobenzene	< 1.0	
1,2-Dichlorobenzene	< 1.0	
MTBE	< 5.0	

Notes:

GTEL Client ID: 053245445  
 Login Number: C5060169  
 Project ID (number): 053245445  
 Project ID (name): Sun/1103 Summit Ave., Greensboro NC

ANALYTICAL RESULTS

Volatile Organics  
 Method: EPA 601  
 Matrix: Aqueous

GTEL Sample Number	C5060169-01	C5060169-02	C5060169-03	C5060169-04
Client ID	MW-1	MW-2	MW-3	MW-4
Date Sampled	06/14/95	06/14/95	06/14/95	06/14/95
Date Analyzed	06/27/95	06/27/95	06/27/95	06/28/95
Dilution Factor	1.00	1.00	1.00	1.00

Analyte	Reporting		Concentration:			
	Limit	Units				
Chloromethane	0.5	ug/L	< 0.5	< 0.5	< 0.5	< 0.5
Vinyl chloride	1.0	ug/L	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	0.5	ug/L	< 0.5	< 0.5	< 0.5	< 0.5
Chloroethane	0.5	ug/L	< 0.5	< 0.5	< 0.5	< 0.5
Trichlorofluoromethane	0.5	ug/L	< 0.5	< 0.5	< 0.5	< 0.5
1,1-Dichloroethene	0.5	ug/L	< 0.5	< 0.5	< 0.5	< 0.5
Methylene chloride	0.5	ug/L	< 1.0	< 1.0	< 1.0	< 0.5
trans-1,2-Dichloroethene	0.5	ug/L	< 0.5	< 0.5	< 0.5	< 0.5
cis-1,2-Dichloroethene	0.5	ug/L	< 0.5	< 0.5	< 0.5	< 0.5
1,1-Dichloroethane	0.5	ug/L	< 0.5	< 0.5	< 0.5	< 0.5
Chloroform	0.5	ug/L	< 0.5	< 0.5	< 0.5	< 0.5
1,1,1-Trichloroethane	0.5	ug/L	< 0.5	< 0.5	< 0.5	< 0.5
Carbon tetrachloride	0.5	ug/L	< 0.5	< 0.5	< 0.5	< 0.5
1,2-Dichloroethane	0.5	ug/L	6.3	< 0.5	9.6	7.9
Trichloroethene	0.5	ug/L	< 0.5	< 0.5	< 0.5	< 0.5
1,2-Dichloropropane	0.5	ug/L	< 0.5	< 0.5	< 0.5	< 0.5
Bromodichloromethane	0.5	ug/L	< 0.5	< 0.5	< 0.5	< 0.5
2-Chloroethyl vinyl ether	1.0	ug/L	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,3-Dichloropropene	0.5	ug/L	< 0.5	< 0.5	< 0.5	< 0.5
trans-1,3-Dichloropropene	0.5	ug/L	< 0.5	< 0.5	< 0.5	< 0.5
1,1,2-Trichloroethane	0.5	ug/L	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethene	0.5	ug/L	< 0.5	< 0.5	< 0.5	< 0.5
Dibromochloromethane	0.5	ug/L	< 0.5	< 0.5	< 0.5	< 0.5
Chlorobenzene	0.5	ug/L	< 0.5	< 0.5	< 0.5	< 0.5
Bromoform	0.5	ug/L	< 0.5	< 0.5	< 0.5	< 0.5
1,1,2,2-Tetrachloroethane	0.5	ug/L	< 0.5	< 0.5	< 0.5	< 0.5
1,3-Dichlorobenzene	0.5	ug/L	< 0.5	< 0.5	< 0.5	< 0.5
1,4-Dichlorobenzene	0.5	ug/L	< 0.5	< 0.5	< 0.5	< 0.5
1,2-Dichlorobenzene	0.5	ug/L	< 0.5	< 0.5	< 0.5	< 0.5
Trichlorotrifluoroethane	0.5	ug/L	< 0.5	< 0.5	< 0.5	< 0.5
BFB (surrogate)	--	%	70.9	68.6	69.8	73.0

Notes:

Dilution Factor:

Dilution factor indicates the adjustments made for sample dilution.

EPA 601:

\*Test Procedures for Analysis of Organic Pollutants\*, Code of Federal Regulations, 40CFR Part 136, Appendix A. Acceptability limits for recovery in the Bromofluorobenzene (BFB) surrogate is 65-135%.

C5060169-01:

GTEL Concord, CA  
 C5060169:1



GTEL Client ID: 053245445  
 Login Number: C5060169  
 Project ID (number): 053245445  
 Project ID (name): Sun/1103 Summit Ave., Greensboro NC

ANALYTICAL RESULTS

Volatile Organics  
 Method: EPA 601  
 Matrix: Aqueous

GTEL Sample Number	C5060169-05	C5060169-06	C5060169-07	C5060169-08
Client ID	VMW-5	MM-6	MM-7	VMW-8
Date Sampled	06/14/95	06/14/95	06/14/95	06/14/95
Date Analyzed	06/27/95	06/28/95	06/27/95	06/27/95
Dilution Factor	1.00	1.00	1.00	1.00

Analyte	Reporting		Concentration:			
	Limit	Units				
Chloromethane	0.5	ug/L	< 0.5	< 0.5	< 0.5	< 0.5
Vinyl chloride	1.0	ug/L	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	0.5	ug/L	< 0.5	< 0.5	< 0.5	< 0.5
Chloroethane	0.5	ug/L	< 0.5	< 0.5	< 0.5	< 0.5
Trichlorofluoromethane	0.5	ug/L	< 0.5	< 0.5	< 0.5	< 0.5
1,1-Dichloroethene	0.5	ug/L	< 0.5	< 0.5	< 0.5	< 0.5
Methylene chloride	0.5	ug/L	< 1.0	< 0.5	< 1.0	< 1.0
trans-1,2-Dichloroethene	0.5	ug/L	< 0.5	< 0.5	< 0.5	< 0.5
cis-1,2-Dichloroethene	0.5	ug/L	< 0.5	< 0.5	< 0.5	< 0.5
1,1-Dichloroethane	0.5	ug/L	< 0.5	< 0.5	< 0.5	< 0.5
Chloroform	0.5	ug/L	< 0.5	< 0.5	< 0.5	< 0.5
1,1,1-Trichloroethane	0.5	ug/L	< 0.5	< 0.5	< 0.5	< 0.5
Carbon tetrachloride	0.5	ug/L	< 0.5	< 0.5	< 0.5	< 0.5
1,2-Dichloroethane	0.5	ug/L	4.1	82.	22.	1.1
Trichloroethene	0.5	ug/L	< 0.5	0.7	< 0.5	< 0.5
1,2-Dichloropropane	0.5	ug/L	< 0.5	< 0.5	< 0.5	< 0.5
Bromodichloromethane	0.5	ug/L	< 0.5	< 0.5	< 0.5	< 0.5
2-Chloroethyl vinyl ether	1.0	ug/L	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,3-Dichloropropene	0.5	ug/L	< 0.5	< 0.5	< 0.5	< 0.5
trans-1,3-Dichloropropene	0.5	ug/L	< 0.5	< 0.5	< 0.5	< 0.5
1,1,2-Trichloroethane	0.5	ug/L	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethene	0.5	ug/L	< 0.5	< 0.5	< 0.5	1.4
Dibromochloromethane	0.5	ug/L	< 0.5	< 0.5	< 0.5	< 0.5
Chlorobenzene	0.5	ug/L	< 0.5	< 0.5	< 0.5	< 0.5
Bromoform	0.5	ug/L	< 0.5	< 0.5	< 0.5	< 0.5
1,1,2,2-Tetrachloroethane	0.5	ug/L	< 0.5	< 0.5	< 0.5	< 0.5
1,3-Dichlorobenzene	0.5	ug/L	< 0.5	< 0.5	< 0.5	< 0.5
1,4-Dichlorobenzene	0.5	ug/L	< 0.5	< 0.5	< 0.5	< 0.5
1,2-Dichlorobenzene	0.5	ug/L	< 0.5	< 0.5	< 0.5	< 0.5
Trichlorotrifluoroethane	0.5	ug/L	< 0.5	< 0.5	< 0.5	< 0.5
BFB (surrogate)	--	%	70.8	81.2	74.6	71.7

Notes:

Dilution Factor:

Dilution factor indicates the adjustments made for sample dilution.

EPA 601:

\*Test Procedures for Analysis of Organic Pollutants\*, Code of Federal Regulation CFR Part 136, Appendix A. Acceptability limits for recovery in the Bromofluorobenzene (BFB) surrogate is 65-135%.

C5060169-05:

GTEL Concord, CA  
 C5060169:3



GTEL Client ID: 053245445  
Login Number: C5060169  
Project ID (number): 053245445  
Project ID (name): Sun/1103 Summit Ave., Greensboro NC

ANALYTICAL RESULTS

Volatile Organics  
Method: EPA 601  
Matrix: Aqueous

GTEL Sample Number	C5060169-01	C5060169-02	C5060169-03	C5060169-04
Client ID	MW-1	MW-2	MW-3	MW-4
Date Sampled	06/14/95	06/14/95	06/14/95	06/14/95
Date Analyzed	06/27/95	06/27/95	06/27/95	06/28/95
Dilution Factor	1.00	1.00	1.00	1.00

Analyte	Reporting Limit	Units	Concentration:
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Notes: (continued)

- Detection limit raised due to low level contamination of Methylene Chloride.
- C5060169-02:  
Detection limit raised due to low level contamination of Methylene Chloride.
- C5060169-03:  
Detection limit raised due to low level contamination of Methylene Chloride.

GTEL Client ID: 053245445  
 Login Number: C5060169  
 Project ID (number): 053245445  
 Project ID (name): Sun/1103 Summit Ave., Greensboro NC

ANALYTICAL RESULTS

Volatile Organics  
 Method: EPA 601  
 Matrix: Aqueous

GTEL Sample Number	C5060169-05	C5060169-06	C5060169-07	C5060169-08
Client ID	VMW-5	MM-6	MM-7	VMW-8
Date Sampled	06/14/95	06/14/95	06/14/95	06/14/95
Date Analyzed	06/27/95	06/28/95	06/27/95	06/27/95
Dilution Factor	1.00	1.00	1.00	1.00

Analyte	Reporting Limit	Units	Concentration:
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Notes: (continued)

- Detection limit raised due to low level contamination of Methylene Chloride.
- C5060169-07:  
 Detection limit raised due to low level contamination of Methylene Chloride.
- C5060169-08:  
 Detection limit raised due to low level contamination of Methylene Chloride.

GTEL Client ID: 053245445 ANALYTICAL RESULTS  
 Login Number: C5060169  
 Project ID (number): 053245445  
 Project ID (name): Sun/1103 Summit Ave., Greensboro NC

Volatile Organics  
 Method: EPA 601  
 Matrix: Aqueous

GTEL Sample Number	C5060169-09
Client ID	MN-9
Date Sampled	06/14/95
Date Analyzed	06/27/95
Dilution Factor	1.00

Analyte	Reporting Limit	Units	Concentration:			
Chloromethane	0.5	ug/L	< 0.5	--	--	--
Vinyl chloride	1.0	ug/L	< 1.0	--	--	--
Bromomethane	0.5	ug/L	< 0.5	--	--	--
Chloroethane	0.5	ug/L	< 0.5	--	--	--
Trichlorofluoromethane	0.5	ug/L	< 0.5	--	--	--
1,1-Dichloroethene	0.5	ug/L	< 0.5	--	--	--
Methylene chloride	0.5	ug/L	< 1.0	--	--	--
trans-1,2-Dichloroethene	0.5	ug/L	< 0.5	--	--	--
cis-1,2-Dichloroethene	0.5	ug/L	< 0.5	--	--	--
1,1-Dichloroethane	0.5	ug/L	< 0.5	--	--	--
Chloroform	0.5	ug/L	< 0.5	--	--	--
1,1,1-Trichloroethane	0.5	ug/L	< 0.5	--	--	--
Carbon tetrachloride	0.5	ug/L	< 0.5	--	--	--
1,2-Dichloroethane	0.5	ug/L	< 0.5	--	--	--
Trichloroethene	0.5	ug/L	< 0.5	--	--	--
1,2-Dichloropropane	0.5	ug/L	< 0.5	--	--	--
Bromodichloromethane	0.5	ug/L	< 0.5	--	--	--
2-Chloroethyl vinyl ether	1.0	ug/L	< 1.0	--	--	--
cis-1,3-Dichloropropene	0.5	ug/L	< 0.5	--	--	--
trans-1,3-Dichloropropene	0.5	ug/L	< 0.5	--	--	--
1,1,2-Trichloroethane	0.5	ug/L	< 0.5	--	--	--
Tetrachloroethene	0.5	ug/L	< 0.5	--	--	--
Dibromochloromethane	0.5	ug/L	< 0.5	--	--	--
Chlorobenzene	0.5	ug/L	< 0.5	--	--	--
Bromoform	0.5	ug/L	< 0.5	--	--	--
1,1,2,2-Tetrachloroethane	0.5	ug/L	< 0.5	--	--	--
1,3-Dichlorobenzene	0.5	ug/L	< 0.5	--	--	--
1,4-Dichlorobenzene	0.5	ug/L	< 0.5	--	--	--
1,2-Dichlorobenzene	0.5	ug/L	< 0.5	--	--	--
Trichlorotrifluoroethane	0.5	ug/L	< 0.5	--	--	--
BFB (surrogate)	--	%	68.6	--	--	--

Notes:

Dilution Factor:

Dilution factor indicates the adjustments made for sample dilution.

EPA 601:

"Test Procedures for Analysis of Organic Pollutants". Code of Federal Regulations, 40CFR Part 136, Appendix A. Acceptability limits for recovery in the Bromofluorobenzene (BFB) surrogate is 65-135%.

C5060169-09:

GTEL Concord, CA  
 C5060169:5



GTEL Client ID: 053245445  
Login Number: C5060169  
Project ID (number): 053245445  
Project ID (name): Sun/1103 Summit Ave., Greensboro NC

ANALYTICAL RESULTS

Volatile Organics  
Method: EPA 601  
Matrix: Aqueous

GTEL Sample Number	C5060169.09
Client ID	MW-9
Date Sampled	06/14/95
Date Analyzed	06/27/95
Dilution Factor	1.00

Analyte	Reporting Limit	Units	Concentration:
Notes: (continued)			

Detection limit raised due to low level contamination of Methylene Chloride.

GTEL Concord, CA  
C5060169:6



GTEL Client ID: 053245445  
 Login Number: C5060169  
 Project ID (number): 053245445  
 Project ID (name): Sun/1103 Summit Ave., Greensboro NC

QUALITY CONTROL RESULTS

Volatile Organics  
 Method: EPA 601  
 Matrix: Aqueous

Method Blank Results

QC Batch No: C062695-1  
 Date Analyzed: 26-JUN-95

Analyte	Method: EPA 601	Concentration: ug/L
Chloromethane	< 0.50	
Vinyl chloride	< 1.0	
Bromomethane	< 0.50	
Chloroethane	< 0.50	
Trichlorofluoromethane	< 0.50	
1,1-Dichloroethene	< 0.50	
Methylene chloride	1.29*	
trans-1,2-Dichloroethene	< 0.50	
cis-1,2-Dichloroethene	< 0.50	
1,1-Dichloroethane	< 0.50	
Chloroform	< 0.50	
1,1,1-Trichloroethane	< 0.50	
Carbon tetrachloride	< 0.50	
1,2-Dichloroethane	< 0.50	
Trichloroethene	< 0.50	
1,2-Dichloropropane	< 0.50	
Bromodichloromethane	< 0.50	
2-Chloroethyl vinyl ether	< 1.0	
cis-1,3-Dichloropropene	< 0.50	
trans-1,3-Dichloropropene	< 0.50	
1,1,2-Trichloroethane	< 0.50	
Tetrachloroethene	< 0.50	
Dibromochloromethane	< 0.50	
Chlorobenzene	< 0.50	
Bromoform	< 0.50	
1,1,2,2-Tetrachloroethane	< 0.50	
1,3-Dichlorobenzene	< 0.50	
1,4-Dichlorobenzene	< 0.50	
1,2-Dichlorobenzene	< 0.50	
Benzene	< 0.50	
Toluene	< 0.50	
Ethylbenzene	< 0.50	
Xylenes (Total)	< 0.50	
1,1,2-Trichlorotrifluoroethane	< 0.50	
MTBE	< 0.50	

Notes:

C062695-1: Methylene Chloride is a common laboratory contaminant.





# 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

September 6, 1995

Herb Berger  
GROUNDWATER TECHNOLOGY, INC.  
1000 Perimeter Park Drive, Suite 1  
Morrisville, NC 27560

---

RE: GTEL Client ID: 053240046  
Login Number: F5080377  
Project ID (number): 053240046  
Project ID (name): SUN SUMMIT

---

Dear Herb Berger:

Enclosed please find the analytical results for the samples received by GTEL Environmental Laboratories, Inc. on 08/31/95 under Chain-of-Custody Number(s) 24113.

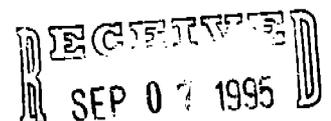
A formal Quality Assurance/Quality Control (QA/QC) program is maintained by GTEL, which is designed to meet or exceed the EPA requirements. Analytical work for this project met QA/QC criteria unless otherwise stated in the footnotes. This Analytical report shall not be reproduced except in full.

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**  
**Volatile Organics**

GTEL Client ID: 053240046  
 Job Number: F5080377  
 Project ID (number): 053240046  
 Project ID (name): SUN SUMMIT

Method: EPA 602  
 Matrix: Aqueous

GTEL Sample Number	F5080377-10	--	--	--
Client ID	MW-10	--	--	--
Date Sampled	08/30/95	--	--	--
Date Analyzed	09/05/95	--	--	--
Dilution Factor	1.00	--	--	--

Analyte	Reporting		Concentration:			
	Limit	Units				
Benzene	0.5	ug/L	68.	--	--	--
Toluene	1.0	ug/L	2.9	--	--	--
Ethylbenzene	1.0	ug/L	< 1.0	--	--	--
Xylenes (total)	2.0	ug/L	5.0	--	--	--
MTBE	10.	ug/L	< 10.	--	--	--
IPE	1.0	ug/L	32.	--	--	--

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.

**ANALYTICAL RESULTS**  
Volatile Organics

GTEL Client ID: 053240046  
 gin Number: F5080377  
 Project ID (number): 053240046  
 Project ID (name): SUN SUMMIT

Method: EPA 601  
 Matrix: Aqueous

GTEL Sample Number	F5080377-10	--	--	--
Client ID	MW-10	--	--	--
Date Sampled	08/30/95	--	--	--
Date Analyzed	09/01/95	--	--	--
Dilution Factor	1.00	--	--	--

Analyte	Reporting Limit	Units	Concentration:			
Dichlorodifluoromethane	5.0	ug/L	< 5.0	--	--	--
Chloromethane	2.0	ug/L	< 2.0	--	--	--
Vinyl chloride	1.0	ug/L	< 1.0	--	--	--
Bromomethane	2.0	ug/L	< 2.0	--	--	--
Chloroethane	1.0	ug/L	< 1.0	--	--	--
Trichlorofluoromethane	1.0	ug/L	< 1.0	--	--	--
1,1-Dichloroethene	1.0	ug/L	< 1.0	--	--	--
Methylene Chloride	1.0	ug/L	< 1.0	--	--	--
1,1-Dichloroethane	1.0	ug/L	< 1.0	--	--	--
Chloroform	1.0	ug/L	< 1.0	--	--	--
1,1,1-Trichloroethane	1.0	ug/L	< 1.0	--	--	--
Carbon Tetrachloride	1.0	ug/L	< 1.0	--	--	--
1,2-Dichloroethane	1.0	ug/L	4.5	--	--	--
1,1,2-Trichloroethane	1.0	ug/L	< 1.0	--	--	--
1,2-Dichloropropane	1.0	ug/L	< 1.0	--	--	--
Bromodichloromethane	1.0	ug/L	< 1.0	--	--	--
2-Chloroethyl vinyl ether	1.0	ug/L	< 1.0	--	--	--
cis-1,3-Dichloropropene	1.0	ug/L	< 1.0	--	--	--
trans-1,3-Dichloropropene	1.0	ug/L	< 1.0	--	--	--
1,1,2-Trichloroethane	1.0	ug/L	< 1.0	--	--	--
Tetrachloroethene	1.0	ug/L	< 1.0	--	--	--
Dibromochloromethane	1.0	ug/L	< 1.0	--	--	--
Chlorobenzene	1.0	ug/L	< 1.0	--	--	--
Bromoform	2.0	ug/L	< 2.0	--	--	--
1,1,2,2-Tetrachloroethane	1.0	ug/L	< 1.0	--	--	--
1,3-Dichlorobenzene	1.0	ug/L	< 1.0	--	--	--
1,4-Dichlorobenzene	1.0	ug/L	< 1.0	--	--	--
1,2-Dichlorobenzene	1.0	ug/L	< 1.0	--	--	--
trans-1,2-Dichloroethene	1.0	ug/L	< 1.0	--	--	--

Notes:

Dilution Factor:

Dilution factor indicates the adjustments made for sample dilution.

EPA 601:

"Test Procedures for Analysis of Organic Pollutants", Code of Federal Regulations, 40CFR Part 136, Appendix A.

**ANALYTICAL RESULTS**

**Metals**

GTEL Client ID: 053240046  
 gln Number: F5080377  
 Project ID (number): 053240046  
 Project ID (name): SUN SUMMIT

Method: EPA 7421  
 Matrix: Aqueous

GTEL Sample Number	F5080377-01	F5080377-02	F5080377-03	F5080377-04
Client ID	MW-1	MW-2	MW-3	MW-4
Date Sampled	08/30/95	08/30/95	08/30/95	08/30/95
Date Analyzed	09/05/95	09/05/95	09/05/95	09/05/95
Dilution Factor	1.02	1.02	0.998	1.01

Analyte	Reporting		Concentration:			
	Limit	Units				
Lead	4.0	ug/L	< 4.1	< 4.1	< 4.0	< 4.0

Notes:

**Dilution Factor:**

Dilution factor indicates the adjustments made for sample dilution.

**EPA 7421:**

"Test Methods for Evaluating Solid Waste, Physical/Chemical Methods". SW-846. Third Edition including Update 1. Digestion for Acid-Extractable Metals by Standard Method 3030C.

**ANALYTICAL RESULTS**  
**Metals**

GTEL Client ID: 053240046  
 Login Number: F5080377  
 Project ID (number): 053240046  
 Project ID (name): SUN SUMMIT

Method: EPA 7421  
 Matrix: Aqueous

GTEL Sample Number	F5080377-05	F5080377-06	F5080377-07	F5080377-08
Client ID	MW-5	MW-6	MW-7	MW-8
Date Sampled	08/30/95	08/30/95	08/30/95	08/30/95
Date Analyzed	09/05/95	09/05/95	09/05/95	09/05/95
Dilution Factor	1.03	1.01	1.01	0.996

Analyte	Reporting		Concentration:			
	Limit	Units				
Lead	4.0	ug/L	< 4.1	< 4.0	21.	< 4.0

Notes:

**Dilution Factor:**

Dilution factor indicates the adjustments made for sample dilution.

**EPA 7421:**

"Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846, Third Edition including Update 1. Digestion for Acid-Extractable Metals by Standard Method 3030C.

**ANALYTICAL RESULTS**

**Metals**

GTEL Client ID: 053240046  
 gin Number: F5080377  
 Project ID (number): 053240046  
 Project ID (name): SUN SUMMIT

Method: EPA 7421  
 Matrix: Aqueous

GTEL Sample Number	F5080377-09	F5080377-10	--	--
Client ID	MW-9	MW-10	--	--
Date Sampled	08/30/95	08/30/95	--	--
Date Analyzed	09/05/95	09/05/95	--	--
Dilution Factor	1.01	0.990	--	--

Analyte	Reporting Limit	Units	Concentration:	
Lead	4.0	ug/L	< 4.0	< 4.0

Notes:

**Dilution Factor:**

Dilution factor indicates the adjustments made for sample dilution.

**EPA 7421:**

"Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846 Third Edition including Update 1. Digestion for Acid-Extractable Metals by Standard Method 3030C.



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

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

24113

Company Name: **GTEL**  
 Phone #: (919) 467-2227  
 Company Address: **5011 SUMMIT AVE**  
 FAX #: (919) 467-2299  
 Site Location: **5011 SUMMIT AVE**  
 Project Manager: **MORRISVILLE NC**  
 Client Project ID: (#) **05324-0096**  
 (NAME) **SCOTT BERGER**  
 Sampler Name (Print): **SCOTT BERGER**

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	AIR	SLUDGE	PRODUCT	OTHER	HCl	HNO3	H2O2	ICE	UNREF. SERVED	OTHER	DATE	TIME
MW-1	021	1X								X				8/30/95	1728
MW-2	022	1												1714	
MW-3	023	1												1703	
MW-4	024	1												1720	
MW-5	025	1												1710	
MW-6	026	1												1733	
MW-7	027	1												1752	
MW-8	028	1												1740	
MW-9	029	1												1746	
MW-10	030	1								3				1643	

BTEX Gas Hydrocarbons PID/FID <input type="checkbox"/> with MTBE <input type="checkbox"/>	BTEX 602 <input type="checkbox"/> 8020 <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/MR 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 <input type="checkbox"/>	BTEX/MTE/IRE - EPA 602	PLACABLE HYDROCARBONS - EPA 601	LEAD - EPA 7421
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**REMARKS:**  
Please return coolers to: GTI  
13601 HARRISON LN. CHARLOTTE NC 28273

**SPECIAL DETECTION LIMITS**

**SPECIAL REPORTING REQUIREMENTS**  
FAX

**Lab Use Only Lot #:** \_\_\_\_\_  
**Storage Location:** M/CAB

**Work Order #:** F5080377 AVE

<b>TAT</b> Priority (24 hr) <input type="checkbox"/> Expedited (48 hr) <input type="checkbox"/> 7 Business Days <input type="checkbox"/> Other <u>SID</u> Business Days <input type="checkbox"/>	<b>Special Handling</b> GTEL Contact _____ Quote/Contract # _____ Confirmation # _____ P.O. # _____	<b>QA/QC Level</b> Blue <input type="checkbox"/> CLP <input type="checkbox"/> Other <input type="checkbox"/>
<b>Relinquished by Sampler:</b> <i>Scott Berger / GTI</i>	<b>Relinquished by:</b> <i>Herb Berger</i>	<b>Relinquished by:</b> <i>Herb Berger</i>
<b>Date</b> 8/30/95   <b>Time</b> 2:30	<b>Date</b> 8/30/95   <b>Time</b> 19:45	<b>Date</b> 8/30/95   <b>Time</b> 19:45
<b>Received by:</b> AIRBORNE	<b>Received by:</b> <i>Herb Berger</i>	<b>Received by Laboratory:</b> <i>Herb Berger</i>
<b>Waybill #</b>	<b>Waybill #</b>	<b>Waybill #</b>

**CUSTODY RECORD**



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

CHAIN-OF-CUSTODY RECORD  
AND ANALYSIS REQUEST

24113

OTHER

Company Name: GTI Phone #: (919) 467-2227  
Company Address: MORRISVILLE NC FAX #: (919) 467-2299  
Site Location: SUMMIT AVE  
Project Manager: HERB BERGER Client Project ID: (#) 05324-0046  
(NAME) SUMMIT  
Sampler Name (Print): SCOTT RESIEC

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 <sub>3</sub>	H <sub>2</sub> SO <sub>4</sub>	ICE	UNPREPARED	OTHER (Specify)	DATE	TIME
MW-1	01	1	X												8/30/95	1720
MW-2	02	1														1714
MW-3	03	1														1705
MW-4	04	1														1720
VMW-5	05	1														1710
MW-6	06	1														1733
MW-7	07	1														1752
VMW-8	08	1														1740
MW-9	09	1														1746
MW-10	10	1														1643

TAT  
Priority (24 hr)  GTEL Contact \_\_\_\_\_  
Expedited (48 hr)  Quote/Contract # \_\_\_\_\_  
7 Business Days  Confirmation # \_\_\_\_\_  
Other 310  
Business Days  P.O. # \_\_\_\_\_

QA/QC Level  
Blue  CLP  Other

SPECIAL DETECTION LIMITS

SPECIAL REPORTING REQUIREMENTS  
FAX

Relinquished by Sampler: Scott Berger / GTI Date: 8/30/95 Time: 2130  
Relinquished by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_  
Relinquished by: \_\_\_\_\_ Date: 01/14/95 Time: \_\_\_\_\_

**CUSTODY RECORD**

BTEX 602 <input type="checkbox"/> 8020 <input type="checkbox"/> with MTBE	BTEX/Gas Hydrocarbons PID/FID <input type="checkbox"/> with MTBE	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	TPH/R 418.1 <input type="checkbox"/> SM 503	EDB by 504 <input type="checkbox"/> DBCP by 504	EPA 503.1 <input type="checkbox"/> EPA 502.2	EPA 601 <input type="checkbox"/> EPA 8010	EPA 602 <input type="checkbox"/> EPA 8020	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)	EPA 625/PPL <input type="checkbox"/> 8270/TAL <input type="checkbox"/> NBS (+25)	EPA 610 <input type="checkbox"/> 8310	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"/>
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REMARKS:  
Please return coolers to: GTI  
13601 HARPENDON CN. CHARLOTTE NC 28273

Lab Use Only Lot #: \_\_\_\_\_ Storage Location: M/CAB

Work Order #: 55080377 DUK

Received by: A. BERGER Date: 8/30/95 Time: 2130  
Received by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_  
Received by Laboratory: ATL Date: \_\_\_\_\_ Time: \_\_\_\_\_  
Waybill # \_\_\_\_\_