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DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
GEOTECHNICAL UNIT

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**Limited Preliminary Site Assessment Report**

**Mike's BP (Rex L. Taylor Property)**

**NCDOT State Project 8.1580601 (U-2583)**

**US 1 from Proposed US 74 Bypass of Rockingham to SR 1974**

**September 3, 1998**

*Prepared for*

**North Carolina Department of Transportation**

**Geotechnical Unit**

**Raleigh, North Carolina**

*Prepared by*

**Aquaterra, Inc.**

**Greensboro, North Carolina**

September 3, 1998

Mr. Gene Tarascio  
Project Environmental Geologist  
North Carolina Department of Transportation  
Geotechnical Unit  
Post Office Box 25201  
Raleigh, North Carolina 27611-5201

Reference: Limited Preliminary Site Assessment Report  
Mike's BP (Rex L. Taylor Property)  
NCDOT State Project 8.1580601 (U-2583)  
US 1 from Proposed US 74 Bypass of Rockingham to SR 1974  
Aquaterra Job No. 8303900

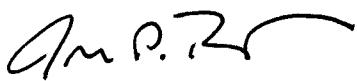
Dear Mr. Tarascio:

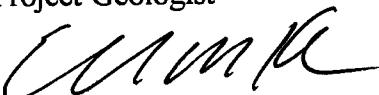
Aquaterra, Inc. (Aquaterra) is pleased to provide this limited preliminary site assessment report for the above referenced site as requested in your letter dated July 9, 1998. This report includes a description of the tasks performed, the results obtained, and our conclusions and recommendations.

Aquaterra appreciates the opportunity to continue to provide environmental services to the North Carolina Department of Transportation. If you have any questions or require any additional information, please contact me at (336) 852-5003.

Sincerely,

AQUATERRA, INC.

  
Joseph P. Best, P.G.  
Project Geologist

  
Edward M. Kuhn, P.G.  
Project Manager

GR8066/JPB/EMK



**Limited Preliminary Site Assessment Report  
Mike's BP (Rex L. Taylor Property)  
NCDOT State Project 8.1580601 (U-2583)  
US 1 from Proposed US 74 Bypass of Rockingham to SR 1974  
September 3, 1998**

## **1 Introduction**

Aquaterra, Inc. (Aquaterra) was contracted by the North Carolina Department of Transportation (NCDOT) to perform preliminary site assessment activities at the Rex L. Taylor Property located in the northwest quadrant of the US 1 and SR 1187 (Springdale Drive). The location of the site is shown on Figure 1. The site is an active gas station. Five underground storage tanks (USTs) were removed from the site in November 1994. Both soil and ground water impact was reported at this site. Aquaterra's assessment activities were focused on northeast corner of the site facing US 1 and Springdale Drive. The purpose of this report is to document the results of Aquaterra's preliminary site assessment activities.

## **2 Scope of Work**

The scope of work for the subject property would involve the installation of soil borings by the use of a Geoprobe® direct-push sampling device. Up to five soil borings would be installed along the perimeter of the proposed right-of-way acquisition, adjacent to the proposed drainage cut, and north along Springdale Drive. Soil samples would be collected at selected intervals from each boring and screened for the presence of volatile organic vapors by the use of a photoionization detector (PID). The soil sample from each boring exhibiting the highest PID reading would be retained for laboratory analysis of volatile organics by EPA Method 8260 and semi-volatile organics by EPA Method 8270. In addition, one soil sample from the soil boring exhibiting the highest PID reading would be analyzed for volatile petroleum hydrocarbons (VPH) and extractable petroleum hydrocarbons (EPH) using the Massachusetts Department of Environmental Protection (MADEP) methods.

## **3 Soil Assessment Activities**

On July 28, 1998, Aquaterra installed six soil borings at the subject property. Each soil boring was installed by the use of a Geoprobe® direct-push sampling device.. All field procedures were performed according to the procedures contained in Appendix A. The locations of each soil boring are shown in Figure 2.

Six soil borings (GA-1, GA-2, GA-3, GA-4, GA-5, and GA-6) were advanced around and in the areas proposed for right-of-way acquisition, the proposed drainage cut areas and within the existing right-of-way adjacent to the former UST basin. The soil borings were extended to depths ranging from 2.4 meters (8 feet) to 4.9 meters (16 feet) below the land surface. The soil sample from each boring with the highest PID reading was retained for laboratory analysis and placed into laboratory prepared glass containers. All soil samples were shipped under chain of custody control to Pace Analytical Services, Inc. (Pace) in Asheville, North Carolina for analysis of volatile organics by EPA Method 8260, and semi-volatile organics by EPA Method 8270. In addition, sample GP-1 was analyzed for VPH and EPH using the MADEP methods.

#### 4      Preliminary Site Assessment Results

Subsurface soils at the site consisted primarily of clayey sand and sandy clay. Ground water was not encountered in any of the borings. Boring logs were completed for each boring and are contained in Appendix B. PID readings from the screened soil samples ranged from 1.2 parts per million (ppm) to 541 ppm. The PID screening results are summarized in Table 1.

Laboratory analyses indicated the presence of regulated compounds above the method detection limits in each of the soil samples (see Table 2). The complete laboratory analytical report is contained in Appendix C.

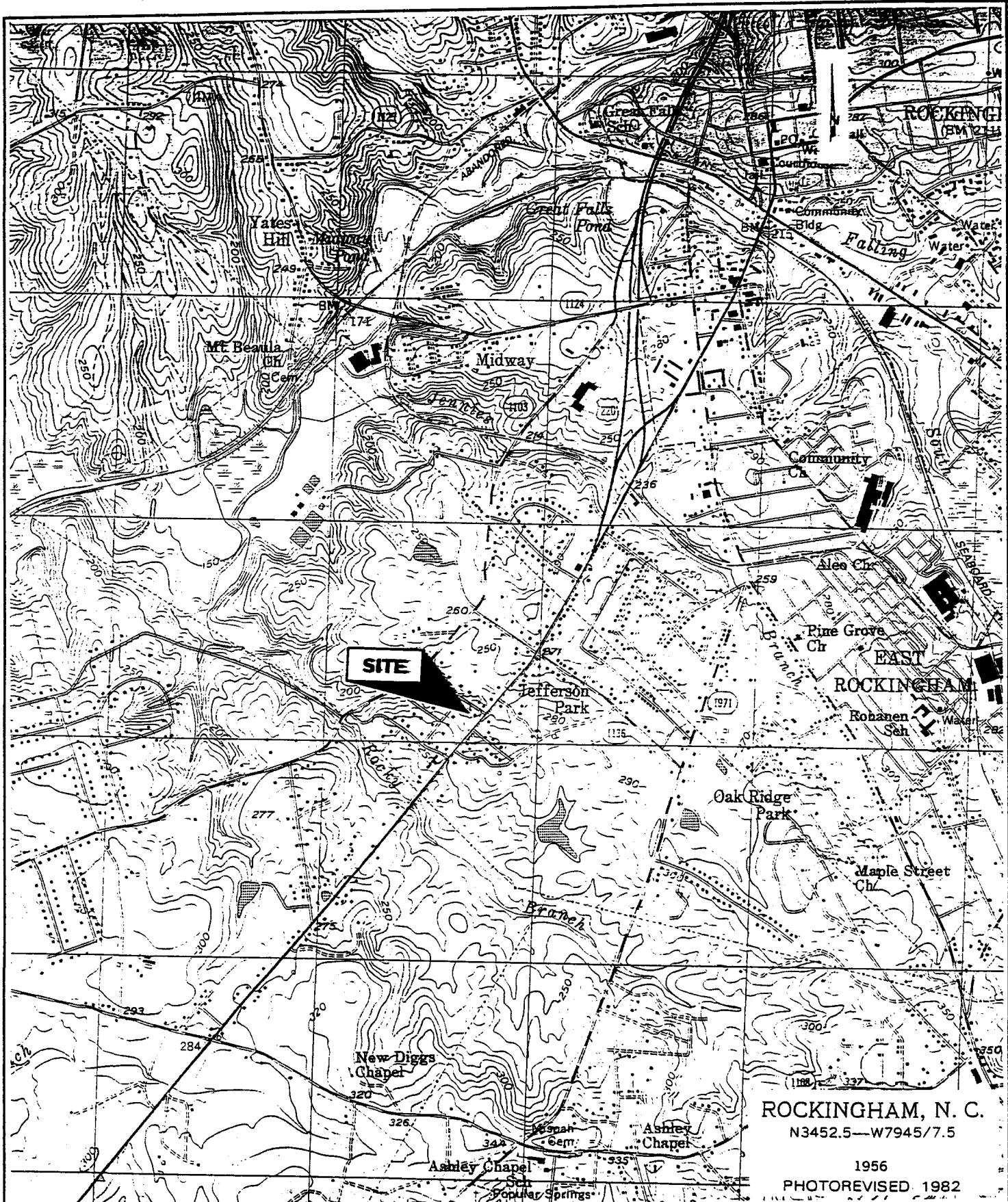
#### 5      Conclusions and Recommendations

Soil samples GA-1, GA-2 and GA-3 contained various regulated compounds exceeding the maximum soil-to-groundwater soil contaminant concentrations listed in the North Carolina Department of Environment and Natural Resources, Division of Water Quality, (DWQ), *Groundwater Section Guidelines for the Investigation and Remediation of Soil and Groundwater*, dated January 2, 1998. Samples GA-4, GA-5, and GA-6 each contained methylene chloride. Methylene chloride is a common laboratory contaminant and probably does not indicate a release of petroleum compounds. Based on the lack assignment of a risk designation to this site, the soil-to-groundwater maximum contaminant concentrations would apply to the site at this time. Once risk and land use classifications have been established, other maximum soil contaminant concentrations may apply.

Based upon the analytical results obtained from our preliminary soil assessment, it appears that soil in the northwest corner of the property has been impacted by a release of petroleum hydrocarbons. Aquaterra estimates the quantity of impacted soil to be 583 cubic meters.

Aquaterra recommends further assessment at the site to determine the risk designation for the site. A copy of this report should be forwarded to the DWQ's Fayetteville Regional Office.

# **FIGURES**

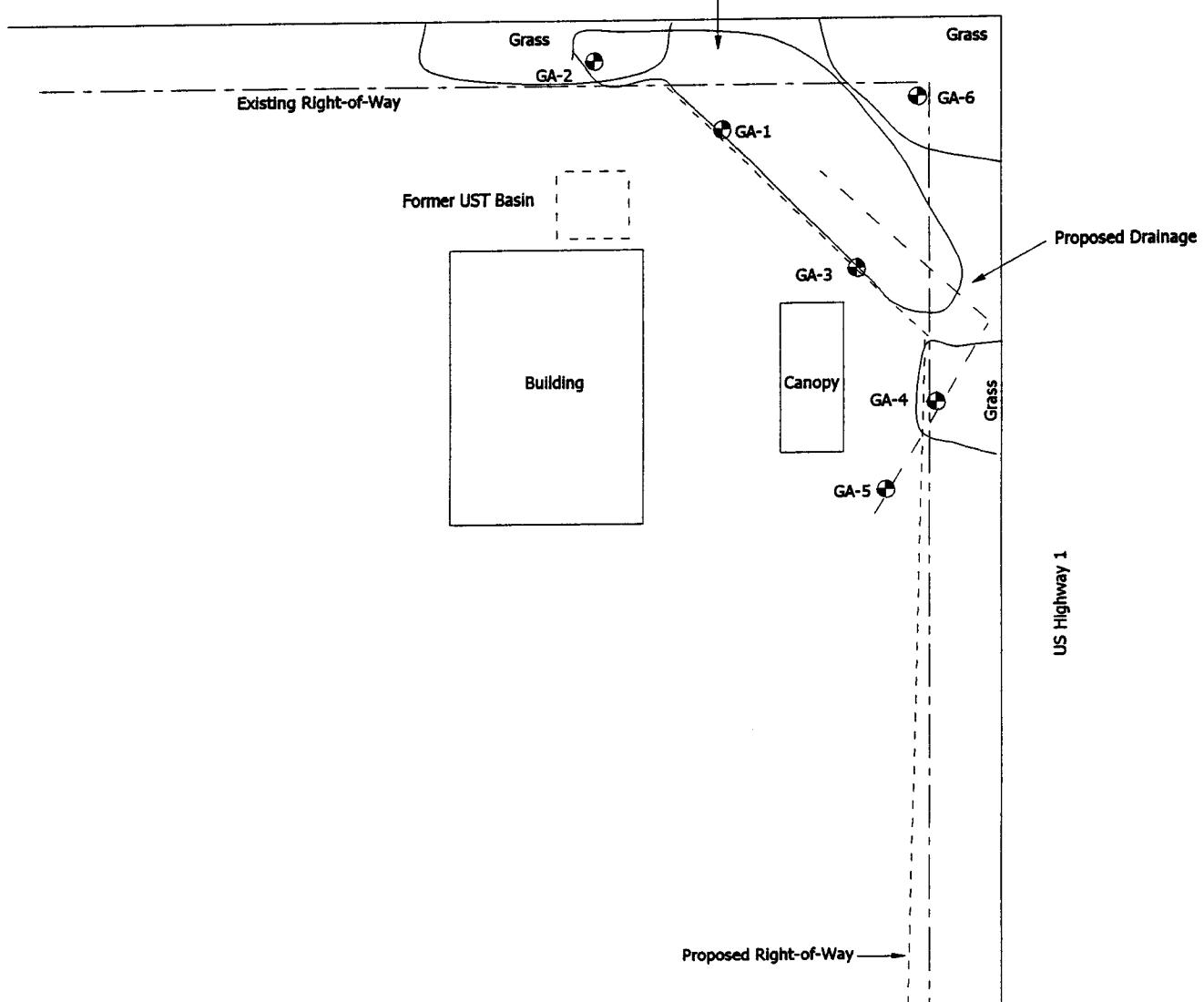


Author JB	Drawing 83039-1	Layers	Date 8/24/98	Title	Site Location Map
Job No. 8303900	Revision 0	Figure 1	Scale 1:24,000	Project	Rex L. Taylor Property Richmond County, North Carolina

34.915309  
79.788102

SR 1187

Estimated Extent of Petroleum Impacted Soil on Proposed and Existing Right-of-Way



Legend

⊕ Geoprobe Location

Author JB	Drawing 83039a-2	Layers	Date 8/11/98	Title Site Map
Job No. 8303900	Revision 0	Figure 2	Scale 1cm=4.7m	Project Rex L. Taylor Property Richmond County, North Carolina

# TABLES

**Table 1. PID Screening Results Rex L. Taylor Property,  
Richmond County, North Carolina**

<b>Sample ID</b>	<b>Sample Depth (Meters)</b>	<b>PID Reading (ppm)</b>
GA-1	1.2-2.4	541
GA-2	0-1.2	48.4
GA-3	0-1.2	397
GA-4	1.2-2.4	18.7
GA-5	0-1.2	5.2
GA-6	0-1.2	1.2

Table 2. Detected Volatile and Semivolatile Compounds in Soil.  
Taylor Property, Richmond County, North Carolina

SAMPLE	SAMPLED	SAMPLE	MATRIX	COMPOUND	METHOD	UNITS	CONC	mg/kg
GA-1	07/28/98	9248592	Soil	2-Methylnaphthalene	EPA 8270	ug/kg	2600	2.2
GA-1	07/28/98	9248592	Soil	Benzene	EPA 8260	ug/kg	<b>2200</b>	8.9
GA-1	07/28/98	9248592	Soil	Ethylbenzene	EPA 8260	ug/kg	<b>8900</b>	33
GA-1	07/28/98	9248592	Soil	m&p-Xylene	EPA 8260	ug/kg	<b>33000</b>	8.9
GA-1	07/28/98	9248592	Soil	Naphthalene	EPA 8260	ug/kg	<b>8900</b>	2.3
GA-1	07/28/98	9248592	Soil	Naphthalene	EPA 8270	ug/kg	<b>2300</b>	14
GA-1	07/28/98	9248592	Soil	o-Xylene (1,2-Dimethylbenzene)	EPA 8260	ug/kg	<b>14000</b>	25
GA-1	07/28/98	9248592	Soil	Toluene	EPA 8260	ug/kg	<b>25000</b>	13
GA-1	07/28/98	9248592	Soil	Tetrachloroethene	EPA 8260	ug/kg	<b>13000</b>	
GA-1	07/28/98	9248592	Soil	C5-C8 Aliphatics	VPH	mg/kg	<b>291</b>	
GA-1	07/28/98	9248592	Soil	C9-C12 Aliphatics	VPH	mg/kg	<b>1020</b>	
GA-1	07/28/98	9248592	Soil	C9-C10 Aromatics	VPH	mg/kg	<b>581</b>	
GA-2	07/28/98	9248600	Soil	1,2,4-Trimethylbenzene	EPA 8260	ug/kg	7.2	
GA-2	07/28/98	9248600	Soil	m&p-Xylene	EPA 8260	ug/kg	24	0.030
GA-2	07/28/98	9248600	Soil	Benzene	EPA 8260	ug/kg	<b>30</b>	
GA-2	07/28/98	9248600	Soil	Ethylbenzene	EPA 8260	ug/kg	7.1	
GA-2	07/28/98	9248600	Soil	o-Xylene (1,2-Dimethylbenzene)	EPA 8260	ug/kg	14	
GA-2	07/28/98	9248600	Soil	Naphthalene	EPA 8260	ug/kg	14	
GA-2	07/28/98	9248600	Soil	Methylene Chloride	EPA 8260	ug/kg	11	
GA-2	07/28/98	9248600	Soil	Toluene	EPA 8260	ug/kg	87	
GA-3	07/28/98	9248618	Soil	1,3,5-Trimethylbenzene	EPA 8260	ug/kg	620	
GA-3	07/28/98	9248618	Soil	2-Methylnaphthalene	EPA 8270	ug/kg	<b>1100</b>	
GA-3	07/28/98	9248618	Soil	o-Xylene (1,2-Dimethylbenzene)	EPA 8260	ug/kg	<b>640</b>	0.4
GA-3	07/28/98	9248618	Soil	Ethylbenzene	EPA 8260	ug/kg	<b>400</b>	
GA-3	07/28/98	9248618	Soil	n-Propylbenzene	EPA 8260	ug/kg	<b>330</b>	
GA-3	07/28/98	9248618	Soil	m&p-Xylene	EPA 8260	ug/kg	<b>1500</b>	
GA-3	07/28/98	9248618	Soil	Naphthalene	EPA 8270	ug/kg	<b>810</b>	0.8
GA-3	07/28/98	9248618	Soil	Hexachlorobutadiene	EPA 8260	ug/kg	<b>940</b>	
GA-3	07/28/98	9248618	Soil	Toluene	EPA 8260	ug/kg	<b>490</b>	
GA-4	07/28/98	9248626	Soil	Methylene Chloride	EPA 8260	ug/kg	<b>9.8</b>	
GA-5	07/28/98	9248634	Soil	Methylene Chloride	EPA 8260	ug/kg	<b>9.8</b>	
GA-6	07/28/98	9248642	Soil	Methylene Chloride	EPA 8260	ug/kg	<b>9.6</b>	

Bold indicates concentration exceeding Maximum Soil-to-Ground Water concentration

## **APPENDIX A**

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## **GEOPROBE SAMPLE COLLECTION**

The Geoprobe™ consists of a truck mounted hydraulic system, with a stainless steel sampling probe that is directly pushed into the subsurface. Once the probe has been advanced to a discrete interval, a dummy tip is pushed to the desired sampling depth to open the sounding. The dummy tip is withdrawn from the hole and a split spoon sampler is advanced into the open hole. The sample is collected by pushing the sampler through the soil and then withdrawing the sampler from the ground. Once the soil has been retrieved, each soil sample is split into two portions; one portion designated for headspace soil gas screening and the second portion transferred to a 40-ml precleaned glass jar designated for potential laboratory analysis.

### **Headspace Screening**

Soils are typically screened with an organic vapor analyzer (OVA) for total volatile organic compounds (VOCs), which may indicate organic or petroleum hydrocarbon contamination. A typical procedure for screening soils involves filling a clean container (e.g., glass jar or plastic baggie) approximately halfway with soil and sealing the container. This creates a headspace in which the VOCs in the soil accumulate and equilibrate. After allowing approximately 10 to 15 minutes for this process to occur, the probe of the OVA is inserted through the container's seal into the headspace of the container to obtain a VOC reading.

### **Soil Sample Collection for Analysis**

Geoprobe soil samples selected for laboratory analysis were placed into the precleaned 40-ml glass jars. The labelled jars were stored and transported to the analytical laboratory in an insulated cooler chilled to approximately 4°C. To ensure sample integrity, all samples are transported in accordance with EPA chain-of-custody protocols.

### **Geoprobe Ground Water Sample Collection**

Ground water samples are collected with a stainless steel Enviroprobe sampler attached to truck mounted hydraulic system. During the sampling event, the sampler is typically pushed to the desired depth with a screened unit sealed inside the sampler. At the desired sampling depth, the screen is exposed by pulling back on the push rod. Once the open sampler fills with ground water, a 3/4-inch Teflon bailer is sent down the push rod to collect samples for volatile analyses. A peristaltic pump with clean Teflon or Tygon tubing is used to collect water for semivolatiles or metals analyses.

All ground water samples are decanted into laboratory provided containers appropriate for the parameters being analyzed, preserved as required by the analytical technique, and are labeled with the following information: sampler's name, date of collection, sample number, analysis to be performed, and project number. Samples are stored and transported to the analytical laboratory in an insulated cooler chilled to approximately 4°C. To ensure sample integrity, all samples are transported in accordance with EPA chain-of-custody protocols. All samples are typically transported to the laboratory within 24 hours of sample collection, if possible.

## **APPENDIX B**

# Boring /Well Construction Log

Well Construction Permit Number

Aquaterra, Inc.

I. D. Number	GA-1	Purpose	Soil Sampling
Project Name	NCDOT 8.1580601 (U-2583) Taylor Property	Contractor	Troxler Geologic
Project No.	8303900	Registration	1841
Geologist	Joe Best	Driller	Ben Troxler
Start Date	7/28/98	Complete Date	07/28/98
		Equipment	Geoprobe

Drilling Method	Direct push sampler				
Comments					
Well Construction Information	Depth From - To	Blow Count		Soil / Rock Description / Comments	FID / PID (ppm) @ Depth (ft.)
		6"	6"	6"	6"
Borehole Dia.	2'	0-4'		Red and tan clayey fine to medium sand-	474
Riser Type				residuum	
Diameter					
Screen Type	4-8' *			Red and tan sandy clay	541
Diameter					
Riser interval	8-12'			Red and tan sandy clay	94.9
Screen interval					
Slot Size	12-16'			Red and tan sandy clay	45.8
Grout Type					
Interval					
Bentonite Type					
Interval					
Filter Pack					
Interval					
Total Depth					
R.P.Elevation					
Datum					
Water Level Information					
Date	W. L. Below R. P.				
				* Denotes soil sample submitted for laboratory analysis.	

R.P. = Reference Point    W.L. = Water Level    TBM = Temporary Benchmark    MSL = Mean Sea Level

# Boring /Well Construction Log

Well Construction Permit Number

Aquaterra, Inc.

I. D. Number	GA-2	Purpose	Soil Sampling
Project Name	NCDOT 8.1580601 (U-2583) Taylor Property	Contractor	Troxler Geologic
Project No.	8303900	Registration	1841
Geologist	Joe Best	Driller	Ben Troxler
Start Date	7/28/98	Complete Date	07/28/98
		Equipment	Geoprobe

Drilling Method	Direct push sampler							
Comments								
Well Construction Information	Depth From - To	Blow Count				Soil / Rock Description / Comments	(ppm) @ Depth (ft.)	FID / PID
		6"	6"	6"	6"			
Borehole Dia.	2'	0-4' *				Red and tan sandy clay- residuum	48.4	
Riser Type								
Diameter		4-8'				Red and tan sandy clay- residuum	17.4	
Screen Type								
Diameter								
Riser interval								
Screen interval								
Slot Size								
Grout Type								
Interval								
Bentonite Type								
Interval								
Filter Pack								
Interval								
Total Depth								
R.P.Elevation								
Datum								
Water Level Information								
Date	W. L. Below R. P.							
						* Denotes soil sample submitted for laboratory analysis.		

R.P. = Reference Point   W.L. = Water Level   TBM = Temporary Benchmark   MSL = Mean Sea Level

# Boring /Well Construction Log

Well Construction Permit Number

I. D. Number	GA-3	Purpose	<i>Soil Sampling</i>
Project Name	NCDOT 8.1580601 (U-2583) Taylor Property	Contractor	<i>Troxler Geologic</i>
Project No.	8303900	Registration	1841
Geologist	Joe Best	Driller	<i>Ben Troxler</i>
Start Date	7/28/98	Complete Date	07/28/98
		Equipment	<i>Geoprobe</i>

Drilling Method	Direct push sampler						
Comments							
Well Construction Information	Depth From - To	Blow Count				Soil / Rock Description / Comments	FID / PID (ppm) @ Depth (ft.)
Borehole Dia.	2'	0-4' *				Red and tan fine sandy clay- residuum	397
Riser Type							
Diameter		4-8'				Red and tan fine sandy clay- residuum	14.5
Screen Type							
Diameter							
Riser interval							
Screen interval							
Slot Size							
Grout Type							
Interval							
Bentonite Type							
Interval							
Filter Pack							
Interval							
Total Depth							
R.P.Elevation							
Datum							
Water Level Information							
Date	W. L. Below R. P.						
						* Denotes soil sample submitted for laboratory analysis.	

R.P. = Reference Point W.L. = Water Level TBM = Temporary Benchmark MSL = Mean Sea Level

# Boring /Well Construction Log

Well Construction Permit Number

Aquaterra, Inc.

I. D. Number	GA-4	Purpose	Soil Sampling
Project Name	NCDOT 8.1580601 (U-2583) Taylor Property	Contractor	Troxler Geologic
Project No.	8303900	Registration	1841
Geologist	Joe Best	Driller	Ben Troxler
Start Date	7/28/98	Complete Date	07/28/98
		Equipment	Geoprobe

Drilling Method		Direct push sampler			
Comments					
Well Construction Information	Depth From - To	Blow Count		Soil / Rock Description / Comments	FID / PID (ppm) @ Depth (ft.)
		6"	6"		
Borehole Dia.	2'	0-4'		Tan and red coarse to medium sandy	4.3
Riser Type				clay- residuum	
Diameter					
Screen Type	4-8'	*		Tan and red coarse to medium sandy	8.7
Diameter				clay- residuum	
Riser interval					
Screen interval					
Slot Size					
Grout Type					
Interval					
Bentonite Type					
Interval					
Filter Pack					
Interval					
Total Depth					
R.P.Elevation					
Datum					
Water Level Information					
Date	W. L. Below R. P.				
				* Denotes soil sample submitted for laboratory analysis.	

R.P. = Reference Point    W.L. = Water Level    TBM = Temporary Benchmark    MSL = Mean Sea Level

# Boring /Well Construction Log

Well Construction Permit Number

Aquaterra, Inc.

I. D. Number	GA-5	Purpose	Soil Sampling
Project Name	NCDOT 8.1580601 (U-2583) Taylor Property	Contractor	Troxler Geologic
Project No.	8303900	Registration	1841
Geologist	Joe Best	Driller	Ben Troxler
Start Date	7/28/98	Complete Date	07/28/98
		Equipment	Geoprobe

Drilling Method	Direct push sampler
Comments	

Well Construction Information	Depth From - To	Blow Count 6" 6" 6" 6"	Soil / Rock Description / Comments	FID / PID (ppm)
				@ Depth (ft.)
Borehole Dia.	2'	0-4' *	Red and tan medium sandy clay-residuum	5.2
Riser Type				
Diameter				
Screen Type		4-8'	Red and tan medium sandy clay-residuum	1.4
Diameter				
Riser interval				
Screen interval				
Slot Size				
Grout Type				
Interval				
Bentonite Type				
Interval				
Filter Pack				
Interval				
Total Depth				
R.P.Elevation				
Datum				
Water Level Information				
Date	W. L. Below R. P.			
			* Denotes soil sample submitted for laboratory analysis.	

R.P. = Reference Point   W.L. = Water Level   TBM = Temporary Benchmark   MSL = Mean Sea Level

# Boring /Well Construction Log

Well Construction Permit Number

*Aquaterra, Inc.*

I. D. Number	GA-6	Purpose	Soil Sampling
Project Name	NCDOT 8.1580601 (U-2583) Taylor Property	Contractor	Troxler Geologic
Project No.	8303900	Registration	1841
Geologist	Joe Best	Driller	Ben Troxler
Start Date	7/28/98	Complete Date	07/28/98
		Equipment	Geoprobe

Drilling Method	Direct push sampler						
Comments							
Well Construction Information	Depth From - To	Blow Count				Soil / Rock Description / Comments	FID / PID (ppm) @ Depth (ft.)
		6"	6"	6"	6"		
Borehole Dia.	2'	0-4' *				Red medium sandy clay- residuum	1.6
Riser Type							
Diameter		4-8'				Red medium sandy clay- residuum	1.2
Screen Type							
Diameter							
Riser interval							
Screen interval							
Slot Size							
Grout Type							
Interval							
Bentonite Type							
Interval							
Filter Pack							
Interval							
Total Depth							
R.P.Elevation							
Datum							
Water Level Information							
Date	W. L. Below R. P.						
						* Denotes soil sample submitted for laboratory analysis.	

R.P. = Reference Point    W.L. = Water Level    TBM = Temporary Benchmark    MSL = Mean Sea Level

## **APPENDIX C**

# Pace Analytical

Pace Analytical Services, Inc.  
9800 Kincey Avenue, Suite 100  
Huntersville, NC 28078

Tel: 704-875-9092  
Fax: 704-875-9091

August 17, 1998

Mr. Charlie Billings  
Pace Analytical Services, Inc.  
54 Ravenscroft Drive  
Asheville, NC 28801

RE: Pace Project Number: 92770  
Client Project ID: NCDOT/8.158061 Taylor

Dear Mr. Billings:

Enclosed are the results of analyses for sample(s) received by the laboratory on July 30, 1998. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Kelly Wallace  
Project Manager

Enclosures

Laboratory Certification IDs  
NC Wastewater 12  
NC Drinking Water 37706  
SC 99006

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, Inc.

Laboratory Certification IDs  
KY Drinking Water 90090  
TN UST List  
VA Drinking Water 213

# Pace Analytical

Pace Analytical Services, Inc.  
9800 Kincey Avenue, Suite 100  
Huntersville, NC 28078

Tel: 704-875-9092  
Fax: 704-875-9091

DATE: 08/17/98

PAGE: 1

Pace Analytical Services, Inc.  
54 Ravenscroft Drive  
Asheville, NC 28801

Pace Project Number: 92770  
Client Project ID: NCDOT/8.158061 Taylor

Attn: Mr. Charlie Billings  
Phone: (704)254-7176

Solid results are reported on a dry weight basis

Pace Sample No:	9248592	Date Collected:	07/28/98	Matrix:	Soil
Client Sample ID:	GA-1	Date Received:	07/30/98		
Parameters	Results	Units	PRL	Analyzed	Analyst CAS# Footnotes

## Wet Chemistry

Percent Moisture	Method: %	Moisture	Prep Method:
Percent Moisture	28.6	%	08/03/98 ADM

## GC/MS -- VOA

	Method: EPA 8260		Prep Method: EPA 8260
Dichlorodifluoromethane	ND	ug/kg	3500
Chloromethane	ND	ug/kg	3500
Vinyl Chloride	ND	ug/kg	3500
Bromomethane	ND	ug/kg	3500
Chloroethane	ND	ug/kg	3500
Trichlorofluoromethane	ND	ug/kg	1700
1,1-Dichloroethene	ND	ug/kg	1700
Methylene Chloride	ND	ug/kg	1700
trans-1,2-Dichloroethene	ND	ug/kg	1700
1,1-Dichloroethane	ND	ug/kg	1700
cis-1,2-Dichloroethene	ND	ug/kg	1700
2,2-Dichloropropane	ND	ug/kg	1700
Chloroform	ND	ug/kg	1700
Bromochloromethane	ND	ug/kg	1700
1,1,1-Trichloroethane	ND	ug/kg	1700
1,1-Dichloropropene	ND	ug/kg	1700
1,2-Dichloroethane	ND	ug/kg	1700
Carbon Tetrachloride	ND	ug/kg	1700
Benzene	2200	ug/kg	1700
Trichloroethene	ND	ug/kg	1700
1,2-Dichloropropane	ND	ug/kg	1700

Laboratory Certification IDs  
NC Wastewater 12  
NC Drinking Water 37706  
SC 99006

Laboratory Certification IDs  
KY Drinking Water 90090  
TN UST List  
VA Drinking Water 213

## REPORT OF LABORATORY ANALYSIS

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# Pace Analytical

Pace Analytical Services, Inc.  
9800 Kincey Avenue, Suite 100  
Huntersville, NC 28078

Tel: 704-875-9092  
Fax: 704-875-9091

DATE: 08/17/98

PAGE: 2

Pace Project Number: 92770

Client Project ID: NCDOT/8.158061 Taylor

Pace Sample No:	9248592		Date Collected:	07/28/98	Matrix:	Soil
Client Sample ID:	GA-1		Date Received:	07/30/98		
Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#
Dibromomethane	ND	ug/kg	1700	08/05/98	JAC	74-95-3
Bromodichloromethane	ND	ug/kg	1700	08/05/98	JAC	75-27-4
Toluene	25000	ug/kg	1700	08/05/98	JAC	108-88-3
1,1,2-Trichloroethane	ND	ug/kg	1700	08/05/98	JAC	79-00-5
1,3-Dichloropropane	ND	ug/kg	1700	08/05/98	JAC	142-28-9
Dibromochloromethane	ND	ug/kg	1700	08/05/98	JAC	124-48-1
Tetrachloroethene	13000	ug/kg	1700	08/05/98	JAC	127-18-4
1,2-Dibromoethane	ND	ug/kg	1700	08/05/98	JAC	106-93-4
Chlorobenzene	ND	ug/kg	1700	08/05/98	JAC	108-90-7
1,1,1,2-Tetrachloroethane	ND	ug/kg	1700	08/05/98	JAC	630-20-6
Ethylbenzene	8900	ug/kg	1700	08/05/98	JAC	100-41-4
m,p-Xylene	33000	ug/kg	3500	08/05/98	JAC	7816-60-0
Styrene	ND	ug/kg	1700	08/05/98	JAC	100-42-5
o-Xylene (1,2-Dimethylbenzene)	14000	ug/kg	1700	08/05/98	JAC	95-47-6
Bromoform	ND	ug/kg	1700	08/05/98	JAC	75-25-2
1,1,2,2-Tetrachloroethane	ND	ug/kg	1700	08/05/98	JAC	79-34-5
Isopropylbenzene (Cumene)	ND	ug/kg	1700	08/05/98	JAC	98-82-8
1,2,3-Trichloropropane	ND	ug/kg	1700	08/05/98	JAC	96-18-4
Bromobenzene	ND	ug/kg	1700	08/05/98	JAC	108-86-1
n-Propylbenzene	ND	ug/kg	1700	08/05/98	JAC	103-65-1
2-Chlorotoluene	ND	ug/kg	1700	08/05/98	JAC	95-49-8
4-Chlorotoluene	ND	ug/kg	1700	08/05/98	JAC	106-43-4
1,3,5-Trimethylbenzene	ND	ug/kg	1700	08/05/98	JAC	108-67-8
tert-Butylbenzene	ND	ug/kg	1700	08/05/98	JAC	98-06-6
1,2,4-Trimethylbenzene	ND	ug/kg	1700	08/05/98	JAC	95-63-6
sec-Butylbenzene	ND	ug/kg	1700	08/05/98	JAC	135-98-8
1,3-Dichlorobenzene	ND	ug/kg	1700	08/05/98	JAC	541-73-1
p-Isopropyltoluene	ND	ug/kg	1700	08/05/98	JAC	99-87-6
1,4-Dichlorobenzene	ND	ug/kg	1700	08/05/98	JAC	106-46-7
1,2-Dichlorobenzene	ND	ug/kg	1700	08/05/98	JAC	95-50-1
n-Butylbenzene	4500	ug/kg	1700	08/05/98	JAC	104-51-8
1,2-Dibromo-3-Chloropropane	ND	ug/kg	1700	08/05/98	JAC	96-12-8
1,2,4-Trichlorobenzene	ND	ug/kg	1700	08/05/98	JAC	120-82-1
Naphthalene	8900	ug/kg	1700	08/05/98	JAC	91-20-3
Hexachlorobutadiene	ND	ug/kg	1700	08/05/98	JAC	87-68-3
1,2,3-Trichlorobenzene	ND	ug/kg	1700	08/05/98	JAC	87-61-6
Dibromofluoromethane (S)	82	x		08/05/98	JAC	1868-53-7
1,2-Dichloroethane-d4 (S)	70	x		08/05/98	JAC	17060-07-0
Toluene-d8 (S)	93	x		08/05/98	JAC	2037-26-5
4-Bromofluorobenzene (S)	92	x		08/05/98	JAC	460-00-4

GC/MS -- Semi-VOA

#### Laboratory Certification IDs

NC Wastewater 12  
NC Drinking Water 37706  
SC 99006

#### Laboratory Certification IDs

KY Drinking Water 90090  
TN UST List  
VA Drinking Water 213

## REPORT OF LABORATORY ANALYSIS

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# Pace Analytical

Pace Analytical Services, Inc.  
9800 Kinney Avenue, Suite 100  
Huntersville, NC 28078

Tel: 704-875-9092  
Fax: 704-875-9091

DATE: 08/17/98

PAGE: 3

Pace Project Number: 92770

Client Project ID: NCDOT/8.158061 Taylor

Pace Sample No:	9248592		Date Collected:	07/28/98	Matrix:	Soil
Client Sample ID:	GA-1		Date Received:	07/30/98		
Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#
Semivolatile Organics	Method: EPA 8270			Prep Method: EPA 3550		
bis(2-Chloroethyl)ether	ND	ug/kg	460	08/04/98	DHJ	111-44-4
Phenol	ND	ug/kg	460	08/04/98	DHJ	108-95-2
2-Chlorophenol	ND	ug/kg	460	08/04/98	DHJ	95-57-8
1,3-Dichlorobenzene	ND	ug/kg	460	08/04/98	DHJ	541-73-1
1,4-Dichlorobenzene	ND	ug/kg	460	08/04/98	DHJ	106-46-7
1,2-Dichlorobenzene	ND	ug/kg	460	08/04/98	DHJ	95-50-1
Benzyl Alcohol	ND	ug/kg	920	08/04/98	DHJ	100-51-6
bis(2-Chloroisopropyl)ether	ND	ug/kg	460	08/04/98	DHJ	39638-32-9
2-Methylphenol	ND	ug/kg	460	08/04/98	DHJ	95-48-7
Hexachloroethane	ND	ug/kg	460	08/04/98	DHJ	67-72-1
N-Nitroso-di-n-propylamine	ND	ug/kg	460	08/04/98	DHJ	621-64-7
4-Methylphenol	ND	ug/kg	460	08/04/98	DHJ	106-44-5
Nitrobenzene	ND	ug/kg	460	08/04/98	DHJ	98-95-3
Isophorone	ND	ug/kg	460	08/04/98	DHJ	78-59-1
2-Nitrophenol	ND	ug/kg	460	08/04/98	DHJ	88-75-5
2,4-Dimethylphenol	ND	ug/kg	460	08/04/98	DHJ	105-67-9
bis(2-Chloroethoxy)methane	ND	ug/kg	460	08/04/98	DHJ	111-91-1
Benzoic Acid	ND	ug/kg	2300	08/04/98	DHJ	65-85-0
2,4-Dichlorophenol	ND	ug/kg	460	08/04/98	DHJ	120-83-2
1,2,4-Trichlorobenzene	ND	ug/kg	460	08/04/98	DHJ	120-82-1
Naphthalene	2300	ug/kg	460	08/04/98	DHJ	91-20-3
4-Chloroaniline	ND	ug/kg	920	08/04/98	DHJ	106-47-8
Hexachlorobutadiene	ND	ug/kg	460	08/04/98	DHJ	87-68-3
4-Chloro-3-methylphenol	ND	ug/kg	920	08/04/98	DHJ	59-50-7
2-Methylnaphthalene	2600	ug/kg	460	08/04/98	DHJ	91-57-6
Hexachlorocyclopentadiene	ND	ug/kg	460	08/04/98	DHJ	77-47-4
2,4,6-Trichlorophenol	ND	ug/kg	460	08/04/98	DHJ	88-06-2
2,4,5-Trichlorophenol	ND	ug/kg	460	08/04/98	DHJ	95-95-4
2-Chloronaphthalene	ND	ug/kg	460	08/04/98	DHJ	91-58-7
2-Nitroaniline	ND	ug/kg	2300	08/04/98	DHJ	88-74-4
Acenaphthylene	ND	ug/kg	460	08/04/98	DHJ	208-96-8
Dimethylphthalate	ND	ug/kg	460	08/04/98	DHJ	131-11-3
2,6-Dinitrotoluene	ND	ug/kg	460	08/04/98	DHJ	606-20-2
Acenaphthene	ND	ug/kg	460	08/04/98	DHJ	83-32-9
3-Nitroaniline	ND	ug/kg	2300	08/04/98	DHJ	99-09-2
2,4-Dinitrophenol	ND	ug/kg	2300	08/04/98	DHJ	51-28-5
Dibenzofuran	ND	ug/kg	460	08/04/98	DHJ	132-64-9
2,4-Dinitrotoluene	ND	ug/kg	460	08/04/98	DHJ	121-14-2
4-Nitrophenol	ND	ug/kg	2300	08/04/98	DHJ	100-02-7

Laboratory Certification IDs  
NC Wastewater 12  
NC Drinking Water 37706  
SC 99006

## REPORT OF LABORATORY ANALYSIS

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Laboratory Certification IDs  
KY Drinking Water 90090  
TN UST List  
VA Drinking Water 213

# Pace Analytical

Pace Analytical Services, Inc.  
9800 Kinney Avenue, Suite 100  
Huntersville, NC 28078

Tel: 704-875-9092  
Fax: 704-875-9091

DATE: 08/17/98

PAGE: 4

Pace Project Number: 92770

Client Project ID: NCDOT/8.158061 Taylor

Pace Sample No:	9248592		Date Collected:	07/28/98	Matrix:	Soil
Client Sample ID:	GA-1		Date Received:	07/30/98		
Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#
Fluorene	ND	ug/kg	460	08/04/98	DHJ	86-73-7
4-Chlorophenyl-phenylether	ND	ug/kg	460	08/04/98	DHJ	7005-72-3
Diethylphthalate	ND	ug/kg	460	08/04/98	DHJ	84-66-2
4-Nitroaniline	ND	ug/kg	2300	08/04/98	DHJ	100-01-6
1,2-Diphenylhydrazine	ND	ug/kg	460	08/04/98	DHJ	122-66-7
4,6-Dinitro-2-methylphenol	ND	ug/kg	460	08/04/98	DHJ	534-52-1
N-Nitrosodiphenylamine	ND	ug/kg	460	08/04/98	DHJ	86-30-6
4-Bromophenyl-phenylether	ND	ug/kg	460	08/04/98	DHJ	101-55-3
Hexachlorobenzene	ND	ug/kg	460	08/04/98	DHJ	118-74-1
Pentachlorophenol	ND	ug/kg	2300	08/04/98	DHJ	87-86-5
Phenanthrene	ND	ug/kg	460	08/04/98	DHJ	85-01-8
Anthracene	ND	ug/kg	460	08/04/98	DHJ	120-12-7
Di-n-butylphthalate	ND	ug/kg	460	08/04/98	DHJ	84-74-2
Fluoranthene	ND	ug/kg	460	08/04/98	DHJ	206-44-0
Pyrene	ND	ug/kg	460	08/04/98	DHJ	129-00-0
Butylbenzylphthalate	ND	ug/kg	460	08/04/98	DHJ	85-68-7
3,3'-Dichlorobenzidine	ND	ug/kg	920	08/04/98	DHJ	91-94-1
Benzo(a)anthracene	ND	ug/kg	460	08/04/98	DHJ	56-55-3
Chrysene	ND	ug/kg	460	08/04/98	DHJ	218-01-9
bis(2-Ethylhexyl)phthalate	ND	ug/kg	920	08/04/98	DHJ	117-81-7
Di-n-octylphthalate	ND	ug/kg	460	08/04/98	DHJ	117-84-0
Benzo(b)fluoranthene	ND	ug/kg	460	08/04/98	DHJ	205-99-2
Benzo(k)fluoranthene	ND	ug/kg	460	08/04/98	DHJ	207-08-9
Benzo(a)pyrene	ND	ug/kg	460	08/04/98	DHJ	50-32-8
Indeno(1,2,3-cd)pyrene	ND	ug/kg	460	08/04/98	DHJ	193-39-5
Dibenz(a,h)anthracene	ND	ug/kg	460	08/04/98	DHJ	53-70-3
Benzo(g,h,i)perylene	ND	ug/kg	460	08/04/98	DHJ	191-24-2
Nitrobenzene-d5 (S)	86	%		08/04/98	DHJ	4165-60-0
2-Fluorobiphenyl (S)	82	%		08/04/98	DHJ	321-60-8
Terphenyl-d14 (S)	89	%		08/04/98	DHJ	1718-51-0
Phenol-d6 (S)	76	%		08/04/98	DHJ	13127-88-3
2-Fluorophenol (S)	67	%		08/04/98	DHJ	367-12-4
2,4,6-Tribromophenol (S)	84	%		08/04/98	DHJ	118-79-6
Date Extracted				08/03/98		

#### Laboratory Certification IDs

NC Wastewater 12  
NC Drinking Water 37706  
SC 99006

#### Laboratory Certification IDs

KY Drinking Water 90090  
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VA Drinking Water 213

## REPORT OF LABORATORY ANALYSIS

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Received: 08/04/98

## Results by Sample

SAMPLE ID GA-1/TAYLORFRACTION 03A TEST CODE EPHNC NAME EXTRACTABLE PHCDate & Time Collected 07/28/98Category SOILEXTRACTABLE PETROLEUM HYDROCARBONS

## REPORTING

RESULT LIMIT

C9-C18 Aliphatics	<u>ND</u>	100
C19-C36 Aliphatics	<u>ND</u>	100
C11-C22 Aromatics	<u>ND</u>	30

Surrogates	%Recovery	Surrogate	Limits
Aliphatic Surrogate	<u>83.0</u>	40	- 140
Aliphatic Fractionation Surrogate	<u>88.8</u>	40	- 140
Aromatic Surrogate	<u>79.7</u>	40	- 140
Aromatic Fractionation Surrogate	<u>45.8</u>	40	- 140

## Notes and Definitions for this Report:

EXTRACTED 08/06/98DATE RUN 08/12/98ANALYST CKINSTRUMENT HP7DIL. FACTOR: 1UNITS mg/KgMATRIX:  DRY WEIGHT: 69.0

ND = not detected at detection limit

D = diluted out

INT = matrix interference

Hydrocarbon Range data exclude concentrations of surrogate(s) eluting in that range

Hydrocarbon Range data are unadjusted for target analytes

## Results by Sample

SAMPLE ID GA-1/TAYLORFRACTION 03A TEST CODE VPHNC NAME VOLATILE PHCDate & Time Collected 07/28/98Category SOILVOLATILE PETROLEUM HYDROCARBONS

REPORTING		
	RESULT	LIMIT
C5-C8 Aliphatics (FID)	<u>291</u>	<u>10</u>
C9-C12 Aliphatics (FID)	<u>1020</u>	<u>10</u>
C9-C10 Aromatics (PID)	<u>581</u>	<u>10</u>

## TARGET VPH ANALYTES

Surrogates	% Recovery	Surrogate	Limits
FID Surrogate	<u>80</u>	70	- 130
PID Surrogate	<u>76</u>	70	- 130

## Notes and Definitions for this Report:

UNITS: mg/kg  
 DATE RUN: 08/06/98  
 EXTRACTED: \_\_\_\_\_  
 ANALYST: SEP  
 INSTRUMENT: V3  
 DIL. FACTOR: 10  
 DRY WEIGHT: 69.0

ND = not detected at detection limit

D = diluted out

INT = matrix interference

Hydrocarbon Range data exclude concentrations of surrogate(s) eluting in that range

Hydrocarbon Range data are unadjusted for target analytes

# Pace Analytical

Pace Analytical Services, Inc.  
9800 Kinney Avenue, Suite 100  
Huntersville, NC 28078

Tel: 704-875-9092  
Fax: 704-875-9091

DATE: 08/17/98  
PAGE: 5

Pace Project Number: 92770  
Client Project ID: NCDOT/8.158061 Taylor

Pace Sample No:	9248600	Date Collected:	07/28/98	Matrix:	Soil
Client Sample ID:	GA-2	Date Received:	07/30/98		
Parameters	Results	Units	PRL	Analyzed	Analyst CAS#
					Footnotes

## Wet Chemistry

Percent Moisture	Method: %	Moisture	Prep Method:
Percent Moisture	16.5	%	08/03/98 ADM

## GC/MS -- VOA

GC/MS VOCs by 8260, low level	Method: EPA 8260	Prep Method: EPA 8260
Dichlorodifluoromethane	ND ug/kg 12	08/03/98 VFT 75-71-8
Chloromethane	ND ug/kg 12	08/03/98 VFT 74-87-3
Vinyl Chloride	ND ug/kg 12	08/03/98 VFT 75-01-4
Bromomethane	ND ug/kg 12	08/03/98 VFT 74-83-9
Chloroethane	ND ug/kg 12	08/03/98 VFT 75-00-3
Trichlorofluoromethane	ND ug/kg 6	08/03/98 VFT 75-69-4
1,1-Dichloroethene	ND ug/kg 6	08/03/98 VFT 75-35-4
Methylene Chloride	11 ug/kg 6	08/03/98 VFT 75-09-2
trans-1,2-Dichloroethene	ND ug/kg 6	08/03/98 VFT 156-60-5
1,1-Dichloroethane	ND ug/kg 6	08/03/98 VFT 75-34-3
cis-1,2-Dichloroethene	ND ug/kg 6	08/03/98 VFT 156-59-2
2,2-Dichloropropane	ND ug/kg 6	08/03/98 VFT 594-20-7
Chloroform	ND ug/kg 6	08/03/98 VFT 67-66-3
Bromochloromethane	ND ug/kg 6	08/03/98 VFT 74-97-5
1,1,1-Trichloroethane	ND ug/kg 6	08/03/98 VFT 71-55-6
1,1-Dichloropropene	ND ug/kg 6	08/03/98 VFT 563-58-6
1,2-Dichloroethane	ND ug/kg 6	08/03/98 VFT 107-06-2
Carbon Tetrachloride	ND ug/kg 6	08/03/98 VFT 56-23-5
Benzene	30 ug/kg 6	08/03/98 VFT 71-43-2
Trichloroethene	ND ug/kg 6	08/03/98 VFT 79-01-6
1,2-Dichloropropane	ND ug/kg 6	08/03/98 VFT 78-87-5
Dibromomethane	ND ug/kg 6	08/03/98 VFT 74-95-3
Bromodichloromethane	ND ug/kg 6	08/03/98 VFT 75-27-4
Toluene	87 ug/kg 6	08/03/98 VFT 108-88-3
1,1,2-Trichloroethane	ND ug/kg 6	08/03/98 VFT 79-00-5
1,3-Dichloropropane	ND ug/kg 6	08/03/98 VFT 142-28-9
Dibromochloromethane	ND ug/kg 6	08/03/98 VFT 124-48-1
Tetrachloroethene	ND ug/kg 6	08/03/98 VFT 127-18-4
1,2-Dibromoethane	ND ug/kg 6	08/03/98 VFT 106-93-4
Chlorobenzene	ND ug/kg 6	08/03/98 VFT 108-90-7
1,1,1,2-Tetrachloroethane	ND ug/kg 6	08/03/98 VFT 630-20-6

Laboratory Certification IDs  
NC Wastewater 12  
NC Drinking Water 37706  
SC 99006

Laboratory Certification IDs  
KY Drinking Water 90090  
TN UST List  
VA Drinking Water 213

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Tel: 704-875-9092  
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DATE: 08/17/98

PAGE: 6

Pace Project Number: 92770

Client Project ID: NCDOT/8.158061 Taylor

Pace Sample No:	9248600		Date Collected:	07/28/98	Matrix:	Soil
Client Sample ID:	GA-2		Date Received:	07/30/98		
Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#
Ethylbenzene	7.1	ug/kg	6	08/03/98	VFT	100-41-4
m&p-Xylene	24	ug/kg	12	08/03/98	VFT	7816-60-0
Styrene	ND	ug/kg	6	08/03/98	VFT	100-42-5
o-Xylene (1,2-Dimethylbenzene)	14	ug/kg	6	08/03/98	VFT	95-47-6
Bromoform	ND	ug/kg	6	08/03/98	VFT	75-25-2
1,1,2,2-Tetrachloroethane	ND	ug/kg	6	08/03/98	VFT	79-34-5
Isopropylbenzene (Cumene)	ND	ug/kg	6	08/03/98	VFT	98-82-8
1,2,3-Trichloropropane	ND	ug/kg	6	08/03/98	VFT	96-18-4
Bromobenzene	ND	ug/kg	6	08/03/98	VFT	108-86-1
n-Propylbenzene	ND	ug/kg	6	08/03/98	VFT	103-65-1
2-Chlorotoluene	ND	ug/kg	6	08/03/98	VFT	95-49-8
4-Chlorotoluene	ND	ug/kg	6	08/03/98	VFT	106-43-4
1,3,5-Trimethylbenzene	ND	ug/kg	6	08/03/98	VFT	108-67-8
tert-Butylbenzene	ND	ug/kg	6	08/03/98	VFT	98-06-6
1,2,4-Trimethylbenzene	7.2	ug/kg	6	08/03/98	VFT	95-63-6
sec-Butylbenzene	ND	ug/kg	6	08/03/98	VFT	135-98-8
1,3-Dichlorobenzene	ND	ug/kg	6	08/03/98	VFT	541-73-1
p-Isopropyltoluene	ND	ug/kg	6	08/03/98	VFT	99-87-6
1,4-Dichlorobenzene	ND	ug/kg	6	08/03/98	VFT	106-46-7
1,2-Dichlorobenzene	ND	ug/kg	6	08/03/98	VFT	95-50-1
n-Butylbenzene	ND	ug/kg	6	08/03/98	VFT	104-51-8
1,2-Dibromo-3-Chloropropane	ND	ug/kg	6	08/03/98	VFT	96-12-8
1,2,4-Trichlorobenzene	ND	ug/kg	6	08/03/98	VFT	120-82-1
Naphthalene	14	ug/kg	6	08/03/98	VFT	91-20-3
Hexachlorobutadiene	ND	ug/kg	6	08/03/98	VFT	87-68-3
1,2,3-Trichlorobenzene	ND	ug/kg	6	08/03/98	VFT	87-61-6
Dibromofluoromethane (S)	93	x		08/03/98	VFT	1868-53-7
1,2-Dichloroethane-d4 (S)	98	x		08/03/98	VFT	17060-07-0
Toluene-d8 (S)	95	x		08/03/98	VFT	2037-26-5
4-Bromofluorobenzene (S)	100	x		08/03/98	VFT	460-00-4

GC/MS -- Semi-VOA

Semivolatile Organics	Method: EPA 8270		Prep Method: EPA 3550
bis(2-Chloroethyl)ether	ND	ug/kg	400
Phenol	ND	ug/kg	400
2-Chlorophenol	ND	ug/kg	400
1,3-Dichlorobenzene	ND	ug/kg	400
1,4-Dichlorobenzene	ND	ug/kg	400
1,2-Dichlorobenzene	ND	ug/kg	400

Laboratory Certification IDs  
NC Wastewater 12  
NC Drinking Water 37706  
SC 99006

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9800 Kinney Avenue, Suite 100  
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Fax: 704-875-9091

DATE: 08/17/98

PAGE: 7

Pace Project Number: 92770

Client Project ID: NCDOT/8.158061 Taylor

Pace Sample No:	9248600		Date Collected:	07/28/98	Matrix:	Soil
Client Sample ID:	GA-2		Date Received:	07/30/98		
Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#
Benzyl Alcohol	ND	ug/kg	790	08/05/98	DHJ	100-51-6
bis(2-Chloroisopropyl)ether	ND	ug/kg	400	08/05/98	DHJ	39638-32-9
2-Methylphenol	ND	ug/kg	400	08/05/98	DHJ	95-48-7
Hexachloroethane	ND	ug/kg	400	08/05/98	DHJ	67-72-1
N-Nitroso-di-n-propylamine	ND	ug/kg	400	08/05/98	DHJ	621-64-7
4-Methylphenol	ND	ug/kg	400	08/05/98	DHJ	106-44-5
Nitrobenzene	ND	ug/kg	400	08/05/98	DHJ	98-95-3
Isophorone	ND	ug/kg	400	08/05/98	DHJ	78-59-1
2-Nitrophenol	ND	ug/kg	400	08/05/98	DHJ	88-75-5
2,4-Dimethylphenol	ND	ug/kg	400	08/05/98	DHJ	105-67-9
bis(2-Chloroethoxy)methane	ND	ug/kg	400	08/05/98	DHJ	111-91-1
Benzoic Acid	ND	ug/kg	2000	08/05/98	DHJ	65-85-0
2,4-Dichlorophenol	ND	ug/kg	400	08/05/98	DHJ	120-83-2
1,2,4-Trichlorobenzene	ND	ug/kg	400	08/05/98	DHJ	120-82-1
Naphthalene	ND	ug/kg	400	08/05/98	DHJ	91-20-3
4-Chloroaniline	ND	ug/kg	790	08/05/98	DHJ	106-47-8
Hexachlorobutadiene	ND	ug/kg	400	08/05/98	DHJ	87-68-3
4-Chloro-3-methylphenol	ND	ug/kg	790	08/05/98	DHJ	59-50-7
2-Methylnaphthalene	ND	ug/kg	400	08/05/98	DHJ	91-57-6
Hexachlorocyclopentadiene	ND	ug/kg	400	08/05/98	DHJ	77-47-4
2,4,6-Trichlorophenol	ND	ug/kg	400	08/05/98	DHJ	88-06-2
2,4,5-Trichlorophenol	ND	ug/kg	400	08/05/98	DHJ	95-95-4
2-Chloronaphthalene	ND	ug/kg	400	08/05/98	DHJ	91-58-7
2-Nitroaniline	ND	ug/kg	2000	08/05/98	DHJ	88-74-4
Acenaphthylene	ND	ug/kg	400	08/05/98	DHJ	208-96-8
Dimethylphthalate	ND	ug/kg	400	08/05/98	DHJ	131-11-3
2,6-Dinitrotoluene	ND	ug/kg	400	08/05/98	DHJ	606-20-2
Acenaphthene	ND	ug/kg	400	08/05/98	DHJ	83-32-9
3-Nitroaniline	ND	ug/kg	2000	08/05/98	DHJ	99-09-2
2,4-Dinitrophenol	ND	ug/kg	2000	08/05/98	DHJ	51-28-5
Dibenzofuran	ND	ug/kg	400	08/05/98	DHJ	132-64-9
2,4-Dinitrotoluene	ND	ug/kg	400	08/05/98	DHJ	121-14-2
4-Nitrophenol	ND	ug/kg	2000	08/05/98	DHJ	100-02-7
Fluorene	ND	ug/kg	400	08/05/98	DHJ	86-73-7
4-Chlorophenyl-phenylether	ND	ug/kg	400	08/05/98	DHJ	7005-72-3
Diethylphthalate	ND	ug/kg	400	08/05/98	DHJ	84-66-2
4-Nitroaniline	ND	ug/kg	2000	08/05/98	DHJ	100-01-6
1,2-Diphenylhydrazine	ND	ug/kg	400	08/05/98	DHJ	122-66-7
4,6-Dinitro-2-methylphenol	ND	ug/kg	400	08/05/98	DHJ	534-52-1
N-Nitrosodiphenylamine	ND	ug/kg	400	08/05/98	DHJ	86-30-6

Laboratory Certification IDs

NC Wastewater 12  
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9800 Kinney Avenue, Suite 100  
Huntersville, NC 28078

Tel: 704-875-9092  
Fax: 704-875-9091

DATE: 08/17/98

PAGE: 8

Pace Project Number: 92770

Client Project ID: NCDOT/8.158061 Taylor

Pace Sample No:	9248600		Date Collected:	07/28/98	Matrix:	Soil
Client Sample ID:	GA-2		Date Received:	07/30/98		
Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#
4-Bromophenyl-phenylether	ND	ug/kg	400	08/05/98	DHJ	101-55-3
Hexachlorobenzene	ND	ug/kg	400	08/05/98	DHJ	118-74-1
Pentachlorophenol	ND	ug/kg	2000	08/05/98	DHJ	87-86-5
Phenanthrene	ND	ug/kg	400	08/05/98	DHJ	85-01-8
Anthracene	ND	ug/kg	400	08/05/98	DHJ	120-12-7
Di-n-butylphthalate	ND	ug/kg	400	08/05/98	DHJ	84-74-2
Fluoranthene	ND	ug/kg	400	08/05/98	DHJ	206-44-0
Pyrene	ND	ug/kg	400	08/05/98	DHJ	129-00-0
Butylbenzylphthalate	ND	ug/kg	400	08/05/98	DHJ	85-68-7
3,3'-Dichlorobenzidine	ND	ug/kg	790	08/05/98	DHJ	91-94-1
Benzo(a)anthracene	ND	ug/kg	400	08/05/98	DHJ	56-55-3
Chrysene	ND	ug/kg	400	08/05/98	DHJ	218-01-9
bis(2-Ethylhexyl)phthalate	ND	ug/kg	790	08/05/98	DHJ	117-81-7
Di-n-octylphthalate	ND	ug/kg	400	08/05/98	DHJ	117-84-0
Benzo(b)fluoranthene	ND	ug/kg	400	08/05/98	DHJ	205-99-2
Benzo(k)fluoranthene	ND	ug/kg	400	08/05/98	DHJ	207-08-9
Benzo(a)pyrene	ND	ug/kg	400	08/05/98	DHJ	50-32-8
Indeno(1,2,3-cd)pyrene	ND	ug/kg	400	08/05/98	DHJ	193-39-5
Dibenz(a,h)anthracene	ND	ug/kg	400	08/05/98	DHJ	53-70-3
Benzo(g,h,i)perylene	ND	ug/kg	400	08/05/98	DHJ	191-24-2
Nitrobenzene-d5 (S)	81	%		08/05/98	DHJ	4165-60-0
2-Fluorobiphenyl (S)	82	%		08/05/98	DHJ	321-60-8
Terphenyl-d14 (S)	82	%		08/05/98	DHJ	1718-51-0
Phenol-d6 (S)	66	%		08/05/98	DHJ	13127-88-3
2-Fluorophenol (S)	50	%		08/05/98	DHJ	367-12-4
2,4,6-Tribromophenol (S)	52	%		08/05/98	DHJ	118-79-6
Date Extracted				08/03/98		

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Pace Analytical Services, Inc.  
9800 Kinney Avenue, Suite 100  
Huntersville, NC 28078

Tel: 704-875-9092  
Fax: 704-875-9091

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PAGE: 9

Pace Project Number: 92770

Client Project ID: NCDOT/8.158061 Taylor

Pace Sample No:	9248618	Date Collected:	07/28/98	Matrix:	Soil
Client Sample ID:	GA-3	Date Received:	07/30/98		
Parameters	Results	Units	PRL	Analyzed	Analyst CAS#

## Wet Chemistry

Percent Moisture	Method: %	Moisture	Prep Method:
Percent Moisture	16.7	%	08/03/98 ADM

## GC/MS -- VOA

GC/MS VOCs by 8260	Method: EPA 8260	Prep Method: EPA 8260
Dichlorodifluoromethane	ND ug/kg	600 08/03/98 JAC 75-71-8
Chloromethane	ND ug/kg	600 08/03/98 JAC 74-87-3
Vinyl Chloride	ND ug/kg	600 08/03/98 JAC 75-01-4
Bromomethane	ND ug/kg	600 08/03/98 JAC 74-83-9
Chloroethane	ND ug/kg	600 08/03/98 JAC 75-00-3
Trichlorofluoromethane	ND ug/kg	300 08/03/98 JAC 75-69-4
1,1-Dichloroethene	ND ug/kg	300 08/03/98 JAC 75-35-4
Methylene Chloride	ND ug/kg	300 08/03/98 JAC 75-09-2
trans-1,2-Dichloroethene	ND ug/kg	300 08/03/98 JAC 156-60-5
1,1-Dichloroethane	ND ug/kg	300 08/03/98 JAC 75-34-3
cis-1,2-Dichloroethene	ND ug/kg	300 08/03/98 JAC 156-59-2
2,2-Dichloropropane	ND ug/kg	300 08/03/98 JAC 594-20-7
Chloroform	ND ug/kg	300 08/03/98 JAC 67-66-3
Bromochloromethane	ND ug/kg	300 08/03/98 JAC 74-97-5
1,1,1-Trichloroethane	ND ug/kg	300 08/03/98 JAC 71-55-6
1,1-Dichloropropene	ND ug/kg	300 08/03/98 JAC 563-58-6
1,2-Dichloroethane	ND ug/kg	300 08/03/98 JAC 107-06-2
Carbon Tetrachloride	ND ug/kg	300 08/03/98 JAC 56-23-5
Benzene	ND ug/kg	300 08/03/98 JAC 71-43-2
Trichloroethene	ND ug/kg	300 08/03/98 JAC 79-01-6
1,2-Dichloropropane	ND ug/kg	300 08/03/98 JAC 78-87-5
Dibromomethane	ND ug/kg	300 08/03/98 JAC 74-95-3
Bromodichloromethane	ND ug/kg	300 08/03/98 JAC 75-27-4
Toluene	490 ug/kg	300 08/03/98 JAC 108-88-3
1,1,2-Trichloroethane	ND ug/kg	300 08/03/98 JAC 79-00-5
1,3-Dichloropropane	ND ug/kg	300 08/03/98 JAC 142-28-9
Dibromochloromethane	ND ug/kg	300 08/03/98 JAC 124-48-1
Tetrachloroethene	ND ug/kg	300 08/03/98 JAC 127-18-4
1,2-Dibromoethane	ND ug/kg	300 08/03/98 JAC 106-93-4
Chlorobenzene	ND ug/kg	300 08/03/98 JAC 108-90-7
1,1,1,2-Tetrachloroethane	ND ug/kg	300 08/03/98 JAC 630-20-6

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PAGE: 10

Pace Project Number: 92770  
Client Project ID: NCDOT/8.158061 Taylor

Pace Sample No:	9248618		Date Collected:	07/28/98	Matrix:	Soil
Client Sample ID:	GA-3		Date Received:	07/30/98		
Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#
Ethylbenzene	400	ug/kg	300	08/03/98	JAC	100-41-4
m&p-Xylene	1500	ug/kg	600	08/03/98	JAC	7816-60-0
Styrene	ND	ug/kg	300	08/03/98	JAC	100-42-5
o-Xylene (1,2-Dimethylbenzene)	640	ug/kg	300	08/03/98	JAC	95-47-6
Bromoform	ND	ug/kg	300	08/03/98	JAC	75-25-2
1,1,2,2-Tetrachloroethane	ND	ug/kg	300	08/03/98	JAC	79-34-5
Isopropylbenzene (Cumene)	ND	ug/kg	300	08/03/98	JAC	98-82-8
1,2,3-Trichloropropane	ND	ug/kg	300	08/03/98	JAC	96-18-4
Bromobenzene	ND	ug/kg	300	08/03/98	JAC	108-86-1
n-Propylbenzene	330	ug/kg	300	08/03/98	JAC	103-65-1
2-Chlorotoluene	ND	ug/kg	300	08/03/98	JAC	95-49-8
4-Chlorotoluene	ND	ug/kg	300	08/03/98	JAC	106-43-4
1,3,5-Trimethylbenzene	620	ug/kg	300	08/03/98	JAC	108-67-8
tert-Butylbenzene	ND	ug/kg	300	08/03/98	JAC	98-06-6
1,2,4-Trimethylbenzene	1900	ug/kg	300	08/03/98	JAC	95-63-6
sec-Butylbenzene	ND	ug/kg	300	08/03/98	JAC	135-98-8
1,3-Dichlorobenzene	ND	ug/kg	300	08/03/98	JAC	541-73-1
p-Isopropyltoluene	ND	ug/kg	300	08/03/98	JAC	99-87-6
1,4-Dichlorobenzene	ND	ug/kg	300	08/03/98	JAC	106-46-7
1,2-Dichlorobenzene	ND	ug/kg	300	08/03/98	JAC	95-50-1
n-Butylbenzene	ND	ug/kg	300	08/03/98	JAC	104-51-8
1,2-Dibromo-3-Chloropropane	ND	ug/kg	300	08/03/98	JAC	96-12-8
1,2,4-Trichlorobenzene	ND	ug/kg	300	08/03/98	JAC	120-82-1
Naphthalene	ND	ug/kg	300	08/03/98	JAC	91-20-3
Hexachlorobutadiene	940	ug/kg	300	08/03/98	JAC	87-68-3
1,2,3-Trichlorobenzene	ND	ug/kg	300	08/03/98	JAC	87-61-6
Dibromofluoromethane (S)	83	x		08/03/98	JAC	1868-53-7
1,2-Dichloroethane-d4 (S)	84	x		08/03/98	JAC	17060-07-0
Toluene-d8 (S)	94	x		08/03/98	JAC	2037-26-5
4-Bromofluorobenzene (S)	91	x		08/03/98	JAC	460-00-4

GC/MS -- Semi-VOA

Semivolatile Organics	Method: EPA 8270		Prep Method: EPA 3550
bis(2-Chloroethyl)ether	ND	ug/kg	400
Phenol	ND	ug/kg	400
2-Chlorophenol	ND	ug/kg	400
1,3-Dichlorobenzene	ND	ug/kg	400
1,4-Dichlorobenzene	ND	ug/kg	400
1,2-Dichlorobenzene	ND	ug/kg	400

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Pace Analytical Services, Inc.  
9800 Kincey Avenue, Suite 100  
Huntersville, NC 28078

Tel: 704-875-9092  
Fax: 704-875-9091

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PAGE: 11

Pace Project Number: 92770

Client Project ID: NCDOT/8.158061 Taylor

Pace Sample No:	9248618		Date Collected:	07/28/98	Matrix:	Soil
Client Sample ID:	GA-3		Date Received:	07/30/98		
Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#
Benzyl Alcohol	ND	ug/kg	790	08/05/98	DHJ	100-51-6
bis(2-Chloroisopropyl)ether	ND	ug/kg	400	08/05/98	DHJ	39638-32-9
2-Methylphenol	ND	ug/kg	400	08/05/98	DHJ	95-48-7
Hexachloroethane	ND	ug/kg	400	08/05/98	DHJ	67-72-1
N-Nitroso-di-n-propylamine	ND	ug/kg	400	08/05/98	DHJ	621-64-7
4-Methylphenol	ND	ug/kg	400	08/05/98	DHJ	106-44-5
Nitrobenzene	ND	ug/kg	400	08/05/98	DHJ	98-95-3
Isophorone	ND	ug/kg	400	08/05/98	DHJ	78-59-1
2-Nitrophenol	ND	ug/kg	400	08/05/98	DHJ	88-75-5
2,4-Dimethylphenol	ND	ug/kg	400	08/05/98	DHJ	105-67-9
bis(2-Chloroethoxy)methane	ND	ug/kg	400	08/05/98	DHJ	111-91-1
Benzoic Acid	ND	ug/kg	2000	08/05/98	DHJ	65-85-0
2,4-Dichlorophenol	ND	ug/kg	400	08/05/98	DHJ	120-83-2
1,2,4-Trichlorobenzene	ND	ug/kg	400	08/05/98	DHJ	120-82-1
Naphthalene	810	ug/kg	400	08/05/98	DHJ	91-20-3
4-Chloroaniline	ND	ug/kg	790	08/05/98	DHJ	106-47-8
Hexachlorobutadiene	ND	ug/kg	400	08/05/98	DHJ	87-68-3
4-Chloro-3-methylphenol	ND	ug/kg	790	08/05/98	DHJ	59-50-7
2-Methylnaphthalene	1100	ug/kg	400	08/05/98	DHJ	91-57-6
Hexachlorocyclopentadiene	ND	ug/kg	400	08/05/98	DHJ	77-47-4
2,4,6-Trichlorophenol	ND	ug/kg	400	08/05/98	DHJ	88-06-2
2,4,5-Trichlorophenol	ND	ug/kg	400	08/05/98	DHJ	95-95-4
2-Chloronaphthalene	ND	ug/kg	400	08/05/98	DHJ	91-58-7
2-Nitroaniline	ND	ug/kg	2000	08/05/98	DHJ	88-74-4
Acenaphthylene	ND	ug/kg	400	08/05/98	DHJ	208-96-8
Dimethylphthalate	ND	ug/kg	400	08/05/98	DHJ	131-11-3
2,6-Dinitrotoluene	ND	ug/kg	400	08/05/98	DHJ	606-20-2
Acenaphthene	ND	ug/kg	400	08/05/98	DHJ	83-32-9
3-Nitroaniline	ND	ug/kg	2000	08/05/98	DHJ	99-09-2
2,4-Dinitrophenol	ND	ug/kg	2000	08/05/98	DHJ	51-28-5
Dibenzofuran	ND	ug/kg	400	08/05/98	DHJ	132-64-9
2,4-Dinitrotoluene	ND	ug/kg	400	08/05/98	DHJ	121-14-2
4-Nitrophenol	ND	ug/kg	2000	08/05/98	DHJ	100-02-7
Fluorene	ND	ug/kg	400	08/05/98	DHJ	86-73-7
4-Chlorophenyl-phenylether	ND	ug/kg	400	08/05/98	DHJ	7005-72-3
Diethylphthalate	ND	ug/kg	400	08/05/98	DHJ	84-66-2
4-Nitroaniline	ND	ug/kg	2000	08/05/98	DHJ	100-01-6
1,2-Diphenylhydrazine	ND	ug/kg	400	08/05/98	DHJ	122-66-7
4,6-Dinitro-2-methylphenol	ND	ug/kg	400	08/05/98	DHJ	534-52-1
N-Nitrosodiphenylamine	ND	ug/kg	400	08/05/98	DHJ	86-30-6

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9800 Kincey Avenue, Suite 100  
Huntersville, NC 28078

Tel: 704-875-9092  
Fax: 704-875-9091

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Pace Project Number: 92770

Client Project ID: NCDOT/8.158061 Taylor

Pace Sample No:	9248618		Date Collected:	07/28/98	Matrix:	Soil
Client Sample ID:	GA-3		Date Received:	07/30/98		
Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#
4-Bromophenyl-phenylether	ND	ug/kg	400	08/05/98	DHJ	101-55-3
Hexachlorobenzene	ND	ug/kg	400	08/05/98	DHJ	118-74-1
Pentachlorophenol	ND	ug/kg	2000	08/05/98	DHJ	87-86-5
Phenanthrene	ND	ug/kg	400	08/05/98	DHJ	85-01-8
Anthracene	ND	ug/kg	400	08/05/98	DHJ	120-12-7
Di-n-butylphthalate	ND	ug/kg	400	08/05/98	DHJ	84-74-2
Fluoranthene	ND	ug/kg	400	08/05/98	DHJ	206-44-0
Pyrene	ND	ug/kg	400	08/05/98	DHJ	129-00-0
Butylbenzylphthalate	ND	ug/kg	400	08/05/98	DHJ	85-68-7
3,3'-Dichlorobenzidine	ND	ug/kg	790	08/05/98	DHJ	91-94-1
Benzo(a)anthracene	ND	ug/kg	400	08/05/98	DHJ	56-55-3
Chrysene	ND	ug/kg	400	08/05/98	DHJ	218-01-9
bis(2-Ethylhexyl)phthalate	ND	ug/kg	790	08/05/98	DHJ	117-81-7
Di-n-octylphthalate	ND	ug/kg	400	08/05/98	DHJ	117-84-0
Benzo(b)fluoranthene	ND	ug/kg	400	08/05/98	DHJ	205-99-2
Benzo(k)fluoranthene	ND	ug/kg	400	08/05/98	DHJ	207-08-9
Benzo(a)pyrene	ND	ug/kg	400	08/05/98	DHJ	50-32-8
Indeno(1,2,3-cd)pyrene	ND	ug/kg	400	08/05/98	DHJ	193-39-5
Dibenz(a,h)anthracene	ND	ug/kg	400	08/05/98	DHJ	53-70-3
Benzo(g,h,i)perylene	ND	ug/kg	400	08/05/98	DHJ	191-24-2
Nitrobenzene-d5 (S)	98	x		08/05/98	DHJ	4165-60-0
2-Fluorobiphenyl (S)	98	x		08/05/98	DHJ	321-60-8
Terphenyl-d14 (S)	100	x		08/05/98	DHJ	1718-51-0
Phenol-d6 (S)	84	x		08/05/98	DHJ	13127-88-3
2-Fluorophenol (S)	76	x		08/05/98	DHJ	367-12-4
2,4,6-Tribromophenol (S)	98	x		08/05/98	DHJ	118-79-6
Date Extracted				08/03/98		

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Huntersville, NC 28078

Tel: 704-875-9092  
Fax: 704-875-9091

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PAGE: 13

Pace Project Number: 92770  
Client Project ID: NCDOT/8.158061 Taylor

Pace Sample No:	9248626	Date Collected:	07/28/98	Matrix:	Soil
Client Sample ID:	GA-4	Date Received:	07/30/98		
Parameters	Results	Units	PRL	Analyzed	Analyst CAS#

## Wet Chemistry

Percent Moisture	Method: %	Moisture	Prep Method:
Percent Moisture	14.3	%	08/03/98 ADM

## GC/MS -- VOA

GC/MS VOCs by 8260, low level	Method: EPA 8260		Prep Method: EPA 8260	
Dichlorodifluoromethane	ND	ug/kg	12	08/03/98 VFT 75-71-8
Chloromethane	ND	ug/kg	12	08/03/98 VFT 74-87-3
Vinyl Chloride	ND	ug/kg	12	08/03/98 VFT 75-01-4
Bromomethane	ND	ug/kg	12	08/03/98 VFT 74-83-9
Chloroethane	ND	ug/kg	12	08/03/98 VFT 75-00-3
Trichlorofluoromethane	ND	ug/kg	5.8	08/03/98 VFT 75-69-4
1,1-Dichloroethene	ND	ug/kg	5.8	08/03/98 VFT 75-35-4
Methylene Chloride	9.8	ug/kg	5.8	08/03/98 VFT 75-09-2
trans-1,2-Dichloroethene	ND	ug/kg	5.8	08/03/98 VFT 156-60-5
1,1-Dichloroethane	ND	ug/kg	5.8	08/03/98 VFT 75-34-3
cis-1,2-Dichloroethene	ND	ug/kg	5.8	08/03/98 VFT 156-59-2
2,2-Dichloropropane	ND	ug/kg	5.8	08/03/98 VFT 594-20-7
Chloroform	ND	ug/kg	5.8	08/03/98 VFT 67-66-3
Bromochloromethane	ND	ug/kg	5.8	08/03/98 VFT 74-97-5
1,1,1-Trichloroethane	ND	ug/kg	5.8	08/03/98 VFT 71-55-6
1,1-Dichloropropene	ND	ug/kg	5.8	08/03/98 VFT 563-58-6
1,2-Dichloroethane	ND	ug/kg	5.8	08/03/98 VFT 107-06-2
Carbon Tetrachloride	ND	ug/kg	5.8	08/03/98 VFT 56-23-5
Benzene	ND	ug/kg	5.8	08/03/98 VFT 71-43-2
Trichloroethene	ND	ug/kg	5.8	08/03/98 VFT 79-01-6
1,2-Dichloropropane	ND	ug/kg	5.8	08/03/98 VFT 78-87-5
Dibromomethane	ND	ug/kg	5.8	08/03/98 VFT 74-95-3
Bromodichloromethane	ND	ug/kg	5.8	08/03/98 VFT 75-27-4
Toluene	ND	ug/kg	5.8	08/03/98 VFT 108-88-3
1,1,2-Trichloroethane	ND	ug/kg	5.8	08/03/98 VFT 79-00-5
1,3-Dichloropropane	ND	ug/kg	5.8	08/03/98 VFT 142-28-9
Dibromochloromethane	ND	ug/kg	5.8	08/03/98 VFT 124-48-1
Tetrachloroethene	ND	ug/kg	5.8	08/03/98 VFT 127-18-4
1,2-Dibromoethane	ND	ug/kg	5.8	08/03/98 VFT 106-93-4
Chlorobenzene	ND	ug/kg	5.8	08/03/98 VFT 108-90-7
1,1,1,2-Tetrachloroethane	ND	ug/kg	5.8	08/03/98 VFT 630-20-6

## Laboratory Certification IDs

NC Wastewater 12  
NC Drinking Water 37706  
SC 99006

## Laboratory Certification IDs

KY Drinking Water 90090  
TN UST List  
VA Drinking Water 213

## REPORT OF LABORATORY ANALYSIS

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PAGE: 14

Pace Project Number: 92770

Client Project ID: NCDOT/8.158061 Taylor

Pace Sample No:	9248626	Date Collected:	07/28/98		Matrix:	Soil
Client Sample ID:	GA-4	Date Received:	07/30/98			
Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#
Ethylbenzene	ND	ug/kg	5.8	08/03/98	VFT	100-41-4
m&p-Xylene	ND	ug/kg	12	08/03/98	VFT	7816-60-0
Styrene	ND	ug/kg	5.8	08/03/98	VFT	100-42-5
o-Xylene (1,2-Dimethylbenzene)	ND	ug/kg	5.8	08/03/98	VFT	95-47-6
Bromoform	ND	ug/kg	5.8	08/03/98	VFT	75-25-2
1,1,2,2-Tetrachloroethane	ND	ug/kg	5.8	08/03/98	VFT	79-34-5
Isopropylbenzene (Cumene)	ND	ug/kg	5.8	08/03/98	VFT	98-82-8
1,2,3-Trichloropropane	ND	ug/kg	5.8	08/03/98	VFT	96-18-4
Bromobenzene	ND	ug/kg	5.8	08/03/98	VFT	108-86-1
n-Propylbenzene	ND	ug/kg	5.8	08/03/98	VFT	103-65-1
2-Chlorotoluene	ND	ug/kg	5.8	08/03/98	VFT	95-49-8
4-Chlorotoluene	ND	ug/kg	5.8	08/03/98	VFT	106-43-4
1,3,5-Trimethylbenzene	ND	ug/kg	5.8	08/03/98	VFT	108-67-8
tert-Butylbenzene	ND	ug/kg	5.8	08/03/98	VFT	98-06-6
1,2,4-Trimethylbenzene	ND	ug/kg	5.8	08/03/98	VFT	95-63-6
sec-Butylbenzene	ND	ug/kg	5.8	08/03/98	VFT	135-98-8
1,3-Dichlorobenzene	ND	ug/kg	5.8	08/03/98	VFT	541-73-1
p-Isopropyltoluene	ND	ug/kg	5.8	08/03/98	VFT	99-87-6
1,4-Dichlorobenzene	ND	ug/kg	5.8	08/03/98	VFT	106-46-7
1,2-Dichlorobenzene	ND	ug/kg	5.8	08/03/98	VFT	95-50-1
n-Butylbenzene	ND	ug/kg	5.8	08/03/98	VFT	104-51-8
1,2-Dibromo-3-Chloropropane	ND	ug/kg	5.8	08/03/98	VFT	96-12-8
1,2,4-Trichlorobenzene	ND	ug/kg	5.8	08/03/98	VFT	120-82-1
Naphthalene	ND	ug/kg	5.8	08/03/98	VFT	91-20-3
Hexachlorobutadiene	ND	ug/kg	5.8	08/03/98	VFT	87-68-3
1,2,3-Trichlorobenzene	ND	ug/kg	5.8	08/03/98	VFT	87-61-6
Dibromofluoromethane (S)	99	x		08/03/98	VFT	1868-53-7
1,2-Dichloroethane-d4 (S)	106	x		08/03/98	VFT	17060-07-0
Toluene-d8 (S)	97	x		08/03/98	VFT	2037-26-5
4-Bromofluorobenzene (S)	108	x		08/03/98	VFT	460-00-4

GC/MS -- Semi-VOA

Semivolatile Organics	Method:	EPA 8270	Prep Method:	EPA 3550
bis(2-Chloroethyl)ether	ND	ug/kg	380	08/04/98 DHJ 111-44-4
Phenol	ND	ug/kg	380	08/04/98 DHJ 108-95-2
2-Chlorophenol	ND	ug/kg	380	08/04/98 DHJ 95-57-8
1,3-Dichlorobenzene	ND	ug/kg	380	08/04/98 DHJ 541-73-1
1,4-Dichlorobenzene	ND	ug/kg	380	08/04/98 DHJ 106-46-7
1,2-Dichlorobenzene	ND	ug/kg	380	08/04/98 DHJ 95-50-1

Laboratory Certification IDs  
 NC Wastewater 12  
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 VA Drinking Water 213

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DATE: 08/17/98  
PAGE: 15

Pace Project Number: 92770  
Client Project ID: NCDOT/8.158061 Taylor

Pace Sample No:	9248626		Date Collected:	07/28/98	Matrix:	Soil
Client Sample ID:	GA-4		Date Received:	07/30/98		
Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#
Benzyl Alcohol	ND	ug/kg	770	08/04/98	DHJ	100-51-6
bis(2-Chloroisopropyl)ether	ND	ug/kg	380	08/04/98	DHJ	39638-32-9
2-Methylphenol	ND	ug/kg	380	08/04/98	DHJ	95-48-7
Hexachloroethane	ND	ug/kg	380	08/04/98	DHJ	67-72-1
N-Nitroso-di-n-propylamine	ND	ug/kg	380	08/04/98	DHJ	621-64-7
4-Methylphenol	ND	ug/kg	380	08/04/98	DHJ	106-44-5
Nitrobenzene	ND	ug/kg	380	08/04/98	DHJ	98-95-3
Isophorone	ND	ug/kg	380	08/04/98	DHJ	78-59-1
2-Nitrophenol	ND	ug/kg	380	08/04/98	DHJ	88-75-5
2,4-Dimethylphenol	ND	ug/kg	380	08/04/98	DHJ	105-67-9
bis(2-Chloroethoxy)methane	ND	ug/kg	380	08/04/98	DHJ	111-91-1
Benzoic Acid	ND	ug/kg	1900	08/04/98	DHJ	65-85-0
2,4-Dichlorophenol	ND	ug/kg	380	08/04/98	DHJ	120-83-2
1,2,4-Trichlorobenzene	ND	ug/kg	380	08/04/98	DHJ	120-82-1
Naphthalene	ND	ug/kg	380	08/04/98	DHJ	91-20-3
4-Chloroaniline	ND	ug/kg	770	08/04/98	DHJ	106-47-8
Hexachlorobutadiene	ND	ug/kg	380	08/04/98	DHJ	87-68-3
4-Chloro-3-methylphenol	ND	ug/kg	770	08/04/98	DHJ	59-50-7
2-Methylnaphthalene	ND	ug/kg	380	08/04/98	DHJ	91-57-6
Hexachlorocyclopentadiene	ND	ug/kg	380	08/04/98	DHJ	77-47-4
2,4,6-Trichlorophenol	ND	ug/kg	380	08/04/98	DHJ	88-06-2
2,4,5-Trichlorophenol	ND	ug/kg	380	08/04/98	DHJ	95-95-4
2-Chloronaphthalene	ND	ug/kg	380	08/04/98	DHJ	91-58-7
2-Nitroaniline	ND	ug/kg	1900	08/04/98	DHJ	88-74-4
Acenaphthylene	ND	ug/kg	380	08/04/98	DHJ	208-96-8
Dimethylphthalate	ND	ug/kg	380	08/04/98	DHJ	131-11-3
2,6-Dinitrotoluene	ND	ug/kg	380	08/04/98	DHJ	606-20-2
Acenaphthene	ND	ug/kg	380	08/04/98	DHJ	83-32-9
3-Nitroaniline	ND	ug/kg	1900	08/04/98	DHJ	99-09-2
2,4-Dinitrophenol	ND	ug/kg	1900	08/04/98	DHJ	51-28-5
Dibenzofuran	ND	ug/kg	380	08/04/98	DHJ	132-64-9
2,4-Dinitrotoluene	ND	ug/kg	380	08/04/98	DHJ	121-14-2
4-Nitrophenol	ND	ug/kg	1900	08/04/98	DHJ	100-02-7
Fluorene	ND	ug/kg	380	08/04/98	DHJ	86-73-7
4-Chlorophenyl-phenylether	ND	ug/kg	380	08/04/98	DHJ	7005-72-3
Diethylphthalate	ND	ug/kg	380	08/04/98	DHJ	84-66-2
4-Nitroaniline	ND	ug/kg	1900	08/04/98	DHJ	100-01-6
1,2-Diphenylhydrazine	ND	ug/kg	380	08/04/98	DHJ	122-66-7
4,6-Dinitro-2-methylphenol	ND	ug/kg	380	08/04/98	DHJ	534-52-1
N-Nitrosodiphenylamine	ND	ug/kg	380	08/04/98	DHJ	86-30-6

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NC Wastewater 12  
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SC 99006

Laboratory Certification IDs

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# Pace Analytical

Pace Analytical Services, Inc.  
9800 Kinney Avenue, Suite 100  
Huntersville, NC 28078

Tel: 704-875-9092  
Fax: 704-875-9091

DATE: 08/17/98  
PAGE: 16

Pace Project Number: 92770  
Client Project ID: NCDOT/8.158061 Taylor

Pace Sample No: 9248626 Date Collected: 07/28/98 Matrix: Soil  
Client Sample ID: GA-4 Date Received: 07/30/98

Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#	Footnotes
4-Bromophenyl-phenylether	ND	ug/kg	380	08/04/98	DHJ	101-55-3	
Hexachlorobenzene	ND	ug/kg	380	08/04/98	DHJ	118-74-1	
Pentachlorophenol	ND	ug/kg	1900	08/04/98	DHJ	87-86-5	
Phenanthrene	ND	ug/kg	380	08/04/98	DHJ	85-01-8	
Anthracene	ND	ug/kg	380	08/04/98	DHJ	120-12-7	
Di-n-butylphthalate	ND	ug/kg	380	08/04/98	DHJ	84-74-2	
Fluoranthene	ND	ug/kg	380	08/04/98	DHJ	206-44-0	
Pyrene	ND	ug/kg	380	08/04/98	DHJ	129-00-0	
Butylbenzylphthalate	ND	ug/kg	380	08/04/98	DHJ	85-68-7	
3,3'-Dichlorobenzidine	ND	ug/kg	770	08/04/98	DHJ	91-94-1	
Benzo(a)anthracene	ND	ug/kg	380	08/04/98	DHJ	56-55-3	
Chrysene	ND	ug/kg	380	08/04/98	DHJ	218-01-9	
bis(2-Ethylhexyl)phthalate	ND	ug/kg	770	08/04/98	DHJ	117-81-7	
Di-n-octylphthalate	ND	ug/kg	380	08/04/98	DHJ	117-84-0	
Benzo(b)fluoranthene	ND	ug/kg	380	08/04/98	DHJ	205-99-2	
Benzo(k)fluoranthene	ND	ug/kg	380	08/04/98	DHJ	207-08-9	
Benzo(a)pyrene	ND	ug/kg	380	08/04/98	DHJ	50-32-8	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	380	08/04/98	DHJ	193-39-5	
Dibenz(a,h)anthracene	ND	ug/kg	380	08/04/98	DHJ	53-70-3	
Benzo(g,h,i)perylene	ND	ug/kg	380	08/04/98	DHJ	191-24-2	
Nitrobenzene-d5 (S)	84	x		08/04/98	DHJ	4165-60-0	
2-Fluorobiphenyl (S)	84	x		08/04/98	DHJ	321-60-8	
Terphenyl-d14 (S)	87	x		08/04/98	DHJ	1718-51-0	
Phenol-d6 (S)	70	x		08/04/98	DHJ	13127-88-3	
2-Fluorophenol (S)	61	x		08/04/98	DHJ	367-12-4	
2,4,6-Tribromophenol (S)	76	x		08/04/98	DHJ	118-79-6	
Date Extracted				08/03/98			

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9800 Kinney Avenue, Suite 100  
Huntersville, NC 28078

Tel: 704-875-9092  
Fax: 704-875-9091

DATE: 08/17/98

PAGE: 17

Pace Project Number: 92770

Client Project ID: NCDOT/8.158061 Taylor

Pace Sample No:	9248634	Date Collected:	07/28/98	Matrix:	Soil
Client Sample ID:	GA-5	Date Received:	07/30/98		
Parameters	Results	Units	PRL	Analyzed	Analyst CAS#

## Wet Chemistry

Percent Moisture	Method: %	Moisture	Prep Method:
Percent Moisture	16.8	%	08/03/98 ADM

## GC/MS -- VOA

GC/MS VOCs by 8260, low level	Method: EPA 8260	Prep Method: EPA 8260
Dichlorodifluoromethane	ND ug/kg	12 08/03/98 VFT 75-71-8
Chloromethane	ND ug/kg	12 08/03/98 VFT 74-87-3
Vinyl Chloride	ND ug/kg	12 08/03/98 VFT 75-01-4
Bromomethane	ND ug/kg	12 08/03/98 VFT 74-83-9
Chloroethane	ND ug/kg	12 08/03/98 VFT 75-00-3
Trichlorofluoromethane	ND ug/kg	6 08/03/98 VFT 75-69-4
1,1-Dichloroethene	ND ug/kg	6 08/03/98 VFT 75-35-4
Methylene Chloride	9.8 ug/kg	6 08/03/98 VFT 75-09-2
trans-1,2-Dichloroethene	ND ug/kg	6 08/03/98 VFT 156-60-5
1,1-Dichloroethane	ND ug/kg	6 08/03/98 VFT 75-34-3
cis-1,2-Dichloroethene	ND ug/kg	6 08/03/98 VFT 156-59-2
2,2-Dichloropropane	ND ug/kg	6 08/03/98 VFT 594-20-7
Chloroform	ND ug/kg	6 08/03/98 VFT 67-66-3
Bromochloromethane	ND ug/kg	6 08/03/98 VFT 74-97-5
1,1,1-Trichloroethane	ND ug/kg	6 08/03/98 VFT 71-55-6
1,1-Dichloropropene	ND ug/kg	6 08/03/98 VFT 563-58-6
1,2-Dichloroethane	ND ug/kg	6 08/03/98 VFT 107-06-2
Carbon Tetrachloride	ND ug/kg	6 08/03/98 VFT 56-23-5
Benzene	ND ug/kg	6 08/03/98 VFT 71-43-2
Trichloroethene	ND ug/kg	6 08/03/98 VFT 79-01-6
1,2-Dichloropropane	ND ug/kg	6 08/03/98 VFT 78-87-5
Dibromomethane	ND ug/kg	6 08/03/98 VFT 74-95-3
Bromodichloromethane	ND ug/kg	6 08/03/98 VFT 75-27-4
Toluene	ND ug/kg	6 08/03/98 VFT 108-88-3
1,1,2-Trichloroethane	ND ug/kg	6 08/03/98 VFT 79-00-5
1,3-Dichloropropane	ND ug/kg	6 08/03/98 VFT 142-28-9
Dibromochloromethane	ND ug/kg	6 08/03/98 VFT 124-48-1
Tetrachloroethene	ND ug/kg	6 08/03/98 VFT 127-18-4
1,2-Dibromoethane	ND ug/kg	6 08/03/98 VFT 106-93-4
Chlorobenzene	ND ug/kg	6 08/03/98 VFT 108-90-7
1,1,1,2-Tetrachloroethane	ND ug/kg	6 08/03/98 VFT 630-20-6

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NC Wastewater 12  
NC Drinking Water 37706  
SC 99006

Laboratory Certification IDs  
KY Drinking Water 90090  
TN UST List  
VA Drinking Water 213

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DATE: 08/17/98

PAGE: 18

Pace Project Number: 92770  
Client Project ID: NCDOT/8.158061 Taylor

Pace Sample No:	9248634		Date Collected:	07/28/98	Matrix:	Soil
Client Sample ID:	GA-5		Date Received:	07/30/98		
Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#
Ethylbenzene	ND	ug/kg	6	08/03/98	VFT	100-41-4
m&p-Xylene	ND	ug/kg	12	08/03/98	VFT	7816-60-0
Styrene	ND	ug/kg	6	08/03/98	VFT	100-42-5
o-Xylene (1,2-Dimethylbenzene)	ND	ug/kg	6	08/03/98	VFT	95-47-6
Bromoform	ND	ug/kg	6	08/03/98	VFT	75-25-2
1,1,2,2-Tetrachloroethane	ND	ug/kg	6	08/03/98	VFT	79-34-5
Isopropylbenzene (Cumene)	ND	ug/kg	6	08/03/98	VFT	98-82-8
1,2,3-Trichloropropane	ND	ug/kg	6	08/03/98	VFT	96-18-4
Bromobenzene	ND	ug/kg	6	08/03/98	VFT	108-86-1
n-Propylbenzene	ND	ug/kg	6	08/03/98	VFT	103-65-1
2-Chlorotoluene	ND	ug/kg	6	08/03/98	VFT	95-49-8
4-Chlorotoluene	ND	ug/kg	6	08/03/98	VFT	106-43-4
1,3,5-Trimethylbenzene	ND	ug/kg	6	08/03/98	VFT	108-67-8
tert-Butylbenzene	ND	ug/kg	6	08/03/98	VFT	98-06-6
1,2,4-Trimethylbenzene	ND	ug/kg	6	08/03/98	VFT	95-63-6
sec-Butylbenzene	ND	ug/kg	6	08/03/98	VFT	135-98-8
1,3-Dichlorobenzene	ND	ug/kg	6	08/03/98	VFT	541-73-1
p-Isopropyltoluene	ND	ug/kg	6	08/03/98	VFT	99-87-6
1,4-Dichlorobenzene	ND	ug/kg	6	08/03/98	VFT	106-46-7
1,2-Dichlorobenzene	ND	ug/kg	6	08/03/98	VFT	95-50-1
n-Butylbenzene	ND	ug/kg	6	08/03/98	VFT	104-51-8
1,2-Dibromo-3-Chloropropane	ND	ug/kg	6	08/03/98	VFT	96-12-8
1,2,4-Trichlorobenzene	ND	ug/kg	6	08/03/98	VFT	120-82-1
Naphthalene	ND	ug/kg	6	08/03/98	VFT	91-20-3
Hexachlorobutadiene	ND	ug/kg	6	08/03/98	VFT	87-68-3
1,2,3-Trichlorobenzene	ND	ug/kg	6	08/03/98	VFT	87-61-6
Dibromofluoromethane (S)	98	x		08/03/98	VFT	1868-53-7
1,2-Dichloroethane-d4 (S)	102	x		08/03/98	VFT	17060-07-0
Toluene-d8 (S)	96	x		08/03/98	VFT	2037-26-5
4-Bromofluorobenzene (S)	107	x		08/03/98	VFT	460-00-4

GC/MS -- Semi-VOA

Semivolatile Organics	Method: EPA 8270	Prep Method: EPA 3550
bis(2-Chloroethyl)ether	ND ug/kg 400	08/05/98 DHJ 111-44-4
Phenol	ND ug/kg 400	08/05/98 DHJ 108-95-2
2-Chlorophenol	ND ug/kg 400	08/05/98 DHJ 95-57-8
1,3-Dichlorobenzene	ND ug/kg 400	08/05/98 DHJ 541-73-1
1,4-Dichlorobenzene	ND ug/kg 400	08/05/98 DHJ 106-46-7
1,2-Dichlorobenzene	ND ug/kg 400	08/05/98 DHJ 95-50-1

Laboratory Certification IDs  
NC Wastewater 12  
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TN UST List  
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Huntersville, NC 28078

Tel: 704-875-9092  
Fax: 704-875-9091

DATE: 08/17/98  
PAGE: 19

Pace Project Number: 92770  
Client Project ID: NCDOT/8.158061 Taylor

Pace Sample No:	9248634		Date Collected:	07/28/98	Matrix:	Soil	
Client Sample ID:	GA-5		Date Received:	07/30/98			
Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#	Footnotes
Benzyl Alcohol	ND	ug/kg	790	08/05/98	DHJ	100-51-6	
bis(2-Chloroisopropyl)ether	ND	ug/kg	400	08/05/98	DHJ	39638-32-9	
2-Methylphenol	ND	ug/kg	400	08/05/98	DHJ	95-48-7	
Hexachloroethane	ND	ug/kg	400	08/05/98	DHJ	67-72-1	
N-Nitroso-di-n-propylamine	ND	ug/kg	400	08/05/98	DHJ	621-64-7	
4-Methylphenol	ND	ug/kg	400	08/05/98	DHJ	106-44-5	
Nitrobenzene	ND	ug/kg	400	08/05/98	DHJ	98-95-3	
Isophorone	ND	ug/kg	400	08/05/98	DHJ	78-59-1	
2-Nitrophenol	ND	ug/kg	400	08/05/98	DHJ	88-75-5	
2,4-Dimethylphenol	ND	ug/kg	400	08/05/98	DHJ	105-67-9	
bis(2-Chloroethoxy)methane	ND	ug/kg	400	08/05/98	DHJ	111-91-1	
Benzoic Acid	ND	ug/kg	2000	08/05/98	DHJ	65-85-0	
2,4-Dichlorophenol	ND	ug/kg	400	08/05/98	DHJ	120-83-2	
1,2,4-Trichlorobenzene	ND	ug/kg	400	08/05/98	DHJ	120-82-1	
Naphthalene	ND	ug/kg	400	08/05/98	DHJ	91-20-3	
4-Chloroaniline	ND	ug/kg	790	08/05/98	DHJ	106-47-8	
Hexachlorobutadiene	ND	ug/kg	400	08/05/98	DHJ	87-68-3	
4-Chloro-3-methylphenol	ND	ug/kg	790	08/05/98	DHJ	59-50-7	
2-Methylnaphthalene	ND	ug/kg	400	08/05/98	DHJ	91-57-6	
Hexachlorocyclopentadiene	ND	ug/kg	400	08/05/98	DHJ	77-47-4	
2,4,6-Trichlorophenol	ND	ug/kg	400	08/05/98	DHJ	88-06-2	
2,4,5-Trichlorophenol	ND	ug/kg	400	08/05/98	DHJ	95-95-4	
2-Chloronaphthalene	ND	ug/kg	400	08/05/98	DHJ	91-58-7	
2-Nitroaniline	ND	ug/kg	2000	08/05/98	DHJ	88-74-4	
Acenaphthylene	ND	ug/kg	400	08/05/98	DHJ	208-96-8	
Dimethylphthalate	ND	ug/kg	400	08/05/98	DHJ	131-11-3	
2,6-Dinitrotoluene	ND	ug/kg	400	08/05/98	DHJ	606-20-2	
Acenaphthene	ND	ug/kg	400	08/05/98	DHJ	83-32-9	
3-Nitroaniline	ND	ug/kg	2000	08/05/98	DHJ	99-09-2	
2,4-Dinitrophenol	ND	ug/kg	2000	08/05/98	DHJ	51-28-5	
Dibenzofuran	ND	ug/kg	400	08/05/98	DHJ	132-64-9	
2,4-Dinitrotoluene	ND	ug/kg	400	08/05/98	DHJ	121-14-2	
4-Nitrophenol	ND	ug/kg	2000	08/05/98	DHJ	100-02-7	
Fluorene	ND	ug/kg	400	08/05/98	DHJ	86-73-7	
4-Chlorophenyl-phenylether	ND	ug/kg	400	08/05/98	DHJ	7005-72-3	
Diethylphthalate	ND	ug/kg	400	08/05/98	DHJ	84-66-2	
4-Nitroaniline	ND	ug/kg	2000	08/05/98	DHJ	100-01-6	
1,2-Diphenylhydrazine	ND	ug/kg	400	08/05/98	DHJ	122-66-7	
4,6-Dinitro-2-methylphenol	ND	ug/kg	400	08/05/98	DHJ	534-52-1	
N-Nitrosodiphenylamine	ND	ug/kg	400	08/05/98	DHJ	86-30-6	

Laboratory Certification IDs

NC Wastewater 12  
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Huntersville, NC 28078

Tel: 704-875-9092  
Fax: 704-875-9091

DATE: 08/17/98  
PAGE: 20

Pace Project Number: 92770  
Client Project ID: NCDOT/8.158061 Taylor

Pace Sample No:	9248634		Date Collected:	07/28/98	Matrix:	Soil	
Client Sample ID:	GA-5		Date Received:	07/30/98			
Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#	Footnotes
4-Bromophenyl-phenylether	ND	ug/kg	400	08/05/98	DHJ	101-55-3	
Hexachlorobenzene	ND	ug/kg	400	08/05/98	DHJ	118-74-1	
Pentachlorophenol	ND	ug/kg	2000	08/05/98	DHJ	87-86-5	
Phenanthrene	ND	ug/kg	400	08/05/98	DHJ	85-01-8	
Anthracene	ND	ug/kg	400	08/05/98	DHJ	120-12-7	
Di-n-butylphthalate	ND	ug/kg	400	08/05/98	DHJ	84-74-2	
Fluoranthene	ND	ug/kg	400	08/05/98	DHJ	206-44-0	
Pyrene	ND	ug/kg	400	08/05/98	DHJ	129-00-0	
Butylbenzylphthalate	ND	ug/kg	400	08/05/98	DHJ	85-68-7	
3,3'-Dichlorobenzidine	ND	ug/kg	790	08/05/98	DHJ	91-94-1	
Benzo(a)anthracene	ND	ug/kg	400	08/05/98	DHJ	56-55-3	
Chrysene	ND	ug/kg	400	08/05/98	DHJ	218-01-9	
bis(2-Ethylhexyl)phthalate	ND	ug/kg	790	08/05/98	DHJ	117-81-7	
Di-n-octylphthalate	ND	ug/kg	400	08/05/98	DHJ	117-84-0	
Benzo(b)fluoranthene	ND	ug/kg	400	08/05/98	DHJ	205-99-2	
Benzo(k)fluoranthene	ND	ug/kg	400	08/05/98	DHJ	207-08-9	
Benzo(a)pyrene	ND	ug/kg	400	08/05/98	DHJ	50-32-8	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	400	08/05/98	DHJ	193-39-5	
Dibenz(a,h)anthracene	ND	ug/kg	400	08/05/98	DHJ	53-70-3	
Benzo(g,h,i)perylene	ND	ug/kg	400	08/05/98	DHJ	191-24-2	
Nitrobenzene-d5 (S)	87	%		08/05/98	DHJ	4165-60-0	
2-Fluorobiphenyl (S)	88	%		08/05/98	DHJ	321-60-8	
Terphenyl-d14 (S)	90	%		08/05/98	DHJ	1718-51-0	
Phenol-d6 (S)	75	%		08/05/98	DHJ	13127-88-3	
2-Fluorophenol (S)	67	%		08/05/98	DHJ	367-12-4	
2,4,6-Tribromophenol (S)	90	%		08/05/98	DHJ	118-79-6	
Date Extracted				08/03/98			

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Huntersville, NC 28078

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PAGE: 21

Pace Project Number: 92770  
Client Project ID: NCDOT/8.158061 Taylor

Pace Sample No:	9248642	Date Collected:	07/28/98	Matrix:	Soil
Client Sample ID:	GA-6	Date Received:	07/30/98		
Parameters	Results	Units	PRL	Analyzed	Analyst CAS#

## Wet Chemistry

Percent Moisture	Method: %	Moisture	Prep Method:
Percent Moisture	16.9	%	08/03/98 ADM

## GC/MS -- VOA

GC/MS VOCs by 8260, low level	Method: EPA 8260		Prep Method: EPA 8260	
Dichlorodifluoromethane	ND	ug/kg	12	08/03/98 VFT 75-71-8
Chloromethane	ND	ug/kg	12	08/03/98 VFT 74-87-3
Vinyl Chloride	ND	ug/kg	12	08/03/98 VFT 75-01-4
Bromomethane	ND	ug/kg	12	08/03/98 VFT 74-83-9
Chloroethane	ND	ug/kg	12	08/03/98 VFT 75-00-3
Trichlorofluoromethane	ND	ug/kg	6	08/03/98 VFT 75-69-4
1,1-Dichloroethene	ND	ug/kg	6	08/03/98 VFT 75-35-4
Methylene Chloride	9.6	ug/kg	6	08/03/98 VFT 75-09-2
trans-1,2-Dichloroethene	ND	ug/kg	6	08/03/98 VFT 156-60-5
1,1-Dichloroethane	ND	ug/kg	6	08/03/98 VFT 75-34-3
cis-1,2-Dichloroethene	ND	ug/kg	6	08/03/98 VFT 156-59-2
2,2-Dichloropropane	ND	ug/kg	6	08/03/98 VFT 594-20-7
Chloroform	ND	ug/kg	6	08/03/98 VFT 67-66-3
Bromochloromethane	ND	ug/kg	6	08/03/98 VFT 74-97-5
1,1,1-Trichloroethane	ND	ug/kg	6	08/03/98 VFT 71-55-6
1,1-Dichloropropene	ND	ug/kg	6	08/03/98 VFT 563-58-6
1,2-Dichloroethane	ND	ug/kg	6	08/03/98 VFT 107-06-2
Carbon Tetrachloride	ND	ug/kg	6	08/03/98 VFT 56-23-5
Benzene	ND	ug/kg	6	08/03/98 VFT 71-43-2
Trichloroethene	ND	ug/kg	6	08/03/98 VFT 79-01-6
1,2-Dichloropropane	ND	ug/kg	6	08/03/98 VFT 78-87-5
Dibromomethane	ND	ug/kg	6	08/03/98 VFT 74-95-3
Bromodichloromethane	ND	ug/kg	6	08/03/98 VFT 75-27-4
Toluene	ND	ug/kg	6	08/03/98 VFT 108-88-3
1,1,2-Trichloroethane	ND	ug/kg	6	08/03/98 VFT 79-00-5
1,3-Dichloropropane	ND	ug/kg	6	08/03/98 VFT 142-28-9
Dibromochloromethane	ND	ug/kg	6	08/03/98 VFT 124-48-1
Tetrachloroethene	ND	ug/kg	6	08/03/98 VFT 127-18-4
1,2-Dibromoethane	ND	ug/kg	6	08/03/98 VFT 106-93-4
Chlorobenzene	ND	ug/kg	6	08/03/98 VFT 108-90-7
1,1,1,2-Tetrachloroethane	ND	ug/kg	6	08/03/98 VFT 630-20-6

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PAGE: 22

Pace Project Number: 92770  
Client Project ID: NCDOT/8.158061 Taylor

Pace Sample No:	9248642		Date Collected:	07/28/98	Matrix:	Soil
Client Sample ID:	GA-6		Date Received:	07/30/98		
Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#
Ethylbenzene	ND	ug/kg	6	08/03/98	VFT	100-41-4
m&p-Xylene	ND	ug/kg	12	08/03/98	VFT	7816-60-0
Styrene	ND	ug/kg	6	08/03/98	VFT	100-42-5
o-Xylene (1,2-Dimethylbenzene)	ND	ug/kg	6	08/03/98	VFT	95-47-6
Bromoform	ND	ug/kg	6	08/03/98	VFT	75-25-2
1,1,2,2-Tetrachloroethane	ND	ug/kg	6	08/03/98	VFT	79-34-5
Isopropylbenzene (Cumene)	ND	ug/kg	6	08/03/98	VFT	98-82-8
1,2,3-Trichloropropane	ND	ug/kg	6	08/03/98	VFT	96-18-4
Bromobenzene	ND	ug/kg	6	08/03/98	VFT	108-86-1
n-Propylbenzene	ND	ug/kg	6	08/03/98	VFT	103-65-1
2-Chlorotoluene	ND	ug/kg	6	08/03/98	VFT	95-49-8
4-Chlorotoluene	ND	ug/kg	6	08/03/98	VFT	106-43-4
1,3,5-Trimethylbenzene	ND	ug/kg	6	08/03/98	VFT	108-67-8
tert-Butylbenzene	ND	ug/kg	6	08/03/98	VFT	98-06-6
1,2,4-Trimethylbenzene	ND	ug/kg	6	08/03/98	VFT	95-63-6
sec-Butylbenzene	ND	ug/kg	6	08/03/98	VFT	135-98-8
1,3-Dichlorobenzene	ND	ug/kg	6	08/03/98	VFT	541-73-1
p-Isopropyltoluene	ND	ug/kg	6	08/03/98	VFT	99-87-6
1,4-Dichlorobenzene	ND	ug/kg	6	08/03/98	VFT	106-46-7
1,2-Dichlorobenzene	ND	ug/kg	6	08/03/98	VFT	95-50-1
n-Butylbenzene	ND	ug/kg	6	08/03/98	VFT	104-51-8
1,2-Dibromo-3-Chloropropane	ND	ug/kg	6	08/03/98	VFT	96-12-8
1,2,4-Trichlorobenzene	ND	ug/kg	6	08/03/98	VFT	120-82-1
Naphthalene	ND	ug/kg	6	08/03/98	VFT	91-20-3
Hexachlorobutadiene	ND	ug/kg	6	08/03/98	VFT	87-68-3
1,2,3-Trichlorobenzene	ND	ug/kg	6	08/03/98	VFT	87-61-6
Dibromofluoromethane (S)	99	%		08/03/98	VFT	1868-53-7
1,2-Dichloroethane-d4 (S)	105	%		08/03/98	VFT	17060-07-0
Toluene-d8 (S)	97	%		08/03/98	VFT	2037-26-5
4-Bromofluorobenzene (S)	107	%		08/03/98	VFT	460-00-4

GC/MS -- Semi-VOA

Semivolatile Organics	Method: EPA 8270	Prep Method: EPA 3550
bis(2-Chloroethyl)ether	ND ug/kg 400	08/06/98 DHJ 111-44-4
Phenol	ND ug/kg 400	08/06/98 DHJ 108-95-2
2-Chlorophenol	ND ug/kg 400	08/06/98 DHJ 95-57-8
1,3-Dichlorobenzene	ND ug/kg 400	08/06/98 DHJ 541-73-1
1,4-Dichlorobenzene	ND ug/kg 400	08/06/98 DHJ 106-46-7
1,2-Dichlorobenzene	ND ug/kg 400	08/06/98 DHJ 95-50-1

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PAGE: 23

Pace Project Number: 92770  
Client Project ID: NCDOT/8.158061 Taylor

Pace Sample No:	9248642		Date Collected:	07/28/98	Matrix:	Soil
Client Sample ID:	GA-6		Date Received:	07/30/98		
Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#
Benzyl Alcohol	ND	ug/kg	790	08/06/98	DHJ	100-51-6
bis(2-Chloroisopropyl)ether	ND	ug/kg	400	08/06/98	DHJ	39638-32-9
2-Methylphenol	ND	ug/kg	400	08/06/98	DHJ	95-48-7
Hexachloroethane	ND	ug/kg	400	08/06/98	DHJ	67-72-1
N-Nitroso-di-n-propylamine	ND	ug/kg	400	08/06/98	DHJ	621-64-7
4-Methylphenol	ND	ug/kg	400	08/06/98	DHJ	106-44-5
Nitrobenzene	ND	ug/kg	400	08/06/98	DHJ	98-95-3
Isophorone	ND	ug/kg	400	08/06/98	DHJ	78-59-1
2-Nitrophenol	ND	ug/kg	400	08/06/98	DHJ	88-75-5
2,4-Dimethylphenol	ND	ug/kg	400	08/06/98	DHJ	105-67-9
bis(2-Chloroethoxy)methane	ND	ug/kg	400	08/06/98	DHJ	111-91-1
Benzoic Acid	ND	ug/kg	2000	08/06/98	DHJ	65-85-0
2,4-Dichlorophenol	ND	ug/kg	400	08/06/98	DHJ	120-83-2
1,2,4-Trichlorobenzene	ND	ug/kg	400	08/06/98	DHJ	120-82-1
Naphthalene	ND	ug/kg	400	08/06/98	DHJ	91-20-3
4-Chloroaniline	ND	ug/kg	790	08/06/98	DHJ	106-47-8
Hexachlorobutadiene	ND	ug/kg	400	08/06/98	DHJ	87-68-3
4-Chloro-3-methylphenol	ND	ug/kg	790	08/06/98	DHJ	59-50-7
2-Methylnaphthalene	ND	ug/kg	400	08/06/98	DHJ	91-57-6
Hexachlorocyclopentadiene	ND	ug/kg	400	08/06/98	DHJ	77-47-4
2,4,6-Trichlorophenol	ND	ug/kg	400	08/06/98	DHJ	88-06-2
2,4,5-Trichlorophenol	ND	ug/kg	400	08/06/98	DHJ	95-95-4
2-Chloronaphthalene	ND	ug/kg	400	08/06/98	DHJ	91-58-7
2-Nitroaniline	ND	ug/kg	2000	08/06/98	DHJ	88-74-4
Acenaphthylene	ND	ug/kg	400	08/06/98	DHJ	208-96-8
Dimethylphthalate	ND	ug/kg	400	08/06/98	DHJ	131-11-3
2,6-Dinitrotoluene	ND	ug/kg	400	08/06/98	DHJ	606-20-2
Acenaphthene	ND	ug/kg	400	08/06/98	DHJ	83-32-9
3-Nitroaniline	ND	ug/kg	2000	08/06/98	DHJ	99-09-2
2,4-Dinitrophenol	ND	ug/kg	2000	08/06/98	DHJ	51-28-5
Dibenzofuran	ND	ug/kg	400	08/06/98	DHJ	132-64-9
2,4-Dinitrotoluene	ND	ug/kg	400	08/06/98	DHJ	121-14-2
4-Nitrophenol	ND	ug/kg	2000	08/06/98	DHJ	100-02-7
Fluorene	ND	ug/kg	400	08/06/98	DHJ	86-73-7
4-Chlorophenyl-phenylether	ND	ug/kg	400	08/06/98	DHJ	7005-72-3
Diethylphthalate	ND	ug/kg	400	08/06/98	DHJ	84-66-2
4-Nitroaniline	ND	ug/kg	2000	08/06/98	DHJ	100-01-6
1,2-Diphenylhydrazine	ND	ug/kg	400	08/06/98	DHJ	122-66-7
4,6-Dinitro-2-methylphenol	ND	ug/kg	400	08/06/98	DHJ	534-52-1
N-Nitrosodiphenylamine	ND	ug/kg	400	08/06/98	DHJ	86-30-6

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Fax: 704-875-9091

DATE: 08/17/98

PAGE: 24

Pace Project Number: 92770

Client Project ID: NCDOT/8.158061 Taylor

Pace Sample No:	9248642	Date Collected:	07/28/98	Matrix:	Soil
Client Sample ID:	GA-6	Date Received:	07/30/98		

Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#	Footnotes
4-Bromophenyl-phenylether	ND	ug/kg	400	08/06/98	DHJ	101-55-3	
Hexachlorobenzene	ND	ug/kg	400	08/06/98	DHJ	118-74-1	
Pentachlorophenol	ND	ug/kg	2000	08/06/98	DHJ	87-86-5	
Phenanthrene	ND	ug/kg	400	08/06/98	DHJ	85-01-8	
Anthracene	ND	ug/kg	400	08/06/98	DHJ	120-12-7	
Di-n-butylphthalate	ND	ug/kg	400	08/06/98	DHJ	84-74-2	
Fluoranthene	ND	ug/kg	400	08/06/98	DHJ	206-44-0	
Pyrene	ND	ug/kg	400	08/06/98	DHJ	129-00-0	
Butylbenzylphthalate	ND	ug/kg	400	08/06/98	DHJ	85-68-7	
3,3'-Dichlorobenzidine	ND	ug/kg	790	08/06/98	DHJ	91-94-1	
Benzo(a)anthracene	ND	ug/kg	400	08/06/98	DHJ	56-55-3	
Chrysene	ND	ug/kg	400	08/06/98	DHJ	218-01-9	
bis(2-Ethylhexyl)phthalate	ND	ug/kg	790	08/06/98	DHJ	117-81-7	
Di-n-octylphthalate	ND	ug/kg	400	08/06/98	DHJ	117-84-0	
Benzo(b)fluoranthene	ND	ug/kg	400	08/06/98	DHJ	205-99-2	
Benzo(k)fluoranthene	ND	ug/kg	400	08/06/98	DHJ	207-08-9	
Benzo(a)pyrene	ND	ug/kg	400	08/06/98	DHJ	50-32-8	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	400	08/06/98	DHJ	193-39-5	
Dibenz(a,h)anthracene	ND	ug/kg	400	08/06/98	DHJ	53-70-3	
Benzo(g,h,i)perylene	ND	ug/kg	400	08/06/98	DHJ	191-24-2	
Nitrobenzene-d5 (S)	88	%		08/06/98	DHJ	4165-60-0	
2-Fluorobiphenyl (S)	88	%		08/06/98	DHJ	321-60-8	
Terphenyl-d14 (S)	92	%		08/06/98	DHJ	1718-51-0	
Phenol-d6 (S)	79	%		08/06/98	DHJ	13127-88-3	
2-Fluorophenol (S)	69	%		08/06/98	DHJ	367-12-4	
2,4,6-Tribromophenol (S)	92	%		08/06/98	DHJ	118-79-6	
Date Extracted				08/03/98			

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PAGE: 25

Pace Project Number: 92770  
Client Project ID: NCDOT/8.158061 Taylor

---

## PARAMETER FOOTNOTES

ND	Not Detected
NC	Not Calculable
PRL	Pace Reporting Limit
(S)	Surrogate
[1]	Low surrogate recovery was confirmed as a matrix effect by a second analysis.
[2]	The analyte was found in an associated blank, as well as in the sample.

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9800 Kinney Avenue, Suite 100  
Huntersville, NC 28078

Tel: 704-875-9092  
Fax: 704-875-9091

## QUALITY CONTROL DATA

DATE: 08/17/98  
PAGE: 26

Pace Analytical Services, Inc.  
54 Ravenscroft Drive  
Asheville, NC 28801

Pace Project Number: 92770  
Client Project ID: NCDOT/8.158061 Taylor

Attn: Mr. Charlie Billings  
Phone: (704)254-7176

QC Batch ID: 1118  
Analysis Method: % Moisture  
Associated Pace Samples:

QC Batch Method:  
Analysis Description: Percent Moisture  
9248592      9248600      9248618      9248626      9248634  
9248642

Laboratory Certification IDs  
NC Wastewater    12  
NC Drinking Water    37706  
SC                99006

Laboratory Certification IDs  
KY Drinking Water    90090  
TN UST List  
VA Drinking Water    213

## REPORT OF LABORATORY ANALYSIS

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# Pace Analytical

Pace Analytical Services, Inc.  
9800 Kincey Avenue, Suite 100  
Huntersville, NC 28078

Tel: 704-875-9092  
Fax: 704-875-9091

## QUALITY CONTROL DATA

DATE: 08/17/98  
PAGE: 27

Pace Analytical Services, Inc.  
54 Ravenscroft Drive  
Asheville, NC 28801

Pace Project Number: 92770  
Client Project ID: NCDOT/8.158061 Taylor

Attn: Mr. Charlie Billings  
Phone: (704)254-7176

QC Batch ID: 1145

Analysis Method: EPA 8270

Associated Pace Samples:

9248592      9248600      9248618      9248626      9248634  
                9248642

QC Batch Method: EPA 3550

Analysis Description: Semivolatile Organics

METHOD BLANK: 9250689

Associated Pace Samples:

	9248592	9248600	9248618	9248626	9248634	9248642
		Method Blank				

Parameter	Units	Result	PRL	Footnotes
bis(2-Chloroethyl)ether	ug/kg	ND	330	
Phenol	ug/kg	ND	330	
2-Chlorophenol	ug/kg	ND	330	
1,3-Dichlorobenzene	ug/kg	ND	330	
1,4-Dichlorobenzene	ug/kg	ND	330	
1,2-Dichlorobenzene	ug/kg	ND	330	
Benzyl Alcohol	ug/kg	ND	660	
bis(2-Chloroisopropyl)ether	ug/kg	ND	330	
2-Methylphenol	ug/kg	ND	330	
Hexachloroethane	ug/kg	ND	330	
N-Nitroso-di-n-propylamine	ug/kg	ND	330	
4-Methylphenol	ug/kg	ND	330	
Nitrobenzene	ug/kg	ND	330	
Isophorone	ug/kg	ND	330	
2-Nitrophenol	ug/kg	ND	330	
2,4-Dimethylphenol	ug/kg	ND	330	
bis(2-Chloroethoxy)methane	ug/kg	ND	330	
Benzoic Acid	ug/kg	ND	1600	
2,4-Dichlorophenol	ug/kg	ND	330	
1,2,4-Trichlorobenzene	ug/kg	ND	330	
Naphthalene	ug/kg	ND	330	
4-Chloroaniline	ug/kg	ND	660	
Hexachlorobutadiene	ug/kg	ND	330	
4-Chloro-3-methylphenol	ug/kg	ND	660	

Laboratory Certification IDs  
NC Wastewater 12  
NC Drinking Water 37706  
SC 99006

Laboratory Certification IDs  
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TN UST List  
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QUALITY CONTROL DATA

DATE: 08/17/98

PAGE: 28

Pace Project Number: 92770

Client Project ID: NCDOT/8.158061 Taylor

METHOD BLANK: 9250689

Associated Pace Samples:

Parameter	Units	9248592	9248600	Method Blank Result	9248618	9248626	9248634	9248642	Footnotes
2-Methylnaphthalene	ug/kg		ND	330					
Hexachlorocyclopentadiene	ug/kg		ND	330					
2,4,6-Trichlorophenol	ug/kg		ND	330					
2,4,5-Trichlorophenol	ug/kg		ND	330					
2-Chloronaphthalene	ug/kg		ND	330					
2-Nitroaniline	ug/kg		ND	1600					
Acenaphthylene	ug/kg		ND	330					
Dimethylphthalate	ug/kg		ND	330					
2,6-Dinitrotoluene	ug/kg		ND	330					
Acenaphthene	ug/kg		ND	330					
3-Nitroaniline	ug/kg		ND	1600					
2,4-Dinitrophenol	ug/kg		ND	1600					
Dibenzofuran	ug/kg		ND	330					
2,4-Dinitrotoluene	ug/kg		ND	330					
4-Nitrophenol	ug/kg		ND	1600					
Fluorene	ug/kg		ND	330					
4-Chlorophenyl-phenylether	ug/kg		ND	330					
Diethylphthalate	ug/kg		ND	330					
4-Nitroaniline	ug/kg		ND	1600					
1,2-Diphenylhydrazine	ug/kg		ND	330					
4,6-Dinitro-2-methylphenol	ug/kg		ND	330					
N-Nitrosodiphenylamine	ug/kg		ND	330					
4-Bromophenyl-phenylether	ug/kg		ND	330					
Hexachlorobenzene	ug/kg		ND	330					
Pentachlorophenol	ug/kg		ND	1600					
Phenanthrene	ug/kg		ND	330					
Anthracene	ug/kg		ND	330					
Di-n-butylphthalate	ug/kg		ND	330					
Fluoranthene	ug/kg		ND	330					
Pyrene	ug/kg		ND	330					
Butylbenzylphthalate	ug/kg		ND	330					
3,3'-Dichlorobenzidine	ug/kg		ND	660					
Benzo(a)anthracene	ug/kg		ND	330					
Chrysene	ug/kg		ND	330					
bis(2-Ethylhexyl)phthalate	ug/kg		ND	660					
Di-n-octylphthalate	ug/kg		ND	330					
Benzo(b)fluoranthene	ug/kg		ND	330					
Benzo(k)fluoranthene	ug/kg		ND	330					

Laboratory Certification IDs

NC Wastewater 12  
NC Drinking Water 37706  
SC 99006

Laboratory Certification IDs

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VA Drinking Water 213

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Fax: 704-875-9091

## QUALITY CONTROL DATA

DATE: 08/17/98  
PAGE: 29

Pace Project Number: 92770  
Client Project ID: NCDOT/8.158061 Taylor

METHOD BLANK: 9250689

Associated Pace Samples:

Parameter	Units	9248592	9248600	9248618	9248626	9248634	9248642
			Method Blank Result	PRL	Footnotes		
Benzo(a)pyrene	ug/kg	ND	330				
Indeno(1,2,3-cd)pyrene	ug/kg	ND	330				
Dibenz(a,h)anthracene	ug/kg	ND	330				
Benzo(g,h,i)perylene	ug/kg	ND	330				
Nitrobenzene-d5 (S)	%	87					
2-Fluorobiphenyl (S)	%	91					
Terphenyl-d14 (S)	%	90					
Phenol-d6 (S)	%	76					
2-Fluorophenol (S)	%	68					
2,4,6-Tribromophenol (S)	%	90					

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 9252016 9252024

Parameter	Units	9248626	Spike Conc.	Matrix Spike Result	Matrix % Rec	Sp. Dup. Result	Spike Dup % Rec	Dup RPD	Footnotes
Phenol	ug/kg	0	1944	1633	84.0	1517	78.0	7	
2-Chlorophenol	ug/kg	0	1944	1633	84.0	1517	78.0	7	
1,4-Dichlorobenzene	ug/kg	0	1944	1478	76.0	1361	70.0	8	
N-Nitroso-di-n-propylamine	ug/kg	0	1944	1750	90.0	1594	82.0	9	
1,2,4-Trichlorobenzene	ug/kg	0	1944	1594	82.0	1555	80.0	2	
4-Chloro-3-methylphenol	ug/kg	0	1944	1905	98.0	1789	92.0	6	
Acenaphthene	ug/kg	0	1944	1711	88.0	1633	84.0	5	
2,4-Dinitrotoluene	ug/kg	0	1944	1867	96.0	1711	88.0	9	
4-Nitrophenol	ug/kg	0	1944	2294	118	2100	108	9	
Pentachlorophenol	ug/kg	0	1944	1905	98.0	1672	86.0	13	
Pyrene	ug/kg	0	1944	1828	94.0	1633	84.0	11	
Nitrobenzene-d5 (S)					86		81		
2-Fluorobiphenyl (S)					82		76		
Terphenyl-d14 (S)					94		83		
Phenol-d6 (S)					76		71		
2-Fluorophenol (S)					69		64		
2,4,6-Tribromophenol (S)					89		80		

Laboratory Certification IDs  
NC Wastewater 12  
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9800 Kincey Avenue, Suite 100  
Huntersville, NC 28078

Tel: 704-875-9092  
Fax: 704-875-9091

## QUALITY CONTROL DATA

DATE: 08/17/98  
PAGE: 30

Pace Project Number: 92770  
Client Project ID: NCDOT/8.158061 Taylor

LABORATORY CONTROL SAMPLE: 9250713

Parameter	Units	Spike Conc.	LCS Result	Spike % Rec	Footnotes
bis(2-Chloroethyl)ether	ug/kg	1667	1333	80.0	
Phenol	ug/kg	1667	1393	83.6	
2-Chlorophenol	ug/kg	1667	1363	81.8	
1,3-Dichlorobenzene	ug/kg	1667	1253	75.2	
1,4-Dichlorobenzene	ug/kg	1667	1207	72.4	
1,2-Dichlorobenzene	ug/kg	1667	1247	74.8	
Benzyl Alcohol	ug/kg	1667	1480	88.8	
bis(2-Chloroisopropyl)ether	ug/kg	1667	1373	82.4	
2-Methylphenol	ug/kg	1667	1443	86.6	
Hexachloroethane	ug/kg	1667	1307	78.4	
N-Nitroso-di-n-propylamine	ug/kg	1667	1480	88.8	
4-Methylphenol	ug/kg	1667	703.3	42.2	
Nitrobenzene	ug/kg	1667	1387	83.2	
Isophorone	ug/kg	1667	1407	84.4	
2-Nitrophenol	ug/kg	1667	1417	85.0	
2,4-Dimethylphenol	ug/kg	1667	1593	95.6	
bis(2-Chloroethoxy)methane	ug/kg	1667	1427	85.6	
Benzoic Acid	ug/kg	1667	1490	89.4	
2,4-Dichlorophenol	ug/kg	1667	1547	92.8	
1,2,4-Trichlorobenzene	ug/kg	1667	1370	82.2	
Naphthalene	ug/kg	1667	1373	82.4	
4-Chloroaniline	ug/kg	1667	886.7	53.2	
Hexachlorobutadiene	ug/kg	1667	1403	84.2	
4-Chloro-3-methylphenol	ug/kg	1667	1793	108	
2-Methylnaphthalene	ug/kg	1667	1440	86.4	
Hexachlorocyclopentadiene	ug/kg	1667	886.7	53.2	
2,4,6-Trichlorophenol	ug/kg	1667	1597	95.8	
2,4,5-Trichlorophenol	ug/kg	1667	1680	101	
2-Chloronaphthalene	ug/kg	1667	1450	87.0	
2-Nitroaniline	ug/kg	1667	1807	108	
Acenaphthylene	ug/kg	1667	1497	89.8	
Dimethylphthalate	ug/kg	1667	1580	94.8	
2,6-Dinitrotoluene	ug/kg	1667	1630	97.8	
Acenaphthene	ug/kg	1667	1387	83.2	
3-Nitroaniline	ug/kg	1667	1783	107	
2,4-Dinitrophenol	ug/kg	1667	1287	77.2	
Dibenzofuran	ug/kg	1667	1523	91.4	
2,4-Dinitrotoluene	ug/kg	1667	1687	101	
4-Nitrophenol	ug/kg	1667	2063	124	
Fluorene	ug/kg	1667	1597	95.8	
4-Chlorophenyl-phenylether	ug/kg	1667	1627	97.6	

Laboratory Certification IDs  
NC Wastewater 12  
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SC 99006

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## QUALITY CONTROL DATA

DATE: 08/17/98

PAGE: 31

Pace Project Number: 92770

Client Project ID: NCDOT/8.158061 Taylor

LABORATORY CONTROL SAMPLE: 9250713

Parameter	Units	Spike Conc.	LCS Result	Spike % Rec	Footnotes
Diethylphthalate	ug/kg	1667	1707	102	
4-Nitroaniline	ug/kg	1667	1767	106	
1,2-Diphenylhydrazine	ug/kg	1667	1613	96.8	
4,6-Dinitro-2-methylphenol	ug/kg	1667	1390	83.4	
N-Nitrosodiphenylamine	ug/kg	1667	1500	90.0	
4-Bromophenyl-phenylether	ug/kg	1667	1510	90.6	
Hexachlorobenzene	ug/kg	1667	1500	90.0	
Pentachlorophenol	ug/kg	1667	1493	89.6	
Phenanthrene	ug/kg	1667	1550	93.0	
Anthracene	ug/kg	1667	1573	94.4	
Di-n-butylphthalate	ug/kg	1667	1610	96.6	
Fluoranthene	ug/kg	1667	1607	96.4	
Pyrene	ug/kg	1667	1507	90.4	
Butylbenzylphthalate	ug/kg	1667	1510	90.6	
3,3'-Dichlorobenzidine	ug/kg	1667	1073	64.4	
Benzo(a)anthracene	ug/kg	1667	1553	93.2	
Chrysene	ug/kg	1667	1520	91.2	
bis(2-Ethylhexyl)phthalate	ug/kg	1667	1490	89.4	
Di-n-octylphthalate	ug/kg	1667	1483	89.0	
Benzo(b)fluoranthene	ug/kg	1667	1523	91.4	
Benzo(k)fluoranthene	ug/kg	1667	1503	90.2	
Benzo(a)pyrene	ug/kg	1667	1547	92.8	
Indeno(1,2,3-cd)pyrene	ug/kg	1667	1480	88.8	
Dibenz(a,h)anthracene	ug/kg	1667	1483	89.0	
Benzo(g,h,i)perylene	ug/kg	1667	1470	88.2	
Nitrobenzene-d5 (S)				84	
2-Fluorobiphenyl (S)				83	
Terphenyl-d14 (S)				91	
Phenol-d6 (S)				74	
2-Fluorophenol (S)				67	
2,4,6-Tribromophenol (S)				88	

Laboratory Certification IDs  
NC Wastewater 12  
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Laboratory Certification IDs  
KY Drinking Water 90090  
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VA Drinking Water 213

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## QUALITY CONTROL DATA

DATE: 08/17/98  
PAGE: 32

Pace Analytical Services, Inc.  
54 Ravenscroft Drive  
Asheville, NC 28801

Pace Project Number: 92770  
Client Project ID: NCDOT/8.158061 Taylor

Attn: Mr. Charlie Billings  
Phone: (704)254-7176

QC Batch ID: 1238                            QC Batch Method: EPA 8260  
Analysis Method: EPA 8260                 Analysis Description: GC/MS VOCs by 8260, low level  
Associated Pace Samples:                 9248600      9248626      9248634      9248642

---

METHOD BLANK: 9252826

Associated Pace Samples:

Parameter	Units	Method Blank	Result	PRL	Footnotes
Dichlorodifluoromethane	ug/kg	ND	10		
Chloromethane	ug/kg	ND	10		
Vinyl Chloride	ug/kg	ND	10		
Bromomethane	ug/kg	ND	10		
Chloroethane	ug/kg	ND	10		
Trichlorofluoromethane	ug/kg	ND	5		
1,1-Dichloroethene	ug/kg	ND	5		
Methylene Chloride	ug/kg	6.1	5	1	
trans-1,2-Dichloroethene	ug/kg	ND	5		
1,1-Dichloroethane	ug/kg	ND	5		
cis-1,2-Dichloroethene	ug/kg	ND	5		
2,2-Dichloropropane	ug/kg	ND	5		
Chloroform	ug/kg	ND	5		
Bromochloromethane	ug/kg	ND	5		
1,1,1-Trichloroethane	ug/kg	ND	5		
1,1-Dichloropropene	ug/kg	ND	5		
1,2-Dichloroethane	ug/kg	ND	5		
Carbon Tetrachloride	ug/kg	ND	5		
Benzene	ug/kg	ND	5		
Trichloroethene	ug/kg	ND	5		
1,2-Dichloropropane	ug/kg	ND	5		
Dibromomethane	ug/kg	ND	5		
Bromodichloromethane	ug/kg	ND	5		
Toluene	ug/kg	ND	5		
1,1,2-Trichloroethane	ug/kg	ND	5		

Laboratory Certification IDs  
NC Wastewater 12  
NC Drinking Water 37706  
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QUALITY CONTROL DATA

DATE: 08/17/98  
PAGE: 33

Pace Project Number: 92770  
Client Project ID: NCDOT/8.158061 Taylor

METHOD BLANK: 9252826

Associated Pace Samples:

Parameter	Units	Method Blank Result	PRL	Footnotes
1,3-Dichloropropane	ug/kg	ND	5	
Dibromochloromethane	ug/kg	ND	5	
Tetrachloroethene	ug/kg	ND	5	
1,2-Dibromoethane	ug/kg	ND	5	
Chlorobenzene	ug/kg	ND	5	
1,1,1,2-Tetrachloroethane	ug/kg	ND	5	
Ethylbenzene	ug/kg	ND	5	
m&p-Xylene	ug/kg	ND	10	
Styrene	ug/kg	ND	5	
o-Xylene (1,2-Dimethylbenzene)	ug/kg	ND	5	
Bromoform	ug/kg	ND	5	
1,1,2,2-Tetrachloroethane	ug/kg	ND	5	
Isopropylbenzene (Cumene)	ug/kg	ND	5	
1,2,3-Trichloropropane	ug/kg	ND	5	
Bromobenzene	ug/kg	ND	5	
n-Propylbenzene	ug/kg	ND	5	
2-Chlorotoluene	ug/kg	ND	5	
4-Chlorotoluene	ug/kg	ND	5	
1,3,5-Trimethylbenzene	ug/kg	ND	5	
tert-Butylbenzene	ug/kg	ND	5	
1,2,4-Trimethylbenzene	ug/kg	ND	5	
sec-Butylbenzene	ug/kg	ND	5	
1,3-Dichlorobenzene	ug/kg	ND	5	
p-Isopropyltoluene	ug/kg	ND	5	
1,4-Dichlorobenzene	ug/kg	ND	5	
1,2-Dichlorobenzene	ug/kg	ND	5	
n-Butylbenzene	ug/kg	ND	5	
1,2-Dibromo-3-Chloropropane	ug/kg	ND	5	
1,2,4-Trichlorobenzene	ug/kg	ND	5	
Naphthalene	ug/kg	ND	5	
Hexachlorobutadiene	ug/kg	ND	5	
1,2,3-Trichlorobenzene	ug/kg	ND	5	
Dibromofluoromethane (S)	x	97		
1,2-Dichloroethane-d4 (S)	x	101		
Toluene-d8 (S)	x	95		
4-Bromofluorobenzene (S)	x	107		

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NC Wastewater 12  
NC Drinking Water 37706  
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9800 Kinney Avenue, Suite 100  
Huntersville, NC 28078

Tel: 704-875-9092  
Fax: 704-875-9091

## QUALITY CONTROL DATA

DATE: 08/17/98  
PAGE: 34

Pace Project Number: 92770

Client Project ID: NCDOT/8.158061 Taylor

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 9252842 9252859			Matrix	Matrix	Spike				
Parameter	Units	9249004	Spike Conc.	Spike Result	Spike % Rec	Sp. Dup. Result	Dup % Rec	RPD	Footnotes
1,1-Dichloroethene	ug/kg	0	61.22	45.55	74.4	46.89	76.6	3	
Benzene	ug/kg	0	61.22	57.67	94.2	58.77	96.0	2	
Trichloroethene	ug/kg	0	61.22	58.77	96.0	62.93	103	7	
Toluene	ug/kg	0	61.22	56.08	91.6	58.28	95.2	4	
Chlorobenzene	ug/kg	0	61.22	54.36	88.8	58.16	95.0	7	
Dibromofluoromethane (S)					105		100		
1,2-Dichloroethane-d4 (S)					110		103		
Toluene-d8 (S)					103		102		
4-Bromofluorobenzene (S)					97		99		

## LABORATORY CONTROL SAMPLE: 9252834

Parameter	Units	Spike Conc.	LCS Result	Spike % Rec	Footnotes
Dichlorodifluoromethane	ug/kg	50	78.00	156	
Chloromethane	ug/kg	50	66.00	132	
Vinyl Chloride	ug/kg	50	63.00	126	
Bromomethane	ug/kg	50	64.00	128	
Chloroethane	ug/kg	50	62.00	124	
Trichlorofluoromethane	ug/kg	50	58.00	116	
1,1-Dichloroethene	ug/kg	50	61.00	122	
Methylene Chloride	ug/kg	50	55.00	110	
trans-1,2-Dichloroethene	ug/kg	50	56.00	112	
1,1-Dichloroethane	ug/kg	50	53.00	106	
cis-1,2-Dichloroethene	ug/kg	50	54.00	108	
2,2-Dichloropropane	ug/kg	50	57.00	114	
Chloroform	ug/kg	50	52.00	104	
Bromochloromethane	ug/kg	50	50.00	100	
1,1,1-Trichloroethane	ug/kg	50	51.00	102	
1,1-Dichloropropene	ug/kg	50	59.00	118	
1,2-Dichloroethane	ug/kg	50	50.00	100	
Carbon Tetrachloride	ug/kg	50	57.00	114	
Benzene	ug/kg	50	56.00	112	
Trichloroethene	ug/kg	50	57.00	114	
1,2-Dichloropropane	ug/kg	50	56.00	112	
Dibromomethane	ug/kg	50	54.00	108	
Bromodichloromethane	ug/kg	50	53.00	106	
Toluene	ug/kg	50	54.00	108	
1,1,2-Trichloroethane	ug/kg	50	51.00	102	
1,3-Dichloropropane	ug/kg	50	54.00	108	

Laboratory Certification IDs  
 NC Wastewater 12  
 NC Drinking Water 37706  
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9800 Kincey Avenue, Suite 100  
Huntersville, NC 28078

Tel: 704-875-9092  
Fax: 704-875-9091

## QUALITY CONTROL DATA

DATE: 08/17/98  
PAGE: 35

Pace Project Number: 92770  
Client Project ID: NCDOT/8.158061 Taylor

LABORATORY CONTROL SAMPLE: 9252834

Parameter	Units	Spike Conc.	LCS Result	Spike % Rec	Footnotes
Dibromochloromethane	ug/kg	50	53.00	106	
Tetrachloroethene	ug/kg	50	57.00	114	
1,2-Dibromoethane	ug/kg	50	56.00	112	
Chlorobenzene	ug/kg	50	54.00	108	
1,1,1,2-Tetrachloroethane	ug/kg	50	54.00	108	
Ethylbenzene	ug/kg	50	53.00	106	
m&p-Xylene	ug/kg	100	107.0	107	
Styrene	ug/kg	50	57.00	114	
o-Xylene (1,2-Dimethylbenzene)	ug/kg	50	52.00	104	
Bromoform	ug/kg	50	54.00	108	
1,1,2,2-Tetrachloroethane	ug/kg	50	52.00	104	
Isopropylbenzene (Cumene)	ug/kg	50	53.00	106	
1,2,3-Trichloropropane	ug/kg	50	51.00	102	
Bromobenzene	ug/kg	50	55.00	110	
n-Propylbenzene	ug/kg	50	55.00	110	
2-Chlorotoluene	ug/kg	50	53.00	106	
4-Chlorotoluene	ug/kg	50	52.00	104	
1,3,5-Trimethylbenzene	ug/kg	50	54.00	108	
tert-Butylbenzene	ug/kg	50	54.00	108	
1,2,4-Trimethylbenzene	ug/kg	50	54.00	108	
sec-Butylbenzene	ug/kg	50	54.00	108	
1,3-Dichlorobenzene	ug/kg	50	59.00	118	
p-Isopropyltoluene	ug/kg	50	55.00	110	
1,4-Dichlorobenzene	ug/kg	50	58.00	116	
1,2-Dichlorobenzene	ug/kg	50	51.00	102	
n-Butylbenzene	ug/kg	50	55.00	110	
1,2-Dibromo-3-Chloropropane	ug/kg	50	53.00	106	
1,2,4-Trichlorobenzene	ug/kg	50	61.00	122	
Naphthalene	ug/kg	50	58.00	116	
Hexachlorobutadiene	ug/kg	50	53.00	106	
1,2,3-Trichlorobenzene	ug/kg	50	56.00	112	
Dibromofluoromethane (S)				91	
1,2-Dichloroethane-d4 (S)				96	
Toluene-d8 (S)				94	
4-Bromofluorobenzene (S)				103	

Laboratory Certification IDs  
NC Wastewater 12  
NC Drinking Water 37706  
SC 99006

## REPORT OF LABORATORY ANALYSIS

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Laboratory Certification IDs  
KY Drinking Water 90090  
TN UST List  
VA Drinking Water 213

## QUALITY CONTROL DATA

DATE: 08/17/98  
PAGE: 36

Pace Analytical Services, Inc.  
54 Ravenscroft Drive  
Asheville, NC 28801

Pace Project Number: 92770  
Client Project ID: NCDOT/8.158061 Taylor

Attn: Mr. Charlie Billings  
Phone: (704)254-7176

QC Batch ID: 1317                            QC Batch Method: EPA 8260  
Analysis Method: EPA 8260                 Analysis Description: GC/MS VOCs by 8260  
Associated Pace Samples:                 9248592                 9248618

---

METHOD BLANK: 9255340

Associated Pace Samples:

9248618

Parameter	Units	Method Blank Result	PRL	Footnotes
Dichlorodifluoromethane	ug/kg	ND	500	
Chloromethane	ug/kg	ND	500	
Vinyl Chloride	ug/kg	ND	500	
Bromomethane	ug/kg	ND	500	
Chloroethane	ug/kg	ND	500	
Trichlorofluoromethane	ug/kg	ND	250	
1,1-Dichloroethene	ug/kg	ND	250	
Methylene Chloride	ug/kg	ND	250	
trans-1,2-Dichloroethene	ug/kg	ND	250	
1,1-Dichloroethane	ug/kg	ND	250	
cis-1,2-Dichloroethene	ug/kg	ND	250	
2,2-Dichloropropane	ug/kg	ND	250	
Chloroform	ug/kg	ND	250	
Bromochloromethane	ug/kg	ND	250	
1,1,1-Trichloroethane	ug/kg	ND	250	
1,1-Dichloropropene	ug/kg	ND	250	
1,2-Dichloroethane	ug/kg	ND	250	
Carbon Tetrachloride	ug/kg	ND	250	
Benzene	ug/kg	ND	250	
Trichloroethene	ug/kg	ND	250	
1,2-Dichloropropane	ug/kg	ND	250	
Dibromomethane	ug/kg	ND	250	
Bromodichloromethane	ug/kg	ND	250	
Toluene	ug/kg	ND	250	
1,1,2-Trichloroethane	ug/kg	ND	250	

Laboratory Certification IDs  
NC Wastewater 12  
NC Drinking Water 37706  
SC 99006

Laboratory Certification IDs  
KY Drinking Water 90090  
TN UST List  
VA Drinking Water 213

## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL DATA

DATE: 08/17/98  
PAGE: 37

Pace Project Number: 92770  
Client Project ID: NCDOT/8.158061 Taylor

METHOD BLANK: 9255340

Associated Pace Samples:

9248618

Parameter	Units	Method Blank Result	PRL	Footnotes
1,3-Dichloropropane	ug/kg	ND	250	
Dibromochloromethane	ug/kg	ND	250	
Tetrachloroethene	ug/kg	ND	250	
1,2-Dibromoethane	ug/kg	ND	250	
Chlorobenzene	ug/kg	ND	250	
1,1,1,2-Tetrachloroethane	ug/kg	ND	250	
Ethylbenzene	ug/kg	ND	250	
m&p-Xylene	ug/kg	ND	500	
Styrene	ug/kg	ND	250	
o-Xylene (1,2-Dimethylbenzene)	ug/kg	ND	250	
Bromoform	ug/kg	ND	250	
1,1,2,2-Tetrachloroethane	ug/kg	ND	250	
Isopropylbenzene (Cumene)	ug/kg	ND	250	
1,2,3-Trichloropropane	ug/kg	ND	250	
Bromobenzene	ug/kg	ND	250	
n-Propylbenzene	ug/kg	ND	250	
2-Chlorotoluene	ug/kg	ND	250	
4-Chlorotoluene	ug/kg	ND	250	
1,3,5-Trimethylbenzene	ug/kg	ND	250	
tert-Butylbenzene	ug/kg	ND	250	
1,2,4-Trimethylbenzene	ug/kg	ND	250	
sec-Butylbenzene	ug/kg	ND	250	
1,3-Dichlorobenzene	ug/kg	ND	250	
p-Isopropyltoluene	ug/kg	ND	250	
1,4-Dichlorobenzene	ug/kg	ND	250	
1,2-Dichlorobenzene	ug/kg	ND	250	
n-Butylbenzene	ug/kg	ND	250	
1,2-Dibromo-3-Chloropropane	ug/kg	ND	250	
1,2,4-Trichlorobenzene	ug/kg	ND	250	
Naphthalene	ug/kg	ND	250	
Hexachlorobutadiene	ug/kg	ND	250	
1,2,3-Trichlorobenzene	ug/kg	ND	250	
Dibromofluoromethane (S)	%	84		
1,2-Dichloroethane-d4 (S)	%	87		
Toluene-d8 (S)	%	90		
4-Bromofluorobenzene (S)	%	87		

Laboratory Certification IDs  
NC Wastewater 12  
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SC 99006

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Laboratory Certification IDs  
KY Drinking Water 90090  
TN UST List  
VA Drinking Water 213

# Pace Analytical

## QUALITY CONTROL DATA

DATE: 08/17/98

PAGE: 38

Pace Project Number: 92770

Client Project ID: NCDOT/8.158061 Taylor

METHOD BLANK: 9255365

Associated Pace Samples:

9248592

Parameter	Units	Method Blank Result	PRL	Footnotes
Dichlorodifluoromethane	ug/kg	ND	500	
Chloromethane	ug/kg	ND	500	
Vinyl Chloride	ug/kg	ND	500	
Bromomethane	ug/kg	ND	500	
Chloroethane	ug/kg	ND	500	
Trichlorofluoromethane	ug/kg	ND	250	
1,1-Dichloroethene	ug/kg	ND	250	
Methylene Chloride	ug/kg	ND	250	
trans-1,2-Dichloroethene	ug/kg	ND	250	
1,1-Dichloroethane	ug/kg	ND	250	
cis-1,2-Dichloroethene	ug/kg	ND	250	
2,2-Dichloropropane	ug/kg	ND	250	
Chloroform	ug/kg	ND	250	
Bromochloromethane	ug/kg	ND	250	
1,1,1-Trichloroethane	ug/kg	ND	250	
1,1-Dichloropropene	ug/kg	ND	250	
1,2-Dichloroethane	ug/kg	ND	250	
Carbon Tetrachloride	ug/kg	ND	250	
Benzene	ug/kg	ND	250	
Trichloroethene	ug/kg	ND	250	
1,2-Dichloropropane	ug/kg	ND	250	
Dibromomethane	ug/kg	ND	250	
Bromodichloromethane	ug/kg	ND	250	
Toluene	ug/kg	ND	250	
1,1,2-Trichloroethane	ug/kg	ND	250	
1,3-Dichloropropane	ug/kg	ND	250	
Dibromochloromethane	ug/kg	ND	250	
Tetrachloroethene	ug/kg	ND	250	
1,2-Dibromoethane	ug/kg	ND	250	
Chlorobenzene	ug/kg	ND	250	
1,1,1,2-Tetrachloroethane	ug/kg	ND	250	
Ethylbenzene	ug/kg	ND	250	
m&p-Xylene	ug/kg	ND	500	
Styrene	ug/kg	ND	250	
o-Xylene (1,2-Dimethylbenzene)	ug/kg	ND	250	
Bromoform	ug/kg	ND	250	
1,1,2,2-Tetrachloroethane	ug/kg	ND	250	
Isopropylbenzene (Cumene)	ug/kg	ND	250	

Laboratory Certification IDs

NC Wastewater 12  
NC Drinking Water 37706  
SC 99006

Laboratory Certification IDs

KY Drinking Water 90090  
TN UST List  
VA Drinking Water 213

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# Pace Analytical

Pace Analytical Services, Inc.  
9800 Kincey Avenue, Suite 100  
Huntersville, NC 28078

Tel: 704-875-9092  
Fax: 704-875-9091

## QUALITY CONTROL DATA

DATE: 08/17/98  
PAGE: 39

Pace Project Number: 92770  
Client Project ID: NCDOT/8.158061 Taylor

METHOD BLANK: 9255365

Associated Pace Samples:

9248592

Parameter	Units	Method Blank Result	PRL	Footnotes
1,2,3-Trichloropropane	ug/kg	ND	250	
Bromobenzene	ug/kg	ND	250	
n-Propylbenzene	ug/kg	ND	250	
2-Chlorotoluene	ug/kg	ND	250	
4-Chlorotoluene	ug/kg	ND	250	
1,3,5-Trimethylbenzene	ug/kg	ND	250	
tert-Butylbenzene	ug/kg	ND	250	
1,2,4-Trimethylbenzene	ug/kg	ND	250	
sec-Butylbenzene	ug/kg	ND	250	
1,3-Dichlorobenzene	ug/kg	ND	250	
p-Isopropyltoluene	ug/kg	ND	250	
1,4-Dichlorobenzene	ug/kg	ND	250	
1,2-Dichlorobenzene	ug/kg	ND	250	
n-Butylbenzene	ug/kg	ND	250	
1,2-Dibromo-3-Chloropropane	ug/kg	ND	250	
1,2,4-Trichlorobenzene	ug/kg	ND	250	
Naphthalene	ug/kg	ND	250	
Hexachlorobutadiene	ug/kg	ND	250	
1,2,3-Trichlorobenzene	ug/kg	ND	250	
Dibromofluoromethane (S)	%	95		
1,2-Dichloroethane-d4 (S)	%	97		
Toluene-d8 (S)	%	101		
4-Bromofluorobenzene (S)	%	102		

LABORATORY CONTROL SAMPLE: 9255357

Parameter	Units	Spike	LCS	Spike	
		Conc.	Result	% Rec	Footnotes
Dichlorodifluoromethane	ug/kg	1000	555.0	55.5	
Chloromethane	ug/kg	1000	1255	126	
Vinyl Chloride	ug/kg	1000	765.0	76.5	
Bromomethane	ug/kg	1000	441.5	44.2	
Chloroethane	ug/kg	1000	815.0	81.5	
Trichlorofluoromethane	ug/kg	1000	780.0	78.0	
Methylene Chloride	ug/kg	1000	695.0	69.5	
trans-1,2-Dichloroethene	ug/kg	1000	875.0	87.5	
1,1-Dichloroethane	ug/kg	1000	820.0	82.0	

### Laboratory Certification IDs

NC Wastewater 12  
NC Drinking Water 37706  
SC 99006

### Laboratory Certification IDs

KY Drinking Water 90090  
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VA Drinking Water 213

## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL DATA

DATE: 08/17/98

PAGE: 40

Pace Project Number: 92770

Client Project ID: NCDOT/8.158061 Taylor

LABORATORY CONTROL SAMPLE: 9255357

Parameter	Units	Spike Conc.	LCS Result	Spike % Rec	Footnotes
cis-1,2-Dichloroethene	ug/kg	1000	870.0	87.0	
2,2-Dichloropropane	ug/kg	1000	805.0	80.5	
Chloroform	ug/kg	1000	895.0	89.5	
Bromochloromethane	ug/kg	1000	775.0	77.5	
1,1,1-Trichloroethane	ug/kg	1000	860.0	86.0	
1,1-Dichloropropene	ug/kg	1000	960.0	96.0	
1,2-Dichloroethane	ug/kg	1000	820.0	82.0	
Carbon Tetrachloride	ug/kg	1000	920.0	92.0	
Benzene	ug/kg	1000	925.0	92.5	
Trichloroethene	ug/kg	1000	960.0	96.0	
1,2-Dichloropropane	ug/kg	1000	960.0	96.0	
Dibromomethane	ug/kg	1000	855.0	85.5	
Bromodichloromethane	ug/kg	1000	860.0	86.0	
Toluene	ug/kg	1000	930.0	93.0	
1,1,2-Trichloroethane	ug/kg	1000	820.0	82.0	
1,3-Dichloropropane	ug/kg	1000	895.0	89.5	
Dibromochloromethane	ug/kg	1000	815.0	81.5	
Tetrachloroethene	ug/kg	1000	960.0	96.0	
1,2-Dibromoethane	ug/kg	1000	875.0	87.5	
Chlorobenzene	ug/kg	1000	910.0	91.0	
1,1,1,2-Tetrachloroethane	ug/kg	1000	910.0	91.0	
Ethylbenzene	ug/kg	1000	905.0	90.5	
m&p-Xylene	ug/kg	2000	1800	90.0	
Styrene	ug/kg	1000	940.0	94.0	
o-Xylene (1,2-Dimethylbenzene)	ug/kg	1000	900.0	90.0	
Bromoform	ug/kg	1000	780.0	78.0	
1,1,2,2-Tetrachloroethane	ug/kg	1000	800.0	80.0	
Isopropylbenzene (Cumene)	ug/kg	1000	900.0	90.0	
1,2,3-Trichloropropene	ug/kg	1000	740.0	74.0	
Bromobenzene	ug/kg	1000	1010	101	
n-Propylbenzene	ug/kg	1000	975.0	97.5	
2-Chlorotoluene	ug/kg	1000	970.0	97.0	
4-Chlorotoluene	ug/kg	1000	940.0	94.0	
1,3,5-Trimethylbenzene	ug/kg	1000	930.0	93.0	
tert-Butylbenzene	ug/kg	1000	980.0	98.0	
1,2,4-Trimethylbenzene	ug/kg	1000	890.0	89.0	
sec-Butylbenzene	ug/kg	1000	945.0	94.5	
1,3-Dichlorobenzene	ug/kg	1000	925.0	92.5	
p-Isopropyltoluene	ug/kg	1000	935.0	93.5	
1,4-Dichlorobenzene	ug/kg	1000	920.0	92.0	
1,2-Dichlorobenzene	ug/kg	1000	890.0	89.0	

Laboratory Certification IDs

NC Wastewater 12  
NC Drinking Water 37706  
SC 99006

Laboratory Certification IDs

KY Drinking Water 90090  
TN UST List  
VA Drinking Water 213

## REPORT OF LABORATORY ANALYSIS

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# Pace Analytical

## QUALITY CONTROL DATA

DATE: 08/17/98

PAGE: 41

Pace Project Number: 92770

Client Project ID: NCDOT/8.158061 Taylor

LABORATORY CONTROL SAMPLE: 9255357

Parameter	Units	Spike Conc.	LCS Result	Spike % Rec	Footnotes
n-Butylbenzene	ug/kg	1000	890.0	89.0	
1,2-Dibromo-3-Chloropropane	ug/kg	1000	890.0	89.0	
1,2,4-Trichlorobenzene	ug/kg	1000	1045	105	
Naphthalene	ug/kg	1000	1045	105	
Hexachlorobutadiene	ug/kg	1000	915.0	91.5	
1,2,3-Trichlorobenzene	ug/kg	1000	990.0	99.0	
Dibromofluoromethane (S)				95	
1,2-Dichloroethane-d4 (S)				91	
Toluene-d8 (S)				100	
4-Bromofluorobenzene (S)				97	

Laboratory Certification IDs  
NC Wastewater 12  
NC Drinking Water 37706  
SC 99006

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Laboratory Certification IDs  
KY Drinking Water 90090  
TN UST List  
VA Drinking Water 213

DATE: 08/17/98

PAGE: 42

Pace Project Number: 92770

Client Project ID: NCDOT/8.158061 Taylor

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## QUALITY CONTROL DATA PARAMETER FOOTNOTES

Consistent with EPA guidelines unrounded concentrations are displayed and have been used to calculate % Rec and RPD values.

ND	Not Detected
NC	Not Calculable
PRL	Pace Reporting Limit
RPD	Relative Percent Difference
(S)	Surrogate
[1]	Common laboratory contaminant.

Laboratory Certification IDs  
NC Wastewater 12  
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SC 99006

## REPORT OF LABORATORY ANALYSIS

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Laboratory Certification IDs  
KY Drinking Water 90090  
TN UST List  
VA Drinking Water 213



NCDOT State Project  
8.158061 (J-2583)

CHAIN-OF-CUSTODY RECORD  
ANALYTICAL REQUEST

No. 3588

92770

109-1

PROJECT NAME:	NCDOT/Taylor		REPORT TO:	Joe Best		TURNOVER:	<input checked="" type="checkbox"/> NORMAL	<input type="checkbox"/> 5 DAY	<input type="checkbox"/> OTHER (SPECIFY):													
ADDRESS:	Rockingham, NC		AFFILIATION/LOCATION:	Aquaterra/Greensboro		REQUESTED DUE DATE:																
JOB NUMBER:	6303900		PHONE:	(336) 852-5003		P.O. # / BILLING REFERENCE:	Pice P0 933861															
SAMPLED BY [PRINT]:	Joe Best		SAMPLER'S SIGNATURE:	Joe Best		ANALYSES REQUEST																
						NUMBER OF CONTAINERS																
SAMPLE ID	SAMPLE LOCATION	DATE	TIME	MATRIX	WATER	SOIL	OTHER	TOTAL	UNPRESERVED	HNO <sub>3</sub>	H <sub>2</sub> SO <sub>4</sub>	HCl	H <sub>2</sub> O <sub>2</sub> <2 OR >12	NH <sub>4</sub> <sup>+</sup>	methanol	EDTA	UPH 48270	REMARKS				
GA-1		7/28		/	/	/	/	6	4										9298592			
GA-2				/	/	/	/	2	2										48600			
GA-3				/	/	/	/	2	2										486018			
GA-4				/	/	/	/	2	2										486026			
GA-5				/	/	/	/	2	2										486034			
GA-6				/	/	/	/	2	2										486042			
ADDITIONAL COMMENTS:												RElinquished by / AFFILIATION			ACCEPTED BY / AFFILIATION	DATE	TIME	A				
Please forward invoices & results to B.I. McDaniel, NCDOT Materials & Test Unit												John J. Taylor J. Maloney J. H. Head			7/30	10:00 AM	5/18					

## Results by Sample

SAMPLE ID TRIP BLNKFRACTION 06A TEST CODE VPHINC NAME VOLATILE PHCDate & Time Collected not specifiedCategory SOILVOLATILE PETROLEUM HYDROCARBONS

	REPORTING	
	RESULT	LIMIT
C5-C8 Aliphatics (FID)	<u>ND</u>	<u>1.0</u>
C9-C12 Aliphatics (FID)	<u>ND</u>	<u>1.0</u>
C9-C10 Aromatics (PID)	<u>ND</u>	<u>1.0</u>

## TARGET VPH ANALYTES

Surrogates	% Recovery	Surrogate	Limits
FID Surrogate	<u>80</u>	70	- 130
PID Surrogate	<u>82</u>	70	- 130

## Notes and Definitions for this Report:

UNITS: mg/kg  
DATE RUN: 08/05/98  
EXTRACTED: \_\_\_\_\_  
ANALYST: SEP  
INSTRUMENT: : V3  
DIL. FACTOR: 1  
DRY WEIGHT: 100

ND = not detected at detection limit

D = diluted out

INT = matrix interference

Hydrocarbon Range data exclude concentrations of surrogate(s) eluting in that range

Hydrocarbon Range data are unadjusted for target analytes

Page 13

TOXIKON CORP.

REPORT

Work Order # 98-08-058

Received: 08/04/98

Test Methodology

TEST CODE EPHNC NAME EXTRACTABLE PHC

METHOD: EXTRACTABLE PETROLEUM HYDROCARBONS

REFERENCE: METHOD FOR THE DETERMINATION OF EXTRACTABLE PETROLEUM  
HYDROCARBONS (EPH), MADEP-EPH-98-1  
MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION  
JANUARY 1998  
FOLLOWING THE GUIDELINES OF THE NORTH CAROLINA DENR

TEST CODE VPHNC NAME VOLATILE PHC

METHOD: VOLATILE PETROLEUM HYDROCARBONS

REFERENCE: METHOD FOR THE DETERMINATION OF VOLATILE PETROLEUM  
HYDROCARBONS. MADEP-VPH-98-1  
MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION  
JANUARY 1998  
FOLLOWING THE GUIDELINES OF THE NORTH CAROLINA DENR

## EPH/VPH Certification

Toxikon Order 9808058VPH Soil Sample Collection Option 3

Option 1 = Fill line on vial Option 2 = Sampling Device Option 3 = Field weight of soil

Were all QA/QC procedures REQUIRED by the VPH method followed? Yes  No Were all QA/QC procedures REQUIRED by the EPH method followed? Yes  No Were all performance/acceptance standards for the required QA/QC  
procedures achieved?

Details regarding any answer of "No" above are provided below.

Were any significant modifications made to the EPH/VPH methods  
as specified in Section 11.3? Yes  No I attest under the pains and penalties of perjury that, based upon my inquiry of those  
individuals immediately responsible for obtaining the information, the material contained  
in this report is, to the best of my knowledge and belief, accurate and complete.Signature: Position: LAB MANAGERPrinted Name: Paul LeBeneDate: 8/12/98

**EPH Laboratory Reporting Form****Calibration and QA/QC Information**Initial Calibration Date 6/14/98**Calibration Ranges and Limits**

Range	MDL	ML	RL
C9 -C18 Aliphatics	11	33	100
C19 - C36 Aliphatics	8	25	100
C11 -C22 Aromatics	4	13	100

NOTE: Please include units as appropriate

Method of Quantitation (circle one): Curve or Average Response Factor

**Calibration Concentration Levels**

Range	Levels	%RSD for CCC
C9 -C18 Aliphatics	30 ug/ml	3
	120	
	300	
	600	
	1200	
C19 -C36 Aliphatics	40 ug/ml	11
	160	
	400	
	800	
	1600	
C11 - C22 Aromatics	85 ug/ml	4
	340	
	850	
	1700	
	3400	

NOTE: Please indicate units as appropriate.

Calibration Check Date 8/12/98**Calibration Check**

Range	Level	RPD
C9 -C18 Aliphatics	300	11.8
C19 - C36 Aliphatics	400	16.7
C11 -C22 Aromatics	850	0.5

MDL = Method Detection Limit

RPD = Relative Percent Difference

ML = Minimum Limit

%RSD = Percent Relative Standard Deviation

RL = Reportable Limit

CCC = Correlation Coefficient of Curve

## VPH Laboratory Reporting Form

## Calibration and QA/QC Information

Initial Calibration Date July 21 1998

V3 SOILS

Calibration Ranges and Limits

Range	MDL	ML	RL
C5 -C8 Aliphatics	1.0 PPM	1.0 PPM	1.0 PPM
C9 - C12 Aliphatics	↓	↓	↓
C9 -C10 Aromatics	↓	↓	↓

NOTE: Please include units as appropriate

Method of Quantitation (circle one): Curve or Average Response Factor

Calibration Concentration Levels

Range	Levels	%RSD or CCC
C5 - C8 Aliphatics	0.040 mg/Kg	9.0 %
	0.080	
	0.160	
	0.300	
	1.20	
C9 - C12 Aliphatics	0.010	11.5 %
	0.020	
	0.040	
	0.200	
	0.300	
C9 - C10 Aromatics	0.010	6.6 %
	0.020	
	0.040	
	0.200	
	0.300	

NOTE: Please indicate units as appropriate.

Calibration Check Date \_\_\_\_\_

Calibration Check

Range	Level	RPD
C5 -C8 Aliphatics	0.138	14.8 %
C9 - C12 Aliphatics	0.046	14.0 %
C9 -C10 Aromatics	0.046	14.0 %

MDL = Method Detection Limit

RPD = Relative Percent Difference

ML = Minimum Limit

%RSD = Percent Relative Standard Deviation

RL = Reportable Limit

CCC = Correlation Coefficient of Curve



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

ROY COOPER  
GOVERNOR

JAMES H. TROGDON, III  
SECRETARY

January 11, 2019

MEMORANDUM TO: Greg S. Davis, PE  
Division 8 Project Engineer

FROM: Dennis G Li, Ph. D., LG  
GeoEnvironmental Project Manager  
GeoEnvironmental Section  
Geotechnical Engineering Unit

TIP NO: I-5979  
WBS: 46963.1.1  
COUNTY: RICHMOND  
DIVISION: 8  
DESCRIPTION: Interchange improvements-US 74 at US 1 (Exit 311) in Rockingham, Richmond County

SUBJECT: **GeoEnvironmental Phase I Report**

DocuSigned by:  
  
3288528EC798426...  
1/11/2019

The GeoEnvironmental Section of the Geotechnical Engineering Unit performed a Phase I field investigation on January 8, 2019 for the above referenced project to identify geoenvironmental sites of concern. The purpose of this report is to document sites of concern within the project study area that are or may be contaminated. These sites of concern should be included in the environmental planning document in an effort to assist the project stakeholders in reducing or avoiding impacts to these sites. Sites of concern may include, but are not limited to, underground storage tank (UST) sites, dry cleaning facilities, hazardous waste sites, regulated landfills and unregulated dumpsites.

**Findings**

Three (3) sites of concern were identified within the proposed study area. We anticipate low monetary and scheduling impacts resulting from these sites. See the following table and figure for details.

Please note that discovery of additional sites not recorded by regulatory agencies and not reasonably discernible during the project reconnaissance may occur. The GeoEnvironmental Section should be notified immediately after discovery of such sites so their potential impact(s) may be assessed.

If there are questions regarding the geoenvironmental issues, please contact me, at (919) 707-6857.

Mailing Address:  
NC DEPARTMENT OF TRANSPORTATION  
GEOTECHNICAL ENGINEERING UNIT  
1589 MAIL SERVICE CENTER  
RALEIGH, NC 27699-1589

Telephone: (919) 707-6850  
Customer Service: 1-877-368-4968  
Website: [www.ncdot.gov](http://www.ncdot.gov)

Location:  
1020 BIRCH RIDGE DRIVE  
RALEIGH, NC 27610

cc:

John Pilipchuk, LG, PE, State Geotechnical Engineer  
Stephen R. Morgan, PE, State Hydraulics Engineer  
Brian Hanks, PE, State Structures Engineer  
Dale Burton, PE, PLS, State Locations and Surveys Engineer  
Carl Barclay, PE, State Utilities Manager  
Brandon H. Jones, PE, Division Engineer (for Division 8 Construction)  
Pages, Luis E., Division 8&10 Area Negotiator  
Eric Williams, PE, Geotechnical Regional Manager  
Kevin Miller, L.G., Regional Geological Engineer  
Tracy M. Clark, ROW Unit, Assistant State Negotiator - East  
[row-notify@ncdot.gov](mailto:row-notify@ncdot.gov)  
[roadwaydesign@ncdot.gov](mailto:roadwaydesign@ncdot.gov)  
[hydraulics\\_notify@ncdot.gov](mailto:hydraulics_notify@ncdot.gov)

**(01) Property Name:**  
P & C Food Mart (Shell)  
379 US HWY 1 South  
Rockingham, NC 28379

**Facility ID:** 00-0-0000003660  
**Incident Type/Number:** N/A

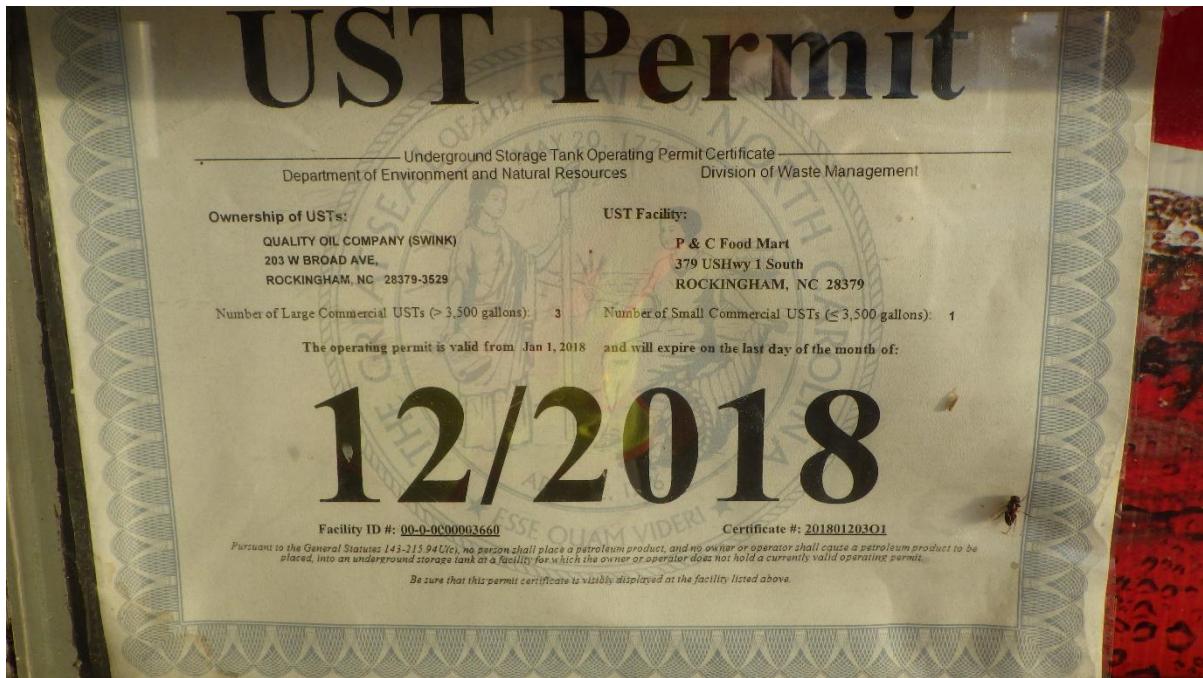
**Property Owner:**  
MELTON HARVEY E & RITA H  
215 CLEARFIELD DR  
Rockingham, NC 28379

**UST Owner:**  
Quality Oil Company (SWINK)  
203 W Broad Ave,  
Rockingham, NC 28379-3529



**Anticipated Impacts: LOW**

This is an active gas station and four USTs are permitted on site. No monitoring wells on site and no records in NCDEQ's database.



UST permit



UST area

**(02) Property Name:**  
US 1 BP Shop  
432 US HWY 1 South  
Rockingham, NC 28379

**Facility ID:** 00-0-0000001809  
**Incident Type/Number:** N/A

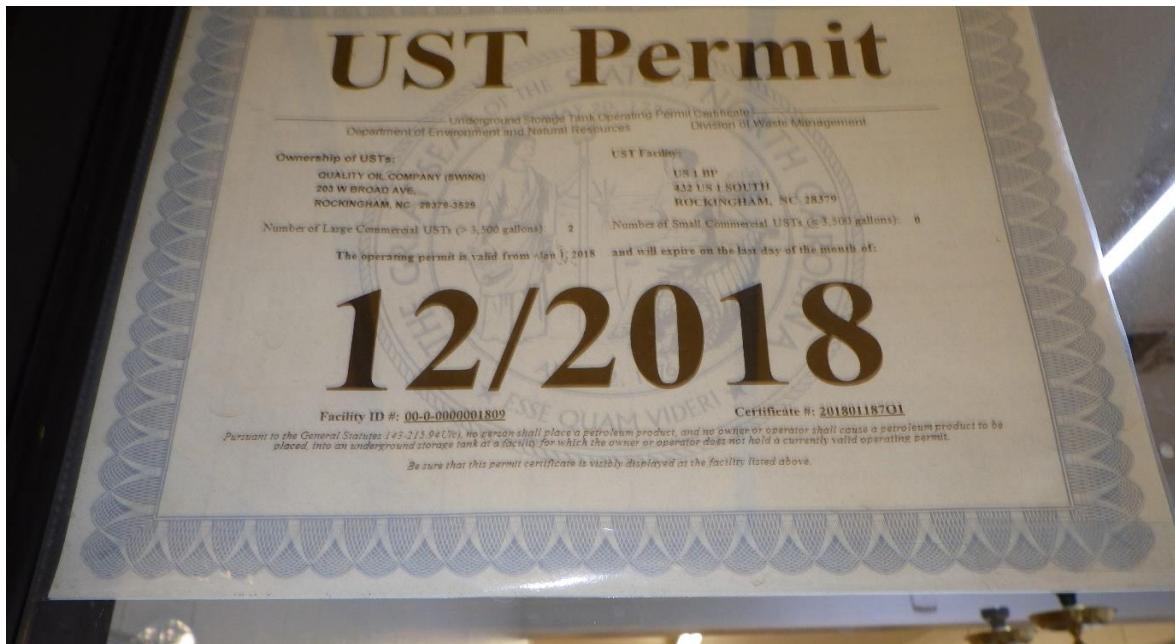
**Property Owner:**  
Quality Oil Company (SWINK)  
203 W Broad Ave,  
Rockingham, NC 28379-3529

**UST Owner:**  
Quality Oil Company (SWINK)  
203 W Broad Ave,  
Rockingham, NC 28379-3529



**Anticipated Impacts: LOW**

This is an active gas station. Two USTs are permitted on site and one AST was located at the back. No monitoring wells on site and no records in NCDEQ's database.



*UST permit*



*UST area*



*AST at the back*



*Unknown site disturbance—potential underground objects—possible USTs.*

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**(03) Property Name:**  
Quik Chek 6 (CITGO)  
481 US HWY 1 South  
Rockingham, NC 28379

**Facility ID:** 00-0-0000036847  
**Incident Type/Number:** N/A

**Property Owner:**  
United Fuels Rockingham LLC  
220 W Spring Street  
Troy, NC 27371

**UST Owner:**  
United Fuels Rockingham LLC  
220 W Spring Street  
Troy, NC 27371



**Anticipated Impacts: LOW**

This is an active gas station and four USTs are permitted on site. No monitoring wells on site and no records in NCDEQ's database.



UST permit



UST area

