

Prepared for:

**North Carolina Department of Transportation**

**Geotechnical Engineering Unit**

**GeoEnvironmental Section**

**1589 Mail Service Center**

**Raleigh, North Carolina, 27699-1589**

## Preliminary Site Assessment Report

Eugene A. Taylor Property

Parcel # 39

101 West Patetown Road

Goldsboro, Wayne County, North Carolina

US 117 Alternate from US 70 Bypass to Belfast

TIP Number: U-2714

WBS Element: 38979.1.2



**Apex Companies, LLC**

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**July 31, 2017**

*not considered final unless all signatures are completed*

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## 1.0 INTRODUCTION

This report presents the results of a Preliminary Site Assessment (PSA) for the North Carolina Department of Transportation (NCDOT) Parcel 39 performed by Apex Companies, LLC (Apex) on behalf of the NCDOT. The subject site of this PSA report will be affected by the widening of the US Highway 117 from US Highway 70 to Belfast Road. The site is comprised of one parcel and is located at 101 West Patetown Road and is identified as Parcel 39, Eugene A. Taylor Property, within the NCDOT U-2714 design project. The RFP indicated that 2207 North William Street is located next to HDR site 10 (former gas station), however, field observations indicate that 101 West Patetown Road is parcel 39, and is located adjacent to 2207 North William Street (the former gas station). The property is located on the northwest corner of the intersection of North William Street and West Patetown Road in Goldsboro, Wayne County, North Carolina, as shown in the attached Site Location Map (**Figure 1**). The site investigation was conducted in accordance with Apex Company's Technical and Cost proposal dated June 7, 2017.

NCDOT contracted Apex to perform the PSA within the proposed right-of-way (ROW) and/or easement of the Parcel 39 Property due to the potential presence of contamination at the site and the fact that excavation and grading may occur within the area. The PSA was performed to evaluate if soils have been impacted as a result of past and present uses of the property within the proposed investigation area, if buried underground storage tanks (USTs) are present in the area of investigation, and if groundwater is impacted.

The following report presents the results of a ground penetrating radar (GPR) evaluation to identify underground storage tanks (USTs) in the investigation area, and describes the subsurface field investigation at the site. The report includes the evaluation of field screening, as well as field and laboratory analyses with regards to the presence or absence of soil and groundwater contamination within the area of investigation across Parcel 39. **Appendix A** includes a Photograph Log for the site.

### 1.1 Site History

Parcel 39 has been identified with the address of 101 West Patetown Road. Based on a search of the North Carolina Department of Environmental Quality (NCDEQ) UST database registry, no registered tanks were identified for the 101 West Patetown Road site. No visual evidence of USTs were noted during field activities. Currently the site operates as a multi-tenant commercial strip mall building in a one-story building. Apex personnel also reviewed the NCDEQ Incident Management Database and no groundwater incidents are associated with this parcel.

## 1.2 Site Description

The site is located in a mixed commercial and residential area of Goldsboro in Wayne County. The property is developed with one multi-tenant commercial strip mall building with an asphalt-paved parking area to the south and west of the structure. Tenants at the property include Subway, Curves, Rice Noodles Chinese Restaurant, Smoke Shop & Hookah, Hawaiian BBQ, and Phone Case World. The site is bordered to the north by Pennington Automotive, Inc. North William Street borders the site to the east, followed by Triangle Restaurant. The property is bordered to the south by West Patetown Road and Edwar Group, LLC Healthcare Providers. US Highway 117 Bypass, followed by Tillman's Restaurant Equipment and Supplies border the site to the west. Parcel 39 does not appear on the NCDEQ UST database registry and is not associated with known USTs. The geophysical surveyor, Pyramid Environmental & Engineering, PC, did not identify any GPR anomalies in the investigation area.

## 2.0 GEOLOGY

### 2.1 Regional Geology

Parcel 39 is located within the Coastal Plain Physiographic Province. The Coastal Plain is the largest physiographic province in the state, covering about 45% of the land area. According to the US Geological Survey Professional Paper 1404-I entitled "Hydrogeologic Framework of the North Carolina Coastal Plain" (Winner and Coble, 1996), the geology consists of an eastward-dipping and eastward-thickening series of sedimentary rocks which range in age from Holocene to Cretaceous. The most common type of sediment types are sand and clay, although a significant amount of limestone occurs in the southern part of the coastal plain. The site overlies the Black Creek Formation. The Black Creek Formation is Late Cretaceous in age and was deposited in a lagoonal to marine environment. It generally consists of thinly laminated gray to black clay with interbedded gray to tan sands. The most notable characteristic of the formation is the high concentration of wood and organic material. Shells and glauconite are also common.

### 2.2 Site Geology

Site geology was observed through the drilling and sampling of 11 direct push probe soil borings (SB) onsite. **Figure 2** presents the boring locations and site layout. Borings did not exceed a total depth of ten feet below ground surface (bgs) since that depth was the maximum excavation depth for proposed drainage features. Soil consisting predominantly of tan silt and tan to gray clayey silt was observed across the parcel. The soils were unconsolidated, and as a result the borings often collapsed. There is little topographic relief to the site and there are streams located to the east. Determining groundwater flow directions can be difficult and would require at least three well locations. However, a groundwater investigation conducted at 1609 North

Williams Street to the south indicated that groundwater flows to the east-southeast. Boring logs are presented in **Appendix B**.

## **3.0 FIELD ACTIVITIES**

### **3.1 Preliminary Activities**

Prior to commencing field sampling activities at the site, several tasks were accomplished in preparation for the subsurface investigation. A Health and Safety Plan (HASP) was prepared to include the site-specific health and safety information necessary for the field activities. North Carolina-One Call was contacted on May 31, 2017 to report the proposed drilling activities and notify affected utilities. Apex subcontracted Pyramid to locate subsurface utilities and other subsurface drilling hazards as well as to perform a geophysical survey. Carolina Soil Investigations, LLC (CSI) of Olin, North Carolina was retained by Apex to perform the direct push sampling for soil borings. REDLAB, LLC (REDLAB) provided an ultraviolet fluorescence (UVF) Hydrocarbon Analyzer and Eastern Solutions provided a calibrated Flame Ionization/Photoionization Detector (FID/PID). Boring locations were strategically placed in a pattern within the area of investigation to maximize the opportunity to encounter potentially contaminated soil.

### **3.2 Site Reconnaissance**

Apex personnel performed a site reconnaissance on June 6, 2017. During the site reconnaissance, the area was visually examined for the presence of USTs or areas/obstructions that could potentially affect the subsurface investigation. The proposed boring locations were marked based on the site inspection and geophysical survey results. Apex personnel also used the site visit as an opportunity to contact the property manager/owner to inform them of upcoming field activities.

### **3.3 Geophysics Survey Results**

The geophysical survey of the site was conducted on June 6, 2017. Pyramid performed an electromagnetic (EM) induction metal survey followed by a GPR survey. A copy of the Geophysical Report is presented in **Appendix C**. The results of the geophysical survey did not record any evidence of unknown metallic USTs at the property. All of the EM features observed were the result of visible cultural features on the ground surface. GPR Data were not required due to all EM features being directly attributed to visible cultural features

### **3.4 Well Survey**

No water supply or groundwater monitoring wells were observed on Parcel 39.

### 3.5 Soil Sampling

Apex conducted drilling activities at the site on June 15, 2017. Apex drilling subcontractor, CSI, advanced 11 direct push soil borings within the proposed investigation area. These 11 boring locations were placed in a pattern to maximize the likelihood of intercepting potential soil contamination. **Figure 2** presents the Site Map with boring locations and identifications.

The purpose of soil sampling was to determine if a petroleum release has occurred within the investigation area, and if so, to estimate the volume of impacted soil that might require special handling during construction activities.

Soil sampling was performed utilizing hand auger and direct push methods accompanied by field screening with the FID/PID unit and onsite quantitative analyses with the UVF Hydrocarbon Analyzer. One interval of the soil boring, exhibiting the most elevated FID/PID readings, was selected for onsite quantitative analysis of total petroleum hydrocarbons (TPH) and polycyclic aromatic hydrocarbons (PAH) in soil using the REDLAB UVF Hydrocarbon Analyzer. The analysis was performed onsite by Kristen Hartsen, a certified REDLAB UVF technician with Apex. The UVF results were generated concurrent with soil boring activities so that rapid assessment could be utilized for strategic boring placement.

### 3.6 Groundwater Sampling

Apex personnel obtained groundwater grab samples at the Site on June 15, 2017. Groundwater grab sample locations were chosen based on data generated from the UVF analyzer and on site conditions such as the likely groundwater gradient. The soils encountered were very sandy and unconsolidated, and as a result the borings would not stand open. Apex instructed CSI personnel to temporarily install a one-inch diameter 10-slot screen into two of the soil borings for the purposes of collecting a groundwater grab sample. Apex personnel collected groundwater grab samples from borings P39-SB1 and P39-SB4 for onsite quantitative analysis of TPH using the REDLAB UVF Hydrocarbon Analyzer. The analysis was performed onsite by Kristen Hartsen, a certified REDLAB UVF technician with Apex.

## 4.0 SAMPLING RESULTS

### 4.1 Soil Sampling Results

Based on FID/PID field screening and onsite UVF hydrocarbon analysis from the June 2017 soil sampling there is no significant evidence of petroleum hydrocarbon contamination onsite within the area of investigation.

Elevated FID/PID readings, above ten parts per million (ppm), were not observed in the borings conducted at the site above the smear zone. The FID readings ranged from non-detectable to 4.1 ppm and the PID readings were all non-detectable. The FID/PID field screening results are provided on the boring logs in **Appendix B**.

Soil concentrations of TPH gasoline range organics (GRO) and diesel range organics (DRO) measured using the onsite UVF unit are presented in **Table 1**, with instrument generated tables and chromatographs in **Appendix D**. **Figure 3** presents the TPH-GRO and TPH-DRO results at each boring.

Based on the UVF analyses, TPH-GRO and TPH-DRO was identified in soils on Parcel 39. TPH-GRO concentrations ranged from below detectable levels to 2.3 milligram per kilogram (mg/kg) (P39-SB8). TPH-DRO concentrations ranged from 2.1 mg/kg (P39-SB5 and P39-SB6) to 45.4 mg/kg (P39-SB4). TPH-GRO concentrations did not exceed the regulatory action level of 50 mg/kg and the TPH-DRO concentrations did not exceed the regulatory action level of 100 mg/kg.

## 4.2 Groundwater Sampling Results

Apex personnel collected groundwater grab samples from two soil borings (P39-SB1 and P39-SB7) for onsite quantitative analysis of TPH using the REDLAB UVF Hydrocarbon Analyzer. Based on the real time UVF analysis of the two groundwater grab samples, significant groundwater impact is not present on Parcel 39. Water sample P39-SB1-WATER indicated TPH-GRO concentrations of 0.073 milligrams per liter (mg/L) and TPH-DRO concentrations of 0.08 mg/L. Sample P39-SB4-WATER indicated TPH-GRO concentrations were below detectable levels and TPH-DRO concentrations of 0.03 mg/L. The groundwater UVF results are tabulated in **Table 1**. The instrument generated tables and chromatographs are included in **Appendix D**. Groundwater analytical data are summarized on **Figure 4**.

## 5.0 CONCLUSIONS

Based on site observations and onsite UVF analysis, no petroleum-impacted soil contamination was identified above the NCDEQ Action level of 50 mg/kg for TPH-GRO or above the NCDEQ Action level of 100 mg/kg for TPH-DRO. The onsite UVF analysis of groundwater did not indicate significant groundwater contamination to be present.

The following bulleted summary is based upon Apex's evaluation of field observations and onsite quantitative analyses of samples collected from the site on June 15, 2017.

- Results of the geophysical survey did not produce evidence of anomalies characteristic of USTs.
- A total of 11 soil borings were advanced onsite. Soil samples collected from each boring were analyzed in the field using a REDLAB UVF Hydrocarbon Analyzer.
- Soil samples analyzed using the UVF did not contain either TPH-GRO or TPH-DRO concentrations above their respective NCDEQ Action levels of 50 mg/kg and 100 mg/kg.
- Two groundwater grab samples were collected and analyzed for TPH-DRO and TPH-GRO with the REDLAB UVF Hydrocarbon Analyzer. These samples did not contain any significant concentrations of the constituents of concern.

## 6.0 RECOMMENDATIONS

Based on these PSA results, Apex does not recommend further assessment or soil sampling in the area of investigation.

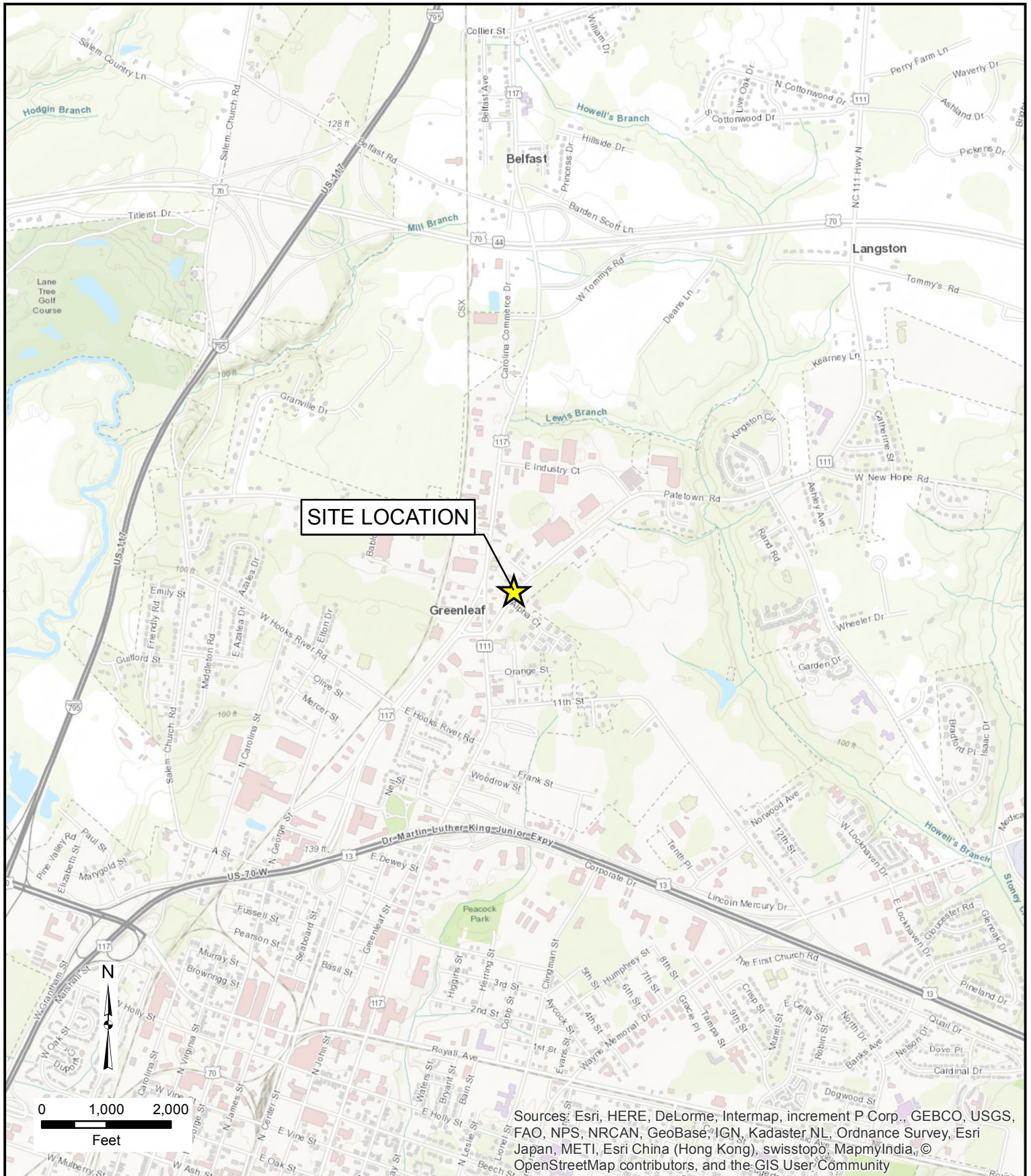


## TABLES

**Table 1**  
**UVF Onsite Hydrocarbon Analytical Soil and Groundwater Data from June 2017**  
**U-2714, Parcel 39, Eugene A Taylor Property**  
**Goldsboro, North Carolina**

Sample ID Number	Sample Date	Sample Depth (ft bgs)	GRO (mg/kg) (C5-C10)	DRO (mg/kg) (C10-C35)
<b>SOIL</b>				
<b>NCDEQ Action Level in mg/kg</b>			<b>50</b>	<b>100</b>
P39-SB1	6/15/2017	1.5	0.5	11.8
P39-SB2	6/15/2017	2	<0.53	5.8
P39-SB3	6/15/2017	2	<0.49	15.2
P39-SB4	6/15/2017	2	1.8	45.4
P39-SB5	6/15/2017	2	<0.5	2.1
P39-SB6	6/15/2017	2	2.1	2.1
P39-SB7	6/15/2017	2	<0.5	8.5
P39-SB8	6/15/2017	2	2.3	3.9
P39-SB9	6/15/2017	2	<0.51	6.4
P39-SB10	6/15/2017	2	<0.52	7.6
P39-SB11	6/15/2017	2	0.67	7.6
<b>GROUNDWATER (mg/L)</b>				
P39-SB1-WATER	6/15/2017	NM	0.073	0.08
P39-SB7-WATER	6/15/2017	NM	<0.025	0.03
<b>NOTES:</b> (mg/kg) = Milligrams per kilogram (mg/L) = Milligrams per liter GRO = Gasoline Range Organics DRO = Diesel Range Organics ft bgs = feet below ground surface NM = Not Measured TPH - GRO values in exceedance of NCDEQ Action Level of 50 mg/kg are shown in Bold TPH - DRO values in exceedance of NCDEQ Action Level of 100 mg/kg are shown in Bold				

## FIGURES



**SITE LOCATION**

**Greenleaf**

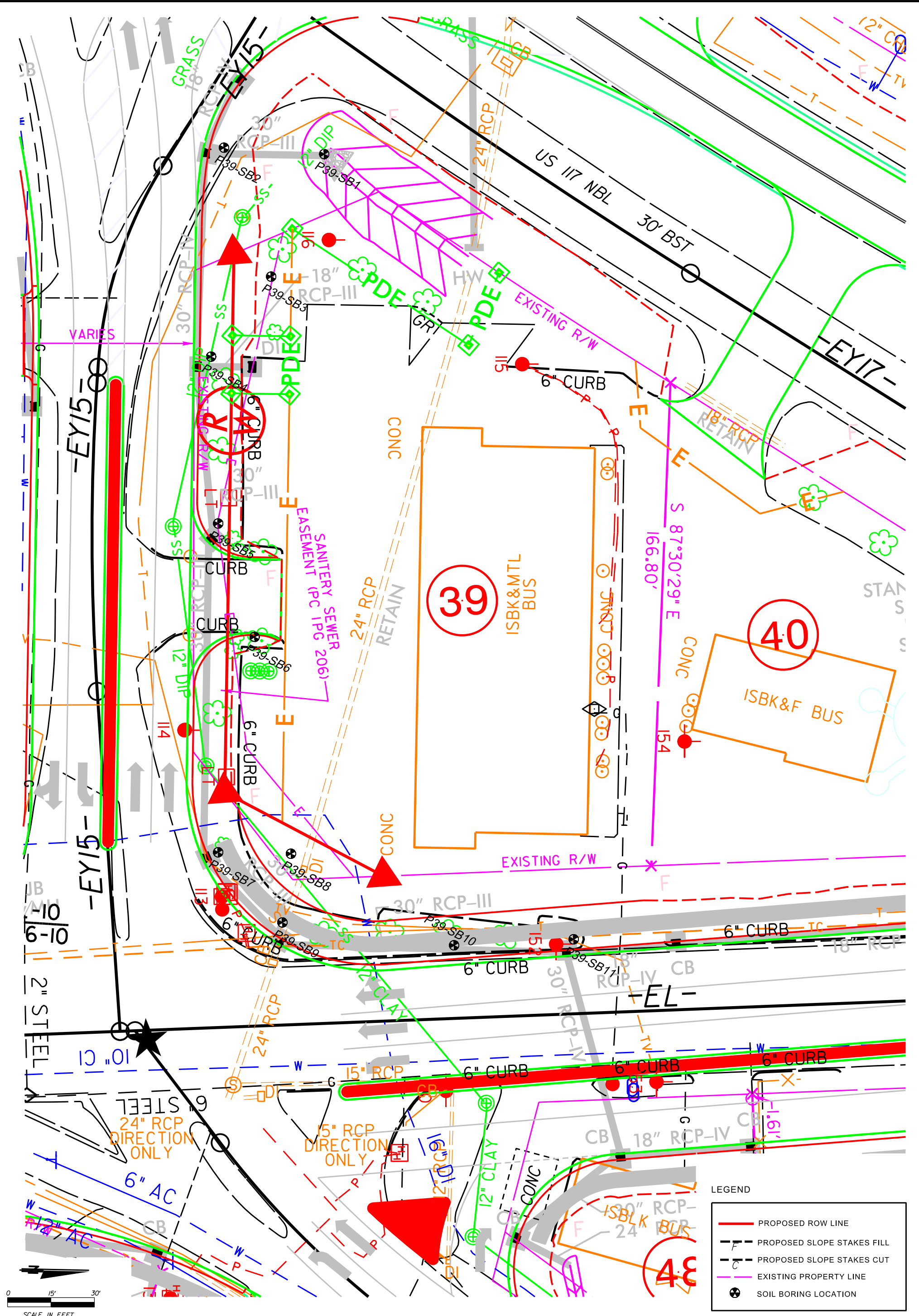
Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

CHECK BY: TH
DRAWN BY: SP
DATE: 7/17/17
SCALE: AS SHOWN
CAD NO.: 510497-003
PRJ NO.: 510497-003

**SITE LOCATION MAP**  
**PARCEL #39**  
**101 WEST PATE TOWN ROAD**  
**GOLDSBORO, NORTH CAROLINA**



**FIGURE**  
**1**



LEGEND

- PROPOSED ROW LINE
- - - PROPOSED SLOPE STAKES FILL
- - - PROPOSED SLOPE STAKES CUT
- EXISTING PROPERTY LINE
- ⊙ SOIL BORING LOCATION

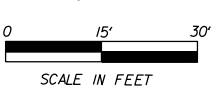


FIGURE 2  
 PARCEL 39  
 SITE MAP WITH SOIL  
 BORING LOCATIONS

APEX COMPANIES, LLC  
 10610 METROMONT PARKWAY  
 SUITE 206  
 CHARLOTTE, NC 28117  
 PHONE: (704) 799-6390

Date:	7/15/17	GOLDSBORO U-2714	
Proj. #	510497-003		
CAD File:	pc_39_fig 2.dgn	Project Title:	
Approx. Scale:	1" = 30'	Drawn by:	MJO
		Client:	NC DOT

Sample Identification	P39-SB1
Sample Depth (Feet bgs)	1.5
TPH GRO (mg/kg)	0.5
THP DRO (mg/kg)	11.8

Sample Identification	P39-SB2
Sample Depth (Feet bgs)	2
TPH GRO (mg/kg)	<0.53
THP DRO (mg/kg)	5.8

Sample Identification	P39-SB3
Sample Depth (Feet bgs)	2
TPH GRO (mg/kg)	<0.49
THP DRO (mg/kg)	15.2

Sample Identification	P39-SB4
Sample Depth (Feet bgs)	2
TPH GRO (mg/kg)	1.8
THP DRO (mg/kg)	45.4

Sample Identification	P39-SB5
Sample Depth (Feet bgs)	2
TPH GRO (mg/kg)	<0.5
THP DRO (mg/kg)	2.1

Sample Identification	P39-SB6
Sample Depth (Feet bgs)	2
TPH GRO (mg/kg)	2.1
THP DRO (mg/kg)	2.1

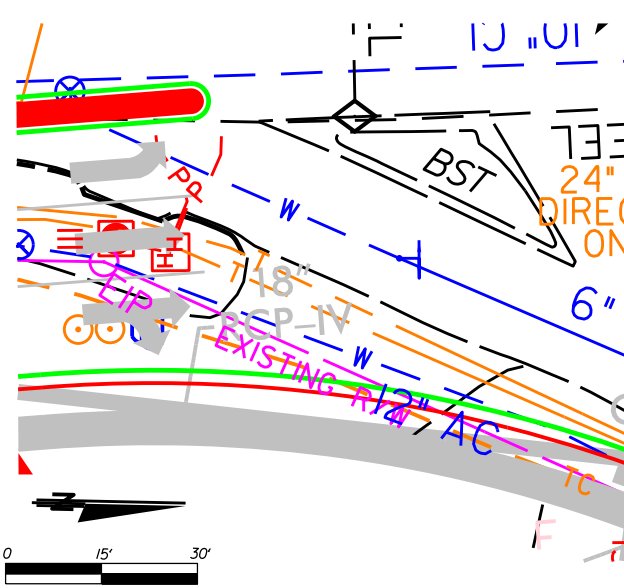
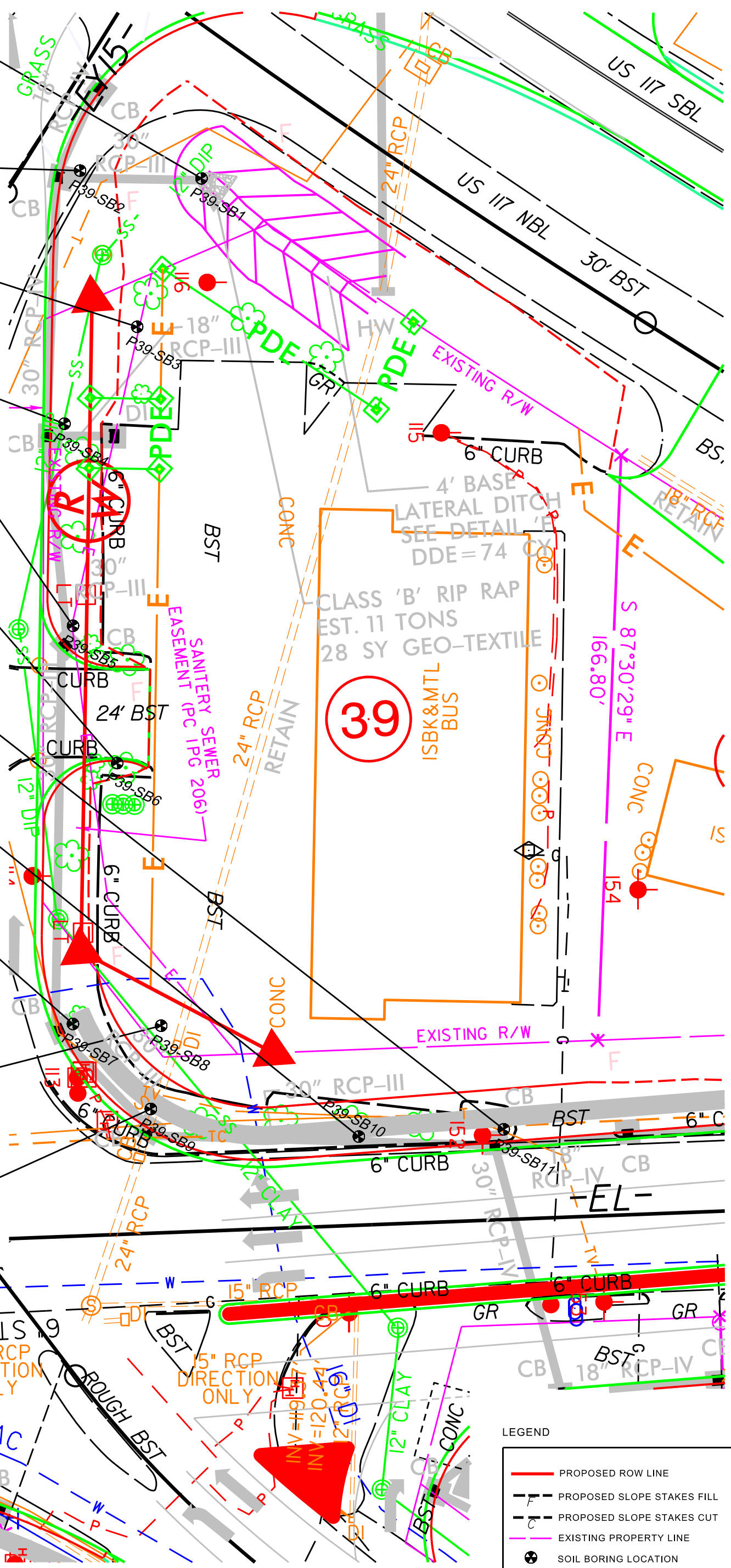
Sample Identification	P39-SB11
Sample Depth (Feet bgs)	2
TPH GRO (mg/kg)	0.67
THP DRO (mg/kg)	7.6

Sample Identification	P39-SB10
Sample Depth (Feet bgs)	2
TPH GRO (mg/kg)	<0.52
THP DRO (mg/kg)	7.6

Sample Identification	P39-SB7
Sample Depth (Feet bgs)	2
TPH GRO (mg/kg)	<0.5
THP DRO (mg/kg)	8.5

Sample Identification	P39-SB8
Sample Depth (Feet bgs)	2
TPH GRO (mg/kg)	2.3
THP DRO (mg/kg)	3.9

Sample Identification	P39-SB9
Sample Depth (Feet bgs)	2
TPH GRO (mg/kg)	<0.51
THP DRO (mg/kg)	6.4



LEGEND	
	PROPOSED ROW LINE
	PROPOSED SLOPE STAKES FILL
	PROPOSED SLOPE STAKES CUT
	EXISTING PROPERTY LINE
	SOIL BORING LOCATION

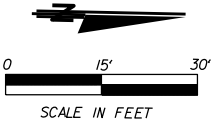


FIGURE 3  
PARCEL 39  
ONSITE UVF HYDROCARBON  
ANALYSIS RESULTS - SOIL  
6/15/17

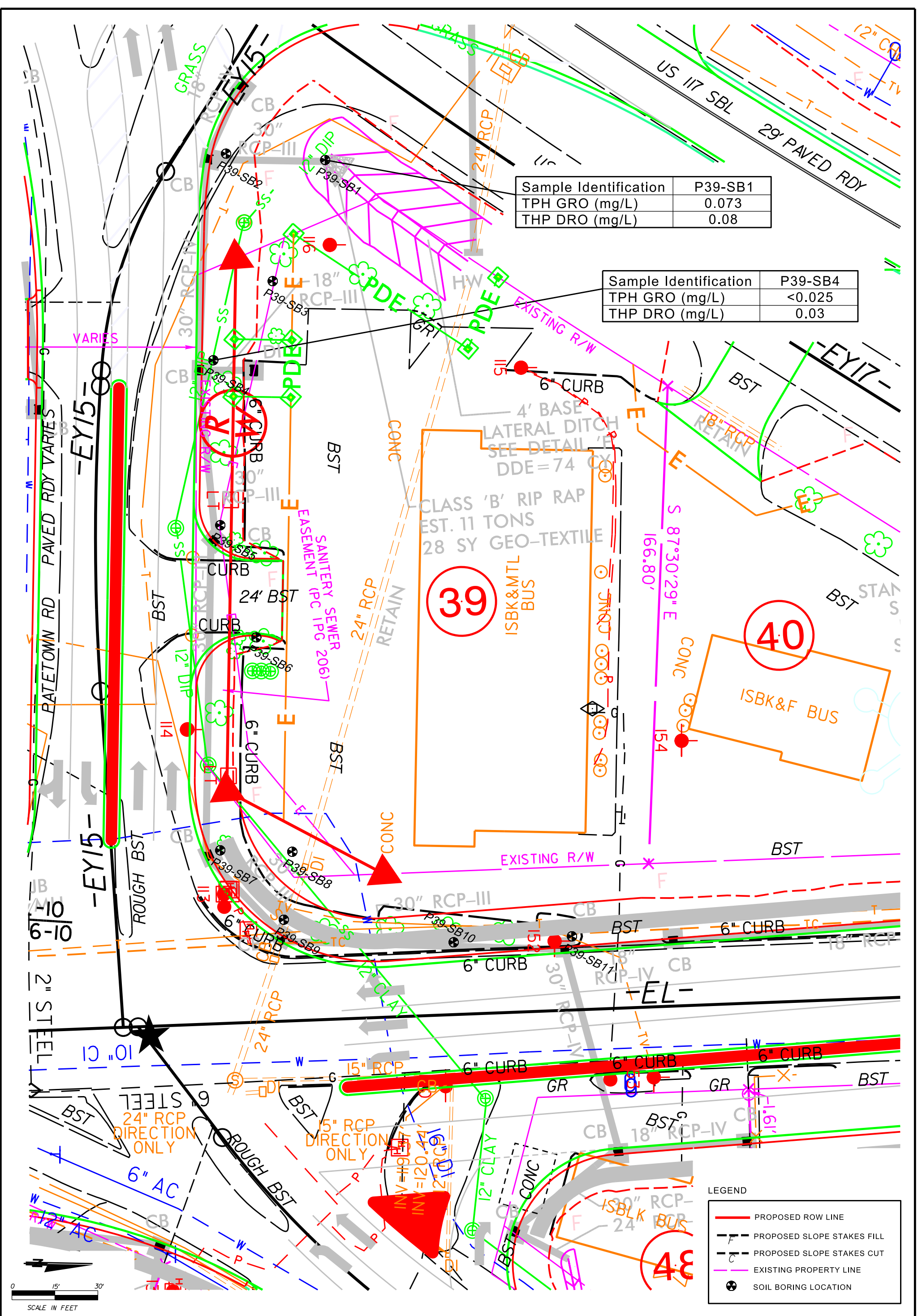


FIGURE 4  
 PARCEL 39  
 ONSITE UVF HYDROCARBON  
 ANALYSIS RESULTS -  
 GROUNDWATER 6/15/17

**APPENDIX A**  
**PHOTOGRAPH LOG**





**Photo 1**

Overview of the site prior to preliminary site assessment activities.



**Photo 2**

View CSI during drilling activities.

10610 Metromont Pkwy  
Suite 206  
Charlotte, NC 28269



WBS 38979.1.2  
PROCESSED TLH  
DATE June 2017  
PAGE

PHOTOGRAPHIC LOG

PSA Field Activities  
Parcel 39  
101 W. Patetown Road, Goldsboro, NC



**Photo 3**

View of CSI hand clearing for utilities.



**Photo 4**

Additional view of the investigation area. View is looking southwest from the north east corner of the parcel.

**APPENDIX B**  
**BORING LOGS**



# Apex Companies, LLC

## Boring Log

<b>Boring/Well No.:</b> P39-SB-1	<b>Site Name:</b> Parcel 39 - Eugene A Taylor Property
<b>Date:</b> 06/15/17	<b>Location:</b> Goldsboro, Wayne County, NC
<b>Job No.:</b> 510497-003	<b>Sample Method:</b> Hand Auger and Direct Push
<b>Apex Rep:</b> Troy L. Holzschuh	<b>Drilling Method:</b> Hand Auger and Direct Push
<b>Drilling Company:</b> Carolina Soil Investigations	<b>Driller Name/Cert #:</b> Danny Summers / 2579

**Remarks:**

Depth (ft BLS)	FID Reading (ppm)	PID Reading (ppm)	Lab Sample ID	Soil/Lithologic Description
				Grass
1			Sample at 1.5'	Gray, Clayey Silt
2	0	0		
3				
4	0	0		Water
5				
6	0	0		Gray Sand
7				
8	0	0		
9				
10	0	0		
				Boring terminated at 10 feet
11				
12				
13				
14				

WELL CONSTRUCTION DETAILS (If Applicable)	
Well Type/Diameter:	Outer Casing Interval:
Total Depth:	Outer Casing Diameter:
Screen Interval:	Bentonite Interval:
Sand Interval:	Slot Size:
Grout Interval:	Static Water Level:



# Apex Companies, LLC

## Boring Log

<b>Boring/Well No.:</b> P39-SB-2	<b>Site Name:</b> Parcel 39 - Eugene A Taylor Property
<b>Date:</b> 06/15/17	<b>Location:</b> Goldsboro, Wayne County, NC
<b>Job No.:</b> 510497-003	<b>Sample Method:</b> Hand Auger and Direct Push
<b>Apex Rep:</b> Troy L. Holzschuh	<b>Drilling Method:</b> Hand Auger and Direct Push
<b>Drilling Company:</b> Carolina Soil Investigations	<b>Driller Name/Cert #:</b> Danny Summers / 2579

**Remarks:**

Depth (ft BLS)	FID Reading (ppm)	PID Reading (ppm)	Lab Sample ID	Soil/Lithologic Description
				Grass
1				Tan Silt, Dry
2	0	0	Sample at 2'	Tan, Sandy Silt, Moist
3				
4	0	0		
5				Water
Boring terminated at 5 feet				
6				
7				
8				
9				
10				
11				
12				
13				
14				

**WELL CONSTRUCTION DETAILS (If Applicable)**

Well Type/Diameter:	Outer Casing Interval:
Total Depth:	Outer Casing Diameter:
Screen Interval:	Bentonite Interval:
Sand Interval:	Slot Size:
Grout Interval:	Static Water Level:



# Apex Companies, LLC

## Boring Log

<b>Boring/Well No.:</b> P39-SB-3	<b>Site Name:</b> Parcel 39 - Eugene A Taylor Property
<b>Date:</b> 06/15/17	<b>Location:</b> Goldsboro, Wayne County, NC
<b>Job No.:</b> 510497-003	<b>Sample Method:</b> Hand Auger and Direct Push
<b>Apex Rep:</b> Troy L. Holzschuh	<b>Drilling Method:</b> Hand Auger and Direct Push
<b>Drilling Company:</b> Carolina Soil Investigations	<b>Driller Name/Cert #:</b> Danny Summers / 2579

**Remarks:**

Depth BLS)	(ft)	FID Reading (ppm)	PID Reading (ppm)	Lab Sample ID	Soil/Lithologic Description
					Grass
1					Tan, Clayey, Sandy Silt, Moist
2		0	0	Sample at 2'	
3					Tan and White Marbled, Clayey Silt, Moist
4		0	0		
5					Water
					Boring terminated at 5 feet
6					
7					
8					
9					
10					
11					
12					
13					
14					

**WELL CONSTRUCTION DETAILS (If Applicable)**

Well Type/Diameter:	Outer Casing Interval:
Total Depth:	Outer Casing Diameter:
Screen Interval:	Bentonite Interval:
Sand Interval:	Slot Size:
Grout Interval:	Static Water Level:



# Apex Companies, LLC

## Boring Log

<b>Boring/Well No.:</b> P39-SB-4	<b>Site Name:</b> Parcel 39 - Eugene A Taylor Property
<b>Date:</b> 06/15/17	<b>Location:</b> Goldsboro, Wayne County, NC
<b>Job No.:</b> 510497-003	<b>Sample Method:</b> Hand Auger and Direct Push
<b>Apex Rep:</b> Troy L. Holzschuh	<b>Drilling Method:</b> Hand Auger and Direct Push
<b>Drilling Company:</b> Carolina Soil Investigations	<b>Driller Name/Cert #:</b> Danny Summers / 2579

**Remarks:**

Depth BLS)	(ft)	FID Reading (ppm)	PID Reading (ppm)	Lab Sample ID	Soil/Lithologic Description
1					Asphalt Tan Silt
2		2.5	0	Sample at 2'	Gray, Clayey Silt
3					Black Sand, Fine
4		4.1	0		Water
5					Boring terminated at 5 feet
6					
7					
8					
9					
10					
11					
12					
13					
14					

**WELL CONSTRUCTION DETAILS (If Applicable)**

Well Type/Diameter:	Outer Casing Interval:
Total Depth:	Outer Casing Diameter:
Screen Interval:	Bentonite Interval:
Sand Interval:	Slot Size:
Grout Interval:	Static Water Level:



# Apex Companies, LLC

## Boring Log

<b>Boring/Well No.:</b> P39-SB-5	<b>Site Name:</b> Parcel 39 - Eugene A Taylor Property
<b>Date:</b> 06/15/17	<b>Location:</b> Goldsboro, Wayne County, NC
<b>Job No.:</b> 510497-003	<b>Sample Method:</b> Hand Auger and Direct Push
<b>Apex Rep:</b> Troy L. Holzschuh	<b>Drilling Method:</b> Hand Auger and Direct Push
<b>Drilling Company:</b> Carolina Soil Investigations	<b>Driller Name/Cert #:</b> Danny Summers / 2579

**Remarks:**

Depth (ft BLS)	FID Reading (ppm)	PID Reading (ppm)	Lab Sample ID	Soil/Lithologic Description
				Grass
1				Tan Silt
2	0	0	Sample at 2'	Tan, Clayey Silt
3				
4	0	0		Tan and White Marbled, Clayey Silt
5				Water
				Boring terminated at 5 feet
6				
7				
8				
9				
10				
11				
12				
13				
14				

**WELL CONSTRUCTION DETAILS (If Applicable)**

Well Type/Diameter:	Outer Casing Interval:
Total Depth:	Outer Casing Diameter:
Screen Interval:	Bentonite Interval:
Sand Interval:	Slot Size:
Grout Interval:	Static Water Level:





# Apex Companies, LLC

## Boring Log

<b>Boring/Well No.:</b> P39-SB-6	<b>Site Name:</b> Parcel 39 - Eugene A Taylor Property
<b>Date:</b> 06/15/17	<b>Location:</b> Goldsboro, Wayne County, NC
<b>Job No.:</b> 510497-003	<b>Sample Method:</b> Hand Auger and Direct Push
<b>Apex Rep:</b> Troy L. Holzschuh	<b>Drilling Method:</b> Hand Auger and Direct Push
<b>Drilling Company:</b> Carolina Soil Investigations	<b>Driller Name/Cert #:</b> Danny Summers / 2579

**Remarks:**

Depth (ft BLS)	FID Reading (ppm)	PID Reading (ppm)	Lab Sample ID	Soil/Lithologic Description
				Asphalt
1				Tan Silt, Dry
2	0	0	Sample at 2'	Tan, Silty Sand, Fine
3				
4	0	0		
5				Water
Boring terminated at 5 feet				
6				
7				
8				
9				
10				
11				
12				
13				
14				

**WELL CONSTRUCTION DETAILS (If Applicable)**

Well Type/Diameter:	Outer Casing Interval:
Total Depth:	Outer Casing Diameter:
Screen Interval:	Bentonite Interval:
Sand Interval:	Slot Size:
Grout Interval:	Static Water Level:



# Apex Companies, LLC

## Boring Log

<b>Boring/Well No.:</b> P39-SB-7	<b>Site Name:</b> Parcel 39 - Eugene A Taylor Property
<b>Date:</b> 06/15/17	<b>Location:</b> Goldsboro, Wayne County, NC
<b>Job No.:</b> 510497-003	<b>Sample Method:</b> Hand Auger and Direct Push
<b>Apex Rep:</b> Troy L. Holzschuh	<b>Drilling Method:</b> Hand Auger and Direct Push
<b>Drilling Company:</b> Carolina Soil Investigations	<b>Driller Name/Cert #:</b> Danny Summers / 2579

**Remarks:**

Depth (ft BLS)	FID Reading (ppm)	PID Reading (ppm)	Lab Sample ID	Soil/Lithologic Description
				Grass
1				Tan Silt, Dry
2	1.2	0	Sample at 2'	Tan and White, Sand, Fine, Moist
3				
4	0.5	0		
5				Water
6				
7				
8				
9				
10				
				Boring terminated at 10 feet
11				
12				
13				
14				

**WELL CONSTRUCTION DETAILS (If Applicable)**

Well Type/Diameter:	Outer Casing Interval:
Total Depth:	Outer Casing Diameter:
Screen Interval:	Bentonite Interval:
Sand Interval:	Slot Size:
Grout Interval:	Static Water Level:



# Apex Companies, LLC

## Boring Log

<b>Boring/Well No.:</b> P39-SB-8	<b>Site Name:</b> Parcel 39 - Eugene A Taylor Property
<b>Date:</b> 06/15/17	<b>Location:</b> Goldsboro, Wayne County, NC
<b>Job No.:</b> 510497-003	<b>Sample Method:</b> Hand Auger and Direct Push
<b>Apex Rep:</b> Troy L. Holzschuh	<b>Drilling Method:</b> Hand Auger and Direct Push
<b>Drilling Company:</b> Carolina Soil Investigations	<b>Driller Name/Cert #:</b> Danny Summers / 2579

**Remarks:**

Depth (ft BLS)	FID Reading (ppm)	PID Reading (ppm)	Lab Sample ID	Soil/Lithologic Description
				Grass
1				Brown, Silty Sand, Fine
2	0	0	Sample at 2'	
3				Brown and White Marbled, Clayey Sand, Fine
4	0	0		
5				
				Boring terminated at 5 feet
6				
7				
8				
9				
10				
11				
12				
13				
14				

**WELL CONSTRUCTION DETAILS (If Applicable)**

Well Type/Diameter:	Outer Casing Interval:
Total Depth:	Outer Casing Diameter:
Screen Interval:	Bentonite Interval:
Sand Interval:	Slot Size:
Grout Interval:	Static Water Level:



# Apex Companies, LLC

## Boring Log

<b>Boring/Well No.:</b> P39-SB-9	<b>Site Name:</b> Parcel 39 - Eugene A Taylor Property
<b>Date:</b> 06/15/17	<b>Location:</b> Goldsboro, Wayne County, NC
<b>Job No.:</b> 510497-003	<b>Sample Method:</b> Hand Auger and Direct Push
<b>Apex Rep:</b> Troy L. Holzschuh	<b>Drilling Method:</b> Hand Auger and Direct Push
<b>Drilling Company:</b> Carolina Soil Investigations	<b>Driller Name/Cert #:</b> Danny Summers / 2579

**Remarks:**

Depth (ft BLS)	FID Reading (ppm)	PID Reading (ppm)	Lab Sample ID	Soil/Lithologic Description
				Grass
1				Tan Silt
2	0	0	Sample at 2'	Orange and White Marbled, Clayey Sand, Medium
3				
4	0	0		Brown, Clayey Sand, Medium
5				Water
				Boring terminated at 5 feet
6				
7				
8				
9				
10				
11				
12				
13				
14				

**WELL CONSTRUCTION DETAILS (If Applicable)**

Well Type/Diameter:	Outer Casing Interval:
Total Depth:	Outer Casing Diameter:
Screen Interval:	Bentonite Interval:
Sand Interval:	Slot Size:
Grout Interval:	Static Water Level:



# Apex Companies, LLC

## Boring Log

<b>Boring/Well No.:</b> P39-SB-10	<b>Site Name:</b> Parcel 39 - Eugene A Taylor Property
<b>Date:</b> 06/15/17	<b>Location:</b> Goldsboro, Wayne County, NC
<b>Job No.:</b> 510497-003	<b>Sample Method:</b> Hand Auger and Direct Push
<b>Apex Rep:</b> Troy L. Holzschuh	<b>Drilling Method:</b> Hand Auger and Direct Push
<b>Drilling Company:</b> Carolina Soil Investigations	<b>Driller Name/Cert #:</b> Danny Summers / 2579

**Remarks:**

Depth BLS)	(ft)	FID Reading (ppm)	PID Reading (ppm)	Lab Sample ID	Soil/Lithologic Description
					Mulch
1					Tan Silt, Dry
2		0	0	Sample at 2'	
3					Tan and White, Sand, Fine
4		0	0		
5					Water
					Boring terminated at 5 feet
6					
7					
8					
9					
10					
11					
12					
13					
14					

**WELL CONSTRUCTION DETAILS (If Applicable)**

Well Type/Diameter:	Outer Casing Interval:
Total Depth:	Outer Casing Diameter:
Screen Interval:	Bentonite Interval:
Sand Interval:	Slot Size:
Grout Interval:	Static Water Level:



# Apex Companies, LLC

## Boring Log

<b>Boring/Well No.:</b> P39-SB-11	<b>Site Name:</b> Parcel 39 - Eugene A Taylor Property
<b>Date:</b> 06/15/17	<b>Location:</b> Goldsboro, Wayne County, NC
<b>Job No.:</b> 510497-003	<b>Sample Method:</b> Hand Auger and Direct Push
<b>Apex Rep:</b> Troy L. Holzschuh	<b>Drilling Method:</b> Hand Auger and Direct Push
<b>Drilling Company:</b> Carolina Soil Investigations	<b>Driller Name/Cert #:</b> Danny Summers / 2579

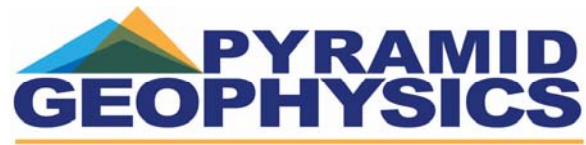
Remarks:

Depth (ft BLS)	FID Reading (ppm)	PID Reading (ppm)	Lab Sample ID	Soil/Lithologic Description
				Mulch
1				Tan Silt
2	0	0	Sample at 2'	
3				Brown, Silty Sand, Fine
4	0	0		
5				
				Boring terminated at 5 feet
6				
7				
8				
9				
10				
11				
12				
13				
14				

**WELL CONSTRUCTION DETAILS (If Applicable)**

Well Type/Diameter:	Outer Casing Interval:
Total Depth:	Outer Casing Diameter:
Screen Interval:	Bentonite Interval:
Sand Interval:	Slot Size:
Grout Interval:	Static Water Level:

**APPENDIX C**  
**GEOPHYSICAL REPORT**



July 6, 2017

Mr. Troy Holzschuh  
Apex Companies, LLC  
10610 Metromont Parkway, Suite 206  
Charlotte, NC 28269  
Sent via email to THolzschuh@apexcos.com

**SUBJECT: Results of Geophysical Survey for Metallic Underground Storage Tanks  
Parcel 039 - NCDOT Project U-2714  
2207 N. William St. Goldsboro, Wayne County, North Carolina**

Mr. Holzschuh:

Pyramid Environmental & Engineering, P.C. (Pyramid) conducted a geophysical investigation for Apex Companies, LLC (Apex) at Parcel 039, located at 2207 N. William Street, Goldsboro, NC. The survey was part of a North Carolina Department of Transportation (NCDOT) Right-of-Way (ROW) investigation (NCDOT Project U-2714). Apex directed Pyramid as to the geophysical survey boundaries at the project site, which were designed to extend from the existing edge of pavement into the proposed Right-Of-Way (ROW) and/or proposed easements, whichever distance was greater. Conducted on June 6, 2017, the geophysical investigation was performed to determine if unknown, metallic underground storage tanks (USTs) were present beneath the survey area.

Based on the technical cost proposal provided by Pyramid and discussions with Apex and the NCDOT, abbreviated letter reports are being submitted for all parcels where no evidence of unknown metallic USTs was recorded by the geophysical survey. As discussed below, this is the case for Parcel 039.

**Figure 1** provides an overlay of the geophysical survey area onto the NCDOT MicroStation engineering plans (proposed ROW and easements) for reference.

The geophysical investigation consisted of an electromagnetic (EM) induction-metal detection survey. Pyramid collected the EM data using a Geonics EM61 metal detector integrated with a Trimble AG-114 GPS antenna. The integrated GPS system allows the location of the instrument to be recorded in real-time during data collection, resulting in an EM data set that is geo-referenced and can be overlain on aerial photographs and CADD drawings. A boundary grid was established around the perimeter of the site with marks every 10 feet to maintain orientation of the instrument throughout the survey and assure complete coverage of the area.

According to the instrument specifications, the EM61 can detect a metal drum down to a maximum depth of approximately 8 feet. Smaller objects (1-foot or less in size) can be



detected to a maximum depth of 4 to 5 feet. The EM61 data were digitally collected at approximately 0.8-foot intervals along north-south trending or east-west trending, generally parallel survey lines spaced five feet apart. The data were downloaded to a computer and reviewed in the field and office using the Geonics NAV61 and Surfer for Windows Version 14.0 software programs.

**The results of the geophysical survey did not record any evidence of unknown metallic USTs at the property.** All of the EM features observed were the result of visible cultural features at the ground surface. GPR data were not required due to all EM features being directly attributed to visible cultural features.

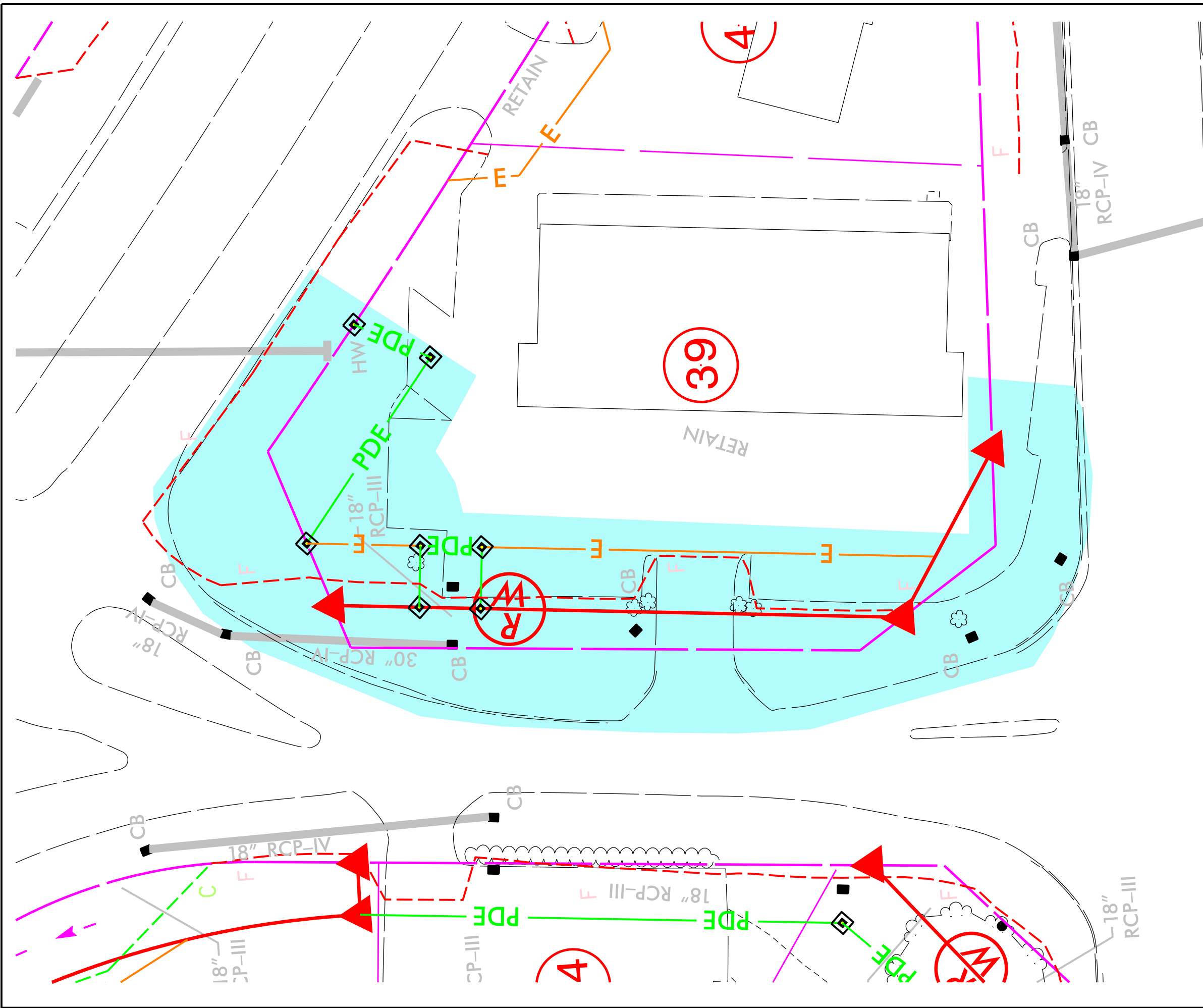
This abbreviated letter report is being submitted based on the guidelines in Pyramid's technical cost proposal and discussions with Apex and the NCDOT. All electronic data files from the geophysical surveys will be stored on Pyramid's internal servers for retrieval in the future, if necessary.

Geophysical surveys have been performed and this report was prepared for Apex in accordance with generally accepted guidelines for EM61 surveys. It is generally recognized that the results of the EM61 surveys are non-unique and may not represent actual subsurface conditions. The EM61 results obtained for this project have not conclusively determined the definitive presence or absence of metallic USTs, but the evidence collected is sufficient to result in the conclusions made in this report. Additionally, it should be understood that areas containing extensive vegetation, reinforced concrete, or other restrictions to the accessibility of the geophysical instruments could not be fully investigated.

Sincerely,

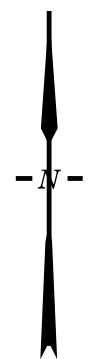
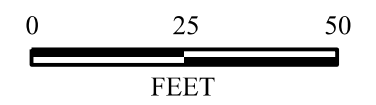


Eric Cross, P.G.  
Senior Geophysicist



**LEGEND**

	EXISTING ROW
	EXISTING PROPERTY BOUNDARY
	PROPOSED ROW LINE
	PROPOSED UTILITY EASEMENT
	PROPOSED DRAINAGE EASEMENT
	PROPOSED SS FILL LINE
	PROPOSED SS CUT LINE
	GEOPHYSICAL SURVEY AREA



TITLE OVERLAY OF GEOPHYSICAL SURVEY BOUNDARIES ON NCDOT ENGINEERING PLANS	
PROJECT PARCEL 039 GOLDSBORO, NORTH CAROLINA NCDOT PROJECT U-2714	
503 INDUSTRIAL AVENUE GREENSBORO, NC 27406 336.335.3174 (p) 336.691.0648 (f) License # C1251 Eng. / #C257 Geology	
DATE: 6-30-17	REVISION NO. 0
PYRAMID PROJECT NO. 2017-156	FIGURE NO. 1

**APPENDIX D**  
**UVF HYDROCARBON ANALYSIS RESULTS**



### Hydrocarbon Analysis Results

**Client:** NCDOT  
**Address:** PARCEL 39  
 101 W. Patetown Rd.  
 Goldsboro, NC

**Samples taken** Thursday, June 15, 2017  
**Samples extracted** Thursday, June 15, 2017  
**Samples analysed** Thursday, June 15, 2017

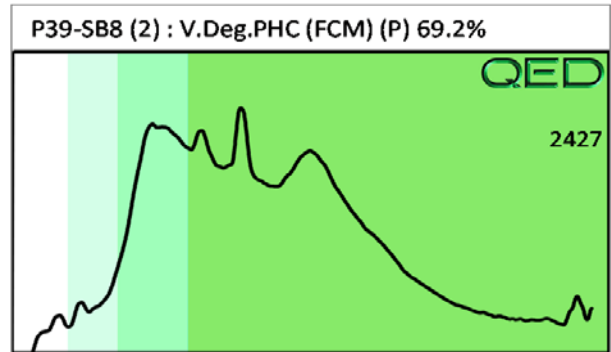
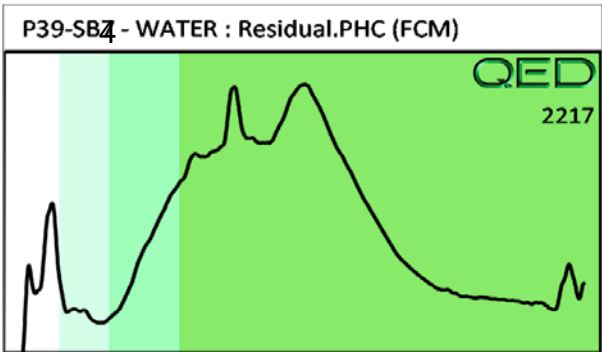
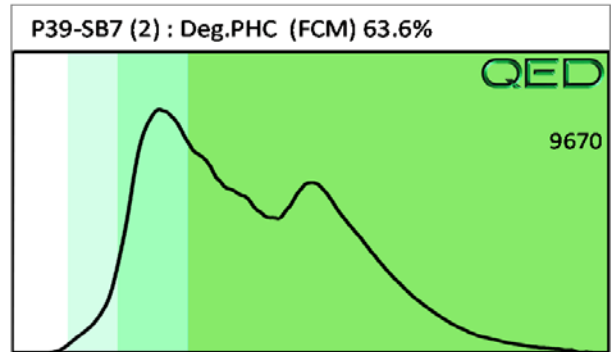
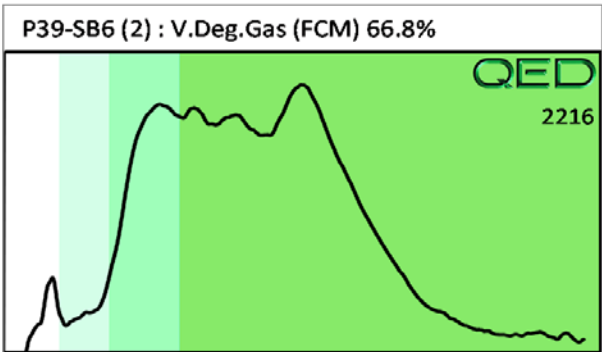
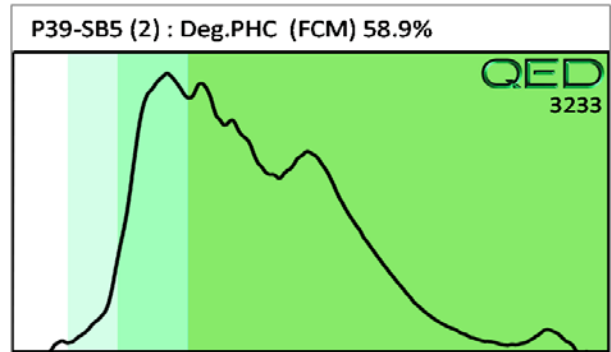
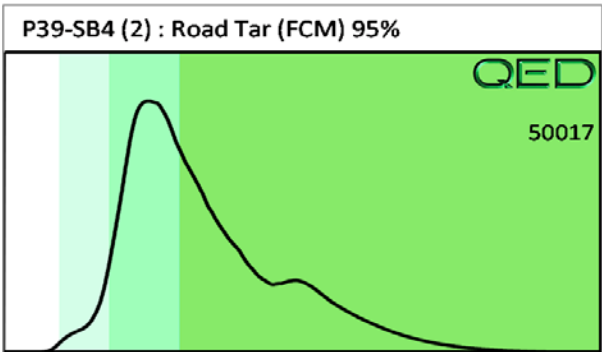
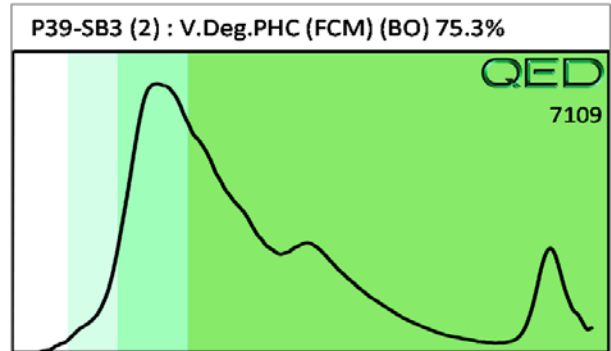
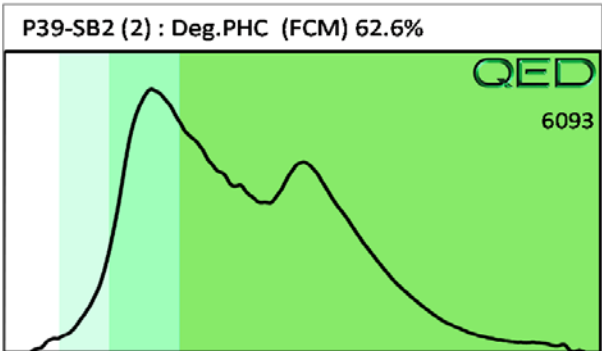
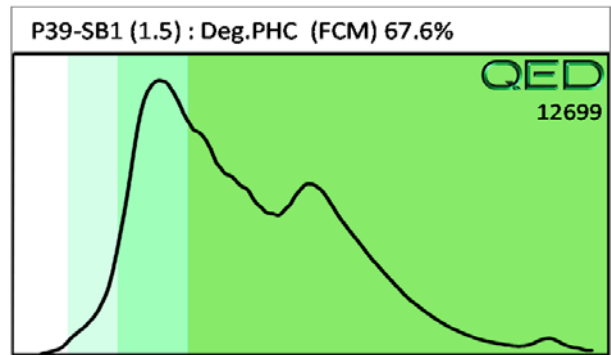
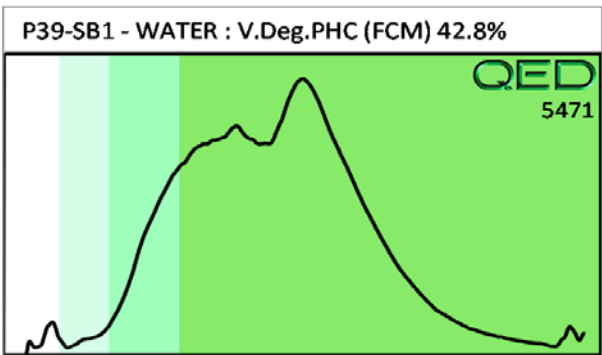
**Contact:** Dennis Li

**Operator** KH

**Project:** 510497-003

											F03640		
Matrix	Sample ID	Dilution used	BTEX (C6 - C9)	GRO (C5 - C10)	DRO (C10 - C35)	TPH (C5 - C35)	Total Aromatics (C10-C35)	16 EPA PAHs	BaP	Ratios			HC Fingerprint Match
										% light	% mid	% heavy	
W	P39-SB1 - WATER	1.0	<0.025	0.073	0.08	0.15	0.06	0.004	0	54.5	16.8	28.7	V.Deg.PHC (FCM) 42.8%
s	P39-SB1 (1.5)	19.8	<0.5	0.5	11.8	12.3	9.6	1	0.016	3	77.6	19.3	Deg.PHC (FCM) 67.6%
s	P39-SB2 (2)	21.3	<0.53	<0.53	5.8	5.8	4.9	0.5	0.006	0.4	79.1	20.5	Deg.PHC (FCM) 62.6%
s	P39-SB3 (2)	19.7	<0.49	<0.49	15.2	15.2	4.4	0.2	0.002	0	82.3	17.7	V.Deg.PHC (FCM) (BO) 75.3%
s	P39-SB4 (2)	19.7	<0.49	1.8	45.4	47.2	34	3.7	0.072	5.1	80.3	14.6	Road Tar (FCM) 95%
s	P39-SB5 (2)	20.0	<0.5	<0.5	2.1	2.1	1.8	0.2	0.002	0	71.3	28.7	Deg.PHC (FCM) 58.9%
s	P39-SB6 (2)	19.8	<0.5	2.1	2.1	4.2	1.2	0.07	0.002	66.9	21.7	11.4	V.Deg.Gas (FCM) 66.8%
s	P39-SB7 (2)	20.2	<0.5	<0.5	8.5	8.5	7.1	0.73	0.011	0	77.5	22.5	Deg.PHC (FCM) 63.6%
W	P39-SB4 - WATER	1.0	<0.025	<0.025	0.03	0.03	0.02	0.002	<0	0	18.9	81.1	Residual.PHC (FCM)
s	P39-SB8 (2)	19.3	<0.48	2.3	3.9	6.2	1.5	0.08	0.002	63.3	26.7	10	V.Deg.PHC (FCM) (P) 69.2%
Initial Calibrator QC check			OK			Final FCM QC Check			OK			102.3 %	

Results generated by a QED HC-1 analyser. Concentration values in mg/kg for soil samples and mg/L for water samples. Soil values are not corrected for moisture or stone content  
 Fingerprints provide a tentative hydrocarbon identification. The abbreviations are:- FCM = Results calculated using Fundamental Calibration Mode : % = confidence for sample fingerprint match to library  
 (SBS) or (LBS) = Site Specific or Library Background Subtraction applied to result : (PFM) = Poor Fingerprint Match : (T) = Turbid : (P) = Particulate present





### Hydrocarbon Analysis Results

**Client:** NCDOT  
**Address:** PARCEL 39  
 101 W. Patetown Rd.  
 Goldsboro, NC

**Samples taken** Thursday, June 15, 2017  
**Samples extracted** Thursday, June 15, 2017  
**Samples analysed** Thursday, June 15, 2017

**Contact:** Dennis Li

**Operator** KH

**Project:** 510497-003

											F03640															
Matrix	Sample ID	Dilution used	BTEX (C6 - C9)	GRO (C5 - C10)	DRO (C10 - C35)	TPH (C5 - C35)	Total Aromatics (C10-C35)	16 EPA PAHs	BaP	Ratios			HC Fingerprint Match													
										% light	% mid	% heavy														
s	P39-SB9 (2)	20.3	<0.51	<0.51	6.4	6.4	2	0.1	0.002	0	77.1	22.9	V.Deg.PHC (FCM) 80.5%													
s	P39-SB10 (2)	20.6	<1	<0.52	7.6	7.6	6.6	0.65	0.016	0	78.8	21.2	Deg.PHC (FCM) (P) 54.7%													
s	P39-SB11 (2)	20.5	<0.51	0.67	7.6	8.3	6.5	0.66	0.008	10.2	64.1	25.7	Deg.PHC (FCM) 49.2%													
Initial Calibrator QC check											OK		Final FCM QC Check											OK		96.8 %

Results generated by a QED HC-1 analyser. Concentration values in mg/kg for soil samples and mg/L for water samples. Soil values are not corrected for moisture or stone content  
 Fingerprints provide a tentative hydrocarbon identification. The abbreviations are:- FCM = Results calculated using Fundamental Calibration Mode : % = confidence for sample fingerprint match to library  
 (SBS) or (LBS) = Site Specific or Library Background Subtraction applied to result : (PFM) = Poor Fingerprint Match : (T) = Turbid : (P) = Particulate present

