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

Ibrahim M. Odeh Property
Parcel # 28
2000 N. William Street
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
10610 Metromont Parkway, Suite 206
Charlotte, North Carolina 28269

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August 16, 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 28 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 2000 North William Street and is identified as Parcel 28, Ibrahim M. Odeh Property, within the NCDOT U-2714 design project. The property is located at the northeast corner of the intersection of North William Street and Eleventh Street 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 28 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 28. **Appendix A** includes a Photograph log for the site.

1.1 Site History

Parcel 28 has been identified with the address of 2000 N William Street. Based on a search of the North Carolina Department of Environmental Quality (NCDEQ) UST database registry, Adam's Mini Mart occupies the site, preliminary site investigation activities indicate that the site is currently occupied by Tobacco & Wireless Express. They operate three 10,000-gallon capacity gasoline/gasoline mixture USTs (installed August 31, 1971). The three tanks identified with Facility ID number 0-0030014 are listed as "current" in the current UST database. The tank bed is located on the southern end of the parcel, cathodic protection was also observed. Four additional USTs are associated with this site. One 4,000 gallon capacity kerosene UST, associated with Adam's Mini Mart was installed on March 30, 1983 and permanently closed on May 25, 2011. Three 10,000 gallon capacity gasoline/gasoline mixture USTs, associated with Super Test Station #0617 were installed on April 18, 1970 and were permanently closed on

April 1, 1983. The results of the geophysical survey did not record any evidence of unknown metallic USTs on the site. The site currently operates as a gas station and convenience store. Apex personnel also reviewed the NCDEQ Incident Management Database and incident #38168 is listed for this property. Apex attempted to review NCDEQ files associated with incident #38168, however Apex was informed by Sylvia Newsome-Hunneke at the NCDEQ that these files had been boxed up and transported off-site to be archived and digitized and that the files would be unavailable for up to several months. Ms. Newsome-Hunneke did inform Apex that a letter of No Further Action (NFA) was issued for incident #38168 on March 2, 2015, and that there is a land use restriction (LUR) on the soil and groundwater.

1.2 Site Description

The site is located in a mixed commercial and residential area of Goldsboro in Wayne County. The western portion of the property is currently developed with a Tobacco & Wireless Express Convenience Store and Gas Station surrounded by an asphalt-paved parking area. The remaining eastern half of the property is vacant. Spikes Tavern and a storage unit facility are located to the north and residential properties border the site to the east. The site is bordered to the south by East Eleventh Street, followed by a mobile home community, and to the west by North William Street, followed by a multi-tenant retail shopping center and I Wanna Have Fun. Parcel 28 does appear on the NCDEQ UST database registry and is associated with known USTs. The geophysical surveyor, Pyramid Environmental & Engineering, PC, (Pyramid) did not identify anomalies characteristic of a UST in the investigation area.

2.0 GEOLOGY

2.1 Regional Geology

Parcel 28 is located within the Coastal Plain Physiographic Province. The Coastal Plain is the largest physiographic province in the state, covering about 45 percent 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 12 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 orange-brown clayey silt and orange to brown sand was observed across the parcel. The soils were unconsolidated and as a result the borings often collapsed. Howell Branch stream is located to the east and groundwater may flow toward this surface water body. A groundwater investigation conducted to the south at 1609 North William Street indicated that groundwater flows toward the east-southeast. Groundwater was encountered at the site at approximately five feet bgs. 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 Geophysical Survey Results

The geophysical survey of the site was conducted on June 7 and 8, 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. GPR data were collected in across areas suspected to contain reinforced concrete, as well as beneath the pump island canopy where the GPS signal was lost during EM data. No evidence of any subsurface structures such as undocumented USTs were recorded in the study area, but Pyramid noted the presence of an active UST bed present directly south of the dispenser canopy in the south-central portion of the survey area. Three 10,000-gallon USTs are reportedly located in this portion of the site.

3.4 Well Survey

No water supply wells were observed on Parcel 28, however a monitoring wells was observed on site. The monitoring well was not identified so Apex personnel assigned identification for reporting purposes. MW-1 is located west of the northern most dispenser and its location was identified by Apex personnel using GPS (coordinates of 35,406336, -77.982702). The depth to water for MW-1 was measured at 5.86 from Top of Casing (TOC).

3.5 Soil Sampling

Apex conducted drilling activities at the site on June 13, 2017. Apex drilling subcontractor, CSI, advanced 12 direct push soil borings within the proposed investigation area. These 12 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 to two intervals of the soil boring, exhibiting the most elevated FID/PID readings, were 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 mobilized to the Site on June 13, 2017 to obtain groundwater grab samples. Groundwater grab sample locations were chosen based on data generated from the UVF analyzer and on site conditions such as the likely groundwater gradient and UST locations. 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 one of the soil borings (P28-SB9) downgradient of the UST bed for the purposes of collecting a groundwater grab sample. An additional groundwater grab sample was collected from a permanent monitoring well already on site (MW-1). Apex personnel collected groundwater grab samples from borings P28-SB9 and MW-1 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 evidence of significant petroleum hydrocarbon contamination onsite, within the area of investigation.

Elevated FID/PID readings, above ten parts per million (ppm), were observed in the borings conducted at the site above the smear zone. The FID readings ranged from non-detectable to 180 ppm and the PID readings ranged from non-detectable to 68 ppm. 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 28. TPH-GRO concentrations ranged from below detectable levels to 3.4 milligram per kilogram (mg/kg) (P28-SB7). TPH-DRO concentrations ranged from below detectable levels to 42.7 mg/kg (P28-SB7). 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 one soil boring (P28-SB9) and the existing groundwater monitoring well (MW-1) 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 28. P28-SB9-WATER indicated TPH-GRO concentrations of 3.5 mg/L and TPH-DRO concentrations of 0.79 mg/L, and sample MW-1 indicated TPH-GRO concentrations 0.75 mg/L and TPH-DRO concentrations of 0.85 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 13, 2017.

- Results of the geophysical survey did not produce evidence of anomalies characteristic of undocumented USTs in the survey area. A USTs bed which services the gas station is present directly south of the dispenser canopy in the south-central portion of the survey area.

- Twelve 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-DRO or TPH-GRO concentrations above their respective NCDEQ Action levels of 100 mg/kg and 50 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, the three 10,000-gallon capacity known USTs lie within the proposed ROW. This portion of the site is a fill section and a sidewalk will be installed on top of the tank bed. This is an active UST system utilized by the adjacent business and access is required. The import of fill or installation of a sidewalk on top of the UST tank bed would be detrimental to future use of the tanks. Therefore, these tanks would likely require removal and/or relocation.

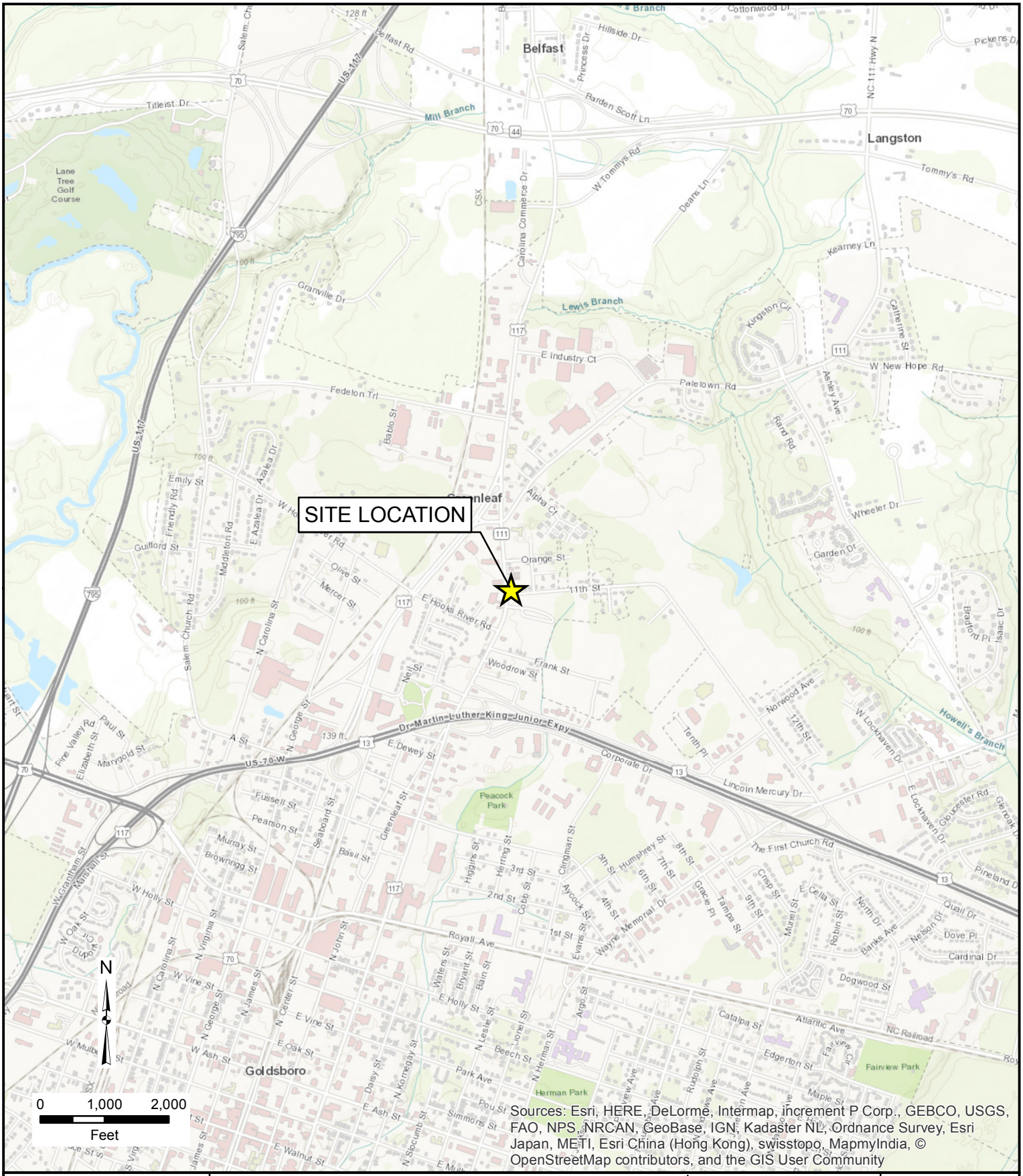
TABLES

Table 1
UVF Onsite Hydrocarbon Analytical Soil and Groundwater Data from June 2017
U-2714, Parcel 28, Ibrahim M Odeh Property
Goldsboro, North Carolina

Sample ID Number	Sample Date	Sample Depth (ft bgs)	GRO (mg/kg) (C5-C10)	DRO (mg/kg) (C10-C35)
SOIL				
NCDEQ Action Level in mg/kg			**50**	**100**
P28-SB1	6/13/2017	2.5	<0.56	33.8
P28-SB2	6/13/2017	2.5	<0.5	18.8
P28-SB3	6/13/2017	2	<0.53	3
P28-SB4	6/13/2017	2	<0.57	0.72
P28-SB5	6/13/2017	2	<0.49	13.2
P28-SB6	6/13/2017	2	<0.93	11.1
P28-SB7	6/13/2017	2	3.4	42.7
P28-SB8	6/13/2017	2	<0.55	26.7
P28-SB9	6/13/2017	2	<0.58	18.1
P28-SB10	6/13/2017	2	<0.47	0.68
P28-SB11	6/13/2017	2	<0.47	0.47
P20-SB12	6/13/2017	2	<0.55	0.55
GROUNDWATER (mg/L)				
P28-SB9-WATER	6/13/2017	NM	3.5	0.79
P28-MW1	6/13/2017	NM	0.75	0.85

NOTES:
(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



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	SITE LOCATION MAP	APEX	FIGURE
DRAWN BY: SP			1
DATE: 7/17/17	PARCEL #28		
SCALE: AS SHOWN	2000 N. WILLIAM STREET		
CAD NO.: 510497-003	GOLDSBORO, NORTH CAROLINA		
PRJ NO.: 510497-003			

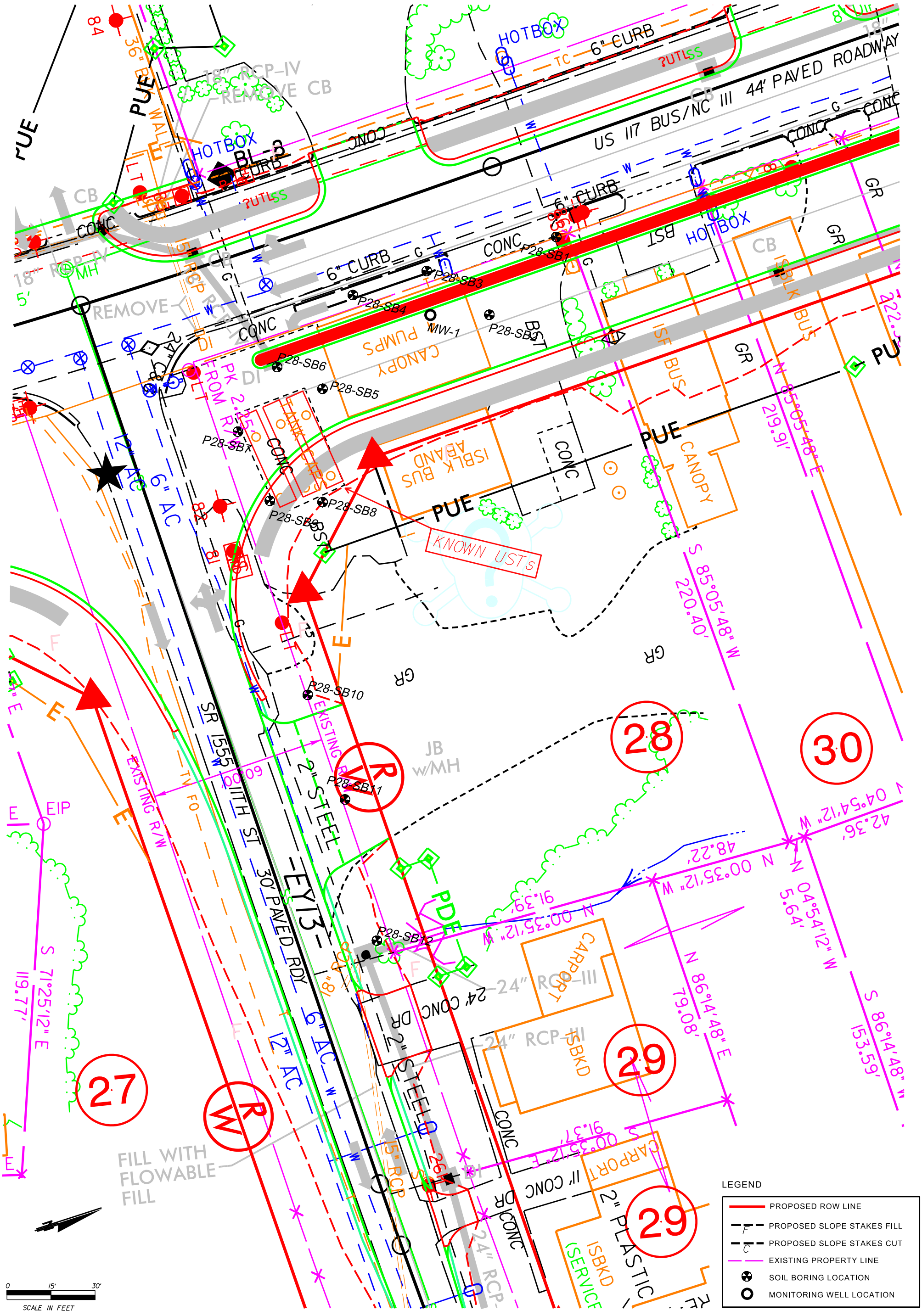


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FIGURE 2
PARCEL 28
SITE MAP WITH SOIL BORING LOCATIONS

Date: 7/15/17	GOLDSBORO U-2714
Proj. # 510497-003	Project Title:
CAD File: pc_28_fig 2.dgn	
Approx. Scale: 1" = 30'	Drawn by: MJO
	Client: NC DOT

Sample Identification	P28-SB1
Sample Depth (Feet bgs)	2.5
TPH GRO (mg/kg)	<0.56
THP DRO (mg/kg)	33.8

Sample Identification	P28-SB3
Sample Depth (Feet bgs)	2
TPH GRO (mg/kg)	<0.53
THP DRO (mg/kg)	3

Sample Identification	P28-SB2
Sample Depth (Feet bgs)	2.5
TPH GRO (mg/kg)	<0.5
THP DRO (mg/kg)	18.8

Sample Identification	P28-SB4
Sample Depth (Feet bgs)	2
TPH GRO (mg/kg)	<0.57
THP DRO (mg/kg)	0.72

Sample Identification	P28-SB6
Sample Depth (Feet bgs)	2
TPH GRO (mg/kg)	<0.93
THP DRO (mg/kg)	11.1

Sample Identification	P28-SB5
Sample Depth (Feet bgs)	2
TPH GRO (mg/kg)	<0.49
THP DRO (mg/kg)	13.2

Sample Identification	P28-SB7
Sample Depth (Feet bgs)	2
TPH GRO (mg/kg)	3.4
THP DRO (mg/kg)	42.7

Sample Identification	P28-SB9
Sample Depth (Feet bgs)	2
TPH GRO (mg/kg)	<0.58
THP DRO (mg/kg)	18.1

Sample Identification	P28-SB8
Sample Depth (Feet bgs)	2
TPH GRO (mg/kg)	<0.55
THP DRO (mg/kg)	26.7

Sample Identification	P28-SB10
Sample Depth (Feet bgs)	2
TPH GRO (mg/kg)	<0.47
THP DRO (mg/kg)	0.68

Sample Identification	P28-SB11
Sample Depth (Feet bgs)	2
TPH GRO (mg/kg)	<0.47
THP DRO (mg/kg)	0.47

Sample Identification	P28-SB12
Sample Depth (Feet bgs)	2
TPH GRO (mg/kg)	<0.55
THP DRO (mg/kg)	0.55

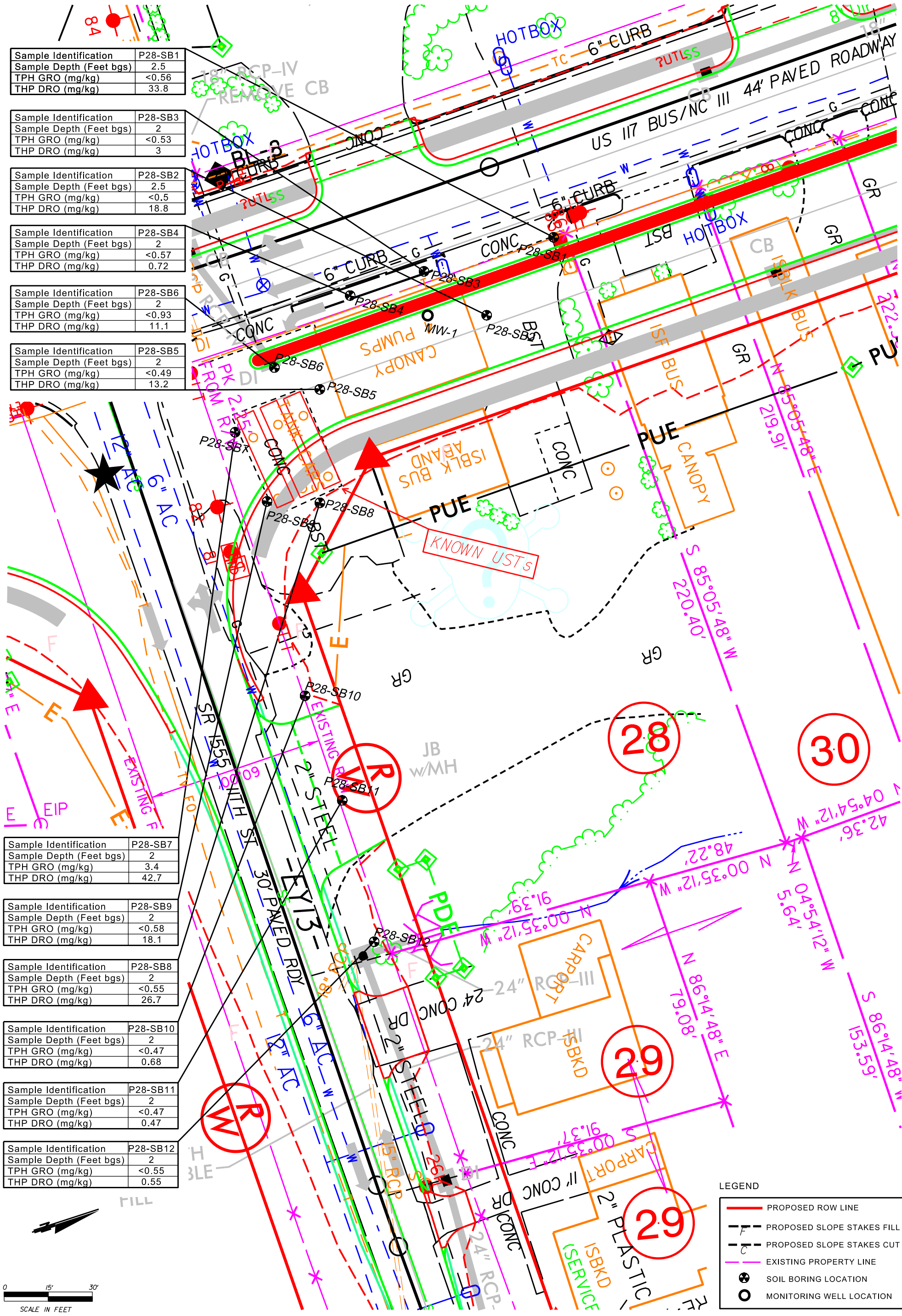

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FIGURE 3
PARCEL 28
ONSITE UVF HYDROCARBON ANALSIS RESULTS - SOIL
6/13/17

Date:	7/15/17
Proj. #	510497-003
CAD File:	pc__28__fig 3.dgn
Approx. Scale:	1" = 30'
Drawn by:	MJO
Client:	NC DOT
Project Title:	GOLDSBORO U-2714

Sample Identification	P28-MW1
TPH GRO (mg/L)	0.75
THP DRO (mg/L)	0.85

Sample Identification	P28-SB9
TPH GRO (mg/L)	3.5
THP DRO (mg/L)	0.79

US 117 BUS/NC 111 44' PAVED ROADWAY

P28-SB1 P28-SB2 P28-SB3 P28-SB4 P28-SB5 P28-SB6 P28-SB7 P28-SB8 P28-SB9 P28-SB10 P28-SB11 P28-SB12 MW-1

KNOWN USTs

SR 1555 (111TH ST) 30' PAVED RDY

28 29 30 27

LEGEND

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

0 15' 30'

SCALE IN FEET

FILL WITH FLOWABLE FILL

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FIGURE 4
PARCEL 28
ONSITE UVF HYDROCARBON ANALYSIS RESULTS - GROUNDWATER (6-13-17)

Date: 7/15/17			GOLDSBORO U-2714
Proj. # 510497-003			
CAD File: pc__28__fig 4.dgn			Project Title:
Approx. Scale: 1" = 30'	Drawn by: MJO	Client: NC DOT	

APPENDIX A
PHOTOGRAPH LOG

Photo 1

View of the site prior to preliminary site assessment activities.

Photo 2

CSI preparing to begin drilling activities.

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APEX

WBS	38979.1.2
PROCESSED	TLH
DATE	June 2017
PAGE	

PHOTOGRAPHIC LOG

PSA Field Activities
Parcel 28
2000 N. William Street, Goldsboro, NC

Photo 3

View of a monitoring well located in the area of investigation.

Photo 4

View of the UST bed located in the area of investigation.

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APEX

WBS	38979.1.2
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PHOTOGRAPHIC LOG

PSA Field Activities
Parcel 28
2000 N. William Street, Goldsboro, NC

APPENDIX B

BORING LOGS

Apex Companies, LLC

Boring Log

Boring/Well No.: P28-SB1	**Site Name: Parcel 28-Ibrahim M Odeh Property**
Date: 06/13/17	**Location: Goldsboro, Wayne County, NC**
Job No.: 510497-003	**Sample Method: Hand Auger and Direct Push**
Apex Rep: Troy L. Holzschuh	**Drilling Method: Hand Auger and Direct Push**
Drilling Company: Carolina Soil Investigations	**Driller Name/Cert #: Danny Summers/2579**
Remarks:	

Depth (ft BLS)	FID Reading (ppm)	PID Reading (ppm)	Lab Sample ID	Soil/Lithologic Description
				Asphalt
1				Tan Sand, Medium
2	1.6	18		
			Sample at 2.5'	
3				
4	0.32	15.2		
5				
				Water
6				
				Boring terminated at 6 feet
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

Boring/Well No.: P28-SB2	**Site Name: Parcel 28-Ibrahim M Odeh Property**
Date: 06/13/17	**Location: Goldsboro, Wayne County, NC**
Job No.: 510497-003	**Sample Method: Hand Auger and Direct Push**
Apex Rep: Troy L. Holzschuh	**Drilling Method: Hand Auger and Direct Push**
Drilling Company: Carolina Soil Investigations	**Driller Name/Cert #: Danny Summers/2579**
Remarks:	

Depth (ft BLS)	FID Reading (ppm)	PID Reading (ppm)	Lab Sample ID	Soil/Lithologic Description
				Asphalt
1				Orange Sand, Medium
2	1.45	13.3		
			Sample at 2.5'	
3				
4	2.6	21.4		Black Sand, Wet
5				
				Water
6				
				Boring terminated at 6 feet
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

Boring/Well No.: P28-SB3	**Site Name: Parcel 28-Ibrahim M Odeh Property**
Date: 06/13/17	**Location: Goldsboro, Wayne County, NC**
Job No.: 510497-003	**Sample Method: Hand Auger and Direct Push**
Apex Rep: Troy L. Holzschuh	**Drilling Method: Hand Auger and Direct Push**
Drilling Company: Carolina Soil Investigations	**Driller Name/Cert #: Danny Summers/2579**
Remarks:	

Depth (ft BLS)	FID Reading (ppm)	PID Reading (ppm)	Lab Sample ID	Soil/Lithologic Description
				Concrete
1				Tan Sand, Medium
2	1.9	7.8	Sample at 2'	
3				Brown Sand, Medium
4	1.9	7.4		
5				
				Water
6				
				Boring terminated at 6 feet
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

Boring/Well No.: P28-SB4	**Site Name: Parcel 28-Ibrahim M Odeh Property**
Date: 06/13/17	**Location: Goldsboro, Wayne County, NC**
Job No.: 510497-003	**Sample Method: Hand Auger and Direct Push**
Apex Rep: Troy L. Holzschuh	**Drilling Method: Hand Auger and Direct Push**
Drilling Company: Carolina Soil Investigations	**Driller Name/Cert #: Danny Summers/2579**
Remarks:	

Depth (ft BLS)	FID Reading (ppm)	PID Reading (ppm)	Lab Sample ID	Soil/Lithologic Description
				Concrete
1				Tan Sand, Medium
2	1.75	5.15	Sample at 2'	
3				Orange Sand
4	1.5	4.75		Smear Zone
5				
				Water
6				
				Boring terminated at 6 feet
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

Boring/Well No.: P28-SB5	**Site Name: Parcel 28-Ibrahim M Odeh Property**
Date: 06/13/17	**Location: Goldsboro, Wayne County, NC**
Job No.: 510497-003	**Sample Method: Hand Auger and Direct Push**
Apex Rep: Troy L. Holzschuh	**Drilling Method: Hand Auger and Direct Push**
Drilling Company: Carolina Soil Investigations	**Driller Name/Cert #: Danny Summers/2579**
Remarks:	

Depth (ft BLS)	FID Reading (ppm)	PID Reading (ppm)	Lab Sample ID	Soil/Lithologic Description
				Asphalt
1				Orange Sand, Fine, Moist
2	1.5	3.28	Sample at 2'	
3				
4	123	30		Gray Sand, Fine, Wet
				Smear Zone
5				
				Water
6				
				Boring terminated at 6 feet
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

Boring/Well No.: P28-SB6	**Site Name: Parcel 28-Ibrahim M Odeh Property**
Date: 06/13/17	**Location: Goldsboro, Wayne County, NC**
Job No.: 510497-003	**Sample Method: Hand Auger and Direct Push**
Apex Rep: Troy L. Holzschuh	**Drilling Method: Hand Auger and Direct Push**
Drilling Company: Carolina Soil Investigations	**Driller Name/Cert #: Danny Summers/2579**
Remarks:	

Depth (ft BLS)	FID Reading (ppm)	PID Reading (ppm)	Lab Sample ID	Soil/Lithologic Description
				Asphalt
1				Tan Sand
2	180	68	Sample at 2'	
3				
4	140	51		
				Smear Zone
5				
				Water
6				
				Boring terminated at 6 feet
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

Boring/Well No.: P28-SB7	**Site Name: Parcel 28-Ibrahim M Odeh Property**
Date: 06/13/17	**Location: Goldsboro, Wayne County, NC**
Job No.: 510497-003	**Sample Method: Hand Auger and Direct Push**
Apex Rep: Troy L. Holzschuh	**Drilling Method: Hand Auger and Direct Push**
Drilling Company: Carolina Soil Investigations	**Driller Name/Cert #: Danny Summers/2579**
Remarks:	

Depth (ft BLS)	FID Reading (ppm)	PID Reading (ppm)	Lab Sample ID	Soil/Lithologic Description
				Asphalt
1				Tan Sand
2	4.88	1.5	Sample at 2'	
3				
				Gray Sand
4	73	31		Smear Zone
5				Water
6				
				Boring terminated at 6 feet
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

Boring/Well No.: P28-SB8	**Site Name: Parcel 28-Ibrahim M Odeh Property**
Date: 06/13/17	**Location: Goldsboro, Wayne County, NC**
Job No.: 510497-003	**Sample Method: Hand Auger and Direct Push**
Apex Rep: Troy L. Holzschuh	**Drilling Method: Hand Auger and Direct Push**
Drilling Company: Carolina Soil Investigations	**Driller Name/Cert #: Danny Summers/2579**
Remarks:	

Depth (ft BLS)	FID Reading (ppm)	PID Reading (ppm)	Lab Sample ID	Soil/Lithologic Description
				Asphalt
1				Tan Sand, Fine
2	2.9	1.5	Sample at 2'	
3				Brown Sand, Fine
4	5.1	2		Smear Zone
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

Boring/Well No.: P28-SB9	**Site Name: Parcel 28-Ibrahim M Odeh Property**
Date: 06/13/17	**Location: Goldsboro, Wayne County, NC**
Job No.: 510497-003	**Sample Method: Hand Auger and Direct Push**
Apex Rep: Troy L. Holzschuh	**Drilling Method: Hand Auger and Direct Push**
Drilling Company: Carolina Soil Investigations	**Driller Name/Cert #: Danny Summers/2579**
Remarks:	

Depth (ft BLS)	FID Reading (ppm)	PID Reading (ppm)	Lab Sample ID	Soil/Lithologic Description
				Asphalt
1				Brown, Clayey Silt
2	7.9	2	Sample at 2'	
3				
4	15.6	4.5		Brown Sand
				Smear Zone
5				Water
6	3.6	1.8		Black Sand
7				
8	45.7	5.9		
9				
10	89	11.6		
				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

Boring/Well No.: P28-SB10	**Site Name: Parcel 28-Ibrahim M Odeh Property**
Date: 06/13/17	**Location: Goldsboro, Wayne County, NC**
Job No.: 510497-003	**Sample Method: Hand Auger and Direct Push**
Apex Rep: Troy L. Holzschuh	**Drilling Method: Hand Auger and Direct Push**
Drilling Company: Carolina Soil Investigations	**Driller Name/Cert #: Danny Summers/2579**
Remarks:	

Depth (ft BLS)	FID Reading (ppm)	PID Reading (ppm)	Lab Sample ID	Soil/Lithologic Description
				Gravel
1				Orange Sand, Medium
2	0	0	Sample at 2'	
3				
				Smear Zone
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

Boring/Well No.: P28-SB11	**Site Name: Parcel 28-Ibrahim M Odeh Property**
Date: 06/13/17	**Location: Goldsboro, Wayne County, NC**
Job No.: 510497-003	**Sample Method: Hand Auger and Direct Push**
Apex Rep: Troy L. Holzschuh	**Drilling Method: Hand Auger and Direct Push**
Drilling Company: Carolina Soil Investigations	**Driller Name/Cert #: Danny Summers/2579**
Remarks:	

Depth (ft BLS)	FID Reading (ppm)	PID Reading (ppm)	Lab Sample ID	Soil/Lithologic Description
				Gravel
1				Orange Sand, Medium
2	0	0	Sample at 2'	
3				
4	0.5	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

Boring/Well No.: P28-SB12	**Site Name: Parcel 28-Ibrahim M Odeh Property**
Date: 06/13/17	**Location: Goldsboro, Wayne County, NC**
Job No.: 510497-003	**Sample Method: Hand Auger and Direct Push**
Apex Rep: Troy L. Holzschuh	**Drilling Method: Hand Auger and Direct Push**
Drilling Company: Carolina Soil Investigations	**Driller Name/Cert #: Danny Summers/2579**
Remarks:	

Depth (ft BLS)	FID Reading (ppm)	PID Reading (ppm)	Lab Sample ID	Soil/Lithologic Description
				Gravel
1				Orange Sand, Medium
2	2.3	0.5	Sample at 2'	
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:

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 028 - NCDOT Project U-2714
2000 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 028, located at 2000 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 from June 7-8, 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 028.

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 and ground penetrating radar (GPR) surveys. 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.

GPR data were acquired across select EM anomalies on June 8, 2017, using a Geophysical Survey Systems, Inc. (GSSI) UtilityScan DF unit equipped with a dual frequency 300/800 MHz antenna. Data were collected both in reconnaissance fashion as well as along formal transect lines across EM features. The GPR data were viewed in real-time using a vertical scan of 512 samples, at a rate of 48 scans per second. GPR data were viewed down to a maximum depth of approximately 6 feet, based on dielectric constants calculated by the DF unit in the field during the reconnaissance scans. GPR transects across specific anomalies were saved to the hard drive of the DF unit for post-processing and figure generation.

The results of the geophysical survey did not record any evidence of unknown metallic USTs at the property. The majority of the EM features observed were the result of visible cultural features at the ground surface. GPR data were collected across areas suspected to contain reinforced concrete, as well as underneath the pump island canopy where the GPS signal was lost during EM data collection. No evidence of any subsurface structures such as USTs was recorded.

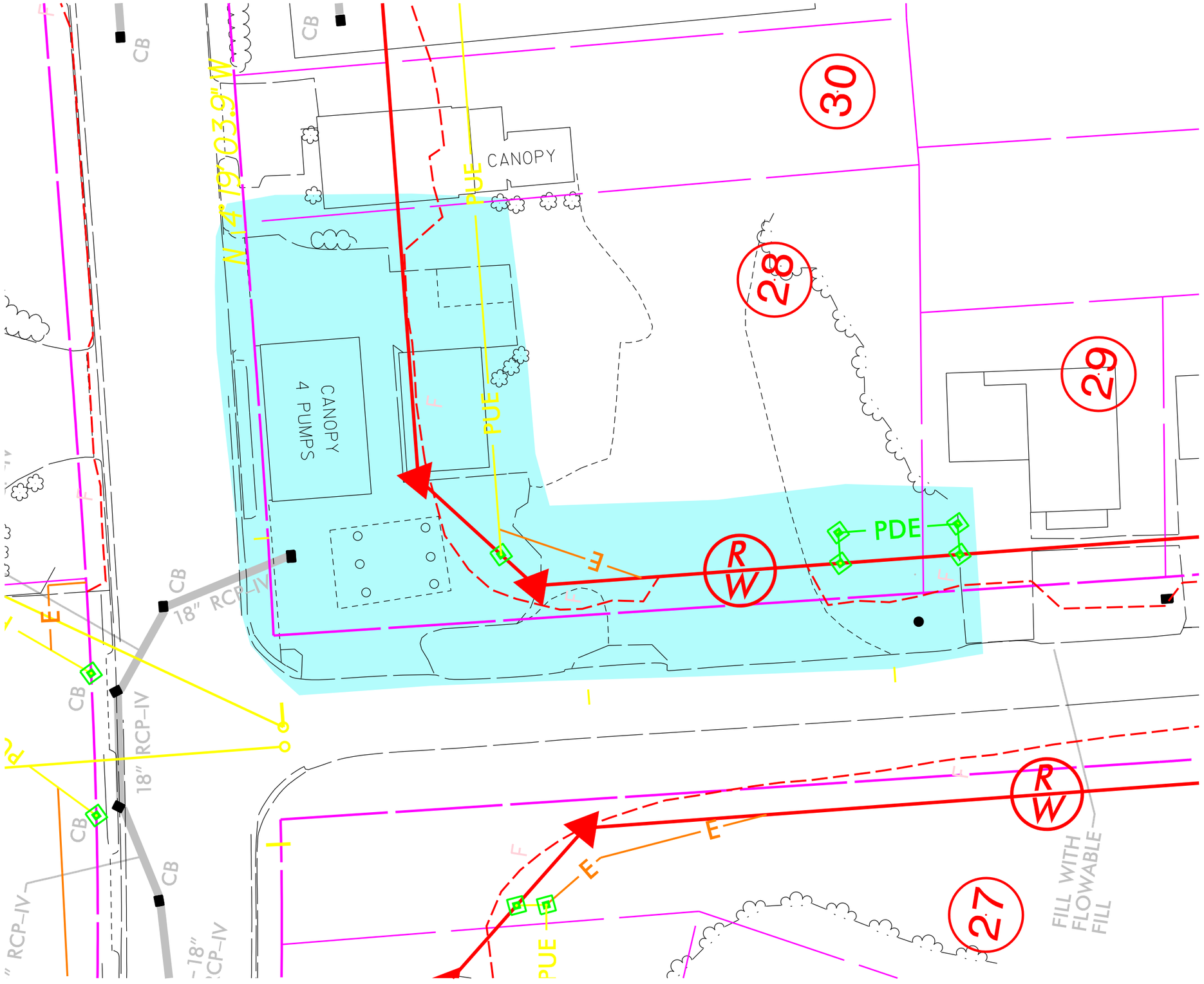
It should be noted that this site is an active service station, and a known UST bed was present directly south of the canopy in the south-central portion of the survey area. This UST bed is identified by a concrete pad and visible fill ports. The fill ports and concrete area are annotated on the NCDOT engineering plans. It should also be noted that a reinforced concrete pad was present in the northeast portion of the survey area that was surrounded by apparent cathodic protection, suggesting a UST may have been present in this area in the past. The GPR did not record evidence of a UST at this location; however, it should be noted that depth penetration was limited to approximately 2.5 feet below the ground surface.

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 and GPR surveys. It is generally recognized that the results of the EM61 and GPR surveys are non-unique and may not represent actual subsurface conditions. The EM61 and GPR 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

N

0 25 50
FEET

TITLE
OVERLAY OF GEOPHYSICAL SURVEY BOUNDARIES ON NCDOT ENGINEERING PLANS

PROJECT
PARCEL 028
GOLDSBORO, NORTH CAROLINA
NCDOT PROJECT U-2714

PYRAMID GEOPHYSICS
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

QED REDLAB RAPID ENVIRONMENTAL DIAGNOSTICS AQROS

Hydrocarbon Analysis Results

Client: NCDOT
Address: PARCEL 28
2000 N William St
Goldsboro, NC

Contact: Dennis Li

Project: 510497-003

Samples taken Tuesday, June 13, 2017
Samples extracted Tuesday, June 13, 2017
Samples analysed Tuesday, June 13, 2017

Operator KH

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	P28-SB1 (2.5)	22.2	<0.56	<0.56	33.8	33.8	14.9	0.68	0.008	0	85	15	V.Deg.PHC (FCM) 83%
s	P28-SB2 (2.5)	20.0	<0.5	<0.5	18.8	18.8	8.3	0.42	0.005	0	85.9	14.1	Deg Fuel (FCM) 83%
s	P28-SB3 (2)	21.1	<0.53	<0.53	3	3	1.3	0.07	0.002	0	72.6	27.4	V.Deg.PHC (FCM) 87.7%
s	P28-SB4 (2)	22.8	<0.57	<0.57	0.72	0.72	0.62	0.04	<0.002	0	73.1	26.9	Deg.PHC (FCM) 53.1%
s	P28-SB5 (2)	19.7	<0.49	<0.49	13.2	13.2	5.4	0.24	0.002	0	87.8	12.2	V.Deg.PHC (FCM) 72.1%
s	P28-SB6 (2)	37.3	<0.93	<0.93	11.1	11.1	4.9	0.27	0.004	0	86.1	13.9	Deg.Fuel (FCM) 75%
s	P28-SB7 (2)	19.7	<0.49	3.4	42.7	46.1	31.1	3.4	0.061	9.9	77.3	12.8	Road Tar (FCM) 90.9%
s	P28-SB8 (2)	22.0	<0.55	<0.55	26.7	26.7	25.7	1.3	0.01	0	88.7	11.3	Deg Fuel (FCM) 94.2%
s	P28-SB9 (2)	23.2	<0.58	<0.58	18.1	18.1	14.9	1.5	0.029	0	80.7	19.3	Deg.PHC (FCM) 67.8%

Initial Calibrator QC check OK

Final FCM QC Check OK 101.7 %

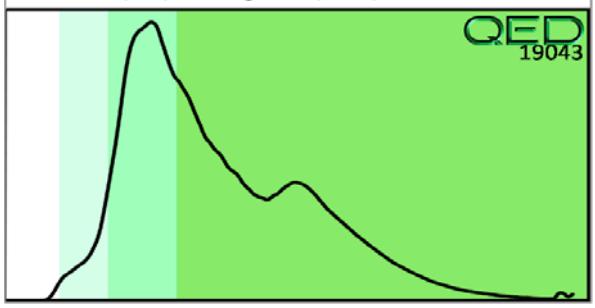
Results generated by a QED HC-1 analyser. Concentration values in mg/kg for soil samples and mg/L for water samples. Soil values are not corrected for moisture or stone content

Fingerprints provide a tentative hydrocarbon identification. The abbreviations are:- FCM = Results calculated using Fundamental Calibration Mode : % = confidence for sample fingerprint match to library

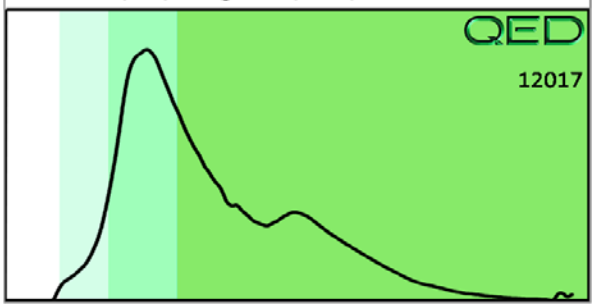
(SBS) or (LBS) = Site Specific or Library Background Subtraction applied to result : (PFM) = Poor Fingerprint Match : (T) = Turbid : (P) = Particulate present

Project: 510497-003 Tuesday, June 13, 2017

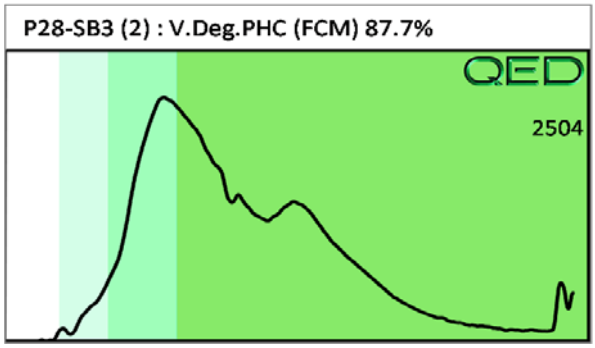
P28-SB1 (2.5) : V.Deg.PHC (FCM) 83%



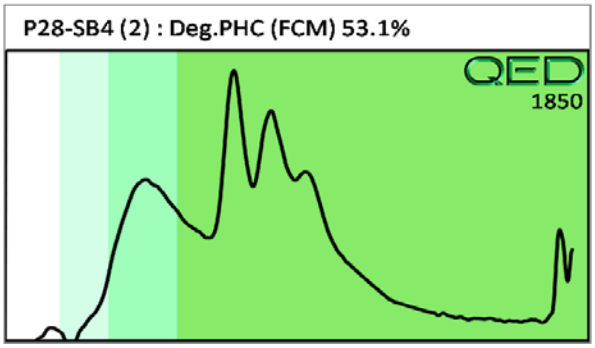
P28-SB2 (2.5) : Deg Fuel (FCM) 83%



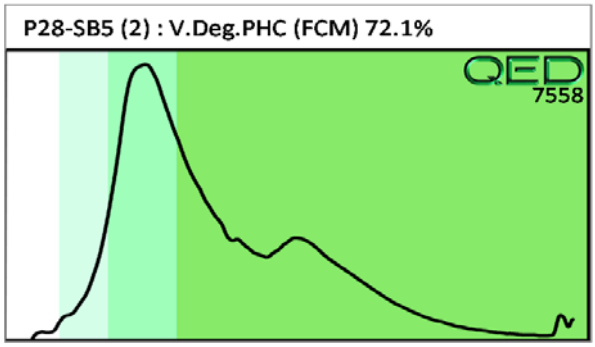
P28-SB3 (2) : V.Deg.PHC (FCM) 87.7%



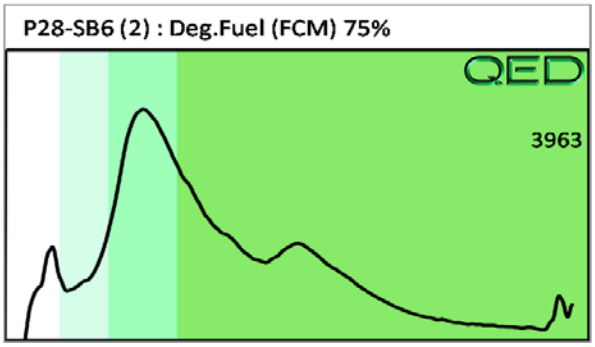
P28-SB4 (2) : Deg.PHC (FCM) 53.1%



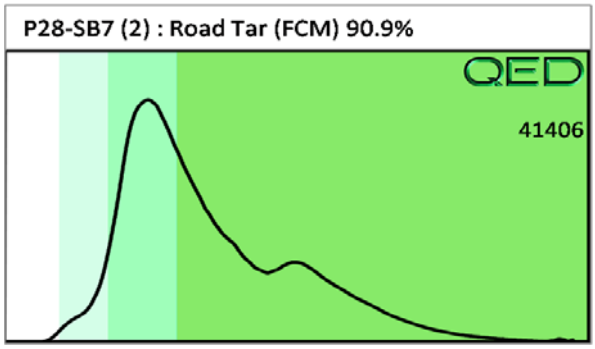
P28-SB5 (2) : V.Deg.PHC (FCM) 72.1%



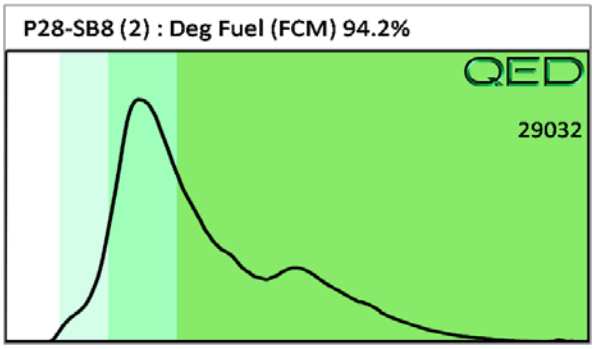
P28-SB6 (2) : Deg.Fuel (FCM) 75%



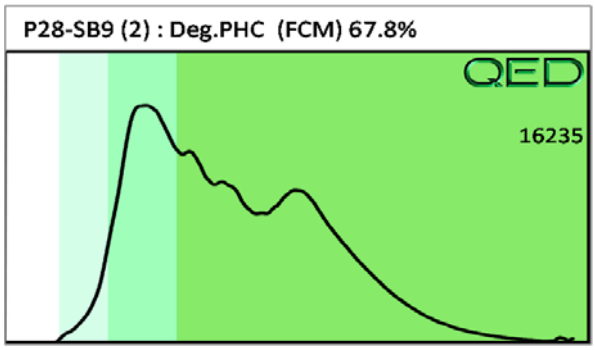
P28-SB7 (2) : Road Tar (FCM) 90.9%



P28-SB8 (2) : Deg Fuel (FCM) 94.2%



P28-SB9 (2) : Deg.PHC (FCM) 67.8%



QED

REDLAB
RAPID ENVIRONMENTAL DIAGNOSTICS

QROS

Hydrocarbon Analysis Results

Client: NCDOT
Address: PARCEL 28
2000 N William St
Goldsboro, NC

Contact: Dennis Li

Project: 510497-003

Samples taken Tuesday, June 13, 2017
Samples extracted Tuesday, June 13, 2017
Samples analysed Tuesday, June 13, 2017

Operator KH

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	P28-SB9 - WATER	1.0	<0.025	3.5	0.79	4.29	0.61	0.03	0	85.1	13.9	1	V.Deg.PHC (FCM) 37.8%
W	P28-MW1	1.0	<0.025	0.75	0.85	1.6	0.51	0.03	0	59.6	38.6	1.8	V.Deg.Gas (FCM) 57.5%
s	P28-SB10 (2)	18.7	<0.47	<0.47	0.68	0.68	0.46	0.02	<0.002	0	29.9	70.1	Deg.PHC (FCM) 47.4%
s	P28-SB11 (2)	18.8	<0.47	<0.47	0.47	0.47	0.35	0.05	0.002	0	35.2	64.8	Residual.PHC (FCM) (P)
s	P28-SB12 (2)	21.8	<0.55	<0.55	0.55	0.55	0.36	0.04	<0.002	0	37.2	62.8	Residual.PHC (FCM)

Initial Calibrator QC check OK

Final FCM QC Check OK 86.6 %

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

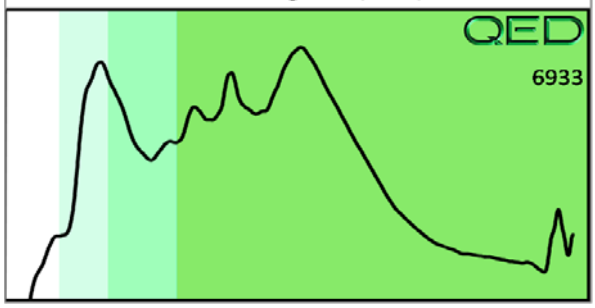
Fingerprints provide a tentative hydrocarbon identification. The abbreviations are:- FCM = Results calculated using Fundamental Calibration Mode : % = confidence for sample fingerprint match to library

(SBS) or (LBS) = Site Specific or Library Background Subtraction applied to result : (PFM) = Poor Fingerprint Match : (T) = Turbid : (P) = Particulate present

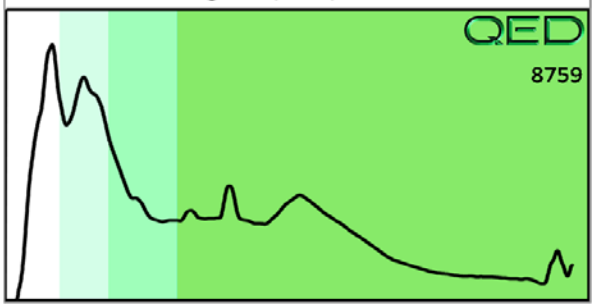
QED Hydrocarbon Fingerprints

Project: 510497-003 Tuesday, June 13, 2017

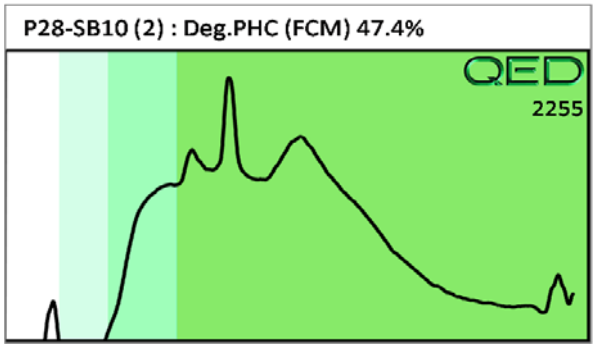
P28-SB9 - WATER : V.Deg.PHC (FCM) 37.8%



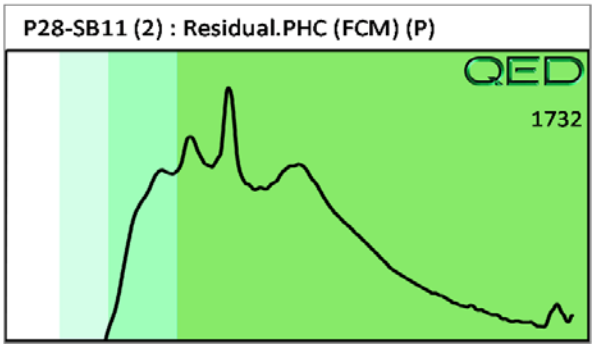
P28-MW1 : V.Deg.Gas (FCM) 57.5%



P28-SB10 (2) : Deg.PHC (FCM) 47.4%



P28-SB11 (2) : Residual.PHC (FCM) (P)



P28-SB12 (2) : Residual.PHC (FCM)