



January 9, 2020

North Carolina Department of Transportation
Geotechnical Unit
Mail Service Center 1592
Raleigh, North Carolina 27699-1592

Attention: Mr. Craig Haden

email: cehaden@ncdot.gov

Reference: **Preliminary Site Assessment Report**
NCDOT Project I-5878, WBS Element 53078.1.1
Parcel 49-Former Welcome Mart
601 Spring Branch Road
Dunn, Harnett County, North Carolina
S&ME Project 4305-19-161

Dear Mr. Haden:

S&ME, Inc. (S&ME) is submitting this Preliminary Site Assessment (PSA) Report to the North Carolina Department of Transportation (NCDOT). This report presents the background/project information, field activities, findings, conclusions, and recommendations. These services were performed in general accordance with S&ME Proposal No. 43-1900576 REV-01 dated August 9, 2019, and Contract Number 7000018853 dated April 12, 2018 between NCDOT and S&ME, Inc., authorized by NCDOT in its September 5, 2019 Notice to Proceed Letter.

◆ Background/Project Information

Based on NCDOT's July 24, 2019, Request for Technical and Cost Proposal, the PSA was conducted within the NCDOT right-of-way (ROW) and/or easement as indicated on the preliminary plan sheets provided by NCDOT at the following property:

NCDOT Parcel No.	Property Owner	Site Address
49	Jessie Anna Walker	(Former Welcome Mart) 601 Spring Branch Road (aka Pope Road), Dunn, NC



The property was previously developed with a gasoline convenience store identified as Welcome Mart and a hotel. At the time of our field activities, the property was a cleared lot with several piles of concrete and asphalt. The former gasoline convenience store and hotel buildings had been razed. The petroleum underground storage tanks (USTs) that the former Welcome Mart operated were previously removed. Information regarding the former UST system listed for this site is provided in the following table:

UST Facility ID No. 0-00-000021703

Number of Tanks	Contents	Capacity (gallons)	Date Installed	Date Removed
1	Gasoline	8,000	1986	8/6/2012
2	Gasoline	8,000	1986	8/6/2012
3	Gasoline	8,000	1986	8/6/2012

The property is listed with one North Carolina Department of Environmental Quality (NCDEQ) Incident (Incident #29782) associated with petroleum releases from USTs discovered during their removal in August 2012. According to the *Phase I Limited Site Assessment* dated January 25, 2013 prepared by Geological Resources, Inc., groundwater was measured in a temporary monitor well installed within the former UST excavation area in August 2012 at a depth of 8.94 feet below ground surface (ft.-bgs). Benzene, lead and C5-C8 Aliphatics were reported in groundwater samples collected from the temporary well in 2012 at concentrations exceeding their respective 15A NCAC 2L Groundwater Quality Standards (2L Standards). Various target constituents were reported in soil samples collected within the former dispenser excavation at depths of five and six ft.-bgs and along the east sidewall of the UST basin at a depth of eight ft.-bgs at concentrations exceeding their respective Soil-to-Groundwater Maximum Soil Contaminant Concentrations (MSCCs) but below their respective Residential MSCCs.

The PSA included a geophysical survey and subsequent limited soil sampling (ten soil borings up to 10 ft.-bgs), within accessible areas of the proposed ROW/easement in preparation for construction activities. **Figure 1** shows the vicinity and site location, and **Figure 2** shows the site and boring locations. Soil sampling results are shown on **Figure 3**.

◆ Field Services

Prior to field activities, a site specific Health and Safety Plan was prepared as required by the Occupational Health and Safety Act (OSHA). Underground utilities were located and marked by the North Carolina One-Call Service. A private utility locator (East Coast Underground, LLC) was also used to locate and mark underground utilities.

◆ Geophysical Survey

On July 25, 2019, S&ME completed Time Domain Electromagnetic (TDEM) and Ground Penetrating Radar (GPR) surveys within accessible areas of the proposed ROW/easement at Parcel 49. Brief descriptions of these complementary geophysical techniques are presented in the following paragraphs.



Time Domain Electromagnetics (TDEM)

TDEM measures the electrical conductivity of subsurface materials and discriminates between moderately conductive earth materials and very conductive metallic targets within the shallow subsurface. The conductivity is determined by transmitting a time-varying magnetic pulse into the subsurface and measuring the amplitude and phase shift of the secondary magnetic field. The secondary magnetic field is created when the conductive materials become an inductor as the primary magnetic field is passed through them. TDEM data are acquired continuously at a walking pace typically along a series of parallel or perpendicular lines. The system generates audible and visual indications when metallic targets are encountered. These measurements can also be supported with a global positioning system (GPS) which is output directly into the TDEM data file.

We used a Geonics Limited EM-61 MK2 TDEM system in general accordance with ASTM D6820 "*Standard Guide for Use of the Time Domain Electromagnetic Method for Subsurface Investigation.*" Data was collected along lines spaced at approximately five feet using a Juniper® Systems Geode™ sub-meter GPS as positioning support. The presence of debris piles, thick vegetation, and equipment within the survey area, however, prevented TDEM data collection in a significant portion of the site. The approximate TDEM data collection paths are presented in **Figure 4**. Golden Software's Surfer® program was used to grid and plot the data (**Figures 5 and 6**). The TDEM data has been presented as Plots A and B in order to provide both opaque and semi-transparent views, respectively.

Ground Penetrating Radar (GPR)

GPR transmits electromagnetic waves into the subsurface from an antenna at a specific frequency and measures the time for wave reflections to be received by interfaces between materials with differing material properties (e.g. soil/metal, etc.). The intensity of the reflected GPR wave is a function of the contrast in the material properties (i.e. dielectric permittivity) at the interface, the conductivity of the material that the wave is traveling through, and the frequency of the signal.

We used a Geophysical Survey Systems, Inc. (GSSI) SIR® 4000 GPR system equipped with a 350 MHz antenna in general accordance with ASTM D6432 "*Standard Guide for Using the Surface Ground Penetrating Radar Method for Subsurface Investigation*" to further characterize anomalies/features identified during the TDEM survey.

A total of seven GPR profiles (Lines 1 through 7) were collected for documentation (**Figure 7**). The data was post-processed using the GSSI Radan® 7 GPR software program for additional analysis.

Geophysical Findings

Responses indicative of a potential UST were not identified in the geophysical data sets collected at the site. Two anomalous features unrelated to known surficial targets were identified in the geophysical data sets (Anomalies A and B; **Figures 6 and 7**). Anomalies A and B are characterized by high amplitude GPR responses located about three feet and 0.5 bgs respectively, and may be related to relatively small, isolated metallic objects (**Figures 8 and 9**). The anomalies were marked in the field using white spray paint. Example GPR profiles are presented in **Figures 8 and 9**.



◆ Soil Sampling

On October 21, 2019, Troxler Geologic, Inc. (Troxler's) drill crew utilized a track mounted Geoprobe® rig to advance ten soil borings (B-1 through B-10) and to collect soil samples within accessible areas of the proposed ROW/easement at Parcel 49. The approximate location of the soil borings are shown in **Figure 2**. A photographic log is included in **Appendix I**. Troxler's drill crew advanced the Geoprobe® borings up to a depth of approximately 10 ft.-bgs. During the advancement of the soil borings, groundwater was not encountered. Soil samples were continuously collected in four-foot long disposable acetate-plastic sleeves that line the hollow stainless-steel sample probes. Soil recovered from the sleeves was classified on-site by S&ME personnel and screened with a Photoionization Detector (PID) at approximately two foot depth intervals to measure relative headspace concentrations of volatile organic compounds (VOCs).

VOC headspace readings were obtained from an aliquot of each soil sample that was placed in a re-sealable bag. Another portion of the sample was placed in a separate re-sealable bag and stored in an insulated container with ice for possible laboratory analyses. After waiting approximately 15 minutes to allow the sample to reach ambient temperature and headspace equilibrium, the PID probe was inserted into the bag to obtain a headspace reading. A summary of the PID readings and logs of the soil borings are included in **Appendix II**.

Slight petroleum odors and slightly elevated PID readings were noted at boring B-5, which was located within the former pump island area, starting at a depth of approximately four ft.-bgs and boring B-7, which was located within the former UST basin area, starting at a depth of approximately eight ft.-bgs and extending to boring termination at 10 ft.-bgs. Petroleum odors and elevated PID readings were not noted at the other borings on the site. Therefore, soil samples were selected from boring B-5 at the four to six foot depth interval and at boring B-7 at the eight to ten foot depth interval. Various soil samples at varying depth intervals were selected from the remaining borings. The soil samples were placed into laboratory supplied containers and transported to RED Lab, LLC (Red Lab) in an insulated cooler with ice for analysis. A total of 10 soil samples (one soil sample per boring) were analyzed by RED Lab for Total Petroleum Hydrocarbons (TPH)-Gasoline Range Organics (GRO) and Diesel Range Organics (DRO) using ultra-violet fluorescence (UVF) spectroscopy with product (fuel) identification.

Upon completion of the soil sampling, the soil borings were backfilled with bentonite pellets and soil cuttings. Investigative derived wastes (IDW), such as additional soil cuttings generated during the soil boring advancement and decontamination water, were spread on the ground in accordance with the procedures specified by NCDEQ. Used gloves, re-sealable bags and acetate sleeves were bagged and disposed off-site.

Soil Analytical Results

Based upon analytical results of soil samples analyzed by RED Lab using UVP spectroscopy, TPH-GRO and TPH-DRO were not reported at concentrations exceeding the North Carolina TPH Action Levels. TPH-DRO was reported at boring B-4 at the four to six foot depth interval, at a concentration of 0.53 milligrams per kilograms (mg/kg) which is below its North Carolina TPH Action Level of 100 mg/kg. TPH-GRO and TPH-DRO were not reported at concentrations exceeding the laboratory method reporting limits at the remaining soil samples. A summary of the soil analytical results is presented in **Table 1** and shown on **Figure 3**. A copy of the laboratory analytical report provided by RED Lab is presented in **Appendix III**.



◆ Conclusion and Recommendations

The geophysical survey identified two anomalies (Anomalies A and B) which may be related to relatively small, isolated metallic objects. Responses indicative of a potential UST were not identified in the geophysical data sets collected at the site.

S&ME advanced ten soil borings (B-1 through B-10) to a depth of up to approximately 10 ft.-bgs at the site. Slight petroleum odors and slightly elevated PID readings were noted at boring B-5, which was located within the former pump island area, starting at a depth of approximately four ft.-bgs and boring B-7, which was located within the former UST basin area, starting at a depth of approximately eight ft.-bgs and extending to boring termination at 10 ft.-bgs. Petroleum odors and elevated PID readings were not noted at the other borings on the site. Selected soil samples from the soil borings were analyzed for TPH-GRO and TPH-DRO using UVF spectroscopy. TPH-DRO was reported at boring B-4 at the four to six foot depth interval, at a concentration slightly above the laboratory reporting limits but well below its North Carolina TPH Action Level. TPH-GRO and TPH-DRO were not reported at concentrations exceeding the laboratory method reporting limits at the remaining soil samples. During the soil boring advancement, groundwater was not encountered. Therefore, groundwater sampling was not performed.

However, in 2012 groundwater was reported within the former UST excavation area at a depth of 8.94 ft.-bgs with petroleum impacts reported above 2L Standards. In 2012, petroleum impacted soil was reported in soil samples collected within the former pump island excavation at a depth of five and six ft.-bgs and along the eastern sidewall of the UST excavation at a depth of eight ft.-bgs at concentrations exceeding the Soil-to-Groundwater MSCCs. Soil samples collected within these areas at these approximate depths did not indicate petroleum impacts above North Carolina TPH Action Levels.

Based on the findings of the geophysical survey, analytical results of soil samples and analytical results of previous soil and groundwater samples, it is likely that during construction, NCDOT may encounter soil and groundwater impacted with petroleum at the site. Petroleum impacted soil at concentrations exceeding the Soil-to-Groundwater MSCCs may be encountered within the vicinity of the former pump island excavation at depths of five to six ft.-bgs and at the UST excavation at a depth of eight ft.-bgs. If construction excavations extend deeper than 10 ft.-bgs, petroleum impacted groundwater may also be encountered within these areas.

If petroleum stained or odorous soils are encountered during construction, these soils should be properly handled and disposed at a licensed facility. If construction dewatering is required, petroleum impacted groundwater must be properly disposed or treated at a licensed facility.

S&ME recommends maintaining an awareness level for the presence of petroleum in the soil and groundwater at the site for the safety of workers and the public.



◆ Limitations

The results of this preliminary investigation are limited to the boring locations presented herein. The results of this Preliminary Site Assessment are not all inclusive and may not represent existing conditions across the entire property. These results only reflect the current conditions at the locations sampled on the date this Preliminary Site Assessment was performed. This report has been prepared in accordance with generally accepted environmental engineering and geophysical practice for specific application to this project. The conclusions and recommendations contained in this report are based upon applicable standards of our practice in this geographic area at the time this report was prepared. No other warranty, expressed or implied, is made.

The geophysical methods used for this survey have inherent limitations. Site metallic features (e.g., surficial debris, reinforced concrete, utilities, etc.) and overhead transmission lines can produce a false electromagnetic response and may mask subsurface features. The depth of exploration of the GPR signal is highly site specific and is greatly limited by signal attenuation (absorption) of the subsurface materials. Signal attenuation is dependent upon the electrical conductivity of the subsurface materials. Signal attenuation is greatest in materials with relatively high electrical conductivities such as clay soils, and lowest in relatively low conductivity materials such as unsaturated sand. For this project location, the GPR data sets appear to have a maximum depth of penetration of about seven ft.-bgs.

Regardless of the thoroughness of a geophysical study, there is always a possibility that actual conditions may not match the interpretations. The results should be considered accurate only to the degree implied by the methods used and the method's limitations and data coverage. Accordingly, the possibility exists that not all features at a project site will be located due to either subsurface soil conditions or the occurrence of features outside the lateral limits and below the depth of penetration of the methods used. As with most surface geophysical methods, resolution of the subsurface will also decrease with depth. As such, the size and/or contrast of features compared to the imaged subsurface media must be significant enough to produce the anticipated response. The location and/or determination (or the lack thereof) of potential buried features is based on our review of the provided information and of the geophysical survey. Under no circumstances does S&ME assume any responsibility for damages resulting from the presence of subsurface features that may exist but were not identified by our survey.

This Preliminary Site Assessment was performed solely for NCDOT regarding the above-referenced site and assessment area. This report is provided for the sole use of NCDOT. Use of this report by any other parties will be at such party's sole risk. S&ME disclaims liability for any such use or reliance by third parties. The observations presented in this report are indicative of conditions during the time of the assessment and of the specific areas referenced.

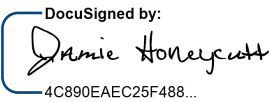


◆ Closing

S&ME appreciates the opportunity to provide these services to you. If you have any questions or comments regarding this report, please contact us at your convenience.

Sincerely,

S&ME, Inc.

DocuSigned by:

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1/27/2020

Thomas P. Raymond, P.E., P.M.P.
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Attachments:

Table 1: Summary of Soil Sampling Results

- Figure 1:** Vicinity Map
- Figure 2:** Site Map
- Figure 3:** Soil Constituent Map
- Figure 4:** TDEM Path Location Plan
- Figure 5:** TDEM Data Plot A
- Figure 6:** TDEM Data Plot B
- Figure 7:** Geophysical Anomaly Location Plan
- Figure 8:** Example GPR Data – Line 3
- Figure 9:** Example GPR Data – Lines 6 and 7

- Appendix I:** Photographs
- Appendix II:** Boring Logs
- Appendix III:** Laboratory Analytical Reports and Chain of Custody

Tables



TABLE 1
SUMMARY OF SOIL SAMPLING RESULTS
NCDOT Project I-5878
Parcel 49 - (Former Welcome Mart)
601 Spring Branch Road
Dunn, Harnett County, North Carolina
S&ME Project No. 4305-19-161

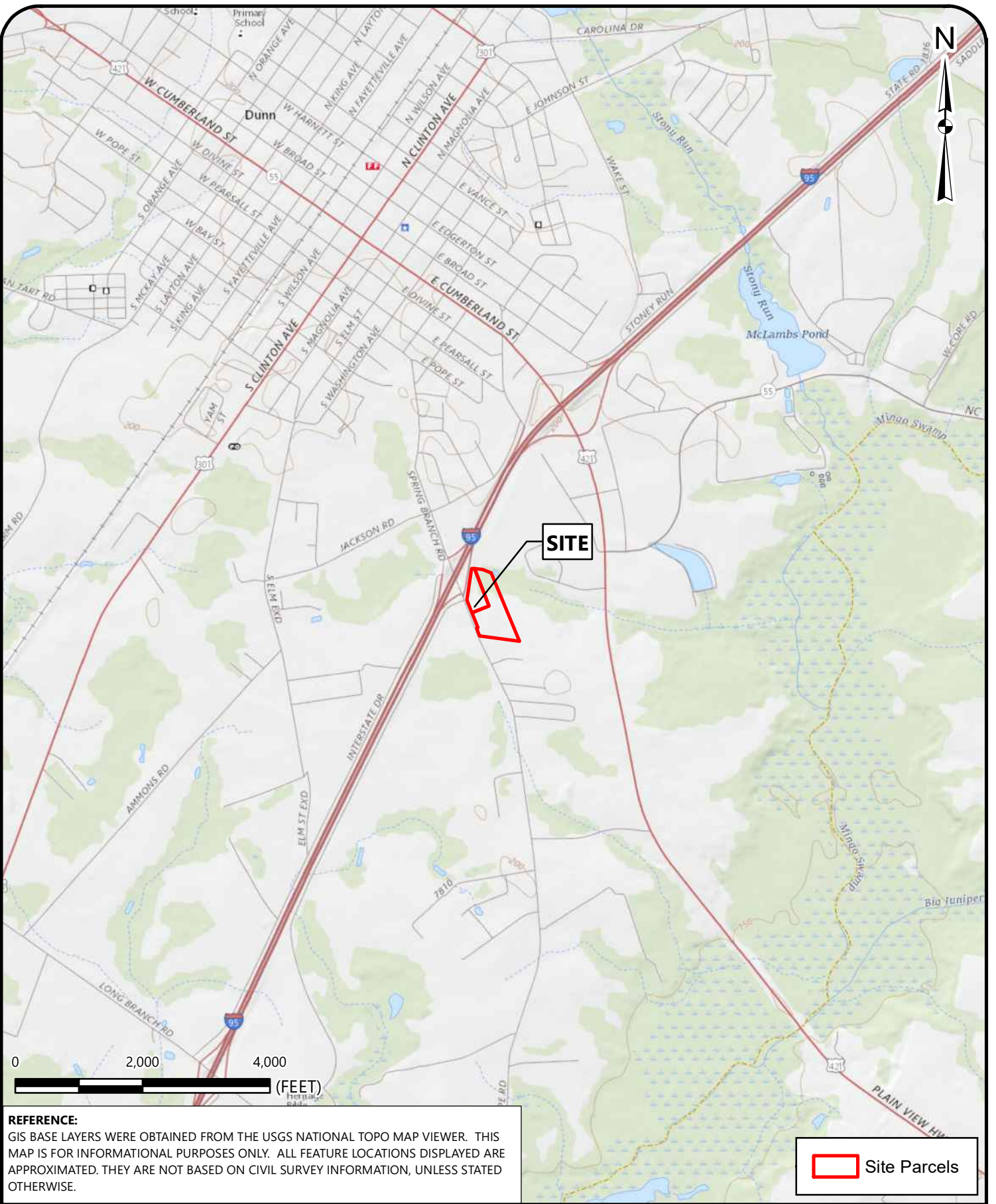
Analytical Method→			Total Petroleum Hydrocarbons (TPH) Gasoline Range Organics (GRO) and Diesel Range Organics (DRO) by Ultraviolet Fluorescence (UVF) Spectrometry	
Sample ID	Date	Contaminant of Concern→	TPH-GRO	TPH-DRO
		Sample Depth (ft.-bgs)		
B-1	10/21/2019	6 to 8	<0.54	<0.54
B-2	10/21/2019	6 to 8	<0.5	<0.5
B-3	10/21/2019	2 to 4	<0.53	<0.53
B-4	10/21/2019	4 to 6	<0.53	0.53
B-5	10/21/2019	4 to 6	<0.54	<0.54
B-6	10/21/2019	8 to 10	<0.49	<0.49
B-7	10/21/2019	8 to 10	<0.5	<0.5
B-8	10/21/2019	8 to 10	<0.55	<0.55
B-9	10/21/2019	8 to 10	<0.29	<0.29
B-10	10/21/2019	6 to 8	<0.51	<0.51
North Carolina TPH Action Levels			50	100

Notes:

1. UVF analysis performed by RED Lab, LLC
2. Concentrations are reported in milligrams per kilogram (mg/Kg).
3. ft.-bgs:- feet below ground surface.
4. Concentrations exceeding the laboratory's reporting limits are shown in **BOLD** fields.
5. Concentrations exceeding the North Carolina TPH Action Levels are shown in Shaded and **BOLD** fields.

Figures

Drawing Path: T:\Projects\2019\ENV\4305-19-161 NCDOT I-5878 PSAs\GIS\Parcel_49\VICINITY.mxd plotted by abentz 11-21-2019



REFERENCE:

GIS BASE LAYERS WERE OBTAINED FROM THE USGS NATIONAL TOPO MAP VIEWER. THIS MAP IS FOR INFORMATIONAL PURPOSES ONLY. ALL FEATURE LOCATIONS DISPLAYED ARE APPROXIMATED. THEY ARE NOT BASED ON CIVIL SURVEY INFORMATION, UNLESS STATED OTHERWISE.

	Site Parcels
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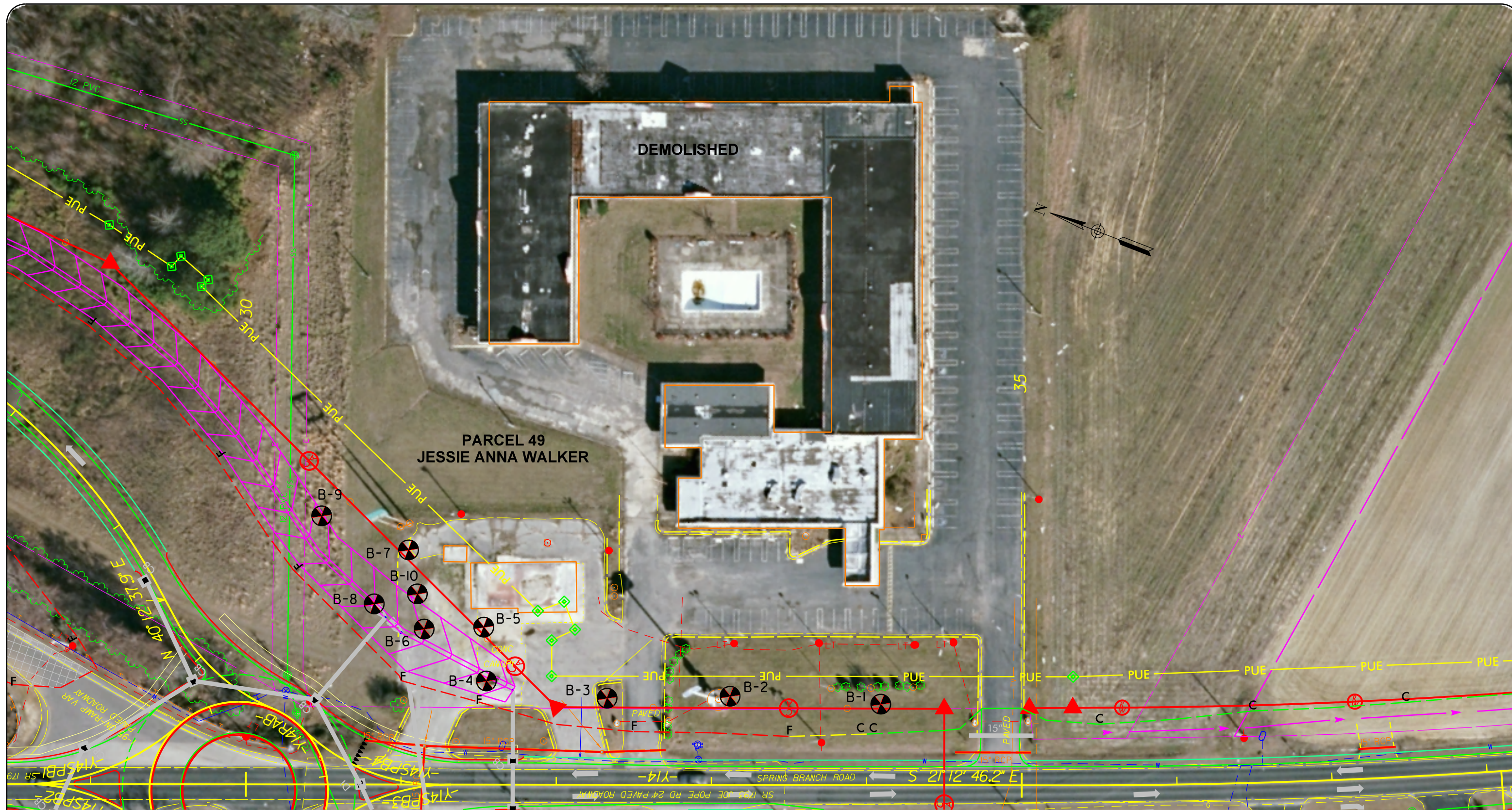


VICINITY MAP

NCDOT PROJECT I-5878
 PARCEL NO. 49 (FORMER WELCOME MART)
 601 SPRING BRANCH RD, DUNN, HARNETT COUNTY, NORTH CAROLINA

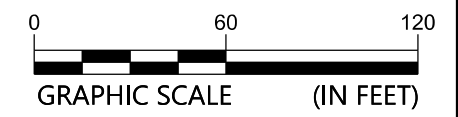
SCALE: 1" = 2,000'
DATE: 11-21-19
PROJECT NUMBER 4305-19-161

FIGURE NO. 1



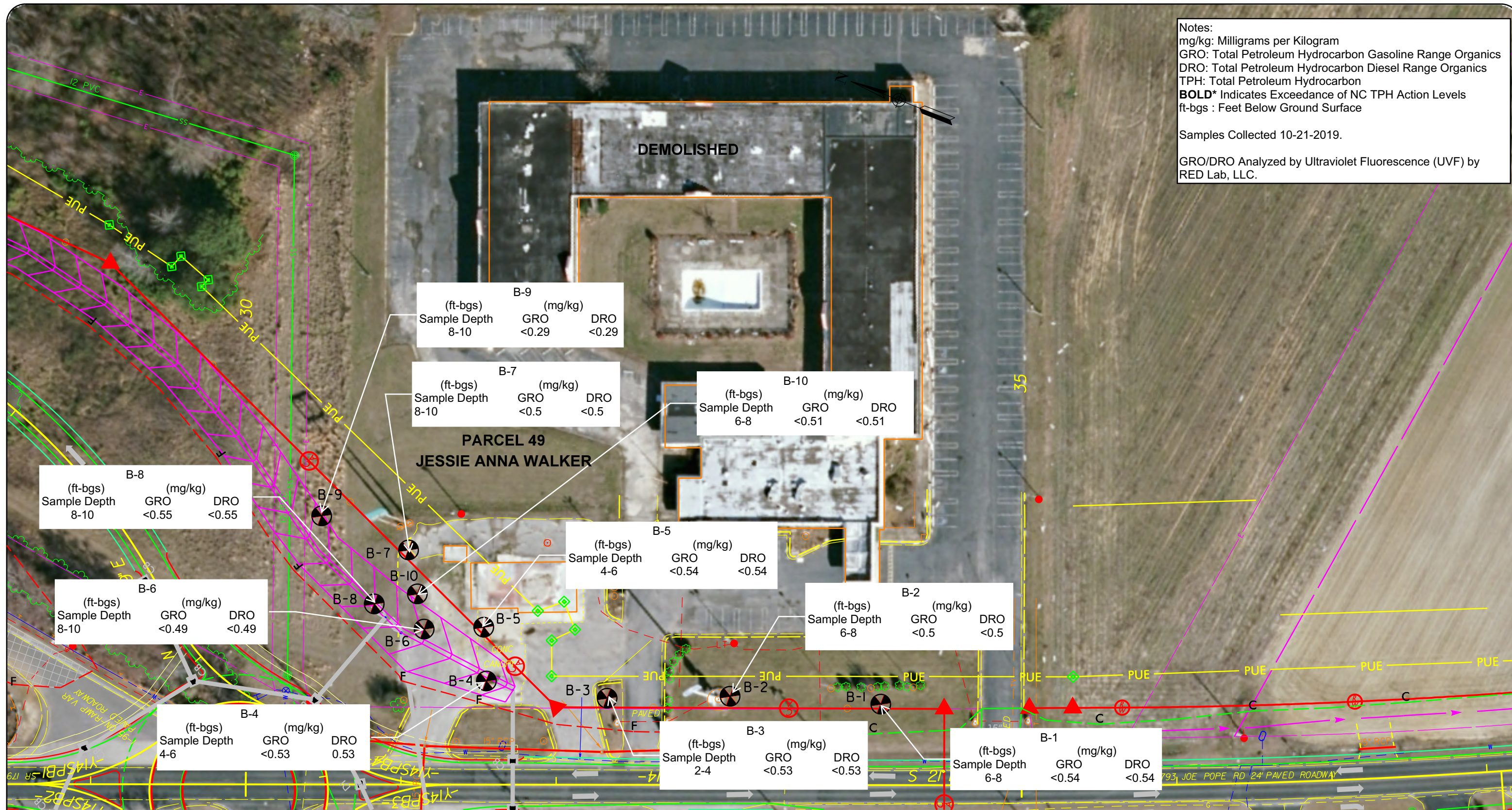
LEGEND
 Geoenvironmental Boring:
 Underground Storage Tank (UST):
 Map Source: NCDOT Project I-59868
 Image Source: NC ONEMAP, Dated 2016

Known Soil Contamination:
 Possible Soil Contamination:
 Existing Contamination Known - Water:



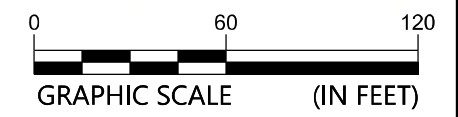
	SITE MAP		SCALE:	FIGURE NO.
	NCDOT Project: I-5878 PARCEL 49 - (FORMER WELCOME MART) 601 Spring Branch Road, Dunn, Harnett County, North Carolina		1" = 60'	2
			DATE:	
			JAN. 2020	
		PROJECT NUMBER		
			4305-19-161	

Notes:
 mg/kg: Milligrams per Kilogram
 GRO: Total Petroleum Hydrocarbon Gasoline Range Organics
 DRO: Total Petroleum Hydrocarbon Diesel Range Organics
 TPH: Total Petroleum Hydrocarbon
BOLD* Indicates Exceedance of NC TPH Action Levels
 ft-bgs : Feet Below Ground Surface
 Samples Collected 10-21-2019.
 GRO/DRO Analyzed by Ultraviolet Fluorescence (UVF) by RED Lab, LLC.



LEGEND
 Geoenvironmental Boring:
 Underground Storage Tank (UST):
 Map Source: NCDOT Project I-59868
 Image Source: NC ONEMAP, Dated 2016

Known Soil Contamination:
 Possible Soil Contamination:
 Existing Contamination Known - Water:



SOIL CONSTITUENT MAP

NCDOT Project: I-5878
 PARCEL 49 - (FORMER WELCOME MART)
 601 Spring Branch Road, Dunn, Harnett County, North Carolina

SCALE:	FIGURE NO.
1" = 60'	3
DATE:	
PROJECT NUMBER	
4305-19-161	





REFERENCE:
GOOGLE EARTH PRO AERIAL PHOTOGRAPH
(DATED MARCH 4, 2018)



LEGEND

- ■ ■ ■ ■ Approximate TDEM Path
- Approximate Requested Survey Area

TDEM PATH LOCATION PLAN

NCDOT PROJECT: I-5878
PARCEL #49 - (FORMER WELCOME MART)
601 SPRING BRANCH ROAD, DUNN, HARNETT COUNTY, NORTH CAROLINA

SCALE:
AS SHOWN

DATE:
11/19/2019

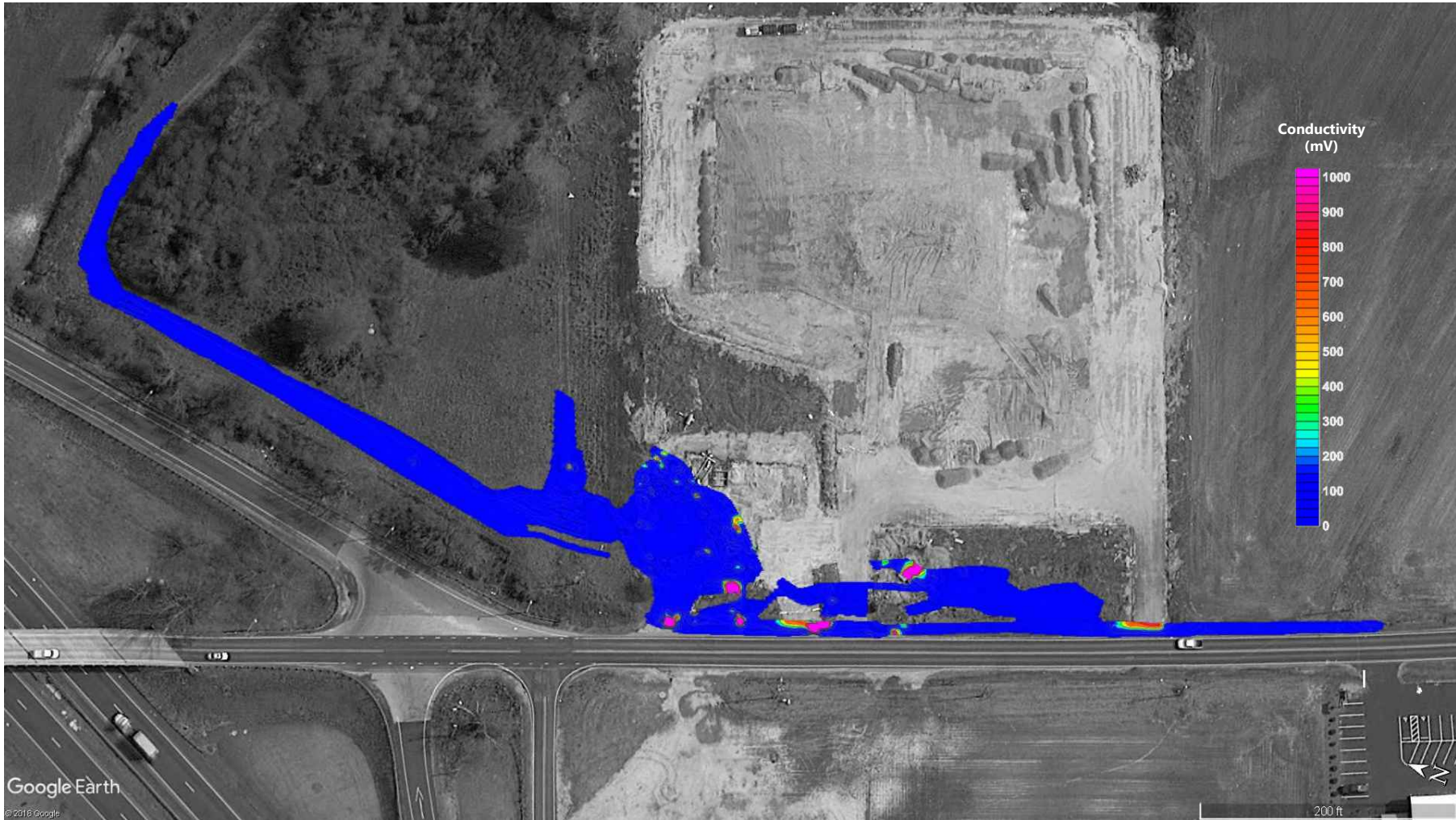
PROJECT NUMBER
4305-19-161

FIGURE NO.

4



REFERENCE:
GOOGLE EARTH PRO AERIAL PHOTOGRAPH
(DATED MARCH 4, 2018)



TDEM DATA PLOT A

NC DOT PROJECT: I-5878
PARCEL #49 - (FORMER WELCOME MART)
601 SPRING BRANCH ROAD, DUNN, HARNETT COUNTY, NORTH CAROLINA

SCALE:
AS SHOWN

DATE:
11/19/2019

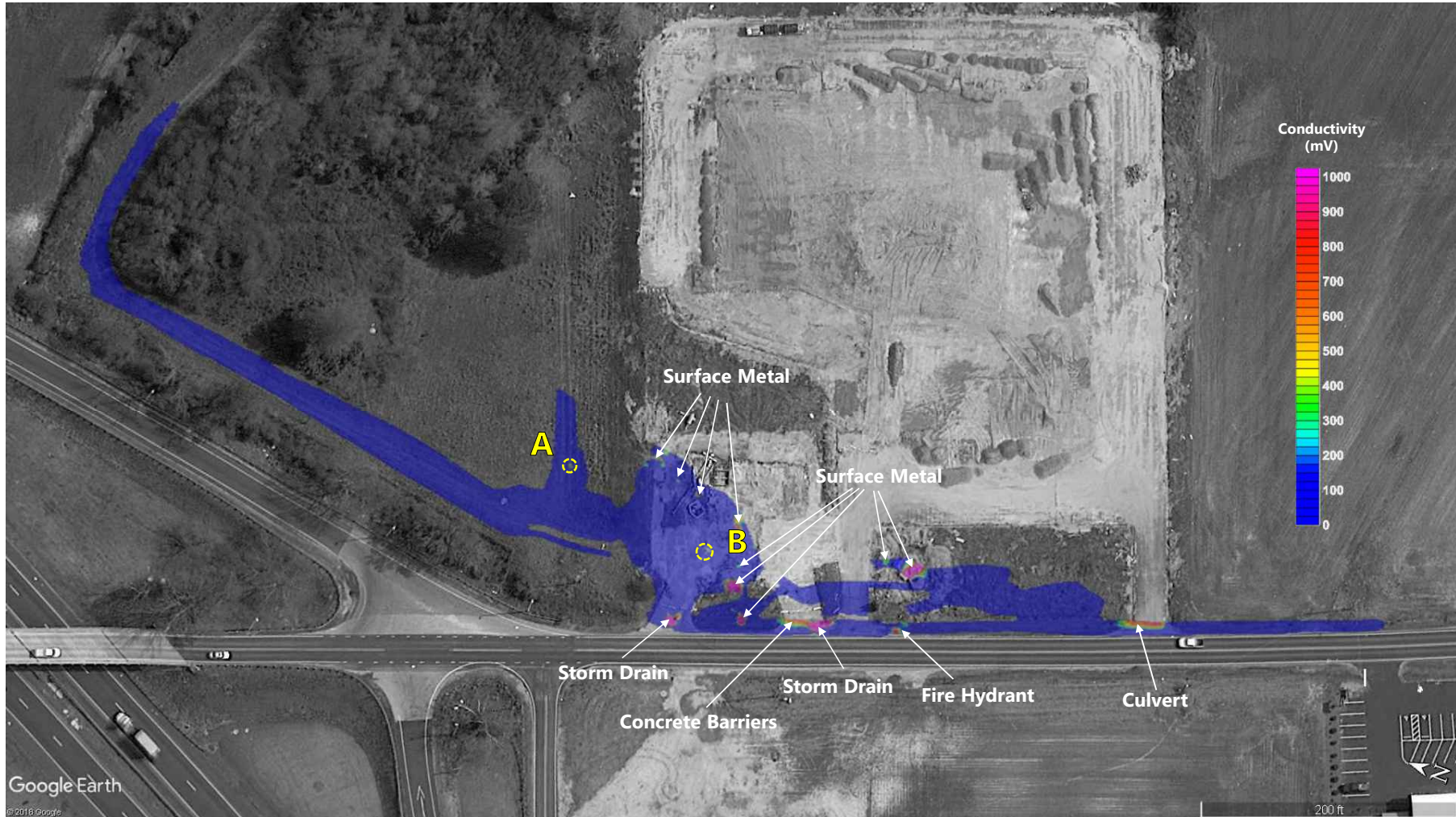
PROJECT NUMBER
4305-19-161

FIGURE NO.

5



REFERENCE:
GOOGLE EARTH PRO AERIAL PHOTOGRAPH
(DATED MARCH 4, 2018)



Google Earth
© 2018 Google

LEGEND

- Approximate Location of Geophysical Anomaly
- Approximate Location of Possible Utility

TDEM DATA PLOT B

NCDOT PROJECT: I-5878
PARCEL #49 - (FORMER WELCOME MART)
601 SPRING BRANCH ROAD, DUNN, HARNETT COUNTY, NORTH CAROLINA

SCALE:
AS SHOWN

DATE:
11/19/2019

PROJECT NUMBER
4305-19-161

FIGURE NO.

6



REFERENCE:
GOOGLE EARTH PRO AERIAL PHOTOGRAPH
(DATED MARCH 4, 2018)



Google Earth
© 2018 Google

200 ft

LEGEND

- Approximate Location of Geophysical Anomaly
- Approximate Location of GPR Profile
- Approximate Location of Possible Utility

GEOPHYSICAL ANOMALY LOCATION PLAN

NCDOT PROJECT: I-5878
PARCEL #49 - (FORMER WELCOME MART)
601 SPRING BRANCH ROAD, DUNN, HARNETT COUNTY, NORTH CAROLINA

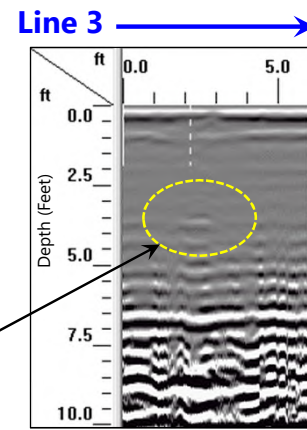
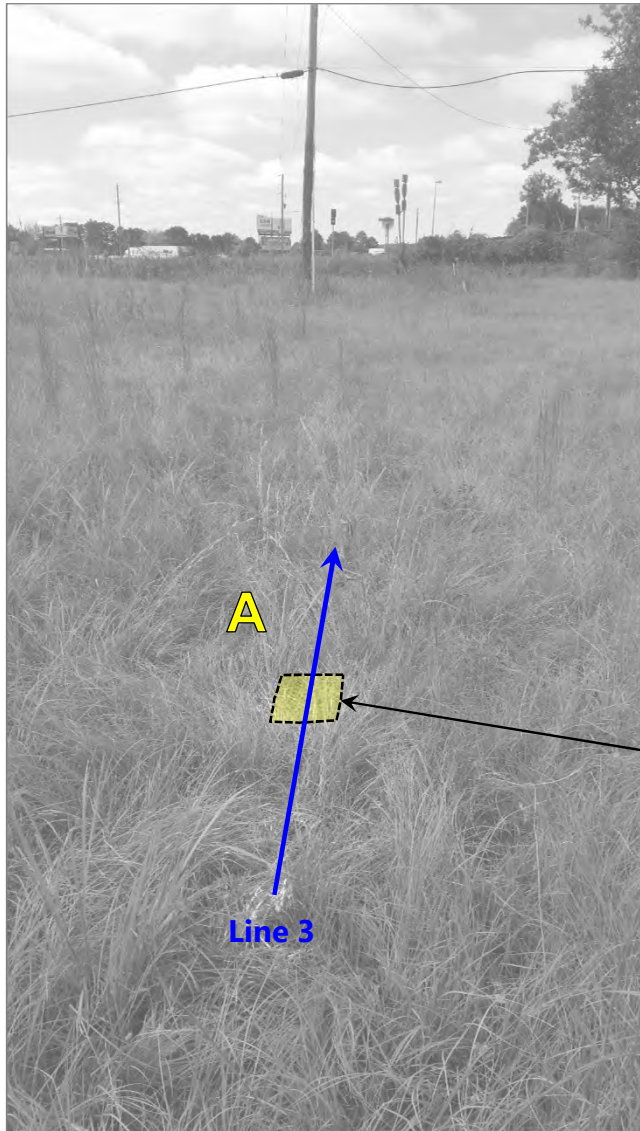
SCALE:
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DATE:
11/19/2019

PROJECT NUMBER
4305-19-161

FIGURE NO.

7



Anomaly A

Note: Presented GPR profile depths are based on an assumed average dielectric and should be considered approximate



EXAMPLE GPR DATA - LINE 3

NCDOT PROJECT: I-5878
 PARCEL #49 - (FORMER WELCOME MART)
 601 SPRING BRANCH ROAD, DUNN, HARNETT COUNTY, NORTH CAROLINA

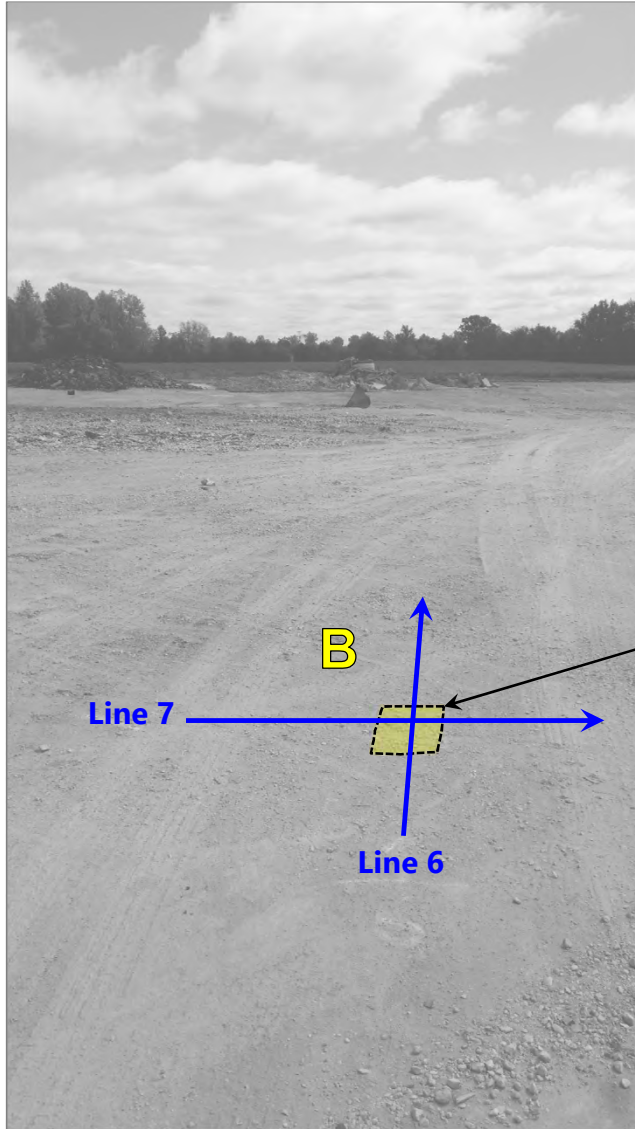
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DATE:
 11/19/2019

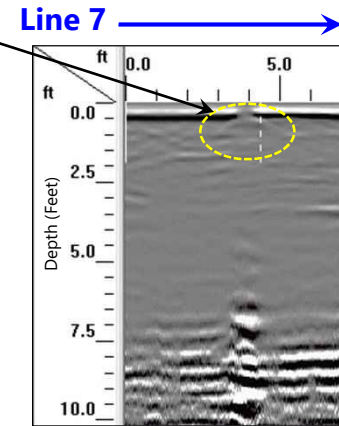
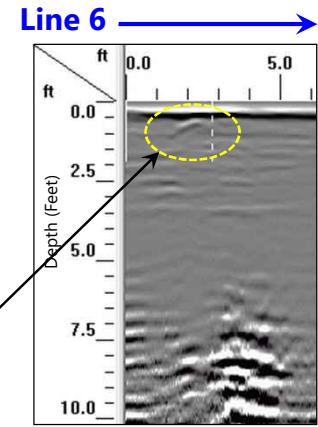
PROJECT NUMBER
 4305-19-161

FIGURE NO.

8



Anomaly B



EXAMPLE GPR DATA – LINES 6 AND 7

NCDOT PROJECT: I-5878
 PARCEL #49 - (FORMER WELCOME MART)
 601 SPRING BRANCH ROAD, DUNN, HARNETT COUNTY, NORTH CAROLINA

SCALE:
 AS SHOWN

DATE:
 11/19/2019

PROJECT NUMBER
 4305-19-161

FIGURE NO.

Note: Presented GPR profile depths are based on an assumed average dielectric and should be considered approximate

Appendix I – Photographs



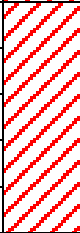

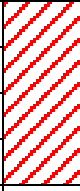

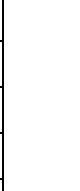

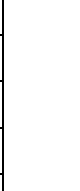

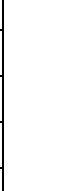

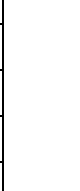

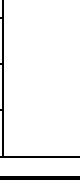









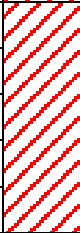

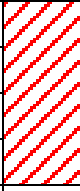

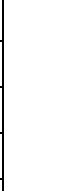

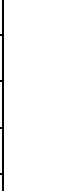

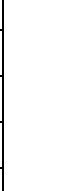

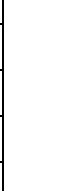

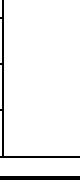





Preliminary Site Assessment Report
NCDOT Project I-5878, WBS Element 53078.1.1
Parcel 49-Former Welcome Mart
Dunn, Harnett County, North Carolina
S&ME Project No. 4305-19-161

		Date: 10/21/2019	Photographer: JTH				
1	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Location / Orientation</td> <td>View of site looking east.</td> </tr> <tr> <td>Remarks</td> <td>View is of former gasoline convenience store area.</td> </tr> </table>	Location / Orientation	View of site looking east.	Remarks	View is of former gasoline convenience store area.		
Location / Orientation	View of site looking east.						
Remarks	View is of former gasoline convenience store area.						

		Date: 10/21/2019	Photographer: JTH				
2	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Location / Orientation</td> <td>View looking east at former UST basin area.</td> </tr> <tr> <td>Remarks</td> <td>None</td> </tr> </table>	Location / Orientation	View looking east at former UST basin area.	Remarks	None		
Location / Orientation	View looking east at former UST basin area.						
Remarks	None						

Appendix II – Boring Logs

PROJECT:		NCDOT I-5878		BORING LOG: B-3						
DATE DRILLED:		Monday, October 21, 2019		BORING DEPTH (FT): 10						
DRILL RIG:		Geoprobe 54DT		WATER LEVEL:						
DRILLER:		Troxler Geologic, Inc.		CAVE-IN DEPTH: Not Applicable						
HAMMER TYPE:		Not Applicable		LOGGED BY: J. Honeycutt						
SAMPLING METHOD:		Macro-Core Sampler		NORTHING:						
DRILLING METHOD:		Macro-Core Sampler (3-in. OD)		EASTING:						
DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	WATER LEVEL	SAMPLE	PID READING (PPM)	LABORATORY ANALYSES	Sample Time / 1st 6in	2nd 6in	3rd 6in	N VALUE
		Silty Sand, Brown, Tan,								
		Clayey Sand, Orange, Tan,			2.3	No				
5		Clayey Sand, Red, Orange, Gray,			4.4	Yes	1030			
		Clayey Sand, Red, Orange, Gray,			2.0	No				
10		Boring Terminated at 10 Ft-BGS			1.7	No				
					1.6	No				
15										
20										
25										
30										

PROJECT:		NCDOT I-5878		BORING LOG: B-4						
DATE DRILLED:		Monday, October 21, 2019		BORING DEPTH (FT): 10						
DRILL RIG:		Geoprobe 54DT		WATER LEVEL:						
DRILLER:		Troxler Geologic, Inc.		CAVE-IN DEPTH: Not Applicable						
HAMMER TYPE:		Not Applicable		LOGGED BY: J. Honeycutt						
SAMPLING METHOD:		Macro-Core Sampler		NORTHING:						
DRILLING METHOD:		Macro-Core Sampler (3-in. OD)		EASTING:						
DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	WATER LEVEL	SAMPLE	PID READING (PPM)	LABORATORY ANALYSES	Sample Time / 1st 6in	2nd 6in	3rd 6in	N VALUE
		Silty Sand, Brown, Tan,								
		Clayey Sand, Orange, Tan,			2.2	No				
5		Clayey Sand, Red, Orange, Gray,			2.4	No				
		Clayey Sand, Red, Orange, Gray,			2.6	Yes	1115			
		Clayey Sand, Red, Orange, Gray,			2.4	No				
10		Boring Terminated at 10 Ft-BGS			0.6	No				
										
15										
20										
25										
30										

Appendix III – Laboratory Analytical Reports and Chain of Custody



Hydrocarbon Analysis Results

Client: S&ME
Address: 3201 SPRING FOREST RD
 RALEIGH NC

Samples taken Monday, October 21, 2019
Samples extracted Monday, October 21, 2019
Samples analysed Wednesday, October 23, 2019

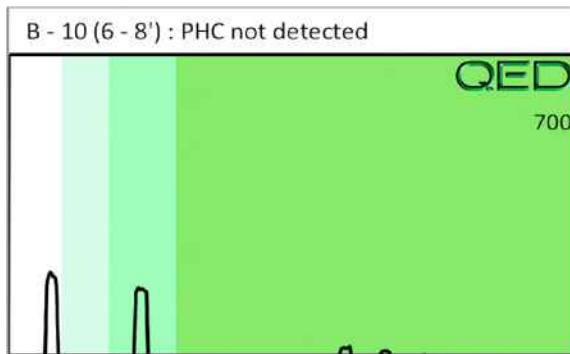
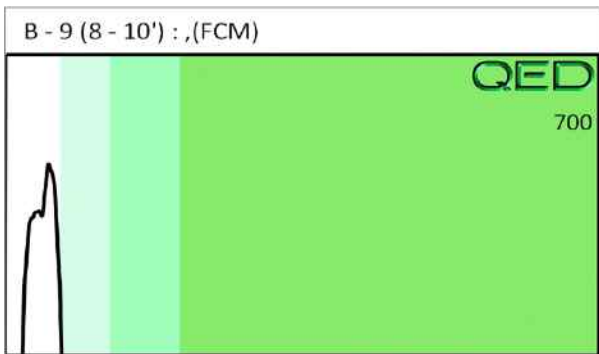
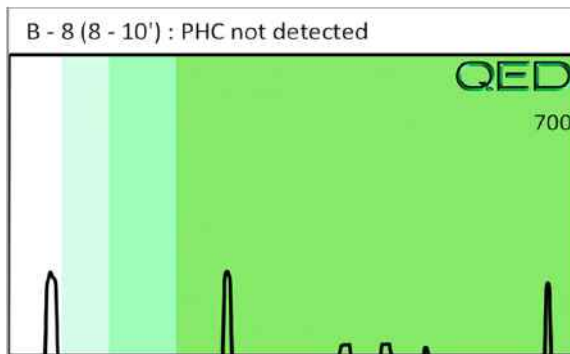
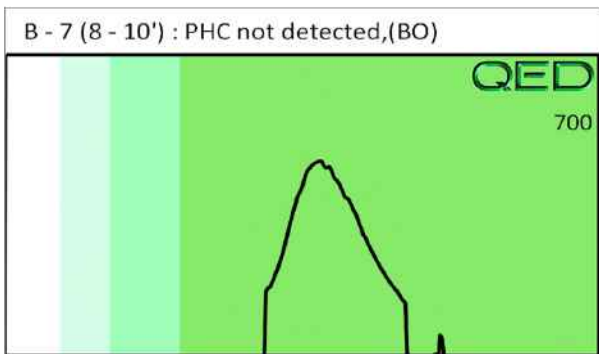
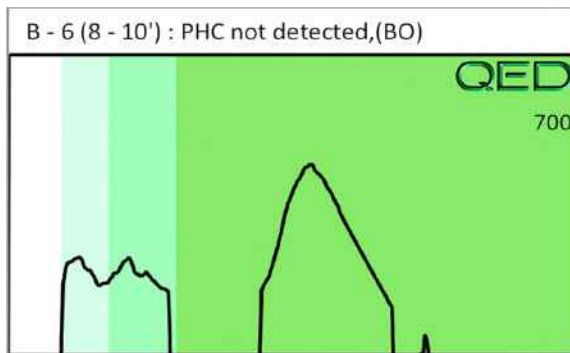
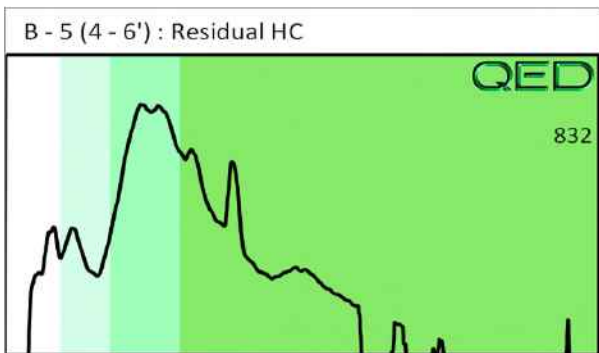
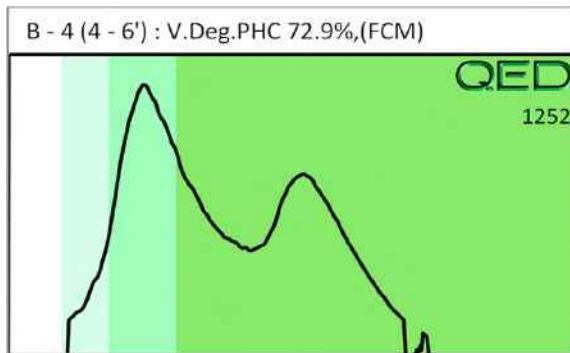
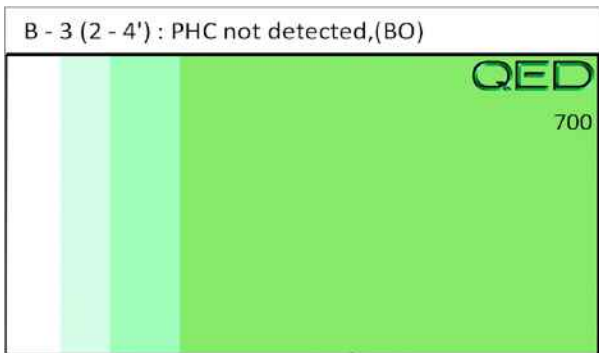
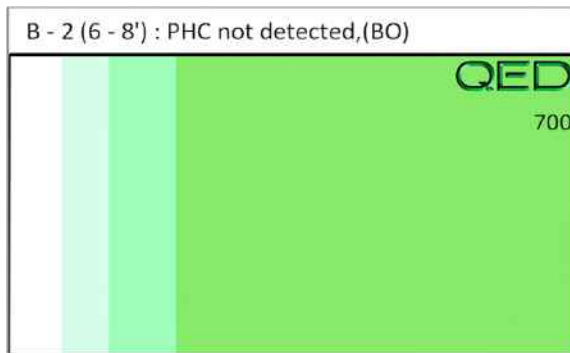
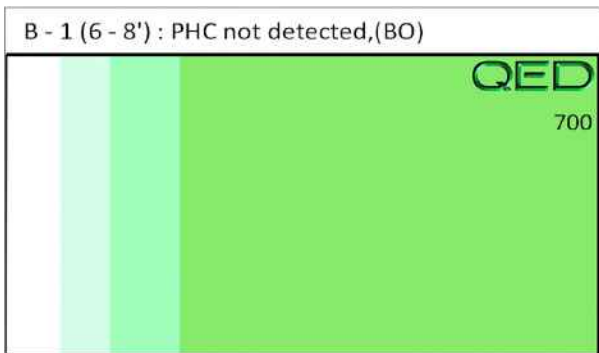
Contact: JAMIE HONEYCUTT

Operator JENN RYAN

Project: NCDOT I-5878 PARCEL 49

											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	B - 1 (6 - 8')	21.5	<0.54	<0.54	<0.54	<0.54	<0.11	<0.17	<0.021	0	0	0	PHC not detected,(BO)
s	B - 2 (6 - 8')	20.0	<0.5	<0.5	<0.5	<0.5	<0.1	<0.16	<0.02	0	0	0	PHC not detected,(BO)
s	B - 3 (2 - 4')	21.1	<0.53	<0.53	<0.53	<0.53	<0.11	<0.17	<0.021	0	0	0	PHC not detected,(BO)
s	B - 4 (4 - 6')	21.3	<0.53	<0.53	0.53	0.53	0.48	<0.17	<0.021	0	72.4	27.6	V.Deg.PHC 72.9%,(FCM)
s	B - 5 (4 - 6')	21.5	<0.54	<0.54	<0.54	0.28	0.28	<0.17	<0.021	0	93.6	6.4	Residual HC
s	B - 6 (8 - 10')	19.4	<0.49	<0.49	<0.49	<0.49	<0.1	<0.16	<0.019	0	0	100	PHC not detected,(BO)
s	B - 7 (8 - 10')	20.2	<0.5	<0.5	<0.5	<0.5	<0.1	<0.16	<0.02	0	0	100	PHC not detected,(BO)
s	B - 8 (8 - 10')	21.8	<0.55	<0.55	<0.55	<0.55	<0.11	<0.17	<0.022	0	0	0	PHC not detected
s	B - 9 (8 - 10')	11.5	<0.29	<0.29	<0.29	<0.29	<0.06	<0.09	<0.011	0	0	0	,(FCM)
s	B - 10 (6 - 8')	20.3	<0.51	<0.51	<0.51	<0.51	<0.1	<0.16	<0.02	0	0	0	PHC not detected
Initial Calibrator QC check			OK			Final FCM QC Check			OK			102.4 %	

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



Address: 3221 Spring Forest Rd
Raleigh NC
 Contact: Jamie T Honeycutt
 Project Ref.: NC007 J-5978 Parcel 49
 Email: jhoneycutt@smcinc.com
 Phone #: 910 577-7614
 Collected by: Jamie T Honeycutt

DUNN, NC



RAPID ENVIRONMENTAL DIAGNOSTICS

MARBIONC Bldg, Suite 2003
Wilmington, NC 28409

Each UVF sample will be analyzed for total BTEX, GRO, DRO, TPH, PAH total aromatics and BaP. Standard GC Analyses are for BTEX and Chlorinated Solvents: VC, 1,1 DCE, 1,2 cis DCE, 1,2 trans DCE, TCE, and PCE. Specify target analytes in the space provided below.

CHAIN OF CUSTODY AND ANALYTICAL REQUEST FORM

Sample Collection Date/Time	TAT Requested		Analysis Type		Initials	Sample ID	Total Wt.	Tare Wt.	Sample Wt.
	24 Hour	48 Hour	UVF	GC					
10-21-19 / 0945		✓	✓		JTN	B1 6-8'	56.9	44.8	12.1
1000.						B2 6-8'	57.8	44.8	13.0
1030						B3 2-4'	57.3	45.0	12.3
1115						B4 4-6'	57.4	45.2	12.2
1130						B5 4-6'	57.2	45.1	12.1
11200						B6 8-10'	57.4	44.0	13.4
11340						B7 8-10'	57.5	44.6	12.9
11400						B8 8-10'	56.5	44.6	11.9
11415						B9 8-10'	57.3	45.1	12.2
11445						B10 8-10' 6-8'	57.7	44.9	12.8

COMMENTS/REQUESTS: TARGET GC/UVF ANALYTES:

Relinquished by	Accepted by	Date/Time	RED Lab USE ONLY
<i>Jamie T Honeycutt</i>	MM	1220	
Relinquished by	Accepted by	Date/Time	
			Ref. No

10