



June 5, 2020

Ashley B. Cox, Jr, LG
Geotechnical Engineering Unit
North Carolina Department of Transportation
1020 Birch Ridge Drive
Raleigh, NC 27610

RE: PHASE II INVESTIGATION OF PARCEL 265
Texas Quick Fuel, Laxmi Food Mart, Inc.
4990 Reidsville Road, Walkertown, NC
ESP Project No. GR22.325

TIP Number: R-2577A
WBS Number: 37405.1.2
County: FORSYTH
Description: US 158 from North of US 421 to SR 1965 (Belews Creek Road)

Dear Mr. Cox:

ESP Associates, Inc. (ESP) is pleased to submit this report on our GeoEnvironmental Phase II Investigation of the subject parcel. This work was performed in accordance with your Request for Proposal received on April 14, 2020, and our Cost Proposal dated April 23, 2020.

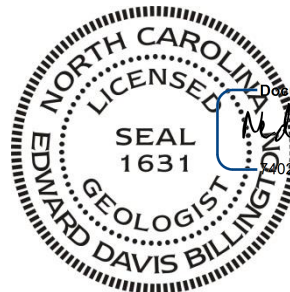
We appreciate the opportunity to assist you during this phase of the project. If you should have any questions concerning this report, or if we may be of further assistance, please contact us.

Sincerely,

ESP Associates, Inc.

A handwritten signature in blue ink, appearing to read "Edward D. Billington".

Edward D. Billington, PG
Senior Geologist/Geophysicist
EDB/CRB/NAZ



Digitally signed by:

Edward D. Billington
20200544DC92F4E0...

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1.0 INTRODUCTION

The North Carolina Department of Transportation (NCDOT) is planning to widen U.S. 158 (Reidsville Road) from north of U.S. 421/I-40 Business to Belews Creek Road (S.R. 1965) in Forsyth County. The primary purpose of this project is to improve traffic operations. The NCDOT requested that ESP Associates, Inc. (ESP) perform a Phase II geoenvironmental investigation of the proposed right-of-way (ROW) and proposed temporary construction easement (E) (collectively, proposed ROW/easement) of Parcel 265 to locate possible underground storage tanks (USTs), sample soil, and delineate potential contaminated soil. Parcel 265 is located on the south side of Reidsville Road between at the intersection with Old Belews Creek Road (Figure 1).

2.0 HISTORY

2.1 Ownership

The following is the current parcel ownership, according to the Forsyth County GIS (<https://www.forsyth.cc/Tax/geodata.aspx>):

- Deed Date: 5/26/2005
- Current Owner: Laxmi Food Mart, Inc
- Owner's Address: 2184 Cherrywood Dr., Clemmons NC 27012

2.2 NCDEQ Information

This parcel was listed as Site 5 in the 2004 Phase 1 report that was provided by the NCDOT. We checked the following sources at the NCDEQ with the results summarized below:

- Division of Waste Management Site Locator Tool
 - Facility #16179
 - Indicated UST Incident #30195
 - Site Name: Caudles Tire Sales - B
 - Numerous files in Documents Link from 1997 to 1998.
- NC UST Facility Operating Permits
 - Facility #16179 (3 USTs)
- Registered USTs Database
 - 1 UST closed by removal on 7/15/1992
 - Facility: Caudles Discount Tire Sales
 - 3 Registered USTs installed on 9/29/1998
 - Facility: Quick Mart
 - 10,000 and 8,000-gallon gasoline USTs
 - 8,000-gallon kerosene UST
- Incident Management Database (Regional USTs)
 - Incident: None listed

- Name: Caudles Tire Sales
- UST No.: WS-1994
- Date Occurred: None listed
- Closed out: 4/14/1993
- Contamination: No
- Comment: None
- Incident: 18056
 - Name: Caudles Tire Sales - B
 - UST No.: WS-5245
 - Date Occurred: 7/14/1997
 - Closed out: 12/8/1997
 - Contamination: None listed (probably TPH contaminated soil from the former dispenser island that was land-farmed on the south end of the parcel).
 - Comment: Samples from Pump Island Associated with Prev. Removed USTs.
- Winston-Salem Regional NCDEQ Office
 - Provided copies of the several reports that were duplicates of reports in NCDEQ Site Locator linked documents.
- Summary
 - NCDEQ-held reports reference closure of USTs probably in the 1970s.
 - The former tank pit for the UST removed in 1992 was located approximately at the north end of the current canopy. The dispenser island was located approximately 10 feet south of the former tank pit. Our closest boring is B265-3.
 - A copy of a schematic figure from the July 1997 Site Sensitivity Evaluation (SSE) report showing the relative locations of pertinent site features is included in Appendix D.

3.0 SITE OBSERVATIONS

During our May 2020 field work, the site was occupied by a petroleum station and market (Texas Quik Fuel). The ground in the study area was covered by asphalt pavement and grass. We could not locate a water meter for the site. The existing tank pit and the dispensers were located outside of the proposed ROW/easement.

4.0 METHODS

ESP performed a geophysical study of the area designated by the NCDOT on May 4, 2020. The geophysical investigation area was approximately 0.25 acres and encompassed the proposed ROW/easement. We performed direct-push drilling and sampling of subsurface soils on May 15, 2020. A photoionization detector (PID) was used to screen subsurface soils in the field and select soil samples to send for laboratory analysis. Groundwater was not encountered during the drilling investigation.

4.1 Geophysics

ESP performed a metal detector study over the accessible areas of the site using a Geonics EM61 MK2 with a line spacing of approximately three feet (Figures 3 and 4). Location control was provided in real-time using a differential global positioning system (DGPS). No EM61 anomalies were observed that required additional investigation using ground-penetrating radar (GPR). We use a Noggin 250 MHz GPR to confirm the limits of the active USTs and mark a few unknown lines in the study area.

4.2 Borings

ESP performed direct-push drilling activities within the proposed ROW/easement of Parcel 265 using a subcontractor, SAEDACCO of Fort Mill, South Carolina. Eight borings were drilled, designated B265-1 through B265-8 (Figure 7). The soil borings were advanced using a GeoProbe 7822DT drill rig. Boring B265-3 was located near the previous tank pit. Borings B265-5 and B265-7 were located near proposed drop inlets. Boring B265-6 was located near the existing diesel dispenser.

Soil samples were obtained to a maximum depth of approximately 10 feet using two 5-foot long Macro-Core® tubes. Soil cores varied in recovery from 3.4 to 5.0 feet (68 to 100 percent recovery). The sampling equipment was decontaminated prior to drilling and between borings by the driller using a Liquinox® detergent solution.

4.3 Soil Sample Protocol

Representative soil samples were taken from the Macro-Core tubes at approximate one-foot intervals by the ESP field geologist while wearing nitrile disposable gloves. Each sample was placed in a sealed plastic bag and then kept in a warm area for approximately 10 to 15 minutes prior to measuring volatile organic compound (VOC) levels in the head space with the PID. The maximum PID readings in each boring ranged from 0.4 to 1.4 parts per million (ppm) (Table 1).

Seven soil samples were selected for laboratory analysis, as listed in Table 2. For each selected sample, an approximate 10-gram soil sample was collected from the sample bag using a Terra Core™ sampler and placed into a laboratory-supplied 40-milliliter volatile organic analysis (VOA) vial containing methanol. Once sealed, the vial was labeled with the sample identification number and then shaken vigorously for about one minute. The samples were packed on ice and sent via overnight delivery to RED Lab, LLC (RED Lab), located in Wilmington, North Carolina, following proper chain-of-custody procedures (Appendix C).

RED Lab used a QED Hydrocarbon Analyzer to quantitatively analyze the soil samples using the ultraviolet fluorescence (UVF) method for benzene, toluene, ethylbenzene, and xylene (BTEX);

gasoline range organics (GRO); diesel range organics (DRO); total petroleum hydrocarbons (TPH); total aromatics; polycyclic aromatic hydrocarbons (PAHs); and benzo(a)pyrene (BaP).

4.4 Groundwater

Groundwater was not encountered in the 8 borings.

5.0 RESULTS

5.1 Geophysics

The EM61 early time gate data show the response from both shallow and deeper metallic objects (Figure 3). The differential response reduces the effect of shallow anomalies and emphasizes anomalies from larger and more deeply buried metallic objects, such as USTs (Figure 4). Our evaluation of the differential response indicated the anomalies were caused by known site features. The GPR data indicated that the known USTs did not extend outside the edges of the concrete slab over the USTs.

The EM61 early time gate response and differential response are shown on the plan sheet on Figures 5 and 6, respectively.

5.2 Sample Data

The soil sample UVF hydrocarbon analysis results for BTEX, GRO, DRO, and PAHs are presented in Table 2. The RED Lab laboratory report, which also includes results for TPH, total aromatics, and BaP, is provided in Appendix B. Values are provided in milligrams per kilogram (mg/kg or ppm).

5.3 Sample Observations

The results of the laboratory testing indicated that DRO was detected in 3 samples but the readings were below the NCDEQ action level of 100 ppm for DRO (Table 2). BTEX, GRO, and BaP values were below the laboratory detection limits for the 7 samples tested. PAHs were detected in one sample with a value of 0.21 ppm (Appendix B).

6.0 CONCLUSIONS

The results of the Phase II investigation for Parcel 265 of NCDOT Project R-2577A indicate that there is no evidence for abandoned USTs in the proposed ROW/easement. Laboratory testing detected DRO petroleum compounds in 3 of the 7 soil samples tested but the readings were less than the NCDEQ action level of 100 ppm for DRO. The PID readings during sampling ranged from 0.1 to 1.4 ppm.

7.0 RECOMMENDATIONS

No limitations on construction activities or special handling of excavated soil are recommended for Parcel 265. Groundwater was not encountered in the upper 10 feet in the study area. The existing tank pit and dispenser islands are outside of the proposed ROW/easement.

8.0 LIMITATIONS

ESP's professional services have been performed, findings obtained, and recommendations prepared in accordance with customary principles and practices in the fields of environmental science and engineering. ESP is not responsible for the independent conclusions, opinions, or recommendations made by others based on the data presented in this report.

The passage of time may result in a change in the environmental characteristics at this site and surrounding properties. ESP does not warrant against future operations or conditions, or against operations or conditions present of a type or at a location not investigated. ESP does not assume responsibility for other environmental issues that may be associated with the subject site.

TABLES

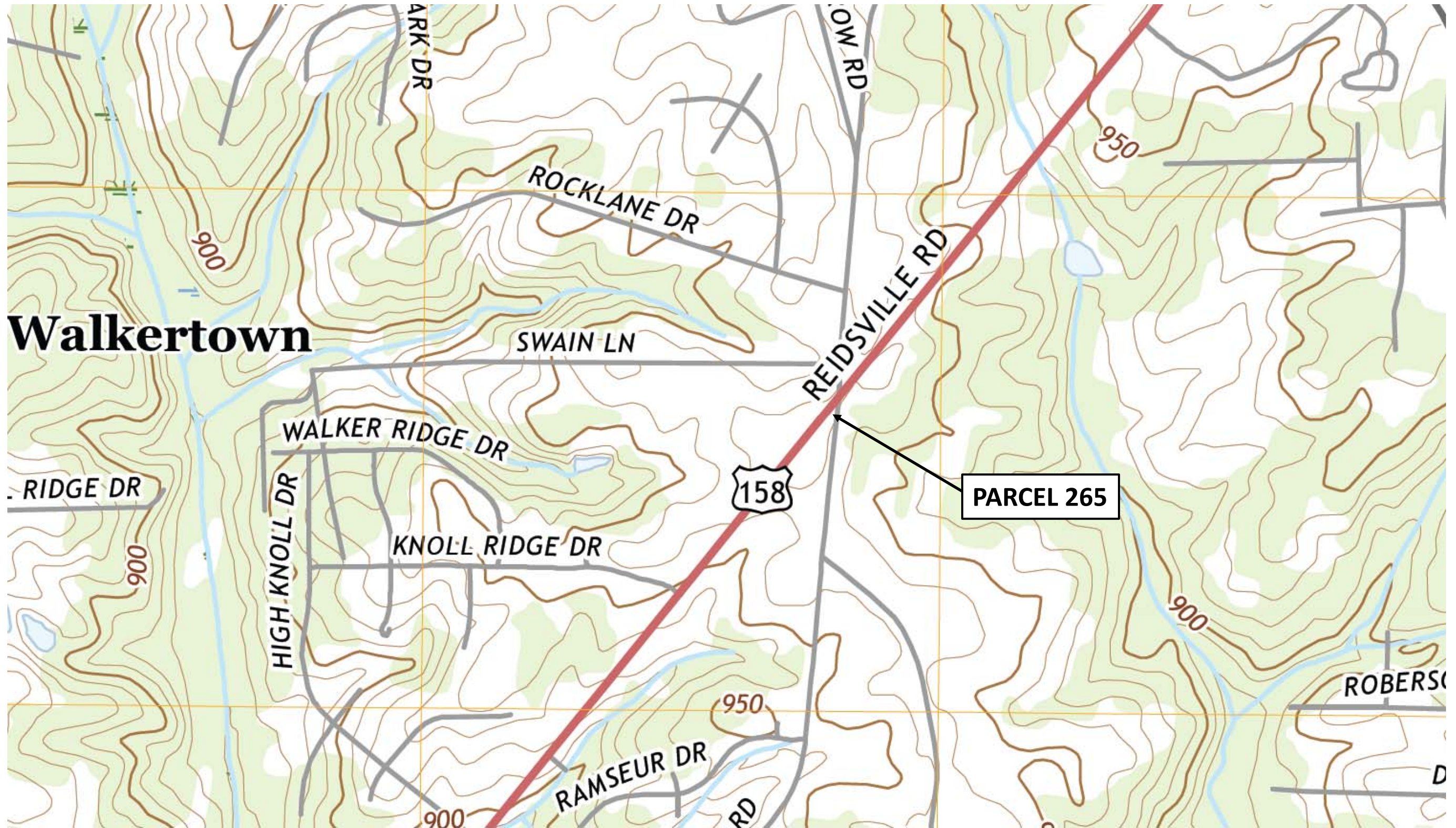
TABLE 1
SOIL SAMPLE PID READINGS

Boring	Sample Depth Range with PID > 10 ppm (feet bgs)	Maximum PID Reading (ppm) and Sample Depth (feet bgs)
B265-1	none	0.4 (2.0-2.5)
B265-2	none	1.4 (3.0-3.5)
B265-3	none	0.9 (1.0-1.5)
B265-4	none	0.6 (3.0-3.5)
B265-5	none	1.3 (3.0-3.5)
B265-6	none	0.5 (2.0-2.5)
B265-7	none	0.6 (3.0-3.5)
B265-8	none	0.6 (5.0-5.5)

TABLE 2
SOIL SAMPLE UVF RESULTS SUMMARY

Boring	Sample ID (depth in feet bgs)	Date Collected	BTEX (C6-C9) (mg/kg)	GRO (C5-C10) (mg/kg)	DRO (C10-C35) (mg/kg)	PAHs (mg/kg)
B265-2	S3 (3.0-3.5)	5/15/20	<0.5	<0.5	3.9	0.21
B265-3	S9 (9.0-9.5)	5/15/20	<0.49	<0.49	<0.49	<0.16
B265-4	S3 (3.0-3.5)	5/15/20	<0.54	<0.54	1.1	<0.17
B265-5	S7 (7.0-7.5)	5/15/20	<0.47	<0.47	<0.47	<0.15
B265-6	S6 (6.0-6.5)	5/15/20	<0.47	<0.47	<0.47	<0.15
B265-7	S3 (3.0-3.5)	5/15/20	<0.45	<0.45	0.72	<0.14
B265-8	S6 (6.0-6.5)	5/15/20	<0.34	<0.34	<0.34	<0.11

FIGURES



From: USGS US Topo 7.5 - minute map for WALKERTOWN, NC, Date: 2019, Original Scale: 1:24,000

PROJECT NO.	GR22.325
SCALE	AS SHOWN
DATE	5/29/2020
BY	CRP/EDB

**FIGURE 1 – PARCEL 265, LAXMI FOOD MART, INC
SITE VICINITY MAP**

**NCDOT PROJECT R-2577A
US 158 FROM NORTH OF US 421 TO SR 1965
FORSYTH COUNTY, NORTH CAROLINA**



ESP Associates, Inc.
7011 Albert Pick Rd.,
Suite E
Greensboro, NC 27409
336.334.7724
www.espassociates.com



A. Photograph from north end of parcel, looking south. Diesel dispenser in foreground.



B. Photograph from southeast end of parcel, looking north.



C. Photograph from southwest end of parcel, looking northeast.



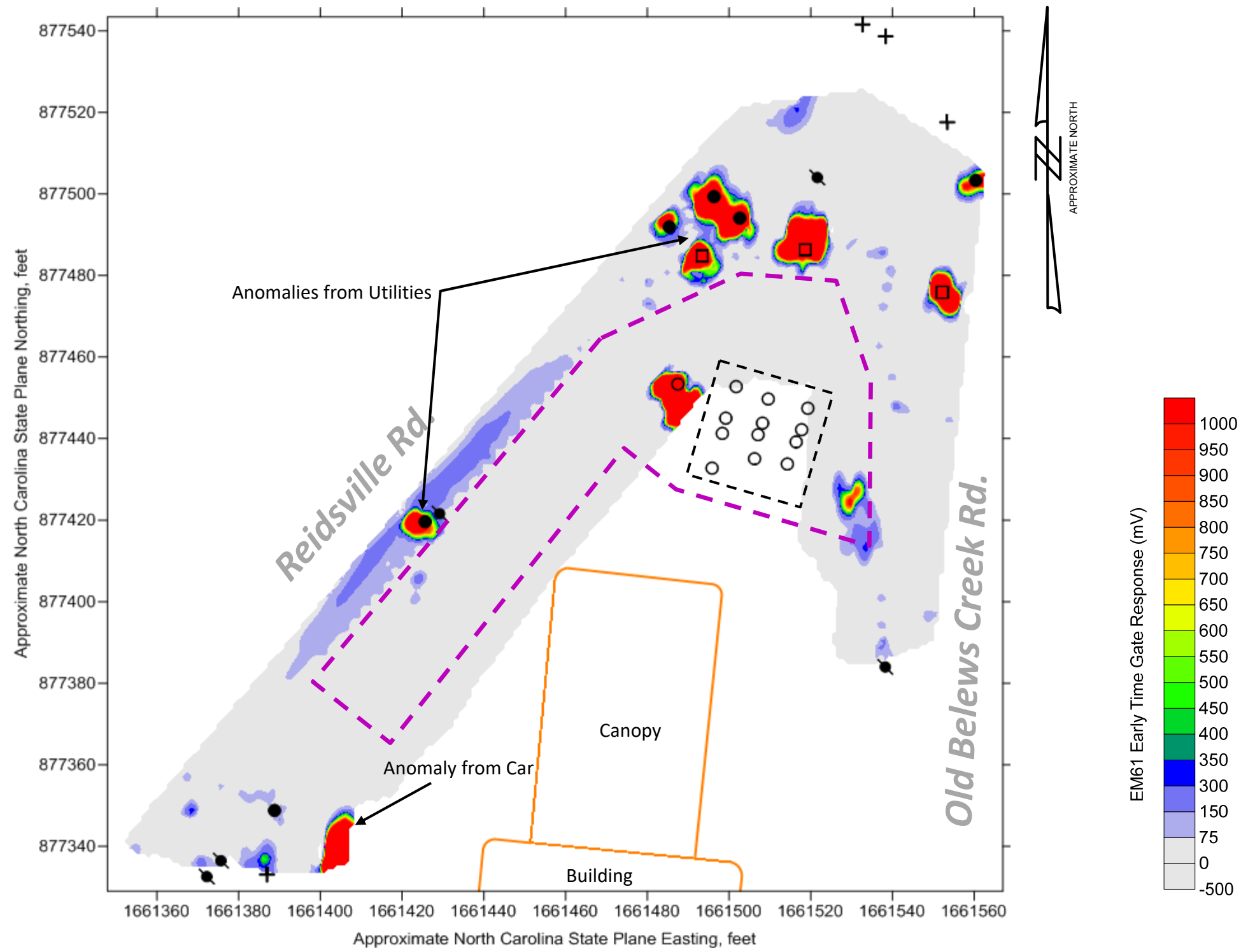
D. Photograph of tank bed, looking south.

PROJECT NO.	GR22.325
SCALE	N/A
DATE	5/29/2020
BY	CRP/EDB

FIGURE 2 – PARCEL 265, LAXMI FOOD MART, INC
SITE PHOTOGRAPHS
NCDOT PROJECT R-2577A
US 158 FROM NORTH OF US 421 TO SR 1965
FORSYTH COUNTY, NORTH CAROLINA



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EXPLANATION	
◆	Miscellaneous metal object (pipe, debris, etc.)
□	Utility Box (water meter, electrical outlet, etc.)
⊠	Drop Inlet, Catch Basin, Manhole
●	Culvert, storm drain pipe
●	Utility pole
+	Guy wire anchor
●	Sign pole, other pole
○	UST Fill Port or Valve Cover
⊕	Monitoring Well
- -	Buried utility line (marked by others)
□	EM61 Data Collection Areas
⊔	GPR Data Collection Areas
□	Underground Storage Tank

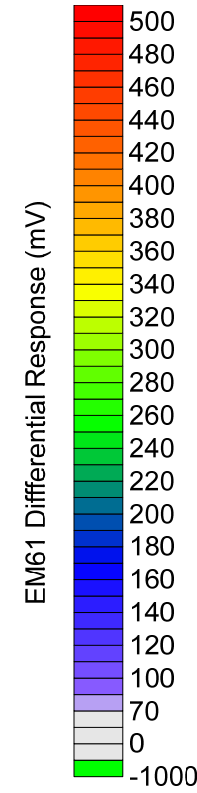
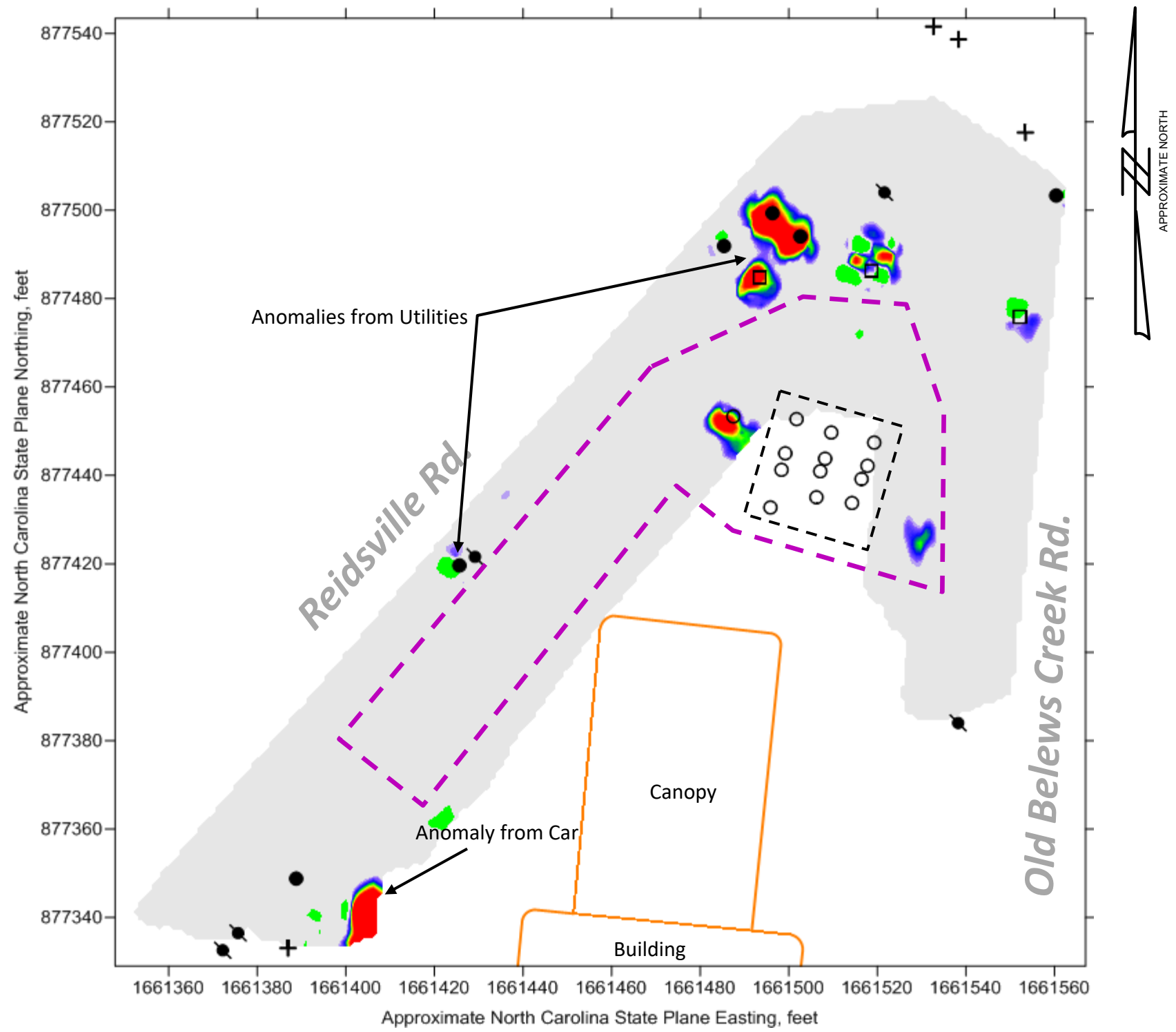
Note: Locations of data and features are approximate and were collected using a DGPS instrument. ESP makes no guarantees as to the accuracy of these locations. Coordinates on the axes of the maps are approximate and provided for general reference only.

PROJECT NO.	GR22.325
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BY	CRP/EDB

FIGURE 3 – PARCEL 265 , LAXMI FOOD MART, INC
EM61 EARLY TIME GATE DATA
 NCDOT PROJECT R-2577A
 US 158 FROM NORTH OF US 421 TO SR 1965
 FORSYTH COUNTY, NORTH CAROLINA



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EXPLANATION	
◆	Miscellaneous metal object (pipe, debris, etc.)
□	Utility Box (water meter, electrical outlet, etc.)
⊠	Drop Inlet, Catch Basin, Manhole
⊙	Culvert, storm drain pipe
●	Utility pole
+	Guy wire anchor
●	Sign pole, other pole
○	UST Fill Port or Valve Cover
⊕	Monitoring Well
- -	Buried utility line (marked by others)
■	EM61 Data Collection Areas
⊔	GPR Data Collection Areas
□	Underground Storage Tank

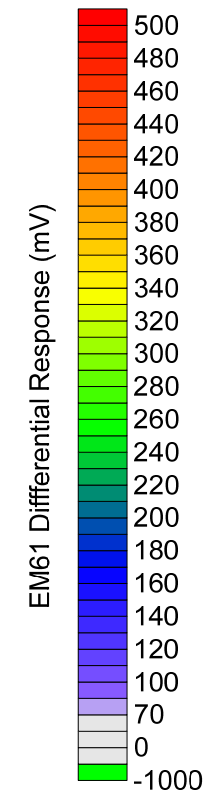
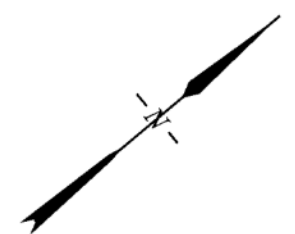
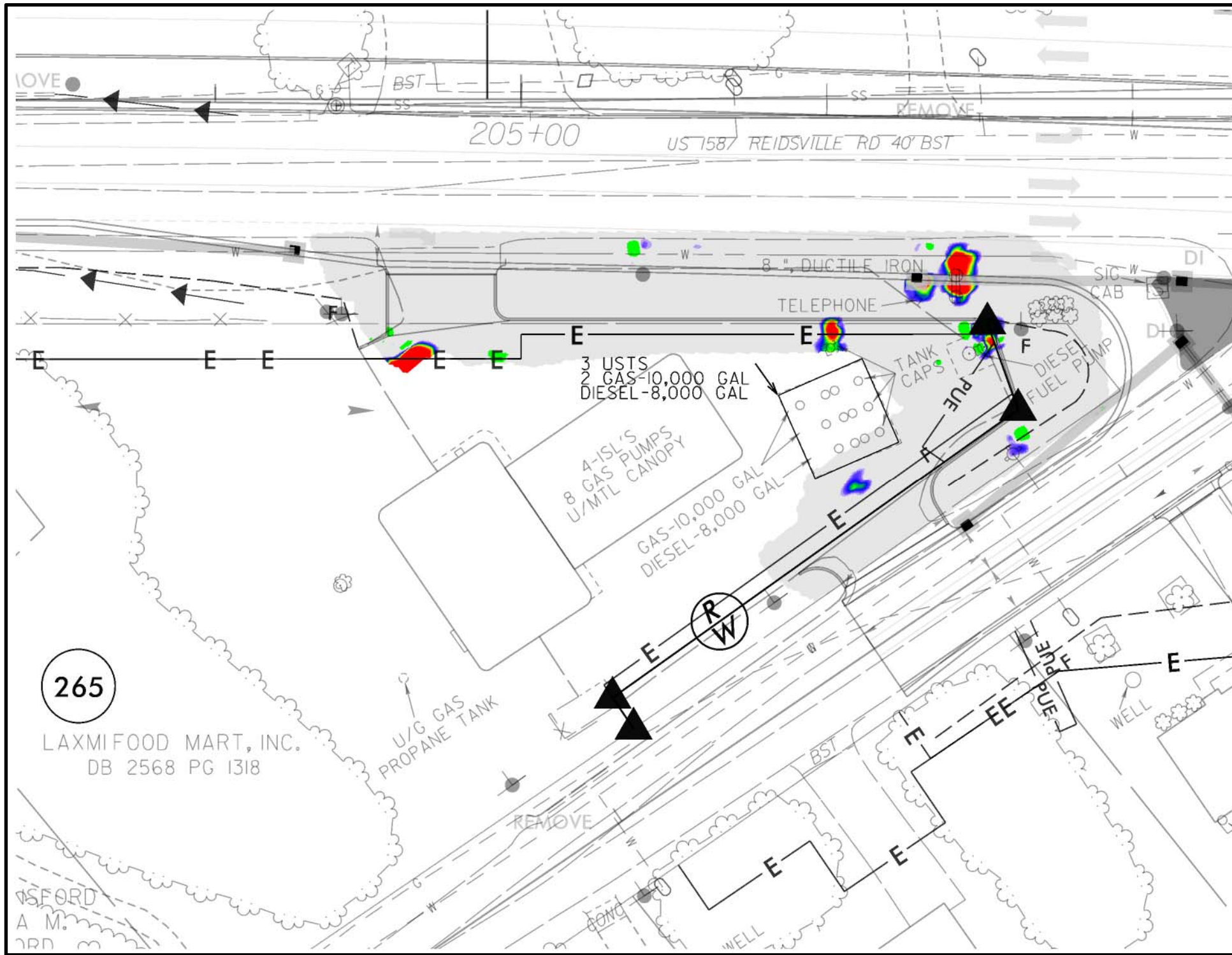
Note: Locations of data and features are approximate and were collected using a DGPS instrument. ESP makes no guarantees as to the accuracy of these locations. Coordinates on the axes of the maps are approximate and provided for general reference only.

PROJECT NO.	GR22.325
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FIGURE 4 – PARCEL 265 , LAXMI FOOD MART, INC
EM61 DIFFERENTIAL DATA
NCDOT PROJECT R-2577A
US 158 FROM NORTH OF US 421 TO SR 1965
FORSYTH COUNTY, NORTH CAROLINA



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- R-2577A_Geo_env.dgn
- R-2577A_hyd_drn.dgn
- R2577A_ncdot_fs.dgn
- R-2577A_rdy_dsn.dgn
- R-2577A_rdy_dsn_driveways.dgn
- R-2577A_rdy_dsn_guardrail.dgn
- R-2577A_rdy_HISTORIC.dgn
- R-2577A_rdy_map_owner_no.dgn
- R-2577A_rdy_row.dgn
- R-2577A_rdy_row_AG.dgn
- R-2577A_rdy_row_SB.dgn
- R-2577A_rdy_ss.dgn



See Figure 9 for explanation of symbols and line types

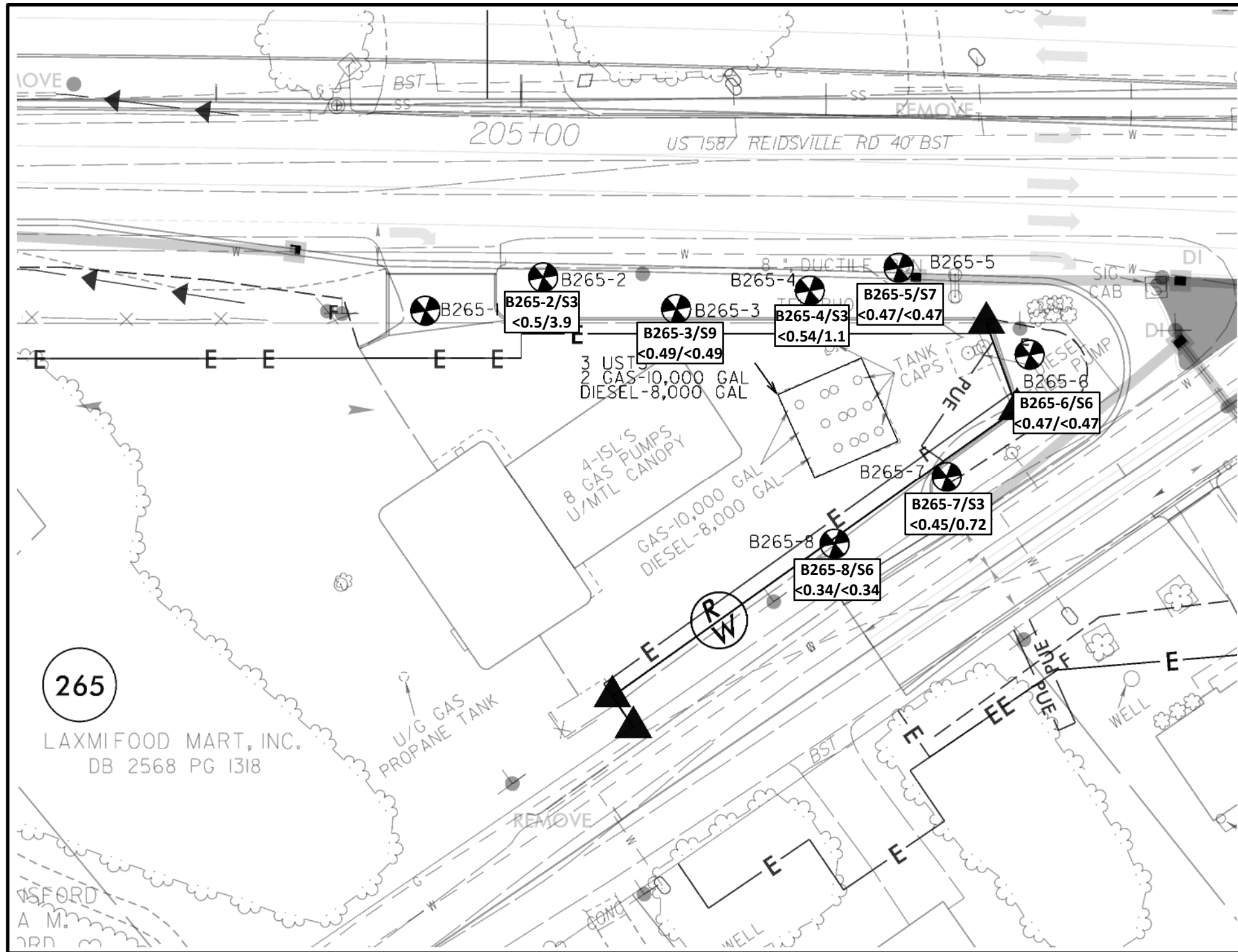
PROJECT NO.	GR22.325
SCALE	1" = 40'
DATE	5/29/2020
BY	CRP/EDB

FIGURE 6 – PARCEL 265, LAXMI FOOD MART, INC
EM61 DIFFERENTIAL DATA ON PLAN SHEET

NCDOT PROJECT R-2577A
US 158 FROM NORTH OF US 421 TO SR 1965
FORSYTH COUNTY, NORTH CAROLINA



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Explanation	
Maximum Analytical Results per Boring	
B265-2/S3	Boring No./Sample No.
<0.5/3.9	GRO/DRO (mg/kg, ppm)

- R-2577A_Geo_env.dgn
- R-2577A_hyd_drn.dgn
- R2577A_ncdot_fs.dgn
- R-2577A_rdy_dsn.dgn
- R-2577A_rdy_dsn_driveways.dgn
- R-2577A_rdy_dsn_guardrail.dgn
- R-2577A_rdy_HISTORIC.dgn
- R-2577A_rdy_map_owner_no.dgn
- R-2577A_rdy_row.dgn
- R-2577A_rdy_row_AG.dgn
- R-2577A_rdy_row_SB.dgn
- R-2577A_rdy_ss.dgn



See Figure 9 for explanation of symbols and line types

PROJECT NO.	GR22.325
SCALE	1" = 40'
DATE	5/29/2020
BY	CRP/EDB

FIGURE 8 – PARCEL 265, LAXMI FOOD MART, INC
SOIL ANALYTICAL RESULTS ON PLAN SHEET

NCDOT PROJECT R-2577A
US 158 FROM NORTH OF US 421 TO SR 1965
FORSYTH COUNTY, NORTH CAROLINA



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12/2/2016

STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS CONVENTIONAL PLAN SHEET SYMBOLS

PROJECT REFERENCE NO. SHEET NO.

BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	○
Computed Property Corner	-----
Property Monument	□
Parcel/Sequence Number	⑫③
Existing Fence Line	-x-x-x-
Proposed Woven Wire Fence	-o-o-o-
Proposed Chain Link Fence	-□-□-□-
Proposed Barbed Wire Fence	-◇-◇-◇-
Existing Wetland Boundary	-----
Proposed Wetland Boundary	-----
Existing Endangered Animal Boundary	-----
Existing Endangered Plant Boundary	-----
Existing Historic Property Boundary	-----
Known Contamination Area: Soil	-S-S-S-
Potential Contamination Area: Soil	-S-S-S-
Known Contamination Area: Water	-W-W-W-
Potential Contamination Area: Water	-W-W-W-
Contaminated Site: Known or Potential	☠☠

BUILDINGS AND OTHER CULTURE:

Gas Pump Vent or U/G Tank Cap	○
Sign	○
Well	○
Small Mine	✕
Foundation	□
Area Outline	□
Cemetery	↑
Building	□
School	□
Church	□
Dam	□

HYDROLOGY:

Stream or Body of Water	-----
Hydro, Pool or Reservoir	-----
Jurisdictional Stream	-----
Buffer Zone 1	-----
Buffer Zone 2	-----
Flow Arrow	←
Disappearing Stream	-----
Spring	○
Wetland	-----
Proposed Lateral, Tail, Head Ditch	-----
False Sump	-----

RAILROADS:

Standard Gauge	-----
RR Signal Milepost	○
Switch	□
RR Abandoned	-----
RR Dismantled	-----

RIGHT OF WAY & PROJECT CONTROL:

Secondary Horiz and Vert Control Point	◆
Primary Horiz Control Point	○
Primary Horiz and Vert Control Point	●
Exist Permanent Easment Pin and Cap	◇
New Permanent Easment Pin and Cap	◆
Vertical Benchmark	⊠
Existing Right of Way Marker	△
Existing Right of Way Line	-----
New Right of Way Line	-----
New Right of Way Line with Pin and Cap	-----
New Right of Way Line with Concrete or Granite R/W Marker	-----
New Control of Access Line with Concrete C/A Marker	-----
Existing Control of Access	-----
New Control of Access	-----
Existing Easement Line	-----
New Temporary Construction Easement	-----
New Temporary Drainage Easement	-----
New Permanent Drainage Easement	-----
New Permanent Drainage / Utility Easement	-----
New Permanent Utility Easement	-----
New Temporary Utility Easement	-----
New Aerial Utility Easement	-----

ROADS AND RELATED FEATURES:

Existing Edge of Pavement	-----
Existing Curb	-----
Proposed Slope Stakes Cut	-----
Proposed Slope Stakes Fill	-----
Proposed Curb Ramp	-----
Existing Metal Guardrail	-----
Proposed Guardrail	-----
Existing Cable Guiderail	-----
Proposed Cable Guiderail	-----
Equality Symbol	⊙
Pavement Removal	-----

VEGETATION:

Single Tree	○
Single Shrub	○

Note: Not to Scale *S.U.E. = Subsurface Utility Engineering

Hedge	-----
Woods Line	-----
Orchard	-----
Vineyard	-----

EXISTING STRUCTURES:

MAJOR:	
Bridge, Tunnel or Box Culvert	-----
Bridge Wing Wall, Head Wall and End Wall	-----
MINOR:	
Head and End Wall	-----
Pipe Culvert	-----
Footbridge	-----
Drainage Box: Catch Basin, DI or JB	-----
Paved Ditch Gutter	-----
Storm Sewer Manhole	-----
Storm Sewer	-----

UTILITIES:

POWER:	
Existing Power Pole	●
Proposed Power Pole	○
Existing Joint Use Pole	●
Proposed Joint Use Pole	○
Power Manhole	⊙
Power Line Tower	⊠
Power Transformer	⊠
U/G Power Cable Hand Hole	-----
H-Frame Pole	-----
U/G Power Line LOS B (S.U.E.*)	-----
U/G Power Line LOS C (S.U.E.*)	-----
U/G Power Line LOS D (S.U.E.*)	-----

TELEPHONE:

Existing Telephone Pole	●
Proposed Telephone Pole	○
Telephone Manhole	⊙
Telephone Pedestal	□
Telephone Cell Tower	⊠
U/G Telephone Cable Hand Hole	-----
U/G Telephone Cable LOS B (S.U.E.*)	-----
U/G Telephone Cable LOS C (S.U.E.*)	-----
U/G Telephone Cable LOS D (S.U.E.*)	-----
U/G Telephone Conduit LOS B (S.U.E.*)	-----
U/G Telephone Conduit LOS C (S.U.E.*)	-----
U/G Telephone Conduit LOS D (S.U.E.*)	-----
U/G Fiber Optics Cable LOS B (S.U.E.*)	-----
U/G Fiber Optics Cable LOS C (S.U.E.*)	-----
U/G Fiber Optics Cable LOS D (S.U.E.*)	-----

WATER:

Water Manhole	⊙
Water Meter	○
Water Valve	⊙
Water Hydrant	⊙
U/G Water Line LOS B (S.U.E.*)	-----
U/G Water Line LOS C (S.U.E.*)	-----
U/G Water Line LOS D (S.U.E.*)	-----
Above Ground Water Line	-----

TV:

TV Pedestal	□
TV Tower	⊙
U/G TV Cable Hand Hole	-----
U/G TV Cable LOS B (S.U.E.*)	-----
U/G TV Cable LOS C (S.U.E.*)	-----
U/G TV Cable LOS D (S.U.E.*)	-----
U/G Fiber Optic Cable LOS B (S.U.E.*)	-----
U/G Fiber Optic Cable LOS C (S.U.E.*)	-----
U/G Fiber Optic Cable LOS D (S.U.E.*)	-----

GAS:

Gas Valve	◇
Gas Meter	⊙
U/G Gas Line LOS B (S.U.E.*)	-----
U/G Gas Line LOS C (S.U.E.*)	-----
U/G Gas Line LOS D (S.U.E.*)	-----
Above Ground Gas Line	-----

SANITARY SEWER:

Sanitary Sewer Manhole	⊙
Sanitary Sewer Cleanout	⊙
U/G Sanitary Sewer Line	-----
Above Ground Sanitary Sewer	-----
SS Forced Main Line LOS B (S.U.E.*)	-----
SS Forced Main Line LOS C (S.U.E.*)	-----
SS Forced Main Line LOS D (S.U.E.*)	-----

MISCELLANEOUS:

Utility Pole	●
Utility Pole with Base	□
Utility Located Object	○
Utility Traffic Signal Box	⊠
Utility Unknown U/G Line LOS B (S.U.E.*)	-----
U/G Tank; Water, Gas, Oil	-----
Underground Storage Tank, Approx. Loc.	-----
A/G Tank; Water, Gas, Oil	-----
Geoenvironmental Boring	⊕
U/G Test Hole LOS A (S.U.E.*)	-----
Abandoned According to Utility Records	AATUR
End of Information	E.O.I.

PROJECT NO.	GR22.325
SCALE	N/A
DATE	5/29/2020
BY	CRP/EDB

FIGURE 9
LEGEND FOR PLAN SHEET FIGURES
NCDOT PROJECT R-2577A
US 158 FROM NORTH OF US 421 TO SR 1965
FORSYTH COUNTY, NORTH CAROLINA



ESP Associates, Inc.
7011 Albert Pick Rd.,
Suite E
Greensboro, NC 27409
336.334.7724
www.espassociates.com

APPENDIX A
SOIL BORING LOGS



FIELD BORING LOG

BORING NO.

B265-1

PROJECT NAME: NCDOT R-2577A Phase II PROJ. NO.: GR22.325

LOCATION: Southwest Corner of Parcel

TYPE OF BORING: Direct Push DATE STARTED: 5/15/20 SHEET: 1 of 1

DRILLING FIRM: SAEDACCO DATE FINISHED: 5/15/20 TOTAL DEPTH: 10.0 ft

DRILLER: Brian Ewing SAMPLE METHOD: 5' Macrocore DEPTH TO GW: N/A ft

DRILL RIG: GeoProbe 722DT LOGGED BY: R. Pastrana COMMENT: _____

DEPTH (ft)	SAMPLE NO.	SAMPLE DEPTH (ft)	PID READING (ppm)	FIELD CLASSIFICATION AND PHYSICAL DESCRIPTION	REMARKS
				0.0' -0.4' - Asphalt	Core 1 Rec 4.3'/5.0'
				0.4' - 0.8' - ABC Stone	
1	S-1	1.0-1.5	0.3	0.8' - 10.0' - Red-Brown, Sandy SILT, Micaceous, Moist	
2	S-2	2.0-2.5	0.4		
3	S-3	3.0-3.5	0.2		
4	S-4	4.0-4.5	0.3		
5	S-5	5.0-5.5	0.2	5.0' - Grading to Brown, Mottled	Core 2 Rec 4.8'/5.0'
6	S-6	6.0-6.5	0.1		
7	S-7	7.0-7.5	0.1		
8	S-8	8.0-8.5	0.2		
9	S-9	9.0-9.5	0.2		
10					
11					
12					
13					
14					
15					



FIELD BORING LOG

BORING NO.

B265-2

PROJECT NAME: NCDOT R-2577A Phase II PROJ. NO.: GR22.325

LOCATION: Edge of asphalt on N side of West entrance

TYPE OF BORING: Direct Push DATE STARTED: 5/15/20 SHEET: 1 of 1

DRILLING FIRM: SAEDACCO DATE FINISHED: 5/15/20 TOTAL DEPTH: 10.0 ft

DRILLER: Brian Ewing SAMPLE METHOD: 5' Macrocore DEPTH TO GW: N/A ft

DRILL RIG: GeoProbe 722DT LOGGED BY: R. Pastrana COMMENT: _____

DEPTH (ft)	SAMPLE NO.	SAMPLE DEPTH (ft)	PID READING (ppm)	FIELD CLASSIFICATION AND PHYSICAL DESCRIPTION	REMARKS
				0.0' -0.5' - Asphalt 0.5' - 1.2' - ABC Stone	Core 1 Rec 4.3'/5.0'
1	S-1	1.0-1.5	0.6		
				1.2' - 10.0' - Red-Brown, Sandy SILT, Dry	
2	S-2	2.0-2.5	0.8		
3	S-3	3.0-3.5	1.4		
4	S-4	4.0-4.5	0.5		
5	S-5	5.0-5.5	0.5		Core 2 Rec 4.7'/5.0'
6	S-6	6.0-6.5	0.6		
7	S-7	7.0-7.5	0.4		
8	S-8	8.0-8.5	0.4		
9	S-9	9.0-9.5	0.7		
10					
11					
12					
13					
14					
15					



FIELD BORING LOG

BORING NO.

B265-3

PROJECT NAME: NCDOT R-2577A Phase II PROJ. NO.: GR22.325

LOCATION: On edge of Asphalt near NW Corner of Canopy

TYPE OF BORING: Direct Push DATE STARTED: 5/15/20 SHEET: 1 of 1

DRILLING FIRM: SAEDACCO DATE FINISHED: 5/15/20 TOTAL DEPTH: 10.0 ft

DRILLER: Brian Ewing SAMPLE METHOD: 5' Macrocore DEPTH TO GW: N/A ft

DRILL RIG: GeoProbe 722DT LOGGED BY: R. Pastrana COMMENT: _____

DEPTH (ft)	SAMPLE NO.	SAMPLE DEPTH (ft)	PID READING (ppm)	FIELD CLASSIFICATION AND PHYSICAL DESCRIPTION	REMARKS
				0.0' -0.4' - Asphalt 0.4' - 1.3' - ABC Stone	Core 1 Rec 4.6'/5.0'
1	S-1	1.0-1.5	0.9		
				1.3' - 7.0' - Red-Brown, Clayey SILT, Moist	
2	S-2	2.0-2.5	0.7		
3	S-3	3.0-3.5	0.5		
4	S-4	4.0-4.5	0.6		
5	S-5	5.0-5.5	0.3		Core 2 Rec 4.3'/5.0'
6	S-6	6.0-6.5	0.4		
7	S-7	7.0-7.5	0.2	7.0' -10.0' - Red-Brown, Sandy SILT, Moist	
8	S-8	8.0-8.5	0.3		
9	S-9	9.0-9.5	0.3		
10					
11					
12					
13					
14					
15					



FIELD BORING LOG

BORING NO.

B265-4

PROJECT NAME: NCDOT R-2577A Phase II PROJ. NO.: GR22.325

LOCATION: West Side of Known UST's

TYPE OF BORING: Direct Push DATE STARTED: 5/15/20 SHEET: 1 of 1

DRILLING FIRM: SAEDACCO DATE FINISHED: 5/15/20 TOTAL DEPTH: 10.0 ft

DRILLER: Brian Ewing SAMPLE METHOD: 5' Macrocore DEPTH TO GW: N/A ft

DRILL RIG: GeoProbe 722DT LOGGED BY: R. Pastrana COMMENT: _____

DEPTH (ft)	SAMPLE NO.	SAMPLE DEPTH (ft)	PID READING (ppm)	FIELD CLASSIFICATION AND PHYSICAL DESCRIPTION	REMARKS
				0.0' -0.4' - Asphalt 0.4' - 1.0' - ABC Stone	Core 1 Rec 4.5'/5.0'
1	S-1	1.0-1.5	0.3	1.0' - 4.0' - Red-Brown, Clayey SILT, Moist to Dry	
2	S-2	2.0-2.5	0.4		
3	S-3	3.0-3.5	0.6		
4	S-4	4.0-4.5	0.1	4.0' - 10.0' - Red-Brown, Sandy SILT, Moist to Dry	
5	S-5	5.0-5.5	0.3		Core 2 Rec 5.0'/5.0'
6	S-6	6.0-6.5	0.4		
7	S-7	7.0-7.5	0.3		
8	S-8	8.0-8.5	0.3		
9	S-9	9.0-9.5	0.2		
10					
11					
12					
13					
14					
15					



FIELD BORING LOG

BORING NO.

B265-5

PROJECT NAME: NCDOT R-2577A Phase II PROJ. NO.: GR22.325

LOCATION: Northwest Corner of Parcel

TYPE OF BORING: Direct Push DATE STARTED: 5/15/20 SHEET: 1 of 1

DRILLING FIRM: SAEDACCO DATE FINISHED: 5/15/20 TOTAL DEPTH: 10.0 ft

DRILLER: Brian Ewing SAMPLE METHOD: 5' Macrocore DEPTH TO GW: N/A ft

DRILL RIG: GeoProbe 722DT LOGGED BY: R. Pastrana COMMENT: _____

DEPTH (ft)	SAMPLE NO.	SAMPLE DEPTH (ft)	PID READING (ppm)	FIELD CLASSIFICATION AND PHYSICAL DESCRIPTION	REMARKS
				0.0' - 0.2' - Topsoil 0.2' - 2.0' - Red-Brown, Silty CLAY, Moist	Core 1 Rec 3.6/5.0'
1	S-1	1.0-1.5	0.4		
2	S-2	2.0-2.5	0.5	2.0' - 10.0' - Red-Brown, Sandy SILT, Moist to Dry	
3	S-3	3.0-3.5	1.3		
4					
5	S-5	5.0-5.5	0.5	5.0' - Grading to Brown, Some Mica	Core 2 Rec 5.0/5.0'
6	S-6	6.0-6.5	0.8		
7	S-7	7.0-7.5	0.9		
8	S-8	8.0-8.5	0.5		
9	S-9	9.0-9.5	0.6		
10					
11					
12					
13					
14					
15					



FIELD BORING LOG

BORING NO.

B265-6

PROJECT NAME: NCDOT R-2577A Phase II PROJ. NO.: GR22.325

LOCATION: Northeast End of Parking Area / 10' into Grass, near Diesel Dispenser

TYPE OF BORING: Direct Push DATE STARTED: 5/15/20 SHEET: 1 of 1

DRILLING FIRM: SAEDACCO DATE FINISHED: 5/15/20 TOTAL DEPTH: 10.0 ft

DRILLER: Brian Ewing SAMPLE METHOD: 5' Macrocore DEPTH TO GW: N/A ft

DRILL RIG: GeoProbe 722DT LOGGED BY: R. Pastrana COMMENT: _____

DEPTH (ft)	SAMPLE NO.	SAMPLE DEPTH (ft)	PID READING (ppm)	FIELD CLASSIFICATION AND PHYSICAL DESCRIPTION	REMARKS
				0.0' - 0.3' - Topsoil	Core 1 Rec 3.4'/5.0'
				0.3' - 5.5' - Red-Brown, Silty CLAY, Moist	
1	S-1	1.0-1.5	0.1		
2	S-2	2.0-2.5	0.5		
3	S-3	3.0-3.5	0.3		
4					
5	S-5	5.0-5.5	0.4		Core 2 Rec 5.0'/5.0'
				5.5' - 10.0' - Red-Brown to Brown, Sandy SILT, Moist	
6	S-6	6.0-6.5	0.4		
7	S-7	7.0-7.5	0.2		
8	S-8	8.0-8.5	0.3		
9	S-9	9.0-9.5	0.1		
10					
11					
12					
13					
14					
15					



FIELD BORING LOG

BORING NO.

B265-7

PROJECT NAME: NCDOT R-2577A Phase II PROJ. NO.: GR22.325

LOCATION: North Side of East Entrance

TYPE OF BORING: Direct Push DATE STARTED: 5/15/20 SHEET: 1 of 1

DRILLING FIRM: SAEDACCO DATE FINISHED: 5/15/20 TOTAL DEPTH: 10.0 ft

DRILLER: Brian Ewing SAMPLE METHOD: 5' Macrocore DEPTH TO GW: N/A ft

DRILL RIG: GeoProbe 722DT LOGGED BY: R. Pastrana COMMENT: _____

DEPTH (ft)	SAMPLE NO.	SAMPLE DEPTH (ft)	PID READING (ppm)	FIELD CLASSIFICATION AND PHYSICAL DESCRIPTION	REMARKS
				0.0' - 1.0' - Topsoil and Gravel Mix	Core 1 Rec 4.2'/5.0'
1				1.0' - 6.0' - Red-Brown to Brown, Clayey Silt, Trace Mica, Moist	
2	S-2	2.0-2.5	0.1		
3	S-3	3.0-3.5	0.6		
4	S-4	4.0-4.5	0.1		
5					Core 2 Rec 5.0'/5.0'
6	S-6	6.0-6.5	0.2	6.0' - 10.0' - Red-Brown to Brown, Sandy SILT, Trace Mica, Moist	
7					
8	S-8	8.0-8.5	0.5		
9	S-9	9.0-9.5	0.3		
10					
11					
12					
13					
14					
15					



FIELD BORING LOG

BORING NO.**B265-8**

PROJECT NAME: NCDOT R-2577A Phase II PROJ. NO.: GR22.325
 LOCATION: South Side of East Entrance
 TYPE OF BORING: Direct Push DATE STARTED: 5/15/20 SHEET: 1 of 1
 DRILLING FIRM: SAEDACCO DATE FINISHED: 5/15/20 TOTAL DEPTH: 10.0 ft
 DRILLER: Brian Ewing SAMPLE METHOD: 5' Macrocore DEPTH TO GW: N/A ft
 DRILL RIG: GeoProbe 722DT LOGGED BY: R. Pastrana COMMENT: _____

DEPTH (ft)	SAMPLE NO.	SAMPLE DEPTH (ft)	PID READING (ppm)	FIELD CLASSIFICATION AND PHYSICAL DESCRIPTION	REMARKS
				0.0' - 1.0' - Topsoil and Gravel Mix	Core 1 Rec 4.3'/5.0'
1	S-1	1.0-1.5	0.5	1.0' - 2.5' - Tan-Brown, Clayey SAND, Moist	
2	S-2	2.0-2.5	0.3	2.5' - 4.0' - Red-Brown, Silty CLAY, Moist	
3	S-3	3.0-3.5	0.2		
4	S-4	4.0-4.5	0.3	4.0' - 10.0' - Red-Brown to Brown, Sandy SILT, Moist	
5	S-5	5.0-5.5	0.6		Core 2 Rec 5.0'/5.0'
6	S-6	6.0-6.5	0.4	6.0' - grading to with Trace Mica, Moist	
7	S-7	7.0-7.5	0.4		
8	S-8	8.0-8.5	0.1		
9	S-9	9.0-9.5	0.5		
10					
11					
12					
13					
14					
15					

APPENDIX B

RED LAB LABORATORY TESTING REPORT



Hydrocarbon Analysis Results

Client: ESP
Address: 7011 Albert Pick Rd
 Ste E
 Greensboro, NC 27409

Samples taken Friday, May 15, 2020
Samples extracted Friday, May 15, 2020
Samples analysed Monday, May 18, 2020

Contact: Ned Billington

Operator Harry Wooten

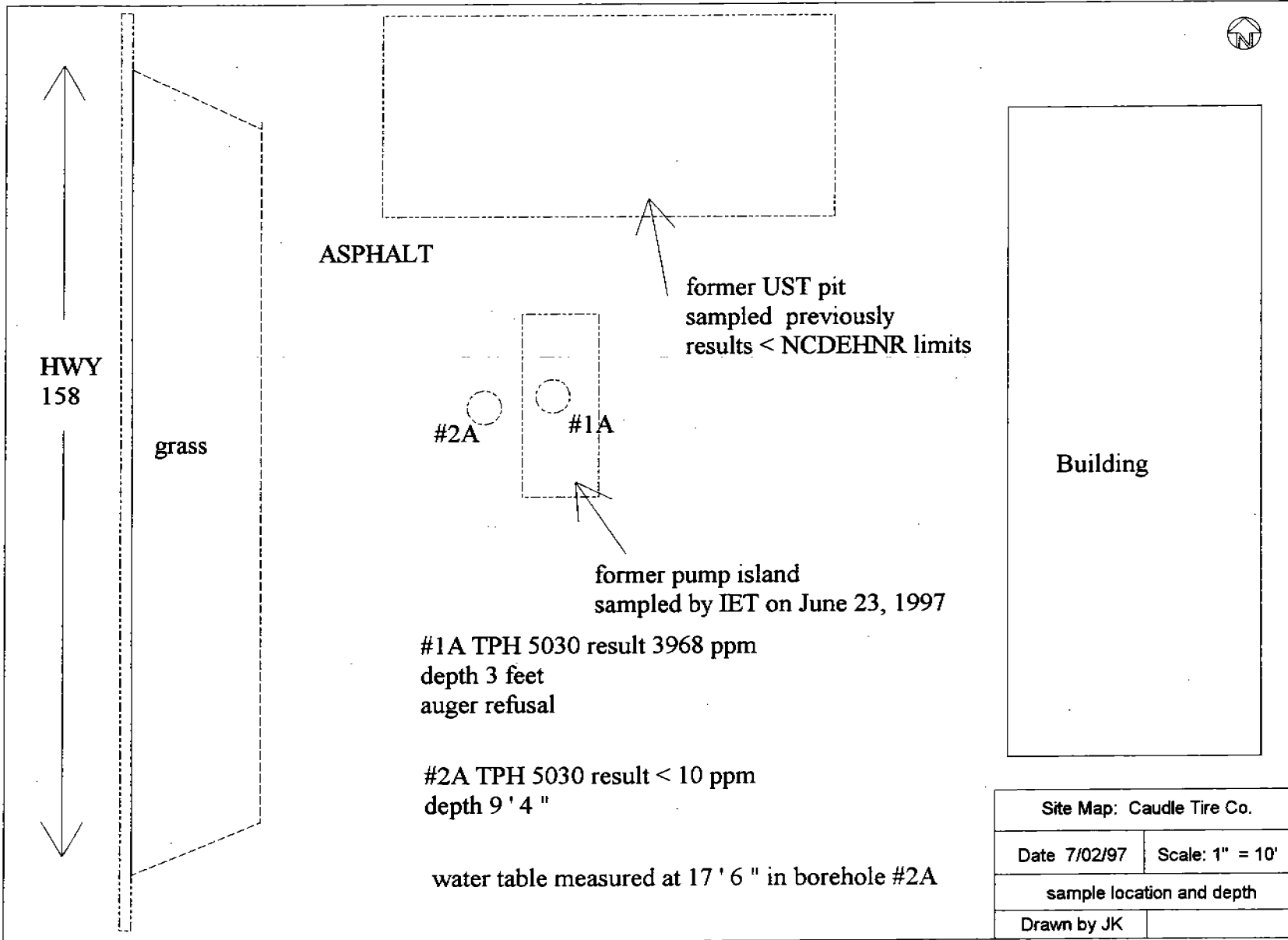
Project: GR22.325

											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	B265-2 , S3	20.2	<0.5	<0.5	3.9	3.9	1.9	0.21	<0.02	0	93	7	Road Tar 96.3%,(FCM)				
s	B265-3 , S9	19.6	<0.49	<0.49	<0.49	<0.49	<0.1	<0.16	<0.02	0	0	0	PHC not detected,(BO)				
s	B265-4 , S3	21.6	<0.54	<0.54	1.1	1.1	0.46	<0.17	<0.022	0	97.6	2.4	Deg Fuel 90.6%,(FCM)				
s	B265-5 , S7	19.0	<0.47	<0.47	<0.47	<0.47	<0.09	<0.15	<0.019	0	0	0	PHC not detected,(BO)				
s	B265-6 , S6	19.0	<0.47	<0.47	<0.47	<0.47	<0.09	<0.15	<0.019	0	0	0	PHC not detected,(BO)				
s	B265-7 , S3	18.0	<0.45	<0.45	0.72	0.72	0.35	<0.14	<0.018	0	86.2	13.8	V.Deg.PHC 90%,(FCM)				
s	B265-8 , S6	13.6	<0.34	<0.34	<0.34	<0.34	<0.07	<0.11	<0.014	0	0	0	,(FCM),(BO)				
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

APPENDIX C
CHAIN-OF-CUSTODY FORM

APPENDIX D
FIGURE FROM 1997 SSE REPORT



Site Map: Caudle Tire Co.	
Date 7/02/97	Scale: 1" = 10'
sample location and depth	
Drawn by JK	