



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 42
Parker's Stop & Shop, PPWS, LLC
4257 Reidsville Road, Winston-Salem, 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/CRP/NAZ

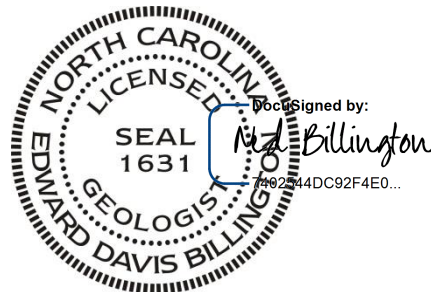


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1.0 INTRODUCTION

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 42 to locate possible underground storage tanks (USTs), sample soil, and delineate potential contaminated soil. Parcel 42 is located on the north side of Reidsville Road opposite the intersection with Rickard 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: 6/25/2004
- Current Owner: PPWS, LLC
- Owner's Address: 4648 Old Belews Creek Rd, Winston-Salem, NC 27101

2.2 NCDEQ Information

This site was listed as Site No. 2 in the 2004 Phase 1 report (Geoenvironmental Impact Evaluation) that was provided by the NCDOT. Site 2 was anticipated to have low monetary and scheduling impact to the project. We checked the following sources at the NCDEQ with the results summarized below:

- Division of Waste Management Site Locator Tool
 - Indicated Facility ID Facility No. 20022
 - UST Incident No. 21402
 - UST WS-5930
 - No files in Documents Link
- NCDEQ UST Facility Operating Permits
 - Facility No. 20022 (Parkers Stop & Shop, LLC)
- Registered USTs Database
 - 5 Registered USTs removed in December 1998
 - 3 USTs installed in May 1999
 - 10,000-gallon gasoline
 - 6,000-gallon gasoline
 - 2,000-gallon kerosene (Inventory Report from station indicates diesel)
- Incident Management Database (Regional USTs)
 - UST No. WS-5930

- Incident Name: Quality Mart No. 7
- Date Occurred: 12/1/1998
- Contamination: Groundwater
- No Further Action (NFA) issued 2/3/2015
- Winston-Salem Regional NCDEQ Office
 - Copy of the June 2000 Limited Site Assessment (LSA) report
 - Copy of the final NFA letter
 - Copies of relevant figures from the 2000 LSA report are included in Appendix D. The former tank pit was located between the current tank pit and Reidsville Road.
 - Analytical results reported in the LSA indicated several constituents in the groundwater samples that exceeded the North Carolina 2L groundwater standards but did not exceed the established Gross Contamination Levels (GCLs) for groundwater. Groundwater was measured at depths of 9.52 to 15.79 feet in the monitoring wells during the LSA.

3.0 SITE OBSERVATIONS

During our May 2020 field work, the site was occupied by an active gasoline station and market (Parker's Stop & Shop) (Figure 2). The ground in the study area was covered by asphalt and concrete. There was one monitoring well in the existing ROW and 2 monitoring wells within the proposed temporary construction easement. The proposed temporary construction easement goes through the approximate middle of the current tank pit. The tank inventory report provided by the station listed one 10,000-gallon gasoline UST, one 6,000-gallon gasoline UST, and one 2,000-gallon diesel UST. In addition, an above-ground tank (AST) and a kerosene pump are located at the north corner of the building, 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 0.27 acres and encompassed the proposed ROW/easement. We performed direct-push drilling and sampling of subsurface soils on May 13 and 14, 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). Ground-penetrating radar (GPR) data were collected over the tank pit to designate the approximate edges of the known USTs, and beneath the canopy to evaluate the EM61 anomaly caused by reinforced concrete and the pump island, and in other locations to evaluate unknown utilities (Figure 5).

4.2 Borings

ESP performed direct-push drilling activities within the proposed ROW/easement of Parcel 42 using a subcontractor, SAEDACCO of Fort Mill, South Carolina. Seven borings were drilled, designated B42-1 through B42-7 (Figure 8). The borings were approximately evenly spaced in the accessible portions of the study area. Boring B42-5 was located close to a proposed drop inlet. Boring B42-6 was located next to the existing tank pit. Boring B42-7 was located in the vicinity of the former tank pit.

The soil borings were advanced using a GeoProbe 7822DT drill rig. 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 3.3 to 5.0 feet (66 to 100 percent recovery). A hand auger was used to sample the upper 5 feet of Boring B42-2 due to poor direct-push 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 PID readings ranged from 0.1 to 848.6 parts per million (ppm) (Table 1 and soil borings logs in Appendix A).

Eight 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 7 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 3 known USTs appeared to extend approximately 0.5 feet past the southeast side of the concrete slab over the tank pit (Figure 5). The GPR data also did not indicate abandoned USTs beneath the canopy.

The EM61 early time gate response and differential response are shown on the plan sheet on Figures 6 and 7, respectively.

5.2 Sample Data

The soil sample UVF hydrocarbon analysis results for BTEX, GRO, DRO, and PAHs are presented in Table 2 with maximum GRO and DRO results shown on Figure 9. 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 indicate GRO was detected in 2 samples, with one sample above the NCDEQ action level of 50 ppm (353.4 ppm in B42-3, Sample 9) (Table 2, Figure 9). DRO was detected in 6 samples, with two samples above the NCDEQ action level of 100 ppm (594.5 ppm in B42-3, Sample 9 and 105.2 in Boring B42-7, Sample 8). BTEX was below detection limits for the 8 samples tested. PAHs were detected in 2 samples with values of 2.3 and 5.5 ppm. BaP was detected in one sample with a value of 0.027 ppm which is less than NCDEQ's preliminary soil remediation goal for residential health for BaP of 0.11 ppm.

6.0 CONCLUSIONS

6.1 Interpretation of Results

The results of the Phase II investigation for Parcel 42 of NCDOT Project R-2577A indicates that there is no evidence for abandoned USTs in the proposed ROW/easement. The 3 known USTs are partially within the proposed temporary construction easement. Laboratory testing indicated petroleum compounds in 6 of the 8 soil samples tested with two samples from two separate borings having results above the NCDEQ action levels of 50 ppm for GRO and/or 100 ppm for DRO. The PID readings during sampling were above 10 ppm in 4 of the 7 borings.

6.2 Estimated Quantities

Based on the laboratory results and PID readings for Borings B42-3, B42-4, and B42-7, the petroleum contamination appears to extend from approximately 6.0 to 10.0 feet below ground surface with an average thickness of 2.3 feet. Using a contaminated soil thickness of 2.3 feet and an area of 2846 square feet, the volume of contaminated soil within the proposed ROW in the vicinity of Borings B42-3, B42-4, and B42-7 is estimated as follows:

- Estimated area of contaminated soil: 2846 square feet
- Estimated average thickness of contaminated soil: 2.3 feet
- Estimated volume of contaminated soil: 2846 square feet * 2.3 feet =
6546 cubic feet = 242 cubic yards

Assuming 100 pounds per cubic foot, the estimated amount of contaminated soil is approximately:

- $6546 * 100 / 2000 = 327$ tons.

7.0 RECOMMENDATIONS

ESP recommends that soil removed from the site as part of NCDOT construction activities in the vicinity of the known USTs, the product lines, the dispenser islands, and Borings B42-3, B42-4, and B42-7 be screened for petroleum hydrocarbon contamination, properly handled, segregated, and disposed of in accordance with NCDEQ regulations.

The product lines and dispenser island are within the proposed ROW and will need to be properly closed and relocated to another location on the parcel. If the final plans indicate that the 3 known USTs that are partially within the proposed temporary construction easement will be encountered during construction, the USTs should be properly closed by removal prior to construction and relocated.

Groundwater was not encountered in the upper 10 feet in the study area. However, documented groundwater contamination exists at Parcel 42. If groundwater is encountered during construction, it should be properly handled and disposed of in accordance with NCDEQ regulations.

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)
B42-1	none	2.4 (8.0-8.5)
B42-2	6.0-7.0, 8.0-9.0	14.8 (8.0-8.5)
B42-3	5.0-10.0	848.6 (9.0-9.5)
B42-4	7.0-7.5, 9.0-9.5	67.2 (9.0-9.5)
B42-5	none	2.0 (7.0-7.5)
B42-6	none	0.6 (4.0-4.5, 6.0-6.5)
B42-7	5.0-10.0	427.0 (8.0-8.5)

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)
B42-2	S6 (6.0-6.5)	5/13/20	<0.44	<0.44	43.6	2.3
B42-2	S8 (8.0-8.5)	5/13/20	<0.42	<0.42	0.86	<0.13
B42-3	S5 (5.0-5.5)	5/13/20	<0.5	<0.5	1.8	<0.16
B42-3	S9 (9.0-9.5)	5/13/20	<3.2	353.4	594.5	<1
B42-4	S9 (9.0-9.5)	5/13/20	<0.45	<0.45	<0.45	<0.15
B42-5	S7 (7.0-7.5)	5/14/20	<0.31	<0.31	<0.31	<0.1
B42-7	S6 (6.0-6.5)	5/14/20	<0.41	<0.41	1.1	<0.13
B42-7	S8 (8.0-8.5)	5/14/20	<0.79	6.1	105.2	5.5

FIGURES



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

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SCALE	AS SHOWN
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**FIGURE 1 – PARCEL 42, PPWS, LLC
SITE VICINITY MAP**

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



ESP Associates, Inc.
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A. Photograph from northeast corner of parcel, looking southwest.



B. Photograph from southern corner of parcel, looking north.



C. Photograph of tank bed area, looking northeast. Magenta lines are approximate edges of USTs, as indicated by GPR images.



D. Photograph of drilling operations, looking northeast.

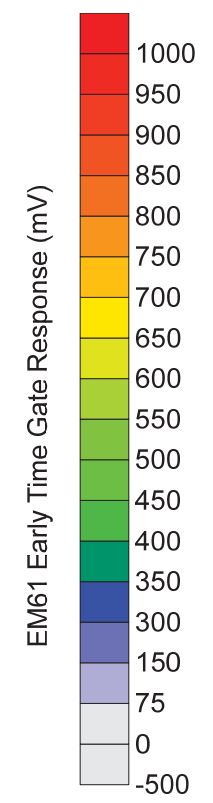
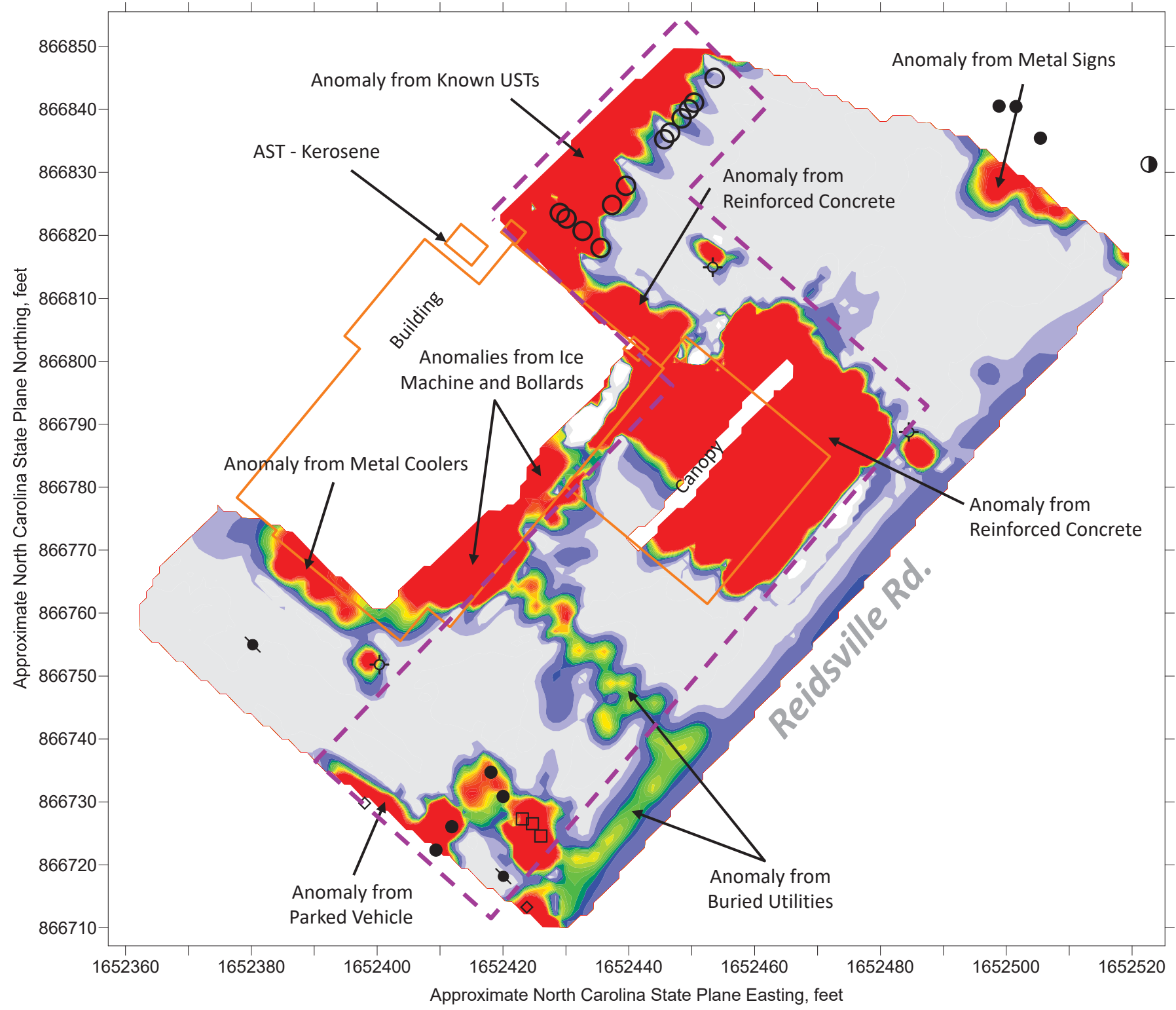
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DATE	5/29/2020
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**FIGURE 2 –PARCEL 42, PPWS, LLC
SITE PHOTOGRAPHS**

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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

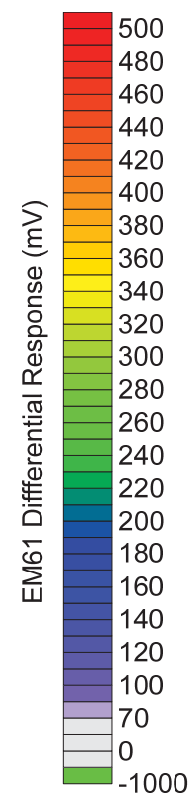
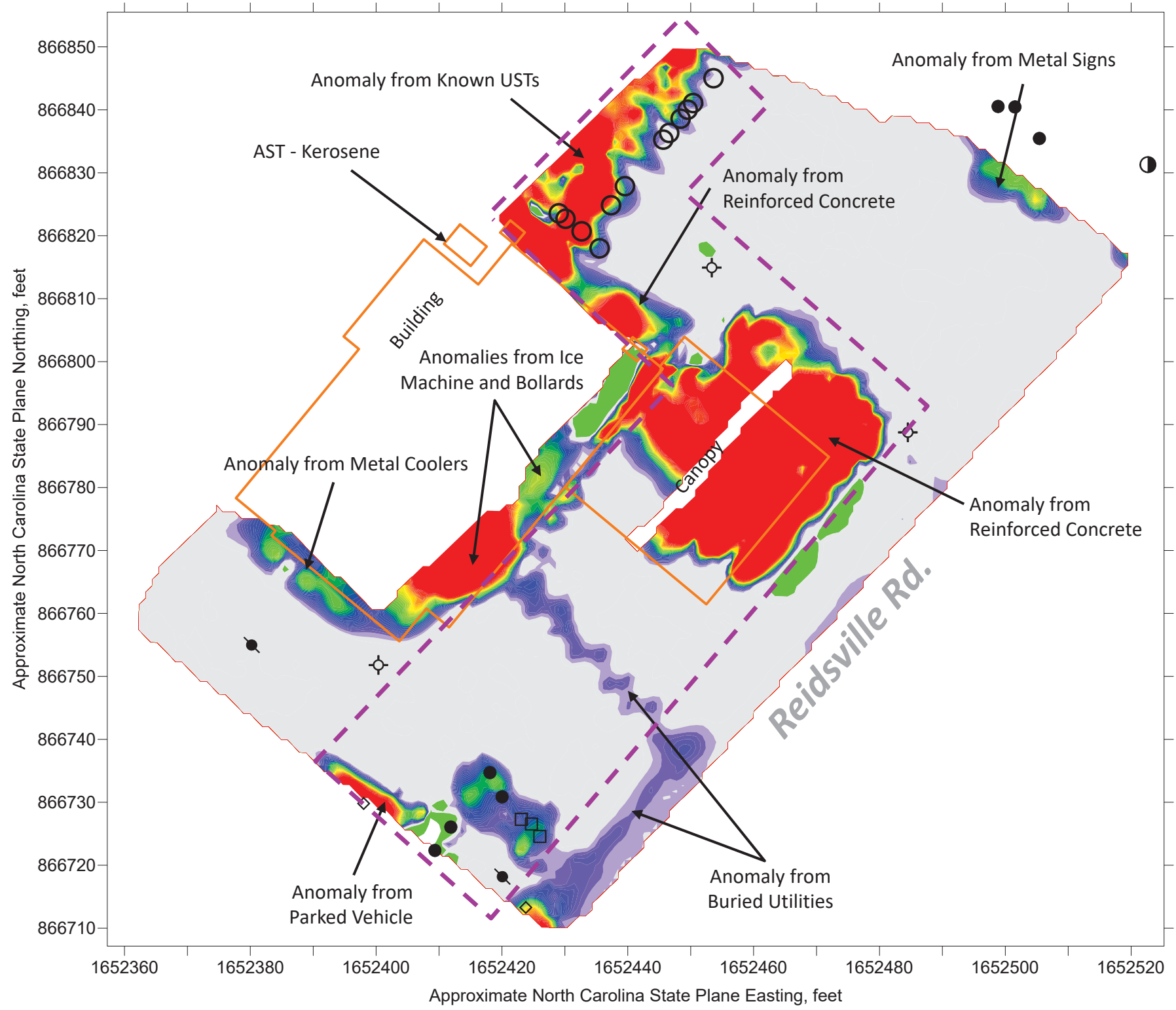
Note: Locations of data and features are approximate and were collected using a DGPS instrument. ESP makes no guarantees as to the accuracy of these locations. Coordinates on the axes of the maps are approximate and provided for general reference only.

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FIGURE 3 – PARCEL 42, PPWS, LLC
EM61 EARLY TIME GATE DATA
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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

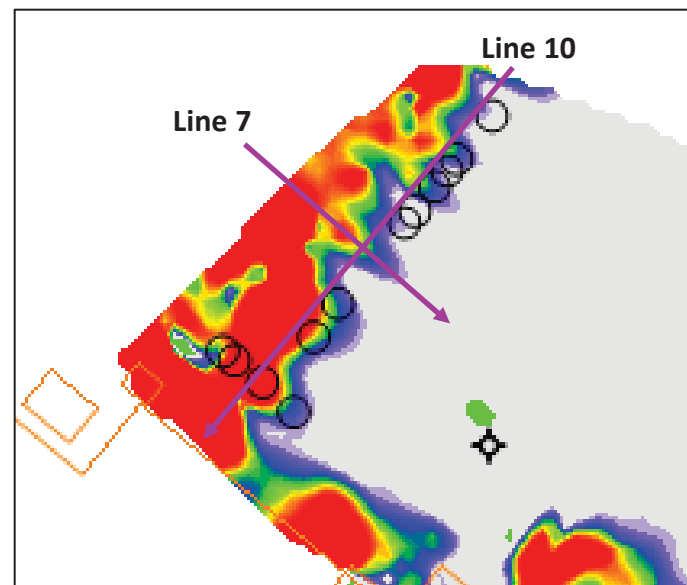
Note: Locations of data and features are approximate and were collected using a DGPS instrument. ESP makes no guarantees as to the accuracy of these locations. Coordinates on the axes of the maps are approximate and provided for general reference only.

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FIGURE 4 – PARCEL 42, PPWS, LLC
EM61 DIFFERENTIAL DATA
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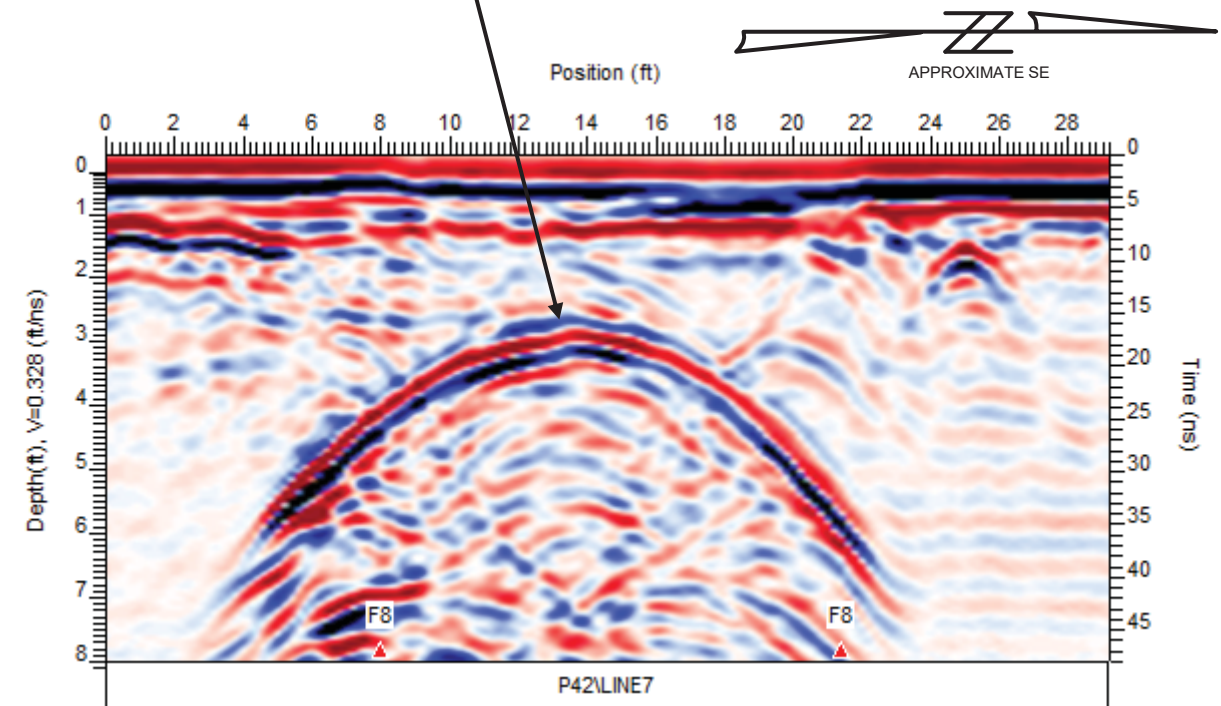


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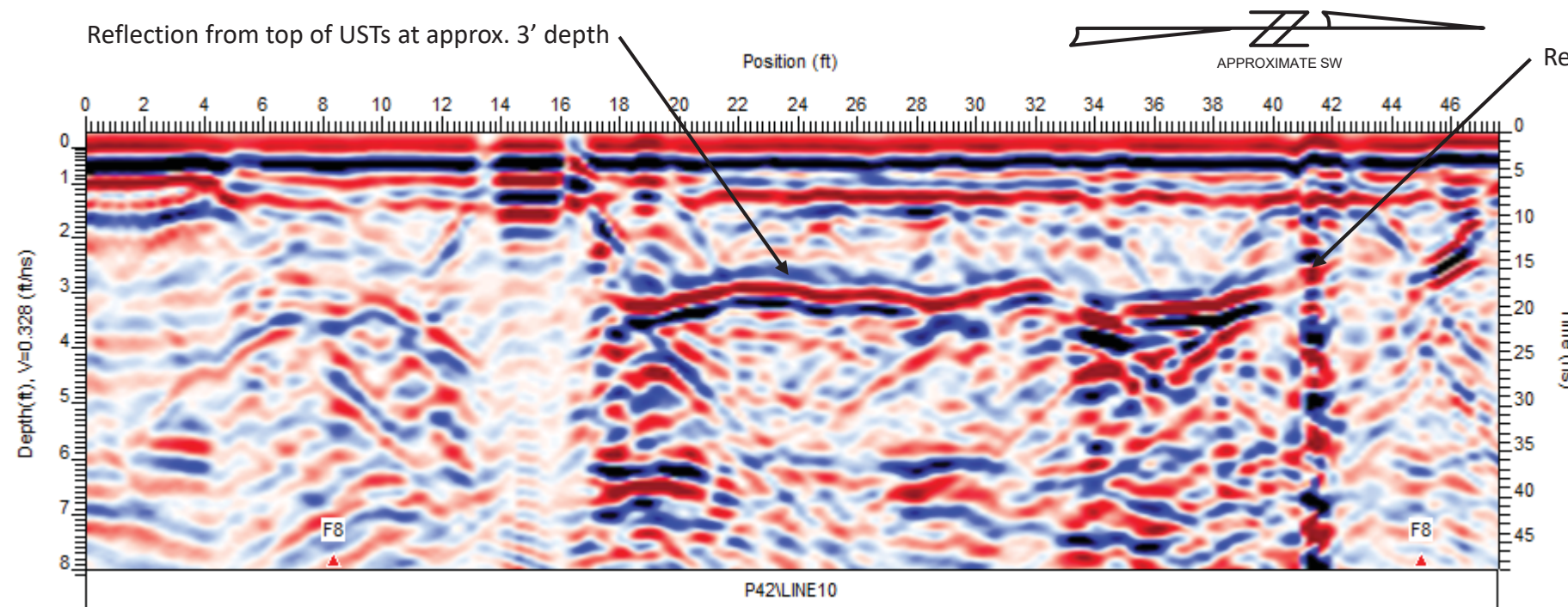
A. EM61 differential data with example GPR line locations.

Reflection from top of one of the gasoline USTs at approx. 3' depth



B. GPR Line 7 over short axis of 1 of 2 gasoline USTs.

Reflection from top of USTs at approx. 3' depth



Reflection from top of diesel UST at approx. 3' depth

D. GPR Line 10 over long axis of gasoline USTs and short axis of diesel UST.

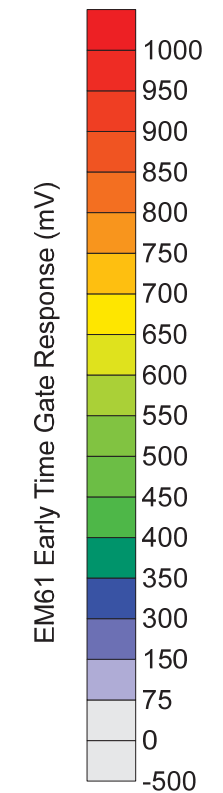
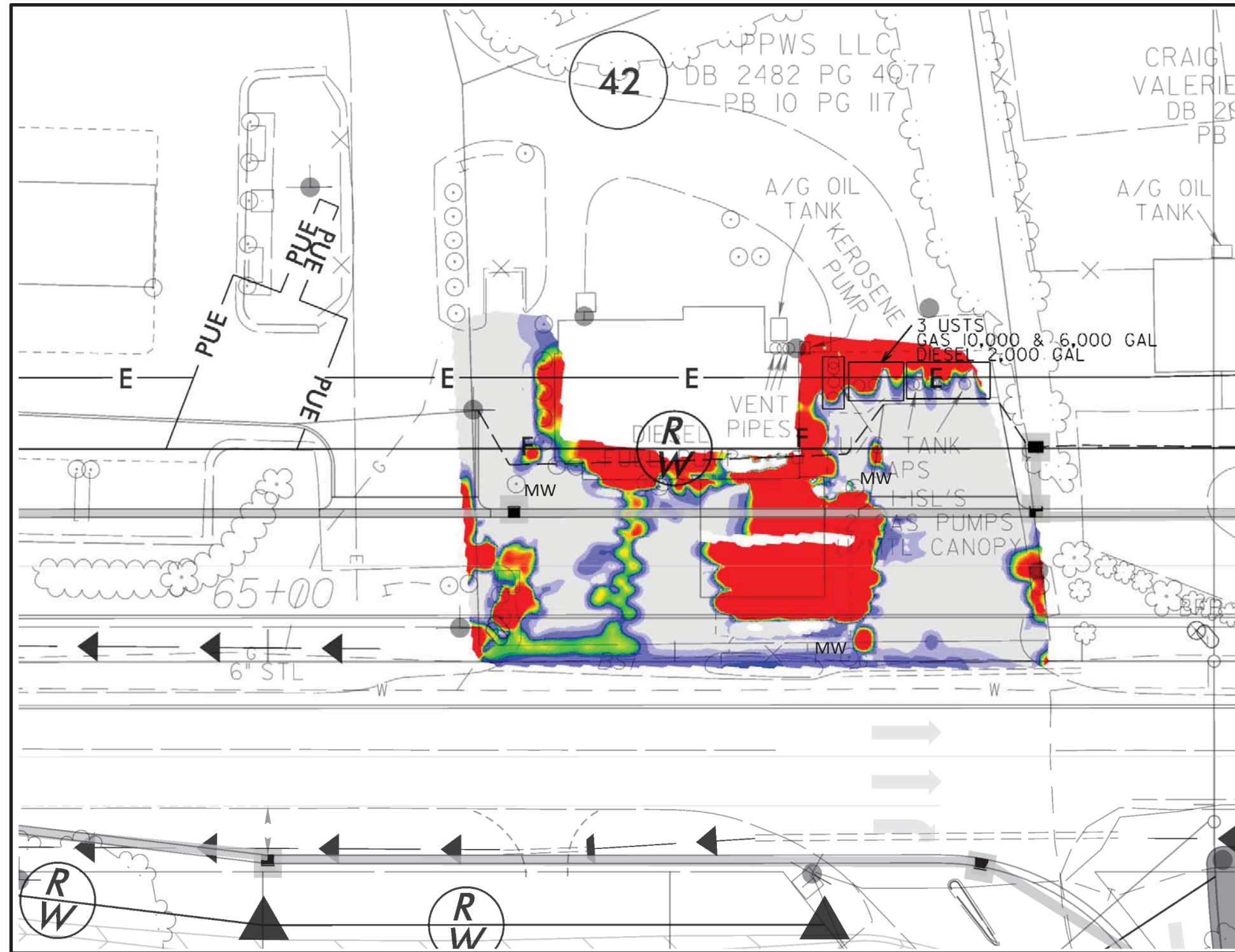
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**FIGURE 5 – PARCEL 42, PPWS, LLC
GPR IMAGES OVER KNOWN USTs**

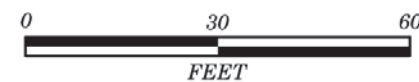
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- ☑ R-2577A_Geo_env.dgn
- ☑ R-2577A_hyd_drn.dgn
- ☑ R2577A_ncdot_fs.dgn
- ☑ R-2577A_rdy_dsn.dgn
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See Figure 10 for explanation of symbols and line types

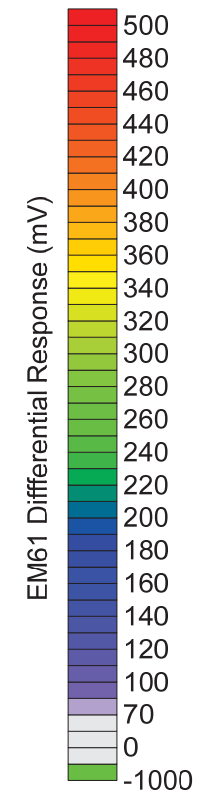
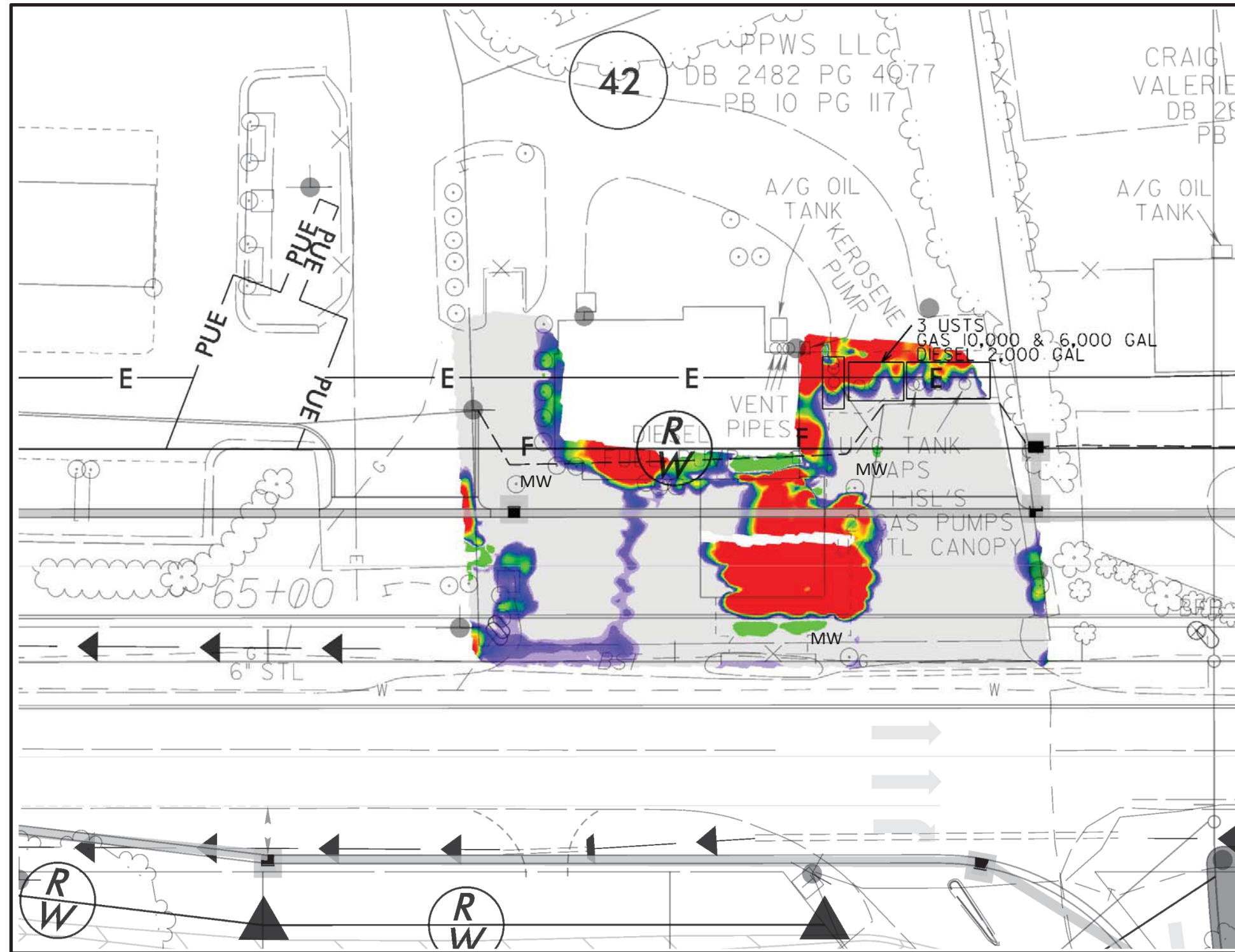
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FIGURE 6 – PARCEL 42, PPWS, LLC
EM61 EARLY TIME GATE DATA ON PLAN SHEET

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- ☑ R-2577A_Geo_env.dgn
- ☑ R-2577A_hyd_drn.dgn
- ☑ R2577A_ncdot_fs.dgn
- ☑ R-2577A_rdy_dsn.dgn
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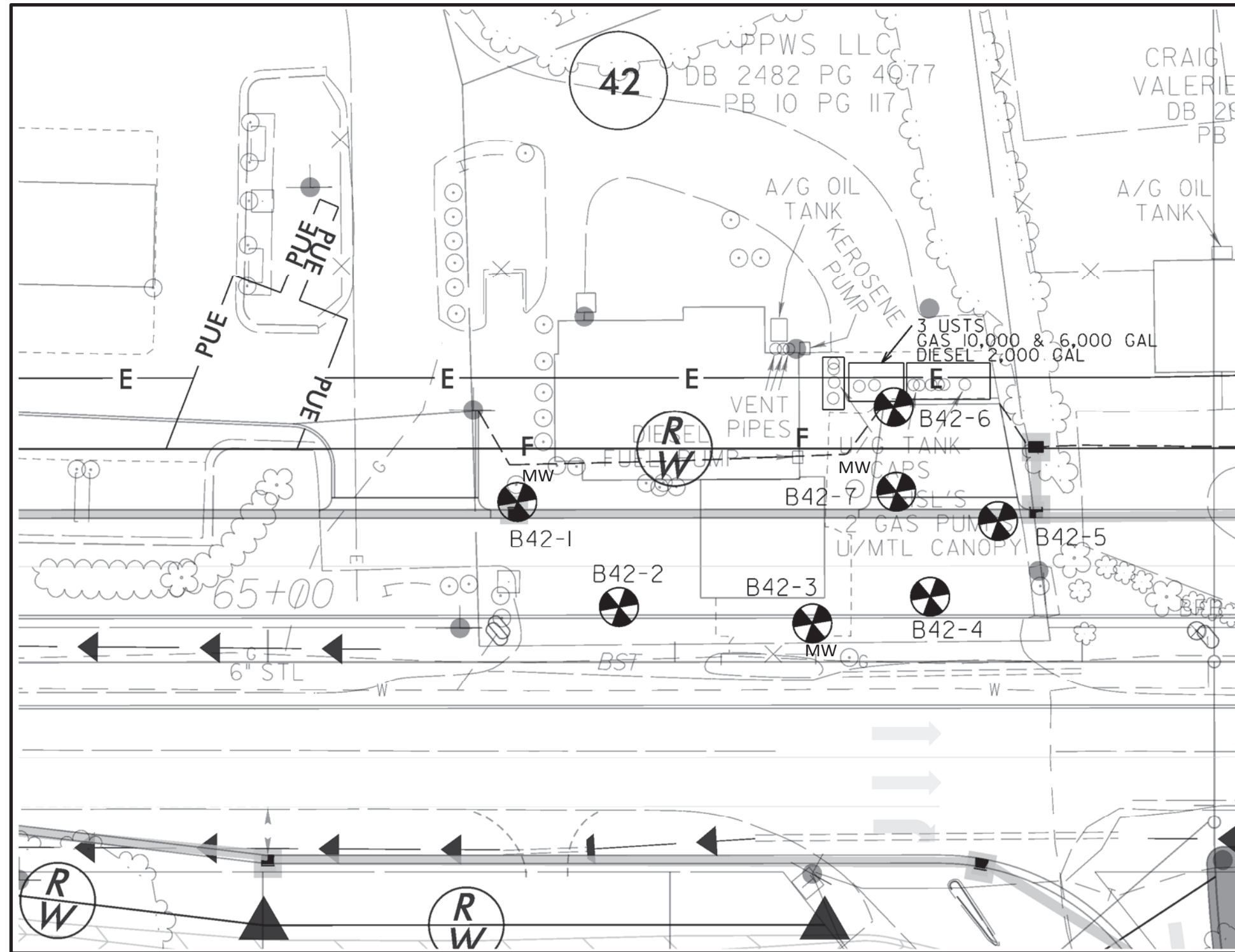
See Figure 10 for explanation of symbols and line types

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FIGURE 7 – PARCEL 42, PPWS, LLC
EM61 DIFFERENTIAL DATA ON PLAN SHEET
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- ☑ R-2577A_Geo_env.dgn
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See Figure 10 for explanation of symbols and line types

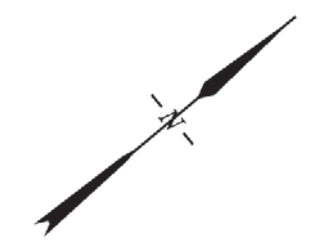
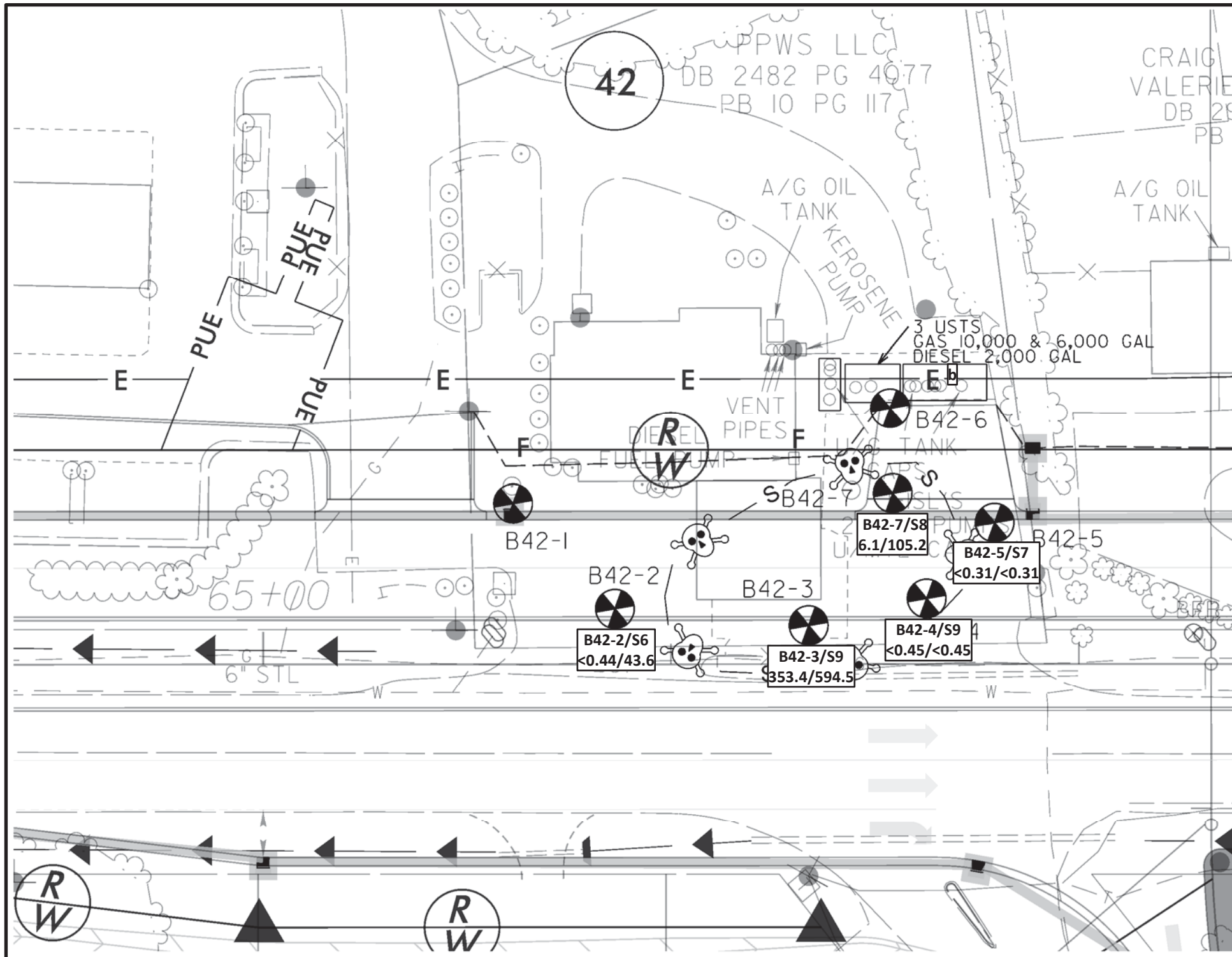
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**FIGURE 8 – PARCEL 42, PPWS, LLC
BORING LOCATIONS ON PLAN SHEET**

**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



Explanation	
Maximum Analytical Results per Boring	
B42-4/S9 <0.45/<0.45	Boring No./Sample No. 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 10 for explanation of symbols and line types

PROJECT NO.	GR22.325
SCALE	1" = 30'
DATE	5/29/2020
BY	CRP/EDB

FIGURE 9 – PARCEL 42, PPWS, LLC
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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 Suite E
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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	⑫
Existing Fence Line	-x-x-x-
Proposed Woven Wire Fence	-o-o-o-
Proposed Chain Link Fence	-o-o-o-
Proposed Barbed Wire Fence	-o-o-o-
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 10
LEGEND FOR PLAN SHEET FIGURES
NCDOT PROJECT R-2577A
US 158 FROM NORTH OF US 421 TO SR 1965
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APPENDIX A
SOIL BORING LOGS



FIELD BORING LOG

BORING NO.**B42-1**

PROJECT NAME: NCDOT R-2577A Phase II PROJ. NO.: GR22.325
 LOCATION: South End of Parcel, by MW and near S Corner of Building
 TYPE OF BORING: Direct Push DATE STARTED: 5/13/20 SHEET: 1 of 1
 DRILLING FIRM: SAEDACCO DATE FINISHED: 5/13/20 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' - Asphalt	Core 1 Rec 3.8'/5.0'
				0.3' - 1.0' - Concrete	1st Attempt Rec. 0.8'/5.0'
1				1.0' - 8.0' - Red-Brown to Orange, Silty CLAY, Moist	2nd Attempt - Core was stuck in casing
2	S-2	2.0-2.5	0.2		3rd Attempt Rec. 3.8'/5.0'
3	S-3	3.0-3.5	0.1		
4	S-4	4.0-4.5	0.3		
5	S-5	5.0-5.5	0.1	5.0' - grading to Red-Brown, Moist to Very Moist	Core 2 Rec 3.8'/5.0'
6	S-6	6.0-6.5	0.2		
7	S-7	7.0-7.5	0.3		
8	S-8	8.0-8.5	2.4	8.0' - 10.0' - Red-Brown to Brown, Sandy SILT, Moist	
9					
10					
11					
12					
13					
14					
15					



FIELD BORING LOG

BORING NO.

B42-2

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

LOCATION: South Entrance to Parcel

TYPE OF BORING: Direct Push, Hand Auger DATE STARTED: 5/13/20 SHEET: 1 of 1

DRILLING FIRM: SAEDACCO DATE FINISHED: 5/13/20 TOTAL DEPTH: 10.0 ft

DRILLER: Brian Ewing SAMPLE METHOD: 5' Macrocore / Hand Auger 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' - 0.6' - Asphalt	Core 1 Rec N/A
				0.6' - 5.0' Red-Brown, Silty CLAY, Moist	
1	S-1	1.0-1.5	0.2		1st & 2nd Attempt No Recovery
					Hand Augered to 5.0' Rec. 5.0/5.0
2	S-2	2.0-2.5	0.3		
3	S-3	3.0-3.5	0.4		
4	S-4	4.0-4.5	0.2		
5	S-5	5.0-5.5	0.5	5.0'-7.8' - Red-Brown, Clayey SILT, Moist to Very Moist	Core 2 Rec 3.3'/5.0'
					1st Attempt Rec. 2.5'/5.0'
6	S-6	6.0-6.5	12.4		2nd Attempt Rec. 3.3'/5.0'
					6.0-10.0 - Slight petroleum odor
7	S-7	7.0-7.5	8.2		
8	S-8	8.0-8.5	14.8	7.8' - 10.0' - Orange-Brown to Green-Brown, Silty SAND, Mottled, Moist to Very Moist	
9					
10					
11					
12					
13					
14					
15					



FIELD BORING LOG

BORING NO.

B42-3

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

LOCATION: North Entrance to Parcel

TYPE OF BORING: Direct Push DATE STARTED: 5/13/20 SHEET: 1 of 1

DRILLING FIRM: SAEDACCO DATE FINISHED: 5/13/20 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' - 0.7' - Asphalt	Core 1 Rec 3.7'/5.0'
1	S-1	1.0-1.5	0.2	0.7' - 3.2' - Tan-Brown, Silty and Clayey SAND, Moist to Very Moist	
2	S-2	2.0-2.5	0.5		
3	S-3	3.0-3.5	0.3	3.2' - 5.6' - Red-Brown, Silty CLAY, Moist to Very Moist	
4	S-4	4.0-4.5	0.8		
5	S-5	5.0-5.5	16.6	5.6' - 10.0' - Red-Brown, Sandy SILT, Moist to Very Moist	Core 2 Rec 5.0'/5.0' 5.0-10.0 - Strong Petroleum Odor
6	S-6	6.0-6.5	66.3		
7	S-7	7.0-7.5	154.0	7.6' - grading to Orange-Brown to Gray-Brown	
8	S-8	8.0-8.5	108.6		
9	S-9	9.0-9.5	848.6		
10					
11					
12					
13					
14					
15					



FIELD BORING LOG

BORING NO.

B42-4

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

LOCATION: North End of Parcel, North Side of North Entrance

TYPE OF BORING: Direct Push DATE STARTED: 5/13/20 SHEET: 1 of 1

DRILLING FIRM: SAEDACCO DATE FINISHED: 5/13/20 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' - 0.6' - Asphalt 0.6' - 1.8' - Gravel and Soil Mix	Core 1 Rec 4.1'/5.0'
1	S-1	1.0-1.5	6.5		
2	S-2	2.0-2.5	1.9	1.8' - 5.2' - Tan-Brown to Red-Brown, Silty CLAY, Moist	
3	S-3	3.0-3.5	1.0		
4	S-4	4.0-4.5	3.4		
5	S-5	5.0-5.5	3.2	5.2' - 10.0 - Red-Brown to Dark Brown, Sandy SILT, Micaceous, Moist	Core 2 Rec 5.0'/5.0'
6	S-6	6.0-6.5	2.9		
7	S-7	7.0-7.5	10.2		7.0-10.0 - Petroleum Odor
8	S-8	8.0-8.5	6.3		
9	S-9	9.0-9.5	67.2		
10					
11					
12					
13					
14					
15					



FIELD BORING LOG

BORING NO.

B42-5

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

LOCATION: Middle of North End of Parcel

TYPE OF BORING: Direct Push DATE STARTED: 5/14/20 SHEET: 1 of 1

DRILLING FIRM: SAEDACCO DATE FINISHED: 5/14/20 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' - 0.6' - Asphalt 0.6' - 4.0' - Red-Brown to Tan-Brown, Silty and Sandy CLAY, Dry to Very Moist	Core 1 Rec 4.2'/5.0'
1	S-1	1.0-1.5	0.2		
2	S-2	2.0-2.5	0.4		
3	S-3	3.0-3.5	0.5		
4	S-4	4.0-4.5	0.3	4.0' - 5.5' - Red-Brown, Silty CLAY, Moist	
5	S-5	5.0-5.5	0.4	5.5' - 10.0' - Red-Brown to Brown, Sandy SILT, Moist	Core 2 Rec 5.0'/5.0'
6	S-6	6.0-6.5	0.3		
7	S-7	7.0-7.5	2.0		
8	S-8	8.0-8.5	1.6		
9	S-9	9.0-9.5	1.5		
10					
11					
12					
13					
14					
15					



FIELD BORING LOG

BORING NO.

B42-6

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

LOCATION: East Side of Known USTs

TYPE OF BORING: Direct Push DATE STARTED: 5/14/20 SHEET: 1 of 1

DRILLING FIRM: SAEDACCO DATE FINISHED: 5/14/20 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' - 0.6' - Asphalt 0.6' - 1.2' - ABC Stone	Core 1 Rec 3.7'/5.0'
1				1.2' - 5.0' - Red to Tan-Brown, Silty and Sandy CLAY, Dry to Moist	
2	S-2	2.0-2.5	0.5		
3	S-3	3.0-3.5	0.4		
4	S-4	4.0-4.5	0.6		
5	S-5	5.0-5.5	0.3	5.0' - 10.0' - Red-Brown to Brown, Sandy and Clayey SILT, Moist	Core 2 Rec 5.0'/5.0'
6	S-6	6.0-6.5	0.6		
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	0.4		
10					
11					
12					
13					
14					
15					



FIELD BORING LOG

BORING NO.**B42-7**

PROJECT NAME: NCDOT R-2577A Phase II PROJ. NO.: GR22.325
 LOCATION: In Vicinity of Former Tank Pit
 TYPE OF BORING: Direct Push DATE STARTED: 5/14/20 SHEET: 1 of 1
 DRILLING FIRM: SAEDACCO DATE FINISHED: 5/14/20 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' - 1.3' - ABC Stone	Core 1 Rec 3.3'/5.0'
1				1.3' - 6.0' - Red-Brown to Brown, Silty CLAY, Moist	
2	S-2	2.0-2.5	1.4		
3	S-3	3.0-3.5	7.4		
4	S-4	4.0-4.5	9.3		4.0-10.0 Petroleum Odor
5	S-5	5.0-5.5	15.8		Core 2 Rec 4.3'/5.0'
					1st Attempt Rec 1.8'/5.0'
6	S-6	6.0-6.5	29.7	6.0' - 10.0' Red-Brown to Brown, Clayey and Sandy SILT, Moist to Very Moist	2nd Attempt Rec 4.3'/5.0'
7	S-7	7.0-7.5	26.2	7.0' - 7.8' - with Layer of Gravel	
8	S-8	8.0-8.5	427.0	8.0' - grading to Dry	
9	S-9	9.0-9.5	160.3		
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 5/13 - 5/14/2020
Samples extracted 5/13 - 5/14/2020
Samples analysed Monday, May 18, 2020

Contact: Ned Billington

Operator Harry Wooten

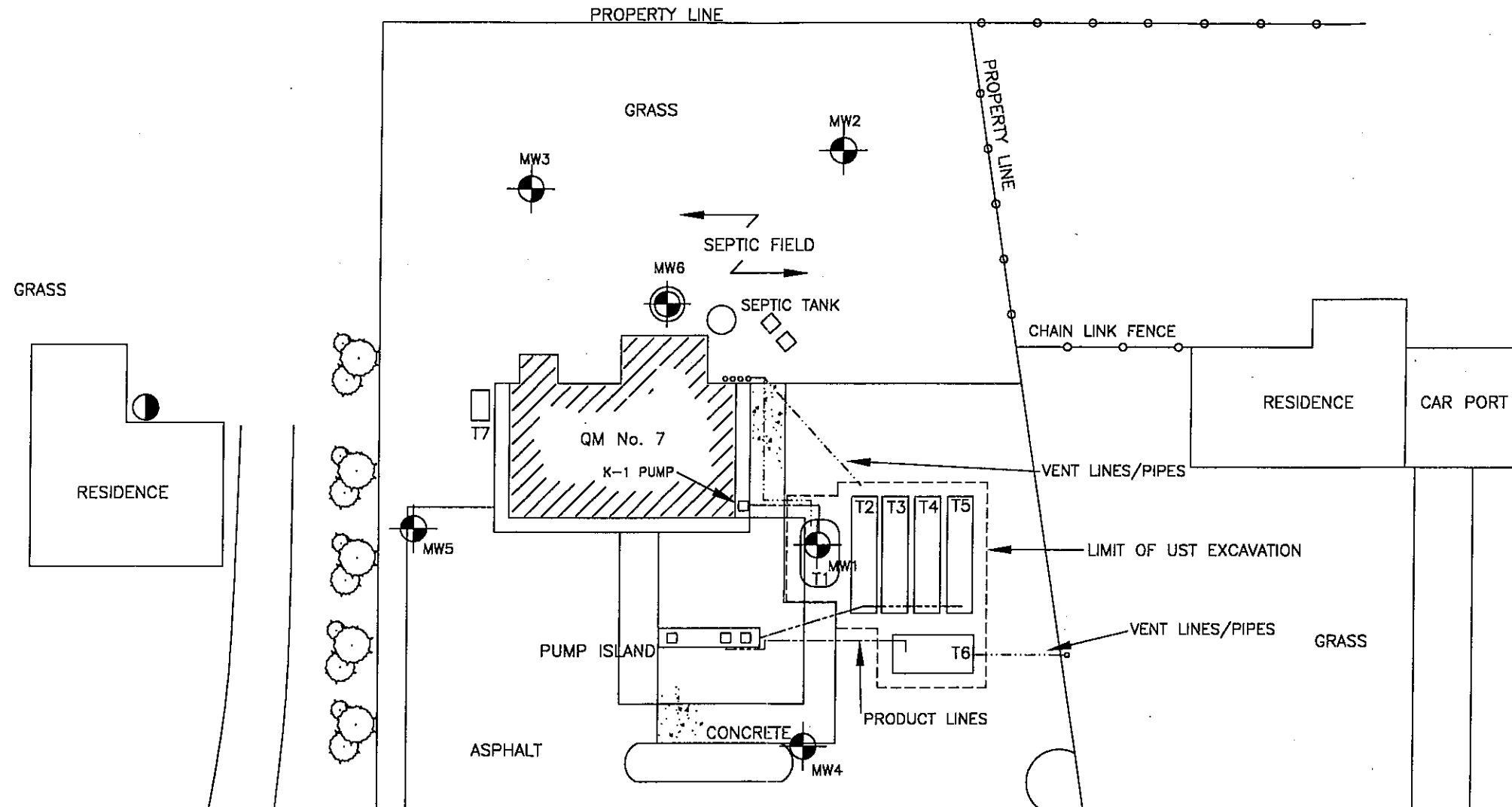
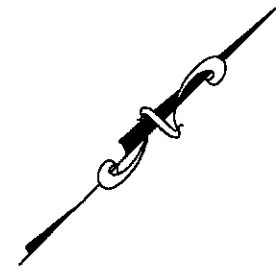
Project: GR22.325

											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	B42-2 , S6	17.7	<0.44	<0.44	43.6	43.6	21.2	2.3	0.027	0	94.7	5.3	Road Tar 90.2%,(FCM)													
s	B42-2 , S8	16.8	<0.42	<0.42	0.86	0.86	0.34	<0.13	<0.017	0	93.5	6.5	Deg Fuel 92.7%,(FCM)													
s	B42-3 , S5	20.2	<0.5	<0.5	1.8	1.8	0.91	<0.16	<0.02	0	92.2	7.8	Road Tar 94.9%,(FCM)													
s	B42-3 , S9	128.0	<3.2	353.4	594.5	947.9	25.4	<1	<0.13	99.7	0.3	0	Deg.Kerosene 90.4%,(FCM)													
s	B42-4 , S9	18.2	<0.45	<0.45	<0.45	<0.45	<0.09	<0.15	<0.018	0	0	0	PHC not detected													
s	B42-5 , S7	12.5	<0.31	<0.31	<0.31	<0.31	<0.06	<0.1	<0.012	0	0	0	,(FCM),(BO)													
s	B42-7 , S6	16.5	<0.41	<0.41	1.1	1.1	0.72	<0.13	<0.017	0	95.5	4.5	Deg Fuel 73.4%,(FCM)													
s	B42-7 , S8	31.6	<0.79	6.1	105.2	111.3	51.1	5.5	<0.032	10.4	86.3	3.3	Road Tar 93.7%,(FCM)													
Initial Calibrator QC check											OK		Final FCM QC Check											OK		100.3 %

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

APPENDIX C
CHAIN-OF-CUSTODY FORM

APPENDIX D
2000 LSA REPORT FIGURES 2, 4, 5, AND 6



U.S. HWY. 158 (Reidsville Rd.)

LEGEND

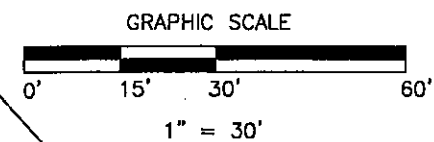
-  Type II Monitoring Well
-  Type III Monitoring Well
-  Potable Well (Inactive)

TANK INFORMATION	
T1	4,000 gal. kerosene (fiberglass)
T2	4,000 gal. gasoline (steel)
T3	4,000 gal. gasoline (steel)
T4	4,000 gal. gasoline (steel)
T5	4,000 gal. gasoline (steel)
T6	6,000 gal. gasoline (steel)
T7	550 gal. heating oil (closed 1988)

VACANT LOT

SR 2397 (Rickard Rd.)

GRASS



TURNER ENVIRONMENTAL CONSULTANTS, P.C.
CARRBORO, NC

SITE LAYOUT MAP

QUALITY MART No. 7

QUALITY OIL COMPANY, LLC

WINSTON-SALEM, NC

PROJECT NO: 04198

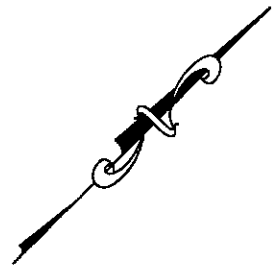
CHECKED BY: MJB

FIGURE NO. 2

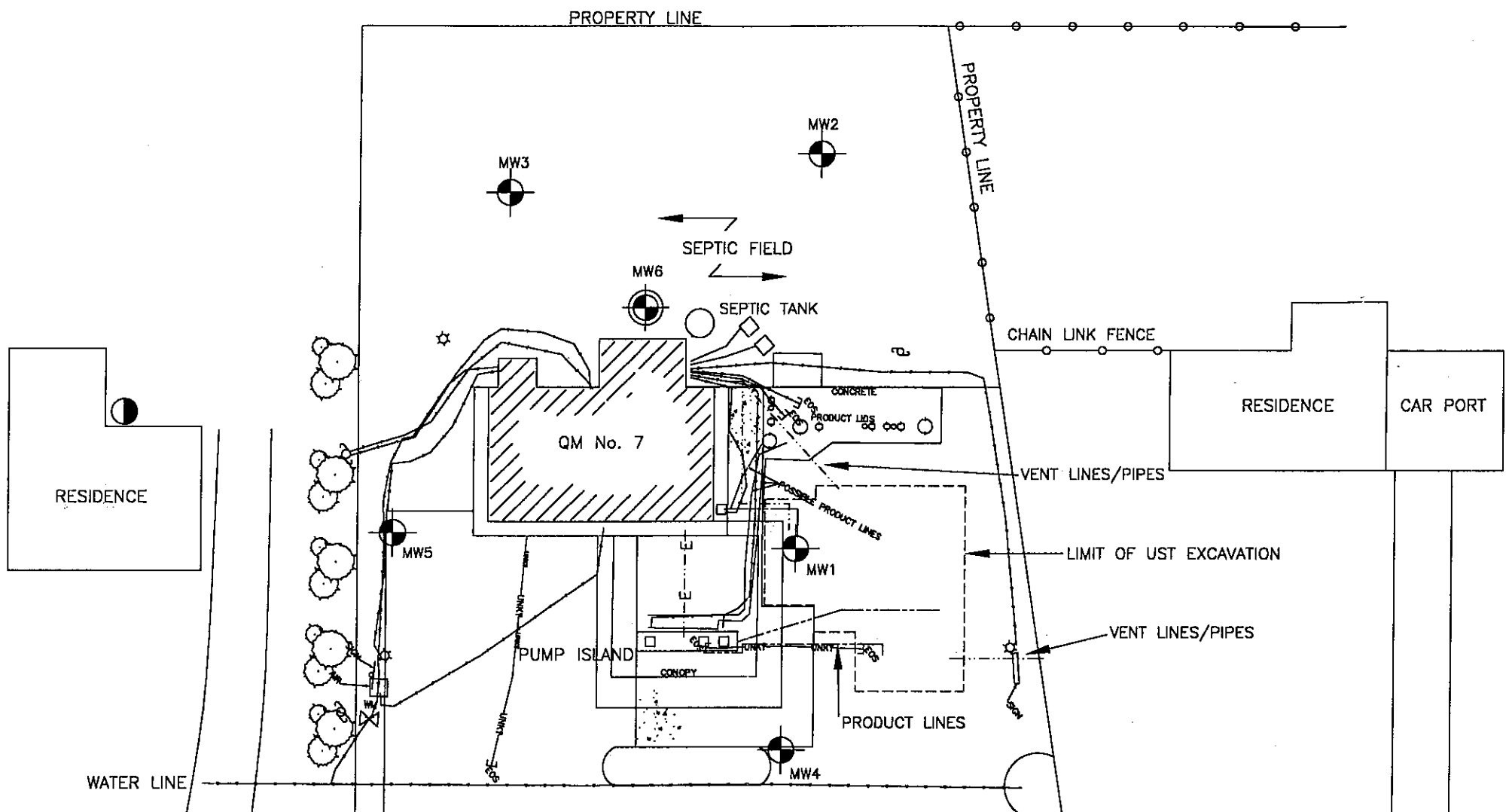
SCALE: 1"=30'

DRAWN BY: MJB/RDK

DATE: 5/30/00



LEGEND	
⊕	UTILITY POLE
☆	LIGHT POLE
⊗	WATER METER
⊥	SIGN POLE
⊙	SEPTIC LIDS
⊕	MONITORING WELL
-P-	POWER LINE
-W-	WATER LINE
-T-	TELEPHONE LINE
-UNK?	UNKNOWN UTILITY



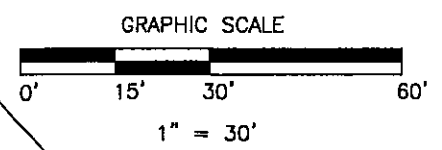
U.S. HWY. 158 (Reidsville Rd.)

SR 2397 (Rickard Rd.)

LEGEND

- ⊕ Type II Monitoring Well
- ⊙ Potable Well (Inactive)
- ⊕ Type III Monitoring Well

NOTE: Utility locating performed by Taylor, Weisman and Taylor.



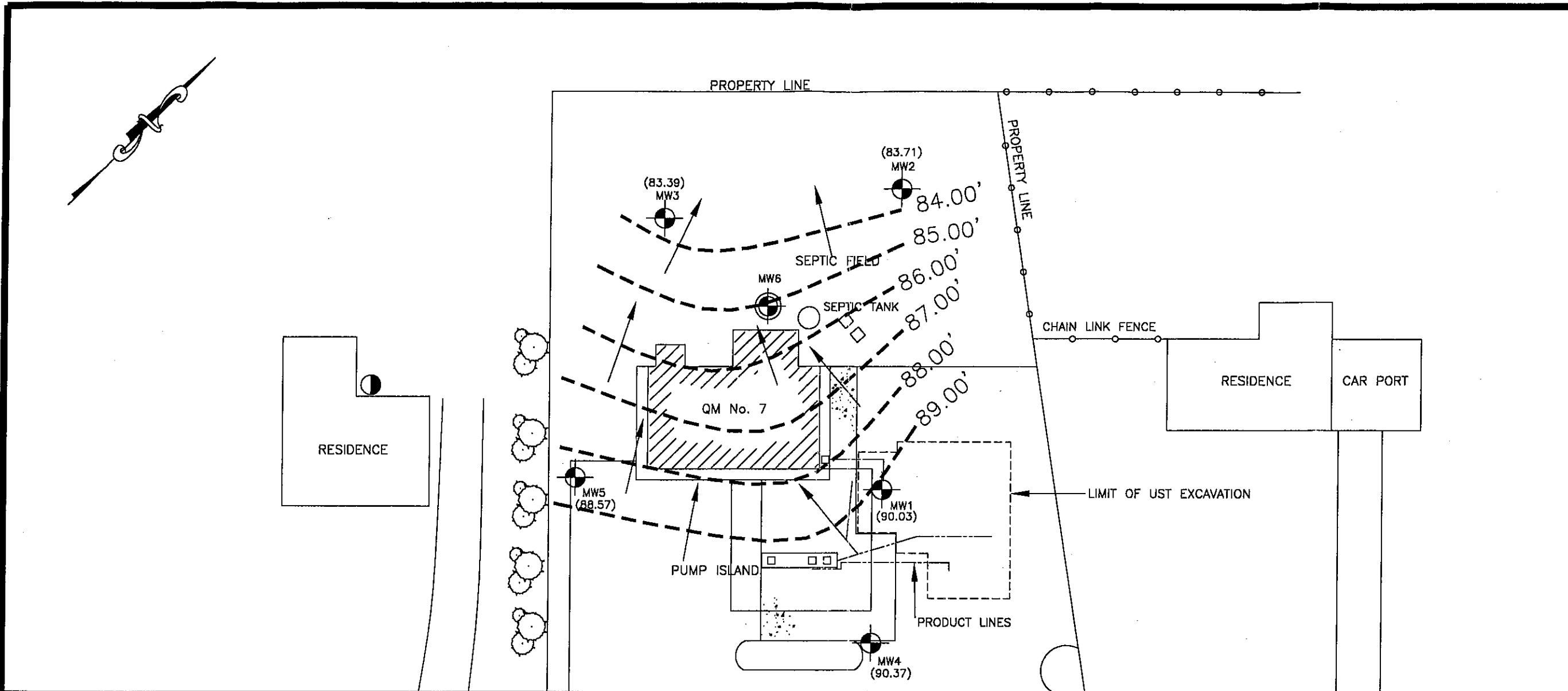
TURNER ENVIRONMENTAL CONSULTANTS, P.C.
CARRBORO, NC

UNDERGROUND UTILITIES MAP
QUALITY MART No. 7

QUALITY OIL COMPANY, LLC
PROJECT NO: 04198
SCALE: 1"=30'

WINSTON-SALEM, NC
CHECKED BY: MJB
DRAWN BY: MJB/RDK

FIGURE NO. 4
DATE: 5/30/00



POTENTIOMETRIC SURFACE MAP (5/23/00)


QUALITY OIL COMPANY, LLC
 QUALITY MART No. 7
 WINSTON-SALEM, NC

PROJECT NO: 04198
 SCALE: 1" = 30'

CHECKED BY: MJB
 DRAWN BY: MJB/RDK

FIGURE NO. 5
 DATE: 5/30/00

TURNER ENVIRONMENTAL CONSULTANTS, P.C.
 CARBORO, NC




U.S. HWY. 158 (Reidsville Rd.)


SR 2397 (Rickard Rd.)

LEGEND

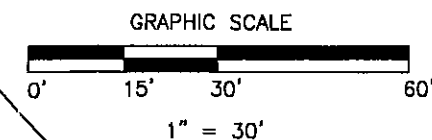
-  Type II Monitoring Well
-  Type III Monitoring Well

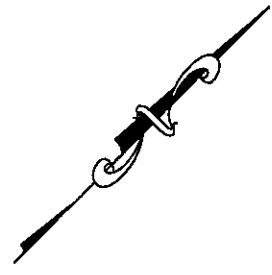
 Potable Well (Inactive)

(90.37) Water elevations shown next to corresponding monitoring wells in parentheses.

 88.00 Contour lines shown are in one foot intervals. Elevations are in feet.
 89.00 Arrows indicate interpreted groundwater flow direction.

NOTE: MW6 is a Type III well and was not used to construct this map.
 Water elevation data is from 5/23/00 measurements.





ESTIMATED EXTENT OF NCAC 2L STANDARD VIOLATION

PROPERTY LINE

PROPERTY LINE

Benzene 74
Toluene 2.1
Ethylbenzene 13.0
Total Xylenes 3.9
MTBE 140

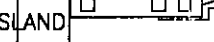
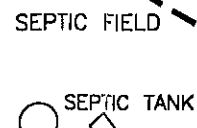
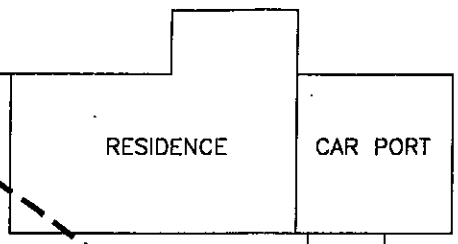
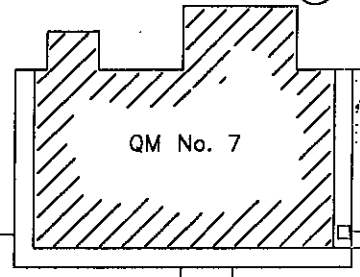
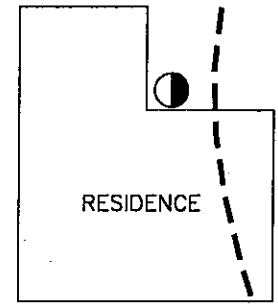
Benzene <1
Toluene <1
Ethylbenzene <1
Total Xylenes <3
MTBE 1.5

Benzene <1
Toluene <1
Ethylbenzene <1
Total Xylenes <3
MTBE <1

Benzene 2,000
Toluene 1,100
Ethylbenzene 410
Total Xylenes 1170
MTBE 7,400

Benzene 77.0
Toluene 100
Ethylbenzene 740
Total Xylenes 800
MTBE <10

Benzene 1,200
Toluene 1,600
Ethylbenzene 9,400
Total Xylenes 53,000
MTBE <500



LIMIT OF UST EXCAVATION

CHAIN LINK FENCE

U.S. HWY. 158 (Reidsville Rd.)

SR 2397 (Rickard Rd.)

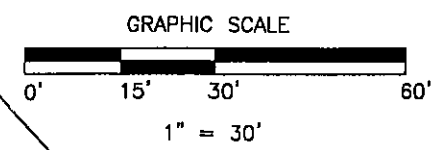
LEGEND

- Type II Monitoring Well
- Type III Monitoring Well
- Potable Well (Inactive)

NOTE: Groundwater analytical results for MW1 - MW5 are from the 4/25/00 sampling event. Analytical results for MW6 are from the 5/24/00 sampling event.

All results shown are in parts per billion (ppb)

Note that not all results are included on this map. The complete analytical report for MW1 -MW6 is included as Appendix D.



TURNER ENVIRONMENTAL CONSULTANTS, P.C.
CARRBORO, NC

GROUNDWATER ANALYTICAL RESULTS (VARIOUS DATES)
QUALITY MART No. 7

QUALITY OIL COMPANY, LLC

WINSTON-SALEM, NC

PROJECT NO: 0419B

CHECKED BY: MJB

FIGURE NO. 6

SCALE: 1"=30'

DRAWN BY: MJB/RDK

DATE: 5/30/00