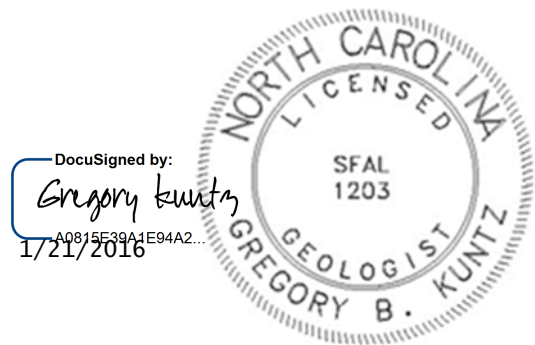


**PRELIMINARY SITE ASSESSMENT
PARCEL 021, SPIRIT MASTER FUNDING IN., LLC,
STATE PROJECT U-3109A
WBS ELEMENT 34900.1.2, ALAMANCE COUNTY**

**MEBANE-NC 119 RELOCATION FROM I-40/85 TO
MEBANE ROGERS RD, MEBANE, NORTH CAROLINA**

Schnabel Project 14821010.11
January 13, 2016
Revised January 15, 2016



Not Considered Final unless all signatures are completed





January 13, 2016
Revised January 15, 2016

Mr. Mohammed A. Mulla, P.E., CPM, MCE
NCDOT, Geotechnical Engineering Unit
1020 Birch Ridge Drive
Raleigh, NC 27610

RE: State Project: U-3109A
 WBS Element: 34900.1.2
 County: Alamance
 Description: Mebane-NC 119 Relocation from I-40/85 to Mebane Rogers Rd.

Subject: **Preliminary Site Assessment for Parcel 021, Mebane, NC**
 Schnabel Engineering Project 14821010.11

Dear Mr. Mulla:

SCHNABEL ENGINEERING SOUTH, P.C. (Schnabel) is pleased to submit our revised report for this project. This study was performed in accordance with our proposal dated October 19, 2015 as authorized by the Notice to Proceed on November 13, 2015 and was conducted under our May 16, 2014 Agreement with the NCDOT.

We appreciate the opportunity to be of service for this project. Please call us if you have any questions regarding this report.

Sincerely,

SCHNABEL ENGINEERING SOUTH, PC

Benjamin L. Bradley, GIT
Project Scientist

DocuSigned by:
Ben Bradley
179EEB5214154D5...
1/22/2016

Gregory B. Kuntz, LG
Senior Associate Scientist

DocuSigned by:
Gregory Kuntz
A0815E39A1E94A2...
1/21/2016

BB/GK

**NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
PRELIMINARY SITE ASSESSMENT FOR PARCEL 021,
SPIRIT MASTER FUNDING IN., LLC
STATE PROJECT U-3109A, WBS ELEMENT 39400.1.2
MEBANE-NC 119 RELOCATION FROM I-40/85 TO MEBANE ROGERS RD
MEBANE, ALAMANCE COUNTY, NORTH CAROLINA**

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1.0 INTRODUCTION

The North Carolina Department of Transportation (NCDOT) is planning to relocate NC 119 from I-40/85 to Mebane Rogers Road in the Town of Mebane, located in Alamance County, North Carolina. Acquisition of properties within the right-of-way (ROW) is necessary prior to road construction. Schnabel Engineering conducted a Preliminary Site Assessments (PSA) on Parcel 021 located within the proposed ROW that is of concern to the NCDOT.

This report summarizes the results of field activities conducted during the PSA for the proposed property Parcel 021 acquisition area (Study Area) identified by NCDOT. The property is located at 1305 S. Fifth Street and is an active gas station/fast food chain restaurant owned by Spirit Master Funding in., LLC (Figure 1). The property line and topography are shown on Figure 2. The approximate NCDOT project limits that delineate the property acquisition area are shown on Figure 4.

The scope of work executed at the site was performed in general accordance with our cost proposal dated October 19, 2015 and was initiated based on a Notice to Proceed issued by the NCDOT Geotechnical Engineering Unit on November 13, 2015 under contract 7000015371, dated May 16, 2014.

2.0 BACKGROUND AND SITE DESCRIPTION

A gas station convenience mart and fast food restaurant are located on Parcel 021. Dispenser islands are located to the north of the buildings and are covered by a canopy. The eastern part of the property is covered with asphalt and the western part of the property is covered with trees and other vegetation. The Study Area consists of grass covered islands, two asphalt covered entrance driveways and parking areas, and brush on the western part of the property. Utilities located in the Study Area include water, sewer, and electric. The information regarding prior site use provided to Schnabel Engineering by NCDOT was that this parcel is an active gas station with two active USTs installed in 1993. The UST pad is located adjacent to the grass covered islands to the north. This PSA is for a partial take. Photographs of the Study Area are presented in Appendix A.

3.0 FIELD METHODOLOGY

Prior to mobilizing to the site to conduct the field investigation, Schnabel Engineering contacted North Carolina One Call to locate underground utilities in the Study Area of the site. Schnabel Engineering mobilized a geophysical crew to the site on November 18, 2015 and performed an electromagnetic survey of the subsurface in the proposed ROW area within the parcel. The Schnabel geophysical crew returned to the Study Area on December 4, 2015 to perform a ground penetrating radar (GPR) survey with a Geophysical Survey Systems SIR 3000 equipped with a 400 MHz antenna. The geophysical report is presented in Appendix B.

After reviewing the background information and geophysical data, Schnabel returned to Parcel 021 to conduct soil borings and field screening of soils from within the Study Area. Seven soil borings designated B-21-01 through B-21-07 were advanced by Geologic Exploration of Statesville, NC along S. Fifth Street on December 17, 2015. Two borings were advanced near the grass islands adjacent to the UST pad, three borings were advanced near proposed drainage easements located on the western and southeastern parts of the property, one boring was advanced in the proposed utility easement on the northeastern part of the property, and one boring was advanced in the north central portion of the Study Area. The location of the soil borings are shown on Figure 2. The borings were advanced to a total depth of 10 to 12 feet below ground surface (bgs). The borings were advanced utilizing a track-mounted

Geoprobe® (Model 8040-DT) with direct push probe technology. At the completion of the sampling activities, the borings were backfilled with soil removed from the boring during sampling and/or bentonite chips.

Soils for field screening were obtained from the borings using a MacroCore® sampler fitted with a new, single-use, five foot long disposable polyvinyl chloride (PVC) liner. A portion of each 3-foot interval was placed in a separate re-sealable plastic bag. These bags were sealed and placed aside to equilibrate for 15 minutes at ambient temperature. The headspace in each bag was field screened with a MiniRAE Plus photo ionization detector (PID) for total volatile organic compounds. Headspace screening of the soil samples was zero parts per million (ppm) at each of the boring locations at intervals of 0-3 feet, 3-6 feet, 6-9 feet, and 9-12 feet bgs (Table 1, Sampling Intervals and Field Volatile Measurements). The PID was calibrated on December 17, 2015 in general accordance with the manufacturer's recommended calibration procedures. The PID readings were recorded with the soil descriptions and indications of staining or odors, if present on the logs for each boring presented in Appendix C.

Ultra Violet Fluorescence (UVF) was performed at Parcel 021 because of the usage of the property as an active gas station with USTs. A portion of soil from each boring at intervals of 0-3 feet, 3-6 feet, 6-9 feet, and 9-12 feet bgs were field analyzed for total benzene, toluene, ethylbenzene, and xylenes (BTEX), total petroleum hydrocarbons (TPH), TPH gasoline range organics (GRO), TPH diesel range organics (DRO), total Aromatics, Sum 16 EPA polynuclear aromatic hydrocarbons (PAHs), and Benzo(a)pyrene (BaP) by UVF using a QED Hydrocarbon Analyzer from QROS, LLC. Groundwater was not encountered in the borings so a groundwater sample was not collected. The UVF results are located in Appendix E.

Soils collected from borings within the Study Area generally consisted of orangish brown Elastic Silt (MH). GPS coordinates for each boring were obtained using a Trimble Pro-XRS DGPS system (Appendix D) with coordinates reported in US State Plane 1983 system, North Carolina 3200 zone, using the NAD 83 datum, with units in US survey feet.

4.0 GROUNDWATER MONITORING WELLS OR REMEDIATION WELLS

Groundwater monitoring wells or remediation wells were not observed within the proposed ROW or easement on this parcel.

5.0 DISCUSSION OF RESULTS

The EM data obtained during the geophysical survey indicated the presence of two known USTs near the northwestern corner of the gas station canopy.

The GPR data suggest the tops of UST Nos. 1 and 2 are two to three feet below ground surface. UST No. 1 is interpreted to be about 10.5 feet in diameter and about 18.5 feet long, which yields a volume approximately equivalent to a 12,000 gallon UST. UST No. 2 is interpreted to be about 8 feet in diameter and about 21.5 feet long, which yields a volume approximately equivalent to an 8,000 gallon UST.

Table 2, listed below, shows the results of the UVF analyses conducted at Parcel 021. Results greater than 10 mg/Kg exceed the TPH Action Level for DRO and GRO (*Guidelines for Site Checks, Tank Closure, and Initial Response and Abatement for UST Releases, Division of Waste Management, UST Section, December 1, 2013*).

Table 2, UVF Results

**NCDOT Geotechnical Engineering Unit
State Project U-3109A, Alamance County**

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-21-01 0-3'	13.5	<0.67	<0.34	2.3	2.3	2.2	0.1	0.002	0	82.6	17.4	V.Deg.PHC + BO (FCM) 74.3%
s	B-21-01 3-6'	15.6	<0.78	<0.39	0.88	0.88	0.84	0.1	0.007	0	76.1	23.9	V.Deg.PHC (FCM) (P)
s	B-21-01 6-9'	8.8	<0.22	<0.22	<0.09	<0.22	<0.04	<0.007	<0.001	0	0	0	PHC not Detected + BO
s	B-21-02 0-3'	13.9	<0.7	<0.35	1.5	1.5	1.4	0.06	0.001	0	83.3	16.7	V.Deg.PHC (FCM) 84.3%
s	B-21-02 3-6'	18.2	<0.91	<0.45	<0.18	<0.45	<0.09	<0.01	<0.002	0	0	0	PHC not Detected + BO
s	B-21-02 6-9'	15.6	<0.78	<0.39	0.22	0.22	0.2	0.02	<0.002	0	93.7	6.3	PHC Traces + BO (FCM) (P)
s	B-21-06 0-3'	14.0	<0.7	<0.35	7.5	7.5	3.7	0.12	0.001	0	95.2	4.8	Deg.Diesel (FCM) 33.8%
s	B-21-06 3-6'	16.9	<0.84	<0.42	0.39	0.39	0.39	0.04	<0.002	0	84.3	15.7	Residual PHC + BO (FCM) 56.1%
s	B-21-06 6-9'	14.9	<0.74	<0.37	2.6	2.6	2.5	0.1	0.002	0	81.4	18.6	V.Deg.PHC (FCM) 70.5%
s	B-21-06 10'	16.0	<0.8	<0.4	0.38	0.38	0.26	<0.01	<0.002	0	87.7	12.3	V.Deg.PHC (FCM) 61.8%
s	B-21-07 0-3'	14.4	<0.72	<0.36	<0.14	<0.36	<0.11	<0.01	<0.001	0	10.9	89.1	PHC not Detected + BO (P)
s	B-21-07 3-6'	17.0	<0.85	<0.42	0.43	0.43	0.37	<0.01	<0.002	0	84.7	15.3	V.Deg.PHC + BO (FCM) 75.2%
s	B-21-07 6-9'	15.2	<0.76	<0.38	0.47	0.47	0.45	0.05	<0.002	0	61.7	38.3	PHC Traces + BO (FCM)
s	B-21-07 10'	15.8	<0.79	<0.39	0.56	0.56	0.54	0.06	<0.002	0	58.7	41.3	V.Deg.PHC + BO (FCM)
s	B-21-04 0-3'	20.3	<1	<0.51	1.3	1.3	1.2	0.06	0.002	0	76.5	23.5	V.Deg.PHC + BO (FCM) 77.7%
s	B-21-04 3-6'	16.5	<0.82	<0.41	0.46	0.46	0.34	<0.01	<0.002	0	71.4	28.6	V.Deg.PHC + BO (FCM) (P) 44.2%
s	B-21-04 6-9'	19.1	<0.96	<0.48	0.84	0.84	0.8	0.05	0.002	0	74	26	V.Deg.PHC + BO (FCM) (P) 70.1%
s	B-21-04 9-12'	16.0	<0.8	<0.4	<0.16	<0.4	<0.08	<0.01	<0.002	0	10.4	89.6	PHC Traces + BO (FCM) (P)
s	B-21-03 0-3'	13.7	<0.68	<0.34	0.37	0.37	<0.15	<0.01	0.001	0	47.3	52.7	V.Deg.PHC (FCM) (P) 68.9%
s	B-21-03 3-6'	17.9	<0.9	<0.45	4	4	3	0.33	0.013	0	85.5	14.5	Road Tar (FCM) 92.7%
s	B-21-03 6-9'	16.8	<0.84	<0.42	3.1	3.1	2.4	0.25	0.006	0	86.2	13.8	Road Tar (FCM) 86.3%
s	B-21-03 9-12'	19.5	<0.98	<0.49	12.4	12.4	11.8	0.53	0.012	0	87.1	12.9	Deg Fuel (FCM) 88.8%
s	B-21-05 0-3'	16.7	<0.83	<0.42	1.5	1.5	1.4	0.07	0.002	0	79.5	20.5	V.Deg.PHC + BO (FCM) 84%
s	B-21-05 3-6'	10.4	<0.52	<0.26	0.5	0.5	<0.05	<0.008	<0.001	0	0	0	Residual PHC + BO (FCM) 11.7%
s	B-21-05 6-10'	4.2	<0.21	<0.1	<0.04	<0.1	<0.02	<0.003	<0	0	0	0	PHC not Detected + BO

S: Soil

Results are in mg/Kg

UVF analyses showed degraded fuel at 12.4 mg/Kg DRO at B-21-03 (9-12 feet). PID readings collected at this location were zero ppm and there was an absence of staining and odor. UVF analyses of the remainder of the borings showed readings below 10 mg/Kg. The potentially contaminated soil is estimated to cover an area of approximately 800 square feet and extends vertically from 9 to 12 feet bgs in the vicinity of B-21-03. Based on these dimensions Schnabel estimates that there are approximately 90 cubic yards of contaminated soil at the site. UVF analytical results are included in Appendix E.

6.0 CONCLUSIONS

The geophysical survey conducted at the site indicated the presence of two known USTs on the north central part of the property beneath a concrete pad. Buried utility lines and conduits were also present along the northern part of the property.

Seven soil borings B-21-01 through B-21-07 were advanced to evaluate potential petroleum contamination within the Study Area, and to document soil conditions. UVF results showed that, except for a low level exceedance at B-21-03 (9-12 feet), petroleum contaminated soils were not encountered to 10 feet depth in the areas analyzed. The PID readings and visual/olfactory observations at 9-12 feet in B-21-3 did not indicate contamination.

No existing groundwater or remediation wells were observed within the surveyed area. Groundwater was not encountered to a depth of 12 feet in the soil borings.

7.0 RECOMMENDATIONS

If excavation activities in the Study Area at Parcel 021 exceed 9 feet in depth, contaminated soil may be encountered in proximity to B-21-03 (9-12 feet). Two active USTs are located adjacent to this boring. Based on the UVF results, potential soil contamination is shown at boring B-21-03 on Figures 3 and 4. The proposed NCDOT excavation in proximity to this boring is shallow so soil impact should not be encountered during road construction activities.

8.0 LIMITATIONS

This PSA was prepared for the use of the NCDOT. The scope of work performed at the site is limited to the tasks described in our cost proposal dated October 19, 2015. This report is not intended to represent an exhaustive research of all potential hazards that may exist. Schnabel makes no other declarations, or any express or implied warranty, as to the professional services provided under the terms of the agreement.

TABLES

Table 1, Sampling Intervals and Field Volatile Measurements

Table 2, UVF Results (table included in body of report)

TABLE 1
SAMPLING INTERVALS AND FIELD VOLATILE MEASUREMENTS
PARCEL 021
NCDOT U-3109A, ALAMANCE COUNTY

Sample Depth Below Ground	Soil Borings						
	B-21-01	B-21-02	B-21-03	B-21-04	B-21-05	B-21-06	B-21-07
0 - 3 feet	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3 - 6 feet	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6-10 feet	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-12 feet	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Notes:

*: Ultra Violet Fluorescence (UVF) performed

Field volatile measurements obtained with a MiniRae Photo Ionization Detector

Measurements in parts per million (ppm)

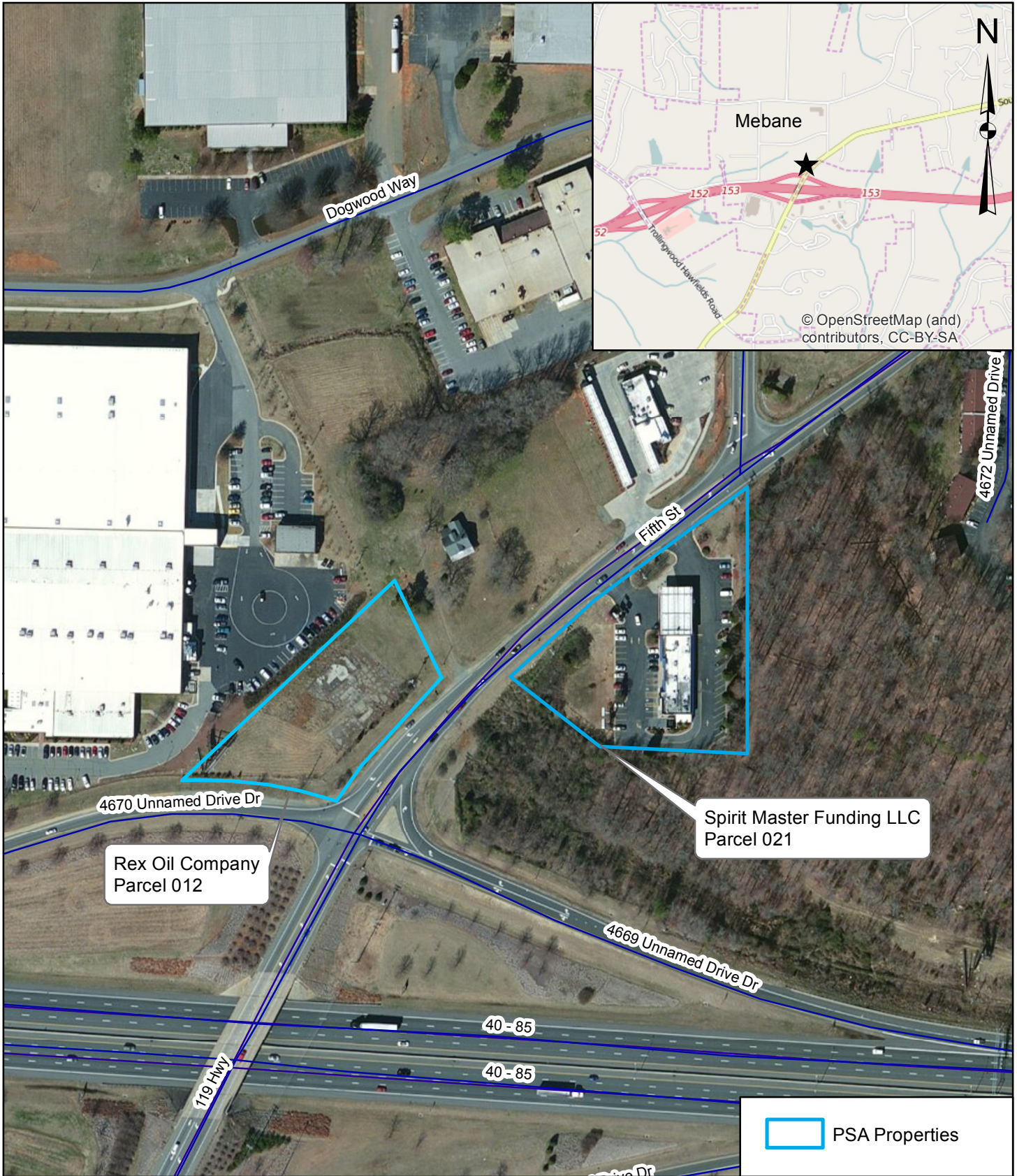
FIGURES

Figure 1, Vicinity Map

Figure 2, Site Map

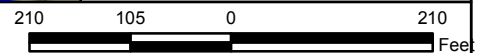
Figure 3, Soil Contamination Map

Figure 4 and 4A, Boring Locations and Legend



Source: Alamance County, NC, GIS Department

Projection: NAD 1983 State Plane North Carolina FIPS 3200 Feet



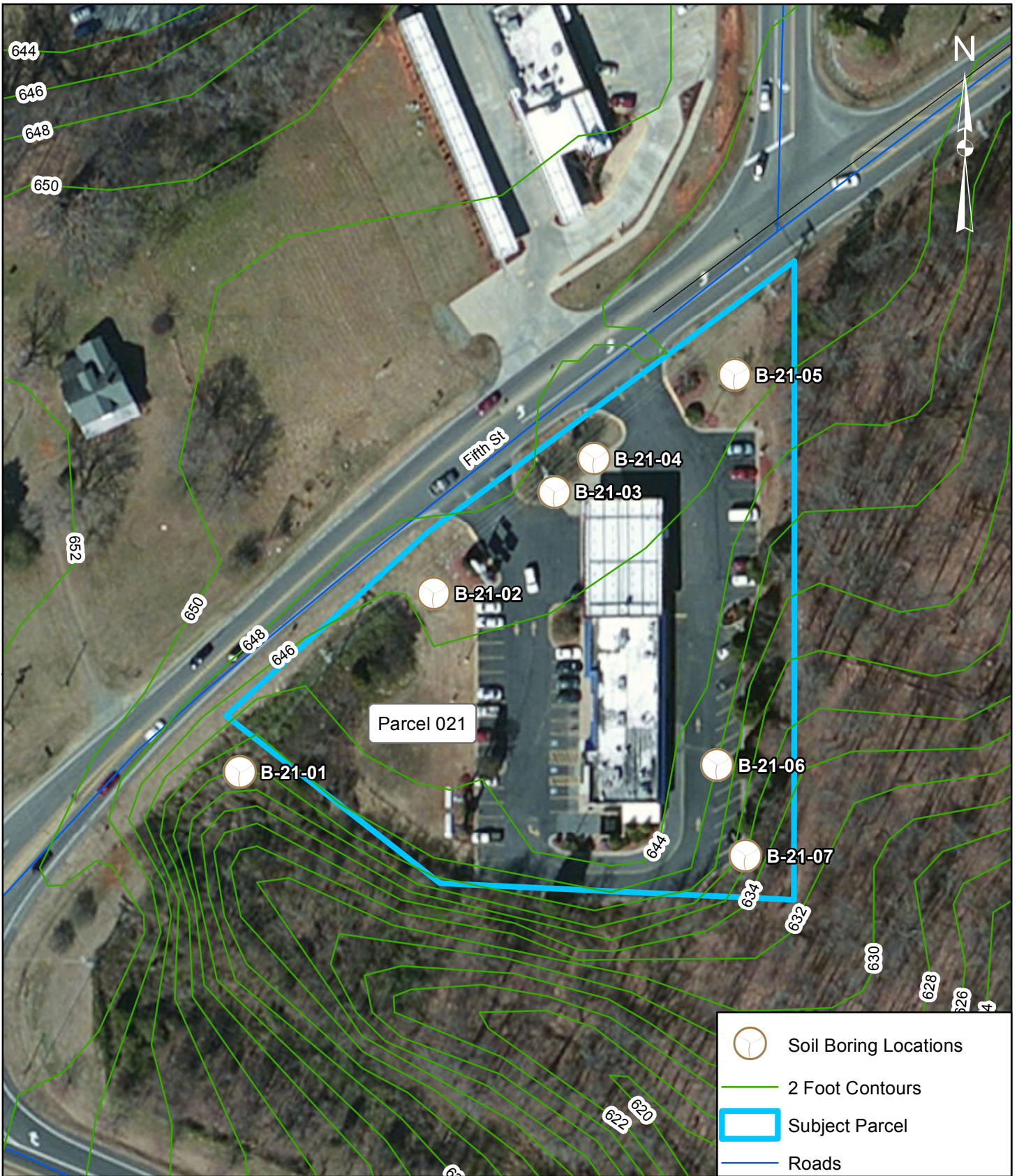
Scale: 1:2,400



SITE PROJECT U-3109A, PSA PARCELS
 ALAMANCE COUNTY, NORTH CAROLINA
 NC DEPARTMENT OF TRANSPORTATION
 PROJECT NO. 14821010.11

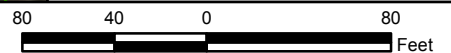
VICINITY MAP

FIGURE 1



Source: Alamance County, NC, GIS Department

Projection: NAD 1983 State Plane North Carolina FIPS 3200 Feet

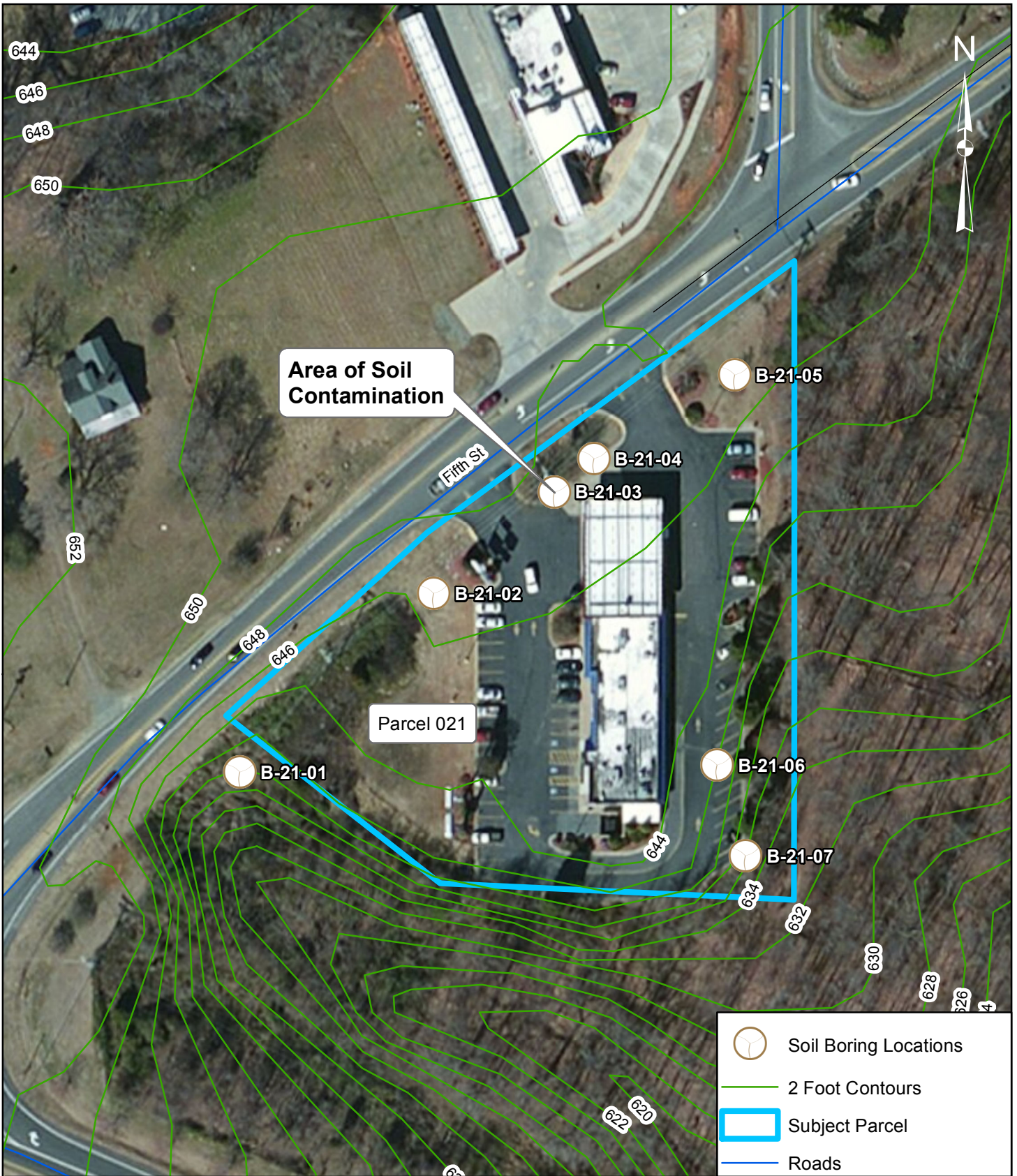


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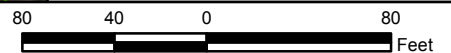


SITE PROJECT U-3109A, PARCEL 021
 ALAMANCE COUNTY, NORTH CAROLINA
 NC DEPARTMENT OF TRANSPORTATION
 PROJECT NO. 14821010.11

SITE MAP
 PARCEL 021,
 SPIRIT MASTER FUNDING IN., LLC
 FIGURE 2



Source: Alamance County, NC, GIS Department



Projection: NAD 1983 State Plane North Carolina FIPS 3200 Feet

Scale: 1:1,000



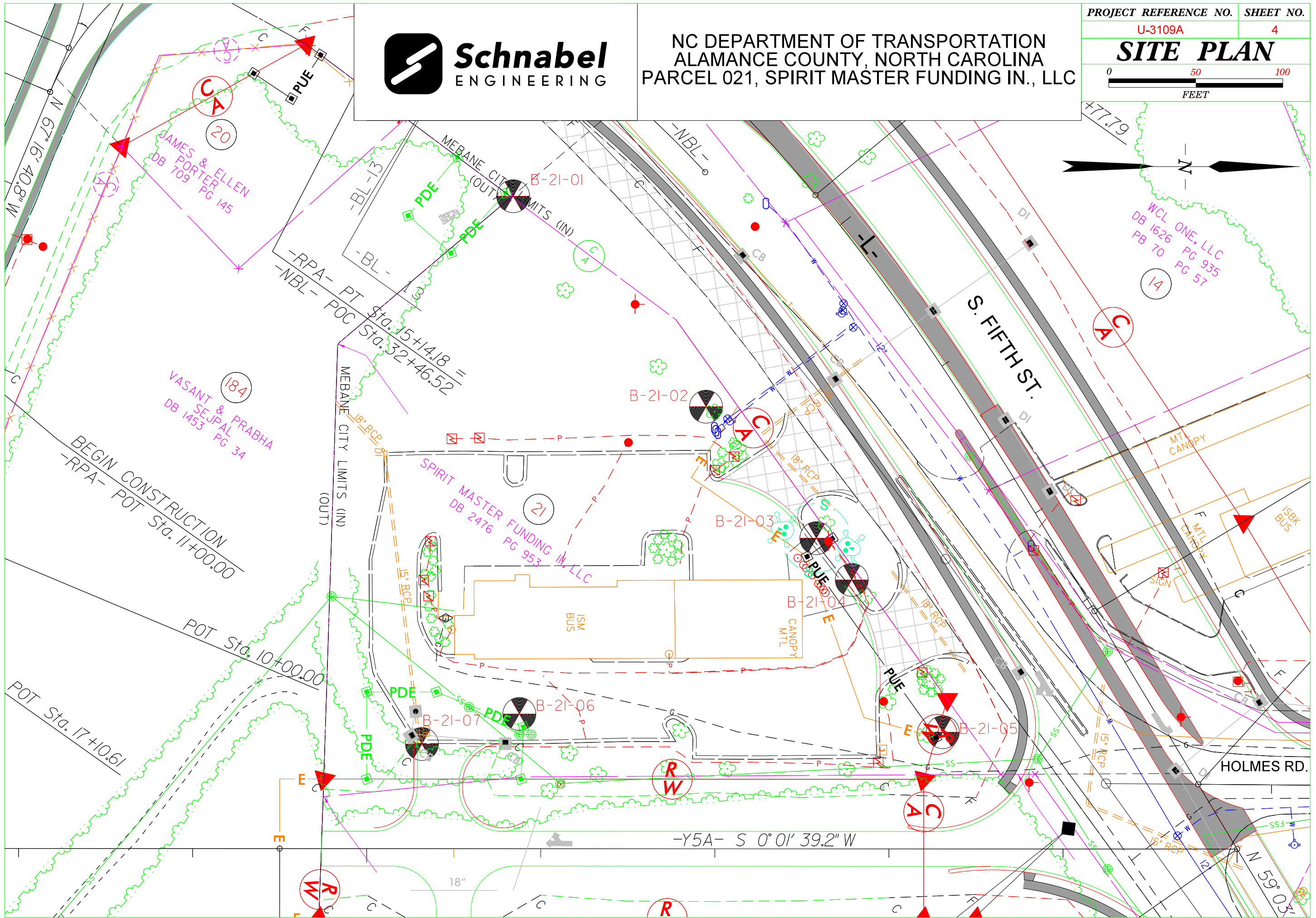
SITE PROJECT U-3109A, PARCEL 021
 ALAMANCE COUNTY, NORTH CAROLINA
 NC DEPARTMENT OF TRANSPORTATION
 PROJECT NO. 14821010.11

SOIL CONTAMINATION AREA
 PARCEL 021,
 SPIRIT MASTER FUNDING IN., LLC
 FIGURE 3



NC DEPARTMENT OF TRANSPORTATION
ALAMANCE COUNTY, NORTH CAROLINA
PARCEL 021, SPIRIT MASTER FUNDING IN., LLC

PROJECT REFERENCE NO.	SHEET NO.
U-3109A	4
SITE PLAN	
0 50 100 FEET	



Note: Not to Scale

*S.U.E. = Subsurface Utility Engineering

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	○ IP
Property Corner	✕
Property Monument	□ ECM
Parcel/Sequence Number	① 23
Existing Fence Line	---x---x---x---
Proposed Woven Wire Fence	○
Proposed Chain Link Fence	□
Proposed Barbed Wire Fence	◇
Existing Wetland Boundary	---MLB---
Proposed Wetland Boundary	---MLB---
Existing Endangered Animal Boundary	---EAB---
Existing Endangered Plant Boundary	---EPB---
Known Soil Contamination: Area or Site	☠ ☠
Potential Soil Contamination: Area or Site	☠ ? ☠

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	---JS---
Buffer Zone 1	---BZ 1---
Buffer Zone 2	---BZ 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:

Baseline Control Point	◆
Existing Right of Way Marker	△
Existing Right of Way Line	-----
Proposed Right of Way Line	-----
Proposed Right of Way Line with Iron Pin and Cap Marker	○ IP
Proposed Right of Way Line with Concrete or Granite R/W Marker	△
Proposed Control of Access Line with Concrete C/A Marker	△
Existing Control of Access	△
Proposed Control of Access	△
Existing Easement Line	---E---
Proposed Temporary Construction Easement	---E---
Proposed Temporary Drainage Easement	---TDE---
Proposed Permanent Drainage Easement	---PDE---
Proposed Permanent Drainage / Utility Easement	---DUE---
Proposed Permanent Utility Easement	---PUE---
Proposed Temporary Utility Easement	---TUE---
Proposed Aerial Utility Easement	---AUE---
Proposed Permanent Easement with Iron Pin and Cap Marker	◆

ROADS AND RELATED FEATURES:

Existing Edge of Pavement	-----
Existing Curb	-----
Proposed Slope Stakes Cut	---C---
Proposed Slope Stakes Fill	---F---
Proposed Curb Ramp	○ CR
Existing Metal Guardrail	---T---
Proposed Guardrail	---T---
Existing Cable Guiderail	---T---
Proposed Cable Guiderail	---T---
Equality Symbol	⊕
Pavement Removal	▬
VEGETATION:	
Single Tree	☘
Single Shrub	☘
Hedge	▬
Woods Line	▬

Orchard	☘ ☘ ☘ ☘
Vineyard	□ Vineyard

EXISTING STRUCTURES:

MAJOR:	
Bridge, Tunnel or Box Culvert	CONC
Bridge Wing Wall, Head Wall and End Wall	CONC WW
MINOR:	
Head and End Wall	CONC HW
Pipe Culvert	---
Footbridge	---
Drainage Box: Catch Basin, DI or JB	□ CB
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	●
Recorded U/G Power Line	---
Designated U/G Power Line (S.U.E.*)	---

TELEPHONE:

Existing Telephone Pole	●
Proposed Telephone Pole	○
Telephone Manhole	⊕
Telephone Booth	□
Telephone Pedestal	⊕
Telephone Cell Tower	⊕
U/G Telephone Cable Hand Hole	□
Recorded U/G Telephone Cable	---
Designated U/G Telephone Cable (S.U.E.*)	---
Recorded U/G Telephone Conduit	---
Designated U/G Telephone Conduit (S.U.E.*)	---
Recorded U/G Fiber Optics Cable	---
Designated U/G Fiber Optics Cable (S.U.E.*)	---

WATER:

Water Manhole	⊕
Water Meter	○
Water Valve	⊗
Water Hydrant	⊕
Recorded U/G Water Line	---
Designated U/G Water Line (S.U.E.*)	---
Above Ground Water Line	---

TV:

TV Satellite Dish	☎
TV Pedestal	⊕
TV Tower	⊗
U/G TV Cable Hand Hole	□
Recorded U/G TV Cable	---
Designated U/G TV Cable (S.U.E.*)	---
Recorded U/G Fiber Optic Cable	---
Designated U/G Fiber Optic Cable (S.U.E.*)	---

GAS:

Gas Valve	◇
Gas Meter	⊕
Recorded U/G Gas Line	---
Designated U/G Gas Line (S.U.E.*)	---
Above Ground Gas Line	---

SANITARY SEWER:

Sanitary Sewer Manhole	⊕
Sanitary Sewer Cleanout	⊕
U/G Sanitary Sewer Line	---
Above Ground Sanitary Sewer	---
Recorded SS Forced Main Line	---
Designated SS Forced Main Line (S.U.E.*)	---

MISCELLANEOUS:

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

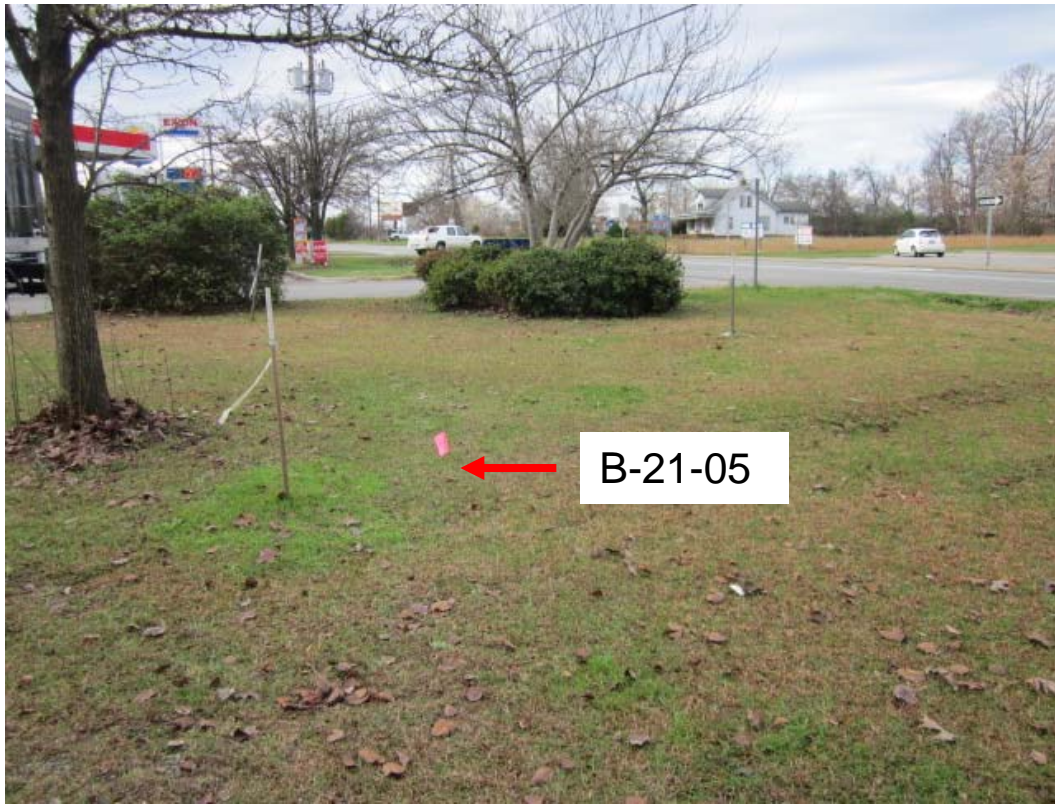
APPENDIX A
PHOTOGRAPHS



Parcel 021, facing southeast toward B-21-07.



Parcel 021, facing east toward B-21-06.



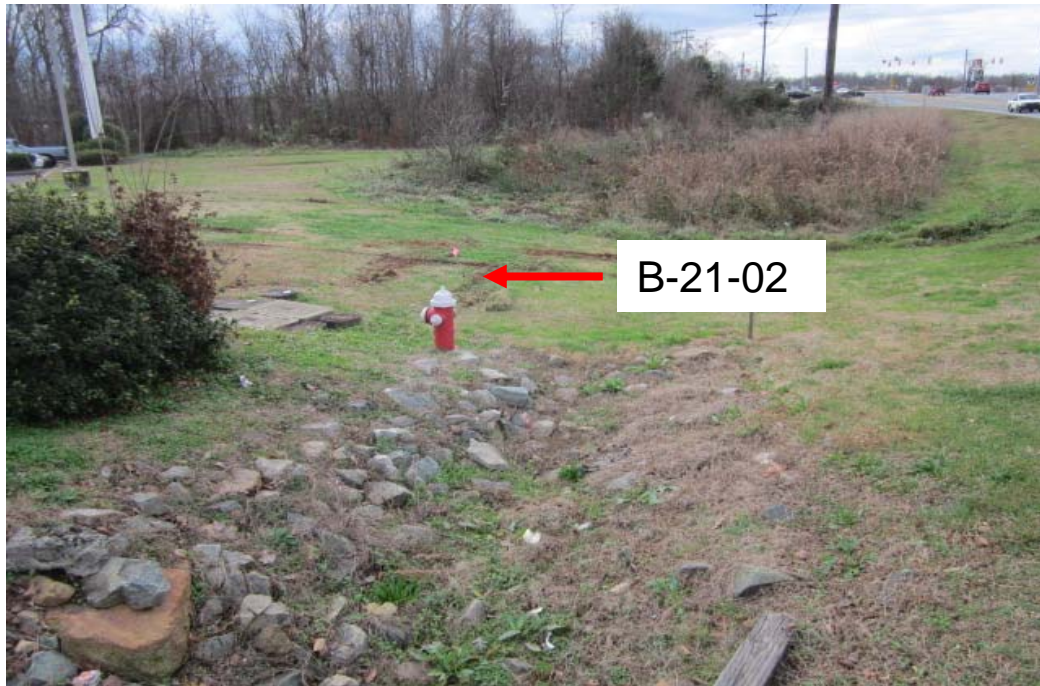
Parcel 021, facing west toward B-21-05.



Parcel 021, facing northwest toward B-21-04.



Parcel 021, facing northeast toward B-21-04 and 03.



Parcel 021, facing west toward B-21-02.



Parcel 021, facing west toward B-21-01.

APPENDIX B
GEOPHYSICS REPORT



January 13, 2016
Revised January 15, 2016

Mr. Mohammed A. Mulla, P.E., CPM, MCE
NCDOT, Geotechnical Engineering Unit
1020 Birch Ridge Drive
Raleigh, NC 27610

RE: State Project: U-3109A
 WBS Element: 34900.1.2
 County: Alamance
 Description: Mebane-NC 119 Relocation from I-40/85 to Mebane Rogers Rd.

**Subject: Project 14821010.11, Report on Geophysical Surveys
 Parcel 21, Spirit Master Funding In., LLC Property, Mebane, North Carolina**

Dear Mr. Mulla:

SCHNABEL ENGINEERING SOUTH, PC (Schnabel) is pleased to present this report on the geophysical surveys we performed on the subject property. The report includes two 11x17 inch color figures and four 8.5x11 inch color figures. This study was performed in accordance with our proposal for Geophysical Surveys to Locate Possible USTs, dated October 19, 2015, as approved by Terry Farr (NCDOT) on November 13, 2015.

INTRODUCTION

The field work described in this report was performed on November 18, 2015 and December 4, 2015, by Schnabel. The purpose of the geophysical surveys was to evaluate the potential presence of metal underground storage tanks (USTs) in the accessible areas of the NCDOT right-of-way and/or easement at Parcel 21. Photographs of the property are included on Figure 1. The property is located at the southwestern quadrant of the intersection of Holmes Road and NC 119 Highway in Mebane, NC.

The geophysical surveys consisted of an electromagnetic (EM) induction survey and a ground penetrating radar (GPR) survey. The EM survey was performed using a Geonics EM61-MK2 (EM61) instrument. The EM61 is a time domain metal detector that stores data digitally for later processing and review. Sensitivity to metallic objects is dependent on the size, depth, and orientation of the buried object and the amount of noise (i.e. response from spurious metallic objects) in the area. The EM61 can generally observe a single buried 55 gallon drum at a depth of 10 feet or less. The EM61 makes measurements by creating multiple

electromagnetic pulses and then measuring the response from metallic objects over time after each pulse is generated. We measure and record the response at several time increments after each pulse to help evaluate relative size and depth of metallic objects in the subsurface.

The GPR survey was performed over selected EM61 anomalies using a Geophysical Survey Systems SIR-3000 system equipped with a 400 MHz antenna to further evaluate EM responses that could indicate a potential UST. The depth penetration of the GPR signal, when using a 400 MHz antenna, is normally limited to 6 feet or less.

Photographs of the equipment used are shown on Figure 2.

FIELD METHODOLOGY

We obtained locations of geophysical data points using a sub-meter Trimble Geo7X differential global positioning system (DGPS). References to direction and location in this report are based on the US State Plane 1983 System, North Carolina 3200 Zone, using the NAD 83 datum, with units in US survey feet. We also recorded the locations of existing site features (signs, other metal objects, etc.) with the DGPS for later correlation with the geophysical data and a digital site plan provided by the NCDOT. The digital site plan for this project appears to show an offset from the GPS positions collected by our DGPS that is somewhat consistent in direction and distance at this site and the other sites (Parcel 10, Parcel 12) where we have collected geophysical data for this project. Based on our communication with Gordon Box about this issue, we did not shift the site plan data in an attempt to overlay it on the geophysical data accurately.

The EM61 data were collected along parallel survey lines spaced approximately 2.5 feet apart. The EM61 and DGPS data were recorded digitally using a field computer and later transferred to a desktop computer for data processing. The GPR data were collected along survey lines spaced approximately one to two feet apart in orthogonal directions over anomalous EM readings not attributed to cultural features. The GPR data were reviewed in the field to evaluate the possible presence of USTs. The GPR data also were recorded digitally and later transferred to a desktop computer for further review.

DISCUSSION OF RESULTS

The contoured EM61 data collected over Parcel 21 and the GPR survey area locations are shown on Figure 3, EM61 Early Time Gate Response, and Figure 4, EM61 Differential Response. We were not able to access some areas throughout the planned survey area due to the presence of drainage ditches with riprap, thick vegetation, etc. Areas outside the colored, contoured EM61 data were not surveyed. Early time data refer to the response measured at a short time after the initial EM pulse is generated. Early time data typically contain responses from all metal objects, small or large and shallow or deep, within the sensitivity range of the instrument. Differential data represent the difference in response between the top and bottom coils of the EM61 instrument at a later time after the initial pulse than early time data. Differential data naturally tend to filter out the effect of surface and very shallowly buried metallic objects. Typically, the differential response emphasizes anomalies from deeper and larger objects such as USTs.

We collected GPR data over an EM anomaly near the northwestern corner of the canopy on Parcel 21, as shown on Figures 3 and 4, to further investigate the EM anomaly. The GPR data indicated the presence of two known USTs, as shown on Figures 3 and 4. Identification of suspected Known UST Nos. 1 and 2

was made in accordance with the rating categories provided by the NCDOT in their letter, dated May 19, 2009, entitled "Geophysical Surveys to Identify USTs".

Example GPR images from lines oriented over the marked locations of Known UST Nos. 1 and 2 are shown on Figure 5. The GPR data suggest the tops of Known UST Nos. 1 and 2 are two to three feet below ground surface. Known UST No. 1 is interpreted to be about 10.5 feet in diameter and about 18.5 feet long, which yields a volume approximately equivalent to a 12,000 gallon UST. Known UST No. 2 is interpreted to be about 8 feet in diameter and about 21.5 feet long, which yields a volume approximately equivalent to an 8,000 gallon UST. The locations of the known USTs are based on interpreted GPR reflections from multiple files collected over the tanks, and the fillports, manholes, etc. on the ground surface are approximately coincident to the centerlines (long axis) of the marked UST locations. The sizes of the tanks we marked onsite are based on the dimensions associated with the documented UST volumes. The GPR reflections verified the marked locations of the USTs for GPR files collected over most of their suspected locations. We did not see evidence of GPR reflections from the suspected UST locations on every GPR line that crosses the long axes of the marked UST locations. Specifically, the GPR reflections from Known UST No. 2 did not suggest the tank extends as far to the southwest as we marked it, but we marked its size based on the dimensions associated with an 8,000 gallon UST. Photographs of the approximate locations of the known USTs that were marked in the field are included on Figure 6.

CONCLUSIONS

As shown in Figures 3 and 4, the EM data we collected over Parcel 21 did not cover portions of the planned survey area due to the presence of thick vegetation, drainage ditches with riprap, etc. The EM data include responses from several visible metallic objects at grade (e.g. water meters, signs, etc.).

The geophysical data confirm the presence of two known USTs, which are both at least partially within the proposed construction easement on Parcel 21. We have interpreted Known UST No. 1 and Known UST No. 2 to be about the size of a 12,000-gallon capacity UST and an 8,000-gallon capacity UST, respectively. The GPR data suggest the tops of Known UST Nos. 1 and 2 are two to three feet below ground surface.

LIMITATIONS

These services have been performed and this report prepared for the North Carolina Department of Transportation in accordance with generally accepted guidelines for conducting geophysical surveys. It is generally recognized that the results of geophysical surveys are non-unique and may not represent actual subsurface conditions.

**North Carolina Department of Transportation
Parcel 21, State Project U-3109A, Alamance County**

We appreciate the opportunity to have provided these services. Please call if you need additional information or have any questions.

Sincerely,

SCHNABEL ENGINEERING SOUTH, PC



James W. Whitt, LG
Project Geophysicist



Joel C. Daniel, LG
Senior Geophysicist

JWW:JCD

Attachments: Figures (6)

CC: Gordon Box - NCDOT

FILE: G:\2014\GREENSBORO\14821010.00_NCDOT_2014_GEOTECHNICAL_UNIT_SERVICES\14821010.11_U-3109A_ALAMANCE_CO\03-SE PRODUCTS\03-REPORTS\01-DRAFT\GEOPHYSICS\PARCEL 21\SCHNABEL GEOPHYSICAL REPORT ON PARCEL 21 (U-3109A) - JCD, JWW REVIEWED.DOCX

Attachments:

- Figure 1 - Parcel 21 Site Photos
- Figure 2 - Photos of Geophysical Equipment Used
- Figure 3 - EM61 Early Time Gate Response
- Figure 4 - EM61 Differential Response
- Figure 5 - Parcel 21 Example GPR Images
- Figure 6 - Parcel 21 Photos of Known UST Locations



Looking east towards Parcel 21 (Spirit Master Funding In., LLC Property)



Looking south towards Parcel 21 (Spirit Master Funding In., LLC Property)



Geonics EM61-MK2 Metal Detector with Trimble DGPS Unit



GSSI SIR-3000 Ground-Penetrating Radar with 400 MHz Antenna

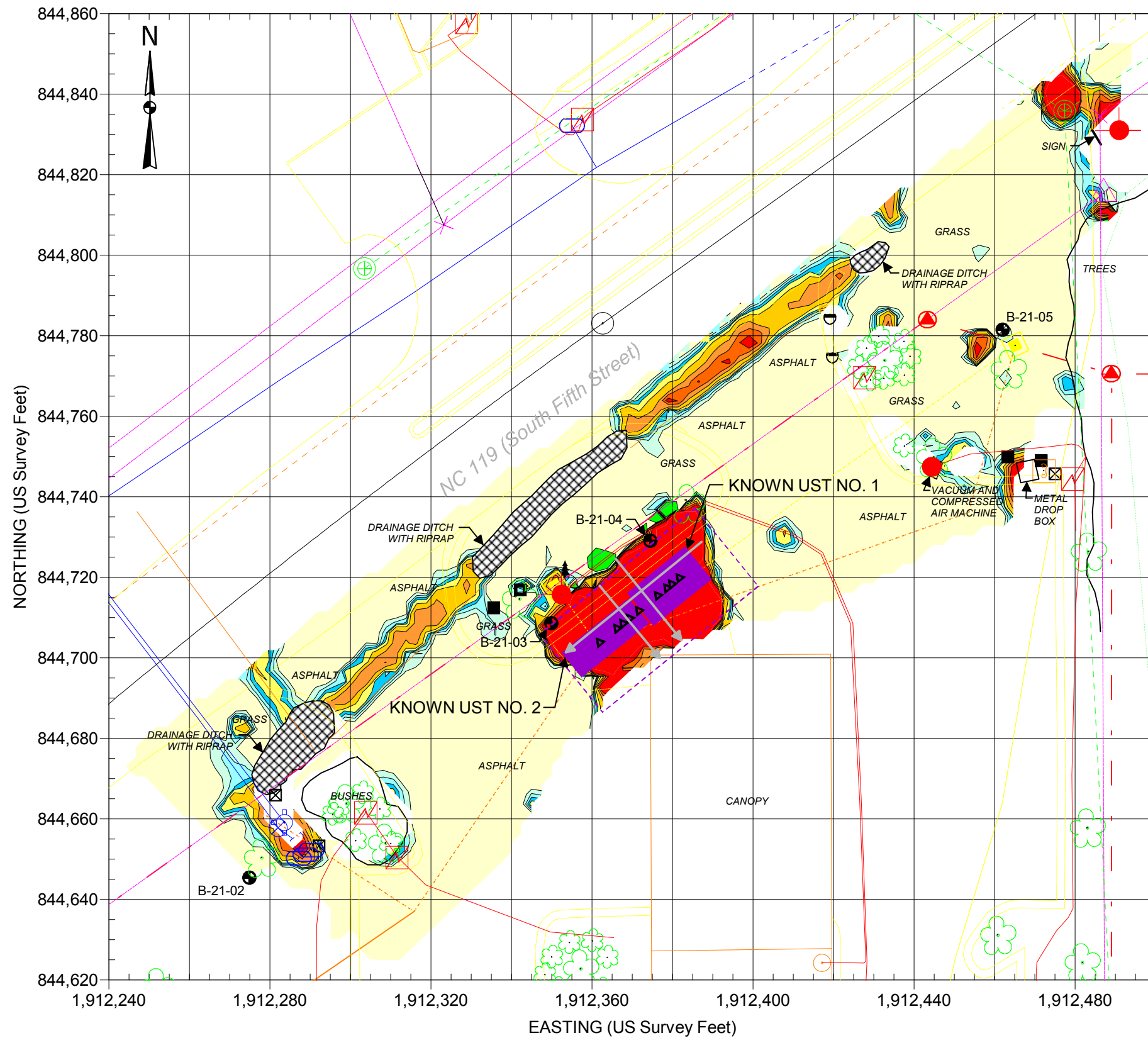
Note: Stock photographs – not taken on site.



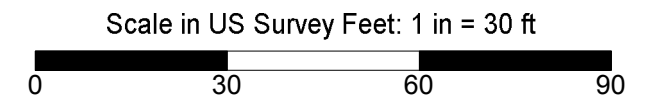
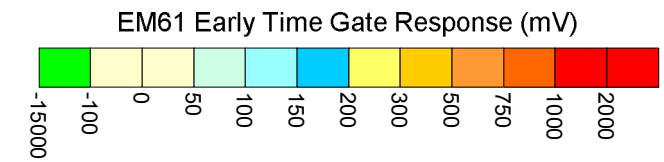
STATE PROJECT U-3109A
NC DEPT. OF TRANSPORTATION
ALAMANCE CO., NORTH CAROLINA
PROJECT NO. 14821010.11

PHOTOS OF
GEOPHYSICAL
EQUIPMENT USED

FIGURE 2



PARCEL 21 - Spirit Master Funding In., LLC Property



EXPLANATION	
	UST ACCESS LIDS/PLATES
	VENT PIPE
	SIGN
	MISCELLANEOUS METALLIC OBJECT
	UTILITY MANHOLE, METER, BOX, ETC.
	BORING LOCATION
	EDGE OF NCDOT PROPOSED R/W
	GPR SURVEY AREA
	LOCATION OF KNOWN USTS MARKED ON SITE
	EXAMPLE GPR LINE LOCATION

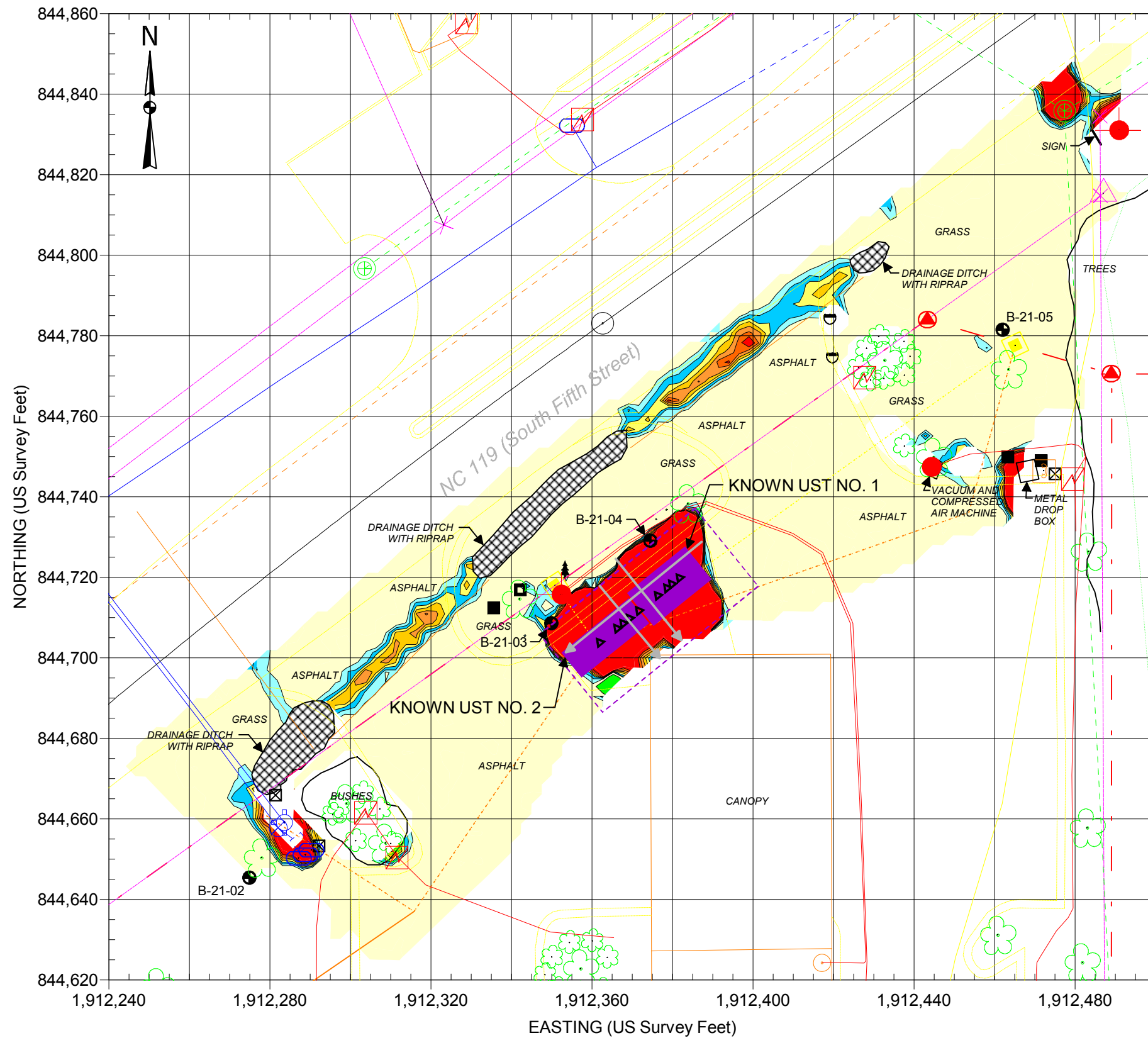
BASE PLAN FROM NCDOT FILE:
 U3109a_ncdot_fs.dgn &
 U3109A_Rdy_row
 (FOR SOME SITE FEATURES)

Note: The contour plot shows the earliest and more sensitive time gate of the EM61 bottom coil/channel in millivolts (mV). The EM data were collected on November 18, 2015, using a Geonics EM61-MK2 instrument. Positioning for the EM61 survey was provided using a submeter Trimble Geo7X DGPS system. Coordinates are in the US State Plane 1983 System, North Carolina Zone 3200, using the NAD 1983 datum. GPR data were acquired on December 4, 2015, using a Geophysical Survey Systems SIR 3000 equipped with a 400 MHz antenna.

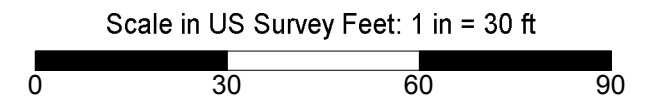
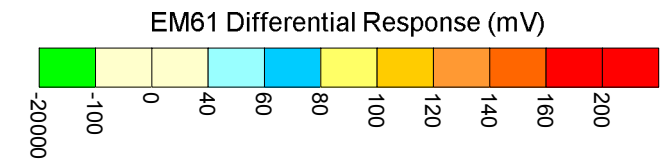


STATE PROJECT U-3109A
 NC DEPARTMENT OF TRANSPORTATION
 ALAMANCE COUNTY, NC
 PROJECT NO. 14821010.11

EM61
 EARLY TIME GATE
 RESPONSE



PARCEL 21 - Spirit Master Funding In., LLC Property



EXPLANATION	
	UST ACCESS LIDS/PLATES
	VENT PIPE
	SIGN
	MISCELLANEOUS METALLIC OBJECT
	UTILITY MANHOLE, METER, BOX, ETC.
	BORING LOCATION
	EDGE OF NCDOT PROPOSED R/W
	GPR SURVEY AREA
	LOCATION OF KNOWN USTS MARKED ON SITE
	EXAMPLE GPR LINE LOCATION

BASE PLAN FROM NCDOT FILE:
 U3109a_ncdot_fs.dgn &
 U3109A_Rdy_row
 (FOR SOME SITE FEATURES)

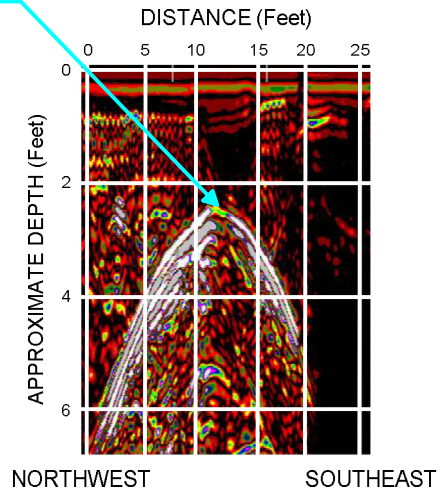
Note: The contour plot shows the difference, in millivolts (mV), between the readings from the top and bottom coils of the EM61. The difference is taken to reduce the effect of shallow metal objects and emphasize anomalies caused by deeper metallic objects, such as drums and tanks. The EM data were collected on November 18, 2015, using a Geonics EM61-MK2 instrument. Positioning for the EM61 survey was provided using a submeter Trimble Geo7X DGPS system. Coordinates are in the US State Plane 1983 System, North Carolina 3200 Zone, using the NAD 1983 datum. GPR data were acquired on December 4, 2015, using a Geophysical Survey Systems SIR 3000 equipped with a 400 MHz antenna.



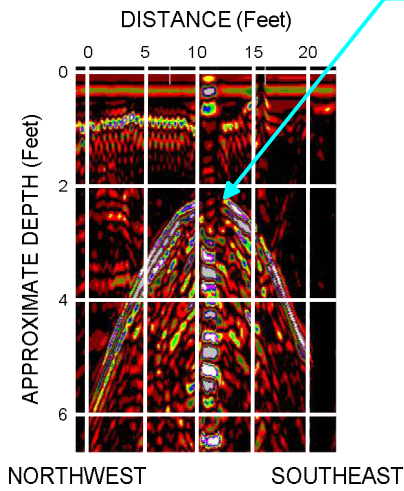
STATE PROJECT U-3109A
 NC DEPARTMENT OF TRANSPORTATION
 ALAMANCE COUNTY, NC
 PROJECT NO. 14821010.11

EM61
 DIFFERENTIAL
 RESPONSE

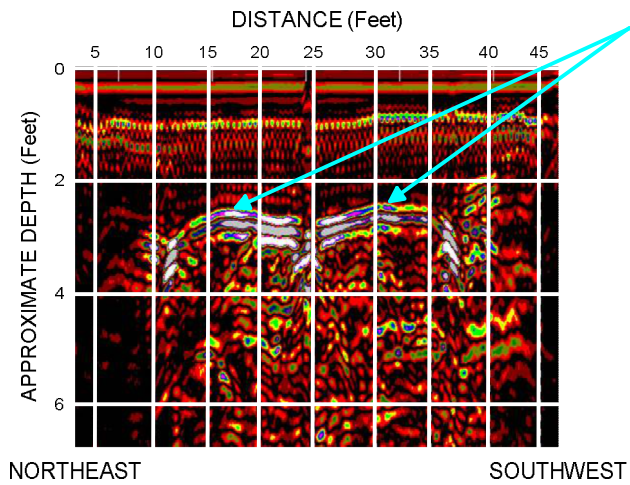
GPR RESPONSE FROM
THE SHORT AXIS OF
KNOWN UST NO. 1



GPR RESPONSE FROM
THE SHORT AXIS OF
KNOWN UST NO. 2



GPR RESPONSES FROM
THE LONG AXES OF
KNOWN UST NO. 1
(NORTHEAST SIDE) &
KNOWN UST NO. 2
(SOUTHWEST SIDE)





Parcel 21 (Spirit Master Funding In., LLC Property), looking southwest. Photo shows approximate marked location of Known UST No. 1 (foreground) and Known UST No. 2 (background) near the northwest corner of the canopy on Parcel 21.



Parcel 21 (Spirit Master Funding In., LLC Property), looking southwest. Photo shows approximate marked location of Known UST No. 2 near the northwest corner of the canopy on Parcel 21.

APPENDIX C
SOIL BORING LOGS



GEO PROBE LOG

Project: Parcel 021 PSA
Alamance County
Mebane, North Carolina

Geo Probe Number: **B-21-01**
Contract Number: U-3109A
Sheet: 1 of 1

Contractor: Geologic Exploration, Inc.
Statesville, North Carolina
Contractor Foreman: J. Burr
Schnabel Representative: B. Bradley
Equipment: Geoprobe 8040DT
Method: 3-1/4" Probe Rod,
Macrocore
Hammer Type:
Dates Started: 12/17/15 **Finished:** 12/17/15
X: 844534.58 ft **Y:** 1912154.22 ft
Plunge: **Bearing:**
Ground Surface Elevation: **Total Depth:** 10.0 ft

Water Level Observations					
	Date	Time	Depth	Casing	Caved
Not Encountered	12/17/15	12:00 AM	Dry	---	---

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRATUM	SAMPLING DATA		TESTS	REMARKS	
					DEPTH	DATA			
0.2	Topsoil	MH				B-21-01 (0-3 ft)	PID = 0 ppm		
	ELASTIC SILT, fine grained sand; moist, orangeish brown, low to medium plasticity, no odor, probable RESIDUAL material						B-21-01 (3-6 ft)		PID = 0 ppm
							B-21-01 (6-10 ft)		PID = 0 ppm
10.0									

Bottom of Geo Probe at 10.0 ft.
Boring terminated at selected depth.
Boring backfilled with bentonite upon completion.



GEO PROBE LOG

Project: Parcel 021 PSA
Alamance County
Mebane, North Carolina

Geo Probe Number: **B-21-02**
Contract Number: U-3109A
Sheet: 1 of 1

Contractor: Geologic Exploration, Inc.
Statesville, North Carolina
Contractor Foreman: J. Burr
Schnabel Representative: B. Bradley
Equipment: Geoprobe 8040DT
Method: 3-1/4" Probe Rod,
Macrocore
Hammer Type:
Dates Started: 12/17/15 **Finished:** 12/17/15
X: 844645.341 ft **Y:** 1912274.962 ft
Plunge: **Bearing:**
Ground Surface Elevation: **Total Depth:** 10.0 ft

Water Level Observations					
	Date	Time	Depth	Casing	Caved
Not Encountered	12/17/15	12:00 AM	Dry	---	---

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRATUM	SAMPLING		TESTS	REMARKS	
					DEPTH	DATA			
0.3	Topsoil	MH				B-21-02 (0-3 ft)	PID = 0 ppm		
	ELASTIC SILT, fine grained sand; moist, orangeish brown, low to medium plasticity, no odor, probable RESIDUAL material						B-21-02 (3-6 ft)		PID = 0 ppm
							B-21-02 (6-9 ft)		PID = 0 ppm
10.0									

Bottom of Geo Probe at 10.0 ft.
Boring terminated at selected depth.
Boring backfilled with bentonite upon completion.

TEST BORING LOG PARCEL 021 LOGS.GPJ SCHNABEL DATA TEMPLATE 2008_07_06.GDT 1/13/16



GEO PROBE LOG

Project: Parcel 021 PSA
Alamance County
Mebane, North Carolina

Geo Probe Number: **B-21-03**
Contract Number: U-3109A
Sheet: 1 of 1

Contractor: Geologic Exploration, Inc.
Statesville, North Carolina
Contractor Foreman: J. Burr
Schnabel Representative: B. Bradley
Equipment: Geoprobe 8040DT
Method: 3-1/4" Probe Rod,
Macrocore
Hammer Type:
Dates Started: 12/17/15 **Finished:** 12/17/15
X: 844708.616 ft **Y:** 1912349.881 ft
Plunge: **Bearing:**
Ground Surface Elevation: **Total Depth:** 12.0 ft

Water Level Observations					
	Date	Time	Depth	Casing	Caved
Not Encountered	12/17/15	12:00 AM	Dry	---	---

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRATUM	SAMPLING		TESTS	REMARKS
					DEPTH	DATA		
0.2	Asphalt	MH				B-21-03 (0-3 ft)	PID = 0 ppm	
	ELASTIC SILT, fine grained sand; moist, orangeish brown, low to medium plasticity, no odor, probable RESIDUAL material					B-21-03 (3-6 ft)	PID = 0 ppm	
					5	B-21-03 (6-9 ft)	PID = 0 ppm	
					10	B-21-03 (9-12 ft)	PID = 0 ppm	
12.0								

Bottom of Geo Probe at 12.0 ft.
Boring terminated at selected depth.
Boring backfilled with bentonite upon completion.

TEST BORING LOG PARCEL 021 LOGS.GPJ SCHNABEL DATA TEMPLATE 2008_07_06.GDT 1/13/16



GEO PROBE LOG

Project: Parcel 021 PSA
Alamance County
Mebane, North Carolina

Geo Probe Number: **B-21-04**
Contract Number: U-3109A
Sheet: 1 of 1

Contractor: Geologic Exploration, Inc.
Statesville, North Carolina
Contractor Foreman: J. Burr
Schnabel Representative: B. Bradley
Equipment: Geoprobe 8040DT
Method: 3-1/4" Probe Rod,
Macrocore
Hammer Type:
Dates Started: 12/17/15 **Finished:** 12/17/15
X: 844729.127 ft **Y:** 1912374.487 ft
Plunge: **Bearing:**
Ground Surface Elevation: **Total Depth:** 12.0 ft

Water Level Observations					
	Date	Time	Depth	Casing	Caved
Not Encountered	12/17/15	12:00 AM	Dry	---	---

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRATUM	SAMPLING		TESTS	REMARKS
					DEPTH	DATA		
0.2	Topsoil					B-21-04 (0-3 ft)	PID = 0 ppm	
	PROBABLE FILL, sampled as elastic silt, fine grained sand; moist, orangeish brown, low to medium plasticity, no odor	FILL				B-21-04 (3-6 ft)	PID = 0 ppm	
				5		B-21-04 (6-9 ft)	PID = 0 ppm	
						B-21-04 (9-12 ft)	PID = 0 ppm	
				10				
12.0								

Bottom of Geo Probe at 12.0 ft.
Boring terminated at selected depth.
Boring backfilled with bentonite upon completion.

TEST BORING LOG PARCEL 021 LOGS.GPJ SCHNABEL DATA TEMPLATE 2008_07_06.GDT 1/13/16



GEO PROBE LOG

Project: Parcel 021 PSA
Alamance County
Mebane, North Carolina

Geo Probe Number: **B-21-05**
Contract Number: U-3109A
Sheet: 1 of 1

Contractor: Geologic Exploration, Inc.
Statesville, North Carolina
Contractor Foreman: J. Burr
Schnabel Representative: B. Bradley
Equipment: Geoprobe 8040DT
Method: 3-1/4" Probe Rod,
Macrocore
Hammer Type:
Dates Started: 12/17/15 **Finished:** 12/17/15
X: 844781.526 ft **Y:** 1912461.995 ft
Plunge: **Bearing:**
Ground Surface Elevation: **Total Depth:** 10.0 ft

Water Level Observations					
	Date	Time	Depth	Casing	Caved
Not Encountered	12/17/15	12:00 AM	Dry	---	---

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRATUM	SAMPLING DATA		TESTS	REMARKS
					DEPTH	DATA		
0.2	Topsoil					B-21-05 (0-3 ft)	PID = 0 ppm	
	PROBABLE FILL, sampled as elastic silt, fine grained sand; moist, orangeish brown, low to medium plasticity, no odor	FILL			5	B-21-05 (3-6 ft)	PID = 0 ppm	
						B-21-05 (6-10 ft)	PID = 0 ppm	
10.0								

Bottom of Geo Probe at 10.0 ft.
Boring terminated at selected depth.
Boring backfilled with bentonite upon completion.

TEST BORING LOG PARCEL 021 LOGS.GPJ SCHNABEL DATA TEMPLATE 2008_07_06.GDT 1/13/16



GEO PROBE LOG

Project: Parcel 021 PSA
Alamance County
Mebane, North Carolina

Geo Probe Number: **B-21-06**
Contract Number: U-3109A
Sheet: 1 of 1

Contractor: Geologic Exploration, Inc.
Statesville, North Carolina
Contractor Foreman: J. Burr
Schnabel Representative: B. Bradley
Equipment: Geoprobe 8040DT
Method: 3-1/4" Probe Rod,
Macrocore
Hammer Type:
Dates Started: 12/17/15 **Finished:** 12/17/15
X: 844538.737 ft **Y:** 1912451.063 ft
Plunge: **Bearing:**
Ground Surface Elevation: **Total Depth:** 10.0 ft

Water Level Observations					
	Date	Time	Depth	Casing	Caved
Not Encountered	12/17/15	12:00 AM	Dry	---	---

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRATUM	SAMPLING DATA		TESTS	REMARKS	
					DEPTH	DATA			
0.2	Asphalt	MH				B-21-06 (0-3 ft)	PID = 0 ppm		
	ELASTIC SILT, fine grained sand; moist, orangeish brown, low to medium plasticity, no odor, probable RESIDUAL material						B-21-06 (3-6 ft)		PID = 0 ppm
					5		B-21-06 (6-9 ft)		PID = 0 ppm
					10		B-21-06 (10 ft)		PID = 0 ppm

Bottom of Geo Probe at 10.0 ft.
Boring terminated at selected depth.
Boring backfilled with bentonite upon completion.

TEST BORING LOG PARCEL 021 LOGS.GPJ SCHNABEL DATA TEMPLATE 2008_07_06.GDT 1/13/16



GEO PROBE LOG

Project: Parcel 021 PSA
Alamance County
Mebane, North Carolina

Geo Probe Number: **B-21-07**
Contract Number: U-3109A
Sheet: 1 of 1

Contractor: Geologic Exploration, Inc.
Statesville, North Carolina
Contractor Foreman: J. Burr
Schnabel Representative: B. Bradley
Equipment: Geoprobe 8040DT
Method: 3-1/4" Probe Rod,
Macrocore
Hammer Type:
Dates Started: 12/17/15 **Finished:** 12/17/15
X: 844482.282 ft **Y:** 1912468.857 ft
Plunge: **Bearing:**
Ground Surface Elevation: **Total Depth:** 10.0 ft

Water Level Observations					
	Date	Time	Depth	Casing	Caved
Not Encountered	12/17/15	12:00 AM	Dry	---	---

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOL	ELEV (ft)	STRATUM	SAMPLING		TESTS	REMARKS
					DEPTH	DATA		
0.2	Asphalt					B-21-07 (0-3 ft)	PID = 0 ppm	
	ELASTIC SILT, fine grained sand; moist, orangeish brown, low to medium plasticity, no odor, probable RESIDUAL material	MH			5	B-21-07 (3-6 ft)	PID = 0 ppm	
						B-21-07 (6-9 ft)	PID = 0 ppm	
10.0						B-21-07 (10 ft)	PID = 0 ppm	

Bottom of Geo Probe at 10.0 ft.
Boring terminated at selected depth.
Boring backfilled with bentonite upon completion.

TEST BORING LOG PARCEL 021 LOGS.GPJ SCHNABEL DATA TEMPLATE 2008_07_06.GDT 1/13/16

APPENDIX D
SOIL BORING GPS COORDINATES

**SOIL BORING GPS COORDINATES
NCDOT U-3109A, ALAMANCE COUNTY**

Soil Boring GPS Coordinates		
Boring Identification	Easting	Northing
	X	Y
B-21-01	1912154.22	844534.58
B-21-02	1912274.962	844645.341
B-21-03	1912349.881	844708.616
B-21-04	1912374.487	844729.127
B-21-05	1912461.995	844781.526
B-21-06	1912451.063	844538.737
B-21-07	1912468.857	844482.282

* NC State Plane 1983 System, NC 3200 Zone,
NAD 83 Datum, US Survey Feet

APPENDIX E
UVF RESULTS



Hydrocarbon Analysis Results

Client: Schnabel Engineering
Address: Greensboro, NC

Samples taken Thursday, December 17, 2015
Samples extracted Thursday, December 17, 2015
Samples analysed Thursday, December 17, 2015

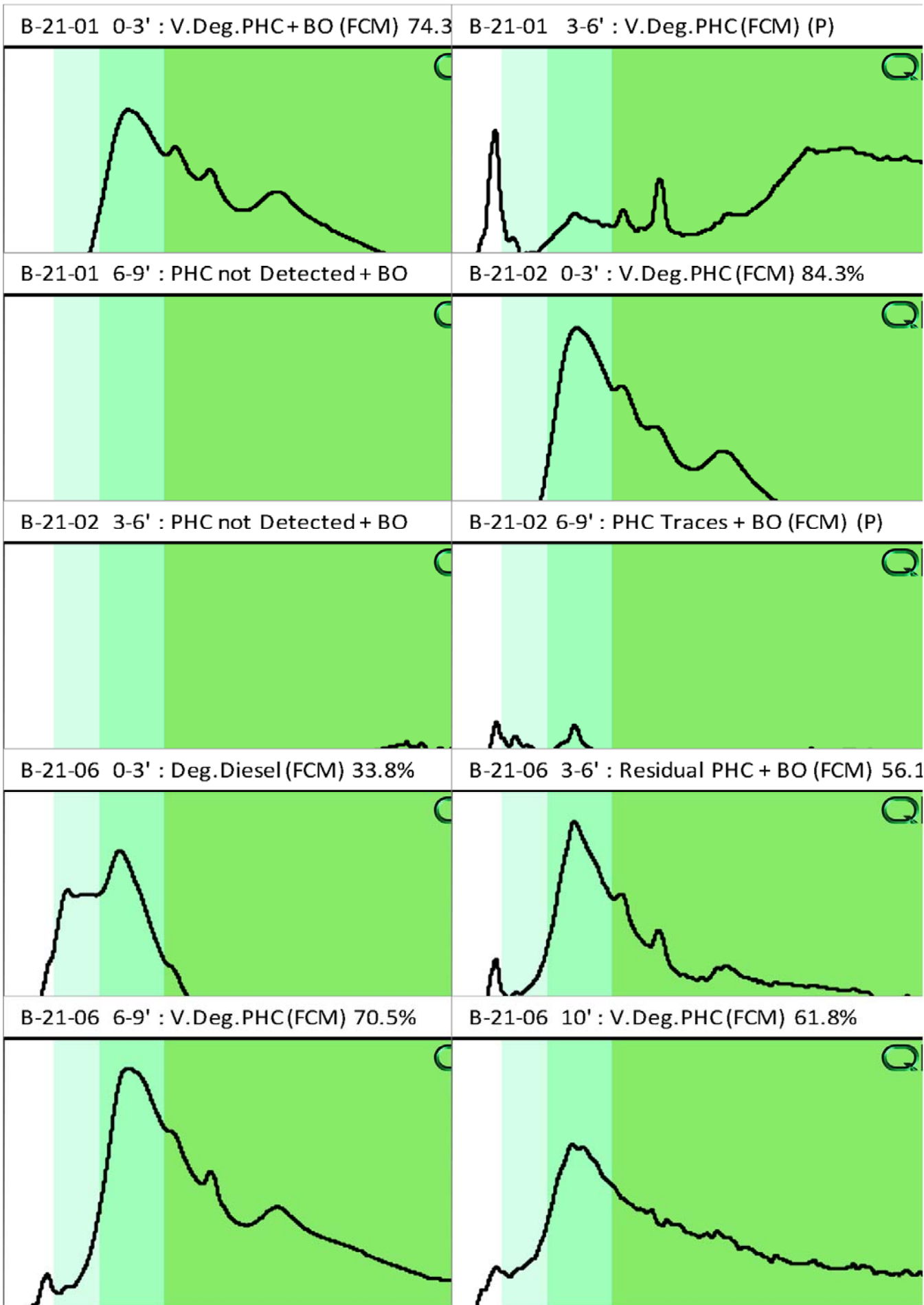
Contact: Ben Bradley

Operator Owen

Project: U-3109A

											U00903		
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-21-01 0-3'	13.5	<0.67	<0.34	2.3	2.3	2.2	0.1	0.002	0	82.6	17.4	V.Deg.PHC + BO (FCM) 74.3%
s	B-21-01 3-6'	15.6	<0.78	<0.39	0.88	0.88	0.84	0.1	0.007	0	76.1	23.9	V.Deg.PHC (FCM) (P)
s	B-21-01 6-9'	8.8	<0.22	<0.22	<0.09	<0.22	<0.04	<0.007	<0.001	0	0	0	PHC not Detected + BO
s	B-21-02 0-3'	13.9	<0.7	<0.35	1.5	1.5	1.4	0.06	0.001	0	83.3	16.7	V.Deg.PHC (FCM) 84.3%
s	B-21-02 3-6'	18.2	<0.91	<0.45	<0.18	<0.45	<0.09	<0.01	<0.002	0	0	0	PHC not Detected + BO
s	B-21-02 6-9'	15.6	<0.78	<0.39	0.22	0.22	0.2	0.02	<0.002	0	93.7	6.3	PHC Traces + BO (FCM) (P)
s	B-21-06 0-3'	14.0	<0.7	<0.35	7.5	7.5	3.7	0.12	0.001	0	95.2	4.8	Deg.Diesel (FCM) 33.8%
s	B-21-06 3-6'	16.9	<0.84	<0.42	0.39	0.39	0.39	0.04	<0.002	0	84.3	15.7	Residual PHC + BO (FCM) 56.1%
s	B-21-06 6-9'	14.9	<0.74	<0.37	2.6	2.6	2.5	0.1	0.002	0	81.4	18.6	V.Deg.PHC (FCM) 70.5%
s	B-21-06 10'	16.0	<0.8	<0.4	0.38	0.38	0.26	<0.01	<0.002	0	87.7	12.3	V.Deg.PHC (FCM) 61.8%
Initial Calibrator QC check			OK		Final FCM QC Check					OK		96.7 %	

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





Hydrocarbon Analysis Results

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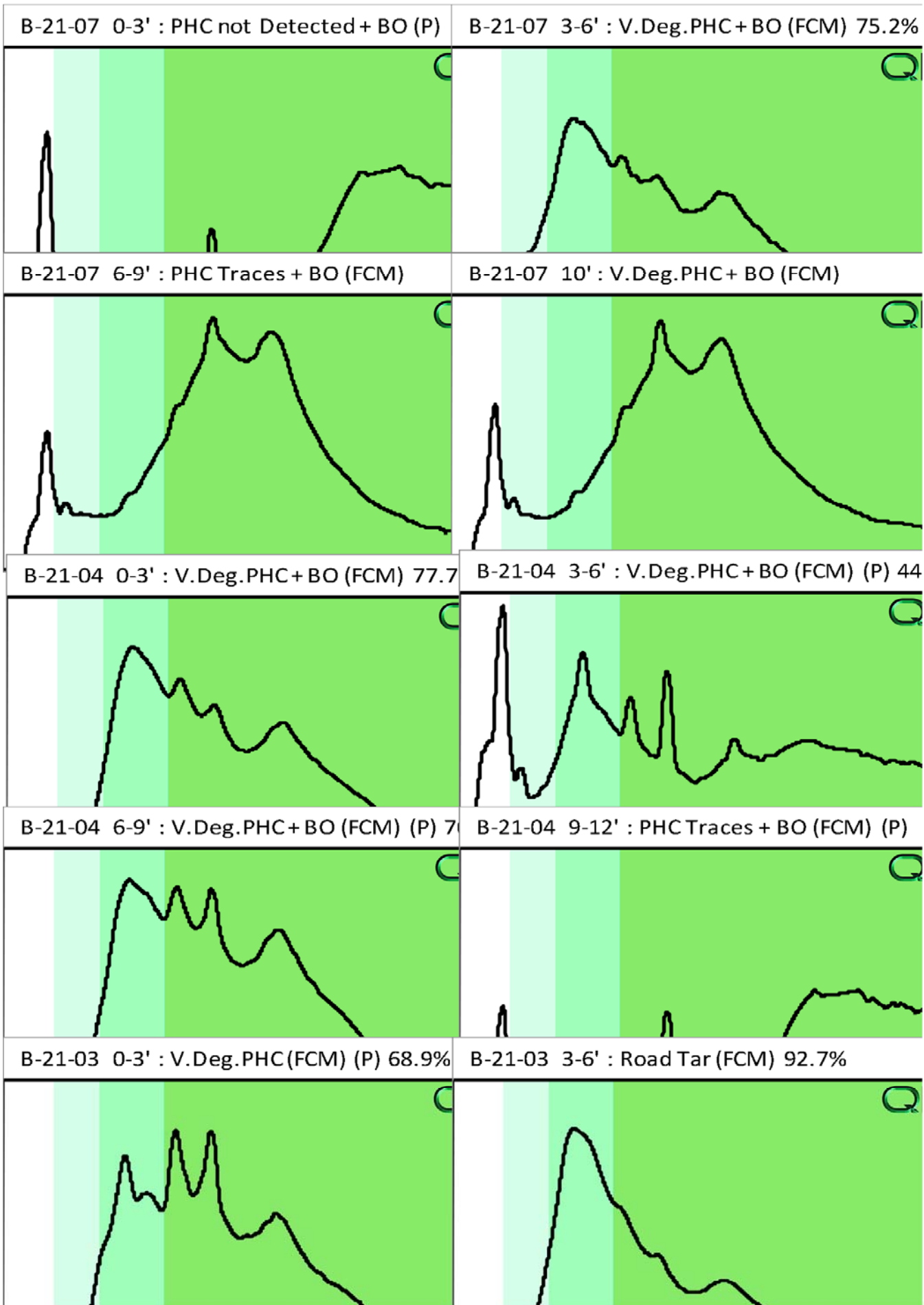
Project: U-3109A

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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-21-07 0-3'	14.4	<0.72	<0.36	<0.14	<0.36	<0.11	<0.01	<0.001	0	10.9	89.1	PHC not Detected + BO (P)		
s	B-21-07 3-6'	17.0	<0.85	<0.42	0.43	0.43	0.37	<0.01	<0.002	0	84.7	15.3	V.Deg.PHC + BO (FCM) 75.2%		
s	B-21-07 6-9'	15.2	<0.76	<0.38	0.47	0.47	0.45	0.05	<0.002	0	61.7	38.3	PHC Traces + BO (FCM)		
s	B-21-07 10'	15.8	<0.79	<0.39	0.56	0.56	0.54	0.06	<0.002	0	58.7	41.3	V.Deg.PHC + BO (FCM)		
s	B-21-04 0-3'	20.3	<1	<0.51	1.3	1.3	1.2	0.06	0.002	0	76.5	23.5	V.Deg.PHC + BO (FCM) 77.7%		
s	B-21-04 3-6'	16.5	<0.82	<0.41	0.46	0.46	0.34	<0.01	<0.002	0	71.4	28.6	V.Deg.PHC + BO (FCM) (P) 44.2%		
s	B-21-04 6-9'	19.1	<0.96	<0.48	0.84	0.84	0.8	0.05	0.002	0	74	26	V.Deg.PHC + BO (FCM) (P) 70.1%		
s	B-21-04 9-12'	16.0	<0.8	<0.4	<0.16	<0.4	<0.08	<0.01	<0.002	0	10.4	89.6	PHC Traces + BO (FCM) (P)		
s	B-21-03 0-3'	13.7	<0.68	<0.34	0.37	0.37	<0.15	<0.01	0.001	0	47.3	52.7	V.Deg.PHC (FCM) (P) 68.9%		
s	B-21-03 3-6'	17.9	<0.9	<0.45	4	4	3	0.33	0.013	0	85.5	14.5	Road Tar (FCM) 92.7%		
			Initial Calibrator QC check				OK				Final FCM QC Check			OK	103.1 %

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										% light	% mid	% heavy		
s	B-21-03 6-9'	16.8	<0.84	<0.42	3.1	3.1	2.4	0.25	0.006	0	86.2	13.8	Road Tar (FCM) 86.3%	
s	B-21-03 9-12'	19.5	<0.98	<0.49	12.4	12.4	11.8	0.53	0.012	0	87.1	12.9	Deg Fuel (FCM) 88.8%	
s	B-21-05 0-3'	16.7	<0.83	<0.42	1.5	1.5	1.4	0.07	0.002	0	79.5	20.5	V.Deg.PHC + BO (FCM) 84%	
s	B-21-05 3-6'	10.4	<0.52	<0.26	0.5	0.5	<0.05	<0.008	<0.001	0	0	0	Residual PHC + BO (FCM) 11.7%	
s	B-21-05 6-10'	4.2	<0.21	<0.1	<0.04	<0.1	<0.02	<0.003	<0	0	0	0	PHC not Detected + BO	
s	B-12-02 0-3'	18.4	<0.92	<0.46	<0.18	<0.46	<0.09	<0.01	<0.002	0	0	0	PHC not Detected + BO	
s	B-12-02 3-6'	21.7	<1.1	<0.54	<0.22	<0.54	<0.11	<0.02	<0.002	0	0	0	PHC not Detected + BO	
s	B-12-02 6-10'	20.8	<1	5.3	0.39	5.69	0.33	<0.02	<0.002	94.6	5.4	0	Deg Gas + BO (FCM) 40.6%	
s	B-12-04 0-3'	7.5	<0.37	<0.19	<0.07	<0.19	<0.04	<0.006	<0.001	0	0	0	PHC not Detected + BO	
s	B-12-04 3-6'	18.7	<0.94	<0.47	2	2	1.5	0.16	0.004	0	83.6	16.4	Road Tar (FCM) 77.3%	
Initial Calibrator QC check OK											Final FCM QC Check OK			97.7 %

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

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