

Phase II Site Assessment Report

August 16, 2021

WBS Element: 44691.1.1

State Project: R-5759

Wilkes County

at

Parcel #: 030

Scott A. Johnson, Katherine Leary, Angela Johnson, Carlene Jordan Property
180 Speedway Road, North Wilkesboro, NC, 28659

PIN #: 3877-97-1320

Facility ID No.: N/A

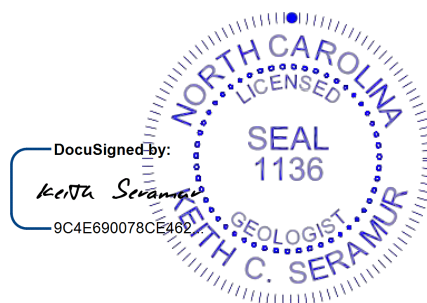
Groundwater Incident #: N/A

Prepared For:

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1.0 Introduction

1.1 General Site Background Information

Seramur & Associates, PC was contracted to complete a Phase II Environmental Site Assessment at:

Parcel #: 030
Scott Anthony Johnson, Katherine Leary, Angela Johnson, Carlene Jordan Property
180 Speedway Road, North Wilkesboro, NC, 28659
PIN #: 3877-97-1320
Facility ID No.: N/A
Groundwater Incident #: N/A

Parcel #030 is located on the southern side of Speedway Road about 350 ft east of the intersection with Statesville Road. The property is on the T1 terrace of Fishing Creek. Bedrock in the area is mapped as Henderson Gneiss, a biotitic augen gneiss (Rankin, D.W., Espenshade, G.H., Shaw, K.W., and Neumann, R.B. Geologic map of the west half of the Winston-Salem quadrangle, North Carolina-Virginia, U.S. Geologic Survey Misc. Inv. Series Map I-709-B, 1975).

A Notice to Proceed was obtained on June 25, 2021. Our investigation included areas within the proposed easements and proposed and existing Right-of-Way (R/W) along the southern side of Speedway Road (Figure 2). The Phase II Site Assessment scope of work included completing a geophysical survey, Geoprobe drilling, soil sample collection and soil laboratory analysis. Geophysical investigations evaluate the potential for underground storage tanks and remnant UST system infrastructure. The purpose of soil analysis is to assess soil quality across the easements and R/W. Background research for this project included reviewing historic aerial photographs and NCDEQ databases.

2.0 Scope of Work

2.1 Background Research

According to the Wilkes County Tax Administration records, this property is currently owned by Nathan Sumpter. Available historic aerial photographs from the USGS EarthExplorer website and Google Earth Pro were reviewed.

The following NCDEQ databases were queried for incidents at Parcel #030:

- Dry Cleaners
- Active USTs
- UST Incident Map
- UST Database
- Hazardous Waste Sites

2.2 Geophysical Surveys

Seramur & Associates used the Pythagorean Theorem to establish one rectangular grid within the proposed Permanent Utility Easement (PUE) along Speedway Road. Nine additional transects of geophysical data were collected within the Temporary Construction Easement (E), PUE and existing R/W. The Permanent Drainage Utility Easement (DUE) and proposed R/W were inaccessible due to dense woods and a steep slope. Geophysical grid data were collected along transects at a two-foot spacing. Additional transects were collected along fiberglass tape measures laid out to follow straight lines.

The magnetometer data was collected with a GEM Systems GSM-19W Walking Overhauser magnetometer. The data was compiled in Excel spreadsheets and a color contour map of the magnetic data was drafted using Golden Software's Surfer® modeling program. The lighter shades are lower magnetic readings and the darker colors are higher magnetic readings (Figure 5). Ferrous objects in the subsurface have a magnetic field that differs from the surrounding soil and produces positive and negative magnetic anomalies in the magnetic data.

A Ground Penetrating Radar (GPR) survey was completed across the grid and along individual transects using Geophysical Survey Systems, Inc. UtilityScan GPR System with a 350 MHz hyperstacking antenna. This GPR system is equipped with a calibrated survey wheel. The GPR data was downloaded and saved onto a computer. The GPR grid data has been processed and modeled using GPR Slice® software. The GPR data processing included adjusting time zero, completing a background removal and adjusting the time variable gain to enhance deep reflections. Three-dimensional models of the GPR grid and transect data were produced with GPR Slice® software. Three time slices (or depth slices) were imaged in each 3D model at depths of 0.3 to 0.6 feet, 1.4 to 1.7 feet and 1.6 to 1.9 feet (Figures 6 through 8). Each depth slice is a horizontal slice or plan view of the reflections across a 0.3-foot thickness of the subsurface. For example, the deep GPR depth slice shows reflections in the radar data between depths of 1.6 to 1.9 feet.

The GPR transect data has been processed and modeled using Radan® software. The GPR data processing included adjusting time zero, completing a background removal and adjusting the time variable gain to enhance deep reflections. The profiles of the GPR transects are shown in Figures 9a through 9c. Significant anomalies are notated on the profile images.

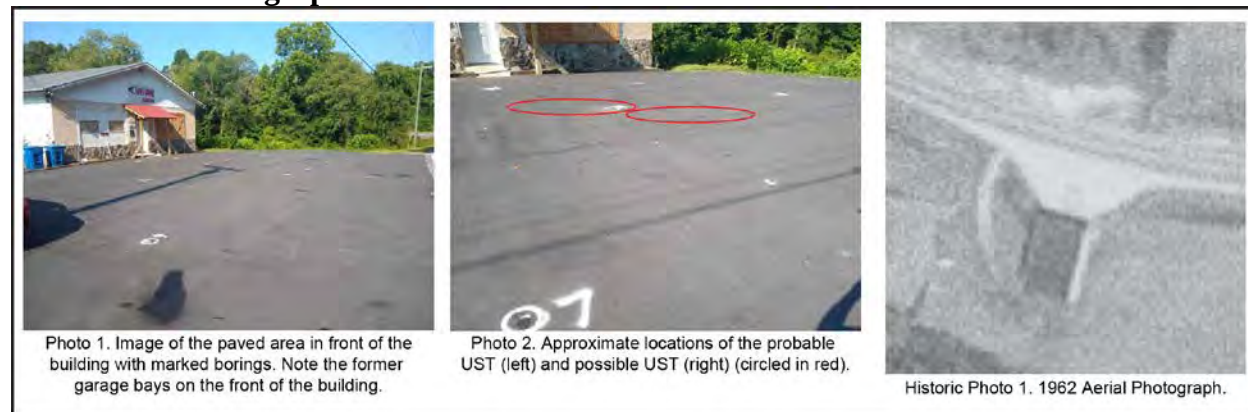
2.3 Soil Sampling and Analyses

On July 14, 2021 Carolina Soil Investigations, LLC mobilized to the site to drill Geoprobe borings and collect soil samples. Our project design typically calls for collecting a shallow and deep soil sample from each boring. The purpose of collecting samples at a depth of ~3.0 feet is to test for petroleum releases related to surface spills and releases from product lines. The purpose of collecting samples at a depth of ~9.0 feet is to test for petroleum releases related to underground storage tanks. Soil borings were drilled within the existing R/W and easements along Speedway Road (Figure 4).

A track-mounted Geoprobe rig was used to drill sixteen soil borings. A new pair of Nitrile gloves was worn while collecting each soil sample. A representative portion of each soil sample was placed in a zip lock bag and allowed to rest for a period of time to allow volatile vapors to accumulate in the headspace of the bag. A calibrated PhoCheck Tiger Photoionization Detector (PID) was used to screen the headspace in each bag and the concentration of volatile petroleum vapors was measured and recorded (Table 1). The texture and type of soil material in the Geoprobe cores was described and recorded. Table 1 lists the boring data including sample number, depth, PID reading, lithology, and type of soil material.

REDLab, LLC provided onsite laboratory analyses for the soil samples collected from the Geoprobe cores. REDLab analyzed the soil samples for petroleum constituents using a QED HC-1 analyzer and the Ultra-Violet Fluorescence method. The analytical results are reported as Gasoline Range Organics (GRO) and Diesel Range Organics (DRO) and Total Petroleum Hydrocarbons (TPH). REDLab provided a hydrocarbon spectrum with each of the sample results. This spectrum is used for a tentative identification of the type of hydrocarbon detected by the analytical method. A hydrocarbon fingerprint is interpreted by REDLab for each sample using a library search of spectra for known hydrocarbon types and concentrations. The laboratory reports and fingerprint spectra are included in Appendix B.

2.4 Plate 1 – Photographs of Parcel #030



3.0 Results of Investigation

Parcel #030 currently operates as a Sweepstakes Parlor. A 1963 aerial photograph shows that East Speedway Road had been developed and the building and driveway at Parcel #030 are present (Plate 1). The next available photographs captured in the years proceeding starting in 1993 show that the property remained developed as it is today and was in 1963. The NCDEQ UST Registered Tanks and Underground Storage Tank Incidents databases do not show any record of existing tanks or previous release incidents at this property.

An employee of the Sweepstakes Parlor familiar with the history of the property recalled that a gas station was formerly operated on the property as recent as the 1960s. He also stated that

there were previously two garage bays in the building before it was remodeled. The former cut-outs for the garage bays can still be seen on the front of the building.

SAPC personnel made a pedestrian reconnaissance of the property during the initial site visit on July 4, 2021. Surficial evidence of a UST system (i.e. vent pipes, fuel dispensers, etc.) was not observed within the proposed easements.

3.1 Geophysical Surveys

A grid of magnetometer data was collected within the PUE north of the building (Figure 5). Scattered isolated negative magnetic anomalies were recorded along the north-central portion of the grid. A broad set of negative magnetic anomalies were recorded in the southern portion of the grid in front of the entrance to the building (Figure 5). This magnetic anomaly is about 20 feet in length and likely related to a UST.

The shallow GPR depth slice (0.3-0.6 feet) for Grid 1 shows a disorganized set of medium amplitude reflections in front of the building (Figure 6). Linear reflections are present along the edge of the pavement on the east and west ends of the grid.

The intermediate GPR depth slice (1.4-1.7 feet) for Grid 1 shows two linear sets of high amplitude reflections in front of the building (Figure 7). The southern set of reflections aligns with the location of the magnetic anomaly (Figures 5 and 7).

The deeper GPR depth slice (1.6 to 1.9 feet) shows the best image of the potential UST (Sufficient geophysical data from both magnetic and radar surveys that is characteristic of a tank) (Figure 8). The second anomaly is slightly north and west of the anomaly in front of the building. This anomaly did not show negative magnetic readings. These UST tend to show positive magnetic readings on one side of the UST and negative on the other end of the UST. The magnetic fields of the two USTs could have caused interference and the second anomaly could be a UST, or this second anomaly is not a UST but related infrastructure. This second GPR anomaly should probably be classified as a possible UST (Sufficient geophysical data from either magnetic or radar surveys that is characteristic of a tank).

Radar reflections characteristic of a UST were not imaged in GPR Profiles 1 through 7 (Figures 9a and 9b). A hyperbola characteristic of a UST was imaged on GPR Transects 8 and 9 collected across the probable UST (Figure 9c).

The magnetic and GPR data indicate the presence of one probable UST. The GPR data indicates a second possible UST.

3.2 Soil Borings, Sampling and Laboratory Analysis

The soil at Parcel #030 consists of fill material over residuum (saprolite) (Table 1). The fill material and the residuum are primarily sandy loam and silty sand. Some shallow samples had small amounts of gravel within sandy loam. Groundwater was encountered at this site in borings B-13 and B-15 in the grassy area near the creek. A soil sample was collected from the

shallow and deep portions of the Geoprobe cores at borings B-7 and B-9 through B-16. Sixteen borings were drilled, and twenty-five soil samples collected. Each soil sample was analyzed for TPH-GRO and DRO (Table B-3).

Soil boring B-10 was drilled in the grassy area on the east side of the parcel along the E. Borings B-11 through B-14 were drilled in the grassy area on the west side of the property along the R/W. There are two separate utility lines in the grassy area on the west side of the property. Therefore, soil borings were distributed in a manner that avoided these utility lines (Figure 3). The remaining nine borings were drilled in the paved parking lot in front of the building.

The laboratory analysis reported that petroleum constituents were not detected at or above NCDEQ UST Action Levels in any of the soil samples collected at Parcel #030 (Table B-3 and Figure 10).

3.3 Conclusions

Parcel #030 is currently operated as a Sweepstakes Parlor. The geophysical surveys imaged anomalies consistent with USTs or infrastructure related to a former UST system. The geophysical data suggests there is one probable and one possible UST located at the parcel. The laboratory analysis reported that petroleum constituents were not detected at or above NCDEQ UST Action Levels in any of the soil samples collected at Parcel #030.

4.0 Recommendations

Seramur & Associates recommends that the one probable UST be properly closed. The area around the one possible UST should be excavated to determine if a second UST is present. If a second UST is located, then it should be properly closed as well. If contaminated soil is encountered in the UST excavation, a licensed geologist or engineer should supervise the excavation and removal of contaminated soil. Contaminated soil removed from Parcel #030 should be sent to a remediation facility.

Appendix A

Tables and Figures

Table 1. Soil Boring Data - Parcel #030						
Boring No.	Depth (ft)	Lithology	Soil type	Soil Sample	PID ppm	Comments
B-1	0.0 to 5.0	Silt loam w/ gravel	Fill	N/A	N/A	
B-1	5.0 to 6.5	Silt loam w/ gravel	Fill	N/A	N/A	
B-1	6.5 to 10.0	Silt loam	Residuum	S-1	0.0	Sample at 7.5 feet.
B-2	0.0 to 2.5	Sandy loam	Fill	N/A	N/A	
B-2	2.5 to 5.0	N/A	N/A	N/A	N/A	No recovery.
B-2	5.0 to 6.0	Cave in	Cave In	N/A	N/A	
B-2	6.0 to 7.5	Silt loam	Fill	S-2	0.0	Sample at 7.0 feet.
B-2	7.5 to 10.0	N/A	N/A	N/A	N/A	No recovery.
B-3	0.0 to 3.0	Silt loam	Fill	N/A	N/A	
B-3	3.0 to 5.0	N/A	N/A	N/A	N/A	No recovery.
B-3	5.0 to 5.5	Silt loam	Fill	N/A	N/A	
B-3	5.5 to 7.0	Silty sand	Residuum	S-3	0.0	Sample at 7.0 feet. Refusal at 7.0 feet.
B-4	0.0 to 2.5	Sandy loam w/ gravel	Fill	N/A	N/A	
B-4	2.5 to 5.0	N/A	N/A	N/A	N/A	No recovery.
B-4	5.0 to 8.5	Sandy loam	Fill	N/A	N/A	
B-4	8.5 to 10.0	Sandy loam	Residuum	S-4	0.0	Sample at 8.5 feet.
B-5	0.0 to 3.5	Silt loam w/ gravel	Fill	N/A	N/A	
B-5	3.5 to 5.0	Silty sand	Residuum	N/A	N/A	
B-5	5.0 to 10.0	Silty sand	Residuum	S-5	0.0	Sample at 7.5 feet.
B-6	0.0 to 5.0	Sandy loam w/ gravel	Fill	N/A	N/A	
B-6	5.0 to 8.5	Sandy loam	Fill	S-6	0.0	Sample at 7.5 feet.
B-6	8.5 to 10.0	Sandy loam	Residuum	N/A	N/A	
B-7	0.0 to 5.0	Silty sand	Fill	S-7	0.0	Sample at 3.0 feet.
B-7	5.0 to 7.0	Sandy loam	Fill	N/A	N/A	
B-7	7.0 to 10.0	Sandy loam	Residuum	S-8	0.0	Sample at 7.5 feet.
B-8	0.0 to 2.0	Silty sand	Fill	N/A	N/A	
B-8	2.0 to 4.0	Sandy loam	Fill	N/A	N/A	
B-8	4.0 to 5.0	N/A	N/A	N/A	N/A	No recovery.
B-8	5.0 to 7.0	Sandy loam	Fill	N/A	N/A	
B-8	7.0 to 10.0	Sandy loam	Residuum	S-9	0.0	Sample at 7.0 feet.
B-9	0.0 to 2.0	Silt loam	Fill	N/A	N/A	
B-9	2.0 to 4.0	Sandy loam	Residuum	S-10	0.0	Sample at 3.5 feet.
B-9	4.0 to 5.0	N/A	N/A	N/A	N/A	No recovery.
B-9	5.0 to 7.5	Sandy loam w/ gravel	Residuum	S-11	0.1	Sample at 7.0 feet.
B-9	7.5 to 10.0	N/A	N/A	N/A	N/A	No recovery.
B-10	0.0 to 1.0	Sandy loam	Fill	N/A	N/A	
B-10	1.0 to 4.0	Silty sand	Residuum	S-12	0.0	Sample at 3.5 feet.
B-10	4.0 to 5.0	N/A	N/A	N/A	N/A	No recovery.
B-10	5.0 to 10.0	Silt loam w/ gravel	Residuum	S-13	0.0	Sample at 8.0 feet.
B-11	0.0 to 3.5	Sandy loam	Fill	S-14	0.1	Sample at 2.5 feet.
B-11	3.5 to 5.0	N/A	N/A	N/A	N/A	No recovery.
B-11	5.0 to 9.0	Silty sand w/ gravel	Residuum	S-15	0.1	Sample at 8.0 feet.
B-11	9.0 to 10.0	N/A	N/A	N/A	N/A	No recovery.
B-12	0.0 to 2.0	Sandy loam	Fill	S-16	0.0	Sample at 1.5 feet.
B-12	2.0 to 5.0	N/A	N/A	N/A	N/A	No recovery.
B-12	5.0 to 6.5	Silt loam	Residuum	S-17	0.0	Sample at 6.25 feet. Wet and stained soil 6.0 to 6.5
B-12	6.5 to 10.0	Sandy silt	Residuum	N/A	N/A	
B-13	0.0 to 2.0	Sandy loam	Fill	S-18	0.0	Sample at 1.0 feet.
B-13	2.0 to 5.0	N/A	N/A	N/A	N/A	No recovery.
B-13	5.0 to 7.5	Sandy silt	Residuum	S-19	0.0	Sample at 7.0 feet.
B-13	7.5 to 8.5	Sandy silt w/ gravel	Residuum	N/A	N/A	Stained soil.
B-13	8.5 to 10.0	Silt loam	Residuum	N/A	N/A	
B-14	0.0 to 1.5	Sandy loam	Fill	S-20	0.0	Sample at 1.0 feet.
B-14	1.5 to 5.0	N/A	N/A	N/A	N/A	No recovery.
B-14	5.0 to 6.5	N/A	N/A	N/A	N/A	No recovery.
B-14	6.5 to 8.5	Silt loam	Residuum	S-21	0.1	Sample at 7.5 feet. Wet and stained soil (sewage).
B-14	8.5 to 10.0	Sandy silt	Residuum	N/A	N/A	
B-15	0.0 to 5.0	Silt loam	Fill	S-22	0.2	Sample at 3.0 feet.
B-15	5.0 to 6.5	Silt loam	Fill	N/A	N/A	
B-15	6.5 to 10.0	Silty sand	Residuum	S-23	0.1	Sample at 9.0 feet.
B-16	0.0 to 4.0	Silt loam	Fill	S-24	0.0	Sample at 2.5 feet.
B-16	4.0 to 5.0	Silty sand	Residuum	N/A	N/A	
B-16	5.0 to 9.0	Silty sand	Residuum	S-25	0.0	Sample at 7.5 feet.
B-16	9.0 to 10.0	N/A	N/A	N/A	N/A	No recovery.

Table B-3: Summary of Soil Sampling Results

Revision Date: 07/14/21

Incident Name: Parcel #030

Analytical Method (e.g., VOC by EPA 8260) →					UVF	UVF
Contaminant of Concern →					TPH GRO (mg/kg)	TPH DRO (mg/kg)
Sample ID	Date Collected (mm/dd/yy)	Source Area	Sample Depth (ft. BGS)	Incident Phase		
S-1	07/14/21	B-1	7.5	Phase II	<0.5	<0.2
S-2	07/14/21	B-2	7.0	Phase II	<0.5	0.27
S-3	07/14/21	B-3	7.0	Phase II	<0.4	<0.19
S-4	07/14/21	B-4	8.5	Phase II	<0.5	<0.2
S-5	07/14/21	B-5	7.5	Phase II	<0.5	0.9
S-6	07/14/21	B-6	7.5	Phase II	<0.5	0.8
S-7	07/14/21	B-7	3.0	Phase II	<0.5	0.3
S-8	07/14/21	B-7	7.5	Phase II	<0.6	<0.24
S-9	07/14/21	B-8	7.0	Phase II	<0.5	0.09
S-11	07/14/21	B-9	7.0	Phase II	<0.5	0.2
S-13	07/14/21	B-10	8.0	Phase II	<0.17	<0.07
S-14	07/14/21	B-11	2.5	Phase II	<0.5	<0.23
S-17	07/14/21	B-12	6.25	Phase II	<0.3	0.1
S-19	07/14/21	B-13	7.0	Phase II	<0.4	1.6
S-21	07/14/21	B-14	7.5	Phase II	<0.6	3.4
S-22	07/15/21	B-15	3.0	Phase II	<0.5	<0.21
S-23	07/15/21	B-15	9.0	Phase II	<0.5	<0.23
S-24	07/15/21	B-16	2.5	Phase II	<0.6	<0.25
S-25	07/15/21	B-16	7.5	Phase II	<0.5	0.9
NC DEQ Action Level (mg/kg)					50	100

ft. BGS = feet below ground surface
mg/kg = milligrams per kilogram

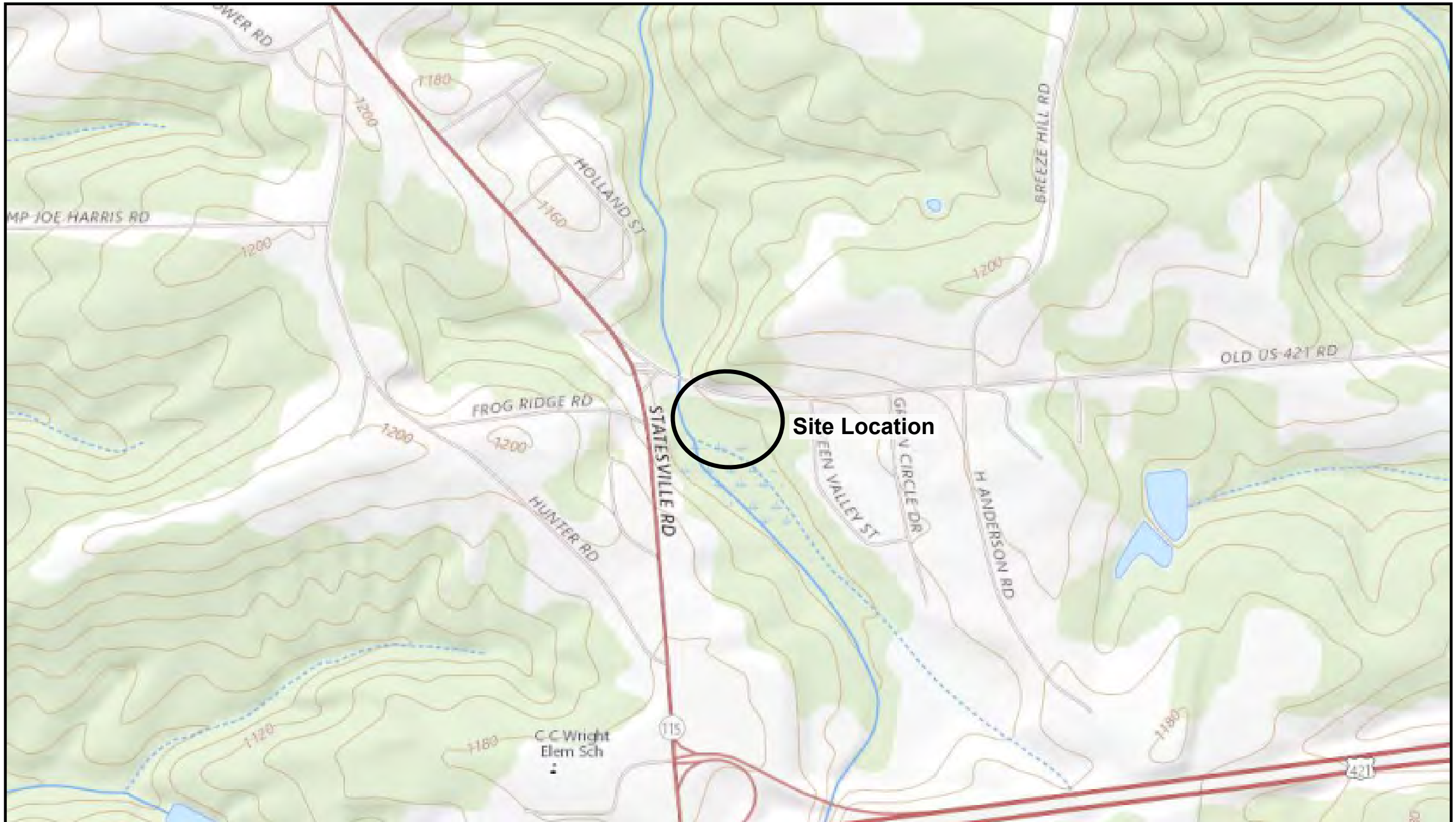


Figure 1 Site Location Map Source: U.S.G.S. The National Map	TIP Number: R-5759 Wilkes County, NC	S.A. Johnson et al. Property 180 Speedway Road North Wilkesboro, NC	Parcel I.D. #: 030 Facility I.D. #: N/A	Seramur & Associates, PC Boone, NC	0 400 800 Feet N
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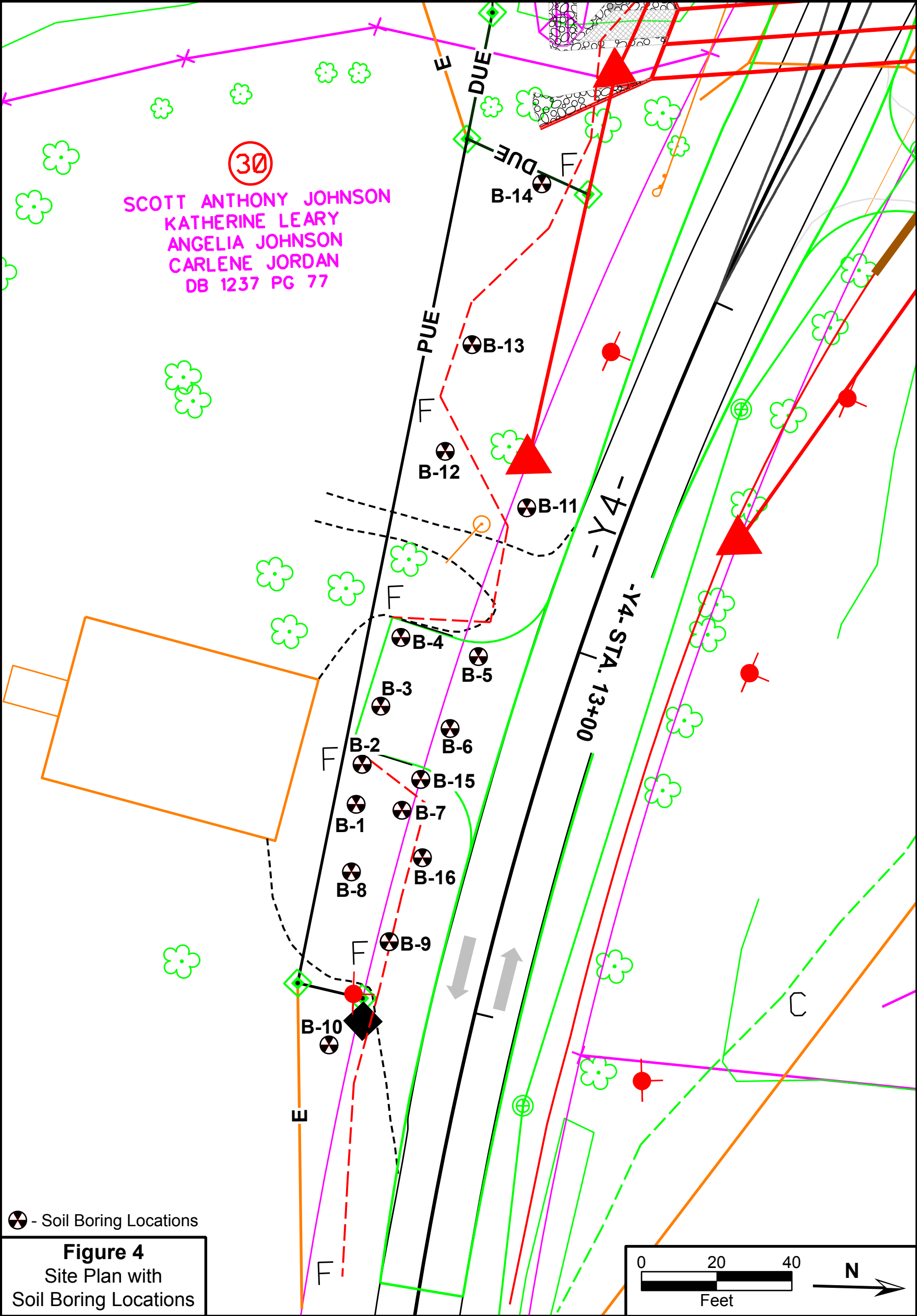


Figure 4
Site Plan with
Soil Boring Locations

TIP Number: R-5759
Wilkes County, NC

S.A. Johnson et al. Property
180 Speedway Road
North Wilkesboro, NC

Parcel I.D. #: 030
Facility I.D. #: N/A

Seramur & Associates, PC
Boone, NC

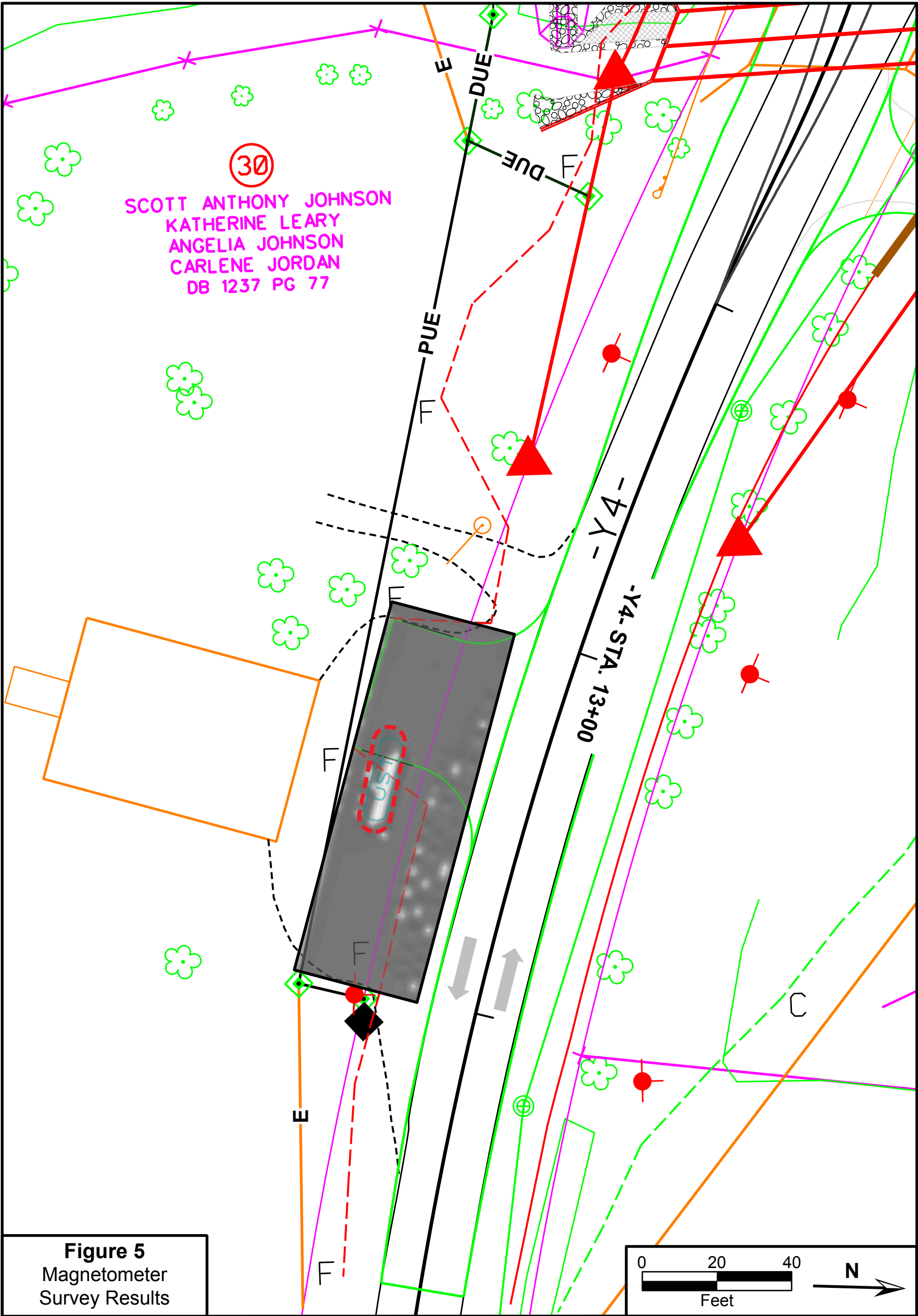


Figure 5 Magnetometer Survey Results			
TIP Number: R-5759 Wilkes County, NC	S.A. Johnson et al. Property 180 Speedway Road North Wilkesboro, NC	Parcel I.D. #: 030 Facility I.D. #: N/A	Seramur & Associates, PC Boone, NC

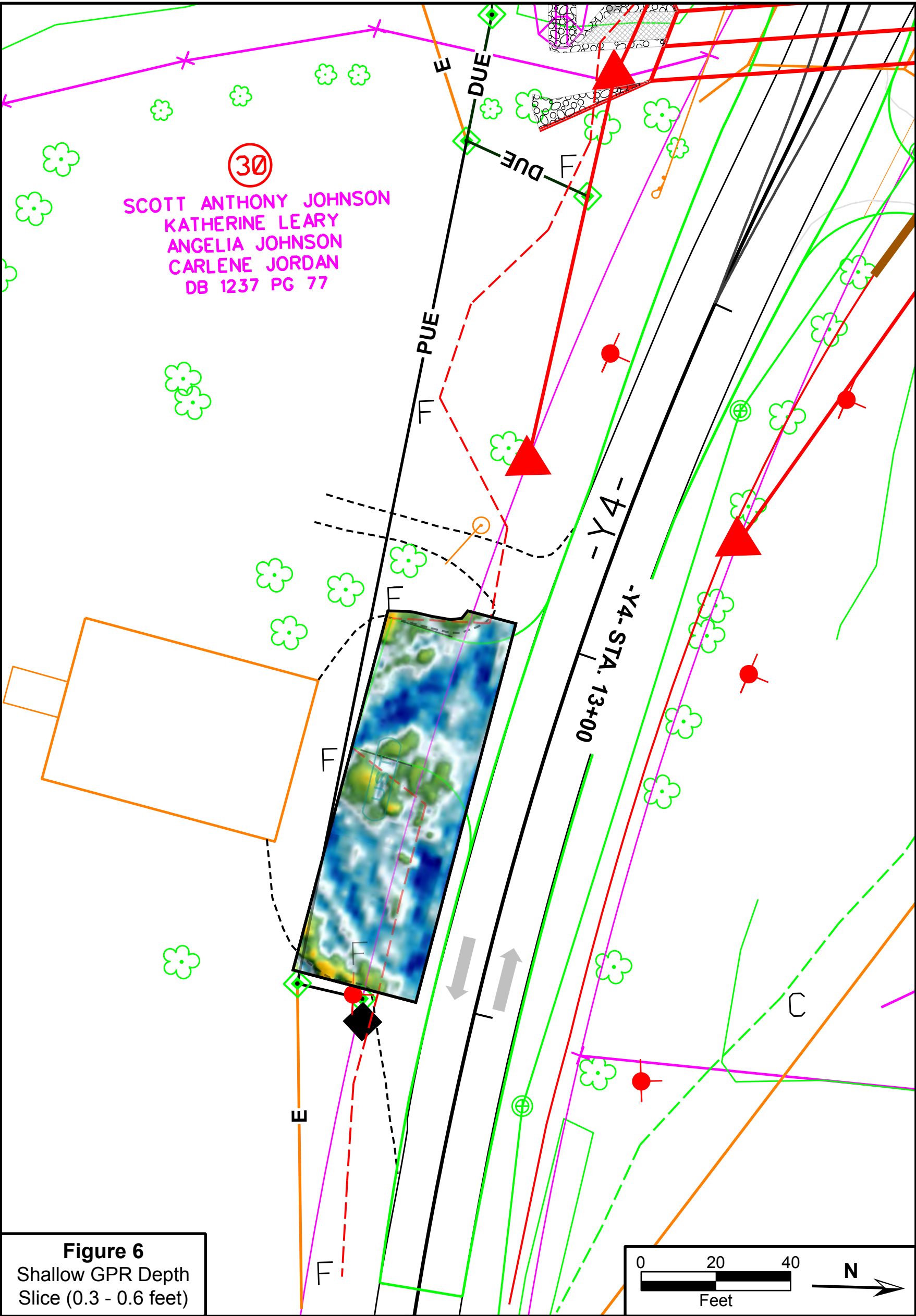


Figure 6
Shallow GPR Depth
Slice (0.3 - 0.6 feet)

TIP Number: R-5759
Wilkes County, NC

S.A. Johnson et al. Property
180 Speedway Road
North Wilkesboro, NC

Parcel I.D. #: 030
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Seramur & Associates, PC
Boone, NC

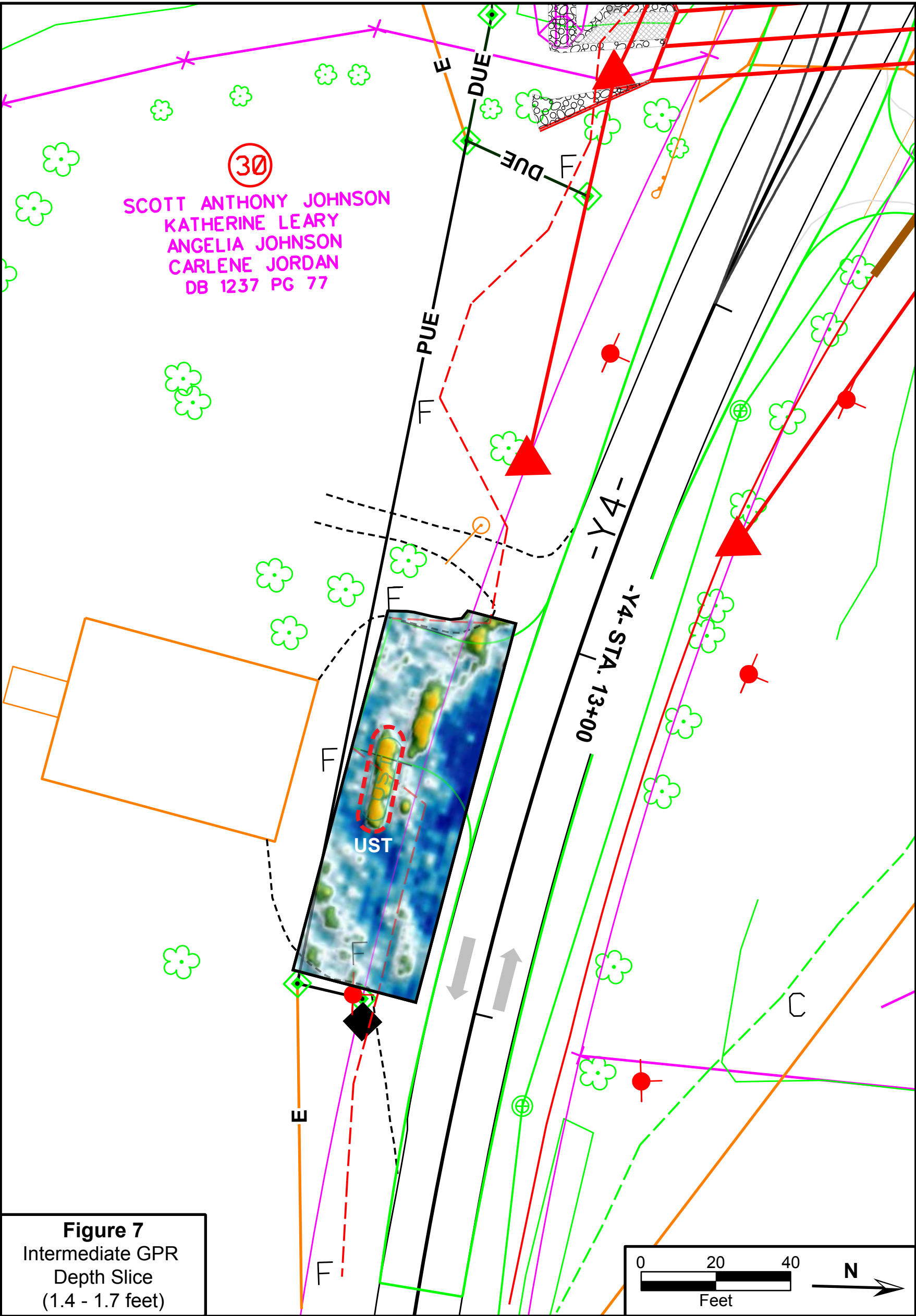


Figure 7 Intermediate GPR Depth Slice (1.4 - 1.7 feet)	S.A. Johnson et al. Property 180 Speedway Road North Wilkesboro, NC			Parcel I.D. #: 030 Facility I.D. #: N/A	Seramur & Associates, PC Boone, NC
TIP Number: R-5759 Wilkes County, NC					

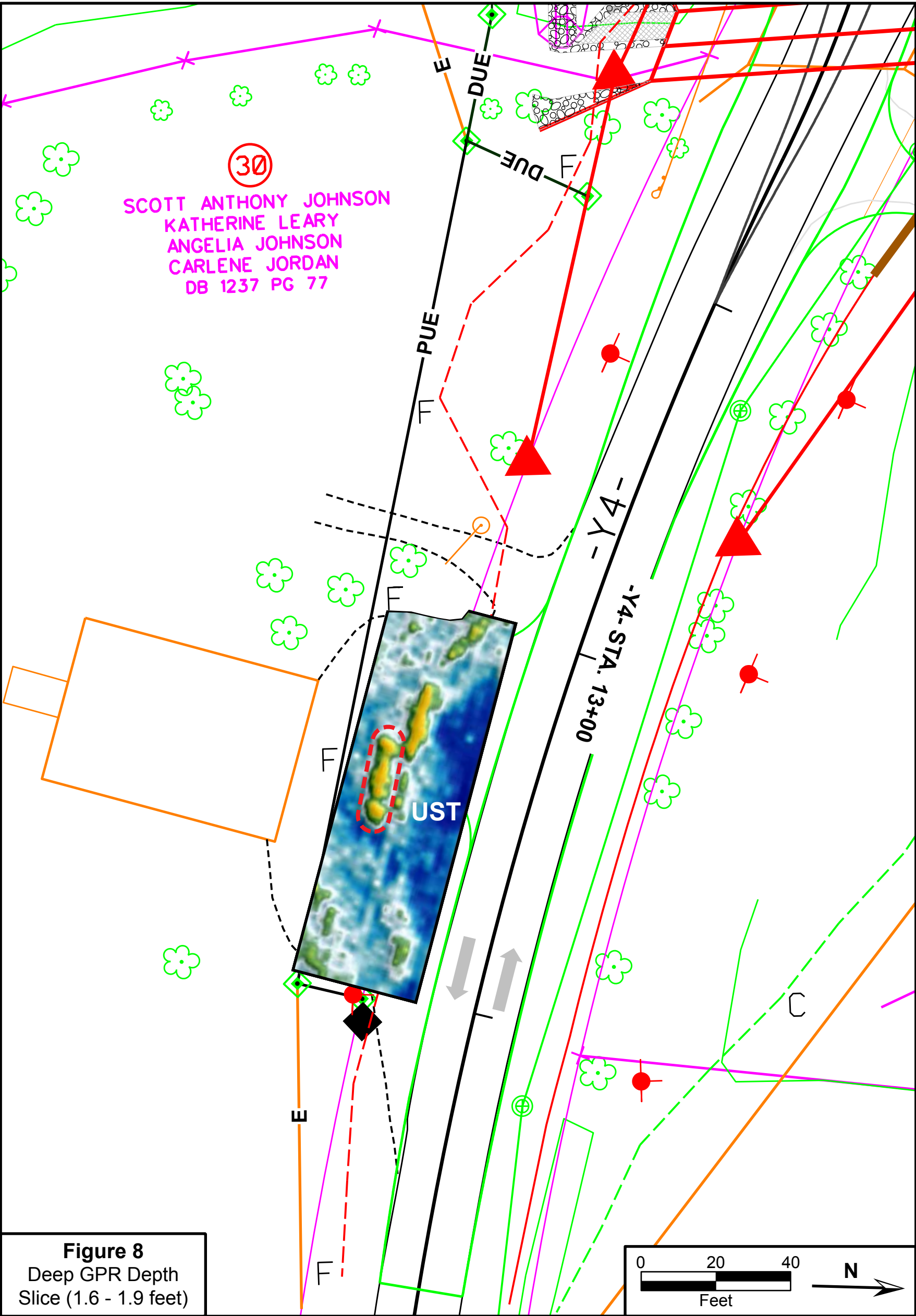


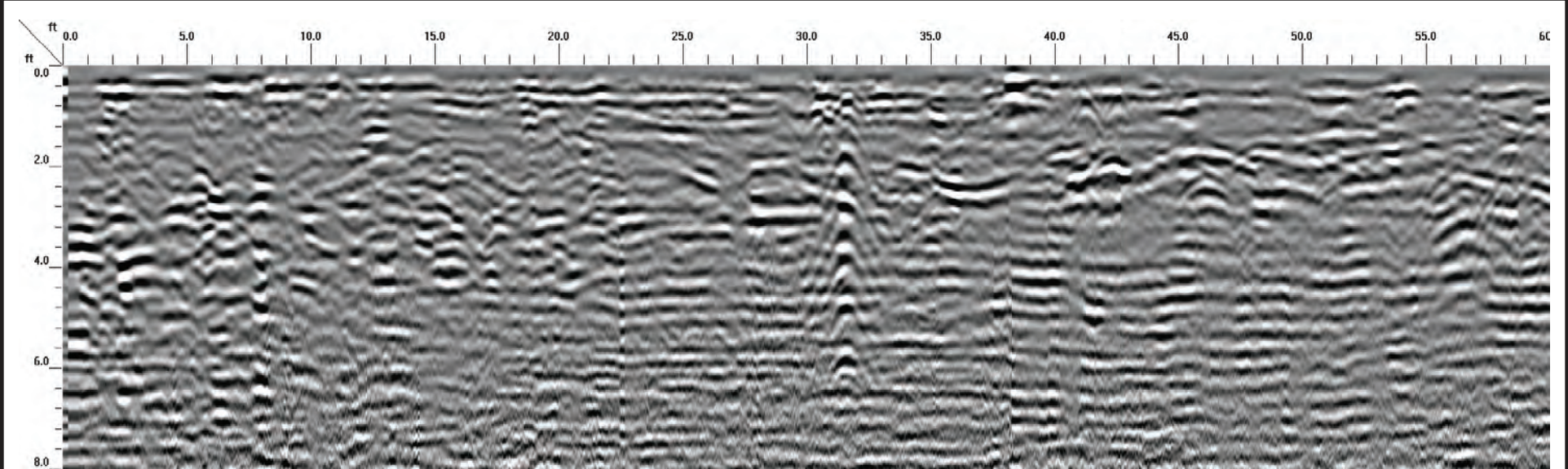
Figure 8
Deep GPR Depth
Slice (1.6 - 1.9 feet)

TIP Number: R-5759
Wilkes County, NC

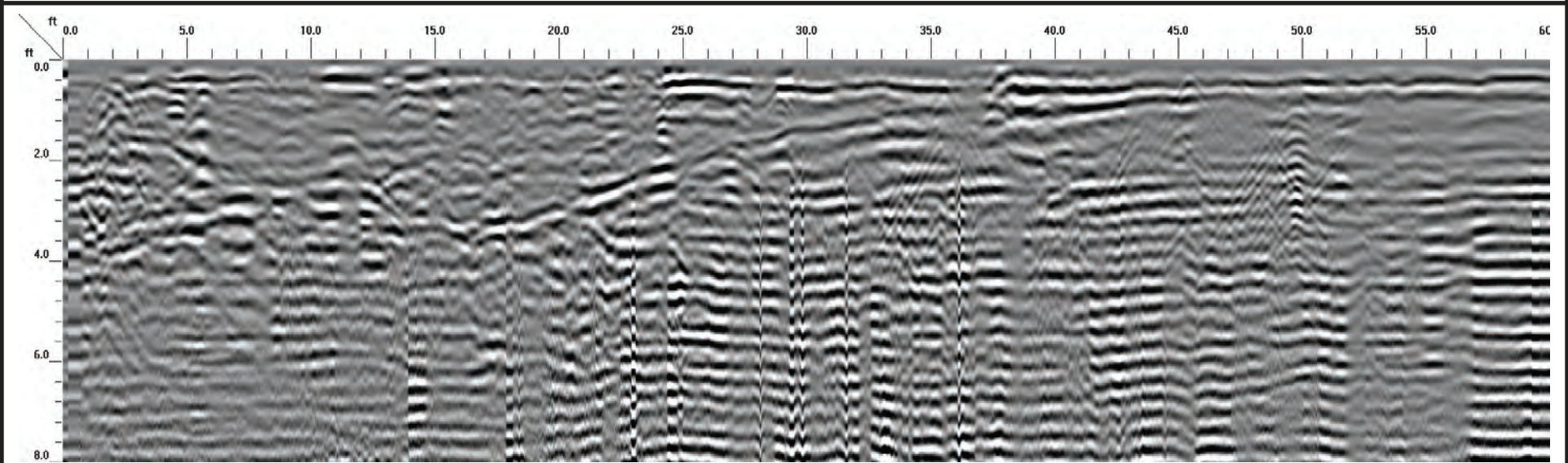
S.A. Johnson et al. Property
180 Speedway Road
North Wilkesboro, NC

Parcel I.D. #: 030
Facility I.D. #: N/A

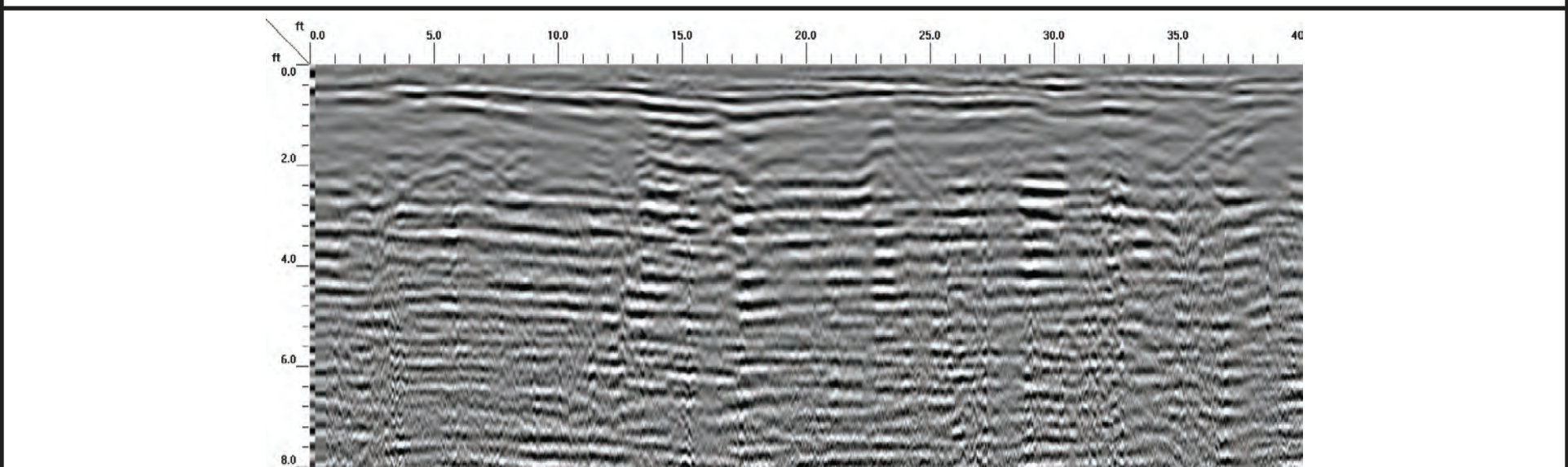
Seramur & Associates, PC
Boone, NC



Transect 1

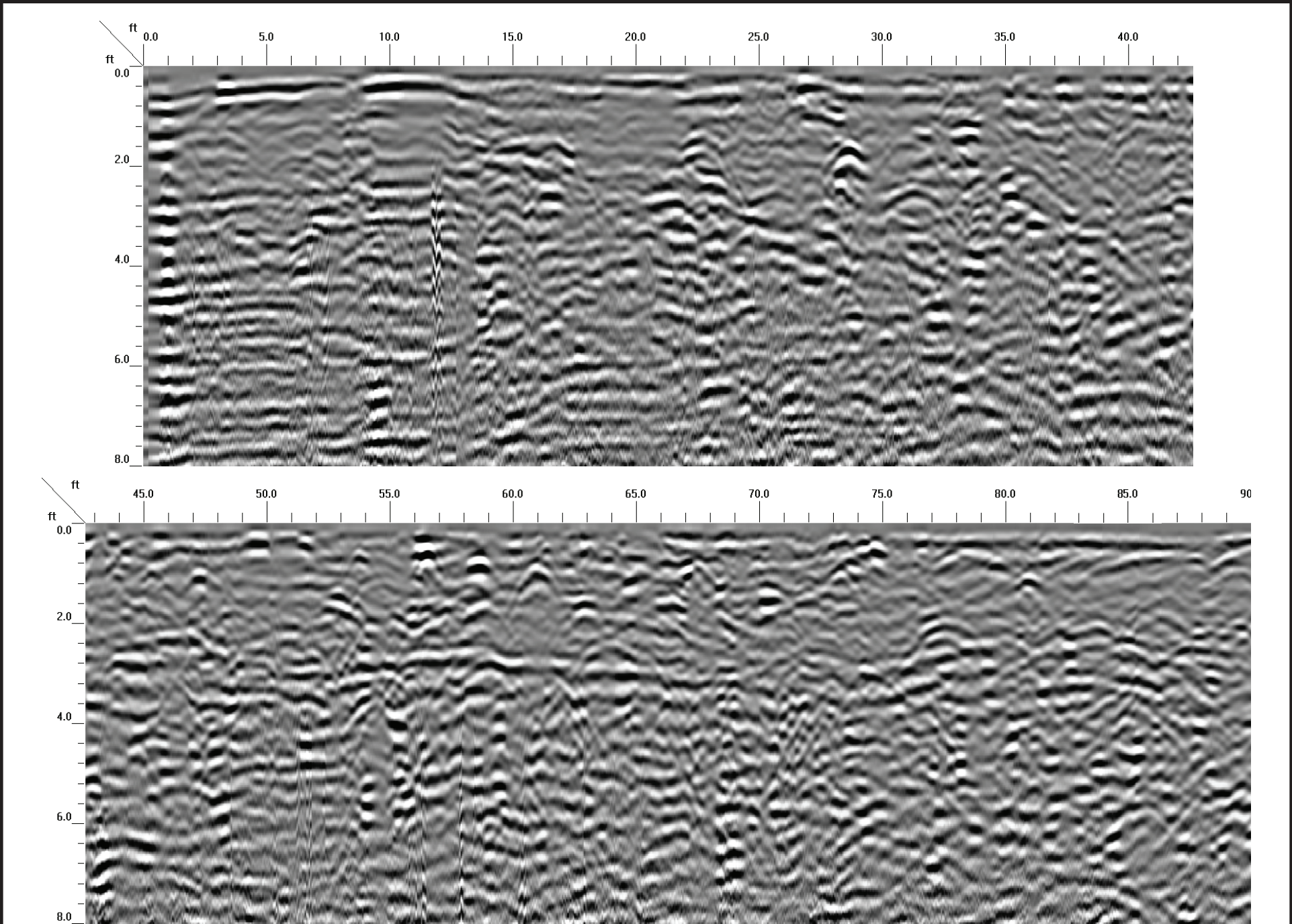


Transect 2

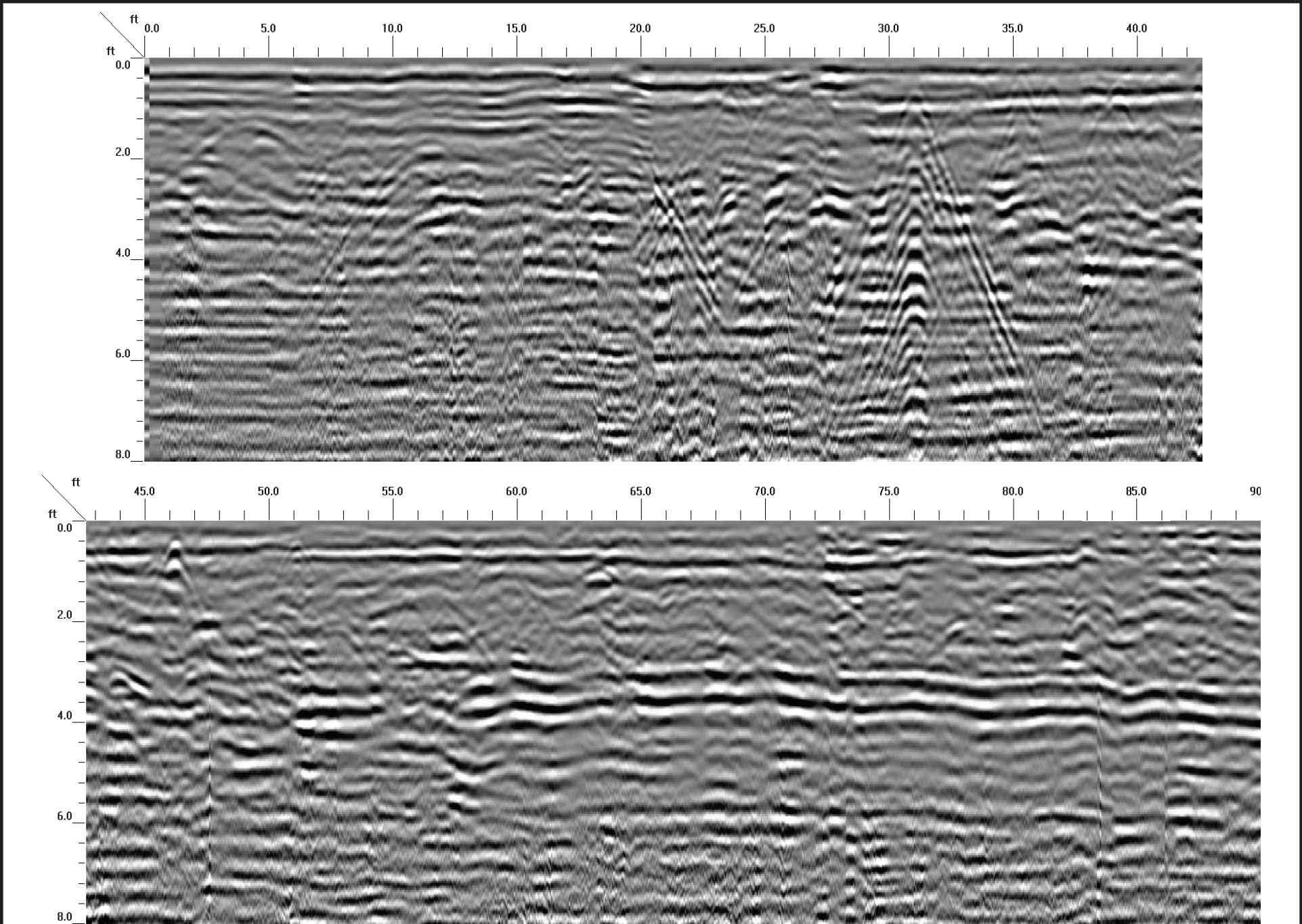


Transect 3

Figure 9a GPR Transects 1 through 3	TIP Number: R-5759 Wilkes County, NC	S.A. Johnson et al. Property 180 Speedway Road North Wilkesboro, NC	Parcel I.D. #: 030 Facility I.D. #: N/A	Seramur & Associates, PC Boone, NC
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Transect 4



Transect 5

Figure 9b GPR Transects 4 and 5	TIP Number: R-5759 Wilkes County, NC	S.A. Johnson et al. Property 180 Speedway Road North Wilkesboro, NC	Parcel I.D. #: 030 Facility I.D. #: N/A	Seramur & Associates, PC Boone, NC
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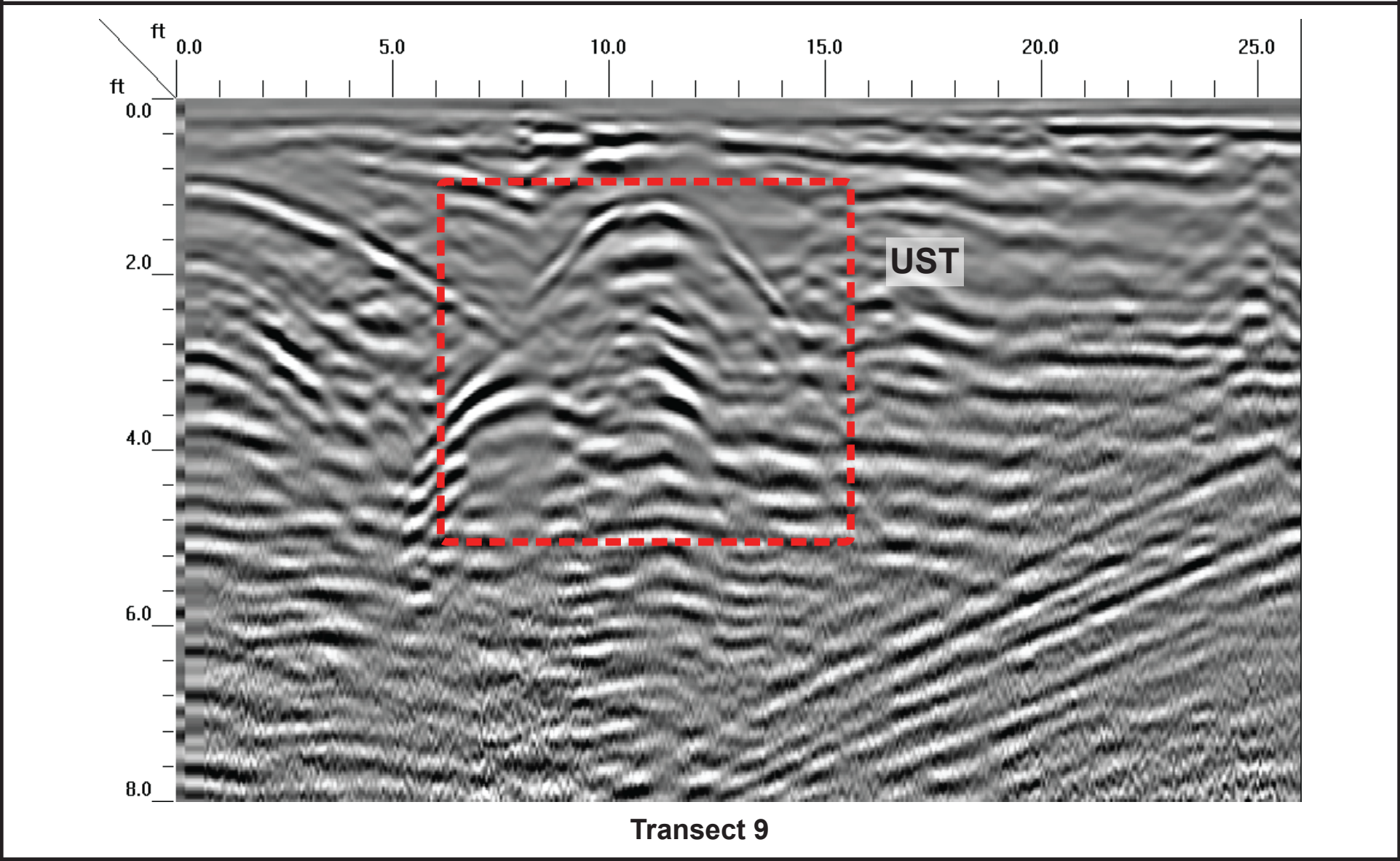
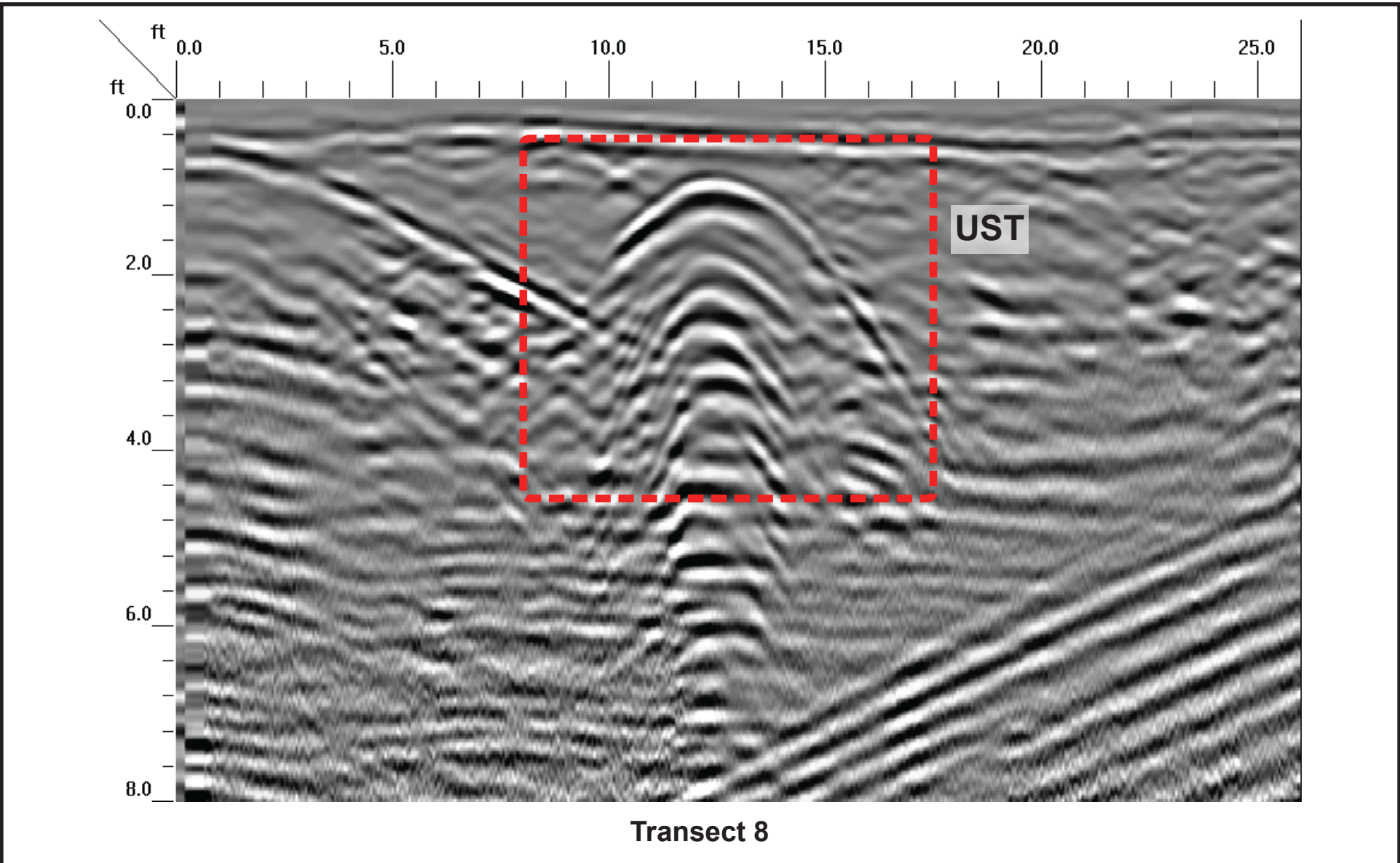
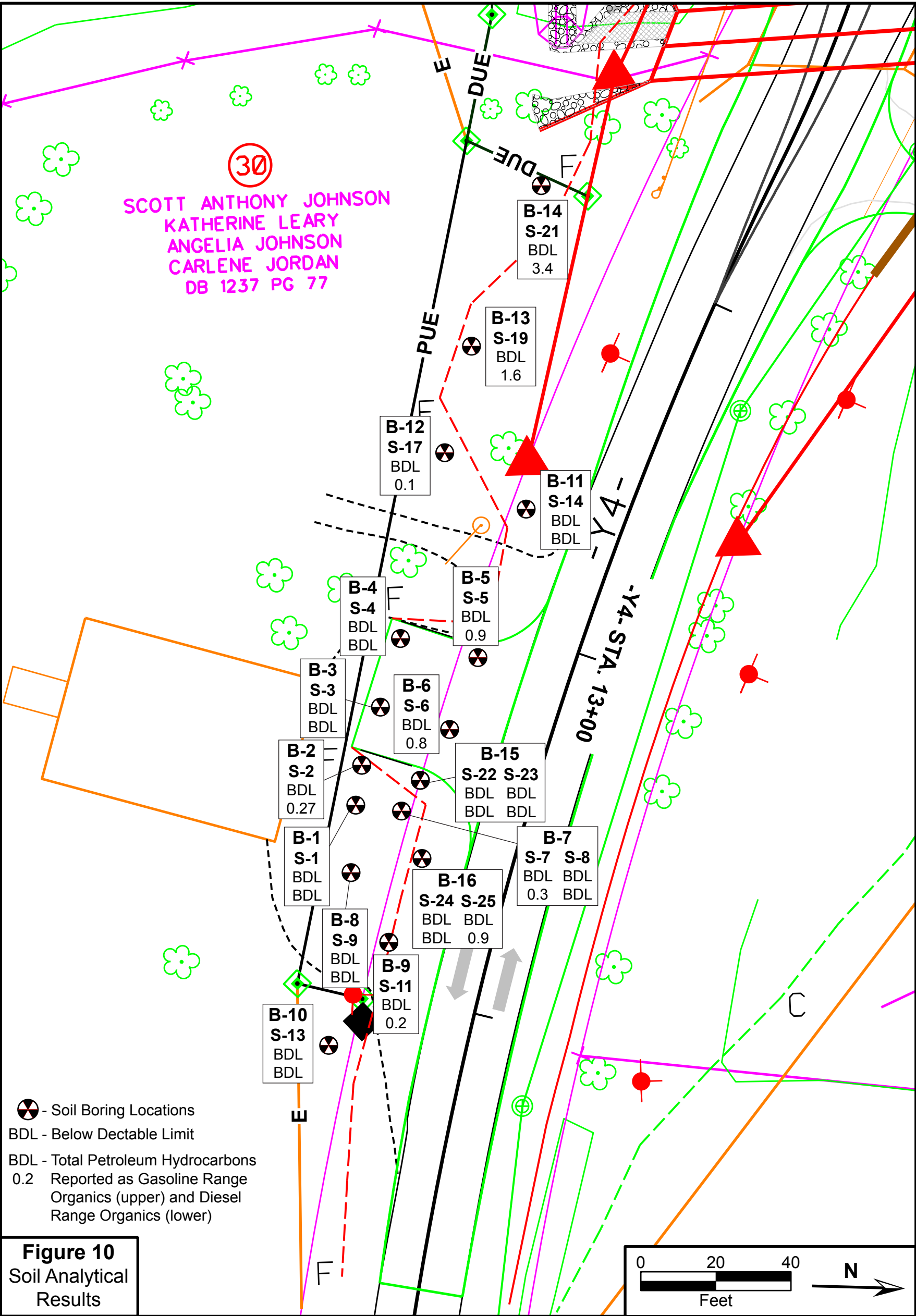


Figure 9c GPR Transects 8 and 9	TIP Number: R-5759 Wilkes County, NC	S.A. Johnson et al. Property 180 Speedway Road North Wilkesboro, NC	Parcel I.D. #: 030 Facility I.D. #: N/A	Seramur & Associates, PC Boone, NC
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TIP Number: R-5759 Wilkes County, NC	S.A. Johnson et al. Property 180 Speedway Road North Wilkesboro, NC	Parcel I.D. #: 030 Facility I.D. #: N/A	Seramur & Associates, PC Boone, NC
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Appendix B
Laboratory Reports

Hydrocarbon Analysis Results



Client: SERAMUR & ASSOCIATES

Address:



Samples taken

Samples extracted

Samples analysed



Wednesday, July 14, 2021

Wednesday, July 14, 2021

Wednesday, July 14, 2021

Contact: KEITH SERAMUR

Operator

MAX MOYER

Project: NCDOT R-5759 ; PARCEL 30

													T03308
Matrix	Sample ID	Dilution used	BTEX	GRO	DRO	TPH	Total Aromatics	16 EPA PAHs	BaP	% Ratios			HC Fingerprint Match
			C6-C9	C5-C10	C10-C35	C5-C35	C10-C35			C5:10	C10:C18	C18+	
Soil	S-1	20.0	<0.5	<0.5	<0.2	<0.5	<0.01	<0.01	<0.006	0	100	0	Residual HC
Soil	S-2	21.0	<0.5	<0.5	0.27	0.27	0.26	0.01	<0.006	0	95.6	4.4	Residual PHC
Soil	S-3	19.0	<0.4	<0.4	<0.19	<0.4	<0.01	<0.01	<0.006	0	0	0	PHC ND,(FCM)
Soil	S-4	20.0	<0.5	<0.5	<0.2	<0.5	<0.01	<0.01	<0.006	0	100	0	Residual HC
Soil	S-5	20.0	<0.5	<0.5	0.9	0.9	0.4	0.024	0.001	0	76.3	23.7	V.Deg.PHC 77.4%,(FCM)
Soil	S-6	20.0	<0.5	<0.5	0.8	0.8	0.08	0.007	0.001	0	100	0	Deg Fuel 51.2%,(FCM)
Soil	S-7	23.0	<0.5	<0.5	0.3	0.3	0.16	0.009	<0.001	0	73.6	26.4	V.Deg.PHC 68.5%,(FCM)
Soil	S-8	24.0	<0.6	<0.6	<0.24	0.05	0.05	0.005	<0.007	0	100	0	Residual HC
Soil	S-9	23.0	<0.5	<0.5	0.09	0.09	0.08	0.008	<0.001	0	90.1	9.9	Residual HC
Soil	S-11	22.0	<0.5	<0.5	0.2	0.2	0.08	0.005	<0.007	0	81.9	18.1	Residual HC
Initial Calibrator QC check			OK			Final FCM QC Check			OK			93.4%	

Concentration values in mg/kg for soil samples and mg/L for water samples. Soil values uncorrected for moisture or stone content. Fingerprints provide a tentative hydrocarbon identification.

Abbreviations :- FCM = Results calculated using Fundamental Calibration Mode : % = confidence of hydrocarbon identification : (PFM) = Poor Fingerprint Match : (T) = Turbid : (P) = Particulate detected

B = Blank Drift : (SBS)/(LBS) = Site Specific or Library Background Subtraction applied to result : (BO) = Background Organics detected : (OCR) = Outside cal range : (M) = Modified Result.

% Ratios estimated aromatic carbon number proportions : HC = Hydrocarbon : PHC = Petroleum HC : FP = Fingerprint only.

Data generated by HC-1 Analyser

Hydrocarbon Analysis Results



Client: SERAMUR & ASSOCIATES

Address:



Samples taken

Samples extracted

Samples analysed



Wednesday, July 14, 2021

Wednesday, July 14, 2021

Wednesday, July 14, 2021

Contact: KEITH SERAMUR

Operator

MAX MOYER

Project: NCDOT R-5759 ; PARCEL 30

													T03308
Matrix	Sample ID	Dilution used	BTEX	GRO	DRO	TPH	Total Aromatics	16 EPA PAHs	BaP	% Ratios			HC Fingerprint Match
			C6-C9	C5-C10	C10-C35	C5-C35	C10-C35			C5:10	C10:C18	C18+	
Soil	S-13	7.0	<0.17	<0.17	<0.07	<0.17	<0.004	<0.004	<0.002	0	0	0	PHC ND,(FCM)
Soil	S-14	23.0	<0.5	<0.5	<0.23	0.03	0.03	0.004	<0.007	0	54.4	45.6	Residual HC
Soil	S-17	15.0	<0.3	<0.3	0.1	0.1	0.05	0.003	<0.005	0	82.5	17.5	Residual HC
Soil	S-19	18.0	<0.4	<0.4	1.6	1.6	0.8	0.04	0.001	0	72	28	V.Deg.PHC 49.9%,(FCM)
Soil	S-21	24.0	<0.6	<0.6	3.4	3.4	1.9	0.1	0.002	0	78.7	21.3	V.Deg.PHC 69.8%,(FCM)
Initial Calibrator QC check			OK			Final FCM QC Check			OK			96.9%	

Concentration values in mg/kg for soil samples and mg/L for water samples. Soil values uncorrected for moisture or stone content. Fingerprints provide a tentative hydrocarbon identification.

Abbreviations :- FCM = Results calculated using Fundamental Calibration Mode : % = confidence of hydrocarbon identification : (PFM) = Poor Fingerprint Match : (T) = Turbid : (P) = Particulate detected

B = Blank Drift : (SBS)/(LBS) = Site Specific or Library Background Subtraction applied to result : (BO) = Background Organics detected : (OCR) = Outside cal range : (M) = Modified Result.

% Ratios estimated aromatic carbon number proportions : HC = Hydrocarbon : PHC = Petroleum HC : FP = Fingerprint only.

Data generated by HC-1 Analyser

Hydrocarbon Analysis Results



Client: SERAMUR & ASSOCIATES

Address:



Samples taken

Samples extracted

Samples analysed



Thursday, July 15, 2021

Thursday, July 15, 2021

Thursday, July 15, 2021

Contact: KEITH SERAMUR

Operator

MAX MOYER

Project: NCDOT R-5759 ; PARCEL 30

													T03308
Matrix	Sample ID	Dilution used	BTEX	GRO	DRO	TPH	Total Aromatics	16 EPA PAHs	BaP	% Ratios			HC Fingerprint Match
			C6-C9	C5-C10	C10-C35	C5-C35	C10-C35			C5:10	C10:C18	C18+	
Soil	S-22	21.0	<0.5	<0.5	<0.21	0.016	0.016	<0.0	<0.006	0	100	0	Residual HC
Soil	S-23	23.0	<0.5	<0.5	<0.23	<0.5	<0.012	<0.012	<0.007	0	0	0	PHC ND,(FCM)
Soil	S-24	25.0	<0.6	<0.6	<0.25	<0.6	<0.013	<0.013	<0.008	0	0	100	Residual HC
Soil	S-25	23.0	<0.5	<0.5	0.9	0.9	0.5	0.013	<0.003	0	92.8	7.2	Deg.PHC 85.6%,(FCM)
Initial Calibrator QC check			OK		Final FCM QC Check					OK		91.2%	

Concentration values in mg/kg for soil samples and mg/L for water samples. Soil values uncorrected for moisture or stone content. Fingerprints provide a tentative hydrocarbon identification.

Abbreviations :- FCM = Results calculated using Fundamental Calibration Mode : % = confidence of hydrocarbon identification : (PFM) = Poor Fingerprint Match : (T) = Turbid : (P) = Particulate detected

B = Blank Drift : (SBS)/(LBS) = Site Specific or Library Background Subtraction applied to result : (BO) = Background Organics detected : (OCR) = Outside cal range : (M) = Modified Result.

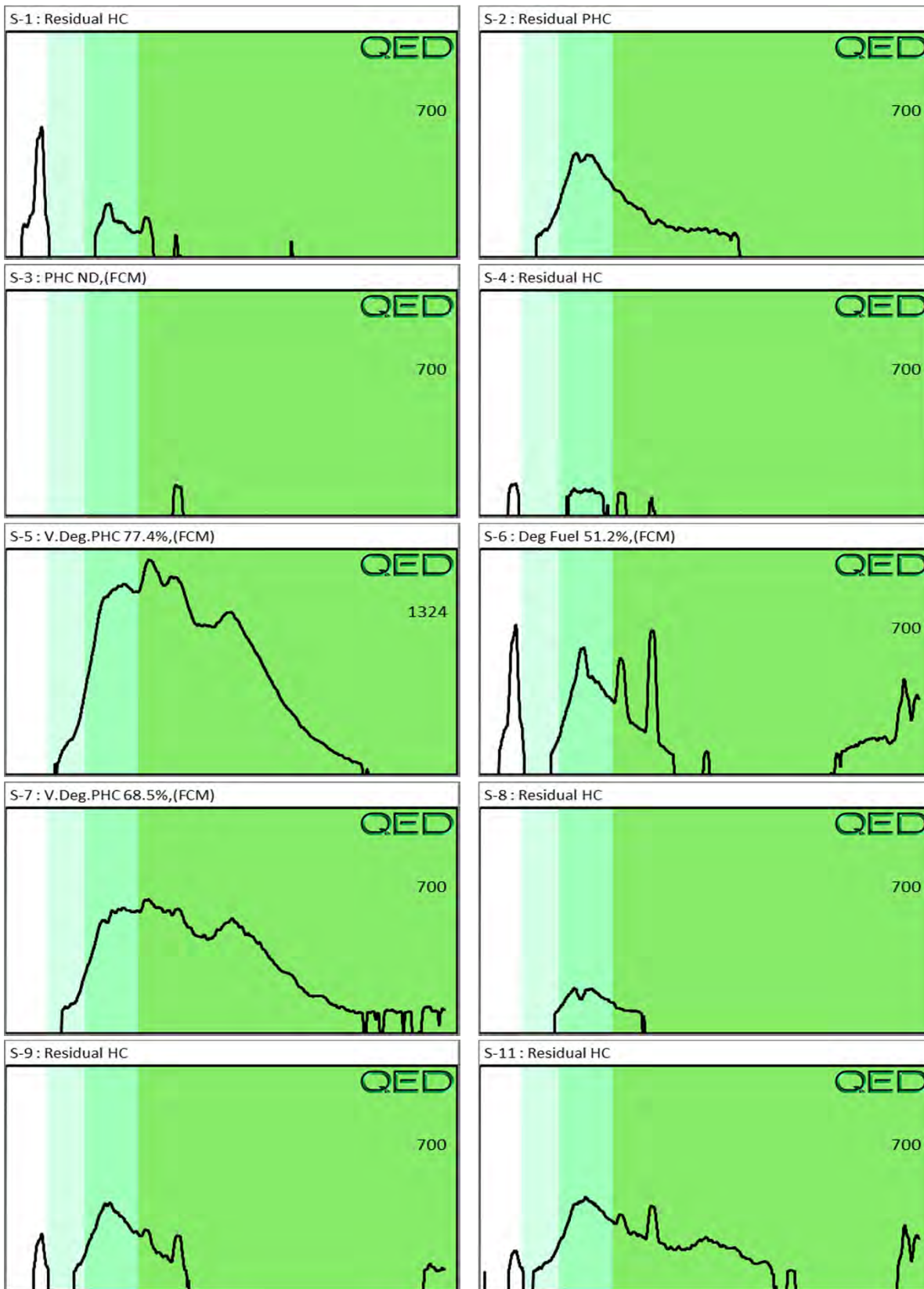
% Ratios estimated aromatic carbon number proportions : HC = Hydrocarbon : PHC = Petroleum HC : FP = Fingerprint only.

Data generated by HC-1 Analyser

QED Hydrocarbon Fingerprints

Project: NCDOT R-5759

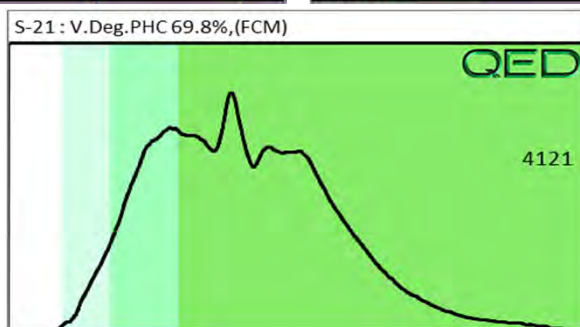
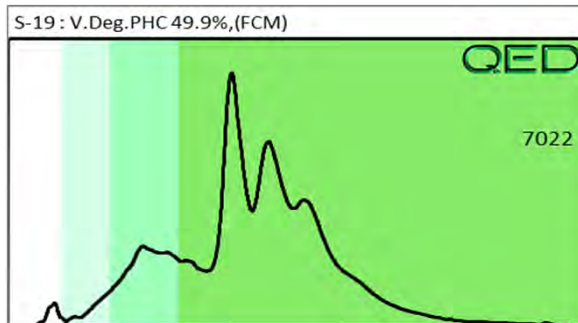
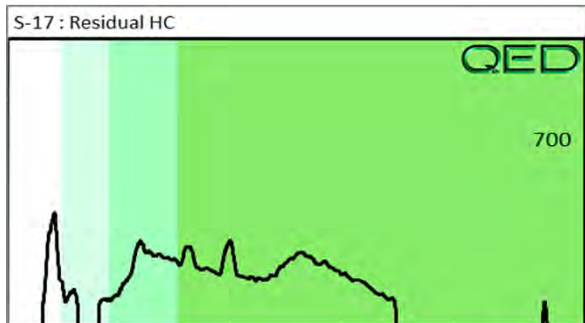
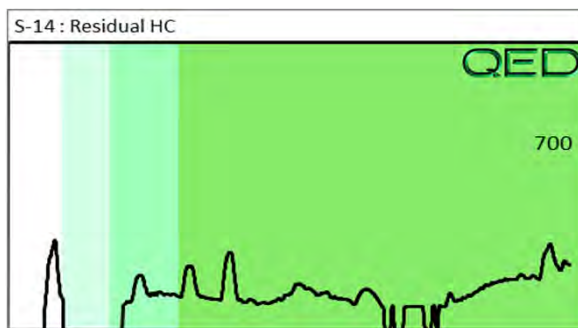
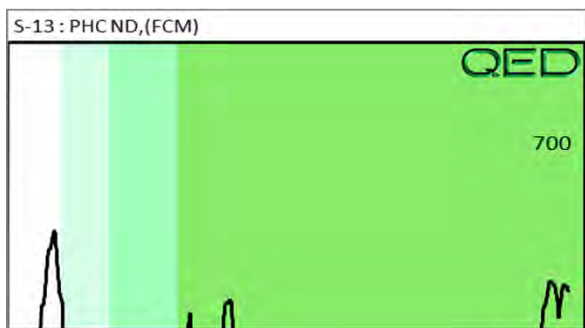
Wednesday, July 14, 2021



QED Hydrocarbon Fingerprints

Project: NCDOT R-5759 ; PARCEL 30

Wednesday, July 14, 2021



QED Hydrocarbon Fingerprints

Project: NCDOT R-5759 ; PARCEL 30

Thursday, July 15, 2021

