

Phase II Site Assessment Report

August 14, 2021

WBS Element: 44691.1.1

State Project: R-5759

Wilkes County

at

Parcel #: 017

Thurman & Jewel Brown Property

2698 Statesville Road; North Wilkesboro, NC, 28659

PIN #: 3877-86-7338

Facility ID No.: 00-0-0000000790

Groundwater Incident #: 22405

Prepared For:

Mr. Gordon Box

NCDOT, Geotechnical Engineering Unit

GeoEnvironmental Section

1589 Mail Service Center

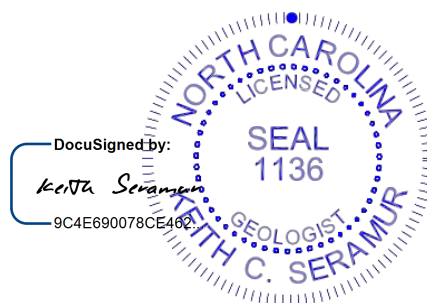
Raleigh, NC 27699-1589

Prepared By:

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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 #: 017
Thurman & Jewel Brown Property
2698 Statesville Road; North Wilkesboro, NC, 28659
PIN #: 3877-86-7338
Facility ID No.: 00-0-0000000790
Groundwater Incident #: 22405

Parcel #017 is located along the western side of Statesville Road at the intersection with Hunter Road. The property is located on a drainage divide west of the Fishing Creek stream valley approximately 900 feet west of the stream channel. 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 from NCDOT on June 25, 2021. Our investigation included areas within the proposed Temporary Construction Easements (E), Permanent Drainage Easement (PDE) and proposed and existing Right-of-Way (R/W) along the Statesville Road and Hunter Road. (Figure 2). The Phase II Site Assessment scope of work included completing a geophysical survey at the property to investigate the potential for unknown underground storage tanks and remnant UST infrastructure. The geophysical survey was followed by soil borings, sample collection and laboratory analyses to assess soil quality across the property (Figures 3 and 4). 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 owned by Jewel A. Brown. It appears that Mr. Thurmond Brown passed away around 2016 as Jewel Brown is listed as a widow on the most recent deed. 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 #017:

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

2.2 Geophysical Surveys

Seramur & Associates used the Pythagorean Theorem to establish three rectangular grids within the R/W, E, and PDE along Statesville Road and Hunter Road. Eighteen additional transects of geophysical data were collected within the proposed R/W and easements (Figure 5a). Twelve of these transects were collected on the new roadway alignment on the north side of the property (Figure 5b). Geophysical grid data were collected along transects at a two-foot spacing.

The magnetometer data was collected with a GEM Systems GSM-19W Walking Overhauser magnetometer. The data was compiled in Excel spreadsheets and a hillshade map of the magnetic data was drafted using Golden Software's Surfer® modeling program. The white areas are lower magnetic readings, and the grey colors are higher background magnetic readings (Figure 6). Ferrous objects in the subsurface are more magnetic than the surrounding soil and produce positive and negative magnetic anomalies on the contour maps.

A Ground Penetrating Radar (GPR) survey was completed across the grids and 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, 1.6 to 1.9 feet and 2.7 to 3.0 feet (Figures 7 through 9). 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 slices show reflections in the radar data between depths of 2.7 and 3.0 feet.

The GPR transects not collected within the grids were processed using Radan® software. Similar to the grid processing, the GPR data processing included adjusting time zero, completing a background removal and adjusting the time variable gain to enhance deep reflections (Figures 10a through 10g).

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 (Figure 3). 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 proposed R/W and easements on Parcel #017.

A track-mounted Geoprobe rig was used to drill nineteen 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 by Ultra-Violet Fluorescence using a QED HC-1 analyzer. 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 #017



3.0 Results of Investigation

Parcel #017 is a former gas station/convenience store that is now operated as a bar. There is a vacant building that appears to have last been used as a barber shop to the north of the former gas station. A mobile home park is located on the north side of the property. The NCDOT Division 11 Right-of-Way has reportedly not determined whether it is necessary to take the entire property. Therefore, we limited our investigation only to the proposed R/W and easements.

A search of NCDEQ Records indicated that this facility did have a release from the former UST system. A review of the available reports for the facility indicate that Mr. Thurmond Brown constructed the facility in 1970 and operated it as a gas station until 1988. Five USTs were

installed at this time (Table 2). These tanks were removed between September 5th and 8th, 2000. During the tank closure, a release was discovered near the kerosene tank that was located on the south side of the building, east of the freezer addition. Petroleum constituents were not detected in soil samples collected around the gasoline UST excavation. A later soil sampling report submitted in 2006 indicated that petroleum constituents remained present in the soil below the former kerosene tank, but the concentrations were below the MSCCs. NCDEQ then issued a Notice of No Further Action for this incident. Select pages from these documents are included in Appendix C of this report.

SAPC personnel made a pedestrian reconnaissance of the property during the initial site visit on June 29, 2021. Evidence of an active UST system was not observed on the property, though the vent lines remain in place from the former UST system.

3.1 Geophysical Surveys

A grid of magnetometer data was collected along the eastern edge of the property (Figure 6). A linear set of elevated magnetometer readings were recorded in the center of Grid 1. These elevated magnetometer readings are likely related to a utility line. Elevated magnetic readings were recorded across the northeast quarter of Grid 3 (Figure 6). This is an area that appears to contain numerous utility lines as imaged in the GPR grids (Figures 8 and 9).

The shallow GPR depth slice (0.3-0.6 feet) for Grid 1 shows scattered medium amplitude (green) reflections across the grid with an area of higher amplitude reflections in the eastern part of the grid (Figure 7). The eastern and western edge of the UST excavation can be seen in the center of the grid. A large reflection free area appears along the west side of the grid. This is the concrete slab surrounding the dispenser island. Medium to high amplitude reflections are scattered across Grid 3, like Grid 1. A linear, slightly curved medium to high amplitude reflection extends across the center of the grid. This anomaly is partially in a grassy area between two parking lots, but it does not exactly follow this boundary and therefore is probably related to a utility.

The intermediate GPR depth slices (1.6-1.9 feet) for all three grids have large reflection free areas (Figure 8). Grid 1 shows a high amplitude linear anomaly towards the east side of the grid. This appears to be the remnants of the vent lines for the UST system. A wide linear set of high amplitude reflections run along the west side of the grid. In a slightly shallower depth slice, two linear sets of high amplitude reflections follow the same trend (see Inset A on Figure 8). These linear anomalies appear to be utilities. In Grid 2, a linear, curved anomaly runs along the south side of the grid. This anomaly appears to lead towards the light pole in the grass island along Statesville Road and is possibly an electric line running to the light. A broad linear set of high amplitude reflections extend from the middle of the Grid 3 toward the northeast corner. This anomaly is likely related to utility lines.

The deep GPR depth slice (2.7 to 3.0 feet) shows a few scattered high amplitude reflections in Grid 1 (Figure 9). These anomalies are not characteristic of a UST and are located on the edge of the roadway. The magnetic survey did not detect an anomaly characteristic of a UST at this

location (Figure 6). Anomalies of interest observed along the GPR transects are related to the storm drains and other subsurface utilities (Figures 10a-g).

3.2 Soil Borings, Sampling and Laboratory Analysis

The soil at Parcel #017 consists of fill material over residuum (saprolite) (Table 1). The fill material and the residuum are primarily loamy sand and sandy loam. Some shallow samples had small amounts of gravel within sandy loam. Groundwater was not encountered at this site. A soil sample was collected from the shallow and deep portions of the Geoprobe cores at each boring. Nineteen borings were drilled, and thirty-eight soil samples collected. Twenty-two of these soil samples were analyzed for TPH-GRO and DRO (Table B-3).

Soil borings B-1 through B-9 were drilled on the south side of the parcel in the area around the former gas station UST System infrastructure. Borings B-1 through B-5 were drilled near the fuel dispenser canopy. Borings B-6 and B-9 were drilled near the remaining UST vent lines. Borings B-7 and B-8 were drilled in the small E southwest of the building that is located west of the former tank pit. Borings B-10 and B-11 were drilled in the E that is on the northwest side of the former gas station building. Borings B-12 and B-13 were drilled in the center of the property in the parking area to the east of the former barber shop.

Borings B-14 through B-19 were drilled on the north side of the parcel around the three mobile homes. These borings extended across the R/W along the new roadway alignment and a drainage feature by the western mobile homes. A local informant who is familiar with the property spoke with SAPC personnel during the completion of the geophysical survey and stated that he did not believe USTs for heating oil had ever been used in the portion of the property that contains mobile homes. Borings were drilled near anomalies found in the GPR transects. These anomalies are likely related to sewer lines or septic tanks.

Petroleum constituents were not detected at or above NCDEQ UST Action Levels in any of the twenty-two soil samples analyzed at Parcel #017 (Table B-3 and Figure 4).

3.3 Conclusions

Parcel #017 is currently a bar and mobile home park. The geophysical surveys did not image anomalies consistent with USTs. Petroleum constituents were not detected above the UST Action Levels in any soil samples analyzed from the soil borings drilled at Parcel #017. There is evidence of a previous UST system at this property, but no existing system.

4.0 Recommendations

Seramur & Associates does not recommend any further assessment work for Parcel #017.

Appendix A

Tables and Figures

Table 1. Soil Boring Data - Parcel #017						
Boring No.	Depth (ft)	Lithology	Soil type	Soil Sample	PID ppm	Comments
B-1	0.0 to 2.0	Sandy loam	Fill	N/A	N/A	
B-1	2.0 to 5.0	Loamy sand	Residuum	S-1	0.0	Sample at 3.5 feet.
B-1	5.0 to 10.0	Loamy sand	Fill	S-2	0.0	Sample at 8.5 feet.
B-2	0.0 to 2.5	Sandy loam	Fill	N/A	N/A	
B-2	2.5 to 5.0	Loamy sand	Residuum	S-3	0.0	Sample at 3.5 feet.
B-2	5.0 to 10.0	Loamy sand	Residuum	S-4	0.0	Sample at 9.0 feet.
B-3	0.0 to 3.0	Sandy loam	Fill	N/A	N/A	
B-3	3.0 to 5.0	Loamy sand	Residuum	S-5	0.0	Sample at 3.0 feet.
B-3	5.0 to 10.0	Loamy sand	Residuum	S-6	0.0	Sample at 8.0 feet.
B-4	0.0 to 1.5	Gravel	Fill	N/A	N/A	
B-4	1.5 to 5.0	Loamy sand	Residuum	S-7	0.0	Sample at 3.0 feet.
B-4	5.0 to 10.0	Loamy sand	Residuum	S-8	0.0	Sample at 8.0 feet.
B-5	0.0 to 1.0	Sandy loam	Fill	N/A	N/A	
B-5	1.0 to 5.0	Loamy sand	Residuum	S-9	0.0	Sample at 3.0 feet.
B-5	5.0 to 10.0	Loamy sand	Residuum	S-10	0.0	Sample at 8.0 feet.
B-6	0.0 to 1.5	Sandy loam	Fill	N/A	N/A	
B-6	1.5 to 5.0	Loamy sand	Residuum	S-11	0.0	Sample at 3.0 feet.
B-6	5.0 to 10.0	Loamy sand	Residuum	S-12	0.0	Sample at 8.0 feet.
B-7	0.0 to 1.5	Sandy loam	Fill	N/A	N/A	
B-7	1.5 to 5.0	Loamy sand	Residuum	S-13	0.0	Sample at 3.0 feet.
B-7	5.0 to 10.0	Loamy sand	Residuum	S-14	0.0	Sample at 8.0 feet.
B-8	0.0 to 2.0	Sandy loam	Fill	N/A	N/A	
B-8	2.0 to 5.0	Loamy sand	Residuum	S-15	0.0	Sample at 3.0 feet.
B-8	5.0 to 10.0	Loamy sand	Residuum	S-16	0.0	Sample at 8.0 feet.
B-9	0.0 to 2.0	Sandy loam	Fill	N/A	N/A	
B-9	2.0 to 5.0	Loamy sand	Residuum	S-17	0.0	Sample at 3.0 feet.
B-9	5.0 to 10.0	Loamy sand	Residuum	S-18	0.0	Sample at 8.0 feet.
B-10	0.0 to 3.0	Sandy loam	Fill	N/A	N/A	
B-10	3.0 to 5.0	Loamy sand	Residuum	S-19	0.0	Sample at 3.0 feet.
B-10	5.0 to 10.0	Loamy sand	Residuum	S-20	0.0	Sample at 8.0 feet.
B-11	0.0 to 3.0	Sandy loam	Fill	N/A	N/A	
B-11	3.0 to 5.0	Loamy sand	Residuum	S-21	0.0	Sample at 3.0 feet.
B-11	5.0 to 10.0	Loamy sand	Residuum	S-22	0.0	Sample at 8.0 feet.
B-12	0.0 to 2.0	Sandy loam	Fill	N/A	N/A	
B-12	2.0 to 5.0	Loamy sand	Residuum	S-23	0.0	Sample at 3.0 feet.
B-12	5.0 to 10.0	Loamy sand	Residuum	S-24	0.0	Sample at 8.0 feet.
B-13	0.0 to 5.0	Sandy loam	Fill	S-25	0.0	Sample at 3.0 feet.
B-13	5.0 to 6.0	Sandy loam	Fill	N/A	N/A	
B-13	6.0 to 10.0	Loamy sand	Residuum	S-26	0.0	Sample at 8.0 feet.
B-14	0.0 to 5.0	Sandy loam	Fill	S-27	0.0	Sample at 3.0 feet.
B-14	5.0 to 6.0	Sandy loam	Fill	N/A	N/A	
B-14	6.0 to 10.0	Loamy sand	Residuum	S-28	0.0	Sample at 8.0 feet.
B-15	0.0 to 5.0	Sandy loam	Fill	S-29	0.0	Sample at 3.0 feet.
B-15	5.0 to 9.0	Sandy loam	Fill	S-30	0.0	Sample at 8.0 feet.
B-15	9.0 to 10.0	Loamy sand	Residuum	N/A	N/A	
B-16	0.0 to 5.0	Sandy loam	Fill	S-31	0.0	Sample at 3.0 feet.
B-16	5.0 to 6.5	Sandy loam	Fill	N/A	N/A	
B-16	6.5 to 10.0	Silty sand w/ gravel	Residuum	S-32	0.0	Sample at 8.0 feet.
B-17	0.0 to 5.0	Sandy loam	Fill	S-33	0.0	Sample at 3.0 feet.
B-17	5.0 to 6.5	Sandy loam	Fill	N/A	N/A	
B-17	6.5 to 10.0	Loamy sand	Residuum	S-34	0.0	Sample at 8.0 feet.
B-18	0.0 to 5.0	Sandy loam	Fill	S-35	0.0	Sample at 3.0 feet.
B-18	5.0 to 9.0	Sandy loam	Fill	S-36	0.0	Sample at 8.0 feet.
B-18	9.0 to 10.0	Loamy sand	Residuum	N/A	N/A	
B-19	0.0 to 5.0	Sandy loam	Fill	S-37	0.0	Sample at 3.0 feet.
B-19	5.0 to 9.0	Sandy loam	Fill	S-38	0.0	Sample at 8.0 feet.
B-19	9.0 to 10.0	Loamy sand	Residuum	N/A	N/A	

Table 2. UST Information						
Facility ID	Facility Name	Address1	City	Zip	Contact	Contact City
00-0-0000000790	B&D QUICK STOP 3	HWY 115 SOUTH	N. WILKESBORO	28659	THURMOND BROWN	N. WILKESBORO
Tank ID	Installation Date	Perm Close Date	Capacity	Commercial	Regulated	Product Name
1	4/11/1970	9/7/2000	3000	N	Y	Gasoline, Gas Mix
2	4/11/1970	9/7/2000	3000	N	Y	Gasoline, Gas Mix
3	4/11/1970	9/7/2000	3000	N	Y	Gasoline, Gas Mix
4	4/11/1970	9/7/2000	3000	N	Y	Gasoline, Gas Mix
5	4/11/1970	9/7/2000	550	N	Y	Kerosene, Kero Mix

Table B-3: Summary of Soil Sampling Results

Revision Date: 07/22/21

Incident Name: Parcel #017

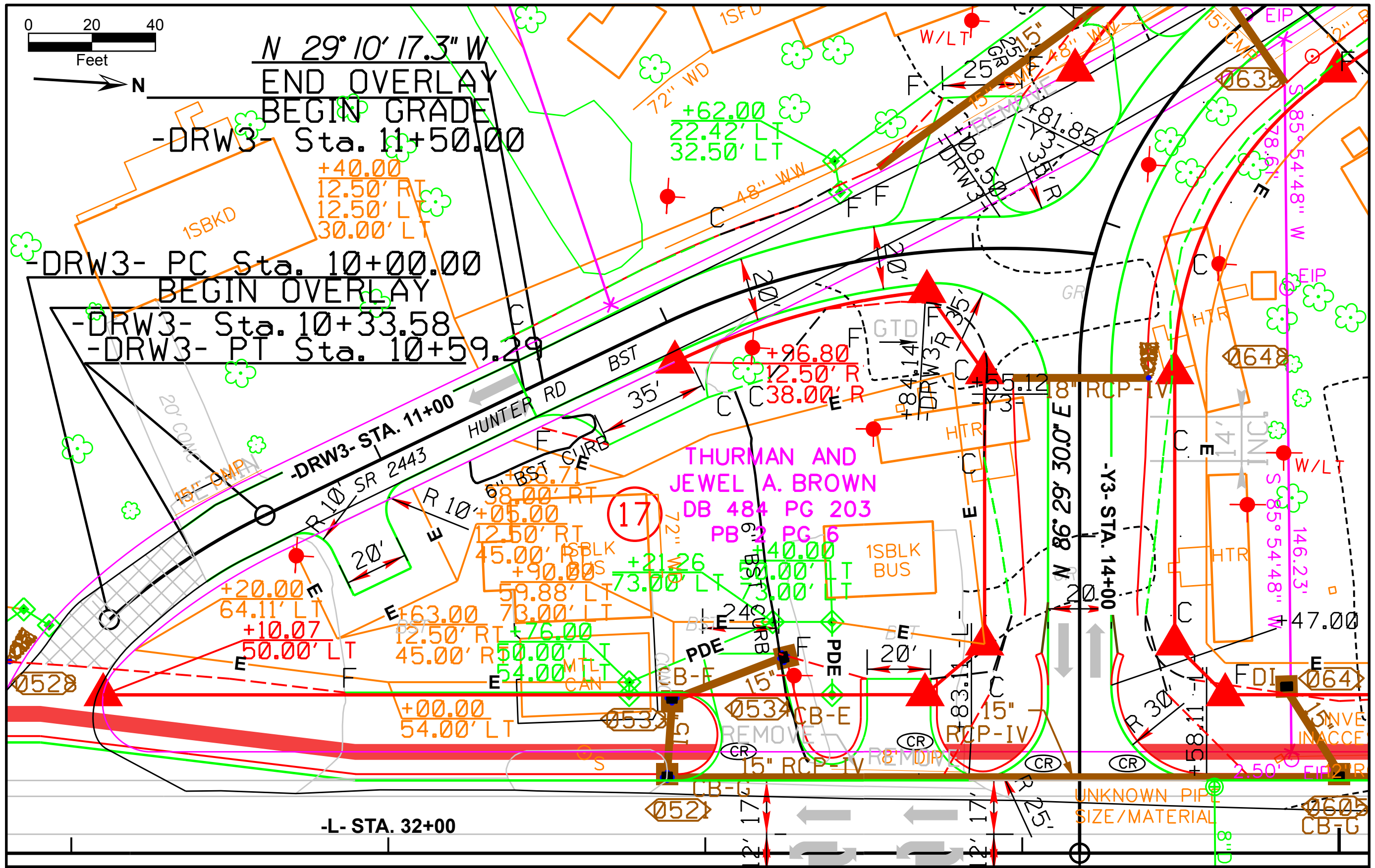
Analytical Method (e.g., VOC by EPA 8260) →					UVF	UVF
Contaminant of Concern →					TPH GRO (mg/kg)	TPH DRO (mg/kg)
Sample ID	Date Collected (mm/dd/yy)	Source Area	Sample Depth (ft. BGS)	Incident Phase		
S-1	07/14/21	B-1	3.5	Phase II	<0.6	1.4
S-2	07/14/21	B-1	8.5	Phase II	<0.5	0.8
S-3	07/14/21	B-2	3.5	Phase II	<0.5	3.6
S-4	07/14/21	B-2	9.0	Phase II	<0.5	0.6
S-5	07/14/21	B-3	3.0	Phase II	<0.6	<0.25
S-6	07/14/21	B-3	8.0	Phase II	<0.5	<0.23
S-7	07/14/21	B-4	3.0	Phase II	<0.5	<0.2
S-8	07/14/21	B-4	8.0	Phase II	<0.6	<0.24
S-10	07/14/21	B-5	8.0	Phase II	<0.5	1.5
S-12	07/14/21	B-6	8.0	Phase II	<0.6	<0.25
S-14	07/14/21	B-7	8.0	Phase II	<0.5	0.08
S-16	07/14/21	B-8	8.0	Phase II	<0.5	0.4
S-20	07/14/21	B-10	8.0	Phase II	<0.5	0.12
S-22	07/14/21	B-11	8.0	Phase II	<0.5	0.3
S-24	07/14/21	B-12	8.0	Phase II	<0.4	0.5
S-26	07/14/21	B-13	8.0	Phase II	<0.5	3.2
S-28	07/14/21	B-14	8.0	Phase II	<0.25	<0.1
S-30	07/14/21	B-15	8.0	Phase II	<0.4	<0.19
S-32	07/14/21	B-16	8.0	Phase II	<0.6	<0.24
S-34	07/14/21	B-17	8.0	Phase II	<0.25	<0.1
S-36	07/14/21	B-18	8.0	Phase II	<0.4	0.5
S-38	07/14/21	B-19	8.0	Phase II	<0.4	<0.19
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	Thurman and Jewel Brown Property 2698 Statesville Road North Wilkesboro, NC	Parcel I.D. #: 017 Facility I.D. #: 00-0-00790	Seramur & Associates, PC Boone, NC	0 400 800 Feet N
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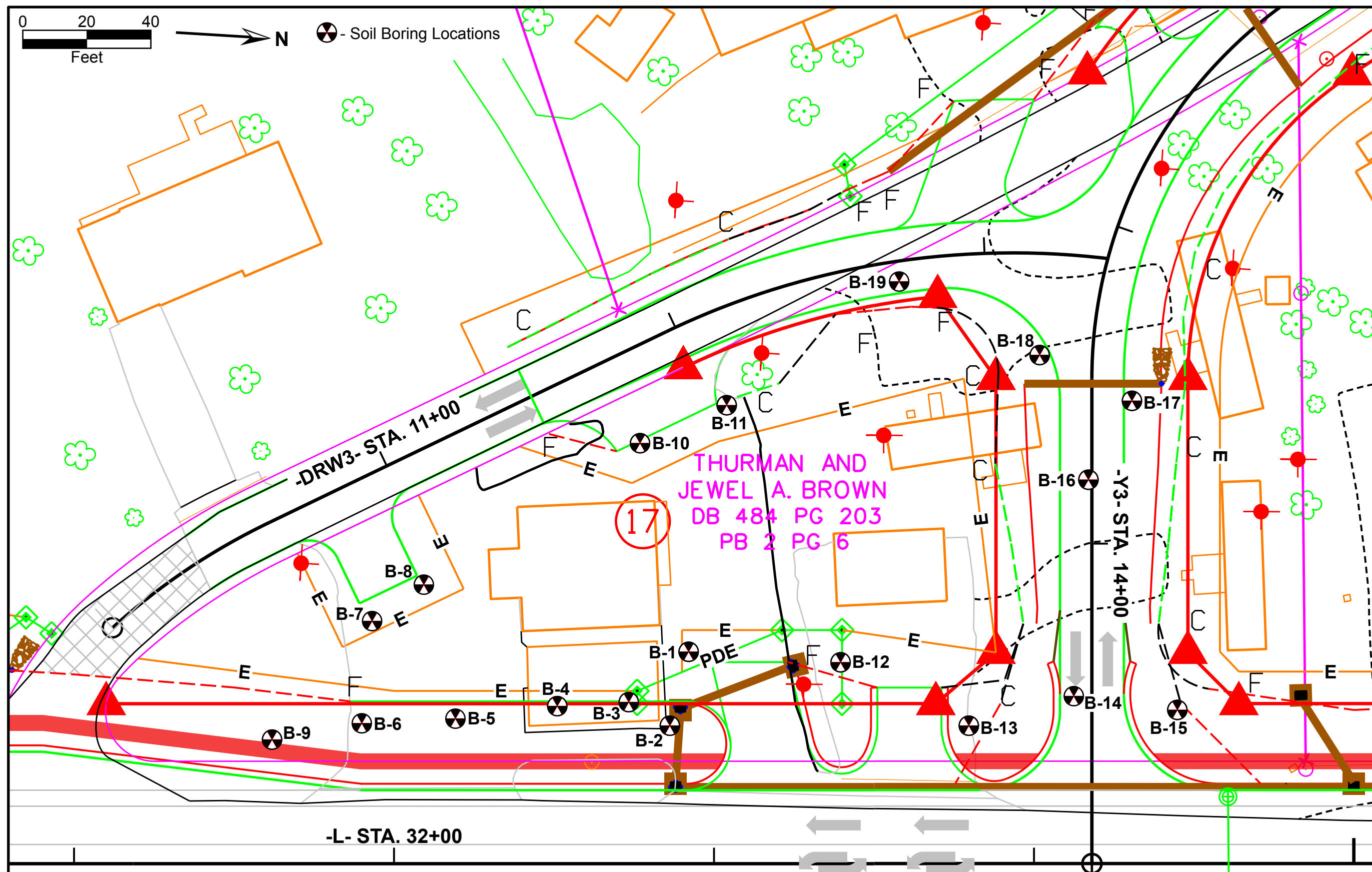


Figure 3 Site Plan with Soil Boring Locations	TIP Number: R-5759 Wilkes County, NC	Thurman and Jewel Brown Property 2698 Statesville Road North Wilkesboro, NC	Parcel I.D. #: 017 Facility I.D. #: 00-0-00790	Seramur & Associates, PC Boone, NC
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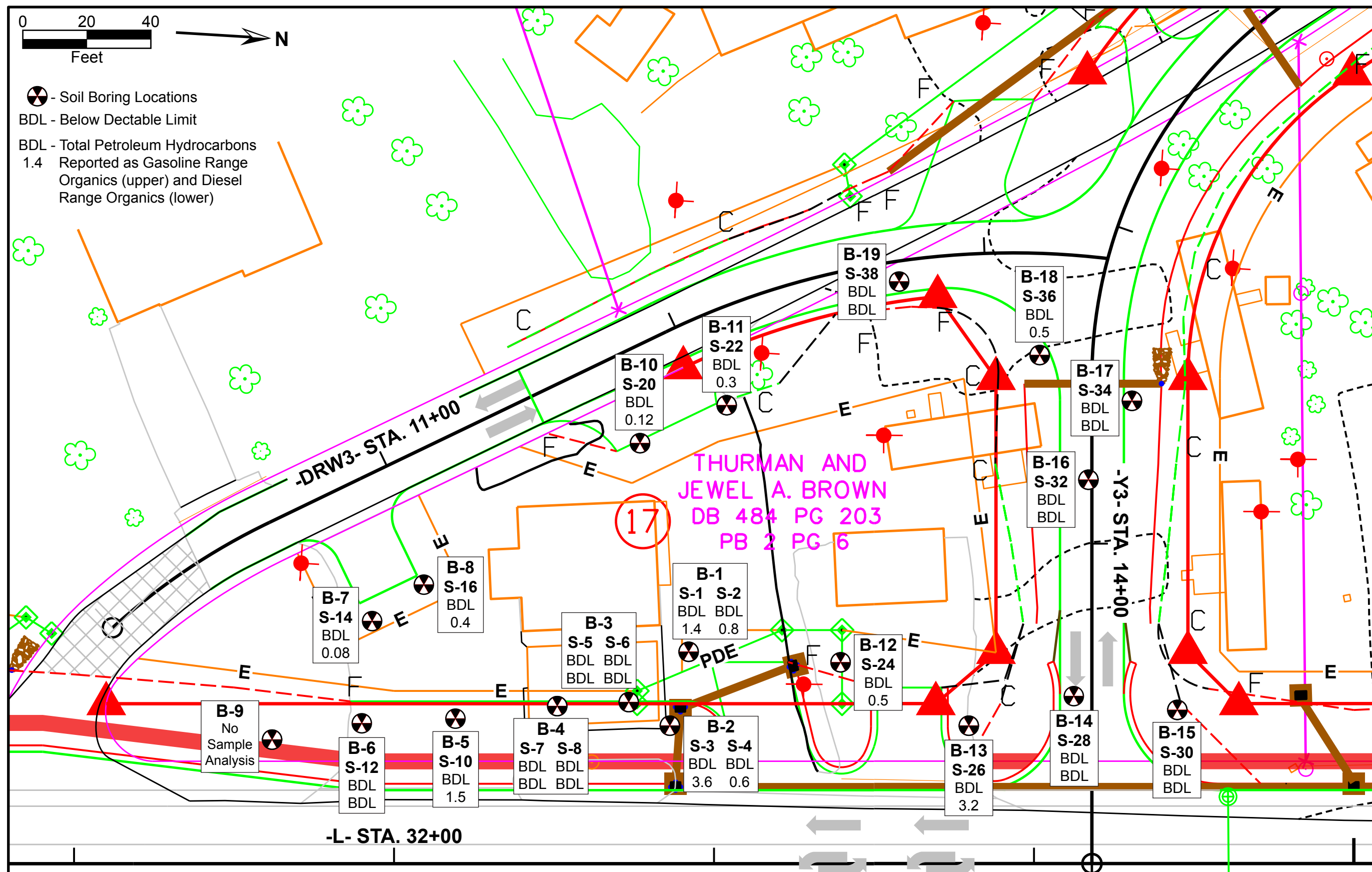


Figure 4
Soil Analytical
Results

TIP Number: R-5759
Wilkes County, NC

Thurman and Jewel Brown Property
2698 Statesville Road
North Wilkesboro, NC

Parcel I.D. #: 017
Facility I.D. #: 00-0-00790

Seramur & Associates, PC
Boone, NC

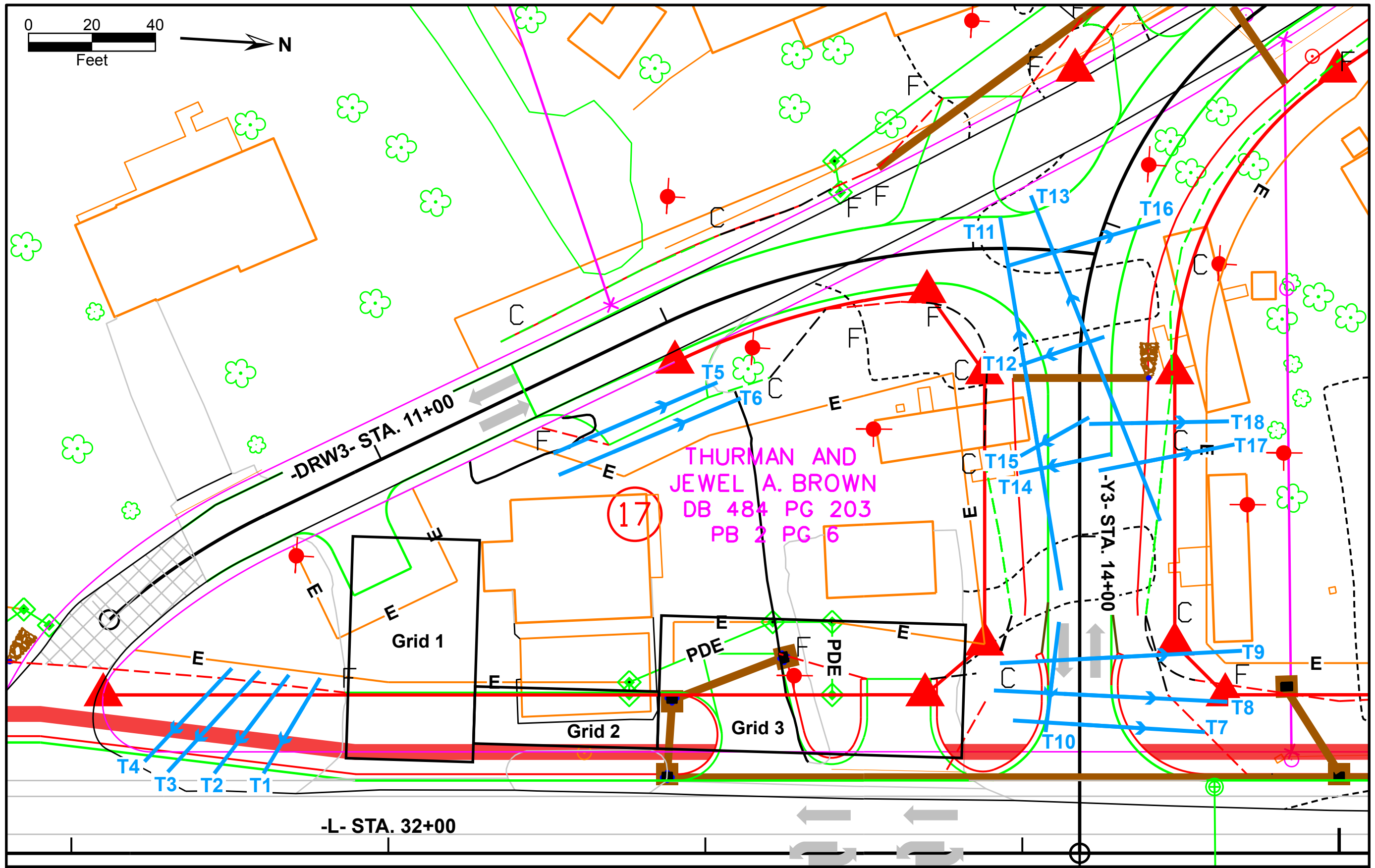


Figure 5a Full Site Plan with Geophysical Grid and Transect Locations	TIP Number: R-5759 Wilkes County, NC	Thurman and Jewel Brown Property 2698 Statesville Road North Wilkesboro, NC	Parcel I.D. #: 017 Facility I.D. #: 00-0-00790	Seramur & Associates, PC Boone, NC
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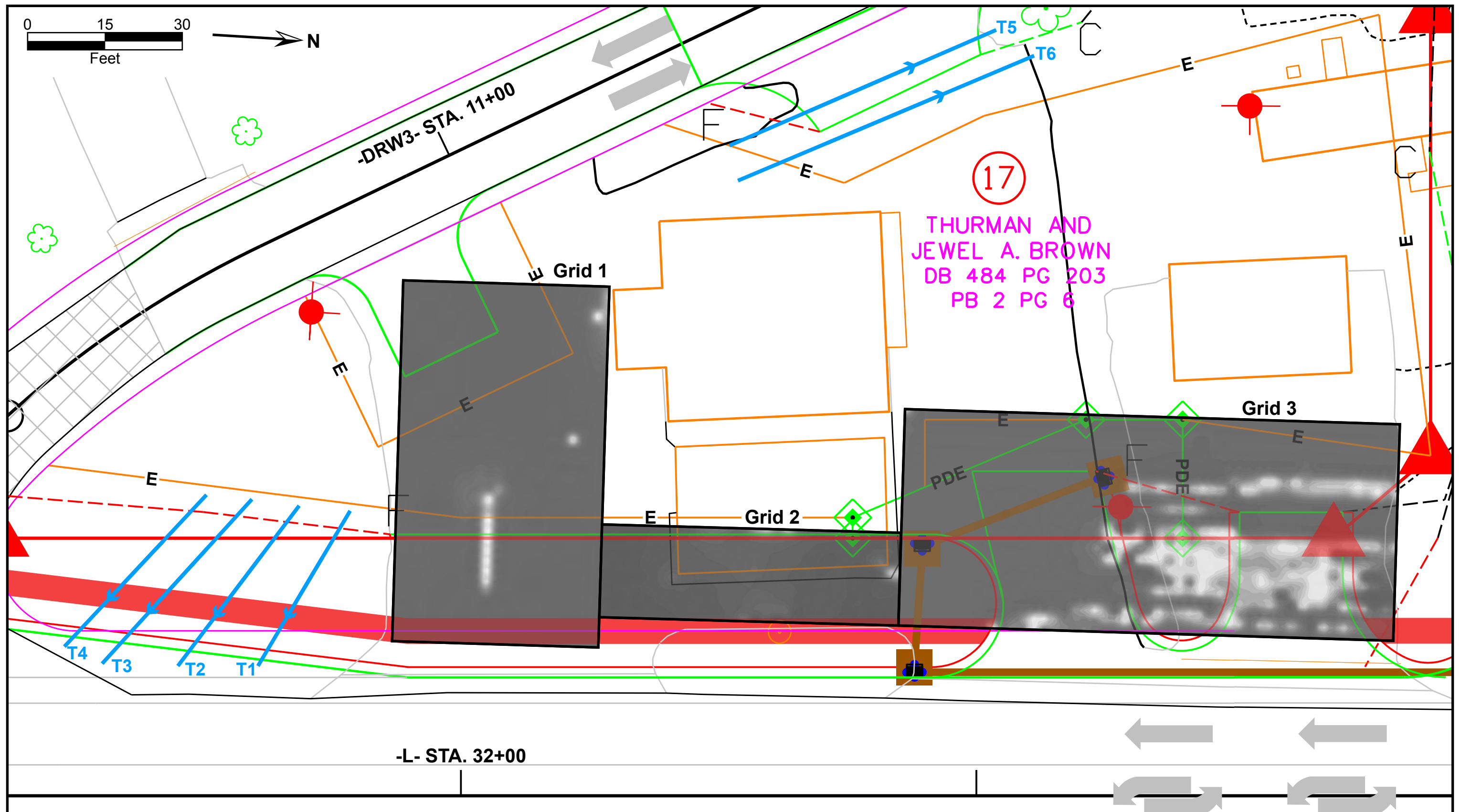


Figure 6 Magnetometer Survey Contour Map	TIP Number: R-5759 Wilkes County, NC	Thurman and Jewel Brown Property 2698 Statesville Road North Wilkesboro, NC	Parcel I.D. #: 017 Facility I.D. #: 00-0-00790	Seramur & Associates, PC Boone, NC
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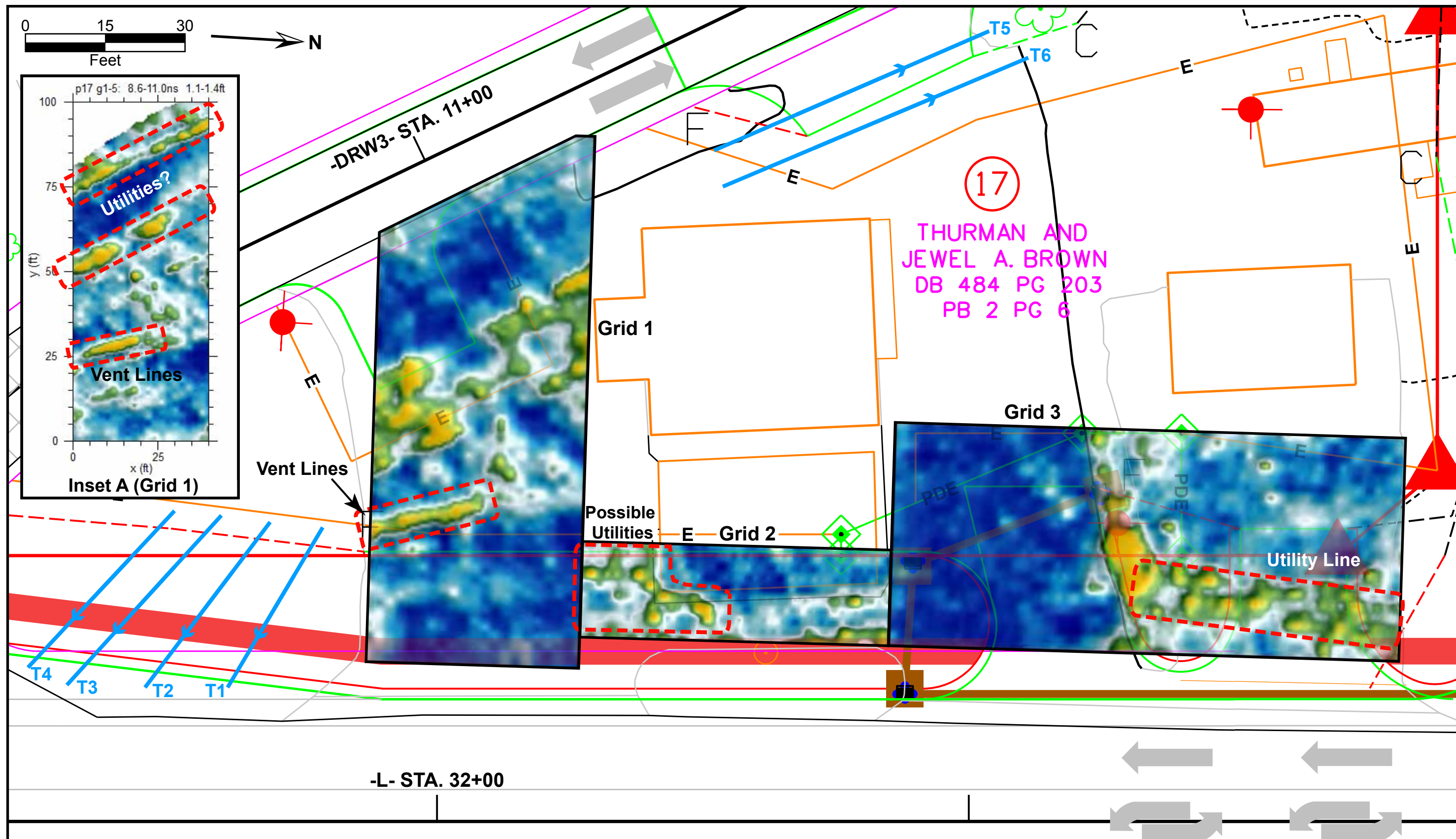


Figure 8

Intermediate GPR Depth Slices
(1.6 - 1.9 feet)

TIP Number: R-5759
Wilkes County, NC

Thurman and Jewel Brown Property
2698 Statesville Road
North Wilkesboro, NC

Parcel I.D. #: 017
Facility I.D. #: 00-0-00790

Seramur & Associates, PC
Boone, NC

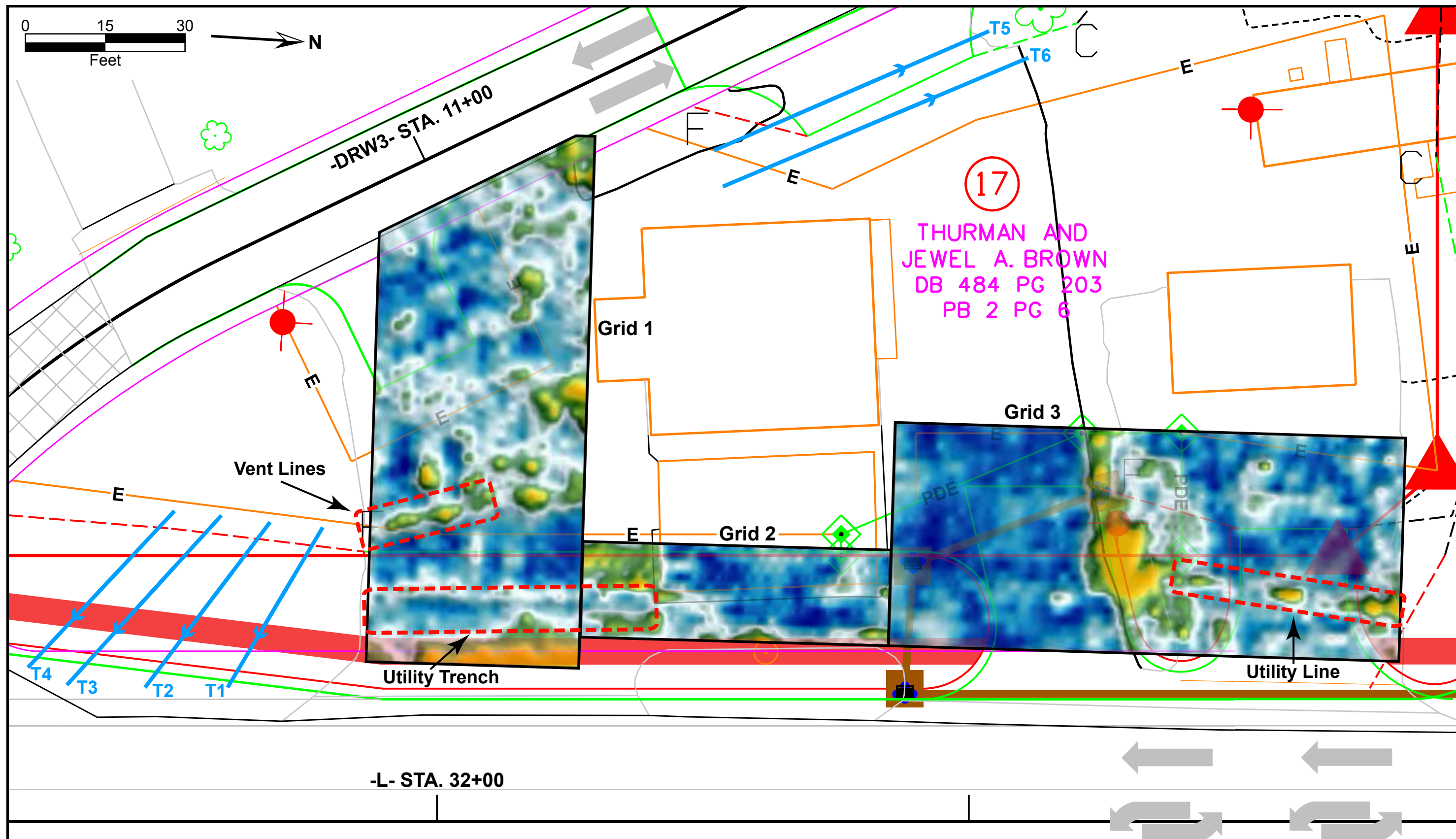


Figure 9 Deep GPR Depth Slices (2.7 - 3.0 feet)	TIP Number: R-5759 Wilkes County, NC	Thurman and Jewel Brown Property 2698 Statesville Road North Wilkesboro, NC	Parcel I.D. #: 017 Facility I.D. #: 00-0-00790	Seramur & Associates, PC Boone, NC
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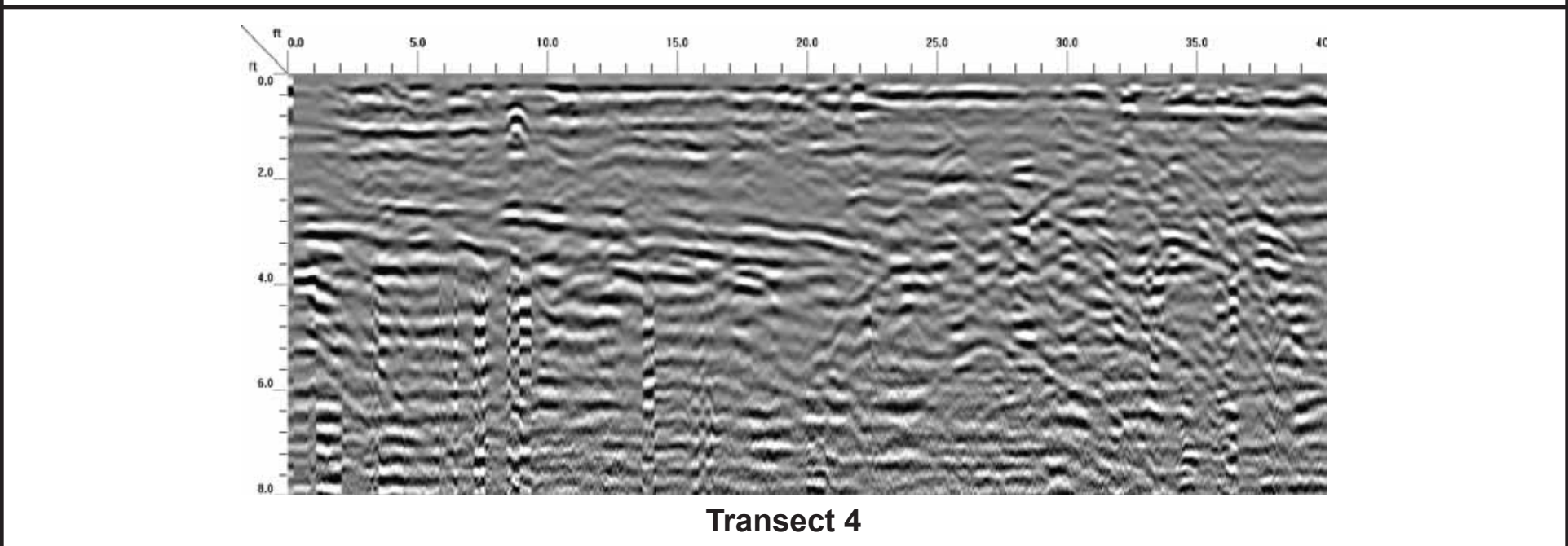
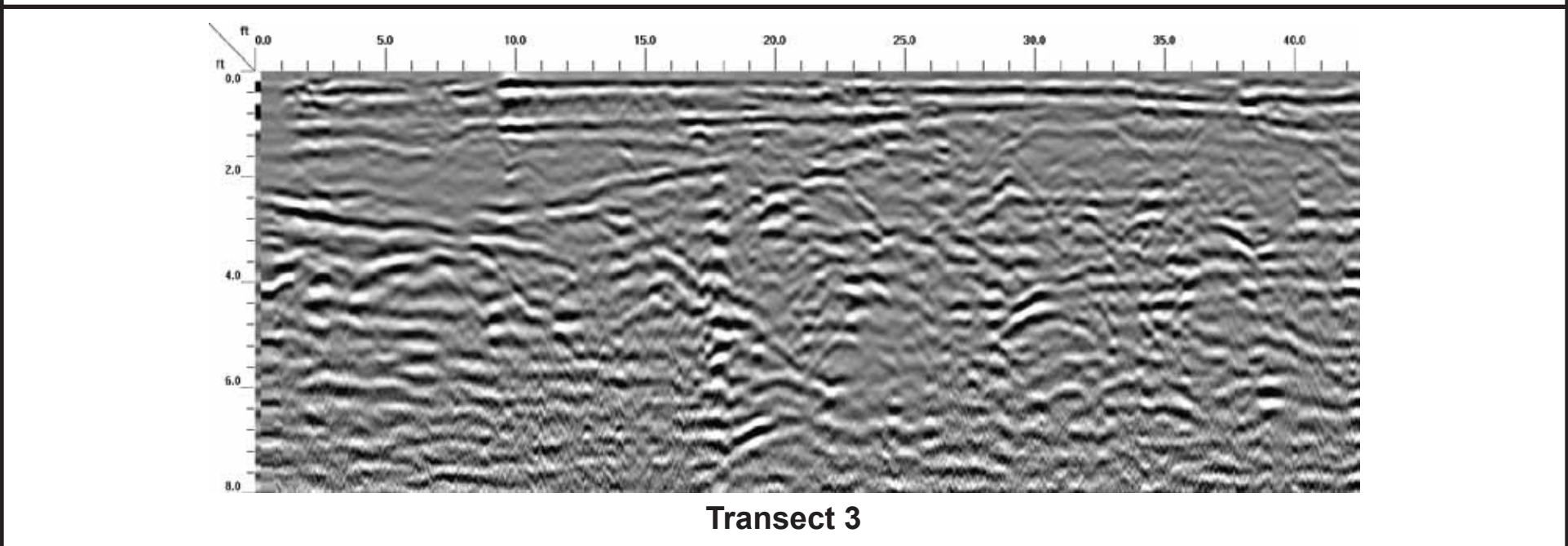
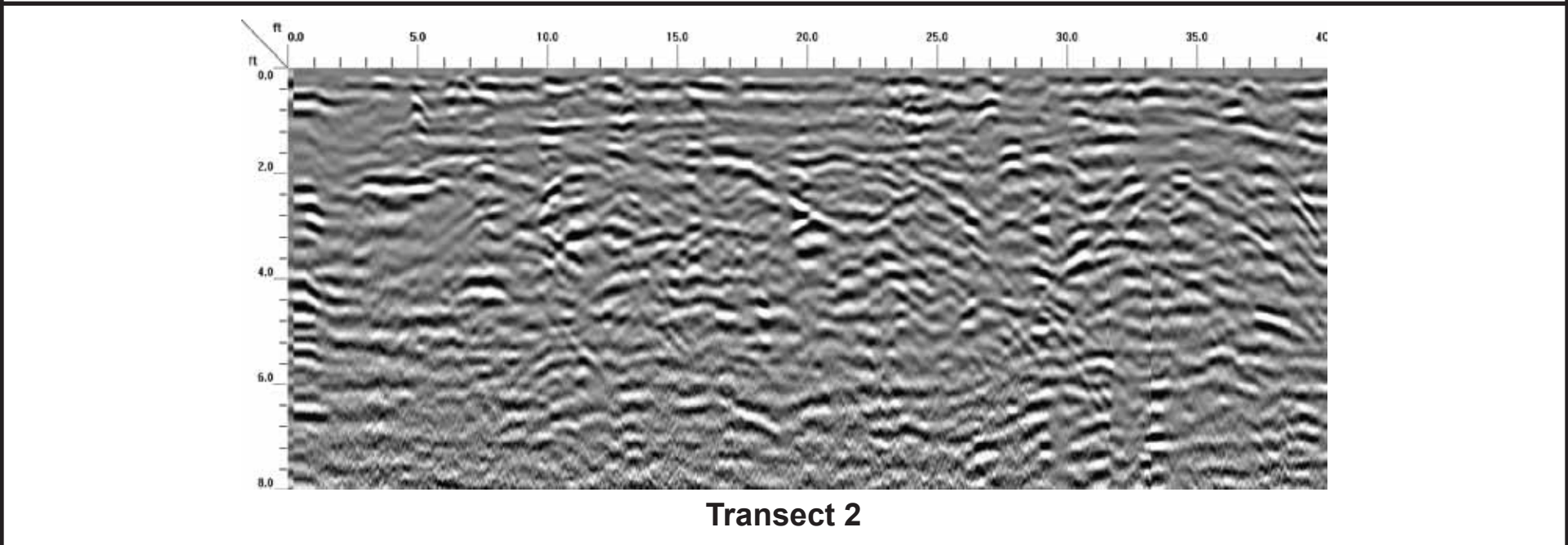
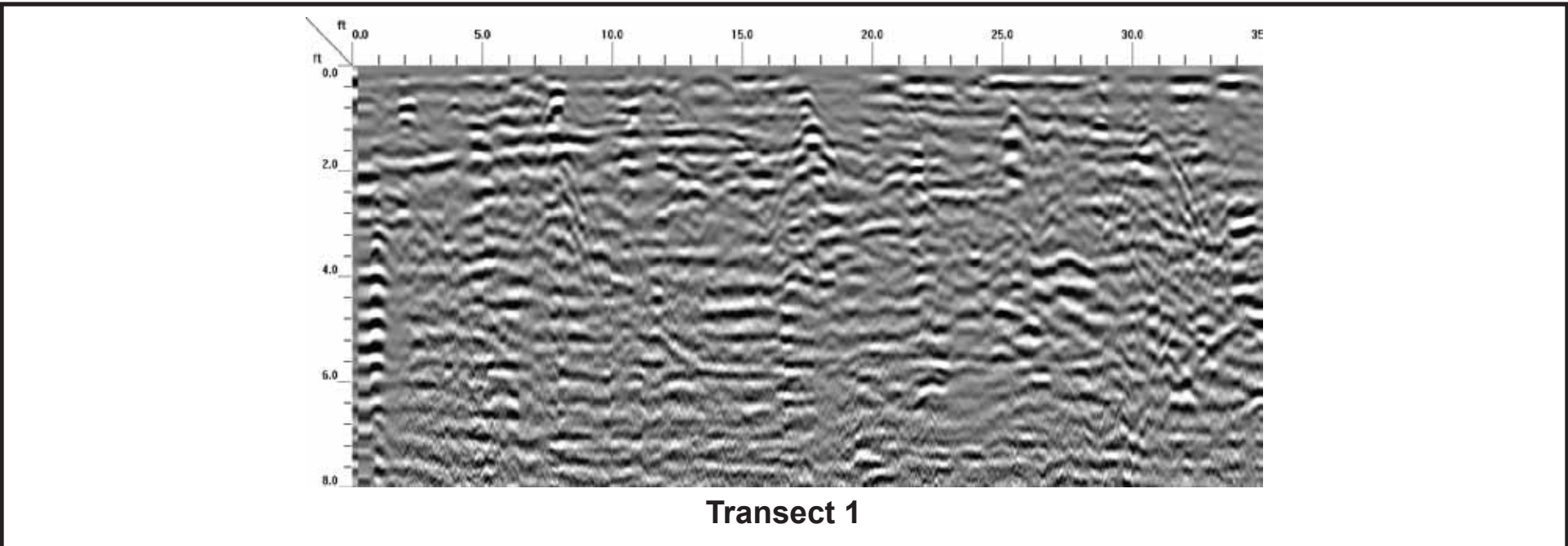
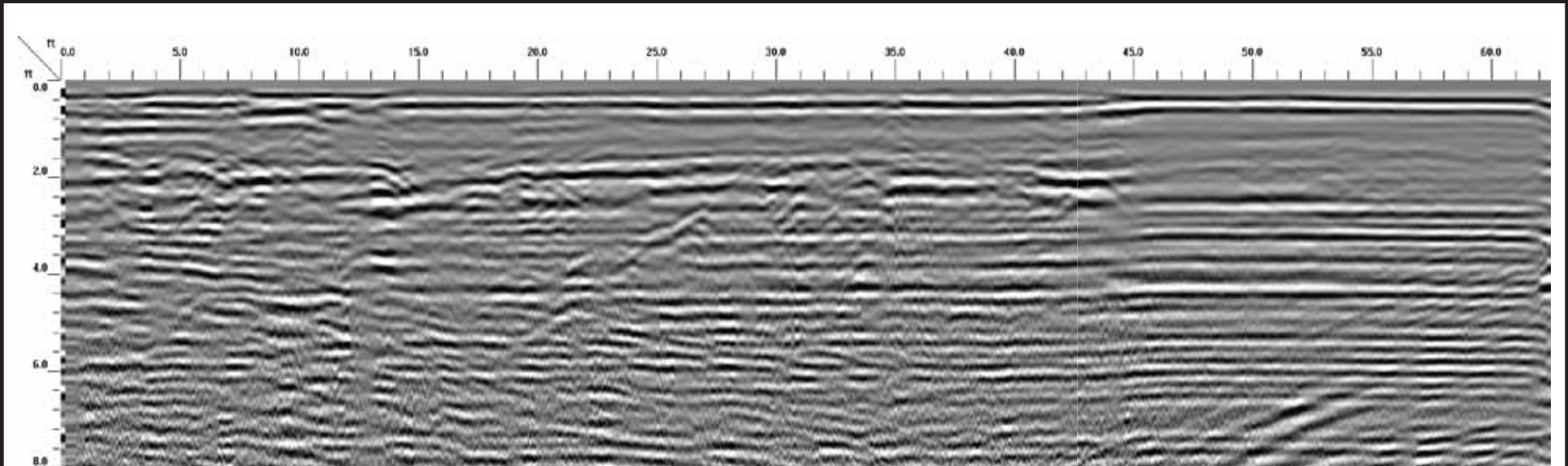
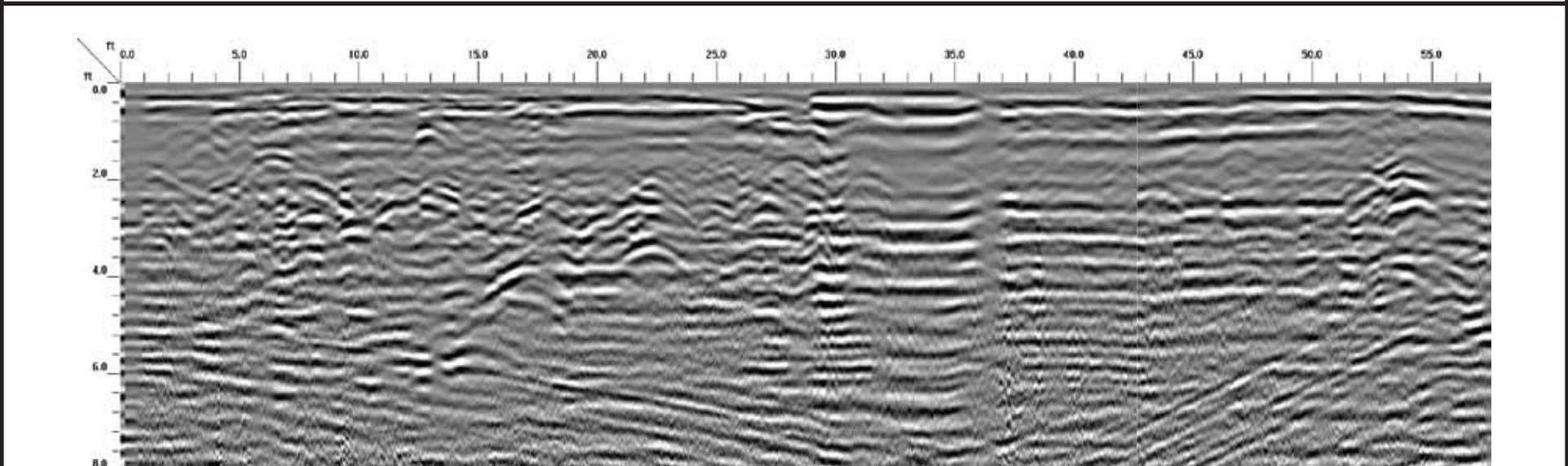


Figure 10a GPR Transects 1 through 4	TIP Number: R-5759 Wilkes County, NC	Thurman and Jewel Brown Property 2698 Statesville Road North Wilkesboro, NC	Parcel I.D. #: 017 Facility I.D. #: 00-0-00790	Seramur & Associates, PC Boone, NC
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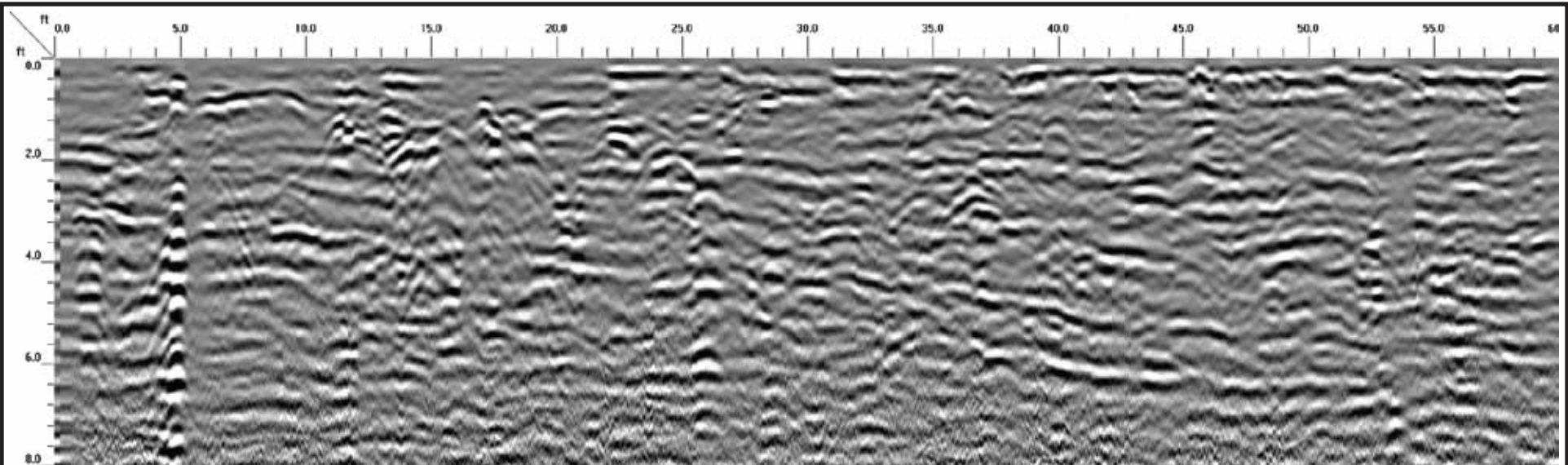


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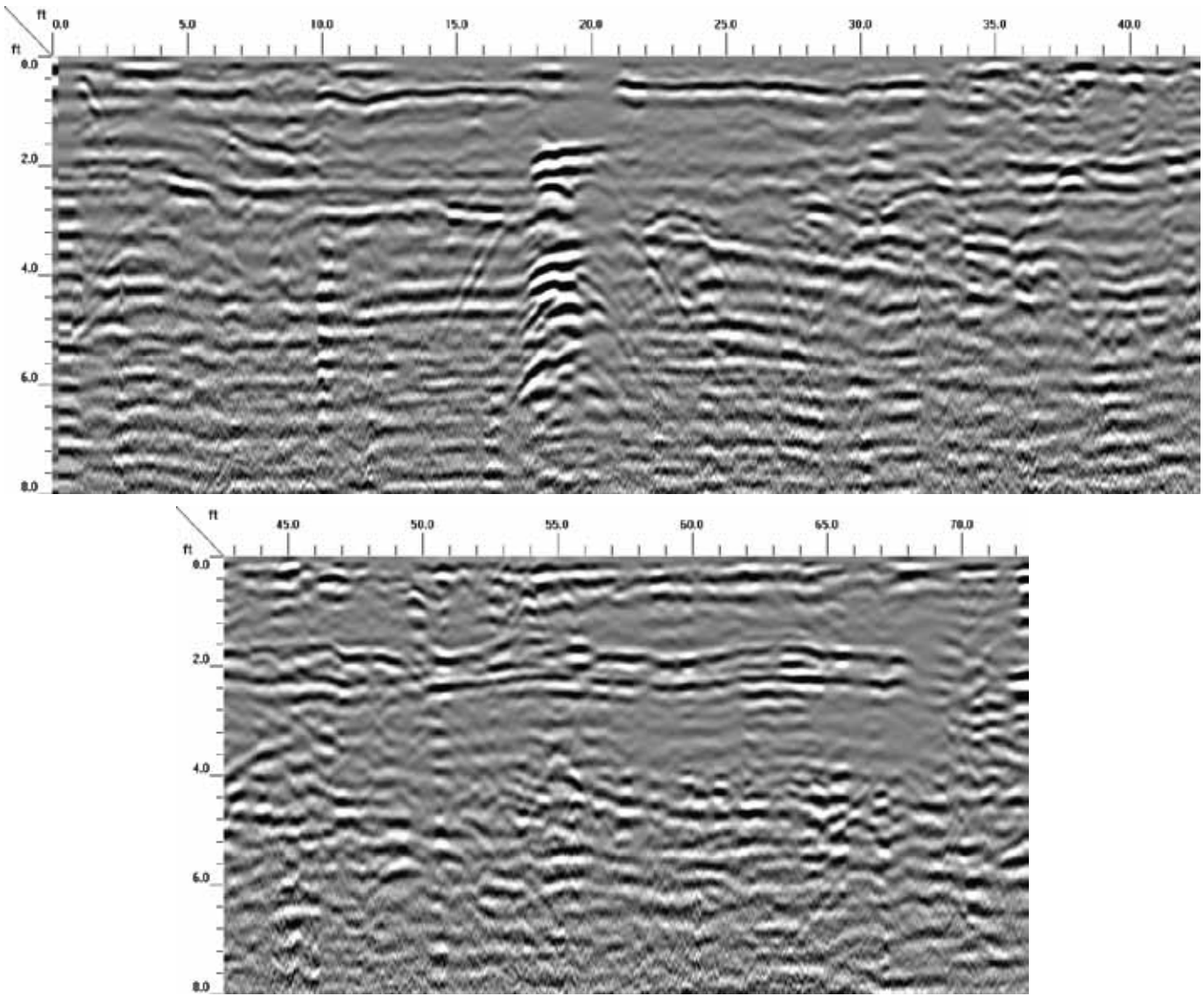


Transect 6

Figure 10b GPR Transects 5 and 6	TIP Number: R-5759 Wilkes County, NC	Thurman and Jewel Brown Property 2698 Statesville Road North Wilkesboro, NC	Parcel I.D. #: 017 Facility I.D. #: 00-0-00790	Seramur & Associates, PC Boone, NC
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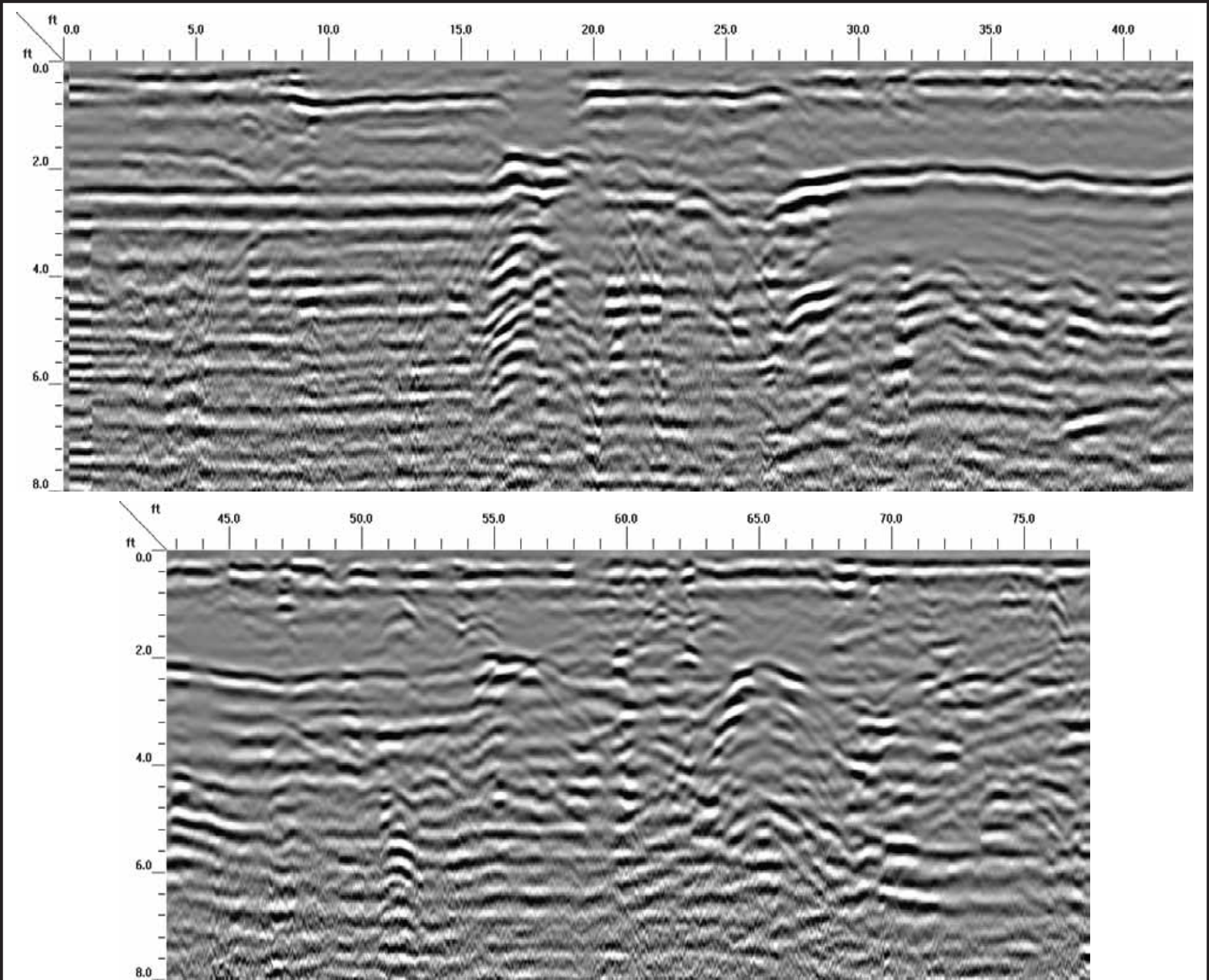


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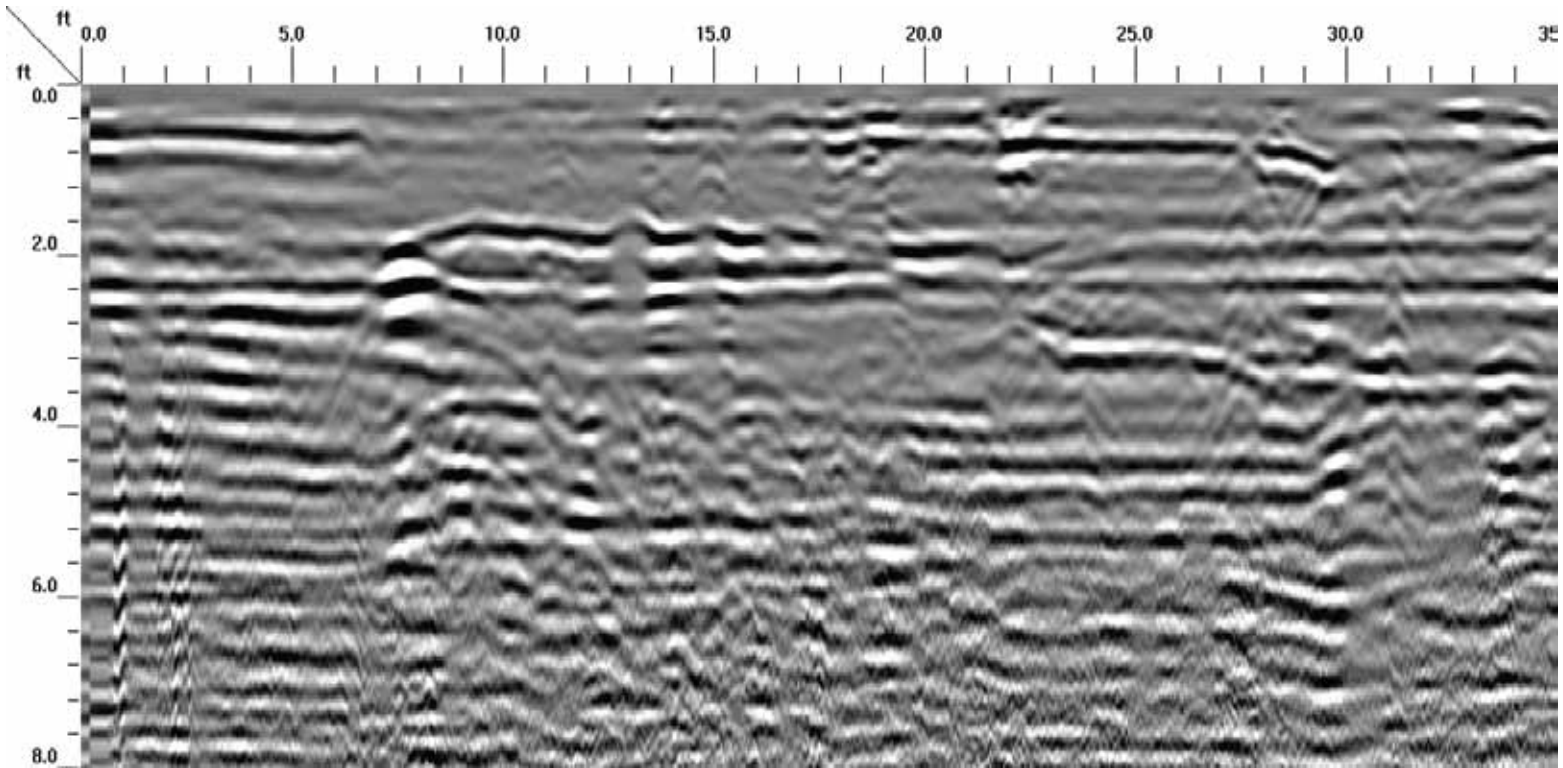


Transect 8

Figure 10c GPR Transects 7 and 8	TIP Number: R-5759 Wilkes County, NC	Thurman and Jewel Brown Property 2698 Statesville Road North Wilkesboro, NC	Parcel I.D. #: 017 Facility I.D. #: 00-0-00790	Seramur & Associates, PC Boone, NC
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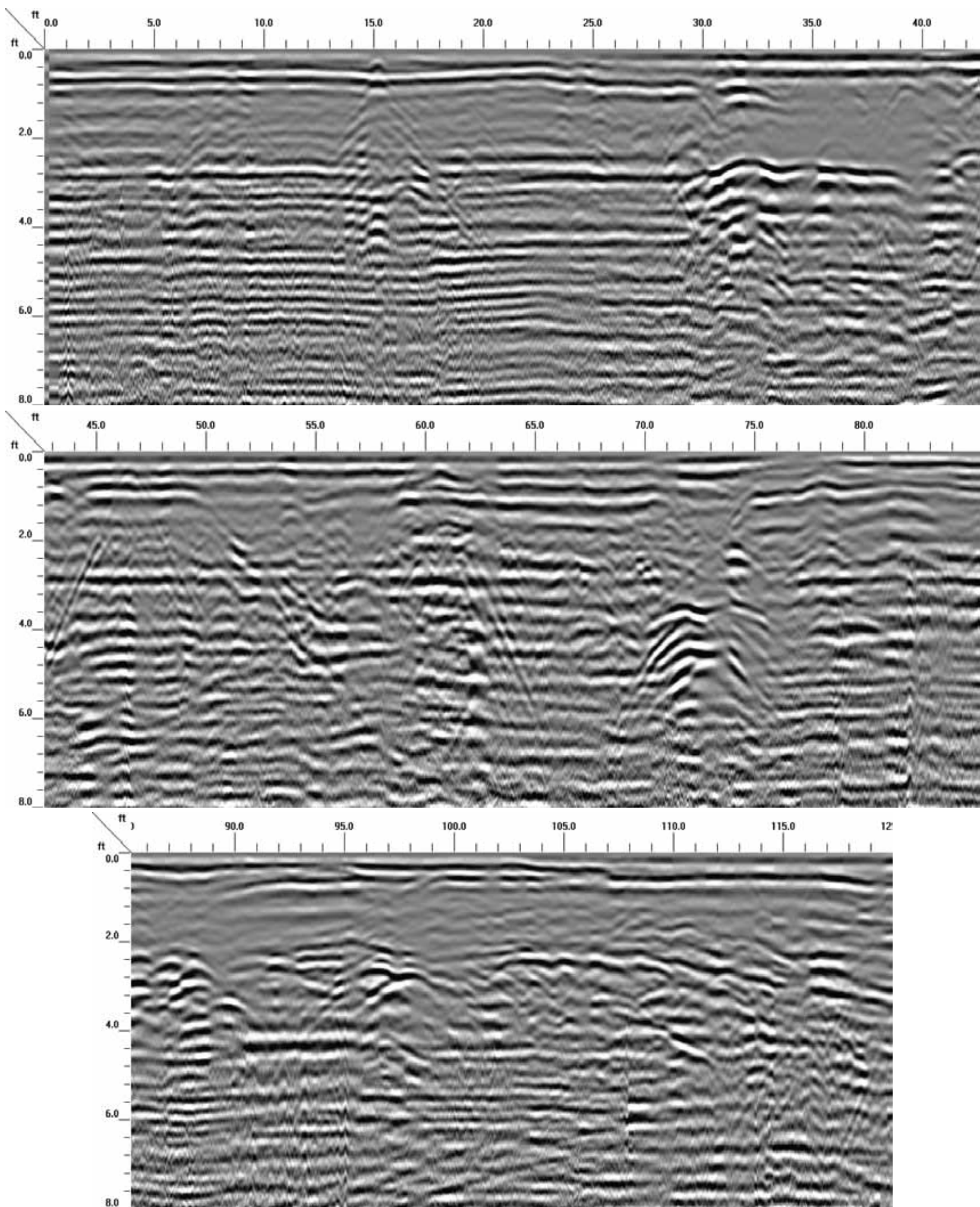


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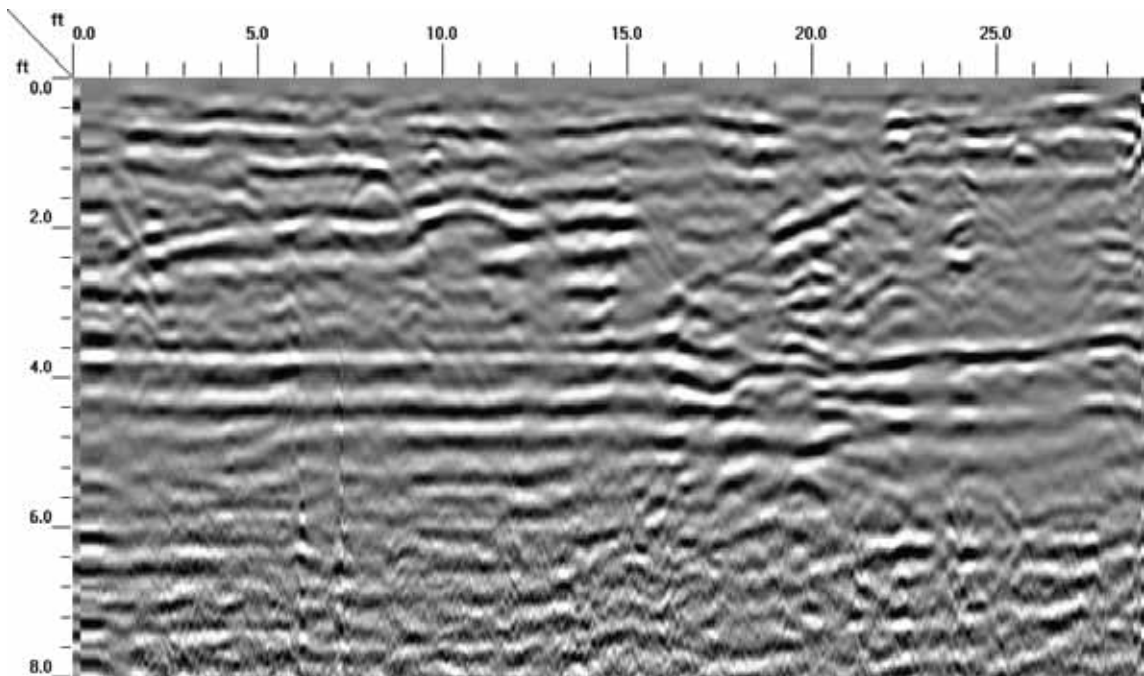


Transect 10

Figure 10d GPR Transects 9 and 10	TIP Number: R-5759 Wilkes County, NC	Thurman and Jewel Brown Property 2698 Statesville Road North Wilkesboro, NC	Parcel I.D. #: 017 Facility I.D. #: 00-0-00790	Seramur & Associates, PC Boone, NC
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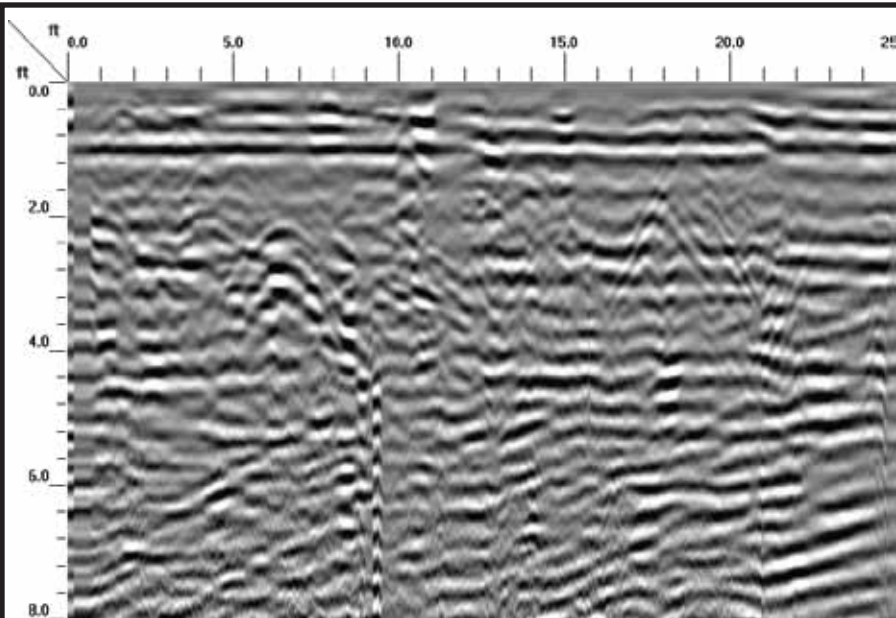


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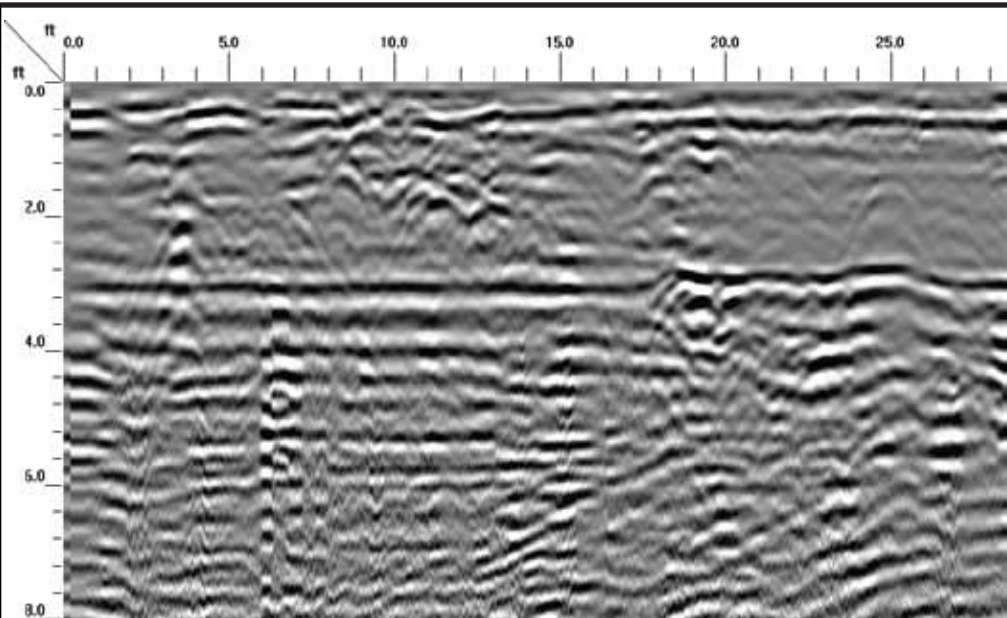


Transect 12

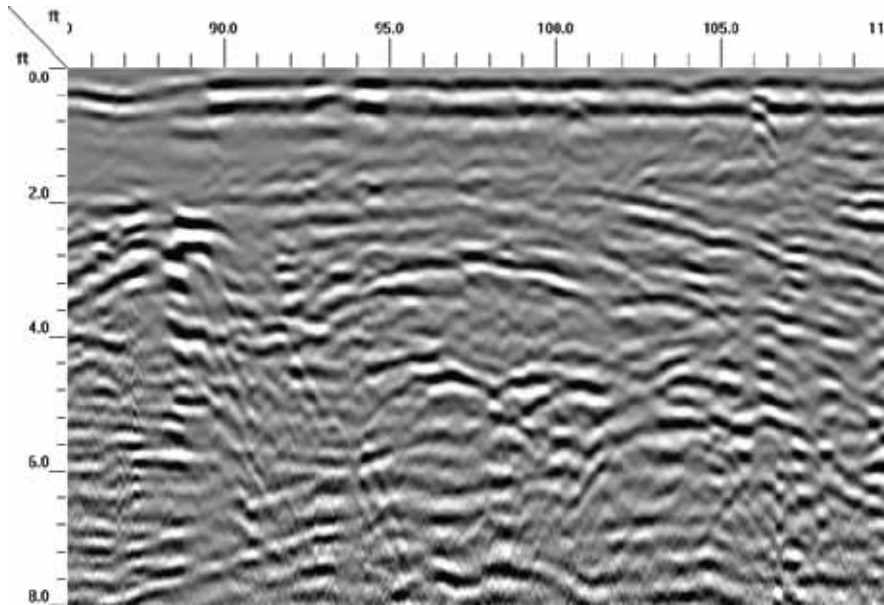
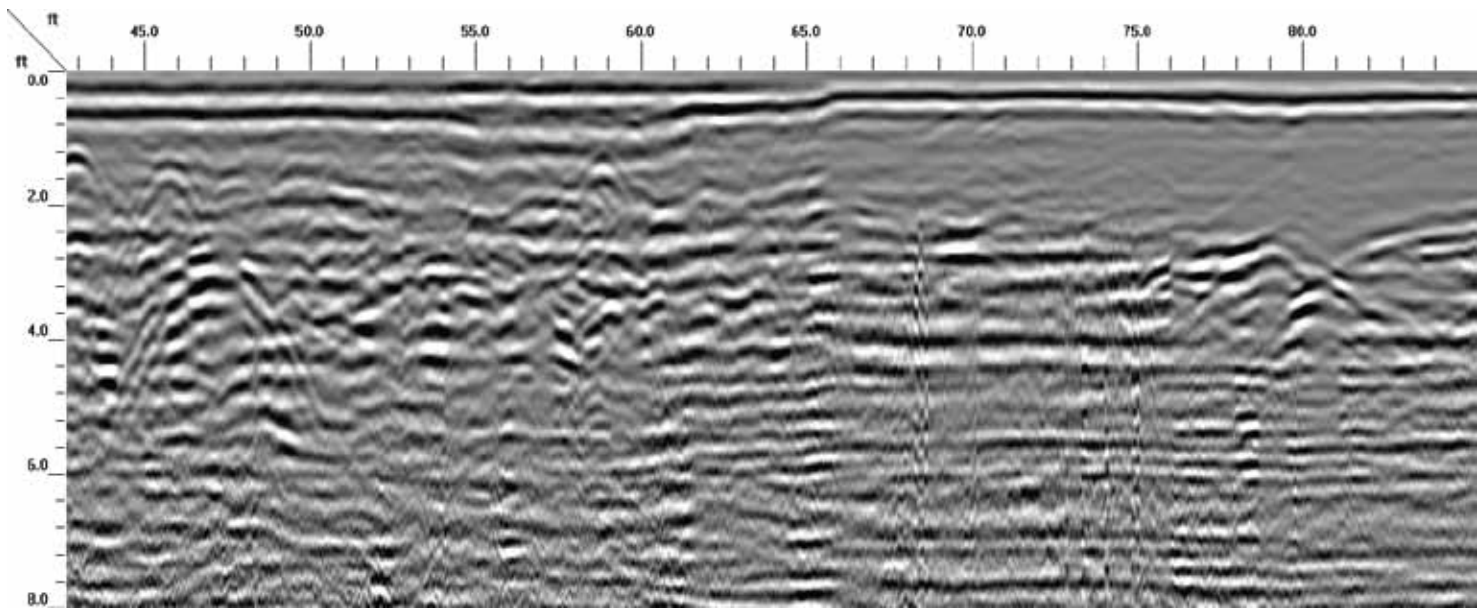
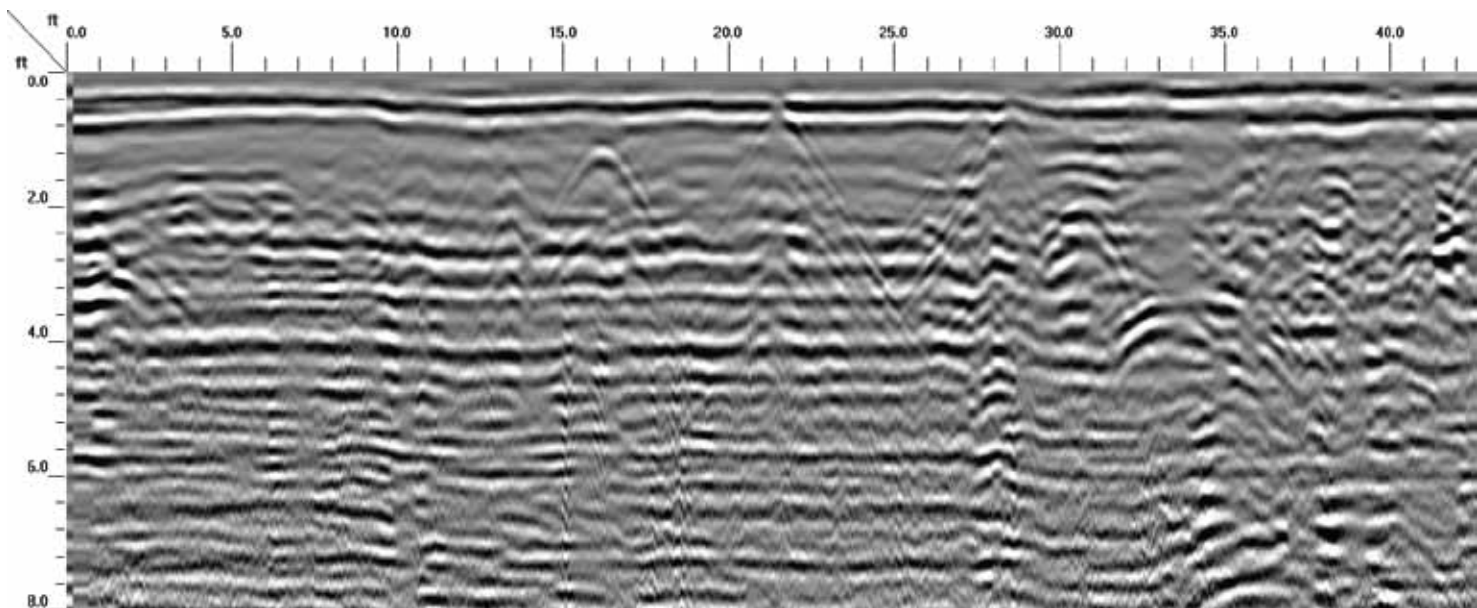
Figure 10e GPR Transects 11 and 12	TIP Number: R-5759 Wilkes County, NC	Thurman and Jewel Brown Property 2698 Statesville Road North Wilkesboro, NC	Parcel I.D. #: 017 Facility I.D. #: 00-0-00790	Seramur & Associates, PC Boone, NC
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Transect 13

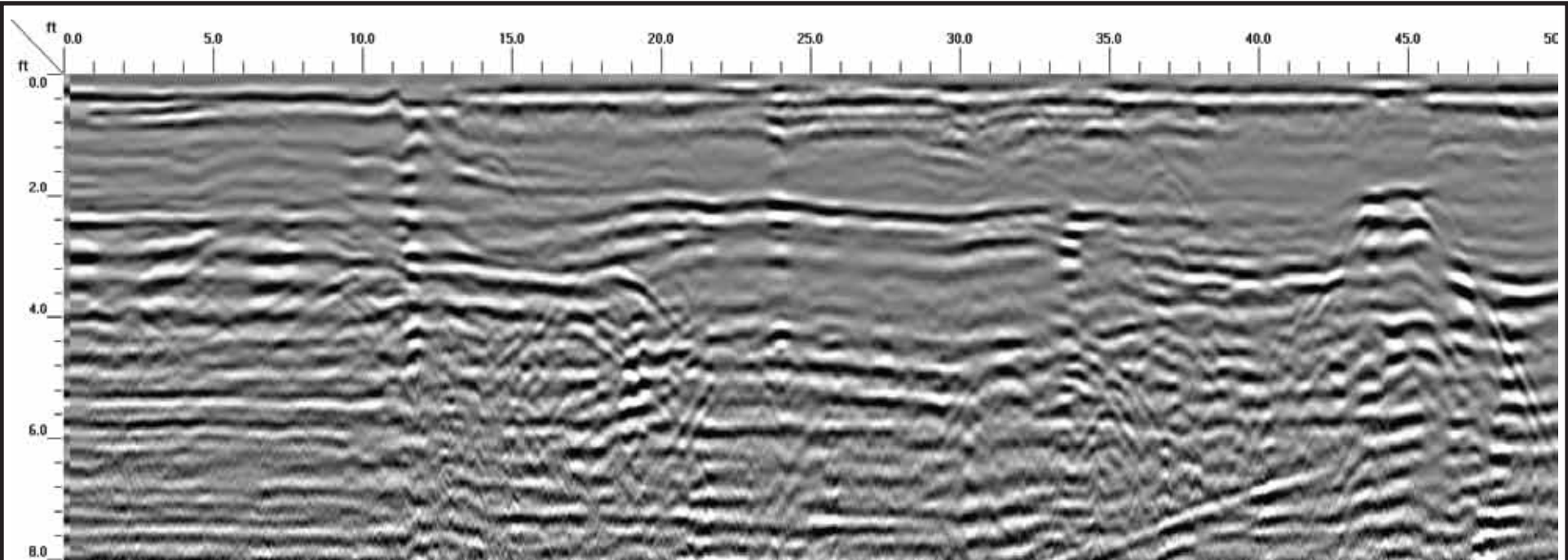


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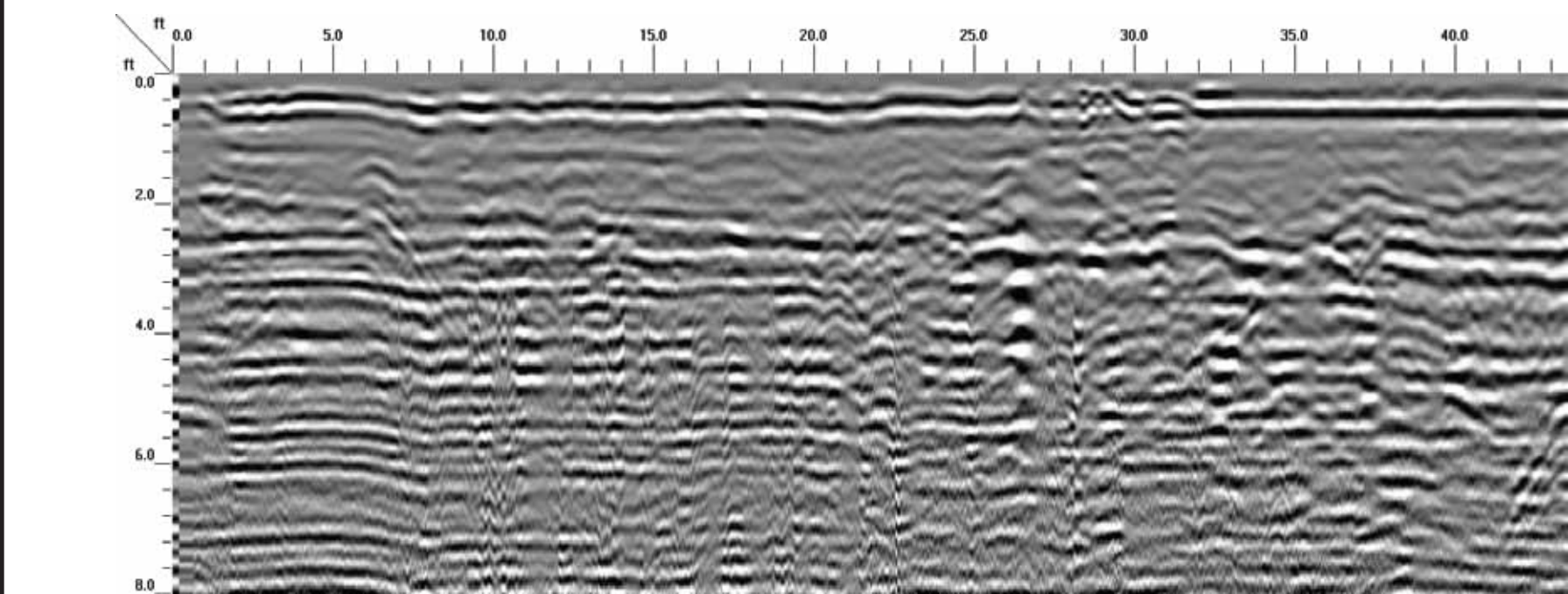


Transect 15

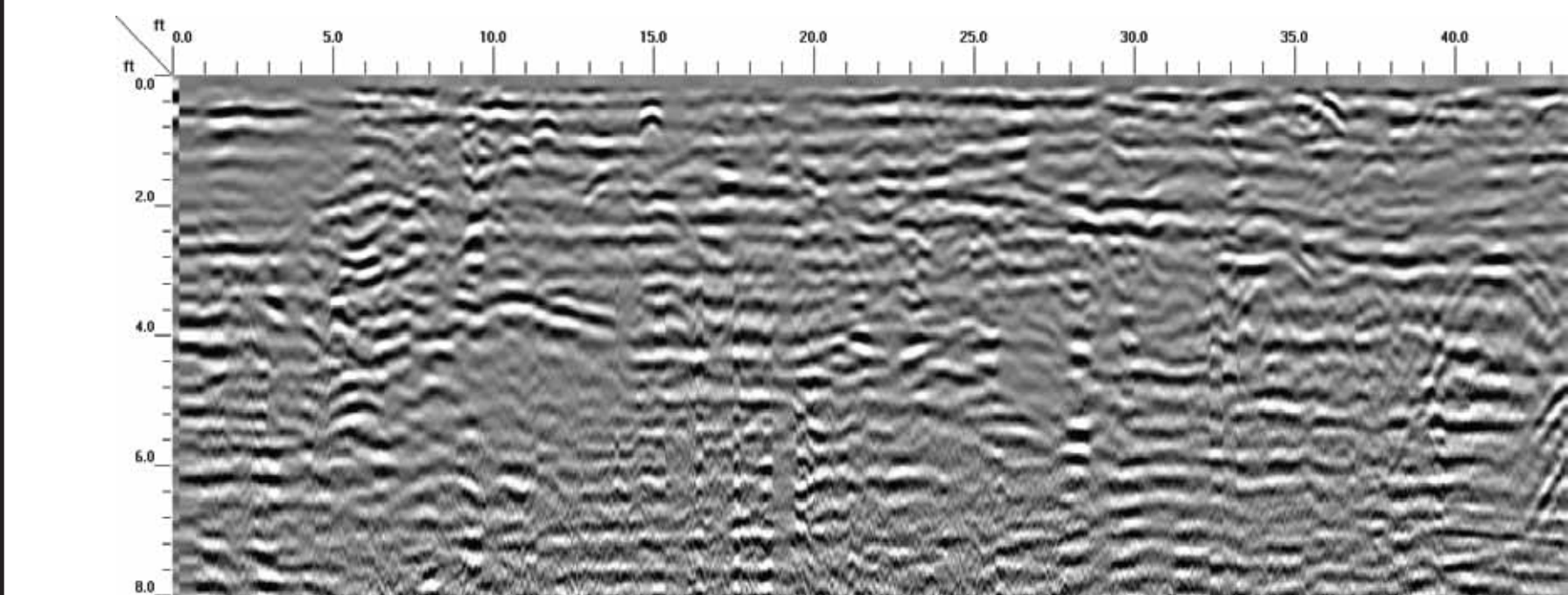
Figure 10f GPR Transects 13 through 15	TIP Number: R-5759 Wilkes County, NC	Thurman and Jewel Brown Property 2698 Statesville Road North Wilkesboro, NC	Parcel I.D. #: 017 Facility I.D. #: 00-0-00790	Seramur & Associates, PC Boone, NC
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Transect 16



Transect 17



Transect 18

Figure 10g GPR Transects 16 through 18	TIP Number: R-5759 Wilkes County, NC	Thurman and Jewel Brown Property 2698 Statesville Road North Wilkesboro, NC	Parcel I.D. #: 017 Facility I.D. #: 00-0-00790	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 17

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	24.0	<0.6	<0.6	1.4	1.4	0.4	0.02	<0.007	0	91.4	8.6	V.Deg.Light Fuel 87.6%,(FCM)
Soil	S-2	20.0	<0.5	<0.5	0.8	0.8	0.08	0.006	<0.006	0	100	0	Deg Fuel 75.6%,(FCM)
Soil	S-3	23.0	<0.5	<0.5	3.6	3.6	1.7	0.09	0.001	0	86.6	13.4	V.Deg.Light Fuel 90.5%,(FCM)
Soil	S-4	21.0	<0.5	<0.5	0.6	0.6	0.6	0.06	<0.006	0	91.9	8.1	Residual PHC
Soil	S-5	25.0	<0.6	<0.6	<0.25	<0.6	<0.013	<0.013	<0.008	0	0	0	PHC ND,(FCM)
Soil	S-6	23.0	<0.5	<0.5	<0.23	<0.5	<0.012	<0.012	<0.007	0	0	0	PHC ND,(FCM)
Soil	S-7	20.0	<0.5	<0.5	<0.2	<0.5	<0.01	<0.01	<0.006	0	0	0	PHC ND,(FCM)
Soil	S-8	24.0	<0.6	<0.6	<0.24	<0.6	<0.012	<0.012	<0.007	0	0	0	PHC ND,(FCM)
Soil	S-10	23.0	<0.5	<0.5	1.5	1.5	1.1	0.07	<0.007	0	92.1	7.9	Deg Fuel 83.2%,(FCM)
Soil	S-12	25.0	<0.6	<0.6	<0.25	<0.6	<0.013	<0.013	<0.008	0	100	0	PHC ND,(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

Wednesday, July 14, 2021
Wednesday, July 14, 2021
Wednesday, July 14, 2021

Contact: KEITH SERAMUR

Operator

MAX MOYER

Project: NCDOT R-5759 ; PARCEL 17

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-14	22.0	<0.5	<0.5	0.08	0.08	0.06	0.007	<0.007	0	100	0	PHC ND,(FCM)
Soil	S-16	22.0	<0.5	<0.5	0.4	0.4	0.3	0.04	<0.007	0	94.3	5.7	Residual PHC
Soil	S-20	20.0	<0.5	<0.5	0.12	0.12	0.11	0.013	<0.006	0	70.7	29.3	Residual HC
Soil	S-22	20.0	<0.5	<0.5	0.3	0.3	0.3	0.04	<0.006	0	92.6	7.4	Residual PHC
Soil	S-24	18.0	<0.4	<0.4	0.5	0.5	0.26	0.014	<0.001	0	76	24	V.Deg.PHC 81.6%,(FCM)
Soil	S-26	22.0	<0.5	<0.5	3.2	3.2	1.4	0.08	0.002	0	78.1	21.9	V.Deg.PHC 89.7%,(FCM)
Soil	S-28	10.0	<0.25	<0.25	<0.1	<0.25	<0.005	<0.005	<0.003	0	0	0	PHC ND,(FCM)
Soil	S-30	19.0	<0.4	<0.4	<0.19	<0.4	<0.01	<0.01	<0.006	0	0	0	PHC ND,(FCM)
Soil	S-32	24.0	<0.6	<0.6	<0.24	<0.6	<0.012	<0.012	<0.007	0	0	0	PHC ND,(FCM)
Soil	S-34	10.0	<0.25	<0.25	<0.1	<0.25	<0.005	<0.005	<0.003	0	0	0	PHC ND,(FCM)
	Initial Calibrator QC check			OK	Final FCM QC Check					OK	103.5%		

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 17

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-36	16.0	<0.4	<0.4	0.5	0.5	0.23	0.012	<0.002	0	80.8	19.2	V.Deg.PHC 93%,(FCM)
Soil	S-38	19.0	<0.4	<0.4	<0.19	<0.4	<0.01	<0.01	<0.006	0	0	0	PHC ND,(FCM)
Initial Calibrator QC check			OK		Final FCM QC Check			OK		100.6%			

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

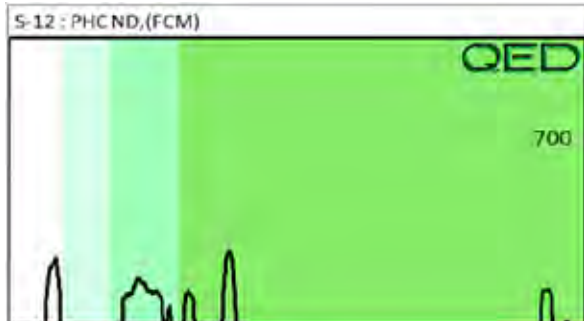
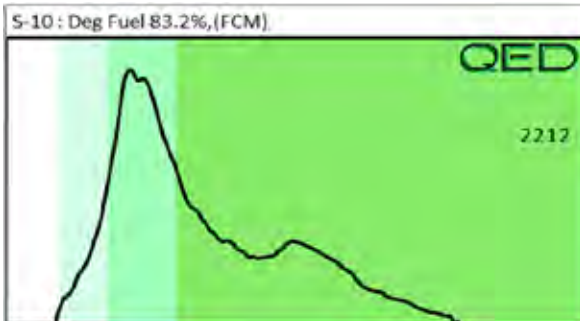
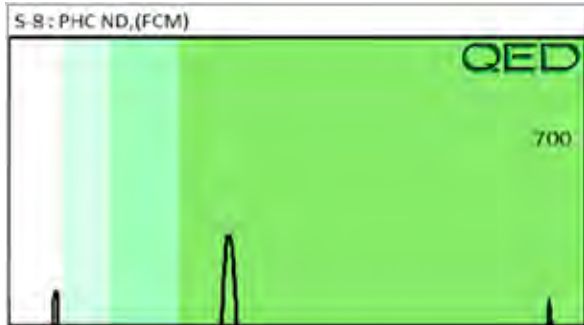
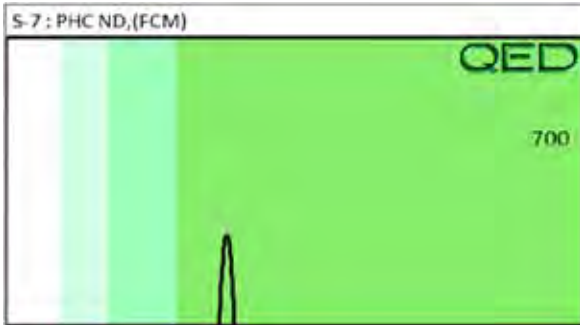
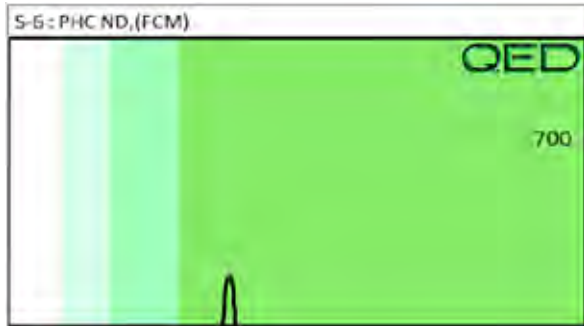
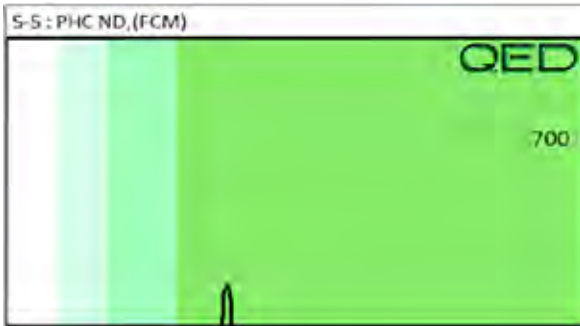
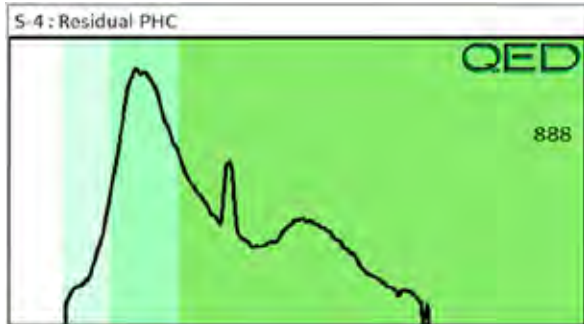
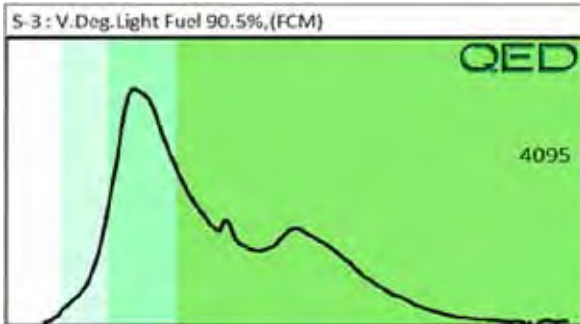
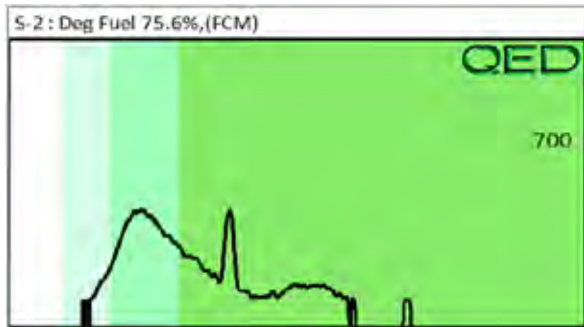
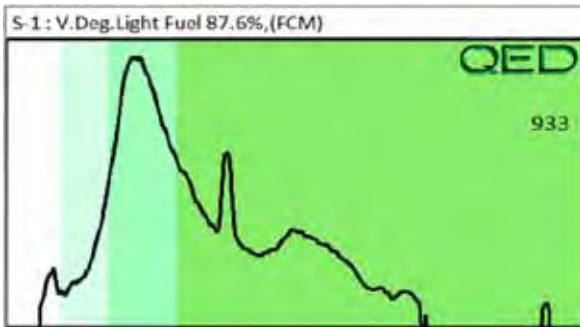
B = Blank Drift : (SBS)/(LBS) = Site Specific or Library Background Subtraction applied to result : (BO) = Background Organics detected : (OCR) = Outside cal range : (M) = Modified Result.

% 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 ; PARCEL 14

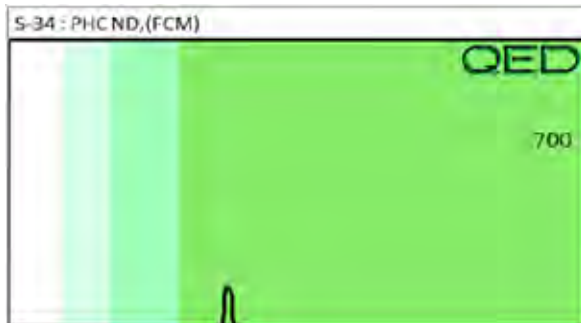
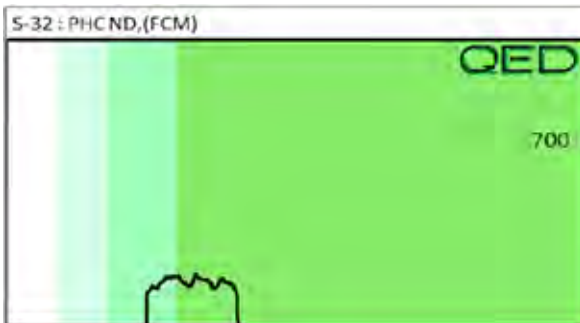
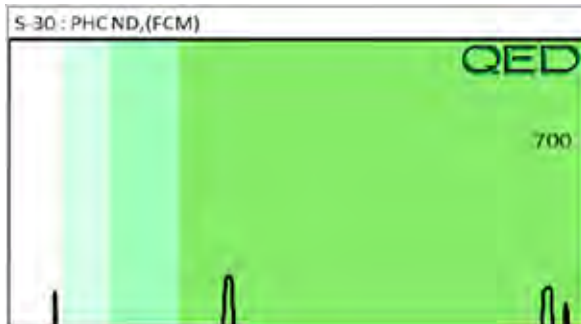
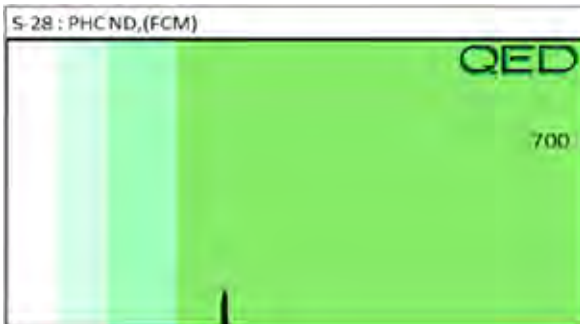
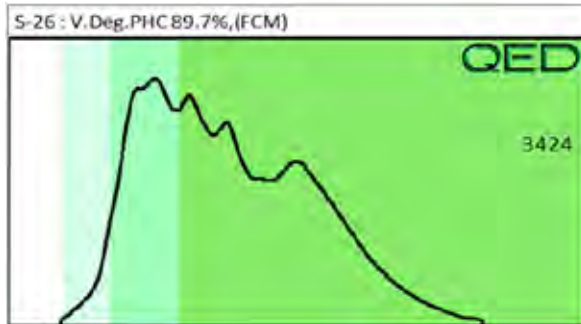
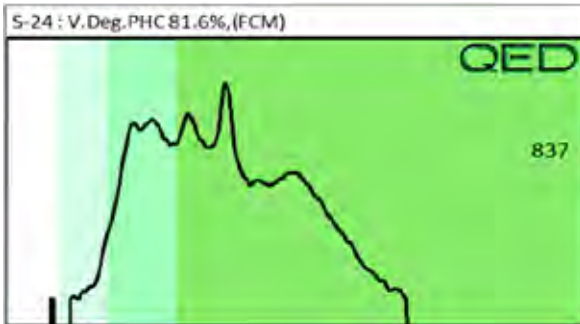
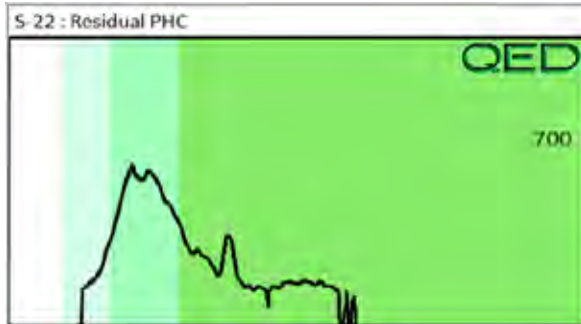
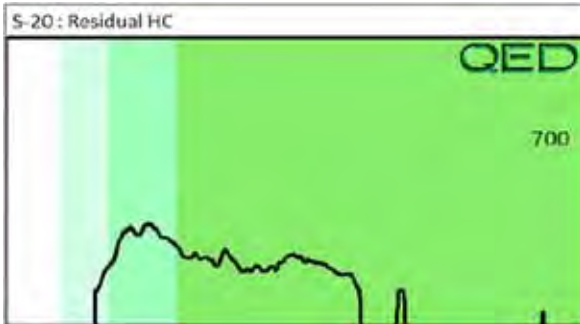
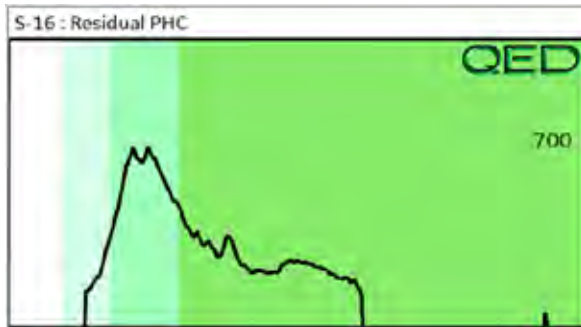
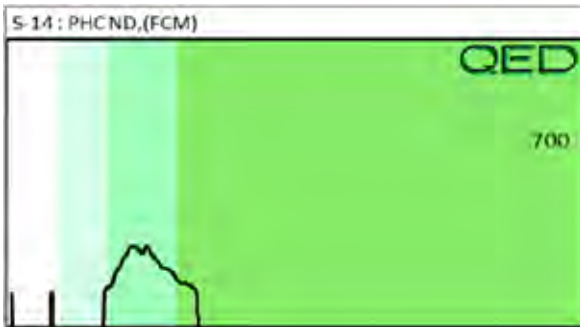
Wednesday, July 14, 2021



QED Hydrocarbon Fingerprints

Project: NCDOT R-5759 ; PARCEL 17

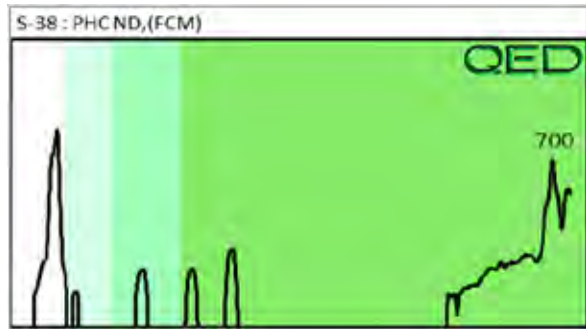
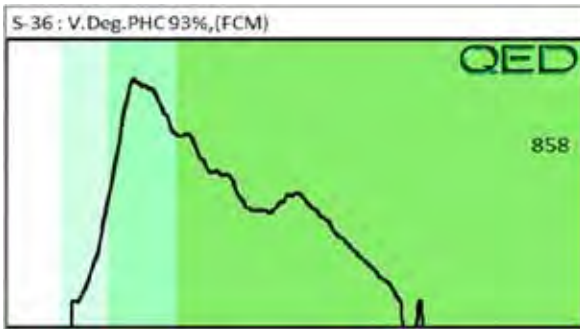
Wednesday, July 14, 2021



QED Hydrocarbon Fingerprints

Project: NCDOT R-5759 ; PARCEL 17

Wednesday, July 14, 2021



Appendix C

NCDEQ Incident Files



RECEIVED
N.C. Dept. of EHNR
SEP 18 2000
Winston-Salem
Regional Office

2050 Northpoint Drive • Suite A • Winston-Salem, NC 27106

Phone: (336) 896-1300 • Fax: (336) 896-1020
e-mail: geosci@geotec.com

September 18, 2000

Mr. Steven Williams
NCDENR/DWM – UST Section
585 Waughtown Street
Winston-Salem, NC 27107-2241

*Perf form found
in another file. Use
Perf generated by UST
Section*

Re: 24 Hour Report and Release Reporting Form
Thurmond Brown UST/GeoSci Project No. 00.200
Former B&D Quick Stop No. 3
2698 Statesville Road (Hwy 115)
North Wilkesboro, Wilkes Co., NC
Facility ID No. 0-000790

Dear Mr. Williams:

Per our phone conversation today, attached is the State's copy of the "24 Hour Release and UST Leak Reporting Form" for the above referenced site. GeoSci is currently preparing the 20 Day Report and UST Closure Report for this location. Should you have any questions or require further information, please contact me.

Sincerely,
Geoscience and Technology, P.A.

M. Alex McGilvary, P.G.
Project Geologist

cc: Mr. Thurmond Brown

24-Hour Release and UST Leak Reporting Form

This form should be completed and submitted to the UST Section's regional office following a known or suspected release from an underground storage tank (UST) system. This form is required to be submitted within 24 hours of discovery of a known or suspected release.

(DWM USE ONLY)		Suspected Contamination? (Y/N) <u>Y</u> Confirmed GW Contamination? (Y/N) <u>N</u> Confirmed Soil Contamination? (Y/N) <u>Y</u> Free Product? (Y/N) <u>N</u> If Yes, State Greatest Thickness _____	Facility ID Number <u>0-000790</u> Date Leak Discovered <u>9/5/00</u> Comm/Non-Commercial? <u>Comm.</u> Reg/Non-regulated? <u>Regulated</u>
Incident # _____ Received On _____ Reported by (circle one): Phone, Fax or Report Region _____	Risk (H,I,L,U) _____ Received By _____		

INCIDENT DESCRIPTIONIncident Name: B & D QUICK STOP # 3Address: 2698 STATESVILLE ROADCounty: WILKESCity/Town: N. WILKESBORO, NCRegional Office (circle one): Asheville, Mooresville, Fayetteville,
Raleigh, Washington, Wilmington, Winston-SalemLatitude (dd.mm.ssss): 36° 8' 26.5" N Longitude (ddd.mm.ssss): 81° 6' 17.3" W Confirmed by GPS? (Y/N) N

Briefly describe suspected or confirmed release: (including but not limited to: Nature and extent of release, date of release, amount of release, amount of free product present and recovery efforts, initial responses conducted, impacts to receptors)

KEROSENE RELEASE SUSPECTED AT TANK REMOVAL 9/5/00. FIVE FOOT RULE
EXCAVATION PERFORMED 9/6/00. VERBAL LABORATORY REPORT FROM RFA
LABS ON 9/13/00 AFTERNOON. TELEPHONE REPORT TO MR. STEVEN WILLIAMS
VOICE MAIL SYSTEM ON 9/14/00. PHONE CONVERSATION WITH STEVE WILLIAMS
9/18/00.

HOW RELEASE WAS DISCOVERED

(Check one)

- ☐ Release Detection Equipment or Methods
☒ During UST Closure/Removal
☐ Property Transfer

- ☐ Visual/Odor
☐ Water in Tank
☐ Water Supply Well Contamination

- ☐ Groundwater Contamination
☐ Surface Water Contamination
☐ Other (specify) _____

SOURCE OF CONTAMINATION**Primary Source of Contamination**

(Check one)

- ☐ Suspected UST Release
☒ Confirmed UST Release (Also check one below):
☐ A. Dispenser
☐ B. Line Release
☒ C. Tank Release
☐ D. Spill/Overfill
☐ E. Exact Failure Location Unknown or Multiple Failures
☐ Unknown Source (Believed to be UST Source, explain in "Incident Description" above)

Primary Contaminant Type

(Check one)

- ☒ Gasoline/Diesel/Kerosene
☐ Heating Oil
☐ Other Petroleum Products
☐ Metals
☐ Other Inorganics
☐ Other Organics

Location

(Check one)

- ☒ Facility
☐ Residence
☐ Other

Setting

(Check one)

- ☐ Residential
☐ Industrial
☐ Urban
☒ Rural

Ownership

1. Municipal 2. Military 3. Unknown (4) Private 5. Federal 6. County 7. State

Operation Type

1. Public Service 2. Agricultural 3. Residential 4. Education/Relig. 5. Industrial (6) Commercial 7. Mining

IMPACT ON DRINKING WATER SUPPLIES

 Water Supply Wells Affected? 1. Yes 2. No 3. Unknown

 Number of Water Supply Wells Affected N/A

Water Supply Wells Contaminated: (Include Users Names, Addresses and Phone Numbers. Attach additional sheet if necessary)

 1.
2.
3.

UST SYSTEM OWNER

UST Owner/Company

MR. THURMOND BROWN

Point of Contact

Address

5431 STATESVILLE ROAD

City

NORTH WILKESBORO

State

NC

Zip Code

28659

Telephone Number

(336) 838-3308

UST SYSTEM OPERATOR

UST Operator/Company

N/A

Address

City

State

Zip Code

Telephone Number

LANDOWNER AT LOCATION OF UST INCIDENT

Landowner

MR. THURMOND BROWN

Address

5431 STATESVILLE ROAD

City

NORTH WILKESBORO

State

NC

Zip Code

28659

Telephone Number

(336) 838-3308

Draw Sketch of Area (showing two major road intersections) or Attach Map

SKETCH ATTACHED

Person Reporting Incident

M. ALEX MEGILVARY, P.G.

Company

GEOSCIENCE & TECHNOLOGY, P.A.

Telephone Number

(336) 896-1300

Title

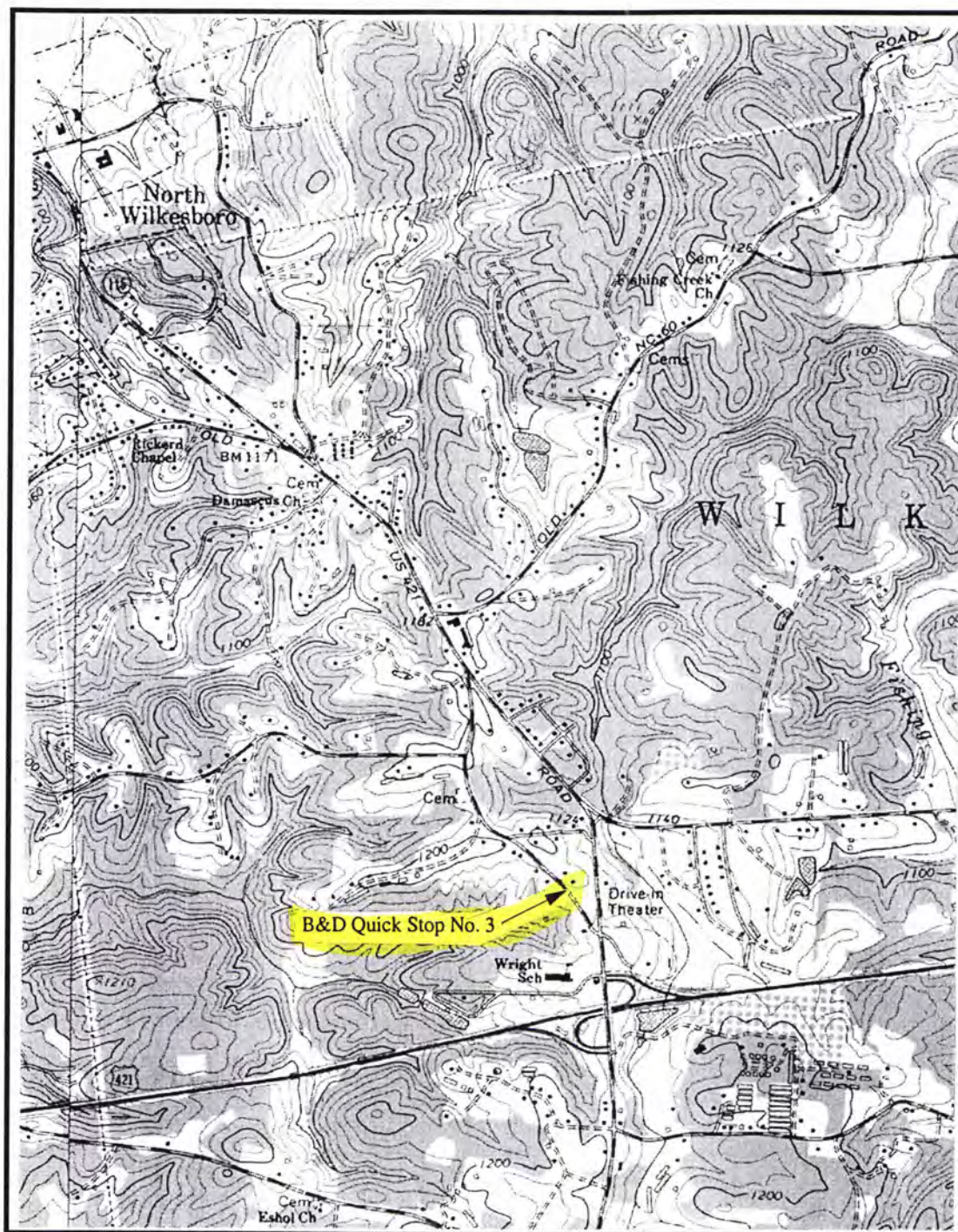
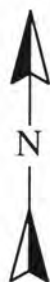
PROJECT GEOLOGIST

Address

2050 N. POINT DR., WINSTON-SALEM, NC

Date

9/18/00



Title:
Site Location Map
Wilkesboro, NC
USGS Quadrangle

Project:
B&D Quick Stop

Scale:
1" = 2000'

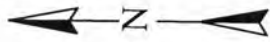
Job No.:
00.200

Location:
N. Wilkesboro, NC

Figure No.:
1

GeoScience &
Technology, P. A.
"Practical Engineering &
Environmental Solutions"

Winston-Salem, NC (336) 896-1300



Hwy 115 (Statesville Road)

Grass island

Asphalt area

Concrete area

Cinderblock Building
31' x 40'

3' sidewalk

Kerosene dispenser

Kerosene UST

Product lines

11' x 15' building addition (cooler)

fill (typ.)

Asphalt area

UST area

Asphalt area

LOCATION: B&D Quick Stop No. 3
2698 Statesville Rd.
N. Wilkesboro, NC 28659

SCALE: 1" = 20'

JOB NUMBER

00.200

GeoScience & Technology, P.A.
"Practical Engineering & Environmental Solutions"

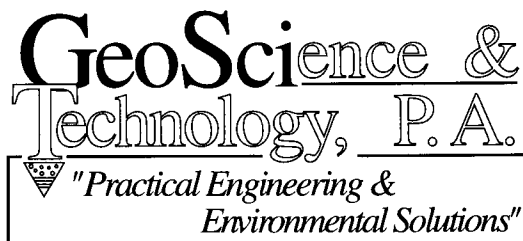
Winston-Salem, NC (336) 896-1300

General Site Plan With
Former UST Locations

FIGURE 2

REV. 0

DATE: 9.11.2000



2050 Northpoint Drive • Suite A • Winston-Salem, NC 27106

Phone: (336) 896-1300 • Fax: (336) 896-1020
e-mail: geosci@geotec.com

RECEIVED
N.C. Dept. of EHN
SEP 21 2000
Winston-Salem
Regional Office

September 21, 2000

Mr. Steven Williams
NCDENR/DWM – UST Section
585 Waughtown Street
Winston-Salem, NC 27107-2241

Re: 20 Day Report
Thurmond Brown UST/GeoSci Project No. 00.200
Former B&D Quick Stop No. 3
2698 Statesville Road (Hwy 115)
North Wilkesboro, Wilkes Co., NC
Facility ID No. 0-000790

Dear Mr. Williams:

Attached is the State's copy of the 20 Day Report for the above referenced site. GeoSci is currently preparing the UST Closure Report for this location. Should you have any questions or require further information, please contact me.

Sincerely,
Geoscience and Technology, P.A.

A handwritten signature in black ink, appearing to read "Alex M. McGilvary".

M. Alex McGilvary, P.G.
Project Geologist

cc: Mr. Thurmond Brown

GeoScience & Technology, P.A.

 "Practical Engineering &
Environmental Solutions"

2050 Northpoint Drive • Suite A • Winston-Salem, NC 27106

Phone: (336) 896-1300 • Fax: (336) 896-1020
e-mail: geosci@geotec.com

20 Day Report

**B&D Quick Stop #3 UST
2698 Statesville Rd. (NC Highway 115)
N. Wilkesboro, Wilkes County, NC
September 21, 2000**

RECEIVED
N.C. Dept. of EHNR

SEP 21 2000

Winston-Salem
Regional Office

A. Site Information

1. Site Name and Location:

The B&D Quick Stop site is not currently an operating UST facility. The site is located at 2698 Statesville Road (NC Highway 115) in N. Wilkesboro, NC. Figure 1 is a site location map; Figure 2 is a site map; Figure 3 illustrates UST Closure soil sampling locations.

Incident #:

No incident number has yet been assigned to this release.

1. Facility #:

ID No. 0-000790

3. Current UST Owner:

Tank Owner:

Mr. Thurmond Brown
5431 Statesville Road
N. Wilkesboro, NC 28659
336-838-3308

4. Most recent UST operator:

The most recent UST operators are Benny and Shirley Combs

5. Current owner and representative information:

Land Owner:

Mr. Thurmond Brown
5431 Statesville Road
N. Wilkesboro, NC 28659
336-838-3308

B & D Quick Stop/T. Brown UST
GeoSci Project 00.200
20 Day Report
September 2000

6. Consultant/Contractor Information:

Primary Consultant:

Geoscience & Technology, P.A.
2050 Northpoint Drive, Suite A
Winston-Salem, NC 27106
336-896-1300

UST Removal Contractor:

Mr. Carlos Johnson
7831 Statesville Road
N. Wilkesboro, NC 28659
336-984-2525

Analytical Laboratory:

Research and Analytical Laboratories, Inc. (R&A)
106 Short Street
Kernersville, NC 27284
NC Certification #34

7. Release information:

Discovery date: Suspected based on soil samples collected at tank removal.

Release suspected: September 5, 2000;

Release reported: Thursday, September 14, 2000 by phone to Mr. Steven

Williams of the NCDENR-UST (within 24 hrs. of receipt of verbal laboratory results).

24 hour Release and UST leak reporting Form submitted to WSRO on September 18, 2000

Quantity of release: Unknown

Probable Release Source: 550 kerosene UST

UST Sizes: 4-3K gasoline, 1-550 gallon kerosene

Last Contents: Gasoline and kerosene, respectively

Tanks last filled: This station was last operated in 1988.

8. Approximate Latitude/Longitude of release site:

~36° 8' 26.5'' N Latitude X ~81° 6' 17.3'' W Longitude

9. Seal and Signature:

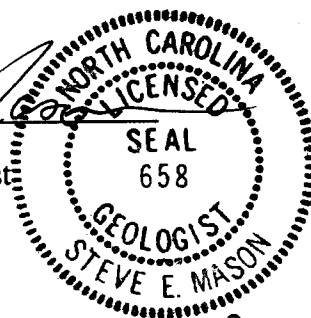
I hereby certify this 21th day of September 2000 that this report was prepared by me or under my direct supervision.

M. Alex McGilvary

M. Alex McGilvary, P.G.
Project Geologist



Steve E. Mason
Steve E. Mason, P.G.
Principal Hydrogeologist



B. Site History

UST Information

Mr. Thurmond Brown has owned this property since the 1960s. According to Mr. Brown, the station was constructed in 1970 and the USTs were last used in 1988. Table 1 summarizes the information about the tanks.

Table 1: Tank Information Summary, Facility ID 0-000790						
ID	Tank Owner	Size (Gals)	Dimensions	Install. Date	Product	Tank Status
1	Thurmond Brown	550	3.5' dia x 7.8' L	1970	Kerosene	Removed 9/5-7/2000
2	Thurmond Brown	3,000	5.33' dia X 18' L	1970	Gasoline	Removed 9/5-7/2000
3	Thurmond Brown	3,000	5.33' dia X 18' L	1970	Gasoline	Removed 9/5-7/2000
4	Thurmond Brown	3,000	5.33' dia X 18' L	1970	Gasoline	Removed 9/5-7/2000
5	Thurmond Brown	3,000	5.33' dia X 18' L	1970	Gasoline	Removed 9/5-7/2000

2. Ownership History:

1. Current land owner:

Mr. Thurmond Brown
5431 Statesville Road
N. Wilkesboro, NC 28659
336-838-3308

C. Initial Abatement Measures

1a. Quantity of regulated substance removed:

Prior to the removal of the tanks, Shamrock Environmental Corporation visited the site with a vacuum truck and removed the residual product from tanks 1-5. Shamrock personnel pumped 1110 gallons of residuals from the tanks on August 29, 2000. The manifest for the removal and acceptance of these liquids is included in Appendix A.

1b. Fire Marshal:

Prior to the tank removal, M. Alex McGilvary of GeoSci contacted Mr. Ken Stoker of the Wilkes County Fire Inspectors office. Mr. Stoker visited the site prior to tank removal on September 5, 2000 and witnessed GeoSci personnel placing dry ice nuggets in the gasoline tanks to displace the vapors. A Wilkes County tank removal permit was issued by Mr. Stoker. A copy of this permit is included in Appendix B.

2. Contaminated Soils Information:

Soils excavated during the removal of the gasoline USTs were stockpiled on-site. A composite sample (CS-1) was collected from this material and submitted for laboratory analysis. Soil excavated from the kerosene tank excavation area were suspected of being impacted. These soils were also stockpiled and a composite sample (CS-2) was collected. Mr. Brown chose to transport these kerosene impacted soils to his other property at 5431 Statesville Road and stockpiled them on, and covered them with, plastic sheeting. According to Mr. Brown, he intends to request a "Certificate of Disposal" from the State for this material.

3. Free Product:

No free product was observed in the tank, dispenser or piping excavations.

D. Source Investigation

1. Soil Samples

a. General Information

Removal of USTs/components and related soil sampling occurred on September 5, 6 and 8, 2000. On September 5, 2000, soil samples were collected from beneath the kerosene UST, which had been located adjacent to the south side of the building and north of the gasoline UST pit, and from gasoline USTs T-2 and T-3 (the southernmost gasoline USTs). Gasoline USTs T-4 and T-5, in the northern portion of the gasoline UST pit, were sampled on September 6, 2000. On that date, soils were excavated from the kerosene UST excavation and a deeper sample (T1-2-10) was also collected. On September 8, 2000, soil samples were collected from beneath gasoline product dispensers and along the gasoline product piping trench. Figure 2 illustrates locations of former USTs and components; Figure 3 shows the locations of soil samples collected for UST Closure.

b. Sample Collection Information and Soil Sample Results

The tank closure and composite samples were submitted to R & A Laboratories for analyses by Method 5030 and Method 3550 as appropriate for the tank contents: One (1) sample, T1-2-10, was also analyzed by Methods 8260, 8270, and the Massachusetts Methods for VPH and EPH. Table 2 is a summary of the soil sample information and OVA evaluation data. The results of the soil sample analyses are summarized in Tables 3a and 3b:

Table 2: Soil Sample OVA Evaluation Summary (ppm)					
Sample ID	Location	Date	Time	Depth (ft)	OVA
T1-1-5	N end 550 K kero UST	9/5/2000	1525	5	5
T1-2-5	S end 550 K kero UST	9/5/2000	1540	5	28
T1-2-10	S end 550 K kero UST	9/6/2000	1245	5	40
T2-1-8	E end 3K Gas UST	9/5/2000	1615	8	8
T2-2-8	W end 3K Gas UST	9/5/2000	1620	8	6
T3-1-8	E end 3K Gas UST	9/5/2000	1715	8	8
T3-2-8	W end 3K Gas UST	9/5/2000	1650	8	2
T4-1-8	E end 3K Gas UST	9/6/2000	1345	8	Non-detect
T4-2-8	W end 3K Gas UST	9/6/2000	1145	8	Non-detect
T5-1-8	E end 3K Gas UST	9/6/2000	1405	8	Non-detect
T5-2-8	W end 3K Gas UST	9/6/2000	1355	8	Non-detect
PT-1-3	N end Piping trench	9/8/2000	1355	3	1
PT-2-3.5	Ctr. Piping trench	9/8/2000	1430	3.5	2
PT-3-3.5	S end Piping trench	9/8/2000	1505	3.5	2
DI-1-2.5	N end Disp. Island	9/8/2000	1440	2.5	1
DI-2-2.5	N ctr Disp Island	9/8/2000	1450	2.5	2
DI-3-2.5	S ctr Disp Island	9/8/2000	1515	2.5	1
DI-4-2.5	S end Disp. Island	9/8/2000	1530	2.5	1

Table 3a: UST Closure Soil Sample Laboratory Results Summary (ppm)						
Sample ID	Location	Date	Time	Depth (ft)	Method 5030	Method 3550
T1-1-5	N end 550K kero UST	9/5/2000	1525	5	<10	<10
T1-2-5	S end 550K kero UST	9/5/2000	1540	5	NA	NA
T1-2-10	S end 550K kero UST	9/6/2000	1245	5	488	2,890
T2-1-8	E end 3K Gas UST	9/5/2000	1615	8	<10	NA
T2-2-8	W end 3K Gas UST	9/5/2000	1620	8	<10	NA
T3-1-8	E end 3K Gas UST	9/5/2000	1715	8	<10	NA
T3-2-8	W end 3K Gas UST	9/5/2000	1650	8	<10	NA
T4-1-8	E end 3K Gas UST	9/6/2000	1345	8	<10	NA
T4-2-8	W end 3K Gas UST	9/6/2000	1145	8	<10	NA
T5-1-8	E end 3K Gas UST	9/6/2000	1405	8	<10	NA
T5-2-8	W end 3K Gas UST	9/6/2000	1355	8	<10	NA
PT-1-3	N end Piping trench	9/8/2000	1355	3	<10	NA
PT-2-3.5	Ctr. Piping trench	9/8/2000	1430	3.5	<10	NA
PT-3-3.5	S end Piping trench	9/8/2000	1505	3.5	<10	NA
DI-1-2.5	N end Disp. Island	9/8/2000	1440	2.5	<10	NA
DI-2-2.5	N ctr Disp Island	9/8/2000	1450	2.5	<10	NA
DI-3-2.5	S ctr Disp Island	9/8/2000	1515	2.5	<10	NA
DI-4-2.5	S end Disp. Island	9/8/2000	1530	2.5	<10	NA
CS-1	Comp. of Kero. UST exc. Soils	9/6/2000	1200	Comp.	718	4,150
CS-2	Comp. of Gas. UST exc. Soils	9/6/2000	1240	Comp.	<10	NA

NA - Not analyzed; this sample not tested by this method.

Table 3b: UST Closure Soil Sample RBCA Laboratory Results: Sample T1-2-10 (ppm)				
	Kerosene UST	Res. Std	Comm/ Ind Std	Soil:GW Std
Sample ID	T1-2-10'			
Location	S. End 550 kero UST			
Date	9/6/2000			
Time	1245			
Depth (ft.)	10			
OVA (ppm)	40			
Method 8260				
<i>p</i> -Isopropyltoluene	0.311	NIS	NIS	NIS
1,3,5-Trimethylbenzene	0.238	782	20440	7
1,245-Trimethylbenzene	0.108	782	20440	8
Method 8270	All BQL			
MADEP-VPH				
C5-C8 Aliphatics	BQL	939	24528	72
C9-C12 Aliphatics	127			
C9-C10 Aromatics	49.5			
MADEP-EPH				
C9-C18 Aliphatics	1080			
C19-C36 Aliphatics	90	93860	HB>100%	immobile
C11-C22 Aromatics	360			
sum C9-C18 Aliphatics	1207	9386	245280	3255
sum C9-C22 Aromatics	409.5	469	12264	34

NA - Not analyzed; this sample not tested by this method, NIS = No individual Standard.

The soil samples collected from beneath the 3,000 gallon gasoline USTs, the gasoline dispenser and piping areas tested below the laboratory detection limits. The soil sample T1-2-10, collected from beneath the eastern end of the 550 gallon kerosene tank tested at 488 parts per million (ppm) Method 5030 and 2,890 ppm Method 3550. Because of the presence of Total Petroleum Hydrocarbons greater than the initial State action level of 10 ppm, this sample was also analyzed by Method 8260/8270 and the MADEP methods. The results of these analyses indicated the presence of kerosene constituents; however, none of the detected compounds, except the MADEP aromatic range, exceeded the allowable soil to groundwater concentration.

The composite sample CS-1, collected from the soil excavated from the gasoline tank top areas, did not indicate the presence of petroleum constituents. These soils will be used as backfill for the gasoline UST excavation. The composite sample CS-2, collected from the soil excavated from the kerosene dispenser, piping and tank top area, indicated the presence of petroleum constituents and will require treatment.

Chain of custody records and laboratory reports are included in Appendices C and D, respectively.

2. Groundwater Samples

Groundwater was not encountered during the tank excavation.

E. Conclusions

The tank closure soil samples collected from the gasoline USTs, dispenser and piping areas tested below the laboratory detection limits. Soil samples collected beneath the 550 gallon kerosene tank indicate a release has occurred from this tank. The Massachusetts VPH Method analyses indicate that the Aromatic range (Sum C9-C22) exceed the allowable Soil to Groundwater concentration.

Excavation has been performed to a depth of 5 feet below the kerosene UST. Because a release was discovered, additional work is planned. The soils excavated during the removal of the kerosene tank and the subsequent excavation enlargement contain petroleum concentrations above 10 ppm and require treatment.

F. Enclosures

A. Figures

1. Site Location Map
2. General Site Plan With Former UST Locations
3. UST Closure Soil Sampling Location Map

B. Tables (within body of report)

1. Tank Information-Facility ID No. 0-000790
2. Soil Sample OVA Evaluation Summary
- 3a. UST Closure Soil Sample Laboratory Results Summary (ppm)
- 3b. UST Closure Soil Sample RBCA Laboratory Results: Sample T1-2-10 (ppm)

C. Appendices

- Appendix A: Shamrock Env. Corp. Manifest
- Appendix B: Wilkes County Fire Inspection Report
- Appendix C: Chain of Custody Records
- Appendix D: Laboratory Reports

✓ MAY 17 2006

Winston-Salem
Regional Office

**Soil Sampling Report
B&D Quick Stop #3
2698 Statesville Road,
North Wilkesboro, Wilkes County**

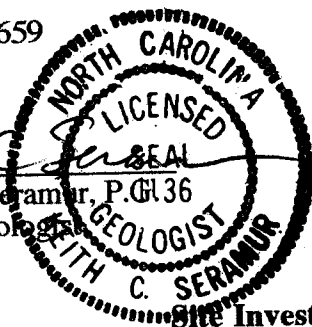
Consultant:
Geonetics Corporation
P.O. Box 1577
Boone, NC 28607
(828) 265-1577

Site Name: B&D Quick Stop #3
Date of Report: 5/14/06
Location: 2698 Statesville Road, North Wilkesboro 28659, Wilkes County,
Incident #: 22405, Facility ID: 0-000790
Risk Category: NA, Reason: NA
Land Use Category: NA

Former Property owner/Responsible Party:
Mr. Thurmond Brown
5431 Statesville Road
North Wilkesboro, NC 28659

Report Author: *Keith C. Seramur*

Keith C. Seramur, P.G. 36
Senior Geologist



Site Investigation

As requested by Mr. Williams of the Winston-Salem Regional Office of the NC DENR, Geonetics has completed the soil sampling and analyses below the former kerosene tank. It is our understanding that Mr. Brown had this tank closed by another consulting company. Mr. Brown showed Geonetics personnel the location of the former tank.

Geonetics personnel contacted Mr. Williams to inquire about the specific sampling protocol that would be required for this phase of assessment. Mr. Williams instructed us to collect two soil samples from the base of the former excavation. Mr. Brown reported that several truckloads of soil had been removed from around the former kerosene tank at closure.

On April 6, 2006, Geonetics personnel drilled two soil test borings through the backfill material that had been placed in the former excavation. Boring B-1 was drilled to a depth of 13.5 feet and a decontaminated split spoon was driven to a depth of 15.0 feet. Soil sample S-1 was collected from this split spoon sample. Soil was a foliated maroon Saprolite (very silty sand), so we knew the boring had extended through the backfill material into residual soils. Boring B-2 was drilled slowly to watch for a change in the cuttings and obtain a soil sample from just below the backfill material. The cuttings began to resemble the Saprolite at a depth of about 10 feet. The boring was terminated and a decontaminated split spoon was driven from a depth of 11.0 to 12.5 feet. Soil sample S-2 was collected from this split spoon sample.

These samples were placed in laboratory-cleaned jars and sealed with Teflon-lined lids. The samples were labeled, chilled, a chain of custody was initiated and then they were transported to Blue Ridge Laboratories for analysis. Soil samples S-1 and S-2 were analyzed for risk-based methods EPA 5035/8021 and 8270, and the MADEP VPH and EPH Methods.

SBW
6/7/06

Volatile petroleum constituents were detected in soil sample S-1 at a concentration of 121.3 ppb and in soil sample S-2 at a concentration of 70.6 ppb. These petroleum constituents did not exceed the residential or soil-to-groundwater maximum soil contaminant concentrations. Applicable soil clean-up levels for soil contamination are the lowest of the residential or soil-to-groundwater maximum soil contaminant concentrations.

Conclusions

Residual petroleum constituent concentrations in soil along the base of the former excavation do not exceed the residential or soil-to-groundwater maximum soil contaminant concentrations. Geonetics does not recommend any additional assessment activity for soil below the former kerosene tank.

Standard Operating Procedures

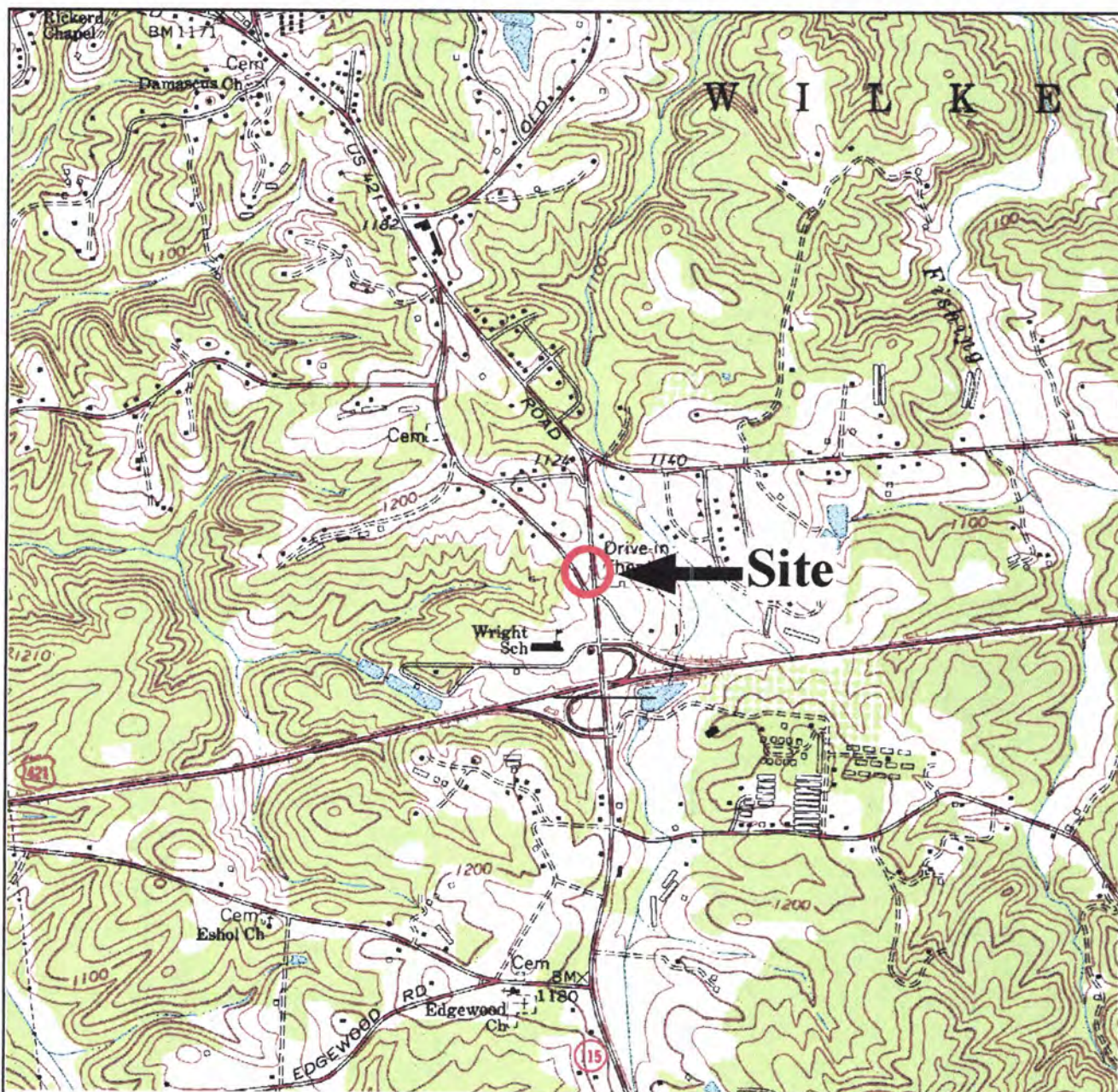
Soil samples S-1 and S-2 were collected from the decontaminated split spoons. The spoons were decontaminated with non-phosphate detergent, distilled water and isopropyl alcohol. Soil samples collected for laboratory analysis were placed in sample jars with Teflon-lined lids, chilled and Chain of Custody record was initiated. Soil samples were transport to Blue Ridge Labs, Inc. in Lenoir, North Carolina for analyses. A new pair of disposable latex gloves was worn while collecting each sample. Horizontal and vertical location of the soil samples were identified by measuring with a fiber-glass tape, estimating right angles and referencing site features.

Appendix A
Table and Figures

Table B-3 Summary of Soil Sampling Results
 Date: May 13, 2006 Incident Number and Name: 2698, B&D Quick Stop #3 Facility ID#: 0-000790

Sample Number	S-1	S-2	MSCC
Date Sampled	4/6/06	4/6/06	
Depth of Sampled (feet)	13.5-15.0	11.0-12.5	
Butylbenzene, n- (ppb)	51	16.8	4,300
Butylbenzene, sec- (ppb)	54.5	ND	3,300
Butylbenzene, tert- (ppb)	ND	15	3,400
Isopropyltoluene, p-(ppb)	15.8	ND	Not Listed
Toluene (ppb)	ND	14.6	7,300
Trimethylbenzene, 1,2,4-(ppb)	ND	24.2	7,500
Sampling Method	Split- Spoon	Split- Spoon	
Analyses	EPA Method 5035/8021, 8270, MADEP VPH/EPH	EPA Method 5035/8021, 8270, MADEP VPH/EPH	

NOTE: 1). ND = Not detected at or above minimum quantification limits listed on the analytical reports.



0 2000
FEET

Ref.: U.S.G.S. 7.5 Minute Topographic
Quadrangle for Roaring River, NC, 1966.



GEONETICS CORPORATION

P.O. Box 1577 Boone, North Carolina 28607

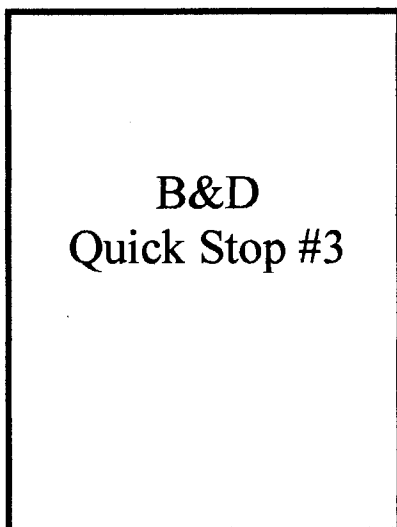
828-265-1577

B&D Quick Stop #3
North Wilkesboro, North Carolina

Site Location Map

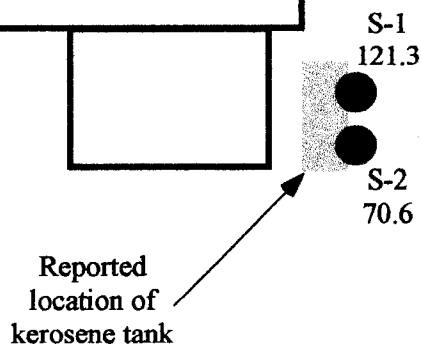
FIGURE 1

Soil Sample	Depth(in feet)
S-1	13.5-15
S-2	11-12



Dispenser Island

Business 421



Explanation

● - Soil sample Location

70.6 - Concentration of Volatile Petroleum Constituents detected by EPA Method 3550/8021 in ppb

0 20
FEET



GEONETICS CORPORATION
P.O. Box 1577 Boone, North Carolina 28607
828-265-1577

B&D Quick Stop #3
North Wilkesboro, North Carolina

Site Plan

FIGURE 2



North Carolina Department of Environment and Natural Resources

Michael F. Easley, Governor
William G. Ross Jr., Secretary

Division of Waste Management
Underground Storage Tank Section

Dexter R. Matthews, Director

June 7, 2006

Thurmond Brown
5431 Statesville Road
North Wilkesboro, NC 28659

Re: Notice of No Further Action
15A NCAC 2L .0407(d)
Risk-based Assessment and Corrective
Action for Petroleum Underground Storage
Tanks

B & D Quick Stop #3
2698 Statesville Road, North Wilkesboro
Wilkes County
Incident Number: 22405
Risk Classification: Low
Ranking: LOR

Dear Mr. Brown:

The Soil Sampling Report received by the Underground Storage Tank (UST) Section, Winston-Salem Regional Office on May 17, 2006 has been reviewed. The review indicates that after tank closure and soil excavation, soil contamination does not exceed the soil-to-groundwater maximum soil contaminant concentrations (MSCCs), established in Title 15A NCAC 2L .0411.

The UST Section determines that no further action is warranted for this incident. This determination shall apply unless the UST Section later finds that the discharge or release poses an unacceptable risk or a potentially unacceptable risk to human health or the environment. Pursuant to Title 15A NCAC 2L .0407(a) you have a continuing obligation to notify the Department of any changes that might affect the risk or land use classifications that have been assigned.

This No Further Action determination applies only to the subject incident; for any other incidents at the subject site, the responsible party must continue to address contamination as required.

If you have any questions regarding this notice, please contact me at the address or telephone number listed below.

Sincerely,



Cindy Rintoul
UST Regional Supervisor
Winston-Salem Regional Office

cc: Wilkes County Health Department
WSRO files

UST Regional Offices

Asheville (ARO) – 2090 US Highway 70, Swannanoa, NC 28778 (828) 296-4500

Fayetteville (FAY) – 225 Green Street, Suite 714, Systel Building, Fayetteville, NC 28301 (910) 486-1541

Mooresville (MOR) – 610 East Center Avenue, Suite 301, Mooresville, NC 28115 (704) 663-1699

Raleigh (RRO) – 1628 Mail Service Center, Raleigh, NC 27699 (919) 791-4200

Washington (WAS) – 943 Washington Square Mall, Washington, NC 27889 (252) 946-6481

Wilmington (WIL) – 127 Cardinal Drive Extension, Wilmington, NC 28405 (910) 796-7215

Winston-Salem (WS) – 585 Waughtown Street, Winston-Salem, NC 27107 (336) 771-5348

Guilford County Environmental Health, 1203 Maple Street, Greensboro, NC 27405, (336) 641-3771