

**PROJECT SPECIAL PROVISIONS
GEOENVIRONMENTAL**

CONTAMINATED SOIL (2/28/2023)

The Contractor's attention is directed to the fact that soil contaminated with petroleum hydrocarbon compounds exists within the project area. The known areas of contamination are indicated on corresponding plans sheets. Information relating to these contaminated areas, sample locations, and investigation reports will be available at the following web address by navigating to the correct letting year and month then selecting, "Plans and Proposals", "R-2707E", "Individual Sheets/520 GeoEnvironmental":

<http://dotw-xfer01.dot.state.nc.us/dsplan/>

Petroleum contaminated soil may be encountered during any earthwork activities on the project. The Contractor shall only excavate those soils that the Engineer designates necessary to complete a particular task. The Engineer shall determine if soil is contaminated based on areas shown on the plans, petroleum odors, and unusual soil staining. Contaminated soil not required to be excavated is to remain in place and undisturbed. Undisturbed soil shall remain in place, whether contaminated or not. The Contractor shall transport all contaminated soil excavated from the project to a facility licensed to accept contaminated soil.

In the event that a stockpile is needed, the stockpile shall be created within the property boundaries of the source material and in accordance with the Diagram for Temporary Containment and Treatment of Petroleum-Contaminated Soil per North Carolina Department of Environmental Quality's (NCDEQ) Division of Waste Management UST Section GUIDELINES FOR EX SITU PETROLEUM CONTAMINATED SOIL REMEDIATION. If the volume of contaminated material exceeds available space on site, the Contractor shall obtain a permit from the NCDEQ UST Section's Regional Office for off-site temporary storage. The Contractor shall provide copies of disposal manifests completed per the disposal facilities requirements and weigh tickets to the Engineer.

Measurement and Payment:

The quantity of contaminated soil hauled and disposed of shall be the actual number of tons of material, which has been acceptably transported and weighed with certified scales as documented by disposal manifests and weigh tickets. The quantity of contaminated soil, measured as provided above, shall be paid for at the contract unit price per ton for "Hauling and Disposal of Petroleum Contaminated Soil".

The above price and payment shall be full compensation for all work covered by this section, including, but not limited to stockpiling, loading, transportation, weighing, laboratory testing, disposal, equipment, decontamination of equipment, labor, and personal protective equipment.

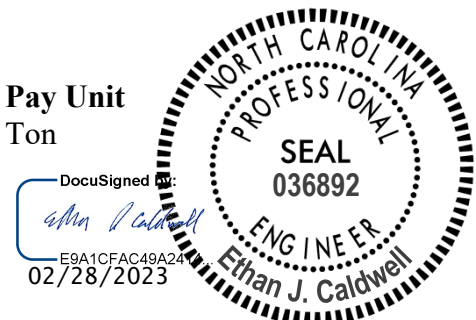
Payment shall be made under:

Pay Item

Hauling and Disposal of Petroleum Contaminated Soil

Pay Unit

Ton



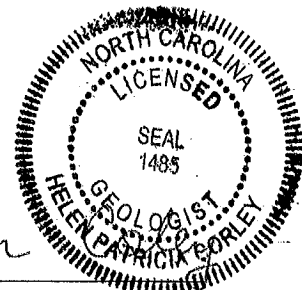


**North Carolina Department of Transportation
Preliminary Site Assessment
State Project: R-2707E
WBS Element: 34497.1.2
Cleveland County**

**Parcel 081
David Wayne Allen
4832 East Dixon Boulevard
King's Mountain, North Carolina
May 7, 2019**

**Wood Environment and Infrastructure Solutions, Inc.
Project: 1883R2707**

Andrew Frantz, REM
Senior Scientist



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Senior Assoc. Hydrogeologist



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1.0 INTRODUCTION

In response to the North Carolina Department of Transportation (NCDOT) Request for Proposal, dated March 27, 2019, Wood Environment & Infrastructure Solutions, Inc. (Wood) has performed a Preliminary Site Assessment (PSA) for Parcel 081. The investigation was conducted in accordance with Wood's Technical and Cost proposal dated April 5, 2019 and revised April 11, 2019. NCDOT contracted Wood to perform the PSA at the parcel, within the area to be affected by future road construction activities, in order to identify potential impacts from the former use of the property.

The parcel is located at 4832 East Dixon Boulevard along the southern side of East Dixon Boulevard as shown on the Vicinity Map, **Figure 1**. At the time of this PSA, the parcel was wooded and occupied with abandoned junk vehicles and a vacant house trailer. It is identified as Parcel 081, the David Wayne Allen property, (Site) within the NCDOT R-2707E design file. The parcel is in King's Mountain of Cleveland County, North Carolina. The area of investigation within the parcel is shown on **Figure 2**.

The following report describes our subsurface field investigation at the Site and presents on-site UVF soil analyses and off-site metals analysis to evaluate soil contamination within the Site.

1.1 Site History

Based on our historical and aerial photography review, the junk vehicles have been present since at least 1961. The Site is not identified on the North Carolina Department of Environmental Quality (NCDEQ) Underground Storage Tank (UST) Facility Database registry and no known groundwater incidents are identified at the Site. No files associated with the Site were available for review on the NCDEQ Laserfiche website.

1.2 Site Description

The Site is located in a mixed-use commercial and residential area of King's Mountain in Cleveland County and covers approximately 17.7 acres. The majority of the Site is wooded and grass-covered with the wooded areas occupied by abandoned junk vehicles and a vacant house trailer. An aboveground storage tank (AST), located along the eastern exterior

of the vacant house trailer was empty at the time of the PSA. A photographic log of the property is included as **Appendix A**.

2.0 GEOLOGY

2.1 Regional Geology

The Site is located within the Inner Piedmont Belt of the Piedmont Physiographic Province of North Carolina. According to the 1985 State Geologic Map of North Carolina, the area is underlain by massive to weakly foliated Cherryville Granite.

2.2 Site Geology

Site geology was observed through the advancement of six shallow hand augered soil borings (P81-SB1 to P81-SB6). Figure 2 presents the boring locations and site layout. Boring depth targeted a total depth of two feet below ground surface (bgs). Soils encountered in the borings consisted mostly of red to tan to brown sandy silts and clays. No petroleum odors or staining were observed in the borings and groundwater was not encountered. Based on observations of topography of the Site vicinity, the groundwater flow direction is inferred to be generally to the northwest. Boring logs are presented in **Appendix B**.

3.0 FIELD ACTIVITIES

3.1 Preliminary Activities

Prior to commencing field sampling activities at the Site, several tasks were accomplished in preparation for the subsurface investigation. A Health and Safety Plan (HASP) was created including the Site-specific health and safety information necessary for the field activities. North Carolina 811 was contacted on April 9, 2019 to report the proposed sampling activities and subsequently notify all affected utilities for the parcel. RED Lab instrumentation was scheduled for the use in the on-site UVF analysis.

Wood understands that acquisition of the right-of-way is necessary for the construction of the US 74 – Shelby Bypass. Boring locations were strategically placed within the parcel to maximize the opportunity to encounter potential contaminated soil resulting from junk car storage.

3.2 Site Reconnaissance

Wood personnel performed a Site reconnaissance with property owner notification on April 9, 2019. During the Site reconnaissance, the area was visually examined for the presence of any areas/obstructions that could potentially affect the subsurface investigation. Several junk vehicles were noted scattered throughout the Site. In addition, a house trailer and AST were observed on the eastern portion of the Site.

3.3 Soil Sampling

On April 16, 2019, Wood personnel advanced six soil borings via a stainless-steel hand auger across the area of investigation to an approximate depth of two feet bgs. Borings P81-SB1, P81-SB2, P81-SB4, and P81-SB6 were advanced in locations near junk vehicles. Boring P81-SB3 was advanced in the location of a proposed drainage feature at the Site, and boring P81-SB5 was advanced beneath the AST at the Site.

The purpose of the soil sampling was to determine if a petroleum release had impacted the Site and if so, to estimate the volume of impacted soil that might require special handling during NCDOT construction activities. Soil sampling was performed utilizing a stainless-steel hand auger accompanied by field screening. The hand auger was decontaminated between boring locations using a Liquinox[®] wash and distilled water rinse. Wood conducted field screening for volatile organic compounds (VOCs) of the soil borings with a photoionization detector (PID). The soil borings were screened with the PID at approximate one-foot intervals. A portion of the interval of the soil boring exhibiting the highest PID reading was retained for analysis of total petroleum hydrocarbons (TPH), diesel range organics (DRO), gasoline range organics (GRO), benzene, toluene, ethylbenzene, and xylene (BTEX), total aromatics, and polycyclic aromatic hydrocarbons (PAH) soil via on-site ultraviolet fluorescence (UVF).

The remaining portion of the interval of the soil boring exhibiting the highest PID reading was retained for off-site laboratory analysis, placed in laboratory provided containers and immediately placed on ice. The samples were delivered under standard chain-of-custody protocol via courier to Prism Laboratories, Inc. in Charlotte, North Carolina and analyzed for eight Resource Conservation and Recovery Act (RCRA) metals via EPA methods 6010/7471 by Prism Laboratories, Inc. (Prism) in Charlotte, North Carolina. Six total samples were collected from the site from the borings for UVF on-site analysis and eight RCRA Metals off-site analysis.

4.0 SOIL SAMPLING RESULTS

Based on PID field screening and UVF hydrocarbon analysis from April 16, 2019, evidence of petroleum hydrocarbon impacts were not identified within the area of investigation.

4.1 Soil Screening and UVF Analyses

PID readings for the six borings ranged from 3.4 parts per million (ppm) in sample P81-SB4-1 collected between the ground surface and one foot bgs to 10.1 ppm in sample P81-SB5-1 collected between the ground surface and one foot bgs. The PID field screening results are summarized in **Table 1** and provided on the boring logs in Appendix B.

Results from the on-site UVF petroleum soil analyses are presented in **Table 2**, with instrument generated tables in **Appendix C**. Several categories of analyses were measured such as: DRO, GRO, TPH, PAHs, and total aromatics. **Figure 3** presents the GRO and DRO results at each boring.

Elevated TPH values above the NCDEQ Action Limit of 50 milligrams per kilogram (mg/kg) for GRO or 100 mg/kg for DRO were not detected in the six samples collected from the borings advanced at the Site. GRO was detected in one sample (P81-SB4-1) at a concentration of 2 mg/kg, while DRO was detected in each of the six samples ranging from 0.06 mg/kg in P81-SB2-1 to 1.0 mg/kg in P81-SB5-1. The hydrocarbon results from the QED QROS Hydrocarbon Analyzer are provided in Appendix C.

4.2 Off-site Laboratory Analyses

The laboratory analytical report and chain-of-custody form for the off-site soil sample analyses conducted by Prism is included in **Appendix D**. The results of the six soil samples analyzed for eight RCRA Metals by Prism are summarized in **Table 3**, as well as below:

- Concentrations of arsenic, barium, total chromium, and lead were identified in each of the six soil samples collected at the site. In addition, concentrations of mercury were identified in three of the six samples collected at the site; however, the mercury concentrations were J-flagged, indicating the values were identified above the method detection limit but below the reporting limit and are considered an estimate.
- The concentrations of arsenic identified in samples P81-SB4-1 (3.8 mg/kg) and P81-SB6-2 (8.8 mg/kg) exceeded the EPA Composite Worker Soil Carcinogenic Target Risk of $1e^{-06}$ (TR) Regional Screening Level (RSL) for arsenic of 3.0 mg/kg.
- The concentrations of total chromium identified in samples P81-SB1-1 (14 mg/kg), P81-SB2-1 (12 mg/kg), P81-SB3-2 (8.9 mg/kg), P81-SB4-1 (13 mg/kg), and P81-SB6-2 (36 mg/kg) exceeded the NCDEQ Soil-to-Water Maximum Soil Contaminant Concentration (MSCC) for total chromium of 5.4 mg/kg. In addition, the concentrations exceeded the EPA Composite Worker Soil TR RSL for chromium (VI) of 6.3 mg/kg. Note, separate EPA RSLs are established for chromium (III) and chromium (VI) variants. Speciated chromium samples were not analyzed as part of this assessment. The EPA Composite Worker Soil TR RSL for chromium (VI) of 6.3 mg/kg was conservatively compared to these samples.
- The barium, lead and mercury concentrations identified in the samples did not exceed their respective NCDEQ MSCCs or EPA RSLs.

5.0 CONCLUSIONS

Based on the Site observations, UVF analysis, and laboratory analysis, petroleum-impacted soil contamination was not identified and as a result the NCDEQ Action level of 100 mg/kg for DRO and 50 mg/kg for GRO were not exceeded.

Concentrations of arsenic and total chromium, identified in some of the soil samples, exceeded their respective EPA Composite Worker Soil TR RSLs. In addition, the concentrations of total chromium identified exceeded the NCDEQ Soil-to-Water MSCC in five of the six soil samples. However, the concentrations of arsenic and total chromium identified in the soil samples collected at the site are within the naturally occurring trace element content of soils as identified in the EPA Office of Solid Waste and Emergency Response, Hazardous Waste Land Treatment, SW874 (dated April 1983), page 273, Table 6.46. Based on the absence of petroleum-impacted soils identified at the site and that the concentrations of arsenic and total chromium were identified within naturally occurring background levels, Wood does not consider the metal concentrations to indicate a release has occurred at the Site.

6.0 RECOMMENDATIONS

Based on these PSA results, Wood does not recommend further assessment in the area of investigation or special soil handling during construction.

TABLES

Table 1: Summary of PID Screening Results
Parcel 081 - David Wayne Allen Property
King's Mountain, North Carolina
Wood Project: 1883R2707E

Boring ID	Depth of Sample Interval	PID Reading
P81-SB1	0-1	3.5
P81-SB2	0-1	5.1
P81-SB3	1-2	7.2
P81-SB4	0-1	3.4
P81-SB5	0-1	10.1
P81-SB6	1-2	6.0

Notes:

1. Samples collected on April 16, 2019
2. Depths shown in feet below ground surface (bgs)
3. PID = Photoionization Detector
4. PID readings shown in parts per million (ppm)

Prepared By/Date: AJF 4/23/2019

Checked By/Date: DRH 5/3/2019

Table 2: Summary of UVF Petroleum Soil Results
Parcel 081 - David Wayne Allen Property
King's Mountain, North Carolina
Wood Project: 1883R2707E

Sample ID Number	Sample Depth	BTEX	GRO	DRO	PAHs
P81-SB1-1	0-1	<0.48	<0.48	0.42	0.01
P81-SB2-1	0-1	<0.49	<0.49	0.06	0.004
P81-SB3-2	1-2	<0.45	<0.45	0.08	0.007
P81-SB4-1	0-1	<0.49	2	0.73	0.08
P81-SB5-1	0-1	<0.59	<0.59	1	0.03
P81-SB6-2	1-2	<0.44	<0.44	0.90	0.02
NC State Action Level		N/A	50	100	N/A

Notes:

1. Samples collected on April 16, 2019
2. Depths shown in feet below ground surface (bgs)
3. Concentrations shown in milligrams per kilogram (mg/kg)
4. BTEX = Benzene, toluene, ethylbenzene, xylene
5. GRO = Gasoline Range Organics
6. DRO = Diesel Range Organics
7. PAHs = Polycyclic aromatic hydrocarbons
8. N/A = Not applicable
9. Bold values exceed respective NC State Action Level

Prepared By/Date: AJF 4/23/2019

Checked By/Date: DRH 5/3/2019

Table 3: Summary of Off-Site RCRA Metal Analytical Results
Parcel 081 - David Wayne Allen Property
King's Mountain, North Carolina
Wood Project: 1883R2707E

Constituent	P81-SB1-1	P81-SB2-1	P81-SB3-2	P81-SB4-1	P81-SB5-1	P81-SB6-2	Soil-to-Water MSCCs	Industrial/Commercial MSCCs	EPA Composite Worker Soil Carcinogenic TR RSLs	EPA Composite Worker Soil Non-carcinogenic HI RSLs	Trace Element Content of Soils*
Sample Depth	0-1	0-1	1-2	1-2	0-1	1-2					
Arsenic	1.9	2.1	1.8	<u>3.8</u>	2.0	<u>8.8</u>	NE	NE	3.0	48	1-50
Barium	25	30	23	34	27	67	290	81,000	NE	22,000	100-3,000
Cadmium	<0.040	<0.042	<0.042	<0.042	<0.044	<0.043	NE	NE	9,300	98	0.01-0.7
Chromium	<u>14</u>	<u>12</u>	<u>8.9</u>	<u>13</u>	4.2	<u>36</u>	5.4	1,226	(III) NE (VI) 6.3	(III) 180,000 (VI) 350	1-1,000
Lead	15	19	19	22	23	30	270	400	NE	800	2-200
Mercury	<0.021	0.028 J	<0.021	0.024 J	<0.022	0.052 J	NE	NE	NE	4.6	0.01-0.3
Selenium	<0.33	<0.34	<0.34	<0.34	<0.36	<0.35	NE	NE	NE	580	0.1-2
Silver	<0.037	<0.038	<0.038	<0.038	<0.040	<0.039	0.25	2,044	NE	580	0.01-5

Notes:

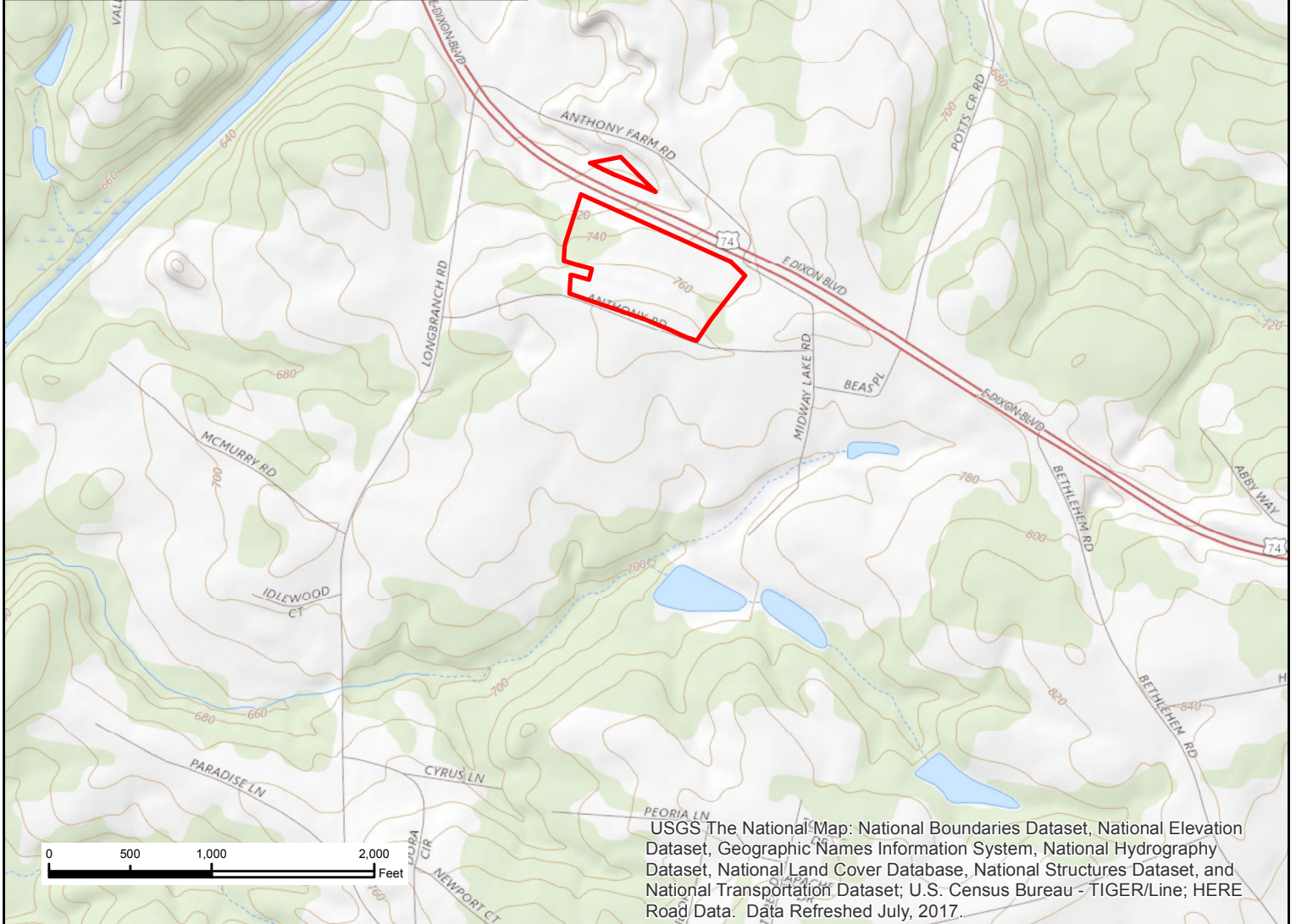
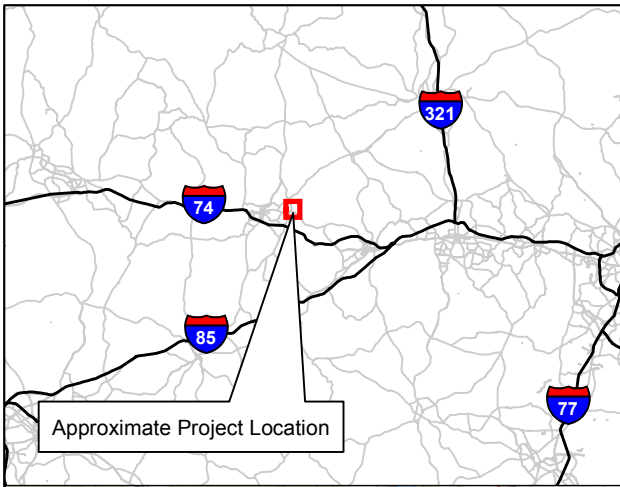
1. Samples collected on April 16, 2019
2. Concentrations reported in milligrams per kilogram (mg/kg)
3. Depths shown in feet below ground surface (bgs)
4. MSCC = NCDEQ Division of Waste Management, Maximum Soil Contaminant Concentration Levels, dated April 2012
5. EPA RSLs = EPA Regional Screening Levels (RSLs), Carcinogenic Target Risk (TR) = 1e-06, Non-carcinogenic Hazard Index (HI) 0.1, dated November 2018
6. Bold value indicates concentration exceeds Soil-to-Water MSCC
7. Shaded value indicates concentration exceeds Industrial/Commercial MSCC
8. Underlined value indicates concentration exceeds EPA RSL for either Carcinogenic TR or Non-carcinogenic HI
9. J-flag indicates value was identified above method detection limit but below laboratory reporting limit, value is considered an estimate
10. Separate RSLs are established for Chromium (III) and (VI) variants. Speciated chromium samples were not analyzed during this assessment
11. NE = Not established

*Reference: USEPA Office of Solid Waste and Emergency Response, Hazardous Waste Land Treatment, SW-874 (April 1983) page 273, Table 6.46

Prepared By/Date: RPD 4/29/19

Checked By/Date: AJF 5/6/19

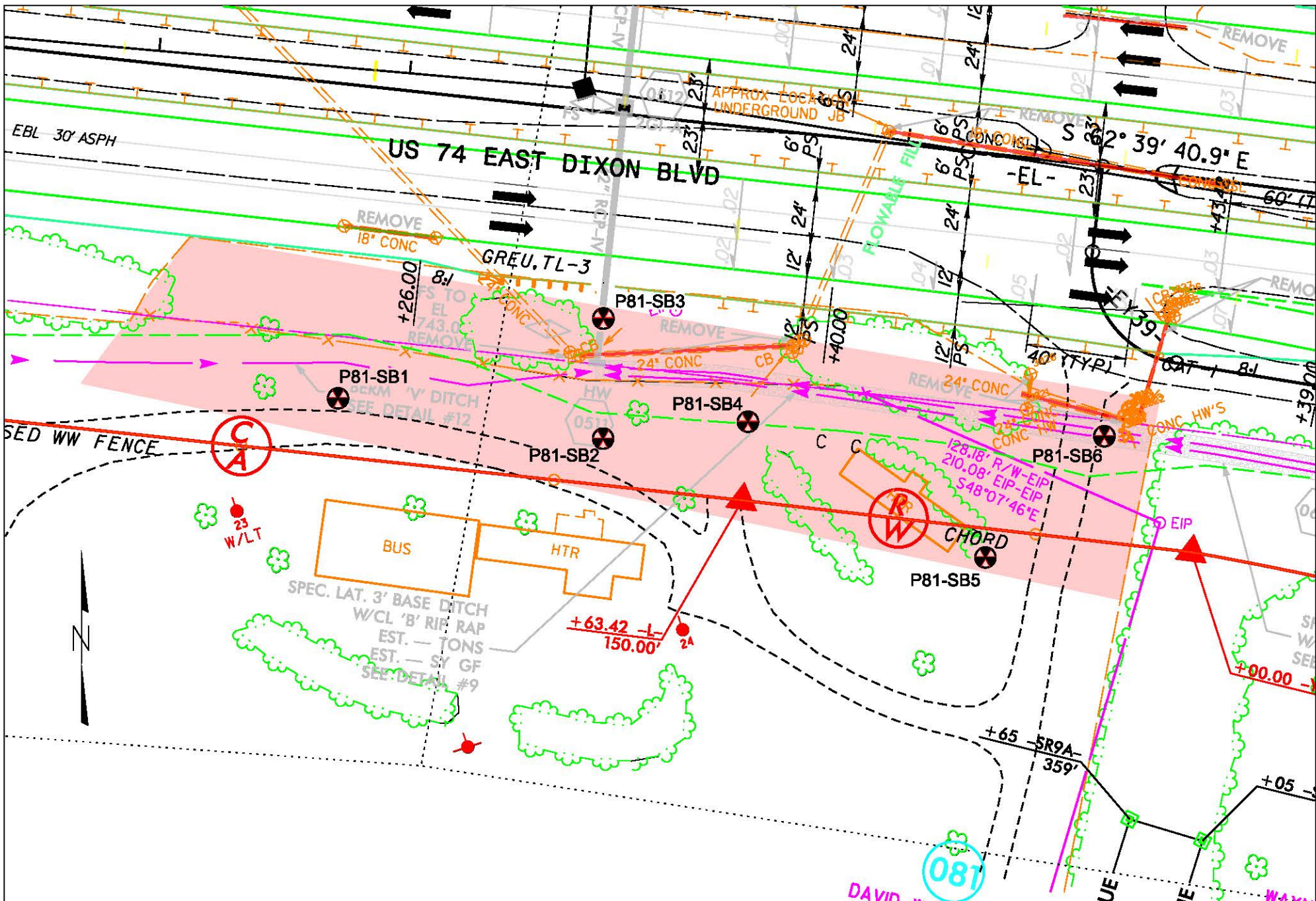
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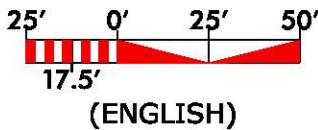
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SITE VICINITY
R2707E - Parcel 081
David Wayne Allen
4832 East Dixon Boulevard
Kings Mountain, North Carolina 28086

 Site Boundary



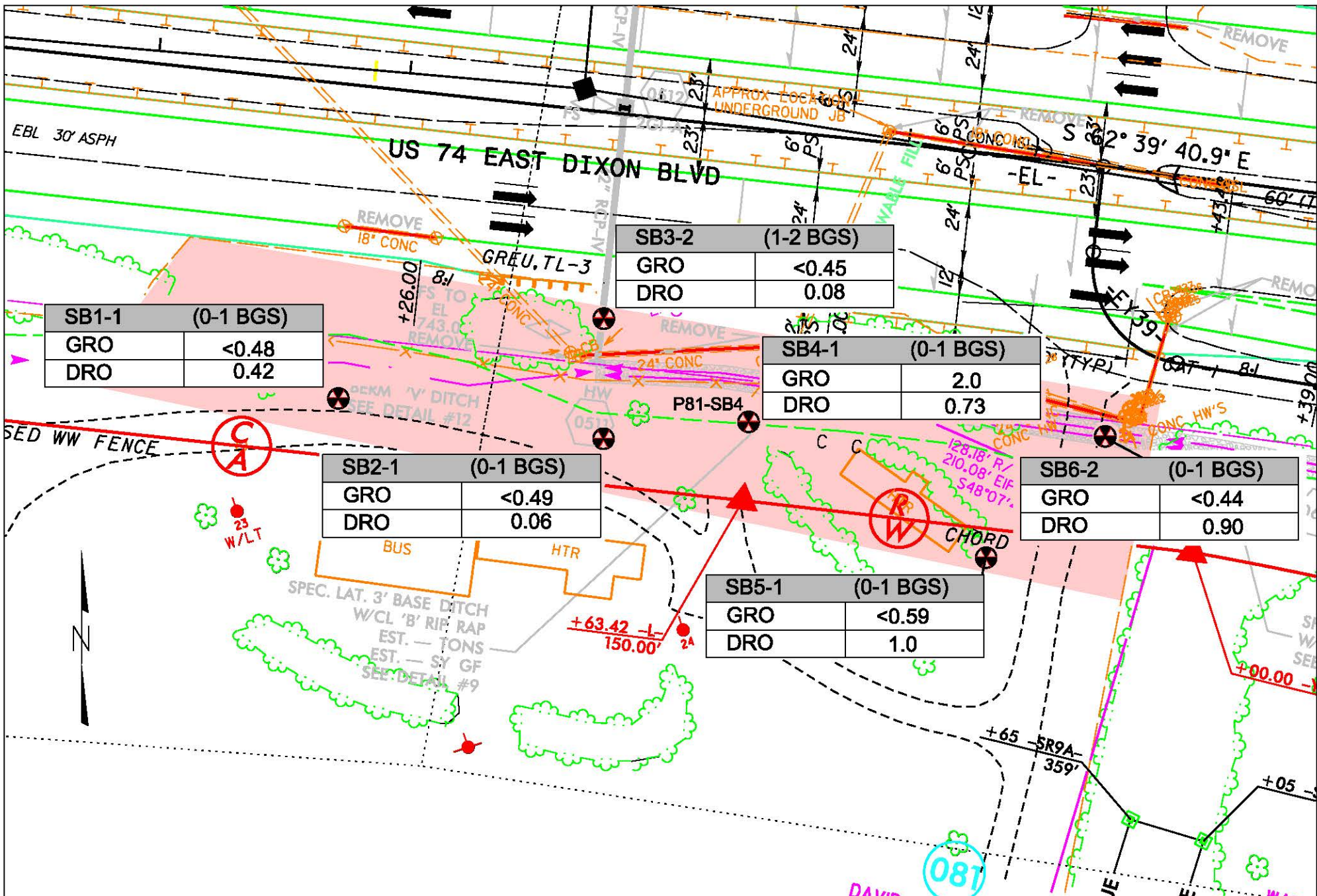
- BORING LOCATION
- AREA OF INVESTIGATION



wood.

BORING LOCATION MAP- PARCEL 81
 DAVID WAYNE ALLEN PROPERTY
 STATE PROJECT: R-2707E
 WBS ELEMENT: 34497.1.2
 CLEVELAND COUNTY, SHELBY, NORTH CAROLINA

PREPARED BY: LJM	DATE: 5/7/19	CHECKED BY: HPC	DATE: 5/7/19	JOB NUMBER 188322707	FIGURE 2
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SB1-1 (0-1 BGS)	
GRO	<0.48
DRO	0.42

SB3-2 (1-2 BGS)	
GRO	<0.45
DRO	0.08

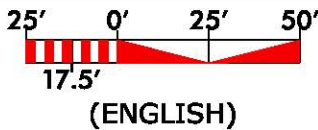
SB4-1 (0-1 BGS)	
GRO	2.0
DRO	0.73

SB2-1 (0-1 BGS)	
GRO	<0.49
DRO	0.06

SB6-2 (0-1 BGS)	
GRO	<0.44
DRO	0.90

SB5-1 (0-1 BGS)	
GRO	<0.59
DRO	1.0

● BORING LOCATION
 AREA OF INVESTIGATION
 GRO=GASOLINE RANGE ORGANICS
 DRO=DIESEL RANGE ORGANICS
 CONCENTRATIONS SHOWN IN MILLIGRAMS PER KILOGRAM (mg/kg)
 SHADED CONCENTRATIONS EXCEED NCDEQ STATE ACTION LIMITS
 BGS=FEET BELOW GROUND SURFACE



wood.

UVF PETROLEUM RESULTS - PARCEL 81
 DAVID WAYNE ALLEN PROPERTY
 STATE PROJECT: R-2707E
 WBS ELEMENT: 34497.1.2
 CLEVELAND COUNTY, SHELBY, NORTH CAROLINA

PREPARED BY: LMM	DATE: 5/7/19	CHECKED BY: HPC	DATE: 5/7/19	JOB NUMBER: 188322707	FIGURE: 3
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APPENDIX A
PHOTOGRAPHIC LOG



PHOTO 1:

View of abandoned fire truck, SUV and RV, looking south from Midway Lake Road/ US 74.

Photo taken 4/16/19.



PHOTO 2:

View of abandoned trailer, looking east.

Photo taken 4/16/19.



PHOTO 3:

View of AST on the eastern side of the abandoned trailer, looking northwest.

Photo taken 4/16/19.



PHOTO 4:

View of abandoned building south of area of investigation. Household debris and appliances scattered around the building, looking south.

Photo taken 4/16/19.



PHOTO 5:

View of abandoned vehicles covered in high vegetation, looking northeast toward US 74.

Photo taken 4/16/19.

APPENDIX B
BORING LOGS

SOIL BORING FIELD WORKSHEET

BORING #	P81-SB1	BORING DEPTH (ft)	2	NUMBER OF PAGES	1
PROJECT #	1883R2707	PROJECT NAME	NCDOT Shelby R-2707E		
DATE DRILLED	4/16/2019	WEATHER CONDITIONS	75°F Sunny		
DRILLING SUB-CONTRACTOR	N/A	DRILL RIG	Hand Auger		

DEPTH (ft bgs)	PID (ppm)	SOIL DESCRIPTION	SAMPLE INFO
1	3.5	Red brown fine-grained sandy SILT w/clay	
2	1.5	Tan brown fine-grained sandy SILT w/quartz and grains	
3		Boring terminated at 2ft. UVF sample taken at 0-1ft. Sample taken for off-site analysis taken at 0-1ft.	
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Page: 1

SOIL BORING FIELD WORKSHEET

BORING #	P81-SB2	BORING DEPTH (ft)	2	NUMBER OF PAGES	1
PROJECT #	1883R2707	PROJECT NAME	NCDOT Shelby R-2707E		
DATE DRILLED	4/16/2019	WEATHER CONDITIONS	75°F Sunny		
DRILLING SUB-CONTRACTOR	N/A	DRILL RIG	Hand Auger		

DEPTH (ft bgs)	PID (ppm)	SOIL DESCRIPTION	SAMPLE INFO
1	5.1	Tan brown fine-grained sandy SILT w/quartz grains	
2	5.0	Tan brown fine-grained sandy CLAY w/fine-grained sand and quartz	
3		Boring terminated at 2ft. UVF sample taken at 0-1ft. Sample taken for off-site analysis taken at 0-1ft.	
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SOIL BORING FIELD WORKSHEET

BORING #	P81-SB3	BORING DEPTH (ft)	2	NUMBER OF PAGES	1
PROJECT #	1883R2707	PROJECT NAME	NCDOT Shelby R-2707E		
DATE DRILLED	4/16/2019	WEATHER CONDITIONS	75°F Sunny		
DRILLING SUB-CONTRACTOR	N/A	DRILL RIG	Hand Auger		

DEPTH (ft bgs)	PID (ppm)	SOIL DESCRIPTION	SAMPLE INFO
1	7.1	Red and tan fine-grained sandy CLAY	
2	7.2		
3		Boring terminated at 2ft. UVF sample taken at 1-2ft. Sample taken for off-site analysis taken at 1-2ft.	
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SOIL BORING FIELD WORKSHEET

BORING #	P81-SB4	BORING DEPTH (ft)	2	NUMBER OF PAGES	1
PROJECT #	1883R2707	PROJECT NAME	NCDOT Shelby R-2707E		
DATE DRILLED	4/16/2019	WEATHER CONDITIONS	75°F Sunny		
DRILLING SUB-CONTRACTOR	N/A	DRILL RIG	Hand Auger		

DEPTH (ft bgs)	PID (ppm)	SOIL DESCRIPTION	SAMPLE INFO
1	3.4	Red and tan fine-grained sandy SILT w/quartz grains	
2	3.1		
3		Boring terminated at 2ft. UVF sample taken at 0-1ft. Sample taken for off-site analysis taken at 0-1ft.	
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SOIL BORING FIELD WORKSHEET

BORING #	P81-SB5	BORING DEPTH (ft)	2	NUMBER OF PAGES	1
PROJECT #	1883R2707	PROJECT NAME	NCDOT Shelby R-2707E		
DATE DRILLED	4/16/2019	WEATHER CONDITIONS	75°F Sunny		
DRILLING SUB-CONTRACTOR	N/A	DRILL RIG	Hand Auger		

DEPTH (ft bgs)	PID (ppm)	SOIL DESCRIPTION	SAMPLE INFO
1	10.1	Tan and dark brown fine-grained sandy SILT w/clay and quartz grains	
2	3.5	Brown fine-grained SILT w/quartz grains	
3		Boring terminated at 2ft. UVF sample taken at 0-1ft. Sample taken for off-site analysis taken at 0-1ft.	
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Log Completed By: DRH

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SOIL BORING FIELD WORKSHEET

BORING #	P81-SB6	BORING DEPTH (ft)	2	NUMBER OF PAGES	1
PROJECT #	1883R2707	PROJECT NAME	NCDOT Shelby R-2707E		
DATE DRILLED	4/16/2019	WEATHER CONDITIONS	75°F Sunny		
DRILLING SUB-CONTRACTOR	N/A	DRILL RIG	Hand Auger		

DEPTH (ft bgs)	PID (ppm)	SOIL DESCRIPTION	SAMPLE INFO
1	1.7	Black fine-grained sandy CLAY w/organics and root matter	
2	6.0	Red brown fine-grained sandy CLAY w/ organics and root matter	
3		Boring terminated at 2ft. UVF sample taken at 1-2ft. Sample taken for off-site analysis taken at 1-2ft.	
4			
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21			

Log Completed By: DRH

Page: 1

APPENDIX C
RESULTS FROM ON-SITE UVF SOIL ANALYSES



Hydrocarbon Analysis Results

Client: Wood
Address: 2801 Yorkmont Road
 Charlotte, NC

Samples taken Tuesday, April 16, 2019
Samples extracted Tuesday, April 16, 2019
Samples analysed Tuesday, April 16, 2019

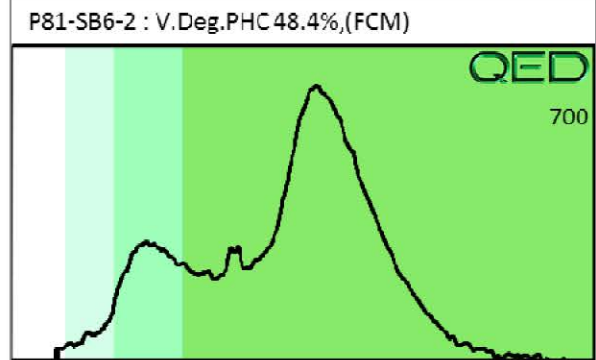
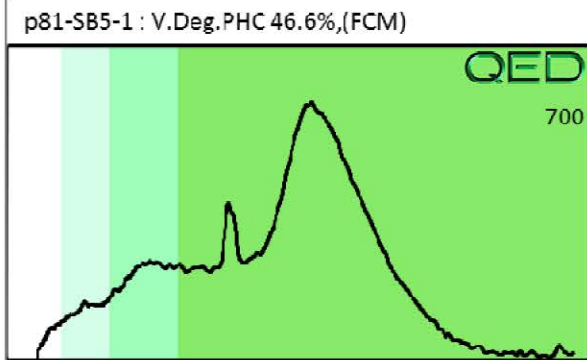
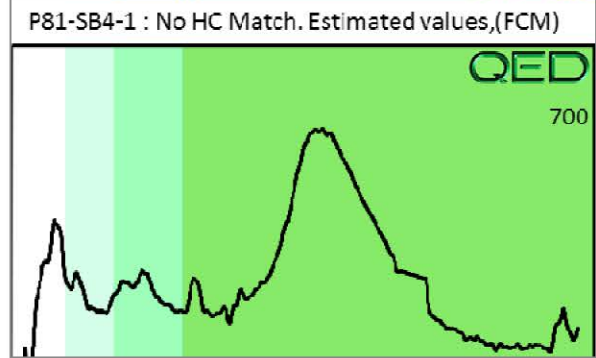
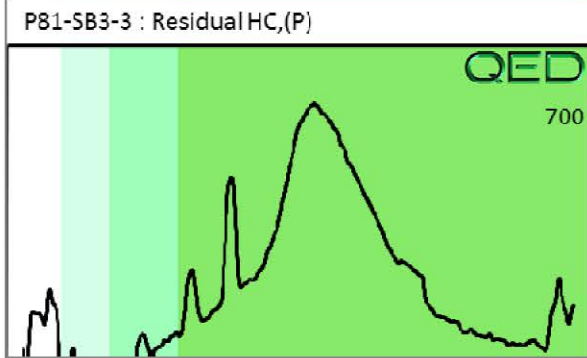
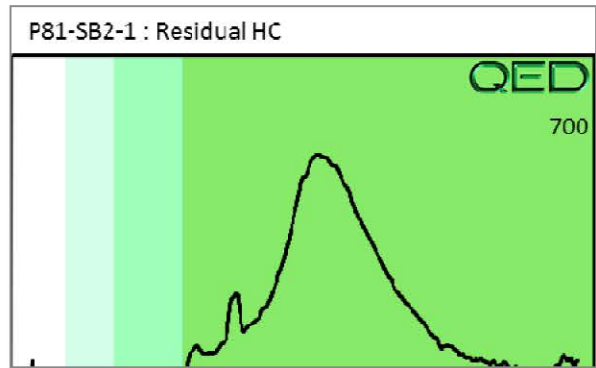
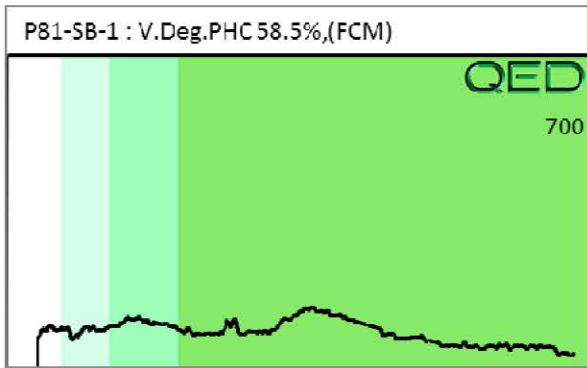
Contact: Helen Corley

Operator Derick Haydin

Project: NCDOT Shelby

											H09382		
Matrix	Sample ID	Dilution used	BTEX (C6 - C9)	GRO (C5 - C10)	DRO (C10 - C35)	TPH (C5 - C35)	Total Aromatics (C10-C35)	16 EPA PAHs	BaP	% Ratios			HC Fingerprint Match
										C5 - C10	C10 - C18	C18	
Soil	P81-SB1-1	19.1	<0.48	<0.48	0.42	0.42	0.31	0.01	<0.006	0	100	0	V.Deg.PHC 58.5%,(FCM)
Soil	P81-SB2-1	19.4	<0.49	<0.49	0.06	0.06	0.06	0.004	<0.006	0	34	66	Residual HC
Soil	P81-SB3-2	17.8	<0.45	<0.45	0.08	0.08	0.08	0.007	<0.005	0	34	66	Residual HC,(P)
Soil	P81-SB4-1	19.7	<0.49	2	0.73	2.73	0.69	0.08	<0.006	78	20.5	1.5	No HC Match. Estimated values,(FCM)
Soil	P81-SB5-1	23.6	<0.59	<0.59	1	1	0.48	0.03	<0.007	0	84.7	15.3	V.Deg.PHC 46.6%,(FCM)
Soil	P81-SB6-2	17.7	<0.44	<0.44	0.9	0.9	0.4	0.02	<0.005	0	87.2	12.8	V.Deg.PHC 48.4%,(FCM)
Initial Calibrator QC check			OK			Final FCM QC Check			OK			98.2%	

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**



APPENDIX D
LABORATORY ANALYTICAL REPORT AND CHAIN-OF-CUSTODY
FORM



Wood Environ. & Infrastructure Solutions (Charl)
Andrew Frantz
2801 Yorkmont Rd. #100
Charlotte, NC 28208

Project: NCDOT Shelby R-2707 D&E
Project No.: 1883R2707 Parcel 81
Lab Submittal Date: 04/17/2019
Prism Work Order: 9040277

This data package contains the analytical results for the project identified above and includes a Case Narrative, Sample Results and Chain of Custody. Unless otherwise noted, all samples were received in acceptable condition and processed according to the referenced methods.

Data qualifiers are flagged individually on each sample. A key reference for the data qualifiers appears at the end of this case narrative.

Please call if you have any questions relating to this analytical report.

Respectfully,

PRISM LABORATORIES, INC.

Robbi A. Jones
President/Project Manager

Reviewed By Robbi A. Jones
President/Project Manager

Data Qualifiers Key Reference:

- J Detected but below the Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag).
- U Not Detected at the MDL
- MDL Method Detection Limit
- RPD Relative Percent Difference
- * Results reported to the reporting limit. All other results are reported to the MDL with values between MDL and reporting limit indicated with a J.

Client Sample ID	Lab Sample ID	Matrix	Date/Time Sampled	Date/Time Received
P81-SB1-1	9040277-01	Solid	04/16/19 15:00	04/17/19 8:25
P81-SB2-1	9040277-02	Solid	04/16/19 15:05	04/17/19 8:25
P81-SB3-2	9040277-03	Solid	04/16/19 15:15	04/17/19 8:25
P81-SB4-1	9040277-04	Solid	04/16/19 15:25	04/17/19 8:25
P81-SB5-1	9040277-05	Solid	04/16/19 15:35	04/17/19 8:25
P81-SB6-2	9040277-06	Solid	04/16/19 15:45	04/17/19 8:25

Samples were received in good condition at 1.6 degrees C unless otherwise noted.

Prism ID	Client ID	Parameter	Method	Result	Units
9040277-01	P81-SB1-1	Arsenic	6010D	1.9	mg/kg dry
9040277-01	P81-SB1-1	Barium	6010D	25	mg/kg dry
9040277-01	P81-SB1-1	Chromium	6010D	14	mg/kg dry
9040277-01	P81-SB1-1	Lead	6010D	15	mg/kg dry
9040277-02	P81-SB2-1	Mercury	7471B	0.028 J	mg/kg dry
9040277-02	P81-SB2-1	Arsenic	6010D	2.1	mg/kg dry
9040277-02	P81-SB2-1	Barium	6010D	30	mg/kg dry
9040277-02	P81-SB2-1	Chromium	6010D	12	mg/kg dry
9040277-02	P81-SB2-1	Lead	6010D	19	mg/kg dry
9040277-03	P81-SB3-2	Arsenic	6010D	1.8	mg/kg dry
9040277-03	P81-SB3-2	Barium	6010D	23	mg/kg dry
9040277-03	P81-SB3-2	Chromium	6010D	8.9	mg/kg dry
9040277-03	P81-SB3-2	Lead	6010D	19	mg/kg dry
9040277-04	P81-SB4-1	Mercury	7471B	0.024 J	mg/kg dry
9040277-04	P81-SB4-1	Arsenic	6010D	3.8	mg/kg dry
9040277-04	P81-SB4-1	Barium	6010D	34	mg/kg dry
9040277-04	P81-SB4-1	Chromium	6010D	13	mg/kg dry
9040277-04	P81-SB4-1	Lead	6010D	22	mg/kg dry
9040277-05	P81-SB5-1	Arsenic	6010D	2.0	mg/kg dry
9040277-05	P81-SB5-1	Barium	6010D	27	mg/kg dry
9040277-05	P81-SB5-1	Chromium	6010D	4.2	mg/kg dry
9040277-05	P81-SB5-1	Lead	6010D	23	mg/kg dry
9040277-06	P81-SB6-2	Mercury	7471B	0.052 J	mg/kg dry
9040277-06	P81-SB6-2	Arsenic	6010D	8.8	mg/kg dry
9040277-06	P81-SB6-2	Barium	6010D	67	mg/kg dry
9040277-06	P81-SB6-2	Chromium	6010D	36	mg/kg dry
9040277-06	P81-SB6-2	Lead	6010D	30	mg/kg dry



Wood Environ. & Infrastructure Solutions (Ch Project: NCDOT Shelby R-2707 D&E
Attn: Andrew Frantz
2801 Yorkmont Rd. #100
Charlotte, NC 28208

Project No.: 1883R2707 Parcel 81
Sample Matrix: Solid

Client Sample ID: P81-SB1-1
Prism Sample ID: 9040277-01
Prism Work Order: 9040277
Time Collected: 04/16/19 15:00
Time Submitted: 04/17/19 08:25

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
General Chemistry Parameters									
% Solids	84.1	% by Weight	0.100	0.100	1	SM2540 G	4/25/19 10:15	KBS	P9D0447
Total Metals									
Mercury	0.021 U	mg/kg dry	0.059	0.021	1	7471B	4/22/19 12:54	MMR	P9D0347
Arsenic	1.9	mg/kg dry	1.2	0.16	1	6010D	4/23/19 16:09	JAB	P9D0350
Barium	25	mg/kg dry	12	3.6	1	6010D	4/23/19 16:09	JAB	P9D0350
Cadmium	0.040 U	mg/kg dry	0.59	0.040	1	6010D	4/23/19 16:09	JAB	P9D0350
Chromium	14	mg/kg dry	1.2	0.090	1	6010D	4/23/19 16:09	JAB	P9D0350
Lead	15	mg/kg dry	1.2	0.20	1	6010D	4/23/19 16:09	JAB	P9D0350
Selenium	0.33 U	mg/kg dry	1.2	0.33	1	6010D	4/23/19 16:09	JAB	P9D0350
Silver	0.037 U	mg/kg dry	0.59	0.037	1	6010D	4/23/19 16:09	JAB	P9D0350

Wood Environ. & Infrastructure Solutions (Ch Project: NCDOT Shelby R-2707 D&E
Attn: Andrew Frantz
2801 Yorkmont Rd. #100
Charlotte, NC 28208

Project No.: 1883R2707 Parcel 81
Sample Matrix: Solid

Client Sample ID: P81-SB2-1
Prism Sample ID: 9040277-02
Prism Work Order: 9040277
Time Collected: 04/16/19 15:05
Time Submitted: 04/17/19 08:25

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
General Chemistry Parameters									
% Solids	81.4	% by Weight	0.100	0.100	1	SM2540 G	4/25/19 10:15	KBS	P9D0447
Total Metals									
Mercury	0.028 J	mg/kg dry	0.061	0.021	1	7471B	4/22/19 12:58	MMR	P9D0347
Arsenic	2.1	mg/kg dry	1.2	0.16	1	6010D	4/23/19 16:17	JAB	P9D0350
Barium	30	mg/kg dry	12	3.7	1	6010D	4/23/19 16:17	JAB	P9D0350
Cadmium	0.042 U	mg/kg dry	0.61	0.042	1	6010D	4/23/19 16:17	JAB	P9D0350
Chromium	12	mg/kg dry	1.2	0.093	1	6010D	4/23/19 16:17	JAB	P9D0350
Lead	19	mg/kg dry	1.2	0.21	1	6010D	4/23/19 16:17	JAB	P9D0350
Selenium	0.34 U	mg/kg dry	1.2	0.34	1	6010D	4/23/19 16:17	JAB	P9D0350
Silver	0.038 U	mg/kg dry	0.61	0.038	1	6010D	4/23/19 16:17	JAB	P9D0350

Wood Environ. & Infrastructure Solutions (Ch Project: NCDOT Shelby R-2707 D&E
Attn: Andrew Frantz
2801 Yorkmont Rd. #100
Charlotte, NC 28208

Project No.: 1883R2707 Parcel 81
Sample Matrix: Solid

Client Sample ID: P81-SB3-2
Prism Sample ID: 9040277-03
Prism Work Order: 9040277
Time Collected: 04/16/19 15:15
Time Submitted: 04/17/19 08:25

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
General Chemistry Parameters									
% Solids	80.6	% by Weight	0.100	0.100	1	SM2540 G	4/25/19 10:15	KBS	P9D0447
Total Metals									
Mercury	0.021 U	mg/kg dry	0.062	0.021	1	7471B	4/22/19 13:03	MMR	P9D0347
Arsenic	1.8	mg/kg dry	1.2	0.16	1	6010D	4/23/19 16:26	JAB	P9D0350
Barium	23	mg/kg dry	12	3.7	1	6010D	4/23/19 16:26	JAB	P9D0350
Cadmium	0.042 U	mg/kg dry	0.62	0.042	1	6010D	4/23/19 16:26	JAB	P9D0350
Chromium	8.9	mg/kg dry	1.2	0.094	1	6010D	4/23/19 16:26	JAB	P9D0350
Lead	19	mg/kg dry	1.2	0.21	1	6010D	4/23/19 16:26	JAB	P9D0350
Selenium	0.34 U	mg/kg dry	1.2	0.34	1	6010D	4/23/19 16:26	JAB	P9D0350
Silver	0.038 U	mg/kg dry	0.62	0.038	1	6010D	4/23/19 16:26	JAB	P9D0350

Wood Environ. & Infrastructure Solutions (Ch Project: NCDOT Shelby R-2707 D&E
Attn: Andrew Frantz
2801 Yorkmont Rd. #100
Charlotte, NC 28208

Project No.: 1883R2707 Parcel 81
Sample Matrix: Solid

Client Sample ID: P81-SB4-1
Prism Sample ID: 9040277-04
Prism Work Order: 9040277
Time Collected: 04/16/19 15:25
Time Submitted: 04/17/19 08:25

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
General Chemistry Parameters									
% Solids	80.3	% by Weight	0.100	0.100	1	SM2540 G	4/25/19 10:15	KBS	P9D0447
Total Metals									
Mercury	0.024 J	mg/kg dry	0.062	0.022	1	7471B	4/22/19 13:08	MMR	P9D0347
Arsenic	3.8	mg/kg dry	1.2	0.16	1	6010D	4/23/19 16:50	JAB	P9D0350
Barium	34	mg/kg dry	12	3.7	1	6010D	4/23/19 16:50	JAB	P9D0350
Cadmium	0.042 U	mg/kg dry	0.62	0.042	1	6010D	4/23/19 16:50	JAB	P9D0350
Chromium	13	mg/kg dry	1.2	0.094	1	6010D	4/23/19 16:50	JAB	P9D0350
Lead	22	mg/kg dry	1.2	0.21	1	6010D	4/23/19 16:50	JAB	P9D0350
Selenium	0.34 U	mg/kg dry	1.2	0.34	1	6010D	4/23/19 16:50	JAB	P9D0350
Silver	0.038 U	mg/kg dry	0.62	0.038	1	6010D	4/23/19 16:50	JAB	P9D0350

Wood Environ. & Infrastructure Solutions (Ch Project: NCDOT Shelby R-2707 D&E
 Attn: Andrew Frantz
 2801 Yorkmont Rd. #100
 Charlotte, NC 28208

Project No.: 1883R2707 Parcel 81
 Sample Matrix: Solid

Client Sample ID: P81-SB5-1
 Prism Sample ID: 9040277-05
 Prism Work Order: 9040277
 Time Collected: 04/16/19 15:35
 Time Submitted: 04/17/19 08:25

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
General Chemistry Parameters									
% Solids	77.5	% by Weight	0.100	0.100	1	SM2540 G	4/25/19 10:15	KBS	P9D0447
Total Metals									
Mercury	0.022 U	mg/kg dry	0.065	0.022	1	7471B	4/22/19 13:17	MMR	P9D0347
Arsenic	2.0	mg/kg dry	1.3	0.17	1	6010D	4/23/19 16:59	JAB	P9D0350
Barium	27	mg/kg dry	13	3.9	1	6010D	4/23/19 16:59	JAB	P9D0350
Cadmium	0.044 U	mg/kg dry	0.65	0.044	1	6010D	4/23/19 16:59	JAB	P9D0350
Chromium	4.2	mg/kg dry	1.3	0.098	1	6010D	4/23/19 16:59	JAB	P9D0350
Lead	23	mg/kg dry	1.3	0.22	1	6010D	4/23/19 16:59	JAB	P9D0350
Selenium	0.36 U	mg/kg dry	1.3	0.36	1	6010D	4/23/19 16:59	JAB	P9D0350
Silver	0.040 U	mg/kg dry	0.65	0.040	1	6010D	4/23/19 16:59	JAB	P9D0350

Wood Environ. & Infrastructure Solutions (Ch Project: NCDOT Shelby R-2707 D&E
Attn: Andrew Frantz
2801 Yorkmont Rd. #100
Charlotte, NC 28208

Project No.: 1883R2707 Parcel 81
Sample Matrix: Solid

Client Sample ID: P81-SB6-2
Prism Sample ID: 9040277-06
Prism Work Order: 9040277
Time Collected: 04/16/19 15:45
Time Submitted: 04/17/19 08:25

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
General Chemistry Parameters									
% Solids	78.7	% by Weight	0.100	0.100	1	SM2540 G	4/25/19 10:15	KBS	P9D0447
Total Metals									
Mercury	0.052 J	mg/kg dry	0.064	0.022	1	7471B	4/22/19 13:21	MMR	P9D0347
Arsenic	8.8	mg/kg dry	1.3	0.17	1	6010D	4/23/19 17:07	JAB	P9D0350
Barium	67	mg/kg dry	13	3.8	1	6010D	4/23/19 17:07	JAB	P9D0350
Cadmium	0.043 U	mg/kg dry	0.64	0.043	1	6010D	4/23/19 17:07	JAB	P9D0350
Chromium	36	mg/kg dry	1.3	0.096	1	6010D	4/23/19 17:07	JAB	P9D0350
Lead	30	mg/kg dry	1.3	0.21	1	6010D	4/23/19 17:07	JAB	P9D0350
Selenium	0.35 U	mg/kg dry	1.3	0.35	1	6010D	4/23/19 17:07	JAB	P9D0350
Silver	0.039 U	mg/kg dry	0.64	0.039	1	6010D	4/23/19 17:07	JAB	P9D0350

Wood Environ. & Infrastructure Solutions (Ch Project: NCDOT Shelby R-2707 D&E
 Attn: Andrew Frantz
 2801 Yorkmont Rd. #100
 Charlotte, NC 28208

Prism Work Order: 9040277
 Time Submitted: 4/17/2019 8:25:00AM

Project No: 1883R2707 Parcel 81

Total Metals - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P9D0347 - 7471B										
Blank (P9D0347-BLK1) Prepared & Analyzed: 04/22/19										
Mercury	BRL	0.050	mg/kg wet							
LCS (P9D0347-BS1) Prepared & Analyzed: 04/22/19										
Mercury	0.446	0.050	mg/kg wet	0.4167		107	80-120			
Batch P9D0350 - 3050B										
Blank (P9D0350-BLK1) Prepared: 04/22/19 Analyzed: 04/23/19										
Arsenic	BRL	1.0	mg/kg wet							
Barium	BRL	10	mg/kg wet							
Cadmium	BRL	0.50	mg/kg wet							
Chromium	BRL	1.0	mg/kg wet							
Lead	BRL	1.0	mg/kg wet							
Selenium	BRL	1.0	mg/kg wet							
Silver	BRL	0.50	mg/kg wet							
LCS (P9D0350-BS1) Prepared: 04/22/19 Analyzed: 04/23/19										
Arsenic	11.7	1.0	mg/kg wet	12.50		94	80-120			
Barium	12.1	10	mg/kg wet	12.50		96	80-120			
Cadmium	11.9	0.50	mg/kg wet	12.50		95	80-120			
Chromium	12.0	1.0	mg/kg wet	12.50		96	80-120			
Lead	11.8	1.0	mg/kg wet	12.50		94	80-120			
Selenium	11.6	1.0	mg/kg wet	12.50		93	80-120			
Silver	4.65	0.50	mg/kg wet	5.000		93	80-120			

Sample Extraction Data

Prep Method: Solids, Dry Weight

Lab Number	Batch	Initial	Final	Date/Time
9040277-01	P9D0447	30 g	30 g	04/25/19 8:48
9040277-02	P9D0447	30 g	30 g	04/25/19 8:48
9040277-03	P9D0447	30 g	30 g	04/25/19 8:48
9040277-04	P9D0447	30 g	30 g	04/25/19 8:48
9040277-05	P9D0447	30 g	30 g	04/25/19 8:48
9040277-06	P9D0447	30 g	30 g	04/25/19 8:48

Prep Method: 3050B

Lab Number	Batch	Initial	Final	Date/Time
9040277-01	P9D0350	2 g	50 mL	04/22/19 8:05
9040277-02	P9D0350	2 g	50 mL	04/22/19 8:05
9040277-03	P9D0350	2 g	50 mL	04/22/19 8:05
9040277-04	P9D0350	2 g	50 mL	04/22/19 8:05
9040277-05	P9D0350	2 g	50 mL	04/22/19 8:05
9040277-06	P9D0350	2 g	50 mL	04/22/19 8:05

Prep Method: 7471B

Lab Number	Batch	Initial	Final	Date/Time
9040277-01	P9D0347	0.6 g	50 mL	04/22/19 10:45
9040277-02	P9D0347	0.6 g	50 mL	04/22/19 10:45
9040277-03	P9D0347	0.6 g	50 mL	04/22/19 10:45
9040277-04	P9D0347	0.6 g	50 mL	04/22/19 10:45
9040277-05	P9D0347	0.6 g	50 mL	04/22/19 10:45
9040277-06	P9D0347	0.6 g	50 mL	04/22/19 10:45



Full-Service Analytical & Environmental Solutions

449 Springbrook Road • Charlotte, NC 28217
Phone 704/529-6364 • Fax: 704/525-0409

Client Company Name: Wood
Report To/Contact Name: Andrew Frantz
Reporting Address: 2801 Yorkmont Rd
Charlotte, NC
Phone: 704-351-5542 Fax (Yes) (No):
Email Address: Andrew.Frantz@woodplc.com
EDD Type: PDF Excel Other
Site Location Name: Parcel 81
Site Location Physical Address: Shelby, NC

CHAIN OF CUSTODY RECORD

PAGE 1 OF 1 QUOTE # TO ENSURE PROPER BILLING: _____

Project Name: NC DOT Shelby
Short Hold Analysis: (Yes) (No) UST Project: (Yes) (No)
*Please ATTACH any project specific reporting (QC LEVEL I II III IV) provisions and/or QC Requirements
Invoice To: Andrew Frantz
Address: Jackie.Williams@woodplc.com

LAB USE ONLY			
	YES	NO	N/A
Samples INTACT upon arrival?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Received ON WET ICE?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PROPER PRESERVATIVES indicated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Received WITHIN HOLDING TIMES?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CUSTODY SEALS INTACT?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
VOLATILES rec'd W/OUT HEADSPACE?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PROPER CONTAINERS used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TEMP: Therm ID: <u>127-15</u> Observed: <u>1.5</u> °C / Corr: <u>1.6</u> °C			

Page 12 of 12

Purchase Order No./Billing Reference 1883 R2707
Requested Due Date 1 Day 2 Days 3 Days 4 Days 5 Days
"Working Days" 6-9 Days Standard 10 days Rush Work Must Be Pre-Approved
Samples received after 14:00 will be processed next business day.
Turnaround time is based on business days, excluding weekends and holidays.
(SEE REVERSE FOR TERMS & CONDITIONS REGARDING SERVICES RENDERED BY PRISM LABORATORIES, INC. TO CLIENT)

TO BE FILLED IN BY CLIENT/SAMPLING PERSONNEL
Certification: NELAC DoD FL NC
SC OTHER N/A
Water Chlorinated: YES NO
Sample Iced Upon Collection: YES NO

CLIENT SAMPLE DESCRIPTION	DATE COLLECTED	TIME COLLECTED MILITARY HOURS	MATRIX (SOIL, WATER OR SLUDGE)	SAMPLE CONTAINER			PRESERVATIVES	ANALYSIS REQUESTED	REMARKS	PRISM LAB ID NO.
				*TYPE SEE BELOW	NO.	SIZE				
P81-SB1-1	4/16/19	1500	Soil	CG	1	4oz	None	X		01
P81-SB2-1		1505						X		02
P81-SB3-2		1515						X		03
P81-SB4-1		1525						X		04
P81-SB5-1		1535						X		05
P81-SB6-2		1545						X		06

Sampler's Signature [Signature] Sampled By (Print Name) Devick Hagdin Affiliation Wood

PRESS DOWN FIRMLY - 3 COPIES

Upon relinquishing, this Chain of Custody is your authorization for Prism to proceed with the analyses as requested above. Any changes must be submitted in writing to the Prism Project Manager. There will be charges for any changes after analyses have been initialized.

Relinquished By: (Signature) <u>[Signature]</u>	Received By: (Signature) <u>[Signature]</u>	Date <u>4/17/19</u>	Military/Hours <u>0525</u>
Relinquished By: (Signature) <u>[Signature]</u>	Received By: (Signature) <u>[Signature]</u>	Date <u>4.17.19</u>	Military/Hours <u>0525</u>
Relinquished By: (Signature) <u>[Signature]</u>	Received For Prism Laboratories By: <u>[Signature]</u>	Date <u>4.17.19</u>	Military/Hours <u>0525</u>
Method of Shipment: NOTE: ALL SAMPLE COOLERS SHOULD BE TAPED SHUT WITH CUSTODY SEALS FOR TRANSPORTATION TO THE LABORATORY. SAMPLES ARE NOT ACCEPTED AND VERIFIED AGAINST COC UNTIL RECEIVED AT THE LABORATORY.			COC Group No. <u>9040277</u>

Additional Comments:
Site Arrival Time:
Site Departure Time:
Field Tech Fee:
Mileage:

PRISM USE ONLY	
Site Arrival Time:	
Site Departure Time:	
Field Tech Fee:	
Mileage:	

Fed Ex UPS Hand-delivered Prism Field Service Other
 NPDES: NC SC UST: NC SC GROUNDWATER: NC SC DRINKING WATER: NC SC SOLID WASTE: NC SC RCRA: NC SC CERCLA: NC SC LANDFILL: NC SC OTHER: NC SC

SEE REVERSE FOR TERMS & CONDITIONS

*CONTAINER TYPE CODES: A = Amber C = Clear G = Glass P = Plastic; TL = Teflon-Lined Cap VOA = Volatile Organics Analysis (Zero Head Space)

ORIGINAL



**North Carolina Department of Transportation
Preliminary Site Assessment
State Project: R-2707E
WBS Element: 34497.1.2
Cleveland County**

**Parcel 609
Robert Gregory Randall
4919 East Dixon Boulevard
Kings Mountain, North Carolina
May 20, 2019**

**Wood Environment and Infrastructure Solutions, Inc.
Project: 1883R2707**

Andrew Frantz, REM
Senior Scientist

John Maas, LG
Senior Geologist

DocuSigned by:

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APPENDICES

Appendix A	Photographic Log
Appendix B	Boring Logs
Appendix C	Geophysical Report
Appendix D	UVF Hydrocarbon Analytical Results
Appendix E	Laboratory Analytical Report and Chain-of-Custody Form

1.0 INTRODUCTION

In response to the North Carolina Department of Transportation (NCDOT) Request for Proposal, dated March 27, 2019, Wood Environment and Infrastructure Solutions, Inc. (Wood) has performed a Preliminary Site Assessment (PSA) for Parcel 609. The investigation was conducted in accordance with Wood’s Technical and Cost proposal dated April 5, 2019 and revised April 11, 2019. NCDOT contracted Wood to perform the PSA at the parcel, within the area to be affected by future road construction activities, in order to identify potential impacts from the former use of the property.

The parcel is located at 4919 East Dixon Boulevard along the northern side of East Dixon Boulevard as shown on the Vicinity Map, **Figure 1**. At the time of this PSA, the parcel was occupied by an auto repair facility (Cleveland Transmission Service). It is identified as Parcel 609 and Robert Gregory Randall (Site) within the NCDOT R-2707E design file. The parcel is in Kings Mountain of Cleveland County, North Carolina. The area of investigation within the parcel is shown on **Figure 2**.

The following report describes our subsurface field investigation at the Site and presents UVF soil analyses and volatile organic compound (VOC) laboratory analysis to evaluate soil contamination within the Site.

1.1 Site History

Based on our historical review, the auto repair facility has occupied the Site since the late 1980s. The Site is not identified on the North Carolina Department of Environmental Quality (NCDEQ) Underground Storage Tank (UST) Facility Database registry and no known groundwater incidents are identified at the Site. No files associated with the Site were available for review on the NCDEQ Laserfiche website.

1.2 Site Description

The Site is located in a mixed-use commercial and residential area of Kings Mountain in Cleveland County and covers approximately 0.93 acres. The Site is occupied by an auto repair facility (Cleveland Transmission Service) with two hydraulic lifts, discarded auto parts, five ASTs (one heating oil and four automobile oil), several 55-gallon drums, used vehicles,

a water-supply well, a floor drain pipe discharge located beneath a canopy-covered portion of the building, and oil-stained areas outside the building. A photographic log of the property is included as **Appendix A**.

2.0 GEOLOGY

2.1 Regional Geology

The Site is located within the Inner Piedmont Belt of the Piedmont Physiographic Province of North Carolina. According to the 1985 State Geologic Map of North Carolina, the area is underlain by massive to weakly foliated Cherryville Granite.

2.2 Site Geology

Site geology was observed through the advancement of 20 shallow soil borings (P609-SB1 to P609-SB20). Borings P609-SB1 to P609-SB4 and P609-SB6 to P609-SB13 were advanced using a direct-push rig and targeted a total depth of four to eight feet below ground surface (bgs). Boring P609-SB7 encountered rig refusal at two feet bgs. Borings P609-SB5 and P609-SB14 to P609-SB20 were advanced using a stainless-steel hand auger due to limited rig access and targeted a total depth of three feet bgs. Boring P609-SB14 encountered refusal at 2.5 feet bgs. Figure 2 presents the boring locations and site layout. Soils encountered in the borings consisted mostly of red to tan to brown silty clays and sand. Petroleum odor and staining was observed in borings P609-SB5, P609-SB12, and P609-SB17. Groundwater was not encountered in the borings. Based on observations of topography of the Site vicinity, the groundwater flow direction is inferred to be generally to the north. Boring logs are presented in **Appendix B**.

3.0 FIELD ACTIVITIES

3.1 Preliminary Activities

Prior to commencing field sampling activities at the Site, several tasks were accomplished in preparation for the subsurface investigation. A Health and Safety Plan (HASP) was created

including the Site-specific health and safety information necessary for the field activities. North Carolina 811 was contacted on April 9, 2019 to report the proposed sampling activities and subsequently notify affected utilities for the parcel. Probe Utility Locating (PUL) was retained by Wood to perform utility locating and GEL Solutions (GEL) was procured by Wood to perform a geophysical survey at the Site. South Atlantic Environmental Drilling and Construction Co. Inc. (SAEDACCO) was selected to conduct the direct-push drilling services at the Site and RED Lab instrumentation was scheduled for the use in the on-site UVF analysis.

Wood understands that acquisition of the expanded right-of-way is necessary for the construction of the US 74 – Shelby Bypass. Boring locations were strategically placed within the parcel to maximize the opportunity to encounter potential contaminated soil.

3.2 Site Reconnaissance

Wood personnel performed a Site reconnaissance with property owner notification on April 9, 2019. During the Site reconnaissance, the area was visually examined for the presence of any areas/obstructions that could potentially affect the subsurface investigation. An auto repair facility (Cleveland Transmission Service) with two hydraulic lifts, discarded auto parts, five ASTs (one heating oil and four automobile oil), several 55-gallon drums, used vehicles, and a water-supply well were observed at the Site.

3.3 Geophysical Survey Results

The geophysical survey of the Site occurred between April 15 and 18, 2019. GEL performed a time-domain electromagnetic (TDEM) survey of the Site with a ground penetrating radar (GPR) survey conducted across select EM anomalies. The TDEM equipment was not used in areas of the Site containing numerous large metallic objects (vehicles, drums, and ASTs) because of possible interference from the objects. However, a GPR survey was still conducted in the areas where space allowed. The GEL geophysical report is presented as **Appendix C**. GEL reported five anomalies within the area of investigation with four attributed to visible cultural features at the ground surface including signs and a fence. The remaining anomaly was attributed to a potential buried utility traversing the Site. No subsurface geophysical anomalies indicating the presence of USTs were detected by GEL within the limits of the area of investigation at the Site.

3.4 Soil Sampling

On April 18, 2019, Wood and SAEDACCO mobilized to the Site to advanced 20 shallow soil borings at the Site across the area of investigation. Borings advanced via a direct-push rig were advanced to depths ranging from two to eight feet below ground surface (bgs). Borings were advanced with the rig to a minimum depth of four feet bgs (unless refusal was encountered), as sources of potential impacts were at or above the ground surface and NCDOT R-2707E design files indicate shallow soil disturbance or cutting during road construction activities. Borings that were advanced deeper (eight feet bgs) were chosen for deeper potential contaminant screening and observation of underlying soil characteristics. Borings advance via a stainless-steel hand auger were advanced to a maximum depth of three feet bgs. Borings were focused near the ASTs, drums, a floor drain discharge pipe located beneath the canopied portion of the building, used vehicles and stained areas at the Site, with a few borings spread around the Site. Soil borings were not advanced inside the building near the hydraulic lifts due to limited access caused by current operations at the Site.

The purpose of the soil sampling was to determine if a petroleum release had impacted the Site and if so, to estimate the volume of impacted soil that might require special handling during NCDOT construction activities. To minimize potential for cross-contamination between boring locations with the direct-push rig, a new PVC liner (tube) was inserted into the sampler for each soil interval and the hand auger was decontaminated between boring locations using a Liquinox[®] wash and distilled water rinse. Soil sampling was accompanied by field screening. Wood conducted field screening for VOCs of the soil borings with a photoionization detector (PID). The direct-push soil borings were screened with the PID at two-foot intervals while the hand auger borings were screened at one-foot intervals. A portion of the interval of the soil boring exhibiting the highest PID reading was retained for analysis of total petroleum hydrocarbons (TPH), diesel range organics (DRO), gasoline range organics (GRO), benzene, toluene, ethylbenzene, and xylene (BTEX), total aromatics, and polycyclic aromatic hydrocarbons (PAH) soil via ultraviolet fluorescence (UVF). Twenty-three total samples were collected from the Site from the borings for UVF analysis.

Portions of select samples (P609-SB5-0-1, P609-SB5-2-3, P609-SB12-0-2, and P609-SB16-0-1, and P609-SB17-0-1) were also retained for laboratory analysis and placed in laboratory provided containers and immediately placed on ice. The samples were delivered under

standard chain-of-custody protocol via courier to Prism Laboratories, Inc. (Prism) in Charlotte, North Carolina and analyzed for VOCs via EPA Method 8260. Five samples were collected from the borings for VOC laboratory analysis.

4.0 SOIL SAMPLING RESULTS

Based on PID field screening and UVF hydrocarbon analysis from April 18, 2019, evidence of petroleum hydrocarbon impacts were identified in borings P609-SB5, P609-SB12, and P609-SB17.

4.1 Soil Screening and UVF Analyses

PID readings for the 20 borings ranged from 2.2 parts per million (ppm) in sample P609-SB12-4-6 collected from four to six feet bgs to 117.2 ppm in sample P609-SB5-0-1 collected from the ground surface to one foot bgs. The PID field screening results are summarized in **Table 1** and provided on the boring logs in Appendix B.

Results from the UVF petroleum soil analyses are presented in **Table 2**, with instrument generated tables in **Appendix D**. Several categories of analyses were measured such as: DRO, GRO, TPH, PAHs, and total aromatics. **Figure 3** presents the GRO and DRO results at each boring.

Elevated TPH values above the NCDEQ Action Limit of 50 milligrams per kilogram (mg/kg) for GRO were not detected in the 23 samples collected from the borings. Elevated levels above the NCDEQ Action Limit of 100 mg/kg for DRO were detected in samples P609-SB5-0-1 (232.8 mg/kg) located near the drain pipe discharge, P609-SB12-0-2 (215.2 mg/kg), located near the USTs along the western exterior of the building, and P609-SB17-0-1 (159.1 mg/kg) located near the drain pipe discharge. The hydrocarbon results from the QED QROS Hydrocarbon Analyzer are provided in Appendix D.

4.2 Laboratory Analyses

The laboratory analytical report and chain-of-custody form for the soil sample laboratory analyses conducted by Prism is included in **Appendix E**. The results of the five soil samples analyzed for VOCs by Prism are summarized in **Table 3**, as well as below:

- Concentrations of 1,2,4-trimethylbenzene (12 mg/kg), 4-isopropyltoluene (1.2 mg/kg), naphthalene (0.60J mg/kg), and n-propylbenzene (3.7 mg/kg) were identified in sample P609-SB5-0-1 which exceeded their respective NCDEQ Soil-to-Water Maximum Soil Contaminant Concentrations (MSCCs). Note, the naphthalene concentration identified in soil sample P609-SB5-0-1 was J-flagged by Prism indicating the concentration was above the method detection limit but below the reporting limit and is considered an estimate.
- None of the VOC concentrations identified in the deeper sample collected from boring P-609-SB5 (P609-SB5-2-3) or the other three samples collected from the Site exceeded their respective NCDEQ MSCCs.
- None of the VOC concentrations identified in five soil samples at the Site exceeded their respective EPA Composite Worker Regional Screening Levels (RSLs).

5.0 CONCLUSIONS

Based on the Site observations, UVF analysis, and laboratory analysis, petroleum-impacted soil contamination was identified above the NCDEQ Action Limit of 100 mg/kg for DRO in three of the 23 samples collected from the borings advanced at the Site. Concentrations of GRO were not identified above the NCDEQ Action Limit of 50 mg/kg for GRO. In addition, the VOC laboratory analysis identified several VOC concentrations in one of the five soil samples which exceeded their respective NCDEQ Soil-to-Water MSCCs.

The areas of petroleum-impacted soils appear to be located in two areas of the site; near the floor drain pipe discharge and borings P609-SB5 and P609-SB17 and near the USTs along the western exterior of the building and boring P609-SB12. The estimated areas of

impacted soils are shown on **Figure 4**. The estimated impacted soil volume for the area near borings P609-SB5 and P609-SB17 is 486 cubic feet (18 cubic yards) and the volume of the area near boring P609-SB12 is 145 cubic feet (5.4 cubic yards). Both soil volumes are based on an unsaturated thickness of two feet.

6.0 RECOMMENDATIONS

Based on these PSA results, Wood recommends additional interior subsurface assessment be performed at the Site near the hydraulic lifts and floor drains inside the building after the building has been vacated by the current tenant. No further assessment is recommended for the exterior subsurface of the Site, unless additional surface staining is observed after the current tenant has removed materials and containers from the Site. It is understood the areas of impacted soils are located in areas to be impacted by construction activities. Special handling should be performed during excavation in these areas and impacted soil should be disposed properly offsite.

TABLES

Table 1: Summary of PID Screening Results
Parcel 609 - Robert Gregory Randall
Kings Mountain, North Carolina
Wood Project: 1883R2707E

Boring ID	Depth of Sample Interval	PID Reading
P609-SB1	0-2	7.7
P609-SB1	4-6	11.5
P609-SB2	6-8	11.2
P609-SB3	2-4	8.4
P609-SB4	0-2	5.2
P609-SB5	0-1	117.2
P609-SB5	2-3	10.3
P609-SB6	0-2	11.4
P609-SB7	0-1	6.3
P609-SB8	2-4	10.7
P609-SB9	2-4	7.4
P609-SB10	0-2	6.4
P609-SB11	0-2	8.2
P609-SB12	0-2	6.2
P609-SB12	4-6	1.3
P609-SB13	0-2	7.0
P609-SB14	0-1	3.2
P609-SB15	0-1	4.5
P609-SB16	0-1	3.7
P609-SB17	0-1	11.0
P609-SB18	0-1	6.2
P609-SB19	0-1	5.3
P609-SB20	0-1	3.4

Notes:

1. Samples collected on April 18, 2019
2. Depths shown in feet below ground surface (bgs)
3. PID = Photoionization Detector
4. PID readings shown in parts per million (ppm)

Prepared By/Date: AJF 4/25/2019

Checked By/Date: DRH 5/3/2019

Table 2: Summary of UVF Petroleum Soil Results
Parcel 609 - Robert Gregory Randall
Kings Mountain, North Carolina
Wood Project: 1883R2707E

Sample ID Number	Sample Depth	BTEX	GRO	DRO	PAHs
P609-SB1-0-2	0-2	<0.42	<0.42	0.45	0.02
P609-SB1-4-6	4-6	<0.53	<0.53	<0.21	<0.01
P609-SB2-6-8	6-8	<0.46	<0.46	<0.18	<0.009
P609-SB3-2-4	2-4	<0.52	<0.52	<0.21	<0.01
P609-SB4-0-2	0-2	<0.44	<0.44	<0.18	<0.009
P609-SB5-0-1	0-1	<0.78	<0.78	232.8	8.5
P609-SB5-2-3	2-3	<0.45	<0.45	8.9	0.04
P609-SB6-0-2	0-2	<0.42	<0.42	0.44	0.006
P609-SB7-1-2	0-1	<0.38	<0.38	<0.15	<0.008
P609-SB8-2-4	2-4	<0.41	<0.41	<0.16	<0.008
P609-SB9-2-4	2-4	<0.5	<0.5	0.15	0.01
P609-SB10-0-2	0-2	<0.46	<0.46	<0.19	<0.009
P609-SB11-0-2	0-2	<0.4	1.3	13.3	0.09
P609-SB12-0-2	0-2	<0.42	<0.42	215.2	7.9
P609-SB12-4-6	4-6	<0.4	<0.4	0.08	0.007
P609-SB13-0-2	0-2	<0.43	<0.43	4.20	0.02
P609-SB14-0-1	0-1	<0.44	<0.44	0.71	0.05
P609-SB15-0-1	0-1	<0.5	<0.5	1.00	0.09
P609-SB16-0-1	0-1	<0.59	0.59	2.00	0.04
P609-SB17-0-1	0-1	<0.47	<0.47	159.1	4.1
P609-SB18-0-1	0-1	<0.47	<0.47	<0.19	<0.009
P609-SB19-0-1	0-1	<0.41	<0.41	<0.16	<0.008
P609-SB20-0-1	0-1	<0.56	<0.56	0.80	0.02
NC State Action Level		N/A	50	100	N/A

Notes:

1. Samples collected on April 18, 2019
2. Depths shown in feet below ground surface (bgs)
3. Concentrations shown in milligrams per kilogram (mg/kg)
4. BTEX = Benzene, toluene, ethylbenzene, xylene
5. GRO = Gasoline Range Organics
6. DRO = Diesel Range Organics
7. PAHs = Polycyclic aromatic hydrocarbons
8. N/A = Not applicable
9. Bold values exceed respective NC State Action Level

Prepared By/Date: AJF 4/25/2019

Checked By/Date: DRH 5/3/2019

Table 3: Summary of VOC Analytical Results
Parcel 609 - Robert Gregory Randall
Kings Mountain, North Carolina
Wood Project: 1883R2707E

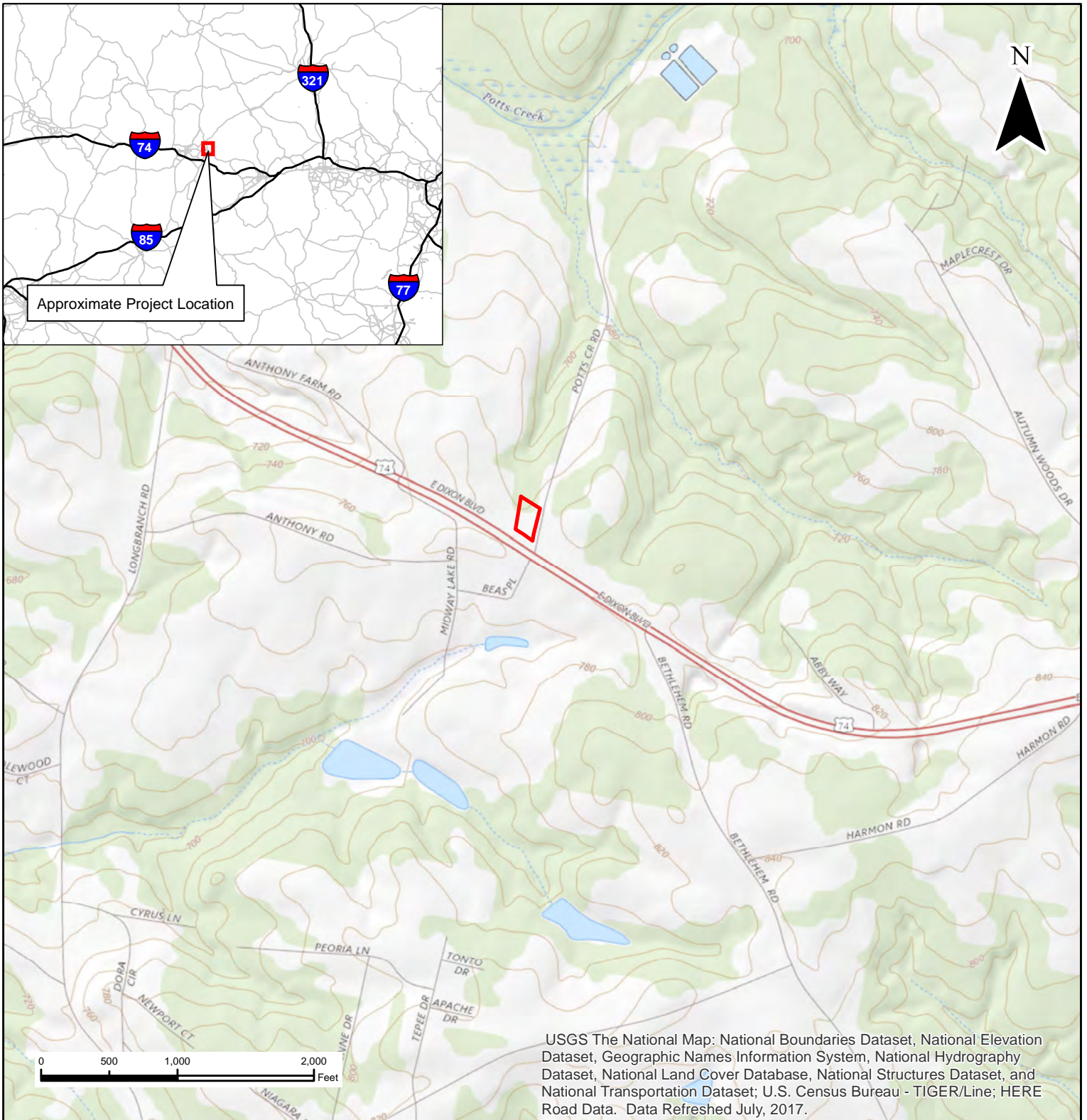
Constituent	P609-SB5-0-1	P609-SB5-2-3	P609-SB12-0-2	P609-SB16-0-1	P609-SB17-0-1	Soil-to-Water MSCCs	Industrial/ Commercial MSCCs	EPA Composite Worker Soil Carcinogenic TR RSLs	EPA Composite Worker Soil Non-carcinogenic HI RSLs
Sample Depth	0-1	2-3	0-2	0-1	0-1				
1,2,4-Trimethylbenzene	12	<0.00059	<0.00052	<0.00067	0.0098J	8.5	20,440	NE	180
1,3,5-Trimethylbenzene	3.3	<0.00070	<0.00062	<0.00079	0.0072J	8.3	20,440	NE	150
4-Isopropyltoluene	1.2	<0.0014	<0.0012	<0.0016	<0.0044	0.12	4,000	NE	NE
Acetone	0.68J	0.043	0.12	0.10	1.1	24	360,000	NE	67,000
Ethylbenzene	0.45	<0.00084	<0.00074	<0.00095	<0.0026	4.9	40,000	25	2,000
Isopropylbenzene (Cumene)	1.3	<0.00065	<0.00057	<0.00073	<0.0020	1.7	40,880	NE	990
m,p-Xylenes	2.1	<0.0014	<0.0013	<0.0016	<0.0044	4.6	81,760	NE	240
Methyl Ethyl Ketone (2-Butanone)	0.97J	0.0044J	0.015J	0.0060J	0.10	16	245,280	NE	19,000
Methyl Isobutyl Ketone	0.27J	<0.00046	0.063	<0.00051	<0.0014	0.40	32,000	NE	14,000
Naphthalene	0.60J	<0.00056	<0.00050	<0.00064	<0.0017	0.16	8,176	17	59
n-Butylbenzene	2.1	<0.00052	<0.00046	<0.00059	<0.0016	4.3	16,350	NE	5,800
n-Propylbenzene	3.7	<0.00081	<0.00071	<0.00091	<0.0025	1.7	16,350	NE	2,400
o-Xylene	2.0	<0.00060	<0.00052	<0.00067	<0.0018	4.6	81,760	NE	280
sec-Butylbenzene	3.2	<0.00060	<0.00053	<0.00068	<0.0019	3.3	16,350	NE	12,000
Xylenes, total	4.1	<0.0020	<0.0018	<0.0023	<0.0062	4.6	81,760	NE	280

Notes:

1. Samples collected on April 18, 2019
2. Concentrations reported in milligrams per kilogram (mg/kg)
3. Depths shown in feet below ground surface (bgs)
4. Bold value indicates concentration exceeds Soil-to-Water MSCC
5. MSCC = NCDEQ Division of Waste Management, Maximum Soil Contaminant Concentration Levels, dated April 2012
6. EPA RSLs = EPA Regional Screening Levels (RSLs), Carcinogenic Target Risk (TR) = 1e-06, Non-carcinogenic Hazard Index (HI) 0.1, dated November 2018
7. J-flag indicates value was identified above method detection limit but below laboratory reporting limit, value is considered an estimate
8. NE = Not established

Prepared By/Date: RPD 5/10/19
Checked By/Date: AJF 5/13/19

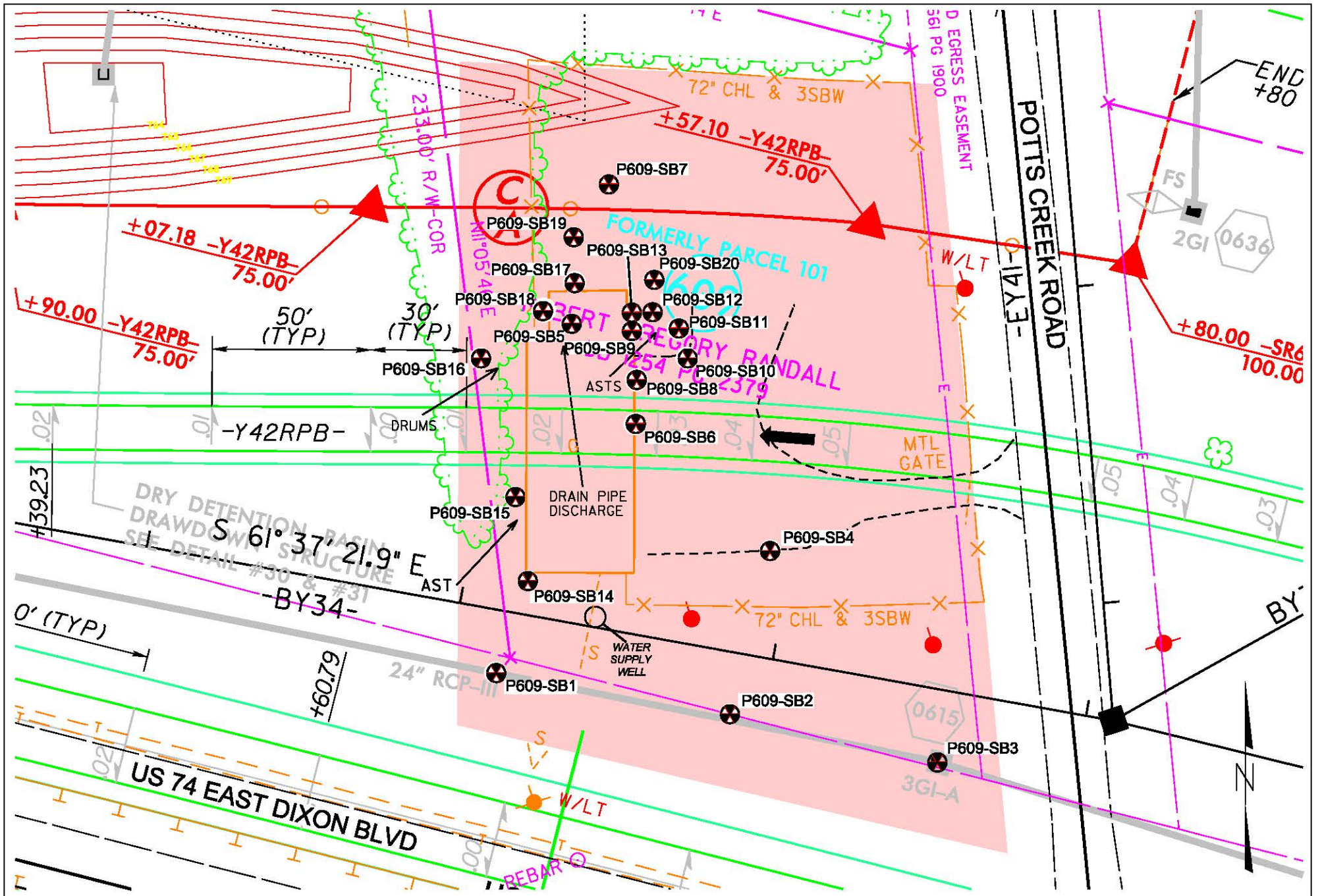
FIGURES



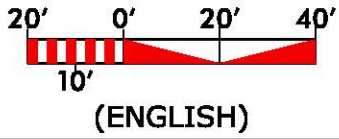
wood.

SITE VICINITY
R2707E - Parcel 609
Robert Gregory Randall
4919 East Dixon Boulevard
Kings Mountain, North Carolina 28086

 Site Boundary



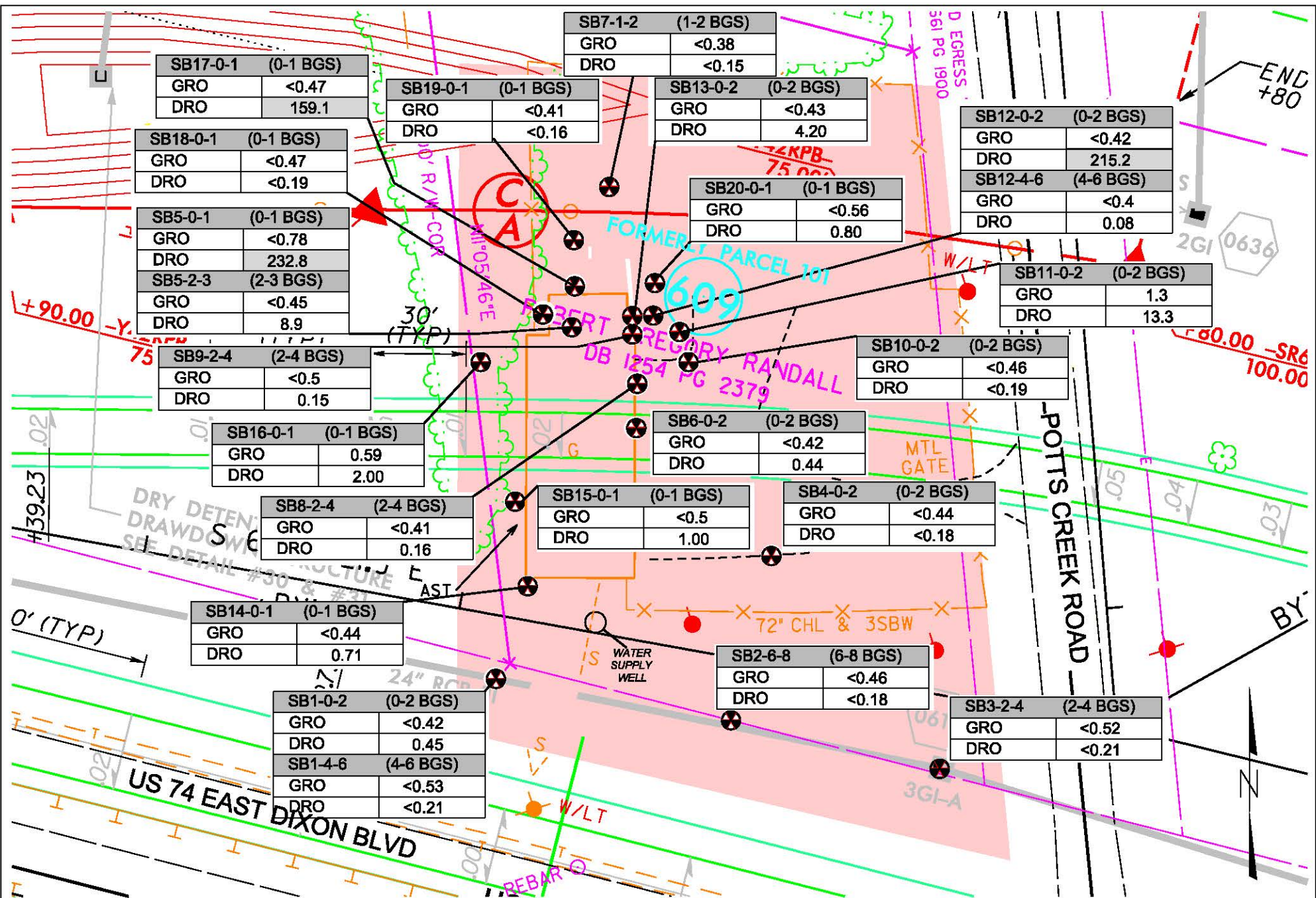
-  BORING LOCATION
-  AREA OF INVESTIGATION



wood.

AREA OF INVESTIGATION WITH SOIL BORING LOCATIONS - PARCEL 609
 ROBERT GREGORY RANDALL PROPERTY
 STATE PROJECT: R-2707E
 WBS ELEMENT: 34497.1.2
 CLEVELAND COUNTY, KINGS MOUNTAIN, NORTH CAROLINA

PREPARED BY: LJM	DATE: 5/13/19	CHECKED BY: HPC	DATE: 5/13/19	JOB NUMBER 188322707	FIGURE 2
---------------------	------------------	--------------------	------------------	-------------------------	-------------



SB17-0-1 (0-1 BGS)	
GRO	<0.47
DRO	159.1

SB7-1-2 (1-2 BGS)	
GRO	<0.38
DRO	<0.15

SB19-0-1 (0-1 BGS)	
GRO	<0.41
DRO	<0.16

SB13-0-2 (0-2 BGS)	
GRO	<0.43
DRO	4.20

SB12-0-2 (0-2 BGS)	
GRO	<0.42
DRO	215.2

SB18-0-1 (0-1 BGS)	
GRO	<0.47
DRO	<0.19

SB5-0-1 (0-1 BGS)	
GRO	<0.78
DRO	232.8

SB5-2-3 (2-3 BGS)	
GRO	<0.45
DRO	8.9

SB20-0-1 (0-1 BGS)	
GRO	<0.56
DRO	0.80

SB12-4-6 (4-6 BGS)	
GRO	<0.4
DRO	0.08

SB9-2-4 (2-4 BGS)	
GRO	<0.5
DRO	0.15

SB11-0-2 (0-2 BGS)	
GRO	1.3
DRO	13.3

SB16-0-1 (0-1 BGS)	
GRO	0.59
DRO	2.00

SB6-0-2 (0-2 BGS)	
GRO	<0.42
DRO	0.44

SB8-2-4 (2-4 BGS)	
GRO	<0.41
DRO	0.16

SB15-0-1 (0-1 BGS)	
GRO	<0.5
DRO	1.00

SB4-0-2 (0-2 BGS)	
GRO	<0.44
DRO	<0.18

SB14-0-1 (0-1 BGS)	
GRO	<0.44
DRO	0.71

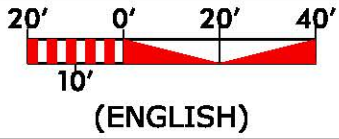
SB2-6-8 (6-8 BGS)	
GRO	<0.46
DRO	<0.18

SB1-0-2 (0-2 BGS)	
GRO	<0.42
DRO	0.45

SB3-2-4 (2-4 BGS)	
GRO	<0.52
DRO	<0.21

SB1-4-6 (4-6 BGS)	
GRO	<0.53
DRO	<0.21

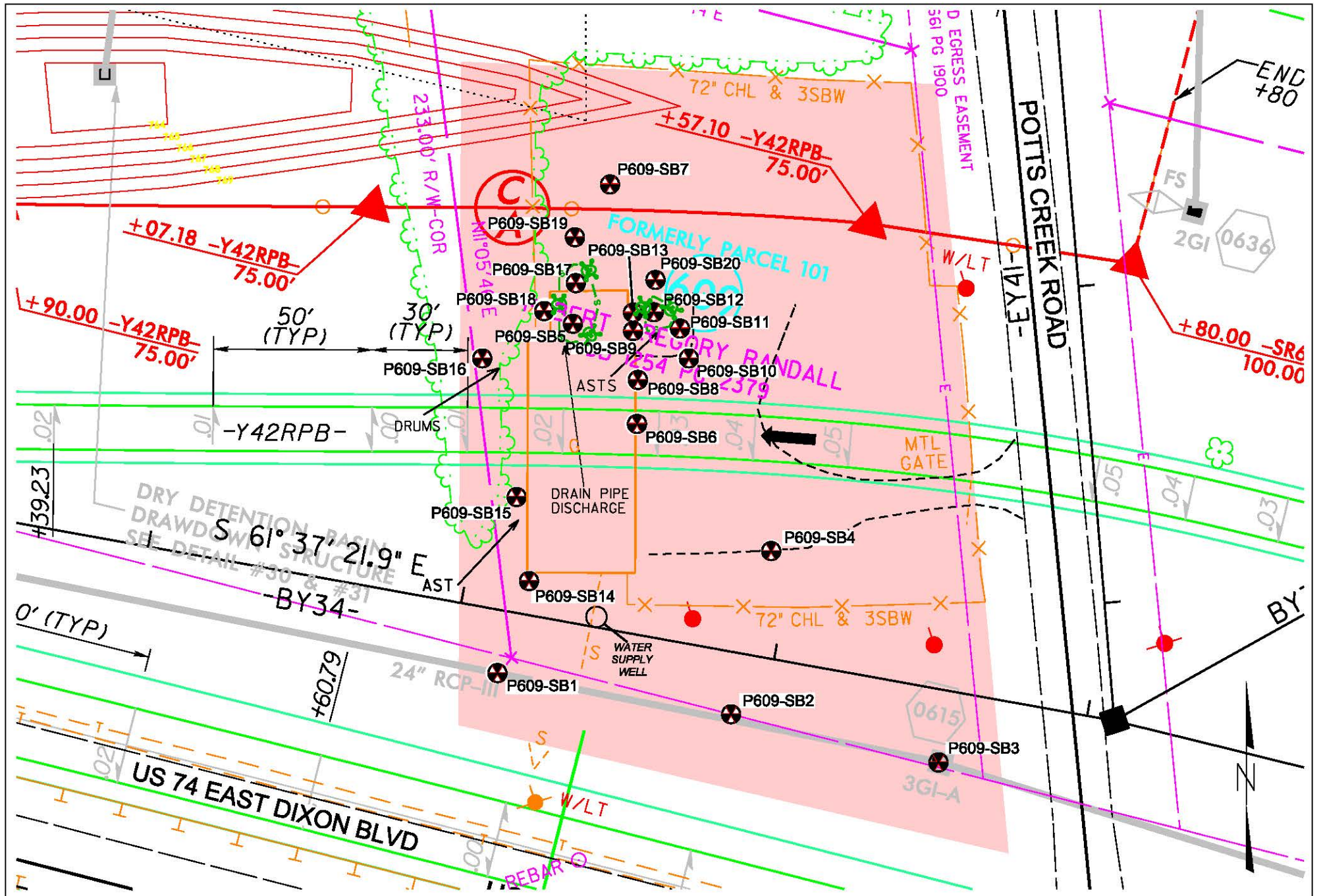
● BORING LOCATION
 ■ AREA OF INVESTIGATION
 GRO=GASOLINE RANGE ORGANICS
 DRO=DIESEL RANGE ORGANICS
 CONCENTRATIONS SHOWN IN MILLIGRAMS PER KILOGRAM (mg/kg)
 SHADED CONCENTRATIONS EXCEED NCEQ STATE ACTION LIMITS
 BGS=FEET BELOW GROUND SURFACE



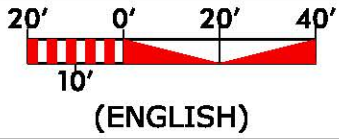
wood.

UVF PETROLEUM RESULTS - PARCEL 609
 ROBERT GREGORY RANDALL PROPERTY
 STATE PROJECT: R-2707E
 WBS ELEMENT: 34497.1.2
 CLEVELAND COUNTY, KINGS MOUNTAIN, NORTH CAROLINA

PREPARED BY: LUM	DATE: 5/13/19	CHECKED BY: HPC	DATE: 5/13/19	JOB NUMBER: 188322707	FIGURE: 3
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- BORING LOCATION
- AREA OF INVESTIGATION
- KNOWN CONTAMINATION - SOIL



wood.

KNOWN CONTAMINATION AREA - PARCEL 609
 ROBERT GREGORY RANDALL PROPERTY
 STATE PROJECT: R-2707E
 WBS ELEMENT: 34497.1.2
 CLEVELAND COUNTY, KINGS MOUNTAIN, NORTH CAROLINA

PREPARED BY: LJM	DATE: 5/13/19	CHECKED BY: HPC	DATE: 5/13/19	JOB NUMBER 188322707	FIGURE 4
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APPENDIX A
PHOTOGRAPHIC LOG



PHOTO 1:

View west of the front/
east side of the site
building and auto
storage yard.

Photo date: 4/18/2019

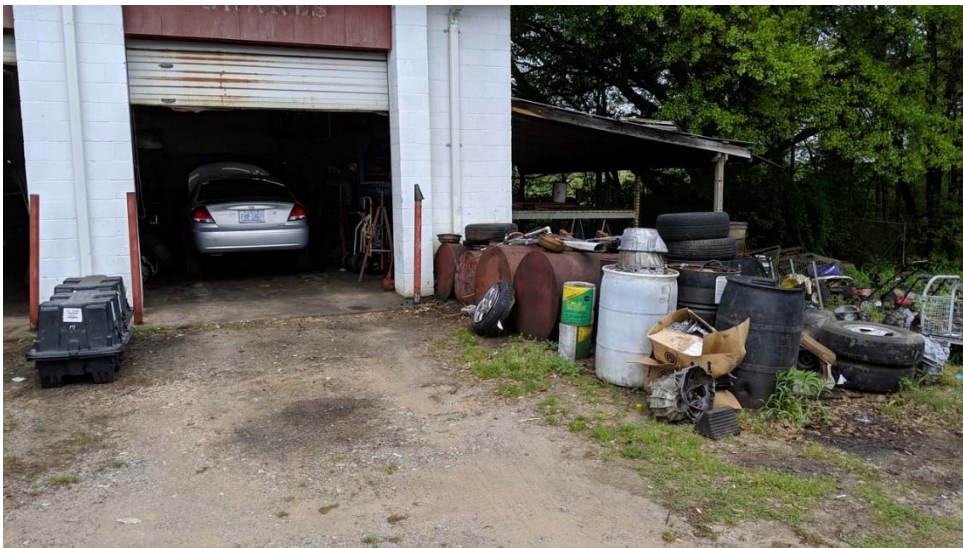


PHOTO 2:

View of a vehicle repair
bay, ground surface
staining, ASTs, and
drums near the
northeast corner of the
Site building facing
west.

Photo date: 4/18/2019



PHOTO 3:

View of vehicle repair bays, ground surface staining, ASTs, and drums near the northeast corner of the Site building facing southwest.

Photo date: 4/18/2019



PHOTO 4:

View of staining near P609-SB13 and an AST at the northeast corner of the Site building.

Photo date: 4/18/2019



PHOTO 5:

View of staining near P609-SB12 and drums at the northeast corner of the Site building.

Photo date: 4/18/2019



PHOTO 6:

View south of a heating oil AST on the west side of the Site building.

Photo date: 4/18/2019



PHOTO 7:

View west of drums and buckets behind/ west of the Site building.

Photo date: 4/18/2019



PHOTO 8:

View north of the south side of the site building. An air compressor can be seen left, and a water supply well can be seen right.

Photo date: 4/18/2019

APPENDIX B
BORING LOGS

SOIL BORING FIELD WORKSHEET

BORING #	P609-SB1	BORING DEPTH (ft)	8	NUMBER OF PAGES	1
PROJECT #	1883R2707	PROJECT NAME	NCDOT Shelby R-2707E		
DATE DRILLED	4/18/2019	WEATHER CONDITIONS	79°F Sunny		
DRILLING SUB-CONTRACTOR	SAEDACCO	DRILL RIG	Geoprobe 54DT		

DEPTH (ft bgs)	PID (ppm)	SOIL DESCRIPTION	SAMPLE INFO
1		Top soil and grass	
2	7.7	Red silty CLAY	
3		Red tan silty CLAY	
4	7.4		
5			
6	11.5		
7			
8	10.2		
9		Boring terminated at 8ft. UVF sample taken at 0-2 and 4-6ft.	
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Log Completed By: DRH

Page: 1

SOIL BORING FIELD WORKSHEET

BORING #	P609-SB2	BORING DEPTH (ft)	8	NUMBER OF PAGES	1
PROJECT #	1883R2707	PROJECT NAME	NCDOT Shelby R-2707E		
DATE DRILLED	4/18/2019	WEATHER CONDITIONS	79°F Sunny		
DRILLING SUB-CONTRACTOR	SAEDACCO	DRILL RIG	Geoprobe 54DT		

DEPTH (ft bgs)	PID (ppm)	SOIL DESCRIPTION	SAMPLE INFO
1		Dark brown silty CLAY	
2	7.1	Tan silty CLAY	
3			
4	7.2	Tan and white PARTIALLY WEATHERED ROCK	
5			
6	7.1		
7			
8	11.2	Boring terminated at 8ft. UVF sample taken at 6-8ft.	
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Log Completed By: DRH

Page: 1

SOIL BORING FIELD WORKSHEET

BORING #	P609-SB3	BORING DEPTH (ft)	8	NUMBER OF PAGES	1
PROJECT #	1883R2707	PROJECT NAME	NCDOT Shelby R-2707E		
DATE DRILLED	4/18/2019	WEATHER CONDITIONS	79°F Sunny		
DRILLING SUB-CONTRACTOR	SAEDACCO	DRILL RIG	Geoprobe 54DT		

DEPTH (ft bgs)	PID (ppm)	SOIL DESCRIPTION	SAMPLE INFO
1		Dark brown silty CLAY	
2	5.9	Red silty CLAY	
3			
4	8.4		
5			
6	7.6		
7			
8	8.1		
9			Boring terminated at 8ft. UVF sample taken at 2-4ft.
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Log Completed By: DRH

Page: 1

SOIL BORING FIELD WORKSHEET

BORING #	P609-SB5	BORING DEPTH (ft)	3	NUMBER OF PAGES	1
PROJECT #	1883R2707	PROJECT NAME	NCDOT Shelby R-2707E		
DATE DRILLED	4/18/2019	WEATHER CONDITIONS	79°F Sunny		
DRILLING SUB-CONTRACTOR	SAEDACCO	DRILL RIG	Hand Auger		

DEPTH (ft bgs)	PID (ppm)	SOIL DESCRIPTION	SAMPLE INFO
1	117.2	Black moist fine-grained sandy CLAY w/roots and leaves	
2	36.3	Tan and red silty CLAY	
3	10.3		
4			
5		Boring terminated at 3ft. UVF sample taken at 0-1 and 2-3ft. Sample for off-site analysis taken at 0-1 and 2-3.	
6			
7			
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Log Completed By: DRH

Page: 1

SOIL BORING FIELD WORKSHEET

BORING #	P609-SB6	BORING DEPTH (ft)	8	NUMBER OF PAGES	1
PROJECT #	1883R2707	PROJECT NAME	NCDOT Shelby R-2707E		
DATE DRILLED	4/18/2019	WEATHER CONDITIONS	79°F Sunny		
DRILLING SUB-CONTRACTOR	SAEDACCO	DRILL RIG	Geoprobe 54DT		

DEPTH (ft bgs)	PID (ppm)	SOIL DESCRIPTION	SAMPLE INFO
1		Dark brown and red silty CLAY	
2	11.4		
3		Red silty CLAY	
4	10.3		
5			
6	11.0		
7			
8	10.9		
9		Boring terminated at 8ft. UVF sample taken at 0-2ft.	
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Log Completed By: DRH

Page: 1

SOIL BORING FIELD WORKSHEET

BORING #	P609-SB7	BORING DEPTH (ft)	2	NUMBER OF PAGES	1
PROJECT #	1883R2707	PROJECT NAME	NCDOT Shelby R-2707E		
DATE DRILLED	4/18/2019	WEATHER CONDITIONS	79°F Sunny		
DRILLING SUB-CONTRACTOR	SAEDACCO	DRILL RIG	Geoprobe 54DT		

DEPTH (ft bgs)	PID (ppm)	SOIL DESCRIPTION	SAMPLE INFO
1	6.3	Red brown silty CLAY	
2	5.4		
3		Boring refusal at 2ft. UVF sample taken at 0-1ft.	
4			
5			
6			
7			
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Log Completed By: DRH

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SOIL BORING FIELD WORKSHEET

BORING #	P609-SB9	BORING DEPTH (ft)	4	NUMBER OF PAGES	1
PROJECT #	1883R2707	PROJECT NAME	NCDOT Shelby R-2707E		
DATE DRILLED	4/18/2019	WEATHER CONDITIONS	79°F Sunny		
DRILLING SUB-CONTRACTOR	SAEDACCO	DRILL RIG	Geoprobe 54DT		

DEPTH (ft bgs)	PID (ppm)	SOIL DESCRIPTION	SAMPLE INFO
1		Brown silty CLAY	
2	6.9		
3		Red silty CLAY	
4	7.4		
5		Boring terminated at 4ft. UVF sample taken at 2-4ft.	
6			
7			
8			
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SOIL BORING FIELD WORKSHEET

BORING #	P609-SB10	BORING DEPTH (ft)	4	NUMBER OF PAGES	1
PROJECT #	1883R2707	PROJECT NAME	NCDOT Shelby R-2707E		
DATE DRILLED	4/18/2019	WEATHER CONDITIONS	79°F Sunny		
DRILLING SUB-CONTRACTOR	SAEDACCO	DRILL RIG	Geoprobe 54DT		

DEPTH (ft bgs)	PID (ppm)	SOIL DESCRIPTION	SAMPLE INFO
1		Brown silty CLAY	
2	6.4		
3		Red and brown silty CLAY	
4	6.0		
5		Boring terminated at 4ft. UVF sample taken at 0-2ft.	
6			
7			
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Page: 1

SOIL BORING FIELD WORKSHEET

BORING #	P609-SB11	BORING DEPTH (ft)	4	NUMBER OF PAGES	1
PROJECT #	1883R2707	PROJECT NAME	NCDOT Shelby R-2707E		
DATE DRILLED	4/18/2019	WEATHER CONDITIONS	79°F Sunny		
DRILLING SUB-CONTRACTOR	SAEDACCO	DRILL RIG	Geoprobe 54DT		

DEPTH (ft bgs)	PID (ppm)	SOIL DESCRIPTION	SAMPLE INFO
1		Brown silty CLAY	
2	8.2		
3		Red and brown silty CLAY	
4	7.0		
5		Boring terminated at 4ft. UVF sample taken at 0-2ft.	
6			
7			
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Log Completed By: DRH

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SOIL BORING FIELD WORKSHEET

BORING #	P609-SB12	BORING DEPTH (ft)	8	NUMBER OF PAGES	1
PROJECT #	1883R2707	PROJECT NAME	NCDOT Shelby R-2707E		
DATE DRILLED	4/18/2019	WEATHER CONDITIONS	79°F Sunny		
DRILLING SUB-CONTRACTOR	SAEDACCO	DRILL RIG	Geoprobe 54DT		

DEPTH (ft bgs)	PID (ppm)	SOIL DESCRIPTION	SAMPLE INFO
1		Dark stained silty CLAY	
2	6.2	Red silty CLAY	
3		Brown and red silty CLAY	
4	1.2		
5			
6	1.3		
7		Red silty CLAY	
8	2.2		
9		Boring terminated at 8ft. Initial push to 4ft then returned to advance to 8ft. Dark staining at surface. UVF sample taken at 0-2 and 4-6ft. Sample for off-site analysis taken at 0-2ft at 1420.	
10			
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Log Completed By: DRH

Page: 1

SOIL BORING FIELD WORKSHEET

BORING #	P609-SB13	BORING DEPTH (ft)	2	NUMBER OF PAGES	1
PROJECT #	1883R2707	PROJECT NAME	NCDOT Shelby R-2707E		
DATE DRILLED	4/18/2019	WEATHER CONDITIONS	79°F Sunny		
DRILLING SUB-CONTRACTOR	n/a	DRILL RIG	Hand Auger		

DEPTH (ft bgs)	PID (ppm)	SOIL DESCRIPTION	SAMPLE INFO
1		Red silty CLAY	
2	7.0		
3		Boring terminated at 2ft. UVF sample taken at 0-2ft.	
4			
5			
6			
7			
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Log Completed By: DRH

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SOIL BORING FIELD WORKSHEET

BORING #	P609-SB14	BORING DEPTH (ft)	2.5	NUMBER OF PAGES	1
PROJECT #	1883R2707	PROJECT NAME	NCDOT Shelby R-2707E		
DATE DRILLED	4/18/2019	WEATHER CONDITIONS	79°F Sunny		
DRILLING SUB-CONTRACTOR	n/a	DRILL RIG	Hand Auger		

DEPTH (ft bgs)	PID (ppm)	SOIL DESCRIPTION	SAMPLE INFO
1	3.2	Red silty CLAY w/PWR	
2	3.1		
3		Boring hit refusal at 2.5ft. UVF sample taken at 0-2ft.	
4			
5			
6			
7			
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Log Completed By: DRH

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SOIL BORING FIELD WORKSHEET

BORING #	P609-SB15	BORING DEPTH (ft)	2	NUMBER OF PAGES	1
PROJECT #	1883R2707	PROJECT NAME	NCDOT Shelby R-2707E		
DATE DRILLED	4/18/2019	WEATHER CONDITIONS	79°F Sunny		
DRILLING SUB-CONTRACTOR	n/a	DRILL RIG	Hand Auger		

DEPTH (ft bgs)	PID (ppm)	SOIL DESCRIPTION	SAMPLE INFO
1	4.5	Red silty CLAY	
2	4.2		
3		Boring terminated at 2ft. UVF sample taken at 0-1ft.	
4			
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SOIL BORING FIELD WORKSHEET

BORING #	P609-SB16	BORING DEPTH (ft)	2	NUMBER OF PAGES	1
PROJECT #	1883R2707	PROJECT NAME	NCDOT Shelby R-2707E		
DATE DRILLED	4/18/2019	WEATHER CONDITIONS	79°F Sunny		
DRILLING SUB-CONTRACTOR	n/a	DRILL RIG	Hand Auger		

DEPTH (ft bgs)	PID (ppm)	SOIL DESCRIPTION	SAMPLE INFO
1	3.7	Red and brown silty CLAY	
2	3.4		
3		Boring terminated at 2ft. UVF sample taken at 0-1ft. Sample for off-site analysis sampled at 0-1ft.	
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SOIL BORING FIELD WORKSHEET

BORING #	P609-SB17	BORING DEPTH (ft)	2	NUMBER OF PAGES	1
PROJECT #	1883R2707	PROJECT NAME	NCDOT Shelby R-2707E		
DATE DRILLED	4/18/2019	WEATHER CONDITIONS	79°F Sunny		
DRILLING SUB-CONTRACTOR	n/a	DRILL RIG	Hand Auger		

DEPTH (ft bgs)	PID (ppm)	SOIL DESCRIPTION	SAMPLE INFO
1	11.0	Dark brown silty CLAY, leaves, petroleum staining	
2	5.8	Red silty CLAY	
3		Boring terminated at 2ft. UVF sample taken at 0-1ft. Sample for off-site analysis sampled at 0-1ft.	
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SOIL BORING FIELD WORKSHEET

BORING #	P609-SB18	BORING DEPTH (ft)	2	NUMBER OF PAGES	1
PROJECT #	1883R2707	PROJECT NAME	NCDOT Shelby R-2707E		
DATE DRILLED	4/18/2019	WEATHER CONDITIONS	79°F Sunny		
DRILLING SUB-CONTRACTOR	n/a	DRILL RIG	Hand Auger		

DEPTH (ft bgs)	PID (ppm)	SOIL DESCRIPTION	SAMPLE INFO
1	6.2	Red silty CLAY	
2	4.7		
3		Boring terminated at 2ft. UVF sample taken at 0-1ft.	
4			
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SOIL BORING FIELD WORKSHEET

BORING #	P609-SB19	BORING DEPTH (ft)	1	NUMBER OF PAGES	1
PROJECT #	1883R2707	PROJECT NAME	NCDOT Shelby R-2707E		
DATE DRILLED	4/18/2019	WEATHER CONDITIONS	79°F Sunny		
DRILLING SUB-CONTRACTOR	n/a	DRILL RIG	Hand Auger		

DEPTH (ft bgs)	PID (ppm)	SOIL DESCRIPTION	SAMPLE INFO
1	5.3	Red silty CLAY	
2		Boring terminated at 1ft. UVF sample taken at 0-1ft.	
3			
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SOIL BORING FIELD WORKSHEET

BORING #	P609-SB20	BORING DEPTH (ft)	1	NUMBER OF PAGES	1
PROJECT #	1883R2707	PROJECT NAME	NCDOT Shelby R-2707E		
DATE DRILLED	4/18/2019	WEATHER CONDITIONS	79°F Sunny		
DRILLING SUB-CONTRACTOR	n/a	DRILL RIG	Hand Auger		

DEPTH (ft bgs)	PID (ppm)	SOIL DESCRIPTION	SAMPLE INFO
1	3.4	Red and brown silty CLAY	
2		Boring terminated at 1ft. UVF sample taken at 0-1ft.	
3			
4			
5			
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APPENDIX C
GEOPHYSICAL REPORT

April 29, 2019

Mr. John Maas, PG
Wood, PLC
2801 Yorkmont Road, Suite 100
Charlotte, NC 28208

Re: Report for Geophysical Survey to Identify Underground Storage Tanks
Parcel #609
4919 E. Dixon Blvd.
Kings Mountain, North Carolina

Dear Mr. Maas,

GEL Solutions appreciates the opportunity to provide Wood with this report of our geophysical investigation for the referenced project. This investigation was designed to determine the potential presence of underground storage tanks (USTs) at the site and underground utilities that would obstruct drilling activities at the site. The geophysical field investigation was successfully performed on April 15, 2019 through April 18, 2019.

1.0 Summary of Results

No subsurface anomalies were identified in the geophysical data that indicated the presence of USTs. The anomalies represented in Figure 1 are consistent with known metallic surface objects, utilities, and/or cultural interference. Although geophysical methods provide a high level of assurance for the location of subsurface objects, the possibility exists that not all features can or will be identified. Therefore, due caution should be used when performing any subsurface excavation, and GEL Solutions, LLC will not be liable for any damages that may occur. Descriptions of the technologies employed during this geophysical investigation are provided below.

2.0 Overview of Geophysical Investigation

The geophysical evaluation included the deployment of ground penetrating radar (GPR) and time-domain electromagnetic (TDEM) technologies to the site. These technologies were used in concert with one another in order to identify the presence of potential USTs at the site. A brief description of each technology is presented in the following paragraphs.

Ground Penetrating Radar Methodology

An Impulse Radar digital radar control system configured with a 160-Megahertz and 600-Megahertz (MHz) antenna array was used in this investigation. GPR is an electromagnetic geophysical method that detects interfaces between subsurface materials with differing dielectric constants. The GPR system consists of an antenna which houses the transmitter and receiver, a digital control unit which both generates and digitally records the GPR data, and a color video monitor to view data as it is collected in the field.

The transmitter radiates repetitive short-duration electromagnetic waves (at radar frequencies) into the earth from an antenna moving across the ground surface. These radar waves are reflected back to the receiver from the interface of materials with different dielectric constants. The intensity of the reflected signal is a function of the contrast in the dielectric constant between the materials, the conductivity of the material through which the wave is traveling, and the frequency of the signal.

Subsurface features that commonly cause such reflections are: 1) natural geologic conditions, such as changes in sediment composition, bedding, and cementation horizons and voids; or 2) unnatural changes to the subsurface such as disturbed soils, soil backfill, buried debris, tanks, pipelines, and utilities. The digital control unit processes the signal from the receiver and produces a continuous cross-section of the subsurface interface reflection events.

GPR data profiles were collected along transects covering the entire rights of ways. Depth of investigation of the GPR signal is highly site-specific and is limited by signal attenuation (absorption) in the subsurface materials. Signal attenuation is dependent upon the electrical conductivity of the subsurface materials. Signal attenuation is greatest in materials with relatively high electrical conductivities such as clays, brackish groundwater, or groundwater with a high dissolved solid content from natural or manmade sources. Signal attenuation is lowest in relatively low conductivity materials such as dry sand or rock. Depth of investigation is also dependent on the antenna's transmitting frequency. Depth of investigation generally increases as transmitting frequency decreases; however, the ability to resolve smaller subsurface features is diminished as frequency is decreased. The average depth of penetration at this site was approximately 2-5 feet below the surface.

The GPR antenna used at this site is internally shielded from aboveground interference sources. Accordingly, the GPR response is not affected by overhead power lines, metallic buildings, or nearby objects.

Time Domain Electromagnetic Methodology

TDEM methods measure the electrical conductivity of subsurface materials. The conductivity is determined by inducing (from a transmitter) a time or frequency-varying magnetic field and measuring (with a receiver) the amplitude and phase shift of an induced secondary magnetic field. The secondary magnetic field is created by subsurface conductive materials behaving as an inductor as the primary magnetic field is passed through them.

The Geonics EM-61 system used in this investigation operates within these principles. However, the EM-61 TDEM system can discriminate between moderately conductive earth materials and very conductive metallic targets. The EM-61 consists of a portable coincident loop time domain transmitter and receiver with a 1.0-meter by 0.5-meter coil system. The EM-61 generates 150 pulses per second and measures the response from the ground after transmission or between pulses. The secondary EM responses from metallic targets are of longer duration than those created by conductive earth materials. By recording the later time EM arrivals, only the response from metallic targets is measured, rather than the field generated by the earth material.

3.0 Field Procedures and Results

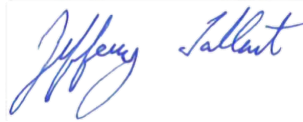
The geophysical field investigation was successfully performed on April 15 through April 18, 2019 at the referenced site located in the immediate vicinity of E. Dixon Blvd. in Kings Mountain, NC. Interpretation of the GPR data was conducted in the field and any potential anomalies were marked in the field. TDEM was also used to scan the project site with a spacing of 2.5 feet. Any electromagnetic anomalies detected during field activities that were indicative of buried metallic objects were also marked in the field. TDEM was not used within the fenced area north and east of the building due to metallic surface obstructions (vehicles and metal parts). GPR was used within the limited access area and between surface obstructions where feasible.

There were no subsurface geophysical anomalies detected within the limits of Parcel #609 during this investigation that indicated the presence of USTs. The anomalies represented in the data shown on Figure 1 are indicative of known metallic surface features and/or cultural interference.

4.0 Closing

GEL Solutions appreciates the opportunity to assist Wood with this project. If you have any questions or need further information regarding the project, please do not hesitate to call me at (828) 782-3523.

Yours very truly,



Jeff Tallent
Director of Western NC Operations

Enclosures
fc: 609.AMEC00419.Report.pdf

Site Photos

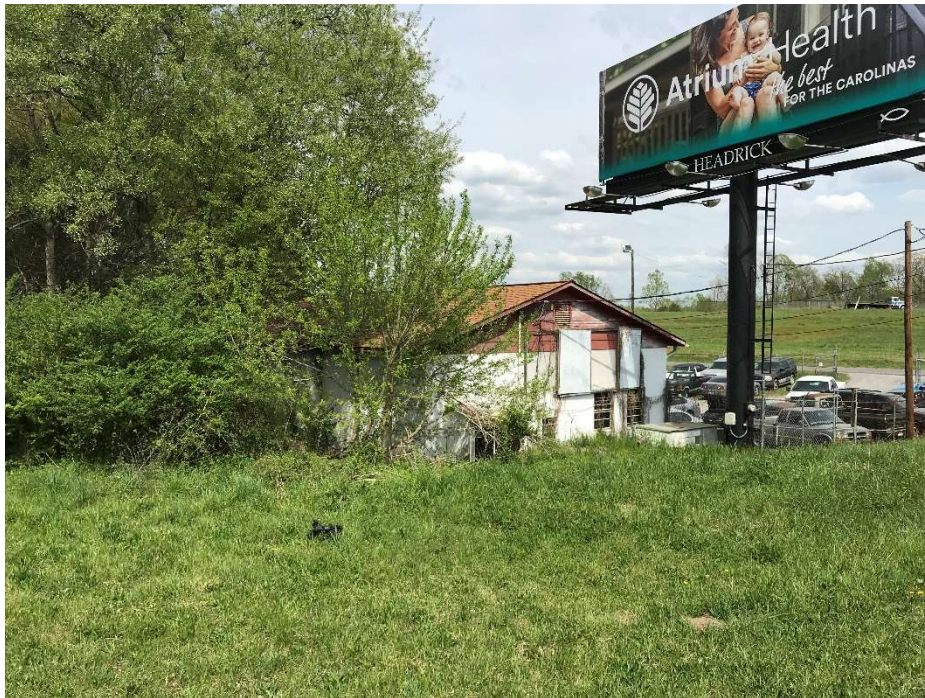
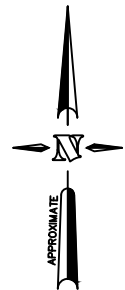
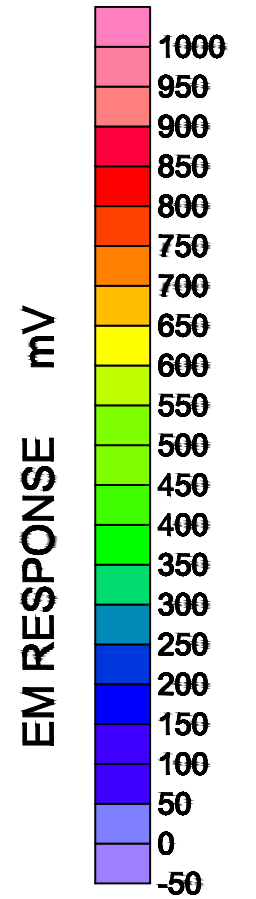
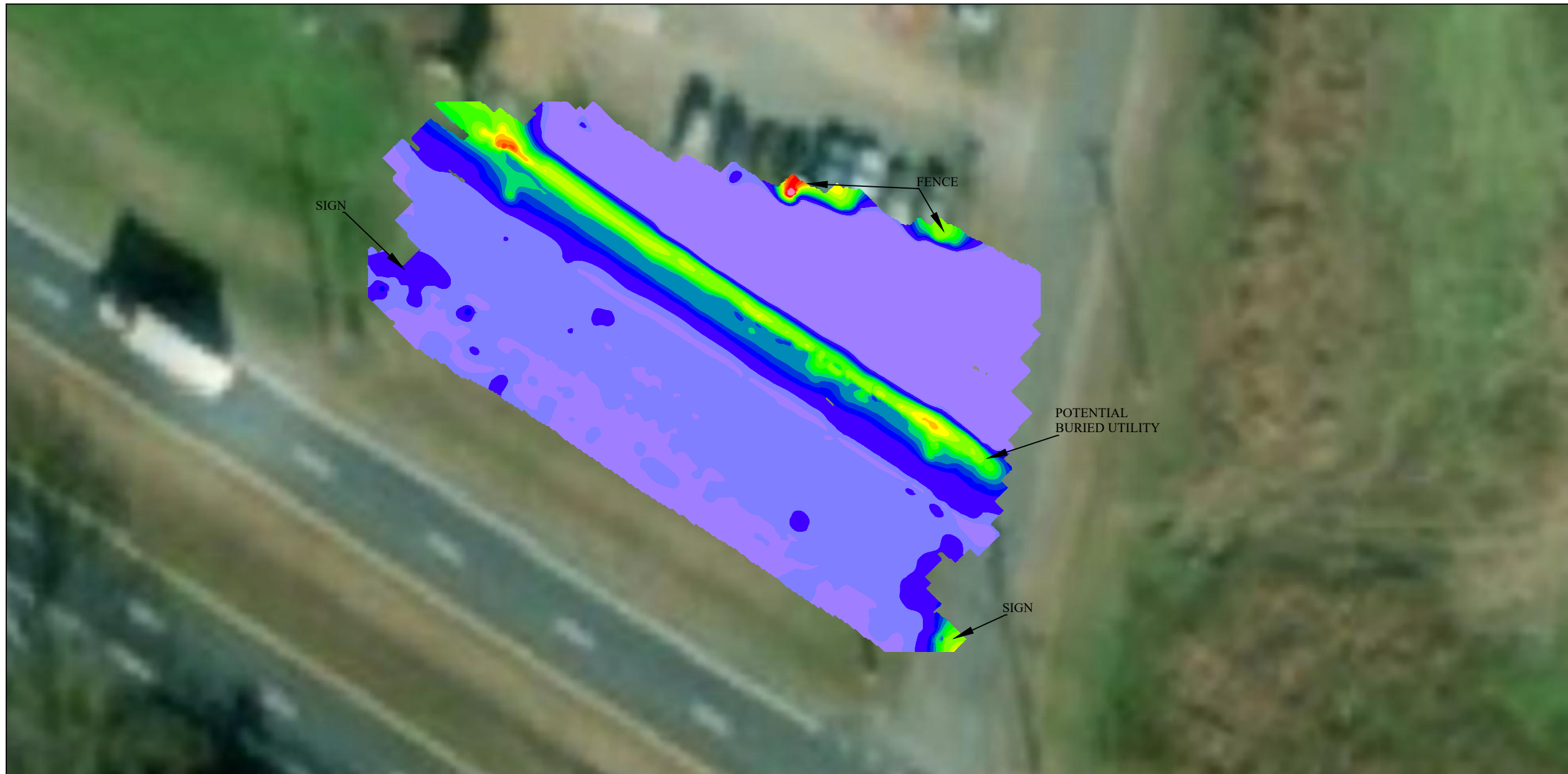


Photo 1: Looking North showing surface metal and obstructions



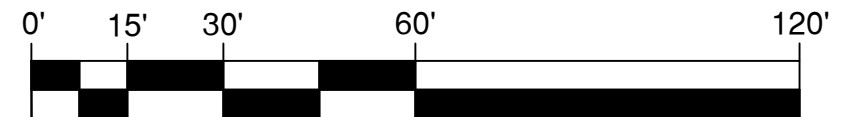
Photo 2: Looking West showing surface metal and obstructions



NOTES

- 1) UNDERGROUND FEATURES WERE LOCATED USING VISUAL EVIDENCE, GROUND PENETRATING RADAR (GPR), AND TIME DOMAIN ELECTROMAGNETIC (TDEM) METHODS. OTHER BURIED FEATURES MAY EXIST BUT WERE NOT DETECTED DUE TO LIMITATIONS OF THE GEOPHYSICAL METHODS, SITE ACCESS, AUTHORIZED SCOPE-OF-WORK, AND/OR HIGH TARGET CONGESTION. THEREFORE, DUE CAUTION SHOULD BE USED WHEN PERFORMING SUBSURFACE EXCAVATION ACTIVITIES WHERE POTENTIAL CONFLICTS EXIST. GEL SOLUTIONS IS NOT RESPONSIBLE FOR DAMAGES THAT MAY OCCUR. IDENTIFYING THE LOCATION OF SOME FEATURES MAY ONLY BE POSSIBLE WITH VACUUM OR OTHER EXCAVATION METHODS.
- 2) FIELD SURVEY CONDUCTED ON 04.15.2019 - 04.18.2019.
- 3) GEOPHYSICAL DATA GENERATED USING AN IMPULSE RADAR CROSSOVER GPR SYSTEM CONFIGURED WITH A 170MHZ AND 600MHZ ANTENNA AND A GEONICS EM-61 TDEM SYSTEM. APPROXIMATE POSITIONING WAS PROVIDED USING TRIMBLE RTK/GPS.
- 4) GEL SOLUTIONS IS NOT LIABLE FOR ACCURACY OF BASE MAP PROVIDED BY WOOD.

GRAPHIC SCALE



(IN FEET)
1 inch = 30 ft.

GEL ENGINEERING OF NC, INC. DBA

GEL SOLUTIONS

an Affiliate of THE GEL GROUP, INC.

55 SHILOH ROAD, SUITE E

ASHEVILLE, NC 28803

(828) 782-3523

WWW.GEL-SOLUTIONS.COM

PROJECT: AMEC00419

GEOPHYSICAL INVESTIGATION FOR USTs
PARCEL 609
4919 E. DIXON BLVD.
KINGS MOUNTAIN, NORTH CAROLINA

DATE: 4/25/19

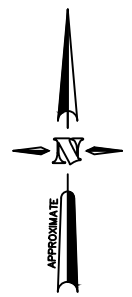
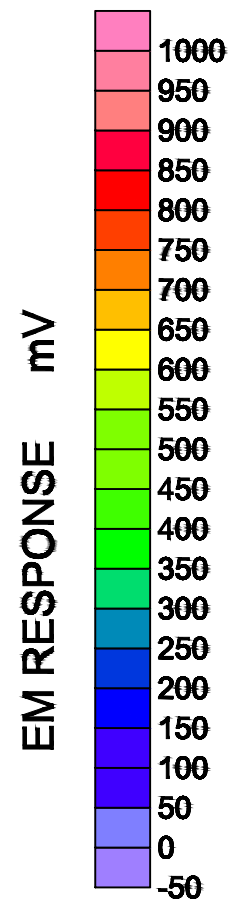
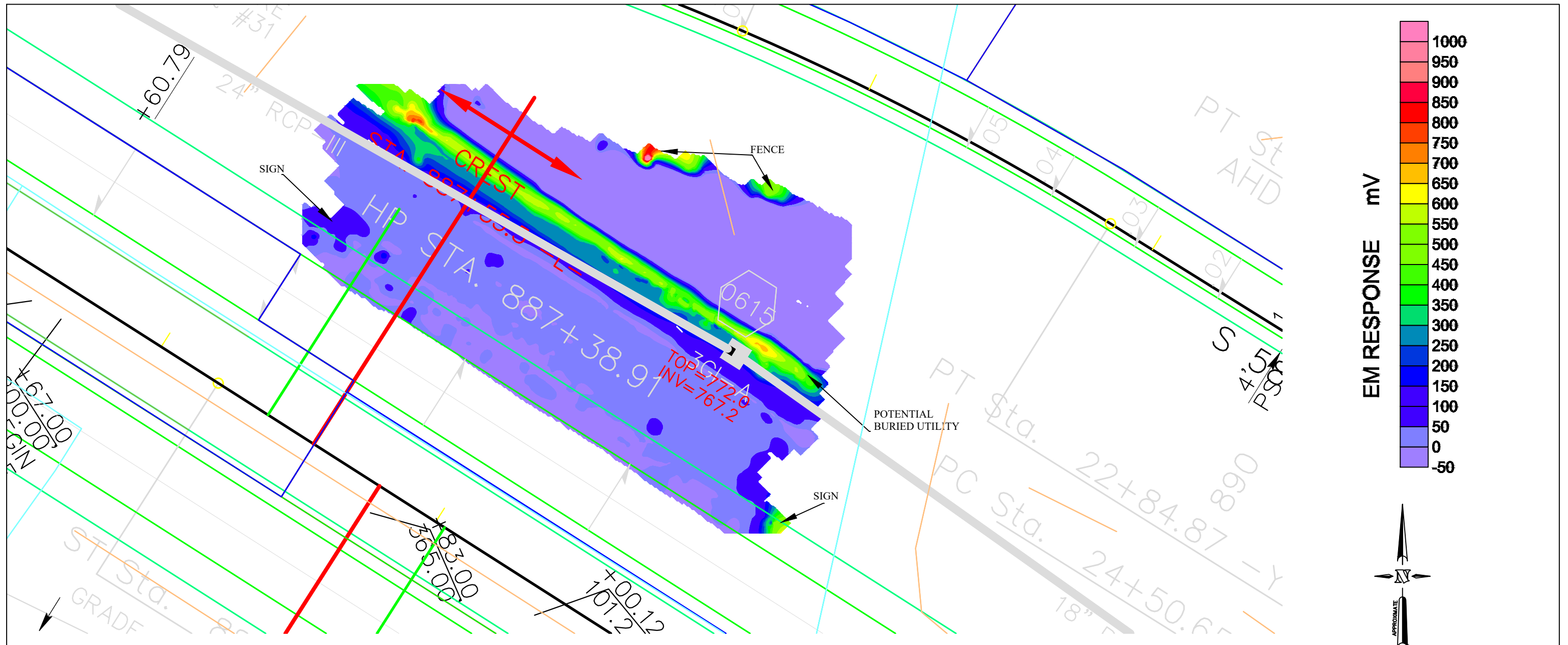
RESULTS OF GEOPHYSICAL INVESTIGATION

FIGURE

1

DRAWN BY: JAT

APPRV. BY: WRA



NOTES

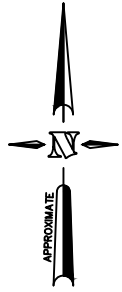
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GRAPHIC SCALE



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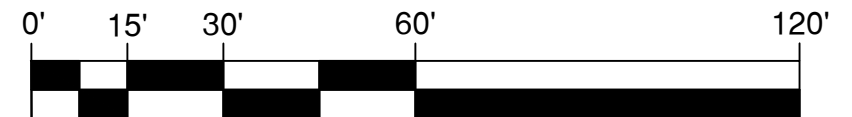
<p>GEL ENGINEERING OF NC, INC. DBA</p> <p>GEL SOLUTIONS</p> <p><i>an Affiliate of THE GEL GROUP, INC.</i></p> <p>55 SHILOH ROAD, SUITE E ASHEVILLE, NC 28803 (828) 782-3523 WWW.GEL-SOLUTIONS.COM</p>	<p>PROJECT: AMEC00419</p>	<p>GEOPHYSICAL INVESTIGATION FOR USTs PARCEL 609 4919 E. DIXON BLVD. KINGS MOUNTAIN, NORTH CAROLINA</p>	<p>RESULTS OF GEOPHYSICAL INVESTIGATION</p>	<p>FIGURE 1</p>
	<p>DATE: 4/25/19</p>			



NOTES

- 1) UNDERGROUND FEATURES WERE LOCATED USING VISUAL EVIDENCE, GROUND PENETRATING RADAR (GPR), AND TIME DOMAIN ELECTROMAGNETIC (TDEM) METHODS. OTHER BURIED FEATURES MAY EXIST BUT WERE NOT DETECTED DUE TO LIMITATIONS OF THE GEOPHYSICAL METHODS, SITE ACCESS, AUTHORIZED SCOPE-OF-WORK, AND/OR HIGH TARGET CONGESTION. THEREFORE, DUE CAUTION SHOULD BE USED WHEN PERFORMING SUBSURFACE EXCAVATION ACTIVITIES WHERE POTENTIAL CONFLICTS EXIST. GEL SOLUTIONS IS NOT RESPONSIBLE FOR DAMAGES THAT MAY OCCUR. IDENTIFYING THE LOCATION OF SOME FEATURES MAY ONLY BE POSSIBLE WITH VACUUM OR OTHER EXCAVATION METHODS.
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PROJECT: AMEC00419

GEOPHYSICAL INVESTIGATION FOR USTs
PARCEL 609
4919 E. DIXON BLVD.
KINGS MOUNTAIN, NORTH CAROLINA

DATE: 4/25/19

RESULTS OF GEOPHYSICAL INVESTIGATION

FIGURE

2

DRAWN BY: JAT

APPRV. BY: WRA

APPENDIX D
RESULTS FROM ON-SITE UVF SOIL ANALYSES



Hydrocarbon Analysis Results

Client: Wood
Address: 2801 Yorkmont Rd
 Charlotte, NC

Samples taken Thursday, April 18, 2019
Samples extracted Thursday, April 18, 2019
Samples analysed Thursday, April 18, 2019

Contact: Helen Corley

Operator Derick Haydin

Project: NCDOT Shelby

H09382

Matrix	Sample ID	Dilution used	BTEX (C6 - C9)	GRO (C5 - C10)	DRO (C10 - C35)	TPH (C5 - C35)	Total Aromatics (C10-C35)	16 EPA PAHs	BaP	% Ratios			HC Fingerprint Match
										C5 - C10	C10 - C18	C18	
Soil	P609-SB4-0-2	17.6	<0.44	<0.44	<0.18	<0.44	<0.009	<0.009	<0.005	0	0	0	PHC ND,(FCM)
Soil	P609-SB5-0-1	31.3	<0.78	<0.78	232.8	232.8	128.2	8.5	0.009	0	99.3	0.7	Deg.Fuel 76.3%,(FCM)
Soil	P609-SB5-2-3	17.8	<0.45	<0.45	8.9	8.9	0.82	0.04	<0.001	0	97.9	2.1	Waste Oil 80.7%,(FCM)
Soil	P609-SB6-0-2	16.8	<0.42	<0.42	0.44	0.44	0.24	0.006	<0.005	0	100	0	V.Deg.PHC 85.4%,(FCM)
Soil	P609-SB7-1-2	15.2	<0.38	<0.38	<0.15	<0.38	<0.008	<0.008	<0.005	0	0	0	PHC ND,(FCM)
Soil	P609-SB8-2-4	16.5	<0.41	<0.41	<0.16	<0.41	<0.008	<0.008	<0.005	0	0	0	PHC ND,(FCM)

Initial Calibrator QC check OK

Final FCM QC Check OK

101.3%

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: Wood
Address: 2801 Yorkmont Rd
 Charlotte, NC

Samples taken Thursday, April 18, 2019
Samples extracted Thursday, April 18, 2019
Samples analysed Thursday, April 18, 2019

Contact: Helen Corley

Operator Derick Haydin

Project: NCDOT Shelby

H09382

Matrix	Sample ID	Dilution used	BTEX (C6 - C9)	GRO (C5 - C10)	DRO (C10 - C35)	TPH (C5 - C35)	Total Aromatics (C10-C35)	16 EPA PAHs	BaP	% Ratios			HC Fingerprint Match
										C5 - C10	C10 - C18	C18	
Soil	P609-SB12-4-6	16.0	<0.4	<0.4	0.08	0.08	0.08	0.007	<0.005	0	84.2	15.8	Residual HC
Soil	P609-SB14-0-1	17.7	<0.44	<0.44	0.71	0.71	0.68	0.05	<0.005	0	94	6	Residual PHC
Soil	P609-SB15-0-1	20.0	<0.5	<0.5	1	1	0.83	0.09	<0.006	0	95.5	4.5	56.8%,(FCM)
Soil	P609-SB16-0-1	23.4	<0.59	0.59	2	2.6	0.79	0.04	<0.007	47.4	49.4	3.2	Deg.PHC 77%,(FCM)
Soil	P609-SB17-0-1	18.7	<0.47	<0.47	159.1	159.1	62.7	4.1	0.005	0	99.1	0.9	Deg.Fuel 73.9%,(FCM)
Soil	P609-SB18-0-1	18.7	<0.47	<0.47	<0.19	<0.47	<0.009	<0.009	<0.006	0	0	0	PHC ND,(FCM)
Soil	P609-SB19-0-1	16.5	<0.41	<0.41	<0.16	<0.41	<0.008	<0.008	<0.005	100	0	0	PHC ND,(FCM)
Soil	P609-SB20-0-1	22.4	<0.56	<0.56	0.8	0.8	0.4	0.02	<0.007	0	93.6	6.4	Pyrogenic HC 77.9%,(FCM)

Initial Calibrator QC check OK

Final FCM QC Check OK

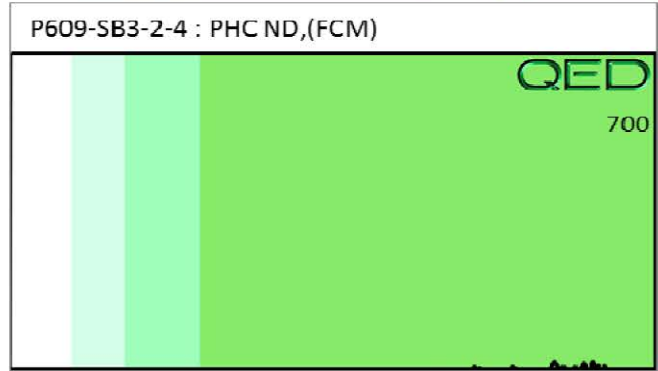
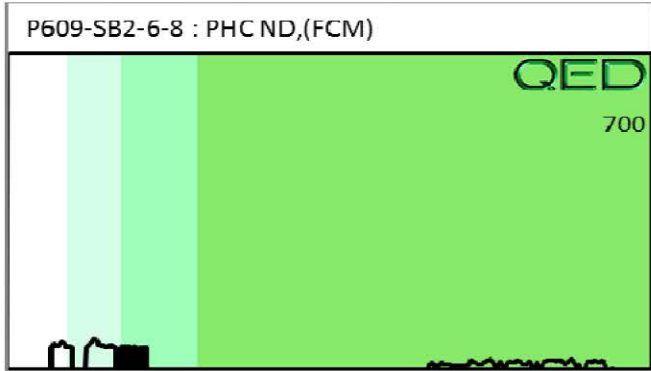
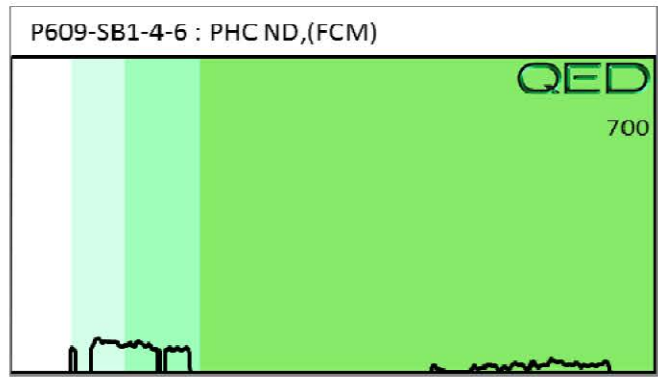
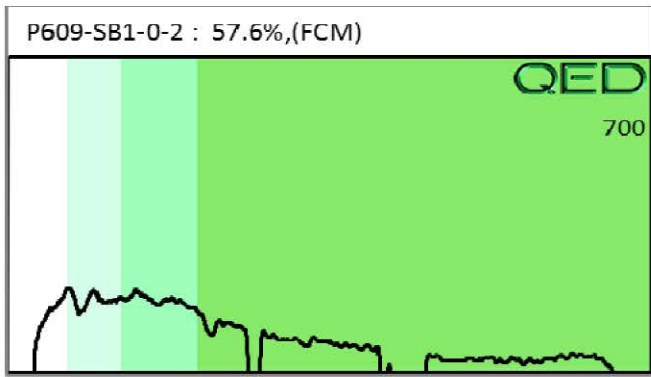
95.3%

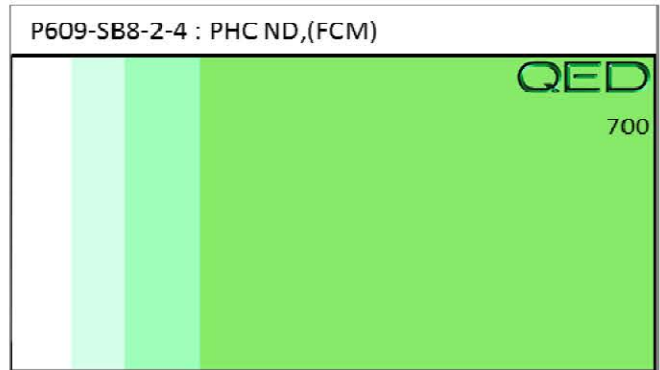
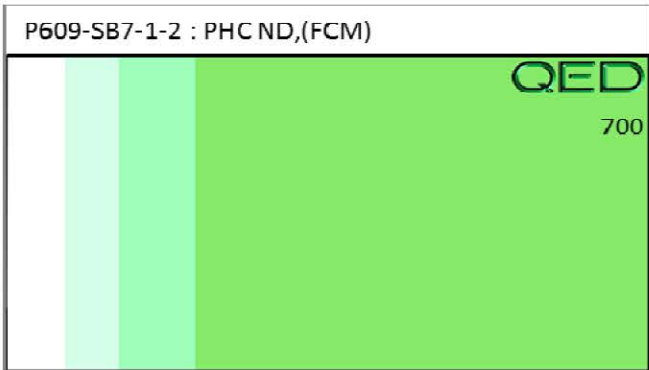
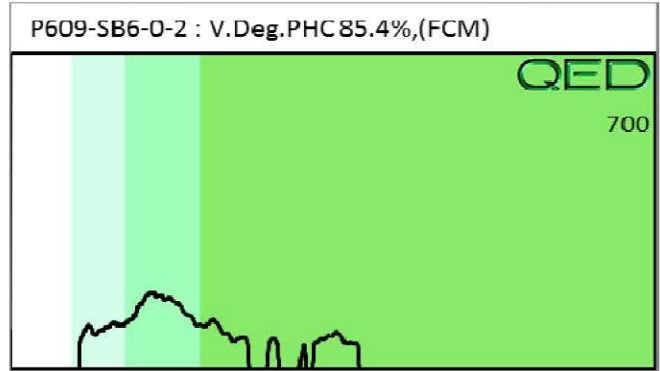
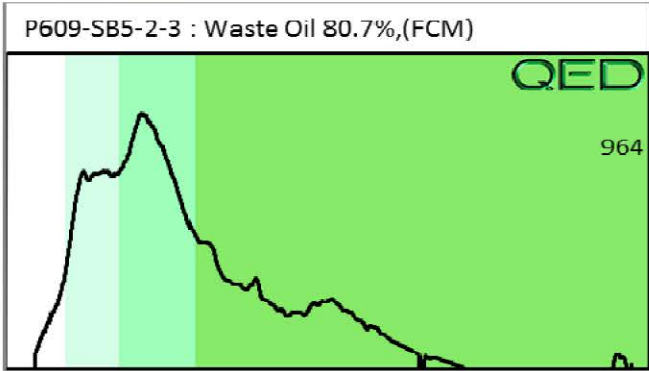
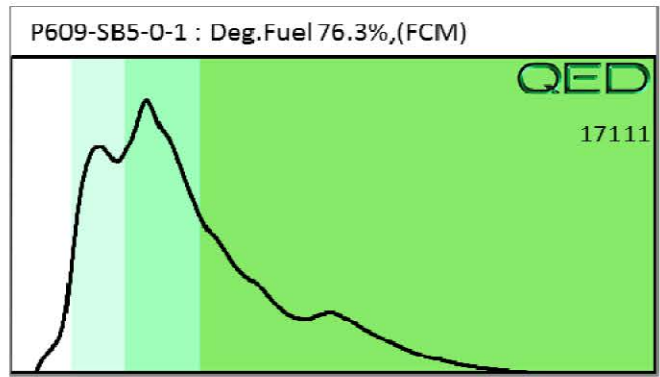
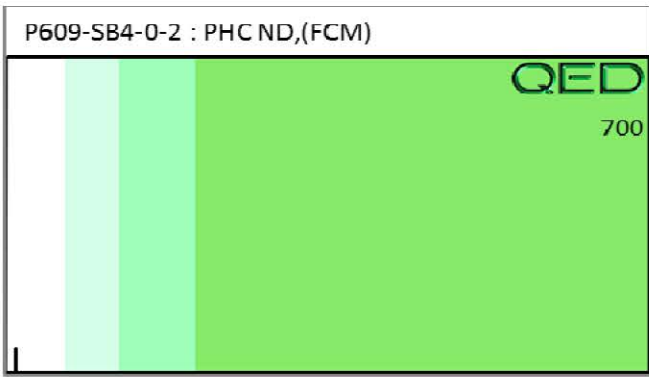
Concentration values in mg/kg for soil samples and mg/L for water samples. Soil values uncorrected for moisture or stone content. Fingerprints provide a tentative hydrocarbon identification.

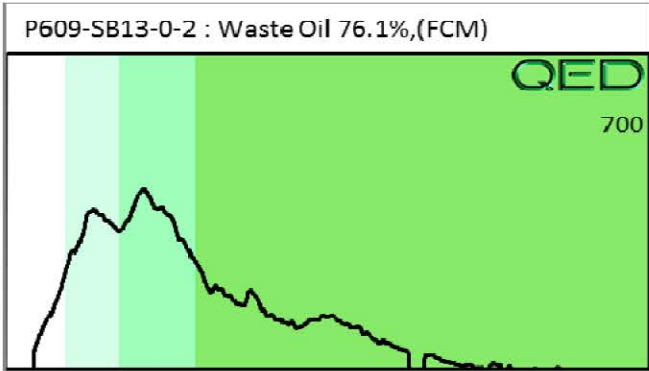
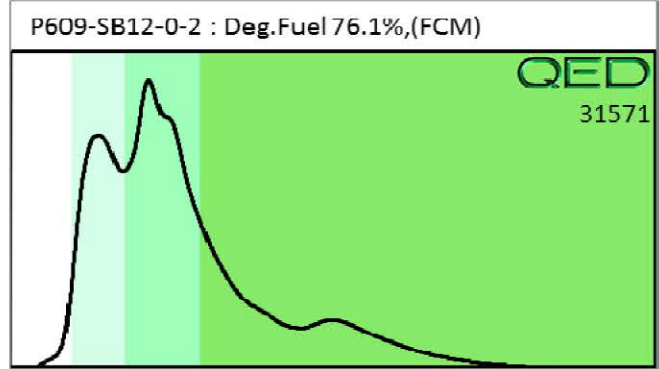
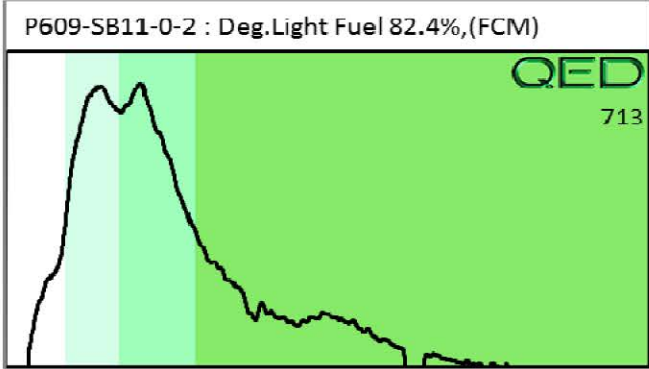
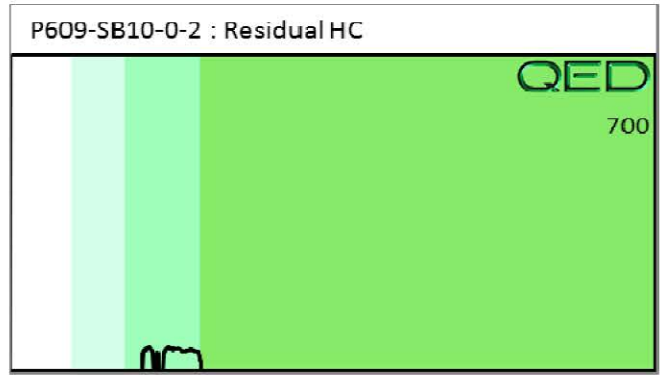
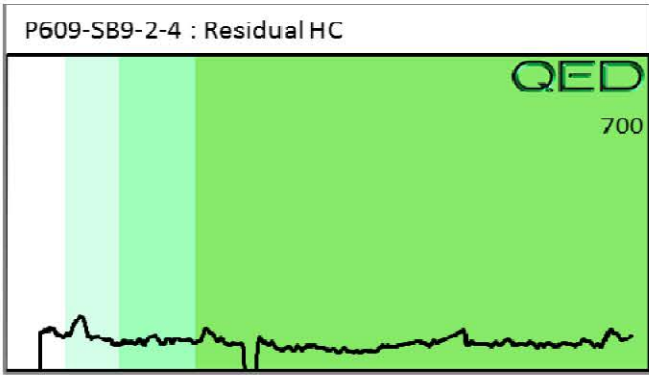
Abbreviations :- FCM = Results calculated using Fundamental Calibration Mode : % = confidence of hydrocarbon identification : (PFM) = Poor Fingerprint Match : (T) = Turbid : (P) = Particulate detected

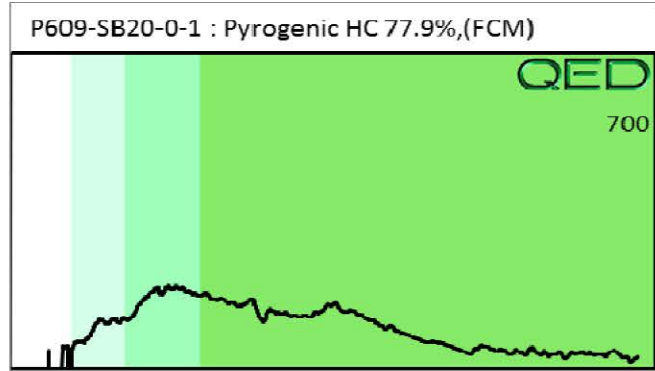
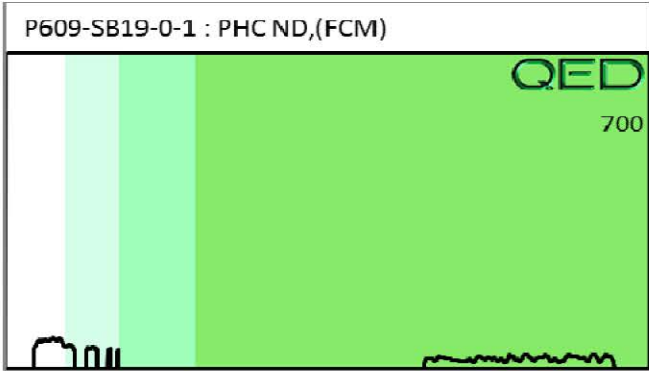
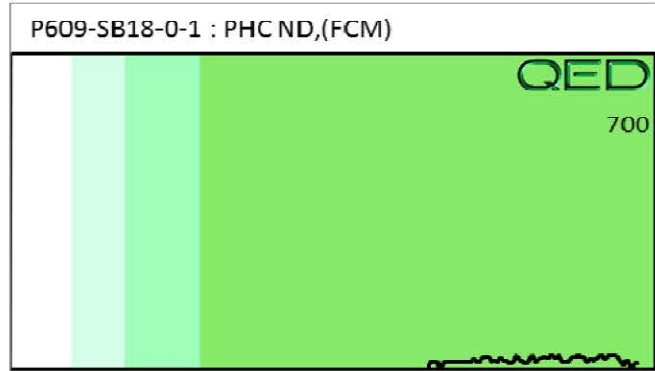
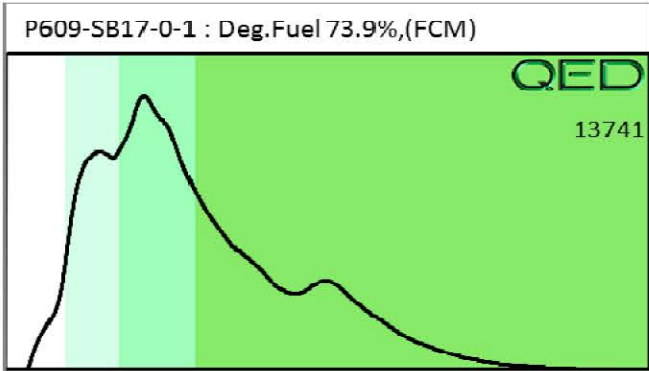
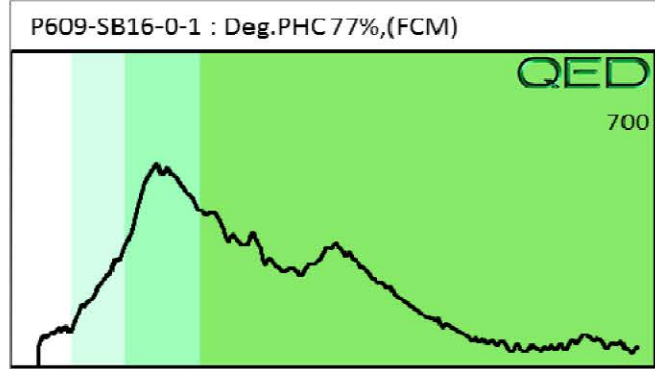
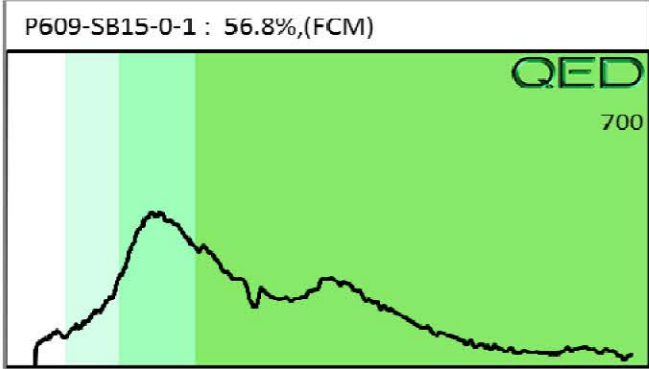
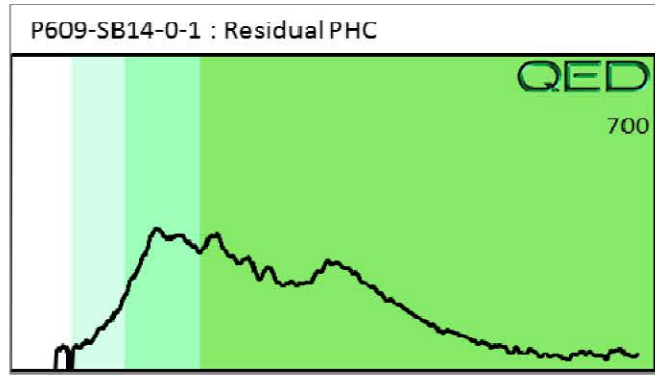
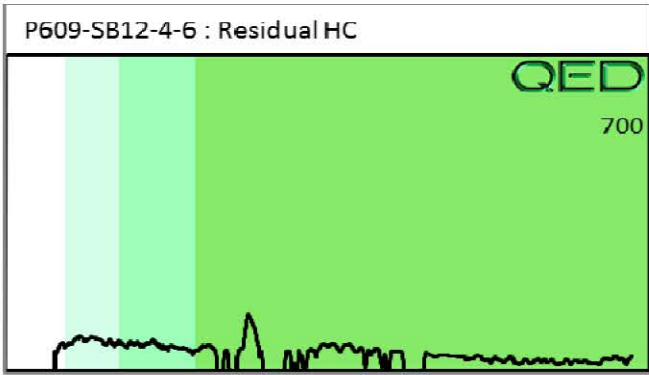
B = Blank Drift : (SBS)/(LBS) = Site Specific or Library Background Subtraction applied to result : (BO) = Background Organics detected : (OCR) = Outside cal range : (M) = Modified Result.

% Ratios estimated aromatic carbon number proportions : HC = Hydrocarbon : PHC = Petroleum HC : FP = Fingerprint only. **Data generated by HC-1 Analyser**









APPENDIX E
LABORATORY ANALYTICAL REPORT AND CHAIN-OF-CUSTODY
FORM



Wood Environ. & Infrastructure Solutions (Charl)
John Maas
2801 Yorkmont Rd. #100
Charlotte, NC 28208

Project: NCDOT Shelby R-2707 D&E
Project No.: 1883R2707 Parcel 609
Lab Submittal Date: 04/22/2019
Prism Work Order: 9040346

This data package contains the analytical results for the project identified above and includes a Case Narrative, Sample Results and Chain of Custody. Unless otherwise noted, all samples were received in acceptable condition and processed according to the referenced methods.

Data qualifiers are flagged individually on each sample. A key reference for the data qualifiers appears at the end of this case narrative.

Please call if you have any questions relating to this analytical report.

Respectfully,

PRISM LABORATORIES, INC.

Robbi A. Jones
President/Project Manager

Reviewed By Robbi A. Jones
President/Project Manager

Data Qualifiers Key Reference:

- ISR Internal standard response outside the QC limits. Analysis repeated without improvement. Initial result reported.
- J Detected but below the Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag).
- L Parameter reported with possible low bias. LCS recovery below the QC limit.
- SR3 Re-analysis due to high surrogate recovery resulted in similar recoveries. Matrix interference suspected. Initial result reported.
- U Not Detected at the MDL
- MDL Method Detection Limit
- RPD Relative Percent Difference
- * Results reported to the reporting limit. All other results are reported to the MDL with values between MDL and reporting limit indicated with a J.

This report should not be reproduced, except in its entirety, without the written consent of Prism Laboratories, Inc.

Client Sample ID	Lab Sample ID	Matrix	Date/Time Sampled	Date/Time Received
P609-SB5-0-1	9040346-01	Solid	04/18/19 11:30	04/22/19 9:30
P609-SB5-2-3	9040346-02	Solid	04/18/19 11:40	04/22/19 9:30
P609-SB12-0-2	9040346-03	Solid	04/18/19 14:20	04/22/19 9:30
P609-SB16-0-1	9040346-04	Solid	04/18/19 14:10	04/22/19 9:30
P609-SB17-0-1	9040346-05	Solid	04/18/19 17:00	04/22/19 9:30

Samples were received in good condition at 2.8 degrees C unless otherwise noted.

Prism ID	Client ID	Parameter	Method	Result	Units
9040346-01	P609-SB5-0-1	1,2,4-Trimethylbenzene	8260B	12	mg/kg dry
9040346-01	P609-SB5-0-1	1,3,5-Trimethylbenzene	8260B	3.3	mg/kg dry
9040346-01	P609-SB5-0-1	4-Isopropyltoluene	8260B	1.2	mg/kg dry
9040346-01	P609-SB5-0-1	Acetone	8260B	0.68	J mg/kg dry
9040346-01	P609-SB5-0-1	Ethylbenzene	8260B	0.45	mg/kg dry
9040346-01	P609-SB5-0-1	Isopropylbenzene (Cumene)	8260B	1.3	mg/kg dry
9040346-01	P609-SB5-0-1	m,p-Xylenes	8260B	2.1	mg/kg dry
9040346-01	P609-SB5-0-1	Methyl Ethyl Ketone (2-Butanone)	8260B	0.97	J mg/kg dry
9040346-01	P609-SB5-0-1	Methyl Isobutyl Ketone	8260B	0.27	J mg/kg dry
9040346-01	P609-SB5-0-1	Naphthalene	8260B	0.60	J mg/kg dry
9040346-01	P609-SB5-0-1	n-Butylbenzene	8260B	2.1	mg/kg dry
9040346-01	P609-SB5-0-1	n-Propylbenzene	8260B	3.7	mg/kg dry
9040346-01	P609-SB5-0-1	o-Xylene	8260B	2.0	mg/kg dry
9040346-01	P609-SB5-0-1	sec-Butylbenzene	8260B	3.2	mg/kg dry
9040346-01	P609-SB5-0-1	Xylenes, total	8260B	4.1	mg/kg dry
9040346-02	P609-SB5-2-3	Acetone	8260B	0.043	mg/kg dry
9040346-02	P609-SB5-2-3	Methyl Ethyl Ketone (2-Butanone)	8260B	0.0044	J mg/kg dry
9040346-03	P609-SB12-0-2	Acetone	8260B	0.12	mg/kg dry
9040346-03	P609-SB12-0-2	Methyl Ethyl Ketone (2-Butanone)	8260B	0.015	J mg/kg dry
9040346-03	P609-SB12-0-2	Methyl Isobutyl Ketone	8260B	0.063	mg/kg dry
9040346-04	P609-SB16-0-1	Acetone	8260B	0.10	mg/kg dry
9040346-04	P609-SB16-0-1	Methyl Ethyl Ketone (2-Butanone)	8260B	0.0060	J mg/kg dry
9040346-05	P609-SB17-0-1	1,2,4-Trimethylbenzene	8260B	0.0098	J mg/kg dry
9040346-05	P609-SB17-0-1	1,3,5-Trimethylbenzene	8260B	0.0072	J mg/kg dry
9040346-05	P609-SB17-0-1	Acetone	8260B	1.1	mg/kg dry
9040346-05	P609-SB17-0-1	Methyl Ethyl Ketone (2-Butanone)	8260B	0.10	mg/kg dry

Wood Environ. & Infrastructure Solutions (Ch Project: NCDOT Shelby R-2707 D&E
 Attn: John Maas
 2801 Yorkmont Rd. #100
 Charlotte, NC 28208

Project No.: 1883R2707 Parcel 609
 Sample Matrix: Solid

Client Sample ID: P609-SB5-0-1
 Prism Sample ID: 9040346-01
 Prism Work Order: 9040346
 Time Collected: 04/18/19 11:30
 Time Submitted: 04/22/19 09:30

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
General Chemistry Parameters									
% Solids	82.4	% by Weight	0.100	0.100	1	*SM2540 G	4/29/19 15:57	KBS	P9D0532
Volatile Organic Compounds by GC/MS (Medium Level)									
1,1,1,2-Tetrachloroethane	0.038 U	mg/kg dry	0.31	0.038	50	8260B	5/1/19 18:29	JLB	P9E0041
1,1,1-Trichloroethane	0.046 U	mg/kg dry	0.31	0.046	50	8260B	5/1/19 18:29	JLB	P9E0041
1,1,2,2-Tetrachloroethane	0.023 U	mg/kg dry	0.31	0.023	50	8260B	5/1/19 18:29	JLB	P9E0041
1,1,2-Trichloroethane	0.034 U	mg/kg dry	0.31	0.034	50	8260B	5/1/19 18:29	JLB	P9E0041
1,1-Dichloroethane	0.057 U	mg/kg dry	0.31	0.057	50	8260B	5/1/19 18:29	JLB	P9E0041
1,1-Dichloroethylene	0.058 U	mg/kg dry	0.31	0.058	50	8260B	5/1/19 18:29	JLB	P9E0041
1,1-Dichloropropylene	0.048 U	mg/kg dry	0.31	0.048	50	8260B	5/1/19 18:29	JLB	P9E0041
1,2,3-Trichlorobenzene	0.045 U	mg/kg dry	0.63	0.045	50	8260B	5/1/19 18:29	JLB	P9E0041
1,2,3-Trichloropropane	0.036 U	mg/kg dry	0.31	0.036	50	8260B	5/1/19 18:29	JLB	P9E0041
1,2,4-Trichlorobenzene	0.030 U	mg/kg dry	0.63	0.030	50	8260B	5/1/19 18:29	JLB	P9E0041
1,2,4-Trimethylbenzene	12	mg/kg dry	0.31	0.033	50	8260B	5/1/19 18:29	JLB	P9E0041
1,2-Dibromoethane	0.028 U	mg/kg dry	0.31	0.028	50	8260B	5/1/19 18:29	JLB	P9E0041
1,2-Dichlorobenzene	0.035 U	mg/kg dry	0.31	0.035	50	8260B	5/1/19 18:29	JLB	P9E0041
1,2-Dichloroethane	0.037 U	mg/kg dry	0.31	0.037	50	8260B	5/1/19 18:29	JLB	P9E0041
1,2-Dichloropropane	0.047 U	mg/kg dry	0.31	0.047	50	8260B	5/1/19 18:29	JLB	P9E0041
1,3,5-Trimethylbenzene	3.3	mg/kg dry	0.31	0.039	50	8260B	5/1/19 18:29	JLB	P9E0041
1,3-Dichlorobenzene	0.039 U	mg/kg dry	0.31	0.039	50	8260B	5/1/19 18:29	JLB	P9E0041
1,3-Dichloropropane	0.026 U	mg/kg dry	0.31	0.026	50	8260B	5/1/19 18:29	JLB	P9E0041
1,4-Dichlorobenzene	0.040 U	mg/kg dry	0.31	0.040	50	8260B	5/1/19 18:29	JLB	P9E0041
2,2-Dichloropropane	0.039 U	mg/kg dry	0.31	0.039	50	8260B	5/1/19 18:29	JLB	P9E0041
2-Chlorotoluene	0.042 U	mg/kg dry	0.31	0.042	50	8260B	5/1/19 18:29	JLB	P9E0041
4-Chlorotoluene	0.036 U	mg/kg dry	0.31	0.036	50	8260B	5/1/19 18:29	JLB	P9E0041
4-Isopropyltoluene	1.2	mg/kg dry	0.31	0.079	50	8260B	5/1/19 18:29	JLB	P9E0041
Acetone	0.68 J	mg/kg dry	1.3	0.080	50	8260B	5/1/19 18:29	JLB	P9E0041
Benzene	0.049 U	mg/kg dry	0.31	0.049	50	8260B	5/1/19 18:29	JLB	P9E0041
Bromobenzene	0.044 U	mg/kg dry	0.31	0.044	50	8260B	5/1/19 18:29	JLB	P9E0041
Bromochloromethane	0.052 U	mg/kg dry	0.31	0.052	50	8260B	5/1/19 18:29	JLB	P9E0041
Bromodichloromethane	0.030 U	mg/kg dry	0.31	0.030	50	8260B	5/1/19 18:29	JLB	P9E0041
Bromoform	0.024 U	mg/kg dry	0.31	0.024	50	8260B	5/1/19 18:29	JLB	P9E0041
Bromomethane	0.15 U	mg/kg dry	0.63	0.15	50	8260B	5/1/19 18:29	JLB	P9E0041
Carbon Tetrachloride	0.062 U	mg/kg dry	0.31	0.062	50	8260B	5/1/19 18:29	JLB	P9E0041
Chlorobenzene	0.049 U	mg/kg dry	0.31	0.049	50	8260B	5/1/19 18:29	JLB	P9E0041
Chloroethane	0.060 U	mg/kg dry	0.63	0.060	50	8260B	5/1/19 18:29	JLB	P9E0041
Chloroform	0.038 U	mg/kg dry	0.31	0.038	50	8260B	5/1/19 18:29	JLB	P9E0041
Chloromethane	0.095 U	mg/kg dry	0.63	0.095	50	8260B	5/1/19 18:29	JLB	P9E0041
cis-1,2-Dichloroethylene	0.049 U	mg/kg dry	0.31	0.049	50	8260B	5/1/19 18:29	JLB	P9E0041
cis-1,3-Dichloropropylene	0.031 U	mg/kg dry	0.31	0.031	50	8260B	5/1/19 18:29	JLB	P9E0041
Dibromochloromethane	0.021 U	mg/kg dry	0.31	0.021	50	8260B	5/1/19 18:29	JLB	P9E0041
Dichlorodifluoromethane	0.088 U	mg/kg dry	0.63	0.088	50	8260B	5/1/19 18:29	JLB	P9E0041

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Wood Environ. & Infrastructure Solutions (Ch Project: NCDOT Shelby R-2707 D&E
 Attn: John Maas
 2801 Yorkmont Rd. #100
 Charlotte, NC 28208

Project No.: 1883R2707 Parcel 609
 Sample Matrix: Solid

Client Sample ID: P609-SB5-0-1
 Prism Sample ID: 9040346-01
 Prism Work Order: 9040346
 Time Collected: 04/18/19 11:30
 Time Submitted: 04/22/19 09:30

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
Ethylbenzene	0.45	mg/kg dry	0.31	0.047	50	8260B	5/1/19 18:29	JLB	P9E0041
Isopropyl Ether	0.046 U	mg/kg dry	0.31	0.046	50	8260B	5/1/19 18:29	JLB	P9E0041
Isopropylbenzene (Cumene)	1.3	mg/kg dry	0.31	0.037	50	8260B	5/1/19 18:29	JLB	P9E0041
m,p-Xylenes	2.1	mg/kg dry	0.63	0.080	50	8260B	5/1/19 18:29	JLB	P9E0041
Methyl Butyl Ketone (2-Hexanone)	0.022 U	mg/kg dry	1.3	0.022	50	8260B	5/1/19 18:29	JLB	P9E0041
Methyl Ethyl Ketone (2-Butanone)	0.97 J	mg/kg dry	1.3	0.073	50	8260B	5/1/19 18:29	JLB	P9E0041
Methyl Isobutyl Ketone	0.27 J	mg/kg dry	1.3	0.026	50	8260B	5/1/19 18:29	JLB	P9E0041
Methylene Chloride	0.051 U	mg/kg dry	0.31	0.051	50	8260B	5/1/19 18:29	JLB	P9E0041
Methyl-tert-Butyl Ether	0.044 U	mg/kg dry	0.31	0.044	50	8260B	5/1/19 18:29	JLB	P9E0041
Naphthalene	0.60 J	mg/kg dry	0.63	0.032	50	8260B	5/1/19 18:29	JLB	P9E0041
n-Butylbenzene	2.1	mg/kg dry	0.31	0.029	50	8260B	5/1/19 18:29	JLB	P9E0041
n-Propylbenzene	3.7	mg/kg dry	0.31	0.045	50	8260B	5/1/19 18:29	JLB	P9E0041
o-Xylene	2.0	mg/kg dry	0.31	0.033	50	8260B	5/1/19 18:29	JLB	P9E0041
sec-Butylbenzene	3.2	mg/kg dry	0.31	0.034	50	8260B	5/1/19 18:29	JLB	P9E0041
Styrene	0.030 U	mg/kg dry	0.31	0.030	50	8260B	5/1/19 18:29	JLB	P9E0041
tert-Butylbenzene	0.037 U	mg/kg dry	0.31	0.037	50	8260B	5/1/19 18:29	JLB	P9E0041
Tetrachloroethylene	0.057 U	mg/kg dry	0.31	0.057	50	8260B	5/1/19 18:29	JLB	P9E0041
Toluene	0.050 U	mg/kg dry	0.31	0.050	50	8260B	5/1/19 18:29	JLB	P9E0041
trans-1,2-Dichloroethylene	0.060 U	mg/kg dry	0.31	0.060	50	8260B	5/1/19 18:29	JLB	P9E0041
trans-1,3-Dichloropropylene	0.027 U	mg/kg dry	0.31	0.027	50	8260B	5/1/19 18:29	JLB	P9E0041
Trichloroethylene	0.061 U	mg/kg dry	0.31	0.061	50	8260B	5/1/19 18:29	JLB	P9E0041
Trichlorofluoromethane	0.085 U	mg/kg dry	0.63	0.085	50	8260B	5/1/19 18:29	JLB	P9E0041
Vinyl acetate	0.034 U	mg/kg dry	0.63	0.034	50	8260B	5/1/19 18:29	JLB	P9E0041
Vinyl chloride	0.062 U	mg/kg dry	0.63	0.062	50	8260B	5/1/19 18:29	JLB	P9E0041
Xylenes, total	4.1	mg/kg dry	0.94	0.11	50	8260B	5/1/19 18:29	JLB	P9E0041

Surrogate	Recovery	Control Limits
4-Bromofluorobenzene	105 %	70-130
Dibromofluoromethane	103 %	70-130
Toluene-d8	106 %	70-130

Wood Environ. & Infrastructure Solutions (Ch Project: NCDOT Shelby R-2707 D&E
 Attn: John Maas
 2801 Yorkmont Rd. #100
 Charlotte, NC 28208

Project No.: 1883R2707 Parcel 609
 Sample Matrix: Solid

Client Sample ID: P609-SB5-2-3
 Prism Sample ID: 9040346-02
 Prism Work Order: 9040346
 Time Collected: 04/18/19 11:40
 Time Submitted: 04/22/19 09:30

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
General Chemistry Parameters									
% Solids	80.8	% by Weight	0.100	0.100	1	*SM2540 G	4/29/19 15:57	KBS	P9D0532
Volatile Organic Compounds by GC/MS									
1,1,1,2-Tetrachloroethane	0.00068 U	mg/kg dry	0.0056	0.00068	1	8260B	4/26/19 19:37	JLB	P9D0530
1,1,1-Trichloroethane	0.00082 U	mg/kg dry	0.0056	0.00082	1	8260B	4/26/19 19:37	JLB	P9D0530
1,1,2,2-Tetrachloroethane	0.00041 U	mg/kg dry	0.0056	0.00041	1	8260B	4/26/19 19:37	JLB	P9D0530
1,1,2-Trichloroethane	0.00060 U	mg/kg dry	0.0056	0.00060	1	8260B	4/26/19 19:37	JLB	P9D0530
1,1-Dichloroethane	0.0010 U	mg/kg dry	0.0056	0.0010	1	8260B	4/26/19 19:37	JLB	P9D0530
1,1-Dichloroethylene	0.0010 U	mg/kg dry	0.0056	0.0010	1	8260B	4/26/19 19:37	JLB	P9D0530
1,1-Dichloropropylene	0.00086 U	mg/kg dry	0.0056	0.00086	1	8260B	4/26/19 19:37	JLB	P9D0530
1,2,3-Trichlorobenzene	0.00080 U	mg/kg dry	0.011	0.00080	1	8260B	4/26/19 19:37	JLB	P9D0530
1,2,3-Trichloropropane	0.00064 U	mg/kg dry	0.0056	0.00064	1	8260B	4/26/19 19:37	JLB	P9D0530
1,2,4-Trichlorobenzene	0.00053 U	mg/kg dry	0.011	0.00053	1	8260B	4/26/19 19:37	JLB	P9D0530
1,2,4-Trimethylbenzene	0.00059 U	mg/kg dry	0.0056	0.00059	1	8260B	4/26/19 19:37	JLB	P9D0530
1,2-Dibromoethane	0.00050 U	mg/kg dry	0.0056	0.00050	1	8260B	4/26/19 19:37	JLB	P9D0530
1,2-Dichlorobenzene	0.00062 U	mg/kg dry	0.0056	0.00062	1	8260B	4/26/19 19:37	JLB	P9D0530
1,2-Dichloroethane	0.00067 U	mg/kg dry	0.0056	0.00067	1	8260B	4/26/19 19:37	JLB	P9D0530
1,2-Dichloropropane	0.00084 U	mg/kg dry	0.0056	0.00084	1	8260B	4/26/19 19:37	JLB	P9D0530
1,3,5-Trimethylbenzene	0.00070 U	mg/kg dry	0.0056	0.00070	1	8260B	4/26/19 19:37	JLB	P9D0530
1,3-Dichlorobenzene	0.00070 U	mg/kg dry	0.0056	0.00070	1	8260B	4/26/19 19:37	JLB	P9D0530
1,3-Dichloropropane	0.00047 U	mg/kg dry	0.0056	0.00047	1	8260B	4/26/19 19:37	JLB	P9D0530
1,4-Dichlorobenzene	0.00071 U	mg/kg dry	0.0056	0.00071	1	8260B	4/26/19 19:37	JLB	P9D0530
2,2-Dichloropropane	0.00070 U	mg/kg dry	0.0056	0.00070	1	8260B	4/26/19 19:37	JLB	P9D0530
2-Chlorotoluene	0.00075 U	mg/kg dry	0.0056	0.00075	1	8260B	4/26/19 19:37	JLB	P9D0530
4-Chlorotoluene	0.00064 U	mg/kg dry	0.0056	0.00064	1	8260B	4/26/19 19:37	JLB	P9D0530
4-Isopropyltoluene	0.0014 U	mg/kg dry	0.0056	0.0014	1	8260B	4/26/19 19:37	JLB	P9D0530
Acetone	0.043	mg/kg dry	0.022	0.0014	1	8260B	4/26/19 19:37	JLB	P9D0530
Benzene	0.00087 U	mg/kg dry	0.0056	0.00087	1	8260B	4/26/19 19:37	JLB	P9D0530
Bromobenzene	0.00078 U	mg/kg dry	0.0056	0.00078	1	8260B	4/26/19 19:37	JLB	P9D0530
Bromochloromethane	0.00092 U	mg/kg dry	0.0056	0.00092	1	8260B	4/26/19 19:37	JLB	P9D0530
Bromodichloromethane	0.00053 U	mg/kg dry	0.0056	0.00053	1	8260B	4/26/19 19:37	JLB	P9D0530
Bromoform	0.00043 U	mg/kg dry	0.0056	0.00043	1	8260B	4/26/19 19:37	JLB	P9D0530
Bromomethane	0.0027 U	mg/kg dry	0.011	0.0027	1	8260B	4/26/19 19:37	JLB	P9D0530
Carbon Tetrachloride	0.0011 U	mg/kg dry	0.0056	0.0011	1	8260B	4/26/19 19:37	JLB	P9D0530
Chlorobenzene	0.00087 U	mg/kg dry	0.0056	0.00087	1	8260B	4/26/19 19:37	JLB	P9D0530
Chloroethane	0.0011 U	mg/kg dry	0.011	0.0011	1	8260B	4/26/19 19:37	JLB	P9D0530
Chloroform	0.00068 U	mg/kg dry	0.0056	0.00068	1	8260B	4/26/19 19:37	JLB	P9D0530
Chloromethane	0.0017 U	mg/kg dry	0.011	0.0017	1	8260B	4/26/19 19:37	JLB	P9D0530
cis-1,2-Dichloroethylene	0.00088 U	mg/kg dry	0.0056	0.00088	1	8260B	4/26/19 19:37	JLB	P9D0530
cis-1,3-Dichloropropylene	0.00055 U	mg/kg dry	0.0056	0.00055	1	8260B	4/26/19 19:37	JLB	P9D0530
Dibromochloromethane	0.00037 U	mg/kg dry	0.0056	0.00037	1	8260B	4/26/19 19:37	JLB	P9D0530
Dichlorodifluoromethane	0.0016 U	mg/kg dry	0.011	0.0016	1	8260B	4/26/19 19:37	JLB	P9D0530

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Wood Environ. & Infrastructure Solutions (Ch Project: NCDOT Shelby R-2707 D&E
 Attn: John Maas
 2801 Yorkmont Rd. #100
 Charlotte, NC 28208

Project No.: 1883R2707 Parcel 609
 Sample Matrix: Solid

Client Sample ID: P609-SB5-2-3
 Prism Sample ID: 9040346-02
 Prism Work Order: 9040346
 Time Collected: 04/18/19 11:40
 Time Submitted: 04/22/19 09:30

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
Ethylbenzene	0.00084 U	mg/kg dry	0.0056	0.00084	1	8260B	4/26/19 19:37	JLB	P9D0530
Isopropyl Ether	0.00082 U	mg/kg dry	0.0056	0.00082	1	8260B	4/26/19 19:37	JLB	P9D0530
Isopropylbenzene (Cumene)	0.00065 U	mg/kg dry	0.0056	0.00065	1	8260B	4/26/19 19:37	JLB	P9D0530
m,p-Xylenes	0.0014 U	mg/kg dry	0.011	0.0014	1	8260B	4/26/19 19:37	JLB	P9D0530
Methyl Butyl Ketone (2-Hexanone)	0.00039 U	mg/kg dry	0.022	0.00039	1	8260B	4/26/19 19:37	JLB	P9D0530
Methyl Ethyl Ketone (2-Butanone)	0.0044 J	mg/kg dry	0.022	0.0013	1	8260B	4/26/19 19:37	JLB	P9D0530
Methyl Isobutyl Ketone	0.00046 U	mg/kg dry	0.022	0.00046	1	8260B	4/26/19 19:37	JLB	P9D0530
Methylene Chloride	0.00091 U	mg/kg dry	0.0056	0.00091	1	8260B	4/26/19 19:37	JLB	P9D0530
Methyl-tert-Butyl Ether	0.00078 U	mg/kg dry	0.0056	0.00078	1	8260B	4/26/19 19:37	JLB	P9D0530
Naphthalene	0.00056 U	mg/kg dry	0.011	0.00056	1	8260B	4/26/19 19:37	JLB	P9D0530
n-Butylbenzene	0.00052 U	mg/kg dry	0.0056	0.00052	1	8260B	4/26/19 19:37	JLB	P9D0530
n-Propylbenzene	0.00081 U	mg/kg dry	0.0056	0.00081	1	8260B	4/26/19 19:37	JLB	P9D0530
o-Xylene	0.00060 U	mg/kg dry	0.0056	0.00060	1	8260B	4/26/19 19:37	JLB	P9D0530
sec-Butylbenzene	0.00060 U	mg/kg dry	0.0056	0.00060	1	8260B	4/26/19 19:37	JLB	P9D0530
Styrene	0.00054 U	mg/kg dry	0.0056	0.00054	1	8260B	4/26/19 19:37	JLB	P9D0530
tert-Butylbenzene	0.00066 U	mg/kg dry	0.0056	0.00066	1	8260B	4/26/19 19:37	JLB	P9D0530
Tetrachloroethylene	0.0010 U	mg/kg dry	0.0056	0.0010	1	8260B	4/26/19 19:37	JLB	P9D0530
Toluene	0.00089 U	mg/kg dry	0.0056	0.00089	1	8260B	4/26/19 19:37	JLB	P9D0530
trans-1,2-Dichloroethylene	0.0011 U	mg/kg dry	0.0056	0.0011	1	8260B	4/26/19 19:37	JLB	P9D0530
trans-1,3-Dichloropropylene	0.00048 U	mg/kg dry	0.0056	0.00048	1	8260B	4/26/19 19:37	JLB	P9D0530
Trichloroethylene	0.0011 U	mg/kg dry	0.0056	0.0011	1	8260B	4/26/19 19:37	JLB	P9D0530
Trichlorofluoromethane	0.0015 U	mg/kg dry	0.011	0.0015	1	8260B	4/26/19 19:37	JLB	P9D0530
Vinyl acetate	0.00061 U	mg/kg dry	0.011	0.00061	1	8260B	4/26/19 19:37	JLB	P9D0530
Vinyl chloride	0.0011 U	mg/kg dry	0.011	0.0011	1	8260B	4/26/19 19:37	JLB	P9D0530
Xylenes, total	0.0020 U	mg/kg dry	0.017	0.0020	1	8260B	4/26/19 19:37	JLB	P9D0530

Surrogate	Recovery	Control Limits
4-Bromofluorobenzene	109 %	70-130
Dibromofluoromethane	110 %	84-123
Toluene-d8	106 %	76-129

Wood Environ. & Infrastructure Solutions (Ch Project: NCDOT Shelby R-2707 D&E
 Attn: John Maas
 2801 Yorkmont Rd. #100
 Charlotte, NC 28208

Project No.: 1883R2707 Parcel 609
 Sample Matrix: Solid

Client Sample ID: P609-SB12-0-2
 Prism Sample ID: 9040346-03
 Prism Work Order: 9040346
 Time Collected: 04/18/19 14:20
 Time Submitted: 04/22/19 09:30

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
General Chemistry Parameters									
% Solids	83.1	% by Weight	0.100	0.100	1	*SM2540 G	4/29/19 15:57	KBS	P9D0532
Volatile Organic Compounds by GC/MS									
1,1,1,2-Tetrachloroethane	0.00060 U	mg/kg dry	0.0049	0.00060	1	8260B	4/26/19 22:07	JLB	P9D0530
1,1,1-Trichloroethane	0.00072 U	mg/kg dry	0.0049	0.00072	1	8260B	4/26/19 22:07	JLB	P9D0530
1,1,2,2-Tetrachloroethane	0.00036 U	mg/kg dry	0.0049	0.00036	1	8260B	4/26/19 22:07	JLB	P9D0530
1,1,2-Trichloroethane	0.00053 U	mg/kg dry	0.0049	0.00053	1	8260B	4/26/19 22:07	JLB	P9D0530
1,1-Dichloroethane	0.00089 U	mg/kg dry	0.0049	0.00089	1	8260B	4/26/19 22:07	JLB	P9D0530
1,1-Dichloroethylene	0.00090 U	mg/kg dry	0.0049	0.00090	1	8260B	4/26/19 22:07	JLB	P9D0530
1,1-Dichloropropylene	0.00076 U	mg/kg dry	0.0049	0.00076	1	8260B	4/26/19 22:07	JLB	P9D0530
1,2,3-Trichlorobenzene	0.00071 U	mg/kg dry	0.0099	0.00071	1	8260B	4/26/19 22:07	JLB	P9D0530
1,2,3-Trichloropropane	0.00056 U	mg/kg dry	0.0049	0.00056	1	8260B	4/26/19 22:07	JLB	P9D0530
1,2,4-Trichlorobenzene	0.00047 U	mg/kg dry	0.0099	0.00047	1	8260B	4/26/19 22:07	JLB	P9D0530
1,2,4-Trimethylbenzene	0.00052 U	mg/kg dry	0.0049	0.00052	1	8260B	4/26/19 22:07	JLB	P9D0530
1,2-Dibromoethane	0.00044 U	mg/kg dry	0.0049	0.00044	1	8260B	4/26/19 22:07	JLB	P9D0530
1,2-Dichlorobenzene	0.00055 U	mg/kg dry	0.0049	0.00055	1	8260B	4/26/19 22:07	JLB	P9D0530
1,2-Dichloroethane	0.00059 U	mg/kg dry	0.0049	0.00059	1	8260B	4/26/19 22:07	JLB	P9D0530
1,2-Dichloropropane	0.00074 U	mg/kg dry	0.0049	0.00074	1	8260B	4/26/19 22:07	JLB	P9D0530
1,3,5-Trimethylbenzene	0.00062 U	mg/kg dry	0.0049	0.00062	1	8260B	4/26/19 22:07	JLB	P9D0530
1,3-Dichlorobenzene	0.00061 U	mg/kg dry	0.0049	0.00061	1	8260B	4/26/19 22:07	JLB	P9D0530
1,3-Dichloropropane	0.00041 U	mg/kg dry	0.0049	0.00041	1	8260B	4/26/19 22:07	JLB	P9D0530
1,4-Dichlorobenzene	0.00062 U	mg/kg dry	0.0049	0.00062	1	8260B	4/26/19 22:07	JLB	P9D0530
2,2-Dichloropropane	0.00061 U	mg/kg dry	0.0049	0.00061	1	8260B	4/26/19 22:07	JLB	P9D0530
2-Chlorotoluene	0.00066 U	mg/kg dry	0.0049	0.00066	1	8260B	4/26/19 22:07	JLB	P9D0530
4-Chlorotoluene	0.00056 U	mg/kg dry	0.0049	0.00056	1	8260B	4/26/19 22:07	JLB	P9D0530
4-Isopropyltoluene	0.0012 U	mg/kg dry	0.0049	0.0012	1	8260B	4/26/19 22:07	JLB	P9D0530
Acetone	0.12	mg/kg dry	0.020	0.0013	1	8260B	4/26/19 22:07	JLB	P9D0530
Benzene	0.00077 U	mg/kg dry	0.0049	0.00077	1	8260B	4/26/19 22:07	JLB	P9D0530
Bromobenzene	0.00068 U	mg/kg dry	0.0049	0.00068	1	8260B	4/26/19 22:07	JLB	P9D0530
Bromochloromethane	0.00081 U	mg/kg dry	0.0049	0.00081	1	8260B	4/26/19 22:07	JLB	P9D0530
Bromodichloromethane	0.00047 U	mg/kg dry	0.0049	0.00047	1	8260B	4/26/19 22:07	JLB	P9D0530
Bromoform	0.00038 U	mg/kg dry	0.0049	0.00038	1	8260B	4/26/19 22:07	JLB	P9D0530
Bromomethane	0.0024 U	mg/kg dry	0.0099	0.0024	1	8260B	4/26/19 22:07	JLB	P9D0530
Carbon Tetrachloride	0.00097 U	mg/kg dry	0.0049	0.00097	1	8260B	4/26/19 22:07	JLB	P9D0530
Chlorobenzene	0.00077 U	mg/kg dry	0.0049	0.00077	1	8260B	4/26/19 22:07	JLB	P9D0530
Chloroethane	0.00094 U	mg/kg dry	0.0099	0.00094	1	8260B	4/26/19 22:07	JLB	P9D0530
Chloroform	0.00060 U	mg/kg dry	0.0049	0.00060	1	8260B	4/26/19 22:07	JLB	P9D0530
Chloromethane	0.0015 U	mg/kg dry	0.0099	0.0015	1	8260B	4/26/19 22:07	JLB	P9D0530
cis-1,2-Dichloroethylene	0.00077 U	mg/kg dry	0.0049	0.00077	1	8260B	4/26/19 22:07	JLB	P9D0530
cis-1,3-Dichloropropylene	0.00049 U	mg/kg dry	0.0049	0.00049	1	8260B	4/26/19 22:07	JLB	P9D0530
Dibromochloromethane	0.00033 U	mg/kg dry	0.0049	0.00033	1	8260B	4/26/19 22:07	JLB	P9D0530
Dichlorodifluoromethane	0.0014 U	mg/kg dry	0.0099	0.0014	1	8260B	4/26/19 22:07	JLB	P9D0530

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Wood Environ. & Infrastructure Solutions (Ch Project: NCDOT Shelby R-2707 D&E
 Attn: John Maas
 2801 Yorkmont Rd. #100
 Charlotte, NC 28208

Project No.: 1883R2707 Parcel 609
 Sample Matrix: Solid

Client Sample ID: P609-SB12-0-2
 Prism Sample ID: 9040346-03
 Prism Work Order: 9040346
 Time Collected: 04/18/19 14:20
 Time Submitted: 04/22/19 09:30

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
Ethylbenzene	0.00074 U	mg/kg dry	0.0049	0.00074	1	8260B	4/26/19 22:07	JLB	P9D0530
Isopropyl Ether	0.00072 U	mg/kg dry	0.0049	0.00072	1	8260B	4/26/19 22:07	JLB	P9D0530
Isopropylbenzene (Cumene)	0.00057 U	mg/kg dry	0.0049	0.00057	1	8260B	4/26/19 22:07	JLB	P9D0530
m,p-Xylenes	0.0013 U	mg/kg dry	0.0099	0.0013	1	8260B	4/26/19 22:07	JLB	P9D0530
Methyl Butyl Ketone (2-Hexanone)	0.00034 U	mg/kg dry	0.020	0.00034	1	8260B	4/26/19 22:07	JLB	P9D0530
Methyl Ethyl Ketone (2-Butanone)	0.015 J	mg/kg dry	0.020	0.0012	1	8260B	4/26/19 22:07	JLB	P9D0530
Methyl Isobutyl Ketone	0.063	mg/kg dry	0.020	0.00040	1	8260B	4/26/19 22:07	JLB	P9D0530
Methylene Chloride	0.00080 U	mg/kg dry	0.0049	0.00080	1	8260B	4/26/19 22:07	JLB	P9D0530
Methyl-tert-Butyl Ether	0.00069 U	mg/kg dry	0.0049	0.00069	1	8260B	4/26/19 22:07	JLB	P9D0530
Naphthalene	0.00050 U	mg/kg dry	0.0099	0.00050	1	8260B	4/26/19 22:07	JLB	P9D0530
n-Butylbenzene	0.00046 U	mg/kg dry	0.0049	0.00046	1	8260B	4/26/19 22:07	JLB	P9D0530
n-Propylbenzene	0.00071 U	mg/kg dry	0.0049	0.00071	1	8260B	4/26/19 22:07	JLB	P9D0530
o-Xylene	0.00052 U	mg/kg dry	0.0049	0.00052	1	8260B	4/26/19 22:07	JLB	P9D0530
sec-Butylbenzene	0.00053 U	mg/kg dry	0.0049	0.00053	1	8260B	4/26/19 22:07	JLB	P9D0530
Styrene	0.00048 U	mg/kg dry	0.0049	0.00048	1	8260B	4/26/19 22:07	JLB	P9D0530
tert-Butylbenzene	0.00059 U	mg/kg dry	0.0049	0.00059	1	8260B	4/26/19 22:07	JLB	P9D0530
Tetrachloroethylene	0.00089 U	mg/kg dry	0.0049	0.00089	1	8260B	4/26/19 22:07	JLB	P9D0530
Toluene	0.00078 U	mg/kg dry	0.0049	0.00078	1	8260B	4/26/19 22:07	JLB	P9D0530
trans-1,2-Dichloroethylene	0.00094 U	mg/kg dry	0.0049	0.00094	1	8260B	4/26/19 22:07	JLB	P9D0530
trans-1,3-Dichloropropylene	0.00042 U	mg/kg dry	0.0049	0.00042	1	8260B	4/26/19 22:07	JLB	P9D0530
Trichloroethylene	0.00096 U	mg/kg dry	0.0049	0.00096	1	8260B	4/26/19 22:07	JLB	P9D0530
Trichlorofluoromethane	0.0013 U	mg/kg dry	0.0099	0.0013	1	8260B	4/26/19 22:07	JLB	P9D0530
Vinyl acetate	0.00053 U	mg/kg dry	0.0099	0.00053	1	8260B	4/26/19 22:07	JLB	P9D0530
Vinyl chloride	0.00097 U	mg/kg dry	0.0099	0.00097	1	8260B	4/26/19 22:07	JLB	P9D0530
Xylenes, total	0.0018 U	mg/kg dry	0.015	0.0018	1	8260B	4/26/19 22:07	JLB	P9D0530

Surrogate	Recovery	Control Limits
4-Bromofluorobenzene	131 %	70-130 SR3
Dibromofluoromethane	112 %	84-123
Toluene-d8	110 %	76-129

Wood Environ. & Infrastructure Solutions (Ch Project: NCDOT Shelby R-2707 D&E
 Attn: John Maas
 2801 Yorkmont Rd. #100
 Charlotte, NC 28208

Project No.: 1883R2707 Parcel 609
 Sample Matrix: Solid

Client Sample ID: P609-SB16-0-1
 Prism Sample ID: 9040346-04
 Prism Work Order: 9040346
 Time Collected: 04/18/19 14:10
 Time Submitted: 04/22/19 09:30

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
General Chemistry Parameters									
% Solids	83.0	% by Weight	0.100	0.100	1	*SM2540 G	4/29/19 15:57	KBS	P9D0532
Volatile Organic Compounds by GC/MS									
1,1,1,2-Tetrachloroethane	0.00077 U	mg/kg dry	0.0063	0.00077	1	8260B	4/26/19 15:08	JLB	P9D0530
1,1,1-Trichloroethane	0.00092 U	mg/kg dry	0.0063	0.00092	1	8260B	4/26/19 15:08	JLB	P9D0530
1,1,2,2-Tetrachloroethane	0.00046 U	mg/kg dry	0.0063	0.00046	1	8260B	4/26/19 15:08	JLB	P9D0530
1,1,2-Trichloroethane	0.00068 U	mg/kg dry	0.0063	0.00068	1	8260B	4/26/19 15:08	JLB	P9D0530
1,1-Dichloroethane	0.0011 U	mg/kg dry	0.0063	0.0011	1	8260B	4/26/19 15:08	JLB	P9D0530
1,1-Dichloroethylene	0.0012 U	mg/kg dry	0.0063	0.0012	1	8260B	4/26/19 15:08	JLB	P9D0530
1,1-Dichloropropylene	0.00097 U	mg/kg dry	0.0063	0.00097	1	8260B	4/26/19 15:08	JLB	P9D0530
1,2,3-Trichlorobenzene	0.00090 U	mg/kg dry	0.013	0.00090	1	8260B	4/26/19 15:08	JLB	P9D0530
1,2,3-Trichloropropane	0.00071 U	mg/kg dry	0.0063	0.00071	1	8260B	4/26/19 15:08	JLB	P9D0530
1,2,4-Trichlorobenzene	0.00060 U	mg/kg dry	0.013	0.00060	1	8260B	4/26/19 15:08	JLB	P9D0530
1,2,4-Trimethylbenzene	0.00067 U	mg/kg dry	0.0063	0.00067	1	8260B	4/26/19 15:08	JLB	P9D0530
1,2-Dibromoethane	0.00056 U	mg/kg dry	0.0063	0.00056	1	8260B	4/26/19 15:08	JLB	P9D0530
1,2-Dichlorobenzene	0.00070 U	mg/kg dry	0.0063	0.00070	1	8260B	4/26/19 15:08	JLB	P9D0530
1,2-Dichloroethane	0.00075 U	mg/kg dry	0.0063	0.00075	1	8260B	4/26/19 15:08	JLB	P9D0530
1,2-Dichloropropane	0.00095 U	mg/kg dry	0.0063	0.00095	1	8260B	4/26/19 15:08	JLB	P9D0530
1,3,5-Trimethylbenzene	0.00079 U	mg/kg dry	0.0063	0.00079	1	8260B	4/26/19 15:08	JLB	P9D0530
1,3-Dichlorobenzene	0.00078 U	mg/kg dry	0.0063	0.00078	1	8260B	4/26/19 15:08	JLB	P9D0530
1,3-Dichloropropane	0.00053 U	mg/kg dry	0.0063	0.00053	1	8260B	4/26/19 15:08	JLB	P9D0530
1,4-Dichlorobenzene	0.00080 U	mg/kg dry	0.0063	0.00080	1	8260B	4/26/19 15:08	JLB	P9D0530
2,2-Dichloropropane	0.00078 U	mg/kg dry	0.0063	0.00078	1	8260B	4/26/19 15:08	JLB	P9D0530
2-Chlorotoluene	0.00084 U	mg/kg dry	0.0063	0.00084	1	8260B	4/26/19 15:08	JLB	P9D0530
4-Chlorotoluene	0.00072 U	mg/kg dry	0.0063	0.00072	1	8260B	4/26/19 15:08	JLB	P9D0530
4-Isopropyltoluene	0.0016 U	mg/kg dry	0.0063	0.0016	1	8260B	4/26/19 15:08	JLB	P9D0530
Acetone	0.10	mg/kg dry	0.025	0.0016	1	8260B	4/26/19 15:08	JLB	P9D0530
Benzene	0.00098 U	mg/kg dry	0.0063	0.00098	1	8260B	4/26/19 15:08	JLB	P9D0530
Bromobenzene	0.00087 U	mg/kg dry	0.0063	0.00087	1	8260B	4/26/19 15:08	JLB	P9D0530
Bromochloromethane	0.0010 U	mg/kg dry	0.0063	0.0010	1	8260B	4/26/19 15:08	JLB	P9D0530
Bromodichloromethane	0.00060 U	mg/kg dry	0.0063	0.00060	1	8260B	4/26/19 15:08	JLB	P9D0530
Bromoform	0.00049 U	mg/kg dry	0.0063	0.00049	1	8260B	4/26/19 15:08	JLB	P9D0530
Bromomethane	0.0031 U	mg/kg dry	0.013	0.0031	1	8260B	4/26/19 15:08	JLB	P9D0530
Carbon Tetrachloride	0.0012 U	mg/kg dry	0.0063	0.0012	1	8260B	4/26/19 15:08	JLB	P9D0530
Chlorobenzene	0.00098 U	mg/kg dry	0.0063	0.00098	1	8260B	4/26/19 15:08	JLB	P9D0530
Chloroethane	0.0012 U	mg/kg dry	0.013	0.0012	1	8260B	4/26/19 15:08	JLB	P9D0530
Chloroform	0.00077 U	mg/kg dry	0.0063	0.00077	1	8260B	4/26/19 15:08	JLB	P9D0530
Chloromethane	0.0019 U	mg/kg dry	0.013	0.0019	1	8260B	4/26/19 15:08	JLB	P9D0530
cis-1,2-Dichloroethylene	0.00099 U	mg/kg dry	0.0063	0.00099	1	8260B	4/26/19 15:08	JLB	P9D0530
cis-1,3-Dichloropropylene	0.00062 U	mg/kg dry	0.0063	0.00062	1	8260B	4/26/19 15:08	JLB	P9D0530
Dibromochloromethane	0.00042 U	mg/kg dry	0.0063	0.00042	1	8260B	4/26/19 15:08	JLB	P9D0530
Dichlorodifluoromethane	0.0018 U	mg/kg dry	0.013	0.0018	1	8260B	4/26/19 15:08	JLB	P9D0530

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Wood Environ. & Infrastructure Solutions (Ch Project: NCDOT Shelby R-2707 D&E
 Attn: John Maas
 2801 Yorkmont Rd. #100
 Charlotte, NC 28208

Project No.: 1883R2707 Parcel 609
 Sample Matrix: Solid

Client Sample ID: P609-SB16-0-1
 Prism Sample ID: 9040346-04
 Prism Work Order: 9040346
 Time Collected: 04/18/19 14:10
 Time Submitted: 04/22/19 09:30

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
Ethylbenzene	0.00095 U	mg/kg dry	0.0063	0.00095	1	8260B	4/26/19 15:08	JLB	P9D0530
Isopropyl Ether	0.00092 U	mg/kg dry	0.0063	0.00092	1	8260B	4/26/19 15:08	JLB	P9D0530
Isopropylbenzene (Cumene)	0.00073 U	mg/kg dry	0.0063	0.00073	1	8260B	4/26/19 15:08	JLB	P9D0530
m,p-Xylenes	0.0016 U	mg/kg dry	0.013	0.0016	1	8260B	4/26/19 15:08	JLB	P9D0530
Methyl Butyl Ketone (2-Hexanone)	0.00044 U	mg/kg dry	0.025	0.00044	1	8260B	4/26/19 15:08	JLB	P9D0530
Methyl Ethyl Ketone (2-Butanone)	0.0060 J	mg/kg dry	0.025	0.0015	1	8260B	4/26/19 15:08	JLB	P9D0530
Methyl Isobutyl Ketone	0.00051 U	mg/kg dry	0.025	0.00051	1	8260B	4/26/19 15:08	JLB	P9D0530
Methylene Chloride	0.0010 U	mg/kg dry	0.0063	0.0010	1	8260B	4/26/19 15:08	JLB	P9D0530
Methyl-tert-Butyl Ether	0.00088 U	mg/kg dry	0.0063	0.00088	1	8260B	4/26/19 15:08	JLB	P9D0530
Naphthalene	0.00064 U	mg/kg dry	0.013	0.00064	1	8260B	4/26/19 15:08	JLB	P9D0530
n-Butylbenzene	0.00059 U	mg/kg dry	0.0063	0.00059	1	8260B	4/26/19 15:08	JLB	P9D0530
n-Propylbenzene	0.00091 U	mg/kg dry	0.0063	0.00091	1	8260B	4/26/19 15:08	JLB	P9D0530
o-Xylene	0.00067 U	mg/kg dry	0.0063	0.00067	1	8260B	4/26/19 15:08	JLB	P9D0530
sec-Butylbenzene	0.00068 U	mg/kg dry	0.0063	0.00068	1	8260B	4/26/19 15:08	JLB	P9D0530
Styrene	0.00061 U	mg/kg dry	0.0063	0.00061	1	8260B	4/26/19 15:08	JLB	P9D0530
tert-Butylbenzene	0.00075 U	mg/kg dry	0.0063	0.00075	1	8260B	4/26/19 15:08	JLB	P9D0530
Tetrachloroethylene	0.0011 U	mg/kg dry	0.0063	0.0011	1	8260B	4/26/19 15:08	JLB	P9D0530
Toluene	0.0010 U	mg/kg dry	0.0063	0.0010	1	8260B	4/26/19 15:08	JLB	P9D0530
trans-1,2-Dichloroethylene	0.0012 U	mg/kg dry	0.0063	0.0012	1	8260B	4/26/19 15:08	JLB	P9D0530
trans-1,3-Dichloropropylene	0.00054 U	mg/kg dry	0.0063	0.00054	1	8260B	4/26/19 15:08	JLB	P9D0530
Trichloroethylene	0.0012 U	mg/kg dry	0.0063	0.0012	1	8260B	4/26/19 15:08	JLB	P9D0530
Trichlorofluoromethane	0.0017 U	mg/kg dry	0.013	0.0017	1	8260B	4/26/19 15:08	JLB	P9D0530
Vinyl acetate	0.00068 U	mg/kg dry	0.013	0.00068	1	8260B	4/26/19 15:08	JLB	P9D0530
Vinyl chloride	0.0012 U	mg/kg dry	0.013	0.0012	1	8260B	4/26/19 15:08	JLB	P9D0530
Xylenes, total	0.0023 U	mg/kg dry	0.019	0.0023	1	8260B	4/26/19 15:08	JLB	P9D0530

Surrogate	Recovery	Control Limits
4-Bromofluorobenzene	111 %	70-130
Dibromofluoromethane	112 %	84-123
Toluene-d8	107 %	76-129

Wood Environ. & Infrastructure Solutions (Ch Project: NCDOT Shelby R-2707 D&E
 Attn: John Maas
 2801 Yorkmont Rd. #100
 Charlotte, NC 28208

Project No.: 1883R2707 Parcel 609
 Sample Matrix: Solid

Client Sample ID: P609-SB17-0-1
 Prism Sample ID: 9040346-05
 Prism Work Order: 9040346
 Time Collected: 04/18/19 17:00
 Time Submitted: 04/22/19 09:30

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
General Chemistry Parameters									
% Solids	42.8	% by Weight	0.100	0.100	1	*SM2540 G	4/29/19 15:57	KBS	P9D0532
Volatile Organic Compounds by GC/MS									
1,1,1,2-Tetrachloroethane	0.0021 U	mg/kg dry	0.017	0.0021	1	8260B	5/1/19 17:00	JLB	P9E0038
1,1,1-Trichloroethane	0.0025 U	mg/kg dry	0.017	0.0025	1	8260B	5/1/19 17:00	JLB	P9E0038
1,1,2,2-Tetrachloroethane	0.0013 U	mg/kg dry	0.017	0.0013	1	8260B	5/1/19 17:00	JLB	P9E0038
1,1,2-Trichloroethane	0.0019 U	mg/kg dry	0.017	0.0019	1	8260B	5/1/19 17:00	JLB	P9E0038
1,1-Dichloroethane	0.0031 U	mg/kg dry	0.017	0.0031	1	8260B	5/1/19 17:00	JLB	P9E0038
1,1-Dichloroethylene	0.0032 U	mg/kg dry	0.017	0.0032	1	8260B	5/1/19 17:00	JLB	P9E0038
1,1-Dichloropropylene	0.0027 U	mg/kg dry	0.017	0.0027	1	8260B	5/1/19 17:00	JLB	P9E0038
1,2,3-Trichlorobenzene	0.0025 U	mg/kg dry	0.035	0.0025	1	8260B	5/1/19 17:00	JLB	P9E0038
1,2,3-Trichloropropane	0.0020 U	mg/kg dry	0.017	0.0020	1	8260B	5/1/19 17:00	JLB	P9E0038
1,2,4-Trichlorobenzene	0.0017 U	mg/kg dry	0.035	0.0017	1	8260B	5/1/19 17:00	JLB	P9E0038
1,2,4-Trimethylbenzene	0.0098 J	mg/kg dry	0.017	0.0018	1	8260B	5/1/19 17:00	JLB	P9E0038
1,2-Dibromoethane	0.0016 U	mg/kg dry	0.017	0.0016	1	8260B	5/1/19 17:00	JLB	P9E0038
1,2-Dichlorobenzene	0.0019 U	mg/kg dry	0.017	0.0019	1	8260B	5/1/19 17:00	JLB	P9E0038
1,2-Dichloroethane	0.0021 U	mg/kg dry	0.017	0.0021	1	8260B	5/1/19 17:00	JLB	P9E0038
1,2-Dichloropropane	0.0026 U	mg/kg dry	0.017	0.0026	1	8260B	5/1/19 17:00	JLB	P9E0038
1,3,5-Trimethylbenzene	0.0072 J	mg/kg dry	0.017	0.0022	1	8260B	5/1/19 17:00	JLB	P9E0038
1,3-Dichlorobenzene	0.0022 U	mg/kg dry	0.017	0.0022	1	8260B	5/1/19 17:00	JLB	P9E0038
1,3-Dichloropropane	0.0014 U	mg/kg dry	0.017	0.0014	1	8260B	5/1/19 17:00	JLB	P9E0038
1,4-Dichlorobenzene	0.0022 U	mg/kg dry	0.017	0.0022	1	8260B	5/1/19 17:00	JLB	P9E0038
2,2-Dichloropropane	0.0022 U	mg/kg dry	0.017	0.0022	1	8260B	5/1/19 17:00	JLB	P9E0038
2-Chlorotoluene	0.0023 U	mg/kg dry	0.017	0.0023	1	8260B	5/1/19 17:00	JLB	P9E0038
4-Chlorotoluene	0.0020 U	mg/kg dry	0.017	0.0020	1	8260B	5/1/19 17:00	JLB	P9E0038
4-Isopropyltoluene	0.0044 U	mg/kg dry	0.017	0.0044	1	8260B	5/1/19 17:00	JLB	P9E0038
Acetone	1.1	mg/kg dry	0.069	0.0044	1	8260B	5/1/19 17:00	JLB	P9E0038
Benzene	0.0027 U	mg/kg dry	0.017	0.0027	1	8260B	5/1/19 17:00	JLB	P9E0038
Bromobenzene	0.0024 U	mg/kg dry	0.017	0.0024	1	8260B	5/1/19 17:00	JLB	P9E0038
Bromochloromethane	0.0028 U	mg/kg dry	0.017	0.0028	1	8260B	5/1/19 17:00	JLB	P9E0038
Bromodichloromethane	0.0016 U	mg/kg dry	0.017	0.0016	1	8260B	5/1/19 17:00	JLB	P9E0038
Bromoform	0.0013 U	mg/kg dry	0.017	0.0013	1	8260B	5/1/19 17:00	JLB	P9E0038
Bromomethane	0.0085 U	mg/kg dry	0.035	0.0085	1	8260B	5/1/19 17:00	JLB	P9E0038
Carbon Tetrachloride	0.0034 U	mg/kg dry	0.017	0.0034	1	8260B	5/1/19 17:00	JLB	P9E0038
Chlorobenzene	0.0027 U	mg/kg dry	0.017	0.0027	1	8260B	5/1/19 17:00	JLB	P9E0038
Chloroethane	0.0033 U	mg/kg dry	0.035	0.0033	1	8260B	5/1/19 17:00	JLB	P9E0038
Chloroform	0.0021 U	mg/kg dry	0.017	0.0021	1	8260B	5/1/19 17:00	JLB	P9E0038
Chloromethane	0.0053 U	mg/kg dry	0.035	0.0053	1	8260B	5/1/19 17:00	JLB	P9E0038
cis-1,2-Dichloroethylene	0.0027 U	mg/kg dry	0.017	0.0027	1	8260B	5/1/19 17:00	JLB	P9E0038
cis-1,3-Dichloropropylene	0.0017 U	mg/kg dry	0.017	0.0017	1	8260B	5/1/19 17:00	JLB	P9E0038
Dibromochloromethane	0.0012 U	mg/kg dry	0.017	0.0012	1	8260B	5/1/19 17:00	JLB	P9E0038
Dichlorodifluoromethane	0.0049 U	mg/kg dry	0.035	0.0049	1	8260B	5/1/19 17:00	JLB	P9E0038

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Wood Environ. & Infrastructure Solutions (Ch Project: NCDOT Shelby R-2707 D&E
 Attn: John Maas
 2801 Yorkmont Rd. #100
 Charlotte, NC 28208

Project No.: 1883R2707 Parcel 609
 Sample Matrix: Solid

Client Sample ID: P609-SB17-0-1
 Prism Sample ID: 9040346-05
 Prism Work Order: 9040346
 Time Collected: 04/18/19 17:00
 Time Submitted: 04/22/19 09:30

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
Ethylbenzene	0.0026 U	mg/kg dry	0.017	0.0026	1	8260B	5/1/19 17:00	JLB	P9E0038
Isopropyl Ether	0.0025 U	mg/kg dry	0.017	0.0025	1	8260B	5/1/19 17:00	JLB	P9E0038
Isopropylbenzene (Cumene)	0.0020 U	mg/kg dry	0.017	0.0020	1	8260B	5/1/19 17:00	JLB	P9E0038
m,p-Xylenes	0.0044 U	mg/kg dry	0.035	0.0044	1	8260B	5/1/19 17:00	JLB	P9E0038
Methyl Butyl Ketone (2-Hexanone)	0.0012 U	mg/kg dry	0.069	0.0012	1	8260B	5/1/19 17:00	JLB	P9E0038
Methyl Ethyl Ketone (2-Butanone)	0.10	mg/kg dry	0.069	0.0041	1	8260B	5/1/19 17:00	JLB	P9E0038
Methyl Isobutyl Ketone	0.0014 U	mg/kg dry	0.069	0.0014	1	8260B	5/1/19 17:00	JLB	P9E0038
Methylene Chloride	0.0028 U	mg/kg dry	0.017	0.0028	1	8260B	5/1/19 17:00	JLB	P9E0038
Methyl-tert-Butyl Ether	0.0024 U	mg/kg dry	0.017	0.0024	1	8260B	5/1/19 17:00	JLB	P9E0038
Naphthalene	0.0017 U	mg/kg dry	0.035	0.0017	1	8260B	5/1/19 17:00	JLB	P9E0038
n-Butylbenzene	0.0016 U	mg/kg dry	0.017	0.0016	1	8260B	5/1/19 17:00	JLB	P9E0038
n-Propylbenzene	0.0025 U	mg/kg dry	0.017	0.0025	1	8260B	5/1/19 17:00	JLB	P9E0038
o-Xylene	0.0018 U	mg/kg dry	0.017	0.0018	1	8260B	5/1/19 17:00	JLB	P9E0038
sec-Butylbenzene	0.0019 U	mg/kg dry	0.017	0.0019	1	8260B	5/1/19 17:00	JLB	P9E0038
Styrene	0.0017 U	mg/kg dry	0.017	0.0017	1	8260B	5/1/19 17:00	JLB	P9E0038
tert-Butylbenzene	0.0021 U	mg/kg dry	0.017	0.0021	1	8260B	5/1/19 17:00	JLB	P9E0038
Tetrachloroethylene	0.0031 U	mg/kg dry	0.017	0.0031	1	8260B	5/1/19 17:00	JLB	P9E0038
Toluene	0.0028 U	mg/kg dry	0.017	0.0028	1	8260B	5/1/19 17:00	JLB	P9E0038
trans-1,2-Dichloroethylene	0.0033 U	mg/kg dry	0.017	0.0033	1	8260B	5/1/19 17:00	JLB	P9E0038
trans-1,3-Dichloropropylene	0.0015 U	mg/kg dry	0.017	0.0015	1	8260B	5/1/19 17:00	JLB	P9E0038
Trichloroethylene	0.0034 U	mg/kg dry	0.017	0.0034	1	8260B	5/1/19 17:00	JLB	P9E0038
Trichlorofluoromethane	0.0047 U	mg/kg dry	0.035	0.0047	1	8260B	5/1/19 17:00	JLB	P9E0038
Vinyl acetate	0.0019 U	mg/kg dry	0.035	0.0019	1	8260B	5/1/19 17:00	JLB	P9E0038
Vinyl chloride	0.0034 U	mg/kg dry	0.035	0.0034	1	8260B	5/1/19 17:00	JLB	P9E0038
Xylenes, total	0.0062 U	mg/kg dry	0.052	0.0062	1	8260B	5/1/19 17:00	JLB	P9E0038

Surrogate	Recovery	Control Limits
4-Bromofluorobenzene	148 %	70-130 SR3
Dibromofluoromethane	118 %	84-123
Toluene-d8	122 %	76-129



Wood Environ. & Infrastructure Solutions (Ch Project: NCDOT Shelby R-2707 D&E
 Attn: John Maas
 2801 Yorkmont Rd. #100
 Charlotte, NC 28208

Project No: 1883R2707 Parcel
 609

Prism Work Order: 9040346
 Time Submitted: 4/22/2019 9:30:00AM

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P9D0530 - 5035										
Blank (P9D0530-BLK1)										
Prepared & Analyzed: 04/26/19										
1,1,1,2-Tetrachloroethane	BRL	0.0050	mg/kg wet							
1,1,1-Trichloroethane	BRL	0.0050	mg/kg wet							
1,1,2,2-Tetrachloroethane	BRL	0.0050	mg/kg wet							
1,1,2-Trichloroethane	BRL	0.0050	mg/kg wet							
1,1-Dichloroethane	BRL	0.0050	mg/kg wet							
1,1-Dichloroethylene	BRL	0.0050	mg/kg wet							
1,1-Dichloropropylene	BRL	0.0050	mg/kg wet							
1,2,3-Trichlorobenzene	BRL	0.010	mg/kg wet							
1,2,3-Trichloropropane	BRL	0.0050	mg/kg wet							
1,2,4-Trichlorobenzene	BRL	0.010	mg/kg wet							
1,2,4-Trimethylbenzene	BRL	0.0050	mg/kg wet							
1,2-Dibromoethane	BRL	0.0050	mg/kg wet							
1,2-Dichlorobenzene	BRL	0.0050	mg/kg wet							
1,2-Dichloroethane	BRL	0.0050	mg/kg wet							
1,2-Dichloropropane	BRL	0.0050	mg/kg wet							
1,3,5-Trimethylbenzene	BRL	0.0050	mg/kg wet							
1,3-Dichlorobenzene	BRL	0.0050	mg/kg wet							
1,3-Dichloropropane	BRL	0.0050	mg/kg wet							
1,4-Dichlorobenzene	BRL	0.0050	mg/kg wet							
2,2-Dichloropropane	BRL	0.0050	mg/kg wet							
2-Chlorotoluene	BRL	0.0050	mg/kg wet							
4-Chlorotoluene	BRL	0.0050	mg/kg wet							
4-Isopropyltoluene	BRL	0.0050	mg/kg wet							
Acetone	BRL	0.020	mg/kg wet							
Benzene	BRL	0.0050	mg/kg wet							
Bromobenzene	BRL	0.0050	mg/kg wet							
Bromochloromethane	BRL	0.0050	mg/kg wet							
Bromodichloromethane	BRL	0.0050	mg/kg wet							
Bromoform	BRL	0.0050	mg/kg wet							
Bromomethane	BRL	0.010	mg/kg wet							
Carbon Tetrachloride	BRL	0.0050	mg/kg wet							
Chlorobenzene	BRL	0.0050	mg/kg wet							
Chloroethane	BRL	0.010	mg/kg wet							
Chloroform	BRL	0.0050	mg/kg wet							
Chloromethane	BRL	0.010	mg/kg wet							
cis-1,2-Dichloroethylene	BRL	0.0050	mg/kg wet							
cis-1,3-Dichloropropylene	BRL	0.0050	mg/kg wet							
Dibromochloromethane	BRL	0.0050	mg/kg wet							
Dichlorodifluoromethane	BRL	0.010	mg/kg wet							
Ethylbenzene	BRL	0.0050	mg/kg wet							
Isopropyl Ether	BRL	0.0050	mg/kg wet							
Isopropylbenzene (Cumene)	BRL	0.0050	mg/kg wet							
m,p-Xylenes	BRL	0.010	mg/kg wet							
Methyl Butyl Ketone (2-Hexanone)	BRL	0.020	mg/kg wet							
Methyl Ethyl Ketone (2-Butanone)	BRL	0.020	mg/kg wet							
Methyl Isobutyl Ketone	BRL	0.020	mg/kg wet							

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Wood Environ. & Infrastructure Solutions (ChProject: NCDOT Shelby R-2707 D&E
 Attn: John Maas
 2801 Yorkmont Rd. #100
 Charlotte, NC 28208

Prism Work Order: 9040346
 Time Submitted: 4/22/2019 9:30:00AM

Project No: 1883R2707 Parcel
 609

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P9D0530 - 5035										
Blank (P9D0530-BLK1)										
Prepared & Analyzed: 04/26/19										
Methylene Chloride	BRL	0.0050	mg/kg wet							
Methyl-tert-Butyl Ether	BRL	0.0050	mg/kg wet							
Naphthalene	BRL	0.010	mg/kg wet							
n-Butylbenzene	BRL	0.0050	mg/kg wet							
n-Propylbenzene	BRL	0.0050	mg/kg wet							
o-Xylene	BRL	0.0050	mg/kg wet							
sec-Butylbenzene	BRL	0.0050	mg/kg wet							
Styrene	BRL	0.0050	mg/kg wet							
tert-Butylbenzene	BRL	0.0050	mg/kg wet							
Tetrachloroethylene	BRL	0.0050	mg/kg wet							
Toluene	BRL	0.0050	mg/kg wet							
trans-1,2-Dichloroethylene	BRL	0.0050	mg/kg wet							
trans-1,3-Dichloropropylene	BRL	0.0050	mg/kg wet							
Trichloroethylene	BRL	0.0050	mg/kg wet							
Trichlorofluoromethane	BRL	0.010	mg/kg wet							
Vinyl acetate	BRL	0.010	mg/kg wet							
Vinyl chloride	BRL	0.010	mg/kg wet							
Xylenes, total	BRL	0.015	mg/kg wet							
Surrogate: 4-Bromofluorobenzene	53.8		ug/L	50.00		108	70-130			
Surrogate: Dibromofluoromethane	54.0		ug/L	50.00		108	84-123			
Surrogate: Toluene-d8	53.2		ug/L	50.00		106	76-129			
LCS (P9D0530-BS1)										
Prepared & Analyzed: 04/26/19										
1,1,1,2-Tetrachloroethane	0.0503	0.0050	mg/kg wet	0.05000		101	72-115			
1,1,1-Trichloroethane	0.0434	0.0050	mg/kg wet	0.05000		87	67-131			
1,1,2,2-Tetrachloroethane	0.0576	0.0050	mg/kg wet	0.05000		115	56-126			
1,1,2-Trichloroethane	0.0474	0.0050	mg/kg wet	0.05000		95	70-133			
1,1-Dichloroethane	0.0453	0.0050	mg/kg wet	0.05000		91	74-127			
1,1-Dichloroethylene	0.0442	0.0050	mg/kg wet	0.05000		88	67-149			
1,1-Dichloropropylene	0.0456	0.0050	mg/kg wet	0.05000		91	71-130			
1,2,3-Trichlorobenzene	0.0585	0.010	mg/kg wet	0.05000		117	68-130			
1,2,3-Trichloropropane	0.0583	0.0050	mg/kg wet	0.05000		117	60-137			
1,2,4-Trichlorobenzene	0.0578	0.010	mg/kg wet	0.05000		116	66-125			
1,2,4-Trimethylbenzene	0.0582	0.0050	mg/kg wet	0.05000		116	69-129			
1,2-Dibromoethane	0.0480	0.0050	mg/kg wet	0.05000		96	70-132			
1,2-Dichlorobenzene	0.0560	0.0050	mg/kg wet	0.05000		112	72-123			
1,2-Dichloroethane	0.0430	0.0050	mg/kg wet	0.05000		86	68-128			
1,2-Dichloropropane	0.0457	0.0050	mg/kg wet	0.05000		91	73-130			
1,3,5-Trimethylbenzene	0.0581	0.0050	mg/kg wet	0.05000		116	69-128			
1,3-Dichlorobenzene	0.0557	0.0050	mg/kg wet	0.05000		111	71-120			
1,3-Dichloropropane	0.0483	0.0050	mg/kg wet	0.05000		97	75-124			
1,4-Dichlorobenzene	0.0556	0.0050	mg/kg wet	0.05000		111	71-123			
2,2-Dichloropropane	0.0452	0.0050	mg/kg wet	0.05000		90	50-142			
2-Chlorotoluene	0.0562	0.0050	mg/kg wet	0.05000		112	67-124			
4-Chlorotoluene	0.0561	0.0050	mg/kg wet	0.05000		112	71-126			
4-Isopropyltoluene	0.0577	0.0050	mg/kg wet	0.05000		115	68-129			
Acetone	0.104	0.020	mg/kg wet	0.1000		104	29-198			

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Wood Environ. & Infrastructure Solutions (ChProject: NCDOT Shelby R-2707 D&E
 Attn: John Maas
 2801 Yorkmont Rd. #100
 Charlotte, NC 28208

Prism Work Order: 9040346
 Time Submitted: 4/22/2019 9:30:00AM

Project No: 1883R2707 Parcel
 609

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P9D0530 - 5035										
LCS (P9D0530-BS1)										
Prepared & Analyzed: 04/26/19										
Benzene	0.0442	0.0050	mg/kg wet	0.05000		88	74-127			
Bromobenzene	0.0574	0.0050	mg/kg wet	0.05000		115	73-125			
Bromochloromethane	0.0444	0.0050	mg/kg wet	0.05000		89	72-134			
Bromodichloromethane	0.0434	0.0050	mg/kg wet	0.05000		87	75-122			
Bromoform	0.0472	0.0050	mg/kg wet	0.05000		94	66-135			
Bromomethane	0.0478	0.010	mg/kg wet	0.05000		96	20-180			
Carbon Tetrachloride	0.0441	0.0050	mg/kg wet	0.05000		88	64-143			
Chlorobenzene	0.0460	0.0050	mg/kg wet	0.05000		92	74-118			
Chloroethane	0.0621	0.010	mg/kg wet	0.05000		124	33-149			
Chloroform	0.0442	0.0050	mg/kg wet	0.05000		88	73-127			
Chloromethane	0.0400	0.010	mg/kg wet	0.05000		80	45-143			
cis-1,2-Dichloroethylene	0.0439	0.0050	mg/kg wet	0.05000		88	76-134			
cis-1,3-Dichloropropylene	0.0462	0.0050	mg/kg wet	0.05000		92	71-125			
Dibromochloromethane	0.0463	0.0050	mg/kg wet	0.05000		93	73-122			
Dichlorodifluoromethane	0.0361	0.010	mg/kg wet	0.05000		72	26-146			
Ethylbenzene	0.0479	0.0050	mg/kg wet	0.05000		96	74-128			
Isopropyl Ether	0.0432	0.0050	mg/kg wet	0.05000		86	59-159			
Isopropylbenzene (Cumene)	0.0587	0.0050	mg/kg wet	0.05000		117	68-126			
m,p-Xylenes	0.0956	0.010	mg/kg wet	0.1000		96	75-124			
Methyl Butyl Ketone (2-Hexanone)	0.0498	0.020	mg/kg wet	0.05000		100	61-157			
Methyl Ethyl Ketone (2-Butanone)	0.0504	0.020	mg/kg wet	0.05000		101	63-149			
Methyl Isobutyl Ketone	0.0460	0.020	mg/kg wet	0.05000		92	57-162			
Methylene Chloride	0.0393	0.0050	mg/kg wet	0.05000		79	74-129			
Methyl-tert-Butyl Ether	0.0457	0.0050	mg/kg wet	0.05000		91	70-130			
Naphthalene	0.0569	0.010	mg/kg wet	0.05000		114	57-157			
n-Butylbenzene	0.0595	0.0050	mg/kg wet	0.05000		119	65-135			
n-Propylbenzene	0.0578	0.0050	mg/kg wet	0.05000		116	67-130			
o-Xylene	0.0481	0.0050	mg/kg wet	0.05000		96	74-126			
sec-Butylbenzene	0.0583	0.0050	mg/kg wet	0.05000		117	66-131			
Styrene	0.0471	0.0050	mg/kg wet	0.05000		94	77-121			
tert-Butylbenzene	0.0580	0.0050	mg/kg wet	0.05000		116	67-132			
Tetrachloroethylene	0.0457	0.0050	mg/kg wet	0.05000		91	68-130			
Toluene	0.0445	0.0050	mg/kg wet	0.05000		89	71-129			
trans-1,2-Dichloroethylene	0.0441	0.0050	mg/kg wet	0.05000		88	73-132			
trans-1,3-Dichloropropylene	0.0460	0.0050	mg/kg wet	0.05000		92	68-123			
Trichloroethylene	0.0440	0.0050	mg/kg wet	0.05000		88	75-133			
Trichlorofluoromethane	0.0401	0.010	mg/kg wet	0.05000		80	44-146			
Vinyl acetate	0.0455	0.010	mg/kg wet	0.05000		91	85-161			
Vinyl chloride	0.0384	0.010	mg/kg wet	0.05000		77	48-147			
Xylenes, total	0.144	0.015	mg/kg wet	0.1500		96	74-126			
Surrogate: 4-Bromofluorobenzene	53.1		ug/L	50.00		106	70-130			
Surrogate: Dibromofluoromethane	51.1		ug/L	50.00		102	84-123			
Surrogate: Toluene-d8	53.8		ug/L	50.00		108	76-129			

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Wood Environ. & Infrastructure Solutions (ChProject: NCDOT Shelby R-2707 D&E
 Attn: John Maas
 2801 Yorkmont Rd. #100
 Charlotte, NC 28208

Prism Work Order: 9040346
 Time Submitted: 4/22/2019 9:30:00AM

Project No: 1883R2707 Parcel
 609

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P9D0530 - 5035										
LCS Dup (P9D0530-BSD1)										
Prepared & Analyzed: 04/26/19										
1,1,1,2-Tetrachloroethane	0.0497	0.0050	mg/kg wet	0.05000		99	72-115	1	20	
1,1,1-Trichloroethane	0.0421	0.0050	mg/kg wet	0.05000		84	67-131	3	20	
1,1,1,2,2-Tetrachloroethane	0.0593	0.0050	mg/kg wet	0.05000		119	56-126	3	20	
1,1,2-Trichloroethane	0.0468	0.0050	mg/kg wet	0.05000		94	70-133	1	20	
1,1-Dichloroethane	0.0437	0.0050	mg/kg wet	0.05000		87	74-127	4	20	
1,1-Dichloroethylene	0.0425	0.0050	mg/kg wet	0.05000		85	67-149	4	20	
1,1-Dichloropropylene	0.0435	0.0050	mg/kg wet	0.05000		87	71-130	5	20	
1,2,3-Trichlorobenzene	0.0578	0.010	mg/kg wet	0.05000		116	68-130	1	20	
1,2,3-Trichloropropane	0.0596	0.0050	mg/kg wet	0.05000		119	60-137	2	20	
1,2,4-Trichlorobenzene	0.0564	0.010	mg/kg wet	0.05000		113	66-125	3	20	
1,2,4-Trimethylbenzene	0.0576	0.0050	mg/kg wet	0.05000		115	69-129	1	20	
1,2-Dibromoethane	0.0476	0.0050	mg/kg wet	0.05000		95	70-132	0.8	20	
1,2-Dichlorobenzene	0.0556	0.0050	mg/kg wet	0.05000		111	72-123	0.7	20	
1,2-Dichloroethane	0.0428	0.0050	mg/kg wet	0.05000		86	68-128	0.4	20	
1,2-Dichloropropane	0.0451	0.0050	mg/kg wet	0.05000		90	73-130	1	20	
1,3,5-Trimethylbenzene	0.0572	0.0050	mg/kg wet	0.05000		114	69-128	1	20	
1,3-Dichlorobenzene	0.0549	0.0050	mg/kg wet	0.05000		110	71-120	2	20	
1,3-Dichloropropane	0.0480	0.0050	mg/kg wet	0.05000		96	75-124	0.6	20	
1,4-Dichlorobenzene	0.0552	0.0050	mg/kg wet	0.05000		110	71-123	0.6	20	
2,2-Dichloropropane	0.0432	0.0050	mg/kg wet	0.05000		86	50-142	4	20	
2-Chlorotoluene	0.0555	0.0050	mg/kg wet	0.05000		111	67-124	1	20	
4-Chlorotoluene	0.0558	0.0050	mg/kg wet	0.05000		112	71-126	0.5	20	
4-Isopropyltoluene	0.0569	0.0050	mg/kg wet	0.05000		114	68-129	1	20	
Acetone	0.105	0.020	mg/kg wet	0.1000		105	29-198	1	20	
Benzene	0.0430	0.0050	mg/kg wet	0.05000		86	74-127	3	20	
Bromobenzene	0.0570	0.0050	mg/kg wet	0.05000		114	73-125	0.6	20	
Bromochloromethane	0.0437	0.0050	mg/kg wet	0.05000		87	72-134	2	20	
Bromodichloromethane	0.0432	0.0050	mg/kg wet	0.05000		86	75-122	0.6	20	
Bromoform	0.0468	0.0050	mg/kg wet	0.05000		94	66-135	1	20	
Bromomethane	0.0454	0.010	mg/kg wet	0.05000		91	20-180	5	20	
Carbon Tetrachloride	0.0429	0.0050	mg/kg wet	0.05000		86	64-143	3	20	
Chlorobenzene	0.0448	0.0050	mg/kg wet	0.05000		90	74-118	3	20	
Chloroethane	0.0603	0.010	mg/kg wet	0.05000		121	33-149	3	20	
Chloroform	0.0429	0.0050	mg/kg wet	0.05000		86	73-127	3	20	
Chloromethane	0.0388	0.010	mg/kg wet	0.05000		78	45-143	3	20	
cis-1,2-Dichloroethylene	0.0435	0.0050	mg/kg wet	0.05000		87	76-134	0.8	20	
cis-1,3-Dichloropropylene	0.0457	0.0050	mg/kg wet	0.05000		91	71-125	1	20	
Dibromochloromethane	0.0463	0.0050	mg/kg wet	0.05000		93	73-122	0.09	20	
Dichlorodifluoromethane	0.0343	0.010	mg/kg wet	0.05000		69	26-146	5	20	
Ethylbenzene	0.0460	0.0050	mg/kg wet	0.05000		92	74-128	4	20	
Isopropyl Ether	0.0426	0.0050	mg/kg wet	0.05000		85	59-159	1	20	
Isopropylbenzene (Cumene)	0.0572	0.0050	mg/kg wet	0.05000		114	68-126	2	20	
m,p-Xylenes	0.0921	0.010	mg/kg wet	0.1000		92	75-124	4	20	
Methyl Butyl Ketone (2-Hexanone)	0.0513	0.020	mg/kg wet	0.05000		103	61-157	3	20	
Methyl Ethyl Ketone (2-Butanone)	0.0513	0.020	mg/kg wet	0.05000		103	63-149	2	20	
Methyl Isobutyl Ketone	0.0469	0.020	mg/kg wet	0.05000		94	57-162	2	20	

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Wood Environ. & Infrastructure Solutions (ChProject: NCDOT Shelby R-2707 D&E
 Attn: John Maas
 2801 Yorkmont Rd. #100
 Charlotte, NC 28208

Prism Work Order: 9040346
 Time Submitted: 4/22/2019 9:30:00AM

Project No: 1883R2707 Parcel
 609

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P9D0530 - 5035										
LCS Dup (P9D0530-BSD1)										
Prepared & Analyzed: 04/26/19										
Methylene Chloride	0.0392	0.0050	mg/kg wet	0.05000		78	74-129	0.1	20	
Methyl-tert-Butyl Ether	0.0457	0.0050	mg/kg wet	0.05000		91	70-130	0.02	20	
Naphthalene	0.0577	0.010	mg/kg wet	0.05000		115	57-157	1	20	
n-Butylbenzene	0.0579	0.0050	mg/kg wet	0.05000		116	65-135	3	20	
n-Propylbenzene	0.0567	0.0050	mg/kg wet	0.05000		113	67-130	2	20	
o-Xylene	0.0467	0.0050	mg/kg wet	0.05000		93	74-126	3	20	
sec-Butylbenzene	0.0572	0.0050	mg/kg wet	0.05000		114	66-131	2	20	
Styrene	0.0464	0.0050	mg/kg wet	0.05000		93	77-121	2	20	
tert-Butylbenzene	0.0568	0.0050	mg/kg wet	0.05000		114	67-132	2	20	
Tetrachloroethylene	0.0439	0.0050	mg/kg wet	0.05000		88	68-130	4	20	
Toluene	0.0432	0.0050	mg/kg wet	0.05000		86	71-129	3	20	
trans-1,2-Dichloroethylene	0.0426	0.0050	mg/kg wet	0.05000		85	73-132	3	20	
trans-1,3-Dichloropropylene	0.0458	0.0050	mg/kg wet	0.05000		92	68-123	0.5	20	
Trichloroethylene	0.0426	0.0050	mg/kg wet	0.05000		85	75-133	3	20	
Trichlorofluoromethane	0.0386	0.010	mg/kg wet	0.05000		77	44-146	4	20	
Vinyl acetate	0.0469	0.010	mg/kg wet	0.05000		94	85-161	3	20	
Vinyl chloride	0.0375	0.010	mg/kg wet	0.05000		75	48-147	2	20	
Xylenes, total	0.139	0.015	mg/kg wet	0.1500		93	74-126	3	20	
Surrogate: 4-Bromofluorobenzene	53.3		ug/L	50.00		107	70-130			
Surrogate: Dibromofluoromethane	52.2		ug/L	50.00		104	84-123			
Surrogate: Toluene-d8	54.0		ug/L	50.00		108	76-129			

Batch P9E0038 - 5035

Blank (P9E0038-BLK1)										
Prepared & Analyzed: 05/01/19										
1,1,1,2-Tetrachloroethane	BRL	0.0050	mg/kg wet							
1,1,1-Trichloroethane	BRL	0.0050	mg/kg wet							
1,1,2,2-Tetrachloroethane	BRL	0.0050	mg/kg wet							
1,1,2-Trichloroethane	BRL	0.0050	mg/kg wet							
1,1-Dichloroethane	BRL	0.0050	mg/kg wet							
1,1-Dichloroethylene	BRL	0.0050	mg/kg wet							
1,1-Dichloropropylene	BRL	0.0050	mg/kg wet							
1,2,3-Trichlorobenzene	BRL	0.010	mg/kg wet							
1,2,3-Trichloropropane	BRL	0.0050	mg/kg wet							
1,2,4-Trichlorobenzene	BRL	0.010	mg/kg wet							
1,2,4-Trimethylbenzene	BRL	0.0050	mg/kg wet							
1,2-Dibromoethane	BRL	0.0050	mg/kg wet							
1,2-Dichlorobenzene	BRL	0.0050	mg/kg wet							
1,2-Dichloroethane	BRL	0.0050	mg/kg wet							
1,2-Dichloropropane	BRL	0.0050	mg/kg wet							
1,3,5-Trimethylbenzene	BRL	0.0050	mg/kg wet							
1,3-Dichlorobenzene	BRL	0.0050	mg/kg wet							
1,3-Dichloropropane	BRL	0.0050	mg/kg wet							
1,4-Dichlorobenzene	BRL	0.0050	mg/kg wet							
2,2-Dichloropropane	BRL	0.0050	mg/kg wet							
2-Chlorotoluene	BRL	0.0050	mg/kg wet							
4-Chlorotoluene	BRL	0.0050	mg/kg wet							

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Wood Environ. & Infrastructure Solutions (ChProject: NCDOT Shelby R-2707 D&E
 Attn: John Maas
 2801 Yorkmont Rd. #100
 Charlotte, NC 28208

Project No: 1883R2707 Parcel
 609

Prism Work Order: 9040346
 Time Submitted: 4/22/2019 9:30:00AM

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P9E0038 - 5035										
Blank (P9E0038-BLK1)										
Prepared & Analyzed: 05/01/19										
4-Isopropyltoluene	BRL	0.0050	mg/kg wet							
Acetone	BRL	0.020	mg/kg wet							
Benzene	BRL	0.0050	mg/kg wet							
Bromobenzene	BRL	0.0050	mg/kg wet							
Bromochloromethane	BRL	0.0050	mg/kg wet							
Bromodichloromethane	BRL	0.0050	mg/kg wet							
Bromoform	BRL	0.0050	mg/kg wet							
Bromomethane	BRL	0.010	mg/kg wet							
Carbon Tetrachloride	BRL	0.0050	mg/kg wet							
Chlorobenzene	BRL	0.0050	mg/kg wet							
Chloroethane	BRL	0.010	mg/kg wet							
Chloroform	BRL	0.0050	mg/kg wet							
Chloromethane	BRL	0.010	mg/kg wet							
cis-1,2-Dichloroethylene	BRL	0.0050	mg/kg wet							
cis-1,3-Dichloropropylene	BRL	0.0050	mg/kg wet							
Dibromochloromethane	BRL	0.0050	mg/kg wet							
Dichlorodifluoromethane	BRL	0.010	mg/kg wet							
Ethylbenzene	BRL	0.0050	mg/kg wet							
Isopropyl Ether	BRL	0.0050	mg/kg wet							
Isopropylbenzene (Cumene)	BRL	0.0050	mg/kg wet							
m,p-Xylenes	BRL	0.010	mg/kg wet							
Methyl Butyl Ketone (2-Hexanone)	BRL	0.020	mg/kg wet							
Methyl Ethyl Ketone (2-Butanone)	BRL	0.020	mg/kg wet							
Methyl Isobutyl Ketone	BRL	0.020	mg/kg wet							
Methylene Chloride	BRL	0.0050	mg/kg wet							
Methyl-tert-Butyl Ether	BRL	0.0050	mg/kg wet							
Naphthalene	BRL	0.010	mg/kg wet							
n-Butylbenzene	BRL	0.0050	mg/kg wet							
n-Propylbenzene	BRL	0.0050	mg/kg wet							
o-Xylene	BRL	0.0050	mg/kg wet							
sec-Butylbenzene	BRL	0.0050	mg/kg wet							
Styrene	BRL	0.0050	mg/kg wet							
tert-Butylbenzene	BRL	0.0050	mg/kg wet							
Tetrachloroethylene	BRL	0.0050	mg/kg wet							
Toluene	BRL	0.0050	mg/kg wet							
trans-1,2-Dichloroethylene	BRL	0.0050	mg/kg wet							
trans-1,3-Dichloropropylene	BRL	0.0050	mg/kg wet							
Trichloroethylene	BRL	0.0050	mg/kg wet							
Trichlorofluoromethane	BRL	0.010	mg/kg wet							
Vinyl acetate	BRL	0.010	mg/kg wet							
Vinyl chloride	BRL	0.010	mg/kg wet							
Xylenes, total	BRL	0.015	mg/kg wet							
Surrogate: 4-Bromofluorobenzene	53.5		ug/L	50.00		107	70-130			
Surrogate: Dibromofluoromethane	52.1		ug/L	50.00		104	84-123			
Surrogate: Toluene-d8	54.5		ug/L	50.00		109	76-129			

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 Charlotte, NC 28208

Prism Work Order: 9040346
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Project No: 1883R2707 Parcel
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Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P9E0038 - 5035										
LCS (P9E0038-BS1)										
Prepared & Analyzed: 05/01/19										
1,1,1,2-Tetrachloroethane	0.0447	0.0050	mg/kg wet	0.05000		89	72-115			
1,1,1-Trichloroethane	0.0383	0.0050	mg/kg wet	0.05000		77	67-131			
1,1,2,2-Tetrachloroethane	0.0488	0.0050	mg/kg wet	0.05000		98	56-126			
1,1,2-Trichloroethane	0.0404	0.0050	mg/kg wet	0.05000		81	70-133			
1,1-Dichloroethane	0.0396	0.0050	mg/kg wet	0.05000		79	74-127			
1,1-Dichloroethylene	0.0428	0.0050	mg/kg wet	0.05000		86	67-149			
1,1-Dichloropropylene	0.0398	0.0050	mg/kg wet	0.05000		80	71-130			
1,2,3-Trichlorobenzene	0.0508	0.010	mg/kg wet	0.05000		102	68-130			
1,2,3-Trichloropropane	0.0488	0.0050	mg/kg wet	0.05000		98	60-137			
1,2,4-Trichlorobenzene	0.0514	0.010	mg/kg wet	0.05000		103	66-125			
1,2,4-Trimethylbenzene	0.0539	0.0050	mg/kg wet	0.05000		108	69-129			
1,2-Dibromoethane	0.0400	0.0050	mg/kg wet	0.05000		80	70-132			
1,2-Dichlorobenzene	0.0511	0.0050	mg/kg wet	0.05000		102	72-123			
1,2-Dichloroethane	0.0368	0.0050	mg/kg wet	0.05000		74	68-128			
1,2-Dichloropropane	0.0412	0.0050	mg/kg wet	0.05000		82	73-130			
1,3,5-Trimethylbenzene	0.0534	0.0050	mg/kg wet	0.05000		107	69-128			
1,3-Dichlorobenzene	0.0512	0.0050	mg/kg wet	0.05000		102	71-120			
1,3-Dichloropropane	0.0411	0.0050	mg/kg wet	0.05000		82	75-124			
1,4-Dichlorobenzene	0.0510	0.0050	mg/kg wet	0.05000		102	71-123			
2,2-Dichloropropane	0.0397	0.0050	mg/kg wet	0.05000		79	50-142			
2-Chlorotoluene	0.0518	0.0050	mg/kg wet	0.05000		104	67-124			
4-Chlorotoluene	0.0520	0.0050	mg/kg wet	0.05000		104	71-126			
4-Isopropyltoluene	0.0535	0.0050	mg/kg wet	0.05000		107	68-129			
Acetone	0.0743	0.020	mg/kg wet	0.1000		74	29-198			
Benzene	0.0386	0.0050	mg/kg wet	0.05000		77	74-127			
Bromobenzene	0.0520	0.0050	mg/kg wet	0.05000		104	73-125			
Bromochloromethane	0.0390	0.0050	mg/kg wet	0.05000		78	72-134			
Bromodichloromethane	0.0381	0.0050	mg/kg wet	0.05000		76	75-122			
Bromoform	0.0393	0.0050	mg/kg wet	0.05000		79	66-135			
Bromomethane	0.0452	0.010	mg/kg wet	0.05000		90	20-180			
Carbon Tetrachloride	0.0391	0.0050	mg/kg wet	0.05000		78	64-143			
Chlorobenzene	0.0409	0.0050	mg/kg wet	0.05000		82	74-118			
Chloroethane	0.0597	0.010	mg/kg wet	0.05000		119	33-149			
Chloroform	0.0410	0.0050	mg/kg wet	0.05000		82	73-127			
Chloromethane	0.0385	0.010	mg/kg wet	0.05000		77	45-143			
cis-1,2-Dichloroethylene	0.0386	0.0050	mg/kg wet	0.05000		77	76-134			
cis-1,3-Dichloropropylene	0.0398	0.0050	mg/kg wet	0.05000		80	71-125			
Dibromochloromethane	0.0405	0.0050	mg/kg wet	0.05000		81	73-122			
Dichlorodifluoromethane	0.0390	0.010	mg/kg wet	0.05000		78	26-146			
Ethylbenzene	0.0428	0.0050	mg/kg wet	0.05000		86	74-128			
Isopropyl Ether	0.0366	0.0050	mg/kg wet	0.05000		73	59-159			
Isopropylbenzene (Cumene)	0.0537	0.0050	mg/kg wet	0.05000		107	68-126			
m,p-Xylenes	0.0854	0.010	mg/kg wet	0.1000		85	75-124			
Methyl Butyl Ketone (2-Hexanone)	0.0365	0.020	mg/kg wet	0.05000		73	61-157			
Methyl Ethyl Ketone (2-Butanone)	0.0351	0.020	mg/kg wet	0.05000		70	63-149			
Methyl Isobutyl Ketone	0.0347	0.020	mg/kg wet	0.05000		69	57-162			

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Prism Work Order: 9040346
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Project No: 1883R2707 Parcel
 609

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P9E0038 - 5035										
LCS (P9E0038-BS1)										
Prepared & Analyzed: 05/01/19										
Methylene Chloride	0.0389	0.0050	mg/kg wet	0.05000		78	74-129			
Methyl-tert-Butyl Ether	0.0381	0.0050	mg/kg wet	0.05000		76	70-130			
Naphthalene	0.0472	0.010	mg/kg wet	0.05000		94	57-157			
n-Butylbenzene	0.0549	0.0050	mg/kg wet	0.05000		110	65-135			
n-Propylbenzene	0.0531	0.0050	mg/kg wet	0.05000		106	67-130			
o-Xylene	0.0428	0.0050	mg/kg wet	0.05000		86	74-126			
sec-Butylbenzene	0.0537	0.0050	mg/kg wet	0.05000		107	66-131			
Styrene	0.0419	0.0050	mg/kg wet	0.05000		84	77-121			
tert-Butylbenzene	0.0535	0.0050	mg/kg wet	0.05000		107	67-132			
Tetrachloroethylene	0.0397	0.0050	mg/kg wet	0.05000		79	68-130			
Toluene	0.0424	0.0050	mg/kg wet	0.05000		85	71-129			
trans-1,2-Dichloroethylene	0.0380	0.0050	mg/kg wet	0.05000		76	73-132			
trans-1,3-Dichloropropylene	0.0396	0.0050	mg/kg wet	0.05000		79	68-123			
Trichloroethylene	0.0383	0.0050	mg/kg wet	0.05000		77	75-133			
Trichlorofluoromethane	0.0381	0.010	mg/kg wet	0.05000		76	44-146			
Vinyl acetate	0.0393	0.010	mg/kg wet	0.05000		79	85-161			L
Vinyl chloride	0.0373	0.010	mg/kg wet	0.05000		75	48-147			
Xylenes, total	0.128	0.015	mg/kg wet	0.1500		85	74-126			
Surrogate: 4-Bromofluorobenzene	52.6		ug/L	50.00		105	70-130			
Surrogate: Dibromofluoromethane	51.4		ug/L	50.00		103	84-123			
Surrogate: Toluene-d8	54.8		ug/L	50.00		110	76-129			
LCS Dup (P9E0038-BSD1)										
Prepared & Analyzed: 05/01/19										
1,1,1,2-Tetrachloroethane	0.0460	0.0050	mg/kg wet	0.05000		92	72-115	3	20	
1,1,1-Trichloroethane	0.0379	0.0050	mg/kg wet	0.05000		76	67-131	0.9	20	
1,1,2,2-Tetrachloroethane	0.0532	0.0050	mg/kg wet	0.05000		106	56-126	9	20	
1,1,2-Trichloroethane	0.0432	0.0050	mg/kg wet	0.05000		86	70-133	6	20	
1,1-Dichloroethane	0.0395	0.0050	mg/kg wet	0.05000		79	74-127	0.3	20	
1,1-Dichloroethylene	0.0424	0.0050	mg/kg wet	0.05000		85	67-149	1	20	
1,1-Dichloropropylene	0.0389	0.0050	mg/kg wet	0.05000		78	71-130	2	20	
1,2,3-Trichlorobenzene	0.0533	0.010	mg/kg wet	0.05000		107	68-130	5	20	
1,2,3-Trichloropropane	0.0532	0.0050	mg/kg wet	0.05000		106	60-137	9	20	
1,2,4-Trichlorobenzene	0.0532	0.010	mg/kg wet	0.05000		106	66-125	3	20	
1,2,4-Trimethylbenzene	0.0551	0.0050	mg/kg wet	0.05000		110	69-129	2	20	
1,2-Dibromoethane	0.0421	0.0050	mg/kg wet	0.05000		84	70-132	5	20	
1,2-Dichlorobenzene	0.0534	0.0050	mg/kg wet	0.05000		107	72-123	4	20	
1,2-Dichloroethane	0.0387	0.0050	mg/kg wet	0.05000		77	68-128	5	20	
1,2-Dichloropropane	0.0419	0.0050	mg/kg wet	0.05000		84	73-130	2	20	
1,3,5-Trimethylbenzene	0.0548	0.0050	mg/kg wet	0.05000		110	69-128	3	20	
1,3-Dichlorobenzene	0.0527	0.0050	mg/kg wet	0.05000		105	71-120	3	20	
1,3-Dichloropropane	0.0432	0.0050	mg/kg wet	0.05000		86	75-124	5	20	
1,4-Dichlorobenzene	0.0528	0.0050	mg/kg wet	0.05000		106	71-123	4	20	
2,2-Dichloropropane	0.0387	0.0050	mg/kg wet	0.05000		77	50-142	3	20	
2-Chlorotoluene	0.0531	0.0050	mg/kg wet	0.05000		106	67-124	3	20	
4-Chlorotoluene	0.0533	0.0050	mg/kg wet	0.05000		107	71-126	2	20	
4-Isopropyltoluene	0.0541	0.0050	mg/kg wet	0.05000		108	68-129	1	20	
Acetone	0.0768	0.020	mg/kg wet	0.1000		77	29-198	3	20	

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Wood Environ. & Infrastructure Solutions (ChProject: NCDOT Shelby R-2707 D&E
 Attn: John Maas
 2801 Yorkmont Rd. #100
 Charlotte, NC 28208

Prism Work Order: 9040346
 Time Submitted: 4/22/2019 9:30:00AM

Project No: 1883R2707 Parcel
 609

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P9E0038 - 5035										
LCS Dup (P9E0038-BSD1)										
Prepared & Analyzed: 05/01/19										
Benzene	0.0389	0.0050	mg/kg wet	0.05000		78	74-127	0.8	20	
Bromobenzene	0.0546	0.0050	mg/kg wet	0.05000		109	73-125	5	20	
Bromochloromethane	0.0401	0.0050	mg/kg wet	0.05000		80	72-134	3	20	
Bromodichloromethane	0.0395	0.0050	mg/kg wet	0.05000		79	75-122	4	20	
Bromoform	0.0420	0.0050	mg/kg wet	0.05000		84	66-135	7	20	
Bromomethane	0.0450	0.010	mg/kg wet	0.05000		90	20-180	0.5	20	
Carbon Tetrachloride	0.0386	0.0050	mg/kg wet	0.05000		77	64-143	1	20	
Chlorobenzene	0.0417	0.0050	mg/kg wet	0.05000		83	74-118	2	20	
Chloroethane	0.0584	0.010	mg/kg wet	0.05000		117	33-149	2	20	
Chloroform	0.0414	0.0050	mg/kg wet	0.05000		83	73-127	1	20	
Chloromethane	0.0389	0.010	mg/kg wet	0.05000		78	45-143	0.9	20	
cis-1,2-Dichloroethylene	0.0395	0.0050	mg/kg wet	0.05000		79	76-134	2	20	
cis-1,3-Dichloropropylene	0.0414	0.0050	mg/kg wet	0.05000		83	71-125	4	20	
Dibromochloromethane	0.0426	0.0050	mg/kg wet	0.05000		85	73-122	5	20	
Dichlorodifluoromethane	0.0387	0.010	mg/kg wet	0.05000		77	26-146	0.8	20	
Ethylbenzene	0.0430	0.0050	mg/kg wet	0.05000		86	74-128	0.6	20	
Isopropyl Ether	0.0376	0.0050	mg/kg wet	0.05000		75	59-159	3	20	
Isopropylbenzene (Cumene)	0.0546	0.0050	mg/kg wet	0.05000		109	68-126	2	20	
m,p-Xylenes	0.0860	0.010	mg/kg wet	0.1000		86	75-124	0.8	20	
Methyl Butyl Ketone (2-Hexanone)	0.0394	0.020	mg/kg wet	0.05000		79	61-157	8	20	
Methyl Ethyl Ketone (2-Butanone)	0.0376	0.020	mg/kg wet	0.05000		75	63-149	7	20	
Methyl Isobutyl Ketone	0.0371	0.020	mg/kg wet	0.05000		74	57-162	7	20	
Methylene Chloride	0.0406	0.0050	mg/kg wet	0.05000		81	74-129	4	20	
Methyl-tert-Butyl Ether	0.0401	0.0050	mg/kg wet	0.05000		80	70-130	5	20	
Naphthalene	0.0504	0.010	mg/kg wet	0.05000		101	57-157	6	20	
n-Butylbenzene	0.0554	0.0050	mg/kg wet	0.05000		111	65-135	0.9	20	
n-Propylbenzene	0.0540	0.0050	mg/kg wet	0.05000		108	67-130	2	20	
o-Xylene	0.0430	0.0050	mg/kg wet	0.05000		86	74-126	0.6	20	
sec-Butylbenzene	0.0544	0.0050	mg/kg wet	0.05000		109	66-131	1	20	
Styrene	0.0427	0.0050	mg/kg wet	0.05000		85	77-121	2	20	
tert-Butylbenzene	0.0539	0.0050	mg/kg wet	0.05000		108	67-132	0.9	20	
Tetrachloroethylene	0.0395	0.0050	mg/kg wet	0.05000		79	68-130	0.6	20	
Toluene	0.0430	0.0050	mg/kg wet	0.05000		86	71-129	1	20	
trans-1,2-Dichloroethylene	0.0384	0.0050	mg/kg wet	0.05000		77	73-132	0.9	20	
trans-1,3-Dichloropropylene	0.0407	0.0050	mg/kg wet	0.05000		81	68-123	3	20	
Trichloroethylene	0.0383	0.0050	mg/kg wet	0.05000		77	75-133	0.05	20	
Trichlorofluoromethane	0.0375	0.010	mg/kg wet	0.05000		75	44-146	1	20	
Vinyl acetate	0.0417	0.010	mg/kg wet	0.05000		83	85-161	6	20	L
Vinyl chloride	0.0369	0.010	mg/kg wet	0.05000		74	48-147	1	20	
Xylenes, total	0.129	0.015	mg/kg wet	0.1500		86	74-126	0.7	20	
Surrogate: 4-Bromofluorobenzene	54.8		ug/L	50.00		110	70-130			
Surrogate: Dibromofluoromethane	50.9		ug/L	50.00		102	84-123			
Surrogate: Toluene-d8	54.9		ug/L	50.00		110	76-129			

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Wood Environ. & Infrastructure Solutions (Ch Project: NCDOT Shelby R-2707 D&E
 Attn: John Maas
 2801 Yorkmont Rd. #100
 Charlotte, NC 28208

Project No: 1883R2707 Parcel
 609

Prism Work Order: 9040346
 Time Submitted: 4/22/2019 9:30:00AM

Volatile Organic Compounds by GC/MS (Medium Level) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P9E0041 - 5035										
Blank (P9E0041-BLK1)										
Prepared & Analyzed: 05/01/19										
1,1,1,2-Tetrachloroethane	BRL	0.0050	mg/kg wet							
1,1,1-Trichloroethane	BRL	0.0050	mg/kg wet							
1,1,2,2-Tetrachloroethane	BRL	0.0050	mg/kg wet							
1,1,2-Trichloroethane	BRL	0.0050	mg/kg wet							
1,1-Dichloroethane	BRL	0.0050	mg/kg wet							
1,1-Dichloroethylene	BRL	0.0050	mg/kg wet							
1,1-Dichloropropylene	BRL	0.0050	mg/kg wet							
1,2,3-Trichlorobenzene	BRL	0.010	mg/kg wet							
1,2,3-Trichloropropane	BRL	0.0050	mg/kg wet							
1,2,4-Trichlorobenzene	BRL	0.010	mg/kg wet							
1,2,4-Trimethylbenzene	BRL	0.0050	mg/kg wet							
1,2-Dibromoethane	BRL	0.0050	mg/kg wet							
1,2-Dichlorobenzene	BRL	0.0050	mg/kg wet							
1,2-Dichloroethane	BRL	0.0050	mg/kg wet							
1,2-Dichloropropane	BRL	0.0050	mg/kg wet							
1,3,5-Trimethylbenzene	BRL	0.0050	mg/kg wet							
1,3-Dichlorobenzene	BRL	0.0050	mg/kg wet							
1,3-Dichloropropane	BRL	0.0050	mg/kg wet							
1,4-Dichlorobenzene	BRL	0.0050	mg/kg wet							
2,2-Dichloropropane	BRL	0.0050	mg/kg wet							
2-Chlorotoluene	BRL	0.0050	mg/kg wet							
4-Chlorotoluene	BRL	0.0050	mg/kg wet							
4-Isopropyltoluene	BRL	0.0050	mg/kg wet							
Acetone	BRL	0.020	mg/kg wet							
Benzene	BRL	0.0050	mg/kg wet							
Bromobenzene	BRL	0.0050	mg/kg wet							
Bromochloromethane	BRL	0.0050	mg/kg wet							
Bromodichloromethane	BRL	0.0050	mg/kg wet							
Bromoform	BRL	0.0050	mg/kg wet							
Bromomethane	BRL	0.010	mg/kg wet							
Carbon Tetrachloride	BRL	0.0050	mg/kg wet							
Chlorobenzene	BRL	0.0050	mg/kg wet							
Chloroethane	BRL	0.010	mg/kg wet							
Chloroform	BRL	0.0050	mg/kg wet							
Chloromethane	BRL	0.010	mg/kg wet							
cis-1,2-Dichloroethylene	BRL	0.0050	mg/kg wet							
cis-1,3-Dichloropropylene	BRL	0.0050	mg/kg wet							
Dibromochloromethane	BRL	0.0050	mg/kg wet							
Dichlorodifluoromethane	BRL	0.010	mg/kg wet							
Ethylbenzene	BRL	0.0050	mg/kg wet							
Isopropyl Ether	BRL	0.0050	mg/kg wet							
Isopropylbenzene (Cumene)	BRL	0.0050	mg/kg wet							
m,p-Xylenes	BRL	0.010	mg/kg wet							
Methyl Butyl Ketone (2-Hexanone)	BRL	0.020	mg/kg wet							
Methyl Ethyl Ketone (2-Butanone)	BRL	0.020	mg/kg wet							
Methyl Isobutyl Ketone	BRL	0.020	mg/kg wet							

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Wood Environ. & Infrastructure Solutions (ChProject: NCDOT Shelby R-2707 D&E
 Attn: John Maas
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 Charlotte, NC 28208

Prism Work Order: 9040346
 Time Submitted: 4/22/2019 9:30:00AM

Project No: 1883R2707 Parcel
 609

Volatile Organic Compounds by GC/MS (Medium Level) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P9E0041 - 5035										
Blank (P9E0041-BLK1)										
Prepared & Analyzed: 05/01/19										
Methylene Chloride	BRL	0.0050	mg/kg wet							
Methyl-tert-Butyl Ether	BRL	0.0050	mg/kg wet							
Naphthalene	BRL	0.010	mg/kg wet							
n-Butylbenzene	BRL	0.0050	mg/kg wet							
n-Propylbenzene	BRL	0.0050	mg/kg wet							
o-Xylene	BRL	0.0050	mg/kg wet							
sec-Butylbenzene	BRL	0.0050	mg/kg wet							
Styrene	BRL	0.0050	mg/kg wet							
tert-Butylbenzene	BRL	0.0050	mg/kg wet							
Tetrachloroethylene	BRL	0.0050	mg/kg wet							
Toluene	BRL	0.0050	mg/kg wet							
trans-1,2-Dichloroethylene	BRL	0.0050	mg/kg wet							
trans-1,3-Dichloropropylene	BRL	0.0050	mg/kg wet							
Trichloroethylene	BRL	0.0050	mg/kg wet							
Trichlorofluoromethane	BRL	0.010	mg/kg wet							
Vinyl acetate	BRL	0.010	mg/kg wet							
Vinyl chloride	BRL	0.010	mg/kg wet							
Xylenes, total	BRL	0.015	mg/kg wet							
<i>Surrogate: 4-Bromofluorobenzene</i>	53.5		ug/L	50.00		107	70-130			
<i>Surrogate: Dibromofluoromethane</i>	52.1		ug/L	50.00		104	70-130			
<i>Surrogate: Toluene-d8</i>	54.5		ug/L	50.00		109	70-130			
LCS (P9E0041-BS1)										
Prepared & Analyzed: 05/01/19										
1,1,1,2-Tetrachloroethane	0.0447	0.0050	mg/kg wet	0.05000		89	72-115			
1,1,1-Trichloroethane	0.0383	0.0050	mg/kg wet	0.05000		77	72-123			
1,1,2,2-Tetrachloroethane	0.0488	0.0050	mg/kg wet	0.05000		98	62-127			
1,1,2-Trichloroethane	0.0404	0.0050	mg/kg wet	0.05000		81	73-123			
1,1-Dichloroethane	0.0396	0.0050	mg/kg wet	0.05000		79	73-119			
1,1-Dichloroethylene	0.0428	0.0050	mg/kg wet	0.05000		86	59-157			
1,1-Dichloropropylene	0.0398	0.0050	mg/kg wet	0.05000		80	70-129			
1,2,3-Trichlorobenzene	0.0508	0.010	mg/kg wet	0.05000		102	59-133			
1,2,3-Trichloropropane	0.0488	0.0050	mg/kg wet	0.05000		98	52-137			
1,2,4-Trichlorobenzene	0.0514	0.010	mg/kg wet	0.05000		103	66-123			
1,2,4-Trimethylbenzene	0.0539	0.0050	mg/kg wet	0.05000		108	69-126			
1,2-Dibromoethane	0.0400	0.0050	mg/kg wet	0.05000		80	69-127			
1,2-Dichlorobenzene	0.0511	0.0050	mg/kg wet	0.05000		102	70-121			
1,2-Dichloroethane	0.0368	0.0050	mg/kg wet	0.05000		74	69-125			
1,2-Dichloropropane	0.0412	0.0050	mg/kg wet	0.05000		82	75-124			
1,3,5-Trimethylbenzene	0.0534	0.0050	mg/kg wet	0.05000		107	69-124			
1,3-Dichlorobenzene	0.0512	0.0050	mg/kg wet	0.05000		102	70-121			
1,3-Dichloropropane	0.0411	0.0050	mg/kg wet	0.05000		82	70-124			
1,4-Dichlorobenzene	0.0510	0.0050	mg/kg wet	0.05000		102	71-119			
2,2-Dichloropropane	0.0397	0.0050	mg/kg wet	0.05000		79	46-154			
2-Chlorotoluene	0.0518	0.0050	mg/kg wet	0.05000		104	70-121			
4-Chlorotoluene	0.0520	0.0050	mg/kg wet	0.05000		104	72-126			
4-Isopropyltoluene	0.0535	0.0050	mg/kg wet	0.05000		107	71-126			
Acetone	0.0743	0.020	mg/kg wet	0.1000		74	12-196			

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Wood Environ. & Infrastructure Solutions (ChProject: NCDOT Shelby R-2707 D&E
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 2801 Yorkmont Rd. #100
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Prism Work Order: 9040346
 Time Submitted: 4/22/2019 9:30:00AM

Project No: 1883R2707 Parcel
 609

Volatile Organic Compounds by GC/MS (Medium Level) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P9E0041 - 5035										
LCS (P9E0041-BS1)										
Prepared & Analyzed: 05/01/19										
Benzene	0.0386	0.0050	mg/kg wet	0.05000		77	74-123			
Bromobenzene	0.0520	0.0050	mg/kg wet	0.05000		104	66-122			
Bromochloromethane	0.0390	0.0050	mg/kg wet	0.05000		78	73-128			
Bromodichloromethane	0.0381	0.0050	mg/kg wet	0.05000		76	76-123			
Bromoform	0.0393	0.0050	mg/kg wet	0.05000		79	71-124			
Bromomethane	0.0452	0.010	mg/kg wet	0.05000		90	56-145			
Carbon Tetrachloride	0.0391	0.0050	mg/kg wet	0.05000		78	67-140			
Chlorobenzene	0.0409	0.0050	mg/kg wet	0.05000		82	74-121			
Chloroethane	0.0597	0.010	mg/kg wet	0.05000		119	64-142			
Chloroform	0.0410	0.0050	mg/kg wet	0.05000		82	75-125			
Chloromethane	0.0385	0.010	mg/kg wet	0.05000		77	54-132			
cis-1,2-Dichloroethylene	0.0386	0.0050	mg/kg wet	0.05000		77	68-132			
cis-1,3-Dichloropropylene	0.0398	0.0050	mg/kg wet	0.05000		80	75-128			
Dibromochloromethane	0.0405	0.0050	mg/kg wet	0.05000		81	71-121			
Dichlorodifluoromethane	0.0390	0.010	mg/kg wet	0.05000		78	39-178			
Ethylbenzene	0.0428	0.0050	mg/kg wet	0.05000		86	69-125			
Isopropyl Ether	0.0366	0.0050	mg/kg wet	0.05000		73	77-123			
Isopropylbenzene (Cumene)	0.0537	0.0050	mg/kg wet	0.05000		107	68-129			L
m,p-Xylenes	0.0854	0.010	mg/kg wet	0.1000		85	64-125			
Methyl Butyl Ketone (2-Hexanone)	0.0365	0.020	mg/kg wet	0.05000		73	54-139			
Methyl Ethyl Ketone (2-Butanone)	0.0351	0.020	mg/kg wet	0.05000		70	34-165			
Methyl Isobutyl Ketone	0.0347	0.020	mg/kg wet	0.05000		69	63-130			
Methylene Chloride	0.0389	0.0050	mg/kg wet	0.05000		78	65-135			
Methyl-tert-Butyl Ether	0.0381	0.0050	mg/kg wet	0.05000		76	62-123			
Naphthalene	0.0472	0.010	mg/kg wet	0.05000		94	58-129			
n-Butylbenzene	0.0549	0.0050	mg/kg wet	0.05000		110	71-126			
n-Propylbenzene	0.0531	0.0050	mg/kg wet	0.05000		106	68-128			
o-Xylene	0.0428	0.0050	mg/kg wet	0.05000		86	69-121			
sec-Butylbenzene	0.0537	0.0050	mg/kg wet	0.05000		107	71-128			
Styrene	0.0419	0.0050	mg/kg wet	0.05000		84	67-129			
tert-Butylbenzene	0.0535	0.0050	mg/kg wet	0.05000		107	71-126			
Tetrachloroethylene	0.0397	0.0050	mg/kg wet	0.05000		79	71-124			
Toluene	0.0424	0.0050	mg/kg wet	0.05000		85	74-122			
trans-1,2-Dichloroethylene	0.0380	0.0050	mg/kg wet	0.05000		76	69-129			
trans-1,3-Dichloropropylene	0.0396	0.0050	mg/kg wet	0.05000		79	74-127			
Trichloroethylene	0.0383	0.0050	mg/kg wet	0.05000		77	68-133			
Trichlorofluoromethane	0.0381	0.010	mg/kg wet	0.05000		76	60-138			
Vinyl acetate	0.0393	0.010	mg/kg wet	0.05000		79	14-179			
Vinyl chloride	0.0373	0.010	mg/kg wet	0.05000		75	69-135			
Xylenes, total	0.128	0.015	mg/kg wet	0.1500		85	74-126			
Surrogate: 4-Bromofluorobenzene	52.6		ug/L	50.00		105	70-130			
Surrogate: Dibromofluoromethane	51.4		ug/L	50.00		103	70-130			
Surrogate: Toluene-d8	54.8		ug/L	50.00		110	70-130			

Wood Environ. & Infrastructure Solutions (ChProject: NCDOT Shelby R-2707 D&E
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 Charlotte, NC 28208

Prism Work Order: 9040346
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Project No: 1883R2707 Parcel
 609

Volatile Organic Compounds by GC/MS (Medium Level) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P9E0041 - 5035										
LCS Dup (P9E0041-BSD1)										
Prepared & Analyzed: 05/01/19										
1,1,1,2-Tetrachloroethane	0.0460	0.0050	mg/kg wet	0.05000		92	72-115	3	20	
1,1,1-Trichloroethane	0.0379	0.0050	mg/kg wet	0.05000		76	72-123	0.9	20	
1,1,1,2,2-Tetrachloroethane	0.0532	0.0050	mg/kg wet	0.05000		106	62-127	9	20	
1,1,2-Trichloroethane	0.0432	0.0050	mg/kg wet	0.05000		86	73-123	6	20	
1,1-Dichloroethane	0.0395	0.0050	mg/kg wet	0.05000		79	73-119	0.3	20	
1,1-Dichloroethylene	0.0424	0.0050	mg/kg wet	0.05000		85	59-157	1	20	
1,1-Dichloropropylene	0.0389	0.0050	mg/kg wet	0.05000		78	70-129	2	20	
1,2,3-Trichlorobenzene	0.0533	0.010	mg/kg wet	0.05000		107	59-133	5	20	
1,2,3-Trichloropropane	0.0532	0.0050	mg/kg wet	0.05000		106	52-137	9	20	
1,2,4-Trichlorobenzene	0.0532	0.010	mg/kg wet	0.05000		106	66-123	3	20	
1,2,4-Trimethylbenzene	0.0551	0.0050	mg/kg wet	0.05000		110	69-126	2	20	
1,2-Dibromoethane	0.0421	0.0050	mg/kg wet	0.05000		84	69-127	5	20	
1,2-Dichlorobenzene	0.0534	0.0050	mg/kg wet	0.05000		107	70-121	4	20	
1,2-Dichloroethane	0.0387	0.0050	mg/kg wet	0.05000		77	69-125	5	20	
1,2-Dichloropropane	0.0419	0.0050	mg/kg wet	0.05000		84	75-124	2	20	
1,3,5-Trimethylbenzene	0.0548	0.0050	mg/kg wet	0.05000		110	69-124	3	20	
1,3-Dichlorobenzene	0.0527	0.0050	mg/kg wet	0.05000		105	70-121	3	20	
1,3-Dichloropropane	0.0432	0.0050	mg/kg wet	0.05000		86	70-124	5	20	
1,4-Dichlorobenzene	0.0528	0.0050	mg/kg wet	0.05000		106	71-119	4	20	
2,2-Dichloropropane	0.0387	0.0050	mg/kg wet	0.05000		77	46-154	3	20	
2-Chlorotoluene	0.0531	0.0050	mg/kg wet	0.05000		106	70-121	3	20	
4-Chlorotoluene	0.0533	0.0050	mg/kg wet	0.05000		107	72-126	2	20	
4-Isopropyltoluene	0.0541	0.0050	mg/kg wet	0.05000		108	71-126	1	20	
Acetone	0.0768	0.020	mg/kg wet	0.1000		77	12-196	3	20	
Benzene	0.0389	0.0050	mg/kg wet	0.05000		78	74-123	0.8	20	
Bromobenzene	0.0546	0.0050	mg/kg wet	0.05000		109	66-122	5	20	
Bromochloromethane	0.0401	0.0050	mg/kg wet	0.05000		80	73-128	3	20	
Bromodichloromethane	0.0395	0.0050	mg/kg wet	0.05000		79	76-123	4	20	
Bromoform	0.0420	0.0050	mg/kg wet	0.05000		84	71-124	7	20	
Bromomethane	0.0450	0.010	mg/kg wet	0.05000		90	56-145	0.5	20	
Carbon Tetrachloride	0.0386	0.0050	mg/kg wet	0.05000		77	67-140	1	20	
Chlorobenzene	0.0417	0.0050	mg/kg wet	0.05000		83	74-121	2	20	
Chloroethane	0.0584	0.010	mg/kg wet	0.05000		117	64-142	2	20	
Chloroform	0.0414	0.0050	mg/kg wet	0.05000		83	75-125	1	20	
Chloromethane	0.0389	0.010	mg/kg wet	0.05000		78	54-132	0.9	20	
cis-1,2-Dichloroethylene	0.0395	0.0050	mg/kg wet	0.05000		79	68-132	2	20	
cis-1,3-Dichloropropylene	0.0414	0.0050	mg/kg wet	0.05000		83	75-128	4	20	
Dibromochloromethane	0.0426	0.0050	mg/kg wet	0.05000		85	71-121	5	20	
Dichlorodifluoromethane	0.0387	0.010	mg/kg wet	0.05000		77	39-178	0.8	20	
Ethylbenzene	0.0430	0.0050	mg/kg wet	0.05000		86	69-125	0.6	20	
Isopropyl Ether	0.0376	0.0050	mg/kg wet	0.05000		75	77-123	3	20	L
Isopropylbenzene (Cumene)	0.0546	0.0050	mg/kg wet	0.05000		109	68-129	2	20	
m,p-Xylenes	0.0860	0.010	mg/kg wet	0.1000		86	64-125	0.8	20	
Methyl Butyl Ketone (2-Hexanone)	0.0394	0.020	mg/kg wet	0.05000		79	54-139	8	20	
Methyl Ethyl Ketone (2-Butanone)	0.0376	0.020	mg/kg wet	0.05000		75	34-165	7	20	
Methyl Isobutyl Ketone	0.0371	0.020	mg/kg wet	0.05000		74	63-130	7	20	

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Wood Environ. & Infrastructure Solutions (ChProject: NCDOT Shelby R-2707 D&E
 Attn: John Maas
 2801 Yorkmont Rd. #100
 Charlotte, NC 28208

Prism Work Order: 9040346
 Time Submitted: 4/22/2019 9:30:00AM

Project No: 1883R2707 Parcel
 609

Volatile Organic Compounds by GC/MS (Medium Level) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P9E0041 - 5035										
LCS Dup (P9E0041-BSD1)										
Prepared & Analyzed: 05/01/19										
Methylene Chloride	0.0406	0.0050	mg/kg wet	0.05000		81	65-135	4	20	
Methyl-tert-Butyl Ether	0.0401	0.0050	mg/kg wet	0.05000		80	62-123	5	20	
Naphthalene	0.0504	0.010	mg/kg wet	0.05000		101	58-129	6	20	
n-Butylbenzene	0.0554	0.0050	mg/kg wet	0.05000		111	71-126	0.9	20	
n-Propylbenzene	0.0540	0.0050	mg/kg wet	0.05000		108	68-128	2	20	
o-Xylene	0.0430	0.0050	mg/kg wet	0.05000		86	69-121	0.6	20	
sec-Butylbenzene	0.0544	0.0050	mg/kg wet	0.05000		109	71-128	1	20	
Styrene	0.0427	0.0050	mg/kg wet	0.05000		85	67-129	2	20	
tert-Butylbenzene	0.0539	0.0050	mg/kg wet	0.05000		108	71-126	0.9	20	
Tetrachloroethylene	0.0395	0.0050	mg/kg wet	0.05000		79	71-124	0.6	20	
Toluene	0.0430	0.0050	mg/kg wet	0.05000		86	74-122	1	20	
trans-1,2-Dichloroethylene	0.0384	0.0050	mg/kg wet	0.05000		77	69-129	0.9	20	
trans-1,3-Dichloropropylene	0.0407	0.0050	mg/kg wet	0.05000		81	74-127	3	20	
Trichloroethylene	0.0383	0.0050	mg/kg wet	0.05000		77	68-133	0.05	20	
Trichlorofluoromethane	0.0375	0.010	mg/kg wet	0.05000		75	60-138	1	20	
Vinyl acetate	0.0417	0.010	mg/kg wet	0.05000		83	14-179	6	20	
Vinyl chloride	0.0369	0.010	mg/kg wet	0.05000		74	69-135	1	20	
Xylenes, total	0.129	0.015	mg/kg wet	0.1500		86	74-126	0.7	200	
Surrogate: 4-Bromofluorobenzene	54.8		ug/L	50.00		110	70-130			
Surrogate: Dibromofluoromethane	50.9		ug/L	50.00		102	70-130			
Surrogate: Toluene-d8	54.9		ug/L	50.00		110	70-130			

Sample Extraction Data

Prep Method: Solids, Dry Weight

Lab Number	Batch	Initial	Final	Date/Time
9040346-01	P9D0532	30 g	30 g	04/29/19 15:57
9040346-02	P9D0532	30 g	30 g	04/29/19 15:57
9040346-03	P9D0532	30 g	30 g	04/29/19 15:57
9040346-04	P9D0532	30 g	30 g	04/29/19 15:57
9040346-05	P9D0532	30 g	30 g	04/29/19 15:57

Prep Method: 5035

Lab Number	Batch	Initial	Final	Date/Time
9040346-02	P9D0530	5.53 g	5 mL	04/26/19 10:00
9040346-03	P9D0530	6.11 g	5 mL	04/26/19 10:00
9040346-04	P9D0530	4.79 g	5 mL	04/26/19 10:00
9040346-05	P9E0038	3.37 g	5 mL	05/01/19 10:00

Prep Method: 5035

Lab Number	Batch	Initial	Final	Date/Time
9040346-01	P9E0041	4.84 g	5 mL	05/01/19 10:00

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Full-Service Analytical & Environmental Solutions

449 Springbrook Road • Charlotte, NC 28217
Phone 704/529-6364 • Fax: 704/525-0409

CHAIN OF CUSTODY RECORD

PAGE 1 OF 1 QUOTE # TO ENSURE PROPER BILLING: _____

Project Name: NC DOT Shelby
Short Hold Analysis: (Yes) (No) UST Project: (Yes) (NO)
*Please ATTACH any project specific reporting (QC LEVEL I II III IV) provisions and/or QC Requirements
Invoice To: John Maas
Address: _____

LAB USE ONLY		YES	NO	N/A
Samples INTACT upon arrival?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Received ON WET ICE?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PROPER PRESERVATIVES indicated?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Received WITHIN HOLDING TIMES?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CUSTODY SEALS INTACT?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
VOLATILES rec'd W/O HEADSPACE?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PROPER CONTAINERS used?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TEMP: Therm ID: <u>125-13</u>	Observed: <u>2.7°C</u>	Corr: <u>2.8°C</u>		

Client Company Name: Wood
Report To/Contact Name: John Maas
Reporting Address: 2801 Yorkmont Rd
Charlotte, NC
Phone: 704-881-1717 Fax (Yes) (No):
Email Address: John.maas@woodplc.com
EDD Type: PDF Excel Other
Site Location Name: Parcel 609
Site Location Physical Address: _____

Purchase Order No./Billing Reference 1883R2707
Requested Due Date 1 Day 2 Days 3 Days 4 Days 5 Days
"Working Days" 6-9 Days Standard 10 days Rush Work Must Be Pre-Approved
Samples received after 14:00 will be processed next business day.
Turnaround time is based on business days, excluding weekends and holidays.
(SEE REVERSE FOR TERMS & CONDITIONS REGARDING SERVICES RENDERED BY PRISM LABORATORIES, INC. TO CLIENT)

TO BE FILLED IN BY CLIENT/SAMPLING PERSONNEL
Certification: NELAC ___ DoD ___ FL ___ NC
SC ___ OTHER ___ N/A ___
Water Chlorinated: YES ___ NO
Sample Iced Upon Collection: YES NO ___

CLIENT SAMPLE DESCRIPTION	DATE COLLECTED	TIME COLLECTED MILITARY HOURS	MATRIX (SOIL, WATER OR SLUDGE)	SAMPLE CONTAINER			PRESERVATIVES	ANALYSIS REQUESTED	REMARKS	PRISM LAB ID NO.
				*TYPE SEE BELOW	NO.	SIZE				
P609-SB5-0-1	4/18/19	1130	Soil	CTL, ATL	4	5ml, 2oz	Sodium Perchlorate, Methanol	X		01
P609-SB5-2-3		1140						X		02
P609-SB12-0-2		1420						X		03
P609-SB16-0-1		1410						X		04
P609-SB17-0-1		1700						X		05

Sampler's Signature: [Signature] Sampled By (Print Name): Derrick Hayden Affiliation: Wood

PRESS DOWN FIRMLY - 3 COPIES

Upon relinquishing, this Chain of Custody is your authorization for Prism to proceed with the analyses as requested above. Any changes must be submitted in writing to the Prism Project Manager. There will be charges for any changes after analyses have been initialized.

Relinquished By: (Signature) <u>[Signature]</u>	Received By: (Signature) <u>[Signature]</u>	Date <u>4-22-19</u>	Military/Hours <u>09:20</u>	Additional Comments:
Relinquished By: (Signature) <u>[Signature]</u>	Received By: (Signature) <u>[Signature]</u>	Date <u>4-22-19</u>	Military/Hours <u>09:30</u>	
Relinquished By: (Signature) <u>[Signature]</u>	Received For Prism Laboratories By: <u>[Signature]</u>	Date <u>4-22-19</u>	Military/Hours <u>09:30</u>	
Method of Shipment: <input type="checkbox"/> Express <input type="checkbox"/> UPS <input type="checkbox"/> Hand-delivered <input checked="" type="checkbox"/> Prism Field Service <input type="checkbox"/> Other				COC Group No. <u>9040346</u>

PRISM USE ONLY
Site Arrival Time:
Site Departure Time:
Field Tech Fee:
Mileage:

DES: <input type="checkbox"/> NC <input type="checkbox"/> SC	UST: <input type="checkbox"/> NC <input type="checkbox"/> SC	GROUNDWATER: <input type="checkbox"/> NC <input type="checkbox"/> SC	DRINKING WATER: <input type="checkbox"/> NC <input type="checkbox"/> SC	SOLID WASTE: <input type="checkbox"/> NC <input type="checkbox"/> SC	RCRA: <input type="checkbox"/> NC <input type="checkbox"/> SC	CERCLA: <input type="checkbox"/> NC <input type="checkbox"/> SC	LANDFILL: <input type="checkbox"/> NC <input type="checkbox"/> SC	OTHER: <input type="checkbox"/> NC <input type="checkbox"/> SC
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SEE REVERSE FOR TERMS & CONDITIONS

*CONTAINER TYPE CODES: A = Amber C = Clear G = Glass P = Plastic; TL = Teflon-Lined Cap VOA = Volatile Organics Analysis (Zero Head Space)

ORIGINAL

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