Prepared for

North Carolina Department of Transportation
Century Center Complex, Building B
1020 Birch Ridge Drive
Raleigh, North Carolina 27610

PRELIMINARY SITE ASSESSMENT

PARCEL 69

NC 211 IN WEST END

4331 NC HIGHWAY 211, MOORE COUNTY, WEST END, NORTH CAROLINA

WBS #: 50218.1.1

TIP#: R-5726

Prepared by

Geosyntec Consultants of NC, PC
2501 Blue Ridge Road, Suite 430
Raleigh, North Carolina 27607

Project Number GN7039

October 2019

Geosyntec consultants

Date:	October 21, 2019
WBS Number:	50218.1.1
TIP Number:	R-5726
County:	Moore County
Description:	Preliminary Site Assessment
Address:	4331 NC 211, West End, North Carolina 27376
Parcel ID:	Parcel 69; (Brian K. Neal and Karen P. Neal)
Author:	R. Matthew Jenny, P.E.

I, R. Matthew Jenny, a Professional Engineer for Geosyntec Consultants of NC, PC do certify that the information in this report is correct and accurate to the best of my knowledge.

Not considered final until all signatures are completed

Geosyntec Consultants of NC, PC is licensed to practice engineering in North Carolina. The certification number (Firm's License Number) is C-3500.

Geosyntec Consultants of NC, PC is licensed to practice geology in North Carolina. The certification number (Firm's License Number) is C-295.

Geosyntec consultants
Geosyntec Consultants of NC, P.C.

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1. INTRODUCTION

1.1 Description

Geosyntec Consultants of NC, PC (Geosyntec) presents this technical report (Report) to the North Carolina Department of Transportation (NCDOT) for the Preliminary Site Assessment (PSA) of 4331 NC 211 in West End, North Carolina (the Site). The Site is associated with NCDOT TIP number R-5726, Parcel 69, and owned by Brian K. Neal and Karen P. Neal. A Site location map is presented in **Figure 1**.

Geosyntec understands NCDOT would like to acquire right-of-way (ROW) and Public Utility Easements (PUEs) for road improvements along NC 211 in West End, North Carolina. The principal purpose of this PSA is to assess the possible presence of underground storage tanks (USTs) and/or above-ground storage tanks (ASTs), determine the likelihood of environmental impacts (i.e., soil and/or groundwater contamination), and make recommendations for regulatory compliance within the project study area.

This report discusses the Site history, investigative methodology, observations, sampling results, conclusions, and recommendations.

1.2 Site Background

NCDOT Parcel number 69 (Moore County Parcel number 00023865 [owned by Brian K. Neal and Karen P. Neal]) is located on 4331 NC HWY 211 in West End. **Figure 2** shows the general Site layout, including the locations of the soil borings advanced to investigate the subsurface of the Site. The Site is currently a gas station and is associated with UST Incident 29042, FA-1733. The North Carolina Department of Environmental Quality (NCDEQ) provided a No Further Action (NFA) for the incident in January 2012.

The property is approximately 0.45 acres and operates as a convenience store. The NCDEQ UST Section registry indicates there are three active USTs (a 10,000-gallon gasoline tank, an 8,000-gallon gasoline tank, and a 6,000-gallon gasoline tank) servicing the property (facility ID: 0-020850). The Site is bounded to the southwest by NC 211 and to the north and east by commercial properties and Seven Lakes Drive.

1.3 Scope of Work

The scope of work consisted of a historical Site desktop review, geophysical survey, and sub-surface soil investigation within the entirety of the subject property. The geophysical survey was performed to locate potential metallic USTs, UST-associated product lines, non-UST metallic anomalies, and private underground utility lines within the immediate vicinity of the proposed soil boring locations. Following the geophysical survey, soil borings were advanced and soil samples were collected from each location to determine if, and to what extent, contaminated soils are present within the study area.

2. HISTORY

Geosyntec reviewed publicly accessible online environmental databases (i.e., the North Carolina Department of Environmental Quality [NCDEQ] Laserfiche database, the NCDEQ Division of Waste Management Site Locator Tool, and the NCDEQ UST Section database) to research the Site history.

2.1 Historical Aerial Photographs

The following reviews the findings from the historical aerial photographs, as provided by Google Earth® imagery:

- The earliest aerial photographs date back to 1993. The existing refueling station can be identified in the historical photos. No significant deviations at the Site were identified between 1993 and 2018.

- The Site surroundings (residential and commercial land) appear generally consistent between 2005 and 2018. Some minor land development occurred at eastern off-Site properties between 1999 and 2005.

2.2 Subject Site Findings

The Brian K. Neal and Karen P. Neal property is associated with UST Incident 29042, FA-1733. According to CATLIN Engineers and Scientists (CATLIN), approximately 2,500 gallons of gasoline were released to the environment in 2003 due to a gasket failure on one of the on-Site USTs. Following initial abatement activities, a Soil Vapor Extraction (SVE) unit was installed in March 2004 as an interim remedial effort until March 2007. A Corrective Action Plan (CAP) was completed in August 2007, which involved the use of an SVE and air sparge system. The most recent groundwater monitoring report was submitted by CATLIN in August 2010, indicating benzene, xylenes, and methyl-tert-butyl ether (MTBE) detections above their respective North Carolina Administrative Code (NCAC) 2L Groundwater Standards (2L Standards) in select on-Site monitoring wells. Nonetheless, NCDEQ issued an NFA for the incident in January 2012.

Based upon the understanding of the Subject Site and adjacent off-Site environmental history, Geosyntec conducted a Site investigation inclusive of a geophysical survey and intrusive activities to screen soil and evaluate if residual contamination exists within the Site study area.

3. METHODS

3.1 Geophysical Investigation

The geophysical investigation was performed at the Site by Pyramid Environmental and Engineering P.C. (Pyramid) from July 29 to July 31, 2019 to locate and mark buried USTs, buried metallic drums, and/or buried utility lines within the entire property. Generally, the tasks consisted of an electromagnetic induction-metal (EM) detection followed by ground penetrating radar (GPR) surveys.

The EM data was digitally collected at approximately 1-foot intervals along survey lines spaced approximately five feet apart. The EM unit can detect a metal drum down to a depth of approximately eight (8) to ten (10) feet. GPR scanning was conducted across selected EM metal detection anomalies, around the proposed boring locations, and across the entire ROW/PUE area along with a DitchWitch utility locator for buried utility line clearance. Additional details of the geophysical investigation methodology are provided in **Appendix A** of the report.

3.2 Sub-Surface Soil Investigation

The sub-surface investigation was conducted on August 12-15, 2019 using a direct push technology (DPT) drill rig. SAEDACCO provided the drilling services. North Carolina 811 was notified to mark utility lines within the existing ROW prior to drilling. A hand auger was used for the top three (3) to five (5) feet of each boring as an additional safety precaution.

Eight (8) soil borings were completed during this investigation, each extending 10 feet below ground surface (ft bgs). Soil sampling locations were selected in areas likely to be encountered during roadway construction. Specific priority was placed at locations proximal to the existing USTs, SVE system, and groundwater monitoring wells. The soil lithology was recorded, and the soil was screened using a photo-ionization detector (PID) with a 10.6 electron-Volt lamp at approximately 6-inch intervals. Soil samples were collected from each boring at an elevation corresponding to the highest PID reading. In instances where PID readings were null, field personnel used professional judgement (e.g., odors, staining, historical Site-use information) to determine the appropriate sampling depth.

Upon DPT completion, the soil cuttings were dispersed over the Site's natural areas and/or backfilled within the boring. Boring surface completions matched pre-existing conditions to the extent practical. Boring locations were surveyed with a global position system (GPS) unit. DPT rods were decontaminated with a Liquinox® cleaning solution between borings. Free product was not encountered during soil sampling, nor was other investigative derived waste (IDW) accumulated. As such, IDW drums were unnecessary.

Samples were sent off-site to Red Lab, LLC (Red Lab) and Prism Laboratories, Inc. (Prism). The samples sent to Red Lab were analyzed for Total Petroleum Hydrocarbon (TPH), gasoline-range organics (GRO), and diesel-range organics (DRO) by Ultra-Violet Fluorescence (UVF). The soil samples submitted to Prism were analyzed for volatile organic compounds (VOCs) by USEPA Method 8260B, reporting only benzene, toluene, ethylbenzene, and xylenes (BTEX). These analytical approaches are consistent with the UST Section Guidance. Samples were sent on ice under chain of custody procedures to the applicable laboratory.

4. RESULTS

4.1 Site Observations

On July 29, 2019 Geosyntec performed an initial Site walk with Pyramid prior to conducting work. An SVE system was identified throughout the property, along with six unabandoned (i.e., viable) monitoring wells. The historical CATLIN reports indicate twelve (12) monitoring wells are associated with the Site; it is unclear if some of the wells were abandoned or were unable to be located in the field. Geosyntec was unable to locate well abandonment records for the UST incident and NFA notice. **Appendix B** provides a photographic log of the field observations.

4.2 Geophysical Investigation Results

The geophysical survey was performed to locate and mark buried USTs, buried metallic drums, and/or buried utility lines within the ROW/PUE extent using both EM and GPR approaches.

Pyramid identified three existing USTs and one septic tank. A total of eleven EM anomalies were identified. Several of the EM anomalies were directly attributed to visible features at the ground surface. GPR was performed across the three USTs and the septic tank to verify their properties (the UST numbers were arbitrarily labeled, see more details in **Appendix A**).

- UST #1 is approximately 26.5 feet long and 8 feet wide.
- UST #2 is approximately 23 feet long and 8 feet wide.
- UST #3 is approximately 27.5 feet long and 10 feet wide.
- The septic tank is approximately 12.5 feet long and 7.5 feet wide.

Collectively, the geophysical data recorded evidence of three known metallic USTs and one septic tank at the Site. Pyramid's geophysical report is provided in **Appendix A**.

4.3 Sub-Surface Investigation Results

4.3.1 Field Sampling Observations and PID Results

Following the geophysical survey, the sub-surface investigation was performed to determine if, and to what extent, contaminated soils are present within the study area.

Eight (8) soil borings were completed during the investigation, each extending 10 ft bgs. PID soil screening values were minimal (less than 1 part per million [ppm]) throughout the entirety of each soil boring. The soil lithology generally consisted of top soil in the first three (3) ft bgs followed by sandy clay with some gravel. Groundwater was not encountered. Soil sampling locations are shown on **Figure 2** and GPS coordinates are recorded on **Table 1**. The boring logs are provided in **Appendix C**.

4.3.2 Soil Sampling Analytical Results

Eight (8) soil samples were collected as part of the intrusive investigation and analyzed for TPH by UVF and VOCs by EPA Method 8260B. The TPH analytical data was screened against the TPH DRO and TPH GRO values established in the UST Section Guidance. The benzo(a)pyrene and BTEX analytical data were compared to the NCDEQ UST Section Maximum Soil Contaminant Concentrations (MSCCs).

The UVF fingerprinting data do not indicate soil screening level exceedances for the constituents analyzed. DRO was detected in the SB69-02, SB69-06 and SB69-08 soil samples. GRO was detected in the SB69-02 and SB69-07 soil samples. No results exceeded the screening values. **Table 2** shows the TPH analytical results.

VOC analytical data was screened against the NCDEQ UST Section MSCCs. No detections were reported. The VOC analytical results are shown in **Table 3.**

The UVF analytical report, including the fingerprint matching data, is provided in **Appendix D**; the Prism analytical report is provided in **Appendix E**[1]. **Figure 3** displays the soil boring locations using a preliminary roadway design drawing base map.

[1]The Prism Laboratory report includes analytical results for samples collected from other parcels associated with NCDOT project R-5726.

5. SUMMARY

From August 12-15, 2019 Geosyntec completed an environmental PSA to determine the likelihood of contamination within the proposed acquisition area at 4331 NC 211 in West End (NCDOT Parcel 69). The property is owned by Brian K. Neal and Karen P. Neal; the entire parcel was included as part of this investigation. The following summarizes the findings of this PSA.

UST Incident 29042, FA-1733 is associated with the Site. An NFA was issued by the UST Section in January 2012; however, petroleum-based constituents (benzene, MTBE, xylenes) were detected in excess of their respective 2L Groundwater Standards during the most recent sampling event in 2010. Six viable groundwater monitoring wells were located within the property boundary; historical reports suggest 12 monitoring wells are on the property.

A geophysical survey and intrusive soil investigation were performed as part of this scope of work. Three known USTs were identified at the northern side of the property and one septic tank south of the building footprint. The USTs range from approximately 23 to 28-feet in length and 8 to 10 feet in width; the top of the tanks is located approximately 2 ft bgs. The septic tank is approximately 12.5 feet long, 7.5 feet wide, and the top of the septic tank is located approximately 2-ft bgs. Eight (8) soil borings were advanced to investigate the environmental impacts on the property. Petroleum impacts to shallow Site soils were not identified during field screening or as part of the analytical testing. Groundwater was not encountered.

The work performed herein did not identify petroleum impacts in shallow soils within the Site study area. Geosyntec anticipates a low likelihood of encountering shallow soil impacts within the study area. Given the historical exceedances of petroleum-based constituents in Site groundwater, Geosyntec offers that if groundwater is encountered during roadway construction, there is a reasonable likelihood that the groundwater will be impacted. As such, Geosyntec recommends handling contaminated matrices in accordance with State and Federal regulations. Further, Geosyntec recommends abandoning the monitoring wells identified on the property and decommissioning/removing the USTs and septic tank to facilitate roadway construction.

TABLES

Table 1
Soil Boring Coordinates
4331 NC 211, West End, North Carolina 27376
NCDOT Parcel 69
TIP: R-5726
WBS: 50218.1.1

Soil Boring ID	Longitude	Latitude
SB69-01-6.0-6.5	-79.584612	35.263033
SB69-02-4.0-4.5	-79.584671	35.263000
SB69-03-5.0-5.5	-79.584915	35.263194
SB69-04-5.0-5.5	-79.584821	35.263283
SB69-05-9.5-10	-79.584738	35.263361
SB69-06-9.0-9.5	-79.584650	35.263347
SB69-07-5.0-5.5	-79.584710	35.263171
SB69-08-6.0-6.5	-79.584446	35.263211

Monitoring Well ID	Longitude	Latitude
MW-2	-79.584817	35.263314
MW-4	-79.584710	35.263204
MW-5	-79.584835	35.263233
MW-7	-79.584410	35.263187
MW-8	-79.584864	35.263114
TMW-5	-79.584742	35.263113

1) Coordinate datum reference: WGS 1984.

Table 2
Soil Analytical Results - TPH by UVF
4331 NC 211, West End, North Carolina 27376
NCDOT Parcel 69
TIP: R-5726
WBS: 50218.1.1

Analyte			BTEX (C6 - C9)	GRO (C5 - C10)	DRO (C10 - C35)	TPH (C5 - C35)	Total Aromatics (C10-C35)	16 EPA PAHs	Benzo[a]pyrene
Units			mg/kg						
UST TPH Guidance			---	**50**	**100**	---	---	---	---
Soil-to-Water MSCCs			---	---	---	---	---	---	**0.096**
Residential Soil MSCCs			---	---	---	---	---	---	**0.088**
Commercial / Industrial MSCCs			---	---	---	---	---	---	**0.78**
Sample ID	**Sample Depth (ft bgs)**	**Sample Date**							
SB69-01-6.0-6.5	6.0-6.5	8/12/2019	<0.32	<0.32	<0.32	<0.32	<0.06	<0.1	<0.013
SB69-02-4.0-4.5	4.0-4.5	8/12/2019	<0.36	**0.52**	**1.4**	**1.9**	**0.71**	<0.11	<0.014
SB69-03-5.0-5.5	5.0-5.5	8/12/2019	<0.29	<0.29	<0.29	<0.29	<0.06	<0.09	<0.012
SB69-04-5.0-5.5	5.0-5.5	8/12/2019	<0.32	<0.32	<0.32	<0.32	<0.06	<0.1	<0.013
SB69-05-9.5-10	9.5-10.0	8/12/2019	<0.33	<0.33	<0.33	<0.33	<0.07	<0.11	<0.013
SB69-06-9.0-9.5	9.0-9.5	8/12/2019	<0.28	<0.28	**0.28**	**0.28**	**0.22**	<0.09	<0.011
SB69-07-5.0-5.5	5.0-5.5	8/12/2019	<0.36	**0.74**	<0.36	**0.74**	<0.07	<0.12	<0.015
SB69-08-6.0-6.5	6.0-6.5	8/13/2019	<0.55	<0.55	**10.4**	**10.4**	**5.2**	**0.23**	<0.022

Notes:

(1) mg/kg indicates milligrams per kilogram.

(2) NCDEQ UST Guidance references the 26 July 2016 Guidelines for North Carolina Action Limits for Total Petroleum Hydrocarbons (TPH).

(3) MSCC indicates North Carolina Department of Environmental Quality (NCDEQ) Underground Storage Tank (UST) Section Maximum Contaminant Concentration Levels, updated November 2016.

(4) < indicates analyte was not detected above the laboratory method detection limit (MDL).

(5) Detections are identified in bold.

(6) --- indicates screening criteria not established.

(7) UVF indicates ultraviolet fluorescence.

(8) TPH indicates total petroleum hydrocarbons.

(9) GRO indicates gasoline range organics.

(10) DRO indicates diesel range organics.

(11) PAH indicates polycyclic aromatic hydrocarbon.

(12) BTEX indicates benzene, toluene, ethylbenzene, and xylenes.

(13) ft. bgs indicates feet below ground surface.

Table 3
Soil Sampling Analytical Summary - VOCs
4331 NC 211, West End, North Carolina 27376
NCDOT Parcel 69
TIP: R-5726
WBS: 50218.1.1

Analyte	NCDEQ Residential Soil Cleanup Levels MSCC	NCDEQ Industrial/ Commercial Soil Cleanup Levels MSCC	NCDEQ Soil-to-Water Maximum Contaminant MSCC	Sample ID	SB69-01	SB69-02	SB69-03	SB69-04	SB69-05	SB69-06	SB69-07	SB69-08
				Sample Date	8/12/2019	8/12/2019	8/12/2019	8/12/2019	8/12/2019	8/12/2019	8/12/2019	8/13/2019
				Sample Depth (ft. bgs)	6.0-6.5	4.0-4.5	5.0-5.5	5.0-5.5	9.5-10.0	9.0-9.5	5.0-5.5	6.0-6.5
				Sample Type	Grab							
				Units	mg/kg							
Volatile Organic Compounds (VOCs) by EPA Method 8260B												
Benzene	**18**	**164**	**0.0056**	mg/kg	< 0.0052	< 0.0080	< 0.0043	< 0.0049	< 0.0056	< 0.0046	< 0.0051	< 0.0060
Ethylbenzene	**1,560**	**40,000**	**4.9**	mg/kg	< 0.0052	< 0.0080	< 0.0043	< 0.0049	< 0.0056	< 0.0046	< 0.0051	< 0.0060
m,p-Xylenes	**3,129**	**81,760**	**4.6**	mg/kg	< 0.010	< 0.016	< 0.0086	< 0.0098	< 0.011	< 0.0092	< 0.010	< 0.012
o-Xylene	**3,129**	**81,760**	**4.6**	mg/kg	< 0.0052	< 0.0080	< 0.0043	< 0.0049	< 0.0056	< 0.0046	< 0.0051	< 0.0060
Toluene	**1,200**	**32,000**	**4.3**	mg/kg	< 0.0052	< 0.0080	< 0.0043	< 0.0049	< 0.0056	< 0.0046	< 0.0051	< 0.0060
Xylene (total)	**3,129**	**81,760**	**4.6**	mg/kg	< 0.016	< 0.024	< 0.013	< 0.015	< 0.017	< 0.014	< 0.015	< 0.018

Notes:

(1) North Carolina Department of Environmental Quality (NCDEQ) Underground Storage Tank (UST) Section Maximum Soil Contaminant Concentrations (MSCCs) as indicated in the NCDEQ UST Section *Guidelines for Site Checks, Tank Closure, and Initial Response and Abatement for UST Releases* , amended April 2012.

(2) VOC indicates volatile organic compound.

(3) mg/kg indicates milligrams per kilogram.

(4) Concentrations exceeding MSCCs are highlighted as shown:

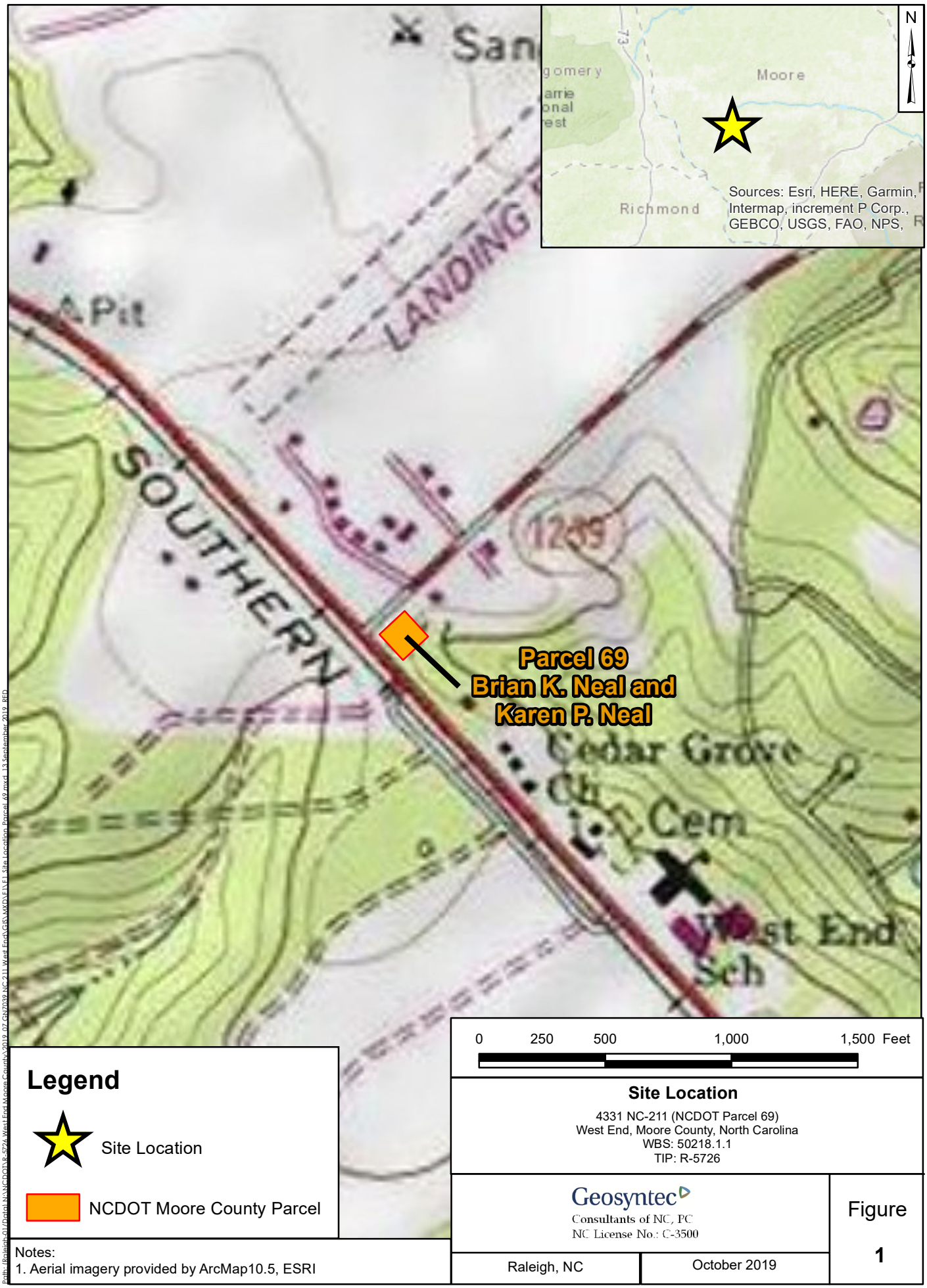
Residential **Industrial** **Soil-to-Water**

(5) ft bgs indicated feet below ground surface.

(6) < indicates analyte was not detected above the laboratory reporting limit (RL).

(7) Only benzene, toluene, ethylbenzene, and xylenes (BTEX) were reported.

FIGURES



Legend

- Site Location
- NCDOT Moore County Parcel

Notes:
1. Aerial imagery provided by ArcMap10.5, ESRI

Site Location

4331 NC-211 (NCDOT Parcel 69)
West End, Moore County, North Carolina
WBS: 50218.1.1
TIP: R-5726

Geosyntec
Consultants of NC, PC
NC License No.: C-3500

Raleigh, NC | October 2019

Figure 1

Path: J:\Raleigh-01\Data\N\NCDOT\R-5726 West End Moore County\2019_07 GN2039 NC 211 West End\GIS\MXD\F1-F1 Site Location Parcel 69.mxd 13 September 2019 RED

Legend

- Monitoring Wells
- Soil Boring Locations
- Approximate PUE Extent
- Septic Tank
- Existing USTs
- NCDOT Moore County Parcel

0 25 50 100 Feet

Notes:
1. Property boundary provided by Moore County, North Carolina GIS.
2. Aerial imagery provided by ArcMap10.5, ESRI
3. PUE indicates Public Utility Easement.
4. Soil boring and monitoring well locations are approximated by GPS; locations were not surveyed by a licensed surveyor.
5. Monitoring well IDs are based on reports from CATLIN Engineers and Scientists.

Site Layout (Brian K. Neal and Karen P. Neal)

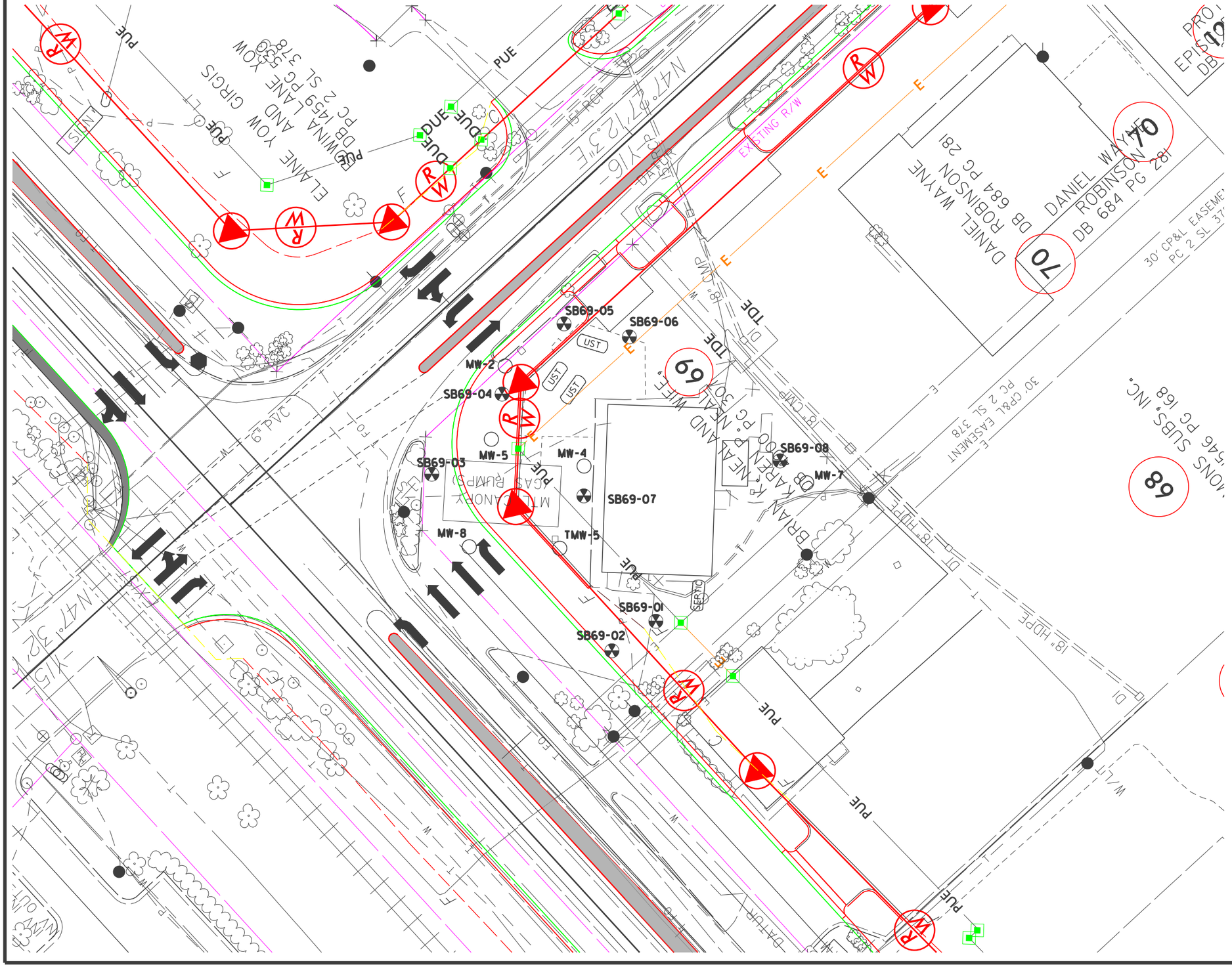
4331 NC-211 (NCDOT Parcel 69)
West End, Moore County, North Carolina
TIP: R-5726
WBS: 50218.1.1

Geosyntec
Consultants of NC, PC
NC License No.: C-3500

Figure **2**

Raleigh, NC | October 2019

Path: (Raleigh-01 (Data) N:\NCDOT\R-5726 West End Moore County\2019_07 GN7039 NC 211 West End\GIS\MXD\F2D_Parcel 69.mxd 06 September 2019 RED



LEGEND

- EXISTING RIGHT-OF-WAY
- EXISTING PROPERTY BOUNDARY
- PROPOSED RIGHT-OF-WAY LINE
- PUE — PROPOSED PERMANENT DRAINAGE
- PROPOSED SS CUT LINE
- PROPOSED SS FILL LINE
- E — TEMPORARY CONSTRUCTION EASEMENT
- SB69-xx — GEOENVIRONMENTAL BORING
- MW-xx / TMW-xx — MONITORING WELL
- SEPTIC — SEPTIC TANK
- UST — UNDERGROUND STORAGE TANK

NOTES:

1. *PSA PERFORMED IN THE ENTIRE PROPERTY.*
2. *CONSTITUENTS ANALYZED WERE NOT DETECTED ABOVE APPLICABLE NCDEQ UST SECTION SCREENING CRITERION.*

N

0 40' 80'

NCDOT PARCEL 69 SOIL BORING LOCATIONS
4331 HIGHWAY NC-211
WEST END, MOORE COUNTY,
NORTH CAROLINA
WBS: 50218.1.1 TIP: R-5726

Geosyntec consultants of NC, PC
NC License No: C-3500

FIGURE 3

PROJECT NO: GN7039 | OCTOBER 2019

Geosyntec consultants
Geosyntec Consultants of NC, P.C.

APPENDIX A
Geophysical Investigation Report

PYRAMID GEOPHYSICAL SERVICES
(PROJECT 2019-233)

GEOPHYSICAL SURVEY

METALLIC UST INVESTIGATION:
PARCEL 69
NCDOT PROJECT R-5726 (50218.1.1)

4331 N.C. 211, WEST END, NC

August 23, 2019

Report prepared for: **Mr. Matt Jenny, P.E.**
Geosyntec Consultants of NC, PC
2501 Blue Ridge Road, Suite 430
Raleigh, NC 27607

Prepared by: _____

Eric C. Cross, P.G.
NC License #2181

Reviewed by: _____

Douglas A. Canavello, P.G.
NC License #1066

503 INDUSTRIAL AVENUE, GREENSBORO, NC 27406
P: 336.335.3174 F: 336.691.0648
C257: GEOLOGY C1251: ENGINEERING

GEOPHYSICAL INVESTIGATION REPORT
Parcel 69 - 4331 N.C. 211
West End, Moore County, North Carolina

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LIST OF ACRONYMS

CADD .....Computer Assisted Drafting and Design
DF .....Dual Frequency
EM.....Electromagnetic
GPR.....Ground Penetrating Radar
GPS .....Global Positioning System
NCDOT.....North Carolina Department of Transportation
ROW .....Right-of-Way
UST .....Underground Storage Tank

EXECUTIVE SUMMARY

Project Description: Pyramid Environmental conducted a geophysical investigation for Geosyntec Consultants of NC, PC at Parcel 69, located at 4331 N.C. 211 in West End, NC. The survey was part of an NCDOT Right-of-Way (ROW) investigation (NCDOT Project R-5726). The survey was designed to include all accessible portions of the property. Conducted from July 29-31, 2019, the geophysical investigation was performed to determine if unknown, metallic underground storage tanks (USTs) were present beneath the survey area.

Geophysical Results: The geophysical investigation consisted of electromagnetic (EM) induction-metal detection and ground penetrating radar (GPR) surveys. Three known USTs and one septic tank were observed at the property. A total of eleven EM anomalies were identified. Several of the EM anomalies were directly attributed to visible cultural features at the ground surface. GPR was performed across the three known USTs and the septic tank to verify their sizes and orientations.

- UST #1 was approximately 26.5 feet long and 8 feet wide.
- UST #2 was approximately 23 feet long and 8 feet wide.
- UST #3 was approximately 27.5 feet long and 10 feet wide.
- The septic tank was approximately 12.5 feet long and 7.5 feet wide.

The remaining GPR performed at the property verified isolated areas of reinforced concrete and did not record any evidence of additional buried structures such as USTs. Collectively, the geophysical data recorded evidence of three known metallic USTs and one septic tank at Parcel 69.

INTRODUCTION

Pyramid Environmental conducted a geophysical investigation for Geosyntec Consultants of NC, PC at Parcel 69, located at 4331 N.C. 211 in West End, NC. The survey was part of an NCDOT Right-of-Way (ROW) investigation (NCDOT Project R-5726). The survey was designed to include all accessible portions of the property. Conducted from July 29-31, 2019, the geophysical investigation was performed to determine if unknown, metallic underground storage tanks (USTs) were present beneath the survey area.

The site included an active service station and pump island/canopy surrounded by grass and asphalt surfaces. Three known USTs were evidenced by visible fill ports and concrete on the north side of the property. Evidence of a septic tank was also observed on the south side of the building. An aerial photograph showing the survey area boundaries and ground-level photographs are shown in **Figure 1**.

FIELD METHODOLOGY

The geophysical investigation consisted of electromagnetic (EM) induction-metal detection and ground penetrating radar (GPR) surveys. Pyramid collected the EM data using a Geonics EM61-MK2 (EM61) metal detector integrated with a Geode External GPS/GLONASS receiver. The integrated GPS system allows the location of the instrument to be recorded in real-time during data collection, resulting in an EM data set that is geo-referenced and can be overlain on aerial photographs and CADD drawings. A boundary grid was established around the perimeter of the site with marks every 10 feet to maintain orientation of the instrument throughout the survey and assure complete coverage of the area.

According to the instrument specifications, the EM61 can detect a metal drum down to a maximum depth of approximately 8 feet. Smaller objects (1-foot or less in size) can be detected to a maximum depth of 4 to 5 feet. The EM61 data were digitally collected at approximately 0.8-foot intervals along north-south trending or east-west trending,

generally parallel survey lines, spaced five feet apart. The data were downloaded to a computer and reviewed in the field and office using the Geonics NAV61 and Surfer for Windows Version 15.0 software programs.

GPR data were acquired across select EM anomalies on July 31, 2019, using a Geophysical Survey Systems, Inc. (GSSI) SIR 4000 controller coupled to a 350 MHz HS antenna. Data were collected both in reconnaissance fashion as well as along formal transect lines across EM features. The GPR data were viewed in real-time using a vertical scan of 512 samples, at a rate of 48 scans per second. GPR data were viewed down to a maximum depth of approximately 6 feet, based on dielectric constants calculated by the DF unit in the field during the reconnaissance scans. GPR transects across specific anomalies were saved to the hard drive of the DF unit for post-processing and figure generation.

Pyramid's classifications of USTs for the purposes of this report are based directly on the geophysical UST ratings provided by the NCDOT. These ratings are as follows:

Geophysical Surveys for Underground Storage Tanks
on NCDOT Projects

High Confidence	Intermediate Confidence	Low Confidence	No Confidence
Known UST Active tank - spatial location, orientation, and approximate depth determined by geophysics.	**Probable UST** Sufficient geophysical data from both magnetic and radar surveys that is characteristic of a tank. Interpretation may be supported by physical evidence such as fill/vent pipe, metal cover plate, asphalt/concrete patch, etc.	**Possible UST** Sufficient geophysical data from either magnetic or radar surveys that is characteristic of a tank. Additional data is not sufficient enough to confirm or deny the presence of a UST.	Anomaly noted but not characteristic of a UST. Should be noted in the text and may be called out in the figures at the geophysicist's discretion.

DISCUSSION OF RESULTS

Discussion of EM Results

A contour plot of the EM61 results obtained across the survey area at the property is presented in **Figure 2**. Each EM anomaly is numbered for reference in the figure. The following table presents the list of EM anomalies and the cause of the metallic response, if known:

LIST OF METALLIC ANOMALIES IDENTIFIED BY EM SURVEY

Metallic Anomaly #	Cause of Anomaly	Investigated with GPR
1	Signs/Utilities	
2	Metal Hatch	✓
3	Suspected Metallic Debris	✓
4	**Three Known USTs**	✓
5	Vehicles/Surface Metal	✓
6	Dumpsters	✓
7	Fence	
8	Building	
9	Septic Tank	✓
10	Vehicles/Utilities	✓
11	Pump Islands/Vehicles/Reinforced Concrete	✓

Several of the EM anomalies were directly attributed to visible cultural features at the ground surface, including signs, utilities, a metal hatch, surface metal, dumpsters, a fence, the building, the pump islands, and suspected reinforced concrete. EM Anomaly 4 was associated with the three known USTs, and EM Anomaly 9 was associated with the septic tank. Additionally, EM Anomaly 3 was suspected to be associated with buried metallic debris. GPR was performed across the three known USTs and the septic tank to verify their sizes and orientations. GPR was also performed across the suspected buried metallic debris and around features that resulted in metallic interference to verify that they were not obscuring any buried structures such as USTs.

Discussion of GPR Results

Figure 3 presents the locations of the formal GPR transects performed at the property as well as select transect images. All of the transect images are presented in **Appendix A**. A total of eleven GPR transects were performed at the property. GPR Transects 2 and 3 were performed across the septic tank on the south side of the property. The septic tank was evidenced by discreet, isolated lateral reflectors in all directions consistent with a flat, vault septic tank cover. The septic tank was approximately 12.5 feet long and 7.5 feet wide.

GPR Transects 8 and 9 were performed across the three known USTs supplying fuel to the pump islands. These transects verified the sizes of the three known tanks at the property. **Figure 4** provides the locations and sizes of the three known USTs and the septic tank overlain on an aerial photograph as well as a ground-level photograph. UST #1 was approximately 26.5 feet long and 8 feet wide. UST #2 was approximately 23 feet long and 8 feet wide. UST #3 was approximately 27.5 feet long and 10 feet wide.

The remaining GPR transects verified the presence of reinforced concrete on the west side of the property. No evidence of any additional buried structures such as USTs was observed.

Figure 5 provides an overlay of the metal detection results, the three known USTs and the septic tank onto the NCDOT Engineering plans.

Collectively, the geophysical data recorded evidence of three known metallic USTs and one septic tank at Parcel 69.

SUMMARY & CONCLUSIONS

Pyramid's evaluation of the EM61 and GPR data collected at Parcel 69 in West End, North Carolina, provides the following summary and conclusions:

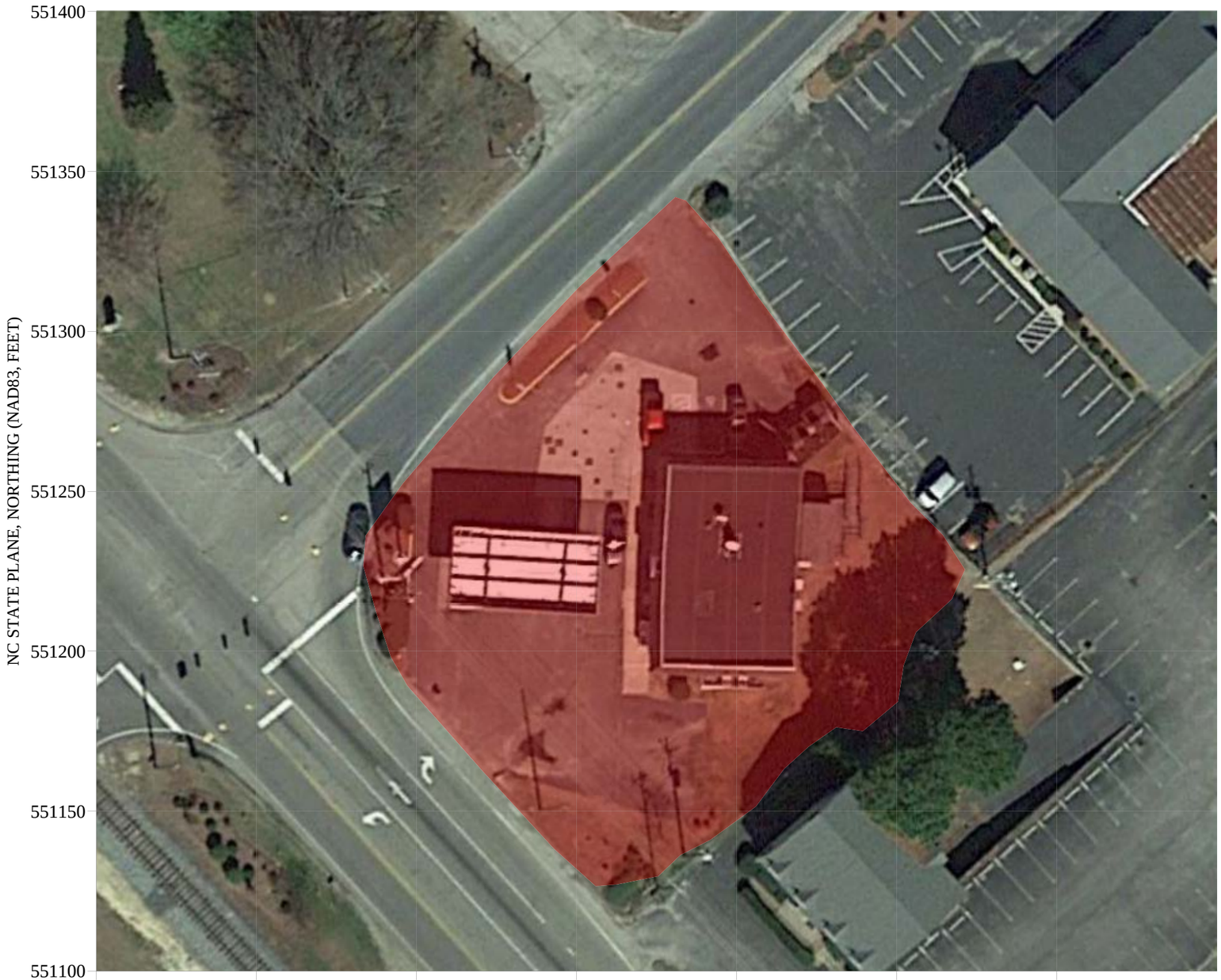
- The EM61 and GPR surveys provided reliable results for the detection of metallic USTs within the accessible portions of the geophysical survey area.
- Three known USTs and one septic tank were observed at the property.
- Several of the EM anomalies were directly attributed to visible cultural features at the ground surface.
- GPR was performed across the three known USTs and the septic tank to verify their sizes and orientations.
    - UST #1 was approximately 26.5 feet long and 8 feet wide.
    - UST #2 was approximately 23 feet long and 8 feet wide.
    - UST #3 was approximately 27.5 feet long and 10 feet wide.

    - The septic tank was approximately 12.5 feet long and 7.5 feet wide.
- The remaining GPR performed at the property verified isolated areas of reinforced concrete and did not record any evidence of additional buried structures such as USTs.
- Collectively, the geophysical data recorded evidence of three known metallic USTs and one septic tank at Parcel 69.

LIMITATIONS

Geophysical surveys have been performed and this report was prepared for Geosyntec Consultants of NC, PC in accordance with generally accepted guidelines for EM61 and GPR surveys. It is generally recognized that the results of the EM61 and GPR surveys are non-unique and may not represent actual subsurface conditions. The EM61 and GPR results obtained for this project have not conclusively determined the definitive presence or absence of metallic USTs, but the evidence collected is sufficient to result in the conclusions made in this report. Additionally, it should be understood that areas containing extensive vegetation, reinforced concrete, or other restrictions to the accessibility of the geophysical instruments could not be fully investigated.

APPROXIMATE BOUNDARIES OF GEOPHYSICAL SURVEY AREA



View of Survey Area
(Facing Approximately North)

View of Survey Area
(Facing Approximately North)

N

PYRAMID GEOPHYSICS
503 INDUSTRIAL AVENUE
GREENSBORO, NC 27406
(336) 335-3174 (p) (336) 691-0648 (f)
License # C1251 Eng. / License # C257 Geology

PROJECT	PARCEL 69 WEST END, NORTH CAROLINA NCDOT PROJECT R-5726	TITLE	PARCEL 69 - GEOPHYSICAL SURVEY BOUNDARIES AND SITE PHOTOGRAPHS	DATE 8/8/2019 PYRAMID PROJECT #: 2019-233	CLIENT GEOSYNTEC **FIGURE 1**

EM61 METAL DETECTION RESULTS

EVIDENCE OF THREE KNOWN USTs AND ONE SEPTIC TANK WAS OBSERVED. NO EVIDENCE OF UNKOWN METALLIC USTs WAS OBSERVED.

The contour plot shows the differential results of the EM61 instrument in millivolts (mV). The differential results focus on larger metallic objects such as USTs and drums. The EM data were collected on July 29, 2019, using a Geonics EM61-MK2 instrument. Verification GPR data were collected using a GSSI SIR 4000 controller with a 350 MHz HS antenna on July 31, 2019.

EM61 Metal Detection Response (millivolts)

1000 750 500 400 300 200 150 100 75 60 50 40 30 -90 -100 -200 -400 -5000

N

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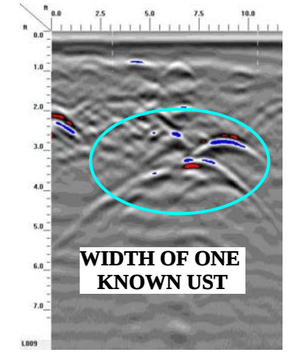
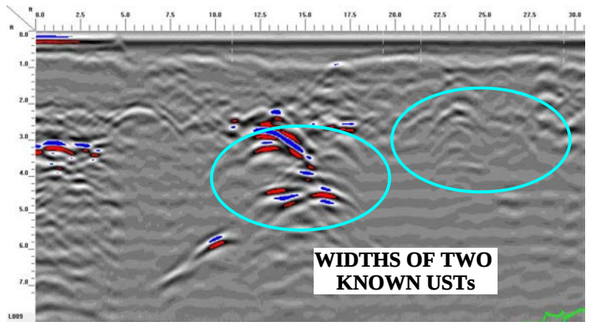
PROJECT: PARCEL 69 WEST END, NORTH CAROLINA NCDOT PROJECT R-5726	TITLE: PARCEL 69 - EM61 METAL DETECTION CONTOUR MAP	DATE: 8/8/2019	CLIENT: GEOSYNTEC
		PYRAMID PROJECT #: 2019-233	**FIGURE 2**

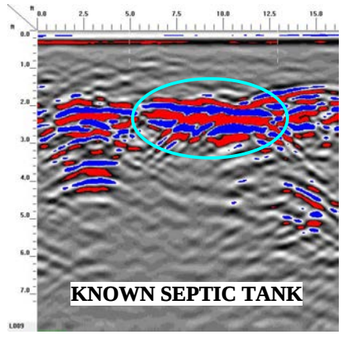
LOCATIONS OF GPR TRANSECTS



GPR TRANSECT 8 (T8)



GPR TRANSECT 9 (T9)



GPR TRANSECT 2 (T2)

N

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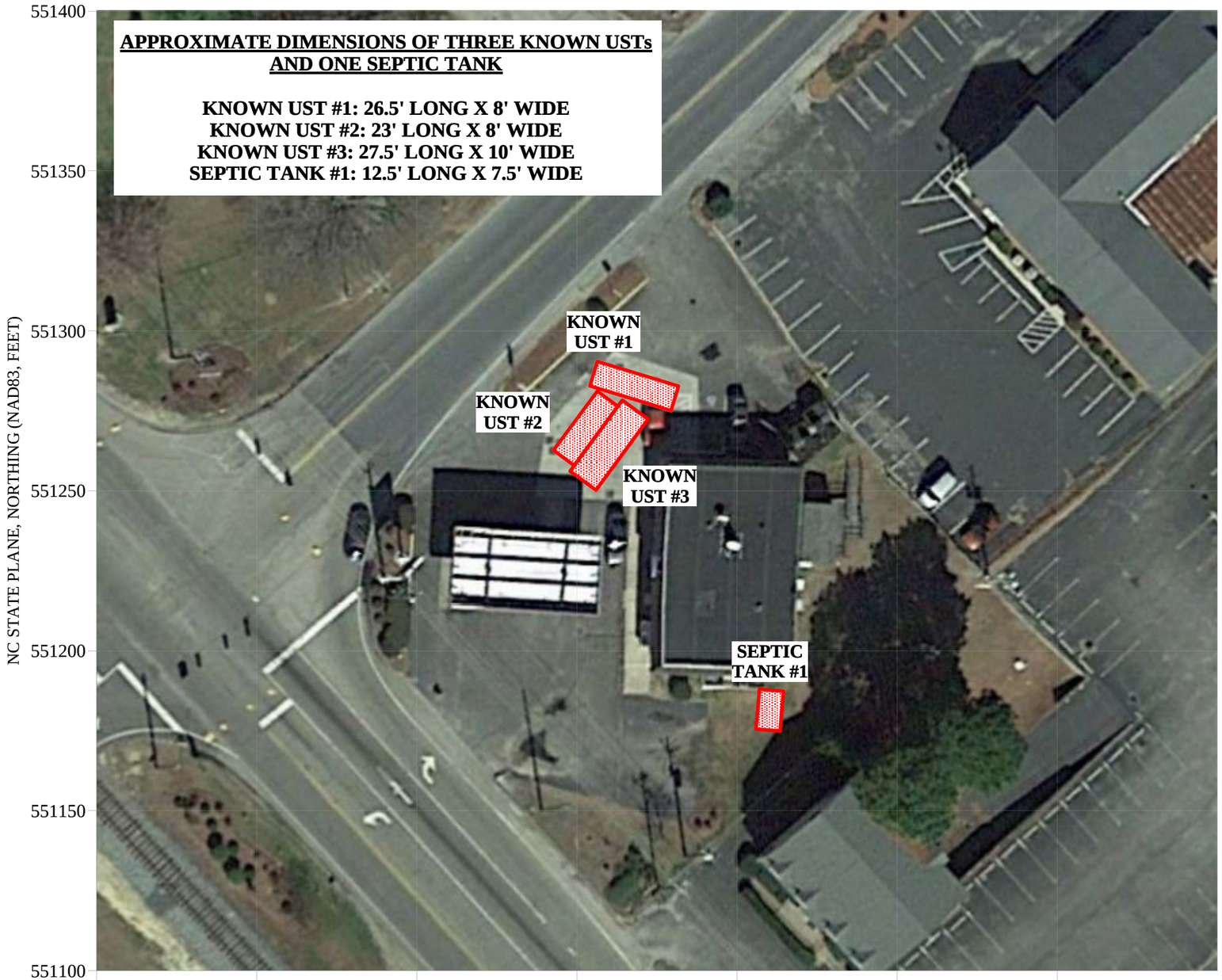
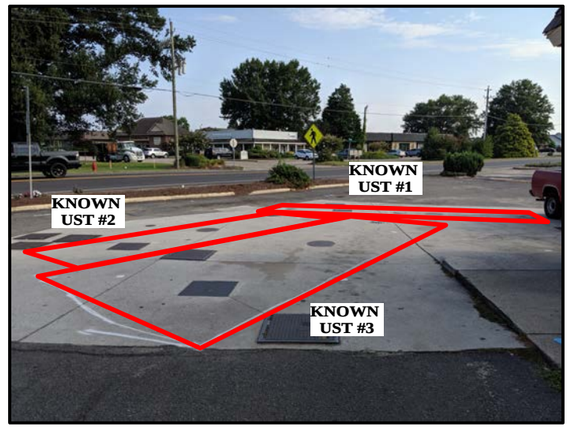
PROJECT	PARCEL 69 WEST END, NORTH CAROLINA NCDOT PROJECT R-5726	TITLE	PARCEL 69 - GPR TRANSECT LOCATIONS AND SELECT IMAGES
DATE	8/8/2019	CLIENT	GEOSYNTEC
PYRAMID PROJECT #:	2019-233		**FIGURE 3**

LOCATIONS OF THREE KNOWN USTs AND ONE SEPTIC TANK





View of Three Known USTs
Facing Approximately North

View of One Septic Tank
Facing Approximately North

N

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GREENSBORO, NC 27406
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PROJECT: PARCEL 69 WEST END, NORTH CAROLINA NCDOT PROJECT R-5726	TITLE: PARCEL 69 - LOCATIONS AND SIZES OF THREE KNOWN USTs AND ONE SEPTIC TANK	DATE: 8/8/2019 PYRAMID PROJECT #: 2019-233	CLIENT: GEOSYNTEC **FIGURE 4**

THREE KNOWN USTs

EM61 METAL DETECTION CONTOURS (SEE FIGURE 2 FOR ANOMALY LABELS)

ONE KNOWN SEPTIC TANK

LEGEND

- EXISTING ROW
- EXISTING PROPERTY BOUNDARY
- PROPOSED ROW LINE
- TEMPORARY CONSTRUCTION EASEMENT
- PROPOSED PERMANENT DRAINAGE
- PROPOSED SS CUT LINE
- PROPOSED SS FILL LINE
- KNOWN UST
- KNOWN SEPTIC TANK

MILLIVOLTS (mV)

1000 750 500 400 300 200 150 100 75 60 50 40 30 -90 -100 -200 -400 -5000

0 25 50
FEET

N

TITLE: OVERLAY OF METAL DETECTION RESULTS, THREE KNOWN USTs AND ONE SEPTIC TANK ON NCDOT ENGINEERING PLANS

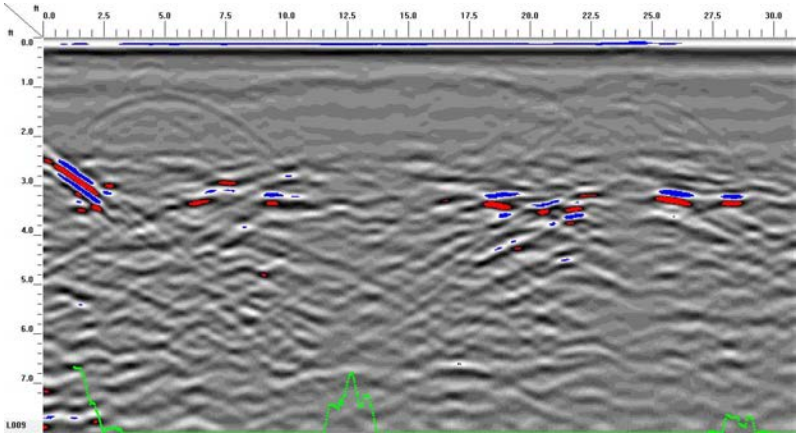
PROJECT: PARCEL 69
WEST END, NORTH CAROLINA
NCDOT PROJECT R-5726

PYRAMID GEOPHYSICS
503 INDUSTRIAL AVENUE
GREENSBORO, NC 27406
336.335.3174 (p) 336.691.0648 (f)
License # C1251 Eng. / #C257 Geology

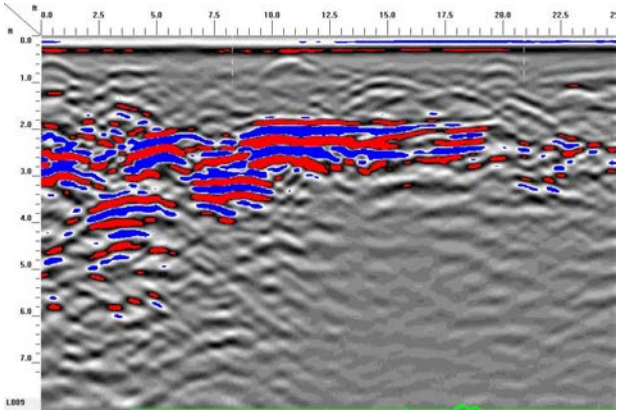
DATE: 08-20-2019 | REVISION NO. 0

PYRAMID PROJECT NO. 2019-233 | FIGURE NO. 5

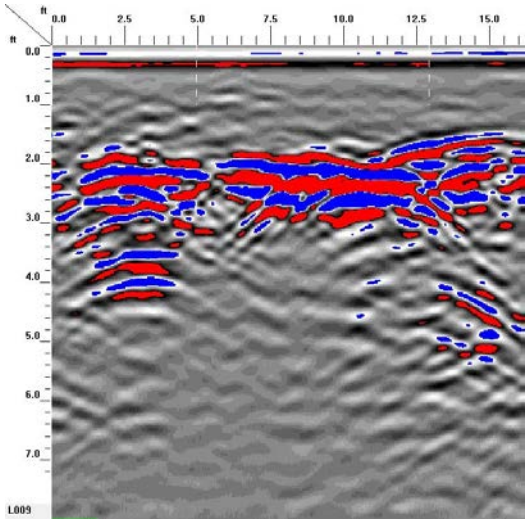
Appendix A – GPR Transect Images



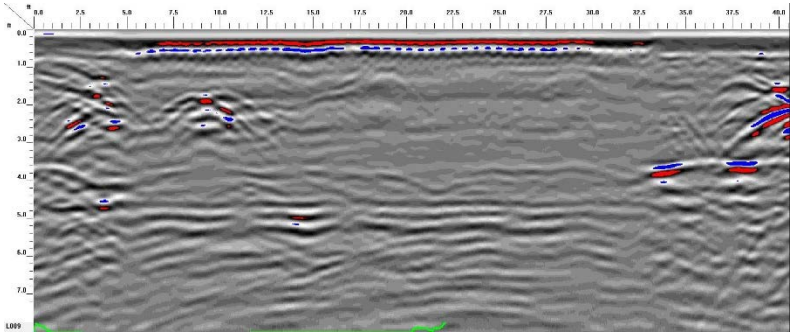
GPR TRANSECT 1



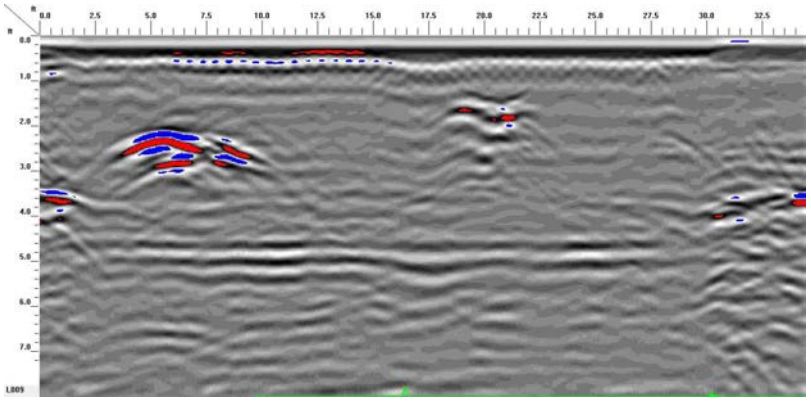
GPR TRANSECT 3



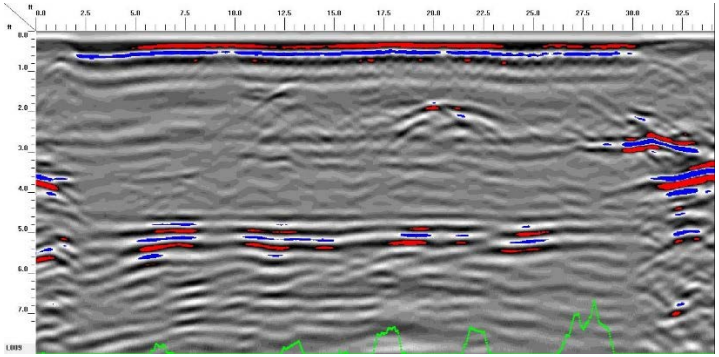
GPR TRANSECT 2



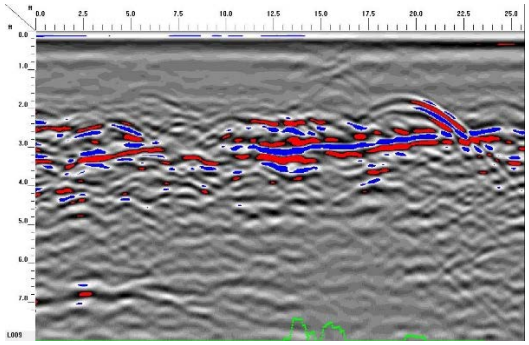
GPR TRANSECT 4



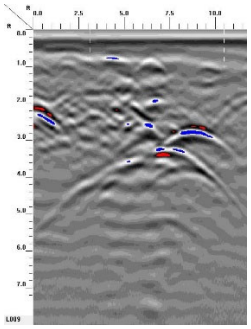
GPR TRANSECT 5



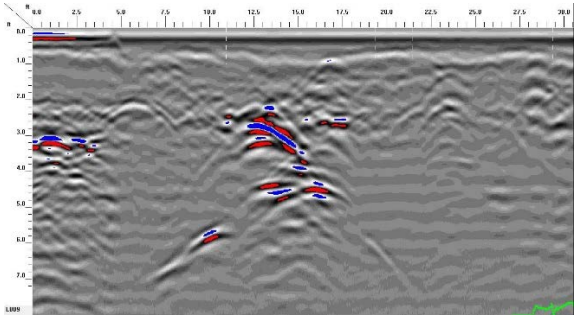
GPR TRANSECT 6



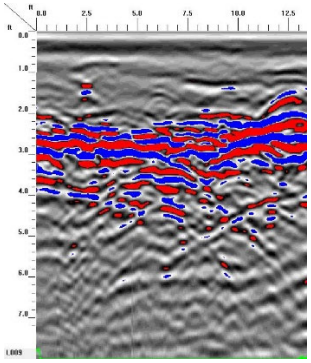
GPR TRANSECT 7



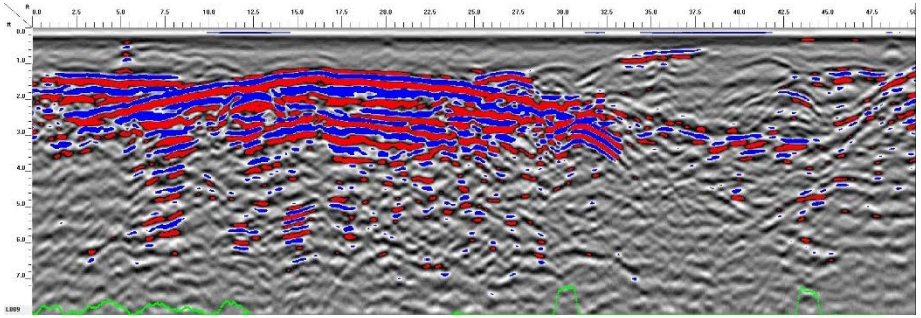
GPR TRANSECT 8



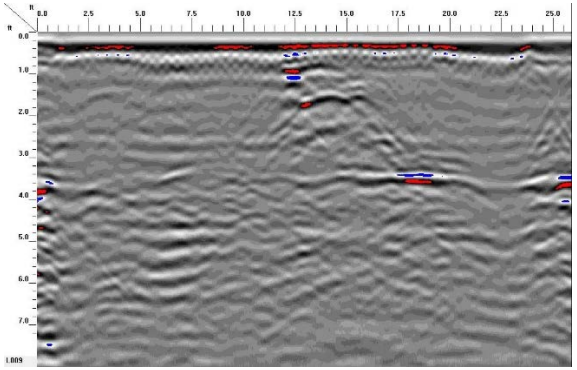
GPR TRANSECT 9



GPR TRANSECT 10



GPR TRANSECT 11



GPR TRANSECT 12

APPENDIX B
Photographic Log

GEOSYNTEC CONSULTANTS
Photographic Record

Geosyntec Consultants of NC, PC

Client: NCDOT	**Project Number: GN7039**
Site Name: R-5726 - Parcel 69	**Site Location: 4331 NC 211, West End, NC**

Photograph 1	
Date: 29 July 2019	
Direction: NW	
Comments: View of the southern side of the Site and the fuel island.	

Photograph 2	
Date: 29 July 2019	
Direction: E	
Comments: View of the monitoring well on the northwestern side of the convenience store building. Monitoring well vault was filled with soil but is not abandoned.	

GEOSYNTEC CONSULTANTS
Photographic Record

Geosyntec Consultants of NC, PC

Client: NCDOT	**Project Number: GN7039**
Site Name: R-5726 - Parcel 69	**Site Location: 4331 NC 211, West End, NC**

Photograph 3	
Date: 29 July 2019	
Direction: E	
Comments: View of the monitoring well on the southwestern side of the convenience store building. Monitoring well is not abandoned.	

Photograph 4	
Date: 29 July 2019	
Direction: S	
Comments: View of the Soil Vapor Extraction (SVE) system in front of the convenience store.	

GEOSYNTEC CONSULTANTS Photographic Record	Geosyntec Consultants of NC, PC
Client: NCDOT	**Project Number: GN7039**
Site Name: R-5726 - Parcel 69	**Site Location: 4331 NC 211, West End, NC**

Photograph 5 **Date: 29 July 2019** **Direction: N** **Comments: View of the eastern side of the convenience store building. Assumed SVE shed behind the gas station.**	
Photograph 6 **Date: 29 July 2019** **Direction: NE** **Comments: View of the southern side of the convenience store building.**	

APPENDIX C
Soil Boring Logs

Geosyntec consultants

BORING LOG

BORING NO. SB69-01

SHEET 1 OF 1

DRILLING CO.: Snedacco	Status: ☐ Well Installed ☐ Plugged & Abdnd. ☐	SITE: NCDOT West End	Borehole Location Sketch Map
METHOD & TOOLS: DPT		PROJECT NO.: 6N7039	
RIG: Geoprobe 7822 DT		N: E:	
BIT DIAMETER: 2¼"	DRILLER: Brian T	SUPERVISOR: M Wang	
GROUND ELEV.: ☐ Surveyed ☐ Estimated		DATE: 8/12/19	

Top (Depth) ☐ Feet ☐ Meters	Lithology Log	Graphic Log	Depth Scale	Well	SPT Blows/6"	Run (No.)	Rec. (%)	Drilling Log
0-4	0-1 Grass & organic debris, black to dark brown color						100	Hand Auger PID = 0
	1-4 dark brown sand, moist-wet, medium							
4-5	brown sand, wet, compact, medium - coarse						75	PID = 0
5-6	5-7.5 ft. brown silty clay, mixed with some grey color. moist, compact, low plastic						100	PID = 6
	7.5-6 ft. red silty clay, mixed with some grey color, moist, low plastic,							
	Samples collected from 6.0-6.5 ft, SB69-01-6.0-6.5 @ 1300							

MW

Geosyntec consultants

BORING LOG

BORING NO. SB69-02

SHEET 1 OF 1

DRILLING CO.: Geoprobe

METHOD & TOOLS: DPT

RIG: Geoprobe 7822DT

BIT DIAMETER: 2¼" DRILLER: Brian T

GROUND ELEV.: ☐ Surveyed ☐ Estimated

Status: ☐ Well Installed ☐ Plugged & Abdnd. ☐

SITE: NCDOT West End

PROJECT NO.: GN7039

N: E:

SUPERVISOR: M Wang

DATE: 8/12/19

Borehole Location Sketch Map

Top (Depth) ☐ Feet ☐ Meters	Lithology Log	Graphic Log	Depth Scale	Well	SPT Blows/6"	Run (No.)	Rec. (%)	Drilling Log
0-3	Light brown sand / silt, dry-moist loose, medium,						100	Hand Auger PID= 0
3-5	dark brown sand, coarse, moist, loose, with some black staining & gravels.						50	PID= 0.8 @ 4.5 ft
	4.5-5 ft bgs, brown sandy clay mixed with red color.							PID= 0 from 4.5-5 ft
5-10	sandy clay, with some gravels reddish brown & grey color mixed. dry. hard.						40	PID= 0
	Only partially recovered, lost some intervals in between.							
	Samples are collected from 4-4.5 ft bgs.							
	SB69-02-4.0-4.5							
	@ 1330							

Geosyntec consultants

BORING LOG

BORING NO. SB69-03

SHEET 1 OF 1

DRILLING CO.: Saedacco	Status: ☐ Well Installed ☐ Plugged & Abdnd. ☐	SITE: NCDOT West End	Borehole Location Sketch Map
METHOD & TOOLS: DPT		PROJECT NO.: GN 7039	
RIG: Geoprobe 7822DT		N: E:	
BIT DIAMETER: 2 1/4"	DRILLER: Porter T	SUPERVISOR: M Wang	
GROUND ELEV.: ☐ Surveyed ☐ Estimated		DATE: 8/12/19	

Top (Depth)	☐ Feet ☐ Meters Lithology Log	Graphic Log	Depth Scale	Well	SPT Blows/6"	Run (No.)	Rec. (%)	Drilling Log
0-5	0-1ft light brown sand, dry, loose 1-4ft dark brown sand, fine to medium, dry-moist, loose 4-5ft Light brown sand, fine to medium, dry-moist, loose.						100	Hand Augen PID background = 0.8 ppm SB69-03 right in front of fuel dispense
5-10	5-6 ft, light brown sandy clay, low plastic, dry-moist. 6-8 ft, Reddish brown sandy clay mixed with gravels. low plastic, dry-moist, hard 8-10 red sandy clay. mixed with some grey color. dry, hard, low plastic. Sample collected from 5-5.5 ft SB69-03-5-5.5 @ 1406						100	PID=0

Geosyntec consultants

BORING LOG

BORING NO. SB69-04
SHEET 1 OF 1

DRILLING CO.: Saedacco
METHOD & TOOLS: DPT
RIG: Geoprobe 7822DT
BIT DIAMETER: 2 1/4"
DRILLER: Brian T
GROUND ELEV.: ☐ Surveyed ☐ Estimated

Status:
☐ Well Installed
☐ Plugged & Abdnd.
☐

SITE: NCDOT Ulerst Bend
PROJECT NO.: GN 7039
N: E:
SUPERVISOR: M Wang
DATE: 8/12/19

Borehole Location Sketch Map

Top (Depth)	☐ Feet ☐ Meters Lithology Log	Graphic Log	Depth Scale	Well	SPT Blows/6*	Run (No.)	Rec. (%)	Drilling Log
0-5	0-1 Light brown ~~sand~~ silt, dry loose 1-4.5 brown sand, moist, loose fine to medium 4.5-5.0 brown sandy clay mixed with some red color						100	Hand Auger PID = 0.5 ppm @ 5.0 ft
5-10	5-6ft sandy clay, grey mixed with red color; Dry to Moise, low plastic 6-8 ft sandy clay, grey color throughout, mixed with some gravels. dry-moist 8-10 ft red sandy clay, low plastic. dry-moist Samples collected from 5-5.5 ft SB69-04-5-5.5 @ 1445							PID=0.1 ppm @ 5.5 ft PID=0.1 ppm @ 6.0 ft PID=0.1 ppm @ 6.5 ft PID=0 @ 7 ft

MW

Geosyntec consultants

BORING LOG

BORING NO. SB69-05

SHEET 1 OF 1

DRILLING CO.: Seaboard

METHOD & TOOLS: DPT

RIG: Geoprobe 7822DT

BIT DIAMETER: 2 1/4" DRILLER: Brian T

GROUND ELEV.: ☐ Surveyed ☐ Estimated

Status: ☐ Well Installed ☐ Plugged & Abdnd. ☐

SITE: NCDOT West End

PROJECT NO.: GN 2039

N: E:

SUPERVISOR: M Wang

DATE: 8/12/19

Borehole Location Sketch Map

Top (Depth) ☐ Feet ☐ Meters	Lithology Log	Graphic Log	Depth Scale	Well	SPT Blows/6"	Run (No.)	Rec. (%)	Drilling Log
0-5	0-1 Light brown silt, dry, loose 1-5 light-dark brown sand, medium-coarse, dry-moist						100	Hand Auger PID=0.1 ppm @ 0.5 ft bgs PID=0.1 ppm @ 1 ft bgs PID=0.1 ppm @ 1.5 ft bgs PID=0 from 2-5 ft bgs
5-8	5-8 ft, sandy clay, grey mixed with red color. Dry-moist, low plastic with some gravels at the end of the interval							PID background = 0.1 ppm
	8-10 ft, red sandy clay, low plastic, dry-moist							
	Samples collected from 9.5-10 ft SB69-05-9.5-10 @ 1525							PID=0.8 @ 9 ft bgs PID=0.3 @ 9.5 ft bgs

Geosyntec consultants

BORING LOG

BORING NO. SB69-06

SHEET 1 OF 1

DRILLING CO.: Saedacco	Status: ☐ Well Installed ☐ Plugged & Abdnd. ☐	SITE: NCDOT Ulster Yard	Borehole Location Sketch Map
METHOD & TOOLS: DPT		PROJECT NO.: GW7039	
RIG: Geoprobe 7822 DT		N: E:	
BIT DIAMETER: 2¼" DRILLER: Bryan T		SUPERVISOR: M Ulang	
GROUND ELEV.: ☐ Surveyed ☐ Estimated		DATE: 8/12/19	

Top (Depth) ☐ Feet ☐ Meters	Lithology Log	Graphic Log	Depth Scale	Well	SPT Blows/6"	Run (No.)	Rec. (%)	Drilling Log
0-5	0-3 ft, light brown sand/silt dry, loose 3-5 ft, brown sand, medium, dry-moist, loose						100	Hand Auger PID background reading = 0.5 ppm, possibly because boring location is next to a idle truck. (Had some hand auger issue) PID=0
5-8	5-6 ft, dark brown sandy clay, dry-moist, low plastic 6-8 ft. Light brown sandy clay, dry-moist, low plastic with some gravels mixed,						120	
8-10	brown sandy clay, with some black stains mixed, possible petroleum related product. samples collected from 9.0-9.5 ft SB69-05-9.-9.5 @ 1615							PID=0.8 ppm @ 9 ft bgs PID=0.3 @ 9.5 bgs

Geosyntec consultants

BORING LOG

BORING NO. SB69-07

SHEET 1 OF 1

DRILLING CO.: Soedarco

METHOD & TOOLS: DPT

RIG: Geoprobe 78220T

BIT DIAMETER: 2¼" DRILLER: Brian T

GROUND ELEV.: ☐ Surveyed ☐ Estimated

Status: ☐ Well Installed ☐ Plugged & Abdnd ☐

SITE: NCDOT Wentworth

PROJECT NO.: GW7039

N: E:

SUPERVISOR: M Ulmer

DATE: 8/12/19

Borehole Location Sketch Map

Top (Depth) ☐ Feet ☐ Meters	Lithology Log	Graphic Log	Depth Scale	Well	SPT Blows/6"	Run (No.)	Rec. (%)	Drilling Log
0-5 ft	0-1 Light brown sand/silt dry. loose 1-3ft brown sand, moist, medium-coarse. mixed with some black debris, no odor. 3-5 ft dark brown sand, moist. medium, loose						100	Hand Auger PID background reading = 0.1 ppm PID = 0.2ppm @ 1 ft bgs PID = 0.2ppm @ 1.5 ft bgs PID = 0.3ppm @ 2 ft bgs PID = 0.1 ppm @ ~~2 ft bgs~~ 2.5-5 ft bgs ~~PID~~
5-10 ft	5-7 ft, Light brown sandy clay, dry-moist, low plastic 7-10, reddish sandy clay, dry-moist, low-medium plastic, samples collected from 5.0-5.5 ft bgs @ 1645 SB69-07-5.0-5.5						100	PID = 0

Geosyntec consultants

BORING LOG

BORING NO. SB69-08

SHEET 1 OF 1

DRILLING CO.: Gradient	Status: ☐ Well Installed ☐ Plugged & Abdnd. ☐	SITE: West End	Borehole Location Sketch Map
METHOD & TOOLS: DPT		PROJECT NO.: GN7039	
RIG: Geoprobe 7822DT		N: E:	
BIT DIAMETER: 2 1/4" DRILLER: Brian T		SUPERVISOR: M Wang	
GROUND ELEV.: ☐ Surveyed ☐ Estimated		DATE: 8/13/19	

Top (Depth) ☐ Feet ☐ Meters	Lithology Log	Graphic Log	Depth Scale	Well	SPT Blows/6"	Run (No.)	Rec. (%)	Drilling Log
~~0~~ 0-4 ft	0-0.5 ft Light to grey silt, dry, loose.						100	Hand Auger
	0.5 - 2 ft. brown silt/sand. dry - moist, loose							PID = 0
	2 - 4 ft, brown sand, dry - moist, loose, poorly sorted.							5 ft East from the original location
4-5 ft	brown sand, medium, dry - moist mixed with some black stain						100	PID = 0
5-10 ft	5.0-5.5 ft, brown - dark sand, medium. ~~do~~ moist to wet. ~~loose~~ compact						50	
	5.5 - 6.5 ft dark/black color sand, black stain, possible septic tank drainage field.							PID = 0.8 ppm @ 6 ft
	6.5 - 7 ft, dark/black color to brown color sand, moist.							6 MWs onsite.
	Samples are collected from 6 - 6.5 ~~6.5~~ 7 ft, @ 1300							
	SB69-08 ~~6.5~~ 6-6.5							

MW

APPENDIX D
Red Lab UVF Report

QED

REDLAB RAPID ENVIRONMENTAL DIAGNOSTICS

QROS

Hydrocarbon Analysis Results

Client: GEOSYNTEC
Address: 2501 BLUE RIDGE RD
SUITE 430 RALEIGH, NC

Samples taken Monday, August 12, 2019
Samples extracted Monday, August 12, 2019
Samples analysed Friday, August 16, 2019

Contact: MICHAEL WANG

Operator CAROLINE STEVENS

Project: R5726

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	
s	SB69-01-6.0-6.5	12.6	<0.32	<0.32	<0.32	<0.32	<0.06	<0.1	<0.013	0	41.6	58.4	,(FCM),(BO),(P)
s	SB69-02-4.0-4.5	14.3	<0.36	0.52	1.4	1.9	0.71	<0.11	<0.014	59.9	28.4	11.7	Deg Fuel 74.5%,(FCM)
s	SB69-03-5-5.5	11.6	<0.29	<0.29	<0.29	<0.29	<0.06	<0.09	<0.012	0	100	0	,(FCM)
s	SB69-04-5-5.5	12.6	<0.32	<0.32	<0.32	<0.32	<0.06	<0.1	<0.013	0	67.2	32.8	Residual HC
s	SB69-05-9.5-10	13.3	<0.33	<0.33	<0.33	<0.33	<0.07	<0.11	<0.013	0	100	0	,(FCM),(BO),(P)
s	SB69-06-9-9.5	11.2	<0.28	<0.28	0.28	0.28	0.22	<0.09	<0.011	0	67.4	32.6	No Match found
s	SB69-07-5-5.5	14.6	<0.36	0.74	<0.36	0.74	<0.07	<0.12	<0.015	94.8	4.1	1.1	Deg.PHC 77.1%,(FCM)
s	SB69-08-6-6.5	21.8	<0.55	<0.55	10.4	10.4	5.2	0.23	<0.022	0	68.6	31.4	Deg.PHC 79.9%,(FCM),(BO)

Initial Calibrator QC check OK

Final FCM QC Check OK 93.6 %

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

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

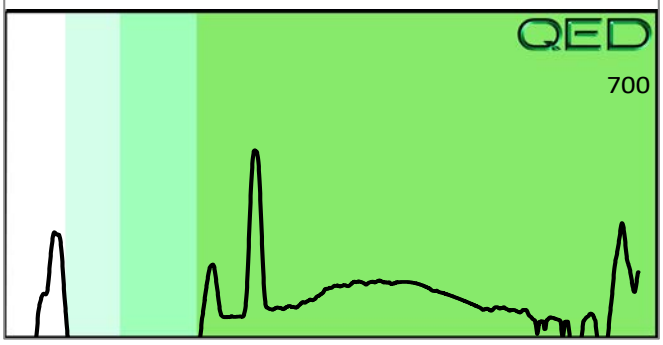
B = Blank Drift : (SBS)/(LBS) = Site Specific or Library Background Subtraction applied to result : (BO) = Background Organics detected : (OCR) = Outside cal range : (M) = Modifed Result.

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

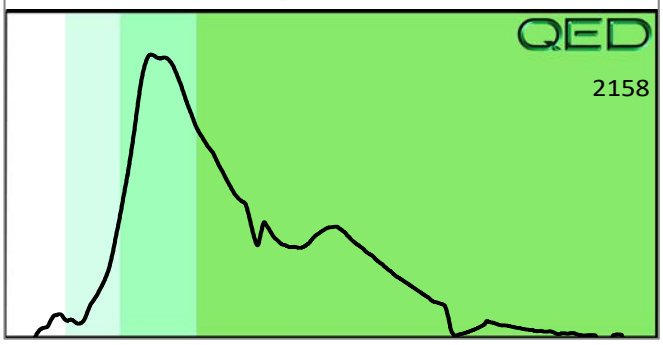
QED Hydrocarbon Fingerprints

Project: R5726

SB69-01-6.0-6.5 : ,(FCM),(BO),(P)

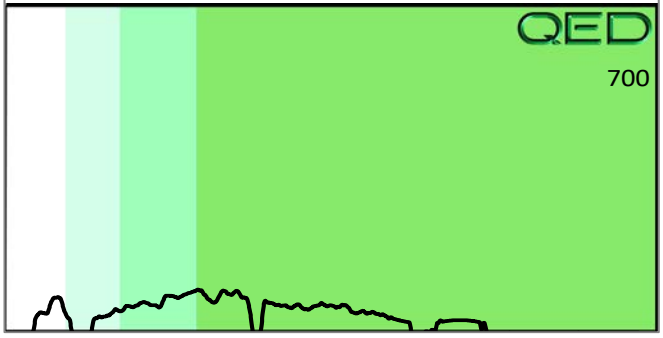


SB69-02-4.0-4.5 : Deg Fuel 74.5%,(FCM)

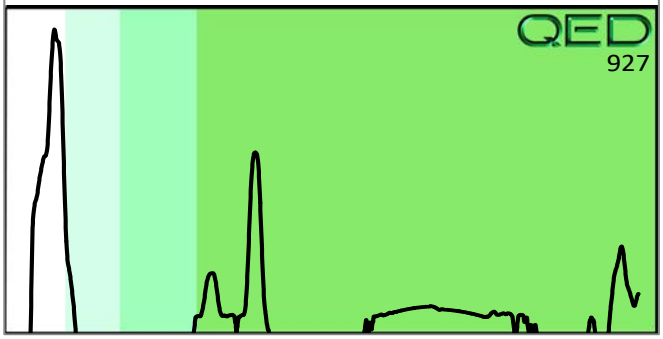


SB69-03-5-5.5 : ,(FCM)

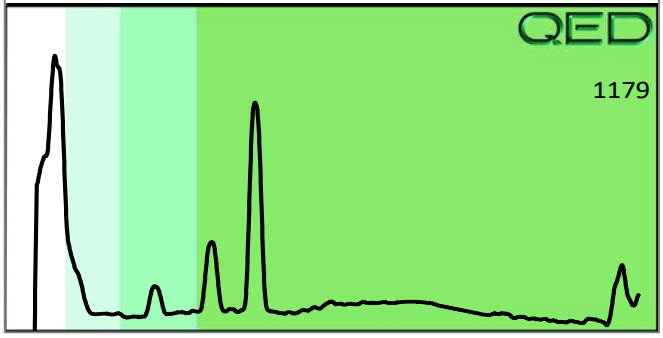
SB69-04-5-5.5 : Residual HC



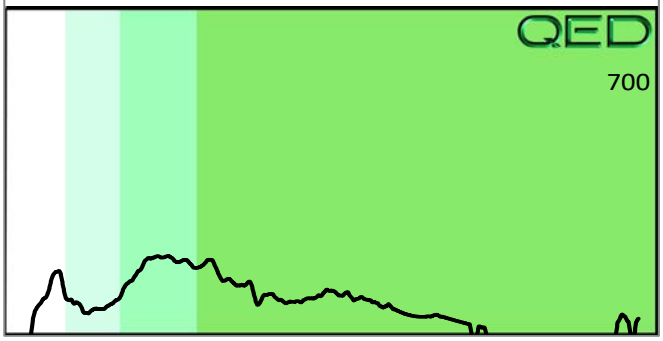
SB6905-9.5-10 : ,(FCM),(BO),(P)



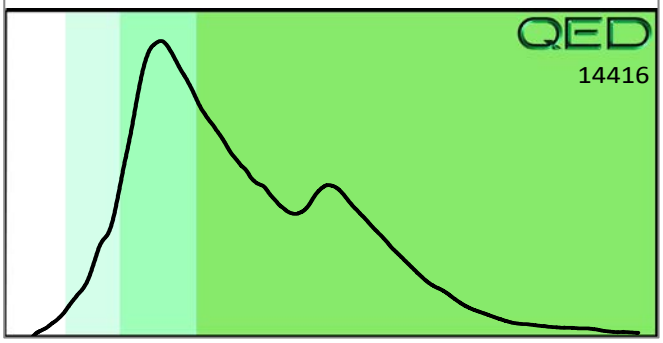
SB69-06-9-9.5 : No Match found



SB69-07-5-5.5 : Deg.PHC 77.1%,(FCM)



SB69-08-6-6.5 : Deg.PHC 79.9%,(FCM),(BO)



APPENDIX E
Prism Laboratories Analytical Report

PRISM LABORATORIES, INC.
Full-Service Analytical & Environmental Solutions

NC Certification No. 402
NC Drinking Water Cert No. 37735
SC Certification No. 99012

Case Narrative

8/28/19 11:20

Geosyntec Consultants of NC, PC - Raleigh
Michael Wang
2501 Blue Ridge Road, Ste 430
Raleigh, NC 27607

Project: NCDOT R-5726 West End
Project No.: GN7039
Lab Submittal Date: 08/16/2019
Prism Work Order: 9080260

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:

SR	Surrogate recovery outside the QC limits.
BRL	Below Reporting Limit
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.

Sample Receipt Summary

08/28/2019

Prism Work Order: 9080260

Client Sample ID	Lab Sample ID	Matrix	Date/Time Sampled	Date/Time Received
SB13-01-7.5-8.0	9080260-01	Solid	08/12/19 10:30	08/16/19 9:15
SB13-02-7-7.5	9080260-02	Solid	08/12/19 11:00	08/16/19 9:15
SB13-03-6.5-7.0	9080260-03	Solid	08/12/19 11:30	08/16/19 9:15
SB43-01-4.5-5.0	9080260-04	Solid	08/13/19 13:40	08/16/19 9:15
SB43-02-6.5-7.0	9080260-05	Solid	08/13/19 14:00	08/16/19 9:15
SB43-03-7.0-7.5	9080260-06	Solid	08/13/19 14:30	08/16/19 9:15
SB43-04-7.5-8.0	9080260-07	Solid	08/13/19 14:45	08/16/19 9:15
SB66867-01-5-5.5	9080260-08	Solid	08/13/19 8:40	08/16/19 9:15
SB66867-02-4.0-4.5	9080260-09	Solid	08/13/19 9:10	08/16/19 9:15
SB66867-03-6.5-7	9080260-10	Solid	08/13/19 10:20	08/16/19 9:15
SB66867-04-5.5-6.0	9080260-11	Solid	08/13/19 9:45	08/16/19 9:15
SB66867-05-7-7.5	9080260-12	Solid	08/13/19 11:10	08/16/19 9:15
SB66867-06-7.5-8	9080260-13	Solid	08/13/19 12:20	08/16/19 9:15
SB69-01-6.0-6.5	9080260-14	Solid	08/12/19 13:00	08/16/19 9:15
SB69-02-4.0-4.5	9080260-15	Solid	08/12/19 13:30	08/16/19 9:15
SB69-03-5.0-5.5	9080260-16	Solid	08/12/19 14:00	08/16/19 9:15
SB69-04-5.0-5.5	9080260-17	Solid	08/12/19 14:45	08/16/19 9:15
SB69-05-9.5-10	9080260-18	Solid	08/12/19 15:25	08/16/19 9:15
SB69-06-9-9.5	9080260-19	Solid	08/12/19 16:15	08/16/19 9:15
SB69-07-5.0-5.5	9080260-20	Solid	08/12/19 16:45	08/16/19 9:15
SB69-08-6.0-6.5	9080260-21	Solid	08/13/19 13:00	08/16/19 9:15
SB78-01-7-7.5	9080260-22	Solid	08/13/19 15:50	08/16/19 9:15
SB78-02-5.5-6	9080260-23	Solid	08/14/19 8:25	08/16/19 9:15
SB78-03-6-6.5	9080260-24	Solid	08/14/19 9:00	08/16/19 9:15
SB78-04-6.5-7	9080260-25	Solid	08/14/19 9:30	08/16/19 9:15
SB89-01-5-5.5	9080260-26	Solid	08/15/19 9:00	08/16/19 9:15
SB89-02-5.5-6	9080260-27	Solid	08/15/19 9:40	08/16/19 9:15
SB89-03-6.5-7	9080260-28	Solid	08/15/19 10:30	08/16/19 9:15
SB89-04-7-7.5	9080260-29	Solid	08/15/19 11:30	08/16/19 9:15
SB102-01-2.5-3	9080260-30	Solid	08/14/19 10:50	08/16/19 9:15
SB102-02-5.5-6	9080260-31	Solid	08/14/19 11:35	08/16/19 9:15
SB102-03-7-7.5	9080260-32	Solid	08/14/19 13:00	08/16/19 9:15
SB102-04-7.5-8	9080260-33	Solid	08/14/19 13:30	08/16/19 9:15

449 Springbrook Road - P.O. Box 240543 - Charlotte, NC 28224-0543
Phone: 704/529-6364 - Toll Free Number: 1-800/529-6364 - Fax: 704/525-0409

SB102-05-4.5-5	9080260-34	Solid	08/14/19 14:00	08/16/19 9:15
SB102-06-0.5-1	9080260-35	Solid	08/14/19 14:50	08/16/19 9:15
SB102-07-7.5-8	9080260-36	Solid	08/14/19 15:35	08/16/19 9:15
SB102-08-8-8.5	9080260-37	Solid	08/14/19 16:05	08/16/19 9:15
SB102-09-8.5-9	9080260-38	Solid	08/14/19 16:45	08/16/19 9:15
SB102-10-9-9.5	9080260-39	Solid	08/14/19 17:20	08/16/19 9:15

Samples were received in good condition at 3.3 degrees C unless otherwise noted.

449 Springbrook Road - P.O. Box 240543 - Charlotte, NC 28224-0543
Phone: 704/529-6364 - Toll Free Number: 1-800/529-6364 - Fax: 704/525-0409

Summary of Detections

08/28/2019

Prism Work Order: 9080260

Prism ID	Client ID	Parameter	Method	Result	Units

There were no detections reported.

449 Springbrook Road - P.O. Box 240543 - Charlotte, NC 28224-0543
Phone: 704/529-6364 - Toll Free Number: 1-800/529-6364 - Fax: 704/525-0409

Geosyntec Consultants of NC, PC - Raleigh
Attn: Michael Wang
2501 Blue Ridge Road, Ste 430
Raleigh, NC 27607

Project: NCDOT R-5726 West End

Project No.: GN7039
Sample Matrix: Solid

Client Sample ID: SB13-01-7.5-8.0
Prism Sample ID: 9080260-01
Prism Work Order: 9080260
Time Collected: 08/12/19 10:30
Time Submitted: 08/16/19 09:15

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
General Chemistry Parameters									
% Solids	**91.0**	**% by Weight**	**0.100**	**0.100**	**1**	***SM2540 G**	**8/22/19 10:22**	**EDV**	**P9H0353**
Volatile Organic Compounds by GC/MS									
Benzene	BRL	mg/kg dry	0.0071	0.0011	1	8260D	8/20/19 17:51	JLB	P9H0347
Ethylbenzene	BRL	mg/kg dry	0.0071	0.0011	1	8260D	8/20/19 17:51	JLB	P9H0347
m,p-Xylenes	BRL	mg/kg dry	0.014	0.0018	1	8260D	8/20/19 17:51	JLB	P9H0347
o-Xylene	BRL	mg/kg dry	0.0071	0.00075	1	8260D	8/20/19 17:51	JLB	P9H0347
Toluene	BRL	mg/kg dry	0.0071	0.0011	1	8260D	8/20/19 17:51	JLB	P9H0347
Xylenes, total	BRL	mg/kg dry	0.021	0.0025	1	8260D	8/20/19 17:51	JLB	P9H0347

Surrogate	Recovery	Control Limits
4-Bromofluorobenzene	*99 %*	*70-130*
Dibromofluoromethane	*112 %*	*84-123*
Toluene-d8	*95 %*	*76-129*

Geosyntec Consultants of NC, PC - Raleigh
Attn: Michael Wang
2501 Blue Ridge Road, Ste 430
Raleigh, NC 27607

Project: NCDOT R-5726 West End

Project No.: GN7039
Sample Matrix: Solid

Client Sample ID: SB13-02-7-7.5
Prism Sample ID: 9080260-02
Prism Work Order: 9080260
Time Collected: 08/12/19 11:00
Time Submitted: 08/16/19 09:15

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
General Chemistry Parameters									
% Solids	**86.2**	**% by Weight**	**0.100**	**0.100**	**1**	***SM2540 G**	**8/22/19 10:22**	**EDV**	**P9H0353**
Volatile Organic Compounds by GC/MS									
Benzene	BRL	mg/kg dry	0.0069	0.0011	1	8260D	8/20/19 18:21	JLB	P9H0347
Ethylbenzene	BRL	mg/kg dry	0.0069	0.0010	1	8260D	8/20/19 18:21	JLB	P9H0347
m,p-Xylenes	BRL	mg/kg dry	0.014	0.0018	1	8260D	8/20/19 18:21	JLB	P9H0347
o-Xylene	BRL	mg/kg dry	0.0069	0.00074	1	8260D	8/20/19 18:21	JLB	P9H0347
Toluene	BRL	mg/kg dry	0.0069	0.0011	1	8260D	8/20/19 18:21	JLB	P9H0347
Xylenes, total	BRL	mg/kg dry	0.021	0.0025	1	8260D	8/20/19 18:21	JLB	P9H0347

Surrogate	Recovery	Control Limits
4-Bromofluorobenzene	*98 %*	*70-130*
Dibromofluoromethane	*114 %*	*84-123*
Toluene-d8	*94 %*	*76-129*

Geosyntec Consultants of NC, PC - Raleigh
Attn: Michael Wang
2501 Blue Ridge Road, Ste 430
Raleigh, NC 27607

Project: NCDOT R-5726 West End

Project No.: GN7039
Sample Matrix: Solid

Client Sample ID: SB13-03-6.5-7.0
Prism Sample ID: 9080260-03
Prism Work Order: 9080260
Time Collected: 08/12/19 11:30
Time Submitted: 08/16/19 09:15

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
General Chemistry Parameters									
% Solids	**95.0**	**% by Weight**	**0.100**	**0.100**	**1**	***SM2540 G**	**8/22/19 10:22**	**EDV**	**P9H0353**
Volatile Organic Compounds by GC/MS									
Benzene	BRL	mg/kg dry	0.0051	0.00079	1	8260D	8/20/19 18:51	JLB	P9H0347
Ethylbenzene	BRL	mg/kg dry	0.0051	0.00077	1	8260D	8/20/19 18:51	JLB	P9H0347
m,p-Xylenes	BRL	mg/kg dry	0.010	0.0013	1	8260D	8/20/19 18:51	JLB	P9H0347
o-Xylene	BRL	mg/kg dry	0.0051	0.00054	1	8260D	8/20/19 18:51	JLB	P9H0347
Toluene	BRL	mg/kg dry	0.0051	0.00081	1	8260D	8/20/19 18:51	JLB	P9H0347
Xylenes, total	BRL	mg/kg dry	0.015	0.0018	1	8260D	8/20/19 18:51	JLB	P9H0347

Surrogate	Recovery	Control Limits
4-Bromofluorobenzene	*102 %*	*70-130*
Dibromofluoromethane	*116 %*	*84-123*
Toluene-d8	*95 %*	*76-129*

Geosyntec Consultants of NC, PC - Raleigh
Attn: Michael Wang
2501 Blue Ridge Road, Ste 430
Raleigh, NC 27607

Project: NCDOT R-5726 West End

Project No.: GN7039
Sample Matrix: Solid

Client Sample ID: SB43-01-4.5-5.0
Prism Sample ID: 9080260-04
Prism Work Order: 9080260
Time Collected: 08/13/19 13:40
Time Submitted: 08/16/19 09:15

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
General Chemistry Parameters									
% Solids	**97.8**	**% by Weight**	**0.100**	**0.100**	**1**	***SM2540 G**	**8/22/19 10:22**	**EDV**	**P9H0353**
Volatile Organic Compounds by GC/MS									
Benzene	BRL	mg/kg dry	0.0053	0.00083	1	8260D	8/20/19 19:21	JLB	P9H0347
Ethylbenzene	BRL	mg/kg dry	0.0053	0.00080	1	8260D	8/20/19 19:21	JLB	P9H0347
m,p-Xylenes	BRL	mg/kg dry	0.011	0.0014	1	8260D	8/20/19 19:21	JLB	P9H0347
o-Xylene	BRL	mg/kg dry	0.0053	0.00056	1	8260D	8/20/19 19:21	JLB	P9H0347
Toluene	BRL	mg/kg dry	0.0053	0.00084	1	8260D	8/20/19 19:21	JLB	P9H0347
Xylenes, total	BRL	mg/kg dry	0.016	0.0019	1	8260D	8/20/19 19:21	JLB	P9H0347

Surrogate	Recovery	Control Limits
4-Bromofluorobenzene	*102 %*	*70-130*
Dibromofluoromethane	*113 %*	*84-123*
Toluene-d8	*95 %*	*76-129*

Geosyntec Consultants of NC, PC - Raleigh
Attn: Michael Wang
2501 Blue Ridge Road, Ste 430
Raleigh, NC 27607

Project: NCDOT R-5726 West End

Project No.: GN7039
Sample Matrix: Solid

Client Sample ID: SB43-02-6.5-7.0
Prism Sample ID: 9080260-05
Prism Work Order: 9080260
Time Collected: 08/13/19 14:00
Time Submitted: 08/16/19 09:15

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
General Chemistry Parameters									
% Solids	**91.4**	**% by Weight**	**0.100**	**0.100**	**1**	***SM2540 G**	**8/22/19 10:22**	**EDV**	**P9H0353**
Volatile Organic Compounds by GC/MS									
Benzene	BRL	mg/kg dry	0.0073	0.0011	1	8260D	8/22/19 15:18	JLB	P9H0389
Ethylbenzene	BRL	mg/kg dry	0.0073	0.0011	1	8260D	8/22/19 15:18	JLB	P9H0389
m,p-Xylenes	BRL	mg/kg dry	0.015	0.0019	1	8260D	8/22/19 15:18	JLB	P9H0389
o-Xylene	BRL	mg/kg dry	0.0073	0.00077	1	8260D	8/22/19 15:18	JLB	P9H0389
Toluene	BRL	mg/kg dry	0.0073	0.0012	1	8260D	8/22/19 15:18	JLB	P9H0389
Xylenes, total	BRL	mg/kg dry	0.022	0.0026	1	8260D	8/22/19 15:18	JLB	P9H0389

Surrogate	Recovery	Control Limits	
4-Bromofluorobenzene	*103 %*	*70-130*	
Dibromofluoromethane	*127 %*	*84-123*	*SR*
Toluene-d8	*93 %*	*76-129*	

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Attn: Michael Wang
2501 Blue Ridge Road, Ste 430
Raleigh, NC 27607

Project: NCDOT R-5726 West End

Project No.: GN7039
Sample Matrix: Solid

Client Sample ID: SB43-03-7.0-7.5
Prism Sample ID: 9080260-06
Prism Work Order: 9080260
Time Collected: 08/13/19 14:30
Time Submitted: 08/16/19 09:15

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
General Chemistry Parameters									
% Solids	**75.6**	**% by Weight**	**0.100**	**0.100**	**1**	***SM2540 G**	**8/22/19 10:22**	**EDV**	**P9H0353**
Volatile Organic Compounds by GC/MS									
Benzene	BRL	mg/kg dry	0.0061	0.00095	1	8260D	8/20/19 20:21	JLB	P9H0347
Ethylbenzene	BRL	mg/kg dry	0.0061	0.00091	1	8260D	8/20/19 20:21	JLB	P9H0347
m,p-Xylenes	BRL	mg/kg dry	0.012	0.0016	1	8260D	8/20/19 20:21	JLB	P9H0347
o-Xylene	BRL	mg/kg dry	0.0061	0.00065	1	8260D	8/20/19 20:21	JLB	P9H0347
Toluene	BRL	mg/kg dry	0.0061	0.00097	1	8260D	8/20/19 20:21	JLB	P9H0347
Xylenes, total	BRL	mg/kg dry	0.018	0.0022	1	8260D	8/20/19 20:21	JLB	P9H0347

Surrogate	Recovery	Control Limits
4-Bromofluorobenzene	*102 %*	*70-130*
Dibromofluoromethane	*120 %*	*84-123*
Toluene-d8	*96 %*	*76-129*

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Attn: Michael Wang
2501 Blue Ridge Road, Ste 430
Raleigh, NC 27607

Project: NCDOT R-5726 West End

Project No.: GN7039
Sample Matrix: Solid

Client Sample ID: SB43-04-7.5-8.0
Prism Sample ID: 9080260-07
Prism Work Order: 9080260
Time Collected: 08/13/19 14:45
Time Submitted: 08/16/19 09:15

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**	**8/22/19 10:22**	**EDV**	**P9H0353**
Volatile Organic Compounds by GC/MS									
Benzene	BRL	mg/kg dry	0.0054	0.00085	1	8260D	8/20/19 20:51	JLB	P9H0347
Ethylbenzene	BRL	mg/kg dry	0.0054	0.00082	1	8260D	8/20/19 20:51	JLB	P9H0347
m,p-Xylenes	BRL	mg/kg dry	0.011	0.0014	1	8260D	8/20/19 20:51	JLB	P9H0347
o-Xylene	BRL	mg/kg dry	0.0054	0.00058	1	8260D	8/20/19 20:51	JLB	P9H0347
Toluene	BRL	mg/kg dry	0.0054	0.00086	1	8260D	8/20/19 20:51	JLB	P9H0347
Xylenes, total	BRL	mg/kg dry	0.016	0.0020	1	8260D	8/20/19 20:51	JLB	P9H0347

Surrogate	Recovery	Control Limits
4-Bromofluorobenzene	*101 %*	*70-130*
Dibromofluoromethane	*119 %*	*84-123*
Toluene-d8	*95 %*	*76-129*

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Attn: Michael Wang
2501 Blue Ridge Road, Ste 430
Raleigh, NC 27607

Project: NCDOT R-5726 West End

Project No.: GN7039
Sample Matrix: Solid

Client Sample ID: SB66867-01-5-5.5
Prism Sample ID: 9080260-08
Prism Work Order: 9080260
Time Collected: 08/13/19 08:40
Time Submitted: 08/16/19 09:15

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
General Chemistry Parameters									
% Solids	**90.8**	**% by Weight**	**0.100**	**0.100**	**1**	***SM2540 G**	**8/22/19 10:22**	**EDV**	**P9H0353**
Volatile Organic Compounds by GC/MS									
Benzene	BRL	mg/kg dry	0.0050	0.00078	1	8260D	8/20/19 21:21	JLB	P9H0347
Ethylbenzene	BRL	mg/kg dry	0.0050	0.00075	1	8260D	8/20/19 21:21	JLB	P9H0347
m,p-Xylenes	BRL	mg/kg dry	0.010	0.0013	1	8260D	8/20/19 21:21	JLB	P9H0347
o-Xylene	BRL	mg/kg dry	0.0050	0.00053	1	8260D	8/20/19 21:21	JLB	P9H0347
Toluene	BRL	mg/kg dry	0.0050	0.00080	1	8260D	8/20/19 21:21	JLB	P9H0347
Xylenes, total	BRL	mg/kg dry	0.015	0.0018	1	8260D	8/20/19 21:21	JLB	P9H0347

Surrogate	Recovery	Control Limits
4-Bromofluorobenzene	*99 %*	*70-130*
Dibromofluoromethane	*122 %*	*84-123*
Toluene-d8	*95 %*	*76-129*

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Attn: Michael Wang
2501 Blue Ridge Road, Ste 430
Raleigh, NC 27607

Project: NCDOT R-5726 West End

Project No.: GN7039
Sample Matrix: Solid

Client Sample ID: SB66867-02-4.0-4.5
Prism Sample ID: 9080260-09
Prism Work Order: 9080260
Time Collected: 08/13/19 09:10
Time Submitted: 08/16/19 09:15

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
General Chemistry Parameters									
% Solids	**86.8**	**% by Weight**	**0.100**	**0.100**	**1**	***SM2540 G**	**8/22/19 10:22**	**EDV**	**P9H0353**
Volatile Organic Compounds by GC/MS									
Benzene	BRL	mg/kg dry	0.0061	0.00096	1	8260D	8/20/19 21:51	JLB	P9H0347
Ethylbenzene	BRL	mg/kg dry	0.0061	0.00092	1	8260D	8/20/19 21:51	JLB	P9H0347
m,p-Xylenes	BRL	mg/kg dry	0.012	0.0016	1	8260D	8/20/19 21:51	JLB	P9H0347
o-Xylene	BRL	mg/kg dry	0.0061	0.00065	1	8260D	8/20/19 21:51	JLB	P9H0347
Toluene	BRL	mg/kg dry	0.0061	0.00098	1	8260D	8/20/19 21:51	JLB	P9H0347
Xylenes, total	BRL	mg/kg dry	0.018	0.0022	1	8260D	8/20/19 21:51	JLB	P9H0347

Surrogate	Recovery	Control Limits
4-Bromofluorobenzene	*100 %*	*70-130*
Dibromofluoromethane	*118 %*	*84-123*
Toluene-d8	*97 %*	*76-129*

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Attn: Michael Wang
2501 Blue Ridge Road, Ste 430
Raleigh, NC 27607

Project: NCDOT R-5726 West End

Project No.: GN7039
Sample Matrix: Solid

Client Sample ID: SB66867-03-6.5-7
Prism Sample ID: 9080260-10
Prism Work Order: 9080260
Time Collected: 08/13/19 10:20
Time Submitted: 08/16/19 09:15

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
General Chemistry Parameters									
% Solids	**90.8**	**% by Weight**	**0.100**	**0.100**	**1**	***SM2540 G**	**8/22/19 10:22**	**EDV**	**P9H0353**
Volatile Organic Compounds by GC/MS									
Benzene	BRL	mg/kg dry	0.0059	0.00092	1	8260D	8/20/19 22:20	JLB	P9H0347
Ethylbenzene	BRL	mg/kg dry	0.0059	0.00088	1	8260D	8/20/19 22:20	JLB	P9H0347
m,p-Xylenes	BRL	mg/kg dry	0.012	0.0015	1	8260D	8/20/19 22:20	JLB	P9H0347
o-Xylene	BRL	mg/kg dry	0.0059	0.00063	1	8260D	8/20/19 22:20	JLB	P9H0347
Toluene	BRL	mg/kg dry	0.0059	0.00094	1	8260D	8/20/19 22:20	JLB	P9H0347
Xylenes, total	BRL	mg/kg dry	0.018	0.0021	1	8260D	8/20/19 22:20	JLB	P9H0347

Surrogate	Recovery	Control Limits
4-Bromofluorobenzene	*99 %*	*70-130*
Dibromofluoromethane	*120 %*	*84-123*
Toluene-d8	*95 %*	*76-129*

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Attn: Michael Wang
2501 Blue Ridge Road, Ste 430
Raleigh, NC 27607

Project: NCDOT R-5726 West End

Project No.: GN7039
Sample Matrix: Solid

Client Sample ID: SB66867-04-5.5-6.0
Prism Sample ID: 9080260-11
Prism Work Order: 9080260
Time Collected: 08/13/19 09:45
Time Submitted: 08/16/19 09:15

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
General Chemistry Parameters									
% Solids	**94.1**	**% by Weight**	**0.100**	**0.100**	**1**	***SM2540 G**	**8/22/19 10:22**	**EDV**	**P9H0353**
Volatile Organic Compounds by GC/MS									
Benzene	BRL	mg/kg dry	0.0056	0.00088	1	8260D	8/20/19 22:50	JLB	P9H0347
Ethylbenzene	BRL	mg/kg dry	0.0056	0.00085	1	8260D	8/20/19 22:50	JLB	P9H0347
m,p-Xylenes	BRL	mg/kg dry	0.011	0.0014	1	8260D	8/20/19 22:50	JLB	P9H0347
o-Xylene	BRL	mg/kg dry	0.0056	0.00060	1	8260D	8/20/19 22:50	JLB	P9H0347
Toluene	BRL	mg/kg dry	0.0056	0.00090	1	8260D	8/20/19 22:50	JLB	P9H0347
Xylenes, total	BRL	mg/kg dry	0.017	0.0020	1	8260D	8/20/19 22:50	JLB	P9H0347

Surrogate	Recovery	Control Limits
4-Bromofluorobenzene	*97 %*	*70-130*
Dibromofluoromethane	*118 %*	*84-123*
Toluene-d8	*96 %*	*76-129*

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Attn: Michael Wang
2501 Blue Ridge Road, Ste 430
Raleigh, NC 27607

Project: NCDOT R-5726 West End

Project No.: GN7039
Sample Matrix: Solid

Client Sample ID: SB66867-05-7-7.5
Prism Sample ID: 9080260-12
Prism Work Order: 9080260
Time Collected: 08/13/19 11:10
Time Submitted: 08/16/19 09:15

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
General Chemistry Parameters									
% Solids	**89.3**	**% by Weight**	**0.100**	**0.100**	**1**	***SM2540 G**	**8/22/19 10:22**	**EDV**	**P9H0353**
Volatile Organic Compounds by GC/MS									
Benzene	BRL	mg/kg dry	0.0060	0.00094	1	8260D	8/20/19 23:20	JLB	P9H0347
Ethylbenzene	BRL	mg/kg dry	0.0060	0.00091	1	8260D	8/20/19 23:20	JLB	P9H0347
m,p-Xylenes	BRL	mg/kg dry	0.012	0.0015	1	8260D	8/20/19 23:20	JLB	P9H0347
o-Xylene	BRL	mg/kg dry	0.0060	0.00064	1	8260D	8/20/19 23:20	JLB	P9H0347
Toluene	BRL	mg/kg dry	0.0060	0.00096	1	8260D	8/20/19 23:20	JLB	P9H0347
Xylenes, total	BRL	mg/kg dry	0.018	0.0022	1	8260D	8/20/19 23:20	JLB	P9H0347

Surrogate	Recovery	Control Limits
4-Bromofluorobenzene	*102 %*	*70-130*
Dibromofluoromethane	*119 %*	*84-123*
Toluene-d8	*94 %*	*76-129*

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Attn: Michael Wang
2501 Blue Ridge Road, Ste 430
Raleigh, NC 27607

Project: NCDOT R-5726 West End

Project No.: GN7039
Sample Matrix: Solid

Client Sample ID: SB66867-06-7.5-8
Prism Sample ID: 9080260-13
Prism Work Order: 9080260
Time Collected: 08/13/19 12:20
Time Submitted: 08/16/19 09:15

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
General Chemistry Parameters									
% Solids	**89.0**	**% by Weight**	**0.100**	**0.100**	**1**	***SM2540 G**	**8/22/19 10:22**	**EDV**	**P9H0353**
Volatile Organic Compounds by GC/MS									
Benzene	BRL	mg/kg dry	0.0049	0.00076	1	8260D	8/19/19 16:12	JLB	P9H0310
Ethylbenzene	BRL	mg/kg dry	0.0049	0.00074	1	8260D	8/19/19 16:12	JLB	P9H0310
m,p-Xylenes	BRL	mg/kg dry	0.0098	0.0013	1	8260D	8/19/19 16:12	JLB	P9H0310
o-Xylene	BRL	mg/kg dry	0.0049	0.00052	1	8260D	8/19/19 16:12	JLB	P9H0310
Toluene	BRL	mg/kg dry	0.0049	0.00078	1	8260D	8/19/19 16:12	JLB	P9H0310
Xylenes, total	BRL	mg/kg dry	0.015	0.0018	1	8260D	8/19/19 16:12	JLB	P9H0310

Surrogate	Recovery	Control Limits
4-Bromofluorobenzene	*100 %*	*70-130*
Dibromofluoromethane	*110 %*	*84-123*
Toluene-d8	*97 %*	*76-129*

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Attn: Michael Wang
2501 Blue Ridge Road, Ste 430
Raleigh, NC 27607

Project: NCDOT R-5726 West End

Project No.: GN7039
Sample Matrix: Solid

Client Sample ID: SB69-01-6.0-6.5
Prism Sample ID: 9080260-14
Prism Work Order: 9080260
Time Collected: 08/12/19 13:00
Time Submitted: 08/16/19 09:15

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
General Chemistry Parameters									
% Solids	**90.5**	**% by Weight**	**0.100**	**0.100**	**1**	***SM2540 G**	**8/22/19 10:22**	**EDV**	**P9H0353**
Volatile Organic Compounds by GC/MS									
Benzene	BRL	mg/kg dry	0.0052	0.00081	1	8260D	8/21/19 19:41	JLB	P9H0366
Ethylbenzene	BRL	mg/kg dry	0.0052	0.00078	1	8260D	8/21/19 19:41	JLB	P9H0366
m,p-Xylenes	BRL	mg/kg dry	0.010	0.0013	1	8260D	8/21/19 19:41	JLB	P9H0366
o-Xylene	BRL	mg/kg dry	0.0052	0.00055	1	8260D	8/21/19 19:41	JLB	P9H0366
Toluene	BRL	mg/kg dry	0.0052	0.00082	1	8260D	8/21/19 19:41	JLB	P9H0366
Xylenes, total	BRL	mg/kg dry	0.016	0.0019	1	8260D	8/21/19 19:41	JLB	P9H0366

Surrogate	Recovery	Control Limits
4-Bromofluorobenzene	*103 %*	*70-130*
Dibromofluoromethane	*123 %*	*84-123*
Toluene-d8	*92 %*	*76-129*

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Attn: Michael Wang
2501 Blue Ridge Road, Ste 430
Raleigh, NC 27607

Project: NCDOT R-5726 West End

Project No.: GN7039
Sample Matrix: Solid

Client Sample ID: SB69-02-4.0-4.5
Prism Sample ID: 9080260-15
Prism Work Order: 9080260
Time Collected: 08/12/19 13:30
Time Submitted: 08/16/19 09:15

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
General Chemistry Parameters									
% Solids	**95.0**	**% by Weight**	**0.100**	**0.100**	**1**	***SM2540 G**	**8/22/19 10:22**	**EDV**	**P9H0353**
Volatile Organic Compounds by GC/MS									
Benzene	BRL	mg/kg dry	0.0080	0.0012	1	8260D	8/21/19 0:20	JLB	P9H0347
Ethylbenzene	BRL	mg/kg dry	0.0080	0.0012	1	8260D	8/21/19 0:20	JLB	P9H0347
m,p-Xylenes	BRL	mg/kg dry	0.016	0.0020	1	8260D	8/21/19 0:20	JLB	P9H0347
o-Xylene	BRL	mg/kg dry	0.0080	0.00085	1	8260D	8/21/19 0:20	JLB	P9H0347
Toluene	BRL	mg/kg dry	0.0080	0.0013	1	8260D	8/21/19 0:20	JLB	P9H0347
Xylenes, total	BRL	mg/kg dry	0.024	0.0029	1	8260D	8/21/19 0:20	JLB	P9H0347

Surrogate	Recovery	Control Limits
4-Bromofluorobenzene	*103 %*	*70-130*
Dibromofluoromethane	*122 %*	*84-123*
Toluene-d8	*95 %*	*76-129*

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Attn: Michael Wang
2501 Blue Ridge Road, Ste 430
Raleigh, NC 27607

Project: NCDOT R-5726 West End

Project No.: GN7039
Sample Matrix: Solid

Client Sample ID: SB69-03-5.0-5.5
Prism Sample ID: 9080260-16
Prism Work Order: 9080260
Time Collected: 08/12/19 14:00
Time Submitted: 08/16/19 09:15

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
General Chemistry Parameters									
% Solids	**93.2**	**% by Weight**	**0.100**	**0.100**	**1**	***SM2540 G**	**8/22/19 10:22**	**EDV**	**P9H0353**
Volatile Organic Compounds by GC/MS									
Benzene	BRL	mg/kg dry	0.0043	0.00067	1	8260D	8/21/19 0:49	JLB	P9H0347
Ethylbenzene	BRL	mg/kg dry	0.0043	0.00064	1	8260D	8/21/19 0:49	JLB	P9H0347
m,p-Xylenes	BRL	mg/kg dry	0.0086	0.0011	1	8260D	8/21/19 0:49	JLB	P9H0347
o-Xylene	BRL	mg/kg dry	0.0043	0.00046	1	8260D	8/21/19 0:49	JLB	P9H0347
Toluene	BRL	mg/kg dry	0.0043	0.00068	1	8260D	8/21/19 0:49	JLB	P9H0347
Xylenes, total	BRL	mg/kg dry	0.013	0.0015	1	8260D	8/21/19 0:49	JLB	P9H0347

Surrogate	Recovery	Control Limits
4-Bromofluorobenzene	*102 %*	*70-130*
Dibromofluoromethane	*121 %*	*84-123*
Toluene-d8	*96 %*	*76-129*

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Attn: Michael Wang
2501 Blue Ridge Road, Ste 430
Raleigh, NC 27607

Project: NCDOT R-5726 West End

Project No.: GN7039
Sample Matrix: Solid

Client Sample ID: SB69-04-5.0-5.5
Prism Sample ID: 9080260-17
Prism Work Order: 9080260
Time Collected: 08/12/19 14:45
Time Submitted: 08/16/19 09:15

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
General Chemistry Parameters									
% Solids	**92.2**	**% by Weight**	**0.100**	**0.100**	**1**	***SM2540 G**	**8/22/19 10:22**	**EDV**	**P9H0353**
Volatile Organic Compounds by GC/MS									
Benzene	BRL	mg/kg dry	0.0049	0.00076	1	8260D	8/21/19 1:19	JLB	P9H0347
Ethylbenzene	BRL	mg/kg dry	0.0049	0.00074	1	8260D	8/21/19 1:19	JLB	P9H0347
m,p-Xylenes	BRL	mg/kg dry	0.0098	0.0013	1	8260D	8/21/19 1:19	JLB	P9H0347
o-Xylene	BRL	mg/kg dry	0.0049	0.00052	1	8260D	8/21/19 1:19	JLB	P9H0347
Toluene	BRL	mg/kg dry	0.0049	0.00078	1	8260D	8/21/19 1:19	JLB	P9H0347
Xylenes, total	BRL	mg/kg dry	0.015	0.0018	1	8260D	8/21/19 1:19	JLB	P9H0347

Surrogate	Recovery	Control Limits
4-Bromofluorobenzene	*100 %*	*70-130*
Dibromofluoromethane	*123 %*	*84-123*
Toluene-d8	*94 %*	*76-129*

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Attn: Michael Wang
2501 Blue Ridge Road, Ste 430
Raleigh, NC 27607

Project: NCDOT R-5726 West End

Project No.: GN7039
Sample Matrix: Solid

Client Sample ID: SB69-05-9.5-10
Prism Sample ID: 9080260-18
Prism Work Order: 9080260
Time Collected: 08/12/19 15:25
Time Submitted: 08/16/19 09:15

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
General Chemistry Parameters									
% Solids	**91.0**	**% by Weight**	**0.100**	**0.100**	**1**	***SM2540 G**	**8/23/19 8:10**	**EDV**	**P9H0369**
Volatile Organic Compounds by GC/MS									
Benzene	BRL	mg/kg dry	0.0056	0.00088	1	8260D	8/21/19 1:50	JLB	P9H0347
Ethylbenzene	BRL	mg/kg dry	0.0056	0.00084	1	8260D	8/21/19 1:50	JLB	P9H0347
m,p-Xylenes	BRL	mg/kg dry	0.011	0.0014	1	8260D	8/21/19 1:50	JLB	P9H0347
o-Xylene	BRL	mg/kg dry	0.0056	0.00060	1	8260D	8/21/19 1:50	JLB	P9H0347
Toluene	BRL	mg/kg dry	0.0056	0.00089	1	8260D	8/21/19 1:50	JLB	P9H0347
Xylenes, total	BRL	mg/kg dry	0.017	0.0020	1	8260D	8/21/19 1:50	JLB	P9H0347

Surrogate	Recovery	Control Limits
4-Bromofluorobenzene	*99 %*	*70-130*
Dibromofluoromethane	*119 %*	*84-123*
Toluene-d8	*94 %*	*76-129*

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2501 Blue Ridge Road, Ste 430
Raleigh, NC 27607

Project: NCDOT R-5726 West End

Project No.: GN7039
Sample Matrix: Solid

Client Sample ID: SB69-06-9-9.5
Prism Sample ID: 9080260-19
Prism Work Order: 9080260
Time Collected: 08/12/19 16:15
Time Submitted: 08/16/19 09:15

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
General Chemistry Parameters									
% Solids	**87.3**	**% by Weight**	**0.100**	**0.100**	**1**	***SM2540 G**	**8/23/19 8:10**	**EDV**	**P9H0369**
Volatile Organic Compounds by GC/MS									
Benzene	BRL	mg/kg dry	0.0046	0.00072	1	8260D	8/22/19 15:47	JLB	P9H0389
Ethylbenzene	BRL	mg/kg dry	0.0046	0.00069	1	8260D	8/22/19 15:47	JLB	P9H0389
m,p-Xylenes	BRL	mg/kg dry	0.0092	0.0012	1	8260D	8/22/19 15:47	JLB	P9H0389
o-Xylene	BRL	mg/kg dry	0.0046	0.00049	1	8260D	8/22/19 15:47	JLB	P9H0389
Toluene	BRL	mg/kg dry	0.0046	0.00073	1	8260D	8/22/19 15:47	JLB	P9H0389
Xylenes, total	BRL	mg/kg dry	0.014	0.0017	1	8260D	8/22/19 15:47	JLB	P9H0389

Surrogate	Recovery	Control Limits	
4-Bromofluorobenzene	*99 %*	*70-130*	
Dibromofluoromethane	*125 %*	*84-123*	*SR*
Toluene-d8	*92 %*	*76-129*	

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Attn: Michael Wang
2501 Blue Ridge Road, Ste 430
Raleigh, NC 27607

Project: NCDOT R-5726 West End

Project No.: GN7039
Sample Matrix: Solid

Client Sample ID: SB69-07-5.0-5.5
Prism Sample ID: 9080260-20
Prism Work Order: 9080260
Time Collected: 08/12/19 16:45
Time Submitted: 08/16/19 09:15

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
General Chemistry Parameters									
% Solids	**93.3**	**% by Weight**	**0.100**	**0.100**	**1**	***SM2540 G**	**8/23/19 8:10**	**EDV**	**P9H0369**
Volatile Organic Compounds by GC/MS									
Benzene	BRL	mg/kg dry	0.0051	0.00080	1	8260D	8/22/19 16:17	JLB	P9H0389
Ethylbenzene	BRL	mg/kg dry	0.0051	0.00077	1	8260D	8/22/19 16:17	JLB	P9H0389
m,p-Xylenes	BRL	mg/kg dry	0.010	0.0013	1	8260D	8/22/19 16:17	JLB	P9H0389
o-Xylene	BRL	mg/kg dry	0.0051	0.00055	1	8260D	8/22/19 16:17	JLB	P9H0389
Toluene	BRL	mg/kg dry	0.0051	0.00082	1	8260D	8/22/19 16:17	JLB	P9H0389
Xylenes, total	BRL	mg/kg dry	0.015	0.0019	1	8260D	8/22/19 16:17	JLB	P9H0389

Surrogate	Recovery	Control Limits	
4-Bromofluorobenzene	*102 %*	*70-130*	
Dibromofluoromethane	*127 %*	*84-123*	*SR*
Toluene-d8	*94 %*	*76-129*	

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Attn: Michael Wang
2501 Blue Ridge Road, Ste 430
Raleigh, NC 27607

Project: NCDOT R-5726 West End

Project No.: GN7039
Sample Matrix: Solid

Client Sample ID: SB69-08-6.0-6.5
Prism Sample ID: 9080260-21
Prism Work Order: 9080260
Time Collected: 08/13/19 13:00
Time Submitted: 08/16/19 09:15

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
General Chemistry Parameters									
% Solids	**85.7**	**% by Weight**	**0.100**	**0.100**	**1**	***SM2540 G**	**8/23/19 8:10**	**EDV**	**P9H0369**
Volatile Organic Compounds by GC/MS									
Benzene	BRL	mg/kg dry	0.0060	0.00094	1	8260D	8/26/19 19:27	JLB	P9H0434
Ethylbenzene	BRL	mg/kg dry	0.0060	0.00091	1	8260D	8/26/19 19:27	JLB	P9H0434
m,p-Xylenes	BRL	mg/kg dry	0.012	0.0015	1	8260D	8/26/19 19:27	JLB	P9H0434
o-Xylene	BRL	mg/kg dry	0.0060	0.00064	1	8260D	8/26/19 19:27	JLB	P9H0434
Toluene	BRL	mg/kg dry	0.0060	0.00096	1	8260D	8/26/19 19:27	JLB	P9H0434
Xylenes, total	BRL	mg/kg dry	0.018	0.0022	1	8260D	8/26/19 19:27	JLB	P9H0434

Surrogate	Recovery	Control Limits
4-Bromofluorobenzene	*112 %*	*70-130*
Dibromofluoromethane	*96 %*	*84-123*
Toluene-d8	*101 %*	*76-129*

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Attn: Michael Wang
2501 Blue Ridge Road, Ste 430
Raleigh, NC 27607

Project: NCDOT R-5726 West End

Project No.: GN7039
Sample Matrix: Solid

Client Sample ID: SB78-01-7-7.5
Prism Sample ID: 9080260-22
Prism Work Order: 9080260
Time Collected: 08/13/19 15:50
Time Submitted: 08/16/19 09:15

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
General Chemistry Parameters									
% Solids	**83.4**	**% by Weight**	**0.100**	**0.100**	**1**	***SM2540 G**	**8/23/19 8:10**	**EDV**	**P9H0369**
Volatile Organic Compounds by GC/MS									
Benzene	BRL	mg/kg dry	0.0053	0.00082	1	8260D	8/22/19 17:34	JLB	P9H0389
Ethylbenzene	BRL	mg/kg dry	0.0053	0.00079	1	8260D	8/22/19 17:34	JLB	P9H0389
m,p-Xylenes	BRL	mg/kg dry	0.011	0.0013	1	8260D	8/22/19 17:34	JLB	P9H0389
o-Xylene	BRL	mg/kg dry	0.0053	0.00056	1	8260D	8/22/19 17:34	JLB	P9H0389
Toluene	BRL	mg/kg dry	0.0053	0.00084	1	8260D	8/22/19 17:34	JLB	P9H0389
Xylenes, total	BRL	mg/kg dry	0.016	0.0019	1	8260D	8/22/19 17:34	JLB	P9H0389

Surrogate	Recovery	Control Limits	
4-Bromofluorobenzene	*100 %*	*70-130*	
Dibromofluoromethane	*132 %*	*84-123*	*SR*
Toluene-d8	*96 %*	*76-129*	

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2501 Blue Ridge Road, Ste 430
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Project: NCDOT R-5726 West End

Project No.: GN7039
Sample Matrix: Solid

Client Sample ID: SB78-02-5.5-6
Prism Sample ID: 9080260-23
Prism Work Order: 9080260
Time Collected: 08/14/19 08:25
Time Submitted: 08/16/19 09:15

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
General Chemistry Parameters									
% Solids	**97.8**	**% by Weight**	**0.100**	**0.100**	**1**	***SM2540 G**	**8/23/19 8:10**	**EDV**	**P9H0369**
Volatile Organic Compounds by GC/MS									
Benzene	BRL	mg/kg dry	0.0043	0.00067	1	8260D	8/19/19 16:42	JLB	P9H0310
Ethylbenzene	BRL	mg/kg dry	0.0043	0.00065	1	8260D	8/19/19 16:42	JLB	P9H0310
Isopropylbenzene (Cumene)	BRL	mg/kg dry	0.0043	0.00050	1	8260D	8/19/19 16:42	JLB	P9H0310
m,p-Xylenes	BRL	mg/kg dry	0.0086	0.0011	1	8260D	8/19/19 16:42	JLB	P9H0310
o-Xylene	BRL	mg/kg dry	0.0043	0.00046	1	8260D	8/19/19 16:42	JLB	P9H0310
Toluene	BRL	mg/kg dry	0.0043	0.00068	1	8260D	8/19/19 16:42	JLB	P9H0310
Xylenes, total	BRL	mg/kg dry	0.013	0.0015	1	8260D	8/19/19 16:42	JLB	P9H0310

Surrogate	Recovery	Control Limits
4-Bromofluorobenzene	*102 %*	*70-130*
Dibromofluoromethane	*109 %*	*84-123*
Toluene-d8	*96 %*	*76-129*

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Attn: Michael Wang
2501 Blue Ridge Road, Ste 430
Raleigh, NC 27607

Project: NCDOT R-5726 West End

Project No.: GN7039
Sample Matrix: Solid

Client Sample ID: SB78-03-6-6.5
Prism Sample ID: 9080260-24
Prism Work Order: 9080260
Time Collected: 08/14/19 09:00
Time Submitted: 08/16/19 09:15

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
General Chemistry Parameters									
% Solids	**85.2**	**% by Weight**	**0.100**	**0.100**	**1**	***SM2540 G**	**8/23/19 8:10**	**EDV**	**P9H0369**
Volatile Organic Compounds by GC/MS									
Benzene	BRL	mg/kg dry	0.0068	0.0011	1	8260D	8/19/19 17:12	JLB	P9H0310
Ethylbenzene	BRL	mg/kg dry	0.0068	0.0010	1	8260D	8/19/19 17:12	JLB	P9H0310
m,p-Xylenes	BRL	mg/kg dry	0.014	0.0017	1	8260D	8/19/19 17:12	JLB	P9H0310
o-Xylene	BRL	mg/kg dry	0.0068	0.00072	1	8260D	8/19/19 17:12	JLB	P9H0310
Toluene	BRL	mg/kg dry	0.0068	0.0011	1	8260D	8/19/19 17:12	JLB	P9H0310
Xylenes, total	BRL	mg/kg dry	0.020	0.0024	1	8260D	8/19/19 17:12	JLB	P9H0310

Surrogate	Recovery	Control Limits
4-Bromofluorobenzene	*103 %*	*70-130*
Dibromofluoromethane	*110 %*	*84-123*
Toluene-d8	*96 %*	*76-129*

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Attn: Michael Wang
2501 Blue Ridge Road, Ste 430
Raleigh, NC 27607

Project: NCDOT R-5726 West End

Project No.: GN7039
Sample Matrix: Solid

Client Sample ID: SB78-04-6.5-7
Prism Sample ID: 9080260-25
Prism Work Order: 9080260
Time Collected: 08/14/19 09:30
Time Submitted: 08/16/19 09:15

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
General Chemistry Parameters									
% Solids	**85.1**	**% by Weight**	**0.100**	**0.100**	**1**	***SM2540 G**	**8/23/19 8:10**	**EDV**	**P9H0369**
Volatile Organic Compounds by GC/MS									
Benzene	BRL	mg/kg dry	0.0062	0.00097	1	8260D	8/22/19 18:04	JLB	P9H0389
Ethylbenzene	BRL	mg/kg dry	0.0062	0.00093	1	8260D	8/22/19 18:04	JLB	P9H0389
m,p-Xylenes	BRL	mg/kg dry	0.012	0.0016	1	8260D	8/22/19 18:04	JLB	P9H0389
o-Xylene	BRL	mg/kg dry	0.0062	0.00066	1	8260D	8/22/19 18:04	JLB	P9H0389
Toluene	BRL	mg/kg dry	0.0062	0.00099	1	8260D	8/22/19 18:04	JLB	P9H0389
Xylenes, total	BRL	mg/kg dry	0.019	0.0022	1	8260D	8/22/19 18:04	JLB	P9H0389

Surrogate	Recovery	Control Limits	
4-Bromofluorobenzene	*98 %*	*70-130*	
Dibromofluoromethane	*130 %*	*84-123*	*SR*
Toluene-d8	*93 %*	*76-129*	

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Attn: Michael Wang
2501 Blue Ridge Road, Ste 430
Raleigh, NC 27607

Project: NCDOT R-5726 West End

Project No.: GN7039
Sample Matrix: Solid

Client Sample ID: SB89-01-5-5.5
Prism Sample ID: 9080260-26
Prism Work Order: 9080260
Time Collected: 08/15/19 09:00
Time Submitted: 08/16/19 09:15

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
General Chemistry Parameters									
% Solids	**96.3**	**% by Weight**	**0.100**	**0.100**	**1**	***SM2540 G**	**8/23/19 8:10**	**EDV**	**P9H0369**
Volatile Organic Compounds by GC/MS									
Benzene	BRL	mg/kg dry	0.0056	0.00088	1	8260D	8/22/19 18:34	JLB	P9H0389
Ethylbenzene	BRL	mg/kg dry	0.0056	0.00085	1	8260D	8/22/19 18:34	JLB	P9H0389
m,p-Xylenes	BRL	mg/kg dry	0.011	0.0014	1	8260D	8/22/19 18:34	JLB	P9H0389
o-Xylene	BRL	mg/kg dry	0.0056	0.00060	1	8260D	8/22/19 18:34	JLB	P9H0389
Toluene	BRL	mg/kg dry	0.0056	0.00090	1	8260D	8/22/19 18:34	JLB	P9H0389
Xylenes, total	BRL	mg/kg dry	0.017	0.0020	1	8260D	8/22/19 18:34	JLB	P9H0389

Surrogate	Recovery	Control Limits	
4-Bromofluorobenzene	*98 %*	*70-130*	
Dibromofluoromethane	*127 %*	*84-123*	*SR*
Toluene-d8	*94 %*	*76-129*	

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2501 Blue Ridge Road, Ste 430
Raleigh, NC 27607

Project: NCDOT R-5726 West End

Project No.: GN7039
Sample Matrix: Solid

Client Sample ID: SB89-02-5.5-6
Prism Sample ID: 9080260-27
Prism Work Order: 9080260
Time Collected: 08/15/19 09:40
Time Submitted: 08/16/19 09:15

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
General Chemistry Parameters									
% Solids	**96.6**	**% by Weight**	**0.100**	**0.100**	**1**	***SM2540 G**	**8/23/19 8:10**	**EDV**	**P9H0369**
Volatile Organic Compounds by GC/MS									
Benzene	BRL	mg/kg dry	0.0066	0.0010	1	8260D	8/22/19 19:04	JLB	P9H0389
Ethylbenzene	BRL	mg/kg dry	0.0066	0.0010	1	8260D	8/22/19 19:04	JLB	P9H0389
m,p-Xylenes	BRL	mg/kg dry	0.013	0.0017	1	8260D	8/22/19 19:04	JLB	P9H0389
o-Xylene	BRL	mg/kg dry	0.0066	0.00070	1	8260D	8/22/19 19:04	JLB	P9H0389
Toluene	BRL	mg/kg dry	0.0066	0.0011	1	8260D	8/22/19 19:04	JLB	P9H0389
Xylenes, total	BRL	mg/kg dry	0.020	0.0024	1	8260D	8/22/19 19:04	JLB	P9H0389

Surrogate	Recovery	Control Limits	
4-Bromofluorobenzene	*100 %*	*70-130*	
Dibromofluoromethane	*135 %*	*84-123*	*SR*
Toluene-d8	*93 %*	*76-129*	

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Attn: Michael Wang
2501 Blue Ridge Road, Ste 430
Raleigh, NC 27607

Project: NCDOT R-5726 West End

Project No.: GN7039
Sample Matrix: Solid

Client Sample ID: SB89-03-6.5-7
Prism Sample ID: 9080260-28
Prism Work Order: 9080260
Time Collected: 08/15/19 10:30
Time Submitted: 08/16/19 09:15

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
General Chemistry Parameters									
% Solids	**92.2**	**% by Weight**	**0.100**	**0.100**	**1**	***SM2540 G**	**8/23/19 8:10**	**EDV**	**P9H0369**
Volatile Organic Compounds by GC/MS									
Benzene	BRL	mg/kg dry	0.0065	0.0010	1	8260D	8/22/19 19:34	JLB	P9H0389
Ethylbenzene	BRL	mg/kg dry	0.0065	0.00098	1	8260D	8/22/19 19:34	JLB	P9H0389
m,p-Xylenes	BRL	mg/kg dry	0.013	0.0017	1	8260D	8/22/19 19:34	JLB	P9H0389
o-Xylene	BRL	mg/kg dry	0.0065	0.00069	1	8260D	8/22/19 19:34	JLB	P9H0389
Toluene	BRL	mg/kg dry	0.0065	0.0010	1	8260D	8/22/19 19:34	JLB	P9H0389
Xylenes, total	BRL	mg/kg dry	0.019	0.0023	1	8260D	8/22/19 19:34	JLB	P9H0389

Surrogate	Recovery	Control Limits	
4-Bromofluorobenzene	*102 %*	*70-130*	
Dibromofluoromethane	*128 %*	*84-123*	*SR*
Toluene-d8	*90 %*	*76-129*	

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2501 Blue Ridge Road, Ste 430
Raleigh, NC 27607

Project: NCDOT R-5726 West End

Project No.: GN7039
Sample Matrix: Solid

Client Sample ID: SB89-04-7-7.5
Prism Sample ID: 9080260-29
Prism Work Order: 9080260
Time Collected: 08/15/19 11:30
Time Submitted: 08/16/19 09:15

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
General Chemistry Parameters									
% Solids	**93.9**	**% by Weight**	**0.100**	**0.100**	**1**	***SM2540 G**	**8/23/19 8:10**	**EDV**	**P9H0369**
Volatile Organic Compounds by GC/MS									
Benzene	BRL	mg/kg dry	0.0062	0.00097	1	8260D	8/22/19 20:03	JLB	P9H0389
Ethylbenzene	BRL	mg/kg dry	0.0062	0.00094	1	8260D	8/22/19 20:03	JLB	P9H0389
m,p-Xylenes	BRL	mg/kg dry	0.012	0.0016	1	8260D	8/22/19 20:03	JLB	P9H0389
o-Xylene	BRL	mg/kg dry	0.0062	0.00066	1	8260D	8/22/19 20:03	JLB	P9H0389
Toluene	BRL	mg/kg dry	0.0062	0.00099	1	8260D	8/22/19 20:03	JLB	P9H0389
Xylenes, total	BRL	mg/kg dry	0.019	0.0022	1	8260D	8/22/19 20:03	JLB	P9H0389

Surrogate	Recovery	Control Limits	
4-Bromofluorobenzene	*98 %*	*70-130*	
Dibromofluoromethane	*136 %*	*84-123*	*SR*
Toluene-d8	*91 %*	*76-129*	

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Attn: Michael Wang
2501 Blue Ridge Road, Ste 430
Raleigh, NC 27607

Project: NCDOT R-5726 West End

Project No.: GN7039
Sample Matrix: Solid

Client Sample ID: SB102-01-2.5-3
Prism Sample ID: 9080260-30
Prism Work Order: 9080260
Time Collected: 08/14/19 10:50
Time Submitted: 08/16/19 09:15

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
General Chemistry Parameters									
% Solids	**89.8**	**% by Weight**	**0.100**	**0.100**	**1**	***SM2540 G**	**8/23/19 8:10**	**EDV**	**P9H0369**
Volatile Organic Compounds by GC/MS									
Benzene	BRL	mg/kg dry	0.0069	0.0011	1	8260D	8/22/19 20:33	JLB	P9H0389
Ethylbenzene	BRL	mg/kg dry	0.0069	0.0010	1	8260D	8/22/19 20:33	JLB	P9H0389
m,p-Xylenes	BRL	mg/kg dry	0.014	0.0018	1	8260D	8/22/19 20:33	JLB	P9H0389
o-Xylene	BRL	mg/kg dry	0.0069	0.00073	1	8260D	8/22/19 20:33	JLB	P9H0389
Toluene	BRL	mg/kg dry	0.0069	0.0011	1	8260D	8/22/19 20:33	JLB	P9H0389
Xylenes, total	BRL	mg/kg dry	0.021	0.0025	1	8260D	8/22/19 20:33	JLB	P9H0389

Surrogate	Recovery	Control Limits	
4-Bromofluorobenzene	*101 %*	*70-130*	
Dibromofluoromethane	*134 %*	*84-123*	*SR*
Toluene-d8	*92 %*	*76-129*	

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Attn: Michael Wang
2501 Blue Ridge Road, Ste 430
Raleigh, NC 27607

Project: NCDOT R-5726 West End

Project No.: GN7039
Sample Matrix: Solid

Client Sample ID: SB102-02-5.5-6
Prism Sample ID: 9080260-31
Prism Work Order: 9080260
Time Collected: 08/14/19 11:35
Time Submitted: 08/16/19 09:15

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
General Chemistry Parameters									
% Solids	**96.4**	**% by Weight**	**0.100**	**0.100**	**1**	***SM2540 G**	**8/23/19 8:10**	**EDV**	**P9H0369**
Volatile Organic Compounds by GC/MS									
Benzene	BRL	mg/kg dry	0.0059	0.00093	1	8260D	8/22/19 21:03	JLB	P9H0389
Ethylbenzene	BRL	mg/kg dry	0.0059	0.00089	1	8260D	8/22/19 21:03	JLB	P9H0389
m,p-Xylenes	BRL	mg/kg dry	0.012	0.0015	1	8260D	8/22/19 21:03	JLB	P9H0389
o-Xylene	BRL	mg/kg dry	0.0059	0.00063	1	8260D	8/22/19 21:03	JLB	P9H0389
Toluene	BRL	mg/kg dry	0.0059	0.00095	1	8260D	8/22/19 21:03	JLB	P9H0389
Xylenes, total	BRL	mg/kg dry	0.018	0.0021	1	8260D	8/22/19 21:03	JLB	P9H0389

Surrogate	Recovery	Control Limits	
4-Bromofluorobenzene	*100 %*	*70-130*	
Dibromofluoromethane	*133 %*	*84-123*	*SR*
Toluene-d8	*91 %*	*76-129*	

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Attn: Michael Wang
2501 Blue Ridge Road, Ste 430
Raleigh, NC 27607

Project: NCDOT R-5726 West End

Project No.: GN7039
Sample Matrix: Solid

Client Sample ID: SB102-03-7-7.5
Prism Sample ID: 9080260-32
Prism Work Order: 9080260
Time Collected: 08/14/19 13:00
Time Submitted: 08/16/19 09:15

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
General Chemistry Parameters									
% Solids	**94.4**	**% by Weight**	**0.100**	**0.100**	**1**	***SM2540 G**	**8/23/19 8:10**	**EDV**	**P9H0369**
Volatile Organic Compounds by GC/MS									
Benzene	BRL	mg/kg dry	0.0053	0.00082	1	8260D	8/22/19 21:33	JLB	P9H0389
Ethylbenzene	BRL	mg/kg dry	0.0053	0.00079	1	8260D	8/22/19 21:33	JLB	P9H0389
m,p-Xylenes	BRL	mg/kg dry	0.011	0.0014	1	8260D	8/22/19 21:33	JLB	P9H0389
o-Xylene	BRL	mg/kg dry	0.0053	0.00056	1	8260D	8/22/19 21:33	JLB	P9H0389
Toluene	BRL	mg/kg dry	0.0053	0.00084	1	8260D	8/22/19 21:33	JLB	P9H0389
Xylenes, total	BRL	mg/kg dry	0.016	0.0019	1	8260D	8/22/19 21:33	JLB	P9H0389

Surrogate	Recovery	Control Limits	
4-Bromofluorobenzene	*99 %*	*70-130*	
Dibromofluoromethane	*132 %*	*84-123*	*SR*
Toluene-d8	*91 %*	*76-129*	

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Attn: Michael Wang
2501 Blue Ridge Road, Ste 430
Raleigh, NC 27607

Project: NCDOT R-5726 West End

Project No.: GN7039
Sample Matrix: Solid

Client Sample ID: SB102-04-7.5-8
Prism Sample ID: 9080260-33
Prism Work Order: 9080260
Time Collected: 08/14/19 13:30
Time Submitted: 08/16/19 09:15

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**	**8/23/19 8:10**	**EDV**	**P9H0369**
Volatile Organic Compounds by GC/MS									
Benzene	BRL	mg/kg dry	0.0060	0.00094	1	8260D	8/22/19 22:03	JLB	P9H0389
Ethylbenzene	BRL	mg/kg dry	0.0060	0.00091	1	8260D	8/22/19 22:03	JLB	P9H0389
m,p-Xylenes	BRL	mg/kg dry	0.012	0.0015	1	8260D	8/22/19 22:03	JLB	P9H0389
o-Xylene	BRL	mg/kg dry	0.0060	0.00064	1	8260D	8/22/19 22:03	JLB	P9H0389
Toluene	BRL	mg/kg dry	0.0060	0.00096	1	8260D	8/22/19 22:03	JLB	P9H0389
Xylenes, total	BRL	mg/kg dry	0.018	0.0022	1	8260D	8/22/19 22:03	JLB	P9H0389

Surrogate	Recovery	Control Limits	
4-Bromofluorobenzene	*97 %*	*70-130*	
Dibromofluoromethane	*131 %*	*84-123*	*SR*
Toluene-d8	*92 %*	*76-129*	

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Attn: Michael Wang
2501 Blue Ridge Road, Ste 430
Raleigh, NC 27607

Project: NCDOT R-5726 West End

Project No.: GN7039
Sample Matrix: Solid

Client Sample ID: SB102-05-4.5-5
Prism Sample ID: 9080260-34
Prism Work Order: 9080260
Time Collected: 08/14/19 14:00
Time Submitted: 08/16/19 09:15

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
General Chemistry Parameters									
% Solids	**97.4**	**% by Weight**	**0.100**	**0.100**	**1**	***SM2540 G**	**8/23/19 8:10**	**EDV**	**P9H0369**
Volatile Organic Compounds by GC/MS									
Benzene	BRL	mg/kg dry	0.0070	0.0011	1	8260D	8/22/19 22:33	JLB	P9H0389
Ethylbenzene	BRL	mg/kg dry	0.0070	0.0011	1	8260D	8/22/19 22:33	JLB	P9H0389
m,p-Xylenes	BRL	mg/kg dry	0.014	0.0018	1	8260D	8/22/19 22:33	JLB	P9H0389
o-Xylene	BRL	mg/kg dry	0.0070	0.00075	1	8260D	8/22/19 22:33	JLB	P9H0389
Toluene	BRL	mg/kg dry	0.0070	0.0011	1	8260D	8/22/19 22:33	JLB	P9H0389
Xylenes, total	BRL	mg/kg dry	0.021	0.0025	1	8260D	8/22/19 22:33	JLB	P9H0389

Surrogate	Recovery	Control Limits	
4-Bromofluorobenzene	*103 %*	*70-130*	
Dibromofluoromethane	*138 %*	*84-123*	*SR*
Toluene-d8	*96 %*	*76-129*	

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Attn: Michael Wang
2501 Blue Ridge Road, Ste 430
Raleigh, NC 27607

Project: NCDOT R-5726 West End

Project No.: GN7039
Sample Matrix: Solid

Client Sample ID: SB102-06-0.5-1
Prism Sample ID: 9080260-35
Prism Work Order: 9080260
Time Collected: 08/14/19 14:50
Time Submitted: 08/16/19 09:15

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
General Chemistry Parameters									
% Solids	**88.1**	**% by Weight**	**0.100**	**0.100**	**1**	***SM2540 G**	**8/23/19 8:10**	**EDV**	**P9H0369**
Volatile Organic Compounds by GC/MS									
Benzene	BRL	mg/kg dry	0.0075	0.0012	1	8260D	8/22/19 23:02	JLB	P9H0389
Ethylbenzene	BRL	mg/kg dry	0.0075	0.0011	1	8260D	8/22/19 23:02	JLB	P9H0389
m,p-Xylenes	BRL	mg/kg dry	0.015	0.0019	1	8260D	8/22/19 23:02	JLB	P9H0389
o-Xylene	BRL	mg/kg dry	0.0075	0.00080	1	8260D	8/22/19 23:02	JLB	P9H0389
Toluene	BRL	mg/kg dry	0.0075	0.0012	1	8260D	8/22/19 23:02	JLB	P9H0389
Xylenes, total	BRL	mg/kg dry	0.022	0.0027	1	8260D	8/22/19 23:02	JLB	P9H0389

Surrogate	Recovery	Control Limits	
4-Bromofluorobenzene	*103 %*	*70-130*	
Dibromofluoromethane	*143 %*	*84-123*	*SR*
Toluene-d8	*89 %*	*76-129*	

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Attn: Michael Wang
2501 Blue Ridge Road, Ste 430
Raleigh, NC 27607

Project: NCDOT R-5726 West End

Project No.: GN7039
Sample Matrix: Solid

Client Sample ID: SB102-07-7.5-8
Prism Sample ID: 9080260-36
Prism Work Order: 9080260
Time Collected: 08/14/19 15:35
Time Submitted: 08/16/19 09:15

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
General Chemistry Parameters									
% Solids	**83.5**	**% by Weight**	**0.100**	**0.100**	**1**	***SM2540 G**	**8/23/19 8:10**	**EDV**	**P9H0369**
Volatile Organic Compounds by GC/MS									
Benzene	BRL	mg/kg dry	0.0043	0.00067	1	8260D	8/22/19 23:33	JLB	P9H0389
Ethylbenzene	BRL	mg/kg dry	0.0043	0.00065	1	8260D	8/22/19 23:33	JLB	P9H0389
m,p-Xylenes	BRL	mg/kg dry	0.0086	0.0011	1	8260D	8/22/19 23:33	JLB	P9H0389
o-Xylene	BRL	mg/kg dry	0.0043	0.00046	1	8260D	8/22/19 23:33	JLB	P9H0389
Toluene	BRL	mg/kg dry	0.0043	0.00069	1	8260D	8/22/19 23:33	JLB	P9H0389
Xylenes, total	BRL	mg/kg dry	0.013	0.0016	1	8260D	8/22/19 23:33	JLB	P9H0389

Surrogate	Recovery	Control Limits	
4-Bromofluorobenzene	*102 %*	*70-130*	
Dibromofluoromethane	*135 %*	*84-123*	*SR*
Toluene-d8	*91 %*	*76-129*	

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Attn: Michael Wang
2501 Blue Ridge Road, Ste 430
Raleigh, NC 27607

Project: NCDOT R-5726 West End

Project No.: GN7039
Sample Matrix: Solid

Client Sample ID: SB102-08-8-8.5
Prism Sample ID: 9080260-37
Prism Work Order: 9080260
Time Collected: 08/14/19 16:05
Time Submitted: 08/16/19 09:15

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
General Chemistry Parameters									
% Solids	**87.9**	**% by Weight**	**0.100**	**0.100**	**1**	***SM2540 G**	**8/23/19 8:10**	**EDV**	**P9H0369**
Volatile Organic Compounds by GC/MS									
Benzene	BRL	mg/kg dry	0.0058	0.00090	1	8260D	8/26/19 18:57	JLB	P9H0434
Ethylbenzene	BRL	mg/kg dry	0.0058	0.00087	1	8260D	8/26/19 18:57	JLB	P9H0434
m,p-Xylenes	BRL	mg/kg dry	0.012	0.0015	1	8260D	8/26/19 18:57	JLB	P9H0434
o-Xylene	BRL	mg/kg dry	0.0058	0.00061	1	8260D	8/26/19 18:57	JLB	P9H0434
Toluene	BRL	mg/kg dry	0.0058	0.00092	1	8260D	8/26/19 18:57	JLB	P9H0434
Xylenes, total	BRL	mg/kg dry	0.017	0.0021	1	8260D	8/26/19 18:57	JLB	P9H0434

Surrogate	Recovery	Control Limits
4-Bromofluorobenzene	*103 %*	*70-130*
Dibromofluoromethane	*93 %*	*84-123*
Toluene-d8	*99 %*	*76-129*

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Attn: Michael Wang
2501 Blue Ridge Road, Ste 430
Raleigh, NC 27607

Project: NCDOT R-5726 West End

Project No.: GN7039
Sample Matrix: Solid

Client Sample ID: SB102-09-8.5-9
Prism Sample ID: 9080260-38
Prism Work Order: 9080260
Time Collected: 08/14/19 16:45
Time Submitted: 08/16/19 09:15

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
General Chemistry Parameters									
% Solids	**87.0**	**% by Weight**	**0.100**	**0.100**	**1**	***SM2540 G**	**8/26/19 8:25**	**EDV**	**P9H0406**
Volatile Organic Compounds by GC/MS									
Benzene	BRL	mg/kg dry	0.0053	0.00082	1	8260D	8/23/19 0:32	JLB	P9H0389
Ethylbenzene	BRL	mg/kg dry	0.0053	0.00079	1	8260D	8/23/19 0:32	JLB	P9H0389
m,p-Xylenes	BRL	mg/kg dry	0.011	0.0014	1	8260D	8/23/19 0:32	JLB	P9H0389
o-Xylene	BRL	mg/kg dry	0.0053	0.00056	1	8260D	8/23/19 0:32	JLB	P9H0389
Toluene	BRL	mg/kg dry	0.0053	0.00084	1	8260D	8/23/19 0:32	JLB	P9H0389
Xylenes, total	BRL	mg/kg dry	0.016	0.0019	1	8260D	8/23/19 0:32	JLB	P9H0389

Surrogate	Recovery	Control Limits	
4-Bromofluorobenzene	*98 %*	*70-130*	
Dibromofluoromethane	*140 %*	*84-123*	*SR*
Toluene-d8	*95 %*	*76-129*	

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Attn: Michael Wang
2501 Blue Ridge Road, Ste 430
Raleigh, NC 27607

Project: NCDOT R-5726 West End

Project No.: GN7039
Sample Matrix: Solid

Client Sample ID: SB102-10-9-9.5
Prism Sample ID: 9080260-39
Prism Work Order: 9080260
Time Collected: 08/14/19 17:20
Time Submitted: 08/16/19 09:15

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
General Chemistry Parameters									
% Solids	**89.4**	**% by Weight**	**0.100**	**0.100**	**1**	***SM2540 G**	**8/26/19 8:25**	**EDV**	**P9H0406**
Volatile Organic Compounds by GC/MS									
Benzene	BRL	mg/kg dry	0.0048	0.00075	1	8260D	8/26/19 18:27	JLB	P9H0434
Ethylbenzene	BRL	mg/kg dry	0.0048	0.00072	1	8260D	8/26/19 18:27	JLB	P9H0434
m,p-Xylenes	BRL	mg/kg dry	0.0096	0.0012	1	8260D	8/26/19 18:27	JLB	P9H0434
o-Xylene	BRL	mg/kg dry	0.0048	0.00051	1	8260D	8/26/19 18:27	JLB	P9H0434
Toluene	BRL	mg/kg dry	0.0048	0.00077	1	8260D	8/26/19 18:27	JLB	P9H0434
Xylenes, total	BRL	mg/kg dry	0.014	0.0017	1	8260D	8/26/19 18:27	JLB	P9H0434

Surrogate	Recovery	Control Limits
4-Bromofluorobenzene	*104 %*	*70-130*
Dibromofluoromethane	*95 %*	*84-123*
Toluene-d8	*98 %*	*76-129*

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Attn: Michael Wang
2501 Blue Ridge Road, Ste 430
Raleigh, NC 27607

Project: NCDOT R-5726 West End

Project No: GN7039

Prism Work Order: 9080260
Time Submitted: 8/16/2019 9:15:00AM

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 P9H0310 - 5035										
Blank (P9H0310-BLK1)				Prepared & Analyzed: 08/19/19						
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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Attn: Michael Wang
2501 Blue Ridge Road, Ste 430
Raleigh, NC 27607

Project: NCDOT R-5726 West End

Project No: GN7039

Prism Work Order: 9080260
Time Submitted: 8/16/2019 9:15:00AM

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 P9H0310 - 5035										
Blank (P9H0310-BLK1)				Prepared & Analyzed: 08/19/19						
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	*50.9*		*ug/L*	*50.00*		*102*	*70-130*			
Surrogate: Dibromofluoromethane	*53.9*		*ug/L*	*50.00*		*108*	*84-123*			
Surrogate: Toluene-d8	*49.2*		*ug/L*	*50.00*		*98*	*76-129*			
LCS (P9H0310-BS1)				Prepared & Analyzed: 08/19/19						
1,1,1,2-Tetrachloroethane	0.0442	0.0050	mg/kg wet	0.05000		88	72-115			
1,1,1-Trichloroethane	0.0460	0.0050	mg/kg wet	0.05000		92	67-131			
1,1,2,2-Tetrachloroethane	0.0421	0.0050	mg/kg wet	0.05000		84	56-126			
1,1,2-Trichloroethane	0.0421	0.0050	mg/kg wet	0.05000		84	70-133			
1,1-Dichloroethane	0.0432	0.0050	mg/kg wet	0.05000		86	74-127			
1,1-Dichloroethylene	0.0394	0.0050	mg/kg wet	0.05000		79	67-149			
1,1-Dichloropropylene	0.0453	0.0050	mg/kg wet	0.05000		91	71-130			
1,2,3-Trichlorobenzene	0.0432	0.010	mg/kg wet	0.05000		86	68-130			
1,2,3-Trichloropropane	0.0419	0.0050	mg/kg wet	0.05000		84	60-137			
1,2,4-Trichlorobenzene	0.0450	0.010	mg/kg wet	0.05000		90	66-125			
1,2,4-Trimethylbenzene	0.0442	0.0050	mg/kg wet	0.05000		88	69-129			
1,2-Dibromoethane	0.0426	0.0050	mg/kg wet	0.05000		85	70-132			
1,2-Dichlorobenzene	0.0425	0.0050	mg/kg wet	0.05000		85	72-123			
1,2-Dichloroethane	0.0446	0.0050	mg/kg wet	0.05000		89	68-128			
1,2-Dichloropropane	0.0437	0.0050	mg/kg wet	0.05000		87	73-130			
1,3,5-Trimethylbenzene	0.0440	0.0050	mg/kg wet	0.05000		88	69-128			
1,3-Dichlorobenzene	0.0429	0.0050	mg/kg wet	0.05000		86	71-120			
1,3-Dichloropropane	0.0428	0.0050	mg/kg wet	0.05000		86	75-124			
1,4-Dichlorobenzene	0.0428	0.0050	mg/kg wet	0.05000		86	71-123			
2,2-Dichloropropane	0.0463	0.0050	mg/kg wet	0.05000		93	50-142			
2-Chlorotoluene	0.0437	0.0050	mg/kg wet	0.05000		87	67-124			
4-Chlorotoluene	0.0438	0.0050	mg/kg wet	0.05000		88	71-126			
4-Isopropyltoluene	0.0451	0.0050	mg/kg wet	0.05000		90	68-129			
Acetone	0.120	0.020	mg/kg wet	0.1000		120	29-198			

Geosyntec Consultants of NC, PC - Raleigh
Attn: Michael Wang
2501 Blue Ridge Road, Ste 430
Raleigh, NC 27607

Project: NCDOT R-5726 West End
Project No: GN7039

Prism Work Order: 9080260
Time Submitted: 8/16/2019 9:15:00AM

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 P9H0310 - 5035										
LCS (P9H0310-BS1)				Prepared & Analyzed: 08/19/19						
Benzene	0.0433	0.0050	mg/kg wet	0.05000		87	74-127			
Bromobenzene	0.0429	0.0050	mg/kg wet	0.05000		86	73-125			
Bromochloromethane	0.0422	0.0050	mg/kg wet	0.05000		84	72-134			
Bromodichloromethane	0.0456	0.0050	mg/kg wet	0.05000		91	75-122			
Bromoform	0.0467	0.0050	mg/kg wet	0.05000		93	66-135			
Bromomethane	0.0437	0.010	mg/kg wet	0.05000		87	20-180			
Carbon Tetrachloride	0.0464	0.0050	mg/kg wet	0.05000		93	64-143			
Chlorobenzene	0.0429	0.0050	mg/kg wet	0.05000		86	74-118			
Chloroethane	0.0420	0.010	mg/kg wet	0.05000		84	33-149			
Chloroform	0.0442	0.0050	mg/kg wet	0.05000		88	73-127			
Chloromethane	0.0382	0.010	mg/kg wet	0.05000		76	45-143			
cis-1,2-Dichloroethylene	0.0432	0.0050	mg/kg wet	0.05000		86	76-134			
cis-1,3-Dichloropropylene	0.0444	0.0050	mg/kg wet	0.05000		89	71-125			
Dibromochloromethane	0.0446	0.0050	mg/kg wet	0.05000		89	73-122			
Dichlorodifluoromethane	0.0405	0.010	mg/kg wet	0.05000		81	26-146			
Ethylbenzene	0.0435	0.0050	mg/kg wet	0.05000		87	74-128			
Isopropyl Ether	0.0443	0.0050	mg/kg wet	0.05000		89	59-159			
Isopropylbenzene (Cumene)	0.0440	0.0050	mg/kg wet	0.05000		88	68-126			
m,p-Xylenes	0.0886	0.010	mg/kg wet	0.1000		89	75-124			
Methyl Butyl Ketone (2-Hexanone)	0.0480	0.020	mg/kg wet	0.05000		96	61-157			
Methyl Ethyl Ketone (2-Butanone)	0.0510	0.020	mg/kg wet	0.05000		102	63-149			
Methyl Isobutyl Ketone	0.0451	0.020	mg/kg wet	0.05000		90	57-162			
Methylene Chloride	0.0414	0.0050	mg/kg wet	0.05000		83	74-129			
Methyl-tert-Butyl Ether	0.0432	0.0050	mg/kg wet	0.05000		86	70-130			
Naphthalene	0.0428	0.010	mg/kg wet	0.05000		86	57-157			
n-Butylbenzene	0.0460	0.0050	mg/kg wet	0.05000		92	65-135			
n-Propylbenzene	0.0443	0.0050	mg/kg wet	0.05000		89	67-130			
o-Xylene	0.0442	0.0050	mg/kg wet	0.05000		88	74-126			
sec-Butylbenzene	0.0446	0.0050	mg/kg wet	0.05000		89	66-131			
Styrene	0.0438	0.0050	mg/kg wet	0.05000		88	77-121			
tert-Butylbenzene	0.0445	0.0050	mg/kg wet	0.05000		89	67-132			
Tetrachloroethylene	0.0449	0.0050	mg/kg wet	0.05000		90	68-130			
Toluene	0.0435	0.0050	mg/kg wet	0.05000		87	71-129			
trans-1,2-Dichloroethylene	0.0444	0.0050	mg/kg wet	0.05000		89	73-132			
trans-1,3-Dichloropropylene	0.0448	0.0050	mg/kg wet	0.05000		90	68-123			
Trichloroethylene	0.0453	0.0050	mg/kg wet	0.05000		91	75-133			
Trichlorofluoromethane	0.0452	0.010	mg/kg wet	0.05000		90	44-146			
Vinyl acetate	0.0456	0.010	mg/kg wet	0.05000		91	85-161			
Vinyl chloride	0.0430	0.010	mg/kg wet	0.05000		86	48-147			
Xylenes, total	0.133	0.015	mg/kg wet	0.1500		89	74-126			
Surrogate: 4-Bromofluorobenzene	*49.3*		*ug/L*	*50.00*		*99*	*70-130*			
Surrogate: Dibromofluoromethane	*50.5*		*ug/L*	*50.00*		*101*	*84-123*			
Surrogate: Toluene-d8	*49.4*		*ug/L*	*50.00*		*99*	*76-129*			

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Attn: Michael Wang
2501 Blue Ridge Road, Ste 430
Raleigh, NC 27607

Project: NCDOT R-5726 West End
Project No: GN7039

Prism Work Order: 9080260
Time Submitted: 8/16/2019 9:15:00AM

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 P9H0310 - 5035										
LCS Dup (P9H0310-BSD1)				Prepared & Analyzed: 08/19/19						
1,1,1,2-Tetrachloroethane	0.0447	0.0050	mg/kg wet	0.05000		89	72-115	1	20	
1,1,1-Trichloroethane	0.0444	0.0050	mg/kg wet	0.05000		89	67-131	4	20	
1,1,2,2-Tetrachloroethane	0.0413	0.0050	mg/kg wet	0.05000		83	56-126	2	20	
1,1,2-Trichloroethane	0.0422	0.0050	mg/kg wet	0.05000		84	70-133	0.4	20	
1,1-Dichloroethane	0.0423	0.0050	mg/kg wet	0.05000		85	74-127	2	20	
1,1-Dichloroethylene	0.0402	0.0050	mg/kg wet	0.05000		80	67-149	2	20	
1,1-Dichloropropylene	0.0441	0.0050	mg/kg wet	0.05000		88	71-130	3	20	
1,2,3-Trichlorobenzene	0.0433	0.010	mg/kg wet	0.05000		87	68-130	0.1	20	
1,2,3-Trichloropropane	0.0413	0.0050	mg/kg wet	0.05000		83	60-137	2	20	
1,2,4-Trichlorobenzene	0.0438	0.010	mg/kg wet	0.05000		88	66-125	3	20	
1,2,4-Trimethylbenzene	0.0436	0.0050	mg/kg wet	0.05000		87	69-129	1	20	
1,2-Dibromoethane	0.0434	0.0050	mg/kg wet	0.05000		87	70-132	2	20	
1,2-Dichlorobenzene	0.0426	0.0050	mg/kg wet	0.05000		85	72-123	0.1	20	
1,2-Dichloroethane	0.0446	0.0050	mg/kg wet	0.05000		89	68-128	0.1	20	
1,2-Dichloropropane	0.0435	0.0050	mg/kg wet	0.05000		87	73-130	0.4	20	
1,3,5-Trimethylbenzene	0.0430	0.0050	mg/kg wet	0.05000		86	69-128	2	20	
1,3-Dichlorobenzene	0.0428	0.0050	mg/kg wet	0.05000		86	71-120	0.1	20	
1,3-Dichloropropane	0.0437	0.0050	mg/kg wet	0.05000		87	75-124	2	20	
1,4-Dichlorobenzene	0.0424	0.0050	mg/kg wet	0.05000		85	71-123	0.8	20	
2,2-Dichloropropane	0.0445	0.0050	mg/kg wet	0.05000		89	50-142	4	20	
2-Chlorotoluene	0.0426	0.0050	mg/kg wet	0.05000		85	67-124	3	20	
4-Chlorotoluene	0.0434	0.0050	mg/kg wet	0.05000		87	71-126	1	20	
4-Isopropyltoluene	0.0442	0.0050	mg/kg wet	0.05000		88	68-129	2	20	
Acetone	0.126	0.020	mg/kg wet	0.1000		126	29-198	5	20	
Benzene	0.0421	0.0050	mg/kg wet	0.05000		84	74-127	3	20	
Bromobenzene	0.0431	0.0050	mg/kg wet	0.05000		86	73-125	0.4	20	
Bromochloromethane	0.0425	0.0050	mg/kg wet	0.05000		85	72-134	0.8	20	
Bromodichloromethane	0.0450	0.0050	mg/kg wet	0.05000		90	75-122	1	20	
Bromoform	0.0463	0.0050	mg/kg wet	0.05000		93	66-135	1	20	
Bromomethane	0.0415	0.010	mg/kg wet	0.05000		83	20-180	5	20	
Carbon Tetrachloride	0.0452	0.0050	mg/kg wet	0.05000		90	64-143	3	20	
Chlorobenzene	0.0424	0.0050	mg/kg wet	0.05000		85	74-118	1	20	
Chloroethane	0.0404	0.010	mg/kg wet	0.05000		81	33-149	4	20	
Chloroform	0.0438	0.0050	mg/kg wet	0.05000		88	73-127	1	20	
Chloromethane	0.0366	0.010	mg/kg wet	0.05000		73	45-143	4	20	
cis-1,2-Dichloroethylene	0.0429	0.0050	mg/kg wet	0.05000		86	76-134	0.7	20	
cis-1,3-Dichloropropylene	0.0441	0.0050	mg/kg wet	0.05000		88	71-125	0.6	20	
Dibromochloromethane	0.0444	0.0050	mg/kg wet	0.05000		89	73-122	0.5	20	
Dichlorodifluoromethane	0.0389	0.010	mg/kg wet	0.05000		78	26-146	4	20	
Ethylbenzene	0.0430	0.0050	mg/kg wet	0.05000		86	74-128	1	20	
Isopropyl Ether	0.0437	0.0050	mg/kg wet	0.05000		87	59-159	1	20	
Isopropylbenzene (Cumene)	0.0430	0.0050	mg/kg wet	0.05000		86	68-126	2	20	
m,p-Xylenes	0.0871	0.010	mg/kg wet	0.1000		87	75-124	2	20	
Methyl Butyl Ketone (2-Hexanone)	0.0482	0.020	mg/kg wet	0.05000		96	61-157	0.4	20	
Methyl Ethyl Ketone (2-Butanone)	0.0512	0.020	mg/kg wet	0.05000		102	63-149	0.3	20	
Methyl Isobutyl Ketone	0.0442	0.020	mg/kg wet	0.05000		88	57-162	2	20	

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2501 Blue Ridge Road, Ste 430
Raleigh, NC 27607

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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 P9H0310 - 5035										
LCS Dup (P9H0310-BSD1)			Prepared & Analyzed: 08/19/19							
Methylene Chloride	0.0412	0.0050	mg/kg wet	0.05000		82	74-129	0.2	20	
Methyl-tert-Butyl Ether	0.0434	0.0050	mg/kg wet	0.05000		87	70-130	0.6	20	
Naphthalene	0.0426	0.010	mg/kg wet	0.05000		85	57-157	0.4	20	
n-Butylbenzene	0.0448	0.0050	mg/kg wet	0.05000		90	65-135	3	20	
n-Propylbenzene	0.0432	0.0050	mg/kg wet	0.05000		86	67-130	2	20	
o-Xylene	0.0441	0.0050	mg/kg wet	0.05000		88	74-126	0.3	20	
sec-Butylbenzene	0.0439	0.0050	mg/kg wet	0.05000		88	66-131	2	20	
Styrene	0.0445	0.0050	mg/kg wet	0.05000		89	77-121	2	20	
tert-Butylbenzene	0.0432	0.0050	mg/kg wet	0.05000		86	67-132	3	20	
Tetrachloroethylene	0.0425	0.0050	mg/kg wet	0.05000		85	68-130	6	20	
Toluene	0.0426	0.0050	mg/kg wet	0.05000		85	71-129	2	20	
trans-1,2-Dichloroethylene	0.0430	0.0050	mg/kg wet	0.05000		86	73-132	3	20	
trans-1,3-Dichloropropylene	0.0444	0.0050	mg/kg wet	0.05000		89	68-123	0.9	20	
Trichloroethylene	0.0435	0.0050	mg/kg wet	0.05000		87	75-133	4	20	
Trichlorofluoromethane	0.0419	0.010	mg/kg wet	0.05000		84	44-146	8	20	
Vinyl acetate	0.0467	0.010	mg/kg wet	0.05000		93	85-161	2	20	
Vinyl chloride	0.0404	0.010	mg/kg wet	0.05000		81	48-147	6	20	
Xylenes, total	0.131	0.015	mg/kg wet	0.1500		87	74-126	1	20	
Surrogate: 4-Bromofluorobenzene	*50.0*		*ug/L*	*50.00*		*100*	*70-130*			
Surrogate: Dibromofluoromethane	*50.3*		*ug/L*	*50.00*		*101*	*84-123*			
Surrogate: Toluene-d8	*49.6*		*ug/L*	*50.00*		*99*	*76-129*			
Batch P9H0347 - 5035										
Blank (P9H0347-BLK1)			Prepared & Analyzed: 08/20/19							
Benzene	BRL	0.0050	mg/kg wet							
Ethylbenzene	BRL	0.0050	mg/kg wet							
m,p-Xylenes	BRL	0.010	mg/kg wet							
o-Xylene	BRL	0.0050	mg/kg wet							
Toluene	BRL	0.0050	mg/kg wet							
Xylenes, total	BRL	0.015	mg/kg wet							
Surrogate: 4-Bromofluorobenzene	*50.2*		*ug/L*	*50.00*		*100*	*70-130*			
Surrogate: Dibromofluoromethane	*53.2*		*ug/L*	*50.00*		*106*	*84-123*			
Surrogate: Toluene-d8	*48.9*		*ug/L*	*50.00*		*98*	*76-129*			

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2501 Blue Ridge Road, Ste 430
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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 P9H0347 - 5035										
LCS (P9H0347-BS1)				Prepared & Analyzed: 08/20/19						
Benzene	0.0533	0.0050	mg/kg wet	0.05000		107	74-127			
Ethylbenzene	0.0547	0.0050	mg/kg wet	0.05000		109	74-128			
m,p-Xylenes	0.111	0.010	mg/kg wet	0.1000		111	75-124			
o-Xylene	0.0558	0.0050	mg/kg wet	0.05000		112	74-126			
Toluene	0.0546	0.0050	mg/kg wet	0.05000		109	71-129			
Xylenes, total	0.167	0.015	mg/kg wet	0.1500		111	74-126			
Surrogate: 4-Bromofluorobenzene	*48.7*		*ug/L*	*50.00*		*97*	*70-130*			
Surrogate: Dibromofluoromethane	*51.6*		*ug/L*	*50.00*		*103*	*84-123*			
Surrogate: Toluene-d8	*48.6*		*ug/L*	*50.00*		*97*	*76-129*			
LCS Dup (P9H0347-BSD1)				Prepared & Analyzed: 08/20/19						
Benzene	0.0520	0.0050	mg/kg wet	0.05000		104	74-127	2	20	
Ethylbenzene	0.0536	0.0050	mg/kg wet	0.05000		107	74-128	2	20	
m,p-Xylenes	0.109	0.010	mg/kg wet	0.1000		109	75-124	2	20	
o-Xylene	0.0549	0.0050	mg/kg wet	0.05000		110	74-126	2	20	
Toluene	0.0532	0.0050	mg/kg wet	0.05000		106	71-129	2	20	
Xylenes, total	0.164	0.015	mg/kg wet	0.1500		109	74-126	2	20	
Surrogate: 4-Bromofluorobenzene	*48.3*		*ug/L*	*50.00*		*97*	*70-130*			
Surrogate: Dibromofluoromethane	*51.5*		*ug/L*	*50.00*		*103*	*84-123*			
Surrogate: Toluene-d8	*49.0*		*ug/L*	*50.00*		*98*	*76-129*			
Matrix Spike (P9H0347-MS1)	**Source: 9080260-01**			Prepared: 08/20/19 Analyzed: 08/21/19						
Benzene	0.0524	0.0055	mg/kg dry	0.05504	BRL	95	60-135			
Ethylbenzene	0.0536	0.0055	mg/kg dry	0.05504	BRL	97	44-144			
m,p-Xylenes	0.110	0.011	mg/kg dry	0.1101	BRL	100	36-148			
o-Xylene	0.0546	0.0055	mg/kg dry	0.05504	BRL	99	43-143			
Toluene	0.0528	0.0055	mg/kg dry	0.05504	BRL	96	57-135			
Xylenes, total	0.165	0.017	mg/kg dry	0.1651	BRL	100	36-148			
Surrogate: 4-Bromofluorobenzene	*45.8*		*ug/L*	*50.00*		*92*	*70-130*			
Surrogate: Dibromofluoromethane	*51.8*		*ug/L*	*50.00*		*104*	*84-123*			
Surrogate: Toluene-d8	*47.2*		*ug/L*	*50.00*		*94*	*76-129*			

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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 P9H0347 - 5035										
Matrix Spike Dup (P9H0347-MSD1)		**Source: 9080260-01**		Prepared: 08/20/19 Analyzed: 08/21/19						
Benzene	0.0486	0.0054	mg/kg dry	0.05417	BRL	90	60-135	8	20	
Ethylbenzene	0.0499	0.0054	mg/kg dry	0.05417	BRL	92	44-144	7	19	
m,p-Xylenes	0.103	0.011	mg/kg dry	0.1083	BRL	95	36-148	7	20	
o-Xylene	0.0519	0.0054	mg/kg dry	0.05417	BRL	96	43-143	5	17	
Toluene	0.0495	0.0054	mg/kg dry	0.05417	BRL	91	57-135	7	22	
Xylenes, total	0.154	0.016	mg/kg dry	0.1625	BRL	95	36-148	6	20	
Surrogate: 4-Bromofluorobenzene	*48.3*		*ug/L*	*50.00*		*97*	*70-130*			
Surrogate: Dibromofluoromethane	*55.3*		*ug/L*	*50.00*		*111*	*84-123*			
Surrogate: Toluene-d8	*47.2*		*ug/L*	*50.00*		*94*	*76-129*			
Batch P9H0366 - 5035										
Blank (P9H0366-BLK1)				Prepared & Analyzed: 08/21/19						
Benzene	BRL	0.0050	mg/kg wet							
Ethylbenzene	BRL	0.0050	mg/kg wet							
m,p-Xylenes	BRL	0.010	mg/kg wet							
o-Xylene	BRL	0.0050	mg/kg wet							
Toluene	BRL	0.0050	mg/kg wet							
Xylenes, total	BRL	0.015	mg/kg wet							
Surrogate: 4-Bromofluorobenzene	*51.2*		*ug/L*	*50.00*		*102*	*70-130*			
Surrogate: Dibromofluoromethane	*60.3*		*ug/L*	*50.00*		*121*	*84-123*			
Surrogate: Toluene-d8	*47.1*		*ug/L*	*50.00*		*94*	*76-129*			
LCS (P9H0366-BS1)				Prepared & Analyzed: 08/21/19						
Benzene	0.0531	0.0050	mg/kg wet	0.05000		106	74-127			
Ethylbenzene	0.0562	0.0050	mg/kg wet	0.05000		112	74-128			
m,p-Xylenes	0.115	0.010	mg/kg wet	0.1000		115	75-124			
o-Xylene	0.0575	0.0050	mg/kg wet	0.05000		115	74-126			
Toluene	0.0550	0.0050	mg/kg wet	0.05000		110	71-129			
Xylenes, total	0.173	0.015	mg/kg wet	0.1500		115	74-126			
Surrogate: 4-Bromofluorobenzene	*48.7*		*ug/L*	*50.00*		*97*	*70-130*			
Surrogate: Dibromofluoromethane	*54.0*		*ug/L*	*50.00*		*108*	*84-123*			
Surrogate: Toluene-d8	*48.9*		*ug/L*	*50.00*		*98*	*76-129*			

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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 P9H0366 - 5035										
LCS Dup (P9H0366-BSD1)				Prepared & Analyzed: 08/21/19						
Benzene	0.0494	0.0050	mg/kg wet	0.05000		99	74-127	7	20	
Ethylbenzene	0.0523	0.0050	mg/kg wet	0.05000		105	74-128	7	20	
m,p-Xylenes	0.107	0.010	mg/kg wet	0.1000		107	75-124	7	20	
o-Xylene	0.0540	0.0050	mg/kg wet	0.05000		108	74-126	6	20	
Toluene	0.0511	0.0050	mg/kg wet	0.05000		102	71-129	7	20	
Xylenes, total	0.161	0.015	mg/kg wet	0.1500		107	74-126	7	20	
Surrogate: 4-Bromofluorobenzene	*48.8*		*ug/L*	*50.00*		*98*	*70-130*			
Surrogate: Dibromofluoromethane	*53.0*		*ug/L*	*50.00*		*106*	*84-123*			
Surrogate: Toluene-d8	*48.5*		*ug/L*	*50.00*		*97*	*76-129*			
Batch P9H0389 - 5035										
Blank (P9H0389-BLK1)				Prepared & Analyzed: 08/22/19						
Benzene	BRL	0.0050	mg/kg wet							
Ethylbenzene	BRL	0.0050	mg/kg wet							
m,p-Xylenes	BRL	0.010	mg/kg wet							
o-Xylene	BRL	0.0050	mg/kg wet							
Toluene	BRL	0.0050	mg/kg wet							
Xylenes, total	BRL	0.015	mg/kg wet							
Surrogate: 4-Bromofluorobenzene	*50.8*		*ug/L*	*50.00*		*102*	*70-130*			
Surrogate: Dibromofluoromethane	*61.1*		*ug/L*	*50.00*		*122*	*84-123*			
Surrogate: Toluene-d8	*47.1*		*ug/L*	*50.00*		*94*	*76-129*			
LCS (P9H0389-BS1)				Prepared & Analyzed: 08/22/19						
Benzene	0.0502	0.0050	mg/kg wet	0.05000		100	74-127			
Ethylbenzene	0.0535	0.0050	mg/kg wet	0.05000		107	74-128			
m,p-Xylenes	0.111	0.010	mg/kg wet	0.1000		111	75-124			
o-Xylene	0.0542	0.0050	mg/kg wet	0.05000		108	74-126			
Toluene	0.0520	0.0050	mg/kg wet	0.05000		104	71-129			
Xylenes, total	0.165	0.015	mg/kg wet	0.1500		110	74-126			
Surrogate: 4-Bromofluorobenzene	*47.1*		*ug/L*	*50.00*		*94*	*70-130*			
Surrogate: Dibromofluoromethane	*55.3*		*ug/L*	*50.00*		*111*	*84-123*			
Surrogate: Toluene-d8	*44.9*		*ug/L*	*50.00*		*90*	*76-129*			

Geosyntec Consultants of NC, PC - Raleigh
Attn: Michael Wang
2501 Blue Ridge Road, Ste 430
Raleigh, NC 27607

Project: NCDOT R-5726 West End

Project No: GN7039

Prism Work Order: 9080260
Time Submitted: 8/16/2019 9:15:00AM

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 P9H0389 - 5035										
LCS Dup (P9H0389-BSD1)				Prepared & Analyzed: 08/22/19						
Benzene	0.0473	0.0050	mg/kg wet	0.05000		95	74-127	6	20	
Ethylbenzene	0.0501	0.0050	mg/kg wet	0.05000		100	74-128	7	20	
m,p-Xylenes	0.104	0.010	mg/kg wet	0.1000		104	75-124	6	20	
o-Xylene	0.0514	0.0050	mg/kg wet	0.05000		103	74-126	5	20	
Toluene	0.0489	0.0050	mg/kg wet	0.05000		98	71-129	6	20	
Xylenes, total	0.155	0.015	mg/kg wet	0.1500		104	74-126	6	20	
Surrogate: 4-Bromofluorobenzene	*47.0*		*ug/L*	*50.00*		*94*	*70-130*			
Surrogate: Dibromofluoromethane	*53.8*		*ug/L*	*50.00*		*108*	*84-123*			
Surrogate: Toluene-d8	*48.6*		*ug/L*	*50.00*		*97*	*76-129*			
Matrix Spike (P9H0389-MS1)		**Source: 9080260-19**		Prepared: 08/22/19 Analyzed: 08/23/19						
Benzene	0.0476	0.0057	mg/kg dry	0.05685	BRL	84	60-135			
Ethylbenzene	0.0509	0.0057	mg/kg dry	0.05685	BRL	90	44-144			
m,p-Xylenes	0.107	0.011	mg/kg dry	0.1137	BRL	94	36-148			
o-Xylene	0.0492	0.0057	mg/kg dry	0.05685	BRL	87	43-143			
Toluene	0.0487	0.0057	mg/kg dry	0.05685	BRL	86	57-135			
Xylenes, total	0.156	0.017	mg/kg dry	0.1705	BRL	91	36-148			
Surrogate: 4-Bromofluorobenzene	*46.8*		*ug/L*	*50.00*		*94*	*70-130*			
Surrogate: Dibromofluoromethane	*60.8*		*ug/L*	*50.00*		*122*	*84-123*			
Surrogate: Toluene-d8	*46.1*		*ug/L*	*50.00*		*92*	*76-129*			
Matrix Spike Dup (P9H0389-MSD1)		**Source: 9080260-19**		Prepared: 08/22/19 Analyzed: 08/23/19						
Benzene	0.0501	0.0057	mg/kg dry	0.05696	BRL	88	60-135	5	20	
Ethylbenzene	0.0491	0.0057	mg/kg dry	0.05696	BRL	86	44-144	4	19	
m,p-Xylenes	0.104	0.011	mg/kg dry	0.1139	BRL	91	36-148	3	20	
o-Xylene	0.0490	0.0057	mg/kg dry	0.05696	BRL	86	43-143	0.5	17	
Toluene	0.0511	0.0057	mg/kg dry	0.05696	BRL	90	57-135	5	22	
Xylenes, total	0.153	0.017	mg/kg dry	0.1709	BRL	89	36-148	2	20	
Surrogate: 4-Bromofluorobenzene	*45.0*		*ug/L*	*50.00*		*90*	*70-130*			
Surrogate: Dibromofluoromethane	*61.7*		*ug/L*	*50.00*		*123*	*84-123*			
Surrogate: Toluene-d8	*46.6*		*ug/L*	*50.00*		*93*	*76-129*			

Geosyntec Consultants of NC, PC - Raleigh
Attn: Michael Wang
2501 Blue Ridge Road, Ste 430
Raleigh, NC 27607

Project: NCDOT R-5726 West End

Project No: GN7039

Prism Work Order: 9080260
Time Submitted: 8/16/2019 9:15:00AM

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 P9H0434 - 5035										
Blank (P9H0434-BLK1)				Prepared & Analyzed: 08/26/19						
Benzene	BRL	0.0050	mg/kg wet							
Ethylbenzene	BRL	0.0050	mg/kg wet							
m,p-Xylenes	BRL	0.010	mg/kg wet							
o-Xylene	BRL	0.0050	mg/kg wet							
Toluene	BRL	0.0050	mg/kg wet							
Xylenes, total	BRL	0.015	mg/kg wet							
Surrogate: 4-Bromofluorobenzene	*51.0*		*ug/L*	*50.00*		*102*	*70-130*			
Surrogate: Dibromofluoromethane	*46.7*		*ug/L*	*50.00*		*93*	*84-123*			
Surrogate: Toluene-d8	*49.6*		*ug/L*	*50.00*		*99*	*76-129*			
LCS (P9H0434-BS1)				Prepared & Analyzed: 08/26/19						
Benzene	0.0513	0.0050	mg/kg wet	0.05000		103	74-127			
Ethylbenzene	0.0516	0.0050	mg/kg wet	0.05000		103	74-128			
m,p-Xylenes	0.100	0.010	mg/kg wet	0.1000		100	75-124			
o-Xylene	0.0501	0.0050	mg/kg wet	0.05000		100	74-126			
Toluene	0.0516	0.0050	mg/kg wet	0.05000		103	71-129			
Xylenes, total	0.150	0.015	mg/kg wet	0.1500		100	74-126			
Surrogate: 4-Bromofluorobenzene	*52.0*		*ug/L*	*50.00*		*104*	*70-130*			
Surrogate: Dibromofluoromethane	*44.7*		*ug/L*	*50.00*		*89*	*84-123*			
Surrogate: Toluene-d8	*51.0*		*ug/L*	*50.00*		*102*	*76-129*			
LCS Dup (P9H0434-BSD1)				Prepared & Analyzed: 08/26/19						
Benzene	0.0480	0.0050	mg/kg wet	0.05000		96	74-127	7	20	
Ethylbenzene	0.0479	0.0050	mg/kg wet	0.05000		96	74-128	7	20	
m,p-Xylenes	0.0930	0.010	mg/kg wet	0.1000		93	75-124	7	20	
o-Xylene	0.0468	0.0050	mg/kg wet	0.05000		94	74-126	7	20	
Toluene	0.0481	0.0050	mg/kg wet	0.05000		96	71-129	7	20	
Xylenes, total	0.140	0.015	mg/kg wet	0.1500		93	74-126	7	20	
Surrogate: 4-Bromofluorobenzene	*52.6*		*ug/L*	*50.00*		*105*	*70-130*			
Surrogate: Dibromofluoromethane	*43.7*		*ug/L*	*50.00*		*87*	*84-123*			
Surrogate: Toluene-d8	*50.0*		*ug/L*	*50.00*		*100*	*76-129*			

Geosyntec Consultants of NC, PC - Raleigh
Attn: Michael Wang
2501 Blue Ridge Road, Ste 430
Raleigh, NC 27607

Project: NCDOT R-5726 West End

Project No: GN7039

Prism Work Order: 9080260
Time Submitted: 8/16/2019 9:15:00AM

General Chemistry Parameters - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P9H0353 - Solids, Dry Weight										
Duplicate (P9H0353-DUP1)		**Source: 9080260-04**		Prepared: 08/21/19 Analyzed: 08/22/19						
% Solids	91.4	0.100	% by Weight		97.8			7	20	
Duplicate (P9H0353-DUP2)		**Source: 9080260-14**		Prepared: 08/21/19 Analyzed: 08/22/19						
% Solids	96.6	0.100	% by Weight		90.5			7	20	
Batch P9H0369 - Solids, Dry Weight										
Duplicate (P9H0369-DUP1)		**Source: 9080260-20**		Prepared: 08/22/19 Analyzed: 08/23/19						
% Solids	93.3	0.100	% by Weight		93.3			0.02	20	
Duplicate (P9H0369-DUP2)		**Source: 9080260-23**		Prepared: 08/22/19 Analyzed: 08/23/19						
% Solids	97.6	0.100	% by Weight		97.8			0.1	20	
Batch P9H0406 - Solids, Dry Weight										
Duplicate (P9H0406-DUP1)		**Source: 9080260-39**		Prepared: 08/23/19 Analyzed: 08/26/19						
% Solids	88.6	0.100	% by Weight		89.4			0.9	20	

Sample Extraction Data

Prep Method: Solids, Dry Weight

Lab Number	Batch	Initial	Final	Date/Time
9080260-01	P9H0353	30 g	30 g	08/21/19 10:40
9080260-02	P9H0353	30 g	30 g	08/21/19 10:40
9080260-03	P9H0353	30 g	30 g	08/21/19 10:40
9080260-04	P9H0353	30 g	30 g	08/21/19 10:40
9080260-05	P9H0353	30 g	30 g	08/21/19 10:40
9080260-06	P9H0353	30 g	30 g	08/21/19 10:40
9080260-07	P9H0353	30 g	30 g	08/21/19 10:40
9080260-08	P9H0353	30 g	30 g	08/21/19 10:40
9080260-09	P9H0353	30 g	30 g	08/21/19 10:40
9080260-10	P9H0353	30 g	30 g	08/21/19 10:40
9080260-11	P9H0353	30 g	30 g	08/21/19 10:40
9080260-12	P9H0353	30 g	30 g	08/21/19 10:40
9080260-13	P9H0353	30 g	30 g	08/21/19 10:40
9080260-14	P9H0353	30 g	30 g	08/21/19 10:40
9080260-15	P9H0353	30 g	30 g	08/21/19 10:40
9080260-16	P9H0353	30 g	30 g	08/21/19 10:40
9080260-17	P9H0353	30 g	30 g	08/21/19 10:40
9080260-18	P9H0369	30 g	30 g	08/22/19 11:13
9080260-19	P9H0369	30 g	30 g	08/22/19 11:13
9080260-20	P9H0369	30 g	30 g	08/22/19 11:13
9080260-21	P9H0369	30 g	30 g	08/22/19 11:13
9080260-22	P9H0369	30 g	30 g	08/22/19 11:13
9080260-23	P9H0369	30 g	30 g	08/22/19 11:13
9080260-24	P9H0369	30 g	30 g	08/22/19 11:13
9080260-25	P9H0369	30 g	30 g	08/22/19 11:13
9080260-26	P9H0369	30 g	30 g	08/22/19 11:13
9080260-27	P9H0369	30 g	30 g	08/22/19 11:13
9080260-28	P9H0369	30 g	30 g	08/22/19 11:13
9080260-29	P9H0369	30 g	30 g	08/22/19 11:13
9080260-30	P9H0369	30 g	30 g	08/22/19 11:13
9080260-31	P9H0369	30 g	30 g	08/22/19 11:13
9080260-32	P9H0369	30 g	30 g	08/22/19 11:13
9080260-33	P9H0369	30 g	30 g	08/22/19 11:13
9080260-34	P9H0369	30 g	30 g	08/22/19 11:13
9080260-35	P9H0369	30 g	30 g	08/22/19 11:13
9080260-36	P9H0369	30 g	30 g	08/22/19 11:13
9080260-37	P9H0369	30 g	30 g	08/22/19 11:13
9080260-38	P9H0406	30 g	30 g	08/23/19 12:00
9080260-39	P9H0406	30 g	30 g	08/23/19 12:00

Prep Method: 5035

Lab Number	Batch	Initial	Final	Date/Time
9080260-01	P9H0347	3.89 g	5 mL	08/20/19 10:00
9080260-02	P9H0347	4.18 g	5 mL	08/20/19 10:00
9080260-03	P9H0347	5.17 g	5 mL	08/20/19 10:00
9080260-04	P9H0347	4.83 g	5 mL	08/20/19 10:00
9080260-05	P9H0389	3.77 g	5 mL	08/22/19 10:00
9080260-06	P9H0347	5.45 g	5 mL	08/20/19 10:00
9080260-07	P9H0347	5.48 g	5 mL	08/20/19 10:00
9080260-08	P9H0347	5.5 g	5 mL	08/20/19 10:00
9080260-09	P9H0347	4.69 g	5 mL	08/20/19 10:00
9080260-10	P9H0347	4.68 g	5 mL	08/20/19 10:00
9080260-11	P9H0347	4.72 g	5 mL	08/20/19 10:00
9080260-12	P9H0347	4.64 g	5 mL	08/20/19 10:00
9080260-13	P9H0310	5.74 g	5 mL	08/19/19 10:00
9080260-14	P9H0366	5.34 g	5 mL	08/21/19 10:00

449 Springbrook Road - P.O. Box 240543 - Charlotte, NC 28224-0543
Phone: 704/529-6364 - Toll Free Number: 1-800/529-6364 - Fax: 704/525-0409

Sample Extraction Data

Prep Method: 5035

Lab Number	Batch	Initial	Final	Date/Time
9080260-15	P9H0347	3.3 g	5 mL	08/20/19 10:00
9080260-16	P9H0347	6.27 g	5 mL	08/20/19 10:00
9080260-17	P9H0347	5.54 g	5 mL	08/20/19 10:00
9080260-18	P9H0347	4.89 g	5 mL	08/20/19 10:00
9080260-19	P9H0389	6.23 g	5 mL	08/22/19 10:00
9080260-20	P9H0389	5.21 g	5 mL	08/22/19 10:00
9080260-21	P9H0434	4.84 g	5 mL	08/26/19 11:00
9080260-22	P9H0389	5.69 g	5 mL	08/22/19 10:00
9080260-23	P9H0310	5.96 g	5 mL	08/19/19 10:00
9080260-24	P9H0310	4.34 g	5 mL	08/19/19 10:00
9080260-25	P9H0389	4.74 g	5 mL	08/22/19 10:00
9080260-26	P9H0389	4.6 g	5 mL	08/22/19 10:00
9080260-27	P9H0389	3.91 g	5 mL	08/22/19 10:00
9080260-28	P9H0389	4.18 g	5 mL	08/22/19 10:00
9080260-29	P9H0389	4.28 g	5 mL	08/22/19 10:00
9080260-30	P9H0389	4.06 g	5 mL	08/22/19 10:00
9080260-31	P9H0389	4.36 g	5 mL	08/22/19 10:00
9080260-32	P9H0389	5.01 g	5 mL	08/22/19 10:00
9080260-33	P9H0389	5.13 g	5 mL	08/22/19 10:00
9080260-34	P9H0389	3.66 g	5 mL	08/22/19 10:00
9080260-35	P9H0389	3.79 g	5 mL	08/22/19 10:00
9080260-36	P9H0389	6.93 g	5 mL	08/22/19 10:00
9080260-37	P9H0434	4.94 g	5 mL	08/26/19 11:00
9080260-38	P9H0389	5.45 g	5 mL	08/22/19 10:00
9080260-39	P9H0434	5.81 g	5 mL	08/26/19 11:00

449 Springbrook Road - P.O. Box 240543 - Charlotte, NC 28224-0543
Phone: 704/529-6364 - Toll Free Number: 1-800/529-6364 - Fax: 704/525-0409

CHAIN OF CUSTODY RECORD

PRISM LABORATORIES, INC. — Full-Service Analytical & Environmental Solutions

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

PAGE 1 OF 4 QUOTE # TO ENSURE PROPER BILLING: GN7039

Project Name: NCDOT, West End
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: Geosyntec
Address:

Client Company Name: Geosyntec
Report To/Contact Name: Michael Wang
Reporting Address: 2501 Blue Ridge Rd. Ste 430, Raleigh, NC, 27607
Phone: 919-551-5334 Fax (Yes) (No): No
Email Address: mwang@geosyntec.com
EDD Type: PDF X Excel X Other
Site Location Name: NCDOT West End
Site Location Physical Address: West End, NC

Purchase Order No./Billing Reference GN7039
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)

LAB USE ONLY

	YES	NO	N/A
Samples INTACT upon arrival?	✓		
Received ON WET ICE?	✓		
PROPER PRESERVATIVES indicated?	✓		
Received WITHIN HOLDING TIMES?	✓		
CUSTODY SEALS INTACT?			4
VOLATILES rec'd W/OUT HEADSPACE?			4
PROPER CONTAINERS used?	✓		

TEMP: Therm ID: IR-14 Observed: 3.2 °C / Corr: 3.3 °C

TO BE FILLED IN BY CLIENT/SAMPLING PERSONNEL

Certification: NELAC___ DoD___ FL___ NC X
SC___ OTHER___ N/A___
Water Chlorinated: YES___ NO X
Sample Iced Upon Collection: YES X NO___

CLIENT SAMPLE DESCRIPTION	DATE COLLECTED	TIME COLLECTED MILITARY HOURS	MATRIX (SOIL, WATER OR SLUDGE)	SAMPLE CONTAINER *TYPE SEE BELOW	SAMPLE CONTAINER NO.	SAMPLE CONTAINER SIZE	PRESERVATIVES	ANALYSIS REQUESTED CB260	REMARKS	PRISM LAB ID NO.
SB13-01-7.5-8.0	8/12/19	1030	Soil	VOA	4		multiple	✓	BTEX ONLY	01
SB13-02-7-7.5	8/12/19	1100	Soil					✓		02
SB13-03-6.5-7.0	8/12/19	1130	Soil					✓		03
SB43-01-4.5-5	8/13/19	1340						✓		04
SB43-02-6.5-7	8/13/19	1400						✓		05
SB43-03-7-7.5	8/13/19	1430						✓		06
SB43-04-7.5-8	8/13/19	1445						✓		07
SB6867-01-5-5.5	8/13/19	0840						✓		08
SB6867-02-4.5-5	8/13/19	0910	↓	↓	↓		↓	✓	↓	09
SB6867-03-6.5-7	8/13/19	1020	Soil	VOA	4		multiple	✓	BTEX ONLY	10

PRESS DOWN FIRMLY - 3 COPIES

Sampler's Signature Michael Wang Sampled By (Print Name) Michael Wang Affiliation

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.

		Date	Military/Hours
Relinquished By: (Signature) Michael Wang	Received By: (Signature)	~~8/15/19~~	~~1600~~
Relinquished By: (Signature)	Received By: (Signature)	Date	
Relinquished By: (Signature)	Received For Prism Laboratories By:	8-16-19	0915

Method of Shipment: ☒ Fed Ex ☐ UPS ☐ Hand-delivered ☐ Prism Field Service ☐ Other

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. 9080260

Additional Comments:

PRISM USE ONLY

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

NPDES:	UST:	GROUNDWATER:	DRINKING WATER:	SOLID WASTE:	RCRA:	CERCLA	LANDFILL	OTHER:
☐ NC ☐ SC	☐ NC ☐ SC	☐ NC ☐ SC	☐ NC ☐ SC	☐ NC ☐ SC	☐ NC ☐ SC	☐ NC ☐ SC	☐ NC ☐ SC	☐ NC ☐ SC
☐ _____	☐ _____	☐ _____	☐ _____	☐ _____	☐ _____	☐ _____	☐ _____	☐ _____

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

SEE REVERSE FOR TERMS & CONDITIONS

ORIGINAL

CHAIN OF CUSTODY RECORD

PRISM LABORATORIES, INC. | Full-Service Analytical & Environmental Solutions

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

PAGE 2 OF 4 QUOTE # TO ENSURE PROPER BILLING: GN 7039

Project Name: NCDOT West End

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: Geosyntec

Address:

Client Company Name: Geosyntec

Report To/Contact Name: Michael Wang

Reporting Address: 2501 Blue Ridge Rd. Ste 430, Raleigh, NC. 27607

Phone: 919-551-5334 Fax (Yes) (No): No

Email Address: mwang@geosyntec.com

EDD Type: PDF X Excel X Other

Site Location Name: NCDOT West End

Site Location Physical Address: West End NC

Purchase Order No./Billing Reference GN7039

Requested Due Date ☐ 1 Day ☐ 2 Days ☐ 3 Days ☐ 4 Days ☐ 5 Days

"Working Days" ☐ 6-9 Days X 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)

LAB USE ONLY

	YES	NO	N/A
Samples INTACT upon arrival?	✓		
Received ON WET ICE?	✓		
PROPER PRESERVATIVES indicated?	✓		
Received WITHIN HOLDING TIMES?	✓		
CUSTODY SEALS INTACT?			✓
VOLATILES rec'd W/OUT HEADSPACE?			✓
PROPER CONTAINERS used?	✓		

TEMP: Therm ID: [illegible] Observed: 3.2 °C / Corr: 3.3 °C

TO BE FILLED IN BY CLIENT/SAMPLING PERSONNEL

Certification: NELAC___ DoD___ FL___ NC X SC___ OTHER___ N/A___

Water Chlorinated: YES___ NO X

Sample Iced Upon Collection: YES X NO___

CLIENT SAMPLE DESCRIPTION	DATE COLLECTED	TIME COLLECTED MILITARY HOURS	MATRIX (SOIL, WATER OR SLUDGE)	SAMPLE CONTAINER *TYPE SEE BELOW	SAMPLE CONTAINER NO.	SAMPLE CONTAINER SIZE	PRESERVATIVES	ANALYSIS REQUESTED 8260	REMARKS	PRISM LAB ID NO.
SB66867-04.5-6.0	8/13/19	0945	Soil	VOA	4		multiple	X	BTEX ONLY	11
SB66867-05-7.5	8/13/19	1110	Soil					X		12
SB66867-06-7.5-8	8/13/19	1220	Soil					X		13
SB69-01-6.0-6.5	8/12/19	1300						X		14
SB69-02-4.0-4.5	8/12/19	1330						X		15
SB69-03-5-5.5	8/12/19	1400						X		16
SB69-04-5-5.5	8/12/19	1445						X		17
SB69-05-9.5-10	8/12/19	1525						X		18
SB69-06-9-9.5	8/12/19	1615						X		19
SB69-07-5.0-5.5	8/12/19	1645	Soil	VOA	4		multiple	X	BTEX ONLY	20

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Sampler's Signature [signature] Sampled By (Print Name) Michael Wang Affiliation

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.

		Date	Military/Hours
Relinquished By: (Signature) [signature]	Received By: (Signature)	~~8/16/19~~	~~1500~~
Relinquished By: (Signature)	Received By: (Signature)	Date	
Relinquished By: (Signature)	Received For Prism Laboratories By: [signature]	Date 8-16-19	0915

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.

☐ Fed Ex ☐ UPS ☐ Hand-delivered ☐ Prism Field Service ☐ Other

COC Group No. 90 8 0260

Additional Comments:

PRISM USE ONLY

Site Arrival Time:

Site Departure Time:

Field Tech Fee:

Mileage:

NPDES:	UST:	GROUNDWATER:	DRINKING WATER:	SOLID WASTE:	RCRA:	CERCLA	LANDFILL	OTHER:
☐ NC ☐ SC	☐ NC ☐ SC	☐ NC ☐ SC	☐ NC ☐ SC	☐ NC ☐ SC	☐ NC ☐ SC	☐ NC ☐ SC	☐ NC ☐ SC	☐ NC ☐ SC
☐ _____	☐ _____	☐ _____	☐ _____	☐ _____	☐ _____	☐ _____	☐ _____	☐ _____

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

SEE REVERSE FOR TERMS & CONDITIONS

ORIGINAL

CHAIN OF CUSTODY RECORD

PRISM LABORATORIES, INC. | Full-Service Analytical & Environmental Solutions

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

PAGE 3 OF 4 QUOTE # TO ENSURE PROPER BILLING: GN7039

Project Name: NCDOT West End
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: Geosyntec
Address:

Client Company Name: Geosyntec
Report To/Contact Name: Michael Wang
Reporting Address: 2501 Blue Ridge Rd Ste 430, Raleigh, NC, 27607
Phone: 919-551-5334 Fax (Yes) (No): NO
Email Address: MiWang@geosyntec.com
EDD Type: PDF X Excel X Other
Site Location Name: NCDOT West End
Site Location Physical Address: West End, NC

Purchase Order No./Billing Reference GN7039
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)

LAB USE ONLY

	YES	NO	N/A
Samples INTACT upon arrival?	✓		
Received ON WET ICE?	✓		
PROPER PRESERVATIVES indicated?	✓		
Received WITHIN HOLDING TIMES?	✓		
CUSTODY SEALS INTACT?			✓
VOLATILES rec'd W/OUT HEADSPACE?			✓
PROPER CONTAINERS used?	✓		

TEMP: Therm ID: IR1-19 Observed: 3.2 °C / Corr: 3.3 °C

TO BE FILLED IN BY CLIENT/SAMPLING PERSONNEL

Certification: NELAC___ DoD___ FL___ NC X
SC___ OTHER___ N/A___
Water Chlorinated: YES___ NO X
Sample Iced Upon Collection: YES X NO___

CLIENT SAMPLE DESCRIPTION	DATE COLLECTED	TIME COLLECTED MILITARY HOURS	MATRIX (SOIL, WATER OR SLUDGE)	SAMPLE CONTAINER *TYPE SEE BELOW	SAMPLE CONTAINER NO.	SAMPLE CONTAINER SIZE	PRESERVATIVES	ANALYSIS REQUESTED 8260	REMARKS	PRISM LAB ID NO.
SB69-08-6-6.5	8/13/19	1300	Soil	VOA	4		Multiple	X	BTEX ONLY	21
SB68-01-7-7.5	8/13/19	1550						X		22
SB78-02-5.5-6	8/14/19	0825						X		23
SB78-03-6-6.5	8/14/19	0900						X		24
SB78-04-6.5-7	8/14/19	0930						X		25
SB89-01-5-5.5	8/15/19	0900						X		26
SB89-02-5.5-6	8/15/19	0940						X		27
SB89-03-6.5-7	8/15/19	1030						X		28
SB89-04-7-7.5	8/15/19	1130						X		29
SB102-01-2.5-3	8/14/19	1050	Soil	VOA	4		Multiple	X	BTEX ONLY	30

Sampler's Signature: [signature] Sampled By (Print Name): Michael Wang Affiliation

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		Date	Military/Hours
Relinquished By: (Signature) [signature]	Received By: (Signature)	~~8/15/19~~	~~1600~~
Relinquished By: (Signature)	Received By: (Signature)	Date	
Relinquished By: (Signature)	Received For Prism Laboratories By: [signature]	Date 8-16-19	0915

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.

☐ Fed Ex ☐ UPS ☐ Hand-delivered ☐ Prism Field Service ☐ Other

COC Group No. 9080260

Additional Comments:

PRISM USE ONLY

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

NPDES:	UST:	GROUNDWATER:	DRINKING WATER:	SOLID WASTE:	RCRA:	CERCLA	LANDFILL	OTHER:
☐ NC ☐ SC	☐ NC ☐ SC	☐ NC ☐ SC	☐ NC ☐ SC	☐ NC ☐ SC	☐ NC ☐ SC	☐ NC ☐ SC	☐ NC ☐ SC	☐ NC ☐ SC
☐ _____	☐ _____	☐ _____	☐ _____	☐ _____	☐ _____	☐ _____	☐ _____	☐ _____

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

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ORIGINAL

CHAIN OF CUSTODY RECORD

PRISM LABORATORIES, INC.
Full-Service Analytical & Environmental Solutions
449 Springbrook Road • Charlotte, NC 28217
Phone 704/529-6364 • Fax: 704/525-0409

PAGE 4 OF 4 QUOTE # TO ENSURE PROPER BILLING: GN7039

Project Name: ~~GN7039~~ NCDOT West End

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: Geosyntec

Address:

Client Company Name: Geosyntec

Report To/Contact Name: Michael Wang

Reporting Address: 2501 Blue Ridge Rd Ste 430, Raleigh, NC 27607

Phone: 919-551-533 Fax (Yes) (No): NO

Email Address: mwang@Geosyntec.com

EDD Type: PDF X Excel X Other

Site Location Name: NCDOT West End

Site Location Physical Address: West End, NC

Purchase Order No./Billing Reference

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)

LAB USE ONLY

	YES	NO	N/A
Samples INTACT upon arrival?	✓		
Received ON WET ICE?	✓		
PROPER PRESERVATIVES indicated?	✓		
Received WITHIN HOLDING TIMES?	✓		
CUSTODY SEALS INTACT?			✓
VOLATILES rec'd W/OUT HEADSPACE?			✓
PROPER CONTAINERS used?	✓		

TEMP: Therm ID: ~~DC-14~~ Observed: 3.2 °C / Corr: 3.3 °C

Page 60 of 60

TO BE FILLED IN BY CLIENT/SAMPLING PERSONNEL

Certification: NELAC___ DoD___ FL___ NC X

SC___ OTHER___ N/A___

Water Chlorinated: YES___ NO X

Sample Iced Upon Collection: YES X NO___

CLIENT SAMPLE DESCRIPTION	DATE COLLECTED	TIME COLLECTED MILITARY HOURS	MATRIX (SOIL, WATER OR SLUDGE)	SAMPLE CONTAINER *TYPE SEE BELOW	SAMPLE CONTAINER NO.	SAMPLE CONTAINER SIZE	PRESERVATIVES	ANALYSIS REQUESTED DoD	REMARKS	PRISM LAB ID NO.
SB102-02-5.5-6	8/14/19	1135	Soil	VOA	4		Multiple	X	BTEX ONLY	31
SB102-03-7-7.5	8/14/19	1300						X		32
SB102-04-7.5-8	8/14/19	1330						X		33
SB102-05-45-5	8/14/19	1400						X		34
SB102-06-0.5-1	8/14/19	1450						X		35
SB102-07-7.5-8	8/14/19	1535						X		36
SB102-08-8-8.5	8/14/19	1605						X		37
SB102-09-8.5-9	8/14/19	1645						X		38
SB102-10-9-9.5	8/14/19	1720	Soil	VOA	4		Multiple	X	BTEX ONLY	39

Sampler's Signature: Michael Wang Sampled By (Print Name): Michael Wang Affiliation

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		Date	Military/Hours
Relinquished By: (Signature) Michael Wang	Received By: (Signature)	~~8/15/19~~	~~1600~~
Relinquished By: (Signature)	Received By: (Signature)	Date	
Relinquished By: (Signature)	Received For Prism Laboratories By:	Date 8-16-19	0915

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.

☐ Fed Ex ☐ UPS ☐ Hand-delivered ☐ Prism Field Service ☐ Other

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Site Departure Time:

Field Tech Fee:

Mileage:

NPDES:	UST:	GROUNDWATER:	DRINKING WATER:	SOLID WASTE:	RCRA:	CERCLA	LANDFILL	OTHER:
☐ NC ☐ SC	☐ NC ☐ SC	☐ NC ☐ SC	☐ NC ☐ SC	☐ NC ☐ SC	☐ NC ☐ SC	☐ NC ☐ SC	☐ NC ☐ SC	☐ NC ☐ SC
☐ _____	☐ _____	☐ _____	☐ _____	☐ _____	☐ _____	☐ _____	☐ _____	☐ _____

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

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ORIGINAL