



Prepared for

North Carolina Department of Transportation
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Raleigh, North Carolina 27610

PRELIMINARY SITE ASSESSMENT
NC 211 IN WEST END
PARCEL 13
5349 NC HIGHWAY 211,
MOORE COUNTY,
WEST END, NORTH CAROLINA

WBS #: 50218.1.1
TIP#: R-5726

Prepared by

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Project Number GN7039

October 2019

*Preliminary Site Assessment (Parcel 13 - McNeill Oil Co., Inc.)
TIP Number R-5726
5349 NC 211, West End, North Carolina
October 2019*

Date: October 21, 2019
WBS Number: 50218.1.1
TIP Number: R-5726
County: Moore County
Description: Preliminary Site Assessment
Address: 5349 NC 211, West End, North Carolina 27376
Parcel ID: Parcel 13 (McNeill Oil Co., Inc.)
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.

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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 5349 NC 211 in West End, North Carolina (the Site). The Site is associated with NCDOT TIP number R-5726, Parcel 13, and owned by McNeill Oil Co., Inc. 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 13 (Moore County Parcel number 00022929 [McNeill Oil Co., Inc.]) is located on NC HWY 211. **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 an auto garage and used tire shop with a physical address of 5349 NC 211. The Site is associated with UST Incident 11631, FA-633, which was closed in November 1995.

The property is approximately 0.25 acres and is associated with five historical USTs (three 4,000-gallon gasoline USTs; a 4,000-gallon diesel UST; and a 550-gallon kerosene UST), which were removed in October 1993. Three monitoring wells are associated with the historical UST incident; one of which is located beyond the Site and PUE boundary (**Figure 2**). The three monitoring wells extend approximately 60 feet below ground surface (ft bgs) and have not been abandoned. The monitoring well IDs are unknown; therefore, **Figure 2** provides arbitrary well IDs for simplicity.

The Site is bounded to the west by NC 211; to the north by Mode Rd; to the east and south by commercial and residential properties.

1.3 Scope of Work

The scope of work consisted of a historical Site desktop review, geophysical survey, and sub-surface soil investigation. 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, in which there appears to be one above-grade structure on the property. It is assumed to be the same building currently on the parcel.
- No significant deviations to the site were identified between 1993 and 2018.
- The Site surroundings (residential and commercial land) appear generally consistent from 1993 to 2018, except for the building to the north of the Site, which was demolished between 2009 and 2013.

2.2 Subject Site Findings

The McNeill Oil Co., Inc property is associated with UST Incident 11631, FA-633. A No Further Action (NFA) was filed by the NCDEQ in November 1995. Minimal information for the UST incident was found.

The property located to the southwest of the Site (5364 NC-211) is the former Stanley Furniture facility and is an abandoned wood-furniture manufacturing facility. Greenhorn & O'Mara, Inc. (G&O) performed a Phase I Environmental Site Assessment (ESA) at the former Stanley Furniture facility in 1990, which provided a fundamental history of the property. Geosyntec also performed a PSA at the former Stanley Furniture facility in February 2018 on behalf of the NCDOT. Pertinent details of G&O's 1990 Phase I ESA and Geosyntec's 2018 PSA are presented below.

The off-site property was in operation between 1924 until the early 2000's. The plant historically used stains, lacquer, and lacquer thinner to finish furniture product and

reportedly stored virgin solvents and fuel in USTs on the property. The former Stanley Furniture facility also owned land to the south of the Subject Site (i.e., south of McNeill Oil), which housed evaporation lagoons to treat wastewater from the furniture spray booths. Tetrachloroethylene (PCE), benzene, and methylene chloride have been detected in groundwater at concentrations in excess of their respective North Carolina Administrative Code (NCAC) Title 15A 2L Groundwater Standards (2L Standards) associated with former Stanley Furniture plant. In addition to the chlorinated solvent impacts to groundwater, UST incident 29880 is associated with the former Stanley Furniture property, following the identification of soil contamination during a UST closure event. An NFA was filed in 2002 for the UST incident associated with the former Stanley Furniture.

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 accessible portions of the ROW/PUE extent. 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.

Three (3) soil borings were completed during this investigation, extending 10 ft bgs. Soil sampling locations were selected in areas likely to be encountered during roadway construction. Specific priority was placed at locations proximal to historical UST locations and existing 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.

At least three unabandoned monitoring wells were identified within the subject Site property. No historical environmental records were identified indicating the number of monitoring wells associated with the Site.

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. The findings from the initial Site visit are briefly presented in this section and will be discussed throughout the remainder of this report. **Appendix B** provides a photographic log of 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 six (6) EM anomalies, which were attributed to visible features at the ground surface. GPR was performed across areas suspected to contain reinforced concrete and around areas of metallic interference associated with vehicles, trailers and utilities. The geophysics results do not indicate evidence of metallic USTs at the Site. The 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. PID soil screening values were null throughout the entirety of each soil boring. Soil sampling locations are shown on **Figure 2** and GPS coordinates are recorded on **Table 1**. The boring logs are provided in **Appendix C**.

Three (3) soil borings were completed during this investigation, extending 10 ft bgs. The borings are located along the northern and western portion of the properties and within the ROW/PUE extent. 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.

4.3.2 Soil Sampling Analytical Results

Three (3) 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 SB13-01 soil sample. 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.

¹The 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 on NCDOT Parcel 13, located at 5349 NC 211, West End, North Carolina. The property is owned by McNeil Oil Co., Inc. The following summarizes the findings of this PSA.

The Site is associated with UST Incident 11631 (FA-633), which was closed in November 1995. No other environmental records were identified for the subject property. The former Stanley Furniture facility, located to the west and south of the Subject Site, is associated with a UST incident and chlorinated solvent impacts to groundwater in the immediate vicinity.

As part of this scope of work, a geophysical survey and intrusive soil investigation were performed. No subsurface anomalies, including USTs, were identified within the study area as part of this scope of work. Three (3) soil borings were advanced within the existing ROW boundary to investigate the potential environmental impacts on the property. The work performed herein did not identify petroleum impacts in shallow soils within the Site study area. Geosyntec anticipates a low probability of encountering soil contamination during roadway construction, based upon the preliminary findings identified herein. Geosyntec recommends abandoning the two on-Site monitoring wells located within the proposed PUE extent, in accordance with the North Carolina Administrative Code (NCAC) 2C Well Construction Standards to facilitate the proposed roadway construction.

*Preliminary Site Assessment (Parcel 13 - McNeill Oil Co., Inc.)
TIP Number R-5726
5349 NC 211, West End, North Carolina
October 2019*



TABLES

Table 1
Soil Boring Coordinates
5349 NC 211, West End, North Carolina 27376
NCDOT Parcel 13
TIP: R-5726
WBS: 50218.1.1

Soil Boring ID	Longitude	Latitude
SB13-01-7.5-8.0	-79.566828	35.240007
SB13-02-7.0-7.5	-79.566969	35.239940
SB13-03-6.5-7.0	-79.567088	35.239885

Monitoring Well ID	Longitude	Latitude
MW-1	-79.566877	35.239995
MW-2	-79.567001	35.239946
MW-3	-79.566775	35.239701

Note:

- 1) Coordinate datum reference: WGS 1984.
- 2) Monitoring well tags were not identified; IDs are arbitrary.

Table 2
Soil Analytical Results - TPH by UVF
5349 NC 211, West End, North Carolina 27376
NCDOT Parcel 13
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							
SB13-01-7.5-8.0	7.5-8.0	8/12/2019	<0.66	<0.66	0.66	0.66	0.47	<0.21	<0.027
SB13-02-7.0-7.5	7.0-7.5	8/12/2019	<0.41	<0.41	<0.41	<0.41	<0.08	<0.13	<0.016
SB13-03-6.5-7.0	6.5-7.0	8/12/2019	<0.32	<0.32	<0.32	<0.32	<0.06	<0.1	<0.013

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
5349 NC 211, West End, North Carolina 27376
NCDOT Parcel 13
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	SB13-01	SB13-02	SB13-03
				Sample Date	8/12/2019	8/12/2019	8/12/2019
				Sample Depth (ft. bgs)	7.5-8.0	7.0-7.5	6.5-7.0
				Sample Type	Grab		
				Units	mg/kg		
Volatile Organic Compounds (VOCs) by EPA Method 8260B							
Benzene	18	164	0.0056	mg/kg	< 0.0071	< 0.0069	< 0.0051
Ethylbenzene	1,560	40,000	4.9	mg/kg	< 0.0071	< 0.0069	< 0.0051
m,p-Xylenes	3,129	81,760	4.6	mg/kg	< 0.014	< 0.014	< 0.010
o-Xylene	3,129	81,760	4.6	mg/kg	< 0.0071	< 0.0069	< 0.0051
Toluene	1,200	32,000	4.3	mg/kg	< 0.0071	< 0.0069	< 0.0051
Xylene (total)	3,129	81,760	4.6	mg/kg	< 0.021	< 0.021	< 0.015

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

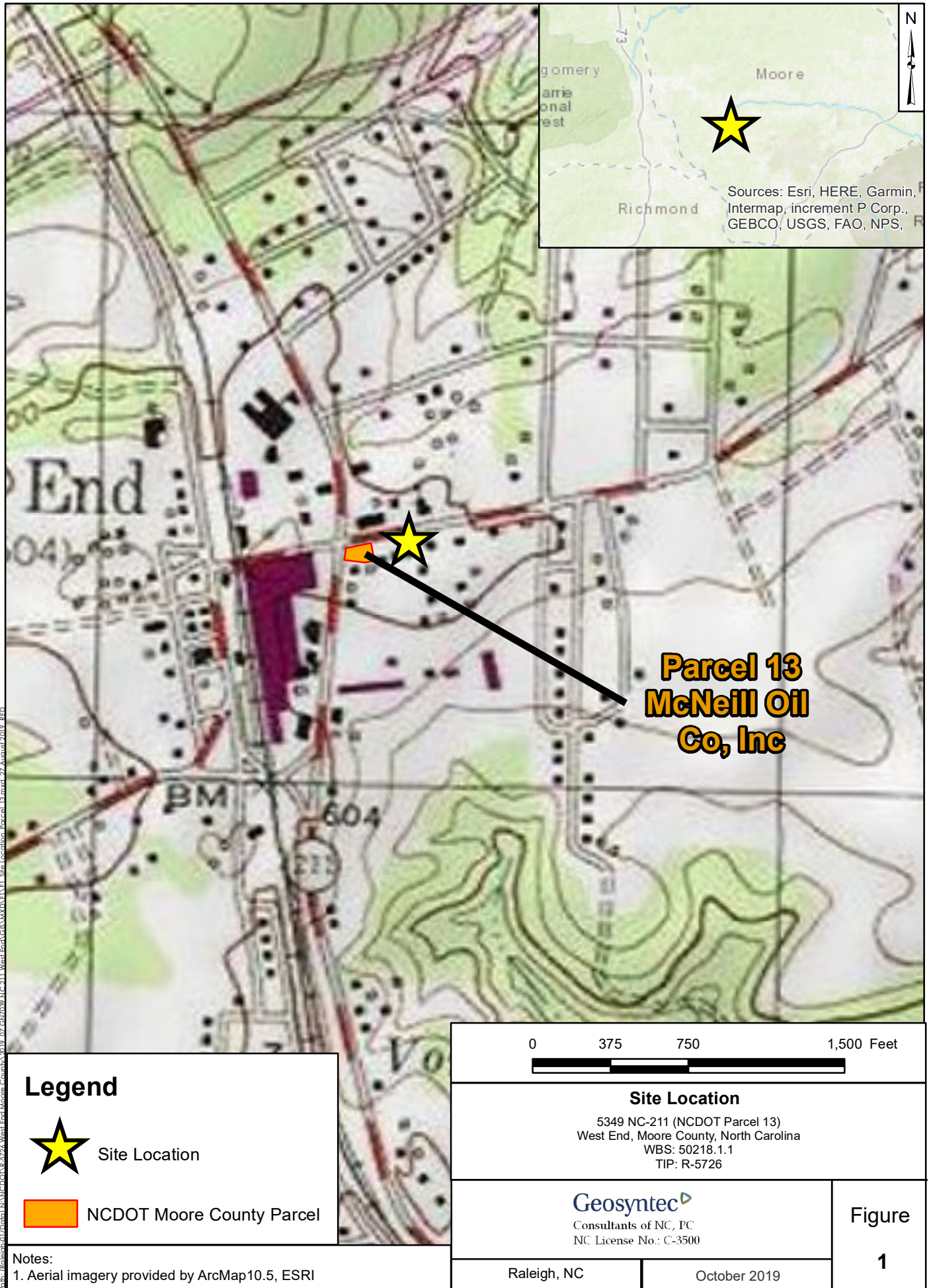
(6) < indicates analyte was not detected above the laboratory reporting limit (RL).

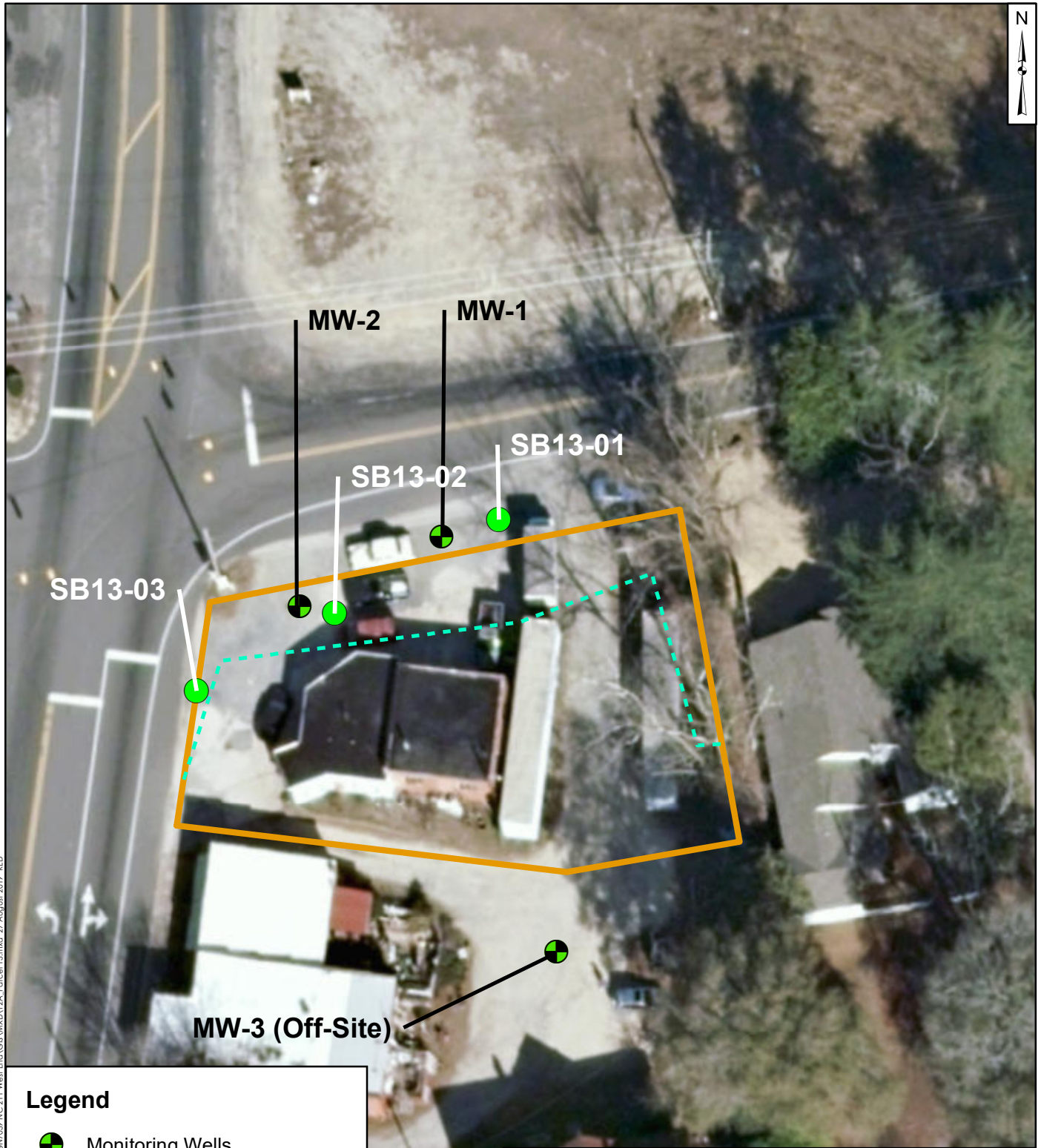
(7) Only benzene, toluene, ethylbenzene, and xylenes (BTEX) were reported.

*Preliminary Site Assessment (Parcel 13 - McNeill Oil Co., Inc.)
TIP Number R-5726
5349 NC 211, West End, North Carolina
October 2019*







FIGURES



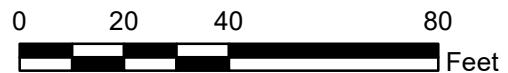


Legend

-  Monitoring Wells
-  Soil Boring Locations
-  Approximate PUE Extent
-  NCDOT Moore County Parcel

Notes:

1. Property boundary provided by Moore County, North Carolina GIS.
2. Aerial imagery provided by ArcMap10.5, ESRI
3. MW IDs are unconfirmed; numbering shown is arbitrary.
4. PUE indicates Public Utility Easement.
5. Soil boring locations are approximated by GPS; locations were not surveyed by a licensed surveyor.



Site Layout (McNeil Oil Co. Inc.)

5349 NC-211 (NCDOT Parcel 13)
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

*Preliminary Site Assessment (Parcel 13 - McNeill Oil Co., Inc.)
TIP Number R-5726
5349 NC 211, West End, North Carolina
October 2019*



APPENDIX A

Geophysical Investigation Report



PYRAMID GEOPHYSICAL SERVICES
(PROJECT 2019-233)

GEOPHYSICAL SURVEY

METALLIC UST INVESTIGATION: PARCEL 13 NCDOT PROJECT R-5726 (50218.1.1)

5349 NC-211, WEST END, NC

August 23, 2019

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GEOPHYSICAL INVESTIGATION REPORT
Parcel 13 - 5349 NC-211
West End, Moore County, North Carolina

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- Figure 2 – Parcel 13 - EM61 Results Contour Map
- Figure 3 – Parcel 13 - GPR Transect Location and Select Images
- Figure 4 – Overlay of Metal Detection Results onto NCDOT Engineering Plans

Appendices

- Appendix A – GPR Transect Images

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 13, located approximately at 5349 NC-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 extend from the existing edge of pavement into the proposed ROW and/or easements, whichever distance was greater. 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. A total of six EM anomalies were identified. All of the EM anomalies were directly attributed to visible cultural features at the ground surface. GPR was performed across areas suspected to contain reinforced concrete and around areas of metallic interference associated with vehicles, trailers and utilities. No evidence of any significant buried structures was observed. Collectively, the geophysical data did not record any evidence of metallic USTs at Parcel 13.

INTRODUCTION

Pyramid Environmental conducted a geophysical investigation for Geosyntec Consultants of NC, PC at Parcel 13, located approximately at 5349 NC-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 extend from the existing edge of pavement into the proposed ROW and/or easements, whichever distance was greater. 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 a commercial building surrounded by asphalt and concrete surfaces. 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	Reinforced Concrete	✓
2	Utilities/Surface Metal	
3	Utility	✓
4	Vehicles	✓
5	Trailers	✓
6	Reinforced Concrete/Vehicles	✓

All of the EM anomalies were directly attributed to visible cultural features at the ground surface, including reinforced concrete, utilities, surface metal, vehicles, and trailers. GPR was performed across areas suspected to contain reinforced concrete to verify that no structures such as USTs were present beneath the reinforcement. GPR was also performed around vehicles, trailers and utilities to verify that the metallic interference did not obscure the presence of 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 GPR images are included in **Appendix A**. A total of 26 formal GPR transects were performed. GPR verified the presence of metal reinforcement within the concrete on the west side of the property. No evidence of larger structures such as USTs was observed beneath the reinforcement or around the areas of metallic interference associated with the vehicles, trailers and utilities. **Figure 4** provides an overlay of the metal detection results onto the NCDOT Engineering plans.

Collectively, the geophysical data did not record any evidence of metallic USTs at Parcel 13.

SUMMARY & CONCLUSIONS

Pyramid's evaluation of the EM61 and GPR data collected at Parcel 13 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.
- All of the EM anomalies were directly attributed to visible cultural features at the ground surface.
- GPR was performed across areas suspected to contain reinforced concrete and around areas of metallic interference associated with vehicles, trailers and utilities. No evidence of any significant buried structures was observed.
- Collectively, the geophysical data did not record any evidence of metallic USTs at Parcel 13.

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 West)



View of Survey Area
(Facing Approximately South)



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

PROJECT
PARCEL 13
WEST END, NORTH CAROLINA
NCDOT PROJECT R-5726

TITLE
PARCEL 13 - GEOPHYSICAL
SURVEY BOUNDARIES AND SITE PHOTOGRAPHS

DATE
8/8/2019
PYRAMID
PROJECT #:
2019-233

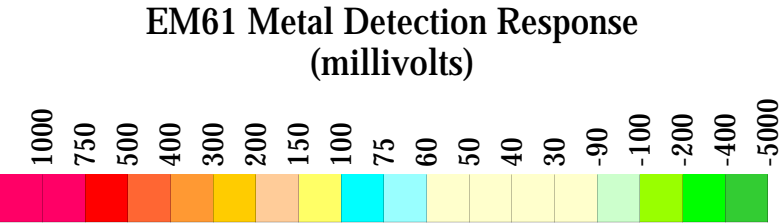
CLIENT
GEOSYNTEC
FIGURE 1

EM61 METAL DETECTION RESULTS



NO EVIDENCE OF 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.



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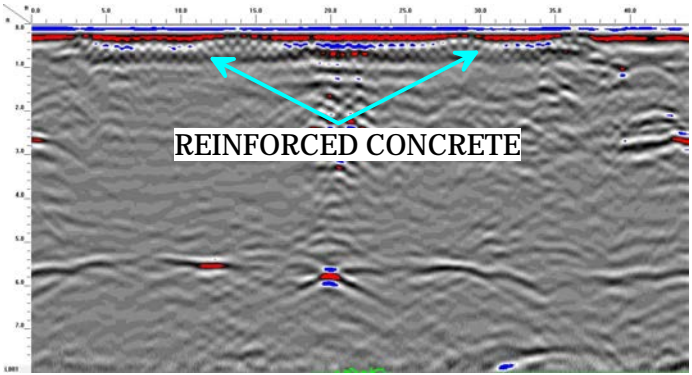
PROJECT
PARCEL 13
WEST END, NORTH CAROLINA
NCDOT PROJECT R-5726

TITLE
PARCEL 13 -
EM61 METAL DETECTION CONTOUR MAP

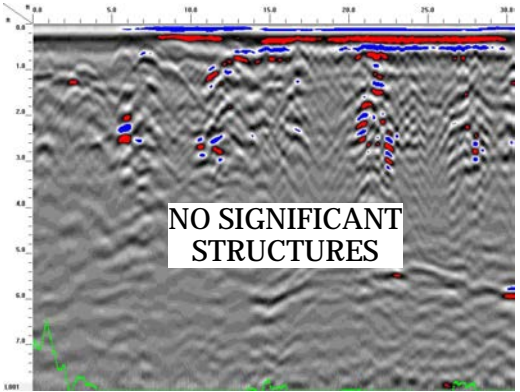
DATE
8/8/2019
PYRAMID
PROJECT #: 2019-233

CLIENT
GEOSYNTEC
FIGURE 2

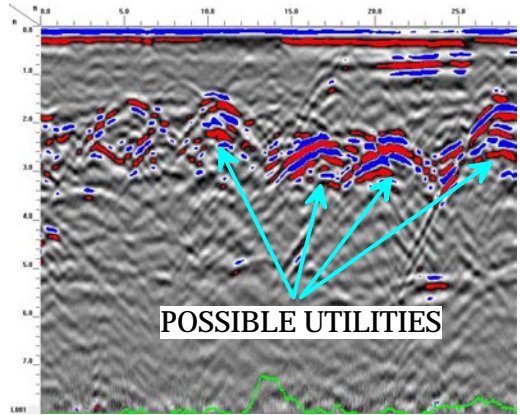
LOCATIONS OF GPR TRANSECTS



GPR TRANSECT 3 (T3)



GPR TRANSECT 14 (T14)



GPR TRANSECT 24 (T24)



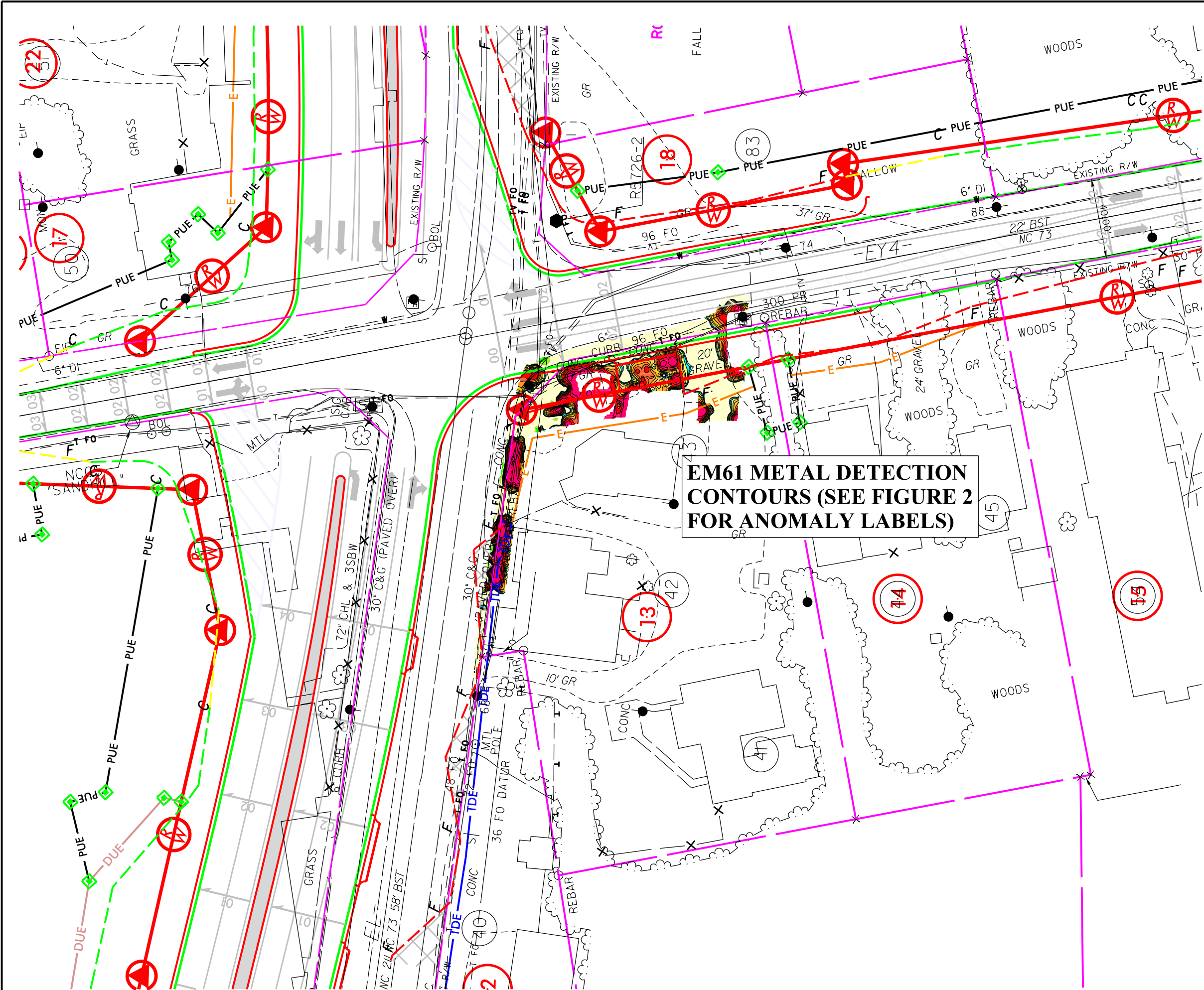
503 INDUSTRIAL AVENUE
GREENSBORO, NC 27406
(336) 335-3174 (p) (336) 691-0648 (f)
License # C1251 Eng. / License # C257 Geology

PROJECT
PARCEL 13
WEST END, NORTH CAROLINA
NCDOT PROJECT R-5726

TITLE
PARCEL 13 -
GPR TRANSECT LOCATIONS AND SELECT IMAGES

DATE
8/8/2019
PYRAMID
PROJECT #:
2019-233

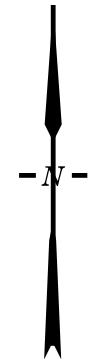
CLIENT
GEOSYNTEC
FIGURE 3




LEGEND

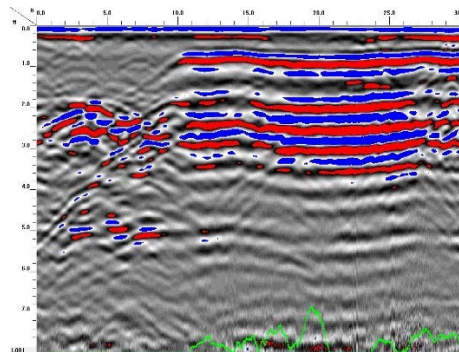
- EXISTING ROW
- EXISTING PROPERTY BOUNDARY
- PROPOSED ROW LINE
- TEMPORARY CONSTRUCTION EASEMENT
- PROPOSED PERMANENT DRAINAGE
- PROPOSED SS CUT LINE
- PROPOSED SS FILL LINE

MILLIVOLTS (mV)

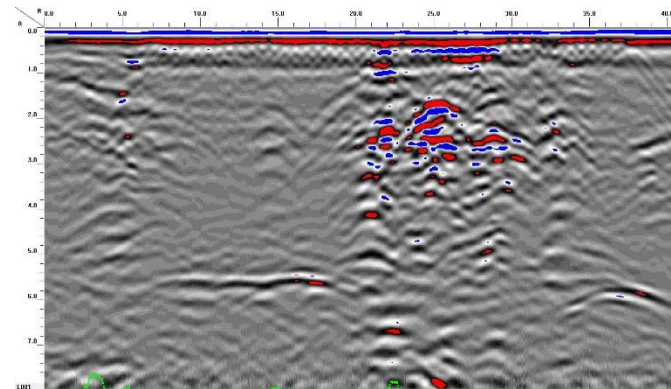


TITLE OVERLAY OF METAL DETECTION RESULTS ON NCDOT ENGINEERING PLANS	
PROJECT PARCEL 13 WEST END, NORTH CAROLINA NCDOT PROJECT R-5726	
<div> 503 INDUSTRIAL AVENUE GREENSBORO, NC 27406 336.335.3174 (p) 336.691.0648 (f) License # C1251 Eng. / #C257 Geology</div>	
DATE: 08-20-2019	REVISION NO. 0
PYRAMID PROJECT NO. 2019-233	FIGURE NO. 4

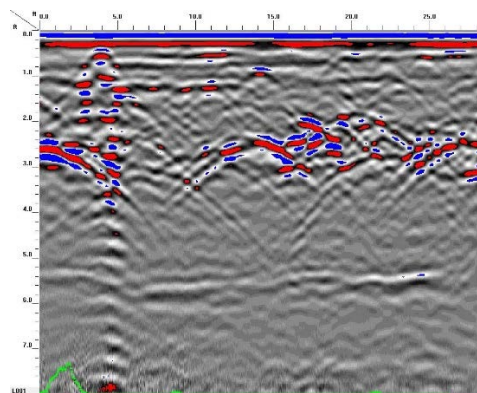
Appendix A – GPR Transect Images



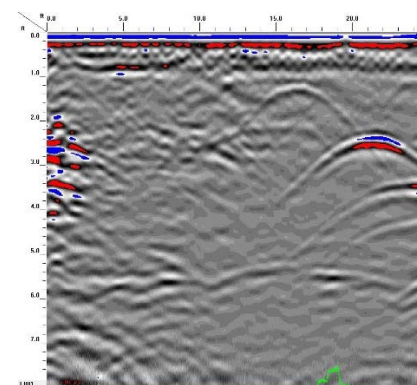
GPR TRANSECT 1



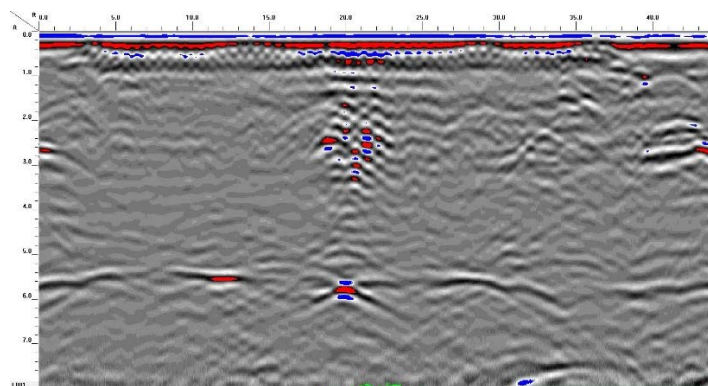
GPR TRANSECT 4



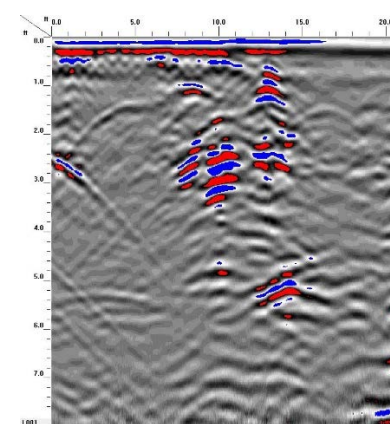
GPR TRANSECT 2



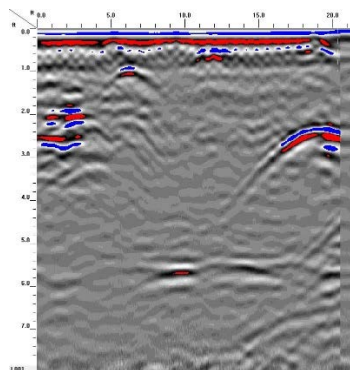
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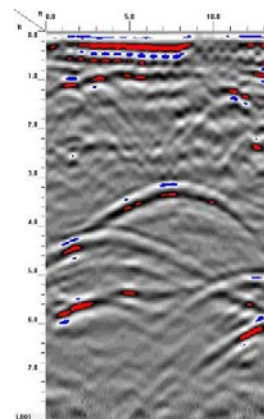
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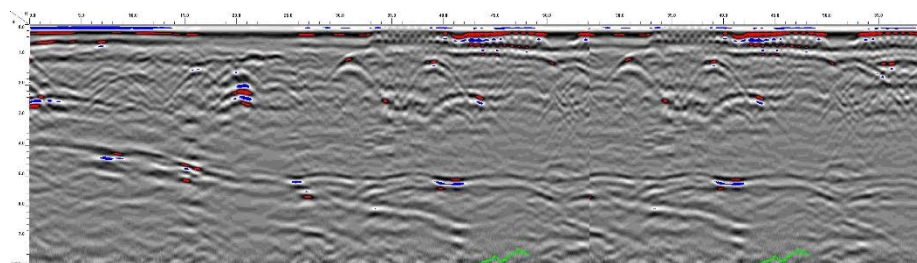
GPR TRANSECT 6



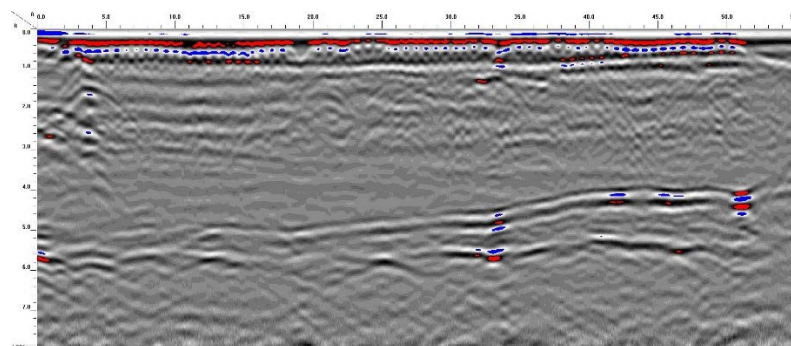
GPR TRANSECT 7



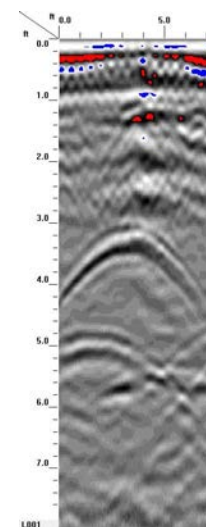
GPR TRANSECT 10



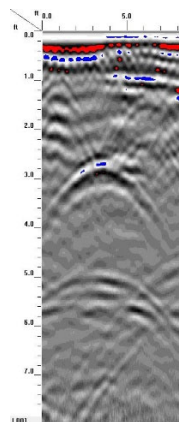
GPR TRANSECT 8



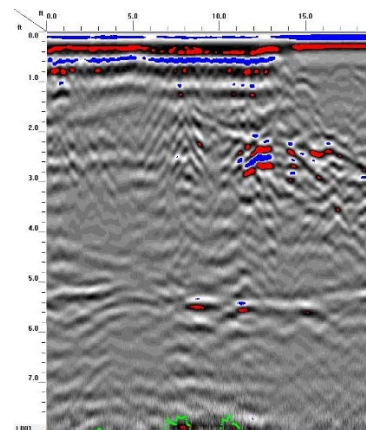
GPR TRANSECT 9



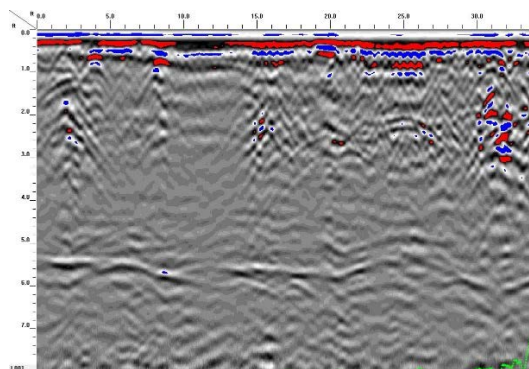
GPR TRANSECT 11



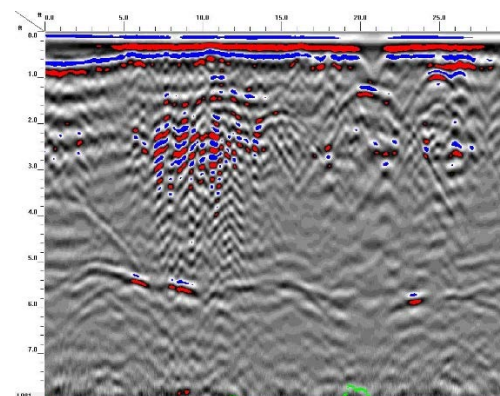
GPR TRANSECT 12



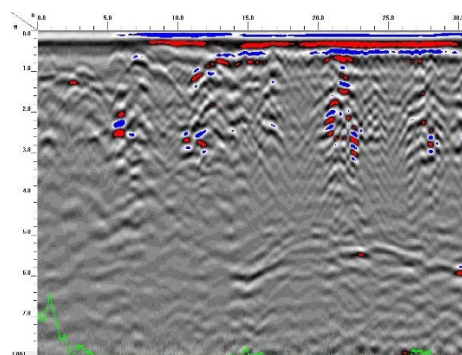
GPR TRANSECT 15



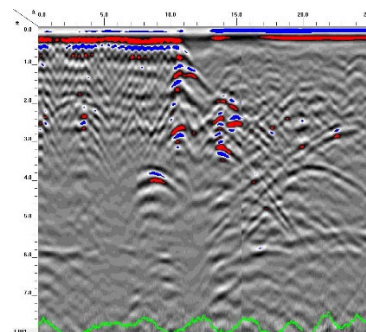
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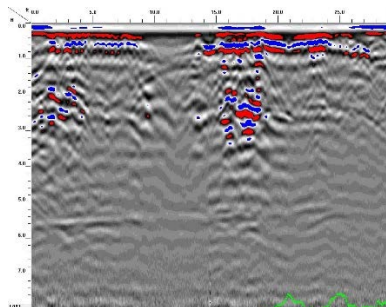
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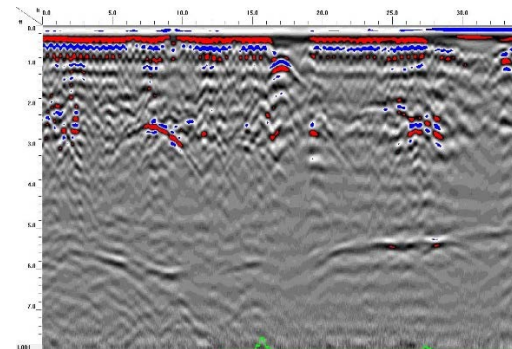
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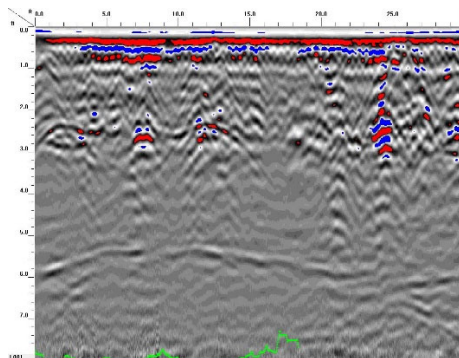
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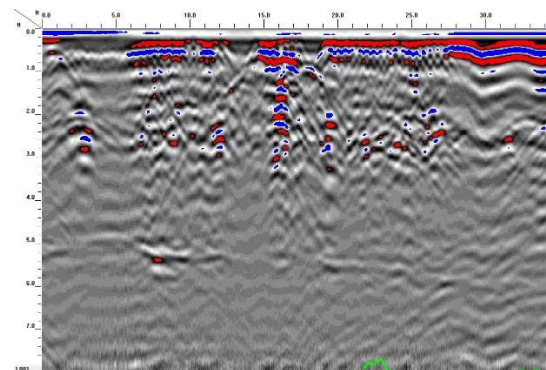
GPR TRANSECT 18



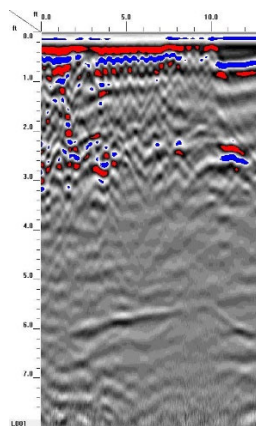
GPR TRANSECT 21



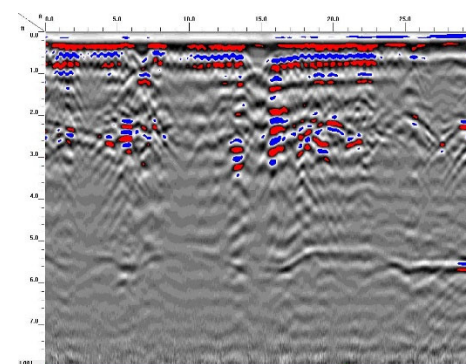
GPR TRANSECT 19



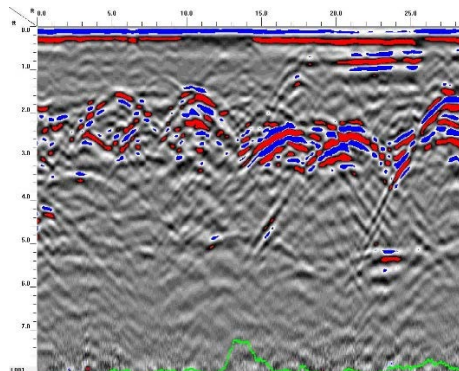
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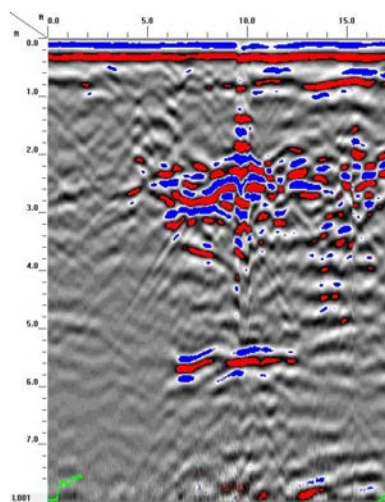
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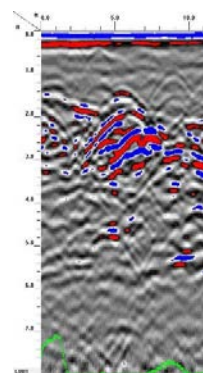
GPR TRANSECT 23



GPR TRANSECT 24



GPR TRANSECT 25



GPR TRANSECT 26

*Preliminary Site Assessment (Parcel 13 - McNeill Oil Co., Inc.)
TIP Number R-5726
5349 NC 211, West End, North Carolina
October 2019*



APPENDIX B

Photographic Log

GEOSYNTEC CONSULTANTS
Photographic Record

Geosyntec
 Consultants of NC, PC

Client: NCDOT

Project Number: GN7039

Site Name: R-5726 - Parcel 13

Site Location: 5349 NC 211, West End, NC

Photograph 1

Date: 29 July 2019

Direction: S-SW

Comments: View of the north side of the Site building.

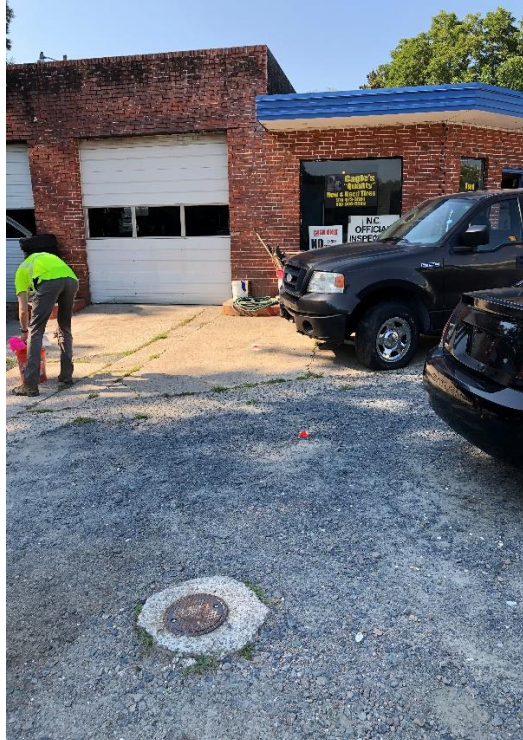


Photograph 2

Date: 29 July 2019

Direction: S

Comments: View of the monitoring well (MW) in front of the Site building (1 of 3 MWs identified on the property; unknown well ID). Located within the ROW in the northern portion of the Site. Monitoring well is not abandoned.



GEOSYNTEC CONSULTANTS

Photographic Record

Geosyntec
Consultants of NC, PC

Client: NCDOT

Project Number: GN7039

Site Name: R-5726 - Parcel 13

Site Location: 5349 NC 211, West End, NC

Photograph 3

Date: 29 July 2019

Direction: E-SE

Comments: View of the MW to the northwest of the Site building (2 of 3 MWs identified on the property; unknown well ID). Located within the ROW near the corner of HWY 73 and Mode Road. Monitoring well is not abandoned.



Photograph 4

Date: 29 July 2019

Direction: E

Comments: View of the northwestern side of the Site building.



GEOSYNTEC CONSULTANTS
Photographic Record

Geosyntec
Consultants of NC, PC

Client: NCDOT

Project Number: GN7039

Site Name: R-5726 - Parcel 13

Site Location: 5349 NC 211, West End, NC

Photograph 5

Date: 29 July 2019

Direction: S

Comments: View of the MW behind the Site building (3 of 3 MWs identified on the property; unknown well ID). Located beyond the proposed ROW. Monitoring well is not abandoned.



*Preliminary Site Assessment (Parcel 13 - McNeill Oil Co., Inc.)
TIP Number R-5726
5349 NC 211, West End, North Carolina
October 2019*



APPENDIX C

Soil Boring Logs

BORING LOG

BORING NO. SB13-1
SHEET 1 OF 1

DRILLING CO.: <u>Suedano</u>		Status: <input type="checkbox"/> Well Installed <input type="checkbox"/> Plugged & Abndd.		SITE: <u>NC007 West End</u>		Borehole Location Sketch Map	
METHOD & TOOLS: <u>DPT</u>				PROJECT NO.: <u>6W7039</u>			
RIG: <u>Geoprobe 7822DT</u>				N: _____ E: _____			
BIT DIAMETER: <u>2 1/4"</u>		DRILLER: <u>Brian T</u>		SUPERVISOR: <u>M Wang</u>			
GROUND ELEV.: <input type="checkbox"/> Surveyed <input type="checkbox"/> Estimated				DATE: <u>8/12/19</u>			
Top (Depth)	<input type="checkbox"/> Feet <input type="checkbox"/> Meters	Lithology Log	Graphic Log	Depth Scale	Well	SPT Blows/6"	Run (No.) Rec. (%)
0-3 bgs		sand and gravel, silt. light-dark brown, dry					100 Hand Auger PID = 0
3-5		brown sand, Medium-coarse, moist					50 PID = 0
5-10		5-5.5 ft, dark brown sand, moist, Medium-coarse					70 PID = 0
		5.5-8.5 ft, brown sand, Medium, moist					
Collect sample @ SB13-01-7.5-8.0 @ 1030							

BORING LOG

BORING NO. SB13-2

SHEET 1 OF 1

DRILLING CO.: Saedawo

METHOD & TOOLS: DPT

RIG: Geoprobe 7822DT

BIT DIAMETER: 2 1/4"

DRILLER: Brian T

GROUND ELEV.: ☐ Surveyed ☐ Estimated

Status:

- ☐ Well Installed
☐ Plugged & Abnd.
☐

SITE: NC DOT West End

PROJECT NO.: GIN7039

N: E:

SUPERVISOR: M Wang

DATE: 8/12/19

Borehole Location Sketch Map

Top (Depth)	<input type="checkbox"/> Feet <input type="checkbox"/> Meters	Lithology Log	Graphic Log	Depth Scale	Well	SPT Blows/6"	Run (No.)	Rec. (%)	Drilling Log
0-3 lbs		Sand and gravel, brown, dry coarse, loose						100	Hand P20 = 0
3-5		Brown sand, silt, moist, mixed with some gravel Medium, loose						70	P20 = 0
5-10		5-6.5, brown, reddish color sandy clay, moist						70	P20 = 0
		5.5-8.5, brown - light brown sand, medium - coarse							
		samples collected @ 7-7.5 ft							
		SB13-02-7-7.5 @ 1100							

BORING LOG

BORING NO. SB13-3

SHEET 1 OF 1

DRILLING CO.: Saedaco

Status:
☐ Well Installed
☐ Plugged & Abnd.
☐

METHOD & TOOLS: DPT

RIG: Geoprobe 7822DT

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

GROUND ELEV.: ☐ Surveyed ☐ Estimated

SITE: NC DOT West End

PROJECT NO.: GN7039

N: E:

SUPERVISOR: M Wang

DATE: 8/12/19

Borehole Location Sketch Map

Top (Depth)	<input type="checkbox"/> Feet <input type="checkbox"/> Meters	Lithology Log	Graphic Log	Depth Scale	Well	SPT Blows/6"	Run (No.)	Rec. (%)	Drilling Log
0-5		Sand and some gravel, brown, dry- moist, coarse, loose							PZD=0 Hand Auger
5-10		4-5 ft, no recovery brown sand/silt, moist, fine-medium							PZD=0
<p>samples collected from 6.5-7.0 ft logs @ 1130 SB13-03-6.5-7.0</p> <p>7.5-8.0 ft logs, sandy clay, moist, tan, dark brown color</p>									

[Handwritten signature]

*Preliminary Site Assessment (Parcel 13 - McNeill Oil Co., Inc.)
TIP Number R-5726
5349 NC 211, West End, North Carolina
October 2019*



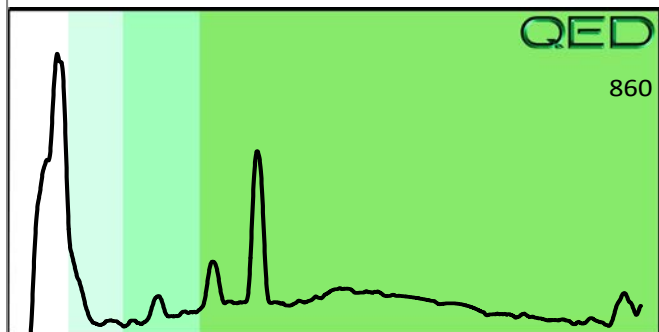
APPENDIX D

Red Lab UVF Report

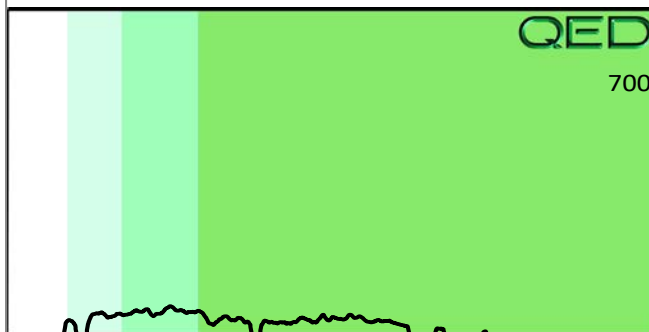


Data generated by HC-1 Analyser

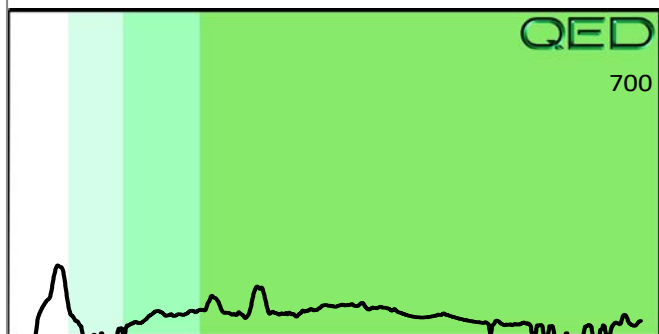
SB13-01-7.5-8.0 : Residual HC,(P)



SB13-02-7-7.5 : PHC not detected



SB13-03-6.5-7.0 : ,(FCM),(BO)



*Preliminary Site Assessment (Parcel 13 - McNeill Oil Co., Inc.)
TIP Number R-5726
5349 NC 211, West End, North Carolina
October 2019*



APPENDIX E

Prism Laboratories Analytical Report



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.

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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 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

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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.

Summary of Detections

08/28/2019

Prism Work Order: 9080260

Prism ID	Client ID	Parameter	Method	Result	Units
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There were no detections reported.



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
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General Chemistry Parameters

% Solids	91.0	% by Weight	0.100	0.100	1	*SM2540 G	8/22/19 10:22	EDV	P9H0353
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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
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General Chemistry Parameters

% Solids	86.2	% by Weight	0.100	0.100	1	*SM2540 G	8/22/19 10:22	EDV	P9H0353
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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
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General Chemistry Parameters

% Solids	95.0	% by Weight	0.100	0.100	1	*SM2540 G	8/22/19 10:22	EDV	P9H0353
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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
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General Chemistry Parameters

% Solids	97.8	% by Weight	0.100	0.100	1	*SM2540 G	8/22/19 10:22	EDV	P9H0353
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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
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General Chemistry Parameters

% Solids	91.4	% by Weight	0.100	0.100	1	*SM2540 G	8/22/19 10:22	EDV	P9H0353
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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

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: SB43-03-7.0-7.5
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
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General Chemistry Parameters

% Solids	75.6	% by Weight	0.100	0.100	1	*SM2540 G	8/22/19 10:22	EDV	P9H0353
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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



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: SB43-04-7.5-8.0
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
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General Chemistry Parameters

% Solids	84.1	% by Weight	0.100	0.100	1	*SM2540 G	8/22/19 10:22	EDV	P9H0353
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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



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: 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
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General Chemistry Parameters

% Solids	90.8	% by Weight	0.100	0.100	1	*SM2540 G	8/22/19 10:22	EDV	P9H0353
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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



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: 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
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General Chemistry Parameters

% Solids	86.8	% by Weight	0.100	0.100	1	*SM2540 G	8/22/19 10:22	EDV	P9H0353
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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



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: 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
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General Chemistry Parameters

% Solids	90.8	% by Weight	0.100	0.100	1	*SM2540 G	8/22/19 10:22	EDV	P9H0353
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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



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: 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
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General Chemistry Parameters

% Solids	94.1	% by Weight	0.100	0.100	1	*SM2540 G	8/22/19 10:22	EDV	P9H0353
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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



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: 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
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General Chemistry Parameters

% Solids	89.3	% by Weight	0.100	0.100	1	*SM2540 G	8/22/19 10:22	EDV	P9H0353
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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



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: 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
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General Chemistry Parameters

% Solids	89.0	% by Weight	0.100	0.100	1	*SM2540 G	8/22/19 10:22	EDV	P9H0353
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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



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: 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
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General Chemistry Parameters

% Solids	90.5	% by Weight	0.100	0.100	1	*SM2540 G	8/22/19 10:22	EDV	P9H0353
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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
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General Chemistry Parameters

% Solids	95.0	% by Weight	0.100	0.100	1	*SM2540 G	8/22/19 10:22	EDV	P9H0353
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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
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General Chemistry Parameters

% Solids	93.2	% by Weight	0.100	0.100	1	*SM2540 G	8/22/19 10:22	EDV	P9H0353
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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
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General Chemistry Parameters

% Solids	92.2	% by Weight	0.100	0.100	1	*SM2540 G	8/22/19 10:22	EDV	P9H0353
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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
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General Chemistry Parameters

% Solids	91.0	% by Weight	0.100	0.100	1	*SM2540 G	8/23/19 8:10	EDV	P9H0369
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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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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: SB69-06-9-9.5
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
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General Chemistry Parameters

% Solids	87.3	% by Weight	0.100	0.100	1	*SM2540 G	8/23/19 8:10	EDV	P9H0369
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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
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
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General Chemistry Parameters

% Solids	93.3	% by Weight	0.100	0.100	1	*SM2540 G	8/23/19 8:10	EDV	P9H0369
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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
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
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General Chemistry Parameters

% Solids	85.7	% by Weight	0.100	0.100	1	*SM2540 G	8/23/19 8:10	EDV	P9H0369
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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
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General Chemistry Parameters

% Solids	83.4	% by Weight	0.100	0.100	1	*SM2540 G	8/23/19 8:10	EDV	P9H0369
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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
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: SB78-02-5.5-6
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
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General Chemistry Parameters

% Solids	97.8	% by Weight	0.100	0.100	1	*SM2540 G	8/23/19 8:10	EDV	P9H0369
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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
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General Chemistry Parameters

% Solids	85.2	% by Weight	0.100	0.100	1	*SM2540 G	8/23/19 8:10	EDV	P9H0369
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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
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General Chemistry Parameters

% Solids	85.1	% by Weight	0.100	0.100	1	*SM2540 G	8/23/19 8:10	EDV	P9H0369
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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
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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
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General Chemistry Parameters

% Solids	96.3	% by Weight	0.100	0.100	1	*SM2540 G	8/23/19 8:10	EDV	P9H0369
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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



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: 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
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General Chemistry Parameters

% Solids	96.6	% by Weight	0.100	0.100	1	*SM2540 G	8/23/19 8:10	EDV	P9H0369
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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
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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
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General Chemistry Parameters

% Solids	92.2	% by Weight	0.100	0.100	1	*SM2540 G	8/23/19 8:10	EDV	P9H0369
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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
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
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General Chemistry Parameters

% Solids	93.9	% by Weight	0.100	0.100	1	*SM2540 G	8/23/19 8:10	EDV	P9H0369
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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
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
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General Chemistry Parameters

% Solids	89.8	% by Weight	0.100	0.100	1	*SM2540 G	8/23/19 8:10	EDV	P9H0369
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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
Toluene-d8	92 %	76-129



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Attn: Michael Wang
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: 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
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General Chemistry Parameters

% Solids	96.4	% by Weight	0.100	0.100	1	*SM2540 G	8/23/19 8:10	EDV	P9H0369
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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
Toluene-d8	91 %	76-129



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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
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General Chemistry Parameters

% Solids	94.4	% by Weight	0.100	0.100	1	*SM2540 G	8/23/19 8:10	EDV	P9H0369
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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
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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
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General Chemistry Parameters

% Solids	80.6	% by Weight	0.100	0.100	1	*SM2540 G	8/23/19 8:10	EDV	P9H0369
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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
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General Chemistry Parameters

% Solids	97.4	% by Weight	0.100	0.100	1	*SM2540 G	8/23/19 8:10	EDV	P9H0369
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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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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
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General Chemistry Parameters

% Solids	88.1	% by Weight	0.100	0.100	1	*SM2540 G	8/23/19 8:10	EDV	P9H0369
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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
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
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General Chemistry Parameters

% Solids	83.5	% by Weight	0.100	0.100	1	*SM2540 G	8/23/19 8:10	EDV	P9H0369
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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
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
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General Chemistry Parameters

% Solids	87.9	% by Weight	0.100	0.100	1	*SM2540 G	8/23/19 8:10	EDV	P9H0369
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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
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General Chemistry Parameters

% Solids	87.0	% by Weight	0.100	0.100	1	*SM2540 G	8/26/19 8:25	EDV	P9H0406
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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
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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
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General Chemistry Parameters

% Solids	89.4	% by Weight	0.100	0.100	1	*SM2540 G	8/26/19 8:25	EDV	P9H0406
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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

Geosyntec Consultants of NC, PC - Raleigh Project: NCDOT R-5726 West End
Attn: Michael Wang
2501 Blue Ridge Road, Ste 430
Raleigh, NC 27607

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

Project No: GN7039

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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Geosyntec Consultants of NC, PC - Raleigh Project: NCDOT R-5726 West End
Attn: Michael Wang
2501 Blue Ridge Road, Ste 430
Raleigh, NC 27607

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

Project No: GN7039

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			

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Geosyntec Consultants of NC, PC - Raleigh Project: NCDOT R-5726 West End
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Raleigh, NC 27607

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

Project No: GN7039

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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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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Raleigh, NC 27607

Prism Work Order: 9080260
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Project No: GN7039

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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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			

Geosyntec Consultants of NC, PC - Raleigh Project: NCDOT R-5726 West End
Attn: Michael Wang
2501 Blue Ridge Road, Ste 430
Raleigh, NC 27607

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

Project No: GN7039

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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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			

Geosyntec Consultants of NC, PC - Raleigh Project: NCDOT R-5726 West End
Attn: Michael Wang
2501 Blue Ridge Road, Ste 430
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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 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 Project: NCDOT R-5726 West End
Attn: Michael Wang
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Raleigh, NC 27607

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

Project No: GN7039

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			



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

Project No: GN7039

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 Project: NCDOT R-5726 West End
Attn: Michael Wang
2501 Blue Ridge Road, Ste 430
Raleigh, NC 27607

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

Project No: GN7039

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

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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

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Full-Service Analytical & Environmental Solutions

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

Client Company Name: Greensync

Report To/Contact Name: Michael Wang

Reporting Address: 7501 Blue Ridge Rd

Ste 420, Raleigh, NC 27607

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

Email Address: mwang@greensync.com

EDD Type: PDF ☒ Excel ☒ Other

Site Location Name: West End

Site Location Physical Address: West End, NC

CHAIN OF CUSTODY RECORD

PAGE 3 OF 4 QUOTE # TO ENSURE PROPER BILLING: 607039

Project Name: West End UST Project: (Yes) (No) (No)

Short Hold Analysis: (Yes) (No) (No)

*Please ATTACH any project specific reporting (QC LEVEL I III IV) provisions and/or QC Requirements

Invoice To: Greensync

Address: Greensync

Purchase Order No./Billing Reference: 607039

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

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

Samples INTACT upon arrival?

Received ON WET ICE?

PROPER PRESERVATIVES indicated?

CUSTODY SEALS INTACT?

VOLATILES rec'd W/OUT HEADSPACE?

PROPER CONTAINERS used?

TEMP: Therm ID: 3014 Observed: 31.2 °C / Corr: 3.3 °C

TO BE FILLED IN BY CLIENT/SAMPLING PERSONNEL

Certification: NELAC DoD FL NC

SC OTHER N/A

Water Chlorinated: YES NO

Sample Iced Upon Collection: YES NO

CLIENT	DATE COLLECTED	TIME COLLECTED MILITARY HOURS	MATRIX (SOIL, WATER OR SLUDGE)	SAMPLE CONTAINER	PRESERVATIVES	ANALYSIS REQUESTED	REMARKS	PRISM LAB ID NO.
SB69-08-6-6.5	8/13/19	1300	Soil	VOA	4	Multiple		21
SB78-01-7-7.5	8/13/19	1550						22
SB78-02-5-5.6	8/14/19	0825						23
SB78-03-6-6.5	8/14/19	0900						24
SB78-04-6-6.5	8/14/19	0930						25
SB89-01-5-5.5	8/15/19	0900						26
SB89-02-5-5.6	8/15/19	0940						27
SB89-03-6-6.5	8/15/19	1030						28
SB89-04-7-7.5	8/15/19	1130						29
SB89-01-2-5.3	8/14/19	1050	Soil	VOA	4	Multiple		30

PRESS DOWN FIRMLY - 3 COPIES

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

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

Relinquished By (Signature): Michael Wang Received By (Signature): Michael Wang Date: 8-15-19 Military/Hours: 0915

Relinquished By (Signature): Michael Wang Received By (Signature): Michael Wang Date: 8-15-19 Military/Hours: 0915

Relinquished By (Signature): Michael Wang Received By (Signature): Michael Wang Date: 8-15-19 Military/Hours: 0915

Relinquished By (Signature): Michael Wang Received By (Signature): Michael Wang Date: 8-15-19 Military/Hours: 0915

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Relinquished By (Signature): Michael Wang Received By (Signature): Michael Wang Date: 8-15-19 Military/Hours: 0915

Relinquished By (Signature): Michael Wang Received By (Signature): Michael Wang Date: 8-15-19 Military/Hours: 0915

PRISM USE ONLY

Site Arrival Time:

Site Departure Time:

Field Tech Fee:

Mileage:

SEE REVERSE FOR TERMS & CONDITIONS



PAGE 4 OF 4 QUOTE # TO ENSURE PROPER BILLING: 6417037
Project Name: 6417037 Next West End
Short Hold Analysis: (Yes) (No) UST Project: (Yes) (No)

LAB USE ONLY

Page 60 of 60

Site Location Physical Address: West Blvd, NC

(SEE REVERSE FOR TERMS & CONDITIONS REGARDING SERVICES
RENDERED BY PRISM LABORATORIES, INC. TO CLIENT)

Sample Iced Upon Collection: YES ☒ NO ☐

CLIENT SAMPLE DESCRIPTION	DATE COLLECTED	TIME COLLECTED MILITARY HOURS	MATRIX (SOIL, WATER OR SLUDGE)	SAMPLE CONTAINER			PRESERVA- TIVES	ANALYSIS REQUESTED				REMARKS	PRISM LAB ID NO.
				*TYPE SEE BELOW	NO.	SIZE							
SB102-02-5-5-6	8/14/19	1135	Soil	10A	4		Multiple					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
SB102-05-4-5-5	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	10A	4		Multiple					BTEx only	39

PRESS DOWN FIRMLY - 3 COPIES

Site Arrival Time:

Site Departure Time:

Field Tech Fee:

Mileage:

**SEE REVERSE FOR
TERMS & CONDITIONS**



Prepared for

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

PRELIMINARY SITE ASSESSMENT
NC 211 IN WEST END
PARCEL 43
5114 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

*Preliminary Site Assessment (Parcel 43 – Susan McCaskill Morgan and Others)
TIP Number R-5726
5114 NC 211, West End, North Carolina
October 2019*



Date: October 21, 2019
WBS Number: 50218.1.1
TIP Number: R-5726
County: Moore County
Description: Preliminary Site Assessment
Address: 5114 NC 211, West End, North Carolina 27376
Parcel ID: Parcel 43 (Susan McCaskill Morgan and Others)
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.

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- Appendix B: Photographic Log
- Appendix C: Soil Boring Logs
- Appendix D: Red Lab UVF Report
- Appendix E: Prism Laboratories Analytical Report

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 5114 NC 211 in West End, North Carolina (the Site). The Site is associated with NCDOT TIP number R-5726, Parcel 43, and owned by Susan McCaskill Morgan and Others. 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 43 (Moore County Parcel number 00022508 [Susan McCaskill Morgan and Others]) is located on 5114 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. According to NCDOT, the Site is a former gas station and auto garage. Currently, the Site has a vacant building. No known UST incidents are associated with the Site.

The property is approximately 1.5 acres and is bounded to the immediate east by NC 211 and to the north, west and south by forest and grassland. Approximately two-thirds of the southern half of the property is covered by a dense tree line and was inaccessible. No investigative activities were performed in this inaccessible portion of the property.

1.3 Scope of Work

The scope of work consisted of a historical Site desktop review, geophysical survey, and sub-surface soil investigation. 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, which shows one above-grade structure on the property. The structure identified in the 1993 aerial photograph appears consistent with the present-day building.
- No significant deviations to the site were identified between 1993 and 2018.
- The Site surroundings (residential and commercial land) appear generally consistent from 1993 to 2018.

2.2 Subject Site Findings

There were no UST incidents associated with the property identified in the initial Site historical review. Further, other (i.e., non-UST) environmental incidents were not identified as part of a cursory desktop review.

Based upon the limited environmental history information, Geosyntec conducted a Site investigation inclusive of a geophysical survey and intrusive activities to screen soil and evaluate if there is contamination 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 accessible portions of the ROW/PUE extent. 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.

Four (4) 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 identified “No Confidence anomaly” (discussed in more detail in the Results section of the report). 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). Soil samples submitted to Prism were analyzed for volatile organic compounds (VOCs) by USEPA Method 8260B, reporting only benzene, toluene, ethylbenzene, and xylenes (BTEX). The 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. The Site is vacant and assumed to operate as a former fuel station and auto-maintenance shop. Most of the southern half of the property is covered by a dense tree line. **Appendix B** provides a photographic log of 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 four (4) EM anomalies. The majority of the EM anomalies were directly attributed to visible features at the ground surface. One metallic anomaly was associated with unknown buried metal and was investigated by GPR. GPR recorded evidence of a possible buried metallic structure or debris; however, the feature was not consistent with what would be expected for an UST. The anomaly was approximately 13 feet long and 6.5 feet wide and is classified by Pyramid as a “No Confidence anomaly”. The finding is buried approximately 4 ft bgs. 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. Four (4) soil borings were completed during this 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

Four (4) 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 SB43-01 soil sample. 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.

¹The 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 on the property located at 5114 NC 211, West End, North Carolina (NCDOT Parcel 43). The property is owned by Susan McCaskill Morgan and Others. The following summarizes the findings of this PSA.

Following a cursory desktop Site review, no environmental incidents associated with the Site were identified. A geophysical survey and intrusive soil investigation were performed as part of this scope of work. Pyramid identified one metallic “No Confidence” anomaly believed to be associated with an unknown buried structure or debris. The anomaly is approximately 13 feet long and 6.5 feet wide and is located approximately 50 feet southeast of the former service station. The finding is located within the proposed PUE and is buried approximately 4 ft bgs. Four (4) soil borings were advanced within the PUE boundary to investigate the environmental impacts on the property, including two (2) soil borings within the immediate vicinity of the underground anomaly. Petroleum impacts to Site soils were not identified during field screening or as part of 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 proposed PUE extent. Geosyntec recommends test pitting to clarify the No Confidence anomaly identified as part of this investigation.

Preliminary Site Assessment (Parcel 43 – Susan McCaskill Morgan and Others)
TIP Number R-5726
5114 NC 211, West End, North Carolina
October 2019



TABLES

Table 1
Soil Boring Coordinates
5114 NC 211, West End, North Carolina 27376
NCDOT Parcel 43
TIP: R-5726
WBS: 50218.1.1

Soil Boring ID	Longitude	Latitude
SB43-01-4.5-5.0	-79.570211	35.245440
SB43-02-6.5-7.0	-79.570258	35.245467
SB43-03-7.0-7.5	-79.570310	35.245576
SB43-04-7.5-8.0	-79.570347	35.245677

Note:

1) Coordinate datum reference: WGS 1984.

Table 2
Soil Analytical Results - TPH by UVF
5114 NC 211, West End, North Carolina 27376
NCDOT Parcel 43
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							
SB43-01-4.5-5.0	4.5-5.0	8/13/2019	<0.3	<0.3	0.98	0.98	0.55	<0.1	<0.012
SB43-02-6.5-7.0	6.5-7.0	8/13/2019	<0.32	<0.32	<0.32	<0.32	<0.06	<0.1	<0.013
SB43-03-7.0-7.5	7.0-7.5	8/13/2019	<0.25	<0.25	<0.25	<0.25	<0.05	<0.08	<0.01
SB43-04-7.5-8.0	7.5-8.0	8/13/2019	<0.28	<0.28	<0.28	<0.28	<0.06	<0.09	<0.011

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
5114 NC 211, West End, North Carolina 27376
NCDOT Parcel 43
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	SB43-01	SB43-02	SB43-03	SB43-04
				Sample Date	8/13/2019	8/13/2019	8/13/2019	8/13/2019
				Sample Depth (ft. bgs)	4.5-5.0	6.5-7.0	7.0-7.5	7.5-8.0
				Sample Type	Grab			
				Units	mg/kg			
Volatile Organic Compounds (VOCs) by EPA Method 8260B								
Benzene	18	164	0.0056	mg/kg	< 0.0053	< 0.0073	< 0.0061	< 0.0054
Ethylbenzene	1,560	40,000	4.9	mg/kg	< 0.0053	< 0.0073	< 0.0061	< 0.0054
m,p-Xylenes	3,129	81,760	4.6	mg/kg	< 0.011	< 0.015	< 0.012	< 0.011
o-Xylene	3,129	81,760	4.6	mg/kg	< 0.0053	< 0.0073	< 0.0061	< 0.0054
Toluene	1,200	32,000	4.3	mg/kg	< 0.0053	< 0.0073	< 0.0061	< 0.0054
Xylene (total)	3,129	81,760	4.6	mg/kg	< 0.016	< 0.022	< 0.018	< 0.016

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

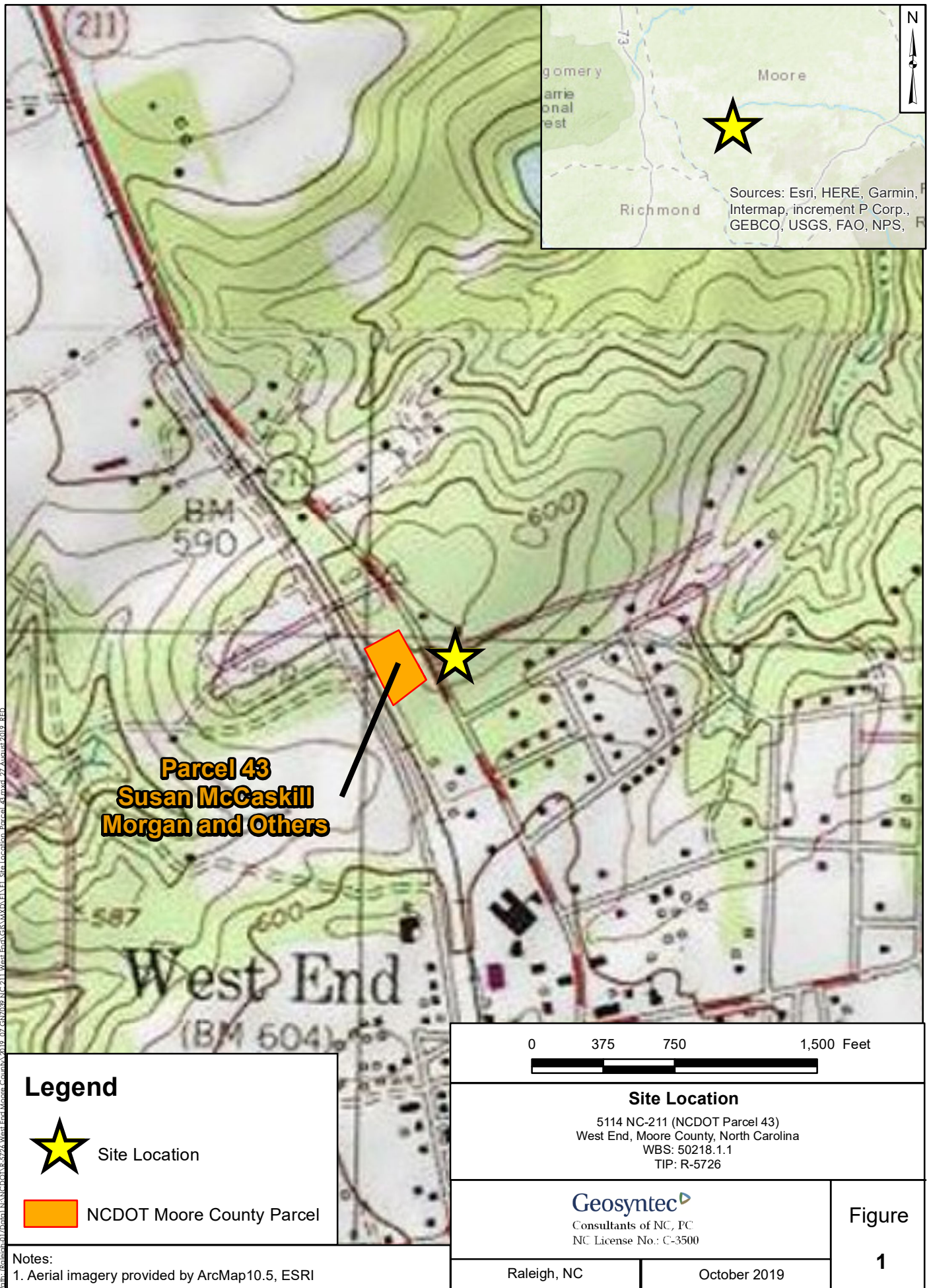
(6) < indicates analyte was not detected above the laboratory reporting limit (RL).

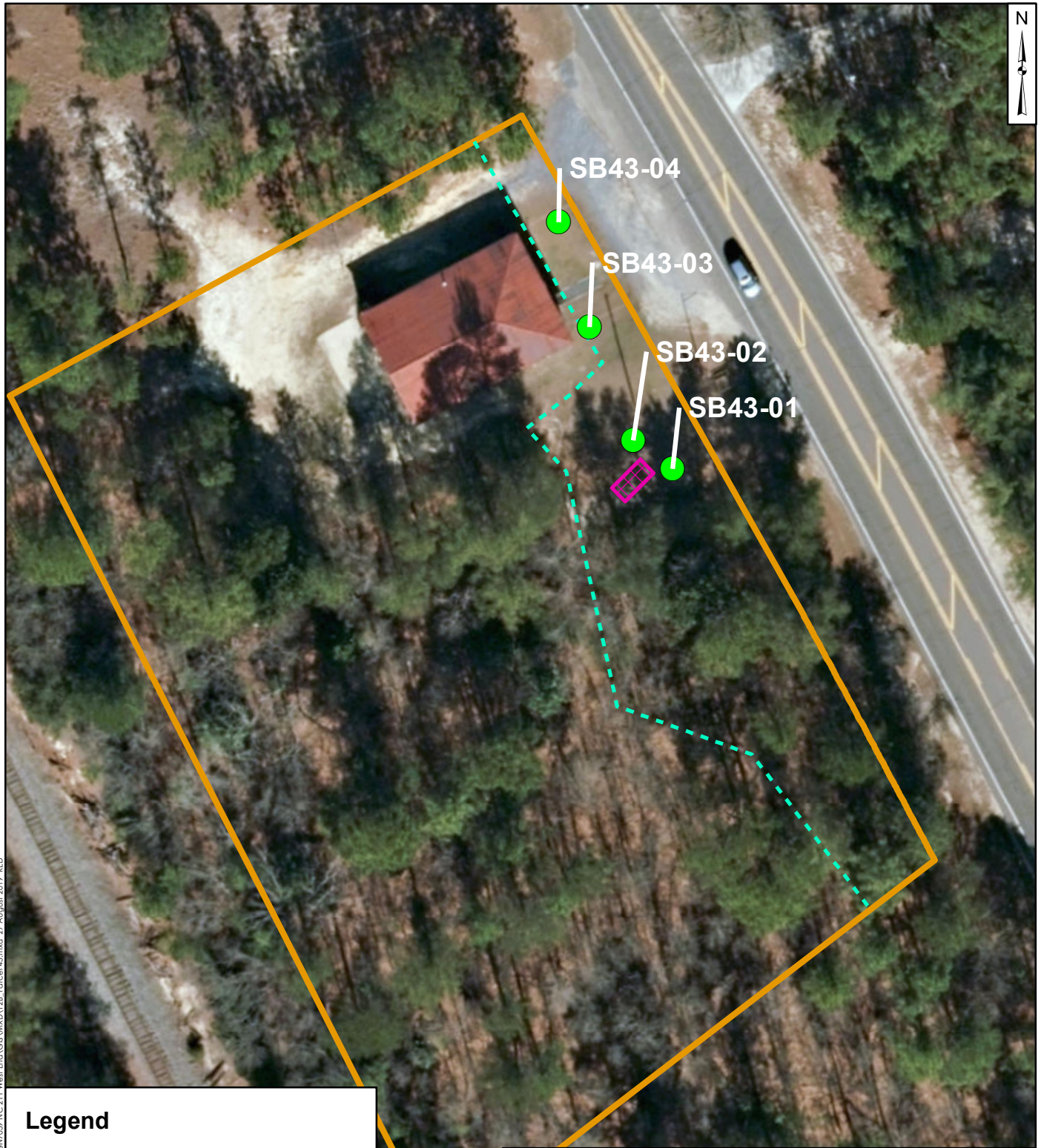
(7) Only benzene, toluene, ethylbenzene, and xylenes (BTEX) were reported.

Preliminary Site Assessment (Parcel 43 – Susan McCaskill Morgan and Others)
TIP Number R-5726
5114 NC 211, West End, North Carolina
October 2019



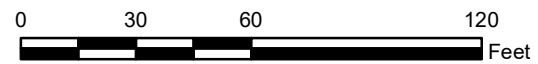
FIGURES





Legend

- Soil Boring Locations
- - - Approximate PUE Extent
- No Confidence Anomaly
- NCDOT Moore County Parcel



Site Layout (Susan McCaskill Morgan and Others)

5114 NC-211 (NCDOT Parcel 43)
 West End, Moore County, North Carolina
 TIP: R-5726
 WBS: 50218.1.1

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 locations are approximated by GPS; locations were not surveyed by a licensed surveyor.

Geosyntec

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

Raleigh, NC

October 2019

Figure

2

Preliminary Site Assessment (Parcel 43 – Susan McCaskill Morgan and Others)
TIP Number R-5726
5114 NC 211, West End, North Carolina
October 2019



APPENDIX A

Geophysical Investigation Report



PYRAMID GEOPHYSICAL SERVICES
(PROJECT 2019-233)

GEOPHYSICAL SURVEY

METALLIC UST INVESTIGATION: PARCEL 43 NCDOT PROJECT R-5726 (50218.1.1)

5114 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: _____

A handwritten signature in black ink, appearing to read "E. Cross".

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

Reviewed by: _____

A handwritten signature in black ink, appearing to read "Doug Canavella".

Douglas A. Canavella, 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 43 - 5114 N.C. 211
West End, Moore County, North Carolina

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Discussion of Results.....	3
<i>Discussion of EM Results</i>	3
<i>Discussion of GPR Results</i>	4
Summary & Conclusions	5
Limitations	5

Figures

- Figure 1 – Parcel 43 - Geophysical Survey Boundaries and Site Photographs
- Figure 2 – Parcel 43 - EM61 Results Contour Map
- Figure 3 – Parcel 43 - GPR Transect Locations and Images
- Figure 4 – Parcel 43 - Location and Size of One No Confidence Anomaly
- Figure 5 – Overlay of Metal Detection Results and One No Confidence Anomaly onto
NCDOT Engineering Plans

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 43, located at 5114 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 extend from the existing edge of pavement into the proposed ROW and/or easements, whichever distance was greater. 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. A total of four EM anomalies were identified. The majority of the EM anomalies were directly attributed to visible cultural features at the ground surface. One metallic anomaly was associated with unknown buried metal and was investigated by GPR. GPR recorded evidence of a possible buried metallic structure or debris; however, the feature was not consistent with what would be expected for a UST. This anomaly was approximately 13 feet long and 6.5 feet wide and was classified as a No Confidence anomaly. No evidence of any additional buried structures was observed. Collectively, the geophysical data recorded evidence of one No Confidence anomaly at Parcel 43.

INTRODUCTION

Pyramid Environmental conducted a geophysical investigation for Geosyntec Consultants of NC, PC at Parcel 43, located at 5114 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 extend from the existing edge of pavement into the proposed ROW and/or easements, whichever distance was greater. 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 a commercial building surrounded by grass, dirt and asphalt surfaces. 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 May 10, 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	Building	✓
2	Metal Poles	
3	Sign/Light	
4	No Confidence Anomaly	✓

The majority of the EM anomalies were directly attributed to visible cultural features at the ground surface, including the building, metal poles, a sign and a light. EM Anomaly 4 was associated with unknown buried metal and was investigated by GPR. GPR was also performed along the east side of the building to verify that the metallic interference observed in this area did not obscure any significant 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 the transect images. A total of three GPR transects were performed at the property. GPR Transects 1 and 2 were performed across the known buried metal associated with EM Anomaly 4. These transects recorded minor isolated hyperbolic reflectors in both directions that were suggestive of a buried metal structure or debris. The size and shape of the possible structure was inconsistent with what would be expected for a UST. For this reason, the feature has been classified as a No Confidence anomaly. The No Confidence anomaly was approximately 13 feet long and 6.5 feet wide. **Figure 4** provides the location and size of the No Confidence anomaly overlain on an aerial photograph as well as ground-level photographs. **Figure 5** provides an overlay of the metal detection results and the No Confidence anomaly onto the NCDOT Engineering plans.

GPR Transect 3 was performed along the east side of the building, and did not record any evidence of buried structures.

Collectively, the geophysical data recorded evidence of one No Confidence anomaly at Parcel 43.

SUMMARY & CONCLUSIONS

Pyramid's evaluation of the EM61 and GPR data collected at Parcel 43 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.
- The majority of the EM anomalies were directly attributed to visible cultural features at the ground surface.
- One metallic anomaly was associated with unknown buried metal and was investigated by GPR.
- GPR recorded evidence of a possible buried metallic structure or debris; however, the feature was not consistent with what would be expected for a UST. This anomaly was approximately 13 feet long and 6.5 feet wide and was classified as a No Confidence anomaly.
- No evidence of any additional buried structures was observed.
- Collectively, the geophysical data recorded evidence of one No Confidence anomaly at Parcel 43.

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 South)



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

PROJECT
PARCEL 43
WEST END, NORTH CAROLINA
NCDOT PROJECT R-5726

TITLE
PARCEL 43 - GEOPHYSICAL
SURVEY BOUNDARIES AND SITE PHOTOGRAPHS

DATE
8/8/2019
PYRAMID
PROJECT #: 2019-233

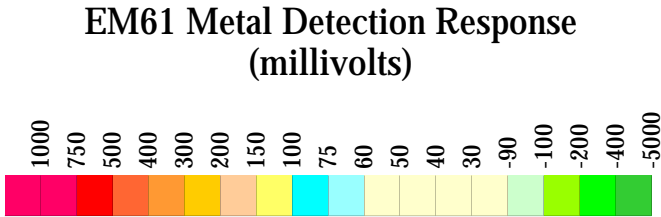
CLIENT
GEOSYNTEC
FIGURE 1

EM61 METAL DETECTION RESULTS



EVIDENCE OF ONE NO
CONFIDENCE ANOMALY 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.



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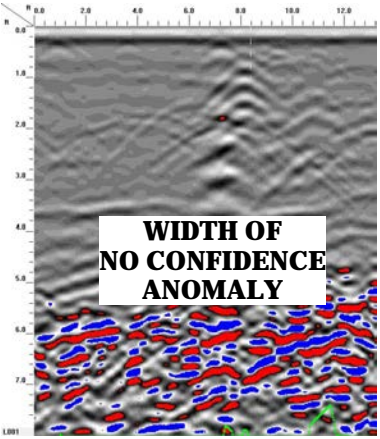
PROJECT
PARCEL 43
WEST END, NORTH CAROLINA
NCDOT PROJECT R-5726

TITLE
PARCEL 43 -
EM61 METAL DETECTION CONTOUR MAP

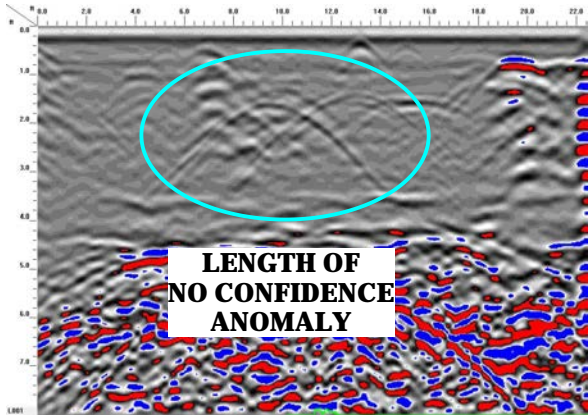
DATE
8/8/2019
PYRAMID
PROJECT #: 2019-233

CLIENT
GEOSYNTEC
FIGURE 2

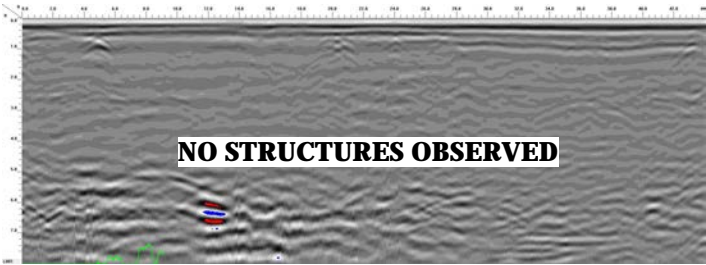
LOCATIONS OF GPR TRANSECTS



GPR TRANSECT 1 (T1)



GPR TRANSECT 2 (T2)



GPR TRANSECT 3 (T3)



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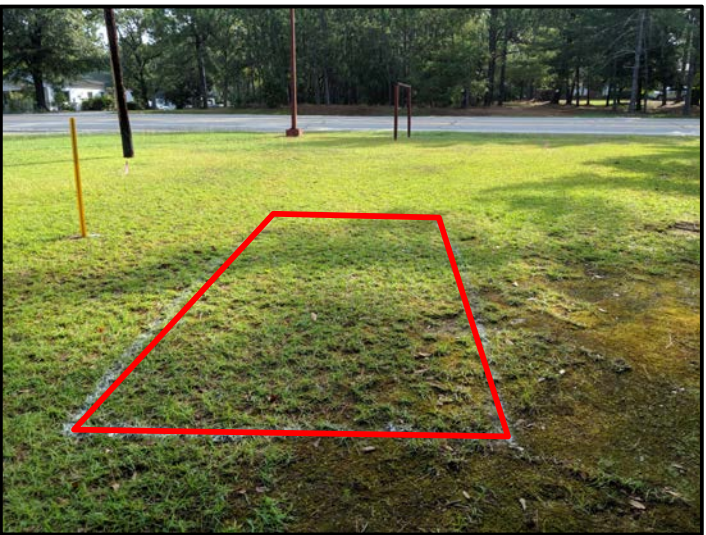
PROJECT
PARCEL 43
WEST END, NORTH CAROLINA
NCDOT PROJECT R-5726

TITLE
PARCEL 43 -
GPR TRANSECT LOCATIONS AND IMAGES

DATE
8/8/2019
PYRAMID
PROJECT #:
2019-233

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GEOSYNTEC
FIGURE 3

LOCATIONS OF ONE NO CONFIDENCE ANOMALY



View of One No Confidence Anomaly
Facing Approximately East



View of One No Confidence Anomaly
Facing Approximately North



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PROJECT
PARCEL 43
WEST END, NORTH CAROLINA
NCDOT PROJECT R-5726

TITLE
**PARCEL 43 - LOCATION AND SIZE OF
ONE NO CONFIDENCE ANOMALY**

DATE
8/8/2019
PYRAMID
PROJECT #: 2019-233

CLIENT
GEOSYNTEC
FIGURE 4

Preliminary Site Assessment (Parcel 43 – Susan McCaskill Morgan and Others)
TIP Number R-5726
5114 NC 211, West End, North Carolina
October 2019



APPENDIX B

Photographic Log

GEOSYNTEC CONSULTANTS
Photographic Record

Geosyntec
Consultants of NC, PC

Client: NCDOT

Project Number: GN7039

Site Name: R-5726 - Parcel 43

Site Location: 5114 NC 211, West End, NC

Photograph 1

Date: 29 July 2019

Direction: SW

Comments: View of the northeastern side of the Site building.



Photograph 2

Date: 29 July 2019

Direction: W

Comments: View of the northeastern NCDOT boundary poles within the ROW and the inaccessible forest area to the south of the Site building.



GEOSYNTEC CONSULTANTS
Photographic Record

Geosyntec
Consultants of NC, PC

Client: NCDOT

Project Number: GN7039

Site Name: R-5726 - Parcel 43

Site Location: 5114 NC 211, West End, NC

Photograph 3

Date: 29 July 2019

Direction: E

Comments: View of the back (western) side of the Site building. Located beyond the proposed ROW.



Photograph 4

Date: 29 July 2019

Direction: W

Comments: View of the southeastern side of the Site building with overhead powerlines.



GEOSYNTEC CONSULTANTS
Photographic Record

Geosyntec
 Consultants of NC, PC

Client: NCDOT

Project Number: GN7039

Site Name: R-5726 - Parcel 43

Site Location: 5114 NC 211, West End, NC

Photograph 5

Date: 29 July 2019

Direction: NW

Comments: View of the western side of the Site building.



Photograph 6

Date: 29 July 2019

Direction: E

Comments: Inside view of the Site building from the northern side window.



Preliminary Site Assessment (Parcel 43 – Susan McCaskill Morgan and Others)
TIP Number R-5726
5114 NC 211, West End, North Carolina
October 2019



APPENDIX C

Soil Boring Logs

BORING LOG

BORING NO. SB43-01

SHEET 1 OF 1

DRILLING CO.: <u>Saedaco</u>		Status: <input type="checkbox"/> Well Installed <input type="checkbox"/> Plugged & Abnd. <input type="checkbox"/>		SITE: <u>Mass Pond</u>		Borehole Location Sketch Map			
METHOD & TOOLS: <u>DPT</u>				PROJECT NO.: <u>GN7039</u>					
RIG: <u>Geoprobe 7822DT</u>				N: _____ E: _____					
BIT DIAMETER: <u>2 1/4"</u>		DRILLER: <u>Brian T</u>		SUPERVISOR: <u>M Wang</u>					
GROUND ELEV.: <input type="checkbox"/> Surveyed <input type="checkbox"/> Estimated				DATE: <u>8/13/19</u>					
Top (Depth)	<input type="checkbox"/> Feet <input type="checkbox"/> Meters	Lithology Log	Graphic Log	Depth Scale	Well	SPT Blows/6"	Run (No.)	Rec. (%)	Drilling Log
0-5		0-0.5 ft, gray silt, dry, loose 0.5-2 ft, gray silt, dry-moist, loose 2-3 ft, brown sand, fine-medium, dry, loose, poor sorted 3-5 ft, brown sand, fine-medium, dry-moist, loose-compact, poor sorted							100 Hand Auger PZO = 0.9 ppm @ 0.5 ft PZO = 0.3 ppm @ 1.5 ft
5-10		6.5-8 ft, sand & silt, some plastic, moist, brown color 8-10 ft, saprolite, reddish color, low-medium plastic, moist. samples are collected from 4.5-5 ft @ 1340 SB43-01-4.5-5							70 PZO = 0

MW

BORING LOG

BORING NO. SB43-02

SHEET 1 OF 1

DRILLING CO.: <u>Saedaco</u>		Status: <input type="checkbox"/> Well Installed <input type="checkbox"/> Plugged & Abnd. <input type="checkbox"/>		SITE: <u>West End</u>		Borehole Location Sketch Map			
METHOD & TOOLS: <u>DPT</u>				PROJECT NO.: <u>GN7039</u>					
RIG: <u>Geoprobe 782201</u>				N: _____ E: _____					
BIT DIAMETER: <u>2 1/4"</u>		DRILLER: <u>Brian J</u>		SUPERVISOR: <u>m Wang</u>					
GROUND ELEV.: <input type="checkbox"/> Surveyed <input type="checkbox"/> Estimated				DATE: <u>8/13/19</u>					
Top (Depth)	<input type="checkbox"/> Feet <input type="checkbox"/> Meters	Lithology Log	Graphic Log	Depth Scale	Well	SPT Blows/6"	Run (No.)	Rec. (%)	Drilling Log
<u>0-5 ft</u>		<u>0-1.5ft, light grey / brown sand, fine, dry, loose</u>							<u>100</u> <u>PWD=0</u> <u>Hand Auger</u>
		<u>1.5-5ft, brown sand, fine-medium, loose, poorly sorted</u>							
<u>5-10 ft</u>		<u>5-6.5ft, not recovered</u>							<u>70</u> <u>PWD=0</u>
		<u>6.5-7ft, brown sand, fine to medium, loose, clay</u>							
		<u>7-10ft, saprolite, reddish sand, mixed with some clay & gravel, hard, low plastic, dry-mott</u>							
<u>Samples are collected from</u> <u>6.5-7ft @ 1400</u> <u>SB43-02-6.5-7</u>									

m

BORING LOG

BORING NO. SB43-03
SHEET 1 OF 1

DRILLING CO.: <u>Saedawo</u>		Status: <input type="checkbox"/> Well Installed <input type="checkbox"/> Plugged & Abnd.		SITE: <u>West End</u>		Borehole Location Sketch Map			
METHOD & TOOLS: <u>DPT</u>				PROJECT NO.: <u>GN7039</u>					
RIG: <u>Geoprobe 782207</u>				N: _____ E: _____					
BIT DIAMETER: <u>2 1/4"</u>		DRILLER: <u>Brian T</u>		SUPERVISOR: <u>M Wang</u>					
GROUND ELEV.: <input type="checkbox"/> Surveyed <input type="checkbox"/> Estimated		DATE: <u>8/13/19</u>							
Top (Depth)	<input type="checkbox"/> Feet <input type="checkbox"/> Meters	Lithology Log	Graphic Log	Depth Scale	Well	SPT Blows/6"	Run (No.)	Rec. (%)	Drilling Log
0-3 ft		0-1 ft, light grey sand, fine, dry, loose 1-3 ft, brown sand, fine to medium, dry-moist, loose, poor sorted					100		Hand Auger PTD = 0
3-5 ft		Saprolite, brown sand, with reddish clay & gravels, dry-moist, hard					100		PTD = 0
5-10 ft		5-5.5 ft no recovery 5.5-10 ft, same as interval 3-5 ft.							
Samples are collected from 7-7.5 ft @ 1430 SB43-03-7-7.5 ft									

DRILLING CO.: <u>Sandaco</u>		Status: <input type="checkbox"/> Well Installed <input type="checkbox"/> Plugged & Abnd. <input type="checkbox"/>		SITE: <u>West End</u>		Borehole Location Sketch Map			
METHOD & TOOLS: <u>DPT</u>				PROJECT NO.: <u>GN7039</u>					
RIG: <u>Geoprobe 7822DT</u>				N: E:					
BIT DIAMETER: <u>2 1/4"</u>		DRILLER: <u>Brian T</u>		SUPERVISOR: <u>M Wang</u>					
GROUND ELEV.: <input type="checkbox"/> Surveyed <input type="checkbox"/> Estimated		DATE: <u>8/13/19</u>							
Top (Depth)	<input type="checkbox"/> Feet <input type="checkbox"/> Meters	Lithology Log	Graphic Log	Depth Scale	Well	SPT Blows/6"	Run (No.)	Rec. (%)	Drilling Log
0-5 ft		0-1 ft. light gray sand, fines, dry, loose							100% Hard Auger PLD=0
1-5 ft		1-4.5 ft. brown sand, fine to medium, dry-moist, loose poorly sorted.							
		4.5-5 ft. brown sand, mixed with some gray clay. Fine-medium, dry-moist, loose.							
5-10 ft		saprolite, brown sand, mixed with reddish clay & gravels. Dry-moist, hard, low plastic.							100 PLD=0
Samples are collected from 7.5-8 ft @ 1445 SB43-04-7.5-8									

MW

Preliminary Site Assessment (Parcel 43 – Susan McCaskill Morgan and Others)
TIP Number R-5726
5114 NC 211, West End, North Carolina
October 2019

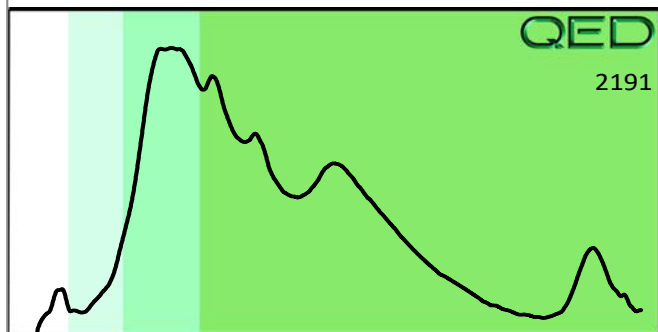


APPENDIX D

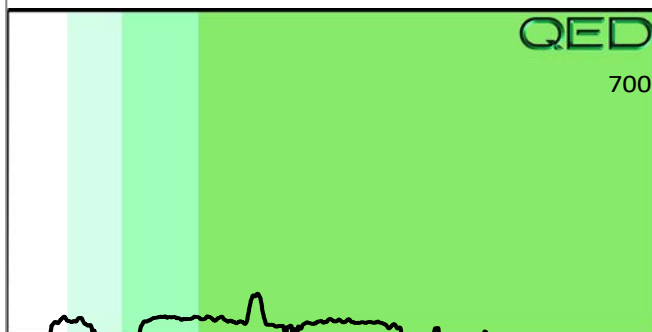
Red Lab UVF Report

Project: R5726

SB43-01-4.5-5.0 : V.Deg.PHC



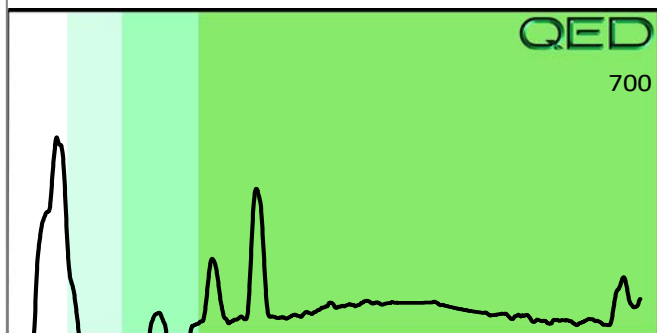
SB43-02-6.5-7.0 : ,(FCM)



SB43-03-7-7.5 : Residual HC,(BO)



SB43-7.5-8.0 : ,(FCM),(P)



Preliminary Site Assessment (Parcel 43 – Susan McCaskill Morgan and Others)
TIP Number R-5726
5114 NC 211, West End, North Carolina
October 2019



APPENDIX E

Prism Laboratories Analytical Report



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.

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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 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

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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.

Summary of Detections

08/28/2019

Prism Work Order: 9080260

Prism ID	Client ID	Parameter	Method	Result	Units
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There were no detections reported.



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
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General Chemistry Parameters

% Solids	91.0	% by Weight	0.100	0.100	1	*SM2540 G	8/22/19 10:22	EDV	P9H0353
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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
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General Chemistry Parameters

% Solids	86.2	% by Weight	0.100	0.100	1	*SM2540 G	8/22/19 10:22	EDV	P9H0353
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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
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General Chemistry Parameters

% Solids	95.0	% by Weight	0.100	0.100	1	*SM2540 G	8/22/19 10:22	EDV	P9H0353
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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
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General Chemistry Parameters

% Solids	97.8	% by Weight	0.100	0.100	1	*SM2540 G	8/22/19 10:22	EDV	P9H0353
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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
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General Chemistry Parameters

% Solids	91.4	% by Weight	0.100	0.100	1	*SM2540 G	8/22/19 10:22	EDV	P9H0353
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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



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: SB43-03-7.0-7.5
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
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General Chemistry Parameters

% Solids	75.6	% by Weight	0.100	0.100	1	*SM2540 G	8/22/19 10:22	EDV	P9H0353
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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



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: SB43-04-7.5-8.0
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
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General Chemistry Parameters

% Solids	84.1	% by Weight	0.100	0.100	1	*SM2540 G	8/22/19 10:22	EDV	P9H0353
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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



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: 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
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General Chemistry Parameters

% Solids	90.8	% by Weight	0.100	0.100	1	*SM2540 G	8/22/19 10:22	EDV	P9H0353
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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



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: 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
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General Chemistry Parameters

% Solids	86.8	% by Weight	0.100	0.100	1	*SM2540 G	8/22/19 10:22	EDV	P9H0353
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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



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: 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
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General Chemistry Parameters

% Solids	90.8	% by Weight	0.100	0.100	1	*SM2540 G	8/22/19 10:22	EDV	P9H0353
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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



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: 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
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General Chemistry Parameters

% Solids	94.1	% by Weight	0.100	0.100	1	*SM2540 G	8/22/19 10:22	EDV	P9H0353
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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



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: 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
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General Chemistry Parameters

% Solids	89.3	% by Weight	0.100	0.100	1	*SM2540 G	8/22/19 10:22	EDV	P9H0353
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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



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: 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
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General Chemistry Parameters

% Solids	89.0	% by Weight	0.100	0.100	1	*SM2540 G	8/22/19 10:22	EDV	P9H0353
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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



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: 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
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General Chemistry Parameters

% Solids	90.5	% by Weight	0.100	0.100	1	*SM2540 G	8/22/19 10:22	EDV	P9H0353
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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
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General Chemistry Parameters

% Solids	95.0	% by Weight	0.100	0.100	1	*SM2540 G	8/22/19 10:22	EDV	P9H0353
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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
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General Chemistry Parameters

% Solids	93.2	% by Weight	0.100	0.100	1	*SM2540 G	8/22/19 10:22	EDV	P9H0353
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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
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General Chemistry Parameters

% Solids	92.2	% by Weight	0.100	0.100	1	*SM2540 G	8/22/19 10:22	EDV	P9H0353
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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
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General Chemistry Parameters

% Solids	91.0	% by Weight	0.100	0.100	1	*SM2540 G	8/23/19 8:10	EDV	P9H0369
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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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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: SB69-06-9-9.5
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
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General Chemistry Parameters

% Solids	87.3	% by Weight	0.100	0.100	1	*SM2540 G	8/23/19 8:10	EDV	P9H0369
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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
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General Chemistry Parameters

% Solids	93.3	% by Weight	0.100	0.100	1	*SM2540 G	8/23/19 8:10	EDV	P9H0369
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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
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
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General Chemistry Parameters

% Solids	85.7	% by Weight	0.100	0.100	1	*SM2540 G	8/23/19 8:10	EDV	P9H0369
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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
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General Chemistry Parameters

% Solids	83.4	% by Weight	0.100	0.100	1	*SM2540 G	8/23/19 8:10	EDV	P9H0369
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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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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: SB78-02-5.5-6
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
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General Chemistry Parameters

% Solids	97.8	% by Weight	0.100	0.100	1	*SM2540 G	8/23/19 8:10	EDV	P9H0369
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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



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: 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
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General Chemistry Parameters

% Solids	85.2	% by Weight	0.100	0.100	1	*SM2540 G	8/23/19 8:10	EDV	P9H0369
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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



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: 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
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General Chemistry Parameters

% Solids	85.1	% by Weight	0.100	0.100	1	*SM2540 G	8/23/19 8:10	EDV	P9H0369
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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



Geosyntec Consultants of NC, PC - Raleigh
Attn: Michael Wang
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: 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
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General Chemistry Parameters

% Solids	96.3	% by Weight	0.100	0.100	1	*SM2540 G	8/23/19 8:10	EDV	P9H0369
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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



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: 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
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General Chemistry Parameters

% Solids	96.6	% by Weight	0.100	0.100	1	*SM2540 G	8/23/19 8:10	EDV	P9H0369
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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
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General Chemistry Parameters

% Solids	92.2	% by Weight	0.100	0.100	1	*SM2540 G	8/23/19 8:10	EDV	P9H0369
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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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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: SB89-04-7-7.5

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
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General Chemistry Parameters

% Solids	93.9	% by Weight	0.100	0.100	1	*SM2540 G	8/23/19 8:10	EDV	P9H0369
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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
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
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General Chemistry Parameters

% Solids	89.8	% by Weight	0.100	0.100	1	*SM2540 G	8/23/19 8:10	EDV	P9H0369
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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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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
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General Chemistry Parameters

% Solids	96.4	% by Weight	0.100	0.100	1	*SM2540 G	8/23/19 8:10	EDV	P9H0369
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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
Toluene-d8	91 %	76-129



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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
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General Chemistry Parameters

% Solids	94.4	% by Weight	0.100	0.100	1	*SM2540 G	8/23/19 8:10	EDV	P9H0369
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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
Toluene-d8	91 %	76-129



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Attn: Michael Wang
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: 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
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General Chemistry Parameters

% Solids	80.6	% by Weight	0.100	0.100	1	*SM2540 G	8/23/19 8:10	EDV	P9H0369
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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
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General Chemistry Parameters

% Solids	97.4	% by Weight	0.100	0.100	1	*SM2540 G	8/23/19 8:10	EDV	P9H0369
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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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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
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General Chemistry Parameters

% Solids	88.1	% by Weight	0.100	0.100	1	*SM2540 G	8/23/19 8:10	EDV	P9H0369
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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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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
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General Chemistry Parameters

% Solids	83.5	% by Weight	0.100	0.100	1	*SM2540 G	8/23/19 8:10	EDV	P9H0369
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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
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
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General Chemistry Parameters

% Solids	87.9	% by Weight	0.100	0.100	1	*SM2540 G	8/23/19 8:10	EDV	P9H0369
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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
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General Chemistry Parameters

% Solids	87.0	% by Weight	0.100	0.100	1	*SM2540 G	8/26/19 8:25	EDV	P9H0406
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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
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General Chemistry Parameters

% Solids	89.4	% by Weight	0.100	0.100	1	*SM2540 G	8/26/19 8:25	EDV	P9H0406
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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

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

Project No: GN7039

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%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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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			

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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 (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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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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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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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			

Geosyntec Consultants of NC, PC - Raleigh Project: NCDOT R-5726 West End
Attn: Michael Wang
2501 Blue Ridge Road, Ste 430
Raleigh, NC 27607

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

Project No: GN7039

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			

Geosyntec Consultants of NC, PC - Raleigh Project: NCDOT R-5726 West End
Attn: Michael Wang
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Prism Work Order: 9080260
Time Submitted: 8/16/2019 9:15:00AM

Project No: GN7039

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 Project: NCDOT R-5726 West End
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Prism Work Order: 9080260
Time Submitted: 8/16/2019 9:15:00AM

Project No: GN7039

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			



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

Project No: GN7039

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 Project: NCDOT R-5726 West End
Attn: Michael Wang
2501 Blue Ridge Road, Ste 430
Raleigh, NC 27607

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

Project No: GN7039

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

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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

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Full-Service Analytical & Environmental Solutions

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

CHAIN OF CUSTODY RECORD

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PAGE 1 OF 4 QUOTE # TO ENSURE PROPER BILLING: 6127039

Project Name: NC DOT, West End
Short Hold Analysis: (Yes) (No) NC DOT, West End NC DOT, West End
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: 449 Springbrook Road, Charlotte, NC 28217

Samples INTACT upon arrival? YES
Received ON WET ICE? YES
PROPER PRESERVATIVES indicated? YES
Received WITHIN HOLDING TIMES? YES
CUSTODY SEALS INTACT? YES
VOLATILES rec'd W/OUT HEADSPACE? YES
PROPER CONTAINERS used? YES
TEMP: Therm ID: 1119 Observed: 3.2 °C / Corr: 3.3 °C

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 Other
Site Location Name: NC DOT, West End
Site Location Physical Address: West End, NC

Purchase Order No./Billing Reference: 6127039
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.
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RENDERED BY PRISM LABORATORIES, INC. TO CLIENT)

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

CLIENT	DATE COLLECTED	TIME COLLECTED MILITARY HOURS	MATRIX (SOIL, WATER OR SLUDGE)	SAMPLE CONTAINER	PRESERVATIVES	ANALYSIS REQUESTED	REMARKS	PRISM LAB ID NO.
SB13-01-75-80	8/13/19	1030	Soil	VDA 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
SB66867-01-5-5.5	8/13/19	0840				✓		08
SB66867-02-4-4.5	8/13/19	0910	V			✓		09
SB66867-03-6-5.7	8/13/19	1020	Soil	VDA 4	Multiple	✓	BTEX ONLY	10

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

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Relinquished By: (Signature) Michael Wang Received By: (Signature) Michael Wang Date: 8-16-19 Military/Hours: 1600

Relinquished By: (Signature) Michael Wang Received By: (Signature) Michael Wang Date: 8-16-19 Military/Hours: 1600

Relinquished By: (Signature) Michael Wang Received By: (Signature) Michael Wang Date: 8-16-19 Military/Hours: 1600

Method of Shipment: Hand-Delivered 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.

Method of Shipment: Hand-Delivered 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.

Method of Shipment: Hand-Delivered 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.

*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



Full-Service Analytical & Environmental Solutions

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

Client Company Name: Greensync

Report To/Contact Name: Michael Wang

Reporting Address: 7501 Blue Ridge Rd

Ste 420, Raleigh, NC 27607

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

Email Address: mwang@greensync.com

EDD Type: PDF ☒ Excel ☒ Other

Site Location Name: West End

Site Location Physical Address: West End, NC

CHAIN OF CUSTODY RECORD

PAGE 3 OF 4 QUOTE # TO ENSURE PROPER BILLING: 607039

Project Name: West End UST Project: (Yes) (No) (No)

Short Hold Analysis: (Yes) (No) (No)

*Please ATTACH any project specific reporting (QC LEVEL I III IV)

provisions and/or QC Requirements

Invoice To: Greensync

Address: 7501 Blue Ridge Rd

Purchase Order No./Billing Reference: 607039

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

Samples received after 14:00 will be processed next business day.

Turnaround time is based on business days, excluding weekends and holidays.

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LAB USE ONLY

Samples INTACT upon arrival?

Received ON WET ICE?

PROPER PRESERVATIVES indicated?

CUSTODY SEALS INTACT?

VOLATILES rec'd W/OUT HEADSPACE?

PROPER CONTAINERS used?

TEMP: Therm ID: 3014 Observed: 31.2 °C / Corr: 3.3 °C

TO BE FILLED IN BY CLIENT/SAMPLING PERSONNEL

Certification: NELAC DoD FL NC

Water Chlorinated: YES NO OTHER N/A

Sample Iced Upon Collection: YES NO

CLIENT	DATE COLLECTED	TIME COLLECTED MILITARY HOURS	MATRIX (SOIL, WATER OR SLUDGE)	SAMPLE CONTAINER	PRESERVATIVES	ANALYSIS REQUESTED	REMARKS	PRISM LAB ID NO.
SB69-08-6-6.5	8/13/19	1300	Soil	VOA 4	Multiple	X	BTEx ONLY	21
SB78-01-7-7.5	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
SB78-04-6-6.5	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
SB89-03-6-6.5	8/15/19	1030				X		28
SB89-04-7-7.5	8/15/19	1130				X		29
SB89-01-2-5.3	8/14/19	1050	Soil	VOA 4	Multiple	X	BTEx ONLY	30

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

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Relinquished By (Signature): Michael Wang Received By (Signature): Michael Wang Date: 8-15-19 Military/Hours: 0915

Relinquished By (Signature): Michael Wang Received By (Signature): Michael Wang Date: 8-15-19 Military/Hours: 0915

Relinquished By (Signature): Michael Wang Received By (Signature): Michael Wang Date: 8-15-19 Military/Hours: 0915

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Relinquished By (Signature): Michael Wang Received By (Signature): Michael Wang Date: 8-15-19 Military/Hours: 0915

Relinquished By (Signature): Michael Wang Received By (Signature): Michael Wang Date: 8-15-19 Military/Hours: 0915

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Site Arrival Time:

Site Departure Time:

Field Tech Fee:

Mileage:

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ORIGINAL

CHAIN OF CUSTODY RECORD

PAGE 4 OF 4 QUOTE # TO ENSURE PROPER BILLING: 647037

Project Name: 647037 NCOT West End
Short Hold Analysis: (Yes) (No) NCOT West End UST Project: (Yes) (No) NCOT West End
*Please ATTACH any project specific reporting (QC LEVEL I III IV) provisions and/or QC Requirements
Invoice To: Greystone
Address: Greystone

LAB USE ONLY

Samples INTACT upon arrival? YES ☒ NO ☐ N/A ☐

Received ON WET ICE? YES ☒ NO ☐ N/A ☐

PROPER PRESERVATIVES indicated? YES ☒ NO ☐ N/A ☐

Received WITHIN HOLDING TIMES? YES ☒ NO ☐ N/A ☐

CUSTODY SEALS INTACT? YES ☒ NO ☐ N/A ☐

VOLATILES rec'd W/OUT HEADSPACE? YES ☒ NO ☐ N/A ☐

PROPER CONTAINERS used? YES ☒ NO ☐ N/A ☐

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

Client Company Name: Greystone
Report To/Contact Name: Michael Wang
Reporting Address: 2501 Blue Ridge Rd
Ste 420 Raleigh, NC 27607
Phone: 919-551-5334 Fax (Yes) (No): NO
Email Address: info@greystone.com
EDD Type: PDF ☒ Excel ☒ Other ☐
Site Location Name: NCOT 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
Samples received after 14:00 will be processed next business day.
Turnaround time is based on business days, excluding weekends and holidays.
(SEE REVERSE FOR TERMS & CONDITIONS REGARDING SERVICES
RENDERED BY PRISM LABORATORIES, INC. TO CLIENT)

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

CLIENT SAMPLE DESCRIPTION	DATE COLLECTED	TIME COLLECTED MILITARY HOURS	MATRIX (SOIL, WATER OR SLUDGE)	SAMPLE CONTAINER			PRESERVATIVES	ANALYSIS REQUESTED		REMARKS	PRISM LAB ID NO.
				*TYPE SEE BELOW	NO.	SIZE					
SB102-02-5-5-6	8/14/19	1135	Soil	VOA	4		Multiple			BTEx ONLY	31
SB102-03-7-7-5	8/14/19	1300									32
SB102-04-7-5-8	8/14/19	1330									33
SB102-05-4-5-5	8/14/19	1400									34
SB102-06-0-5-1	8/14/19	1450									35
SB102-07-7-5-8	8/14/19	1535									36
SB102-08-8-8-5	8/14/19	1605									37
SB102-09-8-5-9	8/14/19	1645									38
SB102-10-9-9-5	8/14/19	1720	Soil	VOA	4		Multiple			BTEx ONLY	39

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

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Relinquished By: (Signature) [Signature] Received By: (Signature) _____ Date: 8-16-19 Military/Hours: 0915

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

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

*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



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

*Preliminary Site Assessment (Parcel 69 – Brian K. Neal and Karen P. Neal)
TIP Number R-5726
4331 NC 211, West End, North Carolina
October 2019*



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.

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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.

Preliminary Site Assessment (Parcel 69 – Brian K. Neal and Karen P. Neal)
TIP Number R-5726
4331 NC 211, West End, North Carolina
October 2019



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.

¹The 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.

Preliminary Site Assessment (Parcel 69 – Brian K. Neal and Karen P. Neal)
TIP Number R-5726
4331 NC 211, West End, North Carolina
October 2019



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.

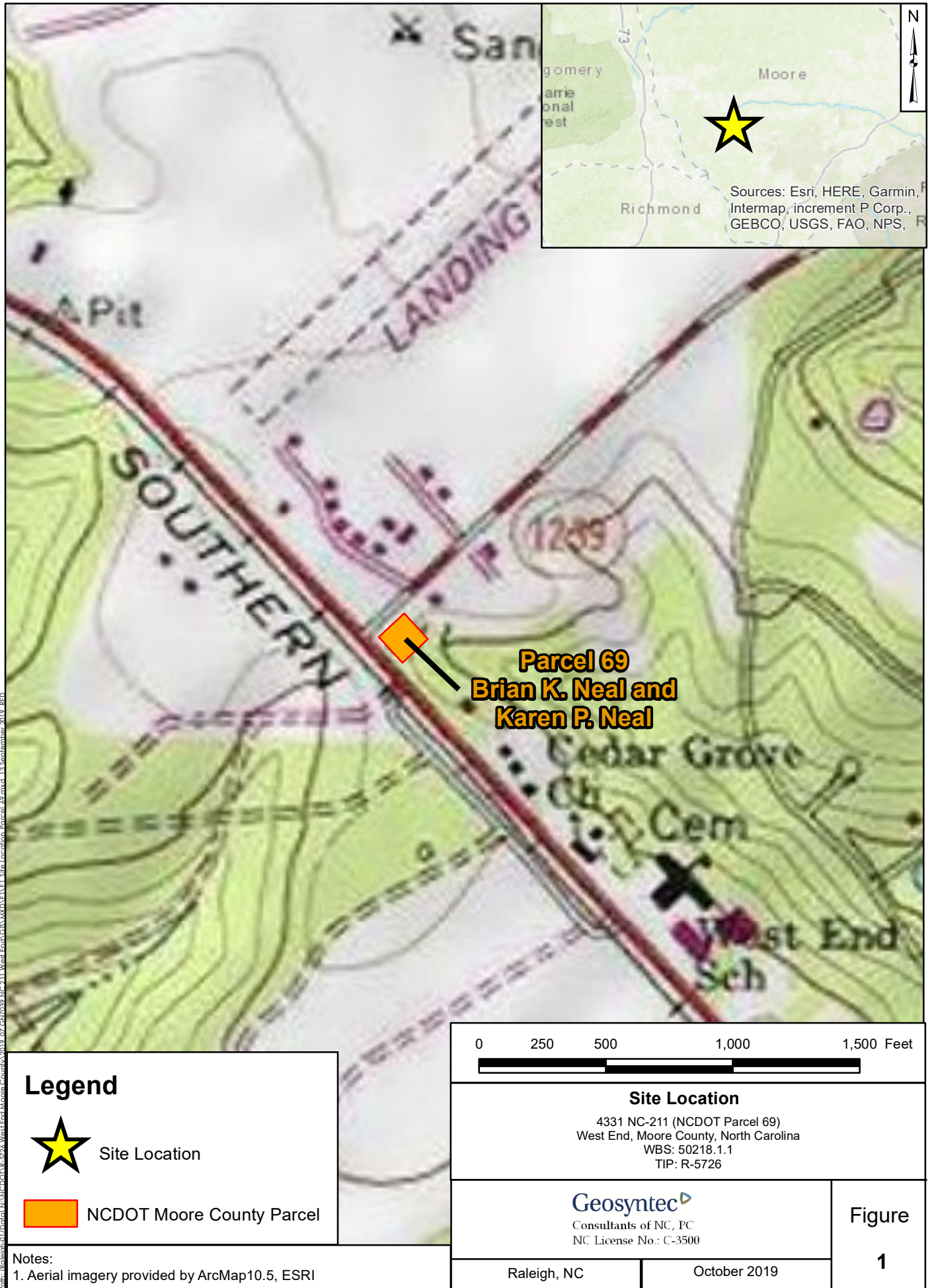
(6) < indicates analyte was not detected above the laboratory reporting limit (RL).

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

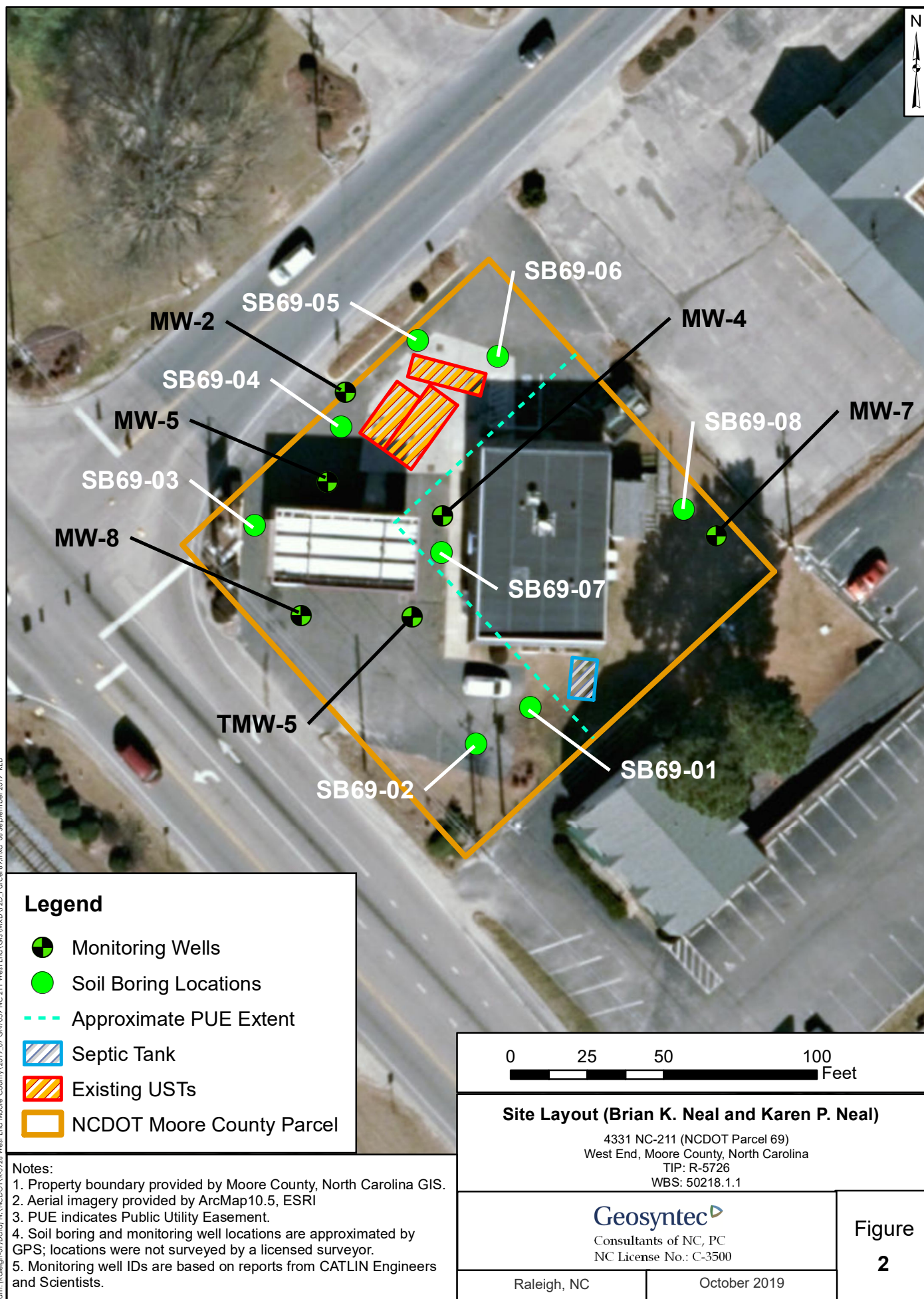
Preliminary Site Assessment (Parcel 69 – Brian K. Neal and Karen P. Neal)
TIP Number R-5726
4331 NC 211, West End, North Carolina
October 2019

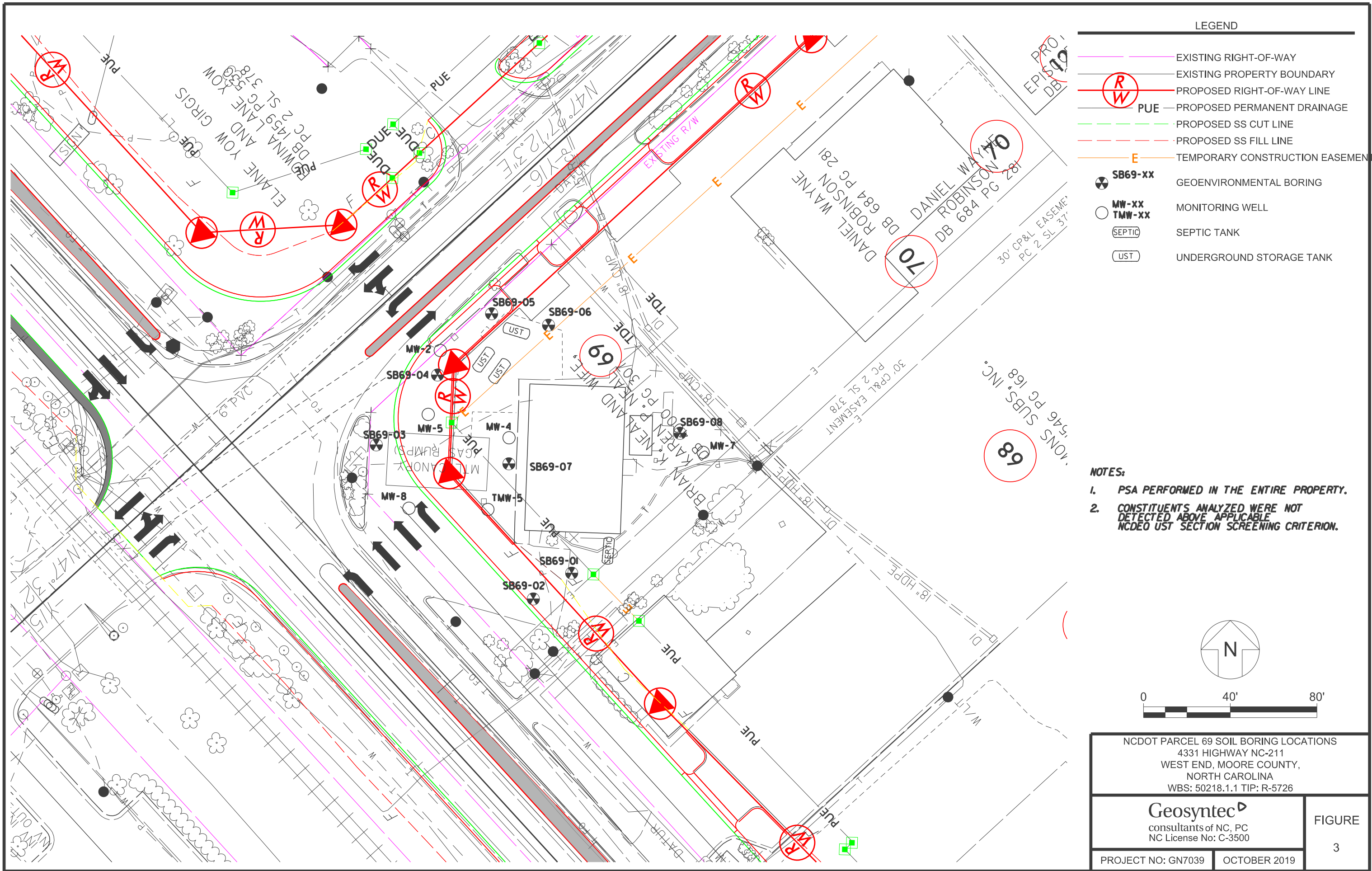


FIGURES



Path: (Raleigh-01) \Data\N\NCDOT\8-5726 West End Moore County\19-07 GN7039 NC211 West End\GIS\WVD\2D Parcel 49.mxd 06 September 2019 RED





Preliminary Site Assessment (Parcel 69 – Brian K. Neal and Karen P. Neal)
TIP Number R-5726
4331 NC 211, West End, North Carolina
October 2019



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: _____

A handwritten signature in black ink, appearing to read "E. Cross", written over a horizontal line.

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

Reviewed by: _____

A handwritten signature in black ink, appearing to read "Doug Canavella", written over a horizontal line.

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

503 INDUSTRIAL AVENUE, GREENSBORO, NC 27406

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C257: GEOLOGY

C1251: ENGINEERING

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

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Executive Summary	1
Introduction.....	2
Field Methodology.....	2
Discussion of Results.....	3
<i>Discussion of EM Results</i>	3
<i>Discussion of GPR Results</i>	4
Summary & Conclusions	5
Limitations	6

Figures

- Figure 1 – Parcel 69 - Geophysical Survey Boundaries and Site Photographs
- Figure 2 – Parcel 69 - EM61 Results Contour Map
- Figure 3 – Parcel 69 - GPR Transect Locations and Images
- Figure 4 – Parcel 69 - Locations and Sizes of Three Known USTs and One Septic Tank
- Figure 5 – Overlay of Metal Detection Results, Three Known USTs and One Septic Tank
 onto NCDOT Engineering Plans

Appendices

- Appendix A – GPR Transect Images

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)



503 INDUSTRIAL AVENUE
GREENSBORO, NC 27406
(336) 335-3174 (p) (336) 691-0648 (f)
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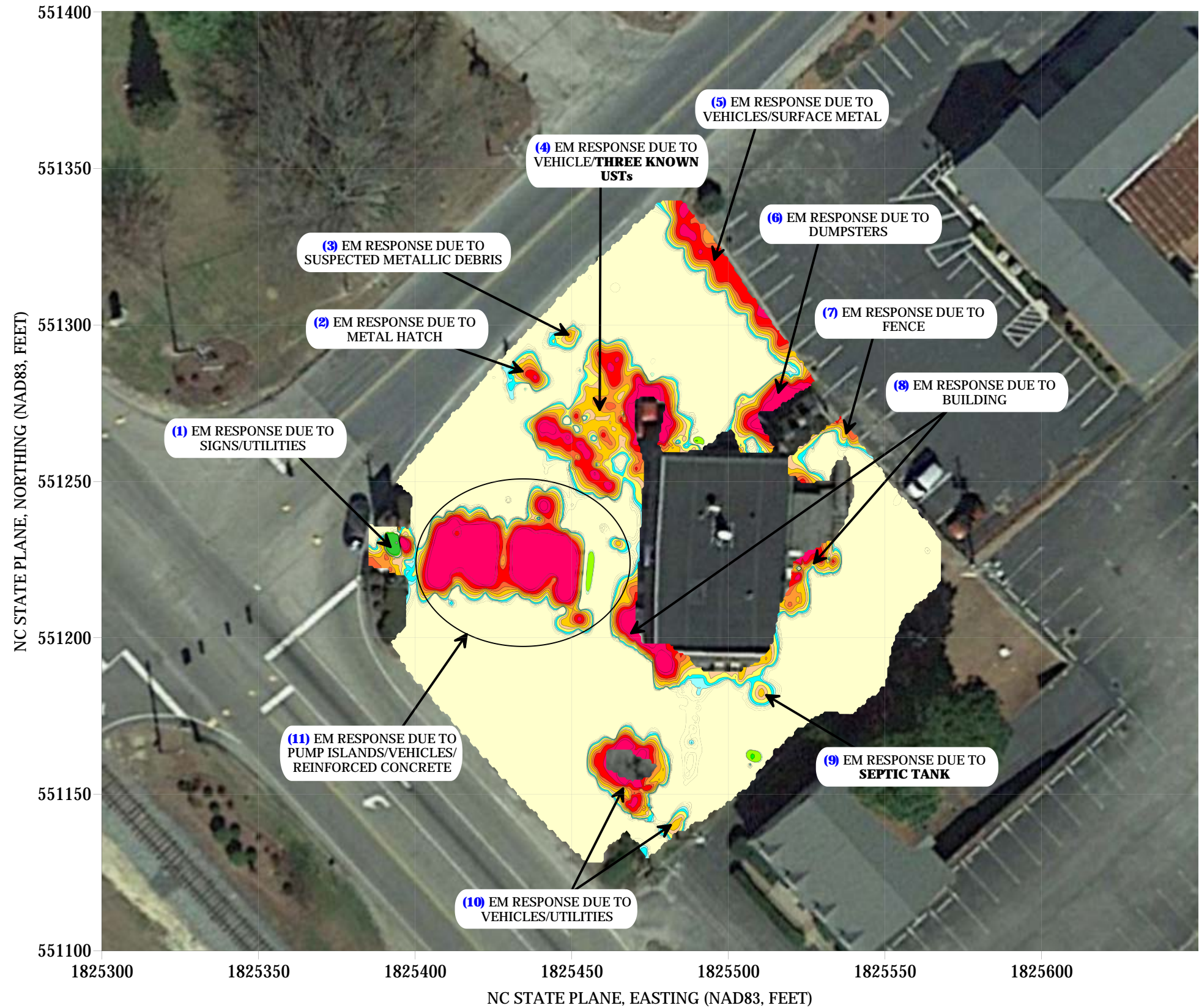
PROJECT
PARCEL 69
WEST END, NORTH CAROLINA
NCDOT PROJECT R-5726

TITLE
PARCEL 69 - GEOPHYSICAL
SURVEY BOUNDARIES AND SITE PHOTOGRAPHS

DATE
8/8/2019
PYRAMID
PROJECT #:
2019-233

CLIENT
GEOSYNTEC
FIGURE 1

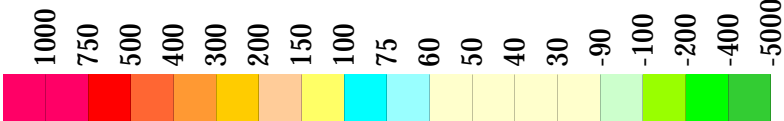
EM61 METAL DETECTION RESULTS



**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)



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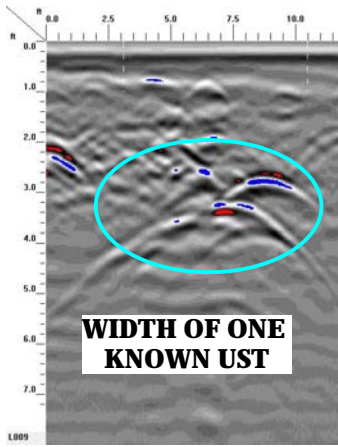
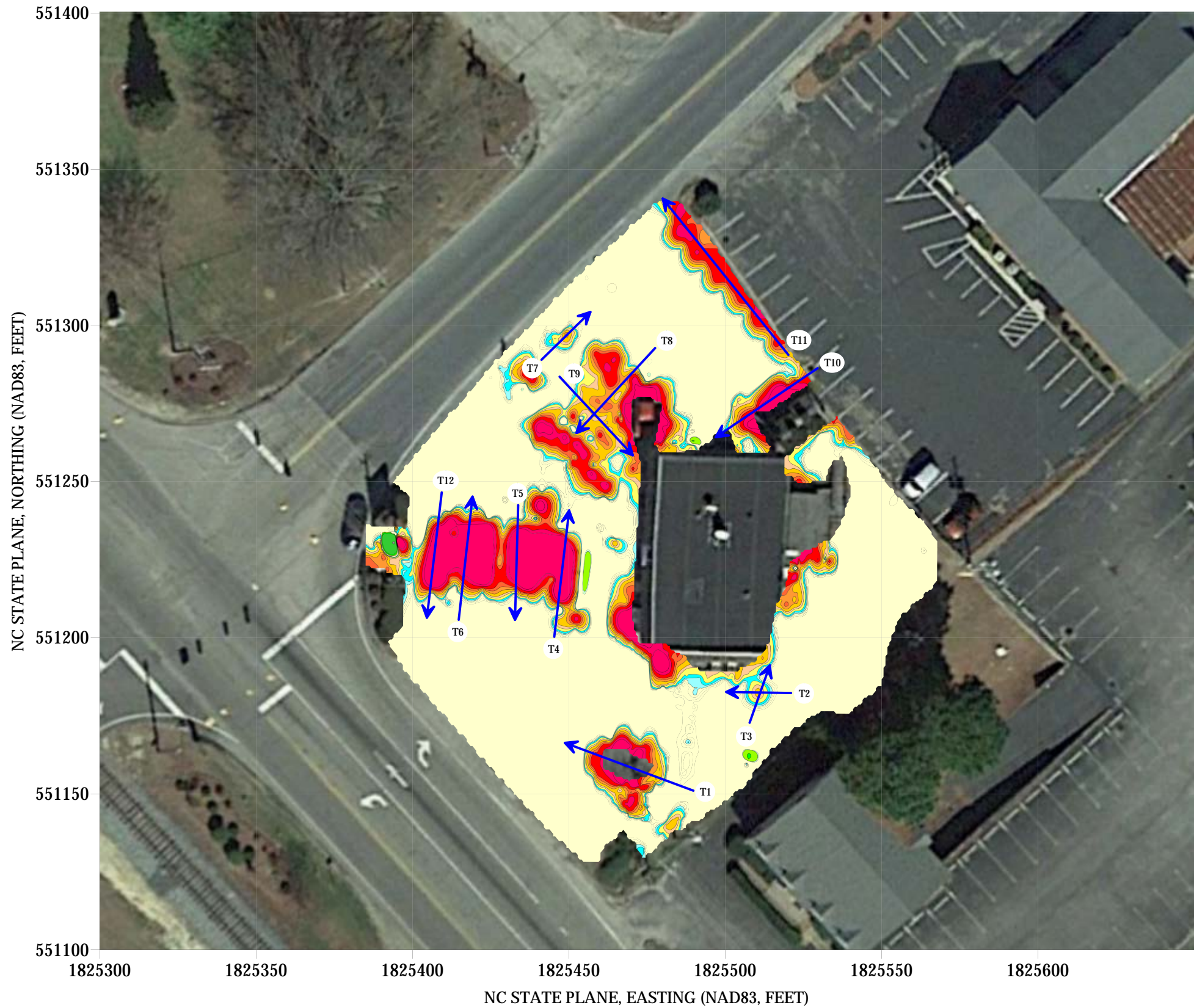
PROJECT
PARCEL 69
WEST END, NORTH CAROLINA
NCDOT PROJECT R-5726

TITLE
PARCEL 69 -
EM61 METAL DETECTION CONTOUR MAP

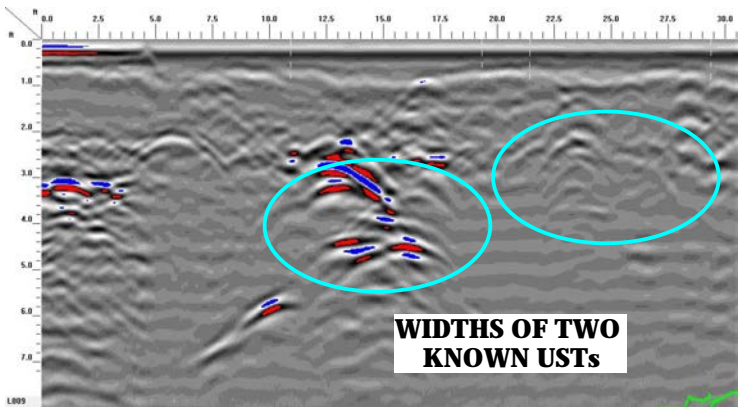
DATE
8/8/2019
PYRAMID
PROJECT #:
2019-233

CLIENT
GEOSYNTEC
FIGURE 2

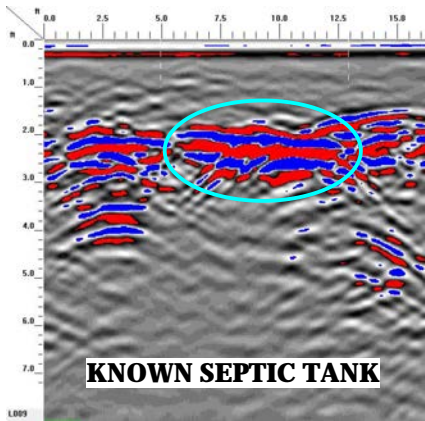
LOCATIONS OF GPR TRANSECTS



GPR TRANSECT 8 (T8)



GPR TRANSECT 9 (T9)



GPR TRANSECT 2 (T2)



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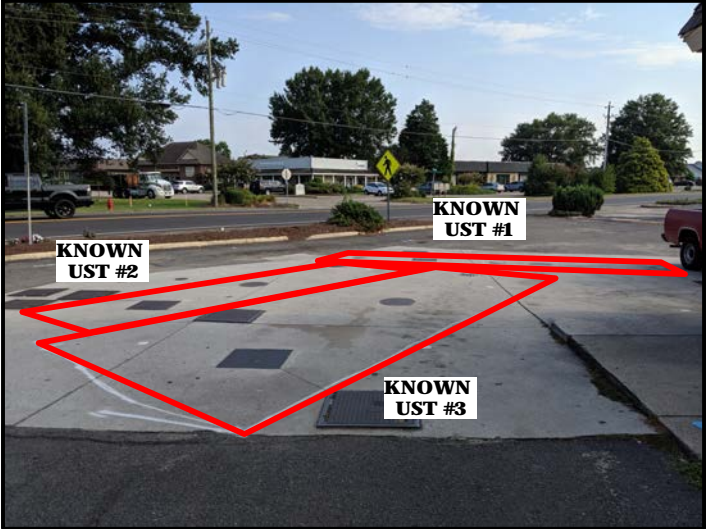
PROJECT
PARCEL 69
WEST END, NORTH CAROLINA
NCDOT PROJECT R-5726

TITLE
PARCEL 69 -
GPR TRANSECT LOCATIONS
AND SELECT IMAGES

DATE
8/8/2019
PYRAMID
PROJECT #:
2019-233

CLIENT
GEOSYNTEC
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



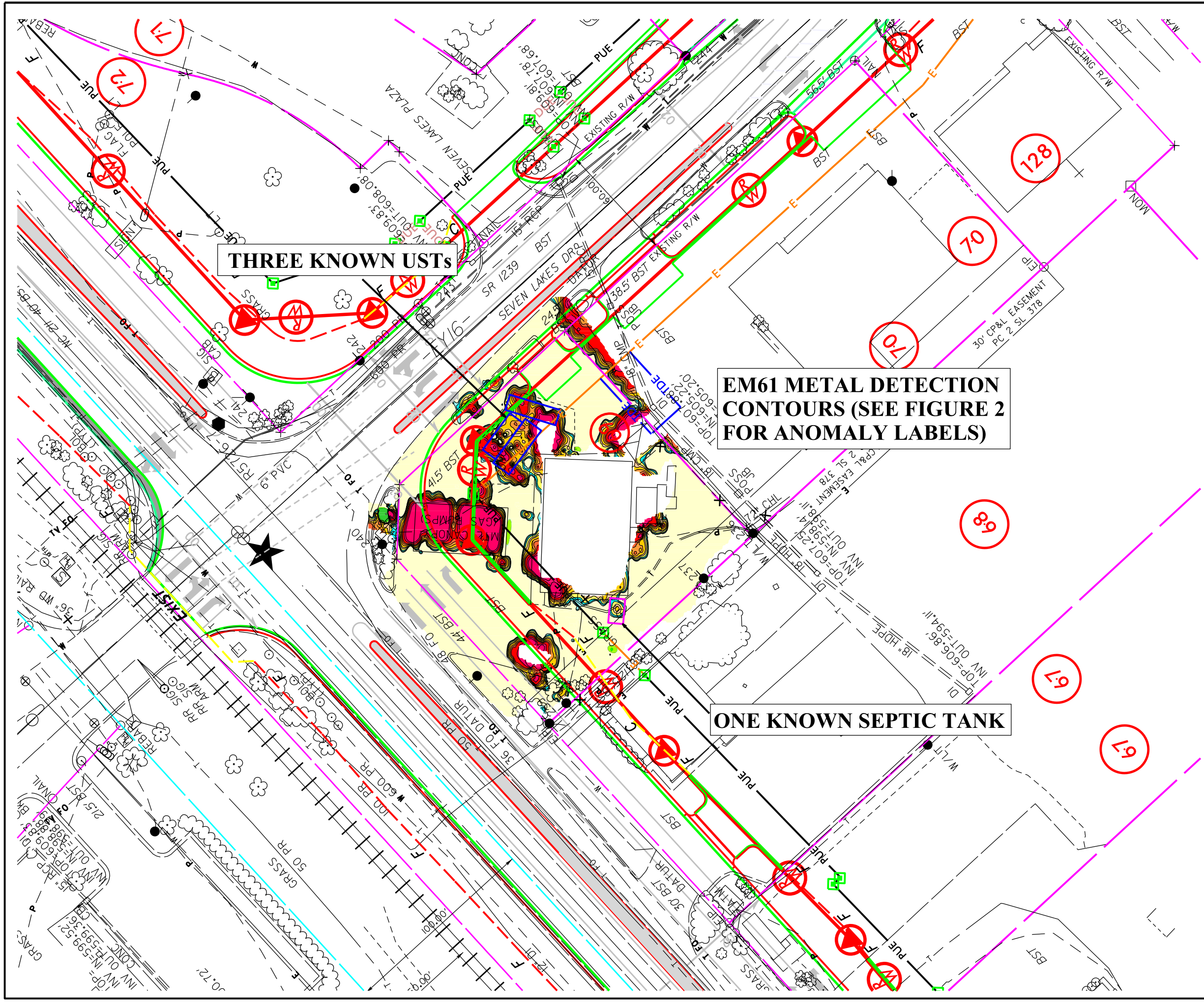
503 INDUSTRIAL AVENUE
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License # C1251 Eng. / License # C257 Geology

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



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)



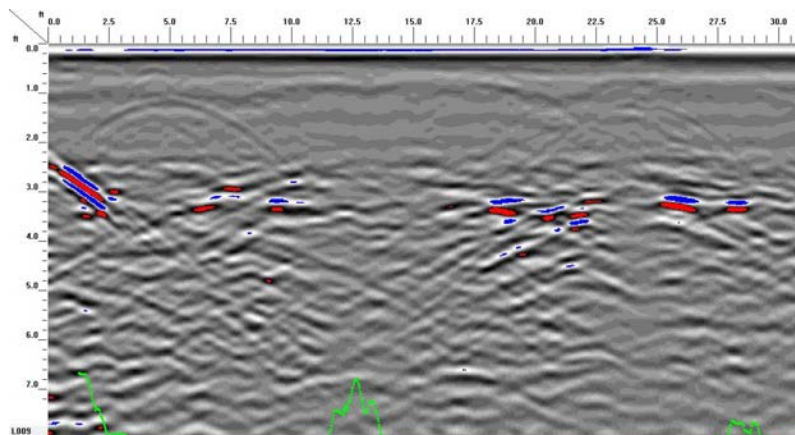
EM61 METAL DETECTION
CONTOURS (SEE FIGURE 2
FOR ANOMALY LABELS)

ONE KNOWN SEPTIC TANK

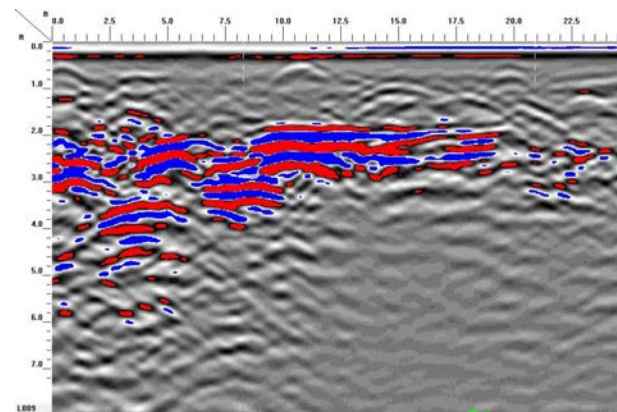


TITLE OVERLAY OF METAL DETECTION RESULTS, THREE KNOWN USTs AND ONE SEPTIC TANK ON NCDOT ENGINEERING PLANS	
PROJECT PARCEL 69 WEST END, NORTH CAROLINA NCDOT PROJECT R-5726	
<div> 503 INDUSTRIAL AVENUE GREENSBORO, NC 27406 336.335.3174 (p) 336.691.0648 (f) License # C1251 Eng. / #C257 Geology</div>	
DATE: 08-20-2019	REVISION NO. 0
PYRAMID PROJECT NO. 2019-233	FIGURE NO. 5

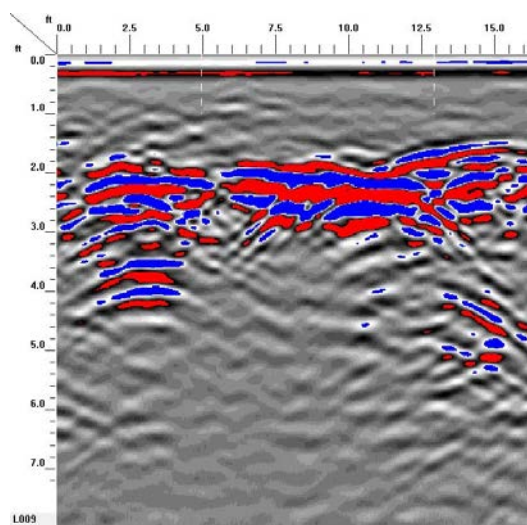
Appendix A – GPR Transect Images



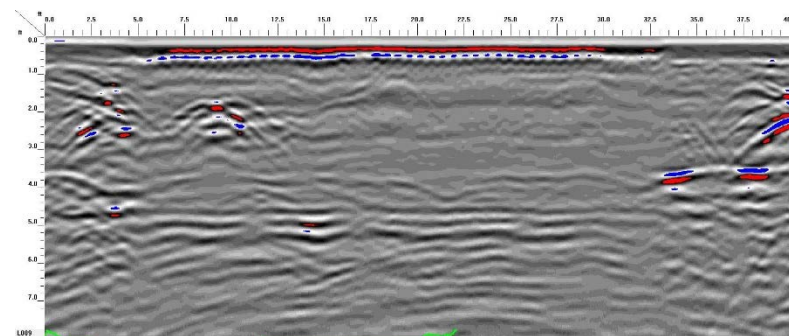
GPR TRANSECT 1



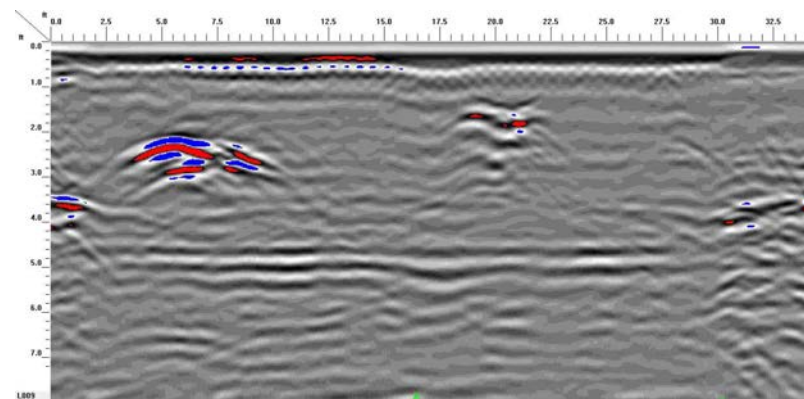
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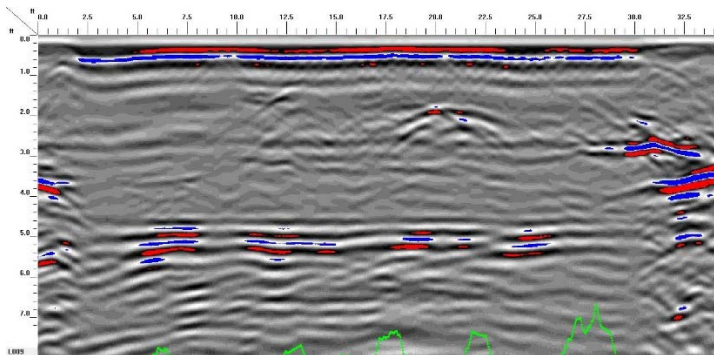
GPR TRANSECT 2



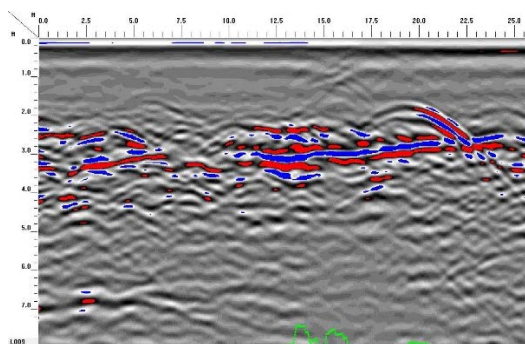
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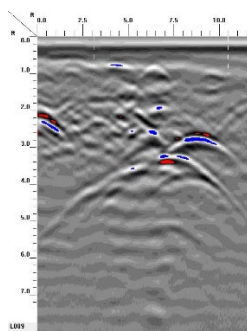
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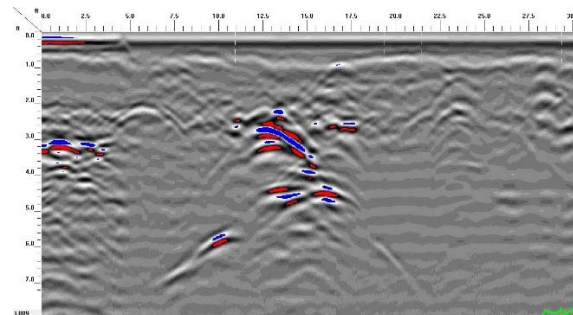
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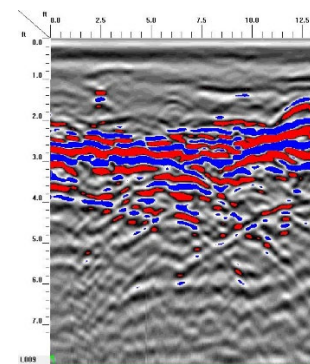
GPR TRANSECT 7



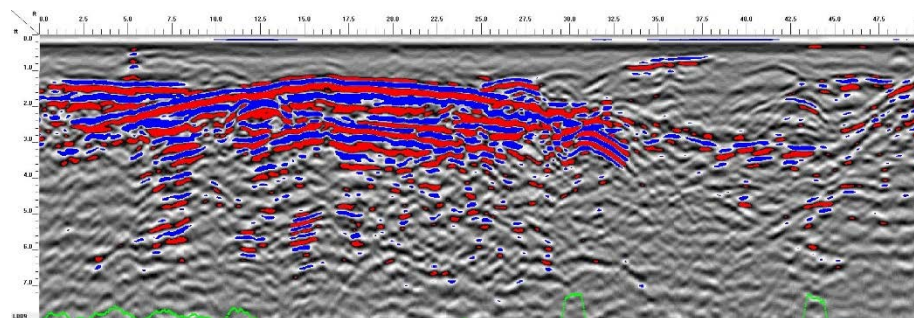
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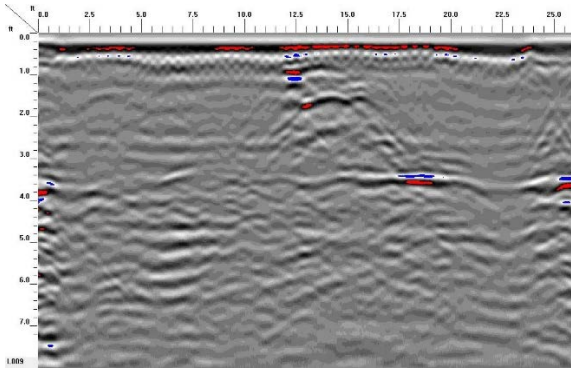
GPR TRANSECT 9



GPR TRANSECT 10



GPR TRANSECT 11



GPR TRANSECT 12

Preliminary Site Assessment (Parcel 69 – Brian K. Neal and Karen P. Neal)
TIP Number R-5726
4331 NC 211, West End, North Carolina
October 2019



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.



Preliminary Site Assessment (Parcel 69 – Brian K. Neal and Karen P. Neal)
TIP Number R-5726
4331 NC 211, West End, North Carolina
October 2019



APPENDIX C

Soil Boring Logs

BORING LOG

BORING NO. SB69-01
SHEET 1 OF 1

DRILLING CO.: <u>Saedaccio</u>		Status: <input type="checkbox"/> Well Installed <input type="checkbox"/> Plugged & Abnd.		SITE: <u>NC DOT West End</u>		Borehole Location Sketch Map			
METHOD & TOOLS: <u>DPT</u>				PROJECT NO.: <u>6N7039</u>					
RIG: <u>Geoprobe 7822 DT</u>				N: _____ E: _____					
BIT DIAMETER: <u>2 1/4"</u>		DRILLER: <u>Brian T</u>		SUPERVISOR: <u>MUang</u>					
GROUND ELEV.: <input type="checkbox"/> Surveyed <input type="checkbox"/> Estimated				DATE: <u>8/12/19</u>					
Top (Depth)	<input type="checkbox"/> Feet <input type="checkbox"/> 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
5-10		5-7.5 ft. brown silty clay, mixed with some grey color. moist, compact, low plastic							100 PID=6
		7.5-10 ft. red silty clay, mixed with some grey color. moist, low plastic,							
<p>Samples collected from 6.0-6.5 ft, SB69-01- 6.0-6.5 @ 1300</p>									

MW

BORING LOG

BORING NO. SB69-02

SHEET 1 OF 1

DRILLING CO.: Saedaccio

METHOD & TOOLS: OPT

RIG: Greeprobe 7822DT

BIT DIAMETER: 2 1/4"

DRILLER: Brian T

GROUND ELEV.: ☐ Surveyed ☐ Estimated

Status:
☐ Well Installed
☐ Plugged & Abnd.
☐

SITE: NCDOT West End

PROJECT NO.: GN7039

N: E:

SUPERVISOR: M. Wang

DATE: 8/12/19

Borehole Location Sketch Map

Top (Depth)	<input type="checkbox"/> Feet <input type="checkbox"/> 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 PID=0 from 4.5-5 ft
		4.5-5 ft bgs, brown sandy clay mixed with red color.							
5-10		sandy clay, with some gravels reddish brown & gray color mixed, dry, hard.						40	PID=0
		Only partially recovered, lost some intervals in between.							
		Samples are collected from							
		4-4.5 4-4.5 ft bgs.							
		SB69-02-4.0-4.5							
		@ 1330							

mm

BORING LOG

BORING NO. SB69-03
SHEET 1 OF 1

DRILLING CO.: <u>Saedaco</u>		Status: <input type="checkbox"/> Well Installed <input type="checkbox"/> Plugged & Abnd. <input type="checkbox"/>		SITE: <u>NCDOT West End</u>		Borehole Location Sketch Map	
METHOD & TOOLS: <u>DPT</u>				PROJECT NO.: <u>GN 7039</u>			
RIG: <u>Geoprobe 7822DT</u>				N: _____ E: _____			
BIT DIAMETER: <u>2 1/4"</u>		DRILLER: <u>Brian T</u>		SUPERVISOR: <u>M Wang</u>			
GROUND ELEV.: <input type="checkbox"/> Surveyed <input type="checkbox"/> Estimated				DATE: <u>8/12/19</u>			
Top (Depth)	<input type="checkbox"/> Feet <input type="checkbox"/> Meters	Lithology Log	Graphic Log	Depth Scale	Well	SPT Blows/6"	Run (No.) Rec. (%)
0-5		0-1 ft light brown sand, dry, loose 1-4 ft dark brown sand, fine to medium, dry-moist, loose 4-5 ft light brown sand, fine to medium, dry-moist, loose.					100 Hand Auger PLD 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.					100 PLD=0
		Sample collected from 5-5.5 ft SB69-03-5-5.5 @ 1400					

mm

BORING LOG

BORING NO. SB69-04
SHEET 1 OF 1

DRILLING CO.: Saedaceo

METHOD & TOOLS: DPT

RIG: Geoprobe 7822DT

BIT DIAMETER: 2 1/4"

DRILLER: Brian J

GROUND ELEV.: ☐ Surveyed ☐ Estimated

Status:

- ☐ Well Installed
☐ Plugged & Abnd.

SITE: NC DOT West End

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

5-10 5-6 ft sandy clay, grey mixed
with red color;
Dry to Moist, low plastic

6-8 ft sandy clay, grey color
throughout, mixed with some
gravels. clay - to moist

8-10 ft red sandy clay, low
plastic. dry - moist

Samples collected from

5-5.5 ft

SB69-04 - 5-5.5

① 14 45

Hand Auger
PLD = 0.5 ppm @
5.0 ft

PLD = 0.1 ppm @ 5.5 ft

PLD = 0.1 ppm @ 6.0 ft

PLD = 0.1 ppm @ 6.5 ft

PLD = 0 @ 7 ft

mm

DRILLING CO.: <u>Saedaus</u>		Status: <input type="checkbox"/> Well Installed <input type="checkbox"/> Plugged & Abnd. <input type="checkbox"/>		SITE: <u>NCDOT West End</u>		Borehole Location Sketch Map			
METHOD & TOOLS: <u>DPT</u>				PROJECT NO.: <u>GN 2039</u>					
RIG: <u>Geoprobe 78220T</u>				N: _____ E: _____					
BIT DIAMETER: <u>2 1/4"</u>		DRILLER: <u>Brian T</u>		SUPERVISOR: <u>M Wang</u>					
GROUND ELEV.: <input type="checkbox"/> Surveyed <input type="checkbox"/> Estimated				DATE: <u>8/12/19</u>					
Top (Depth)	<input type="checkbox"/> Feet <input type="checkbox"/> Meters	Lithology Log	Graphic Log	Depth Scale	Well	SPT Blows/6"	Run (No.)	Rec. (%)	Drilling Log
0-5		0-1 Light brown silt. dry. Cone 1-5 light-dark brown sand, medium-coarse, dry-moist							Hand Auger PLD=0.1 ppm @ 0.5 ft bgs PLD=0.1 ppm @ 1 ft bgs PLD=0.1 ppm @ 1.5 ft bgs PLD=0 from 2-5 ft bgs
8 5-10		5-8 ft, sandy clay, gray mixed with red color. Dry-moist, low plastic with some gravels at the end of the interval 8-10 ft, red sandy clay, low plastic, dry-moist							PLD background = 0.1 ppm
		Samples collected from 9.5-10 ft SB ⁶⁹ 98 - 05 - 9.5-10 @ 1525							PLD=0.8 @ 9 ft bgs PLD=0.3 @ 9.5 ft bgs

BORING LOG

BORING NO. **SB69-06**

SHEET **1** OF **1**

DRILLING CO.: Saedaccio		Status: <input type="checkbox"/> Well Installed <input type="checkbox"/> Plugged & Abnd. <input type="checkbox"/>		SITE: NC DOT Ucross Blvd		Borehole Location Sketch Map	
METHOD & TOOLS: DPT				PROJECT NO.: 6N7839			
RIG: Greaseprobe 7822 DT				N: _____ E: _____			
BIT DIAMETER: 2 1/4"		DRILLER: Portan T		SUPERVISOR: M Wang			
GROUND ELEV.: <input type="checkbox"/> Surveyed <input type="checkbox"/> Estimated		DATE: 8/12/19					
Top (Depth)	<input type="checkbox"/> Feet <input type="checkbox"/> Meters	Lithology Log	Graphic Log	Depth Scale	Well	SPT Blows/6"	Run (No.) Rec. (%)
0-5		0-3 ft, light brown sand/silt dry, loose					100
		3-5 ft, brown sand, medium, dry-moist, loose					
5-8		5-6 ft, dark brown sandy clay, dry-moist, low plastic					100
		6-8 ft, light brown sandy clay, dry-moist, low plastic with some gravel mixed,					
8-10		brown sandy clay, with some black stains mixed, possible petroleum related product.					
		samples collected from 9.0-9.5 ft					
		SB69-06-9.-9.5					
		@ 1615					

Hand Auger
 PZD background reading
 = 0.5 ppm, possibly
 because boring location
 is next to a idle
 truck. (Had some
 hand auger issue)
 PZD = 0

PZD = 0.18 ppm @ 9 ft
 bgs
 PZD = 0.3 @ 9.5 bgs

MW

DRILLING CO.: <u>Suedacuo</u>		Status: <input type="checkbox"/> Well Installed <input type="checkbox"/> Plugged & Abnd.		SITE: <u>NC DOT K-1457 Road</u>		Borehole Location Sketch Map	
METHOD & TOOLS: <u>DPT</u>				PROJECT NO.: <u>6N 7039</u>			
RIG: <u>Geoprobe 782207</u>				N: _____ E: _____			
BIT DIAMETER: <u>2 1/4"</u>		DRILLER: <u>Brian T</u>		SUPERVISOR: <u>M. Wang</u>			
GROUND ELEV.: <input type="checkbox"/> Surveyed <input type="checkbox"/> Estimated				DATE: <u>8/12/19</u>			
Top (Depth)	<input type="checkbox"/> Feet <input type="checkbox"/> Meters	Lithology Log	Graphic Log	Depth Scale	Well	SPT Blows/6"	Run (No.) Rec. (%)
0-5 ft		0-1 light brown sand/silt dry, loose 1-3 ft brown sand, moist, medium-coarse, mixed with some black debris, no odor. 3-5 ft dark brown sand, moist, medium, loose					100 Hand Auger PZD background reading = 0.1 ppm PZD = 0.2 ppm @ 1 ft bgs PZD = 0.2 ppm @ 1.5 ft bgs PZD = 0.3 ppm @ 2 ft bgs PZD = 0.1 ppm @ 2.5 bgs <u>PZD</u> 2.5-5 ft bgs
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 SB 69-07-5.0-5.5					100 PZD = 0

BORING LOG

BORING NO. SB69-08

SHEET 1 OF 1

DRILLING CO.: Sadhu

Status:
☐ Well Installed
☐ Plugged & Abnd.
☐

METHOD & TOOLS: DPT

SITE: West End

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

Borehole Location Sketch Map

Top (Depth)	<input type="checkbox"/> Feet <input type="checkbox"/> Meters	Lithology Log	Graphic Log	Depth Scale	Well	SPT Blows/6"	Run (No.)	Rec. (%)	Drilling Log
0-0.4 0-0.4 ft		0-0.5 ft light to gray silt, dry, loose.						100	Hand Auger P20=0
		0.5 - 2 ft, brown silt/sand, dry-moist, loose							5 ft ^{East} from the original location
		2 - 4 ft, brown sand, dry-moist, loose, poorly sorted.							
4-5 ft		brown sand, medium, dry-moist mixed with some black stain						100	P20=0
5-10 ft		5.0-5.5 ft, brown-dark sand, medium, moist to wet, compact						50	
		5.5-6.5 ft dark/black color sand, black stain, possible septic tank drainage field.							P20=0.8 ppm @ 6 ft
		6.5-7.5 ft, dark/black color to brown color sand, moist.							6 runs onsite.
		Samples are collected from 6-6.5							
		5-7 ft, @ 1300							
		SB69-08- 6.5 6-6.5							

MW

*Preliminary Site Assessment (Parcel 69 – Brian K. Neal and Karen P. Neal)
TIP Number R-5726
4331 NC 211, West End, North Carolina
October 2019*



APPENDIX D

Red Lab UVF Report



Hydrocarbon Analysis Results

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

Samples taken
Samples extracted
Samples analysed

Monday, August 12, 2019
Monday, August 12, 2019
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

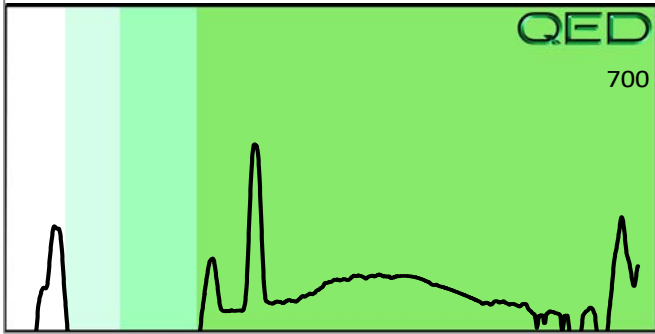
B = Blank Drift : (SBS)/(LBS) = Site Specific or Library Background Subtraction applied to result : (BO) = Background Organics detected : (OCR) = Outside cal range : (M) = Modified Result.

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

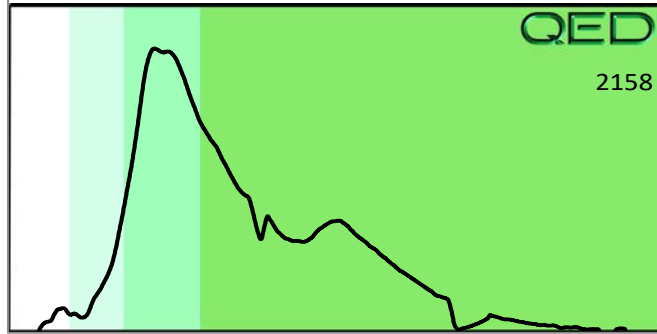
Data generated by HC-1 Analyser

Project: R5726

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



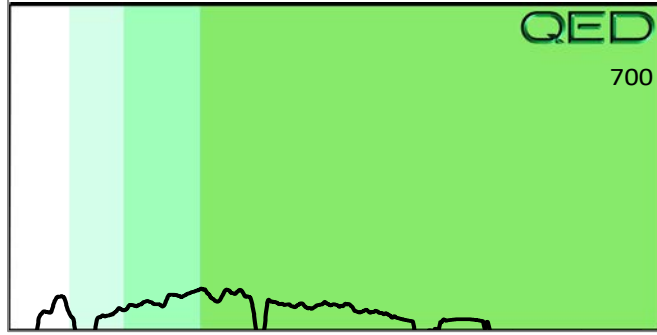
SB69-02-4.0-4.5 : Deg Fuel 74.5%,(FCM)



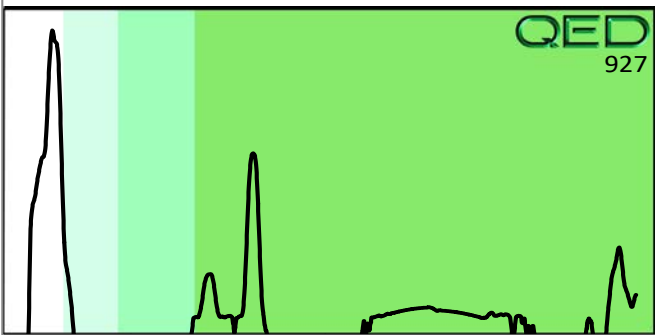
SB69-03-5-5.5 : ,(FCM)



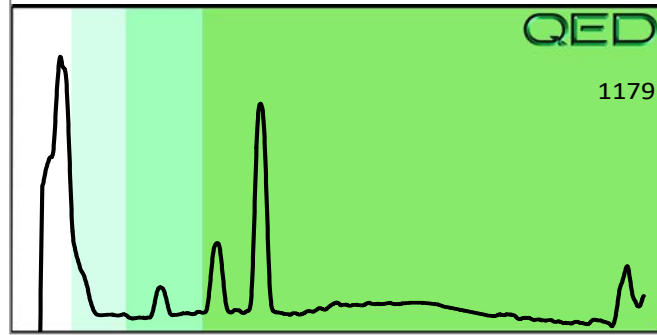
SB69-04-5-5.5 : Residual HC



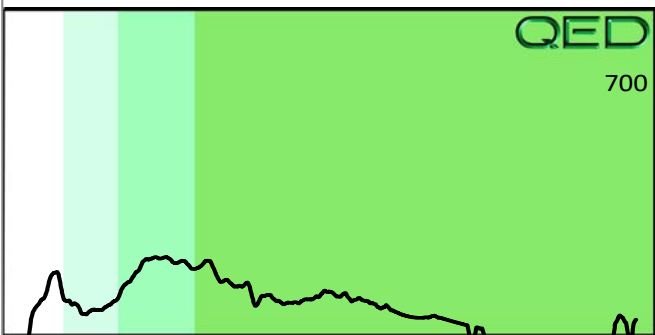
SB6905-9.5-10 : ,(FCM),(BO),(P)



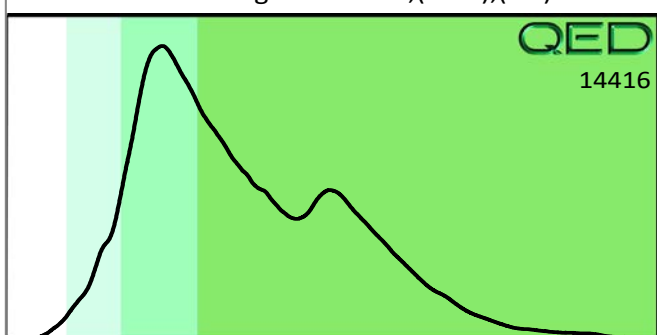
SB69-06-9-9.5 : No Match found



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



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



Preliminary Site Assessment (Parcel 69 – Brian K. Neal and Karen P. Neal)
TIP Number R-5726
4331 NC 211, West End, North Carolina
October 2019



APPENDIX E

Prism Laboratories Analytical Report



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.

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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 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

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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.

Summary of Detections

08/28/2019

Prism Work Order: 9080260

Prism ID	Client ID	Parameter	Method	Result	Units
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There were no detections reported.



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
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General Chemistry Parameters

% Solids	91.0	% by Weight	0.100	0.100	1	*SM2540 G	8/22/19 10:22	EDV	P9H0353
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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
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General Chemistry Parameters

% Solids	86.2	% by Weight	0.100	0.100	1	*SM2540 G	8/22/19 10:22	EDV	P9H0353
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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
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General Chemistry Parameters

% Solids	95.0	% by Weight	0.100	0.100	1	*SM2540 G	8/22/19 10:22	EDV	P9H0353
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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
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General Chemistry Parameters

% Solids	97.8	% by Weight	0.100	0.100	1	*SM2540 G	8/22/19 10:22	EDV	P9H0353
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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
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General Chemistry Parameters

% Solids	91.4	% by Weight	0.100	0.100	1	*SM2540 G	8/22/19 10:22	EDV	P9H0353
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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



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: SB43-03-7.0-7.5
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
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General Chemistry Parameters

% Solids	75.6	% by Weight	0.100	0.100	1	*SM2540 G	8/22/19 10:22	EDV	P9H0353
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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



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: SB43-04-7.5-8.0
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
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General Chemistry Parameters

% Solids	84.1	% by Weight	0.100	0.100	1	*SM2540 G	8/22/19 10:22	EDV	P9H0353
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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



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: 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
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General Chemistry Parameters

% Solids	90.8	% by Weight	0.100	0.100	1	*SM2540 G	8/22/19 10:22	EDV	P9H0353
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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



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: 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
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General Chemistry Parameters

% Solids	86.8	% by Weight	0.100	0.100	1	*SM2540 G	8/22/19 10:22	EDV	P9H0353
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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



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: 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
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General Chemistry Parameters

% Solids	90.8	% by Weight	0.100	0.100	1	*SM2540 G	8/22/19 10:22	EDV	P9H0353
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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

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: 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
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General Chemistry Parameters

% Solids	94.1	% by Weight	0.100	0.100	1	*SM2540 G	8/22/19 10:22	EDV	P9H0353
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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



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: 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
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General Chemistry Parameters

% Solids	89.3	% by Weight	0.100	0.100	1	*SM2540 G	8/22/19 10:22	EDV	P9H0353
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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
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General Chemistry Parameters

% Solids	89.0	% by Weight	0.100	0.100	1	*SM2540 G	8/22/19 10:22	EDV	P9H0353
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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
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General Chemistry Parameters

% Solids	90.5	% by Weight	0.100	0.100	1	*SM2540 G	8/22/19 10:22	EDV	P9H0353
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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
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General Chemistry Parameters

% Solids	95.0	% by Weight	0.100	0.100	1	*SM2540 G	8/22/19 10:22	EDV	P9H0353
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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
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General Chemistry Parameters

% Solids	93.2	% by Weight	0.100	0.100	1	*SM2540 G	8/22/19 10:22	EDV	P9H0353
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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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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: 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
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General Chemistry Parameters

% Solids	92.2	% by Weight	0.100	0.100	1	*SM2540 G	8/22/19 10:22	EDV	P9H0353
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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
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General Chemistry Parameters

% Solids	91.0	% by Weight	0.100	0.100	1	*SM2540 G	8/23/19 8:10	EDV	P9H0369
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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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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: SB69-06-9-9.5
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
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General Chemistry Parameters

% Solids	87.3	% by Weight	0.100	0.100	1	*SM2540 G	8/23/19 8:10	EDV	P9H0369
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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
Toluene-d8	92 %	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: 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
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General Chemistry Parameters

% Solids	93.3	% by Weight	0.100	0.100	1	*SM2540 G	8/23/19 8:10	EDV	P9H0369
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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
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: 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
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General Chemistry Parameters

% Solids	85.7	% by Weight	0.100	0.100	1	*SM2540 G	8/23/19 8:10	EDV	P9H0369
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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
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General Chemistry Parameters

% Solids	83.4	% by Weight	0.100	0.100	1	*SM2540 G	8/23/19 8:10	EDV	P9H0369
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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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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: SB78-02-5.5-6
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
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General Chemistry Parameters

% Solids	97.8	% by Weight	0.100	0.100	1	*SM2540 G	8/23/19 8:10	EDV	P9H0369
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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



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: 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
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General Chemistry Parameters

% Solids	85.2	% by Weight	0.100	0.100	1	*SM2540 G	8/23/19 8:10	EDV	P9H0369
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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



Geosyntec Consultants of NC, PC - Raleigh
Attn: Michael Wang
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: SB78-04-6.5-7
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
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General Chemistry Parameters

% Solids	85.1	% by Weight	0.100	0.100	1	*SM2540 G	8/23/19 8:10	EDV	P9H0369
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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
Toluene-d8	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
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
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General Chemistry Parameters

% Solids	96.3	% by Weight	0.100	0.100	1	*SM2540 G	8/23/19 8:10	EDV	P9H0369
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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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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: SB89-02-5.5-6
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
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General Chemistry Parameters

% Solids	96.6	% by Weight	0.100	0.100	1	*SM2540 G	8/23/19 8:10	EDV	P9H0369
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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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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
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General Chemistry Parameters

% Solids	92.2	% by Weight	0.100	0.100	1	*SM2540 G	8/23/19 8:10	EDV	P9H0369
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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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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
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General Chemistry Parameters

% Solids	93.9	% by Weight	0.100	0.100	1	*SM2540 G	8/23/19 8:10	EDV	P9H0369
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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
Toluene-d8	91 %	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: 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
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General Chemistry Parameters

% Solids	89.8	% by Weight	0.100	0.100	1	*SM2540 G	8/23/19 8:10	EDV	P9H0369
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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
Toluene-d8	92 %	76-129



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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
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General Chemistry Parameters

% Solids	96.4	% by Weight	0.100	0.100	1	*SM2540 G	8/23/19 8:10	EDV	P9H0369
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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
Toluene-d8	91 %	76-129



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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
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General Chemistry Parameters

% Solids	94.4	% by Weight	0.100	0.100	1	*SM2540 G	8/23/19 8:10	EDV	P9H0369
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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
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
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General Chemistry Parameters

% Solids	80.6	% by Weight	0.100	0.100	1	*SM2540 G	8/23/19 8:10	EDV	P9H0369
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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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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
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General Chemistry Parameters

% Solids	97.4	% by Weight	0.100	0.100	1	*SM2540 G	8/23/19 8:10	EDV	P9H0369
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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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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
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General Chemistry Parameters

% Solids	88.1	% by Weight	0.100	0.100	1	*SM2540 G	8/23/19 8:10	EDV	P9H0369
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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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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
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General Chemistry Parameters

% Solids	83.5	% by Weight	0.100	0.100	1	*SM2540 G	8/23/19 8:10	EDV	P9H0369
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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
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
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General Chemistry Parameters

% Solids	87.9	% by Weight	0.100	0.100	1	*SM2540 G	8/23/19 8:10	EDV	P9H0369
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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
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General Chemistry Parameters

% Solids	87.0	% by Weight	0.100	0.100	1	*SM2540 G	8/26/19 8:25	EDV	P9H0406
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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



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: 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
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General Chemistry Parameters

% Solids	89.4	% by Weight	0.100	0.100	1	*SM2540 G	8/26/19 8:25	EDV	P9H0406
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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

Geosyntec Consultants of NC, PC - Raleigh Project: NCDOT R-5726 West End
Attn: Michael Wang
2501 Blue Ridge Road, Ste 430
Raleigh, NC 27607

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

Project No: GN7039

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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Geosyntec Consultants of NC, PC - Raleigh Project: NCDOT R-5726 West End
Attn: Michael Wang
2501 Blue Ridge Road, Ste 430
Raleigh, NC 27607

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

Project No: GN7039

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			

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Geosyntec Consultants of NC, PC - Raleigh Project: NCDOT R-5726 West End
Attn: Michael Wang
2501 Blue Ridge Road, Ste 430
Raleigh, NC 27607

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

Project No: GN7039

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			

Geosyntec Consultants of NC, PC - Raleigh Project: NCDOT R-5726 West End
Attn: Michael Wang
2501 Blue Ridge Road, Ste 430
Raleigh, NC 27607

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

Project No: GN7039

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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Geosyntec Consultants of NC, PC - Raleigh Project: NCDOT R-5726 West End
Attn: Michael Wang
2501 Blue Ridge Road, Ste 430
Raleigh, NC 27607

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

Project No: GN7039

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			

Geosyntec Consultants of NC, PC - Raleigh Project: NCDOT R-5726 West End
Attn: Michael Wang
2501 Blue Ridge Road, Ste 430
Raleigh, NC 27607

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

Project No: GN7039

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			



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Project No: GN7039

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			

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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 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			



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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

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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

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Full-Service Analytical & Environmental Solutions

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

Client Company Name: Greensync

Report To/Contact Name: Michael Wang

Reporting Address: 7501 Blue Ridge Rd

Ste 420, Raleigh, NC 27607

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

Email Address: mwang@greensync.com

EDD Type: PDF ☒ Excel ☒ Other

Site Location Name: West End

Site Location Physical Address: West End, NC

CHAIN OF CUSTODY RECORD

PAGE 3 OF 4 QUOTE # TO ENSURE PROPER BILLING: 607039

Project Name: West End UST Project: (Yes) (No) (No)

Short Hold Analysis: (Yes) (No) (No)

*Please ATTACH any project specific reporting (QC LEVEL I III IV) provisions and/or QC Requirements

Invoice To: Greensync

Address: Greensync

Purchase Order No./Billing Reference: 607039

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

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

Samples INTACT upon arrival?

Received ON WET ICE?

PROPER PRESERVATIVES indicated?

CUSTODY SEALS INTACT?

VOLATILES rec'd W/OUT HEADSPACE?

PROPER CONTAINERS used?

TEMP: Therm ID: 3014 Observed: 31.2 °C / Corr: 3.3 °C

TO BE FILLED IN BY CLIENT/SAMPLING PERSONNEL

Certification: NELAC DoD FL NC

Water Chlorinated: YES NO OTHER N/A

Sample Iced Upon Collection: YES NO

CLIENT	DATE COLLECTED	TIME COLLECTED MILITARY HOURS	MATRIX (SOIL, WATER OR SLUDGE)	SAMPLE CONTAINER	PRESERVATIVES	ANALYSIS REQUESTED	REMARKS	PRISM LAB ID NO.
SB69-08-6-6.5	8/13/19	1300	Soil	VOA 4	Multiple	X	BTEx ONLY	21
SB78-01-7-7.5	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
SB78-04-6-6.5	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
SB89-03-6-6.5	8/15/19	1030				X		28
SB89-04-7-7.5	8/15/19	1130				X		29
SB89-01-2-5.3	8/14/19	1050	Soil	VOA 4	Multiple	X	BTEx ONLY	30

PRESS DOWN FIRMLY - 3 COPIES

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

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

Relinquished By (Signature): Michael Wang

Received By (Signature): Michael Wang

Date: 8-15-19

Relinquished By (Signature): Michael Wang

Received For Prism Laboratories By: Michael Wang

Date: 8-15-19

Method of Shipment: NOTE: ALL SAMPLE COOLERS SHOULD BE TAPED SHUT WITH CUSTODY SEALS FOR TRANSPORTATION TO THE LABORATORY. SAMPLES ARE NOT ACCEPTED AND VERIFIED AGAINST COC UNTIL RECEIVED AT THE LABORATORY.

COC Group No. 9080260

PRISM USE ONLY

Site Arrival Time:

Site Departure Time:

Field Tech Fee:

Mileage:

SEE REVERSE FOR TERMS & CONDITIONS

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



PAGE 4 OF 4 QUOTE # TO ENSURE PROPER BILLING: 6417037
Project Name: 6417037 Next West End
Short Hold Analysis: (Yes) (No) UST Project: (Yes) (NO)

LAB USE ONLY

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: 10-14 Observed

Page 60 of 60

Purchase Order No./Billing Reference_

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			PRESERVA- TIVES	ANALYSIS REQUESTED				REMARKS	PRISM LAB ID NO.
				*TYPE SEE BELOW	NO.	SIZE							
SB102-02-5-5-6	8/14/19	1135	Soil	V04	4		Multiple					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
SB102-05-4-5-5	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	V04	4		Multiple					BTEx only	39

PRESS DOWN FIRMLY - 3 COPIES

Sampler's Signature <u><i>[Signature]</i></u>	Sampled By (Print Name) <u><i>Michael Cleary</i></u>	Affiliation _____
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Upon relinquishing, this Chain of Custody is your authorization for Prism to proceed with the analyses as requested above. Any changes must be submitted in writing to the Prism Project Manager. There will be charges for any changes after analyses have been initialized.

Relinquished By: (Signature)	Received By: (Signature)	Date	Military/Hours	Additional Comments:
		8/1/14	11	

Relinquished By: (Signature)	Received By: (Signature)
------------------------------	--------------------------

Reinquished By: (Signature)

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 CQC UNTIL RECEIVED AT THE LABORATORY.**

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

NPDES:	UST:	GROUNDWATER:	DRINKING WATER:	SOLID WASTE:	RCRA:	CERCLA	LANDFILL	OTHER:
<input type="checkbox"/> NC <input type="checkbox"/> SC	<input type="checkbox"/> NC <input type="checkbox"/> SC	<input type="checkbox"/> NC <input type="checkbox"/> SC	<input type="checkbox"/> NC <input type="checkbox"/> SC	<input type="checkbox"/> NC <input type="checkbox"/> SC	<input type="checkbox"/> NC <input type="checkbox"/> SC	<input type="checkbox"/> NC <input type="checkbox"/> SC	<input type="checkbox"/> NC <input type="checkbox"/> SC	<input type="checkbox"/> NC <input type="checkbox"/> 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