PRELIMINARY SITE ASSESSMENT

PARCEL 005 – CRYSTAL & DUSTY TOLER
675 CUMMINS DRIVE
KENLY, JOHNSTON COUNTY, NORTH CAROLINA
NC PIN: 264600-93-3152
STATE PROJECT: I-3318BB
WBS ELEMENT: 34182.2.1
JUNE 27, 2014

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C-257 –Geology
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Acronyms

BLS .....Below Land Surface
BTEX .....Benzene, Toluene, Ethylbenzene, & Xylenes
CADD .....Computer Aided Design and Drafting
COC .....Chain of Custody
CSA.....Comprehensive Site Assessment
DENR.....Department of Environment and Natural Resources
DRO .....Diesel Range Organics
DWM .....Division of Waste Management
EM.....Electromagnetic (as with EM-61)
EPA.....Environmental Protection Agency
GRO .....Gasoline Range Organics
GCLs .....Gross Contaminant Levels
GPR.....Ground Penetrating Radar
HASP .....Health & Safety Plan
MSCC .....Maximum Soil Contaminant Concentration
MTBE .....Methyl Tertiary Butyl Ether
µg/L.....Micrograms per Liter
mg/kg .....Milligrams per kilogram
NPDES.....National Pollutions Discharge Elimination System
NCAC .....North Carolina Administrative Code
NCDOT.....North Carolina Department of Transportation
OSHA.....Occupational Safety and Health Administration
OVA.....Organic Vapor Analyzer
PPM.....Parts Per Million
PID .....Photo-ionization Detector
PSA .....Preliminary Site Assessment
PVC.....Poly-vinyl Chloride
RFP .....Request for Proposal
ROW .....Right of Way
SVOCs .....Semi-volatile Organic Compounds
TW .....Temporary Well
TPH.....Total Petroleum Hydrocarbons
UVF.....Ultraviolet Fluorescence (UVF) QED Analyzer
UST.....Underground Storage Tank
US EPA.....United States Environmental Protection Agency
VOCs.....Volatile Organic Compounds

PRELIMINARY SITE ASSESSMENT
PARCEL 005, CRYSTAL & DUSTY TOLER
675 CUMMINS DRIVE
KENLY, JOHNSTON COUNTY, NORTH CAROLINA

EXECUTIVE SUMMARY OF RESULTS

Pyramid Environmental & Engineering P.C. (Pyramid) has prepared this Preliminary Site Assessment (PSA) report documenting background information, field activities, assessment activities, findings, conclusions, and recommendations for Parcel 005, Crystal & Dusty Toler. The purpose of this assessment was to determine the presence or absence of underground storage tanks (USTs) and impacted soils between the existing edge of pavement and the proposed ROW and/or easements, whichever distance was greater. This PSA is a part of State Project I-3318BB. The PSA was conducted with particular attention to the areas to be cut as indicated by slope stake lines and cross sections or to be excavated for the installation of drainage features. This preliminary site assessment was conducted on behalf of the North Carolina Department of Transportation (NCDOT) in accordance with Pyramid's April 23, 2014, technical proposal.

The following statements summarize the results of the PSA:

- **Site History:** On May 6, 2014, Pyramid emailed the Johnston County I-3318BB parcel address (675 Cummins Drive in Kenly, NC) to Mr. Jeremy Poplawski, Johnston County Incident Manager, with the Fayetteville Regional Office for the DENR UST Section, with a request to investigate any environmental incidents associated with the parcel. On May 7, 2014, Mr. Poplawski responded to the email and stated that site address did not come back with any environmental incidents or files. He also did not find records related to the junkyard or suspected methamphetamine lab, as indicated in the NCDOT RFP.

  On May 13, 2014, Pyramid Project Manager Eric Cross performed a site visit at the property. Neither the owner nor any other personnel were present to conduct an interview. The property contained an abandoned trailer, a large billboard sign, and was otherwise undeveloped. No evidence of USTs was observed. It should be noted that during a subsequent site visit, suspicious persons were encountered during field work activities that were consistent with possible criminal activity at the property. Additionally, a Johnston County Sheriff's Deputy visited the site during drilling activities and indicated that they believed a methamphetamine lab was located on the property.

- **Geophysical Survey:** Several of the EM61 anomalies detected could be attributed to visible objects at the ground surface such as the reinforced concrete bridge foundation and a power meter. The remaining EM features were suspected to be associated with metallic debris, and were investigated using the GPR. The GPR did not record any significant reflectors that would be indicative of structures such as USTs. The GPR data were consistent with areas of metallic debris. The geophysical investigation did not record any evidence of metallic USTs at the property.

- **Limited Soil Assessment:** A total of nine borings were performed across the property. Soil samples were screened with a PID, and select soil samples were analyzed for DRO and GRO using a QED Analyzer. The DENR action levels for both TPH-GRO and TPH-DRO are 10 milligrams per kilogram (mg/kg). One soil sample from boring 5-2 at a depth of 4-6 feet exhibited a DRO concentration slightly above 10 mg/kg (10.18 mg/kg). None of the remaining soil samples analyzed exhibited DRO or GRO concentrations above 10 mg/kg.

  The laboratory results detected a low concentration of acetone in soil sample 5-4(4-6) of 0.0993 mg/kg that is well below the soil-to-groundwater Maximum Soil Contaminant Concentration (MSCC). The soil-to-groundwater MSCC for Acetone is 24 mg/kg. No other compounds were detected of residential or soil-to-groundwater MSCCs in the samples that were analyzed.

- **Limited Groundwater Assessment:** Soil boring 5-6 was converted into a 1-inch diameter temporary monitoring well to a total depth of 8 feet BLS. The depth-to-groundwater was measured at 3.7 feet BLS. The 6200B and 625 laboratory analysis of groundwater did not detect any VOC or SVOC concentrations above NCAC 2L groundwater standards.

  Review of the NCDOT engineering plans indicates that the NCDOT may encounter groundwater at the property during construction activities. The results of this PSA do not indicate that any contamination is present in the groundwater at the location of sampling.

- **Contaminated Soil Volumes:** Pyramid's PSA investigation resulted in an **estimated area of 804 square feet of impacted soil in the vicinity of boring 5-2**. The contaminated soil was between 4 and 6 feet BLS, and the soil directly above that sample was observed to be clean (DRO/GRO < 10 mg/kg). For this reason, a thickness of two feet will be used to approximate total volumes of contaminated soil. It should be noted that this is a gross estimate based on the data available. Using a total thickness of 2 feet of contaminated soil, Pyramid estimates a total of approximately 1,608 cubic feet, or **60 cubic yards of**

impacted soils between 4 and 6 feet BLS at the location of boring 5-2. The boundaries of the area of contamination are approximate due to limited soil data.

1.0 Introduction

Pyramid Environmental & Engineering P.C. (Pyramid) has prepared this Preliminary Site Assessment (PSA) report documenting background information, field activities, assessment activities, findings, conclusions, and recommendations for Parcel 005, Crystal & Dusty Toler. The Crystal & Dusty Toler property contains a residential lot surrounded by undeveloped land approximately 675 Cummins Drive, Kenly, NC. This preliminary site assessment was conducted on behalf of the North Carolina Department of Transportation (NCDOT) in accordance with Pyramid's April 23, 2014, technical proposal. This PSA is a part of State Project I-3318BB.

The purpose of this assessment was to determine the presence or absence of underground storage tanks (USTs) and impacted soils between the existing edge of pavement and the proposed ROW and/or easements, whichever distance was greater. The PSA was conducted with particular attention to the areas to be cut as indicated by slope stake lines and cross sections or to be excavated for the installation of drainage features between the existing edge of pavement and proposed ROW/easements. The location of the subject site is shown on **Figure 1**.

1.1 Background Information

Based on the NCDOT's April 15, 2014, *Request for Technical and Cost Proposal*, the PSA was conducted between the existing edge of pavement and the proposed ROW and/or easements, whichever distance was greater, with emphasis on the areas to be cut as indicated by slope stake lines and cross sections or to be excavated for the installation of drainage features and/or other utilities, in accordance with the CADD files provided to Pyramid by the NCDOT. The PSA included the following:

- Research the properties for past uses and possible releases.
- Conduct a preliminary geophysical site assessment and limited soil assessment across the entire parcel with emphasis on the areas to be cut as indicated by slope stake lines and cross sections or to be excavated for the installation of drainage features and/or other utilities.
- If a NCDENR Groundwater Incident has been assigned to a parcel, then a single groundwater sample will be collected (or attempted) from the parcel if groundwater is encountered in any of the soil borings on that parcel incidentally during the course of attaining the depths required for objective of soil sampling. At parcels without NCDENR assigned Groundwater Incidents, if groundwater is likely to be encountered by subsequent excavation required by construction, then Pyramid will attempt to obtain a groundwater sample from the parcel.

1.2 Project Information

Prior to field activities, a Health and Safety Plan was prepared. Prior to drilling activities, the public underground utilities were located and marked by the North Carolina One-Call Service. A private utility locator, Northstate Utility Locating Incorporated of Colfax, North Carolina was used to mark the on-site private, buried utilities.

2.0 Site History

The NCDOT description of Parcel 005 in the RFP provided to Pyramid on April 15, 2014, provided the following background information related to the site:

> *"Vacant mobile homes and a junk yard were observed at Parcels 5 & 8 during a site reconnaissance on June 9, 2011. The site(s) is located on the southern side of Cummins Drive, approximately 400 feet southeast of Bridge 114. A local area employee indicated that the property may have operated as a clandestine methamphetamine lab. Review of crime databases could not confirm the historical presence of a lab. According to NCDENR's UST Section Registry there are no known Facility ID's or Groundwater Incidents associated with Parcel 5."*

Pyramid interviewed DENR personnel, interviewed property owners, and reviewed aerial photographs to assess past uses of the property. Pyramid reviewed historical aerial photographs obtained from the Johnston County GIS website and Google Earth dating back to 1937. The 1937, 1948, 1956, 1971, 1988, 1993, 1999, 2004, 2006, 2008, 2009 and 2012 aerial photographs are included in **Appendix A**. Historical information reviewed as part of the PSA indicated that the Crystal & Dusty Toler property was first developed between 1988 and 1993. The 1993 aerial shows the trailer that is currently at the property, as well as a significant number of vehicles to the south of the trailer, suggesting the property may have been used as a junkyard. The 1988 aerial photo shows the property to be undeveloped agricultural land.

On May 6, 2014, Pyramid emailed the Johnston County I-3318BB parcel address (675 Cummins Drive in Kenly, NC) to Mr. Jeremy Poplawski, Johnston County Incident Manager, with the Fayetteville Regional Office for the DENR UST Section, with a request to investigate any environmental incidents associated with the parcel. On May 7, 2014, Mr. Poplawski responded to the email and stated that site address did not come back with any environmental incidents or files. He also did not find records related to the suspected methamphetamine lab, as indicated in the NCDOT RFP.

On May 13, 2014, Pyramid Project Manager Eric Cross performed a site visit at the property. Neither the owner nor any other personnel were present to conduct an interview. The property contained an abandoned trailer, a large billboard sign, and was

otherwise undeveloped. No evidence of USTs was observed. It should be noted that during a subsequent site visit, suspicious persons were encountered during field work activities that were consistent with possible criminal activity at the property. Additionally, a Johnston County Sheriff's Deputy visited the site during drilling activities and indicated that they believed a methamphetamine lab was located on the property.

3.0 Geophysical Investigation

Pyramid's classifications of USTs for the purposes of this PSA report are based directly on the geophysical UST ratings provided to us 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.

Pyramid performed electromagnetic (EM) and ground penetrating radar (GPR) surveys across the accessible portions of the Parcel. Several of the EM61 anomalies detected could be attributed to visible objects at the ground surface such as the reinforced concrete bridge foundation and a power meter. The remaining EM features were suspected to be associated with metallic debris, and were investigated by the GPR. The GPR did not record any significant reflectors that would be indicative of structures such as USTs. The GPR data were consistent with areas of metallic debris. The geophysical investigation did not record any evidence of metallic USTs at the property.

The full details of the geophysical investigation are included in the Geophysical Investigation Report as **Appendix B**.

4.0 Soil Sampling Activities & Results

4.1 Soil Assessment Field Activities

On June 2, 2014, Pyramid mobilized to the site, drilled soil borings and collected the proposed soil samples for the PSA. Nine (9) soil borings (5-1 through 5-9) were advanced on the subject property between the NCDOT proposed ROW and easements, and edge of pavement. The soil borings were completed using a truck mounted

GeoProbe drill rig. The selected locations were chosen to avoid public utilities along the adjacent roads and private utilities associated with the business while remaining in the proposed right of way and/or easement.

The soil borings were installed at or adjacent to proposed drainage features, as indicated by the NCDOT engineering plans, or generally within the proposed ROW and/or easement to obtain additional information. The locations of the borings are shown on **Figure 2**.

Soil samples were continuously collected in four-foot long disposable sleeves from each boring for geologic description, and visual examination for signs of contamination. Soil recovered from each sleeve was screened in the field using a Photo-Ionization Detector (PID) approximately every 2 feet depending on the soil recovery of each sleeve. In general, the soil sample with the highest PID reading was selected from each boring for laboratory analysis. If field screening detected an elevated reading, then additional soil samples from each boring were selectively analyzed with the QED UVF HC-1 Analyzer. The soil boring logs with the soil descriptions, visual examination, and PID screening results are included in **Appendix C**. The PID field screening results are summarized in **Table 1**. To prevent cross contamination, new disposable nitrile gloves were worn by the sampling technician during the sampling activities, and were changed between samples. No petroleum odor was detected in any of the borings during the field screening.

The soil samples selected for Total Petroleum Hydrocarbon (TPH) analyses were analyzed utilizing the QED UVF HC-1 Analyzer system from QROS-US. The NCDOT has indicated that this instrument is an acceptable method to provide TPH results for soil analysis for the PSA projects. Pyramid's QED-certified technician performed the soil analyses. The soil samples selected for analysis using the QED Analyzer were analyzed for TPH as diesel range organics (DRO) and TPH as gasoline range organics (GRO). The soil samples selected for analysis using the QED were preserved in the field with methanol and were analyzed at the end of each day using the QED.

In addition to the QED analysis, select samples were collected for more comprehensive laboratory analysis using EPA Methods 8260 and 8270 for volatile and semi-volatile organic compounds. These additional analyses were performed based on the site history of the property, which suggested that other potential contaminants such as petroleum products or solvents may have been or are being utilized in association with a possible methamphetamine lab. In general, soils from boring locations nearest the abandoned trailer that were above the water table were selected for the additional laboratory analyses. Specifically, samples 5-4(4-6), 5-5(2-4), 5-7(2-4) and 5-8(2-4) were placed in laboratory prepared containers and shipped to Pace Analytical in Huntersville, NC for analysis of volatile and semi-volatile organic compounds.

4.2 Soil Sample Analytical Results

QED Results

The DENR action levels for both TPH-GRO and TPH-DRO are 10 mg/kg. Soil samples were screened with a PID, and select soil samples were analyzed for DRO and GRO using a QED Analyzer. One soil sample from boring 5-2 at a depth of 4-6 feet exhibited a DRO concentration slightly above 10 mg/kg (10.18 mg/kg). None of the remaining soil samples analyzed exhibited DRO or GRO concentrations above 10 mg/kg. The soil sample QED results are summarized in **Table 2**. A copy of the QED analysis report is included in **Appendix D**.

Laboratory Analysis for Methods 8260/8270

Four soil samples [5-4(4-6), 5-5(2-4), 5-7(2-4) and 5-8(2-4)] were sent to the laboratory for analysis of soils using EPA Methods 8260/8270 for volatile and semi-volatile organic compounds based on the suspected methamphetamine lab at the property. The laboratory results detected a low concentration of acetone in soil sample 5-4(4-6) of 0.0993 mg/kg that is well below the soil-to-groundwater MSCC. The soil-to-groundwater MSCC for acetone is 24 mg/kg. No other compounds were detected above residential or soil-to-groundwater MSCCs in the samples that were analyzed. The soil sample laboratory results are summarized in **Table 3**. A copy of the laboratory report and chain-of-custody (COC) is included in **Appendix E**.

4.3 Temporary Monitoring Well Installation

On June 3, 2014, Pyramid converted soil boring 5-6 into a 1-inch diameter temporary monitoring well (TW). This location was chosen based on PID and QED readings, and its location at a proposed drainage structure. Soil boring 5-6(TW) was completed to a total depth of 8 feet below land surface (BLS). The temporary well was constructed with 4 feet of 1-inch diameter schedule 80 PVC casing and 4 feet of 1-inch diameter schedule 80 PVC slotted screen.

The depth-to-groundwater was measured at 3.7 feet BLS. The temporary monitoring well was sampled using a new 0.5-inch diameter disposable bailer. Upon completion of the gauging and sampling, the temporary monitoring well was properly abandoned by the drillers by removing the casing, and filling the borehole with bentonite chips and portland cement.

4.4 Groundwater Analytical Results

The groundwater sample 5-6(TW) was placed in laboratory prepared containers for analysis of volatile organic compounds (VOCs) using EPA Method 6200B and semi-volatile organic compounds (SVOCs) using EPA Method 625. The water sample was shipped to Pace Analytical in Huntersville, NC. The 6200B and 625 laboratory analysis did not detect any concentrations of VOC or SVOC above NCAC 2L groundwater

standards. The groundwater results for sample 5-6(TW) are summarized in **Table 4**. A copy of the laboratory report and chain-of-custody is included in **Appendix E**.

5.0 Conclusions and Recommendations

As requested by NCDOT, Pyramid has completed a PSA at the Crystal & Dusty Toler property located at 675 Cummins Drive, Kenly, NC (Parcel 005). The following is a summary of the assessment activities and results. Personnel logs for all field work are included in **Appendix F.**

5.1 Geophysical Investigation

A large portion of the parcel was inaccessible due to dense/tall vegetation and forest. Several of the EM61 anomalies detected could be attributed to visible objects at the ground surface such as the reinforced concrete bridge foundation and a power meter. The remaining EM features were suspected to be associated with metallic debris, and were investigated using the GPR. The GPR did not record any significant reflectors that would be indicative of structures such as USTs. The GPR data were consistent with areas of metallic debris. The geophysical investigation did not record any evidence of metallic USTs at the property.

5.2 Limited Soil Assessment

QED Results

The DENR action levels for both TPH-GRO and TPH-DRO are 10 mg/kg. Soil samples were screened with a PID, and select soil samples were analyzed for DRO and GRO using a QED Analyzer. One soil sample from boring 5-2 at a depth of 4-6 feet exhibited a DRO concentration slightly above 10 mg/kg (10.18 mg/kg). None of the remaining soil samples analyzed exhibited DRO or GRO concentrations above 10 mg/kg.

Laboratory Results

The laboratory results detected a low concentration of acetone in soil sample 5-4(4-6) of 0.0993 mg/kg that is well below the soil-to-groundwater MSCC. The soil-to-groundwater MSCC for acetone is 24 mg/kg. No other compounds were detected of residential or soil-to-groundwater MSCCs in the samples that were analyzed.

5.3 Limited Groundwater Assessment

Soil boring 5-6 was converted into a 1-inch diameter temporary monitoring well to a total depth of 8 feet BLS. The depth-to-groundwater was measured at 3.7 feet BLS. The 6200B and 625 laboratory analysis of groundwater did not detect any VOC or SVOC concentrations above NCAC 2L groundwater standards.

Review of the NCDOT engineering plans indicates that the NCDOT may encounter groundwater at the property during construction activities. The results of this PSA do not indicate that any contamination is present in the groundwater at the location of sampling.

5.4 Recommendations

Petroleum-Impacted Soils

During road construction activities, it is possible the NCDOT may encounter petroleum impacted soil near soil boring 5-2. The direct source of this petroleum was not evident during our investigation.

A DRO concentration of 10.18 mg/kg was observed between 4 and 6 feet BLS at the location of boring 5-2. The NCDOT Microstation drawing shows a drainage ditch feature proposed to be constructed at this location that will require minor soil excavation. The planned excavation does not appear to extend down to a depth of 4 feet; however, it is possible that impacted soils could be encountered.

Estimating the Areas of Contamination

The estimated area of contamination is depicted on **Figure 2**. The boundary of the area of contamination is generally estimated by applying a circular area of contamination around a boring exhibiting DRO/GRO levels above 10 mg/kg with a radius equal to half the distance between that boring and the nearest "clean" boring (DRO/GRO < 10 mg/kg). In cases where this approach is not feasible, such as near property boundaries or where data does not exist to provide a definitive boundary, the area of contamination is terminated using the distance to the property boundary as a radius, or an educated approximation is applied. For this parcel, the distance between boring 5-2 and 5-9 was used as the diameter for contamination surrounding boring 5-2.

Pyramid's PSA investigation resulted in an **estimated area of 804 square feet of impacted soil in the vicinity of boring 5-2**. The contaminated soil was between 4 and 6 feet BLS, and the soil directly above that sample was observed to be clean (DRO/GRO < 10 mg/kg). For this reason, a thickness of two feet will be used to approximate total volumes of contaminated soil. It should be noted that this is a gross estimate based on the data available. Using a total thickness of 2 feet of contaminated soil, Pyramid estimates a total of approximately 1,608 cubic feet, or **60 cubic yards of impacted soils between 4 and 6 feet BLS** at the location of boring 5-2. The boundaries of the area of contamination are approximate due to limited soil data.

It should be noted that, if impacted soil is encountered during road construction outside of the area analyzed by this investigation, the impacted soil should be managed according to NC DENR Division of Waste Management (DWM) UST Section Guidelines and disposed of at a permitted facility.

6.0 Limitations

The results of this preliminary investigation are limited to the boring locations completed during this limited assessment and presented in this report. The laboratory results only reflect the current conditions at the locations sampled on the date this PSA was performed.

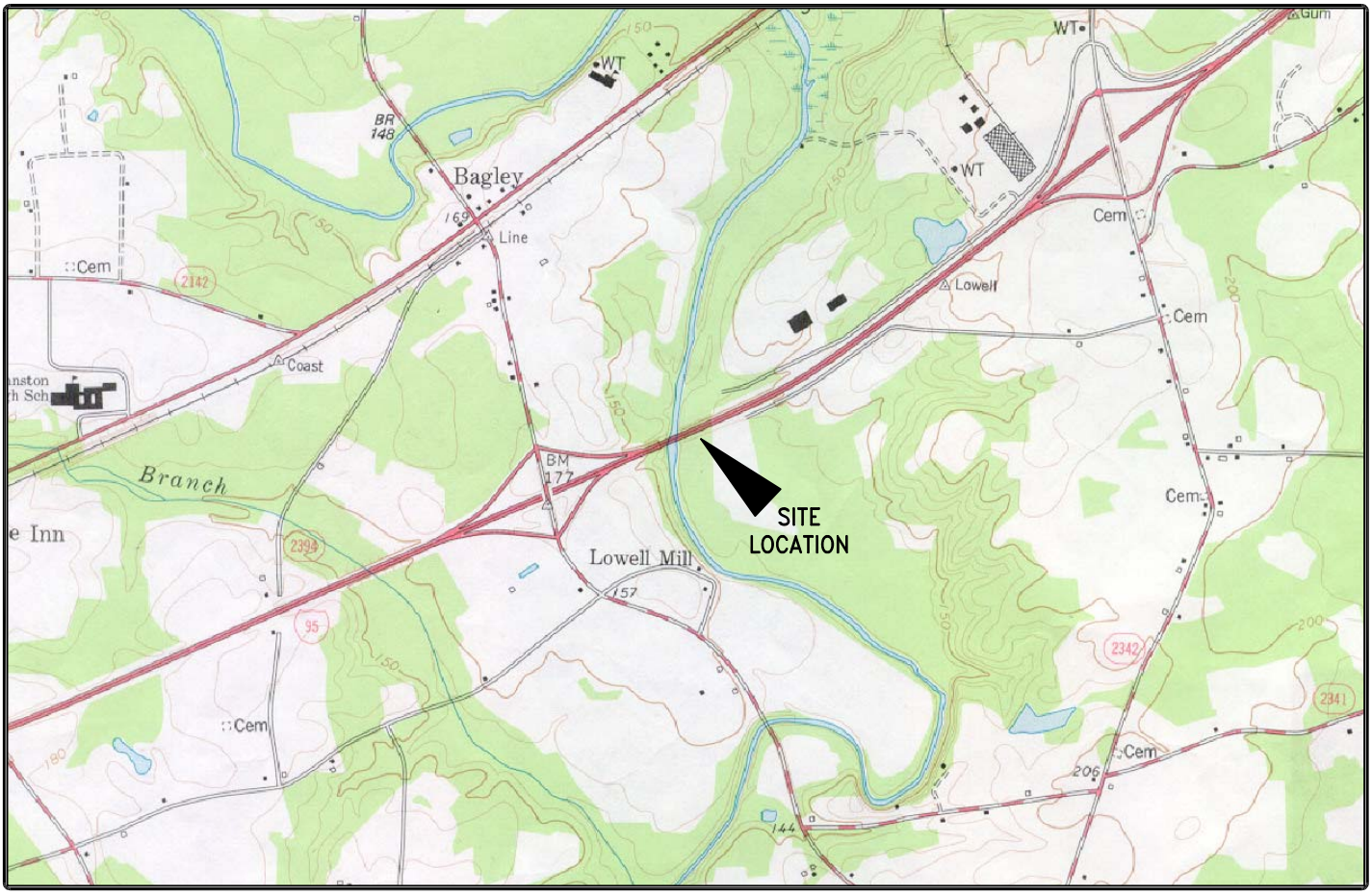
7.0 Closure

This report was prepared for, and is available solely for use by NCDOT and their designees. The contents thereof may not be used or relied upon by any other person without the express written consent and authorization of Pyramid Environmental & Engineering, P.C. (Pyramid). The observations, conclusions, and recommendations documented in this report are based on site conditions and information reviewed at the time of Pyramid's investigation. Pyramid appreciates the opportunity to provide this environmental service.

FIGURES

USGS TOPOGRAPHIC MAP

SITE: 675 CUMMINS DR. LOCATION: KENLY, NORTH CAROLINA



USGS IDENTIFICATION

USGS 7.5 MINUTE MAP	KENLY WEST, N.C.
ORIGINAL DATE:	1978
PHOTOREVISION DATE:	NA

	PRIMARY HIGHWAY, HARD SURFACE
	SECONDARY HIGHWAY, HARD SURFACE
	LIGHT-DUTY ROAD HARD OR IMPROVED SURFACE
	UNIMPROVED ROAD
	STATE ROAD
	U.S. ROUTE
	INTERSTATE ROUTE

SCALES

MILES: 1/2 0 1

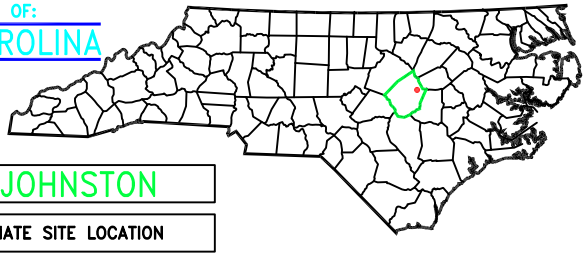
FEET: 1000 0 2000 4000 6000

1" = 2000'

NOTES: ▶ TOPOGRAPHICAL CONTOUR INTERVAL = 10 FEET
▶ PHOTOREVISIONS DENOTED IN PURPLE

MAGNETIC NORTH

COUNTY MAP OF: NORTH CAROLINA



COUNTY: JOHNSTON

APPROXIMATE SITE LOCATION

PYRAMID
ENVIRONMENTAL & ENGINEERING, P.C.

CLIENT: NC DOT I-3318BB

PROPERTY NAME: PARCEL 005, CRYSTAL & DUSTY TOLER

CITY: KENLY STATE: NORTH CAROLINA

TITLE: TOPOGRAPHIC MAP

SCALE: 1"=2000'

DATE: 6/16/14

DRAWING NAME: USGSTOPO

DRAWN BY: KAM

CHECK BY: TDL

JOB NO.: 2014-093

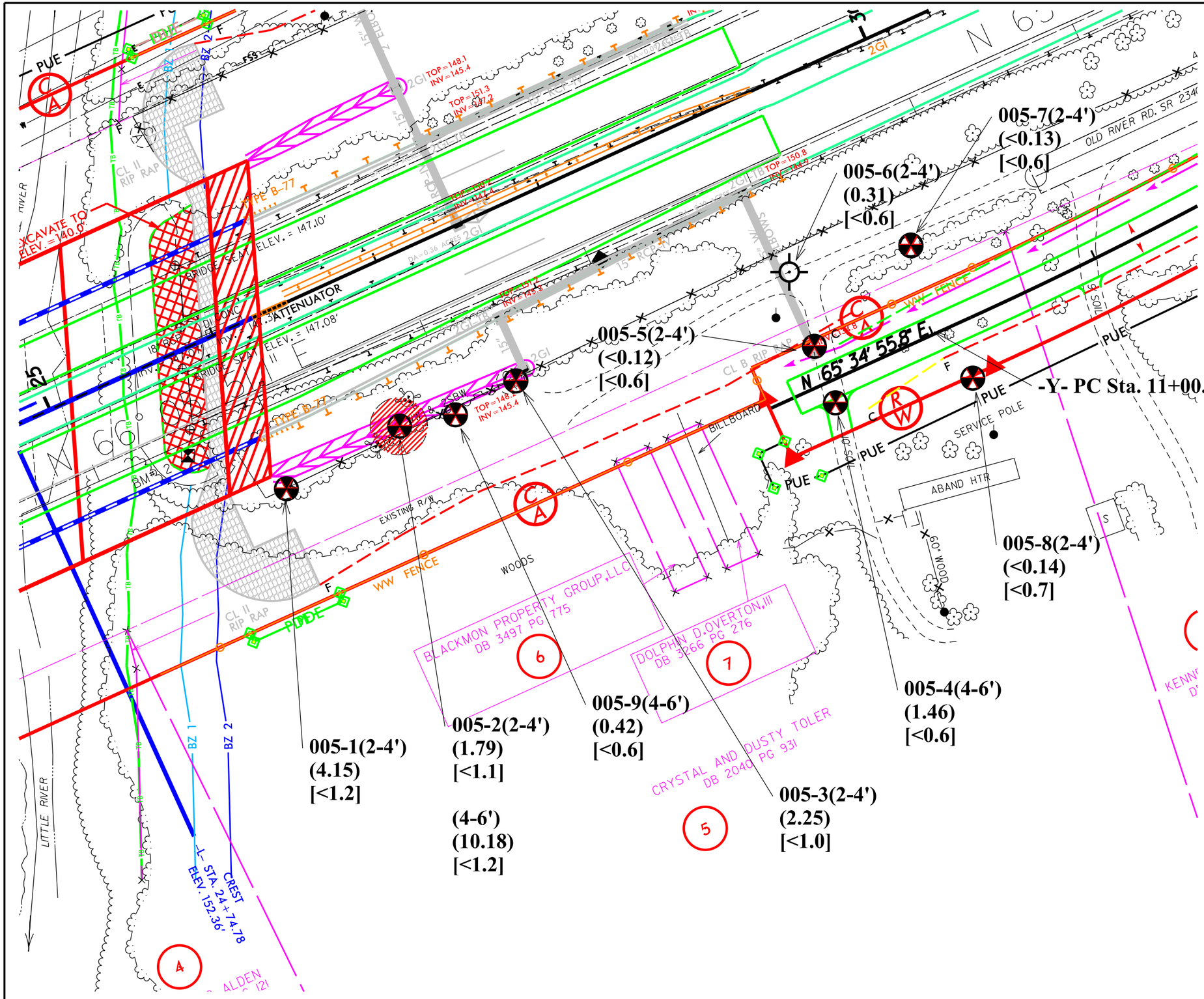
TYPE: PSA

FIGURE NUMBER: 1

NOTES

TOPOGRAPHIC MAP USED IN THIS GRAPHIC IS MAPPED, EDITED, AND PUBLISHED BY THE UNITED STATES GEOLOGIC SURVEY, DEPARTMENT OF THE INTERIOR, RESTON VIRGINIA.

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS.



LEGEND

- PROPOSED UTILITY EASEMENT
- EXISTING ROW
- EXISTING PROPERTY BOUNDARY
- PROPOSED ROW
- PROPOSED CONST. EASEMENT
- PROP. DRAINAGE UTIL. EASEMENT
- PROPOSED SS CUT LINE
- PROPOSED SS FILL LINE
- PROPOSED SS TRANSITION LINE
- PROPOSED DRAINAGE PIPING
- SOIL SAMPLE BORING LOCATION
- BORING CONVERTED TO MONITORING WELL
- AREA OF CONTAMINATION (>10 PPM)

(<6.1) TPH-DRO concentration (mg/kg)
[<6.1] TPH-GRO concentration (mg/kg)

0 50 100
FEET

N

TITLE: SOIL BORING LOCATIONS AND ESTIMATED AREA OF CONTAMINATION

PROJECT: NCDOT ROW PROJECT I-33188B (34182.2.1)
CRYSTAL & DUSTY TOLER - PARCEL 005
BAGLEY ROAD, JOHNSTON COUNTY, NC

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DATE: 6-11-14	REVISION NO. 0
PYRAMID PROJECT NO. 2014-093	FIGURE NO. 2

TABLES

TABLE 1

Summary of Soil Field Screening Results

NCDOT Project I-3318BB
675 Cummins Drive - Parcel 005
Kenly, Johnston County, North Carolina

SOIL BORING	SAMPLE ID	DEPTH (feet bgs)	PID READINGS (PPM)
5-1	5-1(2-4)	2 to 4	7.2
	5-1(4-6)	4 to 6	7.5
	5-1(6-8)	6 to 8	5.0
	5-1(8-9)	8 to 9	5.0
	5-1(9-11)	9 to 11	7.0
5-2	5-2(2-4)	2 to 4	11.0
	5-2(4-6)	4 to 6	8.0
	5-2(6-8)	6 to 8	17.0
	5-2(8-10)	8 to 10	12.0
5-3	5-3(2-4)	2 to 4	18.0
	5-3(4-6)	4 to 6	9.0
	5-3(6-8)	6 to 8	18.0
	5-3(8-9.5)	8 to 9.5	8.0
5-4	5-4(0-2)	0 to 2	14.0
	5-4(2-4)	2 to 4	10.0
	5-4(4-6)	4 to 6	10.0
	5-4(6-8)	6 to 8	16.0
	5-4(8-9.5)	8 to 9.5	22.0
5-5	5-5(0-2)	0 to 2	20.0
	5-5(2-4)	2 to 4	23.0
	5-5(4-6)	4 to 6	17.0
	5-5(6-8)	6 to 8	12.0
	5-5(8-9.5)	8 to 9.5	11.0
5-6	5-6(2-4)	2 to 4	17.0
	5-6(4-6)	4 to 6	15.0
	5-6(6-8)	6 to 8	13.0
	5-6(8-9)	8 to 9	10.0
5-7	5-7(0-2)	0 to 2	1.0
	5-7(2-4)	2 to 4	3.0
	5-7(4-6)	4 to 6	0.5
	5-7(6-8)	6 to 8	1.0
	5-7(8-10)	8 to 10	1.0
5-8	5-8(0-2)	0 to 2	1.0
	5-8(2-4)	2 to 4	3.0
	5-8(4-6)	4 to 6	1.0
	5-8(6-8)	6 to 8	1.0
	5-8(10-12)	10 to 12	1.0
5-9	5-9(2-4)	2 to 4	14.0
	5-9(4-6)	4 to 6	15.0
	5-9(6-8)	6 to 8	10.0

bgs= below ground surface
PID= photo-ionization detector
PPM= parts-per-million
= sampled for lab analysis &/or QROS-QED analysis
OVA= Organic Vapor Analyzer

TABLE 2

Summary of Soil Sample QED Analytical Results for GRO/DRO

NCDOT State Project I-3318BB
675 Cummins Drive - Parcel 005
Kenly, Johnston County, North Carolina

				QROS - QED Analysis		
SAMPLE ID	**DATE**	**DEPTH (feet)**	**PID (ppm)**	**GRO (mg/kg) (C5-C10)**	**DRO (mg/kg) (C10-C35)**	**TPH (mg/kg) (C5-C35)**
5-1(2-4)	6/2/2014	2 to 4	7.2	<1.2	4.15	4.15
5-2(2-4)	6/2/2014	2 to 4	11.0	<1.1	1.79	1.79
5-2(4-6)	6/2/2014	4 to 6	8.0	<1.2	**10.18**	**10.18**
5-3(2-4)	6/2/2014	2 to 4	18.0	<1	2.25	2.25
5-4(4-6)	6/2/2014	4 to 6	10	<0.6	1.46	1.46
5-5(2-4)	6/2/2014	2 to 4	23	<0.6	<0.12	<0.6
5-6(2-4)	6/2/2014	2 to 4	17	<0.6	0.31	0.31
5-7(2-4)	6/2/2014	2 to 4	3	<0.6	<0.13	<0.6
5-8(2-4)	6/2/2014	2 to 4	3	<0.6	<0.14	<0.6
5-9(4-6)	6/2/2014	4 to 6	15	<0.6	0.42	0.42
NC Initial Action Level - UST Section for 5035/5030-GRO; 3550-DRO				10	10	NA

PID= photo-ionizaton detector
PPM= parts-per-million
GRO= Gasoline Range Organics
DRO= Diesel Range Organics
mg/kg= milligrams-per-kilogram
TPH= Total Petroleum Hydrocarbons (GRO + DRO)
NA= Not Applicable
"------" = No Laboratory Analysis

*** Bold values indicate concentrations above initial action levels**

TABLE 3

Summary of Volatile/Semi-Volatile Laboratory Results of Soil Samples

NCDOT Project I-3318BB

675 Cummins Drive - Parcel 005

Analytical Parameter	Analytical Method	SAMPLE ID NUMBER				Residential MSCC (mg/kg)	Soil to Groundwater MSCC (mg/kg)
		5-4(4-6)	5-5(2-4)	5-7(2-4)	5-8(2-4)		
	Sample Date:	6/2/2014	6/2/2014	6/2/2014	6/2/2014		
	Depth (feet):	4 to 6	2 to 4	2 to 4	2 to 4		
	Location	N central	N central	NE parcel	NE parcel		
Acetone	8260	0.0993	ND	ND	ND	14000	24
Benzene	8260	ND	ND	ND	ND	18	0.0056
Bromobenzene	8260	ND	ND	ND	ND	NMSCC	NMSCC
Bromoform	8260	ND	ND	ND	ND	81	0.026
2-Butanone (MEK)	8260	ND	ND	ND	ND	9385	16
n-Butylbenzene	8260	ND	ND	ND	ND	626	4.3
sec-Butylbenzene	8260	ND	ND	ND	ND	626	3.3
Styrene	8260	ND	ND	ND	ND	3128	1.5
tert-Butylbenzene	8260	ND	ND	ND	ND	626	3.4
4-Chlorotoluene	8260	ND	ND	ND	ND	1000	0.1
Ethylbenzene	8260	ND	ND	ND	ND	1560	4.9
1,2-Dichloroethane	8260	ND	ND	ND	ND	7	0.0019
Isopropyl ether (IPE)	8260	ND	ND	ND	ND	156	0.37
Isopropylbenzene	8260	ND	ND	ND	ND	1564	1.7
P-Isopropyltoluene	8260	ND	ND	ND	ND	NMSCC	NMSCC
Naphthalene	8260	ND	ND	ND	ND	313	0.16
n-Propylbenzene	8260	ND	ND	ND	ND	626	1.7
Toluene	8260	ND	ND	ND	ND	1200	4.3
1,2,4-Trimethylbenzene	8260	ND	ND	ND	ND	782	8.5
1,3,5-Trimethylbenzene	8260	ND	ND	ND	ND	782	8.3
Total Xylenes	8260	ND	ND	ND	ND	3129	4.6
MTBE	8260	ND	ND	ND	ND	350	0.091
2-Hexanone	8260	ND	ND	ND	ND	70	0.1
Methylene chloride	8260	ND	ND	ND	ND	85	0.02
All Other 8260 Parameters	8260	ND	ND	ND	ND	NA	NA
Acenaphthene	8270	ND	ND	ND	ND	940	8.2
bis(2-Ethylhexyl)phthalate	8270	ND	ND	ND	ND	46	6.6
1-Methylnaphthalene	8270	ND	ND	ND	ND	20	0.004
2-Methylnaphthalene	8270	ND	ND	ND	ND	63	3.6
Naphthalene	8270	ND	ND	ND	ND	313	0.16
All Other 8270 Parameters	8270	ND	ND	ND	ND	NA	NA
PID Field Screening (ppm)	PID	630.0	1050.0			NA	NA

mg/kg = parts per million (ppm).
BOLD values are above MSCC levels.
NS=Not Sampled for Parameter

MSCC = Maximum Soil Contaminant Concentrations
ND = Not Detected.
J= Estimated Concentration

NMSCC= No MSCC
NA Not Applicable
CI= Considered Immobile

TABLE 4

Summary of Groundwater Analytical Results

NCDOT State Project I-3318BB
675 Cummins Drive - Parcel 005
Kenly, Johnston County, North Carolina

PARAMETER	UNITS	SAMPLE ID	NCAC 2L GROUNDWATER STANDARD
		5-6(TW)	
EPA Method 6200B VOCs; Sample Collection Date: 6/3/14			
Benzene	ug/L	ND	1
Chloroform	ug/L	ND	70
Diisopropyl Ether (IPE)	ug/L	ND	70
Ethyl Benzene	ug/L	ND	600
Isopropylbenzene (Cumene)	ug/L	ND	70
Naphthalene	ug/L	ND	6
Styrene	ug/L	ND	70
Toluene	ug/L	ND	600
Total Xylenes	ug/L	ND	500
n-Propylbenzene	ug/L	ND	70
sec-Butylbenzene	ug/L	ND	70
n-Butylbenzene	ug/L	ND	70
tert-Butyl methyl ether (MTBE)	ug/L	ND	20
tert-Butylbenzene	ug/L	ND	70
1,2,4-Trimethylbenzene	ug/L	ND	400
1,2-Dichloroethane	ug/L	ND	0.4
1,3,5-Trimethylbenzene	ug/L	ND	400
4-Isopropyltoluene	ug/L	ND	25
All Other Parameters	ug/L	ND	NA
EPA Method 625 Semi-Volatile Organic Compounds			
Acenaphthene	ug/L	ND	80
Diethylphthalate	ug/L	ND	6000
bis(2-Ethylhexyl)phthalate	ug/L	ND	3
Naphthalene	ug/L	ND	6
Phenanthrene	ug/L	ND	200
Phenol	ug/L	ND	30
Pyrene	ug/L	ND	200
All Other Parameters	ug/L	ND	NA

ug/L= micrograms-per-liter

ND= Not Detected at or above adjusted reporting limit.

NA= Not Applicable

Bold values above 2L

APPENDIX A


8-15-37
SC-A P6
ABV-21-1949
ABV-21-1951
ABV-63-6054
1937 Aerial
Study Area

1948 Aerial

Study Area

2-27-65

ABV-2FF-283

1965 Aerial

Study Area

2-24-71

1971 Aerial

P-6

ABV - 4 MM - 96

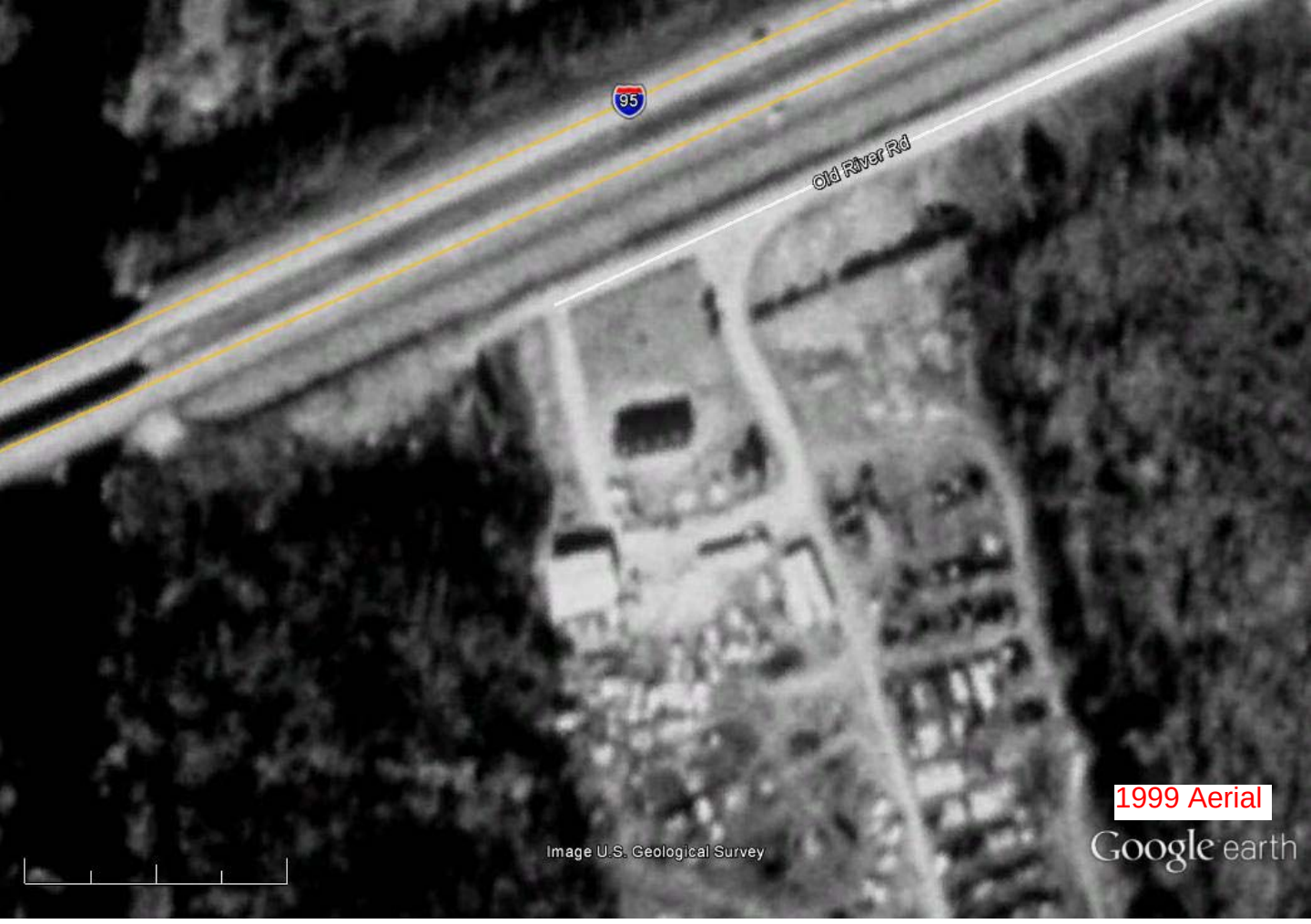
Study Area


37101-2288
183L
1988 Aerial
Study Area

Google earth

feet 600

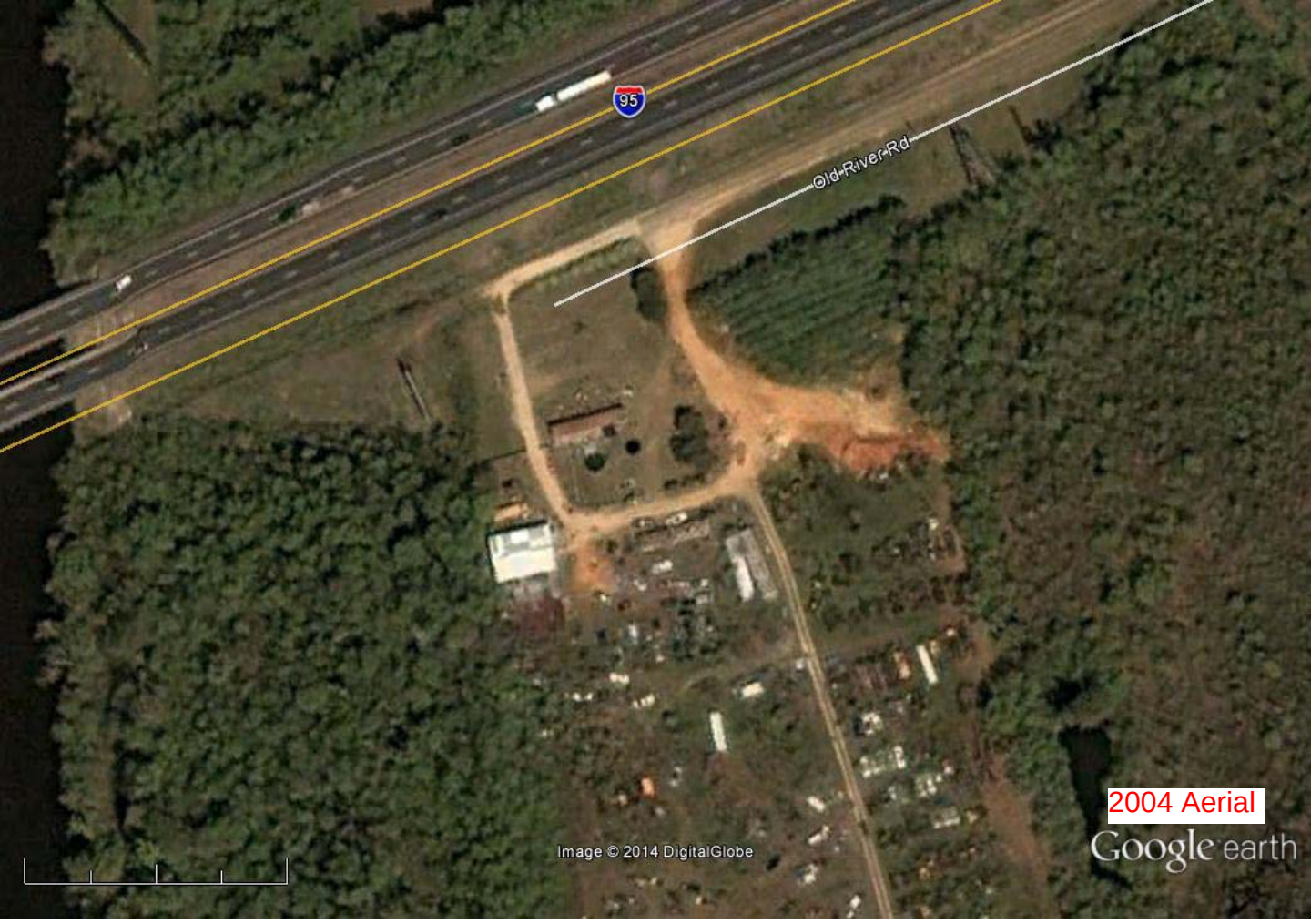
meters 100



Google earth

feet 600

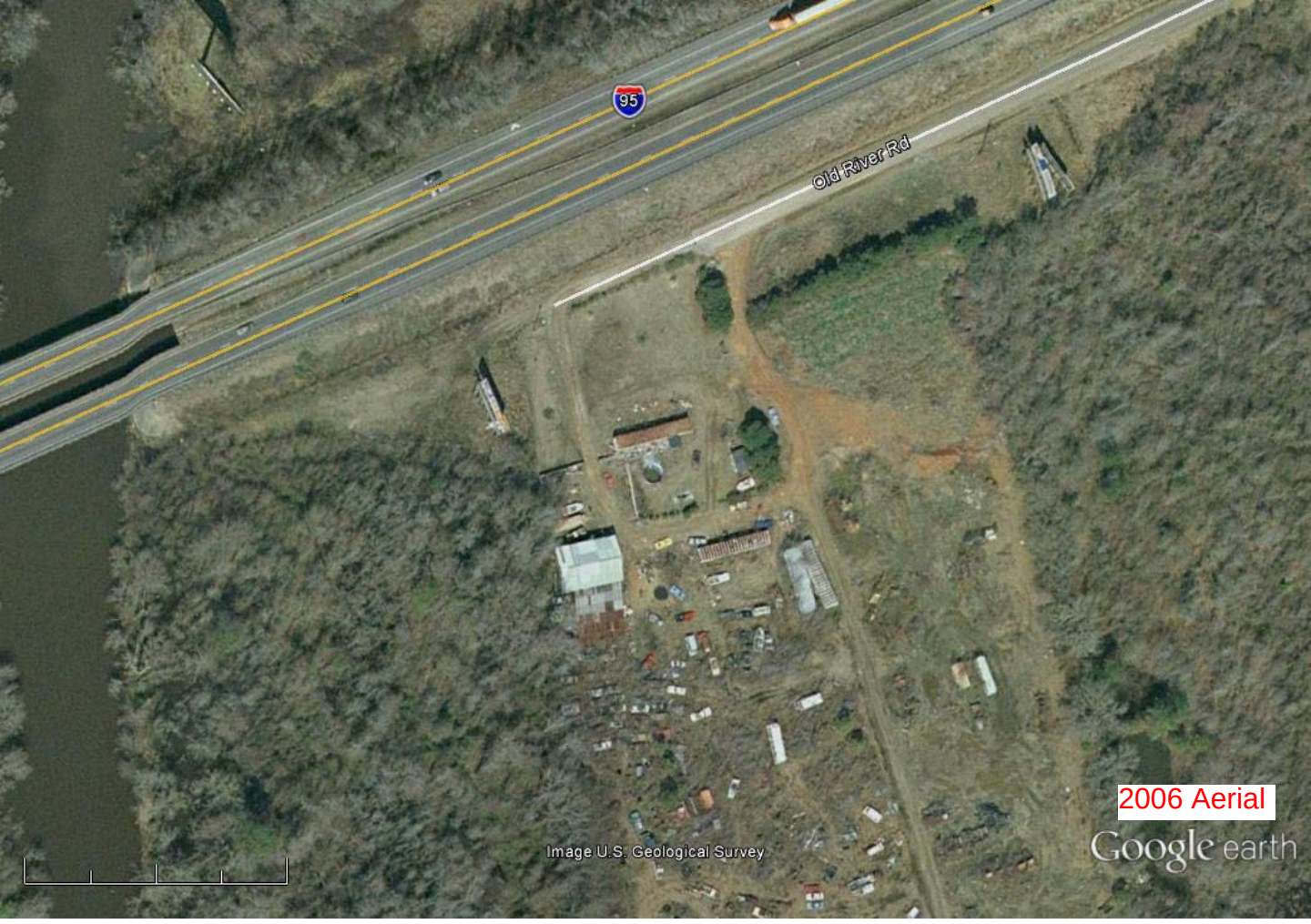
meters 100



Google earth

feet 600

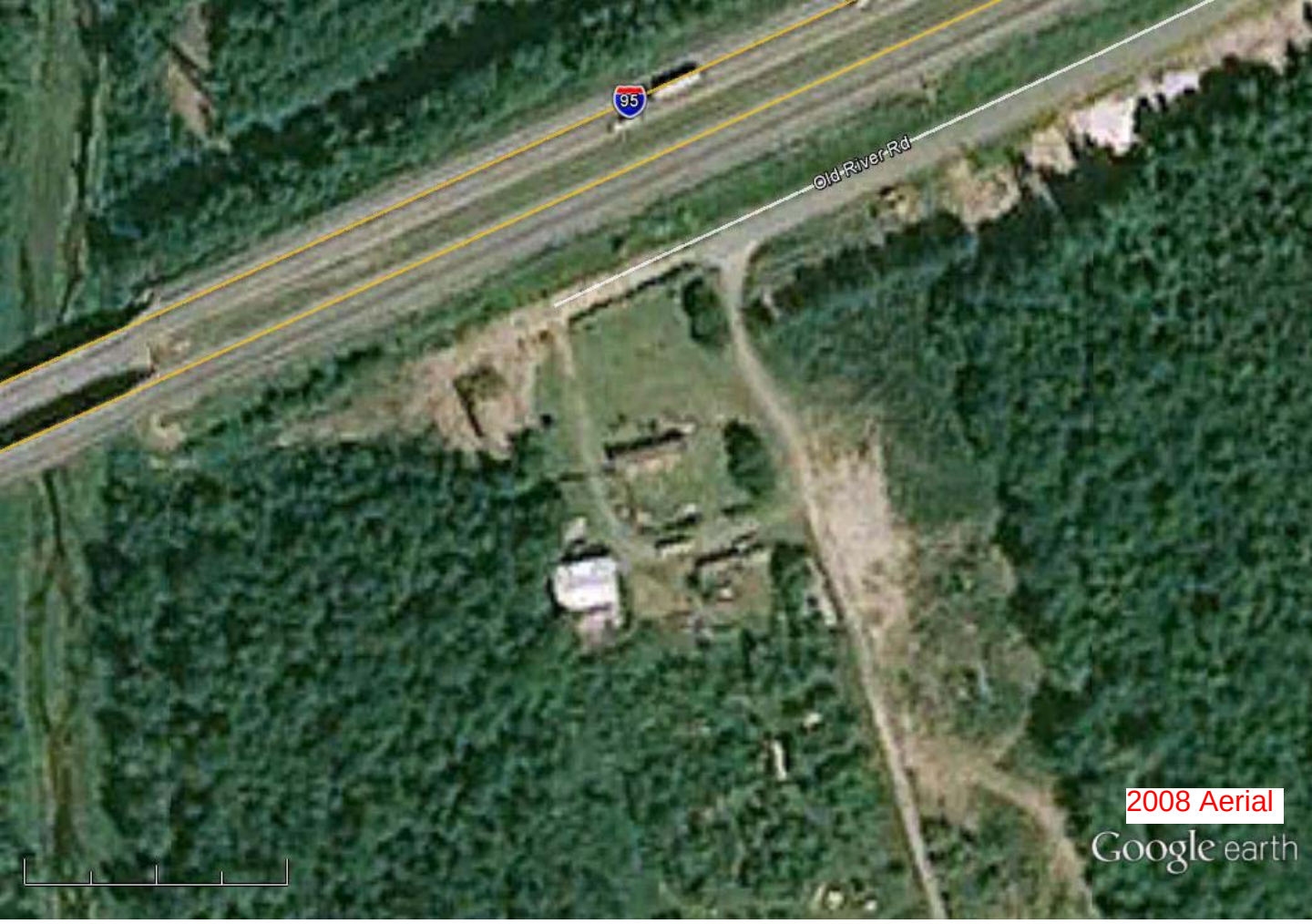
meters 100



Google earth

feet 600

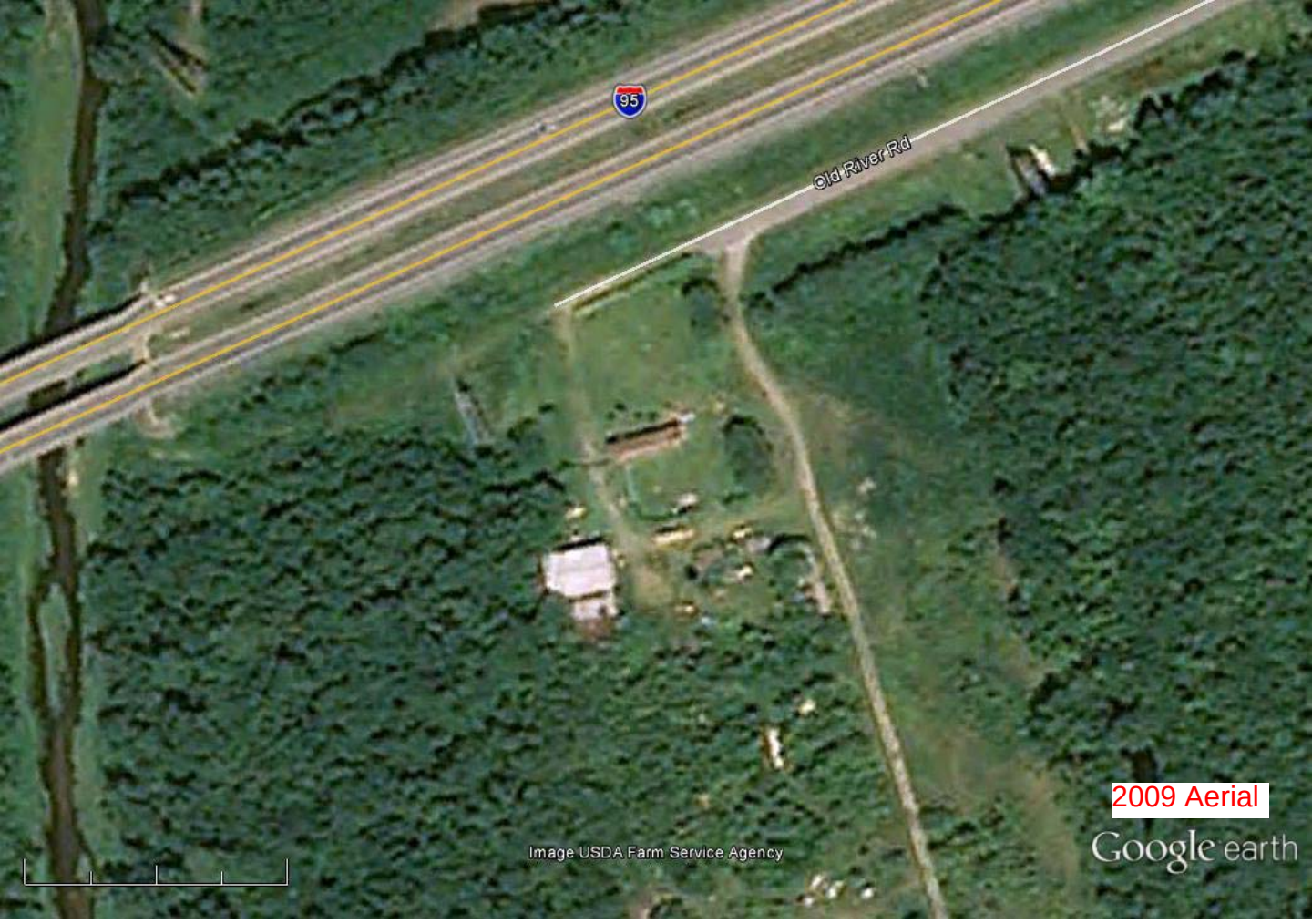
meters 100



Google earth

feet 600

meters 100



Google earth

feet 600

meters 100

Google earth

feet 600

meters 100

APPENDIX B

PYRAMID ENVIRONMENTAL & ENGINEERING, P.C.

PYRAMID ENVIRONMENTAL & ENGINEERING
(PROJECT 2014-093)

GEOPHYSICAL SURVEY

PARCEL 005 –
CRYSTAL & DUSTY TOLER
675 CUMMINS DRIVE, KENLY, NC
NCDOT PROJECT I-3318BB (WBS 34182.2.1)

KENLY, JOHNSTON COUNTY, NC

JUNE 19, 2014

Report prepared for: **Mr. Gordon Box**
GeoEnvironmental Project Manager
Geotechnical Engineering Unit
1020 Birch Ridge Drive
Raleigh, NC 27610

Prepared by: _____

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

Reviewed by: _____

Douglas A. Canavello, P.G.
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C257: GEOLOGY C1251: ENGINEERING

GEOPHYSICAL INVESTIGATION REPORT
Parcel 005, 675 Cummins Drive
Kenly, Johnston County, North Carolina

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Field Methodology 2
Discussion of Results 3
Summary and Conclusions 4
Limitations 5

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Figure 2 – Parcel 005 – EM61 Differential Results Contour Map
Figure 3 – Parcel 005 – Overlay of EM61 Contour Map On Engineering Plans
Figure 4 – Parcel 005 – GPR Transect Locations
Figure 5 – Parcel 005 – GPR Transect Images

EXECUTIVE SUMMARY

Project Description: Pyramid Environmental conducted a geophysical investigation for the North Carolina Department of Transportation (NCDOT), at the Crystal & Dusty Toler property, Parcel 005, 675 Cummins Drive, Kenly, Johnston County, NC. The survey was part of an NCDOT Right-of-Way (ROW) investigation (NCDOT Project I-3318BB). The geophysical survey boundaries at the project site were designed to include the portions of the property between the existing edge of pavement and the proposed ROW and easements, whichever distance was greater. The geophysical investigation consisted of electromagnetic (EM) induction-metal detection and ground penetrating radar (GPR) surveys.

Geophysical Results: Several of the EM61 anomalies detected could be attributed to visible objects at the ground surface such as the reinforced concrete bridge foundation and a power meter. The remaining EM features were suspected to be associated with metallic debris, and were investigated by the GPR. The GPR did not record any significant reflectors that would be indicative of structures such as USTs. The GPR data were consistent with areas of metallic debris. The geophysical investigation did not record any evidence of metallic USTs at the property.

INTRODUCTION

Pyramid Environmental conducted a geophysical investigation for the North Carolina Department of Transportation (NCDOT), at the Crystal & Dusty Toler property, Parcel 005, 675 Cummins Drive, Kenly, Johnston County, NC. The survey was part of an NCDOT Right-of-Way (ROW) investigation (NCDOT Project I-3318BB). The geophysical survey boundaries at the project site were designed to include the portions of the property between the existing edge of pavement and the proposed ROW and easements, whichever distance was greater. The survey grid spanned approximately 500 feet from west to east and a maximum of approximately 115 feet from north to south. Conducted on May 22 and 23, 2014, the geophysical investigation was performed to determine if unknown, metallic underground storage tanks (USTs) were present beneath the survey area.

The site contained an abandoned trailer surrounded by open grassy areas, zones of very dense/tall vegetation, and a dirt access road. It should be noted that significant portions of the parcel that were within the proposed ROW and/or easements were not accessible by the geophysical equipment due to the vegetation. Surveys were performed in all accessible areas. Aerial photographs 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. The EM survey was performed on May 22, 2014, using a Geonics EM61 metal detection instrument integrated with a Trimble AG-114 GPS antennae. 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 geo-referenced and can be overlain on aerial photographs and CADD drawings. A boundary grid was established around the perimeter of the site and at select interior locations 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 generally along north-south trending or east-west trending, 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 11.0 software programs.

GPR data were acquired across select EM differential anomalies on May 23, 2014, using a Geophysical Survey Systems, Inc. (GSSI) UtilityScan DF unit with a dual frequency 300/800 MHz antenna. Data were collected generally from east to west and north to south across the property. The GPR data were viewed in real time using a vertical scan of 512 samples, at a rate of 36 scans per foot. GPR data were viewed down to a maximum depth of approximately 4-5 feet, based on an estimated two-way travel time of 8 nanoseconds per foot. GPR Transects across specific anomalies were saved to the hard drive of the DF unit for post-processing and figure generation.

DISCUSSION OF RESULTS

A contour plot of the EM61 differential results obtained across survey area at the property is presented in **Figure 2**. The differential results are obtained from the difference between the top and bottom coils of the EM61 instrument. The differential results focus on the larger metal objects such as drum and UST-size objects and ignore the smaller insignificant metal objects.

Discussion of EM Anomalies: The EM responses at the west end of the survey area were the result of the reinforced concrete bridge foundation at this location. The high amplitude EM response to the east of the bridge foundation was associated with visible concrete and metallic debris at the ground surface. The high amplitude, isolated EM feature in the center of the survey area was associated with a power meter on the billboard sign at this location. Scattered EM responses were observed at various locations surrounding the billboard sign and on the east portion of the survey area. These features were investigated further with the GPR.

Figure 3 provides an overlay of the EM61 contour map on the NCDOT engineering plans for the site to provide a reference of proposed ROW and construction features with the geophysical data.

Discussion of GPR Survey: **Figure 4** presents the locations of the GPR transects performed at the property, and Figure 5 presents the transect images. GPR Transects 1-5 were performed across the EM feature on the east portion of the survey area. GPR Transect 6-8 were performed across the EM features surrounding the billboard sign in the center of the survey area. Collectively, the 8 transects did not record any significant reflectors that would be indicative of structures such as USTs. Some minor soil disturbances and discontinuous reflectors were observed that are consistent with buried debris.

The geophysical investigation did not record any evidence of metallic USTs at the property within the survey area limits. It should be re-stated that a significant portion of the parcel was inaccessible due to dense/tall vegetation.

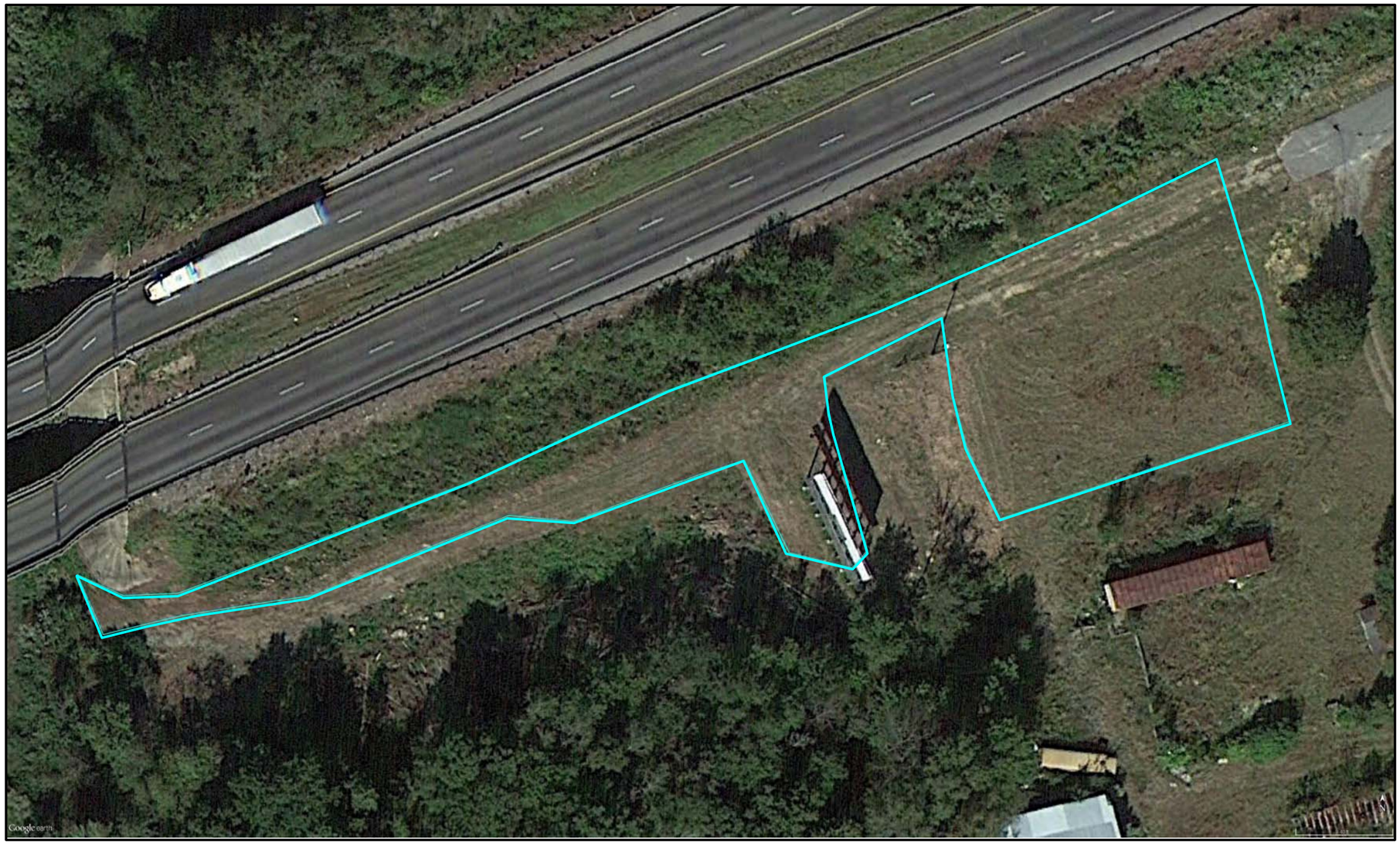
SUMMARY & CONCLUSIONS

Our evaluation of the EM61 and GPR data collected across Parcel 005 in Kenly, 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.
- Several of the EM61 anomalies detected could be attributed to visible objects at the ground surface such as the reinforced concrete bridge foundation and a power meter.
- The remaining EM features were suspected to be associated with metallic debris, and were investigated by the GPR.
- The GPR did not record any significant reflectors that would be indicative of structures such as USTs. The GPR data were consistent with areas of metallic debris.
- The geophysical investigation did not record any evidence of metallic USTs at the property.

LIMITATIONS

Geophysical surveys have been performed and this report prepared for the NCDOT 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 that 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
(Tall/dense vegetation prevented access to entire area)

View of East Portion of Survey Area
(Facing Approximately West)

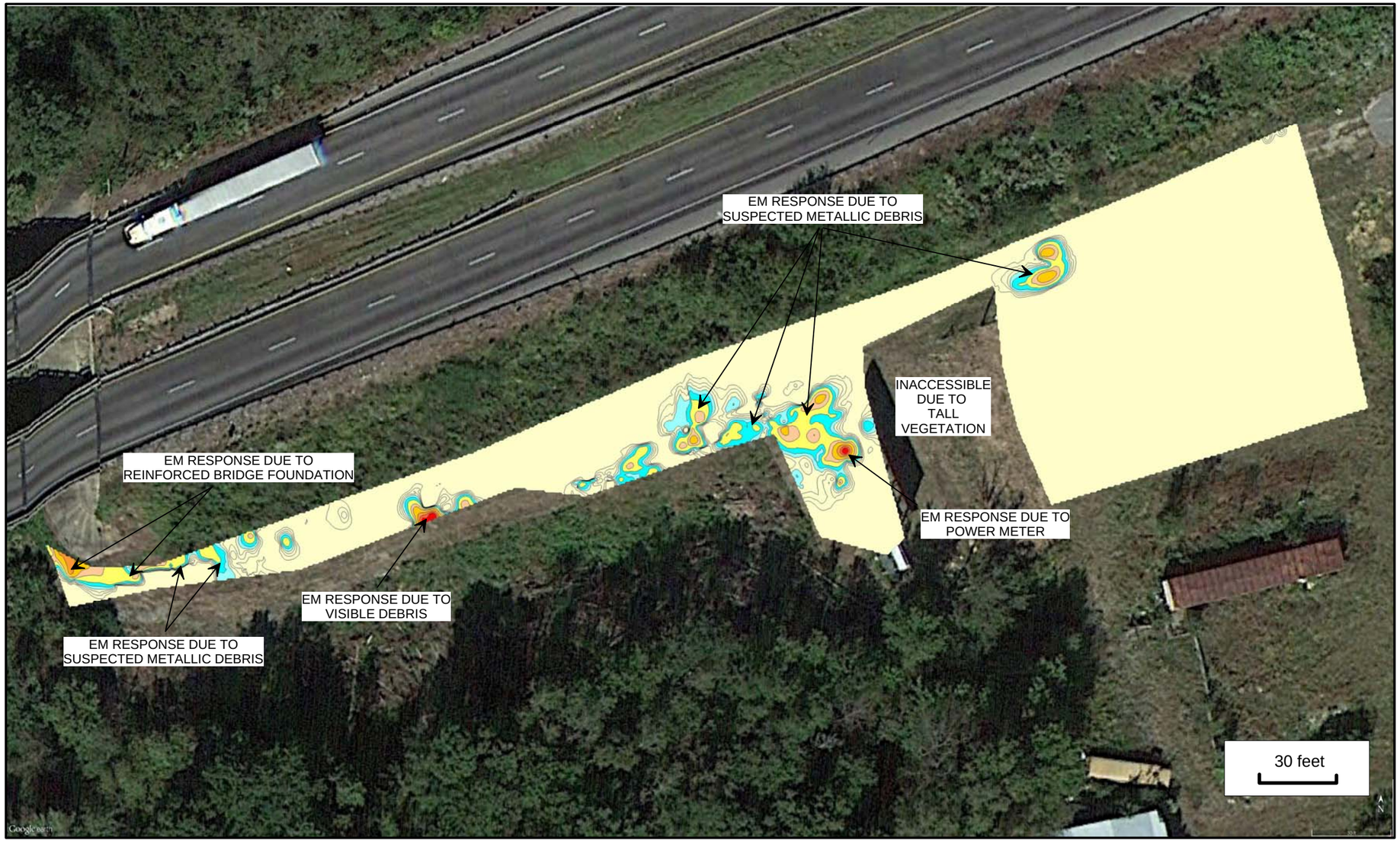
View of West Portion of Survey Area
(Facing Approximately West)

TITLE	PARCEL 005: EM61 GEOPHYSICAL SURVEY PATH AND SITE PHOTOGRAPHS
PROJECT	NCDOT PROJECT I-3318BB (34182.2.1) KENLY, JOHNSTON COUNTY, NC

PYRAMID ENVIRONMENTAL & ENGINEERING, P.C
503 INDUSTRIAL AVENUE
GREENSBORO, NC 27460
(336) 335-3174 (p) (336) 691-0648 (f)
License # C1251 Eng. / License # C257 Geology

DATE	6/17/2014	CLIENT	NCDOT
PYRAMID PROJECT #:	2014-093		**FIGURE 1**

EM61 Differential Results



NO EVIDENCE OF METALLIC USTs OBSERVED

The contour plot shows the differential results of the EM61 instrument in millivolts (mV). The differential response focuses on larger, buried metallic objects such as drums and USTs and ignores smaller miscellaneous buried, metal debris.The EM61 data were collected on May 22, 2014, using a Geonics EM61 instrument. Ground penetrating radar (GPR) data were collected on May 23, 2014, using a GSSI UtilityScan DF unit and a dual frequency 300/800 MHz antenna.

EM61 Metal Detection Response (millivolts)

TITLE	PARCEL 005: EM61 DIFFERENTIAL RESULTS CONTOUR MAP
PROJECT	NCDOT PROJECT I-3318BB (34182.2.1) KENLY, JOHNSTON COUNTY, NC

PYRAMID ENVIRONMENTAL & ENGINEERING, P.C
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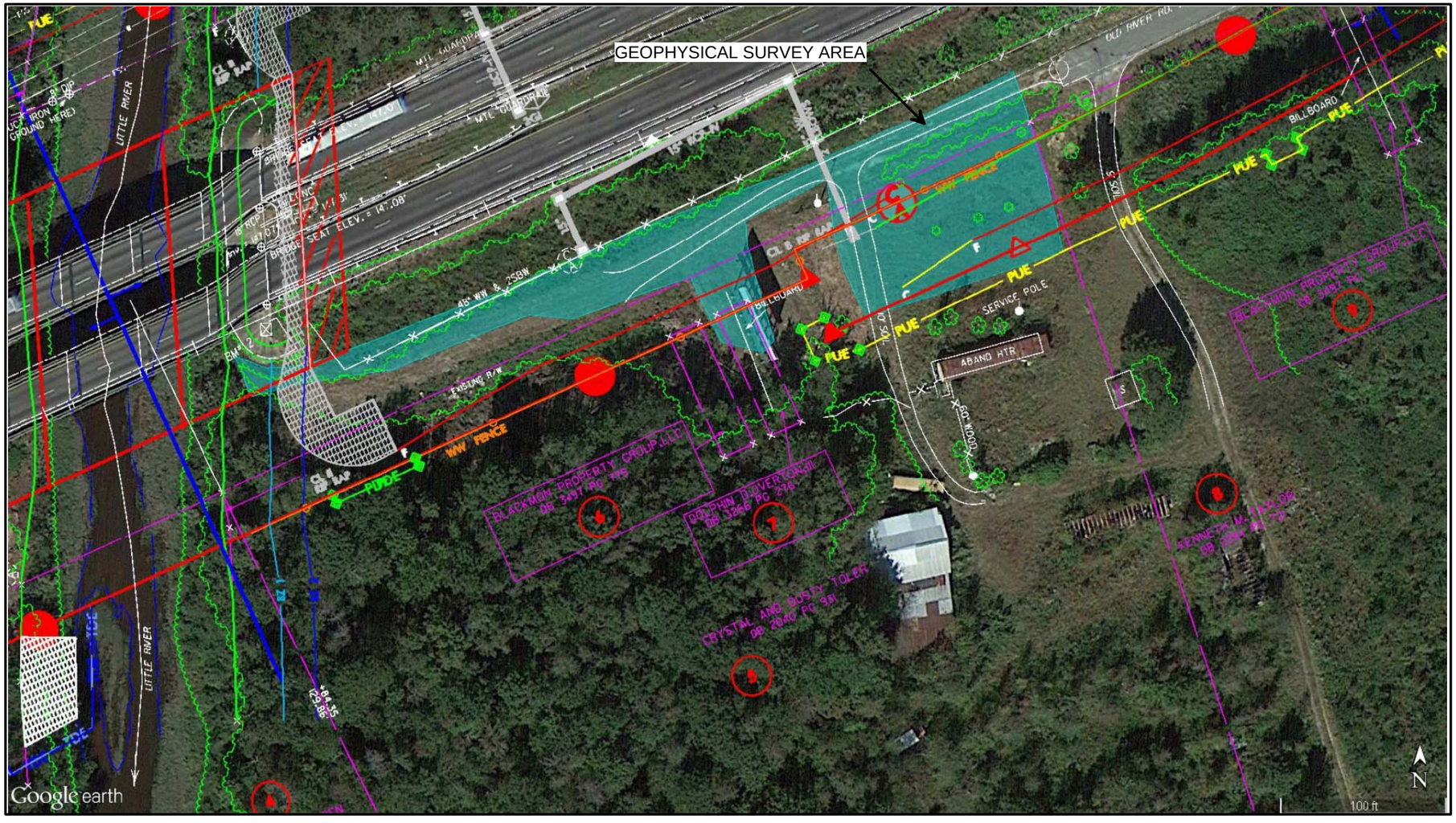
License # C1251 Eng. / License # C257 Geology

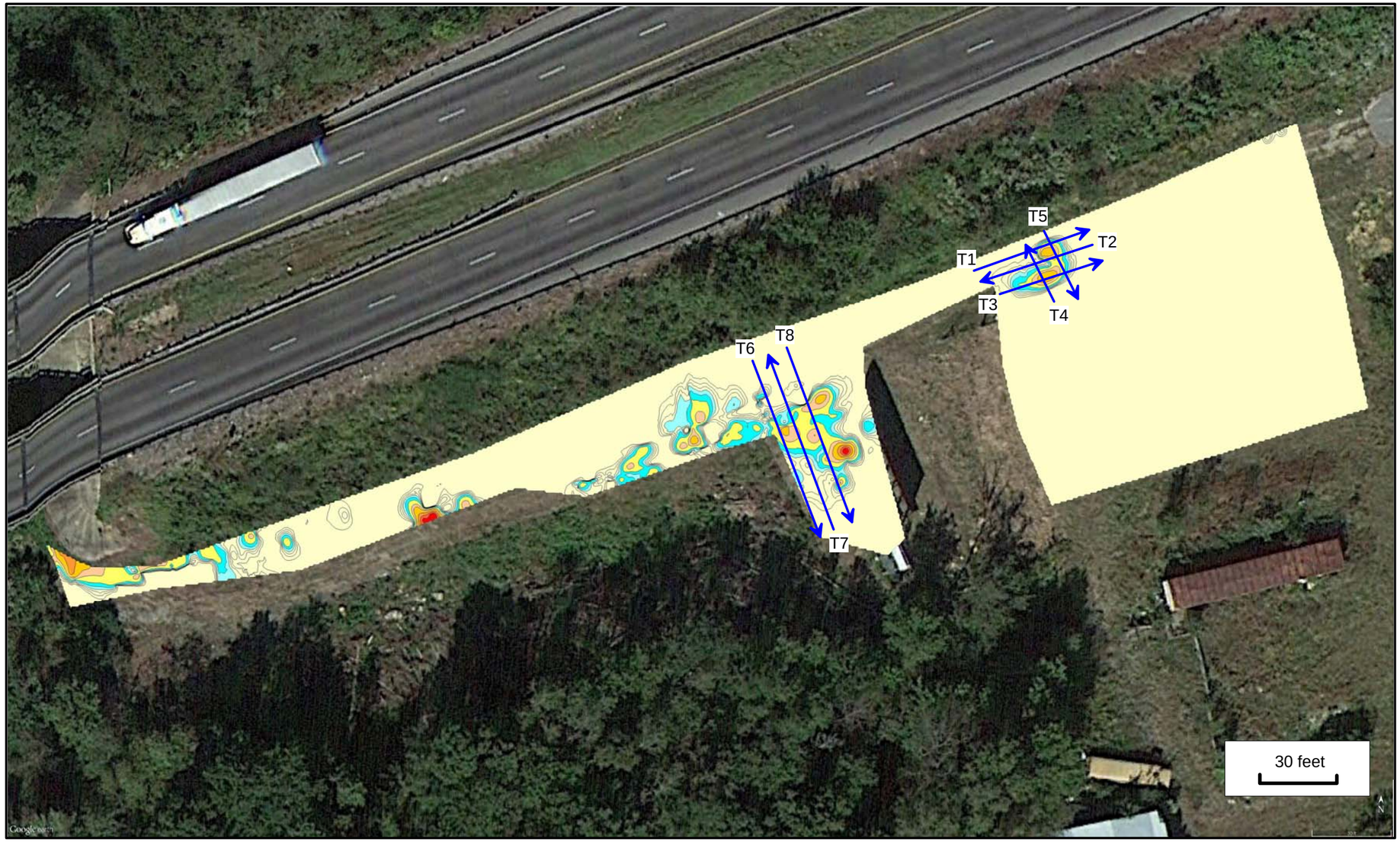
DATE	6/19/2014	CLIENT	NCDOT
PYRAMID PROJECT #:	2014-093		**FIGURE 2**



Geophysical Survey Area Overlain on NCDOT Engineering Plans
(areas not included in survey are the result of dense/tall vegetation)

TITLE	PARCEL 005: GEOPHYSICAL SURVEY AREA OVERLAIN ON NCDOT CADD
PROJECT	NCDOT PROJECT I-3318BB (34182.2.1) KENLY, JOHNSTON COUNTY, NC
PYRAMID ENVIRONMENTAL & ENGINEERING, P.C.	503 INDUSTRIAL AVENUE GREENSBORO, NC 27460 (336) 335-3174 (p) (336) 691-0648 (f) License # C1251 Eng. / License # C257 Geology
DATE 6/17/2014	CLIENT NCDOT
PYRAMID PROJECT #: 2014-093	**FIGURE 3**

GPR Transect Locations



TITLE
PARCEL 005:
GPR TRANSECT LOCATIONS

PROJECT
NCDOT PROJECT I-3318BB (34182.2.1)
KENLY, JOHNSTON COUNTY, NC

PYRAMID
ENVIRONMENTAL & ENGINEERING, P.C.
503 INDUSTRIAL AVENUE
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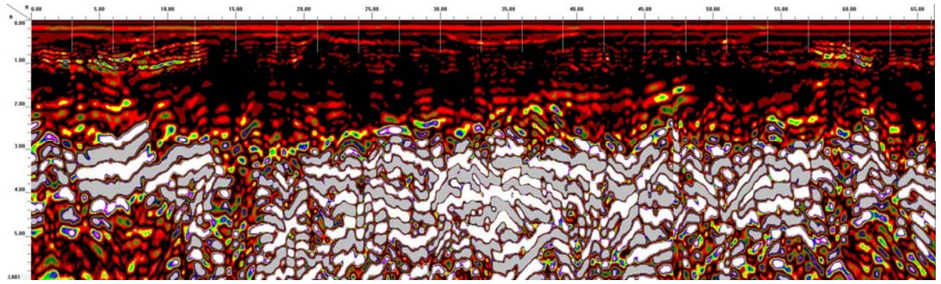
License # C1251 Eng. / License # C257 Geology

DATE 6/19/2014

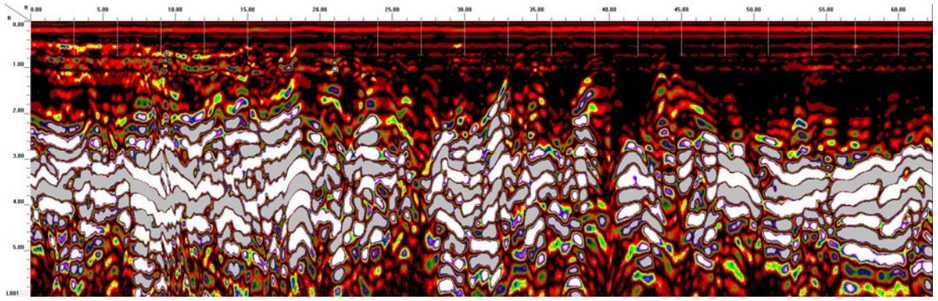
CLIENT NCDOT

PYRAMID PROJECT #: 2014-093

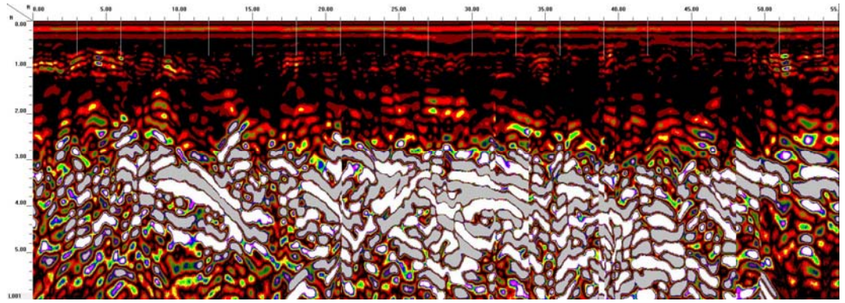
FIGURE 4



GPR TRANSECT 1



GPR TRANSECT 6



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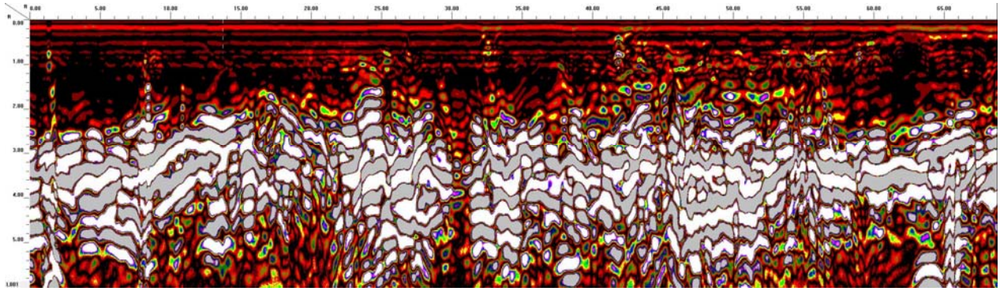
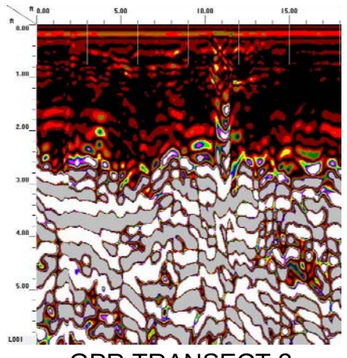


GPR TRANSECT 7



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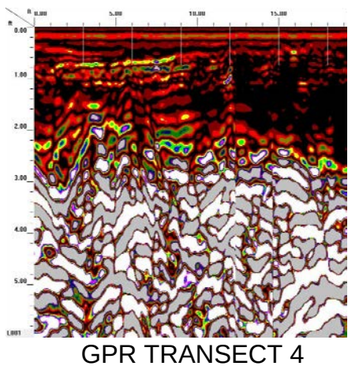
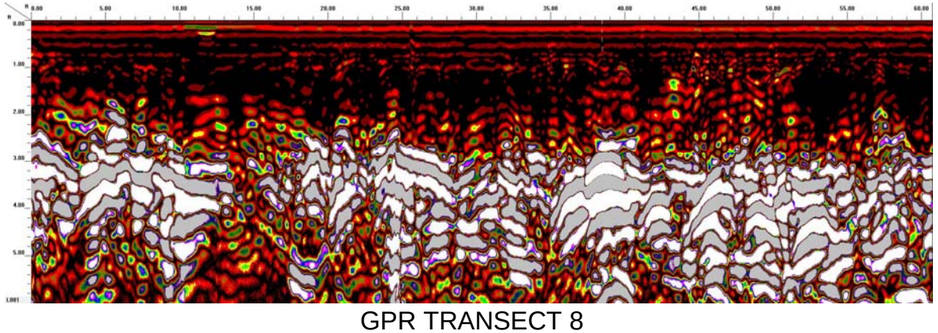


GPR TRANSECT 4



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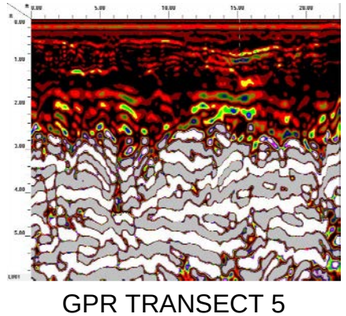


GPR TRANSECT 5

TITLE

PARCEL 005:
GPR TRANSECT IMAGES

PROJECT

NCDOT PROJECT I-3318BB (34182.2.1)
KENLY, JOHNSTON COUNTY, NC

PYRAMID ENVIRONMENTAL & ENGINEERING, P.C
503 INDUSTRIAL AVENUE
GREENSBORO, NC 27460
(336) 335-3174 (p) (336) 691-0648 (f)
License # C1251 Eng. / License # C257 Geology

DATE	6/19/2014	CLIENT	NCDOT
PYRAMID PROJECT #:	2014-093		**FIGURE 5**

APPENDIX C

Pyramid Environmental & Engineering, P.C.

FIELD DRILLING RECORD

PROJECT NAME: **PROJECT NUMBER:**	NC DOT I-3318BB Parcel 005 Crystal & Dusty Toler 2014-093	**BORING/WELL NO:**	5-1
SITE LOCATION:	675 Cummins Drive, Kenly, Johnston County, NC	**BORING/WELL LOCATION:**	W end at bridge
START DATE:	6/2/14	**COMPLETED:**	6/2/14
GEOLOGIST:	T. Leatherman	**DRILLER:**	Solutions, IES
DRILL METHOD:	Geoprobe	**SAMPLE METHOD:**	Macro-core
BORING DIA:	2-inch	**CASING DIA:**	None
TOTAL DEPTH:	11 feet	**CASING DEPTH:**	None

DEPTH (ft.)	**VISUAL MANUAL SOIL CLASSIFICATION COLOR, TEXTURE, STRUCTURE, CONSISTENCY, ODOR, ETC.**	**OVA RESULTS PERCENT RECOVERY BLOW COUNTS**
	Depths correspond to changes in soil type	
0-2'	sandy clayey silt (ML); gray to dark gray, moist, no odor	
2-4'	sandy clayey silt (ML); gray to dark gray, moist, no odor	PID=5-1(2-4): 7.2 PPM
4-6'	sandy silty clay (CL); brown to gray, very moist, no odor	PID=5-1(4-6): 7.5 PPM
6-8'	sandy silty clay (CL); brown to gray, saturated, no odor	PID=5-1(6-8): 5 PPM
8-9'	sandy silty clay (CL); brown to gray, moist, no odor	PID=5-1(8-9): 5 PPM
9-11'	silty sand (SM); gray, rock fragments, moist, no odor	PID=5-1(9-11): 7 PPM
	refusal at 11', groundwater encountered at 4 feet	

MONITORING WELL INFORMATION (IF APPLICABLE)

RISER LENGTH (ft) ___ DEPTH (ft) _____ DIAMETER (in) ___ MATERIAL _____.
SCREEN LENGTH (ft) ___ DEPTH (ft) _____ DIAMETER (in) ___ MATERIAL _____.
DEPTH TO TOP OF SAND _____ BAGS OF SAND ___.
DEPTH TO TOP SEAL _____ BENTONITE USED _____ BAGS OF CEMENT USED ___.

Pyramid Environmental & Engineering, P.C.

FIELD DRILLING RECORD

PROJECT NAME: **PROJECT NUMBER:**	NC DOT I-3318BB Parcel 005 Crystal & Dusty Toler 2014-093	**BORING/WELL NO:**	5-2
SITE LOCATION:	675 Cummins Drive, Kenly, Johnston County, NC	**BORING/WELL LOCATION:**	Center of proposed ditch
START DATE:	6/2/14	**COMPLETED:**	6/2/14
GEOLOGIST:	T. Leatherman	**DRILLER:**	Solutions, IES
DRILL METHOD:	Geoprobe	**SAMPLE METHOD:**	Macro-core
BORING DIA:	2-inch	**CASING DIA:**	None
TOTAL DEPTH:	11 feet	**CASING DEPTH:**	None

DEPTH (ft.)	**VISUAL MANUAL SOIL CLASSIFICATION COLOR, TEXTURE, STRUCTURE, CONSISTENCY, ODOR, ETC.**	**OVA RESULTS PERCENT RECOVERY BLOW COUNTS**
	Depths correspond to changes in soil type	
0-2'	gravel, dirt, asphalt (fill material)	
2-4'	sandy clayey silt (ML); brown, moist, no odor	PID=5-2(2-4): 11 PPM
4-6'	sandy silty clay (CL); brown, very moist, no odor	PID=5-2(4-6): 8 PPM
6-8'	sandy silty clay (CL); brown, very moist, no odor	PID=5-2(6-8): 17 PPM
8-9'	sandy silty clay (CL); brown, saturated, no odor	PID=5-2(8-10): 12 PPM
9-11'	sand (SP) and silty sand (SM); white/brown, rock frags, moist, no odor	
	refusal at 11', groundwater encountered at 5.3 feet	

MONITORING WELL INFORMATION (IF APPLICABLE)

RISER LENGTH (ft) ___ DEPTH (ft) _____ DIAMETER (in) ___ MATERIAL _____.
SCREEN LENGTH (ft) ___ DEPTH (ft) _____ DIAMETER (in) ___ MATERIAL _____.
DEPTH TO TOP OF SAND _____ BAGS OF SAND ___.
DEPTH TO TOP SEAL _____ BENTONITE USED _____ BAGS OF CEMENT USED ___.

Pyramid Environmental & Engineering, P.C.

FIELD DRILLING RECORD

PROJECT NAME: **PROJECT NUMBER:**	NC DOT I-3318BB Parcel 005 Crystal & Dusty Toler 2014-093	**BORING/WELL NO:**	5-3
SITE LOCATION:	675 Cummins Drive, Kenly, Johnston County, NC	**BORING/WELL LOCATION:**	E side proposed ditch
START DATE:	6/2/14	**COMPLETED:**	6/2/14
GEOLOGIST:	T. Leatherman	**DRILLER:**	Solutions, IES
DRILL METHOD:	Geoprobe	**SAMPLE METHOD:**	Macro-core
BORING DIA:	2-inch	**CASING DIA:**	None
TOTAL DEPTH:	9.5 feet	**CASING DEPTH:**	None

DEPTH (ft.)	**VISUAL MANUAL SOIL CLASSIFICATION COLOR, TEXTURE, STRUCTURE, CONSISTENCY, ODOR, ETC.**	**OVA RESULTS PERCENT RECOVERY BLOW COUNTS**
	Depths correspond to changes in soil type	
0-2'	gravel, dirt, asphalt, wood debris (fill material)	
2-4'	sandy clayey silt (ML); brown, moist, no odor	PID=5-3(2-4): 18 PPM
4-6'	sandy silty clay (CL); brown, very moist, no odor	PID=5-3(4-6): 9 PPM
6-8'	sandy silty clay (CL); brown, very moist, no odor	PID=5-3(6-8): 18 PPM
8-9.5'	sandy clay (CL) to clayey sand (SC); tan & lt gray, saturated, no odor	PID=5-3(8-9.5): 8 PPM
	refusal at 9.5', groundwater encountered at 6 feet	

MONITORING WELL INFORMATION (IF APPLICABLE)

RISER LENGTH (ft) ___ DEPTH (ft) _____ DIAMETER (in) ___ MATERIAL _____.
SCREEN LENGTH (ft) ___ DEPTH (ft) _____ DIAMETER (in) ___ MATERIAL _____.
DEPTH TO TOP OF SAND _____ BAGS OF SAND ___.
DEPTH TO TOP SEAL _____ BENTONITE USED _____ BAGS OF CEMENT USED ___.

Pyramid Environmental & Engineering, P.C.

FIELD DRILLING RECORD

PROJECT NAME: **PROJECT NUMBER:**	NC DOT I-3318BB Parcel 005 Crystal & Dusty Toler 2014-093	**BORING/WELL NO:**	5-4
SITE LOCATION:	675 Cummins Drive, Kenly, Johnston County, NC	**BORING/WELL LOCATION:**	W drive, south side
START DATE:	6/2/14	**COMPLETED:**	6/2/14
GEOLOGIST:	T. Leatherman	**DRILLER:**	Solutions, IES
DRILL METHOD:	Geoprobe	**SAMPLE METHOD:**	Macro-core
BORING DIA:	2-inch	**CASING DIA:**	None
TOTAL DEPTH:	9.5 feet	**CASING DEPTH:**	None

DEPTH (ft.)	**VISUAL MANUAL SOIL CLASSIFICATION COLOR, TEXTURE, STRUCTURE, CONSISTENCY, ODOR, ETC.**	**OVA RESULTS PERCENT RECOVERY BLOW COUNTS**
	Depths correspond to changes in soil type	
0-2'	sandy clayey silt (ML); brown, rock frags, moist, no odor	PID=5-4(0-2): 14 PPM
2-4'	sandy clayey silt (ML); brown, rock frags, moist, no odor	PID=5-4(2-4): 10 PPM
4-6'	clayey sand (SC); brown to tan, rock frags, saturated, no odor	PID=5-4(4-6): 0 PPM
6-8'	clayey sand (SC); brown to tan, rock frags, saturated, no odor	PID=5-4(6-8): 16 PPM
8-9.5'	clayey sand (SC) to silty sand (SM); brown to gray, rock frags, saturated,	PID=5-4(8-9.5): 22 PPM
	no odor	
	refusal at 9.5', groundwater encountered at 4.4 feet	

MONITORING WELL INFORMATION (IF APPLICABLE)

RISER LENGTH (ft) ___ DEPTH (ft) _____ DIAMETER (in) ___ MATERIAL _____.
SCREEN LENGTH (ft) ___ DEPTH (ft) _____ DIAMETER (in) ___ MATERIAL _____.
DEPTH TO TOP OF SAND _____ BAGS OF SAND ___.
DEPTH TO TOP SEAL _____ BENTONITE USED _____ BAGS OF CEMENT USED ___.

Pyramid Environmental & Engineering, P.C.

FIELD DRILLING RECORD

PROJECT NAME: **PROJECT NUMBER:**	NC DOT I-3318BB Parcel 005 Crystal & Dusty Toler 2014-093	**BORING/WELL NO:**	5-5
SITE LOCATION:	675 Cummins Drive, Kenly, Johnston County, NC	**BORING/WELL LOCATION:**	W drive, near entry
START DATE:	6/2/14	**COMPLETED:**	6/2/14
GEOLOGIST:	T. Leatherman	**DRILLER:**	Solutions, IES
DRILL METHOD:	Geoprobe	**SAMPLE METHOD:**	Macro-core
BORING DIA:	2-inch	**CASING DIA:**	None
TOTAL DEPTH:	9.5 feet	**CASING DEPTH:**	None

DEPTH (ft.)	**VISUAL MANUAL SOIL CLASSIFICATION COLOR, TEXTURE, STRUCTURE, CONSISTENCY, ODOR, ETC.**	**OVA RESULTS PERCENT RECOVERY BLOW COUNTS**
	Depths correspond to changes in soil type	
0-2'	clayey silty sand (SM); brown, moist, no odor	PID=5-5(0-2): 20 PPM
2-4'	clayey silty sand (SM); brown, rock frags, very moist, no odor	PID=5-5(2-4): 23 PPM
4-6'	silty clayey sand (SC); brown, rock frags, very moist, no odor	PID=5-5(4-6): 17 PPM
6-8'	silty clayey sand (SC); brown, rock frags, very moist, no odor	PID=5-5(6-8): 12 PPM
8-9.5'	clayey sand (SC) to silty sand (SM); brown, rock frags, saturated, no odor	PID=5-5(8-9.5): 11 PPM
	refusal at 9.5', groundwater encountered at 4.3 feet	

MONITORING WELL INFORMATION (IF APPLICABLE)

RISER LENGTH (ft) ___ DEPTH (ft) _____ DIAMETER (in) ___ MATERIAL _____.
SCREEN LENGTH (ft) ___ DEPTH (ft) _____ DIAMETER (in) ___ MATERIAL _____.
DEPTH TO TOP OF SAND _____ BAGS OF SAND ___.
DEPTH TO TOP SEAL _____ BENTONITE USED _____ BAGS OF CEMENT USED ___.

Pyramid Environmental & Engineering, P.C.

FIELD DRILLING RECORD

PROJECT NAME: **PROJECT NUMBER:**	NC DOT I-3318BB Parcel 005 Crystal & Dusty Toler 2014-093	**BORING/WELL NO:**	5-6
SITE LOCATION:	675 Cummins Drive, Kenly, Johnston County, NC	**BORING/WELL LOCATION:**	N of W drive
START DATE:	6/2/14	**COMPLETED:**	6/2/14
GEOLOGIST:	T. Leatherman	**DRILLER:**	Solutions, IES
DRILL METHOD:	Geoprobe	**SAMPLE METHOD:**	Macro-core
BORING DIA:	2-inch	**CASING DIA:**	1-inch
TOTAL DEPTH:	9 feet	**CASING DEPTH:**	1-inch

DEPTH (ft.)	VISUAL MANUAL SOIL CLASSIFICATION COLOR, TEXTURE, STRUCTURE, CONSISTENCY, ODOR, ETC.	OVA RESULTS PERCENT RECOVERY BLOW COUNTS
	Depths correspond to changes in soil type	
0-2'	clayey sand (SC); brown, rock frags, moist, no odor	
2-4'	clayey sand (SC); brown, rock frags, very moist, no odor	PID=5-6(2-4): 17 PPM
4-6'	clayey silty sand (SM); brown, rock frags, no odor	PID=5-6(4-6): 15 PPM
6-8'	clayey silty sand (SM); brown, rock frags, rock at 8' no odor	PID=5-6(6-8): 13 PPM
8-9'	silty clayey sand (SC); gray, rock frags, saturated, no odor	PID=5-6(8-9): 10 PPM
	refusal at 9', Temp well set to 8', groundwater encountered at 3.7 feet	

MONITORING WELL INFORMATION (IF APPLICABLE)

RISER LENGTH (ft) 4 DEPTH (ft) 0-4 DIAMETER (in) 1 MATERIAL PVC.
SCREEN LENGTH (ft) 4 DEPTH (ft) 4-8 DIAMETER (in) 1 MATERIAL PVC.
DEPTH TO TOP OF SAND _____ BAGS OF SAND ___.
DEPTH TO TOP SEAL _____ BENTONITE USED _____ BAGS OF CEMENT USED ___.

Pyramid Environmental & Engineering, P.C.

FIELD DRILLING RECORD

PROJECT NAME: **PROJECT NUMBER:**	NC DOT I-3318BB Parcel 005 Crystal & Dusty Toler 2014-093	**BORING/WELL NO:**	5-7
SITE LOCATION:	675 Cummins Drive, Kenly, Johnston County, NC	**BORING/WELL LOCATION:**	NE Parcel
START DATE:	6/2/14	**COMPLETED:**	6/2/14
GEOLOGIST:	T. Leatherman	**DRILLER:**	Solutions, IES
DRILL METHOD:	Geoprobe	**SAMPLE METHOD:**	Macro-core
BORING DIA:	2-inch	**CASING DIA:**	None
TOTAL DEPTH:	10 feet	**CASING DEPTH:**	None

DEPTH (ft.)	**VISUAL MANUAL SOIL CLASSIFICATION COLOR, TEXTURE, STRUCTURE, CONSISTENCY, ODOR, ETC.**	**OVA RESULTS PERCENT RECOVERY BLOW COUNTS**
	Depths correspond to changes in soil type	
0-2'	clayey sandy silt (ML) and sandy clay (CL); moist, no odor	PID=5-7(0-2): 1 PPM
2-4'	clayey sandy silt (ML) and sandy clay (CL); moist, no odor	PID=5-7(2-4): 3 PPM
4-6'	silty clayey sand (SC); brown, very moist, no odor	PID=5-7(4-6): 0.5 PPM
6-8'	silty clayey sand (SC); brown, very moist, no odor	PID=5-7(6-8): 1 PPM
8-10'	clayey sand (SC) to rock; brown, rock frags, saturated, no odor	PID=5-7(8-10): 1 PPM
	refusal at 10', groundwater encountered at 6.9 feet	

MONITORING WELL INFORMATION (IF APPLICABLE)

RISER LENGTH (ft) ___ DEPTH (ft) _____ DIAMETER (in) ___ MATERIAL _____.
SCREEN LENGTH (ft) ___ DEPTH (ft) _____ DIAMETER (in) ___ MATERIAL _____.
DEPTH TO TOP OF SAND _____ BAGS OF SAND ___.
DEPTH TO TOP SEAL _____ BENTONITE USED _____ BAGS OF CEMENT USED ___.

Pyramid Environmental & Engineering, P.C.

FIELD DRILLING RECORD

PROJECT NAME: **PROJECT NUMBER:**	NC DOT I-3318BB Parcel 005 Crystal & Dusty Toler 2014-093	**BORING/WELL NO:**	5-8
SITE LOCATION:	675 Cummins Drive, Kenly, Johnston County, NC	**BORING/WELL LOCATION:**	W parcel N of trailer
START DATE:	6/2/14	**COMPLETED:**	6/2/14
GEOLOGIST:	T. Leatherman	**DRILLER:**	Solutions, IES
DRILL METHOD:	Geoprobe	**SAMPLE METHOD:**	Macro-core
BORING DIA:	2-inch	**CASING DIA:**	None
TOTAL DEPTH:	12 feet	**CASING DEPTH:**	None

DEPTH (ft.)	**VISUAL MANUAL SOIL CLASSIFICATION COLOR, TEXTURE, STRUCTURE, CONSISTENCY, ODOR, ETC.**	**OVA RESULTS PERCENT RECOVERY BLOW COUNTS**
	Depths correspond to changes in soil type	
0-2'	sandy clay (CL) and clayey silt (ML); brown, moist, no odor	PID=5-8(0-2): 1 PPM
2-4'	sandy clay (CL) and clayey silt (ML); brown, moist, no odor	PID=5-8(2-4): 3 PPM
4-6'	clayey sandy silt (ML); brown, very moist, no odor	PID=5-8(4-6): 1 PPM
6-8'	clayey sand (SC); brown, saturated, no odor	PID=5-8(6-8): 1 PPM
8-10'	clayey sand (SC) to rock; brown, rock frags, saturated, no odor	
10-12'	clayey sand (SC) to rock; brown, rock frags, saturated, no odor	PID=5-8(10-12): 1 PPM
	groundwater encountered at 5 feet	

MONITORING WELL INFORMATION (IF APPLICABLE)

RISER LENGTH (ft) ___ DEPTH (ft) _____ DIAMETER (in) ___ MATERIAL _____.
SCREEN LENGTH (ft) ___ DEPTH (ft) _____ DIAMETER (in) ___ MATERIAL _____.
DEPTH TO TOP OF SAND _____ BAGS OF SAND ___.
DEPTH TO TOP SEAL _____ BENTONITE USED _____ BAGS OF CEMENT USED ___.

Pyramid Environmental & Engineering, P.C.

FIELD DRILLING RECORD

PROJECT NAME: **PROJECT NUMBER:**	NC DOT I-3318BB Parcel 005 Crystal & Dusty Toler 2014-093	**BORING/WELL NO:**	5-9
SITE LOCATION:	675 Cummins Drive, Kenly, Johnston County, NC	**BORING/WELL LOCATION:**	E of boring 5-2
START DATE:	6/2/14	**COMPLETED:**	6/2/14
GEOLOGIST:	T. Leatherman	**DRILLER:**	Solutions, IES
DRILL METHOD:	Geoprobe	**SAMPLE METHOD:**	Macro-core
BORING DIA:	2-inch	**CASING DIA:**	None
TOTAL DEPTH:	8 feet	**CASING DEPTH:**	None

DEPTH (ft.)	**VISUAL MANUAL SOIL CLASSIFICATION COLOR, TEXTURE, STRUCTURE, CONSISTENCY, ODOR, ETC.**	**OVA RESULTS PERCENT RECOVERY BLOW COUNTS**
	Depths correspond to changes in soil type	
0-2'	clayey sandy silt (ML) and fill; brown to dark gray, moist, no odor	
2-4'	clayey sandy silt (ML) and fill; brown to dark gray, moist, no odor	PID=5-9(2-4): 14 PPM
4-6'	sandy silty clay (CL); brown to gray, moist, no odor	PID=5-9(4-6): 15 PPM
6-8'	sandy silty clay (CL); brown to gray, moist, no odor	PID=5-9(6-8): 10 PPM
	groundwater encountered at 6.3 feet	

MONITORING WELL INFORMATION (IF APPLICABLE)

RISER LENGTH (ft) ___ DEPTH (ft) _____ DIAMETER (in) ___ MATERIAL _____.
SCREEN LENGTH (ft) ___ DEPTH (ft) _____ DIAMETER (in) ___ MATERIAL _____.
DEPTH TO TOP OF SAND _____ BAGS OF SAND ___.
DEPTH TO TOP SEAL _____ BENTONITE USED _____ BAGS OF CEMENT USED ___.

APPENDIX D

QED

QROS

Hydrocarbon Analysis Results

Client: NCDOT - Johnston County I-3318BB
Address: 685 Cummins Drive Kenly, NC; Parcel 5

Samples taken 5-1 thru 5-8
Samples extracted 5-1 thru 5-8
Samples analysed 5-1 thru 5-8

Contact:

Operator Ryan Kramer

Project: NCDOT - Johnston County I-3318BB, Parcel 5

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
										% light	% mid	% heavy	
s	5-1 (2-4)	25.0	<1.2	<1.2	4.15	4.15	3.46	0.37	<0.025	64.2	25.9	9.8	V.Deg.PHC 88.7%
s	5-2 (2-4)	23.0	<1.1	<1.1	1.79	1.79	1.65	0.43	<0.023	45.3	30.5	24.2	V.Deg.PHC 76%
s	5-2 (4-6)	24.0	<1.2	<1.2	10.18	10.18	7.8	0.91	<0.024	38.7	42.7	18.6	V.Deg.PHC 75.5%
s	5-3 (2-4)	20.0	<1	<1	2.25	2.25	1.68	0.11	<0.02	40.3	44	15.7	Road Tar 97.6%
s	5-4 (4-6)	13.0	<0.6	<0.6	1.46	1.46	0.27	0.07	<0.013	54.3	24.3	21.4	Deg.Fuel (FCM) 70.9%
s	5-5 (2-4)	12.0	<0.6	<0.6	<0.12	<0.6	<0.12	<0.01	<0.012	0	0	100	TPH not detected
s	5-6 (2-4)	13.0	<0.6	<0.6	0.31	0.31	<0.13	<0.01	<0.013	0	100	0	Deg.Fuel Residue (FCM) 36.3%
s	5-7 (2-4)	13.0	<0.6	<0.6	<0.13	<0.7	<0.13	<0.01	<0.013	0	0	0	TPH not detected
s	5-8 (2-4)	14.0	<0.7	<0.7	<0.14	<0.7	<0.14	<0.01	<0.014	0	0	0	TPH not detected

Initial Calibrator QC check OK

Final FCM QC Check OK 96.6%

Results generated by a QED HC-1 analyser. Concentration values in mg/kg for soil samples and mg/L for water samples. Soil values are not corrected for moisture or stone content

Fingerprints provide a tentative hydrocarbon identification. The abbreviations are:- FCM = Results calculated using Fundamental Calibration Mode : % = confidence for sample fingerprint match to library

(SBS) or (LBS) = Site Specific or Library Background Subtraction applied to result : (PFM) = Poor Fingerprint Match : (T) = Turbid : (P) = Particulate present

QED

AQROS

Hydrocarbon Analysis Results

Client: NCDOT - Johnston County I-3318BB
Address: 685 Cummins Drive Kenly, NC; Parcel 5

Samples taken Boring 5-9
Samples extracted Boring 5-9
Samples analysed Boring 5-9

Contact:

Operator Ryan Kramer

Project: NCDOT - Johnston County I-3318BB, Parcel 5

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
										% light	% mid	% heavy	
s	5-9 (4-6)	12.0	<0.6	<0.6	0.42	0.42	0.4	0.31	<0.012	66.3	14.3	19.4	PAH

Initial Calibrator QC check OK

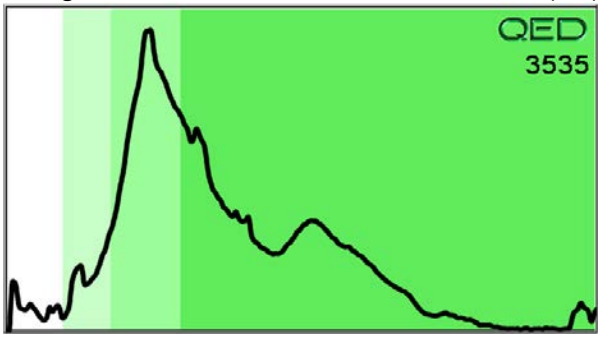
Final FCM QC Check OK 89.6%

Results generated by a QED HC-1 analyser. Concentration values in mg/kg for soil samples and mg/L for water samples. Soil values are not corrected for moisture or stone content

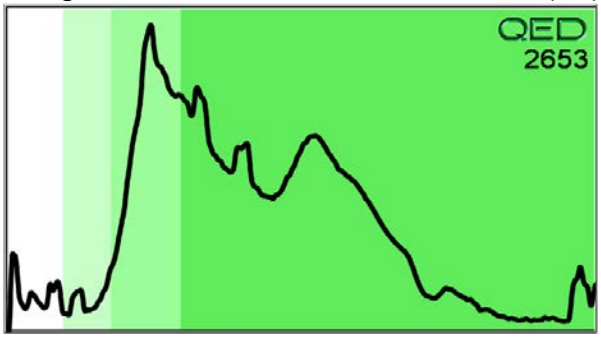
Fingerprints provide a tentative hydrocarbon identification. The abbreviations are:- FCM = Results calculated using Fundamental Calibration Mode : % = confidence for sample fingerprint match to library

(SBS) or (LBS) = Site Specific or Library Background Subtraction applied to result : (PFM) = Poor Fingerprint Match : (T) = Turbid : (P) = Particulate present

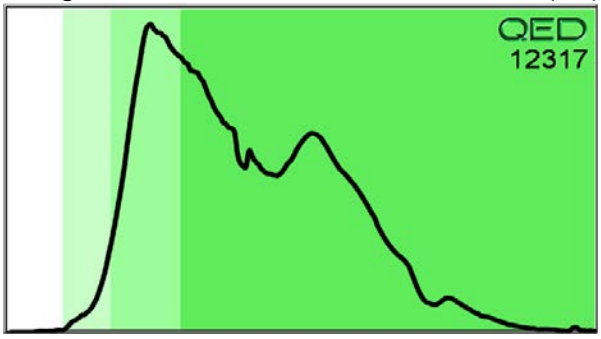
V.Deg.PHC 88.7% 5-1 (2-4)



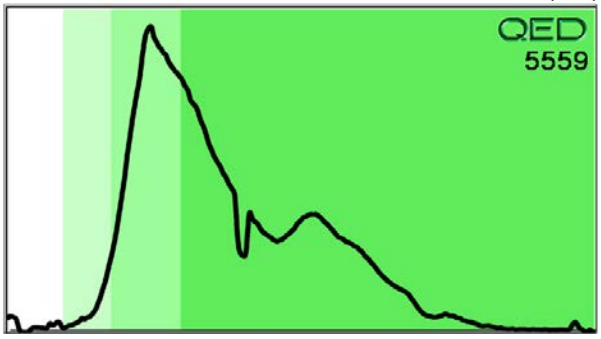
V.Deg.PHC 76% 5-2 (2-4)



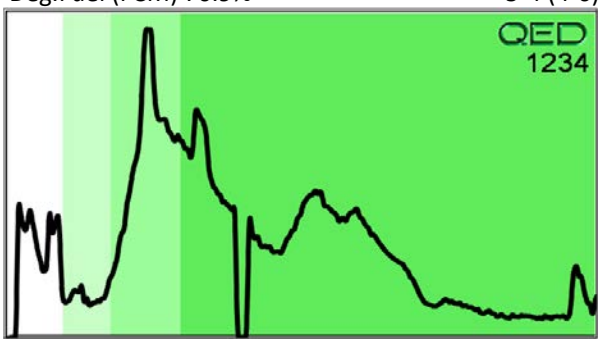
V.Deg.PHC 75.5% 5-2 (4-6)



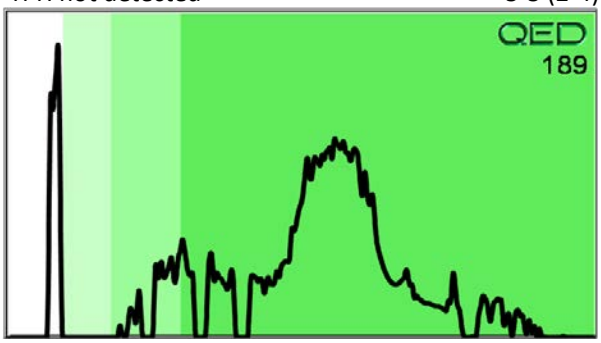
Road Tar 97.6% 5-3 (2-4)



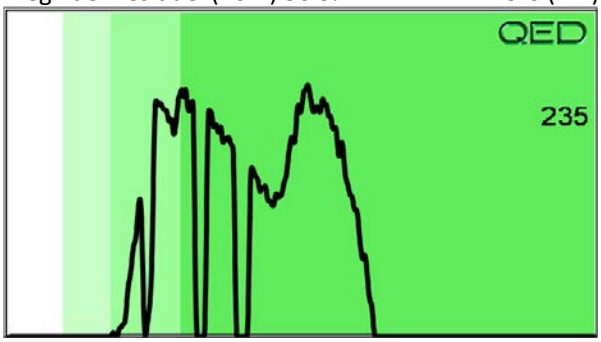
Deg.Fuel (FCM) 70.9% 5-4 (4-6)



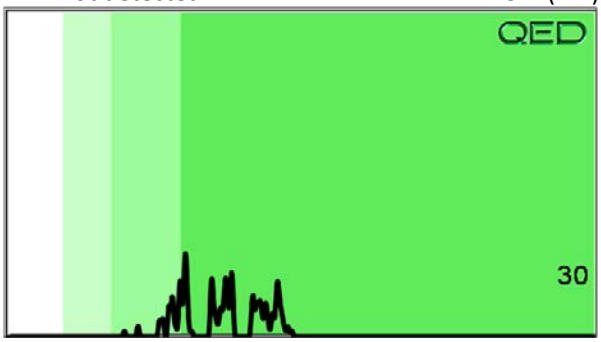
TPH not detected 5-5 (2-4)



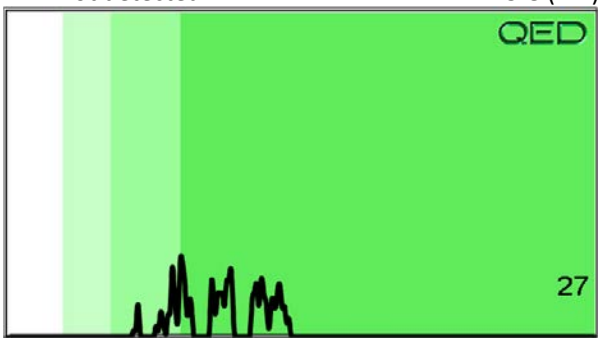
Deg.Fuel Residue (FCM) 36.3% 5-6 (2-4)



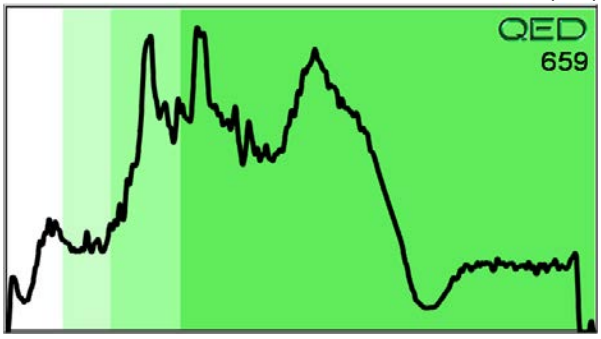
TPH not detected 5-7 (2-4)



TPH not detected 5-8 (2-4)



PAH 5-9 (4-6)



APPENDIX E

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

June 12, 2014

Chemical Testing Engineer
NCDOT
Materials & Tests Unit
1801 Blue Ridge Road
Raleigh, NC 27607

RE: Project: NCDOT Johnston 34182.1.2
Pace Project No.: 92204084

Dear Chemical Engineer:
Enclosed are the analytical results for sample(s) received by the laboratory on June 04, 2014. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Analyses were performed at the Pace Analytical Services location indicated on the sample analyte page for analysis unless otherwise footnoted.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jon D Bradley
jon.bradley@pacelabs.com
Project Manager

Enclosures

cc: Tim Leatherman, Pyramid

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

CERTIFICATIONS

Project: NCDOT Johnston 34182.1.2
Pace Project No.: 92204084

Charlotte Certification IDs
9800 Kincey Ave. Ste 100, Huntersville, NC 28078
North Carolina Drinking Water Certification #: 37706
North Carolina Field Services Certification #: 5342
North Carolina Wastewater Certification #: 12
South Carolina Certification #: 99006001
Florida/NELAP Certification #: E87627
Kentucky UST Certification #: 84
West Virginia Certification #: 357
Virginia/VELAP Certification #: 460221

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

SAMPLE ANALYTE COUNT

Project: NCDOT Johnston 34182.1.2
Pace Project No.: 92204084

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92204084001	**5-4(4-6)**	EPA 8270	RES	74	PASI-C
		EPA 8260	DLK	70	PASI-C
		ASTM D2974-87	ZAK	1	PASI-C
92204084002	**5-5(2-4)**	EPA 8270	RES	74	PASI-C
		EPA 8260	DLK	70	PASI-C
		ASTM D2974-87	ZAK	1	PASI-C
92204084003	**5-7(2-4)**	EPA 8270	RES	74	PASI-C
		EPA 8260	DLK	70	PASI-C
		ASTM D2974-87	ZAK	1	PASI-C
92204084004	**5-8(2-4)**	EPA 8270	BPJ	74	PASI-C
		EPA 8260	DLK	70	PASI-C
		ASTM D2974-87	ZAK	1	PASI-C
92204084005	**5-6(TW)**	EPA 625	BPJ	58	PASI-C
		SM 6200B	CAH	63	PASI-C

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PROJECT NARRATIVE

Project: NCDOT Johnston 34182.1.2
Pace Project No.: 92204084

Method: **EPA 625**
Description: 625 MSSV
Client: NCDOT East Central
Date: June 12, 2014

General Information:
1 sample was analyzed for EPA 625. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 625 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: OEXT/28155

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 92203899001

R1: RPD value was outside control limits.

- MSD (Lab ID: 1216711)
  - Phenol

Additional Comments:

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

PROJECT NARRATIVE

Project: NCDOT Johnston 34182.1.2
Pace Project No.: 92204084

Method: **EPA 8270**
Description: 8270 MSSV Microwave
Client: NCDOT East Central
Date: June 12, 2014

General Information:
4 samples were analyzed for EPA 8270. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3546 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: OEXT/28168

L2: Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.

- LCS (Lab ID: 1217228)
  - Indeno(1,2,3-cd)pyrene

L3: Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples. Results unaffected by high bias.

- LCS (Lab ID: 1217228)
  - 2-Nitroaniline
  - 4-Nitrophenol

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

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PROJECT NARRATIVE

Project: NCDOT Johnston 34182.1.2
Pace Project No.: 92204084

Method: **EPA 8270**
Description: 8270 MSSV Microwave
Client: NCDOT East Central
Date: June 12, 2014

QC Batch: OEXT/28168

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 92204507002

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 1217229)
  - 2,4-Dinitrophenol
  - 4,6-Dinitro-2-methylphenol
- MSD (Lab ID: 1217230)
  - 1,2-Dichlorobenzene
  - 1,3-Dichlorobenzene
  - 1,4-Dichlorobenzene
  - 2,4-Dinitrophenol
  - 2-Nitrophenol
  - 4,6-Dinitro-2-methylphenol
  - Benzoic Acid

R1: RPD value was outside control limits.

- MSD (Lab ID: 1217230)
  - Phenol

Additional Comments:

Analyte Comments:

QC Batch: OEXT/28168

1g: This comment applies to all compounds with RPD greater than 30%.

- MSD (Lab ID: 1217230)
  - Phenol

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PROJECT NARRATIVE

Project: NCDOT Johnston 34182.1.2
Pace Project No.: 92204084

Method: **SM 6200B**
Description: 6200B MSV
Client: NCDOT East Central
Date: June 12, 2014

General Information:
1 sample was analyzed for SM 6200B. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: MSV/27102

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 92204081001

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

- MSD (Lab ID: 1215547)
  - Vinyl chloride

Additional Comments:

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

PROJECT NARRATIVE

Project: NCDOT Johnston 34182.1.2
Pace Project No.: 92204084

Method: **EPA 8260**
Description: 8260/5035A Volatile Organics
Client: NCDOT East Central
Date: June 12, 2014

General Information:
4 samples were analyzed for EPA 8260. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: NCDOT Johnston 34182.1.2
Pace Project No.: 92204084

Sample: 5-4(4-6) **Lab ID: 92204084001** Collected: 06/02/14 11:40 Received: 06/04/14 17:30 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV Microwave	Analytical Method: EPA 8270 Preparation Method: EPA 3546							
Acenaphthene	ND	ug/kg	384	1	06/05/14 13:07	06/09/14 19:24	83-32-9	
Acenaphthylene	ND	ug/kg	384	1	06/05/14 13:07	06/09/14 19:24	208-96-8	
Aniline	ND	ug/kg	384	1	06/05/14 13:07	06/09/14 19:24	62-53-3	
Anthracene	ND	ug/kg	384	1	06/05/14 13:07	06/09/14 19:24	120-12-7	
Benzo(a)anthracene	ND	ug/kg	384	1	06/05/14 13:07	06/09/14 19:24	56-55-3	
Benzo(a)pyrene	ND	ug/kg	384	1	06/05/14 13:07	06/09/14 19:24	50-32-8	
Benzo(b)fluoranthene	ND	ug/kg	384	1	06/05/14 13:07	06/09/14 19:24	205-99-2	
Benzo(g,h,i)perylene	ND	ug/kg	384	1	06/05/14 13:07	06/09/14 19:24	191-24-2	
Benzo(k)fluoranthene	ND	ug/kg	384	1	06/05/14 13:07	06/09/14 19:24	207-08-9	
Benzoic Acid	ND	ug/kg	1920	1	06/05/14 13:07	06/09/14 19:24	65-85-0	
Benzyl alcohol	ND	ug/kg	768	1	06/05/14 13:07	06/09/14 19:24	100-51-6	
4-Bromophenylphenyl ether	ND	ug/kg	384	1	06/05/14 13:07	06/09/14 19:24	101-55-3	
Butylbenzylphthalate	ND	ug/kg	384	1	06/05/14 13:07	06/09/14 19:24	85-68-7	
4-Chloro-3-methylphenol	ND	ug/kg	768	1	06/05/14 13:07	06/09/14 19:24	59-50-7	
4-Chloroaniline	ND	ug/kg	1920	1	06/05/14 13:07	06/09/14 19:24	106-47-8	
bis(2-Chloroethoxy)methane	ND	ug/kg	384	1	06/05/14 13:07	06/09/14 19:24	111-91-1	
bis(2-Chloroethyl) ether	ND	ug/kg	384	1	06/05/14 13:07	06/09/14 19:24	111-44-4	
bis(2-Chloroisopropyl) ether	ND	ug/kg	384	1	06/05/14 13:07	06/09/14 19:24	108-60-1	
2-Chloronaphthalene	ND	ug/kg	384	1	06/05/14 13:07	06/09/14 19:24	91-58-7	
2-Chlorophenol	ND	ug/kg	384	1	06/05/14 13:07	06/09/14 19:24	95-57-8	
4-Chlorophenylphenyl ether	ND	ug/kg	384	1	06/05/14 13:07	06/09/14 19:24	7005-72-3	
Chrysene	ND	ug/kg	384	1	06/05/14 13:07	06/09/14 19:24	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	384	1	06/05/14 13:07	06/09/14 19:24	53-70-3	
Dibenzofuran	ND	ug/kg	384	1	06/05/14 13:07	06/09/14 19:24	132-64-9	
1,2-Dichlorobenzene	ND	ug/kg	384	1	06/05/14 13:07	06/09/14 19:24	95-50-1	
1,3-Dichlorobenzene	ND	ug/kg	384	1	06/05/14 13:07	06/09/14 19:24	541-73-1	
1,4-Dichlorobenzene	ND	ug/kg	384	1	06/05/14 13:07	06/09/14 19:24	106-46-7	
3,3'-Dichlorobenzidine	ND	ug/kg	1920	1	06/05/14 13:07	06/09/14 19:24	91-94-1	
2,4-Dichlorophenol	ND	ug/kg	384	1	06/05/14 13:07	06/09/14 19:24	120-83-2	
Diethylphthalate	ND	ug/kg	384	1	06/05/14 13:07	06/09/14 19:24	84-66-2	
2,4-Dimethylphenol	ND	ug/kg	384	1	06/05/14 13:07	06/09/14 19:24	105-67-9	
Dimethylphthalate	ND	ug/kg	384	1	06/05/14 13:07	06/09/14 19:24	131-11-3	
Di-n-butylphthalate	ND	ug/kg	384	1	06/05/14 13:07	06/09/14 19:24	84-74-2	
4,6-Dinitro-2-methylphenol	ND	ug/kg	768	1	06/05/14 13:07	06/09/14 19:24	534-52-1	
2,4-Dinitrophenol	ND	ug/kg	1920	1	06/05/14 13:07	06/09/14 19:24	51-28-5	
2,4-Dinitrotoluene	ND	ug/kg	384	1	06/05/14 13:07	06/09/14 19:24	121-14-2	
2,6-Dinitrotoluene	ND	ug/kg	384	1	06/05/14 13:07	06/09/14 19:24	606-20-2	
Di-n-octylphthalate	ND	ug/kg	384	1	06/05/14 13:07	06/09/14 19:24	117-84-0	
bis(2-Ethylhexyl)phthalate	ND	ug/kg	384	1	06/05/14 13:07	06/09/14 19:24	117-81-7	
Fluoranthene	ND	ug/kg	384	1	06/05/14 13:07	06/09/14 19:24	206-44-0	
Fluorene	ND	ug/kg	384	1	06/05/14 13:07	06/09/14 19:24	86-73-7	
Hexachloro-1,3-butadiene	ND	ug/kg	384	1	06/05/14 13:07	06/09/14 19:24	87-68-3	
Hexachlorobenzene	ND	ug/kg	384	1	06/05/14 13:07	06/09/14 19:24	118-74-1	
Hexachlorocyclopentadiene	ND	ug/kg	384	1	06/05/14 13:07	06/09/14 19:24	77-47-4	
Hexachloroethane	ND	ug/kg	384	1	06/05/14 13:07	06/09/14 19:24	67-72-1	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	384	1	06/05/14 13:07	06/09/14 19:24	193-39-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: NCDOT Johnston 34182.1.2
Pace Project No.: 92204084

Sample: 5-4(4-6) **Lab ID: 92204084001** Collected: 06/02/14 11:40 Received: 06/04/14 17:30 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV Microwave	Analytical Method: EPA 8270 Preparation Method: EPA 3546							
Isophorone	ND	ug/kg	384	1	06/05/14 13:07	06/09/14 19:24	78-59-1	
1-Methylnaphthalene	ND	ug/kg	384	1	06/05/14 13:07	06/09/14 19:24	90-12-0	
2-Methylnaphthalene	ND	ug/kg	384	1	06/05/14 13:07	06/09/14 19:24	91-57-6	
2-Methylphenol(o-Cresol)	ND	ug/kg	384	1	06/05/14 13:07	06/09/14 19:24	95-48-7	
3&4-Methylphenol(m&p Cresol)	ND	ug/kg	384	1	06/05/14 13:07	06/09/14 19:24		
Naphthalene	ND	ug/kg	384	1	06/05/14 13:07	06/09/14 19:24	91-20-3	
2-Nitroaniline	ND	ug/kg	1920	1	06/05/14 13:07	06/09/14 19:24	88-74-4	
3-Nitroaniline	ND	ug/kg	1920	1	06/05/14 13:07	06/09/14 19:24	99-09-2	
4-Nitroaniline	ND	ug/kg	768	1	06/05/14 13:07	06/09/14 19:24	100-01-6	
Nitrobenzene	ND	ug/kg	384	1	06/05/14 13:07	06/09/14 19:24	98-95-3	
2-Nitrophenol	ND	ug/kg	384	1	06/05/14 13:07	06/09/14 19:24	88-75-5	
4-Nitrophenol	ND	ug/kg	1920	1	06/05/14 13:07	06/09/14 19:24	100-02-7	
N-Nitrosodimethylamine	ND	ug/kg	384	1	06/05/14 13:07	06/09/14 19:24	62-75-9	
N-Nitroso-di-n-propylamine	ND	ug/kg	384	1	06/05/14 13:07	06/09/14 19:24	621-64-7	
N-Nitrosodiphenylamine	ND	ug/kg	384	1	06/05/14 13:07	06/09/14 19:24	86-30-6	
Pentachlorophenol	ND	ug/kg	1920	1	06/05/14 13:07	06/09/14 19:24	87-86-5	
Phenanthrene	ND	ug/kg	384	1	06/05/14 13:07	06/09/14 19:24	85-01-8	
Phenol	ND	ug/kg	384	1	06/05/14 13:07	06/09/14 19:24	108-95-2	
Pyrene	ND	ug/kg	384	1	06/05/14 13:07	06/09/14 19:24	129-00-0	
1,2,4-Trichlorobenzene	ND	ug/kg	384	1	06/05/14 13:07	06/09/14 19:24	120-82-1	
2,4,5-Trichlorophenol	ND	ug/kg	384	1	06/05/14 13:07	06/09/14 19:24	95-95-4	
2,4,6-Trichlorophenol	ND	ug/kg	384	1	06/05/14 13:07	06/09/14 19:24	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	41	%	23-110	1	06/05/14 13:07	06/09/14 19:24	4165-60-0	
2-Fluorobiphenyl (S)	44	%	30-110	1	06/05/14 13:07	06/09/14 19:24	321-60-8	
Terphenyl-d14 (S)	50	%	28-110	1	06/05/14 13:07	06/09/14 19:24	1718-51-0	
Phenol-d6 (S)	47	%	22-110	1	06/05/14 13:07	06/09/14 19:24	13127-88-3	
2-Fluorophenol (S)	44	%	13-110	1	06/05/14 13:07	06/09/14 19:24	367-12-4	
2,4,6-Tribromophenol (S)	42	%	27-110	1	06/05/14 13:07	06/09/14 19:24	118-79-6	
8260/5035A Volatile Organics	Analytical Method: EPA 8260							
Acetone	**99.3**	ug/kg	97.2	1		06/09/14 16:31	67-64-1	A+
Benzene	ND	ug/kg	4.9	1		06/09/14 16:31	71-43-2	
Bromobenzene	ND	ug/kg	4.9	1		06/09/14 16:31	108-86-1	
Bromochloromethane	ND	ug/kg	4.9	1		06/09/14 16:31	74-97-5	
Bromodichloromethane	ND	ug/kg	4.9	1		06/09/14 16:31	75-27-4	
Bromoform	ND	ug/kg	4.9	1		06/09/14 16:31	75-25-2	
Bromomethane	ND	ug/kg	9.7	1		06/09/14 16:31	74-83-9	
2-Butanone (MEK)	ND	ug/kg	97.2	1		06/09/14 16:31	78-93-3	
n-Butylbenzene	ND	ug/kg	4.9	1		06/09/14 16:31	104-51-8	
sec-Butylbenzene	ND	ug/kg	4.9	1		06/09/14 16:31	135-98-8	
tert-Butylbenzene	ND	ug/kg	4.9	1		06/09/14 16:31	98-06-6	
Carbon tetrachloride	ND	ug/kg	4.9	1		06/09/14 16:31	56-23-5	
Chlorobenzene	ND	ug/kg	4.9	1		06/09/14 16:31	108-90-7	
Chloroethane	ND	ug/kg	9.7	1		06/09/14 16:31	75-00-3	
Chloroform	ND	ug/kg	4.9	1		06/09/14 16:31	67-66-3	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: NCDOT Johnston 34182.1.2
Pace Project No.: 92204084

Sample: 5-4(4-6) **Lab ID: 92204084001** Collected: 06/02/14 11:40 Received: 06/04/14 17:30 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260/5035A Volatile Organics	Analytical Method: EPA 8260							
Chloromethane	ND	ug/kg	9.7	1		06/09/14 16:31	74-87-3	
2-Chlorotoluene	ND	ug/kg	4.9	1		06/09/14 16:31	95-49-8	
4-Chlorotoluene	ND	ug/kg	4.9	1		06/09/14 16:31	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/kg	4.9	1		06/09/14 16:31	96-12-8	
Dibromochloromethane	ND	ug/kg	4.9	1		06/09/14 16:31	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/kg	4.9	1		06/09/14 16:31	106-93-4	
Dibromomethane	ND	ug/kg	4.9	1		06/09/14 16:31	74-95-3	
1,2-Dichlorobenzene	ND	ug/kg	4.9	1		06/09/14 16:31	95-50-1	
1,3-Dichlorobenzene	ND	ug/kg	4.9	1		06/09/14 16:31	541-73-1	
1,4-Dichlorobenzene	ND	ug/kg	4.9	1		06/09/14 16:31	106-46-7	
Dichlorodifluoromethane	ND	ug/kg	9.7	1		06/09/14 16:31	75-71-8	
1,1-Dichloroethane	ND	ug/kg	4.9	1		06/09/14 16:31	75-34-3	
1,2-Dichloroethane	ND	ug/kg	4.9	1		06/09/14 16:31	107-06-2	
1,1-Dichloroethene	ND	ug/kg	4.9	1		06/09/14 16:31	75-35-4	
cis-1,2-Dichloroethene	ND	ug/kg	4.9	1		06/09/14 16:31	156-59-2	
trans-1,2-Dichloroethene	ND	ug/kg	4.9	1		06/09/14 16:31	156-60-5	
1,2-Dichloropropane	ND	ug/kg	4.9	1		06/09/14 16:31	78-87-5	
1,3-Dichloropropane	ND	ug/kg	4.9	1		06/09/14 16:31	142-28-9	
2,2-Dichloropropane	ND	ug/kg	4.9	1		06/09/14 16:31	594-20-7	
1,1-Dichloropropene	ND	ug/kg	4.9	1		06/09/14 16:31	563-58-6	
cis-1,3-Dichloropropene	ND	ug/kg	4.9	1		06/09/14 16:31	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/kg	4.9	1		06/09/14 16:31	10061-02-6	
Diisopropyl ether	ND	ug/kg	4.9	1		06/09/14 16:31	108-20-3	
Ethylbenzene	ND	ug/kg	4.9	1		06/09/14 16:31	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/kg	4.9	1		06/09/14 16:31	87-68-3	
2-Hexanone	ND	ug/kg	48.6	1		06/09/14 16:31	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/kg	4.9	1		06/09/14 16:31	98-82-8	
p-Isopropyltoluene	ND	ug/kg	4.9	1		06/09/14 16:31	99-87-6	
Methylene Chloride	ND	ug/kg	19.4	1		06/09/14 16:31	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	48.6	1		06/09/14 16:31	108-10-1	
Methyl-tert-butyl ether	ND	ug/kg	4.9	1		06/09/14 16:31	1634-04-4	
Naphthalene	ND	ug/kg	4.9	1		06/09/14 16:31	91-20-3	
n-Propylbenzene	ND	ug/kg	4.9	1		06/09/14 16:31	103-65-1	
Styrene	ND	ug/kg	4.9	1		06/09/14 16:31	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/kg	4.9	1		06/09/14 16:31	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/kg	4.9	1		06/09/14 16:31	79-34-5	
Tetrachloroethene	ND	ug/kg	4.9	1		06/09/14 16:31	127-18-4	
Toluene	ND	ug/kg	4.9	1		06/09/14 16:31	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/kg	4.9	1		06/09/14 16:31	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/kg	4.9	1		06/09/14 16:31	120-82-1	
1,1,1-Trichloroethane	ND	ug/kg	4.9	1		06/09/14 16:31	71-55-6	
1,1,2-Trichloroethane	ND	ug/kg	4.9	1		06/09/14 16:31	79-00-5	
Trichloroethene	ND	ug/kg	4.9	1		06/09/14 16:31	79-01-6	
Trichlorofluoromethane	ND	ug/kg	4.9	1		06/09/14 16:31	75-69-4	
1,2,3-Trichloropropane	ND	ug/kg	4.9	1		06/09/14 16:31	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/kg	4.9	1		06/09/14 16:31	95-63-6	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: NCDOT Johnston 34182.1.2
Pace Project No.: 92204084

Sample: 5-4(4-6) **Lab ID: 92204084001** Collected: 06/02/14 11:40 Received: 06/04/14 17:30 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260/5035A Volatile Organics	Analytical Method: EPA 8260							
1,3,5-Trimethylbenzene	ND	ug/kg	4.9	1		06/09/14 16:31	108-67-8	
Vinyl acetate	ND	ug/kg	48.6	1		06/09/14 16:31	108-05-4	
Vinyl chloride	ND	ug/kg	9.7	1		06/09/14 16:31	75-01-4	
Xylene (Total)	ND	ug/kg	9.7	1		06/09/14 16:31	1330-20-7	
m&p-Xylene	ND	ug/kg	9.7	1		06/09/14 16:31	179601-23-1	
o-Xylene	ND	ug/kg	4.9	1		06/09/14 16:31	95-47-6	
Surrogates								
Toluene-d8 (S)	105	%	70-130	1		06/09/14 16:31	2037-26-5	
4-Bromofluorobenzene (S)	100	%	70-130	1		06/09/14 16:31	460-00-4	
1,2-Dichloroethane-d4 (S)	109	%	70-132	1		06/09/14 16:31	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974-87							
Percent Moisture	**14.1**	%	0.10	1		06/12/14 16:09		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: NCDOT Johnston 34182.1.2
Pace Project No.: 92204084

Sample: 5-5(2-4) **Lab ID: 92204084002** Collected: 06/02/14 12:05 Received: 06/04/14 17:30 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV Microwave	Analytical Method: EPA 8270 Preparation Method: EPA 3546							
Acenaphthene	ND	ug/kg	373	1	06/05/14 13:07	06/09/14 19:52	83-32-9	
Acenaphthylene	ND	ug/kg	373	1	06/05/14 13:07	06/09/14 19:52	208-96-8	
Aniline	ND	ug/kg	373	1	06/05/14 13:07	06/09/14 19:52	62-53-3	
Anthracene	ND	ug/kg	373	1	06/05/14 13:07	06/09/14 19:52	120-12-7	
Benzo(a)anthracene	ND	ug/kg	373	1	06/05/14 13:07	06/09/14 19:52	56-55-3	
Benzo(a)pyrene	ND	ug/kg	373	1	06/05/14 13:07	06/09/14 19:52	50-32-8	
Benzo(b)fluoranthene	ND	ug/kg	373	1	06/05/14 13:07	06/09/14 19:52	205-99-2	
Benzo(g,h,i)perylene	ND	ug/kg	373	1	06/05/14 13:07	06/09/14 19:52	191-24-2	
Benzo(k)fluoranthene	ND	ug/kg	373	1	06/05/14 13:07	06/09/14 19:52	207-08-9	
Benzoic Acid	ND	ug/kg	1870	1	06/05/14 13:07	06/09/14 19:52	65-85-0	
Benzyl alcohol	ND	ug/kg	746	1	06/05/14 13:07	06/09/14 19:52	100-51-6	
4-Bromophenylphenyl ether	ND	ug/kg	373	1	06/05/14 13:07	06/09/14 19:52	101-55-3	
Butylbenzylphthalate	ND	ug/kg	373	1	06/05/14 13:07	06/09/14 19:52	85-68-7	
4-Chloro-3-methylphenol	ND	ug/kg	746	1	06/05/14 13:07	06/09/14 19:52	59-50-7	
4-Chloroaniline	ND	ug/kg	1870	1	06/05/14 13:07	06/09/14 19:52	106-47-8	
bis(2-Chloroethoxy)methane	ND	ug/kg	373	1	06/05/14 13:07	06/09/14 19:52	111-91-1	
bis(2-Chloroethyl) ether	ND	ug/kg	373	1	06/05/14 13:07	06/09/14 19:52	111-44-4	
bis(2-Chloroisopropyl) ether	ND	ug/kg	373	1	06/05/14 13:07	06/09/14 19:52	108-60-1	
2-Chloronaphthalene	ND	ug/kg	373	1	06/05/14 13:07	06/09/14 19:52	91-58-7	
2-Chlorophenol	ND	ug/kg	373	1	06/05/14 13:07	06/09/14 19:52	95-57-8	
4-Chlorophenylphenyl ether	ND	ug/kg	373	1	06/05/14 13:07	06/09/14 19:52	7005-72-3	
Chrysene	ND	ug/kg	373	1	06/05/14 13:07	06/09/14 19:52	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	373	1	06/05/14 13:07	06/09/14 19:52	53-70-3	
Dibenzofuran	ND	ug/kg	373	1	06/05/14 13:07	06/09/14 19:52	132-64-9	
1,2-Dichlorobenzene	ND	ug/kg	373	1	06/05/14 13:07	06/09/14 19:52	95-50-1	
1,3-Dichlorobenzene	ND	ug/kg	373	1	06/05/14 13:07	06/09/14 19:52	541-73-1	
1,4-Dichlorobenzene	ND	ug/kg	373	1	06/05/14 13:07	06/09/14 19:52	106-46-7	
3,3'-Dichlorobenzidine	ND	ug/kg	1870	1	06/05/14 13:07	06/09/14 19:52	91-94-1	
2,4-Dichlorophenol	ND	ug/kg	373	1	06/05/14 13:07	06/09/14 19:52	120-83-2	
Diethylphthalate	ND	ug/kg	373	1	06/05/14 13:07	06/09/14 19:52	84-66-2	
2,4-Dimethylphenol	ND	ug/kg	373	1	06/05/14 13:07	06/09/14 19:52	105-67-9	
Dimethylphthalate	ND	ug/kg	373	1	06/05/14 13:07	06/09/14 19:52	131-11-3	
Di-n-butylphthalate	ND	ug/kg	373	1	06/05/14 13:07	06/09/14 19:52	84-74-2	
4,6-Dinitro-2-methylphenol	ND	ug/kg	746	1	06/05/14 13:07	06/09/14 19:52	534-52-1	
2,4-Dinitrophenol	ND	ug/kg	1870	1	06/05/14 13:07	06/09/14 19:52	51-28-5	
2,4-Dinitrotoluene	ND	ug/kg	373	1	06/05/14 13:07	06/09/14 19:52	121-14-2	
2,6-Dinitrotoluene	ND	ug/kg	373	1	06/05/14 13:07	06/09/14 19:52	606-20-2	
Di-n-octylphthalate	ND	ug/kg	373	1	06/05/14 13:07	06/09/14 19:52	117-84-0	
bis(2-Ethylhexyl)phthalate	ND	ug/kg	373	1	06/05/14 13:07	06/09/14 19:52	117-81-7	
Fluoranthene	ND	ug/kg	373	1	06/05/14 13:07	06/09/14 19:52	206-44-0	
Fluorene	ND	ug/kg	373	1	06/05/14 13:07	06/09/14 19:52	86-73-7	
Hexachloro-1,3-butadiene	ND	ug/kg	373	1	06/05/14 13:07	06/09/14 19:52	87-68-3	
Hexachlorobenzene	ND	ug/kg	373	1	06/05/14 13:07	06/09/14 19:52	118-74-1	
Hexachlorocyclopentadiene	ND	ug/kg	373	1	06/05/14 13:07	06/09/14 19:52	77-47-4	
Hexachloroethane	ND	ug/kg	373	1	06/05/14 13:07	06/09/14 19:52	67-72-1	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	373	1	06/05/14 13:07	06/09/14 19:52	193-39-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: NCDOT Johnston 34182.1.2
Pace Project No.: 92204084

Sample: 5-5(2-4) **Lab ID: 92204084002** Collected: 06/02/14 12:05 Received: 06/04/14 17:30 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV Microwave	Analytical Method: EPA 8270 Preparation Method: EPA 3546							
Isophorone	ND	ug/kg	373	1	06/05/14 13:07	06/09/14 19:52	78-59-1	
1-Methylnaphthalene	ND	ug/kg	373	1	06/05/14 13:07	06/09/14 19:52	90-12-0	
2-Methylnaphthalene	ND	ug/kg	373	1	06/05/14 13:07	06/09/14 19:52	91-57-6	
2-Methylphenol(o-Cresol)	ND	ug/kg	373	1	06/05/14 13:07	06/09/14 19:52	95-48-7	
3&4-Methylphenol(m&p Cresol)	ND	ug/kg	373	1	06/05/14 13:07	06/09/14 19:52		
Naphthalene	ND	ug/kg	373	1	06/05/14 13:07	06/09/14 19:52	91-20-3	
2-Nitroaniline	ND	ug/kg	1870	1	06/05/14 13:07	06/09/14 19:52	88-74-4	
3-Nitroaniline	ND	ug/kg	1870	1	06/05/14 13:07	06/09/14 19:52	99-09-2	
4-Nitroaniline	ND	ug/kg	746	1	06/05/14 13:07	06/09/14 19:52	100-01-6	
Nitrobenzene	ND	ug/kg	373	1	06/05/14 13:07	06/09/14 19:52	98-95-3	
2-Nitrophenol	ND	ug/kg	373	1	06/05/14 13:07	06/09/14 19:52	88-75-5	
4-Nitrophenol	ND	ug/kg	1870	1	06/05/14 13:07	06/09/14 19:52	100-02-7	
N-Nitrosodimethylamine	ND	ug/kg	373	1	06/05/14 13:07	06/09/14 19:52	62-75-9	
N-Nitroso-di-n-propylamine	ND	ug/kg	373	1	06/05/14 13:07	06/09/14 19:52	621-64-7	
N-Nitrosodiphenylamine	ND	ug/kg	373	1	06/05/14 13:07	06/09/14 19:52	86-30-6	
Pentachlorophenol	ND	ug/kg	1870	1	06/05/14 13:07	06/09/14 19:52	87-86-5	
Phenanthrene	ND	ug/kg	373	1	06/05/14 13:07	06/09/14 19:52	85-01-8	
Phenol	ND	ug/kg	373	1	06/05/14 13:07	06/09/14 19:52	108-95-2	
Pyrene	ND	ug/kg	373	1	06/05/14 13:07	06/09/14 19:52	129-00-0	
1,2,4-Trichlorobenzene	ND	ug/kg	373	1	06/05/14 13:07	06/09/14 19:52	120-82-1	
2,4,5-Trichlorophenol	ND	ug/kg	373	1	06/05/14 13:07	06/09/14 19:52	95-95-4	
2,4,6-Trichlorophenol	ND	ug/kg	373	1	06/05/14 13:07	06/09/14 19:52	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	52	%	23-110	1	06/05/14 13:07	06/09/14 19:52	4165-60-0	
2-Fluorobiphenyl (S)	60	%	30-110	1	06/05/14 13:07	06/09/14 19:52	321-60-8	
Terphenyl-d14 (S)	64	%	28-110	1	06/05/14 13:07	06/09/14 19:52	1718-51-0	
Phenol-d6 (S)	62	%	22-110	1	06/05/14 13:07	06/09/14 19:52	13127-88-3	
2-Fluorophenol (S)	62	%	13-110	1	06/05/14 13:07	06/09/14 19:52	367-12-4	
2,4,6-Tribromophenol (S)	81	%	27-110	1	06/05/14 13:07	06/09/14 19:52	118-79-6	
8260/5035A Volatile Organics	Analytical Method: EPA 8260							
Acetone	ND	ug/kg	82.9	1		06/09/14 16:51	67-64-1	
Benzene	ND	ug/kg	4.1	1		06/09/14 16:51	71-43-2	
Bromobenzene	ND	ug/kg	4.1	1		06/09/14 16:51	108-86-1	
Bromochloromethane	ND	ug/kg	4.1	1		06/09/14 16:51	74-97-5	
Bromodichloromethane	ND	ug/kg	4.1	1		06/09/14 16:51	75-27-4	
Bromoform	ND	ug/kg	4.1	1		06/09/14 16:51	75-25-2	
Bromomethane	ND	ug/kg	8.3	1		06/09/14 16:51	74-83-9	
2-Butanone (MEK)	ND	ug/kg	82.9	1		06/09/14 16:51	78-93-3	
n-Butylbenzene	ND	ug/kg	4.1	1		06/09/14 16:51	104-51-8	
sec-Butylbenzene	ND	ug/kg	4.1	1		06/09/14 16:51	135-98-8	
tert-Butylbenzene	ND	ug/kg	4.1	1		06/09/14 16:51	98-06-6	
Carbon tetrachloride	ND	ug/kg	4.1	1		06/09/14 16:51	56-23-5	
Chlorobenzene	ND	ug/kg	4.1	1		06/09/14 16:51	108-90-7	
Chloroethane	ND	ug/kg	8.3	1		06/09/14 16:51	75-00-3	
Chloroform	ND	ug/kg	4.1	1		06/09/14 16:51	67-66-3	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
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ANALYTICAL RESULTS

Project: NCDOT Johnston 34182.1.2
Pace Project No.: 92204084

Sample: 5-5(2-4) **Lab ID: 92204084002** Collected: 06/02/14 12:05 Received: 06/04/14 17:30 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260/5035A Volatile Organics	Analytical Method: EPA 8260							
Chloromethane	ND	ug/kg	8.3	1		06/09/14 16:51	74-87-3	
2-Chlorotoluene	ND	ug/kg	4.1	1		06/09/14 16:51	95-49-8	
4-Chlorotoluene	ND	ug/kg	4.1	1		06/09/14 16:51	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/kg	4.1	1		06/09/14 16:51	96-12-8	
Dibromochloromethane	ND	ug/kg	4.1	1		06/09/14 16:51	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/kg	4.1	1		06/09/14 16:51	106-93-4	
Dibromomethane	ND	ug/kg	4.1	1		06/09/14 16:51	74-95-3	
1,2-Dichlorobenzene	ND	ug/kg	4.1	1		06/09/14 16:51	95-50-1	
1,3-Dichlorobenzene	ND	ug/kg	4.1	1		06/09/14 16:51	541-73-1	
1,4-Dichlorobenzene	ND	ug/kg	4.1	1		06/09/14 16:51	106-46-7	
Dichlorodifluoromethane	ND	ug/kg	8.3	1		06/09/14 16:51	75-71-8	
1,1-Dichloroethane	ND	ug/kg	4.1	1		06/09/14 16:51	75-34-3	
1,2-Dichloroethane	ND	ug/kg	4.1	1		06/09/14 16:51	107-06-2	
1,1-Dichloroethene	ND	ug/kg	4.1	1		06/09/14 16:51	75-35-4	
cis-1,2-Dichloroethene	ND	ug/kg	4.1	1		06/09/14 16:51	156-59-2	
trans-1,2-Dichloroethene	ND	ug/kg	4.1	1		06/09/14 16:51	156-60-5	
1,2-Dichloropropane	ND	ug/kg	4.1	1		06/09/14 16:51	78-87-5	
1,3-Dichloropropane	ND	ug/kg	4.1	1		06/09/14 16:51	142-28-9	
2,2-Dichloropropane	ND	ug/kg	4.1	1		06/09/14 16:51	594-20-7	
1,1-Dichloropropene	ND	ug/kg	4.1	1		06/09/14 16:51	563-58-6	
cis-1,3-Dichloropropene	ND	ug/kg	4.1	1		06/09/14 16:51	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/kg	4.1	1		06/09/14 16:51	10061-02-6	
Diisopropyl ether	ND	ug/kg	4.1	1		06/09/14 16:51	108-20-3	
Ethylbenzene	ND	ug/kg	4.1	1		06/09/14 16:51	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/kg	4.1	1		06/09/14 16:51	87-68-3	
2-Hexanone	ND	ug/kg	41.4	1		06/09/14 16:51	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/kg	4.1	1		06/09/14 16:51	98-82-8	
p-Isopropyltoluene	ND	ug/kg	4.1	1		06/09/14 16:51	99-87-6	
Methylene Chloride	ND	ug/kg	16.6	1		06/09/14 16:51	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	41.4	1		06/09/14 16:51	108-10-1	
Methyl-tert-butyl ether	ND	ug/kg	4.1	1		06/09/14 16:51	1634-04-4	
Naphthalene	ND	ug/kg	4.1	1		06/09/14 16:51	91-20-3	
n-Propylbenzene	ND	ug/kg	4.1	1		06/09/14 16:51	103-65-1	
Styrene	ND	ug/kg	4.1	1		06/09/14 16:51	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/kg	4.1	1		06/09/14 16:51	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/kg	4.1	1		06/09/14 16:51	79-34-5	
Tetrachloroethene	ND	ug/kg	4.1	1		06/09/14 16:51	127-18-4	
Toluene	ND	ug/kg	4.1	1		06/09/14 16:51	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/kg	4.1	1		06/09/14 16:51	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/kg	4.1	1		06/09/14 16:51	120-82-1	
1,1,1-Trichloroethane	ND	ug/kg	4.1	1		06/09/14 16:51	71-55-6	
1,1,2-Trichloroethane	ND	ug/kg	4.1	1		06/09/14 16:51	79-00-5	
Trichloroethene	ND	ug/kg	4.1	1		06/09/14 16:51	79-01-6	
Trichlorofluoromethane	ND	ug/kg	4.1	1		06/09/14 16:51	75-69-4	
1,2,3-Trichloropropane	ND	ug/kg	4.1	1		06/09/14 16:51	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/kg	4.1	1		06/09/14 16:51	95-63-6	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: NCDOT Johnston 34182.1.2
Pace Project No.: 92204084

Sample: 5-5(2-4) **Lab ID: 92204084002** Collected: 06/02/14 12:05 Received: 06/04/14 17:30 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260/5035A Volatile Organics	Analytical Method: EPA 8260							
1,3,5-Trimethylbenzene	ND	ug/kg	4.1	1		06/09/14 16:51	108-67-8	
Vinyl acetate	ND	ug/kg	41.4	1		06/09/14 16:51	108-05-4	
Vinyl chloride	ND	ug/kg	8.3	1		06/09/14 16:51	75-01-4	
Xylene (Total)	ND	ug/kg	8.3	1		06/09/14 16:51	1330-20-7	
m&p-Xylene	ND	ug/kg	8.3	1		06/09/14 16:51	179601-23-1	
o-Xylene	ND	ug/kg	4.1	1		06/09/14 16:51	95-47-6	
Surrogates								
Toluene-d8 (S)	106	%	70-130	1		06/09/14 16:51	2037-26-5	
4-Bromofluorobenzene (S)	104	%	70-130	1		06/09/14 16:51	460-00-4	
1,2-Dichloroethane-d4 (S)	112	%	70-132	1		06/09/14 16:51	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974-87							
Percent Moisture	**11.6**	%	0.10	1		06/12/14 16:10		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: NCDOT Johnston 34182.1.2
Pace Project No.: 92204084

Sample: 5-7(2-4) **Lab ID: 92204084003** Collected: 06/02/14 14:00 Received: 06/04/14 17:30 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV Microwave	Analytical Method: EPA 8270 Preparation Method: EPA 3546							
Acenaphthene	ND	ug/kg	381	1	06/05/14 13:07	06/09/14 20:20	83-32-9	
Acenaphthylene	ND	ug/kg	381	1	06/05/14 13:07	06/09/14 20:20	208-96-8	
Aniline	ND	ug/kg	381	1	06/05/14 13:07	06/09/14 20:20	62-53-3	
Anthracene	ND	ug/kg	381	1	06/05/14 13:07	06/09/14 20:20	120-12-7	
Benzo(a)anthracene	ND	ug/kg	381	1	06/05/14 13:07	06/09/14 20:20	56-55-3	
Benzo(a)pyrene	ND	ug/kg	381	1	06/05/14 13:07	06/09/14 20:20	50-32-8	
Benzo(b)fluoranthene	ND	ug/kg	381	1	06/05/14 13:07	06/09/14 20:20	205-99-2	
Benzo(g,h,i)perylene	ND	ug/kg	381	1	06/05/14 13:07	06/09/14 20:20	191-24-2	
Benzo(k)fluoranthene	ND	ug/kg	381	1	06/05/14 13:07	06/09/14 20:20	207-08-9	
Benzoic Acid	ND	ug/kg	1910	1	06/05/14 13:07	06/09/14 20:20	65-85-0	
Benzyl alcohol	ND	ug/kg	762	1	06/05/14 13:07	06/09/14 20:20	100-51-6	
4-Bromophenylphenyl ether	ND	ug/kg	381	1	06/05/14 13:07	06/09/14 20:20	101-55-3	
Butylbenzylphthalate	ND	ug/kg	381	1	06/05/14 13:07	06/09/14 20:20	85-68-7	
4-Chloro-3-methylphenol	ND	ug/kg	762	1	06/05/14 13:07	06/09/14 20:20	59-50-7	
4-Chloroaniline	ND	ug/kg	1910	1	06/05/14 13:07	06/09/14 20:20	106-47-8	
bis(2-Chloroethoxy)methane	ND	ug/kg	381	1	06/05/14 13:07	06/09/14 20:20	111-91-1	
bis(2-Chloroethyl) ether	ND	ug/kg	381	1	06/05/14 13:07	06/09/14 20:20	111-44-4	
bis(2-Chloroisopropyl) ether	ND	ug/kg	381	1	06/05/14 13:07	06/09/14 20:20	108-60-1	
2-Chloronaphthalene	ND	ug/kg	381	1	06/05/14 13:07	06/09/14 20:20	91-58-7	
2-Chlorophenol	ND	ug/kg	381	1	06/05/14 13:07	06/09/14 20:20	95-57-8	
4-Chlorophenylphenyl ether	ND	ug/kg	381	1	06/05/14 13:07	06/09/14 20:20	7005-72-3	
Chrysene	ND	ug/kg	381	1	06/05/14 13:07	06/09/14 20:20	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	381	1	06/05/14 13:07	06/09/14 20:20	53-70-3	
Dibenzofuran	ND	ug/kg	381	1	06/05/14 13:07	06/09/14 20:20	132-64-9	
1,2-Dichlorobenzene	ND	ug/kg	381	1	06/05/14 13:07	06/09/14 20:20	95-50-1	
1,3-Dichlorobenzene	ND	ug/kg	381	1	06/05/14 13:07	06/09/14 20:20	541-73-1	
1,4-Dichlorobenzene	ND	ug/kg	381	1	06/05/14 13:07	06/09/14 20:20	106-46-7	
3,3'-Dichlorobenzidine	ND	ug/kg	1910	1	06/05/14 13:07	06/09/14 20:20	91-94-1	
2,4-Dichlorophenol	ND	ug/kg	381	1	06/05/14 13:07	06/09/14 20:20	120-83-2	
Diethylphthalate	ND	ug/kg	381	1	06/05/14 13:07	06/09/14 20:20	84-66-2	
2,4-Dimethylphenol	ND	ug/kg	381	1	06/05/14 13:07	06/09/14 20:20	105-67-9	
Dimethylphthalate	ND	ug/kg	381	1	06/05/14 13:07	06/09/14 20:20	131-11-3	
Di-n-butylphthalate	ND	ug/kg	381	1	06/05/14 13:07	06/09/14 20:20	84-74-2	
4,6-Dinitro-2-methylphenol	ND	ug/kg	762	1	06/05/14 13:07	06/09/14 20:20	534-52-1	
2,4-Dinitrophenol	ND	ug/kg	1910	1	06/05/14 13:07	06/09/14 20:20	51-28-5	
2,4-Dinitrotoluene	ND	ug/kg	381	1	06/05/14 13:07	06/09/14 20:20	121-14-2	
2,6-Dinitrotoluene	ND	ug/kg	381	1	06/05/14 13:07	06/09/14 20:20	606-20-2	
Di-n-octylphthalate	ND	ug/kg	381	1	06/05/14 13:07	06/09/14 20:20	117-84-0	
bis(2-Ethylhexyl)phthalate	ND	ug/kg	381	1	06/05/14 13:07	06/09/14 20:20	117-81-7	
Fluoranthene	ND	ug/kg	381	1	06/05/14 13:07	06/09/14 20:20	206-44-0	
Fluorene	ND	ug/kg	381	1	06/05/14 13:07	06/09/14 20:20	86-73-7	
Hexachloro-1,3-butadiene	ND	ug/kg	381	1	06/05/14 13:07	06/09/14 20:20	87-68-3	
Hexachlorobenzene	ND	ug/kg	381	1	06/05/14 13:07	06/09/14 20:20	118-74-1	
Hexachlorocyclopentadiene	ND	ug/kg	381	1	06/05/14 13:07	06/09/14 20:20	77-47-4	
Hexachloroethane	ND	ug/kg	381	1	06/05/14 13:07	06/09/14 20:20	67-72-1	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	381	1	06/05/14 13:07	06/09/14 20:20	193-39-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: NCDOT Johnston 34182.1.2
Pace Project No.: 92204084

Sample: 5-7(2-4) **Lab ID: 92204084003** Collected: 06/02/14 14:00 Received: 06/04/14 17:30 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV Microwave	Analytical Method: EPA 8270 Preparation Method: EPA 3546							
Isophorone	ND	ug/kg	381	1	06/05/14 13:07	06/09/14 20:20	78-59-1	
1-Methylnaphthalene	ND	ug/kg	381	1	06/05/14 13:07	06/09/14 20:20	90-12-0	
2-Methylnaphthalene	ND	ug/kg	381	1	06/05/14 13:07	06/09/14 20:20	91-57-6	
2-Methylphenol(o-Cresol)	ND	ug/kg	381	1	06/05/14 13:07	06/09/14 20:20	95-48-7	
3&4-Methylphenol(m&p Cresol)	ND	ug/kg	381	1	06/05/14 13:07	06/09/14 20:20		
Naphthalene	ND	ug/kg	381	1	06/05/14 13:07	06/09/14 20:20	91-20-3	
2-Nitroaniline	ND	ug/kg	1910	1	06/05/14 13:07	06/09/14 20:20	88-74-4	
3-Nitroaniline	ND	ug/kg	1910	1	06/05/14 13:07	06/09/14 20:20	99-09-2	
4-Nitroaniline	ND	ug/kg	762	1	06/05/14 13:07	06/09/14 20:20	100-01-6	
Nitrobenzene	ND	ug/kg	381	1	06/05/14 13:07	06/09/14 20:20	98-95-3	
2-Nitrophenol	ND	ug/kg	381	1	06/05/14 13:07	06/09/14 20:20	88-75-5	
4-Nitrophenol	ND	ug/kg	1910	1	06/05/14 13:07	06/09/14 20:20	100-02-7	
N-Nitrosodimethylamine	ND	ug/kg	381	1	06/05/14 13:07	06/09/14 20:20	62-75-9	
N-Nitroso-di-n-propylamine	ND	ug/kg	381	1	06/05/14 13:07	06/09/14 20:20	621-64-7	
N-Nitrosodiphenylamine	ND	ug/kg	381	1	06/05/14 13:07	06/09/14 20:20	86-30-6	
Pentachlorophenol	ND	ug/kg	1910	1	06/05/14 13:07	06/09/14 20:20	87-86-5	
Phenanthrene	ND	ug/kg	381	1	06/05/14 13:07	06/09/14 20:20	85-01-8	
Phenol	ND	ug/kg	381	1	06/05/14 13:07	06/09/14 20:20	108-95-2	
Pyrene	ND	ug/kg	381	1	06/05/14 13:07	06/09/14 20:20	129-00-0	
1,2,4-Trichlorobenzene	ND	ug/kg	381	1	06/05/14 13:07	06/09/14 20:20	120-82-1	
2,4,5-Trichlorophenol	ND	ug/kg	381	1	06/05/14 13:07	06/09/14 20:20	95-95-4	
2,4,6-Trichlorophenol	ND	ug/kg	381	1	06/05/14 13:07	06/09/14 20:20	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	50	%	23-110	1	06/05/14 13:07	06/09/14 20:20	4165-60-0	
2-Fluorobiphenyl (S)	60	%	30-110	1	06/05/14 13:07	06/09/14 20:20	321-60-8	
Terphenyl-d14 (S)	68	%	28-110	1	06/05/14 13:07	06/09/14 20:20	1718-51-0	
Phenol-d6 (S)	65	%	22-110	1	06/05/14 13:07	06/09/14 20:20	13127-88-3	
2-Fluorophenol (S)	61	%	13-110	1	06/05/14 13:07	06/09/14 20:20	367-12-4	
2,4,6-Tribromophenol (S)	80	%	27-110	1	06/05/14 13:07	06/09/14 20:20	118-79-6	
8260/5035A Volatile Organics	Analytical Method: EPA 8260							
Acetone	ND	ug/kg	90.9	1		06/09/14 17:11	67-64-1	
Benzene	ND	ug/kg	4.5	1		06/09/14 17:11	71-43-2	
Bromobenzene	ND	ug/kg	4.5	1		06/09/14 17:11	108-86-1	
Bromochloromethane	ND	ug/kg	4.5	1		06/09/14 17:11	74-97-5	
Bromodichloromethane	ND	ug/kg	4.5	1		06/09/14 17:11	75-27-4	
Bromoform	ND	ug/kg	4.5	1		06/09/14 17:11	75-25-2	
Bromomethane	ND	ug/kg	9.1	1		06/09/14 17:11	74-83-9	
2-Butanone (MEK)	ND	ug/kg	90.9	1		06/09/14 17:11	78-93-3	
n-Butylbenzene	ND	ug/kg	4.5	1		06/09/14 17:11	104-51-8	
sec-Butylbenzene	ND	ug/kg	4.5	1		06/09/14 17:11	135-98-8	
tert-Butylbenzene	ND	ug/kg	4.5	1		06/09/14 17:11	98-06-6	
Carbon tetrachloride	ND	ug/kg	4.5	1		06/09/14 17:11	56-23-5	
Chlorobenzene	ND	ug/kg	4.5	1		06/09/14 17:11	108-90-7	
Chloroethane	ND	ug/kg	9.1	1		06/09/14 17:11	75-00-3	
Chloroform	ND	ug/kg	4.5	1		06/09/14 17:11	67-66-3	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: NCDOT Johnston 34182.1.2
Pace Project No.: 92204084

Sample: 5-7(2-4) **Lab ID: 92204084003** Collected: 06/02/14 14:00 Received: 06/04/14 17:30 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260/5035A Volatile Organics	Analytical Method: EPA 8260							
Chloromethane	ND	ug/kg	9.1	1		06/09/14 17:11	74-87-3	
2-Chlorotoluene	ND	ug/kg	4.5	1		06/09/14 17:11	95-49-8	
4-Chlorotoluene	ND	ug/kg	4.5	1		06/09/14 17:11	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/kg	4.5	1		06/09/14 17:11	96-12-8	
Dibromochloromethane	ND	ug/kg	4.5	1		06/09/14 17:11	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/kg	4.5	1		06/09/14 17:11	106-93-4	
Dibromomethane	ND	ug/kg	4.5	1		06/09/14 17:11	74-95-3	
1,2-Dichlorobenzene	ND	ug/kg	4.5	1		06/09/14 17:11	95-50-1	
1,3-Dichlorobenzene	ND	ug/kg	4.5	1		06/09/14 17:11	541-73-1	
1,4-Dichlorobenzene	ND	ug/kg	4.5	1		06/09/14 17:11	106-46-7	
Dichlorodifluoromethane	ND	ug/kg	9.1	1		06/09/14 17:11	75-71-8	
1,1-Dichloroethane	ND	ug/kg	4.5	1		06/09/14 17:11	75-34-3	
1,2-Dichloroethane	ND	ug/kg	4.5	1		06/09/14 17:11	107-06-2	
1,1-Dichloroethene	ND	ug/kg	4.5	1		06/09/14 17:11	75-35-4	
cis-1,2-Dichloroethene	ND	ug/kg	4.5	1		06/09/14 17:11	156-59-2	
trans-1,2-Dichloroethene	ND	ug/kg	4.5	1		06/09/14 17:11	156-60-5	
1,2-Dichloropropane	ND	ug/kg	4.5	1		06/09/14 17:11	78-87-5	
1,3-Dichloropropane	ND	ug/kg	4.5	1		06/09/14 17:11	142-28-9	
2,2-Dichloropropane	ND	ug/kg	4.5	1		06/09/14 17:11	594-20-7	
1,1-Dichloropropene	ND	ug/kg	4.5	1		06/09/14 17:11	563-58-6	
cis-1,3-Dichloropropene	ND	ug/kg	4.5	1		06/09/14 17:11	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/kg	4.5	1		06/09/14 17:11	10061-02-6	
Diisopropyl ether	ND	ug/kg	4.5	1		06/09/14 17:11	108-20-3	
Ethylbenzene	ND	ug/kg	4.5	1		06/09/14 17:11	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/kg	4.5	1		06/09/14 17:11	87-68-3	
2-Hexanone	ND	ug/kg	45.5	1		06/09/14 17:11	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/kg	4.5	1		06/09/14 17:11	98-82-8	
p-Isopropyltoluene	ND	ug/kg	4.5	1		06/09/14 17:11	99-87-6	
Methylene Chloride	ND	ug/kg	18.2	1		06/09/14 17:11	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	45.5	1		06/09/14 17:11	108-10-1	
Methyl-tert-butyl ether	ND	ug/kg	4.5	1		06/09/14 17:11	1634-04-4	
Naphthalene	ND	ug/kg	4.5	1		06/09/14 17:11	91-20-3	
n-Propylbenzene	ND	ug/kg	4.5	1		06/09/14 17:11	103-65-1	
Styrene	ND	ug/kg	4.5	1		06/09/14 17:11	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/kg	4.5	1		06/09/14 17:11	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/kg	4.5	1		06/09/14 17:11	79-34-5	
Tetrachloroethene	ND	ug/kg	4.5	1		06/09/14 17:11	127-18-4	
Toluene	ND	ug/kg	4.5	1		06/09/14 17:11	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/kg	4.5	1		06/09/14 17:11	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/kg	4.5	1		06/09/14 17:11	120-82-1	
1,1,1-Trichloroethane	ND	ug/kg	4.5	1		06/09/14 17:11	71-55-6	
1,1,2-Trichloroethane	ND	ug/kg	4.5	1		06/09/14 17:11	79-00-5	
Trichloroethene	ND	ug/kg	4.5	1		06/09/14 17:11	79-01-6	
Trichlorofluoromethane	ND	ug/kg	4.5	1		06/09/14 17:11	75-69-4	
1,2,3-Trichloropropane	ND	ug/kg	4.5	1		06/09/14 17:11	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/kg	4.5	1		06/09/14 17:11	95-63-6	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
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ANALYTICAL RESULTS

Project: NCDOT Johnston 34182.1.2
Pace Project No.: 92204084

Sample: 5-7(2-4) **Lab ID: 92204084003** Collected: 06/02/14 14:00 Received: 06/04/14 17:30 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260/5035A Volatile Organics	Analytical Method: EPA 8260							
1,3,5-Trimethylbenzene	ND	ug/kg	4.5	1		06/09/14 17:11	108-67-8	
Vinyl acetate	ND	ug/kg	45.5	1		06/09/14 17:11	108-05-4	
Vinyl chloride	ND	ug/kg	9.1	1		06/09/14 17:11	75-01-4	
Xylene (Total)	ND	ug/kg	9.1	1		06/09/14 17:11	1330-20-7	
m&p-Xylene	ND	ug/kg	9.1	1		06/09/14 17:11	179601-23-1	
o-Xylene	ND	ug/kg	4.5	1		06/09/14 17:11	95-47-6	
Surrogates								
Toluene-d8 (S)	106	%	70-130	1		06/09/14 17:11	2037-26-5	
4-Bromofluorobenzene (S)	103	%	70-130	1		06/09/14 17:11	460-00-4	
1,2-Dichloroethane-d4 (S)	117	%	70-132	1		06/09/14 17:11	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974-87							
Percent Moisture	**13.4**	%	0.10	1		06/12/14 16:10		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: NCDOT Johnston 34182.1.2
Pace Project No.: 92204084

Sample: 5-8(2-4) **Lab ID: 92204084004** Collected: 06/02/14 14:25 Received: 06/04/14 17:30 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV Microwave	Analytical Method: EPA 8270 Preparation Method: EPA 3546							
Acenaphthene	ND	ug/kg	375	1	06/10/14 16:30	06/11/14 15:43	83-32-9	
Acenaphthylene	ND	ug/kg	375	1	06/10/14 16:30	06/11/14 15:43	208-96-8	
Aniline	ND	ug/kg	375	1	06/10/14 16:30	06/11/14 15:43	62-53-3	
Anthracene	ND	ug/kg	375	1	06/10/14 16:30	06/11/14 15:43	120-12-7	
Benzo(a)anthracene	ND	ug/kg	375	1	06/10/14 16:30	06/11/14 15:43	56-55-3	
Benzo(a)pyrene	ND	ug/kg	375	1	06/10/14 16:30	06/11/14 15:43	50-32-8	
Benzo(b)fluoranthene	ND	ug/kg	375	1	06/10/14 16:30	06/11/14 15:43	205-99-2	
Benzo(g,h,i)perylene	ND	ug/kg	375	1	06/10/14 16:30	06/11/14 15:43	191-24-2	
Benzo(k)fluoranthene	ND	ug/kg	375	1	06/10/14 16:30	06/11/14 15:43	207-08-9	
Benzoic Acid	ND	ug/kg	1870	1	06/10/14 16:30	06/11/14 15:43	65-85-0	
Benzyl alcohol	ND	ug/kg	750	1	06/10/14 16:30	06/11/14 15:43	100-51-6	
4-Bromophenylphenyl ether	ND	ug/kg	375	1	06/10/14 16:30	06/11/14 15:43	101-55-3	
Butylbenzylphthalate	ND	ug/kg	375	1	06/10/14 16:30	06/11/14 15:43	85-68-7	
4-Chloro-3-methylphenol	ND	ug/kg	750	1	06/10/14 16:30	06/11/14 15:43	59-50-7	
4-Chloroaniline	ND	ug/kg	1870	1	06/10/14 16:30	06/11/14 15:43	106-47-8	
bis(2-Chloroethoxy)methane	ND	ug/kg	375	1	06/10/14 16:30	06/11/14 15:43	111-91-1	
bis(2-Chloroethyl) ether	ND	ug/kg	375	1	06/10/14 16:30	06/11/14 15:43	111-44-4	
bis(2-Chloroisopropyl) ether	ND	ug/kg	375	1	06/10/14 16:30	06/11/14 15:43	108-60-1	
2-Chloronaphthalene	ND	ug/kg	375	1	06/10/14 16:30	06/11/14 15:43	91-58-7	
2-Chlorophenol	ND	ug/kg	375	1	06/10/14 16:30	06/11/14 15:43	95-57-8	
4-Chlorophenylphenyl ether	ND	ug/kg	375	1	06/10/14 16:30	06/11/14 15:43	7005-72-3	
Chrysene	ND	ug/kg	375	1	06/10/14 16:30	06/11/14 15:43	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	375	1	06/10/14 16:30	06/11/14 15:43	53-70-3	
Dibenzofuran	ND	ug/kg	375	1	06/10/14 16:30	06/11/14 15:43	132-64-9	
1,2-Dichlorobenzene	ND	ug/kg	375	1	06/10/14 16:30	06/11/14 15:43	95-50-1	
1,3-Dichlorobenzene	ND	ug/kg	375	1	06/10/14 16:30	06/11/14 15:43	541-73-1	
1,4-Dichlorobenzene	ND	ug/kg	375	1	06/10/14 16:30	06/11/14 15:43	106-46-7	
3,3'-Dichlorobenzidine	ND	ug/kg	1870	1	06/10/14 16:30	06/11/14 15:43	91-94-1	
2,4-Dichlorophenol	ND	ug/kg	375	1	06/10/14 16:30	06/11/14 15:43	120-83-2	
Diethylphthalate	ND	ug/kg	375	1	06/10/14 16:30	06/11/14 15:43	84-66-2	
2,4-Dimethylphenol	ND	ug/kg	375	1	06/10/14 16:30	06/11/14 15:43	105-67-9	
Dimethylphthalate	ND	ug/kg	375	1	06/10/14 16:30	06/11/14 15:43	131-11-3	
Di-n-butylphthalate	ND	ug/kg	375	1	06/10/14 16:30	06/11/14 15:43	84-74-2	
4,6-Dinitro-2-methylphenol	ND	ug/kg	750	1	06/10/14 16:30	06/11/14 15:43	534-52-1	
2,4-Dinitrophenol	ND	ug/kg	1870	1	06/10/14 16:30	06/11/14 15:43	51-28-5	
2,4-Dinitrotoluene	ND	ug/kg	375	1	06/10/14 16:30	06/11/14 15:43	121-14-2	
2,6-Dinitrotoluene	ND	ug/kg	375	1	06/10/14 16:30	06/11/14 15:43	606-20-2	
Di-n-octylphthalate	ND	ug/kg	375	1	06/10/14 16:30	06/11/14 15:43	117-84-0	
bis(2-Ethylhexyl)phthalate	ND	ug/kg	375	1	06/10/14 16:30	06/11/14 15:43	117-81-7	
Fluoranthene	ND	ug/kg	375	1	06/10/14 16:30	06/11/14 15:43	206-44-0	
Fluorene	ND	ug/kg	375	1	06/10/14 16:30	06/11/14 15:43	86-73-7	
Hexachloro-1,3-butadiene	ND	ug/kg	375	1	06/10/14 16:30	06/11/14 15:43	87-68-3	
Hexachlorobenzene	ND	ug/kg	375	1	06/10/14 16:30	06/11/14 15:43	118-74-1	
Hexachlorocyclopentadiene	ND	ug/kg	375	1	06/10/14 16:30	06/11/14 15:43	77-47-4	
Hexachloroethane	ND	ug/kg	375	1	06/10/14 16:30	06/11/14 15:43	67-72-1	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	375	1	06/10/14 16:30	06/11/14 15:43	193-39-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: NCDOT Johnston 34182.1.2
Pace Project No.: 92204084

Sample: 5-8(2-4) **Lab ID: 92204084004** Collected: 06/02/14 14:25 Received: 06/04/14 17:30 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV Microwave	Analytical Method: EPA 8270 Preparation Method: EPA 3546							
Isophorone	ND	ug/kg	375	1	06/10/14 16:30	06/11/14 15:43	78-59-1	
1-Methylnaphthalene	ND	ug/kg	375	1	06/10/14 16:30	06/11/14 15:43	90-12-0	
2-Methylnaphthalene	ND	ug/kg	375	1	06/10/14 16:30	06/11/14 15:43	91-57-6	
2-Methylphenol(o-Cresol)	ND	ug/kg	375	1	06/10/14 16:30	06/11/14 15:43	95-48-7	
3&4-Methylphenol(m&p Cresol)	ND	ug/kg	375	1	06/10/14 16:30	06/11/14 15:43		
Naphthalene	ND	ug/kg	375	1	06/10/14 16:30	06/11/14 15:43	91-20-3	
2-Nitroaniline	ND	ug/kg	1870	1	06/10/14 16:30	06/11/14 15:43	88-74-4	
3-Nitroaniline	ND	ug/kg	1870	1	06/10/14 16:30	06/11/14 15:43	99-09-2	
4-Nitroaniline	ND	ug/kg	750	1	06/10/14 16:30	06/11/14 15:43	100-01-6	
Nitrobenzene	ND	ug/kg	375	1	06/10/14 16:30	06/11/14 15:43	98-95-3	
2-Nitrophenol	ND	ug/kg	375	1	06/10/14 16:30	06/11/14 15:43	88-75-5	
4-Nitrophenol	ND	ug/kg	1870	1	06/10/14 16:30	06/11/14 15:43	100-02-7	
N-Nitrosodimethylamine	ND	ug/kg	375	1	06/10/14 16:30	06/11/14 15:43	62-75-9	
N-Nitroso-di-n-propylamine	ND	ug/kg	375	1	06/10/14 16:30	06/11/14 15:43	621-64-7	
N-Nitrosodiphenylamine	ND	ug/kg	375	1	06/10/14 16:30	06/11/14 15:43	86-30-6	
Pentachlorophenol	ND	ug/kg	1870	1	06/10/14 16:30	06/11/14 15:43	87-86-5	
Phenanthrene	ND	ug/kg	375	1	06/10/14 16:30	06/11/14 15:43	85-01-8	
Phenol	ND	ug/kg	375	1	06/10/14 16:30	06/11/14 15:43	108-95-2	
Pyrene	ND	ug/kg	375	1	06/10/14 16:30	06/11/14 15:43	129-00-0	
1,2,4-Trichlorobenzene	ND	ug/kg	375	1	06/10/14 16:30	06/11/14 15:43	120-82-1	
2,4,5-Trichlorophenol	ND	ug/kg	375	1	06/10/14 16:30	06/11/14 15:43	95-95-4	
2,4,6-Trichlorophenol	ND	ug/kg	375	1	06/10/14 16:30	06/11/14 15:43	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	83	%	23-110	1	06/10/14 16:30	06/11/14 15:43	4165-60-0	
2-Fluorobiphenyl (S)	59	%	30-110	1	06/10/14 16:30	06/11/14 15:43	321-60-8	
Terphenyl-d14 (S)	59	%	28-110	1	06/10/14 16:30	06/11/14 15:43	1718-51-0	
Phenol-d6 (S)	58	%	22-110	1	06/10/14 16:30	06/11/14 15:43	13127-88-3	
2-Fluorophenol (S)	64	%	13-110	1	06/10/14 16:30	06/11/14 15:43	367-12-4	
2,4,6-Tribromophenol (S)	80	%	27-110	1	06/10/14 16:30	06/11/14 15:43	118-79-6	
8260/5035A Volatile Organics	Analytical Method: EPA 8260							
Acetone	ND	ug/kg	98.4	1		06/09/14 17:31	67-64-1	
Benzene	ND	ug/kg	4.9	1		06/09/14 17:31	71-43-2	
Bromobenzene	ND	ug/kg	4.9	1		06/09/14 17:31	108-86-1	
Bromochloromethane	ND	ug/kg	4.9	1		06/09/14 17:31	74-97-5	
Bromodichloromethane	ND	ug/kg	4.9	1		06/09/14 17:31	75-27-4	
Bromoform	ND	ug/kg	4.9	1		06/09/14 17:31	75-25-2	
Bromomethane	ND	ug/kg	9.8	1		06/09/14 17:31	74-83-9	
2-Butanone (MEK)	ND	ug/kg	98.4	1		06/09/14 17:31	78-93-3	
n-Butylbenzene	ND	ug/kg	4.9	1		06/09/14 17:31	104-51-8	
sec-Butylbenzene	ND	ug/kg	4.9	1		06/09/14 17:31	135-98-8	
tert-Butylbenzene	ND	ug/kg	4.9	1		06/09/14 17:31	98-06-6	
Carbon tetrachloride	ND	ug/kg	4.9	1		06/09/14 17:31	56-23-5	
Chlorobenzene	ND	ug/kg	4.9	1		06/09/14 17:31	108-90-7	
Chloroethane	ND	ug/kg	9.8	1		06/09/14 17:31	75-00-3	
Chloroform	ND	ug/kg	4.9	1		06/09/14 17:31	67-66-3	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: NCDOT Johnston 34182.1.2
Pace Project No.: 92204084

Sample: 5-8(2-4) **Lab ID: 92204084004** Collected: 06/02/14 14:25 Received: 06/04/14 17:30 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260/5035A Volatile Organics	Analytical Method: EPA 8260							
Chloromethane	ND	ug/kg	9.8	1		06/09/14 17:31	74-87-3	
2-Chlorotoluene	ND	ug/kg	4.9	1		06/09/14 17:31	95-49-8	
4-Chlorotoluene	ND	ug/kg	4.9	1		06/09/14 17:31	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/kg	4.9	1		06/09/14 17:31	96-12-8	
Dibromochloromethane	ND	ug/kg	4.9	1		06/09/14 17:31	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/kg	4.9	1		06/09/14 17:31	106-93-4	
Dibromomethane	ND	ug/kg	4.9	1		06/09/14 17:31	74-95-3	
1,2-Dichlorobenzene	ND	ug/kg	4.9	1		06/09/14 17:31	95-50-1	
1,3-Dichlorobenzene	ND	ug/kg	4.9	1		06/09/14 17:31	541-73-1	
1,4-Dichlorobenzene	ND	ug/kg	4.9	1		06/09/14 17:31	106-46-7	
Dichlorodifluoromethane	ND	ug/kg	9.8	1		06/09/14 17:31	75-71-8	
1,1-Dichloroethane	ND	ug/kg	4.9	1		06/09/14 17:31	75-34-3	
1,2-Dichloroethane	ND	ug/kg	4.9	1		06/09/14 17:31	107-06-2	
1,1-Dichloroethene	ND	ug/kg	4.9	1		06/09/14 17:31	75-35-4	
cis-1,2-Dichloroethene	ND	ug/kg	4.9	1		06/09/14 17:31	156-59-2	
trans-1,2-Dichloroethene	ND	ug/kg	4.9	1		06/09/14 17:31	156-60-5	
1,2-Dichloropropane	ND	ug/kg	4.9	1		06/09/14 17:31	78-87-5	
1,3-Dichloropropane	ND	ug/kg	4.9	1		06/09/14 17:31	142-28-9	
2,2-Dichloropropane	ND	ug/kg	4.9	1		06/09/14 17:31	594-20-7	
1,1-Dichloropropene	ND	ug/kg	4.9	1		06/09/14 17:31	563-58-6	
cis-1,3-Dichloropropene	ND	ug/kg	4.9	1		06/09/14 17:31	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/kg	4.9	1		06/09/14 17:31	10061-02-6	
Diisopropyl ether	ND	ug/kg	4.9	1		06/09/14 17:31	108-20-3	
Ethylbenzene	ND	ug/kg	4.9	1		06/09/14 17:31	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/kg	4.9	1		06/09/14 17:31	87-68-3	
2-Hexanone	ND	ug/kg	49.2	1		06/09/14 17:31	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/kg	4.9	1		06/09/14 17:31	98-82-8	
p-Isopropyltoluene	ND	ug/kg	4.9	1		06/09/14 17:31	99-87-6	
Methylene Chloride	ND	ug/kg	19.7	1		06/09/14 17:31	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	49.2	1		06/09/14 17:31	108-10-1	
Methyl-tert-butyl ether	ND	ug/kg	4.9	1		06/09/14 17:31	1634-04-4	
Naphthalene	ND	ug/kg	4.9	1		06/09/14 17:31	91-20-3	
n-Propylbenzene	ND	ug/kg	4.9	1		06/09/14 17:31	103-65-1	
Styrene	ND	ug/kg	4.9	1		06/09/14 17:31	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/kg	4.9	1		06/09/14 17:31	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/kg	4.9	1		06/09/14 17:31	79-34-5	
Tetrachloroethene	ND	ug/kg	4.9	1		06/09/14 17:31	127-18-4	
Toluene	ND	ug/kg	4.9	1		06/09/14 17:31	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/kg	4.9	1		06/09/14 17:31	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/kg	4.9	1		06/09/14 17:31	120-82-1	
1,1,1-Trichloroethane	ND	ug/kg	4.9	1		06/09/14 17:31	71-55-6	
1,1,2-Trichloroethane	ND	ug/kg	4.9	1		06/09/14 17:31	79-00-5	
Trichloroethene	ND	ug/kg	4.9	1		06/09/14 17:31	79-01-6	
Trichlorofluoromethane	ND	ug/kg	4.9	1		06/09/14 17:31	75-69-4	
1,2,3-Trichloropropane	ND	ug/kg	4.9	1		06/09/14 17:31	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/kg	4.9	1		06/09/14 17:31	95-63-6	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: NCDOT Johnston 34182.1.2
Pace Project No.: 92204084

Sample: 5-8(2-4) **Lab ID: 92204084004** Collected: 06/02/14 14:25 Received: 06/04/14 17:30 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260/5035A Volatile Organics	Analytical Method: EPA 8260							
1,3,5-Trimethylbenzene	ND	ug/kg	4.9	1		06/09/14 17:31	108-67-8	
Vinyl acetate	ND	ug/kg	49.2	1		06/09/14 17:31	108-05-4	
Vinyl chloride	ND	ug/kg	9.8	1		06/09/14 17:31	75-01-4	
Xylene (Total)	ND	ug/kg	9.8	1		06/09/14 17:31	1330-20-7	
m&p-Xylene	ND	ug/kg	9.8	1		06/09/14 17:31	179601-23-1	
o-Xylene	ND	ug/kg	4.9	1		06/09/14 17:31	95-47-6	
Surrogates								
Toluene-d8 (S)	103	%	70-130	1		06/09/14 17:31	2037-26-5	
4-Bromofluorobenzene (S)	101	%	70-130	1		06/09/14 17:31	460-00-4	
1,2-Dichloroethane-d4 (S)	115	%	70-132	1		06/09/14 17:31	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974-87							
Percent Moisture	**12.0**	%	0.10	1		06/12/14 16:10		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: NCDOT Johnston 34182.1.2
Pace Project No.: 92204084

Sample: 5-6(TW) **Lab ID: 92204084005** Collected: 06/02/14 15:00 Received: 06/04/14 17:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
625 MSSV	Analytical Method: EPA 625 Preparation Method: EPA 625							
Acenaphthene	ND	ug/L	5.0	1	06/09/14 13:00	06/09/14 21:18	83-32-9	
Acenaphthylene	ND	ug/L	5.0	1	06/09/14 13:00	06/09/14 21:18	208-96-8	
Anthracene	ND	ug/L	5.0	1	06/09/14 13:00	06/09/14 21:18	120-12-7	
Benzo(a)anthracene	ND	ug/L	5.0	1	06/09/14 13:00	06/09/14 21:18	56-55-3	
Benzo(a)pyrene	ND	ug/L	5.0	1	06/09/14 13:00	06/09/14 21:18	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	5.0	1	06/09/14 13:00	06/09/14 21:18	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	5.0	1	06/09/14 13:00	06/09/14 21:18	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	5.0	1	06/09/14 13:00	06/09/14 21:18	207-08-9	
4-Bromophenylphenyl ether	ND	ug/L	5.0	1	06/09/14 13:00	06/09/14 21:18	101-55-3	
Butylbenzylphthalate	ND	ug/L	5.0	1	06/09/14 13:00	06/09/14 21:18	85-68-7	
4-Chloro-3-methylphenol	ND	ug/L	5.0	1	06/09/14 13:00	06/09/14 21:18	59-50-7	
bis(2-Chloroethoxy)methane	ND	ug/L	10.0	1	06/09/14 13:00	06/09/14 21:18	111-91-1	
bis(2-Chloroethyl) ether	ND	ug/L	5.0	1	06/09/14 13:00	06/09/14 21:18	111-44-4	
bis(2-Chloroisopropyl) ether	ND	ug/L	5.0	1	06/09/14 13:00	06/09/14 21:18	108-60-1	
2-Chloronaphthalene	ND	ug/L	5.0	1	06/09/14 13:00	06/09/14 21:18	91-58-7	
2-Chlorophenol	ND	ug/L	5.0	1	06/09/14 13:00	06/09/14 21:18	95-57-8	
4-Chlorophenylphenyl ether	ND	ug/L	5.0	1	06/09/14 13:00	06/09/14 21:18	7005-72-3	
Chrysene	ND	ug/L	5.0	1	06/09/14 13:00	06/09/14 21:18	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	5.0	1	06/09/14 13:00	06/09/14 21:18	53-70-3	
3,3'-Dichlorobenzidine	ND	ug/L	25.0	1	06/09/14 13:00	06/09/14 21:18	91-94-1	
2,4-Dichlorophenol	ND	ug/L	5.0	1	06/09/14 13:00	06/09/14 21:18	120-83-2	
Diethylphthalate	ND	ug/L	5.0	1	06/09/14 13:00	06/09/14 21:18	84-66-2	
2,4-Dimethylphenol	ND	ug/L	10.0	1	06/09/14 13:00	06/09/14 21:18	105-67-9	
Dimethylphthalate	ND	ug/L	5.0	1	06/09/14 13:00	06/09/14 21:18	131-11-3	
Di-n-butylphthalate	ND	ug/L	5.0	1	06/09/14 13:00	06/09/14 21:18	84-74-2	
4,6-Dinitro-2-methylphenol	ND	ug/L	20.0	1	06/09/14 13:00	06/09/14 21:18	534-52-1	
2,4-Dinitrophenol	ND	ug/L	50.0	1	06/09/14 13:00	06/09/14 21:18	51-28-5	
2,4-Dinitrotoluene	ND	ug/L	5.0	1	06/09/14 13:00	06/09/14 21:18	121-14-2	
2,6-Dinitrotoluene	ND	ug/L	5.0	1	06/09/14 13:00	06/09/14 21:18	606-20-2	
Di-n-octylphthalate	ND	ug/L	5.0	1	06/09/14 13:00	06/09/14 21:18	117-84-0	
bis(2-Ethylhexyl)phthalate	ND	ug/L	5.0	1	06/09/14 13:00	06/09/14 21:18	117-81-7	
Fluoranthene	ND	ug/L	5.0	1	06/09/14 13:00	06/09/14 21:18	206-44-0	
Fluorene	ND	ug/L	5.0	1	06/09/14 13:00	06/09/14 21:18	86-73-7	
Hexachloro-1,3-butadiene	ND	ug/L	5.0	1	06/09/14 13:00	06/09/14 21:18	87-68-3	
Hexachlorobenzene	ND	ug/L	5.0	1	06/09/14 13:00	06/09/14 21:18	118-74-1	
Hexachlorocyclopentadiene	ND	ug/L	10.0	1	06/09/14 13:00	06/09/14 21:18	77-47-4	
Hexachloroethane	ND	ug/L	5.0	1	06/09/14 13:00	06/09/14 21:18	67-72-1	
Indeno(1,2,3-cd)pyrene	ND	ug/L	5.0	1	06/09/14 13:00	06/09/14 21:18	193-39-5	
Isophorone	ND	ug/L	10.0	1	06/09/14 13:00	06/09/14 21:18	78-59-1	
Naphthalene	ND	ug/L	5.0	1	06/09/14 13:00	06/09/14 21:18	91-20-3	
Nitrobenzene	ND	ug/L	5.0	1	06/09/14 13:00	06/09/14 21:18	98-95-3	
2-Nitrophenol	ND	ug/L	5.0	1	06/09/14 13:00	06/09/14 21:18	88-75-5	
4-Nitrophenol	ND	ug/L	50.0	1	06/09/14 13:00	06/09/14 21:18	100-02-7	
N-Nitrosodimethylamine	ND	ug/L	5.0	1	06/09/14 13:00	06/09/14 21:18	62-75-9	
N-Nitroso-di-n-propylamine	ND	ug/L	5.0	1	06/09/14 13:00	06/09/14 21:18	621-64-7	
N-Nitrosodiphenylamine	ND	ug/L	10.0	1	06/09/14 13:00	06/09/14 21:18	86-30-6	
Pentachlorophenol	ND	ug/L	10.0	1	06/09/14 13:00	06/09/14 21:18	87-86-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: NCDOT Johnston 34182.1.2
Pace Project No.: 92204084

Sample: 5-6(TW) **Lab ID: 92204084005** Collected: 06/02/14 15:00 Received: 06/04/14 17:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
625 MSSV	Analytical Method: EPA 625 Preparation Method: EPA 625							
Phenanthrene	ND	ug/L	5.0	1	06/09/14 13:00	06/09/14 21:18	85-01-8	
Phenol	ND	ug/L	5.0	1	06/09/14 13:00	06/09/14 21:18	108-95-2	
Pyrene	ND	ug/L	5.0	1	06/09/14 13:00	06/09/14 21:18	129-00-0	
1,2,4-Trichlorobenzene	ND	ug/L	5.0	1	06/09/14 13:00	06/09/14 21:18	120-82-1	
2,4,6-Trichlorophenol	ND	ug/L	10.0	1	06/09/14 13:00	06/09/14 21:18	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	69	%	10-120	1	06/09/14 13:00	06/09/14 21:18	4165-60-0	
2-Fluorobiphenyl (S)	74	%	15-120	1	06/09/14 13:00	06/09/14 21:18	321-60-8	
Terphenyl-d14 (S)	90	%	11-131	1	06/09/14 13:00	06/09/14 21:18	1718-51-0	
Phenol-d6 (S)	29	%	10-120	1	06/09/14 13:00	06/09/14 21:18	13127-88-3	
2-Fluorophenol (S)	42	%	10-120	1	06/09/14 13:00	06/09/14 21:18	367-12-4	
2,4,6-Tribromophenol (S)	81	%	10-137	1	06/09/14 13:00	06/09/14 21:18	118-79-6	
6200B MSV	Analytical Method: SM 6200B							
Benzene	ND	ug/L	0.50	1		06/05/14 16:26	71-43-2	
Bromobenzene	ND	ug/L	0.50	1		06/05/14 16:26	108-86-1	
Bromochloromethane	ND	ug/L	0.50	1		06/05/14 16:26	74-97-5	
Bromodichloromethane	ND	ug/L	0.50	1		06/05/14 16:26	75-27-4	
Bromoform	ND	ug/L	0.50	1		06/05/14 16:26	75-25-2	
Bromomethane	ND	ug/L	5.0	1		06/05/14 16:26	74-83-9	
n-Butylbenzene	ND	ug/L	0.50	1		06/05/14 16:26	104-51-8	
sec-Butylbenzene	ND	ug/L	0.50	1		06/05/14 16:26	135-98-8	
tert-Butylbenzene	ND	ug/L	0.50	1		06/05/14 16:26	98-06-6	
Carbon tetrachloride	ND	ug/L	0.50	1		06/05/14 16:26	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		06/05/14 16:26	108-90-7	
Chloroethane	ND	ug/L	1.0	1		06/05/14 16:26	75-00-3	
Chloroform	ND	ug/L	0.50	1		06/05/14 16:26	67-66-3	
Chloromethane	ND	ug/L	1.0	1		06/05/14 16:26	74-87-3	
2-Chlorotoluene	ND	ug/L	0.50	1		06/05/14 16:26	95-49-8	
4-Chlorotoluene	ND	ug/L	0.50	1		06/05/14 16:26	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	1.0	1		06/05/14 16:26	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		06/05/14 16:26	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	0.50	1		06/05/14 16:26	106-93-4	
Dibromomethane	ND	ug/L	0.50	1		06/05/14 16:26	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	0.50	1		06/05/14 16:26	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	0.50	1		06/05/14 16:26	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	0.50	1		06/05/14 16:26	106-46-7	
Dichlorodifluoromethane	ND	ug/L	0.50	1		06/05/14 16:26	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		06/05/14 16:26	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		06/05/14 16:26	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		06/05/14 16:26	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	0.50	1		06/05/14 16:26	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		06/05/14 16:26	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		06/05/14 16:26	78-87-5	
1,3-Dichloropropane	ND	ug/L	0.50	1		06/05/14 16:26	142-28-9	
2,2-Dichloropropane	ND	ug/L	0.50	1		06/05/14 16:26	594-20-7	
1,1-Dichloropropene	ND	ug/L	0.50	1		06/05/14 16:26	563-58-6	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: NCDOT Johnston 34182.1.2
Pace Project No.: 92204084

Sample: 5-6(TW) **Lab ID: 92204084005** Collected: 06/02/14 15:00 Received: 06/04/14 17:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6200B MSV	Analytical Method: SM 6200B							
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		06/05/14 16:26	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		06/05/14 16:26	10061-02-6	
Diisopropyl ether	ND	ug/L	0.50	1		06/05/14 16:26	108-20-3	
Ethylbenzene	ND	ug/L	0.50	1		06/05/14 16:26	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	2.0	1		06/05/14 16:26	87-68-3	
Isopropylbenzene (Cumene)	ND	ug/L	0.50	1		06/05/14 16:26	98-82-8	
Methylene Chloride	ND	ug/L	2.0	1		06/05/14 16:26	75-09-2	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		06/05/14 16:26	1634-04-4	
Naphthalene	ND	ug/L	2.0	1		06/05/14 16:26	91-20-3	
n-Propylbenzene	ND	ug/L	0.50	1		06/05/14 16:26	103-65-1	
Styrene	ND	ug/L	0.50	1		06/05/14 16:26	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	0.50	1		06/05/14 16:26	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		06/05/14 16:26	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		06/05/14 16:26	127-18-4	
Toluene	ND	ug/L	0.50	1		06/05/14 16:26	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	2.0	1		06/05/14 16:26	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	2.0	1		06/05/14 16:26	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		06/05/14 16:26	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		06/05/14 16:26	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		06/05/14 16:26	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		06/05/14 16:26	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	0.50	1		06/05/14 16:26	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/L	0.50	1		06/05/14 16:26	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	0.50	1		06/05/14 16:26	108-67-8	
Vinyl chloride	ND	ug/L	1.0	1		06/05/14 16:26	75-01-4	
m&p-Xylene	ND	ug/L	1.0	1		06/05/14 16:26	179601-23-1	
o-Xylene	ND	ug/L	0.50	1		06/05/14 16:26	95-47-6	
Surrogates								
1,2-Dichloroethane-d4 (S)	95	%	70-130	1		06/05/14 16:26	17060-07-0	
4-Bromofluorobenzene (S)	98	%	70-130	1		06/05/14 16:26	460-00-4	
Toluene-d8 (S)	102	%	70-130	1		06/05/14 16:26	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: NCDOT Johnston 34182.1.2
Pace Project No.: 92204084

QC Batch: MSV/27102 Analysis Method: SM 6200B
QC Batch Method: SM 6200B Analysis Description: 6200B MSV
Associated Lab Samples: 92204084005

METHOD BLANK: 1214892 Matrix: Water
Associated Lab Samples: 92204084005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	0.50	06/05/14 14:46	
1,1,1-Trichloroethane	ug/L	ND	0.50	06/05/14 14:46	
1,1,2,2-Tetrachloroethane	ug/L	ND	0.50	06/05/14 14:46	
1,1,2-Trichloroethane	ug/L	ND	0.50	06/05/14 14:46	
1,1-Dichloroethane	ug/L	ND	0.50	06/05/14 14:46	
1,1-Dichloroethene	ug/L	ND	0.50	06/05/14 14:46	
1,1-Dichloropropene	ug/L	ND	0.50	06/05/14 14:46	
1,2,3-Trichlorobenzene	ug/L	ND	2.0	06/05/14 14:46	
1,2,3-Trichloropropane	ug/L	ND	0.50	06/05/14 14:46	
1,2,4-Trichlorobenzene	ug/L	ND	2.0	06/05/14 14:46	
1,2,4-Trimethylbenzene	ug/L	ND	0.50	06/05/14 14:46	
1,2-Dibromo-3-chloropropane	ug/L	ND	1.0	06/05/14 14:46	
1,2-Dibromoethane (EDB)	ug/L	ND	0.50	06/05/14 14:46	
1,2-Dichlorobenzene	ug/L	ND	0.50	06/05/14 14:46	
1,2-Dichloroethane	ug/L	ND	0.50	06/05/14 14:46	
1,2-Dichloropropane	ug/L	ND	0.50	06/05/14 14:46	
1,3,5-Trimethylbenzene	ug/L	ND	0.50	06/05/14 14:46	
1,3-Dichlorobenzene	ug/L	ND	0.50	06/05/14 14:46	
1,3-Dichloropropane	ug/L	ND	0.50	06/05/14 14:46	
1,4-Dichlorobenzene	ug/L	ND	0.50	06/05/14 14:46	
2,2-Dichloropropane	ug/L	ND	0.50	06/05/14 14:46	
2-Chlorotoluene	ug/L	ND	0.50	06/05/14 14:46	
4-Chlorotoluene	ug/L	ND	0.50	06/05/14 14:46	
Benzene	ug/L	ND	0.50	06/05/14 14:46	
Bromobenzene	ug/L	ND	0.50	06/05/14 14:46	
Bromochloromethane	ug/L	ND	0.50	06/05/14 14:46	
Bromodichloromethane	ug/L	ND	0.50	06/05/14 14:46	
Bromoform	ug/L	ND	0.50	06/05/14 14:46	
Bromomethane	ug/L	ND	5.0	06/05/14 14:46	
Carbon tetrachloride	ug/L	ND	0.50	06/05/14 14:46	
Chlorobenzene	ug/L	ND	0.50	06/05/14 14:46	
Chloroethane	ug/L	ND	1.0	06/05/14 14:46	
Chloroform	ug/L	ND	0.50	06/05/14 14:46	
Chloromethane	ug/L	ND	1.0	06/05/14 14:46	
cis-1,2-Dichloroethene	ug/L	ND	0.50	06/05/14 14:46	
cis-1,3-Dichloropropene	ug/L	ND	0.50	06/05/14 14:46	
Dibromochloromethane	ug/L	ND	0.50	06/05/14 14:46	
Dibromomethane	ug/L	ND	0.50	06/05/14 14:46	
Dichlorodifluoromethane	ug/L	ND	0.50	06/05/14 14:46	
Diisopropyl ether	ug/L	ND	0.50	06/05/14 14:46	
Ethylbenzene	ug/L	ND	0.50	06/05/14 14:46	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: NCDOT Johnston 34182.1.2
Pace Project No.: 92204084

METHOD BLANK: 1214892 Matrix: Water
Associated Lab Samples: 92204084005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Hexachloro-1,3-butadiene	ug/L	ND	2.0	06/05/14 14:46	
Isopropylbenzene (Cumene)	ug/L	ND	0.50	06/05/14 14:46	
m&p-Xylene	ug/L	ND	1.0	06/05/14 14:46	
Methyl-tert-butyl ether	ug/L	ND	0.50	06/05/14 14:46	
Methylene Chloride	ug/L	ND	2.0	06/05/14 14:46	
n-Butylbenzene	ug/L	ND	0.50	06/05/14 14:46	
n-Propylbenzene	ug/L	ND	0.50	06/05/14 14:46	
Naphthalene	ug/L	ND	2.0	06/05/14 14:46	
o-Xylene	ug/L	ND	0.50	06/05/14 14:46	
sec-Butylbenzene	ug/L	ND	0.50	06/05/14 14:46	
Styrene	ug/L	ND	0.50	06/05/14 14:46	
tert-Butylbenzene	ug/L	ND	0.50	06/05/14 14:46	
Tetrachloroethene	ug/L	ND	0.50	06/05/14 14:46	
Toluene	ug/L	ND	0.50	06/05/14 14:46	
trans-1,2-Dichloroethene	ug/L	ND	0.50	06/05/14 14:46	
trans-1,3-Dichloropropene	ug/L	ND	0.50	06/05/14 14:46	
Trichloroethene	ug/L	ND	0.50	06/05/14 14:46	
Trichlorofluoromethane	ug/L	ND	1.0	06/05/14 14:46	
Vinyl chloride	ug/L	ND	1.0	06/05/14 14:46	
1,2-Dichloroethane-d4 (S)	%	94	70-130	06/05/14 14:46	
4-Bromofluorobenzene (S)	%	97	70-130	06/05/14 14:46	
Toluene-d8 (S)	%	100	70-130	06/05/14 14:46	

LABORATORY CONTROL SAMPLE: 1214893

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	50	51.8	104	60-140	
1,1,1-Trichloroethane	ug/L	50	48.8	98	60-140	
1,1,2,2-Tetrachloroethane	ug/L	50	51.5	103	60-140	
1,1,2-Trichloroethane	ug/L	50	53.9	108	60-140	
1,1-Dichloroethane	ug/L	50	49.1	98	60-140	
1,1-Dichloroethene	ug/L	50	51.5	103	60-140	
1,1-Dichloropropene	ug/L	50	53.4	107	60-140	
1,2,3-Trichlorobenzene	ug/L	50	53.3	107	60-140	
1,2,3-Trichloropropane	ug/L	50	49.1	98	60-140	
1,2,4-Trichlorobenzene	ug/L	50	52.7	105	60-140	
1,2,4-Trimethylbenzene	ug/L	50	54.8	110	60-140	
1,2-Dibromo-3-chloropropane	ug/L	50	47.0	94	60-140	
1,2-Dibromoethane (EDB)	ug/L	50	53.0	106	60-140	
1,2-Dichlorobenzene	ug/L	50	52.1	104	60-140	
1,2-Dichloroethane	ug/L	50	46.0	92	60-140	
1,2-Dichloropropane	ug/L	50	51.0	102	60-140	
1,3,5-Trimethylbenzene	ug/L	50	53.9	108	60-140	
1,3-Dichlorobenzene	ug/L	50	52.4	105	60-140	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: NCDOT Johnston 34182.1.2
Pace Project No.: 92204084

LABORATORY CONTROL SAMPLE: 1214893

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,3-Dichloropropane	ug/L	50	52.7	105	60-140	
1,4-Dichlorobenzene	ug/L	50	51.2	102	60-140	
2,2-Dichloropropane	ug/L	50	51.4	103	60-140	
2-Chlorotoluene	ug/L	50	51.9	104	60-140	
4-Chlorotoluene	ug/L	50	50.0	100	60-140	
Benzene	ug/L	50	56.4	113	60-140	
Bromobenzene	ug/L	50	53.2	106	60-140	
Bromochloromethane	ug/L	50	53.0	106	60-140	
Bromodichloromethane	ug/L	50	51.0	102	60-140	
Bromoform	ug/L	50	45.5	91	60-140	
Bromomethane	ug/L	50	63.7	127	60-140	
Carbon tetrachloride	ug/L	50	52.8	106	60-140	
Chlorobenzene	ug/L	50	52.1	104	60-140	
Chloroethane	ug/L	50	54.8	110	60-140	
Chloroform	ug/L	50	51.8	104	60-140	
Chloromethane	ug/L	50	56.9	114	60-140	
cis-1,2-Dichloroethene	ug/L	50	51.2	102	60-140	
cis-1,3-Dichloropropene	ug/L	50	55.0	110	60-140	
Dibromochloromethane	ug/L	50	52.4	105	60-140	
Dibromomethane	ug/L	50	52.1	104	60-140	
Dichlorodifluoromethane	ug/L	50	52.9	106	60-140	
Diisopropyl ether	ug/L	50	52.7	105	60-140	
Ethylbenzene	ug/L	50	52.2	104	60-140	
Hexachloro-1,3-butadiene	ug/L	50	50.3	101	60-140	
Isopropylbenzene (Cumene)	ug/L	50	54.4	109	60-140	
m&p-Xylene	ug/L	100	108	108	60-140	
Methyl-tert-butyl ether	ug/L	50	51.6	103	60-140	
Methylene Chloride	ug/L	50	51.3	103	60-140	
n-Butylbenzene	ug/L	50	56.1	112	60-140	
n-Propylbenzene	ug/L	50	53.7	107	60-140	
Naphthalene	ug/L	50	53.6	107	60-140	
o-Xylene	ug/L	50	52.5	105	60-140	
sec-Butylbenzene	ug/L	50	53.6	107	60-140	
Styrene	ug/L	50	57.4	115	60-140	
tert-Butylbenzene	ug/L	50	52.7	105	60-140	
Tetrachloroethene	ug/L	50	52.6	105	60-140	
Toluene	ug/L	50	52.2	104	60-140	
trans-1,2-Dichloroethene	ug/L	50	51.7	103	60-140	
trans-1,3-Dichloropropene	ug/L	50	54.3	109	60-140	
Trichloroethene	ug/L	50	52.5	105	60-140	
Trichlorofluoromethane	ug/L	50	50.2	100	60-140	
Vinyl chloride	ug/L	50	64.0	128	60-140	
1,2-Dichloroethane-d4 (S)	%			91	70-130	
4-Bromofluorobenzene (S)	%			100	70-130	
Toluene-d8 (S)	%			102	70-130	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: NCDOT Johnston 34182.1.2
Pace Project No.: 92204084

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1215546 1215547

Parameter	Units	92204081001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	ND	20	20	21.0	21.4	105	107	60-140	2	
1,1,1-Trichloroethane	ug/L	ND	20	20	21.3	21.3	107	106	60-140	0	
1,1,2,2-Tetrachloroethane	ug/L	ND	20	20	20.6	20.8	103	104	60-140	1	
1,1,2-Trichloroethane	ug/L	ND	20	20	21.5	21.6	107	108	60-140	1	
1,1-Dichloroethane	ug/L	ND	20	20	20.4	20.9	102	104	60-140	2	
1,1-Dichloroethene	ug/L	ND	20	20	22.4	23.3	112	116	60-140	4	
1,1-Dichloropropene	ug/L	ND	20	20	23.2	23.6	116	118	60-140	1	
1,2,3-Trichlorobenzene	ug/L	ND	20	20	19.4	20.4	97	102	60-140	5	
1,2,3-Trichloropropane	ug/L	ND	20	20	20.2	20.2	101	101	60-140	0	
1,2,4-Trichlorobenzene	ug/L	ND	20	20	20.1	20.5	101	103	60-140	2	
1,2,4-Trimethylbenzene	ug/L	ND	20	20	22.5	22.8	113	114	60-140	1	
1,2-Dibromo-3-chloropropane	ug/L	ND	20	20	17.7	18.5	89	92	60-140	4	
1,2-Dibromoethane (EDB)	ug/L	ND	20	20	20.9	21.7	104	108	60-140	4	
1,2-Dichlorobenzene	ug/L	ND	20	20	21.0	21.5	105	107	60-140	2	
1,2-Dichloroethane	ug/L	ND	20	20	19.0	19.5	95	98	60-140	3	
1,2-Dichloropropane	ug/L	ND	20	20	20.8	21.1	104	105	60-140	1	
1,3,5-Trimethylbenzene	ug/L	ND	20	20	22.2	22.8	111	114	60-140	3	
1,3-Dichlorobenzene	ug/L	ND	20	20	21.4	21.3	107	107	60-140	0	
1,3-Dichloropropane	ug/L	ND	20	20	21.1	21.3	105	106	60-140	1	
1,4-Dichlorobenzene	ug/L	ND	20	20	20.6	21.3	103	106	60-140	3	
2,2-Dichloropropane	ug/L	ND	20	20	21.9	22.3	109	111	60-140	2	
2-Chlorotoluene	ug/L	ND	20	20	21.2	21.9	106	109	60-140	3	
4-Chlorotoluene	ug/L	ND	20	20	20.4	21.1	102	106	60-140	3	
Benzene	ug/L	ND	20	20	23.1	23.3	115	117	60-140	1	
Bromobenzene	ug/L	ND	20	20	21.3	21.5	107	107	60-140	1	
Bromochloromethane	ug/L	ND	20	20	21.9	22.5	110	112	60-140	3	
Bromodichloromethane	ug/L	ND	20	20	20.4	20.1	102	101	60-140	1	
Bromoform	ug/L	ND	20	20	17.6	17.8	88	89	60-140	1	
Bromomethane	ug/L	ND	20	20	23.0	24.1	115	121	60-140	5	
Carbon tetrachloride	ug/L	ND	20	20	22.1	22.4	110	112	60-140	2	
Chlorobenzene	ug/L	ND	20	20	21.1	21.7	105	108	60-140	3	
Chloroethane	ug/L	ND	20	20	25.1	24.5	125	122	60-140	2	
Chloroform	ug/L	ND	20	20	21.4	22.1	107	110	60-140	3	
Chloromethane	ug/L	ND	20	20	21.6	25.9	108	130	60-140	18	
cis-1,2-Dichloroethene	ug/L	ND	20	20	21.9	21.7	109	108	60-140	1	
cis-1,3-Dichloropropene	ug/L	ND	20	20	20.8	21.4	104	107	60-140	3	
Dibromochloromethane	ug/L	ND	20	20	19.1	20.2	96	101	60-140	6	
Dibromomethane	ug/L	ND	20	20	20.3	20.9	101	105	60-140	3	
Dichlorodifluoromethane	ug/L	ND	20	20	24.0	24.5	120	122	60-140	2	
Diisopropyl ether	ug/L	ND	20	20	21.4	22.0	107	110	60-140	3	
Ethylbenzene	ug/L	ND	20	20	21.9	22.2	110	111	60-140	1	
Hexachloro-1,3-butadiene	ug/L	ND	20	20	20.2	21.0	101	105	60-140	4	
Isopropylbenzene (Cumene)	ug/L	ND	20	20	22.6	23.3	113	116	60-140	3	
m&p-Xylene	ug/L	ND	40	40	45.0	45.4	112	114	60-140	1	
Methyl-tert-butyl ether	ug/L	ND	20	20	20.5	21.7	102	108	60-140	6	
Methylene Chloride	ug/L	ND	20	20	18.9	19.4	94	97	60-140	3	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: NCDOT Johnston 34182.1.2
Pace Project No.: 92204084

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1215546 1215547

Parameter	Units	92204081001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
n-Butylbenzene	ug/L	ND	20	20	22.9	23.3	114	117	60-140	2	
n-Propylbenzene	ug/L	ND	20	20	22.4	22.9	112	114	60-140	2	
Naphthalene	ug/L	ND	20	20	20.0	20.7	100	103	60-140	3	
o-Xylene	ug/L	ND	20	20	21.5	21.9	108	109	60-140	2	
sec-Butylbenzene	ug/L	ND	20	20	22.5	22.8	113	114	60-140	1	
Styrene	ug/L	ND	20	20	22.9	23.7	115	118	60-140	3	
tert-Butylbenzene	ug/L	ND	20	20	22.5	22.8	112	114	60-140	1	
Tetrachloroethene	ug/L	ND	20	20	22.4	22.4	112	112	60-140	0	
Toluene	ug/L	ND	20	20	21.7	22.3	109	111	60-140	3	
trans-1,2-Dichloroethene	ug/L	ND	20	20	22.0	23.0	110	115	60-140	5	
trans-1,3-Dichloropropene	ug/L	ND	20	20	20.9	21.0	105	105	60-140	1	
Trichloroethene	ug/L	ND	20	20	22.4	22.3	112	111	60-140	1	
Trichlorofluoromethane	ug/L	ND	20	20	23.4	23.7	117	119	60-140	1	
Vinyl chloride	ug/L	ND	20	20	27.8	29.5	139	147	60-140	6	M0
1,2-Dichloroethane-d4 (S)	%						91	92	70-130		
4-Bromofluorobenzene (S)	%						100	99	70-130		
Toluene-d8 (S)	%						100	100	70-130		

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
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Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: NCDOT Johnston 34182.1.2
Pace Project No.: 92204084

QC Batch: MSV/27125 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV 5035A Volatile Organics
Associated Lab Samples: 92204084001, 92204084002, 92204084003, 92204084004

METHOD BLANK: 1216668 Matrix: Solid
Associated Lab Samples: 92204084001, 92204084002, 92204084003, 92204084004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/kg	ND	5.0	06/09/14 12:28	
1,1,1-Trichloroethane	ug/kg	ND	5.0	06/09/14 12:28	
1,1,2,2-Tetrachloroethane	ug/kg	ND	5.0	06/09/14 12:28	
1,1,2-Trichloroethane	ug/kg	ND	5.0	06/09/14 12:28	
1,1-Dichloroethane	ug/kg	ND	5.0	06/09/14 12:28	
1,1-Dichloroethene	ug/kg	ND	5.0	06/09/14 12:28	
1,1-Dichloropropene	ug/kg	ND	5.0	06/09/14 12:28	
1,2,3-Trichlorobenzene	ug/kg	ND	5.0	06/09/14 12:28	
1,2,3-Trichloropropane	ug/kg	ND	5.0	06/09/14 12:28	
1,2,4-Trichlorobenzene	ug/kg	ND	5.0	06/09/14 12:28	
1,2,4-Trimethylbenzene	ug/kg	ND	5.0	06/09/14 12:28	
1,2-Dibromo-3-chloropropane	ug/kg	ND	5.0	06/09/14 12:28	
1,2-Dibromoethane (EDB)	ug/kg	ND	5.0	06/09/14 12:28	
1,2-Dichlorobenzene	ug/kg	ND	5.0	06/09/14 12:28	
1,2-Dichloroethane	ug/kg	ND	5.0	06/09/14 12:28	
1,2-Dichloropropane	ug/kg	ND	5.0	06/09/14 12:28	
1,3,5-Trimethylbenzene	ug/kg	ND	5.0	06/09/14 12:28	
1,3-Dichlorobenzene	ug/kg	ND	5.0	06/09/14 12:28	
1,3-Dichloropropane	ug/kg	ND	5.0	06/09/14 12:28	
1,4-Dichlorobenzene	ug/kg	ND	5.0	06/09/14 12:28	
2,2-Dichloropropane	ug/kg	ND	5.0	06/09/14 12:28	
2-Butanone (MEK)	ug/kg	ND	100	06/09/14 12:28	
2-Chlorotoluene	ug/kg	ND	5.0	06/09/14 12:28	
2-Hexanone	ug/kg	ND	50.0	06/09/14 12:28	
4-Chlorotoluene	ug/kg	ND	5.0	06/09/14 12:28	
4-Methyl-2-pentanone (MIBK)	ug/kg	ND	50.0	06/09/14 12:28	
Acetone	ug/kg	ND	100	06/09/14 12:28	
Benzene	ug/kg	ND	5.0	06/09/14 12:28	
Bromobenzene	ug/kg	ND	5.0	06/09/14 12:28	
Bromochloromethane	ug/kg	ND	5.0	06/09/14 12:28	
Bromodichloromethane	ug/kg	ND	5.0	06/09/14 12:28	
Bromoform	ug/kg	ND	5.0	06/09/14 12:28	
Bromomethane	ug/kg	ND	10.0	06/09/14 12:28	
Carbon tetrachloride	ug/kg	ND	5.0	06/09/14 12:28	
Chlorobenzene	ug/kg	ND	5.0	06/09/14 12:28	
Chloroethane	ug/kg	ND	10.0	06/09/14 12:28	
Chloroform	ug/kg	ND	5.0	06/09/14 12:28	
Chloromethane	ug/kg	ND	10.0	06/09/14 12:28	
cis-1,2-Dichloroethene	ug/kg	ND	5.0	06/09/14 12:28	
cis-1,3-Dichloropropene	ug/kg	ND	5.0	06/09/14 12:28	
Dibromochloromethane	ug/kg	ND	5.0	06/09/14 12:28	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: NCDOT Johnston 34182.1.2
Pace Project No.: 92204084

METHOD BLANK: 1216668 Matrix: Solid
Associated Lab Samples: 92204084001, 92204084002, 92204084003, 92204084004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Dibromomethane	ug/kg	ND	5.0	06/09/14 12:28	
Dichlorodifluoromethane	ug/kg	ND	10.0	06/09/14 12:28	
Diisopropyl ether	ug/kg	ND	5.0	06/09/14 12:28	
Ethylbenzene	ug/kg	ND	5.0	06/09/14 12:28	
Hexachloro-1,3-butadiene	ug/kg	ND	5.0	06/09/14 12:28	
Isopropylbenzene (Cumene)	ug/kg	ND	5.0	06/09/14 12:28	
m&p-Xylene	ug/kg	ND	10.0	06/09/14 12:28	
Methyl-tert-butyl ether	ug/kg	ND	5.0	06/09/14 12:28	
Methylene Chloride	ug/kg	ND	20.0	06/09/14 12:28	
n-Butylbenzene	ug/kg	ND	5.0	06/09/14 12:28	
n-Propylbenzene	ug/kg	ND	5.0	06/09/14 12:28	
Naphthalene	ug/kg	ND	5.0	06/09/14 12:28	
o-Xylene	ug/kg	ND	5.0	06/09/14 12:28	
p-Isopropyltoluene	ug/kg	ND	5.0	06/09/14 12:28	
sec-Butylbenzene	ug/kg	ND	5.0	06/09/14 12:28	
Styrene	ug/kg	ND	5.0	06/09/14 12:28	
tert-Butylbenzene	ug/kg	ND	5.0	06/09/14 12:28	
Tetrachloroethene	ug/kg	ND	5.0	06/09/14 12:28	
Toluene	ug/kg	ND	5.0	06/09/14 12:28	
trans-1,2-Dichloroethene	ug/kg	ND	5.0	06/09/14 12:28	
trans-1,3-Dichloropropene	ug/kg	ND	5.0	06/09/14 12:28	
Trichloroethene	ug/kg	ND	5.0	06/09/14 12:28	
Trichlorofluoromethane	ug/kg	ND	5.0	06/09/14 12:28	
Vinyl acetate	ug/kg	ND	50.0	06/09/14 12:28	
Vinyl chloride	ug/kg	ND	10.0	06/09/14 12:28	
Xylene (Total)	ug/kg	ND	10.0	06/09/14 12:28	
1,2-Dichloroethane-d4 (S)	%	98	70-132	06/09/14 12:28	
4-Bromofluorobenzene (S)	%	105	70-130	06/09/14 12:28	
Toluene-d8 (S)	%	106	70-130	06/09/14 12:28	

LABORATORY CONTROL SAMPLE: 1216669

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/kg	49.6	53.3	107	74-137	
1,1,1-Trichloroethane	ug/kg	49.6	49.6	100	67-140	
1,1,2,2-Tetrachloroethane	ug/kg	49.6	52.9	107	72-141	
1,1,2-Trichloroethane	ug/kg	49.6	53.9	109	78-138	
1,1-Dichloroethane	ug/kg	49.6	48.4	97	69-134	
1,1-Dichloroethene	ug/kg	49.6	51.1	103	67-138	
1,1-Dichloropropene	ug/kg	49.6	56.3	113	69-139	
1,2,3-Trichlorobenzene	ug/kg	49.6	55.2	111	70-146	
1,2,3-Trichloropropane	ug/kg	49.6	51.6	104	69-144	
1,2,4-Trichlorobenzene	ug/kg	49.6	56.4	114	68-148	
1,2,4-Trimethylbenzene	ug/kg	49.6	57.9	117	74-137	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
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(704)875-9092

QUALITY CONTROL DATA

Project: NCDOT Johnston 34182.1.2
Pace Project No.: 92204084

LABORATORY CONTROL SAMPLE: 1216669

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2-Dibromo-3-chloropropane	ug/kg	49.6	54.8	110	65-140	
1,2-Dibromoethane (EDB)	ug/kg	49.6	53.9	109	77-135	
1,2-Dichlorobenzene	ug/kg	49.6	55.0	111	77-141	
1,2-Dichloroethane	ug/kg	49.6	51.9	105	65-137	
1,2-Dichloropropane	ug/kg	49.6	53.5	108	72-136	
1,3,5-Trimethylbenzene	ug/kg	49.6	56.2	113	76-133	
1,3-Dichlorobenzene	ug/kg	49.6	55.1	111	74-138	
1,3-Dichloropropane	ug/kg	49.6	55.1	111	71-139	
1,4-Dichlorobenzene	ug/kg	49.6	55.7	112	76-138	
2,2-Dichloropropane	ug/kg	49.6	48.5	98	68-137	
2-Butanone (MEK)	ug/kg	99.2	92.7J	93	58-147	
2-Chlorotoluene	ug/kg	49.6	55.5	112	73-139	
2-Hexanone	ug/kg	99.2	106	107	62-145	
4-Chlorotoluene	ug/kg	49.6	55.4	112	76-141	
4-Methyl-2-pentanone (MIBK)	ug/kg	99.2	112	113	64-149	
Acetone	ug/kg	99.2	97.2J	98	53-153	
Benzene	ug/kg	49.6	53.5	108	73-135	
Bromobenzene	ug/kg	49.6	56.7	114	75-133	
Bromochloromethane	ug/kg	49.6	51.5	104	73-134	
Bromodichloromethane	ug/kg	49.6	58.7	118	71-135	
Bromoform	ug/kg	49.6	56.3	114	66-141	
Bromomethane	ug/kg	49.6	54.8	110	53-160	
Carbon tetrachloride	ug/kg	49.6	50.6	102	60-145	
Chlorobenzene	ug/kg	49.6	52.0	105	78-130	
Chloroethane	ug/kg	49.6	48.7	98	64-149	
Chloroform	ug/kg	49.6	58.2	117	70-134	
Chloromethane	ug/kg	49.6	40.7	82	52-150	
cis-1,2-Dichloroethene	ug/kg	49.6	54.0	109	70-133	
cis-1,3-Dichloropropene	ug/kg	49.6	54.1	109	68-134	
Dibromochloromethane	ug/kg	49.6	60.7	122	71-138	
Dibromomethane	ug/kg	49.6	51.8	105	74-130	
Dichlorodifluoromethane	ug/kg	49.6	39.2	79	40-160	
Diisopropyl ether	ug/kg	49.6	56.7	114	69-141	
Ethylbenzene	ug/kg	49.6	53.8	108	75-133	
Hexachloro-1,3-butadiene	ug/kg	49.6	52.7	106	68-143	
Isopropylbenzene (Cumene)	ug/kg	49.6	54.1	109	76-143	
m&p-Xylene	ug/kg	99.2	106	107	75-136	
Methyl-tert-butyl ether	ug/kg	49.6	52.3	105	68-144	
Methylene Chloride	ug/kg	49.6	50.2	101	45-154	
n-Butylbenzene	ug/kg	49.6	57.5	116	72-137	
n-Propylbenzene	ug/kg	49.6	56.5	114	76-136	
Naphthalene	ug/kg	49.6	56.3	114	68-151	
o-Xylene	ug/kg	49.6	52.7	106	76-141	
p-Isopropyltoluene	ug/kg	49.6	55.5	112	76-140	
sec-Butylbenzene	ug/kg	49.6	55.5	112	79-139	
Styrene	ug/kg	49.6	55.3	112	79-137	
tert-Butylbenzene	ug/kg	49.6	55.6	112	74-143	

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REPORT OF LABORATORY ANALYSIS

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(704)875-9092

QUALITY CONTROL DATA

Project: NCDOT Johnston 34182.1.2
Pace Project No.: 92204084

LABORATORY CONTROL SAMPLE: 1216669

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Tetrachloroethene	ug/kg	49.6	52.0	105	71-138	
Toluene	ug/kg	49.6	52.4	106	74-131	
trans-1,2-Dichloroethene	ug/kg	49.6	52.1	105	67-135	
trans-1,3-Dichloropropene	ug/kg	49.6	54.2	109	65-146	
Trichloroethene	ug/kg	49.6	52.6	106	67-135	
Trichlorofluoromethane	ug/kg	49.6	45.6	92	59-144	
Vinyl acetate	ug/kg	99.2	103	103	40-160	F3
Vinyl chloride	ug/kg	49.6	43.1	87	56-141	
Xylene (Total)	ug/kg	149	159	107	76-137	
1,2-Dichloroethane-d4 (S)	%			94	70-132	
4-Bromofluorobenzene (S)	%			94	70-130	
Toluene-d8 (S)	%			97	70-130	

MATRIX SPIKE SAMPLE: 1217247

Parameter	Units	92204084001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1-Dichloroethene	ug/kg	ND	45.1	46.2	103	49-180	
Benzene	ug/kg	ND	45.1	45.9	102	50-166	
Chlorobenzene	ug/kg	ND	45.1	42.6	95	43-169	
Toluene	ug/kg	ND	45.1	46.1	102	52-163	
Trichloroethene	ug/kg	ND	45.1	45.7	101	49-167	
1,2-Dichloroethane-d4 (S)	%				118	70-132	
4-Bromofluorobenzene (S)	%				98	70-130	
Toluene-d8 (S)	%				101	70-130	

SAMPLE DUPLICATE: 1217468

Parameter	Units	92204085001 Result	Dup Result	RPD	Qualifiers
1,1,1,2-Tetrachloroethane	ug/kg	ND	ND		
1,1,1-Trichloroethane	ug/kg	ND	ND		
1,1,2,2-Tetrachloroethane	ug/kg	ND	ND		
1,1,2-Trichloroethane	ug/kg	ND	ND		
1,1-Dichloroethane	ug/kg	ND	ND		
1,1-Dichloroethene	ug/kg	ND	ND		
1,1-Dichloropropene	ug/kg	ND	ND		
1,2,3-Trichlorobenzene	ug/kg	ND	ND		
1,2,3-Trichloropropane	ug/kg	ND	ND		
1,2,4-Trichlorobenzene	ug/kg	ND	ND		
1,2,4-Trimethylbenzene	ug/kg	ND	ND		
1,2-Dibromo-3-chloropropane	ug/kg	ND	ND		
1,2-Dibromoethane (EDB)	ug/kg	ND	ND		
1,2-Dichlorobenzene	ug/kg	ND	ND		
1,2-Dichloroethane	ug/kg	ND	ND		
1,2-Dichloropropane	ug/kg	ND	ND		

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: NCDOT Johnston 34182.1.2
Pace Project No.: 92204084

SAMPLE DUPLICATE: 1217468

Parameter	Units	92204085001 Result	Dup Result	RPD	Qualifiers
1,3,5-Trimethylbenzene	ug/kg	ND	ND		
1,3-Dichlorobenzene	ug/kg	ND	ND		
1,3-Dichloropropane	ug/kg	ND	ND		
1,4-Dichlorobenzene	ug/kg	ND	ND		
2,2-Dichloropropane	ug/kg	ND	ND		
2-Butanone (MEK)	ug/kg	ND	ND		
2-Chlorotoluene	ug/kg	ND	ND		
2-Hexanone	ug/kg	ND	ND		
4-Chlorotoluene	ug/kg	ND	ND		
4-Methyl-2-pentanone (MIBK)	ug/kg	ND	ND		
Acetone	ug/kg	ND	19.5J		
Benzene	ug/kg	ND	ND		
Bromobenzene	ug/kg	ND	ND		
Bromochloromethane	ug/kg	ND	ND		
Bromodichloromethane	ug/kg	ND	ND		
Bromoform	ug/kg	ND	ND		
Bromomethane	ug/kg	ND	ND		
Carbon tetrachloride	ug/kg	ND	ND		
Chlorobenzene	ug/kg	ND	ND		
Chloroethane	ug/kg	ND	ND		
Chloroform	ug/kg	ND	ND		
Chloromethane	ug/kg	ND	ND		
cis-1,2-Dichloroethene	ug/kg	ND	ND		
cis-1,3-Dichloropropene	ug/kg	ND	ND		
Dibromochloromethane	ug/kg	ND	ND		
Dibromomethane	ug/kg	ND	ND		
Dichlorodifluoromethane	ug/kg	ND	ND		
Diisopropyl ether	ug/kg	ND	ND		
Ethylbenzene	ug/kg	ND	ND		
Hexachloro-1,3-butadiene	ug/kg	ND	ND		
Isopropylbenzene (Cumene)	ug/kg	ND	ND		
m&p-Xylene	ug/kg	ND	ND		
Methyl-tert-butyl ether	ug/kg	ND	ND		
Methylene Chloride	ug/kg	ND	ND		
n-Butylbenzene	ug/kg	ND	ND		
n-Propylbenzene	ug/kg	ND	ND		
Naphthalene	ug/kg	ND	ND		
o-Xylene	ug/kg	ND	ND		
p-Isopropyltoluene	ug/kg	ND	ND		
sec-Butylbenzene	ug/kg	ND	ND		
Styrene	ug/kg	ND	ND		
tert-Butylbenzene	ug/kg	ND	ND		
Tetrachloroethene	ug/kg	ND	ND		
Toluene	ug/kg	ND	ND		
trans-1,2-Dichloroethene	ug/kg	ND	ND		
trans-1,3-Dichloropropene	ug/kg	ND	ND		
Trichloroethene	ug/kg	ND	ND		

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
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(704)875-9092

QUALITY CONTROL DATA

Project: NCDOT Johnston 34182.1.2
Pace Project No.: 92204084

SAMPLE DUPLICATE: 1217468

Parameter	Units	92204085001 Result	Dup Result	RPD	Qualifiers
Trichlorofluoromethane	ug/kg	ND	ND		
Vinyl acetate	ug/kg	ND	ND		
Vinyl chloride	ug/kg	ND	ND		
Xylene (Total)	ug/kg	ND	ND		
1,2-Dichloroethane-d4 (S)	%	113	112	12	
4-Bromofluorobenzene (S)	%	102	104	9	
Toluene-d8 (S)	%	101	102	10	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
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QUALITY CONTROL DATA

Project: NCDOT Johnston 34182.1.2
Pace Project No.: 92204084

QC Batch: OEXT/28155 Analysis Method: EPA 625
QC Batch Method: EPA 625 Analysis Description: 625 MSS
Associated Lab Samples: 92204084005

METHOD BLANK: 1216708 Matrix: Water
Associated Lab Samples: 92204084005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	5.0	06/09/14 19:14	
2,4,6-Trichlorophenol	ug/L	ND	10.0	06/09/14 19:14	
2,4-Dichlorophenol	ug/L	ND	5.0	06/09/14 19:14	
2,4-Dimethylphenol	ug/L	ND	10.0	06/09/14 19:14	
2,4-Dinitrophenol	ug/L	ND	50.0	06/09/14 19:14	
2,4-Dinitrotoluene	ug/L	ND	5.0	06/09/14 19:14	
2,6-Dinitrotoluene	ug/L	ND	5.0	06/09/14 19:14	
2-Chloronaphthalene	ug/L	ND	5.0	06/09/14 19:14	
2-Chlorophenol	ug/L	ND	5.0	06/09/14 19:14	
2-Nitrophenol	ug/L	ND	5.0	06/09/14 19:14	
3,3'-Dichlorobenzidine	ug/L	ND	25.0	06/09/14 19:14	
4,6-Dinitro-2-methylphenol	ug/L	ND	20.0	06/09/14 19:14	
4-Bromophenylphenyl ether	ug/L	ND	5.0	06/09/14 19:14	
4-Chloro-3-methylphenol	ug/L	ND	5.0	06/09/14 19:14	
4-Chlorophenylphenyl ether	ug/L	ND	5.0	06/09/14 19:14	
4-Nitrophenol	ug/L	ND	50.0	06/09/14 19:14	
Acenaphthene	ug/L	ND	5.0	06/09/14 19:14	
Acenaphthylene	ug/L	ND	5.0	06/09/14 19:14	
Anthracene	ug/L	ND	5.0	06/09/14 19:14	
Benzo(a)anthracene	ug/L	ND	5.0	06/09/14 19:14	
Benzo(a)pyrene	ug/L	ND	5.0	06/09/14 19:14	
Benzo(b)fluoranthene	ug/L	ND	5.0	06/09/14 19:14	
Benzo(g,h,i)perylene	ug/L	ND	5.0	06/09/14 19:14	
Benzo(k)fluoranthene	ug/L	ND	5.0	06/09/14 19:14	
bis(2-Chloroethoxy)methane	ug/L	ND	10.0	06/09/14 19:14	
bis(2-Chloroethyl) ether	ug/L	ND	5.0	06/09/14 19:14	
bis(2-Chloroisopropyl) ether	ug/L	ND	5.0	06/09/14 19:14	
bis(2-Ethylhexyl)phthalate	ug/L	ND	5.0	06/09/14 19:14	
Butylbenzylphthalate	ug/L	ND	5.0	06/09/14 19:14	
Chrysene	ug/L	ND	5.0	06/09/14 19:14	
Di-n-butylphthalate	ug/L	ND	5.0	06/09/14 19:14	
Di-n-octylphthalate	ug/L	ND	5.0	06/09/14 19:14	
Dibenz(a,h)anthracene	ug/L	ND	5.0	06/09/14 19:14	
Diethylphthalate	ug/L	ND	5.0	06/09/14 19:14	
Dimethylphthalate	ug/L	ND	5.0	06/09/14 19:14	
Fluoranthene	ug/L	ND	5.0	06/09/14 19:14	
Fluorene	ug/L	ND	5.0	06/09/14 19:14	
Hexachloro-1,3-butadiene	ug/L	ND	5.0	06/09/14 19:14	
Hexachlorobenzene	ug/L	ND	5.0	06/09/14 19:14	
Hexachlorocyclopentadiene	ug/L	ND	10.0	06/09/14 19:14	
Hexachloroethane	ug/L	ND	5.0	06/09/14 19:14	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
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QUALITY CONTROL DATA

Project: NCDOT Johnston 34182.1.2
Pace Project No.: 92204084

METHOD BLANK: 1216708 Matrix: Water
Associated Lab Samples: 92204084005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Indeno(1,2,3-cd)pyrene	ug/L	ND	5.0	06/09/14 19:14	
Isophorone	ug/L	ND	10.0	06/09/14 19:14	
N-Nitroso-di-n-propylamine	ug/L	ND	5.0	06/09/14 19:14	
N-Nitrosodimethylamine	ug/L	ND	5.0	06/09/14 19:14	
N-Nitrosodiphenylamine	ug/L	ND	10.0	06/09/14 19:14	
Naphthalene	ug/L	ND	5.0	06/09/14 19:14	
Nitrobenzene	ug/L	ND	5.0	06/09/14 19:14	
Pentachlorophenol	ug/L	ND	10.0	06/09/14 19:14	
Phenanthrene	ug/L	ND	5.0	06/09/14 19:14	
Phenol	ug/L	ND	5.0	06/09/14 19:14	
Pyrene	ug/L	ND	5.0	06/09/14 19:14	
2,4,6-Tribromophenol (S)	%	87	10-137	06/09/14 19:14	
2-Fluorobiphenyl (S)	%	78	15-120	06/09/14 19:14	
2-Fluorophenol (S)	%	44	10-120	06/09/14 19:14	
Nitrobenzene-d5 (S)	%	72	10-120	06/09/14 19:14	
Phenol-d6 (S)	%	28	10-120	06/09/14 19:14	
Terphenyl-d14 (S)	%	97	11-131	06/09/14 19:14	

LABORATORY CONTROL SAMPLE: 1216709

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	50	34.1	68	44-142	
2,4,6-Trichlorophenol	ug/L	50	38.1	76	37-144	
2,4-Dichlorophenol	ug/L	50	38.5	77	1-191	
2,4-Dimethylphenol	ug/L	50	38.1	76	32-119	
2,4-Dinitrophenol	ug/L	250	189	76	1-181	
2,4-Dinitrotoluene	ug/L	50	53.4	107	39-139	
2,6-Dinitrotoluene	ug/L	50	50.9	102	50-158	
2-Chloronaphthalene	ug/L	50	36.5	73	60-118	
2-Chlorophenol	ug/L	50	35.0	70	23-134	
2-Nitrophenol	ug/L	50	37.8	76	29-182	
3,3'-Dichlorobenzidine	ug/L	100	91.0	91	1-262	
4,6-Dinitro-2-methylphenol	ug/L	100	83.9	84	1-181	
4-Bromophenylphenyl ether	ug/L	50	43.2	86	53-127	
4-Chloro-3-methylphenol	ug/L	100	85.1	85	22-147	
4-Chlorophenylphenyl ether	ug/L	50	43.7	87	25-158	
4-Nitrophenol	ug/L	250	88.4	35	1-132	
Acenaphthene	ug/L	50	39.2	78	47-145	
Acenaphthylene	ug/L	50	38.9	78	33-145	
Anthracene	ug/L	50	42.9	86	1-166	
Benzo(a)anthracene	ug/L	50	46.0	92	33-143	
Benzo(a)pyrene	ug/L	50	46.8	94	17-163	
Benzo(b)fluoranthene	ug/L	50	46.5	93	24-159	
Benzo(g,h,i)perylene	ug/L	50	45.9	92	1-219	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
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(704)875-9092

QUALITY CONTROL DATA

Project: NCDOT Johnston 34182.1.2
Pace Project No.: 92204084

LABORATORY CONTROL SAMPLE: 1216709

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzo(k)fluoranthene	ug/L	50	44.6	89	11-162	
bis(2-Chloroethoxy)methane	ug/L	50	42.1	84	33-184	
bis(2-Chloroethyl) ether	ug/L	50	40.2	80	12-158	
bis(2-Chloroisopropyl) ether	ug/L	50	36.9	74	36-166	
bis(2-Ethylhexyl)phthalate	ug/L	50	48.0	96	8-158	
Butylbenzylphthalate	ug/L	50	47.8	96	1-152	
Chrysene	ug/L	50	45.6	91	17-168	
Di-n-butylphthalate	ug/L	50	46.9	94	1-118	
Di-n-octylphthalate	ug/L	50	45.2	90	4-146	
Dibenz(a,h)anthracene	ug/L	50	47.3	95	1-227	
Diethylphthalate	ug/L	50	45.2	90	1-114	
Dimethylphthalate	ug/L	50	44.8	90	1-112	
Fluoranthene	ug/L	50	44.6	89	26-137	
Fluorene	ug/L	50	43.0	86	59-121	
Hexachloro-1,3-butadiene	ug/L	50	34.0	68	24-116	
Hexachlorobenzene	ug/L	50	42.6	85	1-152	
Hexachlorocyclopentadiene	ug/L	50	30.4	61	25-150	
Hexachloroethane	ug/L	50	31.4	63	40-113	
Indeno(1,2,3-cd)pyrene	ug/L	50	36.1	72	1-171	
Isophorone	ug/L	50	47.1	94	21-196	
N-Nitroso-di-n-propylamine	ug/L	50	40.2	80	1-230	
N-Nitrosodimethylamine	ug/L	50	22.9	46	25-150	
N-Nitrosodiphenylamine	ug/L	50	44.7	89	25-150	
Naphthalene	ug/L	50	36.8	74	21-133	
Nitrobenzene	ug/L	50	44.2	88	35-180	
Pentachlorophenol	ug/L	100	78.2	78	14-176	
Phenanthrene	ug/L	50	42.3	85	54-120	
Phenol	ug/L	50	18.5	37	5-112	
Pyrene	ug/L	50	44.6	89	52-115	
2,4,6-Tribromophenol (S)	%			93	10-137	
2-Fluorobiphenyl (S)	%			75	15-120	
2-Fluorophenol (S)	%			42	10-120	
Nitrobenzene-d5 (S)	%			72	10-120	
Phenol-d6 (S)	%			31	10-120	
Terphenyl-d14 (S)	%			93	11-131	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1216710 1216711

Parameter	Units	92203899001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
1,2,4-Trichlorobenzene	ug/L	ND	100	100	71.2	60.5	71	61	44-142	16	
2,4,6-Trichlorophenol	ug/L	ND	100	100	79.8	68.2	80	68	37-144	16	
2,4-Dichlorophenol	ug/L	ND	100	100	82.5	68.1	82	68	1-191	19	
2,4-Dimethylphenol	ug/L	ND	100	100	80.7	67.5	81	67	32-119	18	
2,4-Dinitrophenol	ug/L	ND	500	500	405	373	81	75	1-181	8	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: NCDOT Johnston 34182.1.2
Pace Project No.: 92204084

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1216710 1216711

Parameter	Units	92203899001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
2,4-Dinitrotoluene	ug/L	ND	100	100	110	98.5	110	99	39-139	11	
2,6-Dinitrotoluene	ug/L	ND	100	100	105	94.0	105	94	50-158	11	
2-Chloronaphthalene	ug/L	ND	100	100	77.4	65.4	77	65	60-118	17	
2-Chlorophenol	ug/L	ND	100	100	81.4	62.7	81	63	23-134	26	
2-Nitrophenol	ug/L	ND	100	100	80.9	63.8	81	64	29-182	24	
3,3'-Dichlorobenzidine	ug/L	ND	200	200	178	141	89	70	1-262	23	
4,6-Dinitro-2-methylphenol	ug/L	ND	200	200	179	148	89	74	1-181	19	
4-Bromophenylphenyl ether	ug/L	ND	100	100	90.4	73.1	90	73	53-127	21	
4-Chloro-3-methylphenol	ug/L	ND	200	200	187	162	94	81	22-147	15	
4-Chlorophenylphenyl ether	ug/L	ND	100	100	91.9	79.0	92	79	25-158	15	
4-Nitrophenol	ug/L	ND	500	500	264	241	53	48	1-132	9	
Acenaphthene	ug/L	ND	100	100	79.8	68.9	80	69	47-145	15	
Acenaphthylene	ug/L	ND	100	100	81.1	70.1	81	70	33-145	14	
Anthracene	ug/L	ND	100	100	87.9	73.2	88	73	1-166	18	
Benzo(a)anthracene	ug/L	ND	100	100	90.4	76.7	90	77	33-143	16	
Benzo(a)pyrene	ug/L	ND	100	100	87.0	75.4	87	75	17-163	14	
Benzo(b)fluoranthene	ug/L	ND	100	100	86.2	74.4	86	74	24-159	15	
Benzo(g,h,i)perylene	ug/L	ND	100	100	84.8	76.2	85	76	1-219	11	
Benzo(k)fluoranthene	ug/L	ND	100	100	83.6	73.5	84	73	11-162	13	
bis(2-Chloroethoxy)methane	ug/L	ND	100	100	84.5	67.1	85	67	33-184	23	
bis(2-Chloroethyl) ether	ug/L	ND	100	100	84.6	64.5	85	65	12-158	27	
bis(2-Chloroisopropyl) ether	ug/L	ND	100	100	75.8	59.0	76	59	36-166	25	
bis(2-Ethylhexyl)phthalate	ug/L	ND	100	100	95.7	84.3	96	84	8-158	13	
Butylbenzylphthalate	ug/L	ND	100	100	94.4	83.4	94	83	1-152	12	
Chrysene	ug/L	ND	100	100	90.2	78.1	90	78	17-168	14	
Di-n-butylphthalate	ug/L	ND	100	100	97.3	81.2	97	81	1-118	18	
Di-n-octylphthalate	ug/L	ND	100	100	103	84.6	103	85	4-146	20	
Dibenz(a,h)anthracene	ug/L	ND	100	100	91.1	79.0	91	79	1-227	14	
Diethylphthalate	ug/L	ND	100	100	92.5	80.6	93	81	1-114	14	
Dimethylphthalate	ug/L	ND	100	100	90.4	78.5	90	78	1-112	14	
Fluoranthene	ug/L	ND	100	100	90.6	76.4	91	76	26-137	17	
Fluorene	ug/L	ND	100	100	88.7	77.5	89	77	59-121	13	
Hexachloro-1,3-butadiene	ug/L	ND	100	100	68.8	58.2	69	58	24-116	17	
Hexachlorobenzene	ug/L	ND	100	100	84.1	71.8	84	72	1-152	16	
Hexachlorocyclopentadiene	ug/L	ND	100	100	44.4	38.7	44	39	25-150	14	
Hexachloroethane	ug/L	ND	100	100	70.4	55.2	70	55	40-113	24	
Indeno(1,2,3-cd)pyrene	ug/L	ND	100	100	71.6	62.1	72	62	1-171	14	
Isophorone	ug/L	ND	100	100	95.0	78.8	95	79	21-196	19	
N-Nitroso-di-n-propylamine	ug/L	ND	100	100	88.9	67.0	89	67	1-230	28	
N-Nitrosodimethylamine	ug/L	ND	100	100	61.4	48.5	61	48	25-150	24	
N-Nitrosodiphenylamine	ug/L	ND	100	100	92.3	74.2	92	74	25-150	22	
Naphthalene	ug/L	ND	100	100	74.6	62.1	75	62	21-133	18	
Nitrobenzene	ug/L	ND	100	100	85.0	72.1	85	72	35-180	16	
Pentachlorophenol	ug/L	ND	200	200	169	140	85	70	14-176	19	
Phenanthrene	ug/L	ND	100	100	85.1	72.2	85	72	54-120	16	
Phenol	ug/L	ND	100	100	59.0	41.5	59	42	5-112	35	R1

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: NCDOT Johnston 34182.1.2
Pace Project No.: 92204084

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1216710 1216711

Parameter	Units	92203899001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Pyrene	ug/L	ND	100	100	79.9	73.9	80	74	52-115	8	
2,4,6-Tribromophenol (S)	%						93	82	10-137		
2-Fluorobiphenyl (S)	%						75	62	15-120		
2-Fluorophenol (S)	%						59	45	10-120		
Nitrobenzene-d5 (S)	%						72	60	10-120		
Phenol-d6 (S)	%						52	37	10-120		
Terphenyl-d14 (S)	%						83	77	11-131		

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
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Huntersville, NC 28078
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QUALITY CONTROL DATA

Project: NCDOT Johnston 34182.1.2
Pace Project No.: 92204084

QC Batch: OEXT/28108 Analysis Method: EPA 8270
QC Batch Method: EPA 3546 Analysis Description: 8270 Solid MSSV Microwave
Associated Lab Samples: 92204084001, 92204084002, 92204084003

METHOD BLANK: 1214764 Matrix: Solid
Associated Lab Samples: 92204084001, 92204084002, 92204084003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/kg	ND	330	06/09/14 11:28	
1,2-Dichlorobenzene	ug/kg	ND	330	06/09/14 11:28	
1,3-Dichlorobenzene	ug/kg	ND	330	06/09/14 11:28	
1,4-Dichlorobenzene	ug/kg	ND	330	06/09/14 11:28	
1-Methylnaphthalene	ug/kg	ND	330	06/09/14 11:28	
2,4,5-Trichlorophenol	ug/kg	ND	330	06/09/14 11:28	
2,4,6-Trichlorophenol	ug/kg	ND	330	06/09/14 11:28	
2,4-Dichlorophenol	ug/kg	ND	330	06/09/14 11:28	
2,4-Dimethylphenol	ug/kg	ND	330	06/09/14 11:28	
2,4-Dinitrophenol	ug/kg	ND	1650	06/09/14 11:28	
2,4-Dinitrotoluene	ug/kg	ND	330	06/09/14 11:28	
2,6-Dinitrotoluene	ug/kg	ND	330	06/09/14 11:28	
2-Chloronaphthalene	ug/kg	ND	330	06/09/14 11:28	
2-Chlorophenol	ug/kg	ND	330	06/09/14 11:28	
2-Methylnaphthalene	ug/kg	ND	330	06/09/14 11:28	
2-Methylphenol(o-Cresol)	ug/kg	ND	330	06/09/14 11:28	
2-Nitroaniline	ug/kg	ND	1650	06/09/14 11:28	
2-Nitrophenol	ug/kg	ND	330	06/09/14 11:28	
3&4-Methylphenol(m&p Cresol)	ug/kg	ND	330	06/09/14 11:28	
3,3'-Dichlorobenzidine	ug/kg	ND	1650	06/09/14 11:28	
3-Nitroaniline	ug/kg	ND	1650	06/09/14 11:28	
4,6-Dinitro-2-methylphenol	ug/kg	ND	660	06/09/14 11:28	
4-Bromophenylphenyl ether	ug/kg	ND	330	06/09/14 11:28	
4-Chloro-3-methylphenol	ug/kg	ND	660	06/09/14 11:28	
4-Chloroaniline	ug/kg	ND	1650	06/09/14 11:28	
4-Chlorophenylphenyl ether	ug/kg	ND	330	06/09/14 11:28	
4-Nitroaniline	ug/kg	ND	660	06/09/14 11:28	
4-Nitrophenol	ug/kg	ND	1650	06/09/14 11:28	
Acenaphthene	ug/kg	ND	330	06/09/14 11:28	
Acenaphthylene	ug/kg	ND	330	06/09/14 11:28	
Aniline	ug/kg	ND	330	06/09/14 11:28	
Anthracene	ug/kg	ND	330	06/09/14 11:28	
Benzo(a)anthracene	ug/kg	ND	330	06/09/14 11:28	
Benzo(a)pyrene	ug/kg	ND	330	06/09/14 11:28	
Benzo(b)fluoranthene	ug/kg	ND	330	06/09/14 11:28	
Benzo(g,h,i)perylene	ug/kg	ND	330	06/09/14 11:28	
Benzo(k)fluoranthene	ug/kg	ND	330	06/09/14 11:28	
Benzoic Acid	ug/kg	ND	1650	06/09/14 11:28	
Benzyl alcohol	ug/kg	ND	660	06/09/14 11:28	
bis(2-Chloroethoxy)methane	ug/kg	ND	330	06/09/14 11:28	
bis(2-Chloroethyl) ether	ug/kg	ND	330	06/09/14 11:28	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
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(704)875-9092

QUALITY CONTROL DATA

Project: NCDOT Johnston 34182.1.2
Pace Project No.: 92204084

METHOD BLANK: 1214764 Matrix: Solid
Associated Lab Samples: 92204084001, 92204084002, 92204084003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
bis(2-Chloroisopropyl) ether	ug/kg	ND	330	06/09/14 11:28	
bis(2-Ethylhexyl)phthalate	ug/kg	ND	330	06/09/14 11:28	
Butylbenzylphthalate	ug/kg	ND	330	06/09/14 11:28	
Chrysene	ug/kg	ND	330	06/09/14 11:28	
Di-n-butylphthalate	ug/kg	ND	330	06/09/14 11:28	
Di-n-octylphthalate	ug/kg	ND	330	06/09/14 11:28	
Dibenz(a,h)anthracene	ug/kg	ND	330	06/09/14 11:28	
Dibenzofuran	ug/kg	ND	330	06/09/14 11:28	
Diethylphthalate	ug/kg	ND	330	06/09/14 11:28	
Dimethylphthalate	ug/kg	ND	330	06/09/14 11:28	
Fluoranthene	ug/kg	ND	330	06/09/14 11:28	
Fluorene	ug/kg	ND	330	06/09/14 11:28	
Hexachloro-1,3-butadiene	ug/kg	ND	330	06/09/14 11:28	
Hexachlorobenzene	ug/kg	ND	330	06/09/14 11:28	
Hexachlorocyclopentadiene	ug/kg	ND	330	06/09/14 11:28	
Hexachloroethane	ug/kg	ND	330	06/09/14 11:28	
Indeno(1,2,3-cd)pyrene	ug/kg	ND	330	06/09/14 11:28	
Isophorone	ug/kg	ND	330	06/09/14 11:28	
N-Nitroso-di-n-propylamine	ug/kg	ND	330	06/09/14 11:28	
N-Nitrosodimethylamine	ug/kg	ND	330	06/09/14 11:28	
N-Nitrosodiphenylamine	ug/kg	ND	330	06/09/14 11:28	
Naphthalene	ug/kg	ND	330	06/09/14 11:28	
Nitrobenzene	ug/kg	ND	330	06/09/14 11:28	
Pentachlorophenol	ug/kg	ND	1650	06/09/14 11:28	
Phenanthrene	ug/kg	ND	330	06/09/14 11:28	
Phenol	ug/kg	ND	330	06/09/14 11:28	
Pyrene	ug/kg	ND	330	06/09/14 11:28	
2,4,6-Tribromophenol (S)	%	38	27-110	06/09/14 11:28	
2-Fluorobiphenyl (S)	%	40	30-110	06/09/14 11:28	
2-Fluorophenol (S)	%	40	13-110	06/09/14 11:28	
Nitrobenzene-d5 (S)	%	37	23-110	06/09/14 11:28	
Phenol-d6 (S)	%	41	22-110	06/09/14 11:28	
Terphenyl-d14 (S)	%	48	28-110	06/09/14 11:28	

LABORATORY CONTROL SAMPLE: 1214765

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/kg	1670	1230	74	39-101	
1,2-Dichlorobenzene	ug/kg	1670	1180	71	36-110	
1,3-Dichlorobenzene	ug/kg	1670	1160	70	35-110	
1,4-Dichlorobenzene	ug/kg	1670	1210	72	35-110	
1-Methylnaphthalene	ug/kg	1670	1110	66	45-105	
2,4,5-Trichlorophenol	ug/kg	1670	1240	75	48-109	
2,4,6-Trichlorophenol	ug/kg	1670	1240	75	45-111	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
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(704)875-9092

QUALITY CONTROL DATA

Project: NCDOT Johnston 34182.1.2
Pace Project No.: 92204084

LABORATORY CONTROL SAMPLE: 1214765

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2,4-Dichlorophenol	ug/kg	1670	1270	76	51-116	
2,4-Dimethylphenol	ug/kg	1670	1220	73	42-103	
2,4-Dinitrophenol	ug/kg	8330	4440	53	28-103	
2,4-Dinitrotoluene	ug/kg	1670	1430	86	46-114	
2,6-Dinitrotoluene	ug/kg	1670	1450	87	48-112	
2-Chloronaphthalene	ug/kg	1670	1250	75	44-105	
2-Chlorophenol	ug/kg	1670	1270	76	36-110	
2-Methylnaphthalene	ug/kg	1670	1210	72	39-112	
2-Methylphenol(o-Cresol)	ug/kg	1670	1210	72	39-101	
2-Nitroaniline	ug/kg	3330	2660	80	44-111	
2-Nitrophenol	ug/kg	1670	1240	75	41-100	
3&4-Methylphenol(m&p Cresol)	ug/kg	1670	1180	71	43-103	
3,3'-Dichlorobenzidine	ug/kg	3330	2450	73	10-150	
3-Nitroaniline	ug/kg	3330	2530	76	35-110	
4,6-Dinitro-2-methylphenol	ug/kg	3330	2430	73	38-118	
4-Bromophenylphenyl ether	ug/kg	1670	1330	80	47-115	
4-Chloro-3-methylphenol	ug/kg	3330	2400	72	43-127	
4-Chloroaniline	ug/kg	3330	2540	76	34-109	
4-Chlorophenylphenyl ether	ug/kg	1670	1260	75	44-115	
4-Nitroaniline	ug/kg	3330	2660	80	37-111	
4-Nitrophenol	ug/kg	8330	5630	68	21-152	
Acenaphthene	ug/kg	1670	1200	72	38-117	
Acenaphthylene	ug/kg	1670	1220	73	46-107	
Aniline	ug/kg	1670	1110	66	29-110	
Anthracene	ug/kg	1670	1250	75	50-110	
Benzo(a)anthracene	ug/kg	1670	1280	77	47-116	
Benzo(a)pyrene	ug/kg	1670	1310	79	47-106	
Benzo(b)fluoranthene	ug/kg	1670	1260	76	47-109	
Benzo(g,h,i)perylene	ug/kg	1670	1200	72	39-115	
Benzo(k)fluoranthene	ug/kg	1670	1280	77	45-117	
Benzoic Acid	ug/kg	8330	3690	44	16-110	
Benzyl alcohol	ug/kg	3330	2390	72	38-105	
bis(2-Chloroethoxy)methane	ug/kg	1670	1210	73	39-110	
bis(2-Chloroethyl) ether	ug/kg	1670	1220	73	19-119	
bis(2-Chloroisopropyl) ether	ug/kg	1670	1020	61	21-110	
bis(2-Ethylhexyl)phthalate	ug/kg	1670	1410	85	35-116	
Butylbenzylphthalate	ug/kg	1670	1440	87	38-110	
Chrysene	ug/kg	1670	1280	77	49-110	
Di-n-butylphthalate	ug/kg	1670	1240	74	43-109	
Di-n-octylphthalate	ug/kg	1670	1400	84	37-109	
Dibenz(a,h)anthracene	ug/kg	1670	1280	77	43-116	
Dibenzofuran	ug/kg	1670	1300	78	45-106	
Diethylphthalate	ug/kg	1670	1160	70	41-114	
Dimethylphthalate	ug/kg	1670	1190	71	43-110	
Fluoranthene	ug/kg	1670	1180	71	50-114	
Fluorene	ug/kg	1670	1210	72	46-114	
Hexachloro-1,3-butadiene	ug/kg	1670	1190	71	28-111	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: NCDOT Johnston 34182.1.2
Pace Project No.: 92204084

LABORATORY CONTROL SAMPLE: 1214765

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Hexachlorobenzene	ug/kg	1670	1230	74	46-120	
Hexachlorocyclopentadiene	ug/kg	1670	1350	81	18-119	
Hexachloroethane	ug/kg	1670	1150	69	33-110	
Indeno(1,2,3-cd)pyrene	ug/kg	1670	972	58	42-115	
Isophorone	ug/kg	1670	1240	74	44-109	
N-Nitroso-di-n-propylamine	ug/kg	1670	1050	63	43-104	
N-Nitrosodimethylamine	ug/kg	1670	1170	70	29-110	
N-Nitrosodiphenylamine	ug/kg	1670	1290	78	48-113	
Naphthalene	ug/kg	1670	1180	71	41-110	
Nitrobenzene	ug/kg	1670	1380	83	38-110	
Pentachlorophenol	ug/kg	3330	2100	63	32-128	
Phenanthrene	ug/kg	1670	1200	72	50-110	
Phenol	ug/kg	1670	1200	72	28-106	
Pyrene	ug/kg	1670	1380	83	45-114	
2,4,6-Tribromophenol (S)	%			79	27-110	
2-Fluorobiphenyl (S)	%			77	30-110	
2-Fluorophenol (S)	%			75	13-110	
Nitrobenzene-d5 (S)	%			71	23-110	
Phenol-d6 (S)	%			73	22-110	
Terphenyl-d14 (S)	%			85	28-110	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
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QUALITY CONTROL DATA

Project: NCDOT Johnston 34182.1.2
Pace Project No.: 92204084

QC Batch: OEXT/28168
QC Batch Method: EPA 3546
Analysis Method: EPA 8270
Analysis Description: 8270 Solid MSSV Microwave
Associated Lab Samples: 92204084004

METHOD BLANK: 1217227
Matrix: Solid
Associated Lab Samples: 92204084004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/kg	ND	330	06/11/14 10:16	
1,2-Dichlorobenzene	ug/kg	ND	330	06/11/14 10:16	
1,3-Dichlorobenzene	ug/kg	ND	330	06/11/14 10:16	
1,4-Dichlorobenzene	ug/kg	ND	330	06/11/14 10:16	
1-Methylnaphthalene	ug/kg	ND	330	06/11/14 10:16	
2,4,5-Trichlorophenol	ug/kg	ND	330	06/11/14 10:16	
2,4,6-Trichlorophenol	ug/kg	ND	330	06/11/14 10:16	
2,4-Dichlorophenol	ug/kg	ND	330	06/11/14 10:16	
2,4-Dimethylphenol	ug/kg	ND	330	06/11/14 10:16	
2,4-Dinitrophenol	ug/kg	ND	1650	06/11/14 10:16	
2,4-Dinitrotoluene	ug/kg	ND	330	06/11/14 10:16	
2,6-Dinitrotoluene	ug/kg	ND	330	06/11/14 10:16	
2-Chloronaphthalene	ug/kg	ND	330	06/11/14 10:16	
2-Chlorophenol	ug/kg	ND	330	06/11/14 10:16	
2-Methylnaphthalene	ug/kg	ND	330	06/11/14 10:16	
2-Methylphenol(o-Cresol)	ug/kg	ND	330	06/11/14 10:16	
2-Nitroaniline	ug/kg	ND	1650	06/11/14 10:16	
2-Nitrophenol	ug/kg	ND	330	06/11/14 10:16	
3&4-Methylphenol(m&p Cresol)	ug/kg	ND	330	06/11/14 10:16	
3,3'-Dichlorobenzidine	ug/kg	ND	1650	06/11/14 10:16	
3-Nitroaniline	ug/kg	ND	1650	06/11/14 10:16	
4,6-Dinitro-2-methylphenol	ug/kg	ND	660	06/11/14 10:16	
4-Bromophenylphenyl ether	ug/kg	ND	330	06/11/14 10:16	
4-Chloro-3-methylphenol	ug/kg	ND	660	06/11/14 10:16	
4-Chloroaniline	ug/kg	ND	1650	06/11/14 10:16	
4-Chlorophenylphenyl ether	ug/kg	ND	330	06/11/14 10:16	
4-Nitroaniline	ug/kg	ND	660	06/11/14 10:16	
4-Nitrophenol	ug/kg	ND	1650	06/11/14 10:16	
Acenaphthene	ug/kg	ND	330	06/11/14 10:16	
Acenaphthylene	ug/kg	ND	330	06/11/14 10:16	
Aniline	ug/kg	ND	330	06/11/14 10:16	
Anthracene	ug/kg	ND	330	06/11/14 10:16	
Benzo(a)anthracene	ug/kg	ND	330	06/11/14 10:16	
Benzo(a)pyrene	ug/kg	ND	330	06/11/14 10:16	
Benzo(b)fluoranthene	ug/kg	ND	330	06/11/14 10:16	
Benzo(g,h,i)perylene	ug/kg	ND	330	06/11/14 10:16	
Benzo(k)fluoranthene	ug/kg	ND	330	06/11/14 10:16	
Benzoic Acid	ug/kg	ND	1650	06/11/14 10:16	
Benzyl alcohol	ug/kg	ND	660	06/11/14 10:16	
bis(2-Chloroethoxy)methane	ug/kg	ND	330	06/11/14 10:16	
bis(2-Chloroethyl) ether	ug/kg	ND	330	06/11/14 10:16	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: NCDOT Johnston 34182.1.2
Pace Project No.: 92204084

METHOD BLANK: 1217227 Matrix: Solid
Associated Lab Samples: 92204084004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
bis(2-Chloroisopropyl) ether	ug/kg	ND	330	06/11/14 10:16	
bis(2-Ethylhexyl)phthalate	ug/kg	ND	330	06/11/14 10:16	
Butylbenzylphthalate	ug/kg	ND	330	06/11/14 10:16	
Chrysene	ug/kg	ND	330	06/11/14 10:16	
Di-n-butylphthalate	ug/kg	ND	330	06/11/14 10:16	
Di-n-octylphthalate	ug/kg	ND	330	06/11/14 10:16	
Dibenz(a,h)anthracene	ug/kg	ND	330	06/11/14 10:16	
Dibenzofuran	ug/kg	ND	330	06/11/14 10:16	
Diethylphthalate	ug/kg	ND	330	06/11/14 10:16	
Dimethylphthalate	ug/kg	ND	330	06/11/14 10:16	
Fluoranthene	ug/kg	ND	330	06/11/14 10:16	
Fluorene	ug/kg	ND	330	06/11/14 10:16	
Hexachloro-1,3-butadiene	ug/kg	ND	330	06/11/14 10:16	
Hexachlorobenzene	ug/kg	ND	330	06/11/14 10:16	
Hexachlorocyclopentadiene	ug/kg	ND	330	06/11/14 10:16	
Hexachloroethane	ug/kg	ND	330	06/11/14 10:16	
Indeno(1,2,3-cd)pyrene	ug/kg	ND	330	06/11/14 10:16	
Isophorone	ug/kg	ND	330	06/11/14 10:16	
N-Nitroso-di-n-propylamine	ug/kg	ND	330	06/11/14 10:16	
N-Nitrosodimethylamine	ug/kg	ND	330	06/11/14 10:16	
N-Nitrosodiphenylamine	ug/kg	ND	330	06/11/14 10:16	
Naphthalene	ug/kg	ND	330	06/11/14 10:16	
Nitrobenzene	ug/kg	ND	330	06/11/14 10:16	
Pentachlorophenol	ug/kg	ND	1650	06/11/14 10:16	
Phenanthrene	ug/kg	ND	330	06/11/14 10:16	
Phenol	ug/kg	ND	330	06/11/14 10:16	
Pyrene	ug/kg	ND	330	06/11/14 10:16	
2,4,6-Tribromophenol (S)	%	74	27-110	06/11/14 10:16	
2-Fluorobiphenyl (S)	%	79	30-110	06/11/14 10:16	
2-Fluorophenol (S)	%	70	13-110	06/11/14 10:16	
Nitrobenzene-d5 (S)	%	99	23-110	06/11/14 10:16	
Phenol-d6 (S)	%	73	22-110	06/11/14 10:16	
Terphenyl-d14 (S)	%	93	28-110	06/11/14 10:16	

LABORATORY CONTROL SAMPLE: 1217228

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/kg	1670	1360	81	36-110	
1,2-Dichlorobenzene	ug/kg	1670	1280	77	41-120	
1,3-Dichlorobenzene	ug/kg	1670	1270	76	66-120	
1,4-Dichlorobenzene	ug/kg	1670	1320	79	42-120	
1-Methylnaphthalene	ug/kg	1670	1370	82	40-120	
2,4,5-Trichlorophenol	ug/kg	1670	1440	86	37-110	
2,4,6-Trichlorophenol	ug/kg	1670	1400	84	40-102	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: NCDOT Johnston 34182.1.2
Pace Project No.: 92204084

LABORATORY CONTROL SAMPLE: 1217228

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2,4-Dichlorophenol	ug/kg	1670	1450	87	33-108	
2,4-Dimethylphenol	ug/kg	1670	1290	78	36-110	
2,4-Dinitrophenol	ug/kg	8330	3860	46	22-121	
2,4-Dinitrotoluene	ug/kg	1670	1610	96	60-114	
2,6-Dinitrotoluene	ug/kg	1670	1640	98	54-114	
2-Chloronaphthalene	ug/kg	1670	1240	75	41-103	
2-Chlorophenol	ug/kg	1670	1300	78	39-109	
2-Methylnaphthalene	ug/kg	1670	1420	85	26-119	
2-Methylphenol(o-Cresol)	ug/kg	1670	1330	80	41-115	
2-Nitroaniline	ug/kg	3330	4290	129	45-113	L3
2-Nitrophenol	ug/kg	1670	1530	92	35-120	
3&4-Methylphenol(m&p Cresol)	ug/kg	1670	1340	80	35-110	
3,3'-Dichlorobenzidine	ug/kg	3330	2670	80	16-125	
3-Nitroaniline	ug/kg	3330	3010	90	45-106	
4,6-Dinitro-2-methylphenol	ug/kg	3330	1740	52	46-114	
4-Bromophenylphenyl ether	ug/kg	1670	1240	75	36-120	
4-Chloro-3-methylphenol	ug/kg	3330	3620	109	37-114	
4-Chloroaniline	ug/kg	3330	3040	91	35-120	
4-Chlorophenylphenyl ether	ug/kg	1670	1300	78	30-113	
4-Nitroaniline	ug/kg	3330	3130	94	48-118	
4-Nitrophenol	ug/kg	8330	10600	127	43-118	L3
Acenaphthene	ug/kg	1670	1240	75	46-120	
Acenaphthylene	ug/kg	1670	1250	75	46-120	
Aniline	ug/kg	1670	1270	76	33-120	
Anthracene	ug/kg	1670	1310	79	63-120	
Benzo(a)anthracene	ug/kg	1670	1360	81	61-120	
Benzo(a)pyrene	ug/kg	1670	1400	84	59-120	
Benzo(b)fluoranthene	ug/kg	1670	1380	83	55-120	
Benzo(g,h,i)perylene	ug/kg	1670	1070	64	57-120	
Benzo(k)fluoranthene	ug/kg	1670	1230	74	56-120	
Benzoic Acid	ug/kg	8330	5080	61	13-120	
Benzyl alcohol	ug/kg	3330	2890	87	34-120	
bis(2-Chloroethoxy)methane	ug/kg	1670	1410	84	21-120	
bis(2-Chloroethyl) ether	ug/kg	1670	1350	81	25-120	
bis(2-Chloroisopropyl) ether	ug/kg	1670	1400	84	13-120	
bis(2-Ethylhexyl)phthalate	ug/kg	1670	1360	82	56-123	
Butylbenzylphthalate	ug/kg	1670	1380	83	57-118	
Chrysene	ug/kg	1670	1330	80	64-120	
Di-n-butylphthalate	ug/kg	1670	1240	74	58-112	
Di-n-octylphthalate	ug/kg	1670	1520	91	47-121	
Dibenz(a,h)anthracene	ug/kg	1670	1140	68	56-110	
Dibenzofuran	ug/kg	1670	1370	82	43-120	
Diethylphthalate	ug/kg	1670	1290	77	55-109	
Dimethylphthalate	ug/kg	1670	1370	82	54-120	
Fluoranthene	ug/kg	1670	1390	84	61-111	
Fluorene	ug/kg	1670	1370	82	51-120	
Hexachloro-1,3-butadiene	ug/kg	1670	1410	85	22-120	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: NCDOT Johnston 34182.1.2
Pace Project No.: 92204084

LABORATORY CONTROL SAMPLE: 1217228

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Hexachlorobenzene	ug/kg	1670	1220	73	53-120	
Hexachlorocyclopentadiene	ug/kg	1670	463	28	18-150	
Hexachloroethane	ug/kg	1670	1370	82	39-120	
Indeno(1,2,3-cd)pyrene	ug/kg	1670	896	54	58-120	L2
Isophorone	ug/kg	1670	1890	113	38-120	
N-Nitroso-di-n-propylamine	ug/kg	1670	1490	89	30-120	
N-Nitrosodimethylamine	ug/kg	1670	1110	67	32-120	
N-Nitrosodiphenylamine	ug/kg	1670	1050	63	50-120	
Naphthalene	ug/kg	1670	1220	73	38-120	
Nitrobenzene	ug/kg	1670	1790	108	37-120	
Pentachlorophenol	ug/kg	3330	2370	71	10-120	
Phenanthrene	ug/kg	1670	1270	76	62-120	
Phenol	ug/kg	1670	1470	88	37-119	
Pyrene	ug/kg	1670	1240	74	63-120	
2,4,6-Tribromophenol (S)	%			86	27-110	
2-Fluorobiphenyl (S)	%			74	30-110	
2-Fluorophenol (S)	%			77	13-110	
Nitrobenzene-d5 (S)	%			97	23-110	
Phenol-d6 (S)	%			81	22-110	
Terphenyl-d14 (S)	%			74	28-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1217229 1217230

Parameter	Units	92204507002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
1,2,4-Trichlorobenzene	ug/kg	ND	2290	2290	1660	671	72	29	18-119	85	
1,2-Dichlorobenzene	ug/kg	ND	2290	2290	1700	485	74	21	50-110	111	M1
1,3-Dichlorobenzene	ug/kg	ND	2290	2290	1660	438J	72	19	27-110		M1
1,4-Dichlorobenzene	ug/kg	ND	2290	2290	1710	471	75	21	28-110	114	M1
1-Methylnaphthalene	ug/kg	ND	2290	2290	1560	780	68	34	24-116	67	
2,4,5-Trichlorophenol	ug/kg	ND	2290	2290	1600	959	70	42	28-110	50	
2,4,6-Trichlorophenol	ug/kg	ND	2290	2290	1400	935	61	41	17-117	40	
2,4-Dichlorophenol	ug/kg	ND	2290	2290	1450	841	64	37	21-128	53	
2,4-Dimethylphenol	ug/kg	ND	2290	2290	871	698	38	30	10-120	22	
2,4-Dinitrophenol	ug/kg	ND	11400	11400	ND	ND	0	0	10-107		M1
2,4-Dinitrotoluene	ug/kg	ND	2290	2290	1390	1160	61	51	36-109	18	
2,6-Dinitrotoluene	ug/kg	ND	2290	2290	1400	1190	61	52	32-110	16	
2-Chloronaphthalene	ug/kg	ND	2290	2290	1420	884	62	39	30-107	47	
2-Chlorophenol	ug/kg	ND	2290	2290	1460	552	64	24	14-106	90	
2-Methylnaphthalene	ug/kg	ND	2290	2290	1580	808	69	35	10-135	65	
2-Methylphenol(o-Cresol)	ug/kg	ND	2290	2290	1100	644	48	28	10-124	52	
2-Nitroaniline	ug/kg	ND	4570	4570	3950	2870	86	63	26-116	32	
2-Nitrophenol	ug/kg	ND	2290	2290	855	538	37	24	28-103	45	M1
3&4-Methylphenol(m&p Cresol)	ug/kg	ND	2290	2290	1100	638	48	28	10-109	53	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: NCDOT Johnston 34182.1.2
Pace Project No.: 92204084

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1217229 1217230

Parameter	Units	92204507002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
3,3'-Dichlorobenzidine	ug/kg	ND	4570	4570	1600J	1420J	35	31	10-150		
3-Nitroaniline	ug/kg	ND	4570	4570	2560	1780J	56	39	22-110		
4,6-Dinitro-2-methylphenol	ug/kg	ND	4570	4570	112J	ND	2	2	13-121		M1
4-Bromophenylphenyl ether	ug/kg	ND	2290	2290	1150	895	50	39	31-109	25	
4-Chloro-3-methylphenol	ug/kg	ND	4570	4570	3170	1910	69	42	13-128	49	
4-Chloroaniline	ug/kg	ND	4570	4570	2850	1780J	62	39	18-102		
4-Chlorophenylphenyl ether	ug/kg	ND	2290	2290	1470	1050	64	46	29-112	34	
4-Nitroaniline	ug/kg	ND	4570	4570	3550	1880	78	41	16-111	62	
4-Nitrophenol	ug/kg	ND	11400	11400	9660	4900	84	43	14-135	65	
Acenaphthene	ug/kg	ND	2290	2290	1400	923	61	40	26-114	41	
Acenaphthylene	ug/kg	ND	2290	2290	1410	932	62	41	32-108	41	
Aniline	ug/kg	ND	2290	2290	1200	474	52	21	10-107	86	
Anthracene	ug/kg	ND	2290	2290	1380	1030	61	45	32-111	29	
Benzo(a)anthracene	ug/kg	ND	2290	2290	1200	942	50	39	25-117	24	
Benzo(a)pyrene	ug/kg	ND	2290	2290	1240	989	50	39	25-106	22	
Benzo(b)fluoranthene	ug/kg	ND	2290	2290	1070	856	42	33	24-110	22	
Benzo(g,h,i)perylene	ug/kg	ND	2290	2290	906	714	37	28	19-112	24	
Benzo(k)fluoranthene	ug/kg	ND	2290	2290	1300	960	52	37	24-114	30	
Benzoic Acid	ug/kg	ND	11400	11400	1840J	647J	16	6	10-110		M1
Benzyl alcohol	ug/kg	ND	4570	4570	3230	1420	71	31	24-106	78	
bis(2-Chloroethoxy)methane	ug/kg	ND	2290	2290	1630	780	71	34	13-119	71	
bis(2-Chloroethyl) ether	ug/kg	ND	2290	2290	1770	535	77	23	10-134	107	
bis(2-Chloroisopropyl) ether	ug/kg	ND	2290	2290	1930	623	84	27	10-113	102	
bis(2-Ethylhexyl)phthalate	ug/kg	ND	2290	2290	1290	1050	56	46	10-125	21	
Butylbenzylphthalate	ug/kg	ND	2290	2290	1430	1100	63	48	18-110	26	
Chrysene	ug/kg	ND	2290	2290	1230	986	48	37	30-110	22	
Di-n-butylphthalate	ug/kg	ND	2290	2290	1160	1580	51	69	19-112	30	
Di-n-octylphthalate	ug/kg	ND	2290	2290	1620	1190	71	52	17-105	31	
Dibenz(a,h)anthracene	ug/kg	ND	2290	2290	961	757	42	33	23-111	24	
Dibenzofuran	ug/kg	ND	2290	2290	1620	1110	71	49	35-103	37	
Diethylphthalate	ug/kg	ND	2290	2290	1510	1010	66	44	27-113	40	
Dimethylphthalate	ug/kg	ND	2290	2290	1550	1040	68	45	26-111	40	
Fluoranthene	ug/kg	ND	2290	2290	1470	1050	56	37	33-109	33	
Fluorene	ug/kg	ND	2290	2290	1640	1110	72	48	32-113	39	
Hexachloro-1,3-butadiene	ug/kg	ND	2290	2290	1700	639	74	28	16-116	91	
Hexachlorobenzene	ug/kg	ND	2290	2290	1170	855	51	37	27-120	31	
Hexachlorocyclopentadiene	ug/kg	ND	2290	2290	385J	231J	17	10	10-108		
Hexachloroethane	ug/kg	ND	2290	2290	1630	512	71	22	10-117	104	
Indeno(1,2,3-cd)pyrene	ug/kg	ND	2290	2290	759	602	31	24	10-122	23	
Isophorone	ug/kg	ND	2290	2290	1970	960	86	42	28-114	69	
N-Nitroso-di-n-propylamine	ug/kg	ND	2290	2290	1630	682	71	30	27-113	82	
N-Nitrosodimethylamine	ug/kg	ND	2290	2290	1360	218J	59	10	10-109		
N-Nitrosodiphenylamine	ug/kg	ND	2290	2290	899	760	39	33	10-128	17	
Naphthalene	ug/kg	ND	2290	2290	1550	641	68	28	25-110	83	
Nitrobenzene	ug/kg	ND	2290	2290	1750	814	77	36	18-114	73	
Pentachlorophenol	ug/kg	ND	4570	4570	2390	1500J	52	33	10-122		

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: NCDOT Johnston 34182.1.2
Pace Project No.: 92204084

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1217229 1217230

Parameter	Units	92204507002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Phenanthrene	ug/kg	ND	2290	2290	1400	998	56	38	30-114	33	
Phenol	ug/kg	ND	2290	2290	1410	568	62	25	11-102	85	1g,R1
Pyrene	ug/kg	ND	2290	2290	1220	928	46	33	25-116	27	
2,4,6-Tribromophenol (S)	%						47	41	27-110		
2-Fluorobiphenyl (S)	%						58	34	30-110		
2-Fluorophenol (S)	%						53	16	13-110		
Nitrobenzene-d5 (S)	%						66	30	23-110		
Phenol-d6 (S)	%						53	23	22-110		
Terphenyl-d14 (S)	%						51	40	28-110		

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: NCDOT Johnston 34182.1.2
Pace Project No.: 92204084

QC Batch: PMST/6693 Analysis Method: ASTM D2974-87
QC Batch Method: ASTM D2974-87 Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 92204084001, 92204084002, 92204084003, 92204084004

SAMPLE DUPLICATE: 1219653

Parameter	Units	92204084001 Result	Dup Result	RPD	Qualifiers
Percent Moisture	%	14.1	13.8	2	

SAMPLE DUPLICATE: 1219654

Parameter	Units	92204947001 Result	Dup Result	RPD	Qualifiers
Percent Moisture	%	7.8	7.9	1	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALIFIERS

Project: NCDOT Johnston 34182.1.2
Pace Project No.: 92204084

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Acid preservation may not be appropriate for 2-Chloroethylvinyl ether, Styrene, and Vinyl chloride.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-C	Pace Analytical Services - Charlotte

ANALYTE QUALIFIERS

1g	This comment applies to all compounds with RPD greater than 30%.
A+	The reaction of the soil preservative, sodium bisulfate, is known to react with humic acid in soils to produce ketones. Based upon method blank results, the laboratory feels the ketones in this sample are a result of that reaction.
F3	The recovery of the second source standard used to verify the initial calibration curve for this analyte is outside the laboratory's control limits. The result is estimated.
L2	Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.
L3	Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples. Results unaffected by high bias.
M0	Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
R1	RPD value was outside control limits.

Pace Analytical Services, Inc.
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Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: NCDOT Johnston 34182.1.2
Pace Project No.: 92204084

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92204084005	**5-6(TW)**	EPA 625	OEXT/28155	EPA 625	MSSV/9223
92204084001	**5-4(4-6)**	EPA 3546	OEXT/28108	EPA 8270	MSSV/9220
92204084002	**5-5(2-4)**	EPA 3546	OEXT/28108	EPA 8270	MSSV/9220
92204084003	**5-7(2-4)**	EPA 3546	OEXT/28108	EPA 8270	MSSV/9220
92204084004	**5-8(2-4)**	EPA 3546	OEXT/28168	EPA 8270	MSSV/9228
92204084005	**5-6(TW)**	SM 6200B	MSV/27102		
92204084001	**5-4(4-6)**	EPA 8260	MSV/27125		
92204084002	**5-5(2-4)**	EPA 8260	MSV/27125		
92204084003	**5-7(2-4)**	EPA 8260	MSV/27125		
92204084004	**5-8(2-4)**	EPA 8260	MSV/27125		
92204084001	**5-4(4-6)**	ASTM D2974-87	PMST/6693		
92204084002	**5-5(2-4)**	ASTM D2974-87	PMST/6693		
92204084003	**5-7(2-4)**	ASTM D2974-87	PMST/6693		
92204084004	**5-8(2-4)**	ASTM D2974-87	PMST/6693		

Pace Analytical®	Document Name: **Sample Condition Upon Receipt (SCUR)**	Document Revised: April 07. 2014 Page 1 of 2
	Document Number: **F-CHR-CS-003-rev.14**	Issuing Authority: Pace Huntersville Quality Office

Client Name: Pyramid Environmental

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☑ Pace Other_____

Custody Seal on Cooler/Box Present: ☐ yes ☑ no Seals intact: ☐ yes ☐ no

Optional
Proj. Due Date:
Proj. Name:

Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other_____

Thermometer Used: IR Gun T1102 T1401 **Type of Ice:** (Wet) Blue None ☑ Samples on ice, cooling process has begun

Temp Correction Factor **T1102**: No Correction **T1301**: No Correction

Corrected Cooler Temp.: 1.7 °C **Biological Tissue is Frozen:** Yes No (N/A)

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 06/4/14

		Comments:
Chain of Custody Present:	☑Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☑Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☑Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☑Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☑Yes ☐No ☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes ☑No ☐N/A	6.
Rush Turn Around Time Requested:	☑Yes ☐No ☐N/A	7.
Sufficient Volume:	☑Yes ☐No ☐N/A	8.
Correct Containers Used:	☑Yes ☐No ☐N/A	9.
-Pace Containers Used:	☑Yes ☐No ☐N/A	
Containers Intact:	☑Yes ☐No ☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☑N/A	11.
Sample Labels match COC:	☑Yes ☐No ☐N/A	12.
-Includes date/time/ID/Analysis Matrix:_____		
All containers needing preservation have been checked.	☐Yes ☐No ☑N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	☐Yes ☐No ☑N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	☑Yes ☐No	
Samples checked for dechlorination:	☑Yes ☐No ☐N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes ☑No ☐N/A	15.
Trip Blank Present:	☐Yes ☐No ☑N/A	16.
Trip Blank Custody Seals Present	☐Yes ☐No ☑N/A	
Pace Trip Blank Lot # (if purchased):_____		

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

SCURF Review: JDB Date: 6/4/14

SRF Review: JDB Date: 6/4/14

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Place label here

WO# : 92204084

92204084

Pace Analytical®
www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 1

1667315

Section A Required Client Information:

Company: Pyramid Environmental
Address: 303 Box 16265 Greensboro NC 27416
Email To: Tim
Phone: 336.335.3174 Fax:
Requested Due Date/TAT: 5-Day

Section B Required Project Information:

Report To: Pyramid - Tim
Copy To:
Purchase Order No.: WBS#34182.1.2/#4300233486
Project Name: NCDOT Johnston I-3318BB
Project Number: 2014-093

Section C Invoice Information:

Attention: NCDOT
Company Name: NCDOT
Address:
Pace Quote Reference: PO#4300233486
Pace Project Manager: Jon Bradley
Pace Profile #: 5720-3,4

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER

Site Location STATE: NC

Section D Required Client Information

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Matrix Codes (MATRIX / CODE)

Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Tissue	TS
Other	OT

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test: 8260/5035	8270	6200B	625	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	5-4(4-6)	SL	G			6/2/14	11:40		7	X					X	X		X	X				001
2	5-5(2-4)	SL	G				12:05		7	X					X	X		X	X				002
3	5-7(2-4)	SL	G				14:00		7	X					X	X		X	X				003
4	5-8(2-4)	SL	G				14:25		7	X					X	X		X	X				004
5	~~5-2(4-6)~~						16:00											X	X				
6	5-6(TW)	WT	G			6/2/14	15:00		6	X			X							X	X		
7																							
8																							
9																							
10																							
11																							
12																							

9220484

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	Timothy D. Leatherman / Pyramid	6/4/14	8:30	Ryan Kanner / Pyramid	6/4/14	9:00				
	Ryan Kanner / Pyram	6/4/14	9:25	Alisa Lamond	6/4/14	09:30				
				[illegible] PACE	6/4/14	1730	1.7	Y	N	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Timothy D. Leatherman
SIGNATURE of SAMPLER: Timothy D. Leatherman
DATE Signed (MM/DD/YY): 6-4-14

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

ORIGINAL

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-May-2007

APPENDIX F

FIELD PERSONNEL LOG

PROJECT NAME: NCDOT Johnston County PSAs **PROJECT NO.:** I-3318BB
PARCELS 1, 2, 5, 8

Name: Eric Cross **Date:** 5/13/14 **Mon** [**Tue**] **Wed Th Fri Sat Sun**

TASKS PERFORMED:

E. Cross:
Mobilize to site. Performed site visit reconnaissance.
Leave site: ~3:30PM

FIELD PERSONNEL LOG

PROJECT NAME: NCDOT Johnston County PSAs **PROJECT NO.:** I-3318BB
PARCELS 1, 2, 5, 8

Name: Eric Cross & Alan McFadden **Date:** 5/21/14 **Mon Tue Wed Th Fri Sat Sun**

TASKS PERFORMED:

E. Cross & A. McFadden:
Mobilize to site. Performed geophysical surveys and data processing in evening.
Leave site: ~5:30PM

FIELD PERSONNEL LOG

PROJECT NAME: NCDOT Johnston County PSAs **PROJECT NO.:** I-3318BB
PARCELS 1, 2, 5, 8

Name: Eric Cross & Alan McFadden **Date:** 5/22/14 **Mon Tue Wed Th Fri Sat Sun**

TASKS PERFORMED:

E. Cross & A. McFadden:
Mobilize to site. Performed geophysical surveys.
Leave site: ~12:30PM

FIELD PERSONNEL LOG

PROJECT NAME: NCDOT Johnston County PSAs **PROJECT NO.:** I-3318BB
PARCELS 1, 2, 5, 8

Name: Eric Cross **Date:** 5/23/14 **Mon Tue Wed Th Fri Sat Sun**

TASKS PERFORMED:

E. Cross:
Mobilize to site. Performed geophysical surveys (GPR) and data processing.
Leave site: ~5:00PM

FIELD PERSONNEL LOG

PROJECT NAME: NCDOT Johnston County PSAs **PROJECT NO.:** I-3318BB
PARCELS 1, 2, 5, 8

Name: Eric Cross & Tim Leatherman **Date:** 5/29/14 **Mon Tue Wed Th Fri Sat Sun**

TASKS PERFORMED:

E. Cross & T. Leatherman:
Mobilize to site. Placed proposed boring locations and supervised private utility locating.
Leave site: ~5:00PM

FIELD PERSONNEL LOG

PROJECT NAME: NCDOT Johnston County PSAs **PROJECT NO.:** I-3318BB
PARCELS 1, 2, 5, 8

Name: Tim Leatherman & Ryan Kramer **Date:** 6/2/14 **Mon Tue Wed Th Fri Sat Sun**

TASKS PERFORMED:

T. Leatherman & R. Kramer:
Mobilize to site. Supervised Geoprobe sampling, performed QED analysis (some in evening). Leave site: ~5:30PM

FIELD PERSONNEL LOG

PROJECT NAME: NCDOT Johnston County PSAs **PROJECT NO.:** I-3318BB
PARCELS 1, 2, 5, 8

Name: Tim Leatherman & Ryan Kramer **Date:** 6/3/14 **Mon** [**Tue**] **Wed Th Fri Sat Sun**

TASKS PERFORMED:

T. Leatherman & R. Kramer:
Mobilize to site. Supervised Geoprobe sampling, performed QED analysis (some in evening). Leave site: ~4:30PM

FIELD PERSONNEL LOG

PROJECT NAME: NCDOT Johnston County PSAs **PROJECT NO.:** I-3318BB
PARCELS 1, 2, 5, 8

Name: Tim Leatherman & Ryan Kramer **Date:** 6/4/14 **Mon Tue Wed Th Fri Sat Sun**

TASKS PERFORMED:

T. Leatherman & R. Kramer:
Mobilize to site. Supervised Geoprobe sampling, performed QED analysis.
Leave site: ~3:00PM