

Pyramid Environmental & Engineering, P.C. Project # 2014-093
Preliminary Site Assessment (PSA) – Parcel 008, Kenneth M. Taylor

PRELIMINARY SITE ASSESSMENT
PARCEL 008 – KENNETH M. TAYLOR
675 CUMMINS DRIVE
KENLY, JOHNSTON COUNTY, NORTH CAROLINA
NC PIN: 264600-93-9514
STATE PROJECT: I-3318BB
WBS ELEMENT: 34182.2.1
JUNE 27, 2014

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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 | Milligram per kilogram |
| NPDES..... | National Pollution 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 008, KENNETH M. TAYLOR
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 008, Kenneth M. Taylor. 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 incidents or files. He also did not find anything related to the suspected methamphetamine lab.

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. A large billboard was present on the property, and the remaining area was undeveloped land. No evidence of USTs was observed. Subsequent site visits provided evidence that it is most likely Parcel 5 (directly to the west of Parcel 8) is being used as a methamphetamine lab.

- **Geophysical Survey:** A large portion of the parcel was inaccessible due to dense/tall vegetation and forest. Two of the EM61 anomalies detected could be attributed to visible objects at the ground surface; specifically, a mailbox and a reinforced concrete drainage pipe. 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 or utilities. The geophysical investigation did not record any evidence of metallic USTs at the property.

- **Limited Soil Assessment:** A total of four borings were performed across the property. The DENR action levels for both TPH-GRO and TPH-DRO are 10 milligrams per kilogram (mg/kg). Soil samples were screened with a PID, and select soil samples were analyzed for DRO and GRO using a QED Analyzer. None of the soil samples analyzed exhibited DRO or GRO concentrations above 10 mg/kg.

One soil sample 8-1(4-6) was sent to the laboratory for analysis of soils using EPA Methods 8260/8270 for volatile organic compounds (VOC) and semi-volatile organic compounds (SVOC) based on the suspected methamphetamine lab located at the west-adjacent parcel. The laboratory results did not detect any concentrations of VOCs or SVOCs above residential or soil-to-groundwater MSCCs in the samples that were analyzed.

- **Limited Groundwater Assessment:** Soil boring 8-4 was converted into a 1-inch diameter temporary monitoring well to a total depth of 12 feet BLS. The depth-to-groundwater was measured at 3.35 feet BLS. The 6200B and 625 laboratory analysis of groundwater samples 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:** No evidence of petroleum-impacted soils (DRO/GRO > 10mg/kg) was observed during this investigation. Additionally, no evidence of elevated concentrations of VOCs or SVOCs was detected by laboratory analysis of the soil samples. Therefore, no recommendations for the treatment, handling, or disposal of such materials are warranted.

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 008, Kenneth M. Taylor. The Kenneth M. Taylor property contains a commercial billboard sign and is otherwise undeveloped. The parcel is located at 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 008 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. 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 8.”

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 Kenneth M. Taylor property was first developed between 1988 and 1993. The 1993 aerial photograph shows that the western portion of the parcel had been cleared, and scattered trailers and other structures/vehicles were present that may have been associated with the apparent junkyard directly to the west at Parcel 5. The 1988 aerial shows the parcel to be undeveloped. The historical aerials indicate that the trailers and vehicles had been removed from Parcel 8 between 2006 and 2008, and no other structures or buildings were observed in the subsequent aerial photographs.

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 incidents or files. He also did not find anything related to the suspected methamphetamine lab.

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. A large billboard was present on the property, and the remaining area was undeveloped land. No evidence of USTs was observed. Subsequent site visits provided evidence that it is likely Parcel 5, directly to the west of Parcel 8, was reportedly being used as a methamphetamine lab (see Pyramid’s Parcel 5 PSA Report).

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. Two of the EM61 anomalies detected could be attributed to visible objects at the ground surface; specifically, a mailbox and a reinforced concrete drainage pipe. 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 or utilities. 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. Four (4) soil borings (8-1 through 8-4) 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 and private utilities 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 total petroleum hydrocarbon (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, respectively. These additional analyses were performed based on the site history of the property, which suggested that other potential contaminants such as solvents may have been or are being utilized in association with a possible methamphetamine lab directly to the west of Parcel 008. Soils from the boring located nearest to Parcel 005, where the lab was suspected to be located, were selected for the additional laboratory analyses. Specifically, sample 8-1(4-6) was placed in a laboratory prepared containers and shipped to Pace Analytical in Huntersville, NC for analysis of volatile and semi-volatile organic compounds. It should be noted that a typographical error was made on the Chain of Custody form submitted to Pace Analytical, and the

sample ID number in their lab report is listed as sample 8-2(4-6). The actual sample that was analyzed was 8-1(4-6).

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. None of the 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

One soil sample 8-1(4-6) was sent to the laboratory for analysis of soils using EPA Methods 8260/8270 for volatile (VOC) and semi-volatile (SVOC) organic compounds based on the suspected methamphetamine lab located at the west-adjacent parcel. The laboratory results did not detect any concentrations of VOCs or SVOCs 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 is included in **Appendix E**.

4.3 Temporary Monitoring Well Installation

On June 2, 2014, Pyramid converted soil boring 8-4 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 8-4(TW) was completed to a total depth of 12 feet below land surface (BLS). The temporary well was constructed with 2 feet of 1-inch diameter schedule 80 PVC casing and 10 feet 1-inch diameter of schedule 80 PVC slotted screen.

The depth-to-groundwater was measured at 3.35 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 8-4(TW) was placed in laboratory prepared containers for analysis of VOCs using EPA Method 6200B and for SVOCs using EPA Method 625. The samples were shipped to Pace Analytical in Huntersville, NC. The 6200B and 625 laboratory analysis did not detect any concentrations of VOCs or SVOCs above NCAC 2L groundwater standards in the sample. The groundwater results for sample 8-4(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 Kenneth M. Taylor property located at 675 Cummins Drive, Kenly, NC (Parcel 008). 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. Two of the EM61 anomalies detected could be attributed to visible objects at the ground surface; specifically, a mailbox and a reinforced concrete drainage pipe. 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 or utilities. 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. None of the soil samples analyzed exhibited DRO or GRO concentrations above 10 mg/kg.

Laboratory Results

One soil sample 8-1(4-6) was sent to the laboratory for analysis of soils using EPA Methods 8260 and 8270 for volatile (VOC) and semi-volatile (SVOC) organic compounds, respectively, based on the suspected methamphetamine lab located at the west-adjacent parcel. The laboratory results did not detect any concentrations of VOCs or SVOCs above residential or soil-to-groundwater MSCCs in the samples that were analyzed.

5.3 Limited Groundwater Assessment

Soil boring 8-4 was converted into a 1-inch diameter temporary monitoring well to a total depth of 12 feet BLS. The depth-to-groundwater was measured at 3.35 feet BLS. The 6200B and 625 laboratory analysis did not detect any VOCs or SVOCs exhibiting concentrations above NCAC 2L groundwater standards in the sample.

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

No evidence of petroleum-impacted soils (DRO/GRO > 10mg/kg) was observed during this investigation. Additionally, no evidence of elevated concentrations of VOCs or SVOCs was detected by laboratory analysis of the soil samples. Therefore, no recommendations for the treatment, handling, or disposal of such materials are warranted.

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) 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

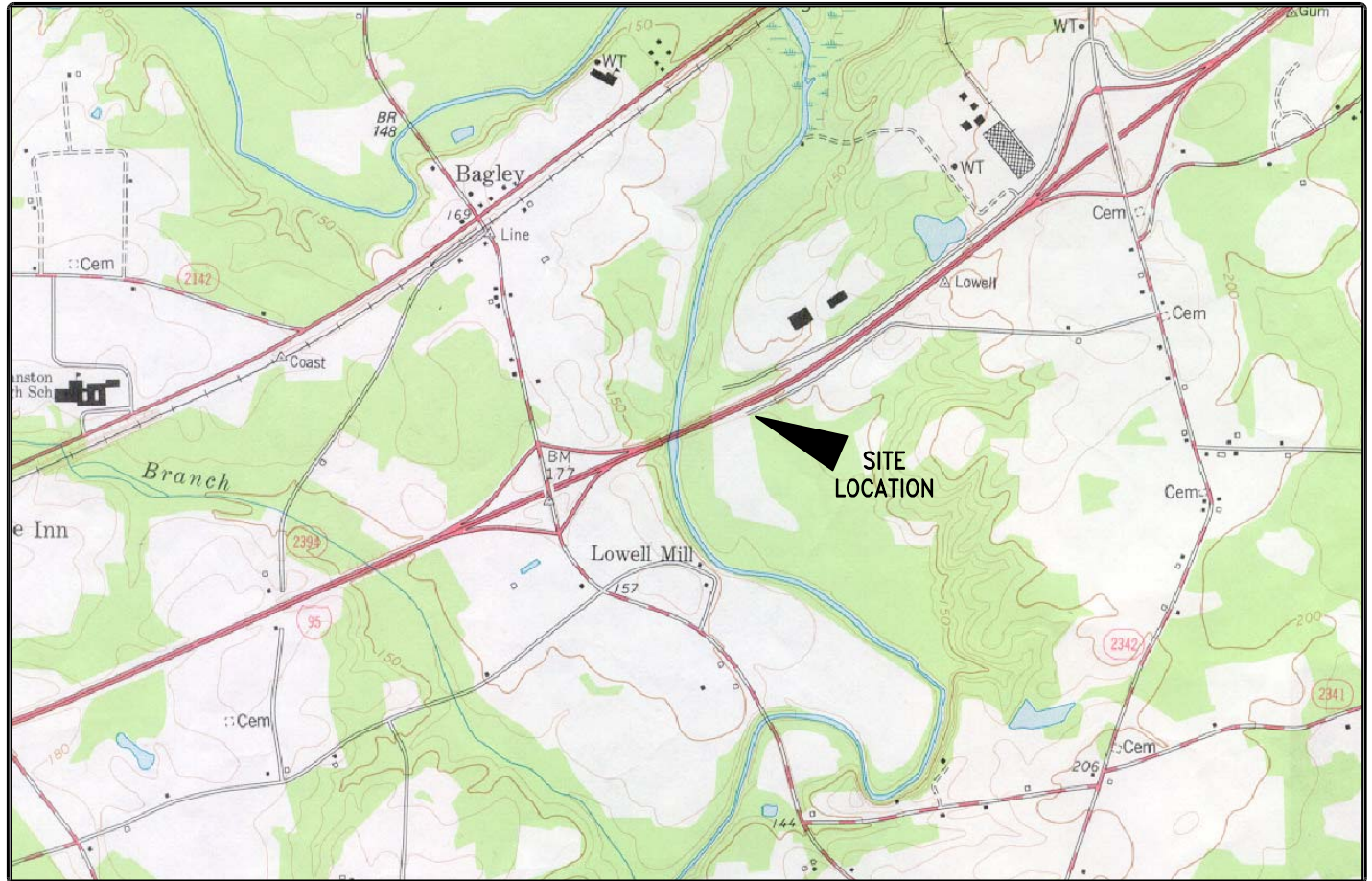
USGS TOPOGRAPHIC MAP

SITE:

675 CUMMINS DR.

LOCATION:

KENLY, NORTH CAROLINA



USGS IDENTIFICATION

SCALES

USGS 7.5 MINUTE MAP

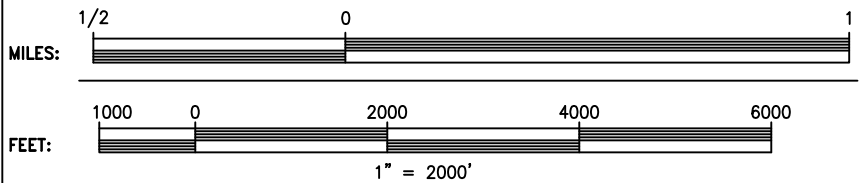
KENLY WEST, N.C.

ORIGINAL DATE:

1978

PHOTOREVISION DATE:

NA



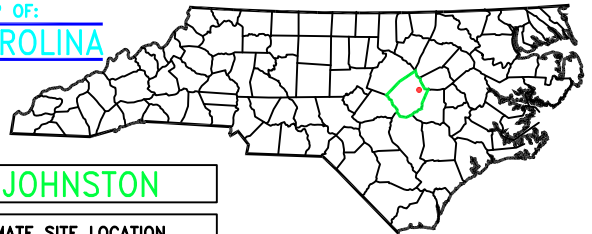
| | |
|--|--|
| | PRIMARY HIGHWAY, HARD SURFACE |
| | SECONDARY HIGHWAY, HARD SURFACE |
| | LIGHT-DUTY ROAD HARD OR IMPROVED SURFACE |
| | UNIMPROVED ROAD |
| | STATE ROAD |
| | U.S. ROUTE |
| | INTERSTATE ROUTE |

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

MAGNETIC NORTH



COUNTY MAP OF:
NORTH CAROLINA



COUNTY: **JOHNSTON**

APPROXIMATE SITE LOCATION



CLIENT: NC DOT I-3318BB

PROPERTY NAME: PARCEL 008, KENNETH TAYLOR

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

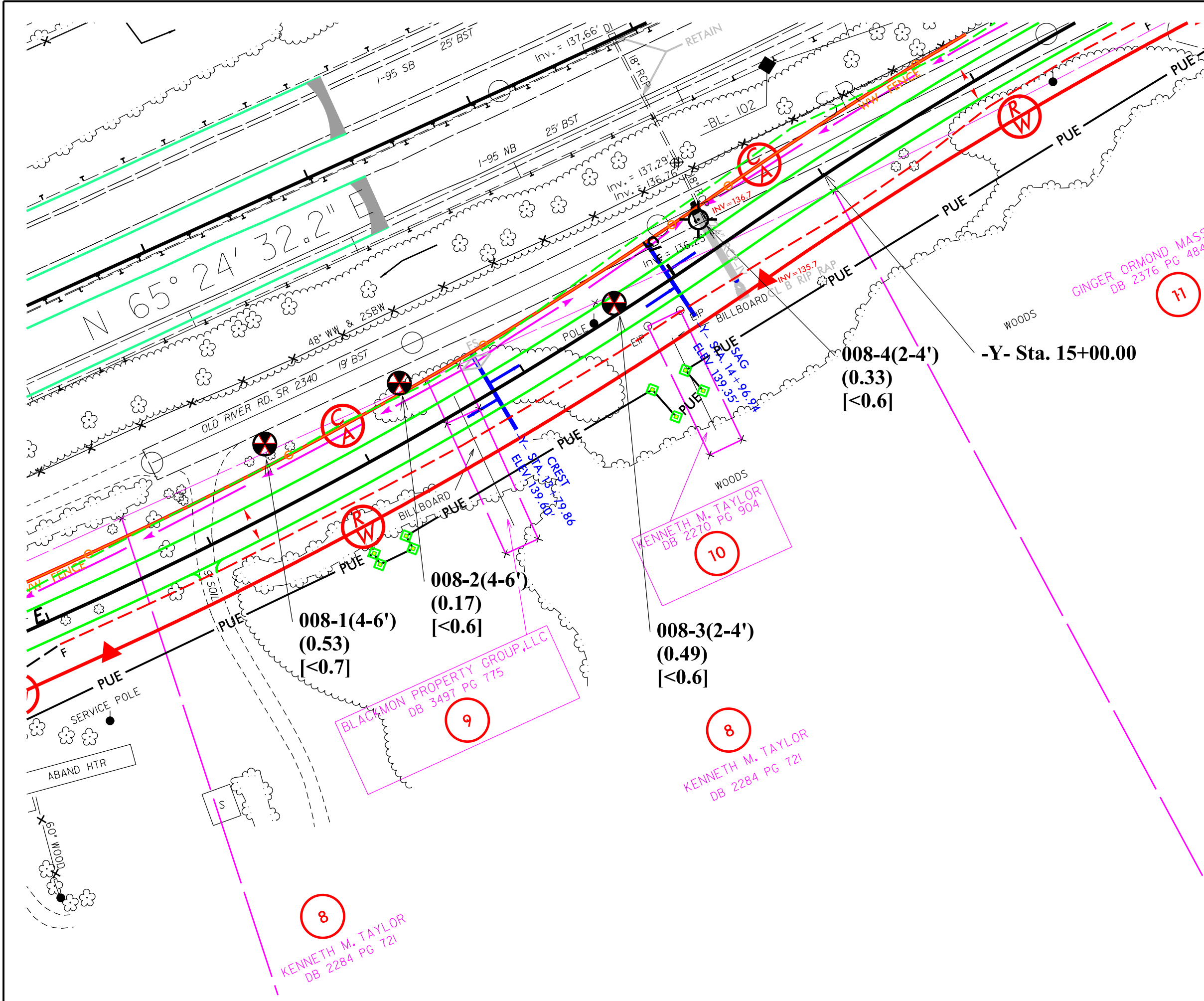
TYPE: PSA

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

- PUE 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)

| | | |
|------------------------------|--|----------------|
| TITLE | SOIL BORING LOCATIONS AND ESTIMATED AREA OF CONTAMINATION | |
| PROJECT | NCDOT ROW PROJECT I-33188B (34182.2.1) KENNETH M. TAYLOR - PARCEL 008 BAGLEY ROAD, JOHNSTON COUNTY, NC | |
| | 503 INDUSTRIAL AVENUE GREENSBORO, NC 27406 336.335.3174 (p) 336.691.0648 (f) License # C1251 Eng. / #C257 Geology | |
| | 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 008
 Kenly, Johnston County, North Carolina

| SOIL BORING | SAMPLE ID | DEPTH (feet bgs) | PID READINGS (PPM) |
|-------------|------------|---------------------|-----------------------|
| 8-1 | 8-1(0-2) | 0 to 2 | 1.5 |
| | 8-1(2-4) | 2 to 4 | 2.0 |
| | 8-1(4-6) | 4 to 6 | 3.0 |
| | 8-1(6-8) | 6 to 8 | 2.0 |
| | 8-1(8-11) | 8 to 11 | 1.0 |
| 8-2 | 8-2(0-2) | 0 to 2 | 1.0 |
| | 8-2(2-4) | 2 to 4 | 2.0 |
| | 8-2(4-6) | 4 to 6 | 3.0 |
| | 8-2(6-8) | 6 to 8 | 2.0 |
| | 8-2(8-11) | 8 to 11 | 2.0 |
| 8-3 | 8-3(0-2) | 0 to 2 | 1.0 |
| | 8-3(2-4) | 2 to 4 | 2.5 |
| | 8-3(4-6) | 4 to 6 | 2.0 |
| | 8-3(6-8) | 6 to 8 | 2.0 |
| 8-4 | 8-4(0-2) | 0 to 2 | 2.0 |
| | 8-4(2-4) | 2 to 4 | 3.0 |
| | 8-4(4-6) | 4 to 6 | 2.0 |
| | 8-4(6-8) | 6 to 8 | 2.0 |
| | 8-4(8-10) | 8 to 10 | 13.0 |
| | 8-4(10-12) | 10 to 12 | 17.0 |

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 008
Kenly, Johnston County, North Carolina

| SAMPLE ID | DATE | DEPTH (feet) | PID (ppm) | QROS - QED Analysis | | |
|--|----------|--------------|-----------|----------------------|-----------------------|----------------------|
| | | | | GRO (mg/kg) (C5-C10) | DRO (mg/kg) (C10-C35) | TPH (mg/kg) (C5-C35) |
| 8-1(4-6) | 6/2/2014 | 4 to 6 | 3.0 | <0.7 | 0.53 | 0.53 |
| 8-2(4-6) | 6/2/2014 | 4 to 6 | 3.0 | <0.6 | 0.17 | 0.17 |
| 8-3(2-4) | 6/2/2014 | 2 to 4 | 2.5 | <0.6 | 0.49 | 0.49 |
| 8-4(2-4) | 6/2/2014 | 2 to 4 | 3.0 | <0.6 | 0.33 | 0.33 |
| NC Initial Action Level - UST Section for | | | | | | |
| 5035/5030-GRO; 3550-DRO | | | | 10 | 10 | NA |

PID= photo-ionization 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 008

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

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

MSCC = Maximum Soil Contaminant Conc.
 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 008
Kenly, Johnston County, North Carolina

| PARAMETER | UNITS | SAMPLE ID | NCAC 2L GROUNDWATER STANDARD |
|--|-------|-----------|------------------------------------|
| | | 8-4(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

1948 Aerial

SC-A

P6

Study Area

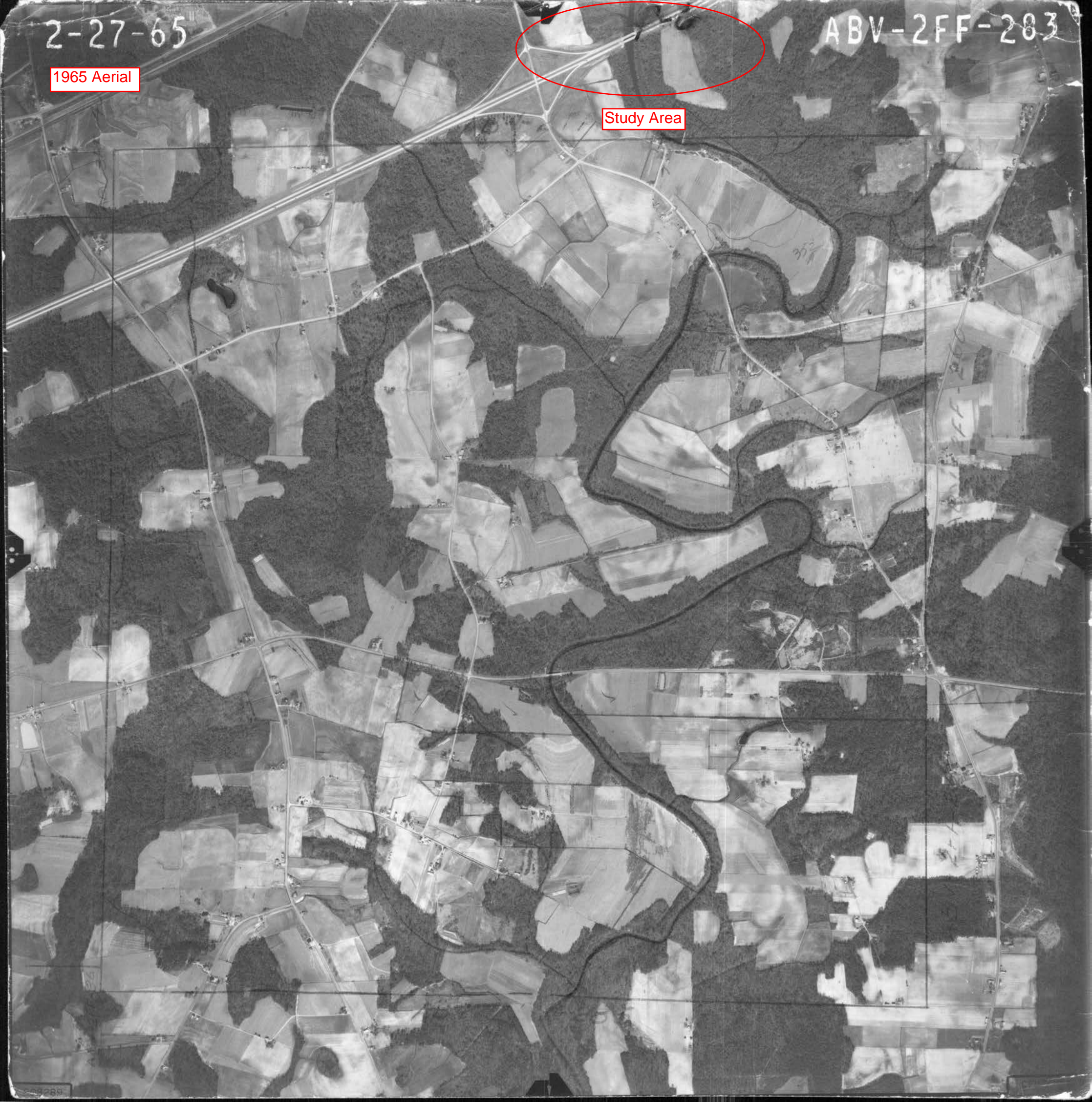


2-27-65

ABV-2FF-283

1965 Aerial

Study Area



2-24-71

1971 Aerial

P-6
ABV-4-MM-96

C-327
1600
C-243
R.V.
Weaver
120

C-329

C-215
C-212

MRI

Study Area



37101-2288

183L

1988 Aerial

Study Area





95

Old River Rd

1993 Aerial

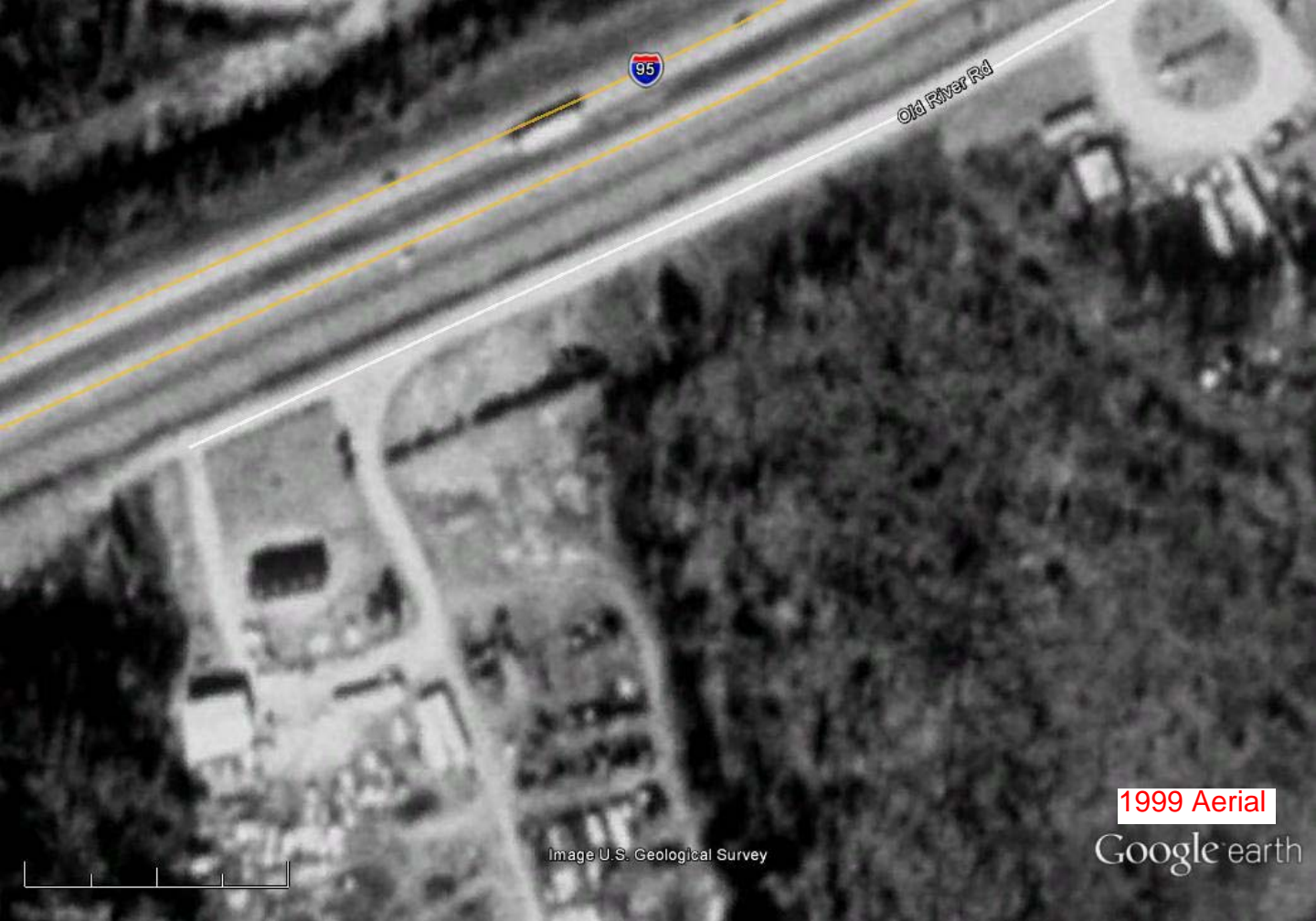
Google earth

Image U.S. Geological Survey



Google earth





95

Old River Rd

1999 Aerial

Google earth

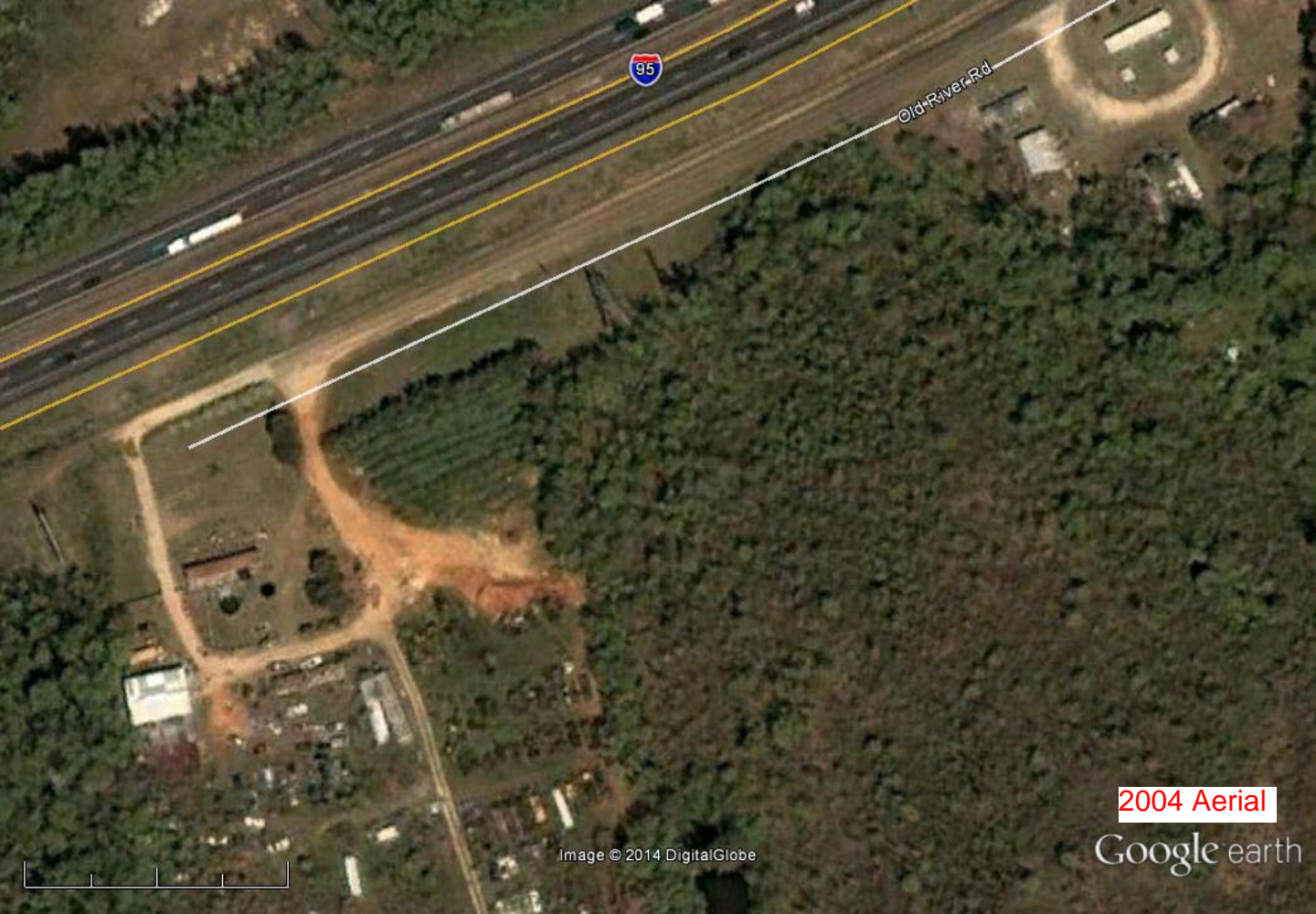
Image U.S. Geological Survey



Google earth

feet
meters





95

Old River Rd

2004 Aerial

Google earth

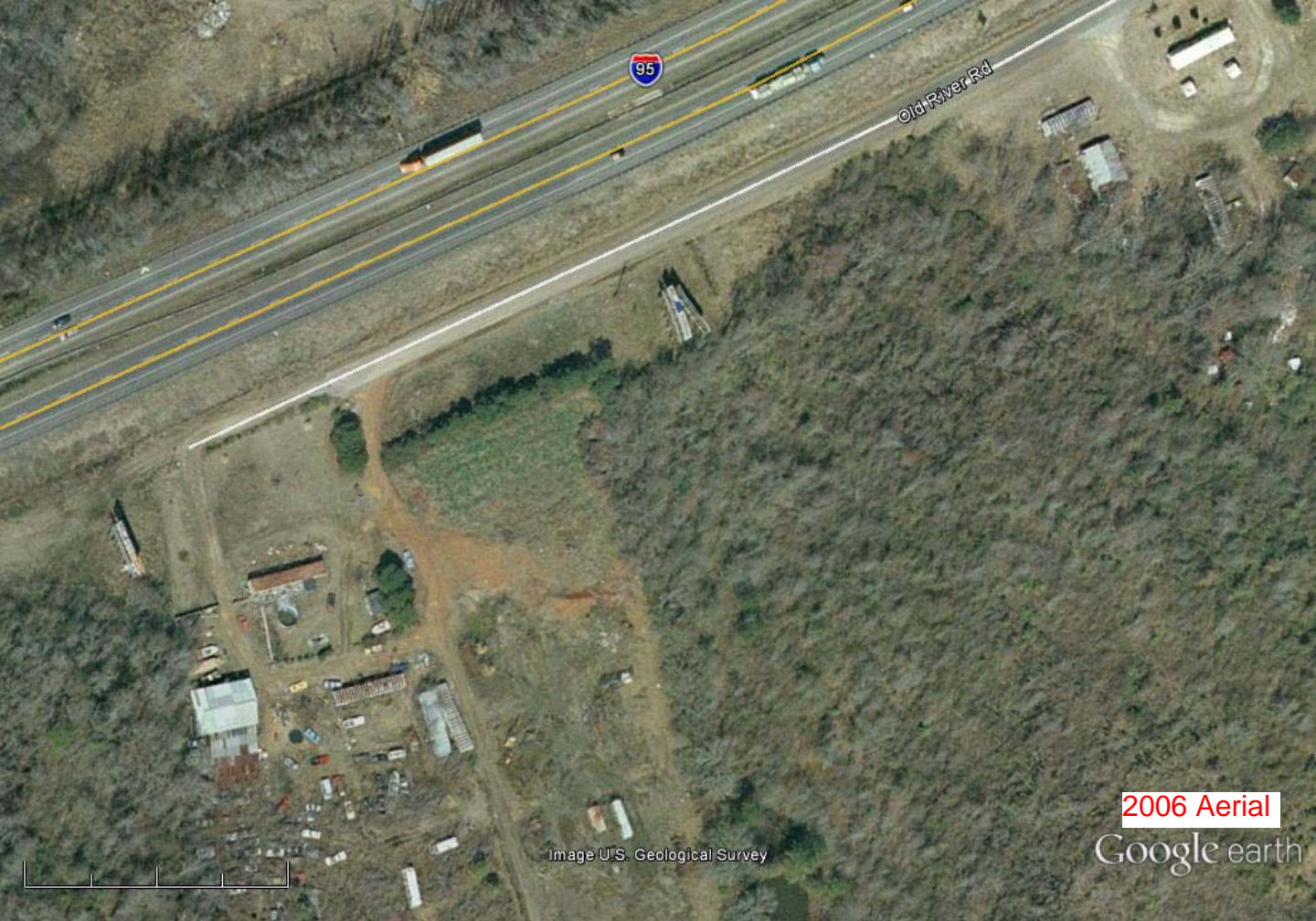
Image © 2014 DigitalGlobe



Google earth

feet
meters





95

Old River Rd

2006 Aerial

Google earth

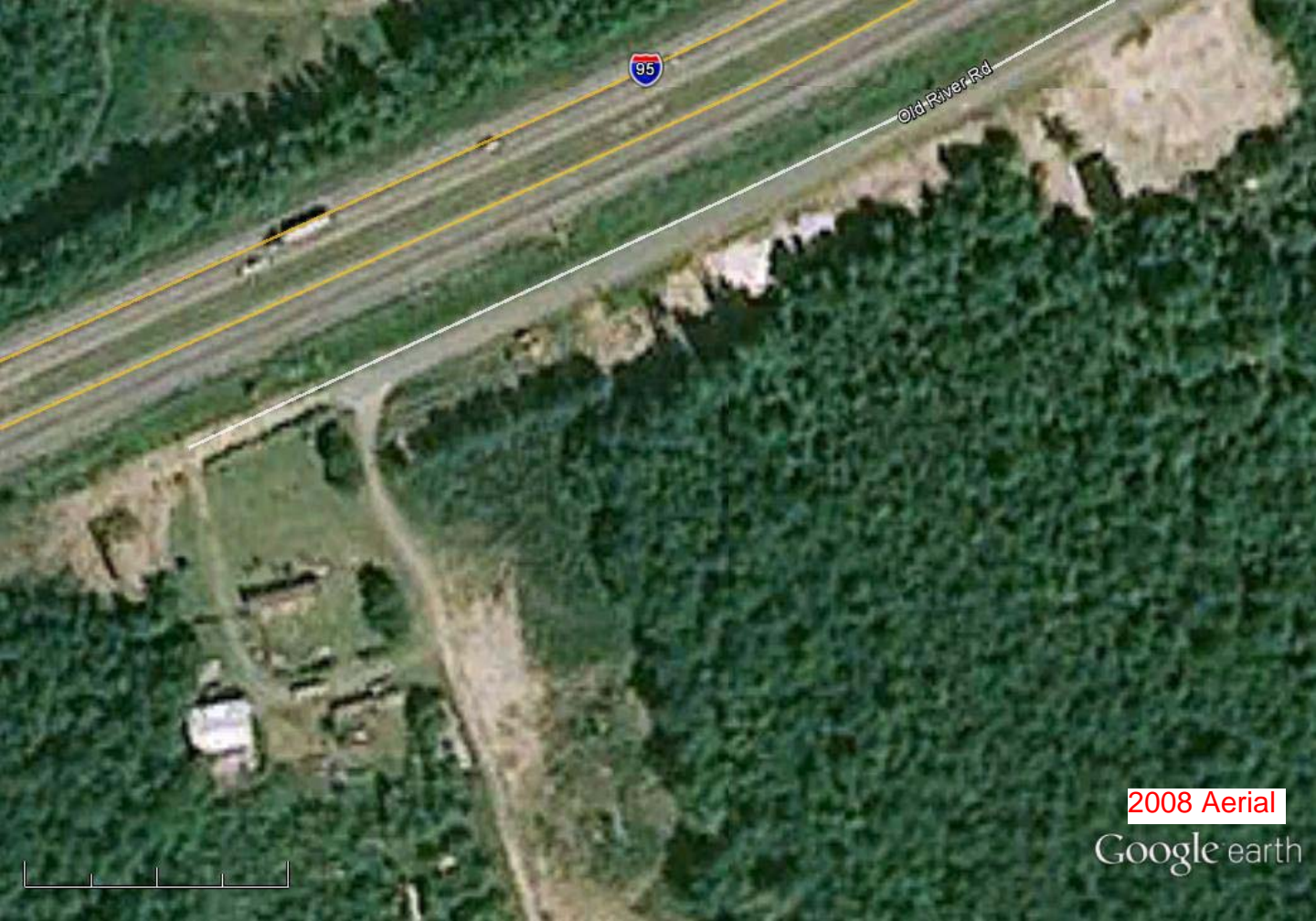
Image U.S. Geological Survey



Google earth

feet
meters





95

Old River Rd

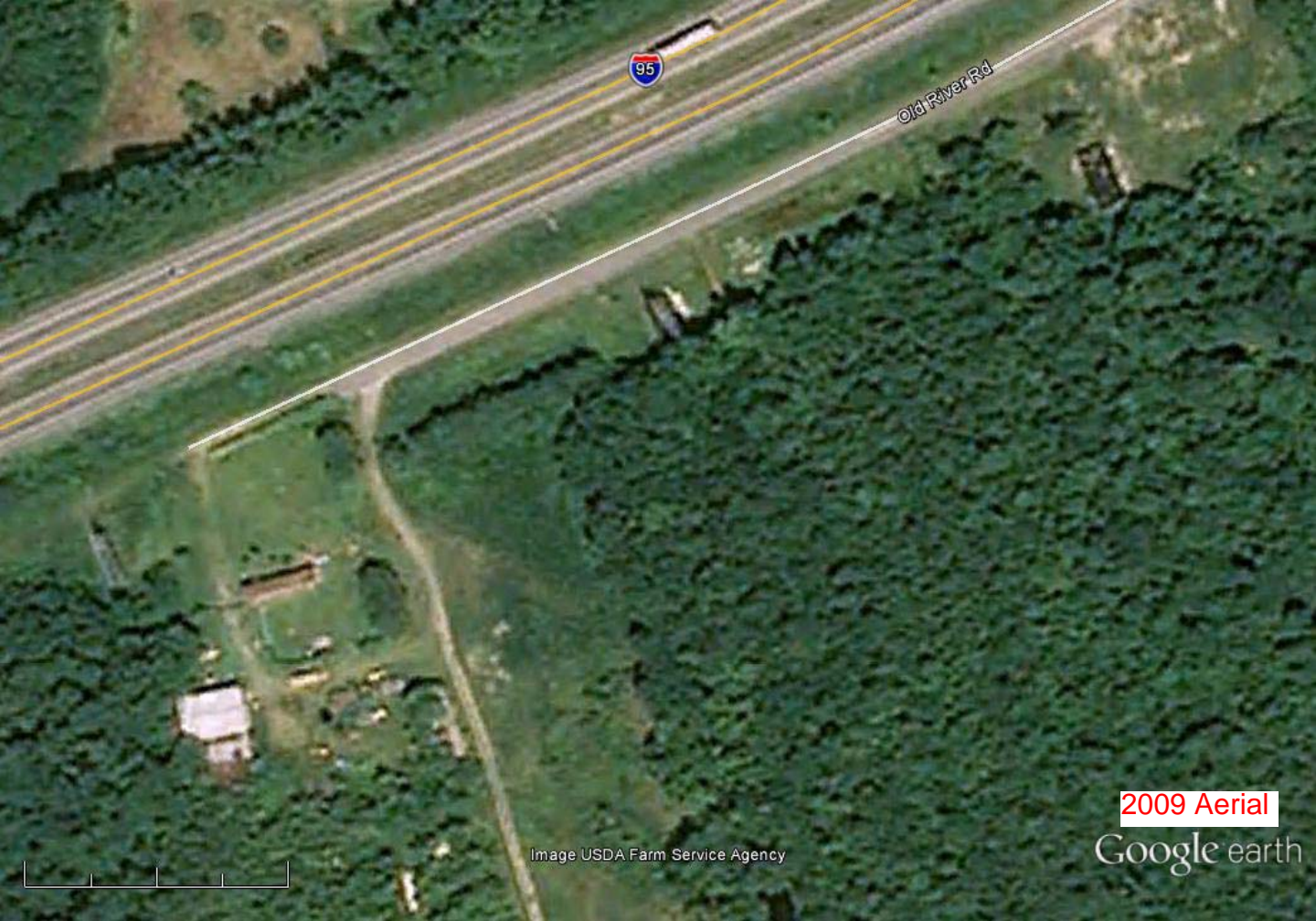
2008 Aerial

Google earth

Google earth

feet
meters





95

Old River Rd

2009 Aerial

Google earth

Image USDA Farm Service Agency



Google earth

feet
meters





96

Old River Rd

2012 Aerial

Google earth

Google earth

feet
meters



APPENDIX B



PYRAMID ENVIRONMENTAL & ENGINEERING
(PROJECT 2014-093)

GEOPHYSICAL SURVEY

PARCEL 008 –
KENNETH M. TAYLOR
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.
NC License #1066

503 INDUSTRIAL AVENUE, GREENSBORO, NC 27406

P: 336.335.3174 F: 336.691.0648

C257: GEOLOGY C1251: ENGINEERING

GEOPHYSICAL INVESTIGATION REPORT
Parcel 008, 675 Cummins Drive
Kenly, Johnston County, North Carolina

Table of Contents

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

Figures

- Figure 1 – Parcel 008 – Geophysical Survey Boundaries and Site Photographs
- Figure 2 – Parcel 008 – EM61 Differential Results Contour Map
- Figure 3 – Parcel 008 – Overlay of EM61 Contour Map On Engineering Plans
- Figure 4 – Parcel 008 – GPR Transect Locations
- Figure 5 – Parcel 008 – GPR Transect Images

EXECUTIVE SUMMARY

Project Description: Pyramid Environmental conducted a geophysical investigation for the North Carolina Department of Transportation (NCDOT), at the Kenneth M. Taylor property, Parcel 008, 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: Two of the EM61 anomalies detected could be attributed to visible objects at the ground surface; specifically, a mailbox and a reinforced concrete drainage pipe. 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 or utilities. 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 Kenneth M. Taylor property, Parcel 008, 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 440 feet from west to east and a maximum of approximately 120 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 vacant lots with billboard signs, an asphalt road, open grassy areas and zones of dense/tall vegetation. 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 response on the west side of the survey area near the entry drive to the adjacent parcel was associated with a mailbox. The EM linear response on the east side of the survey area corresponded to the location of a reinforced concrete drainage pipe crossing under the road. The remaining features in the center of the survey could not be attributed to visible objects at the ground surface, and 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 1-6 were performed at various locations across the scattered EM anomalies in the center of the profile. Collectively, the 6 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, and some isolated high amplitude reflectors were suggestive of objects or utilities. It should be noted that historical aerial photographs obtained as part of the full Preliminary Site Assessment (PSA) show unidentifiable objects/structures at the location of these EM features in the past. It is likely that these structures have been covered by vegetation/soil and are the source of the EM responses.

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.

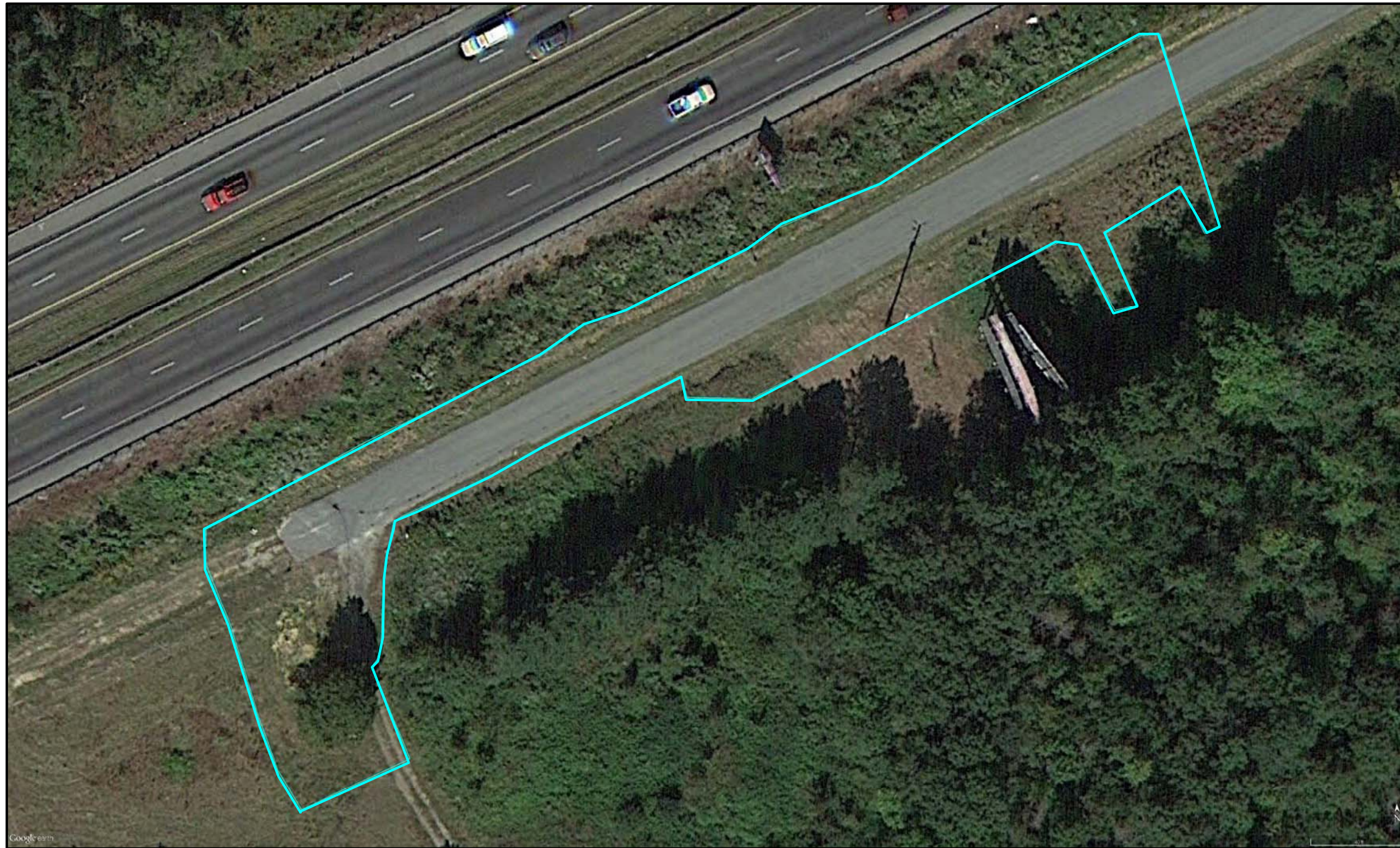
SUMMARY & CONCLUSIONS

Our evaluation of the EM61 and GPR data collected across Parcel 008 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.
- Two of the EM61 anomalies detected could be attributed to visible objects at the ground surface; specifically, a mailbox and a reinforced concrete drainage pipe.
- 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 or utilities.
- 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



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

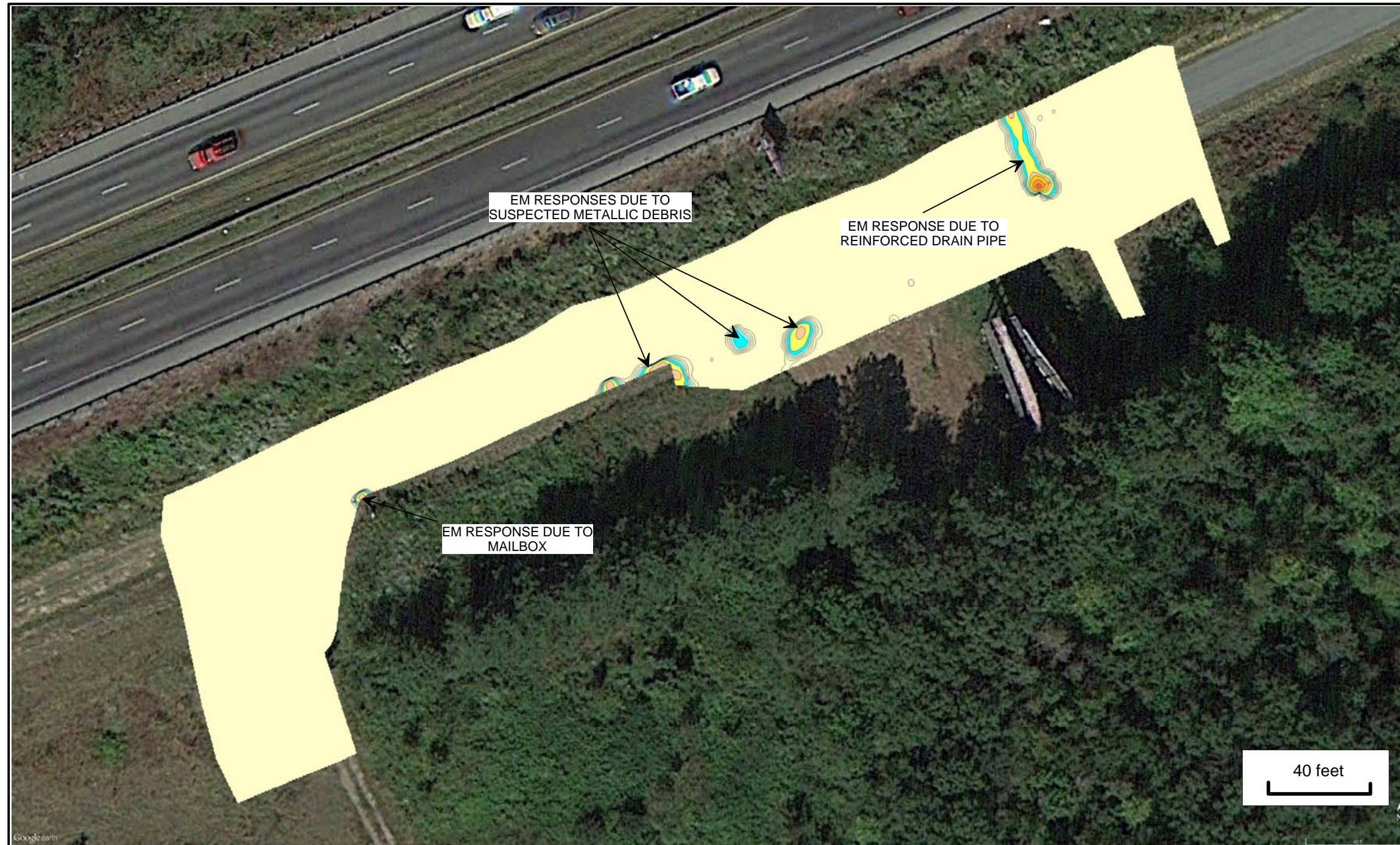


View of East Portion of Survey Area
(Facing Approximately West)

| | | |
|--------------------|--|---|
| TITLE | PARCEL 008: 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




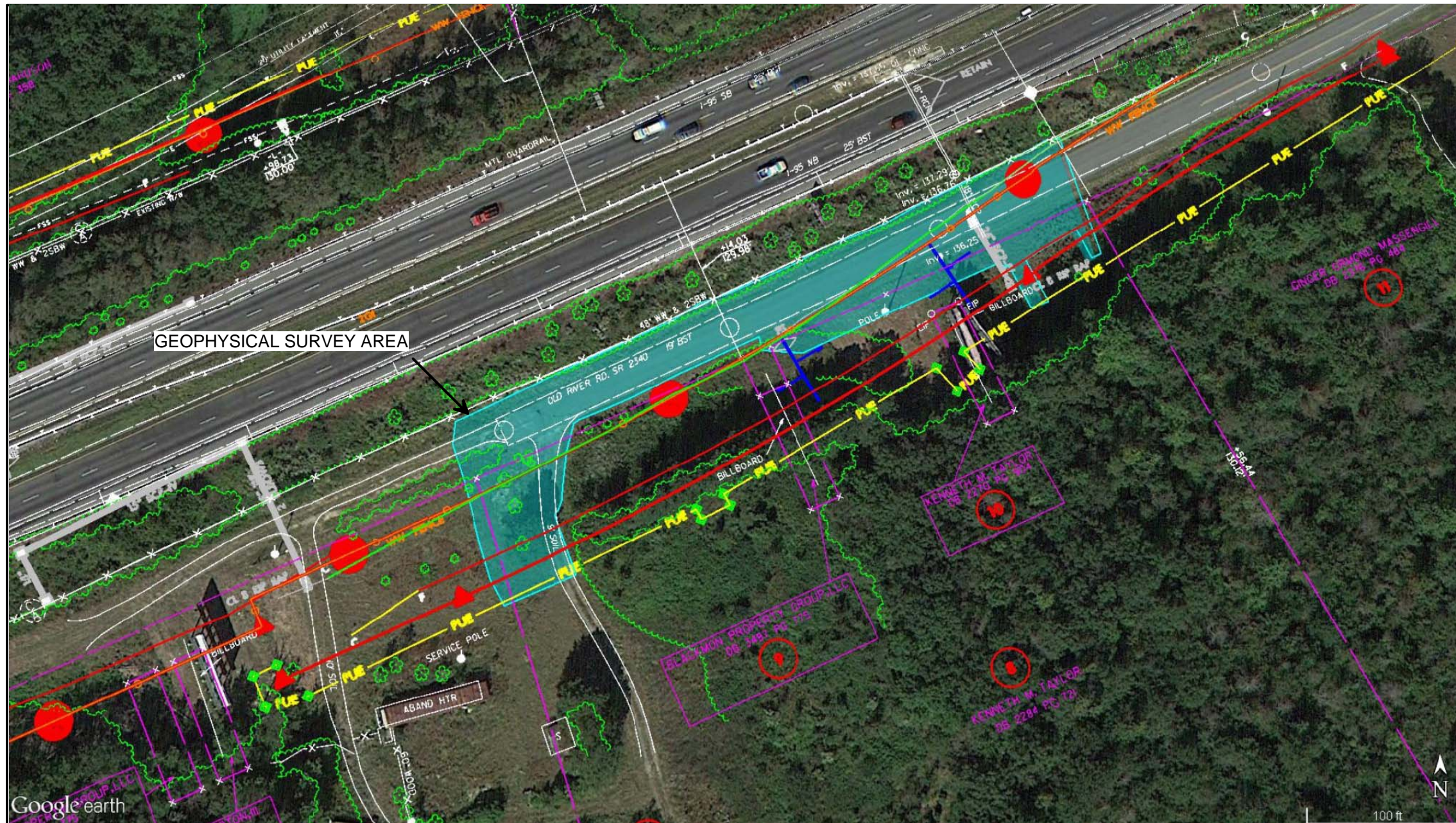
NO EVIDENCE OF METALLIC USTs OBSERVED

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)



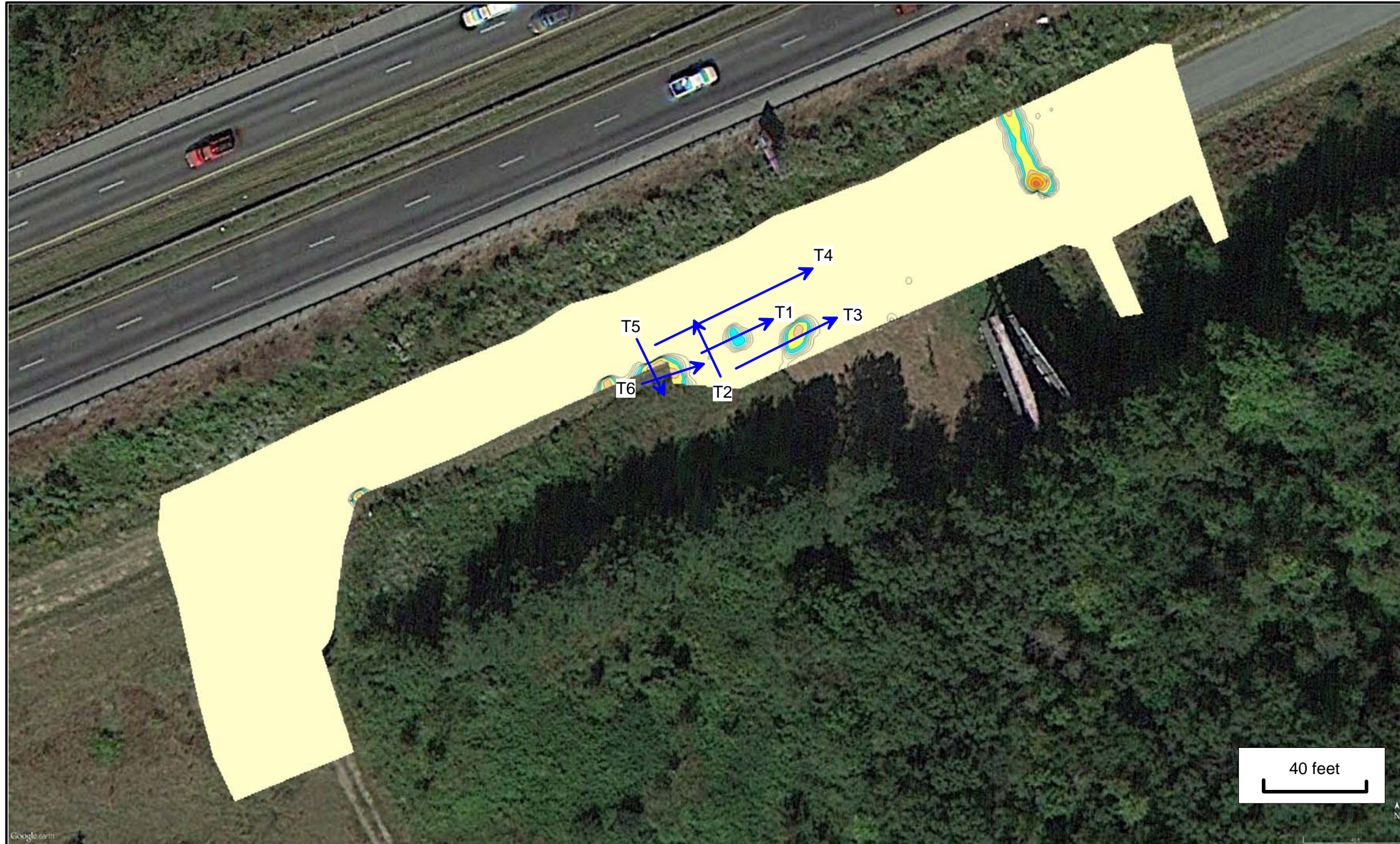
| | | |
|-----------------------|---|---|
| TITLE | PARCEL 008: EM61 DIFFERENTIAL RESULTS CONTOUR MAP | |
| PROJECT | NCDOT PROJECT I-3318BB (34182.2.1) KENLY, JOHNSTON COUNTY, NC | |
| |  | 503 INDUSTRIAL AVENUE GREENSBORO, NC 27460 (336) 335-3174 (p) (336) 691-0648 (f) License # C1251 Eng. / License # C257 Geology |
| DATE | 6/19/2014 | CLIENT NCDOT |
| PYRAMID PROJECT #: | 2014-093 | FIGURE 2 |




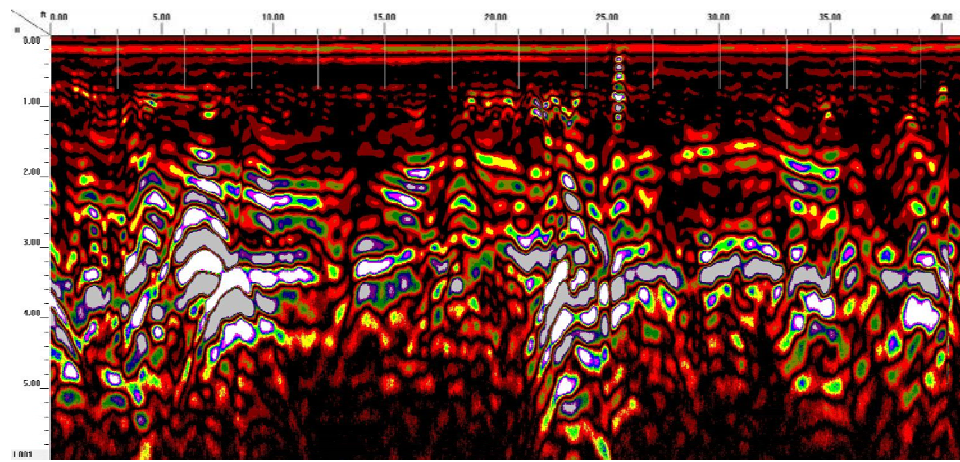
Geophysical Survey Area Overlain on NCDOT Engineering Plans
 (areas not included in survey are the result of dense/tall vegetation)

| | | |
|-----------------------|---|-----------------|
| TITLE | PARCEL 008: GEOPHYSICAL SURVEY AREA OVERLAIN ON NCDOT CADD | |
| PROJECT | NCDOT PROJECT I-3318BB (34182.2.1) KENLY, JOHNSTON COUNTY, NC | |
| |  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 |

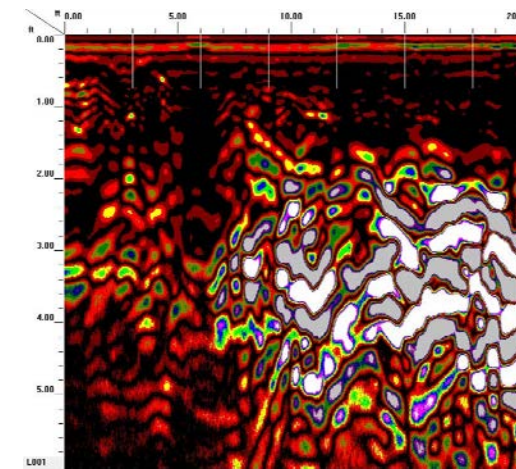
GPR Transect Locations



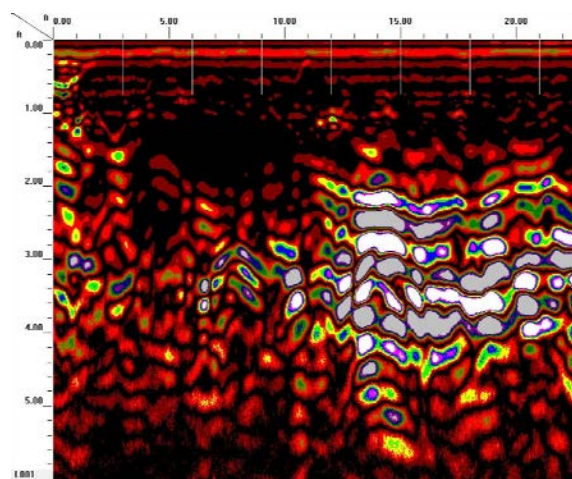
| | | |
|-----------------------|---|-----------------|
| TITLE | PARCEL 008: GPR TRANSECT LOCATIONS AND IMAGES | |
| PROJECT | NCDOT PROJECT I-3318BB (34182.2.1) KENLY, JOHNSTON COUNTY, NC | |
| |  <div style="float: right; text-align: right;"> 503 INDUSTRIAL AVENUE GREENSBORO, NC 27460 (336) 335-3174 (p) (336) 691-0648 (f) License # C1251 Eng. / License # C257 Geology </div> | |
| DATE | 6/19/2014 | CLIENT NCDOT |
| PYRAMID PROJECT #: | 2014-093 | FIGURE 4 |



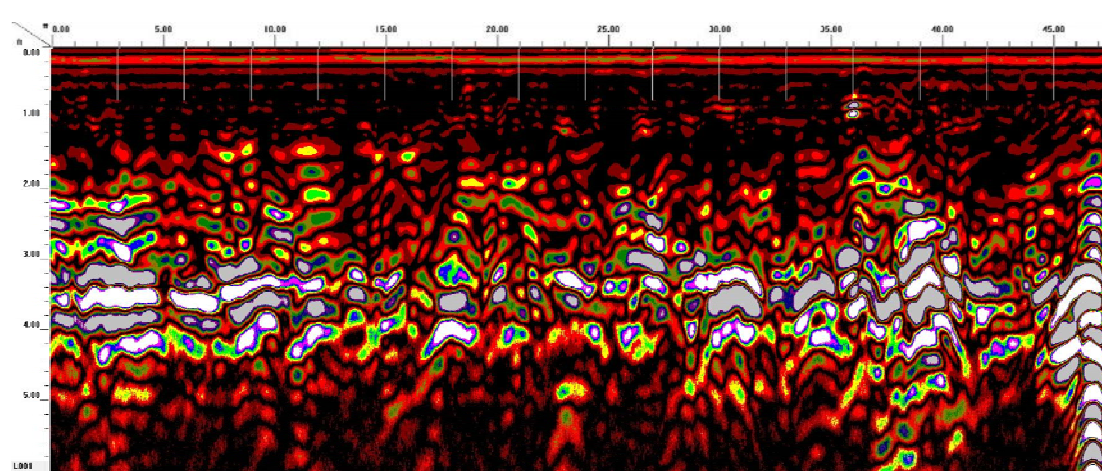
GPR TRANSECT 1



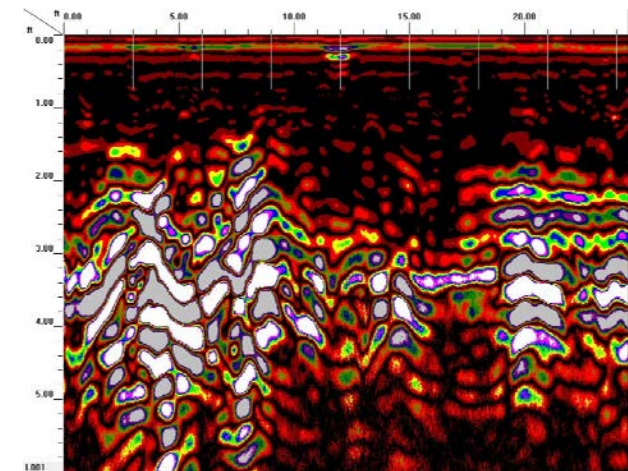
GPR TRANSECT 5



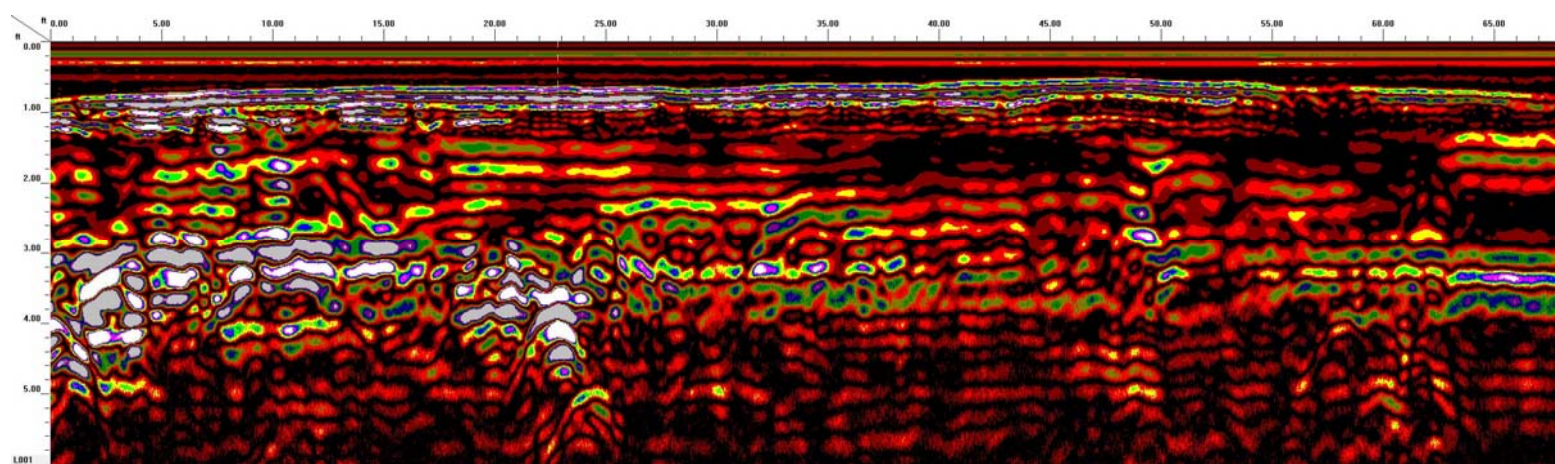
GPR TRANSECT 2



GPR TRANSECT 3




GPR TRANSECT 6



GPR TRANSECT 4



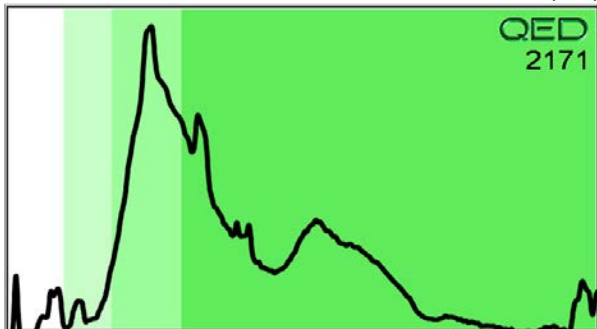
| | | | |
|---|-----------|---|-------|
| TITLE | | PARCEL 008: GPR TRANSECT IMAGES | |
| PROJECT | | NCDOT PROJECT I-3318BB (34182.2.1) KENLY, JOHNSTON COUNTY, NC | |
|  | | 503 INDUSTRIAL AVENUE GREENSBORO, NC 27460 (336) 335-3174 (p) (336) 691-0648 (f) License # C1251 Eng. / License # C257 Geology | |
| DATE | 6/19/2014 | CLIENT | NCDOT |
| PYRAMID PROJECT #: | 2014-093 | FIGURE 5 | |

APPENDIX C

APPENDIX D

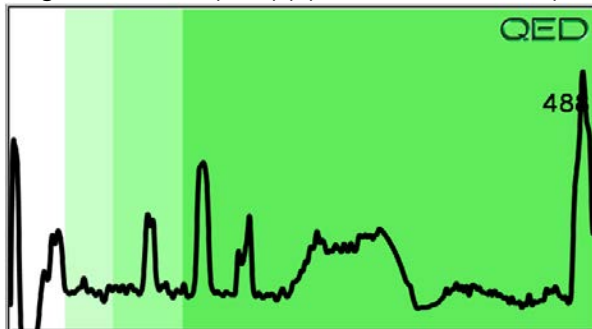
Road Tar 91.2%

8-1 (4-6)



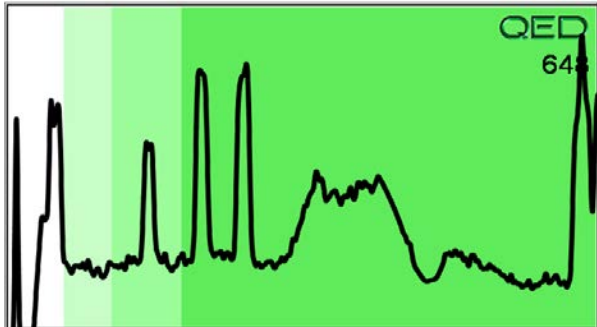
Deg.Fuel Residue (FCM) (P) 9.4%

8-2 (4-6)



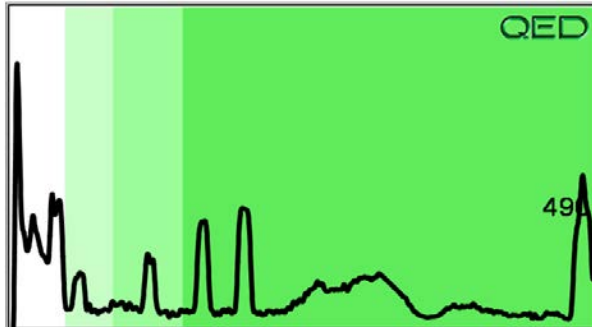
Waste Oil (FCM) (P) 14.9%

8-3 (2-4)



Deg.Fuel Residue (FCM) (P) 14.4%

8-4 (2-4)



APPENDIX E

June 12, 2014

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

RE: Project: 2014-093 Johnston 34182.1.2
Pace Project No.: 92204085

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

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

CERTIFICATIONS

Project: 2014-093 Johnston 34182.1.2

Pace Project No.: 92204085

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

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without the written consent of Pace Analytical Services, Inc..

SAMPLE ANALYTE COUNT

Project: 2014-093 Johnston 34182.1.2

Pace Project No.: 92204085

| Lab ID | Sample ID | Method | Analysts | Analytes Reported | Laboratory |
|-------------|-----------|---------------|----------|-------------------|------------|
| 92204085001 | 8-2 (4-6) | EPA 8270 | RES | 74 | PASI-C |
| | | EPA 8260 | DLK | 70 | PASI-C |
| | | ASTM D2974-87 | ZAK | 1 | PASI-C |
| 92204085002 | 8-4 (TW) | EPA 625 | BPJ | 58 | PASI-C |
| | | SM 6200B | CAH | 63 | PASI-C |

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 2014-093 Johnston 34182.1.2

Pace Project No.: 92204085

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/28189

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 92204282003

R1: RPD value was outside control limits.

- MSD (Lab ID: 1218107)
- 2,4-Dinitrophenol

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 2014-093 Johnston 34182.1.2

Pace Project No.: 92204085

Method: EPA 8270

Description: 8270 MSSV Microwave

Client: NCDOT East Central

Date: June 12, 2014

General Information:

1 sample was 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.

Matrix Spikes:

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

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 2014-093 Johnston 34182.1.2
Pace Project No.: 92204085

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:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 2014-093 Johnston 34182.1.2
Pace Project No.: 92204085

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

General Information:

1 sample was 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.

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 2014-093 Johnston 34182.1.2

Pace Project No.: 92204085

Sample: 8-2 (4-6) **Lab ID: 92204085001** Collected: 06/02/14 16:00 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 | 422 | 1 | 06/05/14 13:07 | 06/10/14 12:26 | 83-32-9 | |
| Acenaphthylene | ND | ug/kg | 422 | 1 | 06/05/14 13:07 | 06/10/14 12:26 | 208-96-8 | |
| Aniline | ND | ug/kg | 422 | 1 | 06/05/14 13:07 | 06/10/14 12:26 | 62-53-3 | |
| Anthracene | ND | ug/kg | 422 | 1 | 06/05/14 13:07 | 06/10/14 12:26 | 120-12-7 | |
| Benzo(a)anthracene | ND | ug/kg | 422 | 1 | 06/05/14 13:07 | 06/10/14 12:26 | 56-55-3 | |
| Benzo(a)pyrene | ND | ug/kg | 422 | 1 | 06/05/14 13:07 | 06/10/14 12:26 | 50-32-8 | |
| Benzo(b)fluoranthene | ND | ug/kg | 422 | 1 | 06/05/14 13:07 | 06/10/14 12:26 | 205-99-2 | |
| Benzo(g,h,i)perylene | ND | ug/kg | 422 | 1 | 06/05/14 13:07 | 06/10/14 12:26 | 191-24-2 | |
| Benzo(k)fluoranthene | ND | ug/kg | 422 | 1 | 06/05/14 13:07 | 06/10/14 12:26 | 207-08-9 | |
| Benzoic Acid | ND | ug/kg | 2110 | 1 | 06/05/14 13:07 | 06/10/14 12:26 | 65-85-0 | |
| Benzyl alcohol | ND | ug/kg | 844 | 1 | 06/05/14 13:07 | 06/10/14 12:26 | 100-51-6 | |
| 4-Bromophenylphenyl ether | ND | ug/kg | 422 | 1 | 06/05/14 13:07 | 06/10/14 12:26 | 101-55-3 | |
| Butylbenzylphthalate | ND | ug/kg | 422 | 1 | 06/05/14 13:07 | 06/10/14 12:26 | 85-68-7 | |
| 4-Chloro-3-methylphenol | ND | ug/kg | 844 | 1 | 06/05/14 13:07 | 06/10/14 12:26 | 59-50-7 | |
| 4-Chloroaniline | ND | ug/kg | 2110 | 1 | 06/05/14 13:07 | 06/10/14 12:26 | 106-47-8 | |
| bis(2-Chloroethoxy)methane | ND | ug/kg | 422 | 1 | 06/05/14 13:07 | 06/10/14 12:26 | 111-91-1 | |
| bis(2-Chloroethyl) ether | ND | ug/kg | 422 | 1 | 06/05/14 13:07 | 06/10/14 12:26 | 111-44-4 | |
| bis(2-Chloroisopropyl) ether | ND | ug/kg | 422 | 1 | 06/05/14 13:07 | 06/10/14 12:26 | 108-60-1 | |
| 2-Chloronaphthalene | ND | ug/kg | 422 | 1 | 06/05/14 13:07 | 06/10/14 12:26 | 91-58-7 | |
| 2-Chlorophenol | ND | ug/kg | 422 | 1 | 06/05/14 13:07 | 06/10/14 12:26 | 95-57-8 | |
| 4-Chlorophenylphenyl ether | ND | ug/kg | 422 | 1 | 06/05/14 13:07 | 06/10/14 12:26 | 7005-72-3 | |
| Chrysene | ND | ug/kg | 422 | 1 | 06/05/14 13:07 | 06/10/14 12:26 | 218-01-9 | |
| Dibenz(a,h)anthracene | ND | ug/kg | 422 | 1 | 06/05/14 13:07 | 06/10/14 12:26 | 53-70-3 | |
| Dibenzofuran | ND | ug/kg | 422 | 1 | 06/05/14 13:07 | 06/10/14 12:26 | 132-64-9 | |
| 1,2-Dichlorobenzene | ND | ug/kg | 422 | 1 | 06/05/14 13:07 | 06/10/14 12:26 | 95-50-1 | |
| 1,3-Dichlorobenzene | ND | ug/kg | 422 | 1 | 06/05/14 13:07 | 06/10/14 12:26 | 541-73-1 | |
| 1,4-Dichlorobenzene | ND | ug/kg | 422 | 1 | 06/05/14 13:07 | 06/10/14 12:26 | 106-46-7 | |
| 3,3'-Dichlorobenzidine | ND | ug/kg | 2110 | 1 | 06/05/14 13:07 | 06/10/14 12:26 | 91-94-1 | |
| 2,4-Dichlorophenol | ND | ug/kg | 422 | 1 | 06/05/14 13:07 | 06/10/14 12:26 | 120-83-2 | |
| Diethylphthalate | ND | ug/kg | 422 | 1 | 06/05/14 13:07 | 06/10/14 12:26 | 84-66-2 | |
| 2,4-Dimethylphenol | ND | ug/kg | 422 | 1 | 06/05/14 13:07 | 06/10/14 12:26 | 105-67-9 | |
| Dimethylphthalate | ND | ug/kg | 422 | 1 | 06/05/14 13:07 | 06/10/14 12:26 | 131-11-3 | |
| Di-n-butylphthalate | ND | ug/kg | 422 | 1 | 06/05/14 13:07 | 06/10/14 12:26 | 84-74-2 | |
| 4,6-Dinitro-2-methylphenol | ND | ug/kg | 844 | 1 | 06/05/14 13:07 | 06/10/14 12:26 | 534-52-1 | |
| 2,4-Dinitrophenol | ND | ug/kg | 2110 | 1 | 06/05/14 13:07 | 06/10/14 12:26 | 51-28-5 | |
| 2,4-Dinitrotoluene | ND | ug/kg | 422 | 1 | 06/05/14 13:07 | 06/10/14 12:26 | 121-14-2 | |
| 2,6-Dinitrotoluene | ND | ug/kg | 422 | 1 | 06/05/14 13:07 | 06/10/14 12:26 | 606-20-2 | |
| Di-n-octylphthalate | ND | ug/kg | 422 | 1 | 06/05/14 13:07 | 06/10/14 12:26 | 117-84-0 | |
| bis(2-Ethylhexyl)phthalate | ND | ug/kg | 422 | 1 | 06/05/14 13:07 | 06/10/14 12:26 | 117-81-7 | |
| Fluoranthene | ND | ug/kg | 422 | 1 | 06/05/14 13:07 | 06/10/14 12:26 | 206-44-0 | |
| Fluorene | ND | ug/kg | 422 | 1 | 06/05/14 13:07 | 06/10/14 12:26 | 86-73-7 | |
| Hexachloro-1,3-butadiene | ND | ug/kg | 422 | 1 | 06/05/14 13:07 | 06/10/14 12:26 | 87-68-3 | |
| Hexachlorobenzene | ND | ug/kg | 422 | 1 | 06/05/14 13:07 | 06/10/14 12:26 | 118-74-1 | |
| Hexachlorocyclopentadiene | ND | ug/kg | 422 | 1 | 06/05/14 13:07 | 06/10/14 12:26 | 77-47-4 | |
| Hexachloroethane | ND | ug/kg | 422 | 1 | 06/05/14 13:07 | 06/10/14 12:26 | 67-72-1 | |
| Indeno(1,2,3-cd)pyrene | ND | ug/kg | 422 | 1 | 06/05/14 13:07 | 06/10/14 12:26 | 193-39-5 | |

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 2014-093 Johnston 34182.1.2

Pace Project No.: 92204085

Sample: 8-2 (4-6) **Lab ID: 92204085001** Collected: 06/02/14 16:00 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 | 422 | 1 | 06/05/14 13:07 | 06/10/14 12:26 | 78-59-1 | |
| 1-Methylnaphthalene | ND | ug/kg | 422 | 1 | 06/05/14 13:07 | 06/10/14 12:26 | 90-12-0 | |
| 2-Methylnaphthalene | ND | ug/kg | 422 | 1 | 06/05/14 13:07 | 06/10/14 12:26 | 91-57-6 | |
| 2-Methylphenol(o-Cresol) | ND | ug/kg | 422 | 1 | 06/05/14 13:07 | 06/10/14 12:26 | 95-48-7 | |
| 3&4-Methylphenol(m&p Cresol) | ND | ug/kg | 422 | 1 | 06/05/14 13:07 | 06/10/14 12:26 | | |
| Naphthalene | ND | ug/kg | 422 | 1 | 06/05/14 13:07 | 06/10/14 12:26 | 91-20-3 | |
| 2-Nitroaniline | ND | ug/kg | 2110 | 1 | 06/05/14 13:07 | 06/10/14 12:26 | 88-74-4 | |
| 3-Nitroaniline | ND | ug/kg | 2110 | 1 | 06/05/14 13:07 | 06/10/14 12:26 | 99-09-2 | |
| 4-Nitroaniline | ND | ug/kg | 844 | 1 | 06/05/14 13:07 | 06/10/14 12:26 | 100-01-6 | |
| Nitrobenzene | ND | ug/kg | 422 | 1 | 06/05/14 13:07 | 06/10/14 12:26 | 98-95-3 | |
| 2-Nitrophenol | ND | ug/kg | 422 | 1 | 06/05/14 13:07 | 06/10/14 12:26 | 88-75-5 | |
| 4-Nitrophenol | ND | ug/kg | 2110 | 1 | 06/05/14 13:07 | 06/10/14 12:26 | 100-02-7 | |
| N-Nitrosodimethylamine | ND | ug/kg | 422 | 1 | 06/05/14 13:07 | 06/10/14 12:26 | 62-75-9 | |
| N-Nitroso-di-n-propylamine | ND | ug/kg | 422 | 1 | 06/05/14 13:07 | 06/10/14 12:26 | 621-64-7 | |
| N-Nitrosodiphenylamine | ND | ug/kg | 422 | 1 | 06/05/14 13:07 | 06/10/14 12:26 | 86-30-6 | |
| Pentachlorophenol | ND | ug/kg | 2110 | 1 | 06/05/14 13:07 | 06/10/14 12:26 | 87-86-5 | |
| Phenanthrene | ND | ug/kg | 422 | 1 | 06/05/14 13:07 | 06/10/14 12:26 | 85-01-8 | |
| Phenol | ND | ug/kg | 422 | 1 | 06/05/14 13:07 | 06/10/14 12:26 | 108-95-2 | |
| Pyrene | ND | ug/kg | 422 | 1 | 06/05/14 13:07 | 06/10/14 12:26 | 129-00-0 | |
| 1,2,4-Trichlorobenzene | ND | ug/kg | 422 | 1 | 06/05/14 13:07 | 06/10/14 12:26 | 120-82-1 | |
| 2,4,5-Trichlorophenol | ND | ug/kg | 422 | 1 | 06/05/14 13:07 | 06/10/14 12:26 | 95-95-4 | |
| 2,4,6-Trichlorophenol | ND | ug/kg | 422 | 1 | 06/05/14 13:07 | 06/10/14 12:26 | 88-06-2 | |
| Surrogates | | | | | | | | |
| Nitrobenzene-d5 (S) | 43 % | | 23-110 | 1 | 06/05/14 13:07 | 06/10/14 12:26 | 4165-60-0 | |
| 2-Fluorobiphenyl (S) | 47 % | | 30-110 | 1 | 06/05/14 13:07 | 06/10/14 12:26 | 321-60-8 | |
| Terphenyl-d14 (S) | 79 % | | 28-110 | 1 | 06/05/14 13:07 | 06/10/14 12:26 | 1718-51-0 | |
| Phenol-d6 (S) | 44 % | | 22-110 | 1 | 06/05/14 13:07 | 06/10/14 12:26 | 13127-88-3 | |
| 2-Fluorophenol (S) | 45 % | | 13-110 | 1 | 06/05/14 13:07 | 06/10/14 12:26 | 367-12-4 | |
| 2,4,6-Tribromophenol (S) | 59 % | | 27-110 | 1 | 06/05/14 13:07 | 06/10/14 12:26 | 118-79-6 | |
| 8260/5035A Volatile Organics | | Analytical Method: EPA 8260 | | | | | | |
| Acetone | ND | ug/kg | 110 | 1 | | 06/09/14 17:52 | 67-64-1 | |
| Benzene | ND | ug/kg | 5.5 | 1 | | 06/09/14 17:52 | 71-43-2 | |
| Bromobenzene | ND | ug/kg | 5.5 | 1 | | 06/09/14 17:52 | 108-86-1 | |
| Bromochloromethane | ND | ug/kg | 5.5 | 1 | | 06/09/14 17:52 | 74-97-5 | |
| Bromodichloromethane | ND | ug/kg | 5.5 | 1 | | 06/09/14 17:52 | 75-27-4 | |
| Bromoform | ND | ug/kg | 5.5 | 1 | | 06/09/14 17:52 | 75-25-2 | |
| Bromomethane | ND | ug/kg | 11.0 | 1 | | 06/09/14 17:52 | 74-83-9 | |
| 2-Butanone (MEK) | ND | ug/kg | 110 | 1 | | 06/09/14 17:52 | 78-93-3 | |
| n-Butylbenzene | ND | ug/kg | 5.5 | 1 | | 06/09/14 17:52 | 104-51-8 | |
| sec-Butylbenzene | ND | ug/kg | 5.5 | 1 | | 06/09/14 17:52 | 135-98-8 | |
| tert-Butylbenzene | ND | ug/kg | 5.5 | 1 | | 06/09/14 17:52 | 98-06-6 | |
| Carbon tetrachloride | ND | ug/kg | 5.5 | 1 | | 06/09/14 17:52 | 56-23-5 | |
| Chlorobenzene | ND | ug/kg | 5.5 | 1 | | 06/09/14 17:52 | 108-90-7 | |
| Chloroethane | ND | ug/kg | 11.0 | 1 | | 06/09/14 17:52 | 75-00-3 | |
| Chloroform | ND | ug/kg | 5.5 | 1 | | 06/09/14 17:52 | 67-66-3 | |

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 2014-093 Johnston 34182.1.2

Pace Project No.: 92204085

Sample: 8-2 (4-6) **Lab ID: 92204085001** Collected: 06/02/14 16:00 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 | 11.0 | 1 | | 06/09/14 17:52 | 74-87-3 | |
| 2-Chlorotoluene | ND | ug/kg | 5.5 | 1 | | 06/09/14 17:52 | 95-49-8 | |
| 4-Chlorotoluene | ND | ug/kg | 5.5 | 1 | | 06/09/14 17:52 | 106-43-4 | |
| 1,2-Dibromo-3-chloropropane | ND | ug/kg | 5.5 | 1 | | 06/09/14 17:52 | 96-12-8 | |
| Dibromochloromethane | ND | ug/kg | 5.5 | 1 | | 06/09/14 17:52 | 124-48-1 | |
| 1,2-Dibromoethane (EDB) | ND | ug/kg | 5.5 | 1 | | 06/09/14 17:52 | 106-93-4 | |
| Dibromomethane | ND | ug/kg | 5.5 | 1 | | 06/09/14 17:52 | 74-95-3 | |
| 1,2-Dichlorobenzene | ND | ug/kg | 5.5 | 1 | | 06/09/14 17:52 | 95-50-1 | |
| 1,3-Dichlorobenzene | ND | ug/kg | 5.5 | 1 | | 06/09/14 17:52 | 541-73-1 | |
| 1,4-Dichlorobenzene | ND | ug/kg | 5.5 | 1 | | 06/09/14 17:52 | 106-46-7 | |
| Dichlorodifluoromethane | ND | ug/kg | 11.0 | 1 | | 06/09/14 17:52 | 75-71-8 | |
| 1,1-Dichloroethane | ND | ug/kg | 5.5 | 1 | | 06/09/14 17:52 | 75-34-3 | |
| 1,2-Dichloroethane | ND | ug/kg | 5.5 | 1 | | 06/09/14 17:52 | 107-06-2 | |
| 1,1-Dichloroethene | ND | ug/kg | 5.5 | 1 | | 06/09/14 17:52 | 75-35-4 | |
| cis-1,2-Dichloroethene | ND | ug/kg | 5.5 | 1 | | 06/09/14 17:52 | 156-59-2 | |
| trans-1,2-Dichloroethene | ND | ug/kg | 5.5 | 1 | | 06/09/14 17:52 | 156-60-5 | |
| 1,2-Dichloropropane | ND | ug/kg | 5.5 | 1 | | 06/09/14 17:52 | 78-87-5 | |
| 1,3-Dichloropropane | ND | ug/kg | 5.5 | 1 | | 06/09/14 17:52 | 142-28-9 | |
| 2,2-Dichloropropane | ND | ug/kg | 5.5 | 1 | | 06/09/14 17:52 | 594-20-7 | |
| 1,1-Dichloropropene | ND | ug/kg | 5.5 | 1 | | 06/09/14 17:52 | 563-58-6 | |
| cis-1,3-Dichloropropene | ND | ug/kg | 5.5 | 1 | | 06/09/14 17:52 | 10061-01-5 | |
| trans-1,3-Dichloropropene | ND | ug/kg | 5.5 | 1 | | 06/09/14 17:52 | 10061-02-6 | |
| Diisopropyl ether | ND | ug/kg | 5.5 | 1 | | 06/09/14 17:52 | 108-20-3 | |
| Ethylbenzene | ND | ug/kg | 5.5 | 1 | | 06/09/14 17:52 | 100-41-4 | |
| Hexachloro-1,3-butadiene | ND | ug/kg | 5.5 | 1 | | 06/09/14 17:52 | 87-68-3 | |
| 2-Hexanone | ND | ug/kg | 55.0 | 1 | | 06/09/14 17:52 | 591-78-6 | |
| Isopropylbenzene (Cumene) | ND | ug/kg | 5.5 | 1 | | 06/09/14 17:52 | 98-82-8 | |
| p-Isopropyltoluene | ND | ug/kg | 5.5 | 1 | | 06/09/14 17:52 | 99-87-6 | |
| Methylene Chloride | ND | ug/kg | 22.0 | 1 | | 06/09/14 17:52 | 75-09-2 | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/kg | 55.0 | 1 | | 06/09/14 17:52 | 108-10-1 | |
| Methyl-tert-butyl ether | ND | ug/kg | 5.5 | 1 | | 06/09/14 17:52 | 1634-04-4 | |
| Naphthalene | ND | ug/kg | 5.5 | 1 | | 06/09/14 17:52 | 91-20-3 | |
| n-Propylbenzene | ND | ug/kg | 5.5 | 1 | | 06/09/14 17:52 | 103-65-1 | |
| Styrene | ND | ug/kg | 5.5 | 1 | | 06/09/14 17:52 | 100-42-5 | |
| 1,1,1,2-Tetrachloroethane | ND | ug/kg | 5.5 | 1 | | 06/09/14 17:52 | 630-20-6 | |
| 1,1,2,2-Tetrachloroethane | ND | ug/kg | 5.5 | 1 | | 06/09/14 17:52 | 79-34-5 | |
| Tetrachloroethene | ND | ug/kg | 5.5 | 1 | | 06/09/14 17:52 | 127-18-4 | |
| Toluene | ND | ug/kg | 5.5 | 1 | | 06/09/14 17:52 | 108-88-3 | |
| 1,2,3-Trichlorobenzene | ND | ug/kg | 5.5 | 1 | | 06/09/14 17:52 | 87-61-6 | |
| 1,2,4-Trichlorobenzene | ND | ug/kg | 5.5 | 1 | | 06/09/14 17:52 | 120-82-1 | |
| 1,1,1-Trichloroethane | ND | ug/kg | 5.5 | 1 | | 06/09/14 17:52 | 71-55-6 | |
| 1,1,2-Trichloroethane | ND | ug/kg | 5.5 | 1 | | 06/09/14 17:52 | 79-00-5 | |
| Trichloroethene | ND | ug/kg | 5.5 | 1 | | 06/09/14 17:52 | 79-01-6 | |
| Trichlorofluoromethane | ND | ug/kg | 5.5 | 1 | | 06/09/14 17:52 | 75-69-4 | |
| 1,2,3-Trichloropropane | ND | ug/kg | 5.5 | 1 | | 06/09/14 17:52 | 96-18-4 | |
| 1,2,4-Trimethylbenzene | ND | ug/kg | 5.5 | 1 | | 06/09/14 17:52 | 95-63-6 | |

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 2014-093 Johnston 34182.1.2

Pace Project No.: 92204085

Sample: 8-2 (4-6) **Lab ID: 92204085001** Collected: 06/02/14 16:00 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 | 5.5 | 1 | | 06/09/14 17:52 | 108-67-8 | |
| Vinyl acetate | ND | ug/kg | 55.0 | 1 | | 06/09/14 17:52 | 108-05-4 | |
| Vinyl chloride | ND | ug/kg | 11.0 | 1 | | 06/09/14 17:52 | 75-01-4 | |
| Xylene (Total) | ND | ug/kg | 11.0 | 1 | | 06/09/14 17:52 | 1330-20-7 | |
| m&p-Xylene | ND | ug/kg | 11.0 | 1 | | 06/09/14 17:52 | 179601-23-1 | |
| o-Xylene | ND | ug/kg | 5.5 | 1 | | 06/09/14 17:52 | 95-47-6 | |
| Surrogates | | | | | | | | |
| Toluene-d8 (S) | 101 | % | 70-130 | 1 | | 06/09/14 17:52 | 2037-26-5 | |
| 4-Bromofluorobenzene (S) | 102 | % | 70-130 | 1 | | 06/09/14 17:52 | 460-00-4 | |
| 1,2-Dichloroethane-d4 (S) | 113 | % | 70-132 | 1 | | 06/09/14 17:52 | 17060-07-0 | |
| Percent Moisture | | Analytical Method: ASTM D2974-87 | | | | | | |
| Percent Moisture | 21.8 | % | 0.10 | 1 | | 06/12/14 16:10 | | |

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 2014-093 Johnston 34182.1.2

Pace Project No.: 92204085

| Sample: 8-4 (TW) | | Lab ID: 92204085002 | Collected: 06/03/14 08:05 | 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 | | 5.6 | 1 | 06/10/14 16:53 | 06/11/14 22:27 | 83-32-9 | |
| Acenaphthylene | ND ug/L | | 5.6 | 1 | 06/10/14 16:53 | 06/11/14 22:27 | 208-96-8 | |
| Anthracene | ND ug/L | | 5.6 | 1 | 06/10/14 16:53 | 06/11/14 22:27 | 120-12-7 | |
| Benzo(a)anthracene | ND ug/L | | 5.6 | 1 | 06/10/14 16:53 | 06/11/14 22:27 | 56-55-3 | |
| Benzo(a)pyrene | ND ug/L | | 5.6 | 1 | 06/10/14 16:53 | 06/11/14 22:27 | 50-32-8 | |
| Benzo(b)fluoranthene | ND ug/L | | 5.6 | 1 | 06/10/14 16:53 | 06/11/14 22:27 | 205-99-2 | |
| Benzo(g,h,i)perylene | ND ug/L | | 5.6 | 1 | 06/10/14 16:53 | 06/11/14 22:27 | 191-24-2 | |
| Benzo(k)fluoranthene | ND ug/L | | 5.6 | 1 | 06/10/14 16:53 | 06/11/14 22:27 | 207-08-9 | |
| 4-Bromophenylphenyl ether | ND ug/L | | 5.6 | 1 | 06/10/14 16:53 | 06/11/14 22:27 | 101-55-3 | |
| Butylbenzylphthalate | ND ug/L | | 5.6 | 1 | 06/10/14 16:53 | 06/11/14 22:27 | 85-68-7 | |
| 4-Chloro-3-methylphenol | ND ug/L | | 5.6 | 1 | 06/10/14 16:53 | 06/11/14 22:27 | 59-50-7 | |
| bis(2-Chloroethoxy)methane | ND ug/L | | 11.1 | 1 | 06/10/14 16:53 | 06/11/14 22:27 | 111-91-1 | |
| bis(2-Chloroethyl) ether | ND ug/L | | 5.6 | 1 | 06/10/14 16:53 | 06/11/14 22:27 | 111-44-4 | |
| bis(2-Chloroisopropyl) ether | ND ug/L | | 5.6 | 1 | 06/10/14 16:53 | 06/11/14 22:27 | 108-60-1 | |
| 2-Chloronaphthalene | ND ug/L | | 5.6 | 1 | 06/10/14 16:53 | 06/11/14 22:27 | 91-58-7 | |
| 2-Chlorophenol | ND ug/L | | 5.6 | 1 | 06/10/14 16:53 | 06/11/14 22:27 | 95-57-8 | |
| 4-Chlorophenylphenyl ether | ND ug/L | | 5.6 | 1 | 06/10/14 16:53 | 06/11/14 22:27 | 7005-72-3 | |
| Chrysene | ND ug/L | | 5.6 | 1 | 06/10/14 16:53 | 06/11/14 22:27 | 218-01-9 | |
| Dibenz(a,h)anthracene | ND ug/L | | 5.6 | 1 | 06/10/14 16:53 | 06/11/14 22:27 | 53-70-3 | |
| 3,3'-Dichlorobenzidine | ND ug/L | | 27.8 | 1 | 06/10/14 16:53 | 06/11/14 22:27 | 91-94-1 | |
| 2,4-Dichlorophenol | ND ug/L | | 5.6 | 1 | 06/10/14 16:53 | 06/11/14 22:27 | 120-83-2 | |
| Diethylphthalate | ND ug/L | | 5.6 | 1 | 06/10/14 16:53 | 06/11/14 22:27 | 84-66-2 | |
| 2,4-Dimethylphenol | ND ug/L | | 11.1 | 1 | 06/10/14 16:53 | 06/11/14 22:27 | 105-67-9 | |
| Dimethylphthalate | ND ug/L | | 5.6 | 1 | 06/10/14 16:53 | 06/11/14 22:27 | 131-11-3 | |
| Di-n-butylphthalate | ND ug/L | | 5.6 | 1 | 06/10/14 16:53 | 06/11/14 22:27 | 84-74-2 | |
| 4,6-Dinitro-2-methylphenol | ND ug/L | | 22.2 | 1 | 06/10/14 16:53 | 06/11/14 22:27 | 534-52-1 | |
| 2,4-Dinitrophenol | ND ug/L | | 55.6 | 1 | 06/10/14 16:53 | 06/11/14 22:27 | 51-28-5 | |
| 2,4-Dinitrotoluene | ND ug/L | | 5.6 | 1 | 06/10/14 16:53 | 06/11/14 22:27 | 121-14-2 | |
| 2,6-Dinitrotoluene | ND ug/L | | 5.6 | 1 | 06/10/14 16:53 | 06/11/14 22:27 | 606-20-2 | |
| Di-n-octylphthalate | ND ug/L | | 5.6 | 1 | 06/10/14 16:53 | 06/11/14 22:27 | 117-84-0 | |
| bis(2-Ethylhexyl)phthalate | ND ug/L | | 5.6 | 1 | 06/10/14 16:53 | 06/11/14 22:27 | 117-81-7 | |
| Fluoranthene | ND ug/L | | 5.6 | 1 | 06/10/14 16:53 | 06/11/14 22:27 | 206-44-0 | |
| Fluorene | ND ug/L | | 5.6 | 1 | 06/10/14 16:53 | 06/11/14 22:27 | 86-73-7 | |
| Hexachloro-1,3-butadiene | ND ug/L | | 5.6 | 1 | 06/10/14 16:53 | 06/11/14 22:27 | 87-68-3 | |
| Hexachlorobenzene | ND ug/L | | 5.6 | 1 | 06/10/14 16:53 | 06/11/14 22:27 | 118-74-1 | |
| Hexachlorocyclopentadiene | ND ug/L | | 11.1 | 1 | 06/10/14 16:53 | 06/11/14 22:27 | 77-47-4 | |
| Hexachloroethane | ND ug/L | | 5.6 | 1 | 06/10/14 16:53 | 06/11/14 22:27 | 67-72-1 | |
| Indeno(1,2,3-cd)pyrene | ND ug/L | | 5.6 | 1 | 06/10/14 16:53 | 06/11/14 22:27 | 193-39-5 | |
| Isophorone | ND ug/L | | 11.1 | 1 | 06/10/14 16:53 | 06/11/14 22:27 | 78-59-1 | |
| Naphthalene | ND ug/L | | 5.6 | 1 | 06/10/14 16:53 | 06/11/14 22:27 | 91-20-3 | |
| Nitrobenzene | ND ug/L | | 5.6 | 1 | 06/10/14 16:53 | 06/11/14 22:27 | 98-95-3 | |
| 2-Nitrophenol | ND ug/L | | 5.6 | 1 | 06/10/14 16:53 | 06/11/14 22:27 | 88-75-5 | |
| 4-Nitrophenol | ND ug/L | | 55.6 | 1 | 06/10/14 16:53 | 06/11/14 22:27 | 100-02-7 | |
| N-Nitrosodimethylamine | ND ug/L | | 5.6 | 1 | 06/10/14 16:53 | 06/11/14 22:27 | 62-75-9 | |
| N-Nitroso-di-n-propylamine | ND ug/L | | 5.6 | 1 | 06/10/14 16:53 | 06/11/14 22:27 | 621-64-7 | |
| N-Nitrosodiphenylamine | ND ug/L | | 11.1 | 1 | 06/10/14 16:53 | 06/11/14 22:27 | 86-30-6 | |
| Pentachlorophenol | ND ug/L | | 11.1 | 1 | 06/10/14 16:53 | 06/11/14 22:27 | 87-86-5 | |

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 2014-093 Johnston 34182.1.2

Pace Project No.: 92204085

| Sample: 8-4 (TW) | | Lab ID: 92204085002 | Collected: 06/03/14 08:05 | 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 | | 5.6 | 1 | 06/10/14 16:53 | 06/11/14 22:27 | 85-01-8 | |
| Phenol | ND ug/L | | 5.6 | 1 | 06/10/14 16:53 | 06/11/14 22:27 | 108-95-2 | |
| Pyrene | ND ug/L | | 5.6 | 1 | 06/10/14 16:53 | 06/11/14 22:27 | 129-00-0 | |
| 1,2,4-Trichlorobenzene | ND ug/L | | 5.6 | 1 | 06/10/14 16:53 | 06/11/14 22:27 | 120-82-1 | |
| 2,4,6-Trichlorophenol | ND ug/L | | 11.1 | 1 | 06/10/14 16:53 | 06/11/14 22:27 | 88-06-2 | |
| Surrogates | | | | | | | | |
| Nitrobenzene-d5 (S) | 83 % | | 10-120 | 1 | 06/10/14 16:53 | 06/11/14 22:27 | 4165-60-0 | |
| 2-Fluorobiphenyl (S) | 61 % | | 15-120 | 1 | 06/10/14 16:53 | 06/11/14 22:27 | 321-60-8 | |
| Terphenyl-d14 (S) | 69 % | | 11-131 | 1 | 06/10/14 16:53 | 06/11/14 22:27 | 1718-51-0 | |
| Phenol-d6 (S) | 29 % | | 10-120 | 1 | 06/10/14 16:53 | 06/11/14 22:27 | 13127-88-3 | |
| 2-Fluorophenol (S) | 39 % | | 10-120 | 1 | 06/10/14 16:53 | 06/11/14 22:27 | 367-12-4 | |
| 2,4,6-Tribromophenol (S) | 100 % | | 10-137 | 1 | 06/10/14 16:53 | 06/11/14 22:27 | 118-79-6 | |
| 6200B MSV | | Analytical Method: SM 6200B | | | | | | |
| Benzene | ND ug/L | | 0.50 | 1 | | 06/05/14 16:42 | 71-43-2 | |
| Bromobenzene | ND ug/L | | 0.50 | 1 | | 06/05/14 16:42 | 108-86-1 | |
| Bromochloromethane | ND ug/L | | 0.50 | 1 | | 06/05/14 16:42 | 74-97-5 | |
| Bromodichloromethane | ND ug/L | | 0.50 | 1 | | 06/05/14 16:42 | 75-27-4 | |
| Bromoform | ND ug/L | | 0.50 | 1 | | 06/05/14 16:42 | 75-25-2 | |
| Bromomethane | ND ug/L | | 5.0 | 1 | | 06/05/14 16:42 | 74-83-9 | |
| n-Butylbenzene | ND ug/L | | 0.50 | 1 | | 06/05/14 16:42 | 104-51-8 | |
| sec-Butylbenzene | ND ug/L | | 0.50 | 1 | | 06/05/14 16:42 | 135-98-8 | |
| tert-Butylbenzene | ND ug/L | | 0.50 | 1 | | 06/05/14 16:42 | 98-06-6 | |
| Carbon tetrachloride | ND ug/L | | 0.50 | 1 | | 06/05/14 16:42 | 56-23-5 | |
| Chlorobenzene | ND ug/L | | 0.50 | 1 | | 06/05/14 16:42 | 108-90-7 | |
| Chloroethane | ND ug/L | | 1.0 | 1 | | 06/05/14 16:42 | 75-00-3 | |
| Chloroform | ND ug/L | | 0.50 | 1 | | 06/05/14 16:42 | 67-66-3 | |
| Chloromethane | ND ug/L | | 1.0 | 1 | | 06/05/14 16:42 | 74-87-3 | |
| 2-Chlorotoluene | ND ug/L | | 0.50 | 1 | | 06/05/14 16:42 | 95-49-8 | |
| 4-Chlorotoluene | ND ug/L | | 0.50 | 1 | | 06/05/14 16:42 | 106-43-4 | |
| 1,2-Dibromo-3-chloropropane | ND ug/L | | 1.0 | 1 | | 06/05/14 16:42 | 96-12-8 | |
| Dibromochloromethane | ND ug/L | | 0.50 | 1 | | 06/05/14 16:42 | 124-48-1 | |
| 1,2-Dibromoethane (EDB) | ND ug/L | | 0.50 | 1 | | 06/05/14 16:42 | 106-93-4 | |
| Dibromomethane | ND ug/L | | 0.50 | 1 | | 06/05/14 16:42 | 74-95-3 | |
| 1,2-Dichlorobenzene | ND ug/L | | 0.50 | 1 | | 06/05/14 16:42 | 95-50-1 | |
| 1,3-Dichlorobenzene | ND ug/L | | 0.50 | 1 | | 06/05/14 16:42 | 541-73-1 | |
| 1,4-Dichlorobenzene | ND ug/L | | 0.50 | 1 | | 06/05/14 16:42 | 106-46-7 | |
| Dichlorodifluoromethane | ND ug/L | | 0.50 | 1 | | 06/05/14 16:42 | 75-71-8 | |
| 1,1-Dichloroethane | ND ug/L | | 0.50 | 1 | | 06/05/14 16:42 | 75-34-3 | |
| 1,2-Dichloroethane | ND ug/L | | 0.50 | 1 | | 06/05/14 16:42 | 107-06-2 | |
| 1,1-Dichloroethene | ND ug/L | | 0.50 | 1 | | 06/05/14 16:42 | 75-35-4 | |
| cis-1,2-Dichloroethene | ND ug/L | | 0.50 | 1 | | 06/05/14 16:42 | 156-59-2 | |
| trans-1,2-Dichloroethene | ND ug/L | | 0.50 | 1 | | 06/05/14 16:42 | 156-60-5 | |
| 1,2-Dichloropropane | ND ug/L | | 0.50 | 1 | | 06/05/14 16:42 | 78-87-5 | |
| 1,3-Dichloropropane | ND ug/L | | 0.50 | 1 | | 06/05/14 16:42 | 142-28-9 | |
| 2,2-Dichloropropane | ND ug/L | | 0.50 | 1 | | 06/05/14 16:42 | 594-20-7 | |
| 1,1-Dichloropropene | ND ug/L | | 0.50 | 1 | | 06/05/14 16:42 | 563-58-6 | |

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 2014-093 Johnston 34182.1.2

Pace Project No.: 92204085

| Sample: 8-4 (TW) | | Lab ID: 92204085002 | Collected: 06/03/14 08:05 | 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 16:42 | 10061-01-5 | |
| trans-1,3-Dichloropropene | ND ug/L | | 0.50 | 1 | | 06/05/14 16:42 | 10061-02-6 | |
| Diisopropyl ether | ND ug/L | | 0.50 | 1 | | 06/05/14 16:42 | 108-20-3 | |
| Ethylbenzene | ND ug/L | | 0.50 | 1 | | 06/05/14 16:42 | 100-41-4 | |
| Hexachloro-1,3-butadiene | ND ug/L | | 2.0 | 1 | | 06/05/14 16:42 | 87-68-3 | |
| Isopropylbenzene (Cumene) | ND ug/L | | 0.50 | 1 | | 06/05/14 16:42 | 98-82-8 | |
| Methylene Chloride | ND ug/L | | 2.0 | 1 | | 06/05/14 16:42 | 75-09-2 | |
| Methyl-tert-butyl ether | ND ug/L | | 0.50 | 1 | | 06/05/14 16:42 | 1634-04-4 | |
| Naphthalene | ND ug/L | | 2.0 | 1 | | 06/05/14 16:42 | 91-20-3 | |
| n-Propylbenzene | ND ug/L | | 0.50 | 1 | | 06/05/14 16:42 | 103-65-1 | |
| Styrene | ND ug/L | | 0.50 | 1 | | 06/05/14 16:42 | 100-42-5 | |
| 1,1,1,2-Tetrachloroethane | ND ug/L | | 0.50 | 1 | | 06/05/14 16:42 | 630-20-6 | |
| 1,1,2,2-Tetrachloroethane | ND ug/L | | 0.50 | 1 | | 06/05/14 16:42 | 79-34-5 | |
| Tetrachloroethene | ND ug/L | | 0.50 | 1 | | 06/05/14 16:42 | 127-18-4 | |
| Toluene | ND ug/L | | 0.50 | 1 | | 06/05/14 16:42 | 108-88-3 | |
| 1,2,3-Trichlorobenzene | ND ug/L | | 2.0 | 1 | | 06/05/14 16:42 | 87-61-6 | |
| 1,2,4-Trichlorobenzene | ND ug/L | | 2.0 | 1 | | 06/05/14 16:42 | 120-82-1 | |
| 1,1,1-Trichloroethane | ND ug/L | | 0.50 | 1 | | 06/05/14 16:42 | 71-55-6 | |
| 1,1,2-Trichloroethane | ND ug/L | | 0.50 | 1 | | 06/05/14 16:42 | 79-00-5 | |
| Trichloroethene | ND ug/L | | 0.50 | 1 | | 06/05/14 16:42 | 79-01-6 | |
| Trichlorofluoromethane | ND ug/L | | 1.0 | 1 | | 06/05/14 16:42 | 75-69-4 | |
| 1,2,3-Trichloropropane | ND ug/L | | 0.50 | 1 | | 06/05/14 16:42 | 96-18-4 | |
| 1,2,4-Trimethylbenzene | ND ug/L | | 0.50 | 1 | | 06/05/14 16:42 | 95-63-6 | |
| 1,3,5-Trimethylbenzene | ND ug/L | | 0.50 | 1 | | 06/05/14 16:42 | 108-67-8 | |
| Vinyl chloride | ND ug/L | | 1.0 | 1 | | 06/05/14 16:42 | 75-01-4 | |
| m&p-Xylene | ND ug/L | | 1.0 | 1 | | 06/05/14 16:42 | 179601-23-1 | |
| o-Xylene | ND ug/L | | 0.50 | 1 | | 06/05/14 16:42 | 95-47-6 | |
| Surrogates | | | | | | | | |
| 1,2-Dichloroethane-d4 (S) | 97 % | | 70-130 | 1 | | 06/05/14 16:42 | 17060-07-0 | |
| 4-Bromofluorobenzene (S) | 97 % | | 70-130 | 1 | | 06/05/14 16:42 | 460-00-4 | |
| Toluene-d8 (S) | 101 % | | 70-130 | 1 | | 06/05/14 16:42 | 2037-26-5 | |

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 2014-093 Johnston 34182.1.2

Pace Project No.: 92204085

QC Batch: MSV/27102

Analysis Method: SM 6200B

QC Batch Method: SM 6200B

Analysis Description: 6200B MSV

Associated Lab Samples: 92204085002

METHOD BLANK: 1214892

Matrix: Water

Associated Lab Samples: 92204085002

| 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.

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QUALITY CONTROL DATA

Project: 2014-093 Johnston 34182.1.2

Pace Project No.: 92204085

METHOD BLANK: 1214892

Matrix: Water

Associated Lab Samples: 92204085002

| 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 | |

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 2014-093 Johnston 34182.1.2

Pace Project No.: 92204085

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

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QUALITY CONTROL DATA

Project: 2014-093 Johnston 34182.1.2

Pace Project No.: 92204085

| MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1215546 1215547 | | | | | | | | | | | | |
|--|-------|-------------|-------|-------------|-------------|--------|--------|-------|-------|--------|-----|------|
| Parameter | Units | 92204081001 | | MS | MSD | MS | | MSD | | % Rec | RPD | Qual |
| | | Result | Conc. | Spike Conc. | Spike Conc. | Result | Result | % Rec | % Rec | | | |
| 1,1,1,2-Tetrachloroethane | ug/L | ND | 20 | 20 | 20 | 21.0 | 21.4 | 105 | 107 | 60-140 | 2 | |
| 1,1,1-Trichloroethane | ug/L | ND | 20 | 20 | 20 | 21.3 | 21.3 | 107 | 106 | 60-140 | 0 | |
| 1,1,2,2-Tetrachloroethane | ug/L | ND | 20 | 20 | 20 | 20.6 | 20.8 | 103 | 104 | 60-140 | 1 | |
| 1,1,2-Trichloroethane | ug/L | ND | 20 | 20 | 20 | 21.5 | 21.6 | 107 | 108 | 60-140 | 1 | |
| 1,1-Dichloroethane | ug/L | ND | 20 | 20 | 20 | 20.4 | 20.9 | 102 | 104 | 60-140 | 2 | |
| 1,1-Dichloroethene | ug/L | ND | 20 | 20 | 20 | 22.4 | 23.3 | 112 | 116 | 60-140 | 4 | |
| 1,1-Dichloropropene | ug/L | ND | 20 | 20 | 20 | 23.2 | 23.6 | 116 | 118 | 60-140 | 1 | |
| 1,2,3-Trichlorobenzene | ug/L | ND | 20 | 20 | 20 | 19.4 | 20.4 | 97 | 102 | 60-140 | 5 | |
| 1,2,3-Trichloropropane | ug/L | ND | 20 | 20 | 20 | 20.2 | 20.2 | 101 | 101 | 60-140 | 0 | |
| 1,2,4-Trichlorobenzene | ug/L | ND | 20 | 20 | 20 | 20.1 | 20.5 | 101 | 103 | 60-140 | 2 | |
| 1,2,4-Trimethylbenzene | ug/L | ND | 20 | 20 | 20 | 22.5 | 22.8 | 113 | 114 | 60-140 | 1 | |
| 1,2-Dibromo-3-chloropropane | ug/L | ND | 20 | 20 | 20 | 17.7 | 18.5 | 89 | 92 | 60-140 | 4 | |
| 1,2-Dibromoethane (EDB) | ug/L | ND | 20 | 20 | 20 | 20.9 | 21.7 | 104 | 108 | 60-140 | 4 | |
| 1,2-Dichlorobenzene | ug/L | ND | 20 | 20 | 20 | 21.0 | 21.5 | 105 | 107 | 60-140 | 2 | |
| 1,2-Dichloroethane | ug/L | ND | 20 | 20 | 20 | 19.0 | 19.5 | 95 | 98 | 60-140 | 3 | |
| 1,2-Dichloropropane | ug/L | ND | 20 | 20 | 20 | 20.8 | 21.1 | 104 | 105 | 60-140 | 1 | |
| 1,3,5-Trimethylbenzene | ug/L | ND | 20 | 20 | 20 | 22.2 | 22.8 | 111 | 114 | 60-140 | 3 | |
| 1,3-Dichlorobenzene | ug/L | ND | 20 | 20 | 20 | 21.4 | 21.3 | 107 | 107 | 60-140 | 0 | |
| 1,3-Dichloropropane | ug/L | ND | 20 | 20 | 20 | 21.1 | 21.3 | 105 | 106 | 60-140 | 1 | |
| 1,4-Dichlorobenzene | ug/L | ND | 20 | 20 | 20 | 20.6 | 21.3 | 103 | 106 | 60-140 | 3 | |
| 2,2-Dichloropropane | ug/L | ND | 20 | 20 | 20 | 21.9 | 22.3 | 109 | 111 | 60-140 | 2 | |
| 2-Chlorotoluene | ug/L | ND | 20 | 20 | 20 | 21.2 | 21.9 | 106 | 109 | 60-140 | 3 | |
| 4-Chlorotoluene | ug/L | ND | 20 | 20 | 20 | 20.4 | 21.1 | 102 | 106 | 60-140 | 3 | |
| Benzene | ug/L | ND | 20 | 20 | 20 | 23.1 | 23.3 | 115 | 117 | 60-140 | 1 | |
| Bromobenzene | ug/L | ND | 20 | 20 | 20 | 21.3 | 21.5 | 107 | 107 | 60-140 | 1 | |
| Bromochloromethane | ug/L | ND | 20 | 20 | 20 | 21.9 | 22.5 | 110 | 112 | 60-140 | 3 | |
| Bromodichloromethane | ug/L | ND | 20 | 20 | 20 | 20.4 | 20.1 | 102 | 101 | 60-140 | 1 | |
| Bromoform | ug/L | ND | 20 | 20 | 20 | 17.6 | 17.8 | 88 | 89 | 60-140 | 1 | |
| Bromomethane | ug/L | ND | 20 | 20 | 20 | 23.0 | 24.1 | 115 | 121 | 60-140 | 5 | |
| Carbon tetrachloride | ug/L | ND | 20 | 20 | 20 | 22.1 | 22.4 | 110 | 112 | 60-140 | 2 | |
| Chlorobenzene | ug/L | ND | 20 | 20 | 20 | 21.1 | 21.7 | 105 | 108 | 60-140 | 3 | |
| Chloroethane | ug/L | ND | 20 | 20 | 20 | 25.1 | 24.5 | 125 | 122 | 60-140 | 2 | |
| Chloroform | ug/L | ND | 20 | 20 | 20 | 21.4 | 22.1 | 107 | 110 | 60-140 | 3 | |
| Chloromethane | ug/L | ND | 20 | 20 | 20 | 21.6 | 25.9 | 108 | 130 | 60-140 | 18 | |
| cis-1,2-Dichloroethene | ug/L | ND | 20 | 20 | 20 | 21.9 | 21.7 | 109 | 108 | 60-140 | 1 | |
| cis-1,3-Dichloropropene | ug/L | ND | 20 | 20 | 20 | 20.8 | 21.4 | 104 | 107 | 60-140 | 3 | |
| Dibromochloromethane | ug/L | ND | 20 | 20 | 20 | 19.1 | 20.2 | 96 | 101 | 60-140 | 6 | |
| Dibromomethane | ug/L | ND | 20 | 20 | 20 | 20.3 | 20.9 | 101 | 105 | 60-140 | 3 | |
| Dichlorodifluoromethane | ug/L | ND | 20 | 20 | 20 | 24.0 | 24.5 | 120 | 122 | 60-140 | 2 | |
| Diisopropyl ether | ug/L | ND | 20 | 20 | 20 | 21.4 | 22.0 | 107 | 110 | 60-140 | 3 | |
| Ethylbenzene | ug/L | ND | 20 | 20 | 20 | 21.9 | 22.2 | 110 | 111 | 60-140 | 1 | |
| Hexachloro-1,3-butadiene | ug/L | ND | 20 | 20 | 20 | 20.2 | 21.0 | 101 | 105 | 60-140 | 4 | |
| Isopropylbenzene (Cumene) | ug/L | ND | 20 | 20 | 20 | 22.6 | 23.3 | 113 | 116 | 60-140 | 3 | |
| m&p-Xylene | ug/L | ND | 40 | 40 | 40 | 45.0 | 45.4 | 112 | 114 | 60-140 | 1 | |
| Methyl-tert-butyl ether | ug/L | ND | 20 | 20 | 20 | 20.5 | 21.7 | 102 | 108 | 60-140 | 6 | |
| Methylene Chloride | ug/L | ND | 20 | 20 | 20 | 18.9 | 19.4 | 94 | 97 | 60-140 | 3 | |

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 2014-093 Johnston 34182.1.2

Pace Project No.: 92204085

| Parameter | 92204081001 | | MS | | MSD | | MS | | MSD | | % Rec | Limits | RPD | Qual |
|---------------------------|-------------|--------|-------------|----------------|-----------|------------|-------|-----------|--------|------|-------|--------|-----|------|
| | Units | Result | Spike Conc. | MS Spike Conc. | MS Result | MSD Result | % Rec | MSD % Rec | | | | | | |
| 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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QUALITY CONTROL DATA

Project: 2014-093 Johnston 34182.1.2

Pace Project No.: 92204085

QC Batch: MSV/27125

Analysis Method: EPA 8260

QC Batch Method: EPA 8260

Analysis Description: 8260 MSV 5035A Volatile Organics

Associated Lab Samples: 92204085001

METHOD BLANK: 1216668

Matrix: Solid

Associated Lab Samples: 92204085001

| 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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QUALITY CONTROL DATA

Project: 2014-093 Johnston 34182.1.2

Pace Project No.: 92204085

METHOD BLANK: 1216668

Matrix: Solid

Associated Lab Samples: 92204085001

| 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

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QUALITY CONTROL DATA

Project: 2014-093 Johnston 34182.1.2

Pace Project No.: 92204085

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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QUALITY CONTROL DATA

Project: 2014-093 Johnston 34182.1.2

Pace Project No.: 92204085

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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QUALITY CONTROL DATA

Project: 2014-093 Johnston 34182.1.2

Pace Project No.: 92204085

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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QUALITY CONTROL DATA

Project: 2014-093 Johnston 34182.1.2

Pace Project No.: 92204085

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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QUALITY CONTROL DATA

Project: 2014-093 Johnston 34182.1.2

Pace Project No.: 92204085

| | | | |
|-------------------------|-------------|-----------------------|---------|
| QC Batch: | OEXT/28189 | Analysis Method: | EPA 625 |
| QC Batch Method: | EPA 625 | Analysis Description: | 625 MSS |
| Associated Lab Samples: | 92204085002 | | |

METHOD BLANK: 1218104 Matrix: Water

Associated Lab Samples: 92204085002

| Parameter | Units | Blank Result | Reporting Limit | Analyzed | Qualifiers |
|------------------------------|-------|--------------|-----------------|----------------|------------|
| 1,2,4-Trichlorobenzene | ug/L | ND | 5.0 | 06/12/14 08:35 | |
| 2,4,6-Trichlorophenol | ug/L | ND | 10.0 | 06/12/14 08:35 | |
| 2,4-Dichlorophenol | ug/L | ND | 5.0 | 06/12/14 08:35 | |
| 2,4-Dimethylphenol | ug/L | ND | 10.0 | 06/12/14 08:35 | |
| 2,4-Dinitrophenol | ug/L | ND | 50.0 | 06/12/14 08:35 | |
| 2,4-Dinitrotoluene | ug/L | ND | 5.0 | 06/12/14 08:35 | |
| 2,6-Dinitrotoluene | ug/L | ND | 5.0 | 06/12/14 08:35 | |
| 2-Chloronaphthalene | ug/L | ND | 5.0 | 06/12/14 08:35 | |
| 2-Chlorophenol | ug/L | ND | 5.0 | 06/12/14 08:35 | |
| 2-Nitrophenol | ug/L | ND | 5.0 | 06/12/14 08:35 | |
| 3,3'-Dichlorobenzidine | ug/L | ND | 25.0 | 06/12/14 08:35 | |
| 4,6-Dinitro-2-methylphenol | ug/L | ND | 20.0 | 06/12/14 08:35 | |
| 4-Bromophenylphenyl ether | ug/L | ND | 5.0 | 06/12/14 08:35 | |
| 4-Chloro-3-methylphenol | ug/L | ND | 5.0 | 06/12/14 08:35 | |
| 4-Chlorophenylphenyl ether | ug/L | ND | 5.0 | 06/12/14 08:35 | |
| 4-Nitrophenol | ug/L | ND | 50.0 | 06/12/14 08:35 | |
| Acenaphthene | ug/L | ND | 5.0 | 06/12/14 08:35 | |
| Acenaphthylene | ug/L | ND | 5.0 | 06/12/14 08:35 | |
| Anthracene | ug/L | ND | 5.0 | 06/12/14 08:35 | |
| Benzo(a)anthracene | ug/L | ND | 5.0 | 06/12/14 08:35 | |
| Benzo(a)pyrene | ug/L | ND | 5.0 | 06/12/14 08:35 | |
| Benzo(b)fluoranthene | ug/L | ND | 5.0 | 06/12/14 08:35 | |
| Benzo(g,h,i)perylene | ug/L | ND | 5.0 | 06/12/14 08:35 | |
| Benzo(k)fluoranthene | ug/L | ND | 5.0 | 06/12/14 08:35 | |
| bis(2-Chloroethoxy)methane | ug/L | ND | 10.0 | 06/12/14 08:35 | |
| bis(2-Chloroethyl) ether | ug/L | ND | 5.0 | 06/12/14 08:35 | |
| bis(2-Chloroisopropyl) ether | ug/L | ND | 5.0 | 06/12/14 08:35 | |
| bis(2-Ethylhexyl)phthalate | ug/L | ND | 5.0 | 06/12/14 08:35 | |
| Butylbenzylphthalate | ug/L | ND | 5.0 | 06/12/14 08:35 | |
| Chrysene | ug/L | ND | 5.0 | 06/12/14 08:35 | |
| Di-n-butylphthalate | ug/L | ND | 5.0 | 06/12/14 08:35 | |
| Di-n-octylphthalate | ug/L | ND | 5.0 | 06/12/14 08:35 | |
| Dibenz(a,h)anthracene | ug/L | ND | 5.0 | 06/12/14 08:35 | |
| Diethylphthalate | ug/L | ND | 5.0 | 06/12/14 08:35 | |
| Dimethylphthalate | ug/L | ND | 5.0 | 06/12/14 08:35 | |
| Fluoranthene | ug/L | ND | 5.0 | 06/12/14 08:35 | |
| Fluorene | ug/L | ND | 5.0 | 06/12/14 08:35 | |
| Hexachloro-1,3-butadiene | ug/L | ND | 5.0 | 06/12/14 08:35 | |
| Hexachlorobenzene | ug/L | ND | 5.0 | 06/12/14 08:35 | |
| Hexachlorocyclopentadiene | ug/L | ND | 10.0 | 06/12/14 08:35 | |
| Hexachloroethane | ug/L | ND | 5.0 | 06/12/14 08:35 | |

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QUALITY CONTROL DATA

Project: 2014-093 Johnston 34182.1.2

Pace Project No.: 92204085

METHOD BLANK: 1218104

Matrix: Water

Associated Lab Samples: 92204085002

| Parameter | Units | Blank Result | Reporting Limit | Analyzed | Qualifiers |
|----------------------------|-------|--------------|-----------------|----------------|------------|
| Indeno(1,2,3-cd)pyrene | ug/L | ND | 5.0 | 06/12/14 08:35 | |
| Isophorone | ug/L | ND | 10.0 | 06/12/14 08:35 | |
| N-Nitroso-di-n-propylamine | ug/L | ND | 5.0 | 06/12/14 08:35 | |
| N-Nitrosodimethylamine | ug/L | ND | 5.0 | 06/12/14 08:35 | |
| N-Nitrosodiphenylamine | ug/L | ND | 10.0 | 06/12/14 08:35 | |
| Naphthalene | ug/L | ND | 5.0 | 06/12/14 08:35 | |
| Nitrobenzene | ug/L | ND | 5.0 | 06/12/14 08:35 | |
| Pentachlorophenol | ug/L | ND | 10.0 | 06/12/14 08:35 | |
| Phenanthrene | ug/L | ND | 5.0 | 06/12/14 08:35 | |
| Phenol | ug/L | ND | 5.0 | 06/12/14 08:35 | |
| Pyrene | ug/L | ND | 5.0 | 06/12/14 08:35 | |
| 2,4,6-Tribromophenol (S) | % | 110 | 10-137 | 06/12/14 08:35 | |
| 2-Fluorobiphenyl (S) | % | 76 | 15-120 | 06/12/14 08:35 | |
| 2-Fluorophenol (S) | % | 40 | 10-120 | 06/12/14 08:35 | |
| Nitrobenzene-d5 (S) | % | 97 | 10-120 | 06/12/14 08:35 | |
| Phenol-d6 (S) | % | 29 | 10-120 | 06/12/14 08:35 | |
| Terphenyl-d14 (S) | % | 80 | 11-131 | 06/12/14 08:35 | |

LABORATORY CONTROL SAMPLE: 1218105

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|----------------------------|-------|-------------|------------|-----------|--------------|------------|
| 1,2,4-Trichlorobenzene | ug/L | 50 | 40.5 | 81 | 44-142 | |
| 2,4,6-Trichlorophenol | ug/L | 50 | 44.8 | 90 | 37-144 | |
| 2,4-Dichlorophenol | ug/L | 50 | 41.1 | 82 | 1-191 | |
| 2,4-Dimethylphenol | ug/L | 50 | 36.9 | 74 | 32-119 | |
| 2,4-Dinitrophenol | ug/L | 250 | 114 | 46 | 1-181 | |
| 2,4-Dinitrotoluene | ug/L | 50 | 66.7 | 133 | 39-139 | |
| 2,6-Dinitrotoluene | ug/L | 50 | 59.4 | 119 | 50-158 | |
| 2-Chloronaphthalene | ug/L | 50 | 39.4 | 79 | 60-118 | |
| 2-Chlorophenol | ug/L | 50 | 34.2 | 68 | 23-134 | |
| 2-Nitrophenol | ug/L | 50 | 46.2 | 92 | 29-182 | |
| 3,3'-Dichlorobenzidine | ug/L | 100 | 79.3 | 79 | 1-262 | |
| 4,6-Dinitro-2-methylphenol | ug/L | 100 | 46.5 | 46 | 1-181 | |
| 4-Bromophenylphenyl ether | ug/L | 50 | 35.7 | 71 | 53-127 | |
| 4-Chloro-3-methylphenol | ug/L | 100 | 95.7 | 96 | 22-147 | |
| 4-Chlorophenylphenyl ether | ug/L | 50 | 45.1 | 90 | 25-158 | |
| 4-Nitrophenol | ug/L | 250 | 207 | 83 | 1-132 | |
| Acenaphthene | ug/L | 50 | 40.1 | 80 | 47-145 | |
| Acenaphthylene | ug/L | 50 | 39.6 | 79 | 33-145 | |
| Anthracene | ug/L | 50 | 44.2 | 88 | 1-166 | |
| Benzo(a)anthracene | ug/L | 50 | 42.9 | 86 | 33-143 | |
| Benzo(a)pyrene | ug/L | 50 | 44.2 | 88 | 17-163 | |
| Benzo(b)fluoranthene | ug/L | 50 | 39.6 | 79 | 24-159 | |
| Benzo(g,h,i)perylene | ug/L | 50 | 32.1 | 64 | 1-219 | |

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QUALITY CONTROL DATA

Project: 2014-093 Johnston 34182.1.2

Pace Project No.: 92204085

LABORATORY CONTROL SAMPLE: 1218105

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|------------------------------|-------|-------------|------------|-----------|--------------|------------|
| Benzo(k)fluoranthene | ug/L | 50 | 45.3 | 91 | 11-162 | |
| bis(2-Chloroethoxy)methane | ug/L | 50 | 43.0 | 86 | 33-184 | |
| bis(2-Chloroethyl) ether | ug/L | 50 | 40.8 | 82 | 12-158 | |
| bis(2-Chloroisopropyl) ether | ug/L | 50 | 42.2 | 84 | 36-166 | |
| bis(2-Ethylhexyl)phthalate | ug/L | 50 | 41.8 | 84 | 8-158 | |
| Butylbenzylphthalate | ug/L | 50 | 46.2 | 92 | 1-152 | |
| Chrysene | ug/L | 50 | 44.3 | 89 | 17-168 | |
| Di-n-butylphthalate | ug/L | 50 | 39.5 | 79 | 1-118 | |
| Di-n-octylphthalate | ug/L | 50 | 49.4 | 99 | 4-146 | |
| Dibenz(a,h)anthracene | ug/L | 50 | 34.4 | 69 | 1-227 | |
| Diethylphthalate | ug/L | 50 | 45.1 | 90 | 1-114 | |
| Dimethylphthalate | ug/L | 50 | 44.4 | 89 | 1-112 | |
| Fluoranthene | ug/L | 50 | 53.2 | 106 | 26-137 | |
| Fluorene | ug/L | 50 | 47.7 | 95 | 59-121 | |
| Hexachloro-1,3-butadiene | ug/L | 50 | 44.3 | 89 | 24-116 | |
| Hexachlorobenzene | ug/L | 50 | 35.1 | 70 | 1-152 | |
| Hexachlorocyclopentadiene | ug/L | 50 | 22.4 | 45 | 25-150 | |
| Hexachloroethane | ug/L | 50 | 41.8 | 84 | 40-113 | |
| Indeno(1,2,3-cd)pyrene | ug/L | 50 | 27.7 | 55 | 1-171 | |
| Isophorone | ug/L | 50 | 52.1 | 104 | 21-196 | |
| N-Nitroso-di-n-propylamine | ug/L | 50 | 38.6 | 77 | 1-230 | |
| N-Nitrosodimethylamine | ug/L | 50 | 25.3 | 51 | 25-150 | |
| N-Nitrosodiphenylamine | ug/L | 50 | 31.3 | 63 | 25-150 | |
| Naphthalene | ug/L | 50 | 37.3 | 75 | 21-133 | |
| Nitrobenzene | ug/L | 50 | 56.0 | 112 | 35-180 | |
| Pentachlorophenol | ug/L | 100 | 85.3 | 85 | 14-176 | |
| Phenanthrene | ug/L | 50 | 42.3 | 85 | 54-120 | |
| Phenol | ug/L | 50 | 19.2 | 38 | 5-112 | |
| Pyrene | ug/L | 50 | 38.5 | 77 | 52-115 | |
| 2,4,6-Tribromophenol (S) | % | | | 124 | 10-137 | |
| 2-Fluorobiphenyl (S) | % | | | 79 | 15-120 | |
| 2-Fluorophenol (S) | % | | | 45 | 10-120 | |
| Nitrobenzene-d5 (S) | % | | | 103 | 10-120 | |
| Phenol-d6 (S) | % | | | 31 | 10-120 | |
| Terphenyl-d14 (S) | % | | | 80 | 11-131 | |

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1218106 1218107

| Parameter | Units | MS | | MSD | | MS % Rec | MSD % Rec | % Rec Limits | RPD | Qual |
|------------------------|-------|--------------------|-------------|-------------|-----------|----------|-----------|--------------|--------|-------|
| | | 92204282003 Result | Spike Conc. | Spike Conc. | MS Result | | | | | |
| 1,2,4-Trichlorobenzene | ug/L | ND | 100 | 100 | 74.8 | 76.4 | 75 | 76 | 44-142 | 2 |
| 2,4,6-Trichlorophenol | ug/L | ND | 100 | 100 | 84.1 | 85.0 | 84 | 85 | 37-144 | 1 |
| 2,4-Dichlorophenol | ug/L | ND | 100 | 100 | 81.6 | 83.1 | 82 | 83 | 1-191 | 2 |
| 2,4-Dimethylphenol | ug/L | ND | 100 | 100 | 72.1 | 74.6 | 72 | 75 | 32-119 | 3 |
| 2,4-Dinitrophenol | ug/L | ND | 500 | 500 | 266 | 182 | 53 | 36 | 1-181 | 38 R1 |

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 2014-093 Johnston 34182.1.2

Pace Project No.: 92204085

| Parameter | 92204282003 | | MS | | MSD | | MS | | MSD | | % Rec | Limits | RPD | Qual |
|------------------------------|-------------|--------|-------------|-------------|--------|--------|-------|-------|--------|---|-------|--------|-----|------|
| | Units | Result | Spike Conc. | Spike Conc. | Result | Result | % Rec | % Rec | | | | | | |
| 2,4-Dinitrotoluene | ug/L | ND | 100 | 100 | 122 | 116 | 122 | 116 | 39-139 | 5 | | | | |
| 2,6-Dinitrotoluene | ug/L | ND | 100 | 100 | 113 | 110 | 113 | 110 | 50-158 | 2 | | | | |
| 2-Chloronaphthalene | ug/L | ND | 100 | 100 | 74.2 | 72.3 | 74 | 72 | 60-118 | 3 | | | | |
| 2-Chlorophenol | ug/L | ND | 100 | 100 | 71.6 | 71.2 | 72 | 71 | 23-134 | 1 | | | | |
| 2-Nitrophenol | ug/L | ND | 100 | 100 | 86.2 | 89.9 | 86 | 90 | 29-182 | 4 | | | | |
| 3,3'-Dichlorobenzidine | ug/L | ND | 200 | 200 | 156 | 160 | 78 | 80 | 1-262 | 2 | | | | |
| 4,6-Dinitro-2-methylphenol | ug/L | ND | 200 | 200 | 108 | 105 | 54 | 53 | 1-181 | 3 | | | | |
| 4-Bromophenylphenyl ether | ug/L | ND | 100 | 100 | 71.3 | 69.0 | 71 | 69 | 53-127 | 3 | | | | |
| 4-Chloro-3-methylphenol | ug/L | ND | 200 | 200 | 199 | 216 | 99 | 108 | 22-147 | 8 | | | | |
| 4-Chlorophenylphenyl ether | ug/L | ND | 100 | 100 | 87.8 | 85.9 | 88 | 86 | 25-158 | 2 | | | | |
| 4-Nitrophenol | ug/L | ND | 500 | 500 | 564 | 539 | 113 | 108 | 1-132 | 4 | | | | |
| Acenaphthene | ug/L | ND | 100 | 100 | 77.9 | 76.5 | 78 | 76 | 47-145 | 2 | | | | |
| Acenaphthylene | ug/L | ND | 100 | 100 | 76.7 | 75.5 | 77 | 76 | 33-145 | 2 | | | | |
| Anthracene | ug/L | ND | 100 | 100 | 86.2 | 84.6 | 86 | 85 | 1-166 | 2 | | | | |
| Benzo(a)anthracene | ug/L | ND | 100 | 100 | 82.4 | 81.8 | 82 | 82 | 33-143 | 1 | | | | |
| Benzo(a)pyrene | ug/L | ND | 100 | 100 | 86.2 | 87.0 | 86 | 87 | 17-163 | 1 | | | | |
| Benzo(b)fluoranthene | ug/L | ND | 100 | 100 | 80.5 | 81.9 | 81 | 82 | 24-159 | 2 | | | | |
| Benzo(g,h,i)perylene | ug/L | ND | 100 | 100 | 61.0 | 62.4 | 61 | 62 | 1-219 | 2 | | | | |
| Benzo(k)fluoranthene | ug/L | ND | 100 | 100 | 85.5 | 85.7 | 86 | 86 | 11-162 | 0 | | | | |
| bis(2-Chloroethoxy)methane | ug/L | ND | 100 | 100 | 81.5 | 80.5 | 82 | 81 | 33-184 | 1 | | | | |
| bis(2-Chloroethyl) ether | ug/L | ND | 100 | 100 | 80.2 | 79.1 | 80 | 79 | 12-158 | 1 | | | | |
| bis(2-Chloroisopropyl) ether | ug/L | ND | 100 | 100 | 82.4 | 82.0 | 82 | 82 | 36-166 | 1 | | | | |
| bis(2-Ethylhexyl)phthalate | ug/L | ND | 100 | 100 | 80.4 | 81.3 | 80 | 81 | 8-158 | 1 | | | | |
| Butylbenzylphthalate | ug/L | ND | 100 | 100 | 89.2 | 87.8 | 89 | 88 | 1-152 | 2 | | | | |
| Chrysene | ug/L | ND | 100 | 100 | 85.0 | 85.2 | 85 | 85 | 17-168 | 0 | | | | |
| Di-n-butylphthalate | ug/L | ND | 100 | 100 | 76.4 | 75.4 | 76 | 75 | 1-118 | 1 | | | | |
| Di-n-octylphthalate | ug/L | ND | 100 | 100 | 93.6 | 94.8 | 94 | 95 | 4-146 | 1 | | | | |
| Dibenz(a,h)anthracene | ug/L | ND | 100 | 100 | 65.2 | 67.3 | 65 | 67 | 1-227 | 3 | | | | |
| Diethylphthalate | ug/L | ND | 100 | 100 | 85.9 | 83.1 | 86 | 83 | 1-114 | 3 | | | | |
| Dimethylphthalate | ug/L | ND | 100 | 100 | 86.8 | 84.8 | 87 | 85 | 1-112 | 2 | | | | |
| Fluoranthene | ug/L | ND | 100 | 100 | 104 | 106 | 104 | 106 | 26-137 | 3 | | | | |
| Fluorene | ug/L | ND | 100 | 100 | 93.8 | 90.7 | 94 | 91 | 59-121 | 3 | | | | |
| Hexachloro-1,3-butadiene | ug/L | ND | 100 | 100 | 79.2 | 77.3 | 79 | 77 | 24-116 | 2 | | | | |
| Hexachlorobenzene | ug/L | ND | 100 | 100 | 69.8 | 67.3 | 70 | 67 | 1-152 | 4 | | | | |
| Hexachlorocyclopentadiene | ug/L | ND | 100 | 100 | 42.4 | 39.3 | 42 | 39 | 25-150 | 8 | | | | |
| Hexachloroethane | ug/L | ND | 100 | 100 | 73.7 | 77.1 | 74 | 77 | 40-113 | 5 | | | | |
| Indeno(1,2,3-cd)pyrene | ug/L | ND | 100 | 100 | 52.4 | 54.2 | 52 | 54 | 1-171 | 3 | | | | |
| Isophorone | ug/L | ND | 100 | 100 | 95.5 | 101 | 96 | 101 | 21-196 | 5 | | | | |
| N-Nitroso-di-n-propylamine | ug/L | ND | 100 | 100 | 76.0 | 81.4 | 76 | 81 | 1-230 | 7 | | | | |
| N-Nitrosodimethylamine | ug/L | ND | 100 | 100 | 58.8 | 56.6 | 59 | 57 | 25-150 | 4 | | | | |
| N-Nitrosodiphenylamine | ug/L | ND | 100 | 100 | 60.0 | 60.0 | 60 | 60 | 25-150 | 0 | | | | |
| Naphthalene | ug/L | ND | 100 | 100 | 69.5 | 70.7 | 70 | 71 | 21-133 | 2 | | | | |
| Nitrobenzene | ug/L | ND | 100 | 100 | 106 | 104 | 106 | 104 | 35-180 | 2 | | | | |
| Pentachlorophenol | ug/L | ND | 200 | 200 | 155 | 163 | 78 | 81 | 14-176 | 5 | | | | |
| Phenanthrene | ug/L | ND | 100 | 100 | 82.0 | 80.8 | 82 | 81 | 54-120 | 1 | | | | |
| Phenol | ug/L | ND | 100 | 100 | 53.7 | 51.7 | 54 | 52 | 5-112 | 4 | | | | |

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 2014-093 Johnston 34182.1.2

Pace Project No.: 92204085

| Parameter | Units | MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1218106 | | 1218107 | | MS Result | MSD Result | MS % Rec | MSD % Rec | % Rec Limits | RPD | Qual |
|--------------------------|-------|--|----------------------|-----------------------|------|--------------|---------------|-------------|--------------|-----------------|-----|------|
| | | 92204282003 Result | MS Spike Conc. | MSD Spike Conc. | | | | | | | | |
| Pyrene | ug/L | ND | 100 | 100 | 77.3 | 72.1 | 77 | 72 | 52-115 | 7 | | |
| 2,4,6-Tribromophenol (S) | % | | | | | | | 113 | 111 | 10-137 | | |
| 2-Fluorobiphenyl (S) | % | | | | | | | 71 | 70 | 15-120 | | |
| 2-Fluorophenol (S) | % | | | | | | | 55 | 53 | 10-120 | | |
| Nitrobenzene-d5 (S) | % | | | | | | | 96 | 97 | 10-120 | | |
| Phenol-d6 (S) | % | | | | | | | 46 | 46 | 10-120 | | |
| Terphenyl-d14 (S) | % | | | | | | | 78 | 75 | 11-131 | | |

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QUALITY CONTROL DATA

Project: 2014-093 Johnston 34182.1.2

Pace Project No.: 92204085

QC Batch: OEXT/28108

Analysis Method: EPA 8270

QC Batch Method: EPA 3546

Analysis Description: 8270 Solid MSSV Microwave

Associated Lab Samples: 92204085001

METHOD BLANK: 1214764

Matrix: Solid

Associated Lab Samples: 92204085001

| 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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QUALITY CONTROL DATA

Project: 2014-093 Johnston 34182.1.2
Pace Project No.: 92204085

METHOD BLANK: 1214764 Matrix: Solid
Associated Lab Samples: 92204085001

| 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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QUALITY CONTROL DATA

Project: 2014-093 Johnston 34182.1.2

Pace Project No.: 92204085

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 | |

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

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QUALITY CONTROL DATA

Project: 2014-093 Johnston 34182.1.2

Pace Project No.: 92204085

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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QUALITY CONTROL DATA

Project: 2014-093 Johnston 34182.1.2

Pace Project No.: 92204085

| | | | |
|-------------------------|---------------|-----------------------|-----------------------------|
| QC Batch: | PMST/6693 | Analysis Method: | ASTM D2974-87 |
| QC Batch Method: | ASTM D2974-87 | Analysis Description: | Dry Weight/Percent Moisture |
| Associated Lab Samples: | 92204085001 | | |

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

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QUALIFIERS

Project: 2014-093 Johnston 34182.1.2

Pace Project No.: 92204085

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

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.

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

R1 RPD value was outside control limits.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 2014-093 Johnston 34182.1.2

Pace Project No.: 92204085

| Lab ID | Sample ID | QC Batch Method | QC Batch | Analytical Method | Analytical Batch |
|-------------|-----------|-----------------|------------|-------------------|------------------|
| 92204085002 | 8-4 (TW) | EPA 625 | OEXT/28189 | EPA 625 | MSSV/9235 |
| 92204085001 | 8-2 (4-6) | EPA 3546 | OEXT/28108 | EPA 8270 | MSSV/9220 |
| 92204085002 | 8-4 (TW) | SM 6200B | MSV/27102 | | |
| 92204085001 | 8-2 (4-6) | EPA 8260 | MSV/27125 | | |
| 92204085001 | 8-2 (4-6) | ASTM D2974-87 | PMST/6693 | | |

REPORT OF LABORATORY ANALYSIS

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Document Name:
Sample Condition Upon Receipt (SCUR)
 Document Number:
F-CHR-CS-003-rev.14

Document Revised: April 07, 2014
 Page 1 of 2
 Issuing Authority:
 Pace Huntersville Quality Office

Client Name: Lysomid Enu

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

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

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

Optional
 Proj. Due Date:
 Proj. Name:

Date and Initials of person examining contents: CO 6/4/14

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

WO# : 92204085

92204085

APPENDIX F
