July 5, 2018

DRMP, Inc.
5950 Fairview Road, Suite 320
Charlotte, NC 28210

Attention: Mr. Mike Hage, P.E.

Reference: **Limited Site Assessment**
**State Highway Project No.: 50207.1.1 (R-5711)**
**Intersection Improvements at US 21 and SR 1312 (Flower House Loop) / SR 2375 (Houston Road)**
870 S. Main Street
Troutman, Iredell County, North Carolina
S&ME Project No. 6235-18-013

Dear Mr. Hage:

S&ME, Inc. (S&ME) submits this Limited Site Assessment Report for the above-referenced property. Our services were performed in accordance with DRMP Design Phase Scope of Services dated May 19, 2017.

## ♦ Background

This site is located at 870 S. Main Street and is currently occupied by Crossroads Service Center. The site is listed in the North Carolina Department of Environmental Quality (NCDEQ) underground storage tank (UST) database (Facility ID #00-0-0000010647) and in the NCDEQ leaking underground storage tank (LUST) database with the incident # 23340 (Haneline Country Store). According to regulatory record information, four (4) USTs were removed from the site and included one (1) 550-gallon used oil UST, one (1) 8,000-gallon gasoline UST, one (1) 8,000-gallon gasoline UST, and one (1) 4,000-gallon gasoline UST. In June 2001, a petroleum release was reported at this facility with follow-up assessment activities confirming soil and groundwater impacts, with free product detected within two (2) onsite monitoring wells. The responsible party for the release was unable to finance additional assessment activities for the site, but additional assessment activities for the site are warranted. This facility, including a suspected former fuel dispenser island, are located in the immediate proximity of S. Main Street.

## ♦ Scope of Services

S&ME performed a geophysical survey of the areas of the two sites that are accessible and without obstruction (e.g., building locations, foundations and surface debris) to identify potential USTs. The geophysical survey was conducted using time-domain electromagnetics (TDEM) and ground penetrating radar (GPR).

Based on the results of the geophysical survey, S&ME advanced four soil borings to 10 feet below ground surface (ft-bgs). Soils were classified on-site by S&ME personnel and screened with a photo-ionized detector (PID) at approximately two foot intervals to measure relative headspace concentrations of volatile organic compounds (VOCs). The soil samples stored in the cooler with the highest level of VOCs detected with the PID in the

corresponding bagged portion within each soil boring were shipped under standard chain-of-custody procedures to a North Carolina certified laboratory.

Selected soil samples were analyzed by Pace Labs (Pace), a North Carolina certified laboratory, for total petroleum hydrocarbons (TPH), gasoline range organics (GRO) and diesel range organics (DRO) by EPA Methods 8015/5030 and 3550 and for VOCs by EPA Method 8260B.

Groundwater was not encountered in the borings so groundwater sampling was not performed as part of this assessment.

## Health and Safety Plan & Utility Locating

S&ME prepared a site-specific Health and Safety Plan (HASP) in general accordance with 29 CFR 1910.120, which addressed the contaminants known or suspected to be present on-site, personal protective equipment, monitoring performed during the field activities, and response actions to be taken in the event monitoring thresholds are exceeded. To mitigate the potential for damage to underground utilities, S&ME contacted NC One Call and contracted a private utility locator in an effort to avoid damaging underground utilities at the boring locations.

## Geophysical Methodology, Field Services, and Data Processing

On May 7, 2018, S&ME completed time domain electromagnetic (TDEM) and ground penetrating radar (GPR) surveys within the accessible portions of the requested survey area (**Figure 2**). Brief descriptions of these complementary geophysical techniques are presented in the following paragraphs.

### *Time Domain Electromagnetics (TDEM)*

The TDEM method measures the electrical conductivity of subsurface materials and discriminates between moderately conductive earth materials and very conductive metallic targets within a maximum depth of about 8 feet below ground surface (bgs). The conductivity is determined by transmitting a time-varying magnetic pulse into the subsurface and measuring the amplitude and phase shift of the secondary magnetic field. The secondary magnetic field is created when the conductive materials become an inductor as the primary magnetic field is passed through them. TDEM data are acquired continuously at a walking pace typically along a series of parallel or perpendicular lines. The system generates audible and visual indications when metallic targets are encountered. We used a Geonics Limited EM-61 MK2 TDEM system in general accordance with ASTM D6820-02 (2007) "*Standard Guide for Use of the Time Domain Electromagnetic Method for Subsurface Investigation.*" Data was collected along lines spaced approximately 5 feet apart.

### *Ground Penetrating Radar (GPR)*

GPR transmits electromagnetic waves into the subsurface from an antenna at a specific frequency and measures the time for wave reflections to be received by interfaces between materials with differing material properties (e.g. soil/metal, etc.). The intensity of the reflected GPR wave is a function of the contrast in the material properties (i.e. dielectric permittivity) at the interface, the conductivity of the material that the wave is traveling through, and the frequency of the signal. We used a Geophysical Survey Systems, Inc. (GSSI) SIR® 3000 GPR system equipped with

a 400 MHz antenna in general accordance with ASTM D6432-11 "*Standard Guide for Using the Surface Ground Penetrating Radar Method for Subsurface Investigation*". A total of twenty-three GPR profiles (Lines 1 through 23) were collected for documentation (**Figure 2**). Data was post-processed using the GSSI Radan® 7 GPR software program for additional analysis.

### *Geophysical Results*

Two anomalous subsurface features were identified in the geophysical data sets collected within the requested survey area (Anomalies A and B; **Figures 2 and 3**); Anomaly A is located adjacent to the existing building and Anomaly B is located in the grass within the northern portion of the survey site. Anomaly A is approximately 3 feet by 4 feet, located about 1.5 feet below ground surface (bgs), and indicative of a potential UST. Anomaly B is approximately 2 feet by 2 feet, located about 1 foot or less bgs, and likely associated with an isolated buried metallic target. Example GPR profiles are presented in **Figures 4 and 5**.

### *Geophysical Limitations*

The geophysical methods used for this survey have inherent limitations. Site metallic features (e.g., buildings, reinforced concrete, vehicles, etc.) and overhead transmission lines can produce a false electromagnetic response and may mask subsurface features. The depth of exploration of the GPR signal is highly site specific, and is greatly limited by signal attenuation (absorption) of the subsurface materials. Signal attenuation is dependent upon the electrical conductivity of the subsurface materials. Signal attenuation is greatest in materials with relatively high electrical conductivities such as clay soils, and lowest in relatively low conductivity materials such as unsaturated sand. For this project location, the GPR data sets appear to have a maximum depth of penetration of about 4 feet bgs.

Regardless of the thoroughness of a geophysical study, there is always a possibility that actual conditions may not match the interpretations. The results should be considered accurate only to the degree implied by the methods used and the method's limitations and data coverage. Accordingly, the possibility exists that not all features at a project site will be located due to either subsurface soil conditions or the occurrence of features outside the lateral limits and below the depth of penetration of the methods used. As with most surface geophysical methods, resolution of the subsurface will also decrease with depth. As such, the size and/or contrast of features compared to the imaged subsurface media must be significant enough to produce the anticipated response. The location and/or determination (or the lack thereof) of potential buried features is based on our review of the provided information and of the geophysical survey. Under no circumstances does S&ME assume any responsibility for damages resulting from the presence of subsurface features that may exist but were not identified by our survey.

## Soil Sampling

On June 8, 2018, S&ME was onsite to observe and document the soil sampling activities by an S&ME subcontracted North Carolina licensed driller. The driller utilizing an AMS Power Probe 9500 track mounted drill rig to perform the direct push borings and collect the soil samples. The driller utilized 2 ¼ -inch diameter steel rods to perform the borings. The borings were advanced to a depth of 10 feet below ground surface (bgs).

S&ME completed four soil borings utilizing direct push technology to 10 feet below ground surface within the right-of-way of the former Haneline Country Store. Soil samples were continuously collected in five-foot long

disposable acetate-plastic sleeves that line the hollow stainless steel macro core that are advanced by the Geoprobe. Soil recovered in the tubes were classified on-site by S&ME personnel and screened with a PID at approximately two foot intervals to measure relative headspace concentrations of VOCs. VOC headspace readings were obtained from an aliquot of each soil sample that is placed in a re-sealable bag. Another portion of the sample will be placed in a laboratory-supplied container and stored in an insulated container with ice for possible laboratory analyses. After waiting approximately 15 minutes to allow the sample to reach ambient temperature and headspace equilibrium, a photo-ionization detector (PID) probe was inserted into the bag to obtain a headspace reading. The soil samples stored in the cooler with the highest level of VOCs detected with the PID in the corresponding bagged portion within each soil boring were shipped under standard chain-of-custody procedures to a North Carolina certified laboratory. The sample locations are depicted on **Figure 7** in **Attachment I**. The field notes and field sampling forms are included in **Attachment III** and photographs are included in **Attachment IV**.

The follow table depicts the field screening concentrations. Samples selected for laboratory analysis are shown as highlighted.

| Boring ID | PID Readings in Parts Per Million (PPM) | | | | |
|---|---|---|---|---|---|
| | 0-2 feet bgs | 2-4 feet bgs | 4-6 feet bgs | 6-8 feet bgs | 8-10 feet bgs |
| SB-1 | 1.9 | 2.4 | 4.7 | 5.1 | 4.6 |
| SB-2 | 7.7 | 3.5 | 4.2 | 4.4 | 13.5 |
| SB-3 | 2.1 | 4.3 | 4.1 | 4.1 | 4.0 |
| SB-4 | 1.1 | 3.8 | 3.9 | 4.0 | 3.4 |

Groundwater was not encountered during soil borings so a groundwater sample was not collected. Samples were submitted to Pace Analytical Laboratory for analysis for diesel range total petroleum hydrocarbons (TPH-DRO), for gasoline range total petroleum hydrocarbons (TPH-GRO) and for VOCs by EPA Method 8260. The soil sample locations are shown in **Figure 7** in **Attachment I**.

## *Soil Sampling Results*

The analytical results of the groundwater samples collected at the site were compared to the North Carolina Department of Environmental Quality (NCDEQ) Action Levels for TPH-DRO and TPH-GRO as well as Soil-To-Groundwater Maximum Soil Contaminant Concentrations (MSCCs), Residential Soil Cleanup Levels and Industrial/Commercial Soil Cleanup Levels. The summary of the analytical results of the soil samples are depicted on **Figure 8** in **Attachment I** and included in **Table 1** in **Attachment II**.

Based on the laboratory analytical results, methylene chloride was reported in SB-1 above Soil-To-Groundwater MSCC but below industrial/commercial cleanup goals. Methylene Chloride is a common laboratory contaminant, and may have been introduced into the sample in the laboratory. Acetone was reported in sample SB-2 at a concentration above the method detection limit but below Soil-to-Groundwater MSCCs. TPH-DRO and TPH-GRO

were not detected in the samples collected. No other VOCs were detected in the soil samples at a concentration above their respective method detection limits.

## ♦ Conclusions

Based on the environmental assessment results from the May 2018 sampling event, the following conclusions are presented:

- S&ME observed and documented the completion of four soil sampling points. Following the boring, S&ME field screened the soil profiles in two foot intervals for VOC. Based on the analytical results, methylene chloride was detected in soil sample SB-1, but below industrial/commercial cleanup levels.
- The TDEM and GPR surveys identified a suspect UST immediately adjacent to the Crossroads Service Center building.

## ♦ Closure

If you have questions regarding this report or require additional information, please feel free to contact us at (919) 872-2660.

Sincerely,

**S&ME, Inc.**

Darren Cox
Staff Professional
dcox@smeinc.com

Wayne Watterson, P.E.
Senior Engineer
wwatterson@smeinc.com

Enclosures: Attachment I - Figures
Attachment II – Tables
Attachment III – Field Notes and Field Sampling Forms
Attachment IV – Site Photographs
Attachment V – Laboratory Analytical Report

# Attachments

# Attachment I– Figures

**REFERENCE:**
GOOGLE EARTH PRO AERIAL PHOTOGRAPH
(DATED AUGUST, 2 2017)







**SITE VICINITY MAP**

NCDOT – US 21 INTERSECTION (R-57711)
870 SOUTH MAIN STREET
TROUTMAN, IREDALE COUNTY, NORTH CAROLINA

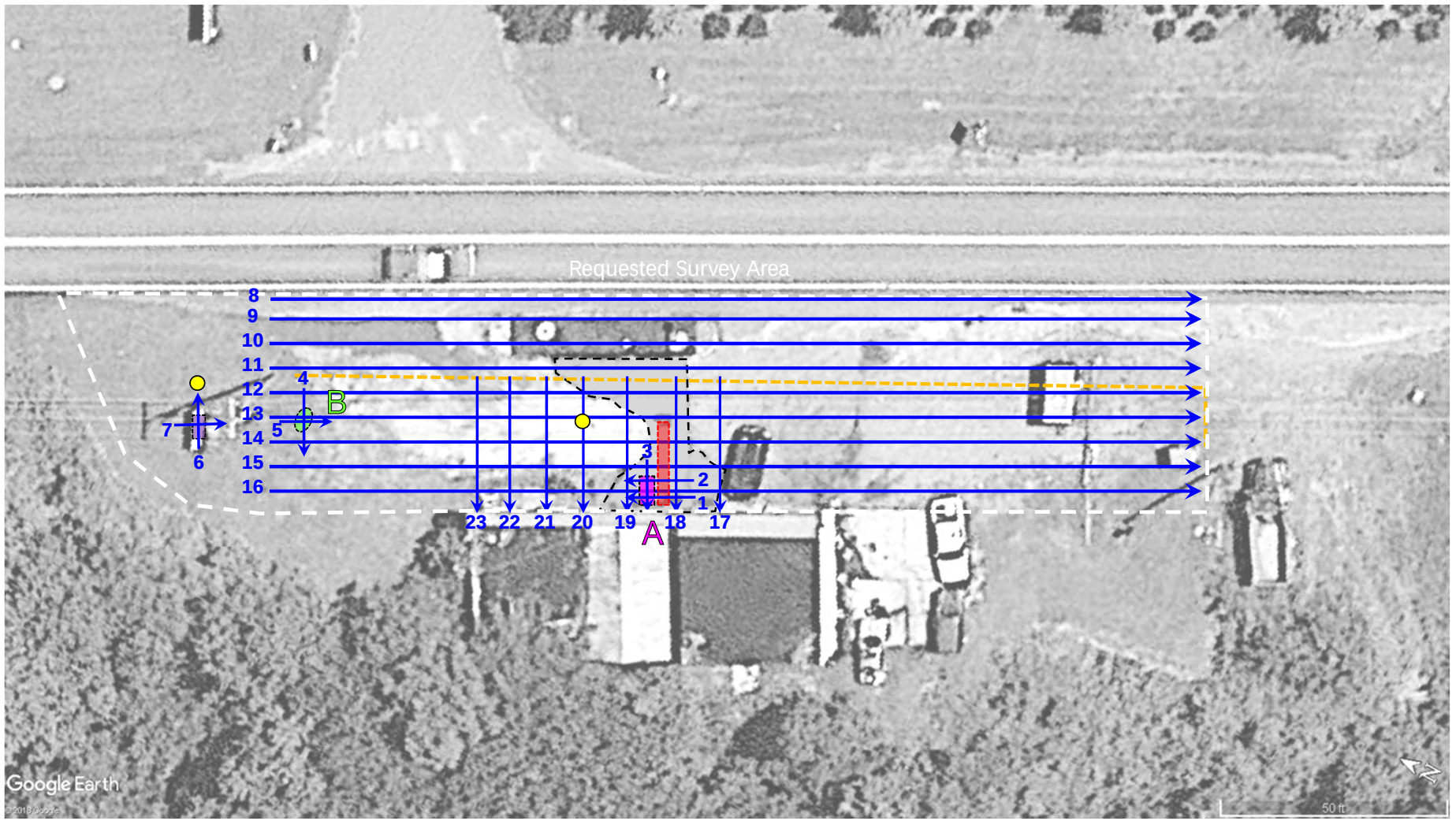
SCALE:
NOT TO SCALE

DATE:
6/28/2018

PROJECT NUMBER
6235-18-013

FIGURE NO.
**1**

**REFERENCE:**
GOOGLE EARTH PRO AERIAL PHOTOGRAPH
(DATED AUGUST, 2 2017)




**LEGEND**

- Approximate Location of Potential UST
- Approximate Location of EM Anomaly
- Approximate Location of Utility Bank
- Approximate Location of Concrete Pad
- Approximate Location of Cable Fence
- Approximate Location of Metal Cover
- Approximate Location of Reinforced Concrete
- Approximate Location of GPR Profile

# GEOPHYSICAL SURVEY LOCATION PLAN

NCDOT – US 21 INTERSECTION (R-57711)
870 SOUTH MAIN STREET
TROUTMAN, IREDALE COUNTY, NORTH CAROLINA

SCALE: AS SHOWN

DATE: 6/28/2018

PROJECT NUMBER: 6235-18-013

FIGURE NO. **2**

**REFERENCE:**
GOOGLE EARTH PRO AERIAL PHOTOGRAPH
(DATED AUGUST, 2 2017)




**LEGEND**

- Approximate Location of Potential UST
- Approximate Location of EM Anomaly
- Approximate Location of Utility Bank
- Approximate Location of Concrete Pad
- Approximate Location of Cable Fence
- Approximate Location of Metal Cover
- Approximate Location of Reinforced Concrete

# GEOPHYSICAL ANOMALY LOCATION PLAN

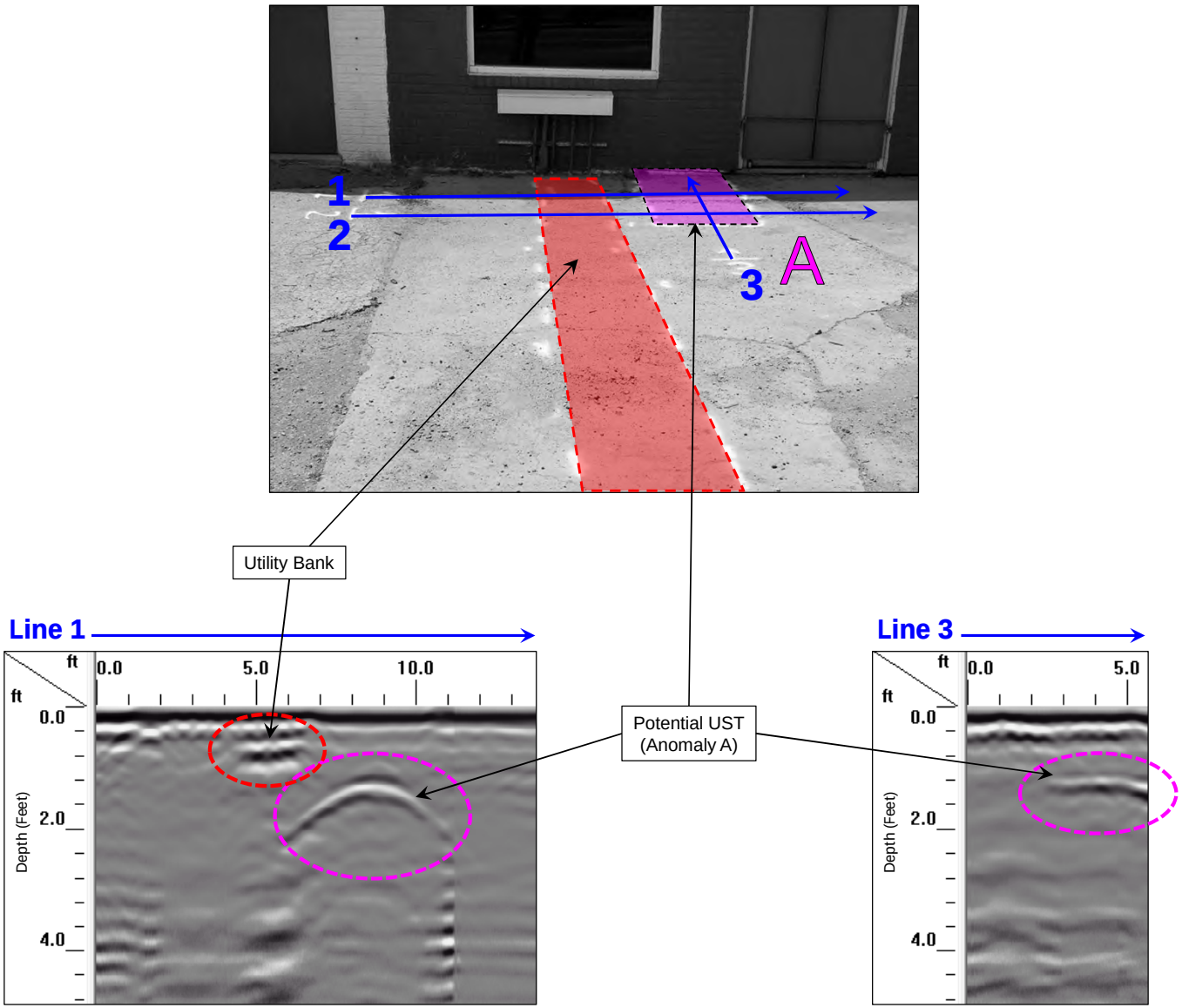
NCDOT – US 21 INTERSECTION (R-57711)
870 SOUTH MAIN STREET
TROUTMAN, IREDALE COUNTY, NORTH CAROLINA

SCALE: AS SHOWN

DATE: 6/28/2018

PROJECT NUMBER 6235-18-013

FIGURE NO. 3




Note: Presented depths are based on an assumed average dielectric and should be considered approximate

**EXAMPLE GPR DATA – LINES 1 AND 3 (ANOMALY A)**

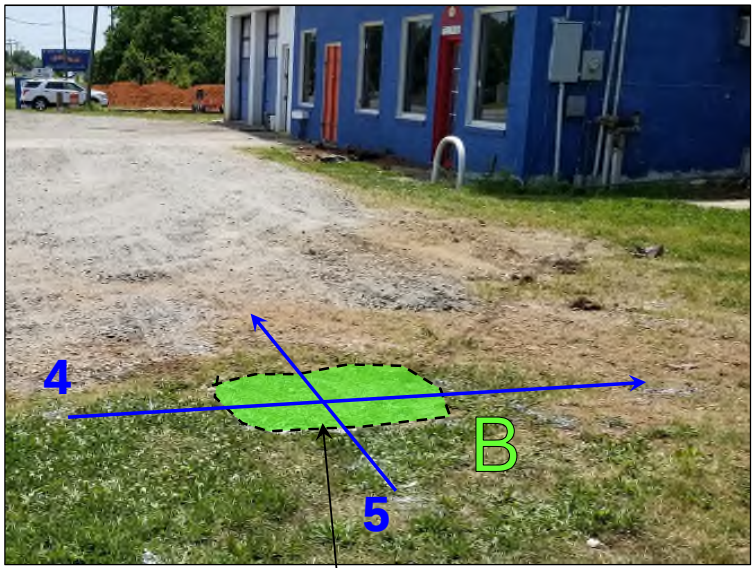
NCDOT – US 21 INTERSECTION (R-57711)
870 SOUTH MAIN STREET
TROUTMAN, IREDALE COUNTY, NORTH CAROLINA

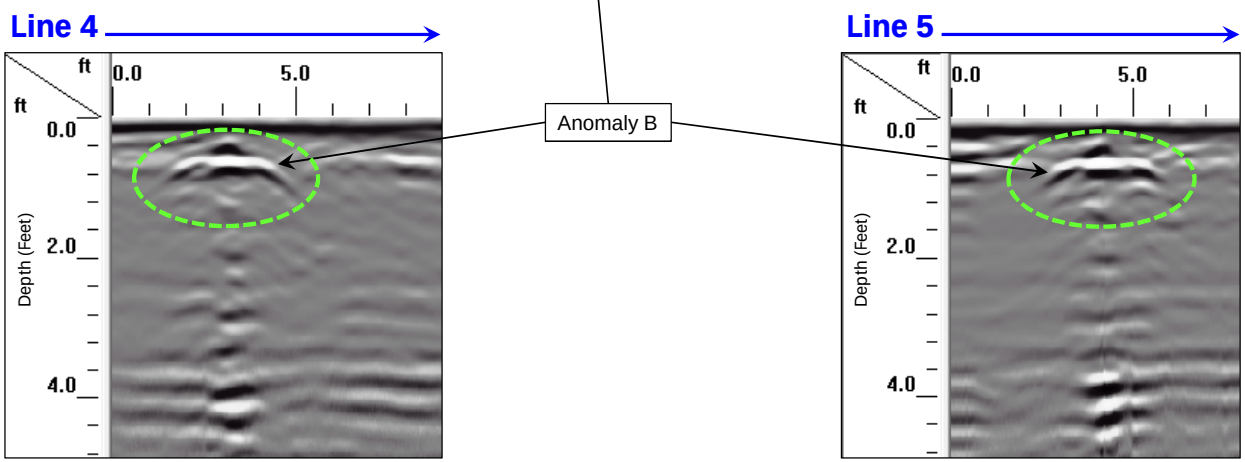
SCALE:
AS SHOWN

DATE:
6/28/2018

PROJECT NUMBER
6235-18-013

FIGURE NO.
**4**




Note: Presented depths are based on an assumed average dielectric and should be considered approximate

**EXAMPLE GPR DATA – LINES 4 AND 5 (ANOMALY B)**

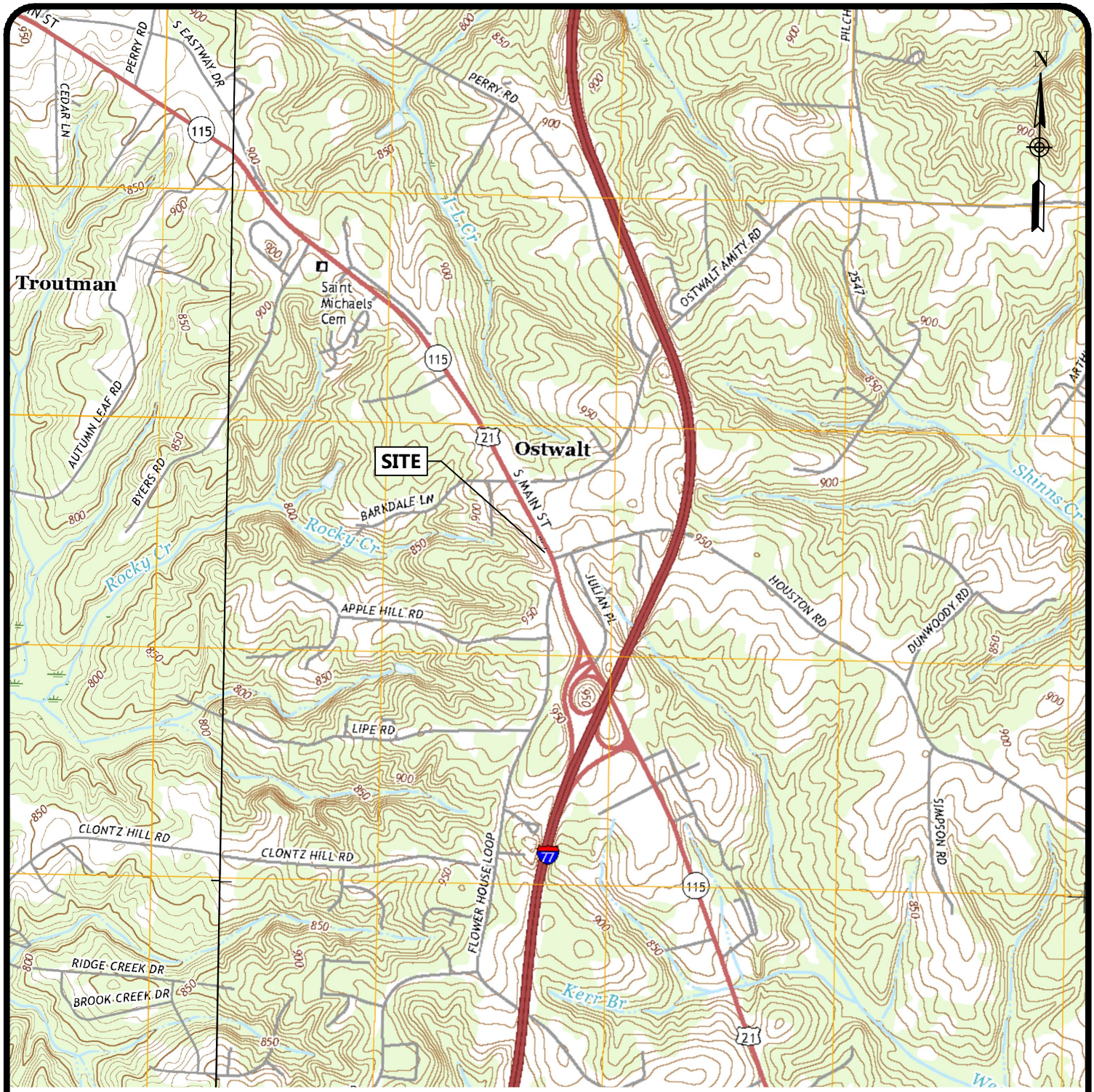
NCDOT – US 21 INTERSECTION (R-57711)
870 SOUTH MAIN STREET
TROUTMAN, IREDALE COUNTY, NORTH CAROLINA

SCALE:
AS SHOWN

DATE:
6/28/2018

PROJECT NUMBER
6235-18-013

FIGURE NO.
**5**




0 2000 4000

GRAPHIC SCALE (IN FEET)

SOURCE: SHEPHERDS, NC AND TROUTMAN, NC QUADRANGLES, 7.5-MINUTE SERIES US TOPO (2016).

# SITE VICINITY MAP

US 21 INTERSECTION
870 S. MAIN STREET
TROUTMAN, IREDELL COUNTY, NORTH CAROLINA

| SCALE: | FIGURE NO. |
|---|---|
| AS SHOWN | 6 |
| DATE: | |
| JUNE 2018 | |
| PROJECT NUMBER | |
| 6235-18-013 | |

Drawing Path: Q:\6235\2018\18-013 - US 21 INTERSECTION\US 21 Intersection - FIGS.dwg




LEGEND

- APPROXIMATE SOIL SAMPLE LOCATION
- OLD GROUNDWATER MONITORING WELL

0 50 100

GRAPHIC SCALE (IN FEET)

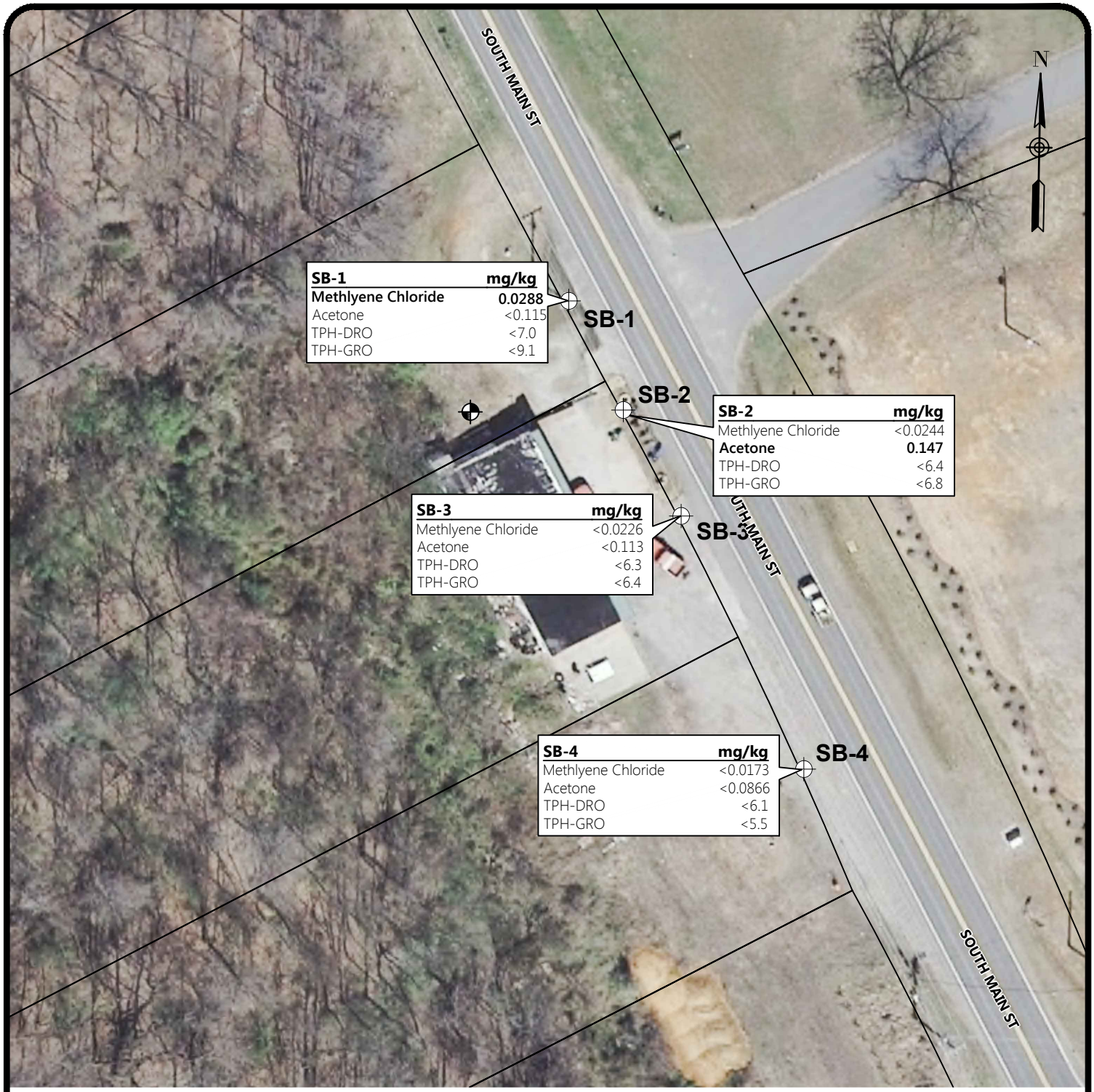
SOURCE: 2014 AERIAL PHOTOGRAPH AND 2017 IREDELL COUNTY PARCEL DATA OBTAINED FROM NC ONEMAP.

# SITE MAP

US 21 INTERSECTION
870 S. MAIN STREET
TROUTMAN, IREDELL COUNTY, NORTH CAROLINA

| SCALE: | FIGURE NO. |
|---|---|
| AS SHOWN | 7 |
| DATE: | |
| JUNE 2018 | |
| PROJECT NUMBER | |
| 6235-18-013 | |

Drawing Path: Q:\6235\2018\18-013 - US 21 INTERSECTION\US 21 Intersection - FIGS.dwg




LEGEND

⊕ - APPROXIMATE SOIL SAMPLE LOCATION

⊕ - OLD GROUNDWATER MONITORING WELL

mg/kg - MILLIGRAMS PER KILOGRAM

CONCENTRATIONS IN **BOLD** ARE GREATER THAN THE DETECTION LIMIT

0 50 100

GRAPHIC SCALE (IN FEET)

SOURCE: 2014 AERIAL PHOTOGRAPH AND 2017 IREDELL COUNTY PARCEL DATA OBTAINED FROM NC ONEMAP.

# SOIL SAMPLING CONSTITUENT MAP

US 21 INTERSECTION
870 S. MAIN STREET
TROUTMAN, IREDELL COUNTY, NORTH CAROLINA

| SCALE: | FIGURE NO. |
|---|---|
| AS SHOWN | 8 |
| DATE: | |
| JUNE 2018 | |
| PROJECT NUMBER | |
| 6235-18-013 | |

Drawing Path: Q:\6235\2018\18-013 - US 21 INTERSECTION\US 21 Intersection - FIGS.dwg

# Attachment II – Tables

**Table 1**
**Summary of Soil Analytical Results**
**US 21 Intersection (R-5711) (US)**
**870 S. Main Street, Troutman, Iredell County, North Carolina**
**S&ME Project No. 6235-18-013**

| Analytical Method | | | EPA Method 8260 | | EPA Method (8015/3550) | EPA Method (8015/5030) |
|---|---|---|---|---|---|---|
| Sample ID | Date Collected (mm/dd/yy) | Incident Phase | Methlyene Chloride | Acetone | TPH-DRO | TPH-GRO |
| SB-1 | 6/8/2018 | LSA | **0.0288** | <0.115 | <7.0 | <9.1 |
| SB-2 | 6/8/2018 | LSA | <0.0244 | **0.147** | <6.4 | <6.8 |
| SB-3 | 6/8/2018 | LSA | <0.0226 | <0.113 | <6.3 | <6.4 |
| SB-4 | 6/8/2018 | LSA | <0.0173 | <0.0866 | <6.1 | <5.5 |
| NCDEQ Action Level | | | NSE | NSE | 100 | 50 |
| Soil-to-Groundwater MSCC | | | 0.02 | 24.0 | NSE | NSE |
| Residential Soil Cleanup Goal | | | 85 | 14,000 | NSE | NSE |
| Industrial/Commercial Soil Cleanup Goal | | | 763 | 360,000 | NSE | NSE |

NOTES:
Concentrations in bold are greater than the detection limit
= Greater than the soil to groundwater MSCC
All values are shown in milligrams per kilograms mg/kg
NA = Not analyzed
NSE = No standard established
MSCC = Maximum Soil Contaminant Concentration
ND = Not detected

# Attachment III – Field Notes and Field Sampling Logs

| Environmental Field Report | |
|---|---|
| **Date:** June 8, 2018 | **Job Number:** 6235-18-013 |
| **Project Name:** U5711 | **Weather/Temperature:** Sunny, 80 °F |
| **Project Location:** Troutman, Iredell County, North Carolina | |
| **Notes By:** ☒ ☐ | **Present at the Site:** Darren Cox<br>John (IET) |

| Equipment Used |
|---|
| Slope Water Level Indicator |

On June 1, 2018, S&ME personnel, Darren Cox, visited the U5711 site in Troutman to complete soil borings

0945 Arrived on site

945-10 observed traffic patterns along main street

10-1010 Explored site for utilities, and previous GPR work performed and sited boring locations.

1015 IET arrived and went over site plan and set up struck by since working near roadway.

1030-1100 Performed 4 soil boring to 10 feet (SB-1 through SB-4)

11-1230 Bagged up profiles of soil 0-2, 2-4, 4-6, 6-8 and 8-10) for each Soil boring for screening and sample collection.

SB-1 6-8

SB-2 8-10

SB-3 2-4

SB-4 2-4

**1300 offsite**

| Hours | Mileage | Signature of S&ME Personnel |
|---|---|---|
| 3.5 | |  |

| PROJECT: | **U5711 US 21 Intersection**<br>Troutman, NC<br>S&ME Project No. 6235-18-013 | | **BORING LOG: SB-1** |
|---|---|---|---|
| DATE DRILLED: | Friday, June 08, 2018 | BORING DEPTH (FT): | 10 |
| DRILL RIG: | AMS Power Probe 9500 VTR | WATER LEVEL: | |
| DRILLER: | Innovative Environmental Technologies, Inc. | CAVE-IN DEPTH: | |
| HAMMER TYPE: | | LOGGED BY: | |
| SAMPLING METHOD: | Macro-Core Sampler | NORTHING: | |
| DRILLING METHOD: | Macro-Core Sampler (2.25-in. OD) | EASTING: | |

| DEPTH (feet) | GRAPHIC LOG | MATERIAL DESCRIPTION | WATER LEVEL | SAMPLE | PID READING (PPM) | LABORATORY ANALYSES | Sample Time / 1st 6in | 2nd 6in | 3rd 6in | N VALUE |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Concrete, Gravel, | | | 1.9 | | | | | |
| | | Fill, Sandy Silt, Soft, Orange, Brown, | | | 2.4 | | | | | |
| | | Clayey Silt, Firm, Orange, Light, | | | 4.7 | | | | | |
| 5 | | | | | 5.1 | Yes | | | | |
| | | | | | 4.6 | | | | | |
| 10 | | Boring Terminated at 10 Ft-BGS | | | | | | | | |
| 15 | | | | | | | | | | |
| 20 | | | | | | | | | | |
| 25 | | | | | | | | | | |
| 30 | | | | | | | | | | |

| PROJECT: | **U5711 US 21 Intersection**<br>Troutman, NC<br>S&ME Project No. 6235-18-013 | **BORING LOG: SB-2** |
|---|---|---|
| DATE DRILLED: | Friday, June 08, 2018 | BORING DEPTH (FT): 10 |
| DRILL RIG: | AMS Power Probe 9500 VTR | WATER LEVEL: |
| DRILLER: | Innovative Environmental Technologies, Inc. | CAVE-IN DEPTH: |
| HAMMER TYPE: | | LOGGED BY: |
| SAMPLING METHOD: | Macro-Core Sampler | NORTHING: |
| DRILLING METHOD: | Macro-Core Sampler (2.25-in. OD) | EASTING: |

| DEPTH (feet) | GRAPHIC LOG | MATERIAL DESCRIPTION | WATER LEVEL | SAMPLE | PID READING (PPM) | LABORATORY ANALYSES | Sample Time / 1st 6in | 2nd 6in | 3rd 6in | N VALUE |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Concrete, Gravel, | | | 7.7 | | | | | |
| | | Fill, Silty Sand, Loose, Brown, | | | | | | | | |
| | | Fill, Silty Clay, Firm, Red, Orange, Light, | | | 3.5 | | | | | |
| | | | | | 4.2 | | | | | |
| 5 | | Residuum, Clayey Silt, Soft, Orange, Brown, Light, Petroleum Odors | | | 4.4 | | | | | |
| | | | | | 13.5 | Yes | | | | |
| 10 | | Boring Terminated at 10 Ft-BGS | | | | | | | | |
| 15 | | | | | | | | | | |
| 20 | | | | | | | | | | |
| 25 | | | | | | | | | | |
| 30 | | | | | | | | | | |

| PROJECT: | **U5711 US 21 Intersection**<br>Troutman, NC<br>S&ME Project No. 6235-18-013 | | **BORING LOG: SB-3** |
|---|---|---|---|
| DATE DRILLED: | Friday, June 08, 2018 | BORING DEPTH (FT): | 10 |
| DRILL RIG: | AMS Power Probe 9500 VTR | WATER LEVEL: | |
| DRILLER: | Innovative Environmental Technologies, Inc. | CAVE-IN DEPTH: | |
| HAMMER TYPE: | | LOGGED BY: | |
| SAMPLING METHOD: | Macro-Core Sampler | NORTHING: | |
| DRILLING METHOD: | Macro-Core Sampler (2.25-in. OD) | EASTING: | |

| DEPTH (feet) | GRAPHIC LOG | MATERIAL DESCRIPTION | WATER LEVEL | SAMPLE | PID READING (PPM) | LABORATORY ANALYSES | Sample Time / 1st 6in | 2nd 6in | 3rd 6in | N VALUE |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Asphalt, Gravel, Concrete, | | | 2.1 | | | | | |
| | | Residuum, Silty Clay, Firm, Orange, Brown, Dark, | | | 4.3 | Yes | | | | |
| 5 | | Residuum, Clayey Silt, Soft, Tan, Orange, Light, | | | 4.1 | | | | | |
| | | | | | 4.1 | | | | | |
| | | Partially Weathered Rock, Sandy Silt, Very Soft, Tan, Yellow, Light, | | | 4.0 | | | | | |
| 10 | | Boring Terminated at 10 Ft-BGS | | | | | | | | |
| 15 | | | | | | | | | | |
| 20 | | | | | | | | | | |
| 25 | | | | | | | | | | |
| 30 | | | | | | | | | | |

| PROJECT: | **U5711 US 21 Intersection**<br>Troutman, NC<br>S&ME Project No. 6235-18-013 | | **BORING LOG: SB-4** |
|---|---|---|---|
| DATE DRILLED: | Friday, June 08, 2018 | BORING DEPTH (FT): | 10 |
| DRILL RIG: | AMS Power Probe 9500 VTR | WATER LEVEL: | |
| DRILLER: | Innovative Environmental Technologies, Inc. | CAVE-IN DEPTH: | |
| HAMMER TYPE: | | LOGGED BY: | |
| SAMPLING METHOD: | Macro-Core Sampler | NORTHING: | |
| DRILLING METHOD: | Macro-Core Sampler (2.25-in. OD) | EASTING: | |

| DEPTH (feet) | GRAPHIC LOG | MATERIAL DESCRIPTION | WATER LEVEL | SAMPLE | PID READING (PPM) | LABORATORY ANALYSES | Sample Time / 1st 6in | 2nd 6in | 3rd 6in | N VALUE |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Concrete, Gravel, | | | 1.1 | | | | | |
| | | Fill, Sandy Silt, Soft, Brown, Rock Fragments, | | | | | | | | |
| | | Residuum, Silty Clay, Stiff, Orange, Red, Light, | | | 3.8 | Yes | | | | |
| | | | | | 3.9 | | | | | |
| 5 | | Residuum, Clayey Silt, Soft, Orange, Tan, Light, | | | 4.0 | | | | | |
| | | | | | 3.4 | | | | | |
| 10 | | Boring Terminated at 10 Ft-BGS | | | | | | | | |
| 15 | | | | | | | | | | |
| 20 | | | | | | | | | | |
| 25 | | | | | | | | | | |
| 30 | | | | | | | | | | |

# Attachment IV – Site Photographs



6/8/2018

Photographer: Darren Cox

| | | |
|---|---|---|
| | **Location / Orientation** | In NCDOT Right of Way looking northwest |
| | **Remarks** | Former auto repair building |



6/8/2018

Photographer: Darren Cox

| | | |
|---|---|---|
| **2** | **Location / Orientation** | In NCDOT Right of Way looking southwest |
| | **Remarks** | Former auto repair building |



6/8/2018

Photographer: Darren Cox

| | | |
|---|---|---|
| **3** | **Location / Orientation** | On site looking north |
| | **Remarks** | Building, concrete drive, fencing marking property boundary |



6/8/2018

Photographer: Darren Cox

| | | |
|---|---|---|
| **4** | **Location / Orientation** | On site looking east into Right of Way |
| | **Remarks** | Boring SB-2, gravel, roadway |

**Representative Photographs**
**US 21 Intersection (R-5711) (US)**
Troutman, Iredell County, North Carolina
S&ME Project No. 6235-18-013



6/8/2018

Photographer: Darren Cox

| | | |
|---|---|---|
| **5** | **Location / Orientation** | In DOT Right of Way looking south |
| | **Remarks** | Boring SB-3, gravel |



6/8/2018

Photographer: Darren Cox

| | | |
|---|---|---|
| **6** | **Location / Orientation** | Near boring SB-1 |
| | **Remarks** | Typical soil profile observed on site |

# Attachment V – Laboratory Analytical Report

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

June 20, 2018

Ed Henriques
S&ME, Inc.
8646 W Market St
Suite 105
Greensboro, NC 27409

RE: Project: NCDOT U5711 WBS 50207.1.1
Pace Project No.: 92387904

Dear Ed Henriques:
Enclosed are the analytical results for sample(s) received by the laboratory on June 11, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,

Trey Carter
trey.carter@pacelabs.com
(704)875-9092
Project Manager

Enclosures

cc: Darren Cox, S&ME Greensboro
Chemical Testing Engineer, NCDOT



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## CERTIFICATIONS

Project: NCDOT U5711 WBS 50207.1.1
Pace Project No.: 92387904

**Charlotte Certification IDs**

9800 Kincey Ave. Ste 100, Huntersville, NC 28078
Louisiana/NELAP Certification # LA170028
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
Virginia/VELAP Certification #: 460221



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(704)875-9092

## SAMPLE ANALYTE COUNT

Project: NCDOT U5711 WBS 50207.1.1
Pace Project No.: 92387904

| Lab ID | Sample ID | Method | Analysts | Analytes Reported | Laboratory |
|---|---|---|---|---|---|
| **92387904001** | **SB-1** | EPA 8015 Modified | SEM | 2 | PASI-C |
| | | EPA 8015 Modified | CL | 2 | PASI-C |
| | | EPA 8260 | DLK | 70 | PASI-C |
| | | ASTM D2974-87 | KDF | 1 | PASI-C |
| **92387904002** | **SB-2** | EPA 8015 Modified | SEM | 2 | PASI-C |
| | | EPA 8015 Modified | CL | 2 | PASI-C |
| | | EPA 8260 | DLK | 70 | PASI-C |
| | | ASTM D2974-87 | KDF | 1 | PASI-C |
| **92387904003** | **SB-3** | EPA 8015 Modified | SEM | 2 | PASI-C |
| | | EPA 8015 Modified | CL | 2 | PASI-C |
| | | EPA 8260 | DLK | 70 | PASI-C |
| | | ASTM D2974-87 | KDF | 1 | PASI-C |
| **92387904004** | **SB-4** | EPA 8015 Modified | SEM | 2 | PASI-C |
| | | EPA 8015 Modified | CL | 2 | PASI-C |
| | | EPA 8260 | DLK | 70 | PASI-C |
| | | ASTM D2974-87 | KDF | 1 | PASI-C |



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## ANALYTICAL RESULTS

Project: NCDOT U5711 WBS 50207.1.1
Pace Project No.: 92387904

**Sample: SB-1** **Lab ID: 92387904001** Collected: 06/08/18 11:00 Received: 06/11/18 11:20 Matrix: Solid

***Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.***

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **8015 GCS THC-Diesel** | Analytical Method: EPA 8015 Modified Preparation Method: EPA 3546 | | | | | | | |
| Diesel Range Organics(C10-C28) | ND | mg/kg | 7.0 | 1 | 06/12/18 15:13 | 06/14/18 12:44 | | |
| ***Surrogates*** | | | | | | | | |
| n-Pentacosane (S) | 63 | % | 41-119 | 1 | 06/12/18 15:13 | 06/14/18 12:44 | 629-99-2 | |
| **Gasoline Range Organics** | Analytical Method: EPA 8015 Modified Preparation Method: EPA 5035A/5030B | | | | | | | |
| Gas Range Organics (C6-C10) | ND | mg/kg | 9.1 | 1 | 06/11/18 12:05 | 06/12/18 04:43 | | |
| ***Surrogates*** | | | | | | | | |
| 4-Bromofluorobenzene (S) | 83 | % | 70-167 | 1 | 06/11/18 12:05 | 06/12/18 04:43 | 460-00-4 | |
| **8260/5035A Volatile Organics** | Analytical Method: EPA 8260 | | | | | | | |
| Acetone | ND | ug/kg | 115 | 1 | | 06/12/18 20:55 | 67-64-1 | |
| Benzene | ND | ug/kg | 5.7 | 1 | | 06/12/18 20:55 | 71-43-2 | |
| Bromobenzene | ND | ug/kg | 5.7 | 1 | | 06/12/18 20:55 | 108-86-1 | |
| Bromochloromethane | ND | ug/kg | 5.7 | 1 | | 06/12/18 20:55 | 74-97-5 | |
| Bromodichloromethane | ND | ug/kg | 5.7 | 1 | | 06/12/18 20:55 | 75-27-4 | |
| Bromoform | ND | ug/kg | 5.7 | 1 | | 06/12/18 20:55 | 75-25-2 | |
| Bromomethane | ND | ug/kg | 11.5 | 1 | | 06/12/18 20:55 | 74-83-9 | |
| 2-Butanone (MEK) | ND | ug/kg | 115 | 1 | | 06/12/18 20:55 | 78-93-3 | |
| n-Butylbenzene | ND | ug/kg | 5.7 | 1 | | 06/12/18 20:55 | 104-51-8 | |
| sec-Butylbenzene | ND | ug/kg | 5.7 | 1 | | 06/12/18 20:55 | 135-98-8 | |
| tert-Butylbenzene | ND | ug/kg | 5.7 | 1 | | 06/12/18 20:55 | 98-06-6 | |
| Carbon tetrachloride | ND | ug/kg | 5.7 | 1 | | 06/12/18 20:55 | 56-23-5 | |
| Chlorobenzene | ND | ug/kg | 5.7 | 1 | | 06/12/18 20:55 | 108-90-7 | |
| Chloroethane | ND | ug/kg | 11.5 | 1 | | 06/12/18 20:55 | 75-00-3 | |
| Chloroform | ND | ug/kg | 5.7 | 1 | | 06/12/18 20:55 | 67-66-3 | |
| Chloromethane | ND | ug/kg | 11.5 | 1 | | 06/12/18 20:55 | 74-87-3 | |
| 2-Chlorotoluene | ND | ug/kg | 5.7 | 1 | | 06/12/18 20:55 | 95-49-8 | |
| 4-Chlorotoluene | ND | ug/kg | 5.7 | 1 | | 06/12/18 20:55 | 106-43-4 | |
| 1,2-Dibromo-3-chloropropane | ND | ug/kg | 5.7 | 1 | | 06/12/18 20:55 | 96-12-8 | |
| Dibromochloromethane | ND | ug/kg | 5.7 | 1 | | 06/12/18 20:55 | 124-48-1 | |
| 1,2-Dibromoethane (EDB) | ND | ug/kg | 5.7 | 1 | | 06/12/18 20:55 | 106-93-4 | |
| Dibromomethane | ND | ug/kg | 5.7 | 1 | | 06/12/18 20:55 | 74-95-3 | |
| 1,2-Dichlorobenzene | ND | ug/kg | 5.7 | 1 | | 06/12/18 20:55 | 95-50-1 | |
| 1,3-Dichlorobenzene | ND | ug/kg | 5.7 | 1 | | 06/12/18 20:55 | 541-73-1 | |
| 1,4-Dichlorobenzene | ND | ug/kg | 5.7 | 1 | | 06/12/18 20:55 | 106-46-7 | |
| Dichlorodifluoromethane | ND | ug/kg | 11.5 | 1 | | 06/12/18 20:55 | 75-71-8 | |
| 1,1-Dichloroethane | ND | ug/kg | 5.7 | 1 | | 06/12/18 20:55 | 75-34-3 | |
| 1,2-Dichloroethane | ND | ug/kg | 5.7 | 1 | | 06/12/18 20:55 | 107-06-2 | |
| 1,1-Dichloroethene | ND | ug/kg | 5.7 | 1 | | 06/12/18 20:55 | 75-35-4 | |
| cis-1,2-Dichloroethene | ND | ug/kg | 5.7 | 1 | | 06/12/18 20:55 | 156-59-2 | |
| trans-1,2-Dichloroethene | ND | ug/kg | 5.7 | 1 | | 06/12/18 20:55 | 156-60-5 | |
| 1,2-Dichloropropane | ND | ug/kg | 5.7 | 1 | | 06/12/18 20:55 | 78-87-5 | |
| 1,3-Dichloropropane | ND | ug/kg | 5.7 | 1 | | 06/12/18 20:55 | 142-28-9 | |
| 2,2-Dichloropropane | ND | ug/kg | 5.7 | 1 | | 06/12/18 20:55 | 594-20-7 | |
| 1,1-Dichloropropene | ND | ug/kg | 5.7 | 1 | | 06/12/18 20:55 | 563-58-6 | |
| cis-1,3-Dichloropropene | ND | ug/kg | 5.7 | 1 | | 06/12/18 20:55 | 10061-01-5 | |

## REPORT OF LABORATORY ANALYSIS

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Huntersville, NC 28078
(704)875-9092

## ANALYTICAL RESULTS

Project: NCDOT U5711 WBS 50207.1.1
Pace Project No.: 92387904

**Sample: SB-1** **Lab ID: 92387904001** Collected: 06/08/18 11:00 Received: 06/11/18 11:20 Matrix: Solid

***Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.***

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **8260/5035A Volatile Organics** | Analytical Method: EPA 8260 | | | | | | | |
| trans-1,3-Dichloropropene | ND | ug/kg | 5.7 | 1 | | 06/12/18 20:55 | 10061-02-6 | |
| Diisopropyl ether | ND | ug/kg | 5.7 | 1 | | 06/12/18 20:55 | 108-20-3 | |
| Ethylbenzene | ND | ug/kg | 5.7 | 1 | | 06/12/18 20:55 | 100-41-4 | |
| Hexachloro-1,3-butadiene | ND | ug/kg | 5.7 | 1 | | 06/12/18 20:55 | 87-68-3 | |
| 2-Hexanone | ND | ug/kg | 57.3 | 1 | | 06/12/18 20:55 | 591-78-6 | |
| Isopropylbenzene (Cumene) | ND | ug/kg | 5.7 | 1 | | 06/12/18 20:55 | 98-82-8 | |
| p-Isopropyltoluene | ND | ug/kg | 5.7 | 1 | | 06/12/18 20:55 | 99-87-6 | |
| Methylene Chloride | **28.8** | ug/kg | 22.9 | 1 | | 06/12/18 20:55 | 75-09-2 | C9 |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/kg | 57.3 | 1 | | 06/12/18 20:55 | 108-10-1 | |
| Methyl-tert-butyl ether | ND | ug/kg | 5.7 | 1 | | 06/12/18 20:55 | 1634-04-4 | |
| Naphthalene | ND | ug/kg | 5.7 | 1 | | 06/12/18 20:55 | 91-20-3 | |
| n-Propylbenzene | ND | ug/kg | 5.7 | 1 | | 06/12/18 20:55 | 103-65-1 | |
| Styrene | ND | ug/kg | 5.7 | 1 | | 06/12/18 20:55 | 100-42-5 | |
| 1,1,1,2-Tetrachloroethane | ND | ug/kg | 5.7 | 1 | | 06/12/18 20:55 | 630-20-6 | |
| 1,1,2,2-Tetrachloroethane | ND | ug/kg | 5.7 | 1 | | 06/12/18 20:55 | 79-34-5 | |
| Tetrachloroethene | ND | ug/kg | 5.7 | 1 | | 06/12/18 20:55 | 127-18-4 | L2 |
| Toluene | ND | ug/kg | 5.7 | 1 | | 06/12/18 20:55 | 108-88-3 | |
| 1,2,3-Trichlorobenzene | ND | ug/kg | 5.7 | 1 | | 06/12/18 20:55 | 87-61-6 | |
| 1,2,4-Trichlorobenzene | ND | ug/kg | 5.7 | 1 | | 06/12/18 20:55 | 120-82-1 | |
| 1,1,1-Trichloroethane | ND | ug/kg | 5.7 | 1 | | 06/12/18 20:55 | 71-55-6 | |
| 1,1,2-Trichloroethane | ND | ug/kg | 5.7 | 1 | | 06/12/18 20:55 | 79-00-5 | |
| Trichloroethene | ND | ug/kg | 5.7 | 1 | | 06/12/18 20:55 | 79-01-6 | |
| Trichlorofluoromethane | ND | ug/kg | 5.7 | 1 | | 06/12/18 20:55 | 75-69-4 | |
| 1,2,3-Trichloropropane | ND | ug/kg | 5.7 | 1 | | 06/12/18 20:55 | 96-18-4 | |
| 1,2,4-Trimethylbenzene | ND | ug/kg | 5.7 | 1 | | 06/12/18 20:55 | 95-63-6 | |
| 1,3,5-Trimethylbenzene | ND | ug/kg | 5.7 | 1 | | 06/12/18 20:55 | 108-67-8 | |
| Vinyl acetate | ND | ug/kg | 57.3 | 1 | | 06/12/18 20:55 | 108-05-4 | |
| Vinyl chloride | ND | ug/kg | 11.5 | 1 | | 06/12/18 20:55 | 75-01-4 | |
| Xylene (Total) | ND | ug/kg | 11.5 | 1 | | 06/12/18 20:55 | 1330-20-7 | |
| m&p-Xylene | ND | ug/kg | 11.5 | 1 | | 06/12/18 20:55 | 179601-23-1 | |
| o-Xylene | ND | ug/kg | 5.7 | 1 | | 06/12/18 20:55 | 95-47-6 | |
| ***Surrogates*** | | | | | | | | |
| Toluene-d8 (S) | 117 | % | 70-130 | 1 | | 06/12/18 20:55 | 2037-26-5 | |
| 4-Bromofluorobenzene (S) | 96 | % | 70-130 | 1 | | 06/12/18 20:55 | 460-00-4 | |
| 1,2-Dichloroethane-d4 (S) | 99 | % | 70-132 | 1 | | 06/12/18 20:55 | 17060-07-0 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | |
| Percent Moisture | **27.9** | % | 0.10 | 1 | | 06/12/18 12:09 | | |

## REPORT OF LABORATORY ANALYSIS

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Huntersville, NC 28078
(704)875-9092

## ANALYTICAL RESULTS

Project: NCDOT U5711 WBS 50207.1.1
Pace Project No.: 92387904

**Sample: SB-2** **Lab ID: 92387904002** Collected: 06/08/18 11:30 Received: 06/11/18 11:20 Matrix: Solid

***Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.***

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **8015 GCS THC-Diesel** | Analytical Method: EPA 8015 Modified Preparation Method: EPA 3546 | | | | | | | |
| Diesel Range Organics(C10-C28) | ND | mg/kg | 6.4 | 1 | 06/20/18 07:10 | 06/20/18 09:19 | | |
| ***Surrogates*** | | | | | | | | |
| n-Pentacosane (S) | 42 | % | 41-119 | 1 | 06/20/18 07:10 | 06/20/18 09:19 | 629-99-2 | |
| **Gasoline Range Organics** | Analytical Method: EPA 8015 Modified Preparation Method: EPA 5035A/5030B | | | | | | | |
| Gas Range Organics (C6-C10) | ND | mg/kg | 6.8 | 1 | 06/11/18 12:05 | 06/12/18 05:11 | | |
| ***Surrogates*** | | | | | | | | |
| 4-Bromofluorobenzene (S) | 79 | % | 70-167 | 1 | 06/11/18 12:05 | 06/12/18 05:11 | 460-00-4 | |
| **8260/5035A Volatile Organics** | Analytical Method: EPA 8260 | | | | | | | |
| Acetone | **147** | ug/kg | 122 | 1 | | 06/12/18 21:15 | 67-64-1 | |
| Benzene | ND | ug/kg | 6.1 | 1 | | 06/12/18 21:15 | 71-43-2 | |
| Bromobenzene | ND | ug/kg | 6.1 | 1 | | 06/12/18 21:15 | 108-86-1 | |
| Bromochloromethane | ND | ug/kg | 6.1 | 1 | | 06/12/18 21:15 | 74-97-5 | |
| Bromodichloromethane | ND | ug/kg | 6.1 | 1 | | 06/12/18 21:15 | 75-27-4 | |
| Bromoform | ND | ug/kg | 6.1 | 1 | | 06/12/18 21:15 | 75-25-2 | |
| Bromomethane | ND | ug/kg | 12.2 | 1 | | 06/12/18 21:15 | 74-83-9 | |
| 2-Butanone (MEK) | ND | ug/kg | 122 | 1 | | 06/12/18 21:15 | 78-93-3 | |
| n-Butylbenzene | ND | ug/kg | 6.1 | 1 | | 06/12/18 21:15 | 104-51-8 | |
| sec-Butylbenzene | ND | ug/kg | 6.1 | 1 | | 06/12/18 21:15 | 135-98-8 | |
| tert-Butylbenzene | ND | ug/kg | 6.1 | 1 | | 06/12/18 21:15 | 98-06-6 | |
| Carbon tetrachloride | ND | ug/kg | 6.1 | 1 | | 06/12/18 21:15 | 56-23-5 | |
| Chlorobenzene | ND | ug/kg | 6.1 | 1 | | 06/12/18 21:15 | 108-90-7 | |
| Chloroethane | ND | ug/kg | 12.2 | 1 | | 06/12/18 21:15 | 75-00-3 | |
| Chloroform | ND | ug/kg | 6.1 | 1 | | 06/12/18 21:15 | 67-66-3 | |
| Chloromethane | ND | ug/kg | 12.2 | 1 | | 06/12/18 21:15 | 74-87-3 | |
| 2-Chlorotoluene | ND | ug/kg | 6.1 | 1 | | 06/12/18 21:15 | 95-49-8 | |
| 4-Chlorotoluene | ND | ug/kg | 6.1 | 1 | | 06/12/18 21:15 | 106-43-4 | |
| 1,2-Dibromo-3-chloropropane | ND | ug/kg | 6.1 | 1 | | 06/12/18 21:15 | 96-12-8 | |
| Dibromochloromethane | ND | ug/kg | 6.1 | 1 | | 06/12/18 21:15 | 124-48-1 | |
| 1,2-Dibromoethane (EDB) | ND | ug/kg | 6.1 | 1 | | 06/12/18 21:15 | 106-93-4 | |
| Dibromomethane | ND | ug/kg | 6.1 | 1 | | 06/12/18 21:15 | 74-95-3 | |
| 1,2-Dichlorobenzene | ND | ug/kg | 6.1 | 1 | | 06/12/18 21:15 | 95-50-1 | |
| 1,3-Dichlorobenzene | ND | ug/kg | 6.1 | 1 | | 06/12/18 21:15 | 541-73-1 | |
| 1,4-Dichlorobenzene | ND | ug/kg | 6.1 | 1 | | 06/12/18 21:15 | 106-46-7 | |
| Dichlorodifluoromethane | ND | ug/kg | 12.2 | 1 | | 06/12/18 21:15 | 75-71-8 | |
| 1,1-Dichloroethane | ND | ug/kg | 6.1 | 1 | | 06/12/18 21:15 | 75-34-3 | |
| 1,2-Dichloroethane | ND | ug/kg | 6.1 | 1 | | 06/12/18 21:15 | 107-06-2 | |
| 1,1-Dichloroethene | ND | ug/kg | 6.1 | 1 | | 06/12/18 21:15 | 75-35-4 | |
| cis-1,2-Dichloroethene | ND | ug/kg | 6.1 | 1 | | 06/12/18 21:15 | 156-59-2 | |
| trans-1,2-Dichloroethene | ND | ug/kg | 6.1 | 1 | | 06/12/18 21:15 | 156-60-5 | |
| 1,2-Dichloropropane | ND | ug/kg | 6.1 | 1 | | 06/12/18 21:15 | 78-87-5 | |
| 1,3-Dichloropropane | ND | ug/kg | 6.1 | 1 | | 06/12/18 21:15 | 142-28-9 | |
| 2,2-Dichloropropane | ND | ug/kg | 6.1 | 1 | | 06/12/18 21:15 | 594-20-7 | |
| 1,1-Dichloropropene | ND | ug/kg | 6.1 | 1 | | 06/12/18 21:15 | 563-58-6 | |
| cis-1,3-Dichloropropene | ND | ug/kg | 6.1 | 1 | | 06/12/18 21:15 | 10061-01-5 | |

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: NCDOT U5711 WBS 50207.1.1
Pace Project No.: 92387904

**Sample: SB-2** **Lab ID: 92387904002** Collected: 06/08/18 11:30 Received: 06/11/18 11:20 Matrix: Solid

***Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.***

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **8260/5035A Volatile Organics** | Analytical Method: EPA 8260 | | | | | | | |
| trans-1,3-Dichloropropene | ND | ug/kg | 6.1 | 1 | | 06/12/18 21:15 | 10061-02-6 | |
| Diisopropyl ether | ND | ug/kg | 6.1 | 1 | | 06/12/18 21:15 | 108-20-3 | |
| Ethylbenzene | ND | ug/kg | 6.1 | 1 | | 06/12/18 21:15 | 100-41-4 | |
| Hexachloro-1,3-butadiene | ND | ug/kg | 6.1 | 1 | | 06/12/18 21:15 | 87-68-3 | |
| 2-Hexanone | ND | ug/kg | 60.9 | 1 | | 06/12/18 21:15 | 591-78-6 | |
| Isopropylbenzene (Cumene) | ND | ug/kg | 6.1 | 1 | | 06/12/18 21:15 | 98-82-8 | |
| p-Isopropyltoluene | ND | ug/kg | 6.1 | 1 | | 06/12/18 21:15 | 99-87-6 | |
| Methylene Chloride | ND | ug/kg | 24.4 | 1 | | 06/12/18 21:15 | 75-09-2 | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/kg | 60.9 | 1 | | 06/12/18 21:15 | 108-10-1 | |
| Methyl-tert-butyl ether | ND | ug/kg | 6.1 | 1 | | 06/12/18 21:15 | 1634-04-4 | |
| Naphthalene | ND | ug/kg | 6.1 | 1 | | 06/12/18 21:15 | 91-20-3 | |
| n-Propylbenzene | ND | ug/kg | 6.1 | 1 | | 06/12/18 21:15 | 103-65-1 | |
| Styrene | ND | ug/kg | 6.1 | 1 | | 06/12/18 21:15 | 100-42-5 | |
| 1,1,1,2-Tetrachloroethane | ND | ug/kg | 6.1 | 1 | | 06/12/18 21:15 | 630-20-6 | |
| 1,1,2,2-Tetrachloroethane | ND | ug/kg | 6.1 | 1 | | 06/12/18 21:15 | 79-34-5 | |
| Tetrachloroethene | ND | ug/kg | 6.1 | 1 | | 06/12/18 21:15 | 127-18-4 | L2 |
| Toluene | ND | ug/kg | 6.1 | 1 | | 06/12/18 21:15 | 108-88-3 | |
| 1,2,3-Trichlorobenzene | ND | ug/kg | 6.1 | 1 | | 06/12/18 21:15 | 87-61-6 | |
| 1,2,4-Trichlorobenzene | ND | ug/kg | 6.1 | 1 | | 06/12/18 21:15 | 120-82-1 | |
| 1,1,1-Trichloroethane | ND | ug/kg | 6.1 | 1 | | 06/12/18 21:15 | 71-55-6 | |
| 1,1,2-Trichloroethane | ND | ug/kg | 6.1 | 1 | | 06/12/18 21:15 | 79-00-5 | |
| Trichloroethene | ND | ug/kg | 6.1 | 1 | | 06/12/18 21:15 | 79-01-6 | |
| Trichlorofluoromethane | ND | ug/kg | 6.1 | 1 | | 06/12/18 21:15 | 75-69-4 | |
| 1,2,3-Trichloropropane | ND | ug/kg | 6.1 | 1 | | 06/12/18 21:15 | 96-18-4 | |
| 1,2,4-Trimethylbenzene | ND | ug/kg | 6.1 | 1 | | 06/12/18 21:15 | 95-63-6 | |
| 1,3,5-Trimethylbenzene | ND | ug/kg | 6.1 | 1 | | 06/12/18 21:15 | 108-67-8 | |
| Vinyl acetate | ND | ug/kg | 60.9 | 1 | | 06/12/18 21:15 | 108-05-4 | |
| Vinyl chloride | ND | ug/kg | 12.2 | 1 | | 06/12/18 21:15 | 75-01-4 | |
| Xylene (Total) | ND | ug/kg | 12.2 | 1 | | 06/12/18 21:15 | 1330-20-7 | |
| m&p-Xylene | ND | ug/kg | 12.2 | 1 | | 06/12/18 21:15 | 179601-23-1 | |
| o-Xylene | ND | ug/kg | 6.1 | 1 | | 06/12/18 21:15 | 95-47-6 | |
| ***Surrogates*** | | | | | | | | |
| Toluene-d8 (S) | 122 | % | 70-130 | 1 | | 06/12/18 21:15 | 2037-26-5 | |
| 4-Bromofluorobenzene (S) | 92 | % | 70-130 | 1 | | 06/12/18 21:15 | 460-00-4 | |
| 1,2-Dichloroethane-d4 (S) | 95 | % | 70-132 | 1 | | 06/12/18 21:15 | 17060-07-0 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | |
| Percent Moisture | **21.4** | % | 0.10 | 1 | | 06/12/18 12:09 | | |

## REPORT OF LABORATORY ANALYSIS

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(704)875-9092

## ANALYTICAL RESULTS

Project: NCDOT U5711 WBS 50207.1.1
Pace Project No.: 92387904

**Sample: SB-3** **Lab ID: 92387904003** Collected: 06/08/18 12:00 Received: 06/11/18 11:20 Matrix: Solid

***Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.***

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **8015 GCS THC-Diesel** | Analytical Method: EPA 8015 Modified Preparation Method: EPA 3546 | | | | | | | |
| Diesel Range Organics(C10-C28) | ND | mg/kg | 6.3 | 1 | 06/12/18 15:13 | 06/14/18 13:09 | | |
| ***Surrogates*** | | | | | | | | |
| n-Pentacosane (S) | 59 | % | 41-119 | 1 | 06/12/18 15:13 | 06/14/18 13:09 | 629-99-2 | |
| **Gasoline Range Organics** | Analytical Method: EPA 8015 Modified Preparation Method: EPA 5035A/5030B | | | | | | | |
| Gas Range Organics (C6-C10) | ND | mg/kg | 6.4 | 1 | 06/11/18 12:05 | 06/12/18 05:39 | | |
| ***Surrogates*** | | | | | | | | |
| 4-Bromofluorobenzene (S) | 82 | % | 70-167 | 1 | 06/11/18 12:05 | 06/12/18 05:39 | 460-00-4 | |
| **8260/5035A Volatile Organics** | Analytical Method: EPA 8260 | | | | | | | |
| Acetone | ND | ug/kg | 113 | 1 | | 06/12/18 21:36 | 67-64-1 | |
| Benzene | ND | ug/kg | 5.6 | 1 | | 06/12/18 21:36 | 71-43-2 | |
| Bromobenzene | ND | ug/kg | 5.6 | 1 | | 06/12/18 21:36 | 108-86-1 | |
| Bromochloromethane | ND | ug/kg | 5.6 | 1 | | 06/12/18 21:36 | 74-97-5 | |
| Bromodichloromethane | ND | ug/kg | 5.6 | 1 | | 06/12/18 21:36 | 75-27-4 | |
| Bromoform | ND | ug/kg | 5.6 | 1 | | 06/12/18 21:36 | 75-25-2 | |
| Bromomethane | ND | ug/kg | 11.3 | 1 | | 06/12/18 21:36 | 74-83-9 | |
| 2-Butanone (MEK) | ND | ug/kg | 113 | 1 | | 06/12/18 21:36 | 78-93-3 | |
| n-Butylbenzene | ND | ug/kg | 5.6 | 1 | | 06/12/18 21:36 | 104-51-8 | |
| sec-Butylbenzene | ND | ug/kg | 5.6 | 1 | | 06/12/18 21:36 | 135-98-8 | |
| tert-Butylbenzene | ND | ug/kg | 5.6 | 1 | | 06/12/18 21:36 | 98-06-6 | |
| Carbon tetrachloride | ND | ug/kg | 5.6 | 1 | | 06/12/18 21:36 | 56-23-5 | |
| Chlorobenzene | ND | ug/kg | 5.6 | 1 | | 06/12/18 21:36 | 108-90-7 | |
| Chloroethane | ND | ug/kg | 11.3 | 1 | | 06/12/18 21:36 | 75-00-3 | |
| Chloroform | ND | ug/kg | 5.6 | 1 | | 06/12/18 21:36 | 67-66-3 | |
| Chloromethane | ND | ug/kg | 11.3 | 1 | | 06/12/18 21:36 | 74-87-3 | |
| 2-Chlorotoluene | ND | ug/kg | 5.6 | 1 | | 06/12/18 21:36 | 95-49-8 | |
| 4-Chlorotoluene | ND | ug/kg | 5.6 | 1 | | 06/12/18 21:36 | 106-43-4 | |
| 1,2-Dibromo-3-chloropropane | ND | ug/kg | 5.6 | 1 | | 06/12/18 21:36 | 96-12-8 | |
| Dibromochloromethane | ND | ug/kg | 5.6 | 1 | | 06/12/18 21:36 | 124-48-1 | |
| 1,2-Dibromoethane (EDB) | ND | ug/kg | 5.6 | 1 | | 06/12/18 21:36 | 106-93-4 | |
| Dibromomethane | ND | ug/kg | 5.6 | 1 | | 06/12/18 21:36 | 74-95-3 | |
| 1,2-Dichlorobenzene | ND | ug/kg | 5.6 | 1 | | 06/12/18 21:36 | 95-50-1 | |
| 1,3-Dichlorobenzene | ND | ug/kg | 5.6 | 1 | | 06/12/18 21:36 | 541-73-1 | |
| 1,4-Dichlorobenzene | ND | ug/kg | 5.6 | 1 | | 06/12/18 21:36 | 106-46-7 | |
| Dichlorodifluoromethane | ND | ug/kg | 11.3 | 1 | | 06/12/18 21:36 | 75-71-8 | |
| 1,1-Dichloroethane | ND | ug/kg | 5.6 | 1 | | 06/12/18 21:36 | 75-34-3 | |
| 1,2-Dichloroethane | ND | ug/kg | 5.6 | 1 | | 06/12/18 21:36 | 107-06-2 | |
| 1,1-Dichloroethene | ND | ug/kg | 5.6 | 1 | | 06/12/18 21:36 | 75-35-4 | |
| cis-1,2-Dichloroethene | ND | ug/kg | 5.6 | 1 | | 06/12/18 21:36 | 156-59-2 | |
| trans-1,2-Dichloroethene | ND | ug/kg | 5.6 | 1 | | 06/12/18 21:36 | 156-60-5 | |
| 1,2-Dichloropropane | ND | ug/kg | 5.6 | 1 | | 06/12/18 21:36 | 78-87-5 | |
| 1,3-Dichloropropane | ND | ug/kg | 5.6 | 1 | | 06/12/18 21:36 | 142-28-9 | |
| 2,2-Dichloropropane | ND | ug/kg | 5.6 | 1 | | 06/12/18 21:36 | 594-20-7 | |
| 1,1-Dichloropropene | ND | ug/kg | 5.6 | 1 | | 06/12/18 21:36 | 563-58-6 | |
| cis-1,3-Dichloropropene | ND | ug/kg | 5.6 | 1 | | 06/12/18 21:36 | 10061-01-5 | |

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(704)875-9092

## ANALYTICAL RESULTS

Project: NCDOT U5711 WBS 50207.1.1
Pace Project No.: 92387904

**Sample: SB-3** **Lab ID: 92387904003** Collected: 06/08/18 12:00 Received: 06/11/18 11:20 Matrix: Solid

***Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.***

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **8260/5035A Volatile Organics** | Analytical Method: EPA 8260 | | | | | | | |
| trans-1,3-Dichloropropene | ND | ug/kg | 5.6 | 1 | | 06/12/18 21:36 | 10061-02-6 | |
| Diisopropyl ether | ND | ug/kg | 5.6 | 1 | | 06/12/18 21:36 | 108-20-3 | |
| Ethylbenzene | ND | ug/kg | 5.6 | 1 | | 06/12/18 21:36 | 100-41-4 | |
| Hexachloro-1,3-butadiene | ND | ug/kg | 5.6 | 1 | | 06/12/18 21:36 | 87-68-3 | |
| 2-Hexanone | ND | ug/kg | 56.4 | 1 | | 06/12/18 21:36 | 591-78-6 | |
| Isopropylbenzene (Cumene) | ND | ug/kg | 5.6 | 1 | | 06/12/18 21:36 | 98-82-8 | |
| p-Isopropyltoluene | ND | ug/kg | 5.6 | 1 | | 06/12/18 21:36 | 99-87-6 | |
| Methylene Chloride | ND | ug/kg | 22.6 | 1 | | 06/12/18 21:36 | 75-09-2 | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/kg | 56.4 | 1 | | 06/12/18 21:36 | 108-10-1 | |
| Methyl-tert-butyl ether | ND | ug/kg | 5.6 | 1 | | 06/12/18 21:36 | 1634-04-4 | |
| Naphthalene | ND | ug/kg | 5.6 | 1 | | 06/12/18 21:36 | 91-20-3 | |
| n-Propylbenzene | ND | ug/kg | 5.6 | 1 | | 06/12/18 21:36 | 103-65-1 | |
| Styrene | ND | ug/kg | 5.6 | 1 | | 06/12/18 21:36 | 100-42-5 | |
| 1,1,1,2-Tetrachloroethane | ND | ug/kg | 5.6 | 1 | | 06/12/18 21:36 | 630-20-6 | |
| 1,1,2,2-Tetrachloroethane | ND | ug/kg | 5.6 | 1 | | 06/12/18 21:36 | 79-34-5 | |
| Tetrachloroethene | ND | ug/kg | 5.6 | 1 | | 06/12/18 21:36 | 127-18-4 | L2 |
| Toluene | ND | ug/kg | 5.6 | 1 | | 06/12/18 21:36 | 108-88-3 | |
| 1,2,3-Trichlorobenzene | ND | ug/kg | 5.6 | 1 | | 06/12/18 21:36 | 87-61-6 | |
| 1,2,4-Trichlorobenzene | ND | ug/kg | 5.6 | 1 | | 06/12/18 21:36 | 120-82-1 | |
| 1,1,1-Trichloroethane | ND | ug/kg | 5.6 | 1 | | 06/12/18 21:36 | 71-55-6 | |
| 1,1,2-Trichloroethane | ND | ug/kg | 5.6 | 1 | | 06/12/18 21:36 | 79-00-5 | |
| Trichloroethene | ND | ug/kg | 5.6 | 1 | | 06/12/18 21:36 | 79-01-6 | |
| Trichlorofluoromethane | ND | ug/kg | 5.6 | 1 | | 06/12/18 21:36 | 75-69-4 | |
| 1,2,3-Trichloropropane | ND | ug/kg | 5.6 | 1 | | 06/12/18 21:36 | 96-18-4 | |
| 1,2,4-Trimethylbenzene | ND | ug/kg | 5.6 | 1 | | 06/12/18 21:36 | 95-63-6 | |
| 1,3,5-Trimethylbenzene | ND | ug/kg | 5.6 | 1 | | 06/12/18 21:36 | 108-67-8 | |
| Vinyl acetate | ND | ug/kg | 56.4 | 1 | | 06/12/18 21:36 | 108-05-4 | |
| Vinyl chloride | ND | ug/kg | 11.3 | 1 | | 06/12/18 21:36 | 75-01-4 | |
| Xylene (Total) | ND | ug/kg | 11.3 | 1 | | 06/12/18 21:36 | 1330-20-7 | |
| m&p-Xylene | ND | ug/kg | 11.3 | 1 | | 06/12/18 21:36 | 179601-23-1 | |
| o-Xylene | ND | ug/kg | 5.6 | 1 | | 06/12/18 21:36 | 95-47-6 | |
| ***Surrogates*** | | | | | | | | |
| Toluene-d8 (S) | 109 | % | 70-130 | 1 | | 06/12/18 21:36 | 2037-26-5 | |
| 4-Bromofluorobenzene (S) | 73 | % | 70-130 | 1 | | 06/12/18 21:36 | 460-00-4 | |
| 1,2-Dichloroethane-d4 (S) | 94 | % | 70-132 | 1 | | 06/12/18 21:36 | 17060-07-0 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | |
| Percent Moisture | **20.1** | % | 0.10 | 1 | | 06/12/18 12:09 | | |

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## ANALYTICAL RESULTS

Project: NCDOT U5711 WBS 50207.1.1
Pace Project No.: 92387904

**Sample: SB-4** **Lab ID: 92387904004** Collected: 06/08/18 12:30 Received: 06/11/18 11:20 Matrix: Solid

***Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.***

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **8015 GCS THC-Diesel** | Analytical Method: EPA 8015 Modified Preparation Method: EPA 3546 | | | | | | | |
| Diesel Range Organics(C10-C28) | ND | mg/kg | 6.1 | 1 | 06/12/18 15:13 | 06/14/18 13:09 | | |
| ***Surrogates*** | | | | | | | | |
| n-Pentacosane (S) | 57 | % | 41-119 | 1 | 06/12/18 15:13 | 06/14/18 13:09 | 629-99-2 | |
| **Gasoline Range Organics** | Analytical Method: EPA 8015 Modified Preparation Method: EPA 5035A/5030B | | | | | | | |
| Gas Range Organics (C6-C10) | ND | mg/kg | 5.5 | 1 | 06/11/18 12:05 | 06/12/18 06:07 | | |
| ***Surrogates*** | | | | | | | | |
| 4-Bromofluorobenzene (S) | 81 | % | 70-167 | 1 | 06/11/18 12:05 | 06/12/18 06:07 | 460-00-4 | |
| **8260/5035A Volatile Organics** | Analytical Method: EPA 8260 | | | | | | | |
| Acetone | ND | ug/kg | 86.6 | 1 | | 06/12/18 21:56 | 67-64-1 | |
| Benzene | ND | ug/kg | 4.3 | 1 | | 06/12/18 21:56 | 71-43-2 | |
| Bromobenzene | ND | ug/kg | 4.3 | 1 | | 06/12/18 21:56 | 108-86-1 | |
| Bromochloromethane | ND | ug/kg | 4.3 | 1 | | 06/12/18 21:56 | 74-97-5 | |
| Bromodichloromethane | ND | ug/kg | 4.3 | 1 | | 06/12/18 21:56 | 75-27-4 | |
| Bromoform | ND | ug/kg | 4.3 | 1 | | 06/12/18 21:56 | 75-25-2 | |
| Bromomethane | ND | ug/kg | 8.7 | 1 | | 06/12/18 21:56 | 74-83-9 | |
| 2-Butanone (MEK) | ND | ug/kg | 86.6 | 1 | | 06/12/18 21:56 | 78-93-3 | |
| n-Butylbenzene | ND | ug/kg | 4.3 | 1 | | 06/12/18 21:56 | 104-51-8 | |
| sec-Butylbenzene | ND | ug/kg | 4.3 | 1 | | 06/12/18 21:56 | 135-98-8 | |
| tert-Butylbenzene | ND | ug/kg | 4.3 | 1 | | 06/12/18 21:56 | 98-06-6 | |
| Carbon tetrachloride | ND | ug/kg | 4.3 | 1 | | 06/12/18 21:56 | 56-23-5 | |
| Chlorobenzene | ND | ug/kg | 4.3 | 1 | | 06/12/18 21:56 | 108-90-7 | |
| Chloroethane | ND | ug/kg | 8.7 | 1 | | 06/12/18 21:56 | 75-00-3 | |
| Chloroform | ND | ug/kg | 4.3 | 1 | | 06/12/18 21:56 | 67-66-3 | |
| Chloromethane | ND | ug/kg | 8.7 | 1 | | 06/12/18 21:56 | 74-87-3 | |
| 2-Chlorotoluene | ND | ug/kg | 4.3 | 1 | | 06/12/18 21:56 | 95-49-8 | |
| 4-Chlorotoluene | ND | ug/kg | 4.3 | 1 | | 06/12/18 21:56 | 106-43-4 | |
| 1,2-Dibromo-3-chloropropane | ND | ug/kg | 4.3 | 1 | | 06/12/18 21:56 | 96-12-8 | |
| Dibromochloromethane | ND | ug/kg | 4.3 | 1 | | 06/12/18 21:56 | 124-48-1 | |
| 1,2-Dibromoethane (EDB) | ND | ug/kg | 4.3 | 1 | | 06/12/18 21:56 | 106-93-4 | |
| Dibromomethane | ND | ug/kg | 4.3 | 1 | | 06/12/18 21:56 | 74-95-3 | |
| 1,2-Dichlorobenzene | ND | ug/kg | 4.3 | 1 | | 06/12/18 21:56 | 95-50-1 | |
| 1,3-Dichlorobenzene | ND | ug/kg | 4.3 | 1 | | 06/12/18 21:56 | 541-73-1 | |
| 1,4-Dichlorobenzene | ND | ug/kg | 4.3 | 1 | | 06/12/18 21:56 | 106-46-7 | |
| Dichlorodifluoromethane | ND | ug/kg | 8.7 | 1 | | 06/12/18 21:56 | 75-71-8 | |
| 1,1-Dichloroethane | ND | ug/kg | 4.3 | 1 | | 06/12/18 21:56 | 75-34-3 | |
| 1,2-Dichloroethane | ND | ug/kg | 4.3 | 1 | | 06/12/18 21:56 | 107-06-2 | |
| 1,1-Dichloroethene | ND | ug/kg | 4.3 | 1 | | 06/12/18 21:56 | 75-35-4 | |
| cis-1,2-Dichloroethene | ND | ug/kg | 4.3 | 1 | | 06/12/18 21:56 | 156-59-2 | |
| trans-1,2-Dichloroethene | ND | ug/kg | 4.3 | 1 | | 06/12/18 21:56 | 156-60-5 | |
| 1,2-Dichloropropane | ND | ug/kg | 4.3 | 1 | | 06/12/18 21:56 | 78-87-5 | |
| 1,3-Dichloropropane | ND | ug/kg | 4.3 | 1 | | 06/12/18 21:56 | 142-28-9 | |
| 2,2-Dichloropropane | ND | ug/kg | 4.3 | 1 | | 06/12/18 21:56 | 594-20-7 | |
| 1,1-Dichloropropene | ND | ug/kg | 4.3 | 1 | | 06/12/18 21:56 | 563-58-6 | |
| cis-1,3-Dichloropropene | ND | ug/kg | 4.3 | 1 | | 06/12/18 21:56 | 10061-01-5 | |

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## ANALYTICAL RESULTS

Project: NCDOT U5711 WBS 50207.1.1
Pace Project No.: 92387904

**Sample: SB-4** **Lab ID: 92387904004** Collected: 06/08/18 12:30 Received: 06/11/18 11:20 Matrix: Solid

***Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.***

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **8260/5035A Volatile Organics** | Analytical Method: EPA 8260 | | | | | | | |
| trans-1,3-Dichloropropene | ND | ug/kg | 4.3 | 1 | | 06/12/18 21:56 | 10061-02-6 | |
| Diisopropyl ether | ND | ug/kg | 4.3 | 1 | | 06/12/18 21:56 | 108-20-3 | |
| Ethylbenzene | ND | ug/kg | 4.3 | 1 | | 06/12/18 21:56 | 100-41-4 | |
| Hexachloro-1,3-butadiene | ND | ug/kg | 4.3 | 1 | | 06/12/18 21:56 | 87-68-3 | |
| 2-Hexanone | ND | ug/kg | 43.3 | 1 | | 06/12/18 21:56 | 591-78-6 | |
| Isopropylbenzene (Cumene) | ND | ug/kg | 4.3 | 1 | | 06/12/18 21:56 | 98-82-8 | |
| p-Isopropyltoluene | ND | ug/kg | 4.3 | 1 | | 06/12/18 21:56 | 99-87-6 | |
| Methylene Chloride | ND | ug/kg | 17.3 | 1 | | 06/12/18 21:56 | 75-09-2 | |
| 4-Methyl-2-pentanone (MIBK) | ND | ug/kg | 43.3 | 1 | | 06/12/18 21:56 | 108-10-1 | |
| Methyl-tert-butyl ether | ND | ug/kg | 4.3 | 1 | | 06/12/18 21:56 | 1634-04-4 | |
| Naphthalene | ND | ug/kg | 4.3 | 1 | | 06/12/18 21:56 | 91-20-3 | |
| n-Propylbenzene | ND | ug/kg | 4.3 | 1 | | 06/12/18 21:56 | 103-65-1 | |
| Styrene | ND | ug/kg | 4.3 | 1 | | 06/12/18 21:56 | 100-42-5 | |
| 1,1,1,2-Tetrachloroethane | ND | ug/kg | 4.3 | 1 | | 06/12/18 21:56 | 630-20-6 | |
| 1,1,2,2-Tetrachloroethane | ND | ug/kg | 4.3 | 1 | | 06/12/18 21:56 | 79-34-5 | |
| Tetrachloroethene | ND | ug/kg | 4.3 | 1 | | 06/12/18 21:56 | 127-18-4 | L2 |
| Toluene | ND | ug/kg | 4.3 | 1 | | 06/12/18 21:56 | 108-88-3 | |
| 1,2,3-Trichlorobenzene | ND | ug/kg | 4.3 | 1 | | 06/12/18 21:56 | 87-61-6 | |
| 1,2,4-Trichlorobenzene | ND | ug/kg | 4.3 | 1 | | 06/12/18 21:56 | 120-82-1 | |
| 1,1,1-Trichloroethane | ND | ug/kg | 4.3 | 1 | | 06/12/18 21:56 | 71-55-6 | |
| 1,1,2-Trichloroethane | ND | ug/kg | 4.3 | 1 | | 06/12/18 21:56 | 79-00-5 | |
| Trichloroethene | ND | ug/kg | 4.3 | 1 | | 06/12/18 21:56 | 79-01-6 | |
| Trichlorofluoromethane | ND | ug/kg | 4.3 | 1 | | 06/12/18 21:56 | 75-69-4 | |
| 1,2,3-Trichloropropane | ND | ug/kg | 4.3 | 1 | | 06/12/18 21:56 | 96-18-4 | |
| 1,2,4-Trimethylbenzene | ND | ug/kg | 4.3 | 1 | | 06/12/18 21:56 | 95-63-6 | |
| 1,3,5-Trimethylbenzene | ND | ug/kg | 4.3 | 1 | | 06/12/18 21:56 | 108-67-8 | |
| Vinyl acetate | ND | ug/kg | 43.3 | 1 | | 06/12/18 21:56 | 108-05-4 | |
| Vinyl chloride | ND | ug/kg | 8.7 | 1 | | 06/12/18 21:56 | 75-01-4 | |
| Xylene (Total) | ND | ug/kg | 8.7 | 1 | | 06/12/18 21:56 | 1330-20-7 | |
| m&p-Xylene | ND | ug/kg | 8.7 | 1 | | 06/12/18 21:56 | 179601-23-1 | |
| o-Xylene | ND | ug/kg | 4.3 | 1 | | 06/12/18 21:56 | 95-47-6 | |
| ***Surrogates*** | | | | | | | | |
| Toluene-d8 (S) | 115 | % | 70-130 | 1 | | 06/12/18 21:56 | 2037-26-5 | |
| 4-Bromofluorobenzene (S) | 99 | % | 70-130 | 1 | | 06/12/18 21:56 | 460-00-4 | |
| 1,2-Dichloroethane-d4 (S) | 99 | % | 70-132 | 1 | | 06/12/18 21:56 | 17060-07-0 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | |
| Percent Moisture | **17.7** | % | 0.10 | 1 | | 06/12/18 12:09 | | |

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## QUALITY CONTROL DATA

Project: NCDOT U5711 WBS 50207.1.1
Pace Project No.: 92387904

QC Batch: 414742 Analysis Method: EPA 8015 Modified
QC Batch Method: EPA 5035A/5030B Analysis Description: Gasoline Range Organics
Associated Lab Samples: 92387904001, 92387904002, 92387904003, 92387904004

METHOD BLANK: 2299889 Matrix: Solid
Associated Lab Samples: 92387904001, 92387904002, 92387904003, 92387904004

| Parameter | Units | Blank Result | Reporting Limit | Analyzed | Qualifiers |
|---|---|---|---|---|---|
| Gas Range Organics (C6-C10) | mg/kg | ND | 6.0 | 06/11/18 13:42 | |
| 4-Bromofluorobenzene (S) | % | 73 | 70-167 | 06/11/18 13:42 | |

LABORATORY CONTROL SAMPLE: 2299890

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|
| Gas Range Organics (C6-C10) | mg/kg | 49.9 | 44.6 | 89 | 70-165 | |
| 4-Bromofluorobenzene (S) | % | | | 70 | 70-167 | |

MATRIX SPIKE SAMPLE: 2299891

| Parameter | Units | 92387715014 Result | Spike Conc. | MS Result | MS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|---|
| Gas Range Organics (C6-C10) | mg/kg | ND | 45.3 | 43.9 | 96 | 47-187 | |
| 4-Bromofluorobenzene (S) | % | | | | 77 | 70-167 | |

SAMPLE DUPLICATE: 2299892

| Parameter | Units | 92387715015 Result | Dup Result | RPD | Qualifiers |
|---|---|---|---|---|---|
| Gas Range Organics (C6-C10) | mg/kg | ND | ND | | |
| 4-Bromofluorobenzene (S) | % | 79 | 80 | 1 | |

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## QUALITY CONTROL DATA

Project: NCDOT U5711 WBS 50207.1.1
Pace Project No.: 92387904

QC Batch: 414886 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV 5035A Volatile Organics
Associated Lab Samples: 92387904001, 92387904002

METHOD BLANK: 2300696 Matrix: Solid
Associated Lab Samples: 92387904001, 92387904002

| Parameter | Units | Blank Result | Reporting Limit | Analyzed | Qualifiers |
|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ug/kg | ND | 5.6 | 06/12/18 14:27 | |
| 1,1,1-Trichloroethane | ug/kg | ND | 5.6 | 06/12/18 14:27 | |
| 1,1,2,2-Tetrachloroethane | ug/kg | ND | 5.6 | 06/12/18 14:27 | |
| 1,1,2-Trichloroethane | ug/kg | ND | 5.6 | 06/12/18 14:27 | |
| 1,1-Dichloroethane | ug/kg | ND | 5.6 | 06/12/18 14:27 | |
| 1,1-Dichloroethene | ug/kg | ND | 5.6 | 06/12/18 14:27 | |
| 1,1-Dichloropropene | ug/kg | ND | 5.6 | 06/12/18 14:27 | |
| 1,2,3-Trichlorobenzene | ug/kg | ND | 5.6 | 06/12/18 14:27 | |
| 1,2,3-Trichloropropane | ug/kg | ND | 5.6 | 06/12/18 14:27 | |
| 1,2,4-Trichlorobenzene | ug/kg | ND | 5.6 | 06/12/18 14:27 | |
| 1,2,4-Trimethylbenzene | ug/kg | ND | 5.6 | 06/12/18 14:27 | |
| 1,2-Dibromo-3-chloropropane | ug/kg | ND | 5.6 | 06/12/18 14:27 | |
| 1,2-Dibromoethane (EDB) | ug/kg | ND | 5.6 | 06/12/18 14:27 | |
| 1,2-Dichlorobenzene | ug/kg | ND | 5.6 | 06/12/18 14:27 | |
| 1,2-Dichloroethane | ug/kg | ND | 5.6 | 06/12/18 14:27 | |
| 1,2-Dichloropropane | ug/kg | ND | 5.6 | 06/12/18 14:27 | |
| 1,3,5-Trimethylbenzene | ug/kg | ND | 5.6 | 06/12/18 14:27 | |
| 1,3-Dichlorobenzene | ug/kg | ND | 5.6 | 06/12/18 14:27 | |
| 1,3-Dichloropropane | ug/kg | ND | 5.6 | 06/12/18 14:27 | |
| 1,4-Dichlorobenzene | ug/kg | ND | 5.6 | 06/12/18 14:27 | |
| 2,2-Dichloropropane | ug/kg | ND | 5.6 | 06/12/18 14:27 | |
| 2-Butanone (MEK) | ug/kg | ND | 112 | 06/12/18 14:27 | |
| 2-Chlorotoluene | ug/kg | ND | 5.6 | 06/12/18 14:27 | |
| 2-Hexanone | ug/kg | ND | 55.9 | 06/12/18 14:27 | |
| 4-Chlorotoluene | ug/kg | ND | 5.6 | 06/12/18 14:27 | |
| 4-Methyl-2-pentanone (MIBK) | ug/kg | ND | 55.9 | 06/12/18 14:27 | |
| Acetone | ug/kg | ND | 112 | 06/12/18 14:27 | |
| Benzene | ug/kg | ND | 5.6 | 06/12/18 14:27 | |
| Bromobenzene | ug/kg | ND | 5.6 | 06/12/18 14:27 | |
| Bromochloromethane | ug/kg | ND | 5.6 | 06/12/18 14:27 | |
| Bromodichloromethane | ug/kg | ND | 5.6 | 06/12/18 14:27 | |
| Bromoform | ug/kg | ND | 5.6 | 06/12/18 14:27 | |
| Bromomethane | ug/kg | ND | 11.2 | 06/12/18 14:27 | |
| Carbon tetrachloride | ug/kg | ND | 5.6 | 06/12/18 14:27 | |
| Chlorobenzene | ug/kg | ND | 5.6 | 06/12/18 14:27 | |
| Chloroethane | ug/kg | ND | 11.2 | 06/12/18 14:27 | |
| Chloroform | ug/kg | ND | 5.6 | 06/12/18 14:27 | |
| Chloromethane | ug/kg | ND | 11.2 | 06/12/18 14:27 | |
| cis-1,2-Dichloroethene | ug/kg | ND | 5.6 | 06/12/18 14:27 | |
| cis-1,3-Dichloropropene | ug/kg | ND | 5.6 | 06/12/18 14:27 | |
| Dibromochloromethane | ug/kg | ND | 5.6 | 06/12/18 14:27 | |

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## QUALITY CONTROL DATA

Project: NCDOT U5711 WBS 50207.1.1
Pace Project No.: 92387904

METHOD BLANK: 2300696 Matrix: Solid
Associated Lab Samples: 92387904001, 92387904002

| Parameter | Units | Blank Result | Reporting Limit | Analyzed | Qualifiers |
|---|---|---|---|---|---|
| Dibromomethane | ug/kg | ND | 5.6 | 06/12/18 14:27 | |
| Dichlorodifluoromethane | ug/kg | ND | 11.2 | 06/12/18 14:27 | |
| Diisopropyl ether | ug/kg | ND | 5.6 | 06/12/18 14:27 | |
| Ethylbenzene | ug/kg | ND | 5.6 | 06/12/18 14:27 | |
| Hexachloro-1,3-butadiene | ug/kg | ND | 5.6 | 06/12/18 14:27 | |
| Isopropylbenzene (Cumene) | ug/kg | ND | 5.6 | 06/12/18 14:27 | |
| m&p-Xylene | ug/kg | ND | 11.2 | 06/12/18 14:27 | |
| Methyl-tert-butyl ether | ug/kg | ND | 5.6 | 06/12/18 14:27 | |
| Methylene Chloride | ug/kg | ND | 22.4 | 06/12/18 14:27 | |
| n-Butylbenzene | ug/kg | ND | 5.6 | 06/12/18 14:27 | |
| n-Propylbenzene | ug/kg | ND | 5.6 | 06/12/18 14:27 | |
| Naphthalene | ug/kg | ND | 5.6 | 06/12/18 14:27 | |
| o-Xylene | ug/kg | ND | 5.6 | 06/12/18 14:27 | |
| p-Isopropyltoluene | ug/kg | ND | 5.6 | 06/12/18 14:27 | |
| sec-Butylbenzene | ug/kg | ND | 5.6 | 06/12/18 14:27 | |
| Styrene | ug/kg | ND | 5.6 | 06/12/18 14:27 | |
| tert-Butylbenzene | ug/kg | ND | 5.6 | 06/12/18 14:27 | |
| Tetrachloroethene | ug/kg | ND | 5.6 | 06/12/18 14:27 | |
| Toluene | ug/kg | ND | 5.6 | 06/12/18 14:27 | |
| trans-1,2-Dichloroethene | ug/kg | ND | 5.6 | 06/12/18 14:27 | |
| trans-1,3-Dichloropropene | ug/kg | ND | 5.6 | 06/12/18 14:27 | |
| Trichloroethene | ug/kg | ND | 5.6 | 06/12/18 14:27 | |
| Trichlorofluoromethane | ug/kg | ND | 5.6 | 06/12/18 14:27 | |
| Vinyl acetate | ug/kg | ND | 55.9 | 06/12/18 14:27 | |
| Vinyl chloride | ug/kg | ND | 11.2 | 06/12/18 14:27 | |
| Xylene (Total) | ug/kg | ND | 11.2 | 06/12/18 14:27 | |
| 1,2-Dichloroethane-d4 (S) | % | 97 | 70-132 | 06/12/18 14:27 | |
| 4-Bromofluorobenzene (S) | % | 103 | 70-130 | 06/12/18 14:27 | |
| Toluene-d8 (S) | % | 121 | 70-130 | 06/12/18 14:27 | |

LABORATORY CONTROL SAMPLE: 2300697

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ug/kg | 62.5 | 67.3 | 108 | 74-137 | |
| 1,1,1-Trichloroethane | ug/kg | 62.5 | 67.1 | 107 | 67-140 | |
| 1,1,2,2-Tetrachloroethane | ug/kg | 62.5 | 52.9 | 85 | 72-141 | |
| 1,1,2-Trichloroethane | ug/kg | 62.5 | 73.8 | 118 | 78-138 | |
| 1,1-Dichloroethane | ug/kg | 62.5 | 70.9 | 113 | 69-134 | |
| 1,1-Dichloroethene | ug/kg | 62.5 | 70.5 | 113 | 67-138 | |
| 1,1-Dichloropropene | ug/kg | 62.5 | 69.5 | 111 | 69-139 | |
| 1,2,3-Trichlorobenzene | ug/kg | 62.5 | 60.4 | 97 | 70-146 | |
| 1,2,3-Trichloropropane | ug/kg | 62.5 | 59.6 | 95 | 69-144 | |
| 1,2,4-Trichlorobenzene | ug/kg | 62.5 | 62.1 | 99 | 68-148 | |
| 1,2,4-Trimethylbenzene | ug/kg | 62.5 | 62.6 | 100 | 74-137 | |

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## QUALITY CONTROL DATA

Project: NCDOT U5711 WBS 50207.1.1
Pace Project No.: 92387904

LABORATORY CONTROL SAMPLE: 2300697

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|
| 1,2-Dibromo-3-chloropropane | ug/kg | 62.5 | 62.0 | 99 | 65-140 | |
| 1,2-Dibromoethane (EDB) | ug/kg | 62.5 | 65.2 | 104 | 77-135 | |
| 1,2-Dichlorobenzene | ug/kg | 62.5 | 64.5 | 103 | 77-141 | |
| 1,2-Dichloroethane | ug/kg | 62.5 | 65.8 | 105 | 65-137 | |
| 1,2-Dichloropropane | ug/kg | 62.5 | 74.7 | 120 | 72-136 | |
| 1,3,5-Trimethylbenzene | ug/kg | 62.5 | 63.3 | 101 | 76-133 | |
| 1,3-Dichlorobenzene | ug/kg | 62.5 | 61.5 | 98 | 74-138 | |
| 1,3-Dichloropropane | ug/kg | 62.5 | 65.8 | 105 | 71-139 | |
| 1,4-Dichlorobenzene | ug/kg | 62.5 | 63.8 | 102 | 76-138 | |
| 2,2-Dichloropropane | ug/kg | 62.5 | 64.8 | 104 | 68-137 | |
| 2-Butanone (MEK) | ug/kg | 125 | 119J | 95 | 58-147 | |
| 2-Chlorotoluene | ug/kg | 62.5 | 61.2 | 98 | 73-139 | |
| 2-Hexanone | ug/kg | 125 | 113 | 91 | 62-145 | |
| 4-Chlorotoluene | ug/kg | 62.5 | 63.1 | 101 | 76-141 | |
| 4-Methyl-2-pentanone (MIBK) | ug/kg | 125 | 137 | 110 | 64-149 | |
| Acetone | ug/kg | 125 | 112J | 90 | 53-153 | |
| Benzene | ug/kg | 62.5 | 68.4 | 109 | 73-135 | |
| Bromobenzene | ug/kg | 62.5 | 63.3 | 101 | 75-133 | |
| Bromochloromethane | ug/kg | 62.5 | 66.1 | 106 | 73-134 | |
| Bromodichloromethane | ug/kg | 62.5 | 72.7 | 116 | 71-135 | |
| Bromoform | ug/kg | 62.5 | 58.2 | 93 | 66-141 | |
| Bromomethane | ug/kg | 62.5 | 66.4 | 106 | 53-160 | |
| Carbon tetrachloride | ug/kg | 62.5 | 72.0 | 115 | 60-145 | |
| Chlorobenzene | ug/kg | 62.5 | 62.4 | 100 | 78-130 | |
| Chloroethane | ug/kg | 62.5 | 58.0 | 93 | 64-149 | |
| Chloroform | ug/kg | 62.5 | 67.6 | 108 | 70-134 | |
| Chloromethane | ug/kg | 62.5 | 52.5 | 84 | 52-150 | |
| cis-1,2-Dichloroethene | ug/kg | 62.5 | 66.2 | 106 | 70-133 | |
| cis-1,3-Dichloropropene | ug/kg | 62.5 | 74.6 | 119 | 68-134 | |
| Dibromochloromethane | ug/kg | 62.5 | 61.1 | 98 | 71-138 | |
| Dibromomethane | ug/kg | 62.5 | 69.0 | 110 | 74-130 | |
| Dichlorodifluoromethane | ug/kg | 62.5 | 54.4 | 87 | 40-160 | |
| Diisopropyl ether | ug/kg | 62.5 | 65.3 | 104 | 69-141 | |
| Ethylbenzene | ug/kg | 62.5 | 61.2 | 98 | 75-133 | |
| Hexachloro-1,3-butadiene | ug/kg | 62.5 | 63.1 | 101 | 68-143 | |
| Isopropylbenzene (Cumene) | ug/kg | 62.5 | 62.1 | 99 | 76-143 | |
| m&p-Xylene | ug/kg | 125 | 123 | 99 | 75-136 | |
| Methyl-tert-butyl ether | ug/kg | 62.5 | 73.9 | 118 | 68-144 | |
| Methylene Chloride | ug/kg | 62.5 | 68.2 | 109 | 45-154 | |
| n-Butylbenzene | ug/kg | 62.5 | 64.7 | 104 | 72-137 | |
| n-Propylbenzene | ug/kg | 62.5 | 65.2 | 104 | 76-136 | |
| Naphthalene | ug/kg | 62.5 | 63.6 | 102 | 68-151 | |
| o-Xylene | ug/kg | 62.5 | 63.6 | 102 | 76-141 | |
| p-Isopropyltoluene | ug/kg | 62.5 | 64.4 | 103 | 76-140 | |
| sec-Butylbenzene | ug/kg | 62.5 | 64.8 | 104 | 79-139 | |
| Styrene | ug/kg | 62.5 | 61.3 | 98 | 79-137 | |
| tert-Butylbenzene | ug/kg | 62.5 | 63.0 | 101 | 74-143 | |

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## QUALITY CONTROL DATA

Project: NCDOT U5711 WBS 50207.1.1
Pace Project No.: 92387904

LABORATORY CONTROL SAMPLE: 2300697

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|
| Tetrachloroethene | ug/kg | 62.5 | 36.4 | 58 | 71-138 | F3,L2 |
| Toluene | ug/kg | 62.5 | 66.7 | 107 | 74-131 | |
| trans-1,2-Dichloroethene | ug/kg | 62.5 | 71.4 | 114 | 67-135 | |
| trans-1,3-Dichloropropene | ug/kg | 62.5 | 70.7 | 113 | 65-146 | |
| Trichloroethene | ug/kg | 62.5 | 71.0 | 114 | 67-135 | |
| Trichlorofluoromethane | ug/kg | 62.5 | 64.6 | 103 | 59-144 | |
| Vinyl acetate | ug/kg | 125 | 84.8 | 68 | 40-160 | F3 |
| Vinyl chloride | ug/kg | 62.5 | 61.4 | 98 | 56-141 | |
| Xylene (Total) | ug/kg | 188 | 187 | 100 | 76-137 | |
| 1,2-Dichloroethane-d4 (S) | % | | | 100 | 70-132 | |
| 4-Bromofluorobenzene (S) | % | | | 93 | 70-130 | |
| Toluene-d8 (S) | % | | | 110 | 70-130 | |

MATRIX SPIKE SAMPLE: 2301221

| Parameter | Units | 92387555010 Result | Spike Conc. | MS Result | MS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ug/kg | ND | 14.5 | 12.3 | 85 | 70-130 | |
| 1,1,1-Trichloroethane | ug/kg | ND | 14.5 | 13.6 | 93 | 70-130 | |
| 1,1,2,2-Tetrachloroethane | ug/kg | ND | 14.5 | 11.9 | 82 | 70-130 | |
| 1,1,2-Trichloroethane | ug/kg | ND | 14.5 | 12.1 | 83 | 70-130 | |
| 1,1-Dichloroethane | ug/kg | ND | 14.5 | 13.3 | 91 | 70-130 | |
| 1,1-Dichloroethene | ug/kg | ND | 14.5 | 14.1 | 97 | 49-180 | |
| 1,1-Dichloropropene | ug/kg | ND | 14.5 | 13.5 | 93 | 70-130 | |
| 1,2,3-Trichlorobenzene | ug/kg | ND | 14.5 | 4.6 | 32 | 70-130 | M1 |
| 1,2,3-Trichloropropane | ug/kg | ND | 14.5 | 10.8 | 75 | 70-130 | |
| 1,2,4-Trichlorobenzene | ug/kg | ND | 14.5 | 5.3 | 36 | 70-130 | M1 |
| 1,2,4-Trimethylbenzene | ug/kg | ND | 14.5 | 12.3 | 85 | 70-130 | |
| 1,2-Dibromo-3-chloropropane | ug/kg | ND | 14.5 | 10.9 | 75 | 70-130 | |
| 1,2-Dibromoethane (EDB) | ug/kg | ND | 14.5 | 12.1 | 83 | 70-130 | |
| 1,2-Dichlorobenzene | ug/kg | ND | 14.5 | 8.6 | 59 | 70-130 | M1 |
| 1,2-Dichloroethane | ug/kg | ND | 14.5 | 12.8 | 88 | 70-130 | |
| 1,2-Dichloropropane | ug/kg | ND | 14.5 | 13.4 | 92 | 70-130 | |
| 1,3,5-Trimethylbenzene | ug/kg | ND | 14.5 | 12.9 | 89 | 70-130 | |
| 1,3-Dichlorobenzene | ug/kg | ND | 14.5 | 9.0 | 62 | 70-130 | M1 |
| 1,3-Dichloropropane | ug/kg | ND | 14.5 | 13.2 | 91 | 70-130 | |
| 1,4-Dichlorobenzene | ug/kg | ND | 14.5 | 8.8 | 61 | 70-130 | M1 |
| 2,2-Dichloropropane | ug/kg | ND | 14.5 | 13.1 | 90 | 70-130 | |
| 2-Butanone (MEK) | ug/kg | ND | 29 | 25.7J | 89 | 70-130 | |
| 2-Chlorotoluene | ug/kg | ND | 14.5 | 12.0 | 83 | 70-130 | |
| 2-Hexanone | ug/kg | ND | 29 | 22.7J | 78 | 70-130 | |
| 4-Chlorotoluene | ug/kg | ND | 14.5 | 11.1 | 77 | 70-130 | |
| 4-Methyl-2-pentanone (MIBK) | ug/kg | ND | 29 | 23.5J | 81 | 70-130 | |
| Acetone | ug/kg | ND | 29 | 65.4J | 225 | 70-130 | M1 |
| Benzene | ug/kg | ND | 14.5 | 13.8 | 95 | 50-166 | |
| Bromobenzene | ug/kg | ND | 14.5 | 11.4 | 78 | 70-130 | |

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## QUALITY CONTROL DATA

Project: NCDOT U5711 WBS 50207.1.1
Pace Project No.: 92387904

MATRIX SPIKE SAMPLE: 2301221

| Parameter | Units | 92387555010 Result | Spike Conc. | MS Result | MS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|---|
| Bromochloromethane | ug/kg | ND | 14.5 | 12.7 | 87 | 70-130 | |
| Bromodichloromethane | ug/kg | ND | 14.5 | 12.2 | 84 | 70-130 | |
| Bromoform | ug/kg | ND | 14.5 | 9.9 | 68 | 70-130 | M1 |
| Bromomethane | ug/kg | ND | 14.5 | 16.1 | 111 | 70-130 | |
| Carbon tetrachloride | ug/kg | ND | 14.5 | 13.5 | 93 | 70-130 | |
| Chlorobenzene | ug/kg | ND | 14.5 | 11.4 | 78 | 43-169 | |
| Chloroethane | ug/kg | ND | 14.5 | 14.5 | 100 | 70-130 | |
| Chloroform | ug/kg | ND | 14.5 | 14.1 | 97 | 70-130 | |
| Chloromethane | ug/kg | ND | 14.5 | 10.2 | 70 | 70-130 | |
| cis-1,2-Dichloroethene | ug/kg | ND | 14.5 | 13.2 | 91 | 70-130 | |
| cis-1,3-Dichloropropene | ug/kg | ND | 14.5 | 11.5 | 79 | 70-130 | |
| Dibromochloromethane | ug/kg | ND | 14.5 | 11.8 | 81 | 70-130 | |
| Dibromomethane | ug/kg | ND | 14.5 | 12.4 | 85 | 70-130 | |
| Dichlorodifluoromethane | ug/kg | ND | 14.5 | 14.7 | 101 | 70-130 | |
| Diisopropyl ether | ug/kg | ND | 14.5 | 13.6 | 94 | 70-130 | |
| Ethylbenzene | ug/kg | ND | 14.5 | 12.5 | 86 | 70-130 | |
| Hexachloro-1,3-butadiene | ug/kg | ND | 14.5 | 10.5 | 72 | 70-130 | |
| Isopropylbenzene (Cumene) | ug/kg | ND | 14.5 | 12.4 | 85 | 70-130 | |
| m&p-Xylene | ug/kg | ND | 29 | 24.4 | 84 | 70-130 | |
| Methyl-tert-butyl ether | ug/kg | ND | 14.5 | 13.4 | 93 | 70-130 | |
| Methylene Chloride | ug/kg | 10.6J | 14.5 | 21.4 | 74 | 70-130 | |
| n-Butylbenzene | ug/kg | ND | 14.5 | 11.8 | 81 | 70-130 | |
| n-Propylbenzene | ug/kg | ND | 14.5 | 14.2 | 97 | 70-130 | |
| Naphthalene | ug/kg | ND | 14.5 | 6.3 | 43 | 70-130 | M1 |
| o-Xylene | ug/kg | ND | 14.5 | 12.0 | 83 | 70-130 | |
| p-Isopropyltoluene | ug/kg | ND | 14.5 | 12.7 | 87 | 70-130 | |
| sec-Butylbenzene | ug/kg | ND | 14.5 | 13.9 | 96 | 70-130 | |
| Styrene | ug/kg | ND | 14.5 | 10 | 69 | 70-130 | M1 |
| tert-Butylbenzene | ug/kg | ND | 14.5 | 14.0 | 96 | 70-130 | |
| Tetrachloroethene | ug/kg | ND | 14.5 | 8.1 | 55 | 70-130 | M0 |
| Toluene | ug/kg | ND | 14.5 | 12.7 | 88 | 52-163 | |
| trans-1,2-Dichloroethene | ug/kg | ND | 14.5 | 13.7 | 94 | 70-130 | |
| trans-1,3-Dichloropropene | ug/kg | ND | 14.5 | 10.6 | 73 | 70-130 | |
| Trichloroethene | ug/kg | ND | 14.5 | 12.0 | 82 | 49-167 | |
| Trichlorofluoromethane | ug/kg | ND | 14.5 | 14.4 | 99 | 70-130 | |
| Vinyl acetate | ug/kg | ND | 29 | ND | 20 | 70-130 | M1 |
| Vinyl chloride | ug/kg | ND | 14.5 | 14.6 | 101 | 70-130 | |
| Xylene (Total) | ug/kg | ND | 43.5 | 36.4 | 84 | 70-130 | |
| 1,2-Dichloroethane-d4 (S) | % | | | | 94 | 70-132 | |
| 4-Bromofluorobenzene (S) | % | | | | 94 | 70-130 | |
| Toluene-d8 (S) | % | | | | 97 | 70-130 | |

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## QUALITY CONTROL DATA

Project: NCDOT U5711 WBS 50207.1.1
Pace Project No.: 92387904

SAMPLE DUPLICATE: 2301222

| Parameter | Units | 92387744005 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 | | |
| 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 | ND | | |
| 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 | | |

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## QUALITY CONTROL DATA

Project: NCDOT U5711 WBS 50207.1.1
Pace Project No.: 92387904

SAMPLE DUPLICATE: 2301222

| Parameter | Units | 92387744005 Result | Dup Result | RPD | Qualifiers |
|---|---|---|---|---|---|
| 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 | | |
| 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) | % | 103 | 97 | 8 | |
| 4-Bromofluorobenzene (S) | % | 100 | 96 | 6 | |
| Toluene-d8 (S) | % | 117 | 100 | 18 | |

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## QUALITY CONTROL DATA

Project: NCDOT U5711 WBS 50207.1.1
Pace Project No.: 92387904

QC Batch: 414895
QC Batch Method: EPA 8260
Analysis Method: EPA 8260
Analysis Description: 8260 MSV 5035A Volatile Organics
Associated Lab Samples: 92387904003, 92387904004

METHOD BLANK: 2300754
Matrix: Solid
Associated Lab Samples: 92387904003, 92387904004

| Parameter | Units | Blank Result | Reporting Limit | Analyzed | Qualifiers |
|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ug/kg | ND | 6.5 | 06/12/18 14:07 | |
| 1,1,1-Trichloroethane | ug/kg | ND | 6.5 | 06/12/18 14:07 | |
| 1,1,2,2-Tetrachloroethane | ug/kg | ND | 6.5 | 06/12/18 14:07 | |
| 1,1,2-Trichloroethane | ug/kg | ND | 6.5 | 06/12/18 14:07 | |
| 1,1-Dichloroethane | ug/kg | ND | 6.5 | 06/12/18 14:07 | |
| 1,1-Dichloroethene | ug/kg | ND | 6.5 | 06/12/18 14:07 | |
| 1,1-Dichloropropene | ug/kg | ND | 6.5 | 06/12/18 14:07 | |
| 1,2,3-Trichlorobenzene | ug/kg | ND | 6.5 | 06/12/18 14:07 | |
| 1,2,3-Trichloropropane | ug/kg | ND | 6.5 | 06/12/18 14:07 | |
| 1,2,4-Trichlorobenzene | ug/kg | ND | 6.5 | 06/12/18 14:07 | |
| 1,2,4-Trimethylbenzene | ug/kg | ND | 6.5 | 06/12/18 14:07 | |
| 1,2-Dibromo-3-chloropropane | ug/kg | ND | 6.5 | 06/12/18 14:07 | |
| 1,2-Dibromoethane (EDB) | ug/kg | ND | 6.5 | 06/12/18 14:07 | |
| 1,2-Dichlorobenzene | ug/kg | ND | 6.5 | 06/12/18 14:07 | |
| 1,2-Dichloroethane | ug/kg | ND | 6.5 | 06/12/18 14:07 | |
| 1,2-Dichloropropane | ug/kg | ND | 6.5 | 06/12/18 14:07 | |
| 1,3,5-Trimethylbenzene | ug/kg | ND | 6.5 | 06/12/18 14:07 | |
| 1,3-Dichlorobenzene | ug/kg | ND | 6.5 | 06/12/18 14:07 | |
| 1,3-Dichloropropane | ug/kg | ND | 6.5 | 06/12/18 14:07 | |
| 1,4-Dichlorobenzene | ug/kg | ND | 6.5 | 06/12/18 14:07 | |
| 2,2-Dichloropropane | ug/kg | ND | 6.5 | 06/12/18 14:07 | |
| 2-Butanone (MEK) | ug/kg | ND | 131 | 06/12/18 14:07 | |
| 2-Chlorotoluene | ug/kg | ND | 6.5 | 06/12/18 14:07 | |
| 2-Hexanone | ug/kg | ND | 65.4 | 06/12/18 14:07 | |
| 4-Chlorotoluene | ug/kg | ND | 6.5 | 06/12/18 14:07 | |
| 4-Methyl-2-pentanone (MIBK) | ug/kg | ND | 65.4 | 06/12/18 14:07 | |
| Acetone | ug/kg | ND | 131 | 06/12/18 14:07 | |
| Benzene | ug/kg | ND | 6.5 | 06/12/18 14:07 | |
| Bromobenzene | ug/kg | ND | 6.5 | 06/12/18 14:07 | |
| Bromochloromethane | ug/kg | ND | 6.5 | 06/12/18 14:07 | |
| Bromodichloromethane | ug/kg | ND | 6.5 | 06/12/18 14:07 | |
| Bromoform | ug/kg | ND | 6.5 | 06/12/18 14:07 | |
| Bromomethane | ug/kg | ND | 13.1 | 06/12/18 14:07 | |
| Carbon tetrachloride | ug/kg | ND | 6.5 | 06/12/18 14:07 | |
| Chlorobenzene | ug/kg | ND | 6.5 | 06/12/18 14:07 | |
| Chloroethane | ug/kg | ND | 13.1 | 06/12/18 14:07 | |
| Chloroform | ug/kg | ND | 6.5 | 06/12/18 14:07 | |
| Chloromethane | ug/kg | ND | 13.1 | 06/12/18 14:07 | |
| cis-1,2-Dichloroethene | ug/kg | ND | 6.5 | 06/12/18 14:07 | |
| cis-1,3-Dichloropropene | ug/kg | ND | 6.5 | 06/12/18 14:07 | |
| Dibromochloromethane | ug/kg | ND | 6.5 | 06/12/18 14:07 | |

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## QUALITY CONTROL DATA

Project: NCDOT U5711 WBS 50207.1.1
Pace Project No.: 92387904

METHOD BLANK: 2300754 Matrix: Solid
Associated Lab Samples: 92387904003, 92387904004

| Parameter | Units | Blank Result | Reporting Limit | Analyzed | Qualifiers |
|---|---|---|---|---|---|
| Dibromomethane | ug/kg | ND | 6.5 | 06/12/18 14:07 | |
| Dichlorodifluoromethane | ug/kg | ND | 13.1 | 06/12/18 14:07 | |
| Diisopropyl ether | ug/kg | ND | 6.5 | 06/12/18 14:07 | |
| Ethylbenzene | ug/kg | ND | 6.5 | 06/12/18 14:07 | |
| Hexachloro-1,3-butadiene | ug/kg | ND | 6.5 | 06/12/18 14:07 | |
| Isopropylbenzene (Cumene) | ug/kg | ND | 6.5 | 06/12/18 14:07 | |
| m&p-Xylene | ug/kg | ND | 13.1 | 06/12/18 14:07 | |
| Methyl-tert-butyl ether | ug/kg | ND | 6.5 | 06/12/18 14:07 | |
| Methylene Chloride | ug/kg | ND | 26.2 | 06/12/18 14:07 | |
| n-Butylbenzene | ug/kg | ND | 6.5 | 06/12/18 14:07 | |
| n-Propylbenzene | ug/kg | ND | 6.5 | 06/12/18 14:07 | |
| Naphthalene | ug/kg | ND | 6.5 | 06/12/18 14:07 | |
| o-Xylene | ug/kg | ND | 6.5 | 06/12/18 14:07 | |
| p-Isopropyltoluene | ug/kg | ND | 6.5 | 06/12/18 14:07 | |
| sec-Butylbenzene | ug/kg | ND | 6.5 | 06/12/18 14:07 | |
| Styrene | ug/kg | ND | 6.5 | 06/12/18 14:07 | |
| tert-Butylbenzene | ug/kg | ND | 6.5 | 06/12/18 14:07 | |
| Tetrachloroethene | ug/kg | ND | 6.5 | 06/12/18 14:07 | |
| Toluene | ug/kg | ND | 6.5 | 06/12/18 14:07 | |
| trans-1,2-Dichloroethene | ug/kg | ND | 6.5 | 06/12/18 14:07 | |
| trans-1,3-Dichloropropene | ug/kg | ND | 6.5 | 06/12/18 14:07 | |
| Trichloroethene | ug/kg | ND | 6.5 | 06/12/18 14:07 | |
| Trichlorofluoromethane | ug/kg | ND | 6.5 | 06/12/18 14:07 | |
| Vinyl acetate | ug/kg | ND | 65.4 | 06/12/18 14:07 | |
| Vinyl chloride | ug/kg | ND | 13.1 | 06/12/18 14:07 | |
| Xylene (Total) | ug/kg | ND | 13.1 | 06/12/18 14:07 | |
| 1,2-Dichloroethane-d4 (S) | % | 97 | 70-132 | 06/12/18 14:07 | |
| 4-Bromofluorobenzene (S) | % | 118 | 70-130 | 06/12/18 14:07 | |
| Toluene-d8 (S) | % | 115 | 70-130 | 06/12/18 14:07 | |

LABORATORY CONTROL SAMPLE: 2300755

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ug/kg | 58 | 60.4 | 104 | 74-137 | |
| 1,1,1-Trichloroethane | ug/kg | 58 | 54.9 | 95 | 67-140 | |
| 1,1,2,2-Tetrachloroethane | ug/kg | 58 | 54.3 | 94 | 72-141 | |
| 1,1,2-Trichloroethane | ug/kg | 58 | 56.8 | 98 | 78-138 | |
| 1,1-Dichloroethane | ug/kg | 58 | 54.6 | 94 | 69-134 | |
| 1,1-Dichloroethene | ug/kg | 58 | 56.4 | 97 | 67-138 | |
| 1,1-Dichloropropene | ug/kg | 58 | 57.7 | 99 | 69-139 | |
| 1,2,3-Trichlorobenzene | ug/kg | 58 | 54.8 | 94 | 70-146 | |
| 1,2,3-Trichloropropane | ug/kg | 58 | 62.9 | 108 | 69-144 | |
| 1,2,4-Trichlorobenzene | ug/kg | 58 | 56.1 | 97 | 68-148 | |
| 1,2,4-Trimethylbenzene | ug/kg | 58 | 55.6 | 96 | 74-137 | |

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## QUALITY CONTROL DATA

Project: NCDOT U5711 WBS 50207.1.1
Pace Project No.: 92387904

LABORATORY CONTROL SAMPLE: 2300755

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|
| 1,2-Dibromo-3-chloropropane | ug/kg | 58 | 54.9 | 95 | 65-140 | |
| 1,2-Dibromoethane (EDB) | ug/kg | 58 | 64.6 | 111 | 77-135 | |
| 1,2-Dichlorobenzene | ug/kg | 58 | 57.0 | 98 | 77-141 | |
| 1,2-Dichloroethane | ug/kg | 58 | 58.1 | 100 | 65-137 | |
| 1,2-Dichloropropane | ug/kg | 58 | 61.0 | 105 | 72-136 | |
| 1,3,5-Trimethylbenzene | ug/kg | 58 | 51.2 | 88 | 76-133 | |
| 1,3-Dichlorobenzene | ug/kg | 58 | 54.5 | 94 | 74-138 | |
| 1,3-Dichloropropane | ug/kg | 58 | 62.9 | 108 | 71-139 | |
| 1,4-Dichlorobenzene | ug/kg | 58 | 55.0 | 95 | 76-138 | |
| 2,2-Dichloropropane | ug/kg | 58 | 52.3 | 90 | 68-137 | |
| 2-Butanone (MEK) | ug/kg | 116 | 94.1J | 81 | 58-147 | |
| 2-Chlorotoluene | ug/kg | 58 | 50.3 | 87 | 73-139 | |
| 2-Hexanone | ug/kg | 116 | 109 | 94 | 62-145 | |
| 4-Chlorotoluene | ug/kg | 58 | 51.2 | 88 | 76-141 | |
| 4-Methyl-2-pentanone (MIBK) | ug/kg | 116 | 106 | 91 | 64-149 | |
| Acetone | ug/kg | 116 | 95.5J | 82 | 53-153 | |
| Benzene | ug/kg | 58 | 62.3 | 107 | 73-135 | |
| Bromobenzene | ug/kg | 58 | 51.9 | 90 | 75-133 | |
| Bromochloromethane | ug/kg | 58 | 55.5 | 96 | 73-134 | |
| Bromodichloromethane | ug/kg | 58 | 62.8 | 108 | 71-135 | |
| Bromoform | ug/kg | 58 | 54.1 | 93 | 66-141 | |
| Bromomethane | ug/kg | 58 | 52.3 | 90 | 53-160 | |
| Carbon tetrachloride | ug/kg | 58 | 57.4 | 99 | 60-145 | |
| Chlorobenzene | ug/kg | 58 | 57.8 | 100 | 78-130 | |
| Chloroethane | ug/kg | 58 | 46.6 | 80 | 64-149 | |
| Chloroform | ug/kg | 58 | 55.7 | 96 | 70-134 | |
| Chloromethane | ug/kg | 58 | 44.4 | 76 | 52-150 | |
| cis-1,2-Dichloroethene | ug/kg | 58 | 54.1 | 93 | 70-133 | |
| cis-1,3-Dichloropropene | ug/kg | 58 | 62.1 | 107 | 68-134 | |
| Dibromochloromethane | ug/kg | 58 | 58.4 | 101 | 71-138 | |
| Dibromomethane | ug/kg | 58 | 56.3 | 97 | 74-130 | |
| Dichlorodifluoromethane | ug/kg | 58 | 45.8 | 79 | 40-160 | |
| Diisopropyl ether | ug/kg | 58 | 50.2 | 86 | 69-141 | |
| Ethylbenzene | ug/kg | 58 | 57.6 | 99 | 75-133 | |
| Hexachloro-1,3-butadiene | ug/kg | 58 | 55.1 | 95 | 68-143 | |
| Isopropylbenzene (Cumene) | ug/kg | 58 | 61.2 | 106 | 76-143 | |
| m&p-Xylene | ug/kg | 116 | 116 | 100 | 75-136 | |
| Methyl-tert-butyl ether | ug/kg | 58 | 57.4 | 99 | 68-144 | |
| Methylene Chloride | ug/kg | 58 | 52.9 | 91 | 45-154 | |
| n-Butylbenzene | ug/kg | 58 | 57.6 | 99 | 72-137 | |
| n-Propylbenzene | ug/kg | 58 | 52.0 | 90 | 76-136 | |
| Naphthalene | ug/kg | 58 | 58.7 | 101 | 68-151 | |
| o-Xylene | ug/kg | 58 | 61.2 | 105 | 76-141 | |
| p-Isopropyltoluene | ug/kg | 58 | 56.5 | 97 | 76-140 | |
| sec-Butylbenzene | ug/kg | 58 | 56.6 | 98 | 79-139 | |
| Styrene | ug/kg | 58 | 59.1 | 102 | 79-137 | |
| tert-Butylbenzene | ug/kg | 58 | 56.7 | 98 | 74-143 | |

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## QUALITY CONTROL DATA

Project: NCDOT U5711 WBS 50207.1.1
Pace Project No.: 92387904

LABORATORY CONTROL SAMPLE: 2300755

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|
| Tetrachloroethene | ug/kg | 58 | 35.8 | 62 | 71-138 | F3,L2 |
| Toluene | ug/kg | 58 | 58.0 | 100 | 74-131 | |
| trans-1,2-Dichloroethene | ug/kg | 58 | 56.4 | 97 | 67-135 | |
| trans-1,3-Dichloropropene | ug/kg | 58 | 55.3 | 95 | 65-146 | |
| Trichloroethene | ug/kg | 58 | 66.3 | 114 | 67-135 | |
| Trichlorofluoromethane | ug/kg | 58 | 51.3 | 88 | 59-144 | |
| Vinyl acetate | ug/kg | 116 | 66.1 | 57 | 40-160 | F3 |
| Vinyl chloride | ug/kg | 58 | 49.6 | 85 | 56-141 | |
| Xylene (Total) | ug/kg | 174 | 177 | 102 | 76-137 | |
| 1,2-Dichloroethane-d4 (S) | % | | | 102 | 70-132 | |
| 4-Bromofluorobenzene (S) | % | | | 106 | 70-130 | |
| Toluene-d8 (S) | % | | | 102 | 70-130 | |

MATRIX SPIKE SAMPLE: 2301229

| Parameter | Units | 92387976001 Result | Spike Conc. | MS Result | MS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ug/kg | ND | 19.7 | 15.2 | 77 | 70-130 | |
| 1,1,1-Trichloroethane | ug/kg | ND | 19.7 | 16.6 | 84 | 70-130 | |
| 1,1,2,2-Tetrachloroethane | ug/kg | ND | 19.7 | 14.6 | 74 | 70-130 | |
| 1,1,2-Trichloroethane | ug/kg | ND | 19.7 | 14.9 | 75 | 70-130 | |
| 1,1-Dichloroethane | ug/kg | ND | 19.7 | 15.9 | 81 | 70-130 | |
| 1,1-Dichloroethene | ug/kg | ND | 19.7 | 17.4 | 88 | 49-180 | |
| 1,1-Dichloropropene | ug/kg | ND | 19.7 | 16.1 | 82 | 70-130 | |
| 1,2,3-Trichlorobenzene | ug/kg | ND | 19.7 | 6.9 | 35 | 70-130 | M1 |
| 1,2,3-Trichloropropane | ug/kg | ND | 19.7 | 14.0 | 71 | 70-130 | |
| 1,2,4-Trichlorobenzene | ug/kg | ND | 19.7 | 7.2 | 36 | 70-130 | M1 |
| 1,2,4-Trimethylbenzene | ug/kg | ND | 19.7 | 13.8 | 70 | 70-130 | |
| 1,2-Dibromo-3-chloropropane | ug/kg | ND | 19.7 | 11.6 | 59 | 70-130 | M1 |
| 1,2-Dibromoethane (EDB) | ug/kg | ND | 19.7 | 13.6 | 69 | 70-130 | M1 |
| 1,2-Dichlorobenzene | ug/kg | ND | 19.7 | 11.0 | 56 | 70-130 | M1 |
| 1,2-Dichloroethane | ug/kg | ND | 19.7 | 15.3 | 78 | 70-130 | |
| 1,2-Dichloropropane | ug/kg | ND | 19.7 | 16.4 | 83 | 70-130 | |
| 1,3,5-Trimethylbenzene | ug/kg | ND | 19.7 | 14.3 | 72 | 70-130 | |
| 1,3-Dichlorobenzene | ug/kg | ND | 19.7 | 10.9 | 55 | 70-130 | M1 |
| 1,3-Dichloropropane | ug/kg | ND | 19.7 | 14.9 | 75 | 70-130 | |
| 1,4-Dichlorobenzene | ug/kg | ND | 19.7 | 10.5 | 53 | 70-130 | M1 |
| 2,2-Dichloropropane | ug/kg | ND | 19.7 | 15.3 | 77 | 70-130 | |
| 2-Butanone (MEK) | ug/kg | ND | 39.4 | 19.9J | 50 | 70-130 | M1 |
| 2-Chlorotoluene | ug/kg | ND | 19.7 | 13.6 | 69 | 70-130 | M1 |
| 2-Hexanone | ug/kg | ND | 39.4 | 22.6J | 57 | 70-130 | M1 |
| 4-Chlorotoluene | ug/kg | ND | 19.7 | 12.1 | 62 | 70-130 | M1 |
| 4-Methyl-2-pentanone (MIBK) | ug/kg | ND | 39.4 | 26.9J | 68 | 70-130 | M1 |
| Acetone | ug/kg | ND | 39.4 | 46.4J | 118 | 70-130 | |
| Benzene | ug/kg | ND | 19.7 | 16.4 | 83 | 50-166 | |
| Bromobenzene | ug/kg | ND | 19.7 | 12.4 | 63 | 70-130 | M1 |

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## REPORT OF LABORATORY ANALYSIS

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

## QUALITY CONTROL DATA

Project: NCDOT U5711 WBS 50207.1.1
Pace Project No.: 92387904

MATRIX SPIKE SAMPLE: 2301229

| Parameter | Units | 92387976001 Result | Spike Conc. | MS Result | MS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|---|
| Bromochloromethane | ug/kg | ND | 19.7 | 15.0 | 76 | 70-130 | |
| Bromodichloromethane | ug/kg | ND | 19.7 | 15.2 | 77 | 70-130 | |
| Bromoform | ug/kg | ND | 19.7 | 11.9 | 60 | 70-130 | M1 |
| Bromomethane | ug/kg | ND | 19.7 | 22.2 | 112 | 70-130 | |
| Carbon tetrachloride | ug/kg | ND | 19.7 | 16.1 | 82 | 70-130 | |
| Chlorobenzene | ug/kg | ND | 19.7 | 13.6 | 69 | 43-169 | |
| Chloroethane | ug/kg | ND | 19.7 | 17.5 | 89 | 70-130 | |
| Chloroform | ug/kg | ND | 19.7 | 16.7 | 85 | 70-130 | |
| Chloromethane | ug/kg | ND | 19.7 | 11.8 | 60 | 70-130 | M1 |
| cis-1,2-Dichloroethene | ug/kg | ND | 19.7 | 15.4 | 78 | 70-130 | |
| cis-1,3-Dichloropropene | ug/kg | ND | 19.7 | 13.5 | 68 | 70-130 | M1 |
| Dibromochloromethane | ug/kg | ND | 19.7 | 13.9 | 70 | 70-130 | |
| Dibromomethane | ug/kg | ND | 19.7 | 14.4 | 73 | 70-130 | |
| Dichlorodifluoromethane | ug/kg | ND | 19.7 | 17.9 | 91 | 70-130 | |
| Diisopropyl ether | ug/kg | ND | 19.7 | 6.8 | 34 | 70-130 | M1 |
| Ethylbenzene | ug/kg | ND | 19.7 | 15.0 | 76 | 70-130 | |
| Hexachloro-1,3-butadiene | ug/kg | ND | 19.7 | 9.7 | 49 | 70-130 | M1 |
| Isopropylbenzene (Cumene) | ug/kg | ND | 19.7 | 15.4 | 78 | 70-130 | |
| m&p-Xylene | ug/kg | ND | 39.4 | 29.1 | 74 | 70-130 | |
| Methyl-tert-butyl ether | ug/kg | ND | 19.7 | 15.8 | 80 | 70-130 | |
| Methylene Chloride | ug/kg | ND | 19.7 | 17J | 43 | 70-130 | M1 |
| n-Butylbenzene | ug/kg | ND | 19.7 | 11.9 | 60 | 70-130 | M1 |
| n-Propylbenzene | ug/kg | ND | 19.7 | 14.5 | 74 | 70-130 | |
| Naphthalene | ug/kg | ND | 19.7 | 7.6 | 38 | 70-130 | M1 |
| o-Xylene | ug/kg | ND | 19.7 | 14.6 | 74 | 70-130 | |
| p-Isopropyltoluene | ug/kg | ND | 19.7 | 13.8 | 70 | 70-130 | |
| sec-Butylbenzene | ug/kg | ND | 19.7 | 14.4 | 73 | 70-130 | |
| Styrene | ug/kg | ND | 19.7 | 11.4 | 58 | 70-130 | M1 |
| tert-Butylbenzene | ug/kg | ND | 19.7 | 15.2 | 77 | 70-130 | |
| Tetrachloroethene | ug/kg | ND | 19.7 | 9.2 | 47 | 70-130 | M0 |
| Toluene | ug/kg | ND | 19.7 | 15.4 | 78 | 52-163 | |
| trans-1,2-Dichloroethene | ug/kg | ND | 19.7 | 16.6 | 84 | 70-130 | |
| trans-1,3-Dichloropropene | ug/kg | ND | 19.7 | 12.8 | 65 | 70-130 | M1 |
| Trichloroethene | ug/kg | ND | 19.7 | 14.7 | 75 | 49-167 | |
| Trichlorofluoromethane | ug/kg | ND | 19.7 | 18.1 | 92 | 70-130 | |
| Vinyl acetate | ug/kg | ND | 39.4 | ND | 0 | 70-130 | M1 |
| Vinyl chloride | ug/kg | ND | 19.7 | 17.7 | 90 | 70-130 | |
| Xylene (Total) | ug/kg | ND | 59.1 | 43.7 | 74 | 70-130 | |
| 1,2-Dichloroethane-d4 (S) | % | | | | 92 | 70-132 | |
| 4-Bromofluorobenzene (S) | % | | | | 97 | 70-130 | |
| Toluene-d8 (S) | % | | | | 99 | 70-130 | |

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Huntersville, NC 28078
(704)875-9092

## QUALITY CONTROL DATA

Project: NCDOT U5711 WBS 50207.1.1
Pace Project No.: 92387904

SAMPLE DUPLICATE: 2301228

| Parameter | Units | 92387904003 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 | | |
| 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 | 13.7J | | |
| 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 | | |

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## QUALITY CONTROL DATA

Project: NCDOT U5711 WBS 50207.1.1
Pace Project No.: 92387904

SAMPLE DUPLICATE: 2301228

| Parameter | Units | 92387904003 Result | Dup Result | RPD | Qualifiers |
|---|---|---|---|---|---|
| m&p-Xylene | ug/kg | ND | ND | | |
| Methyl-tert-butyl ether | ug/kg | ND | ND | | |
| Methylene Chloride | ug/kg | ND | 21.9 | | C9 |
| 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 | | |
| 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) | % | 94 | 98 | 9 | |
| 4-Bromofluorobenzene (S) | % | 73 | 98 | 16 | |
| Toluene-d8 (S) | % | 109 | 99 | 23 | |

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## QUALITY CONTROL DATA

Project: NCDOT U5711 WBS 50207.1.1
Pace Project No.: 92387904

QC Batch: 414907 Analysis Method: EPA 8015 Modified
QC Batch Method: EPA 3546 Analysis Description: 8015 Solid GCSV
Associated Lab Samples: 92387904001, 92387904003, 92387904004

METHOD BLANK: 2300834 Matrix: Solid
Associated Lab Samples: 92387904001, 92387904003, 92387904004

| Parameter | Units | Blank Result | Reporting Limit | Analyzed | Qualifiers |
|---|---|---|---|---|---|
| Diesel Range Organics(C10-C28) | mg/kg | ND | 5.0 | 06/14/18 09:08 | |
| n-Pentacosane (S) | % | 73 | 41-119 | 06/14/18 09:08 | |

LABORATORY CONTROL SAMPLE & LCSD: 2300835 2300836

| Parameter | Units | Spike Conc. | LCS Result | LCSD Result | LCS % Rec | LCSD % Rec | % Rec Limits | RPD | Max RPD | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics(C10-C28) | mg/kg | 67.3 | 45.6 | 43.5 | 68 | 65 | 49-113 | 5 | 30 | |
| n-Pentacosane (S) | % | | | | 71 | 74 | 41-119 | | | |

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## QUALITY CONTROL DATA

Project: NCDOT U5711 WBS 50207.1.1
Pace Project No.: 92387904

QC Batch: 415878
QC Batch Method: EPA 3546
Analysis Method: EPA 8015 Modified
Analysis Description: 8015 Solid GCSV
Associated Lab Samples: 92387904002

METHOD BLANK: 2306202 Matrix: Solid
Associated Lab Samples: 92387904002

| Parameter | Units | Blank Result | Reporting Limit | Analyzed | Qualifiers |
|---|---|---|---|---|---|
| Diesel Range Organics(C10-C28) | mg/kg | ND | 5.0 | 06/20/18 08:55 | |
| n-Pentacosane (S) | % | 75 | 41-119 | 06/20/18 08:55 | |

LABORATORY CONTROL SAMPLE & LCSD: 2306203 2306204

| Parameter | Units | Spike Conc. | LCS Result | LCSD Result | LCS % Rec | LCSD % Rec | % Rec Limits | RPD | Max RPD | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics(C10-C28) | mg/kg | 66 | 40.6 | 41.3 | 61 | 63 | 49-113 | 2 | 30 | |
| n-Pentacosane (S) | % | | | | 65 | 77 | 41-119 | | | |

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## QUALITY CONTROL DATA

Project: NCDOT U5711 WBS 50207.1.1
Pace Project No.: 92387904

QC Batch: 414781 Analysis Method: ASTM D2974-87
QC Batch Method: ASTM D2974-87 Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 92387904001, 92387904002, 92387904003, 92387904004

SAMPLE DUPLICATE: 2300164

| Parameter | Units | 92387722001 Result | Dup Result | RPD | Qualifiers |
|---|---|---|---|---|---|
| Percent Moisture | % | 99.6 | 99.6 | 0 | |

SAMPLE DUPLICATE: 2300165

| Parameter | Units | 92387904004 Result | Dup Result | RPD | Qualifiers |
|---|---|---|---|---|---|
| Percent Moisture | % | 17.7 | 21.4 | 19 | |

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# QUALIFIERS

Project: NCDOT U5711 WBS 50207.1.1
Pace Project No.: 92387904

## DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

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.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

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

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

| | |
|---|---|
| C9 | Common Laboratory Contaminant. |
| F3 | The recovery of the second source standard used to verify the initial calibration curve for this analyte is outside the laboratory's control limits. The result is estimated. |
| L2 | Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low. |
| M0 | Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits. |
| M1 | Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery. |



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## QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: NCDOT U5711 WBS 50207.1.1
Pace Project No.: 92387904

| Lab ID | Sample ID | QC Batch Method | QC Batch | Analytical Method | Analytical Batch |
|---|---|---|---|---|---|
| **92387904001** | **SB-1** | EPA 3546 | 414907 | EPA 8015 Modified | 415184 |
| **92387904002** | **SB-2** | EPA 3546 | 415878 | EPA 8015 Modified | 415912 |
| **92387904003** | **SB-3** | EPA 3546 | 414907 | EPA 8015 Modified | 415184 |
| **92387904004** | **SB-4** | EPA 3546 | 414907 | EPA 8015 Modified | 415184 |
| **92387904001** | **SB-1** | EPA 5035A/5030B | 414742 | EPA 8015 Modified | 414810 |
| **92387904002** | **SB-2** | EPA 5035A/5030B | 414742 | EPA 8015 Modified | 414810 |
| **92387904003** | **SB-3** | EPA 5035A/5030B | 414742 | EPA 8015 Modified | 414810 |
| **92387904004** | **SB-4** | EPA 5035A/5030B | 414742 | EPA 8015 Modified | 414810 |
| **92387904001** | **SB-1** | EPA 8260 | 414886 | | |
| **92387904002** | **SB-2** | EPA 8260 | 414886 | | |
| **92387904003** | **SB-3** | EPA 8260 | 414895 | | |
| **92387904004** | **SB-4** | EPA 8260 | 414895 | | |
| **92387904001** | **SB-1** | ASTM D2974-87 | 414781 | | |
| **92387904002** | **SB-2** | ASTM D2974-87 | 414781 | | |
| **92387904003** | **SB-3** | ASTM D2974-87 | 414781 | | |
| **92387904004** | **SB-4** | ASTM D2974-87 | 414781 | | |



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Laboratory receiving samples:
Asheville ☐ Eden ☐ Greenwood ☐ Huntersville ☐ Raleigh ☐ Mechanicsville ☐

WO#: 92387904
92387904

**Sample Condition Upon Receipt**

Client Name: SAME Proje

Courier: ☐ Commercial ☐ Fed Ex ☐ Pace ☐ UPS ☐ USPS ☐ Other:____ ☐ Client

Custody Seal Present? ☐ Yes ☐ No Seals Intact? ☐ Yes ☐ No Date/Initials Person Examining Contents: VD 6-11-18

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other

Biological Tissue Frozen? ☐ Yes ☐ No ☐ N/A

Thermometer: ☐ IR Gun ID: 92T040 Type of Ice: ☐ Wet ☐ Blue ☐ None

Cooler Temp (°C): 5.5 Correction Factor: Add/Subtract (°C) +0.4

Cooler Temp Corrected (°C): 5.9

Temp should be above freezing to 6°C
☐ Samples out of temp criteria. Samples on ice, cooling process has begun

USDA Regulated Soil (☐ N/A, water sample)
Did samples originate in a quarantine zone within the United States: CA, NY, or SC (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

| | | | | Comments/Discrepancy: |
|---|---|---|---|---|
| Chain of Custody Present? | ☐ Yes | ☐ No | ☐ N/A | 1. |
| Samples Arrived within Hold Time? | ☐ Yes | ☐ No | ☐ N/A | 2. |
| Short Hold Time Analysis (<72 hr.)? | ☐ Yes | ☐ No | ☐ N/A | 3. |
| Rush Turn Around Time Requested? | ☐ Yes | ☐ No | ☐ N/A | 4. |
| Sufficient Volume? | ☐ Yes | ☐ No | ☐ N/A | 5. |
| Correct Containers Used? | ☐ Yes | ☐ No | ☐ N/A | 6. |
| -Pace Containers Used? | ☐ Yes | ☐ No | ☐ N/A | |
| Containers Intact? | ☐ Yes | ☐ No | ☐ N/A | 7. |
| Dissolved analysis: Samples Field Filtered? | ☐ Yes | ☐ No | ☐ N/A | 8. |
| Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: SL | ☐ Yes | ☐ No | ☐ N/A | 9. |
| Headspace in VOA Vials (>5-6mm)? | ☐ Yes | ☐ No | ☐ N/A | 10. |
| Trip Blank Present? | ☐ Yes | ☐ No | ☐ N/A | 11. |
| Trip Blank Custody Seals Present? | ☐ Yes | ☐ No | ☐ N/A | |

Field Data Required? ☐ Yes ☐ No

COMMENTS/SAMPLE DISCREPANCY

Lot ID of split containers:

CLIENT NOTIFICATION/RESOLUTION

Person contacted: _____ Date/Time: _____

Project Manager SCURF Review: TC Date: 6/18 TC 12/18

Project Manager SRF Review: TC Date: 6/12/18

*Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg

**Bottom half of box is to list number of bottle

Proje **WO# : 92387904**

PM: RWC Due Date: 06/20/18

CLIENT: 92-NCDOT

| Item# | BP4U-125 mL Plastic Unpreserved (N/A) (Cl-) | BP3U-250 mL Plastic Unpreserved (N/A) | BP2U-500 mL Plastic Unpreserved (N/A) | BP1U-1 liter Plastic Unpreserved (N/A) | BP4S-125 mL Plastic H2SO4 (pH < 2) (Cl-) | BP3N-250 mL plastic HNO3 (pH < 2) | BP4Z-125 mL Plastic ZN Acetate & NaOH (>9) | BP4C-125 mL Plastic NaOH (pH > 12) (Cl-) | WGFU-Wide-mouthed Glass Jar Unpreserved | AG1U-1 liter Amber Unpreserved (N/A) (Cl-) | AG1H-1 liter Amber HCl (pH < 2) | AG3U-250 mL Amber Unpreserved (N/A) (Cl-) | AG1S-1 liter Amber H2SO4 (pH < 2) | AG3S-250 mL Amber H2SO4 (pH < 2) | AG3A(DG3A)-250 mL Amber NH4Cl (N/A)(Cl-) | DG9H-40 mL VOA HCl (N/A) | VG9T-40 mL VOA Na2S2O3 (N/A) | VG9U-40 mL VOA Unp (N/A) | DG9P-40 mL VOA H3PO4 (N/A) | VOAK (6 vials per kit)-5035 kit (N/A) | V/GK (3 vials per kit)-VPH/Gas kit (N/A) | SP5T-125 mL Sterile Plastic (N/A – lab) | SP2T-250 mL Sterile Plastic (N/A – lab) | | BP3A-250 mL Plastic (NH2)2SO4 (9.3-9.7) | AG0U-100 mL Amber Unpreserved vials (N/A) | VSGU-20 mL Scintillation vials (N/A) | DG9U-40 mL Amber Unpreserved vials (N/A) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | 1 | | | | | | | | | | | | 6 | 3 | | | | | | | |
| 2 | | | | | | | | | 1 | | | | | | | | | | | | 6 | 3 | | | | | | | |
| 3 | | | | | | | | | 1 | | | | | | | | | | | | 6 | 3 | | | | | | | |
| 4 | | | | | | | | | 1 | | | | | | | | | | | | 6 | 3 | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

## pH Adjustment Log for Preserved Samples

| Sample ID | Type of Preservative | pH upon receipt | Date preservation adjusted | Time preservation adjusted | Amount of Preservative added | Lot # |
|---|---|---|---|---|---|---|
| | | | | | | |
| | | | | | | |
| | | | | | | |

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.

Pace Analytical

# CHAIN-OF-CUSTODY / Analytical Request Document

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

Page : 1 Of 1

| Section A Required Client Information: | | Section B Required Project Information: | | Section C Invoice Information: | |
|---|---|---|---|---|---|
| Company: | S&ME - Greensboro | Report To: | Darren Cox | Attention: | |
| Address: | 8646 W Market St | Copy To: | | Company Name: | |
| Greensboro, NC 27409 | | | | Address: | |
| Email: | dcox@smeinc.com | Purchase Order #: | | Pace Quote: | |
| Phone: | NONE Fax | Project Name: | NC DOT U5711 #623518013 | Pace Project Manager: | trey.carter@pacelabs.com, |
| Requested Due Date: | | Project #: | | Pace Profile #: | 5937-1,2 |

Regulatory Agency:

State / Location: NC

| ITEM # | SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique) | MATRIX CODE (see valid codes to left) | SAMPLE TYPE (G=GRAB C=COMP) | COLLECTED START DATE | COLLECTED START TIME | COLLECTED END DATE | COLLECTED END TIME | SAMPLE TEMP AT COLLECTION | # OF CONTAINERS | Preservatives: Unpreserved | H2SO4 | HNO3 | HCl | NaOH | Na2S2O3 | Methanol | Other | Analyses Test Y/N | DRO by 8015 | GRO 8015 | 8260 Full List | 6200B | 625 SVOC | Residual Chlorine (Y/N) | 92387904 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | SB-1 | SL | C | | | 6/8/18 | 1100 | | 10 | | | | | | | | | | / | / | / | | | | 001 |
| 2 | SB-2 | | | | | | 1130 | | | | | | | | | | | | / | / | / | | | | 002 |
| 3 | SB-3 | | | | | | 1200 | | | | | | | | | | | | / | / | / | | | | 003 |
| 4 | SB-4 | | | | | | 1230 | | | | | | | | | | | | / | / | / | | | | 004 |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | | | | | | | | | | | | |

| ADDITIONAL COMMENTS | RELINQUISHED BY / AFFILIATION | DATE | TIME | ACCEPTED BY / AFFILIATION | DATE | TIME | SAMPLE CONDITIONS |
|---|---|---|---|---|---|---|---|
| WBS# 50207.1.1<br>Iredell County NC | | 6/11/18 | 800 | | 6/11/18 | 0804 | |
| | | 6/11/18 | 1120 | | 6-11-18 | 1120 | 5.9 Y 1.7 Y |
| | | | | | | | |
| | | | | | | | |

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: DARREN COX

SIGNATURE of SAMPLER:

DATE Signed: 6/11/18

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