Prepared for:

North Carolina Department of Transportation

Geotechnical Engineering Unit
GeoEnvironmental Section
1589 Mail Service Center
Raleigh, North Carolina 27699-1589

Initial Abatement Action Report

Edith S. Smith Property
Parcel # 15
1710 N. William Street
Goldsboro, Wayne County, North Carolina
US 117 Alternate from US 70 Bypass to Belfast
TIP Number: U-2714
WBS Element: 38979.1.2

APEX

(dba Apex Engineering, PC)
10610 Metromont Parkway, Suite 206
Charlotte, North Carolina, 28269

Prepared by:

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NORTH CAROLINA LICENSED SEAL 1353 GEOLOGIST KATHLEEN A. ROUSH

September 13, 2018

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1.0 INTRODUCTION

This Initial Abatement Action Report (IAAR) prepared by Apex Companies, LLC (Apex) (dba Apex Engineering, PC) presents the results of the underground storage tank (UST) and soil disposal activities conducted on behalf of the North Carolina Department of Transportation (NCDOT). The subject property is located at 1710 North William Street, Goldsboro, Wayne County, North Carolina and is identified as Parcel 15, Edith S. Smith Property (Site), within the NCDOT U-2714 design project. The property is located at the northeast corner of the intersection of North William Street and Woodrow Street in Goldsboro, Wayne County, North Carolina, as shown in the attached Site Location Map (**Figure 1**). The subject site will be affected by the widening of the US Highway 117 from US Highway 70 to Belfast Road.

According to information provided within the RFP and the July 2017 preliminary site assessment (PSA), the parcel located at 1710 North William Street had three probable underground storage tanks (USTs). An access agreement has been obtained to remove and dispose of the three USTs. Two of the USTs were located on the west side of the existing building within the right of way (ROW) and one UST was located on the east side of the existing building.

On April 23, 2018, NCDOT contracted Apex to perform UST closure activities within the proposed right-of-way (ROW) and/or easement due to the potential presence of contaminated soil at the site and on-going excavation and grading occurring within the area. The scope of work included the disposal of three unregulated USTs and its contents, as well as collecting soil samples from the sidewalls and base of the UST excavation. If groundwater was encountered in the excavation that showed signs of petroleum impact, temporary monitoring wells would be installed as needed to evaluate groundwater quality.

The following report summarizes the disposal of two unregulated 500-gallon capacity and one 300-gallon capacity USTs, its contents, and approximately 6.99 tons of petroleum contaminated soil. The report includes the field screening results, as well as field and laboratory analysis of confirmatory samples.

2.0 SITE INFORMATION

1. Site Identification
   Date of Report: September 5, 2018
   Facility I.D.: Not Applicable UST Incident Number: Not Applicable
   Site Name: Parcel 15 – Edith S. Smith Property
   Site Street Address: 1710 North William Street
   City/Town: Goldsboro Zip Code: 27530 County: Wayne
   Description of Geographical Data Point: Not Applicable
   Location Method (GPS, topographical map, other): Google Maps
   Latitude (decimal degrees): 35.40328 Longitude (decimal degrees): -77.9837

2. Information about Contacts Associated with the Leaking UST System *(Addresses must include street, city, state, zip code and mailing address, if different)*
   UST/AST Owner: Edith S. Smith
   Address: PO Box 54, Mount Olive, NC 28365 Tel. Unknown
   UST/AST Operator: Edith S. Smith
   Address: 1710 N. William St., Goldsboro, NC 27530 Tel. Unknown

Property Owner: Edith S. Smith
Address: PO Box 54, Mount Olive, NC 28365 Tel. Unknown
Property Occupant: Not Applicable
Consultant/Contractor: Apex Companies, LLC
Address: 10610 Metromont Pkwy, Charlotte, NC 28269 Tel: 704-799-6390
Analytical Laboratory: Pace Analytical State Certification No. 40
Address: 9800 Kincey Ave, Huntersville, NC 28078 Tel: 704-875-9092

3. Information about Release
Date Discovered: 6-12-2018
Estimated Quantity of Release: Unknown
Cause of Release: Unknown - UST was damaged prior to removal
Source of Release (e.g., Dispenser/Piping/UST): UST
Sizes and Contents of Tanks or Other Containment from which the Release occurred: Two 500-gallon and one 300-gallon capacity USTs

3.0 RELEASE INFORMATION

During PSA activities for the U-2714 highway improvement project, three probable USTs were identified by Pyramid Geophysical Services (Pyramid) with electromagnetic (EM) induction and ground penetrating radar (GPR) surveys. The contents of the USTs were unknown prior to the onset of work. The first two probable USTs identified during the PSA activities were located in the northwestern portion of the parcel. The third probable UST was located in the northeastern portion of the parcel. When removed, it was discovered that the first two USTs (UST-1 and UST-2) located near the northwestern portion of the parcel were rusted and pitted with small holes present at the base of the UST. The third probable UST was actually a buried 55-gallon drum filled with miscellaneous debris. However, Apex subsequently identified a third vent line and traced the vent line back to a previously unidentified UST (UST-3). UST-3 was located adjacent to USTs 1 and 2. UST-3 was rusted and pitted with small holes at the base of the UST. UST locations are presented in **Figure 2.**

Apex made the required notifications to the NCDEQ UST Section. A 24-Hour Release Notification (UST-61 Form) was submitted to the UST Section once the release was identified. Additionally, a Site Investigation Report for Permanent Closure or Change-in-Service of Un-registered UST (UST-2B) form for the closure of the UST is included in **Appendix A**.

4.0 FIELD ACTIVITIES

Prior to commencing field activities at the Site, several tasks were accomplished in preparation for the UST Closure. A Health and Safety Plan (HASP) was prepared to include the Site-specific health and safety information necessary for the field activities. North Carolina-One Call was contacted on June 6, 2018 to report the proposed excavation activities and notify affected utilities. Apex subcontracted ESP Associates (ESP) of Greensboro, North Carolina to locate private subsurface utilities. Evo Corporation (Evo) of Winston Salem, North Carolina was retained by Apex to perform the excavation and removal of the USTs and its contents and Carolina Soil Investigations, LLC (CSI) of Olin, North Carolina was retained by Apex to install and abandon two temporary monitoring wells. Apex provided oversight and direction during UST closure activities, which were performed on June 12th and 13th of 2018 as well as oversight

and direction for the temporary well installation and abandonment which took place on June 18, 2018. A Photolog of the site activities is included as **Appendix B**.

4.1 UST Removal and Soil Excavation Activities

UST closure activities commenced with a vacuum truck extracting the contents of the UST. A total of 440 gallons of a mixture of water, gasoline and #2 fuel oil were evacuated from the USTs. Dry ice was used to inert each tank. The lower explosive limit (LEL) within the tank was then checked with a Four Gas Meter and a Photoionizing detector (PID) to verify safe removal. The tanks were then completely uncovered and removed from the ground. Once uncovered the capacities and overall condition of the USTs were confirmed. Two 500-gallon capacity USTs and one 300-gallon capacity UST were removed. Each UST was slightly rusted and pitted, having small diameter holes located near the bottom.

Impacted soils were not observed in the tank bed above the smear zone. However, the groundwater was encountered within the tank beds at five to 5.5 feet below ground surface (bgs). Sidewall samples were collected above the water table from four sidewalls of each excavation. A sheen was noted in the groundwater located in the base of each excavation. Therefore, Apex personnel directed Evo to excavate soils located at and below the USTs until the impacted soil was removed. The actual quantity of soil removed for disposal was 6.99 tons or approximately 4.66 cubic yards. The soils were transported to the Evo permitted facility located at 1703 Vargrave Street, in Winston-Salem, NC for treatment in accordance with local, state, and federal requirements.

Groundwater was encountered at approximately five to 5.5 feet bgs within the excavation. Bedrock was not encountered within the excavation. The final excavation was rectangular and irregular in depth. The maximum depth of the excavation was six feet bgs. Excavated soil consisted of tan sandy silt to a yellow/orange marbled clayey silt. The UST location and excavation layout are shown on **Figure 2**.

The USTs were transported to OmniSource Southeast in Winston-Salem, North Carolina for proper disposal and recycling. Certificates of disposal are included in **Appendix C** for the USTs and their evacuated fluids. An excavation log is presented in **Appendix D.** The excavation was subsequently backfilled with a foot of 57 stone, followed by native material which was placed in the excavation in 12-inch lifts and compacted by a walk behind remote compactor and topped with ABC stone.

4.2 Soil Sampling

Excavation limits were determined through visual, olfactory, and field screening techniques with a photoionization detector/flame ionization detector (PID/FID). PID/FID readings are presented in **Table 1.** Soil sampling activities were conducted in accordance with the *UST Section Guidance Document entitled Guidelines for Site Checks, Tank Closure, and Initial Abatement for UST Releases (December 2013)*. Because of the shallow water table, the UST samples were collected from directly above the water table at approximately 4.5 feet bgs. Sample locations are shown on **Figure 2**.

Soil samples were analyzed for the presence of total petroleum hydrocarbons (TPH) as diesel range organics (DRO) and gasoline range organics (GRO) in accordance with EPA Method 8015M.

4.3 Groundwater Sampling

Apex personnel returned to the site June 18, 2018 to install a temporary monitoring well in each of the excavation areas. TW-1 was installed in the center of the UST-1 and UST-2 excavation and TW-2 was installed in the center of the UST-3 excavation. Samples were analyzed for volatile organic compounds (VOCs) by US EPA Method 8260, semi-volatile organic compounds (SVOCs) by EPA Method 8270, and volatile petroleum hydrocarbons (VPH) and extractable petroleum hydrocarbons (EPH) by the Massachusetts Department of Environmental Protection Methods (MADEP).

5.0 ANALYTICAL RESULTS

5.1 Soil Analytical Results

Soil sample analytical results are presented in **Table 2**, and confirmation soil sample locations and detections are shown in **Figure 3**. **Appendix E** includes a copy of the complete laboratory analytical results for soil samples, which were analyzed for TPH-GRO and TPH-DRO. None of the sidewall samples analyzed from the two tank pits contained any TPH constituents at concentrations at or exceeding laboratory practical quantitation limits.

5.2 Groundwater Analytical Results

Groundwater was encountered at 6.13 feet bgs in TW-1 and at 6.28 feet bgs in TW-2. Groundwater obtained from TW-1 and TW-2 contained VOCs, SVOCs, VPH and EPH compounds at concentrations exceeding North Carolina 2L Groundwater Quality Standards. Concentrations of benzene and 1-methylnaphthalene exceeded their respective gross contaminant levels (GCLs) in TW-1. Groundwater sample analytical results are presented in **Appendix E** and **Table 3**.

In accordance with the NCDOT approved scope of work, Apex has provided an estimated area of groundwater impact for the purposes of construction activities. The estimated area of groundwater impact in the western portion of parcel 15 is approximately 783 square feet in size and is shown on **Figure 4**. Impacted groundwater will likely be encountered during construction activities. The horizontal extent of groundwater shown on Figure 4 is an estimate only, and not to be used in lieu of additional assessment activities required by NCDEQ or the responsible party for site assessment, remedial, or closure requirements.

6.0 CONCLUSIONS

Apex has completed contracted activities for the removal of the three unregulated USTs at the property located at 1710 N. William Street, Goldsboro, Wayne County, North Carolina. Field activities included the removal and off-site disposal of 440 gallons of a mixture of water, gasoline and #2 fuel oil; the excavation and proper disposal of one 300-gallon capacity UST and two 500-gallon capacity USTs; and the excavation and proper disposal of 6.99 tons of petroleum impacted soils. Soil samples collected from the excavation sidewalls did not contain TPH-DRO or TPH-GRO at concentrations exceeding laboratory practical quantitation limits.

Groundwater was present in each of the two tank pits. A petroleum sheen could be observed in each tank pit. Therefore, Apex installed two temporary groundwater monitoring wells to evaluate

the groundwater impact. Groundwater samples contained petroleum related compounds at concentrations exceeding North Carolina 2L Standards and UST Section GCLs.

The subject parcel is designed as a fill area for the NCDOT U-2714 design project. Drainage features will be installed in the southcentral portion of Parcel 15. Groundwater contamination was noted in the northwestern portion of the parcel and based on surface topography, groundwater appears to flow from north to south. Therefore, the drainage features may be in the area of contamination. Groundwater could be encountered as shallow as five feet bgs. NCDOT should be prepared to dewater and containerize contaminated groundwater if encountered during construction activities.

7.0 CERTIFICATION

I, Kathleen Roush, L.G, for Apex Companies, LLC., do certify that the information contained in this report is correct and accurate to the best of my knowledge.

TABLES

Table 1
PID Readings
U-2714, Parcel 15 Edith S. Smith Property
Goldsboro, North Carolina

Date	PID Location	PID Reading (PPM)	FID Reading (PPM)
6/12/2018	Comp 1 (1')	0.0	0.0
6/12/2018	Comp 2 (1')	1.1	0.0
6/12/2018	Comp 3 (1')	0.0	0.0
6/12/2018	Comp 4 (1')	0.0	0.0
6/12/2018	Comp 5 (2')	1.8	0.0
6/12/2018	Comp 6 (2')	3.2	0.0
6/12/2018	Comp 7 (2')	2.3	0.0
6/12/2018	Comp 8 (2')	3.1	0.0
6/12/2018	Inside Drum	0.0	0.0
6/12/2018	UST 1 and 2 SW-1 (4.5)	4.9	0.0
6/12/2018	UST 1 and 2 SW-2 (4.5)	6.7	0.0
6/12/2018	UST 1 and 2 SW-3 (4.5)	8.1	0.0
6/12/2018	UST 1 and 2 SW-4 (4.5)	7.2	0.0
6/12/2018	UST 1 floor	202.0	25.6
6/12/2018	UST 2 floor	58.0	16.9
6/12/2018	UST 3 floor	37.3	10.2
6/12/2018	UST-3 SW-1 (4.5)	3.3	0.0
6/12/2018	UST-3 SW-2 (4.5)	1.9	0.0
6/12/2018	UST-3 SW-3 (4.5)	4.2	0.0
6/12/2018	UST-3 SW-4 (4.5)	1.7	0.0

*Note:
PID = Photoionization Detector
PPM = Parts Per Million

Table 2
Soil Analytical Results
U-2714, Parcel 62, Edith Smith Property
Goldsboro, Wayne County, North Carolina

Sample ID Number	Sample Date	Sample Depth (ft bgs)	GRO (mg/kg) (C5-C10)	DRO (mg/kg) (C10-C35)
SOIL				
NCDEQ Action Level in mg/kg			**50**	**100**
UST 1+2 SW-1 (4.5')	6/12/2018	4.5'	<4.7	<5.4
UST 1+2 SW-2 (4.5')	6/12/2018	4.5'	<4.6	<5.3
UST 1+2 SW-3 (4.5')	6/12/2018	4.5'	<4.7	<5.6
UST 1+2 SW-4 (4.5')	6/12/2018	4.5'	<4.8	<5.7
UST 3 SW-1 (4.5')	6/12/2018	4.5'	<5.4	<5.5
UST 3 SW-2 (4.5')	6/12/2018	4.5'	<8.3	<5.9
UST 3 SW-3 (4.5')	6/12/2018	4.5'	<5.3	<5.7
UST 3 SW-4 (4.5')	6/12/2018	4.5'	<5.2	<5.8

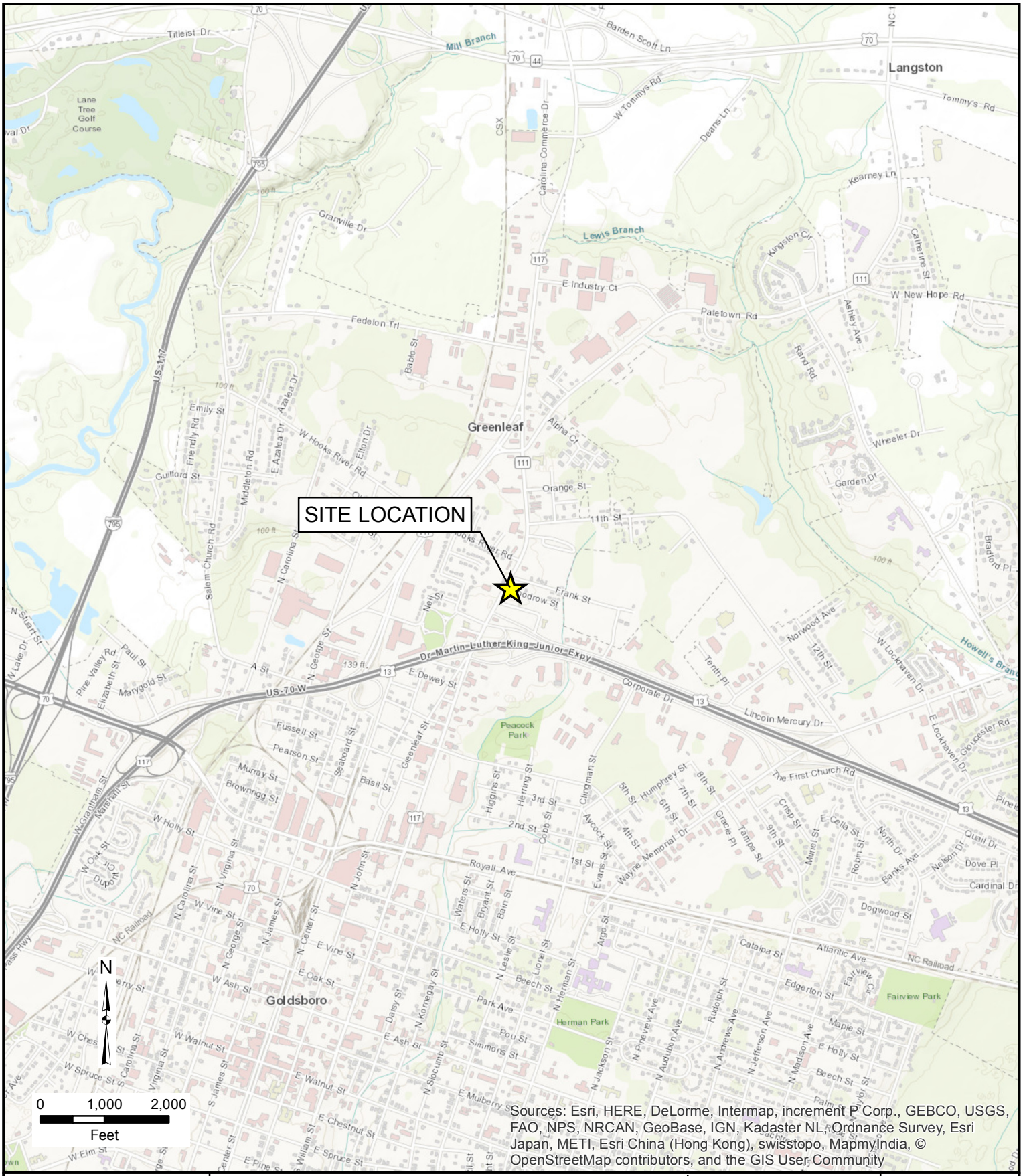
NOTES:
(mg/kg) = Milligrams per kilogram
GRO = Gasoline Range Organics
DRO = Diesel Range Organics
ft bgs = feet below ground surface
TPH - GRO values in exceedance of NCDEQ Action Level of 50 mg/kg are shown in Bold
TPH - DRO values in exceedance of NCDEQ Action Level of 100 mg/kg are shown in Bold

Table 3
Groundwater Analtyical Data
U2714, Parcel 15, Edith S. Smith Property
Goldsboro, Wayne County, North Carolina

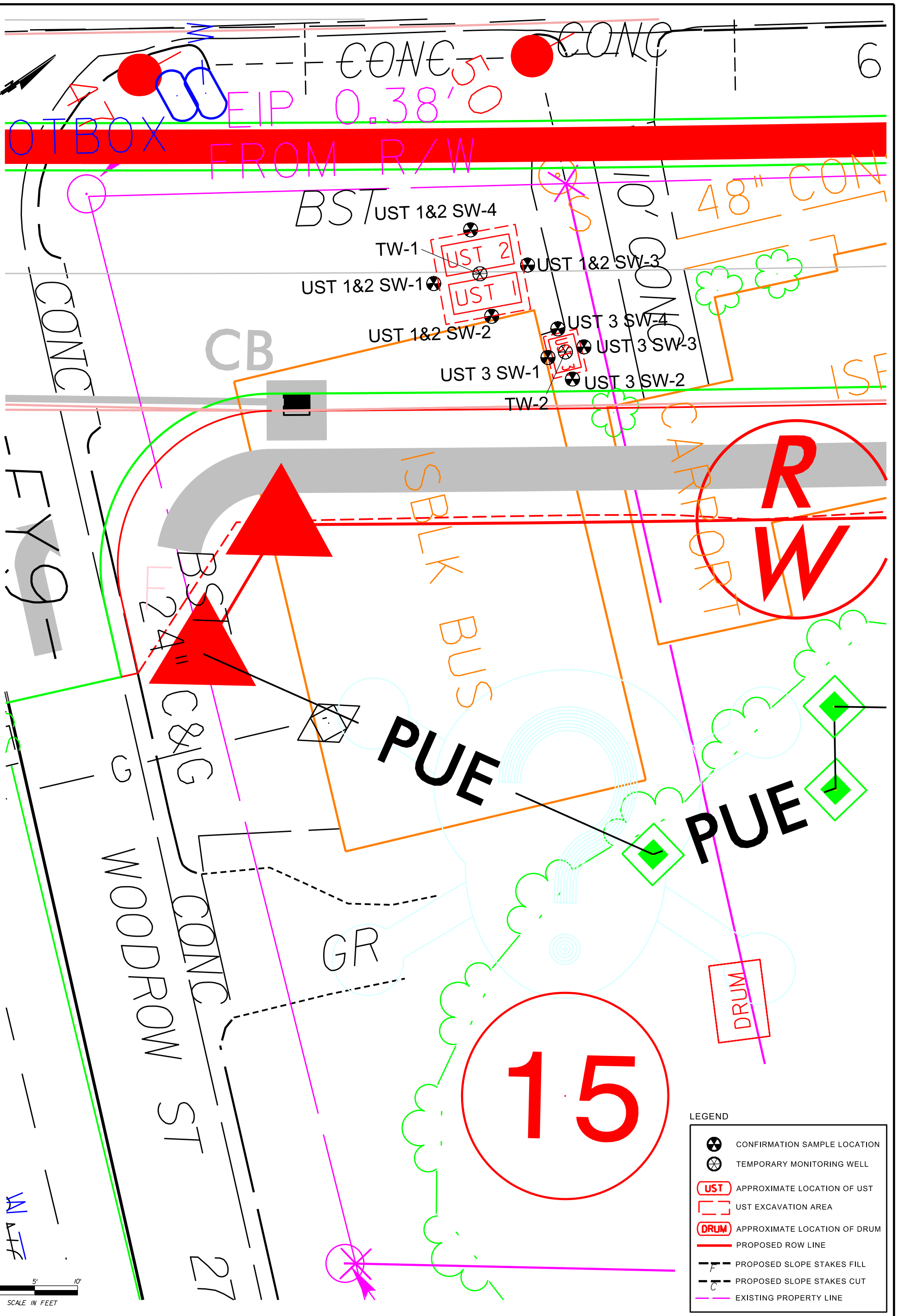
Sample ID Number	Sample Date	Aliphatic (C09-C18)	Aliphatic (C19-C36)	Aromatic (C11-C22)	Aliphatic (C05-C08)	Aliphatic (C09-C12)	Aromatic (C09-C10)
Groundwater							
Gross Contamination Levels for Groundwater		**NE**	**NE**	**NE**	**NE**	**NE**	**NE**
15A NCAC 02L.0202 Groundwater Standards µg/L		**700**	**10,000**	**200**	**400**	**700**	**200**
TW-1	6/18/2018	**4,830**	ND	**2,090**	**146,000**	**144,000**	**59,700**
TW-2	6/18/2018	ND	ND	**181**	**6,510**	**2,430**	**1,060**

NOTES:
µg/L - micrograms per liter
MADEP EPH/VPH - Petroleum Hydrocarbon Fractions
J - Estimated concentration above adjusted method detection limit and below adjusted reporting limit
ND - Below laboratory practical quantitative limits
NCAC - North Carolina Administrative Code
Concentrations in **BOLD** exceed the NCAC 2L Standards
Concentrations in ☐ exceed the Gross Contamination Levels for Groundwater
* - Value based on limited available data

FIGURES



CHECK BY: TH	SITE LOCATION MAP	APEX	FIGURE
DRAWN BY: SP			1
DATE: 7/17/17	PARCEL #15		
SCALE: AS SHOWN	1710 N. WILLIAM STREET		
CAD NO.: 510497-003	GOLDSBORO, NORTH CAROLINA		
PRJ NO.: 510497-003			



APEX COMPANIES, LLC
10610 METROMONT PARKWAY
SUITE 206
CHARLOTTE, NC 28117
PHONE: (704) 799-6390

FIGURE 2
PARCEL 15
SITE MAP WITH UST AND SAMPLE LOCATIONS

Date:	8/2/18
Proj. #	NCDOT-002
CAD File:	pc_15_fig 2.dgn
Approx. Scale:	1" = 10'
Drawn by:	MJO
Client:	NC DOT
Project Title:	GOLDSBORO U-2714

Sample Identification	UST 1+2 SW-4
Sample Depth (Feet bgs)	4.5
TPH GRO (mg/kg)	<4.8
THP DRO (mg/kg)	<5.7

Sample Identification	UST 1+2 SW-3
Sample Depth (Feet bgs)	4.5
TPH GRO (mg/kg)	<4.7
THP DRO (mg/kg)	<5.6

Sample Identification	UST 1+2 SW-1
Sample Depth (Feet bgs)	4.5
TPH GRO (mg/kg)	<4.7
THP DRO (mg/kg)	<5.4

Sample Identification	UST 3 SW-4
Sample Depth (Feet bgs)	4.5
TPH GRO (mg/kg)	<5.2
THP DRO (mg/kg)	<5.8

Sample Identification	UST 1+2 SW-2
Sample Depth (Feet bgs)	4.5
TPH GRO (mg/kg)	<4.6
THP DRO (mg/kg)	<5.3

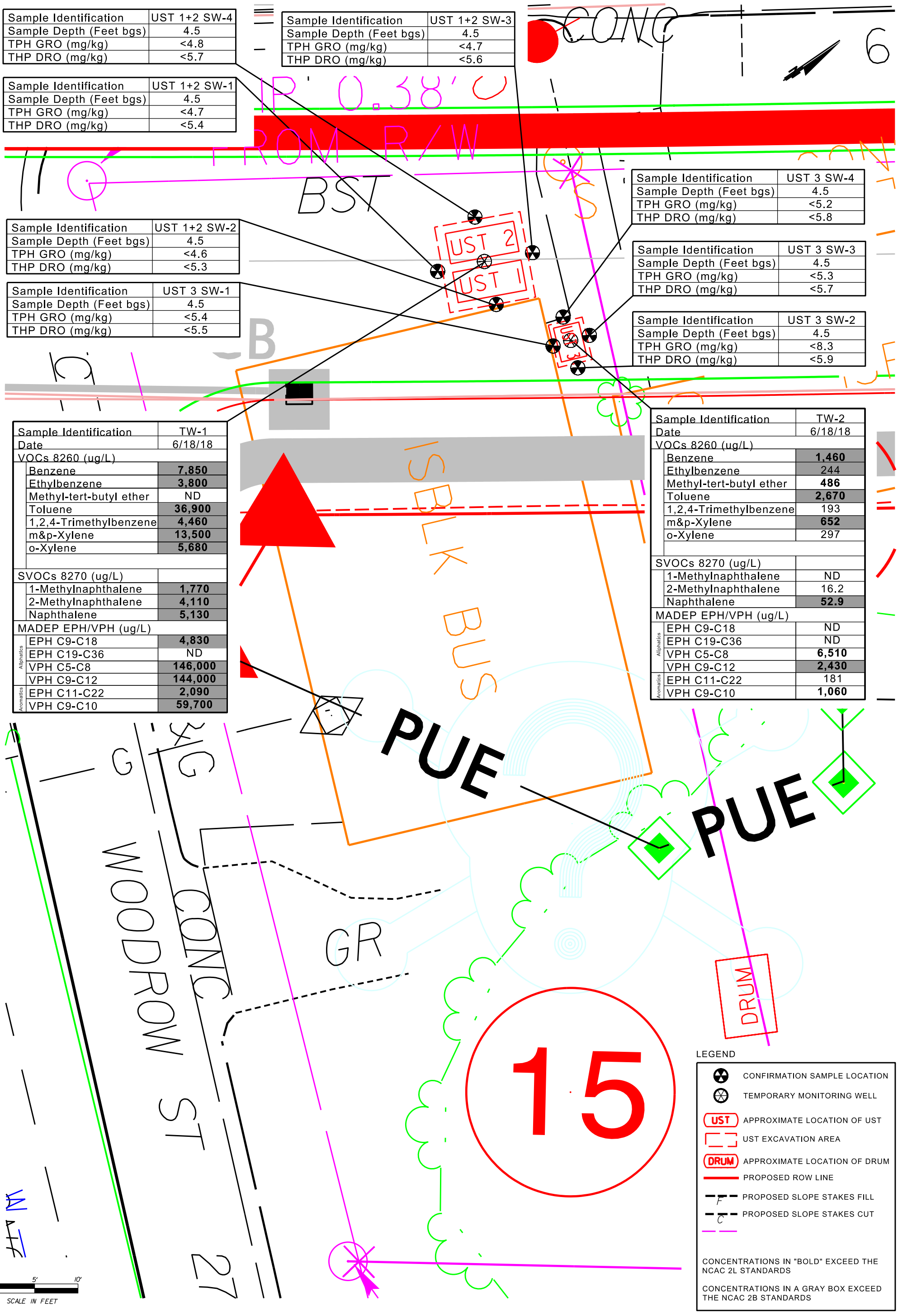
Sample Identification	UST 3 SW-3
Sample Depth (Feet bgs)	4.5
TPH GRO (mg/kg)	<5.3
THP DRO (mg/kg)	<5.7

Sample Identification	UST 3 SW-1
Sample Depth (Feet bgs)	4.5
TPH GRO (mg/kg)	<5.4
THP DRO (mg/kg)	<5.5

Sample Identification	UST 3 SW-2
Sample Depth (Feet bgs)	4.5
TPH GRO (mg/kg)	<8.3
THP DRO (mg/kg)	<5.9

Sample Identification	TW-1
Date	6/18/18
VOCs 8260 (ug/L)	
Benzene	**7,850**
Ethylbenzene	**3,800**
Methyl-tert-butyl ether	ND
Toluene	**36,900**
1,2,4-Trimethylbenzene	**4,460**
m&p-Xylene	**13,500**
o-Xylene	**5,680**
SVOCs 8270 (ug/L)	
1-Methylnaphthalene	**1,770**
2-Methylnaphthalene	**4,110**
Naphthalene	**5,130**
MADEP EPH/VPH (ug/L)	
Aliphatics: EPH C9-C18	**4,830**
Aliphatics: EPH C19-C36	ND
Aliphatics: VPH C5-C8	**146,000**
Aliphatics: VPH C9-C12	**144,000**
Aromatics: EPH C11-C22	**2,090**
Aromatics: VPH C9-C10	**59,700**

Sample Identification	TW-2
Date	6/18/18
VOCs 8260 (ug/L)	
Benzene	**1,460**
Ethylbenzene	244
Methyl-tert-butyl ether	**486**
Toluene	**2,670**
1,2,4-Trimethylbenzene	193
m&p-Xylene	**652**
o-Xylene	297
SVOCs 8270 (ug/L)	
1-Methylnaphthalene	ND
2-Methylnaphthalene	16.2
Naphthalene	**52.9**
MADEP EPH/VPH (ug/L)	
Aliphatics: EPH C9-C18	ND
Aliphatics: EPH C19-C36	ND
Aliphatics: VPH C5-C8	**6,510**
Aliphatics: VPH C9-C12	**2,430**
Aromatics: EPH C11-C22	181
Aromatics: VPH C9-C10	**1,060**



LEGEND

- CONFIRMATION SAMPLE LOCATION
- TEMPORARY MONITORING WELL
- UST — APPROXIMATE LOCATION OF UST
- UST EXCAVATION AREA
- DRUM — APPROXIMATE LOCATION OF DRUM
- PROPOSED ROW LINE
- PROPOSED SLOPE STAKES FILL (F)
- PROPOSED SLOPE STAKES CUT (C)

CONCENTRATIONS IN "BOLD" EXCEED THE NCAC 2L STANDARDS

CONCENTRATIONS IN A GRAY BOX EXCEED THE NCAC 2B STANDARDS

APEX COMPANIES, LLC
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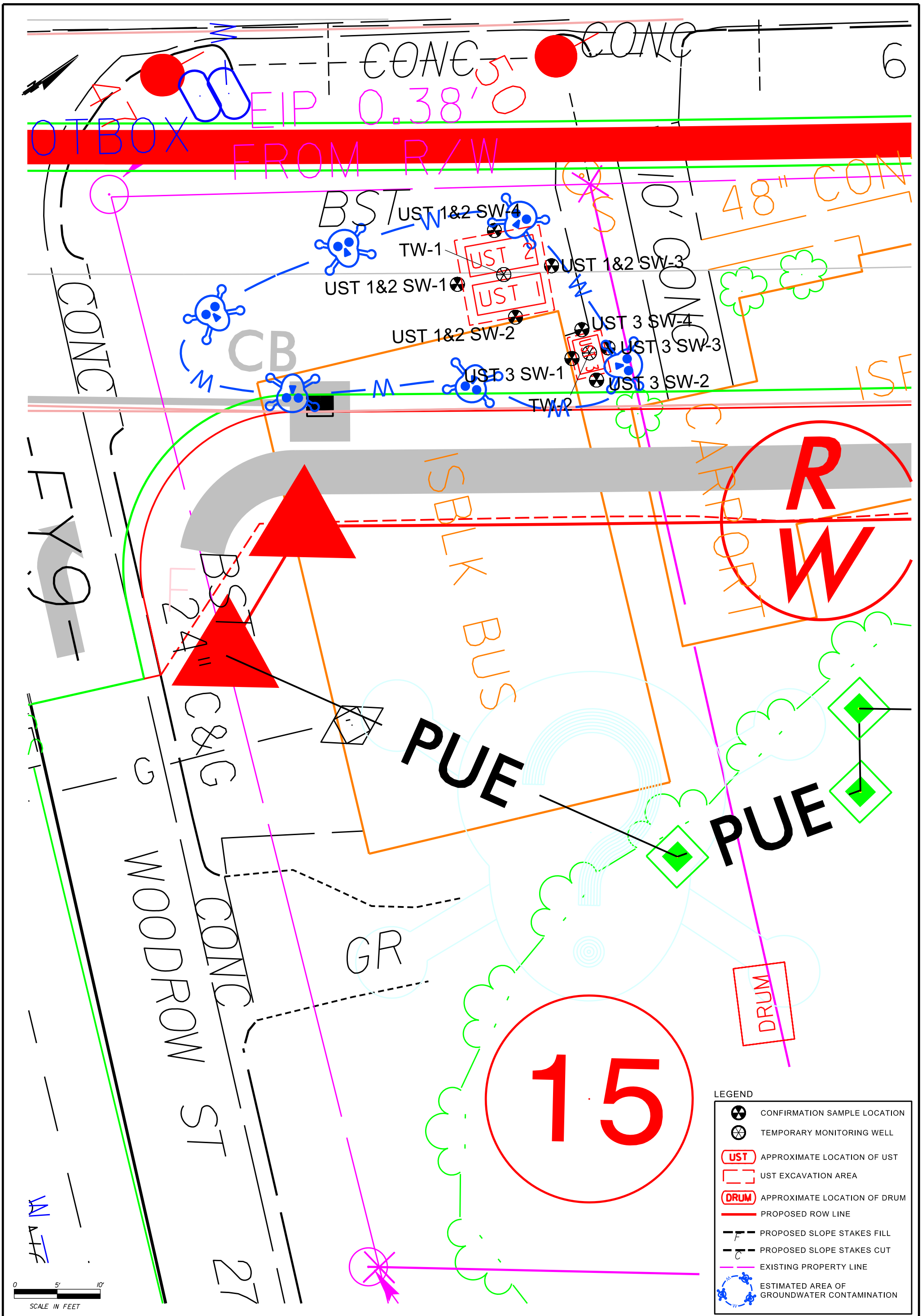
FIGURE 3
PARCEL 15
SITE MAP WITH ANALYTICAL RESULTS

Date:	8/2/18
Proj. #	NCDOT-002
CAD File:	pc_15_fig 3.dgn
Approx. Scale:	1" = 10'
Drawn by:	MJO
Client:	NC DOT
Project Title:	GOLDSBORO U-2714



APEX

APEX COMPANIES, LLC
10610 METROMONT PARKWAY
SUITE 206
CHARLOTTE, NC 28117
PHONE: (704) 799-6390

FIGURE 4
PARCEL 15
SITE MAP WITH ESTIMATED AREA OF GROUNDWATER CONTAMINATION

Date:	8/23/18
Proj. #	NCDOT-002
CAD File:	pc_15_fig 4.dgn
Approx. Scale:	1" = 10'
Drawn by:	MJO
Client:	NC DOT
Project Title:	GOLDSBORO U-2714

APPENDIX A

UST SECTION NOTIFICATION FORMS

UST-61 — 24-Hour Release and UST Leak Reporting Form.

For Releases in NC

This form should be completed and submitted to the UST Section's regional office following a known or suspected release from an underground storage tank (UST) system. This form is required to be submitted within 24 hours of discovery of a known or suspected release

(DWM USE ONLY)
Incident # _____ Risk (H,I,L,U) _____
Received On _____ Received By _____
Reported by (*circle one*): Phone, Fax or Report
Region _____

Suspected Contamination? (Y/N) _____
Confirmed GW Contamination? (Y/N) _____
Confirmed Soil Contamination ?(Y/N) _____
Samples Taken?(Y/N) _____
Free Product? (Y/N) _____ If Yes, State Greatest Thickness _____

Facility ID Number _____
Date Leak Discovered _____
Comm/Non-Commercial? _____
Reg/Non-regulated? _____

INCIDENT DESCRIPTION

Incident Name: Parcel 15 Edith J Smith Property (Former Gas Station?/Flower creation)

Address: 1710 N William St

County: Wayne

City/Town: Goldsboro

Zip Code: 27530

Regional Office (*circle one*): Asheville, Mooresville, Fayetteville, Raleigh, Washington, Wilmington, Winston-Salem

Latitude (decimal degrees): 35.403332 Longitude (decimal degrees): -77.983801

Obtained by:
- ☐ GPS
- ☐ Topographic map
- ☐ GIS Address matching
- ☑ Other Google Maps
- ☐ Unknown

Describe location: corner of N. William St + E Woodrow St (NE Corner)

Briefly describe suspected or confirmed release: *(including but not limited to: nature of release, date of release, amount of release, amount of free product present and recovery efforts, initial responses conducted, impacts to receptors)*

Removed 3 unregulated USTs (500g 500g 300g) from Proposed NCDOT ROW. Shallow Water Table collected Soil Samples above water table - Clean Results Backfilled Excavation w/ clean fill. 440 gallon of Non hazardous contaminated water was evacuated. From Tanks. Went Back to install 2 temp wells for water samples / in each excavation. Water Samples were contaminated.

HOW RELEASE WAS DISCOVERED (Release Code)

(Check one)

- ☐ Release Detection Equipment or Methods
- ☑ During UST Closure/Removal
- ☐ Property Transfer
- ☐ Visual/Odor
- ☐ Water in Tank
- ☐ Water Supply Well Contamination
- ☐ Groundwater Contamination
- ☐ Surface Water Contamination
- ☐ Other (specify) _____

SOURCE OF CONTAMINATION

Source of Release *(Check one to indicate primary source)*
- ☑ Tank
- ☐ Piping
- ☐ Dispenser
- ☐ Submersible Turbine Pump
- ☐ Delivery Problem
- ☐ Other
- ☐ Unknown

Definitions presented on reverse

Cause of Release *(Check one to indicate primary cause)*
- ☐ Spill
- ☐ Overfill
- ☑ Corrosion
- ☐ Physical or Mechanical Damage
- ☐ Install Problem
- ☐ Other
- ☐ Unknown

Definitions presented on reverse

Type of Release *(Check one)*
- ☑ Petroleum
- ☐ Non-Petroleum
- ☐ Both

Location *(Check one)*
- ☐ Facility
- ☐ Residence
- ☑ Other

Product Type Released *(Check one to indicate primary product type released)*
- ☑ Gasoline/ Diesel/ Kerosene
- ☐ Heating Oil
- ☐ Other Petroleum Products
- ☐ Metals
- ☐ Other Inorganics
- ☐ Other Organics
- ☐ Diesel/Veg. Oil Blend
- ☐ Vegetable Oil 100%
- ☐ E10 – E20
- ☐ E21 – E84
- ☐ E85 – E99
- ☐ Ethanol 100%
- ☐ E01 – E09

Ownership
1. Municipal 2. Military 3. Unknown (4. Private) 5. Federal 6. County 7. State

Operation Type
1. Public Service 2. Agricultural 3. Residential 4. Education/Relig. 5. Industrial (6. Commercial) 7. Mining

IMPACT ON DRINKING WATER SUPPLIES

Water Supply Wells Affected? 1. Yes (2. No) 3. Unknown

Number of Water Supply Wells Affected 0

Water Supply Wells Contaminated: (*Include Users Names, Addresses and Phone Numbers. Attach additional sheet if necessary*)

1. N/A
2.
3.

UST SYSTEM OWNER

UST Owner/Company		Address	
Edith S. Smith (Former Gas Station/Flower Creation)		PO Box 54	
Point of Contact			
City	**State**	**Zip Code**	**Telephone Number**
Mount Olive	NC	28365	

UST SYSTEM OPERATOR

UST Operator/Company		Address	
Edith S Smith		PO Box 54	
City	**State**	**Zip Code**	**Telephone Number**
Mount Olive	NC	28365	

LANDOWNER AT LOCATION OF UST INCIDENT

Landowner		Address	
Edith S Smith		PO Box 54	
City	**State**	**Zip Code**	**Telephone Number**
Mount Olive	NC	28365	

Draw Sketch of Area (showing two major road intersections) or Attach Map

Person Reporting Incident	Company Apex Companies	Telephone Number 7047996390
Title Ast PM	Address 10610 Metromont Pkwy	Date 8-1-18

Definitions of Sources

Tank: means the tank that stores the product and is part of the underground storage tank system

Piping: means the piping and connectors running from the tank or submersible turbine pump to the dispenser or other end-use equipment (Vent, vapor recovery, or fill lines are excluded.)

Dispenser: includes the dispenser and the equipment used to connect the dispenser to the piping (e.g., a release from a suction pump or from components located above the shear valve)

Submersible Turbine Pump (STP) Area includes the submersible turbine pump head (typically located in the tank sump), the line leak detector, and the piping that connects the submersible turbine pump to the tank

Delivery Problem: identifies releases that occurred during product delivery to the tank. (Typical causes associated with this source are spills and overfills.)

Other: serves as the option to use when the release source is known but does not fit into one of the preceding categories (e.g., for releases from vent lines, vapor recovery lines, and fill lines)

Unknown: identifies releases for which the source has not been determined

Definitions of Causes

Spill: use this cause when a spill occurs (e.g., when the delivery hose is disconnected from the tank fill pipe or when the nozzle is removed from the dispenser)

Overfill: use when an overfill occurs (e.g., overfills may occur from the fill pipe at the tank or when the nozzle fails to shut off at the dispenser)

Physical or Mechanical Damage: use for all types of physical or mechanical damage, except corrosion (e.g., puncture of tank or piping, loose fittings, broken components, and components that have changed dimension)

Corrosion: use when a metal tank, piping, or other component has a release due to corrosion (e.g., for steel, corrosion takes the form of rust)

Installation Problem: use when the problem is determined to have occurred specifically because the UST system was not installed properly

Other: use this option when the cause is known but does not fit into one of the preceding categories (e.g., putting regulated substances into monitoring wells)

Unknown: use when the cause has not been determined

UST-2B

Site Investigation Report for Permanent Closure or Change-in-Service of UN-REGISTERED UST

Return completed form to:
NC DEQ / DWM / UST SECTION
1646 MAIL SERVICE CENTER
RALEIGH, NC 27699-1646
ATTN: REGISTRATION & PERMITTING

phone (919) 707-8171 fax (919) 715-1117 http://www.wastenotnc.org/

STATE USE ONLY:
Facility ID #
Date Received

INSTRUCTIONS (READ THIS FIRST)

1. UST permanent closure or change in service must be completed in accordance with the latest version of the Guidelines for Site Checks, Tank Closure and Initial Response and Abatement. The guidelines can be obtained at http://deq.nc.gov/about/divisions/waste-management/waste-management-permit-guidance/underground-storage-tanks-section.
2. Permanent closure: Complete all sections of this form.
3. Change-in-service: Where UST systems will be converted from storing a regulated substance to a non-regulated substance, complete sections I, II, III, IV, and VI.
4. For more than 5 un-registered UST systems, attach additional forms as needed.
5. **Un-Registered USTs may be subject to unpaid fees and late penalties.**
6. REGISTERED USTs use Form UST-2A.

I. OWNERSHIP OF TANKS

Owner Name (Corporation, Individual, Public Agency, or Other Entity): Edith S. Smith
Street Address: PO Box 54
City: Mount Olive County: Wayne
State: North Carolina Zip Code: 28365
Phone Number: unknown

II. LOCATION OF TANKS

Facility Name or Company: Vacant Lot (Formerly Flower creations)
Facility ID # (If known): N/A
Street Address: 1710 N William St.
City: Goldsboro County: Zip Code: 27530
Phone Number: unknown

III. CONTACT PERSONNEL

Contact for Facility: Edith S Smith		Job Title: Property Owner	Phone #: Unknown
Closure Contractor Name: Tony Disher	Closure Contractor Company: Evo Corporation	Address: 1703 Vargrave Winston Salem, NC	Phone # 336-725-5844
Primary Consultant Name: Troy Holzschuh	Primary Consultant Company: Apex Companies	Address: 10610 Metromont Pkwy Charlotte NC 28269	Phone # 704-799-6390

IV. UST INFORMATION FOR UN-REGISTERED UST SYSTEMS
REGISTERED USTs use Form UST-2A.

V. EXCAVATION CONDITION

Tank ID No.	Size in Gallons	Last Contents	Last Use Date	Permanent Close Date	Method of Permanent Closure: Indicate REMOVED or enter fill material, such as foam/ concrete/ sand	Change-in-Service Date	Water in excavation		Free product		Notable odor or visible soil contamination	
							Yes	No	Yes	No	Yes	No
1	500	unknown	unknown	6-12-18	Removed		☑	☐	☐	☑	☑	☐
2	500	unknown	unknown	6-12-18	Removed		☑	☐	☐	☑	☑	☐
3	300	unknown	unknown	6-12-18	Removed		☑	☐	☐	☑	☑	☐
							☐	☐	☐	☐	☐	☐
							☐	☐	☐	☐	☐	☐
							☐	☐	☐	☐	☐	☐

VI. CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true accurate and complete.

Print name and official title of owner or owner's authorized representative: Edith S. Smith Property Owner

Signature

Date Signed

APPENDIX B

PHOTO LOG

Photo 1

Overview of site prior to UST tank removal and closure activities.

Photo 2

View of asphalt removed and top of the tank exposed.

10610 Metromont Pkwy
Suite 206
Charlotte, NC 28269

APEX

WBS	38979.1.2
PROCESSED	TLH
DATE	June 2018

PHOTOGRAPHIC LOG
UST Closure Activities
Parcel 15
Edith Smith Property
Goldsboro, NC

Photo 3

During closure activities a buried 55 gallon drum was discovered and left in place.

Photo 4

Photo of EVO vacuum truck operators recovering vapors and liquid from the UST, prior to removal.

10610 Metromont Pkwy
Suite 206
Charlotte, NC 28269

APEX

WBS	38979.1.2
PROCESSED	TLH
DATE	June 2018

PHOTOGRAPHIC LOG
UST Closure Activities
Parcel 15
Edith Smith Property
Goldsboro, NC

Photo 5

Photo of EVO personnel employing dry ice to inert the UST, prior to removal.

Photo 6

Photo of tank condition after extraction from the UST basin.

10610 Metromont Pkwy
Suite 206
Charlotte, NC 28269

APEX

WBS	38979.1.2
PROCESSED	TLH
DATE	June 2018

PHOTOGRAPHIC LOG
UST Closure Activities
Parcel 15
Edith Smith Property
Goldsboro, NC

Photo 7

Photo of groundwater infiltration into the excavation after the UST was removed. 57 stone was placed in the excavation to aid in soil compaction below the groundwater.

Photo 8

The UST excavation was filled with soil and compacted with a remote control compaction roller in one foot lifts.

10610 Metromont Pkwy
Suite 206
Charlotte, NC 28269

APEX

WBS	38979.1.2
PROCESSED	TLH
DATE	June 2018

PHOTOGRAPHIC LOG
UST Closure Activities
Parcel 15
Edith Smith Property
Goldsboro, NC

Photo 9

Crush in run stone was placed on top of the soil in the excavation and graded to land surface.

Photo 10

View of the site at completion of UST removal activities.

10610 Metromont Pkwy
Suite 206
Charlotte, NC 28269

APEX

WBS	38979.1.2
PROCESSED	TLH
DATE	June 2018

PHOTOGRAPHIC LOG
UST Closure Activities
Parcel 15
Edith Smith Property
Goldsboro, NC

Photo 11

Due to the presence of shallow groundwater CSI was contracted to install 2 temporary monitoring wells to collect closure samples from each UST bed. Photo shows temporary monitoring well in the UST 1 and UST 2 tank bed.

Photo 12

Photo of second monitoring well location in the UST-3 tank bed

APPENDIX C

MANIFESTS AND DISPOSAL CERTIFICATES

EVO CORPORATION

1703 Vargrave Street
Winston-Salem, NC 27107
ph 336-725-5844
fax 336-725-6244

TANK DISPOSAL CERTIFICATE

Tank Owner: NCDOT

Site Address: 1710 N. William St.
Goldsboro, NC

Description of Tanks:

Tank Number	Size of Tank	Contents
1	500 Gallons	Gasoline
2	500 Gallons	Gasoline
3	300 Gallons	Kerosene

Transporter: Evo Corporation

EC Project #: 061814

Disposal Certification:

Evo Corporation does hereby certify that the above named storage tanks were transported to Triad Metal Recycling in Yadkinville, NC for proper disposal and recycling.

Signature

Thomas W. Hammett
CEO
Evo Corporation

1703 Vargrave Street
Winston-Salem, NC 27107
ph 336-725-5844
fax 336-725-6244

CERTIFICATE OF DISPOSAL

Evo Corporation does hereby certify that 6.99 tons of non-hazardous contaminated material received on 6/12/2018 from:

Generator: NCDOT

Originating at: 1710 N. William St.
Goldsboro, NC

EC Waste ID #: 061814

has been disposed of by Evo Corporation in a manner approved by the North Carolina Department of Environmental Quality.

Signature

Thomas W. Hammett
CEO
Evo Corporation

EVO CORPORATION

1703 Vargrave Street
Winston-Salem, NC 27107
ph 336-725-5844
fax 336-725-6244

CERTIFICATE OF DISPOSAL

Evo Corporation does hereby certify that 440 gallons of non-hazardous contaminated water received on 6/12/2018 from:

Generator: NCDOT

Originating at: 1710 N. William St.
Goldsboro, NC

EC Waste ID #: 061814

has been disposed of by Evo Corporation in a manner approved by the North Carolina Department of Environmental Quality.

Thomas W. Hammett

Signature

Thomas W. Hammett
CEO
Evo Corporation

EVO CORPORATION

1703 Vargrave Street, Winston-Salem, NC 27107
www.evocorp.net
NON-HAZARDOUS MATERIALS MANIFEST

Load # Manifest No. 76800

GENERATOR INFORMATION

Generator: NCDOT Phone: 919-707-6857
Site Address: 1710 N William St
City/State: Goldsboro NC Contact: Dennis Li

MATERIAL DESCRIPTION / QUANTITY / WEIGHT

Gross Weight (lbs): Material: Water
Empty Weight (lbs): Contaminant: Gasoline & #2 Fuel Oil
Net Weight (lbs):

Quantity 440 Tons Drums Pails Sacs Yards Other:

TRANSPORTER INFORMATION

Transporter: Evo Corporation Phone: 336-725-5844
Truck #: 402 Contact: Tony Disher

As the transporter, I certify that the materials described above being shipped under this non-hazardous materials manifest are properly classified, packaged, labeled, secured and are in proper condition for transport in commerce under the applicable regulations governing transportation, and I hereby receive this material for delivery to the facility designate.

Driver Signature: Date: 6-12-18

FACILITY INFORMATION

Evo Project #: 061814

EVO CORPORATION
1703 Vargrave Street
Winston-Salem, NC 27107

Phone: (336) 725-5844
Contact: Tony Disher

I certify that the carrier has delivered the materials described above to this facility, and I hereby accept this material for treatment and/or disposal in a manner that has been authorized by the State of North Carolina.

Facility Signature: Date: 06-12-2018

White/Facility Canary/Invoice Goldenrod/Generator Pink/Carrier

EVO CORPORATION

1703 Vargrave Street, Winston-Salem, NC 27107
www.evocorp.net

NON-HAZARDOUS MATERIALS MANIFEST

Load # Manifest No. 80436

GENERATOR INFORMATION

Generator: NCDOT Phone: 919-707-6857

Site Address: 1710 N William St

City/State: Goldsboro NC Contact: Dennis Li

MATERIAL DESCRIPTION / QUANTITY / WEIGHT

Gross Weight (lbs): 46420 Material: Soil

Empty Weight (lbs): 32440 Contaminant: Gasoline & #2 Fuel Oil

Net Weight (lbs): 13980

Quantity 6.99 (Tons) Drums Pails Sacs Yards Other: _____

TRANSPORTER INFORMATION

Transporter: Evo Corporation Phone: 336-725-5844

Truck #: _____ Contact: Tony Disher

As the transporter, I certify that the materials described above being shipped under this non-hazardous materials manifest are properly classified, packaged, labeled, secured and are in proper condition for transport in commerce under the applicable regulations governing transportation, and I hereby receive this material for delivery to the facility designate.

Driver Signature: [signature] Date: 06-12-18

FACILITY INFORMATION

Evo Project #: 061814

EVO CORPORATION
1703 Vargrave Street
Winston-Salem, NC 27107

Phone: (336) 725-5844

Contact: Tony Disher

I certify that the carrier has delivered the materials described above to this facility, and I hereby accept this material for treatment and/or disposal in a manner that has been authorized by the State of North Carolina.

Facility Signature: [signature] Date: 6/12/18

White/Facility Canary/Invoice Goldenrod/Generator Pink/Carrier

EC-302

38012025
TICKET NUMBER

CERTIFIED AUTOMATED TRUCK SCALE

CAT SCALE COMPANY
P.O. BOX 630
WALCOTT, IA 52773
(563) 284-6263
www.catscale.com

THE CAT SCALE GUARANTEE

The CAT Scale Company guarantees that our scales will give an accurate weight. What makes us different from other scale companies is that we back up our guarantee with cash.©

WEIGH WHAT WE SAY OR WE PAY®

If you get an overweight fine from the state **AFTER** one of our CAT Scales showed a legal weight, we will immediately check our scale and we will:

(1) Reimburse you for the cost of the overweight fine if our scale is wrong, **OR**
(2) A representative of CAT Scale Company will appear in court **WITH** the driver as an expert witness if we believe our scale was correct.

WEIGH FASTER WITH OUR APP. FIND OUT MORE AT WEIGHMYTRUCK.COM

IF YOU SHOULD GET AN OVERWEIGHT FINE, YOU SHOULD DO THE FOLLOWING TO GET THE PROBLEM RESOLVED:

1) Post bond and request a court date.
2) Call CAT Scale Company direct 24 hours a day at 1-877-CAT-SCALE, ext. 7 (Toll Free) or visit www.catscaleguarantee.com for instructions.
3) **IMMEDIATELY** send a copy of the citation, CAT Scale Ticket, your name, company, address, and phone number to CAT Scale Company Attn: Guarantee Department.

* The four weights shown below are separate weights. The GROSS WEIGHT is the CERTIFIED WEIGHT and was weighed on a full length platform scale. All weights are guaranteed by CAT Scale.

DATE: 6-12-18

SCALE: 1907

LOCATION: LOVES TRAVEL STOP 667
I 85 EXIT 152
MEBANE NC

STEER AXLE	10040 lb
DRIVE AXLE	14400 lb
TRAILER AXLE	21980 lb
* GROSS WEIGHT	46420 lb

6:33
38012025
PUBLIC WEIGHMASTER'S CERTIFICATE OF WEIGHT & MEASURE

This is to certify that the following described merchandise was weighed, counted, or measured by a public or deputy weighmaster, and when properly signed and sealed shall be prima facia evidence of the accuracy of the weight shown as prescribed by law.

Loves Travel Stops #667
1217 Trollingwood Hawfields Rd
(IMPRINT SEAL HERE IF APPLICABLE)

061814

LIVESTOCK, PRODUCE, PROPERTY, COMMODITY, OR ARTICLE WEIGHED: FREIGHT ALL KINDS

COMPANY EVO TRACTOR # 218 TRAILER # 215

WEIGHMASTER OR WEIGHER SIGNATURE: Shay Tinnin
LSHAY TINNIN

TICKET # OF FULL $ WEIGH (IF REWEIGH)

FEE $11.50

EIGH NUMBER
2025
USTOMER COPY

DRIVER IN TRUCK UNLESS CHECKED HERE

APPENDIX D

EXCAVATION LOG

Apex Companies, LLC

Excavation Log

Excation No.: P15-UST 1 and UST 2	**Site Name: Parcel 15 - Edith S Smith Property**
Date: 6-12-18	**Location: Goldsboro, Wayne County, NC**
Job No.: NCDOT-002	**Sample Method: Backhoe**
Apex Rep: Troy L. Holzschuh	**Excavation Method: Backhoe**
Remarks:	

Depth (ft BLS)	PID Reading (ppb)	FID Reading (ppb)	Lab Sample Depth	Soil/Lithologic Description
				Asphalt
1	1.1	0		Tan, Sandy, Clayey Silt, Moist
2	3.2	0		
3				
4	8.1	0		
			Samples collected at 4.5 feet	
5				
	57.9	25.6		Water @ 5.5 feet
6				
				Excavation Terminated at 6' bgs

WELL CONSTRUCTION DETAILS (If Applicable)	
Well Type/Diameter:	Outer Casing Interval:
Total Depth:	Outer Casing Diameter:
Screen Interval:	Bentonite Interval:
Sand Interval:	Slot Size:
Grout Interval:	Static Water Level:

Apex Companies, LLC

Excavation Log

Excation No.: P15-UST 3	**Site Name: Parcel 15 - Edith S Smith Property**
Date: 6-12-18	**Location: Goldsboro, Wayne County, NC**
Job No.: NCDOT-002	**Sample Method: Backhoe**
Apex Rep: Troy L. Holzschuh	**Excavation Method: Backhoe**
Remarks:	

Depth (ft BLS)	PID Reading (ppb)	FID Reading (ppb)	Lab Sample ID	Soil/Lithologic Description
				Grass
1	0.0	0.0		Tan, Sandy Silt
				Tan, Clayey, Sandy Silt
2	0.0	0.0		
			Sample at 2.5'	
3				Orange and Yellow Marbled, Clayey Silt
4	4.2	0.0		
			Samples collected at 4.5 feet	
5				
	37.3	10.2		Water
6				
				Excavation Terminated at 6' bgs

WELL CONSTRUCTION DETAILS (If Applicable)	
Well Type/Diameter:	Outer Casing Interval:
Total Depth:	Outer Casing Diameter:
Screen Interval:	Bentonite Interval:
Sand Interval:	Slot Size:
Grout Interval:	Static Water Level:

APPENDIX E
LABORATORY ANALYTICAL REPORT AND CHAIN OF CUSTODY REPORT

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

June 19, 2018

NCDOT_Apex
Apex
10610 Metromont Pkwy
Charlotte, NC 28208

RE: Project: WBS ELEMENT 28979.1.2 U-2714
Pace Project No.: 92388566

Dear NCDOT_Apex:
Enclosed are the analytical results for sample(s) received by the laboratory on June 14, 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: Chemical Testing Engineer, NCDOT

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

CERTIFICATIONS

Project: WBS ELEMENT 28979.1.2 U-2714
Pace Project No.: 92388566

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

REPORT OF LABORATORY ANALYSIS

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

SAMPLE SUMMARY

Project: WBS ELEMENT 28979.1.2 U-2714
Pace Project No.: 92388566

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92388566001	**UST 1+2 SW-1 (4.5)**	Solid	06/12/18 13:30	06/14/18 15:22
92388566002	**UST 1+2 SW-2 (4.5)**	Solid	06/12/18 13:35	06/14/18 15:22
92388566003	**UST 1+2 SW-3 (4.5)**	Solid	06/12/18 13:40	06/14/18 15:22
92388566004	**UST 1+2 SW-4 (4.5)**	Solid	06/12/18 13:45	06/14/18 15:22
92388566005	**UST 3 SW-1 (4.5)**	Solid	06/12/18 14:10	06/14/18 15:22
92388566006	**UST 3 SW-2 (4.5)**	Solid	06/12/18 14:15	06/14/18 15:22
92388566007	**UST 3 SW-3 (4.5)**	Solid	06/12/18 14:20	06/14/18 15:22
92388566008	**UST 3 SW-4 (4.5)**	Solid	06/12/18 14:25	06/14/18 15:22

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

SAMPLE ANALYTE COUNT

Project: WBS ELEMENT 28979.1.2 U-2714
Pace Project No.: 92388566

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92388566001	**UST 1+2 SW-1 (4.5)**	EPA 8015 Modified	SEM	2	PASI-C
		EPA 8015 Modified	CL	2	PASI-C
		ASTM D2974-87	KDF	1	PASI-C
92388566002	**UST 1+2 SW-2 (4.5)**	EPA 8015 Modified	SEM	2	PASI-C
		EPA 8015 Modified	CL	2	PASI-C
		ASTM D2974-87	KDF	1	PASI-C
92388566003	**UST 1+2 SW-3 (4.5)**	EPA 8015 Modified	SEM	2	PASI-C
		EPA 8015 Modified	CL	2	PASI-C
		ASTM D2974-87	KDF	1	PASI-C
92388566004	**UST 1+2 SW-4 (4.5)**	EPA 8015 Modified	SEM	2	PASI-C
		EPA 8015 Modified	CL	2	PASI-C
		ASTM D2974-87	KDF	1	PASI-C
92388566005	**UST 3 SW-1 (4.5)**	EPA 8015 Modified	SEM	2	PASI-C
		EPA 8015 Modified	CL	2	PASI-C
		ASTM D2974-87	KDF	1	PASI-C
92388566006	**UST 3 SW-2 (4.5)**	EPA 8015 Modified	SEM	2	PASI-C
		EPA 8015 Modified	CL	2	PASI-C
		ASTM D2974-87	KDF	1	PASI-C
92388566007	**UST 3 SW-3 (4.5)**	EPA 8015 Modified	SEM	2	PASI-C
		EPA 8015 Modified	CL	2	PASI-C
		ASTM D2974-87	KDF	1	PASI-C
92388566008	**UST 3 SW-4 (4.5)**	EPA 8015 Modified	SEM	2	PASI-C
		EPA 8015 Modified	CL	2	PASI-C
		ASTM D2974-87	KDF	1	PASI-C

REPORT OF LABORATORY ANALYSIS

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

SUMMARY OF DETECTION

Project: WBS ELEMENT 28979.1.2 U-2714
Pace Project No.: 92388566

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92388566001	**UST 1+2 SW-1 (4.5)**					
ASTM D2974-87	Percent Moisture	6.9	%	0.10	06/18/18 10:03	
92388566002	**UST 1+2 SW-2 (4.5)**					
ASTM D2974-87	Percent Moisture	6.3	%	0.10	06/18/18 10:03	
92388566003	**UST 1+2 SW-3 (4.5)**					
ASTM D2974-87	Percent Moisture	9.1	%	0.10	06/18/18 10:03	
92388566004	**UST 1+2 SW-4 (4.5)**					
ASTM D2974-87	Percent Moisture	11.3	%	0.10	06/18/18 10:03	
92388566005	**UST 3 SW-1 (4.5)**					
ASTM D2974-87	Percent Moisture	7.9	%	0.10	06/18/18 10:03	
92388566006	**UST 3 SW-2 (4.5)**					
ASTM D2974-87	Percent Moisture	14.0	%	0.10	06/18/18 10:03	
92388566007	**UST 3 SW-3 (4.5)**					
ASTM D2974-87	Percent Moisture	12.0	%	0.10	06/18/18 10:03	
92388566008	**UST 3 SW-4 (4.5)**					
ASTM D2974-87	Percent Moisture	12.9	%	0.10	06/18/18 10:04	

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

ANALYTICAL RESULTS

Project: WBS ELEMENT 28979.1.2 U-2714
Pace Project No.: 92388566

Sample: UST 1+2 SW-1 (4.5) **Lab ID: 92388566001** Collected: 06/12/18 13:30 Received: 06/14/18 15:22 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	MDL	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	5.4	4.8	1	06/15/18 19:45	06/18/18 16:56		
Surrogates									
n-Pentacosane (S)	71	%	41-119		1	06/15/18 19:45	06/18/18 16:56	629-99-2	
Gasoline Range Organics	Analytical Method: EPA 8015 Modified Preparation Method: EPA 5035A/5030B								
Gas Range Organics (C6-C10)	ND	mg/kg	4.7	4.7	1	06/15/18 18:18	06/15/18 22:44		
Surrogates									
4-Bromofluorobenzene (S)	73	%	70-167		1	06/15/18 18:18	06/15/18 22:44	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**6.9**	%	0.10	0.10	1		06/18/18 10:03		

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: WBS ELEMENT 28979.1.2 U-2714
Pace Project No.: 92388566

Sample: UST 1+2 SW-2 (4.5) **Lab ID: 92388566002** Collected: 06/12/18 13:35 Received: 06/14/18 15:22 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	MDL	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	5.3	4.8	1	06/15/18 19:45	06/18/18 16:56		
Surrogates									
n-Pentacosane (S)	57	%	41-119		1	06/15/18 19:45	06/18/18 16:56	629-99-2	
Gasoline Range Organics	Analytical Method: EPA 8015 Modified Preparation Method: EPA 5035A/5030B								
Gas Range Organics (C6-C10)	ND	mg/kg	4.6	4.6	1	06/15/18 18:18	06/15/18 23:12		
Surrogates									
4-Bromofluorobenzene (S)	71	%	70-167		1	06/15/18 18:18	06/15/18 23:12	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**6.3**	%	0.10	0.10	1		06/18/18 10:03		

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: WBS ELEMENT 28979.1.2 U-2714
Pace Project No.: 92388566

Sample: UST 1+2 SW-3 (4.5) **Lab ID: 92388566003** Collected: 06/12/18 13:40 Received: 06/14/18 15:22 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	MDL	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	5.6	5.0	1	06/15/18 19:45	06/18/18 17:21		
Surrogates									
n-Pentacosane (S)	74	%	41-119		1	06/15/18 19:45	06/18/18 17:21	629-99-2	
Gasoline Range Organics	Analytical Method: EPA 8015 Modified Preparation Method: EPA 5035A/5030B								
Gas Range Organics (C6-C10)	ND	mg/kg	4.7	4.7	1	06/15/18 18:18	06/15/18 23:40		
Surrogates									
4-Bromofluorobenzene (S)	73	%	70-167		1	06/15/18 18:18	06/15/18 23:40	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**9.1**	%	0.10	0.10	1		06/18/18 10:03		

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: WBS ELEMENT 28979.1.2 U-2714
Pace Project No.: 92388566

Sample: UST 1+2 SW-4 (4.5) **Lab ID: 92388566004** Collected: 06/12/18 13:45 Received: 06/14/18 15:22 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	MDL	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	5.7	5.1	1	06/15/18 19:45	06/18/18 17:21		
Surrogates									
n-Pentacosane (S)	68	%	41-119		1	06/15/18 19:45	06/18/18 17:21	629-99-2	
Gasoline Range Organics	Analytical Method: EPA 8015 Modified Preparation Method: EPA 5035A/5030B								
Gas Range Organics (C6-C10)	ND	mg/kg	4.8	4.8	1	06/15/18 18:18	06/18/18 16:01		
Surrogates									
4-Bromofluorobenzene (S)	82	%	70-167		1	06/15/18 18:18	06/18/18 16:01	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**11.3**	%	0.10	0.10	1		06/18/18 10:03		

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: WBS ELEMENT 28979.1.2 U-2714
Pace Project No.: 92388566

Sample: UST 3 SW-1 (4.5) **Lab ID: 92388566005** Collected: 06/12/18 14:10 Received: 06/14/18 15:22 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	MDL	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	5.5	4.9	1	06/15/18 19:46	06/18/18 18:11		
Surrogates									
n-Pentacosane (S)	70	%	41-119		1	06/15/18 19:46	06/18/18 18:11	629-99-2	
Gasoline Range Organics	Analytical Method: EPA 8015 Modified Preparation Method: EPA 5035A/5030B								
Gas Range Organics (C6-C10)	ND	mg/kg	5.4	5.4	1	06/15/18 18:18	06/18/18 16:29		
Surrogates									
4-Bromofluorobenzene (S)	77	%	70-167		1	06/15/18 18:18	06/18/18 16:29	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**7.9**	%	0.10	0.10	1		06/18/18 10:03		

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: WBS ELEMENT 28979.1.2 U-2714
Pace Project No.: 92388566

Sample: UST 3 SW-2 (4.5) **Lab ID: 92388566006** Collected: 06/12/18 14:15 Received: 06/14/18 15:22 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	MDL	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	5.9	5.3	1	06/15/18 19:46	06/18/18 18:35		
Surrogates									
n-Pentacosane (S)	74	%	41-119		1	06/15/18 19:46	06/18/18 18:35	629-99-2	
Gasoline Range Organics	Analytical Method: EPA 8015 Modified Preparation Method: EPA 5035A/5030B								
Gas Range Organics (C6-C10)	ND	mg/kg	8.3	8.3	1	06/15/18 18:18	06/16/18 01:05		
Surrogates									
4-Bromofluorobenzene (S)	72	%	70-167		1	06/15/18 18:18	06/16/18 01:05	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**14.0**	%	0.10	0.10	1		06/18/18 10:03		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: WBS ELEMENT 28979.1.2 U-2714
Pace Project No.: 92388566

Sample: UST 3 SW-3 (4.5) **Lab ID: 92388566007** Collected: 06/12/18 14:20 Received: 06/14/18 15:22 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	MDL	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	5.7	5.1	1	06/15/18 19:46	06/18/18 19:00		
Surrogates									
n-Pentacosane (S)	72	%	41-119		1	06/15/18 19:46	06/18/18 19:00	629-99-2	
Gasoline Range Organics	Analytical Method: EPA 8015 Modified Preparation Method: EPA 5035A/5030B								
Gas Range Organics (C6-C10)	ND	mg/kg	5.3	5.3	1	06/15/18 18:18	06/16/18 01:33		
Surrogates									
4-Bromofluorobenzene (S)	70	%	70-167		1	06/15/18 18:18	06/16/18 01:33	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**12.0**	%	0.10	0.10	1		06/18/18 10:03		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(704)875-9092

ANALYTICAL RESULTS

Project: WBS ELEMENT 28979.1.2 U-2714
Pace Project No.: 92388566

Sample: UST 3 SW-4 (4.5) **Lab ID: 92388566008** Collected: 06/12/18 14:25 Received: 06/14/18 15:22 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	MDL	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	5.8	5.2	1	06/15/18 19:46	06/18/18 19:00		
Surrogates									
n-Pentacosane (S)	72	%	41-119		1	06/15/18 19:46	06/18/18 19:00	629-99-2	
Gasoline Range Organics	Analytical Method: EPA 8015 Modified Preparation Method: EPA 5035A/5030B								
Gas Range Organics (C6-C10)	ND	mg/kg	5.2	5.2	1	06/15/18 18:18	06/16/18 02:57		
Surrogates									
4-Bromofluorobenzene (S)	77	%	70-167		1	06/15/18 18:18	06/16/18 02:57	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**12.9**	%	0.10	0.10	1		06/18/18 10:04		

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: WBS ELEMENT 28979.1.2 U-2714
Pace Project No.: 92388566

QC Batch: 415472 Analysis Method: EPA 8015 Modified
QC Batch Method: EPA 5035A/5030B Analysis Description: Gasoline Range Organics
Associated Lab Samples: 92388566001, 92388566002, 92388566003, 92388566004, 92388566005, 92388566006, 92388566007, 92388566008

METHOD BLANK: 2304171 Matrix: Solid
Associated Lab Samples: 92388566001, 92388566002, 92388566003, 92388566004, 92388566005, 92388566006, 92388566007, 92388566008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Gas Range Organics (C6-C10)	mg/kg	ND	6.0	6.0	06/15/18 17:34	
4-Bromofluorobenzene (S)	%	78	70-167		06/15/18 17:34	

LABORATORY CONTROL SAMPLE: 2304172

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Gas Range Organics (C6-C10)	mg/kg	49.8	47.9	96	70-165	
4-Bromofluorobenzene (S)	%			76	70-167	

MATRIX SPIKE SAMPLE: 2304173

Parameter	Units	92388516001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Gas Range Organics (C6-C10)	mg/kg	ND	56.8	58.1	101	47-187	
4-Bromofluorobenzene (S)	%				77	70-167	

SAMPLE DUPLICATE: 2304174

Parameter	Units	92388516002 Result	Dup Result	RPD	Max RPD	Qualifiers
Gas Range Organics (C6-C10)	mg/kg	ND	ND		30	
4-Bromofluorobenzene (S)	%	81	81	1		

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: WBS ELEMENT 28979.1.2 U-2714
Pace Project No.: 92388566

QC Batch: 415473 Analysis Method: EPA 8015 Modified
QC Batch Method: EPA 3546 Analysis Description: 8015 Solid GCSV
Associated Lab Samples: 92388566001, 92388566002, 92388566003, 92388566004

METHOD BLANK: 2304179 Matrix: Solid
Associated Lab Samples: 92388566001, 92388566002, 92388566003, 92388566004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Diesel Range Organics(C10-C28)	mg/kg	ND	5.0	4.5	06/18/18 07:38	
n-Pentacosane (S)	%	78	41-119		06/18/18 07:38	

LABORATORY CONTROL SAMPLE & LCSD: 2304180 2304181

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	67.8	46.3	48.0	68	71	49-113	3	30	
n-Pentacosane (S)	%				75	76	41-119			

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: WBS ELEMENT 28979.1.2 U-2714
Pace Project No.: 92388566

QC Batch: 415474 Analysis Method: EPA 8015 Modified
QC Batch Method: EPA 3546 Analysis Description: 8015 Solid GCSV
Associated Lab Samples: 92388566005, 92388566006, 92388566007, 92388566008

METHOD BLANK: 2304182 Matrix: Solid
Associated Lab Samples: 92388566005, 92388566006, 92388566007, 92388566008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Diesel Range Organics(C10-C28)	mg/kg	ND	5.1	4.6	06/18/18 17:46	
n-Pentacosane (S)	%	75	41-119		06/18/18 17:46	

LABORATORY CONTROL SAMPLE: 2304183

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Diesel Range Organics(C10-C28)	mg/kg	67.1	52.0	77	49-113	
n-Pentacosane (S)	%			82	41-119	

MATRIX SPIKE SAMPLE: 2304184

Parameter	Units	92388566005 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Diesel Range Organics(C10-C28)	mg/kg	ND	72.4	45.3	60	10-146	
n-Pentacosane (S)	%				69	41-119	

SAMPLE DUPLICATE: 2304185

Parameter	Units	92388566006 Result	Dup Result	RPD	Max RPD	Qualifiers
Diesel Range Organics(C10-C28)	mg/kg	ND	ND		30	
n-Pentacosane (S)	%	74	65	13		

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: WBS ELEMENT 28979.1.2 U-2714
Pace Project No.: 92388566

QC Batch: 415383 Analysis Method: ASTM D2974-87
QC Batch Method: ASTM D2974-87 Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 92388566001, 92388566002, 92388566003, 92388566004, 92388566005, 92388566006, 92388566007, 92388566008

SAMPLE DUPLICATE: 2303500

Parameter	Units	92388541001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	72.9	73.7	1	25	

SAMPLE DUPLICATE: 2303501

Parameter	Units	92388566008 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	12.9	13.0	0	25	

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

REPORT OF LABORATORY ANALYSIS

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

QUALIFIERS

Project: WBS ELEMENT 28979.1.2 U-2714
Pace Project No.: 92388566

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

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

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: WBS ELEMENT 28979.1.2 U-2714
Pace Project No.: 92388566

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92388566001	**UST 1+2 SW-1 (4.5)**	EPA 3546	415473	EPA 8015 Modified	415575
92388566002	**UST 1+2 SW-2 (4.5)**	EPA 3546	415473	EPA 8015 Modified	415575
92388566003	**UST 1+2 SW-3 (4.5)**	EPA 3546	415473	EPA 8015 Modified	415575
92388566004	**UST 1+2 SW-4 (4.5)**	EPA 3546	415473	EPA 8015 Modified	415575
92388566005	**UST 3 SW-1 (4.5)**	EPA 3546	415474	EPA 8015 Modified	415573
92388566006	**UST 3 SW-2 (4.5)**	EPA 3546	415474	EPA 8015 Modified	415573
92388566007	**UST 3 SW-3 (4.5)**	EPA 3546	415474	EPA 8015 Modified	415573
92388566008	**UST 3 SW-4 (4.5)**	EPA 3546	415474	EPA 8015 Modified	415573
92388566001	**UST 1+2 SW-1 (4.5)**	EPA 5035A/5030B	415472	EPA 8015 Modified	415618
92388566002	**UST 1+2 SW-2 (4.5)**	EPA 5035A/5030B	415472	EPA 8015 Modified	415618
92388566003	**UST 1+2 SW-3 (4.5)**	EPA 5035A/5030B	415472	EPA 8015 Modified	415618
92388566004	**UST 1+2 SW-4 (4.5)**	EPA 5035A/5030B	415472	EPA 8015 Modified	415618
92388566005	**UST 3 SW-1 (4.5)**	EPA 5035A/5030B	415472	EPA 8015 Modified	415618
92388566006	**UST 3 SW-2 (4.5)**	EPA 5035A/5030B	415472	EPA 8015 Modified	415618
92388566007	**UST 3 SW-3 (4.5)**	EPA 5035A/5030B	415472	EPA 8015 Modified	415618
92388566008	**UST 3 SW-4 (4.5)**	EPA 5035A/5030B	415472	EPA 8015 Modified	415618
92388566001	**UST 1+2 SW-1 (4.5)**	ASTM D2974-87	415383		
92388566002	**UST 1+2 SW-2 (4.5)**	ASTM D2974-87	415383		
92388566003	**UST 1+2 SW-3 (4.5)**	ASTM D2974-87	415383		
92388566004	**UST 1+2 SW-4 (4.5)**	ASTM D2974-87	415383		
92388566005	**UST 3 SW-1 (4.5)**	ASTM D2974-87	415383		
92388566006	**UST 3 SW-2 (4.5)**	ASTM D2974-87	415383		
92388566007	**UST 3 SW-3 (4.5)**	ASTM D2974-87	415383		
92388566008	**UST 3 SW-4 (4.5)**	ASTM D2974-87	415383		

Pace Analytical®	Document Name: Sample Condition Upon Receipt(SCUR)	Document Revised: February 7, 2018 Page 1 of 2
	Document No.: F-CAR-CS-033-Rev.06	Issuing Authority: Pace Carolinas Quality Office

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

Sample Condition Upon Receipt

Client Name: Apex Companies

Project #:

WO# : 92388566

92388566

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

Custody Seal Present? ☐ Yes ☑ No **Seals Intact?** ☐ Yes ☑ No

Date/Initials Person Examining Contents: bd 6/14/18

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): 5.1 **Correction Factor:** Add/Subtract (°C) +0.4

Cooler Temp Corrected (°C): 5.5 jm 06/14/18

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?	☑ Yes	☐ No	☐ N/A	9.
-Includes Date/Time/ID/Analysis Matrix: SL				
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	

COMMENTS/SAMPLE DISCREPANCY

Field Data Required? ☐ Yes ☐ No

Lot ID of split containers:

CLIENT NOTIFICATION/RESOLUTION
Collected in Wayne Co, NC.

Person contacted: Troy Holzschuh Date/Time: 6/15/18 10:36

Project Manager SCURF Review: TC **Date:** 6/15/18

Project Manager SRF Review: TC **Date:** 6/15/18

***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**

Project: **WO# : 92388566**

PM: RWC Due Date: 06/21/18

CLIENT: 92-APEX MOOR

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												3								
2									1												3								
3									1												3								
4									1												3								
5									1												3								
6									1												3								
7									1												3								
8									1												3								
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.

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:

Company: APEX Companies - NC
Address: 10610 Metromont Pkwy
Charlotte, NC 28269
Email: tholzschuh@apexcos.com
Phone: 704-799-6390 Fax:
Requested Due Date: Standard

Section B — Required Project Information:

Report To: Troy Holzschuh
Copy To: Katie Lippard
Purchase Order #:
Project Name: WBS element 38979.1.2 U-2714
Project #: NCDOT-002

Section C — Invoice Information:

Attention: Regina Li
Company Name: NCDOT
Address: Raleigh NC
Pace Quote:
Pace Project Manager: trey.carter@pacelabs.com,
Pace Profile #: 1223-18

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 3 Vial Kit	Analyses Test: DRO by 8015	GRO 8015	Residual Chlorine (Y/N)	723 BTEX 66
1	UST 1+2 SW-1 (4.5)	SL	G	6-12-18	1330				4	X							X	1	3		001
2	UST 1+2 SW-2 (4.5)	SL	G	"	1335				4	X							X	1	3		002
3	UST 1+2 SW-3 (4.5)	SL	G	"	1340				4	X							X	1	3		003
4	UST 1+2 SW-4 (4.5)	SL	G	"	1345				4	X							X	1	3		004
5	UST 3 SW-1 (4.5)	SL	G	"	1410				4	X							X	1	3		005
6	UST 3 SW-2 (4.5)	SL	G	"	1415				4	X							X	1	3		006
7	UST 3 SW-3 (4.5)	SL	G	"	1420				4	X							X	1	3		007
8	UST 3 SW-4 (4.5)	SL	G	↓	1425				4	X							X	1	3		008
9																					
10																					
11																					
12																					

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

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
	T Holzschuh / Apex	6-14-18	1522	Michael Pace	6-14-18	1522

SAMPLE CONDITIONS			
TEMP in C	5.5		
Received on Ice (Y/N)	Y	N	Y
Custody Sealed Cooler (Y/N)			
Samples Intact (Y/N)			

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Troy L Holzschuh

SIGNATURE of SAMPLER: T Holzschuh

DATE Signed: 6/14/18

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

June 28, 2018

NCDOT_Apex
Apex
10610 Metromont Pkwy
Charlotte, NC 28208

RE: Project: NCDOT 38979.1.2
Pace Project No.: 92388933

Dear NCDOT_Apex:
Enclosed are the analytical results for sample(s) received by the laboratory on June 19, 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: Chemical Testing Engineer, NCDOT

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

CERTIFICATIONS

Project: NCDOT 38979.1.2
Pace Project No.: 92388933

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

REPORT OF LABORATORY ANALYSIS

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

SAMPLE ANALYTE COUNT

Project: NCDOT 38979.1.2
Pace Project No.: 92388933

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92388933001	**TW-1**	MADEP EPH	SEM	7	PASI-C
		MADEP VPH	CL	5	PASI-C
		EPA 8270	PKS	74	PASI-C
		EPA 8260	GAW	71	PASI-C
92388933002	**TW-2**	MADEP EPH	SEM	7	PASI-C
		MADEP VPH	CL	5	PASI-C
		EPA 8270	PKS	74	PASI-C
		EPA 8260	GAW	71	PASI-C

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

ANALYTICAL RESULTS

Project: NCDOT 38979.1.2
Pace Project No.: 92388933

Sample: TW-1 **Lab ID: 92388933001** Collected: 06/18/18 14:00 Received: 06/19/18 10:29 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
MADEP EPH NC Water	Analytical Method: MADEP EPH Preparation Method: MADEP EPH							
Aliphatic (C09-C18)	**4830**	ug/L	980	10	06/25/18 20:23	06/28/18 06:46		N2
Aliphatic (C19-C36)	ND	ug/L	980	10	06/25/18 20:23	06/28/18 06:46		N2
Aromatic (C11-C22)	**2090**	ug/L	98.0	1	06/25/18 20:23	06/28/18 06:46		N2
Surrogates								
Nonatriacontane (S)	0	%	40-140	10	06/25/18 20:23	06/28/18 06:46	7194-86-7	S4
o-Terphenyl (S)	56	%	40-140	1	06/25/18 20:23	06/28/18 06:46	84-15-1	
2-Fluorobiphenyl (S)	81	%	40-140	1	06/25/18 20:23	06/28/18 06:46	321-60-8	
2-Bromonaphthalene (S)	61	%	40-140	1	06/25/18 20:23	06/28/18 06:46	580-13-2	
VPH NC Water	Analytical Method: MADEP VPH							
Aliphatic (C05-C08)	**146000**	ug/L	12500	250		06/21/18 22:31		N2
Aliphatic (C09-C12)	**144000**	ug/L	12500	250		06/21/18 22:31		N2
Aromatic (C09-C10)	**59700**	ug/L	12500	250		06/21/18 22:31		N2
Surrogates								
4-Bromofluorobenzene (FID) (S)	97	%	70-130	250		06/21/18 22:31	460-00-4	
4-Bromofluorobenzene (PID) (S)	96	%	70-130	250		06/21/18 22:31	460-00-4	
8270 MSSV RVE Semivol Organic	Analytical Method: EPA 8270 Preparation Method: EPA 3510							
Acenaphthene	ND	ug/L	83.3	10	06/19/18 20:35	06/21/18 09:27	83-32-9	
Acenaphthylene	ND	ug/L	83.3	10	06/19/18 20:35	06/21/18 09:27	208-96-8	
Aniline	ND	ug/L	83.3	10	06/19/18 20:35	06/21/18 09:27	62-53-3	
Anthracene	ND	ug/L	83.3	10	06/19/18 20:35	06/21/18 09:27	120-12-7	
Benzo(a)anthracene	ND	ug/L	83.3	10	06/19/18 20:35	06/21/18 09:27	56-55-3	
Benzo(a)pyrene	ND	ug/L	83.3	10	06/19/18 20:35	06/21/18 09:27	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	83.3	10	06/19/18 20:35	06/21/18 09:27	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	83.3	10	06/19/18 20:35	06/21/18 09:27	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	83.3	10	06/19/18 20:35	06/21/18 09:27	207-08-9	
Benzoic Acid	ND	ug/L	417	10	06/19/18 20:35	06/21/18 09:27	65-85-0	
Benzyl alcohol	ND	ug/L	167	10	06/19/18 20:35	06/21/18 09:27	100-51-6	
4-Bromophenylphenyl ether	ND	ug/L	83.3	10	06/19/18 20:35	06/21/18 09:27	101-55-3	
Butylbenzylphthalate	ND	ug/L	83.3	10	06/19/18 20:35	06/21/18 09:27	85-68-7	
4-Chloro-3-methylphenol	ND	ug/L	167	10	06/19/18 20:35	06/21/18 09:27	59-50-7	
4-Chloroaniline	ND	ug/L	167	10	06/19/18 20:35	06/21/18 09:27	106-47-8	
bis(2-Chloroethoxy)methane	ND	ug/L	83.3	10	06/19/18 20:35	06/21/18 09:27	111-91-1	
bis(2-Chloroethyl) ether	ND	ug/L	83.3	10	06/19/18 20:35	06/21/18 09:27	111-44-4	
2-Chloronaphthalene	ND	ug/L	83.3	10	06/19/18 20:35	06/21/18 09:27	91-58-7	
2-Chlorophenol	ND	ug/L	83.3	10	06/19/18 20:35	06/21/18 09:27	95-57-8	
4-Chlorophenylphenyl ether	ND	ug/L	83.3	10	06/19/18 20:35	06/21/18 09:27	7005-72-3	
Chrysene	ND	ug/L	83.3	10	06/19/18 20:35	06/21/18 09:27	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	83.3	10	06/19/18 20:35	06/21/18 09:27	53-70-3	
Dibenzofuran	ND	ug/L	83.3	10	06/19/18 20:35	06/21/18 09:27	132-64-9	
1,2-Dichlorobenzene	ND	ug/L	83.3	10	06/19/18 20:35	06/21/18 09:27	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	83.3	10	06/19/18 20:35	06/21/18 09:27	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	83.3	10	06/19/18 20:35	06/21/18 09:27	106-46-7	
3,3'-Dichlorobenzidine	ND	ug/L	167	10	06/19/18 20:35	06/21/18 09:27	91-94-1	
2,4-Dichlorophenol	ND	ug/L	83.3	10	06/19/18 20:35	06/21/18 09:27	120-83-2	
Diethylphthalate	ND	ug/L	83.3	10	06/19/18 20:35	06/21/18 09:27	84-66-2	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: NCDOT 38979.1.2
Pace Project No.: 92388933

Sample: TW-1 **Lab ID: 92388933001** Collected: 06/18/18 14:00 Received: 06/19/18 10:29 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV RVE Semivol Organic	Analytical Method: EPA 8270 Preparation Method: EPA 3510							
2,4-Dimethylphenol	ND	ug/L	83.3	10	06/19/18 20:35	06/21/18 09:27	105-67-9	
Dimethylphthalate	ND	ug/L	83.3	10	06/19/18 20:35	06/21/18 09:27	131-11-3	
Di-n-butylphthalate	ND	ug/L	83.3	10	06/19/18 20:35	06/21/18 09:27	84-74-2	
4,6-Dinitro-2-methylphenol	ND	ug/L	167	10	06/19/18 20:35	06/21/18 09:27	534-52-1	
2,4-Dinitrophenol	ND	ug/L	417	10	06/19/18 20:35	06/21/18 09:27	51-28-5	
2,4-Dinitrotoluene	ND	ug/L	83.3	10	06/19/18 20:35	06/21/18 09:27	121-14-2	
2,6-Dinitrotoluene	ND	ug/L	83.3	10	06/19/18 20:35	06/21/18 09:27	606-20-2	
Di-n-octylphthalate	ND	ug/L	83.3	10	06/19/18 20:35	06/21/18 09:27	117-84-0	
bis(2-Ethylhexyl)phthalate	ND	ug/L	50.0	10	06/19/18 20:35	06/21/18 09:27	117-81-7	
Fluoranthene	ND	ug/L	83.3	10	06/19/18 20:35	06/21/18 09:27	206-44-0	
Fluorene	ND	ug/L	83.3	10	06/19/18 20:35	06/21/18 09:27	86-73-7	
Hexachloro-1,3-butadiene	ND	ug/L	83.3	10	06/19/18 20:35	06/21/18 09:27	87-68-3	
Hexachlorobenzene	ND	ug/L	83.3	10	06/19/18 20:35	06/21/18 09:27	118-74-1	
Hexachlorocyclopentadiene	ND	ug/L	83.3	10	06/19/18 20:35	06/21/18 09:27	77-47-4	
Hexachloroethane	ND	ug/L	83.3	10	06/19/18 20:35	06/21/18 09:27	67-72-1	
Indeno(1,2,3-cd)pyrene	ND	ug/L	83.3	10	06/19/18 20:35	06/21/18 09:27	193-39-5	
Isophorone	ND	ug/L	83.3	10	06/19/18 20:35	06/21/18 09:27	78-59-1	
1-Methylnaphthalene	**1770**	ug/L	667	80	06/19/18 20:35	06/21/18 11:00	90-12-0	
2-Methylnaphthalene	**4110**	ug/L	667	80	06/19/18 20:35	06/21/18 11:00	91-57-6	
2-Methylphenol(o-Cresol)	ND	ug/L	83.3	10	06/19/18 20:35	06/21/18 09:27	95-48-7	
3&4-Methylphenol(m&p Cresol)	ND	ug/L	83.3	10	06/19/18 20:35	06/21/18 09:27	15831-10-4	
Naphthalene	**5130**	ug/L	667	80	06/19/18 20:35	06/21/18 11:00	91-20-3	
2-Nitroaniline	ND	ug/L	417	10	06/19/18 20:35	06/21/18 09:27	88-74-4	
3-Nitroaniline	ND	ug/L	417	10	06/19/18 20:35	06/21/18 09:27	99-09-2	
4-Nitroaniline	ND	ug/L	167	10	06/19/18 20:35	06/21/18 09:27	100-01-6	
Nitrobenzene	ND	ug/L	83.3	10	06/19/18 20:35	06/21/18 09:27	98-95-3	
2-Nitrophenol	ND	ug/L	83.3	10	06/19/18 20:35	06/21/18 09:27	88-75-5	
4-Nitrophenol	ND	ug/L	417	10	06/19/18 20:35	06/21/18 09:27	100-02-7	
N-Nitrosodimethylamine	ND	ug/L	83.3	10	06/19/18 20:35	06/21/18 09:27	62-75-9	
N-Nitroso-di-n-propylamine	ND	ug/L	83.3	10	06/19/18 20:35	06/21/18 09:27	621-64-7	
N-Nitrosodiphenylamine	ND	ug/L	83.3	10	06/19/18 20:35	06/21/18 09:27	86-30-6	
2,2'-Oxybis(1-chloropropane)	ND	ug/L	83.3	10	06/19/18 20:35	06/21/18 09:27	108-60-1	
Pentachlorophenol	ND	ug/L	208	10	06/19/18 20:35	06/21/18 09:27	87-86-5	
Phenanthrene	ND	ug/L	83.3	10	06/19/18 20:35	06/21/18 09:27	85-01-8	
Phenol	ND	ug/L	83.3	10	06/19/18 20:35	06/21/18 09:27	108-95-2	
Pyrene	ND	ug/L	83.3	10	06/19/18 20:35	06/21/18 09:27	129-00-0	
1,2,4-Trichlorobenzene	ND	ug/L	83.3	10	06/19/18 20:35	06/21/18 09:27	120-82-1	
2,4,5-Trichlorophenol	ND	ug/L	83.3	10	06/19/18 20:35	06/21/18 09:27	95-95-4	
2,4,6-Trichlorophenol	ND	ug/L	83.3	10	06/19/18 20:35	06/21/18 09:27	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	0	%	40-121	10	06/19/18 20:35	06/21/18 09:27	4165-60-0	D3,S4
2-Fluorobiphenyl (S)	0	%	45-139	10	06/19/18 20:35	06/21/18 09:27	321-60-8	S4
Terphenyl-d14 (S)	0	%	48-146	10	06/19/18 20:35	06/21/18 09:27	1718-51-0	S4
Phenol-d6 (S)	0	%	18-105	10	06/19/18 20:35	06/21/18 09:27	13127-88-3	S4
2-Fluorophenol (S)	0	%	13-118	10	06/19/18 20:35	06/21/18 09:27	367-12-4	S4
2,4,6-Tribromophenol (S)	0	%	31-170	10	06/19/18 20:35	06/21/18 09:27	118-79-6	S4

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: NCDOT 38979.1.2
Pace Project No.: 92388933

Sample: TW-1 **Lab ID: 92388933001** Collected: 06/18/18 14:00 Received: 06/19/18 10:29 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260							
Acetone	ND	ug/L	12500	500		06/26/18 16:58	67-64-1	
Benzene	**7850**	ug/L	2500	500		06/26/18 16:58	71-43-2	
Bromobenzene	ND	ug/L	2500	500		06/26/18 16:58	108-86-1	
Bromochloromethane	ND	ug/L	2500	500		06/26/18 16:58	74-97-5	
Bromodichloromethane	ND	ug/L	2500	500		06/26/18 16:58	75-27-4	
Bromoform	ND	ug/L	2500	500		06/26/18 16:58	75-25-2	
Bromomethane	ND	ug/L	5000	500		06/26/18 16:58	74-83-9	M1
2-Butanone (MEK)	ND	ug/L	5000	500		06/26/18 16:58	78-93-3	
tert-Butyl Alcohol	ND	ug/L	50000	500		06/26/18 16:58	75-65-0	
n-Butylbenzene	ND	ug/L	2500	500		06/26/18 16:58	104-51-8	
sec-Butylbenzene	ND	ug/L	2500	500		06/26/18 16:58	135-98-8	
tert-Butylbenzene	ND	ug/L	2500	500		06/26/18 16:58	98-06-6	
Carbon tetrachloride	ND	ug/L	2500	500		06/26/18 16:58	56-23-5	
Chlorobenzene	ND	ug/L	2500	500		06/26/18 16:58	108-90-7	
Chloroethane	ND	ug/L	5000	500		06/26/18 16:58	75-00-3	
Chloroform	ND	ug/L	2500	500		06/26/18 16:58	67-66-3	
Chloromethane	ND	ug/L	2500	500		06/26/18 16:58	74-87-3	
2-Chlorotoluene	ND	ug/L	2500	500		06/26/18 16:58	95-49-8	
4-Chlorotoluene	ND	ug/L	2500	500		06/26/18 16:58	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	1000	500		06/26/18 16:58	96-12-8	
Dibromochloromethane	ND	ug/L	2500	500		06/26/18 16:58	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	2500	500		06/26/18 16:58	106-93-4	
Dibromomethane	ND	ug/L	2500	500		06/26/18 16:58	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	2500	500		06/26/18 16:58	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	2500	500		06/26/18 16:58	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	2500	500		06/26/18 16:58	106-46-7	
Dichlorodifluoromethane	ND	ug/L	2500	500		06/26/18 16:58	75-71-8	
1,1-Dichloroethane	ND	ug/L	2500	500		06/26/18 16:58	75-34-3	
1,2-Dichloroethane	ND	ug/L	2500	500		06/26/18 16:58	107-06-2	
1,2-Dichloroethene (Total)	ND	ug/L	2500	500		06/26/18 16:58	540-59-0	
1,1-Dichloroethene	ND	ug/L	2500	500		06/26/18 16:58	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	2500	500		06/26/18 16:58	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	2500	500		06/26/18 16:58	156-60-5	
1,2-Dichloropropane	ND	ug/L	2500	500		06/26/18 16:58	78-87-5	
1,3-Dichloropropane	ND	ug/L	2500	500		06/26/18 16:58	142-28-9	
2,2-Dichloropropane	ND	ug/L	2500	500		06/26/18 16:58	594-20-7	
1,1-Dichloropropene	ND	ug/L	2500	500		06/26/18 16:58	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	2500	500		06/26/18 16:58	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	2500	500		06/26/18 16:58	10061-02-6	
Diisopropyl ether	ND	ug/L	2500	500		06/26/18 16:58	108-20-3	
Ethylbenzene	**3800**	ug/L	2500	500		06/26/18 16:58	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	2500	500		06/26/18 16:58	87-68-3	
2-Hexanone	ND	ug/L	5000	500		06/26/18 16:58	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	2500	500		06/26/18 16:58	98-82-8	
p-Isopropyltoluene	ND	ug/L	2500	500		06/26/18 16:58	99-87-6	
Methylene Chloride	ND	ug/L	2500	500		06/26/18 16:58	75-09-2	L1
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5000	500		06/26/18 16:58	108-10-1	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: NCDOT 38979.1.2
Pace Project No.: 92388933

Sample: TW-1 **Lab ID: 92388933001** Collected: 06/18/18 14:00 Received: 06/19/18 10:29 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260							
Methyl-tert-butyl ether	ND	ug/L	2500	500		06/26/18 16:58	1634-04-4	
Naphthalene	ND	ug/L	2500	500		06/26/18 16:58	91-20-3	
n-Propylbenzene	ND	ug/L	2500	500		06/26/18 16:58	103-65-1	
Styrene	ND	ug/L	2500	500		06/26/18 16:58	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	2500	500		06/26/18 16:58	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	2500	500		06/26/18 16:58	79-34-5	
Tetrachloroethene	ND	ug/L	2500	500		06/26/18 16:58	127-18-4	
Toluene	**36900**	ug/L	2500	500		06/26/18 16:58	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	2500	500		06/26/18 16:58	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	2500	500		06/26/18 16:58	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	2500	500		06/26/18 16:58	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	2500	500		06/26/18 16:58	79-00-5	
Trichloroethene	ND	ug/L	2500	500		06/26/18 16:58	79-01-6	
Trichlorofluoromethane	ND	ug/L	5000	500		06/26/18 16:58	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	2500	500		06/26/18 16:58	96-18-4	
1,2,4-Trimethylbenzene	**4460**	ug/L	2500	500		06/26/18 16:58	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	2500	500		06/26/18 16:58	108-67-8	
Vinyl acetate	ND	ug/L	5000	500		06/26/18 16:58	108-05-4	
Vinyl chloride	ND	ug/L	2500	500		06/26/18 16:58	75-01-4	
m&p-Xylene	**13500**	ug/L	5000	500		06/26/18 16:58	179601-23-1	
o-Xylene	**5680**	ug/L	2500	500		06/26/18 16:58	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	105	%	70-130	500		06/26/18 16:58	460-00-4	
1,2-Dichloroethane-d4 (S)	117	%	70-130	500		06/26/18 16:58	17060-07-0	
Toluene-d8 (S)	106	%	70-130	500		06/26/18 16:58	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: NCDOT 38979.1.2
Pace Project No.: 92388933

Sample: TW-2 **Lab ID: 92388933002** Collected: 06/18/18 14:30 Received: 06/19/18 10:29 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
MADEP EPH NC Water	Analytical Method: MADEP EPH Preparation Method: MADEP EPH							
Aliphatic (C09-C18)	ND	ug/L	98.0	1	06/25/18 20:23	06/27/18 11:17		N2
Aliphatic (C19-C36)	ND	ug/L	98.0	1	06/25/18 20:23	06/27/18 11:17		N2
Aromatic (C11-C22)	**181**	ug/L	98.0	1	06/25/18 20:23	06/27/18 11:17		N2
Surrogates								
Nonatriacontane (S)	73	%	40-140	1	06/25/18 20:23	06/27/18 11:17	7194-86-7	
o-Terphenyl (S)	76	%	40-140	1	06/25/18 20:23	06/27/18 11:17	84-15-1	
2-Fluorobiphenyl (S)	86	%	40-140	1	06/25/18 20:23	06/27/18 11:17	321-60-8	
2-Bromonaphthalene (S)	88	%	40-140	1	06/25/18 20:23	06/27/18 11:17	580-13-2	
VPH NC Water	Analytical Method: MADEP VPH							
Aliphatic (C05-C08)	**6510**	ug/L	625	12.5		06/21/18 21:34		N2
Aliphatic (C09-C12)	**2430**	ug/L	625	12.5		06/21/18 21:34		N2
Aromatic (C09-C10)	**1060**	ug/L	625	12.5		06/21/18 21:34		N2
Surrogates								
4-Bromofluorobenzene (FID) (S)	97	%	70-130	12.5		06/21/18 21:34	460-00-4	
4-Bromofluorobenzene (PID) (S)	95	%	70-130	12.5		06/21/18 21:34	460-00-4	
8270 MSSV RVE Semivol Organic	Analytical Method: EPA 8270 Preparation Method: EPA 3510							
Acenaphthene	ND	ug/L	10.0	1	06/19/18 20:35	06/21/18 00:21	83-32-9	
Acenaphthylene	ND	ug/L	10.0	1	06/19/18 20:35	06/21/18 00:21	208-96-8	
Aniline	ND	ug/L	10.0	1	06/19/18 20:35	06/21/18 00:21	62-53-3	
Anthracene	ND	ug/L	10.0	1	06/19/18 20:35	06/21/18 00:21	120-12-7	
Benzo(a)anthracene	ND	ug/L	10.0	1	06/19/18 20:35	06/21/18 00:21	56-55-3	
Benzo(a)pyrene	ND	ug/L	10.0	1	06/19/18 20:35	06/21/18 00:21	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	10.0	1	06/19/18 20:35	06/21/18 00:21	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	10.0	1	06/19/18 20:35	06/21/18 00:21	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	10.0	1	06/19/18 20:35	06/21/18 00:21	207-08-9	
Benzoic Acid	ND	ug/L	50.0	1	06/19/18 20:35	06/21/18 00:21	65-85-0	
Benzyl alcohol	ND	ug/L	20.0	1	06/19/18 20:35	06/21/18 00:21	100-51-6	
4-Bromophenylphenyl ether	ND	ug/L	10.0	1	06/19/18 20:35	06/21/18 00:21	101-55-3	
Butylbenzylphthalate	ND	ug/L	10.0	1	06/19/18 20:35	06/21/18 00:21	85-68-7	
4-Chloro-3-methylphenol	ND	ug/L	20.0	1	06/19/18 20:35	06/21/18 00:21	59-50-7	
4-Chloroaniline	ND	ug/L	20.0	1	06/19/18 20:35	06/21/18 00:21	106-47-8	
bis(2-Chloroethoxy)methane	ND	ug/L	10.0	1	06/19/18 20:35	06/21/18 00:21	111-91-1	
bis(2-Chloroethyl) ether	ND	ug/L	10.0	1	06/19/18 20:35	06/21/18 00:21	111-44-4	
2-Chloronaphthalene	ND	ug/L	10.0	1	06/19/18 20:35	06/21/18 00:21	91-58-7	
2-Chlorophenol	ND	ug/L	10.0	1	06/19/18 20:35	06/21/18 00:21	95-57-8	
4-Chlorophenylphenyl ether	ND	ug/L	10.0	1	06/19/18 20:35	06/21/18 00:21	7005-72-3	
Chrysene	ND	ug/L	10.0	1	06/19/18 20:35	06/21/18 00:21	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	10.0	1	06/19/18 20:35	06/21/18 00:21	53-70-3	
Dibenzofuran	ND	ug/L	10.0	1	06/19/18 20:35	06/21/18 00:21	132-64-9	
1,2-Dichlorobenzene	ND	ug/L	10.0	1	06/19/18 20:35	06/21/18 00:21	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	10.0	1	06/19/18 20:35	06/21/18 00:21	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	10.0	1	06/19/18 20:35	06/21/18 00:21	106-46-7	
3,3'-Dichlorobenzidine	ND	ug/L	20.0	1	06/19/18 20:35	06/21/18 00:21	91-94-1	
2,4-Dichlorophenol	ND	ug/L	10.0	1	06/19/18 20:35	06/21/18 00:21	120-83-2	
Diethylphthalate	ND	ug/L	10.0	1	06/19/18 20:35	06/21/18 00:21	84-66-2	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: NCDOT 38979.1.2
Pace Project No.: 92388933

Sample: TW-2 **Lab ID: 92388933002** Collected: 06/18/18 14:30 Received: 06/19/18 10:29 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV RVE Semivol Organic	Analytical Method: EPA 8270 Preparation Method: EPA 3510							
2,4-Dimethylphenol	ND	ug/L	10.0	1	06/19/18 20:35	06/21/18 00:21	105-67-9	
Dimethylphthalate	ND	ug/L	10.0	1	06/19/18 20:35	06/21/18 00:21	131-11-3	
Di-n-butylphthalate	ND	ug/L	10.0	1	06/19/18 20:35	06/21/18 00:21	84-74-2	
4,6-Dinitro-2-methylphenol	ND	ug/L	20.0	1	06/19/18 20:35	06/21/18 00:21	534-52-1	
2,4-Dinitrophenol	ND	ug/L	50.0	1	06/19/18 20:35	06/21/18 00:21	51-28-5	
2,4-Dinitrotoluene	ND	ug/L	10.0	1	06/19/18 20:35	06/21/18 00:21	121-14-2	
2,6-Dinitrotoluene	ND	ug/L	10.0	1	06/19/18 20:35	06/21/18 00:21	606-20-2	
Di-n-octylphthalate	ND	ug/L	10.0	1	06/19/18 20:35	06/21/18 00:21	117-84-0	
bis(2-Ethylhexyl)phthalate	ND	ug/L	6.0	1	06/19/18 20:35	06/21/18 00:21	117-81-7	
Fluoranthene	ND	ug/L	10.0	1	06/19/18 20:35	06/21/18 00:21	206-44-0	
Fluorene	ND	ug/L	10.0	1	06/19/18 20:35	06/21/18 00:21	86-73-7	
Hexachloro-1,3-butadiene	ND	ug/L	10.0	1	06/19/18 20:35	06/21/18 00:21	87-68-3	
Hexachlorobenzene	ND	ug/L	10.0	1	06/19/18 20:35	06/21/18 00:21	118-74-1	
Hexachlorocyclopentadiene	ND	ug/L	10.0	1	06/19/18 20:35	06/21/18 00:21	77-47-4	
Hexachloroethane	ND	ug/L	10.0	1	06/19/18 20:35	06/21/18 00:21	67-72-1	
Indeno(1,2,3-cd)pyrene	ND	ug/L	10.0	1	06/19/18 20:35	06/21/18 00:21	193-39-5	
Isophorone	ND	ug/L	10.0	1	06/19/18 20:35	06/21/18 00:21	78-59-1	
1-Methylnaphthalene	ND	ug/L	10.0	1	06/19/18 20:35	06/21/18 00:21	90-12-0	
2-Methylnaphthalene	**16.2**	ug/L	10.0	1	06/19/18 20:35	06/21/18 00:21	91-57-6	
2-Methylphenol(o-Cresol)	ND	ug/L	10.0	1	06/19/18 20:35	06/21/18 00:21	95-48-7	
3&4-Methylphenol(m&p Cresol)	ND	ug/L	10.0	1	06/19/18 20:35	06/21/18 00:21	15831-10-4	
Naphthalene	**52.9**	ug/L	10.0	1	06/19/18 20:35	06/21/18 00:21	91-20-3	
2-Nitroaniline	ND	ug/L	50.0	1	06/19/18 20:35	06/21/18 00:21	88-74-4	
3-Nitroaniline	ND	ug/L	50.0	1	06/19/18 20:35	06/21/18 00:21	99-09-2	
4-Nitroaniline	ND	ug/L	20.0	1	06/19/18 20:35	06/21/18 00:21	100-01-6	
Nitrobenzene	ND	ug/L	10.0	1	06/19/18 20:35	06/21/18 00:21	98-95-3	
2-Nitrophenol	ND	ug/L	10.0	1	06/19/18 20:35	06/21/18 00:21	88-75-5	
4-Nitrophenol	ND	ug/L	50.0	1	06/19/18 20:35	06/21/18 00:21	100-02-7	
N-Nitrosodimethylamine	ND	ug/L	10.0	1	06/19/18 20:35	06/21/18 00:21	62-75-9	
N-Nitroso-di-n-propylamine	ND	ug/L	10.0	1	06/19/18 20:35	06/21/18 00:21	621-64-7	
N-Nitrosodiphenylamine	ND	ug/L	10.0	1	06/19/18 20:35	06/21/18 00:21	86-30-6	
2,2'-Oxybis(1-chloropropane)	ND	ug/L	10.0	1	06/19/18 20:35	06/21/18 00:21	108-60-1	
Pentachlorophenol	ND	ug/L	25.0	1	06/19/18 20:35	06/21/18 00:21	87-86-5	
Phenanthrene	ND	ug/L	10.0	1	06/19/18 20:35	06/21/18 00:21	85-01-8	
Phenol	ND	ug/L	10.0	1	06/19/18 20:35	06/21/18 00:21	108-95-2	
Pyrene	ND	ug/L	10.0	1	06/19/18 20:35	06/21/18 00:21	129-00-0	
1,2,4-Trichlorobenzene	ND	ug/L	10.0	1	06/19/18 20:35	06/21/18 00:21	120-82-1	
2,4,5-Trichlorophenol	ND	ug/L	10.0	1	06/19/18 20:35	06/21/18 00:21	95-95-4	
2,4,6-Trichlorophenol	ND	ug/L	10.0	1	06/19/18 20:35	06/21/18 00:21	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	70	%	40-121	1	06/19/18 20:35	06/21/18 00:21	4165-60-0	
2-Fluorobiphenyl (S)	59	%	45-139	1	06/19/18 20:35	06/21/18 00:21	321-60-8	
Terphenyl-d14 (S)	43	%	48-146	1	06/19/18 20:35	06/21/18 00:21	1718-51-0	S0
Phenol-d6 (S)	52	%	18-105	1	06/19/18 20:35	06/21/18 00:21	13127-88-3	
2-Fluorophenol (S)	56	%	13-118	1	06/19/18 20:35	06/21/18 00:21	367-12-4	
2,4,6-Tribromophenol (S)	77	%	31-170	1	06/19/18 20:35	06/21/18 00:21	118-79-6	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
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ANALYTICAL RESULTS

Project: NCDOT 38979.1.2
Pace Project No.: 92388933

Sample: TW-2 **Lab ID: 92388933002** Collected: 06/18/18 14:30 Received: 06/19/18 10:29 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260							
Acetone	ND	ug/L	500	20		06/26/18 17:15	67-64-1	
Benzene	**1460**	ug/L	100	20		06/26/18 17:15	71-43-2	
Bromobenzene	ND	ug/L	100	20		06/26/18 17:15	108-86-1	
Bromochloromethane	ND	ug/L	100	20		06/26/18 17:15	74-97-5	
Bromodichloromethane	ND	ug/L	100	20		06/26/18 17:15	75-27-4	
Bromoform	ND	ug/L	100	20		06/26/18 17:15	75-25-2	
Bromomethane	ND	ug/L	200	20		06/26/18 17:15	74-83-9	
2-Butanone (MEK)	ND	ug/L	200	20		06/26/18 17:15	78-93-3	
tert-Butyl Alcohol	ND	ug/L	2000	20		06/26/18 17:15	75-65-0	
n-Butylbenzene	ND	ug/L	100	20		06/26/18 17:15	104-51-8	
sec-Butylbenzene	ND	ug/L	100	20		06/26/18 17:15	135-98-8	
tert-Butylbenzene	ND	ug/L	100	20		06/26/18 17:15	98-06-6	
Carbon tetrachloride	ND	ug/L	100	20		06/26/18 17:15	56-23-5	
Chlorobenzene	ND	ug/L	100	20		06/26/18 17:15	108-90-7	
Chloroethane	ND	ug/L	200	20		06/26/18 17:15	75-00-3	
Chloroform	ND	ug/L	100	20		06/26/18 17:15	67-66-3	
Chloromethane	ND	ug/L	100	20		06/26/18 17:15	74-87-3	
2-Chlorotoluene	ND	ug/L	100	20		06/26/18 17:15	95-49-8	
4-Chlorotoluene	ND	ug/L	100	20		06/26/18 17:15	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	40.0	20		06/26/18 17:15	96-12-8	
Dibromochloromethane	ND	ug/L	100	20		06/26/18 17:15	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	100	20		06/26/18 17:15	106-93-4	
Dibromomethane	ND	ug/L	100	20		06/26/18 17:15	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	100	20		06/26/18 17:15	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	100	20		06/26/18 17:15	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	100	20		06/26/18 17:15	106-46-7	
Dichlorodifluoromethane	ND	ug/L	100	20		06/26/18 17:15	75-71-8	
1,1-Dichloroethane	ND	ug/L	100	20		06/26/18 17:15	75-34-3	
1,2-Dichloroethane	ND	ug/L	100	20		06/26/18 17:15	107-06-2	
1,2-Dichloroethene (Total)	ND	ug/L	100	20		06/26/18 17:15	540-59-0	
1,1-Dichloroethene	ND	ug/L	100	20		06/26/18 17:15	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	100	20		06/26/18 17:15	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	100	20		06/26/18 17:15	156-60-5	
1,2-Dichloropropane	ND	ug/L	100	20		06/26/18 17:15	78-87-5	
1,3-Dichloropropane	ND	ug/L	100	20		06/26/18 17:15	142-28-9	
2,2-Dichloropropane	ND	ug/L	100	20		06/26/18 17:15	594-20-7	
1,1-Dichloropropene	ND	ug/L	100	20		06/26/18 17:15	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	100	20		06/26/18 17:15	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	100	20		06/26/18 17:15	10061-02-6	
Diisopropyl ether	ND	ug/L	100	20		06/26/18 17:15	108-20-3	
Ethylbenzene	**244**	ug/L	100	20		06/26/18 17:15	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	100	20		06/26/18 17:15	87-68-3	
2-Hexanone	ND	ug/L	200	20		06/26/18 17:15	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	100	20		06/26/18 17:15	98-82-8	
p-Isopropyltoluene	ND	ug/L	100	20		06/26/18 17:15	99-87-6	
Methylene Chloride	ND	ug/L	100	20		06/26/18 17:15	75-09-2	L1
4-Methyl-2-pentanone (MIBK)	ND	ug/L	200	20		06/26/18 17:15	108-10-1	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: NCDOT 38979.1.2
Pace Project No.: 92388933

Sample: TW-2 **Lab ID: 92388933002** Collected: 06/18/18 14:30 Received: 06/19/18 10:29 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260							
Methyl-tert-butyl ether	**486**	ug/L	100	20		06/26/18 17:15	1634-04-4	
Naphthalene	ND	ug/L	100	20		06/26/18 17:15	91-20-3	
n-Propylbenzene	ND	ug/L	100	20		06/26/18 17:15	103-65-1	
Styrene	ND	ug/L	100	20		06/26/18 17:15	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	100	20		06/26/18 17:15	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	100	20		06/26/18 17:15	79-34-5	
Tetrachloroethene	ND	ug/L	100	20		06/26/18 17:15	127-18-4	
Toluene	**2670**	ug/L	100	20		06/26/18 17:15	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	100	20		06/26/18 17:15	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	100	20		06/26/18 17:15	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	100	20		06/26/18 17:15	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	100	20		06/26/18 17:15	79-00-5	
Trichloroethene	ND	ug/L	100	20		06/26/18 17:15	79-01-6	
Trichlorofluoromethane	ND	ug/L	200	20		06/26/18 17:15	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	100	20		06/26/18 17:15	96-18-4	
1,2,4-Trimethylbenzene	**193**	ug/L	100	20		06/26/18 17:15	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	100	20		06/26/18 17:15	108-67-8	
Vinyl acetate	ND	ug/L	200	20		06/26/18 17:15	108-05-4	
Vinyl chloride	ND	ug/L	100	20		06/26/18 17:15	75-01-4	
m&p-Xylene	**652**	ug/L	200	20		06/26/18 17:15	179601-23-1	
o-Xylene	**297**	ug/L	100	20		06/26/18 17:15	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	104	%	70-130	20		06/26/18 17:15	460-00-4	
1,2-Dichloroethane-d4 (S)	116	%	70-130	20		06/26/18 17:15	17060-07-0	
Toluene-d8 (S)	106	%	70-130	20		06/26/18 17:15	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: NCDOT 38979.1.2
Pace Project No.: 92388933

QC Batch: 416111 Analysis Method: MADEP VPH
QC Batch Method: MADEP VPH Analysis Description: VPH NC Water
Associated Lab Samples: 92388933001, 92388933002

METHOD BLANK: 2307517 Matrix: Water
Associated Lab Samples: 92388933001, 92388933002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aliphatic (C05-C08)	ug/L	ND	50.0	06/21/18 17:16	N2
Aliphatic (C09-C12)	ug/L	ND	50.0	06/21/18 17:16	N2
Aromatic (C09-C10)	ug/L	ND	50.0	06/21/18 17:16	N2
4-Bromofluorobenzene (FID) (S)	%	84	70-130	06/21/18 17:16	
4-Bromofluorobenzene (PID) (S)	%	82	70-130	06/21/18 17:16	

LABORATORY CONTROL SAMPLE & LCSD: 2307518 2307519

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Aliphatic (C05-C08)	ug/L	300	384	370	128	123	70-130	4	25	N2
Aliphatic (C09-C12)	ug/L	300	324	314	108	105	30-130	3	25	N2
Aromatic (C09-C10)	ug/L	100	102	99.7	102	100	70-130	2	25	N2
4-Bromofluorobenzene (FID) (S)	%				111	106	70-130			
4-Bromofluorobenzene (PID) (S)	%				110	104	70-130			

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REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: NCDOT 38979.1.2
Pace Project No.: 92388933

QC Batch: 416640 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV
Associated Lab Samples: 92388933001, 92388933002

METHOD BLANK: 2310251 Matrix: Water
Associated Lab Samples: 92388933001, 92388933002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	5.0	06/26/18 13:21	
1,1,1-Trichloroethane	ug/L	ND	5.0	06/26/18 13:21	
1,1,2,2-Tetrachloroethane	ug/L	ND	5.0	06/26/18 13:21	
1,1,2-Trichloroethane	ug/L	ND	5.0	06/26/18 13:21	
1,1-Dichloroethane	ug/L	ND	5.0	06/26/18 13:21	
1,1-Dichloroethene	ug/L	ND	5.0	06/26/18 13:21	
1,1-Dichloropropene	ug/L	ND	5.0	06/26/18 13:21	
1,2,3-Trichlorobenzene	ug/L	ND	5.0	06/26/18 13:21	
1,2,3-Trichloropropane	ug/L	ND	5.0	06/26/18 13:21	
1,2,4-Trichlorobenzene	ug/L	ND	5.0	06/26/18 13:21	
1,2,4-Trimethylbenzene	ug/L	ND	5.0	06/26/18 13:21	
1,2-Dibromo-3-chloropropane	ug/L	ND	2.0	06/26/18 13:21	
1,2-Dibromoethane (EDB)	ug/L	ND	5.0	06/26/18 13:21	
1,2-Dichlorobenzene	ug/L	ND	5.0	06/26/18 13:21	
1,2-Dichloroethane	ug/L	ND	5.0	06/26/18 13:21	
1,2-Dichloroethene (Total)	ug/L	ND	5.0	06/26/18 13:21	
1,2-Dichloropropane	ug/L	ND	5.0	06/26/18 13:21	
1,3,5-Trimethylbenzene	ug/L	ND	5.0	06/26/18 13:21	
1,3-Dichlorobenzene	ug/L	ND	5.0	06/26/18 13:21	
1,3-Dichloropropane	ug/L	ND	5.0	06/26/18 13:21	
1,4-Dichlorobenzene	ug/L	ND	5.0	06/26/18 13:21	
2,2-Dichloropropane	ug/L	ND	5.0	06/26/18 13:21	
2-Butanone (MEK)	ug/L	ND	10.0	06/26/18 13:21	
2-Chlorotoluene	ug/L	ND	5.0	06/26/18 13:21	
2-Hexanone	ug/L	ND	10.0	06/26/18 13:21	
4-Chlorotoluene	ug/L	ND	5.0	06/26/18 13:21	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	06/26/18 13:21	
Acetone	ug/L	ND	25.0	06/26/18 13:21	
Benzene	ug/L	ND	5.0	06/26/18 13:21	
Bromobenzene	ug/L	ND	5.0	06/26/18 13:21	
Bromochloromethane	ug/L	ND	5.0	06/26/18 13:21	
Bromodichloromethane	ug/L	ND	5.0	06/26/18 13:21	
Bromoform	ug/L	ND	5.0	06/26/18 13:21	
Bromomethane	ug/L	ND	10.0	06/26/18 13:21	
Carbon tetrachloride	ug/L	ND	5.0	06/26/18 13:21	
Chlorobenzene	ug/L	ND	5.0	06/26/18 13:21	
Chloroethane	ug/L	ND	10.0	06/26/18 13:21	
Chloroform	ug/L	ND	5.0	06/26/18 13:21	
Chloromethane	ug/L	ND	5.0	06/26/18 13:21	
cis-1,2-Dichloroethene	ug/L	ND	5.0	06/26/18 13:21	
cis-1,3-Dichloropropene	ug/L	ND	5.0	06/26/18 13:21	

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REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: NCDOT 38979.1.2
Pace Project No.: 92388933

METHOD BLANK: 2310251 Matrix: Water
Associated Lab Samples: 92388933001, 92388933002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Dibromochloromethane	ug/L	ND	5.0	06/26/18 13:21	
Dibromomethane	ug/L	ND	5.0	06/26/18 13:21	
Dichlorodifluoromethane	ug/L	ND	5.0	06/26/18 13:21	
Diisopropyl ether	ug/L	ND	5.0	06/26/18 13:21	
Ethylbenzene	ug/L	ND	5.0	06/26/18 13:21	
Hexachloro-1,3-butadiene	ug/L	ND	5.0	06/26/18 13:21	
Isopropylbenzene (Cumene)	ug/L	ND	5.0	06/26/18 13:21	
m&p-Xylene	ug/L	ND	10.0	06/26/18 13:21	
Methyl-tert-butyl ether	ug/L	ND	5.0	06/26/18 13:21	
Methylene Chloride	ug/L	ND	5.0	06/26/18 13:21	
n-Butylbenzene	ug/L	ND	5.0	06/26/18 13:21	
n-Propylbenzene	ug/L	ND	5.0	06/26/18 13:21	
Naphthalene	ug/L	ND	5.0	06/26/18 13:21	
o-Xylene	ug/L	ND	5.0	06/26/18 13:21	
p-Isopropyltoluene	ug/L	ND	5.0	06/26/18 13:21	
sec-Butylbenzene	ug/L	ND	5.0	06/26/18 13:21	
Styrene	ug/L	ND	5.0	06/26/18 13:21	
tert-Butyl Alcohol	ug/L	ND	100	06/26/18 13:21	
tert-Butylbenzene	ug/L	ND	5.0	06/26/18 13:21	
Tetrachloroethene	ug/L	ND	5.0	06/26/18 13:21	
Toluene	ug/L	ND	5.0	06/26/18 13:21	
trans-1,2-Dichloroethene	ug/L	ND	5.0	06/26/18 13:21	
trans-1,3-Dichloropropene	ug/L	ND	5.0	06/26/18 13:21	
Trichloroethene	ug/L	ND	5.0	06/26/18 13:21	
Trichlorofluoromethane	ug/L	ND	10.0	06/26/18 13:21	
Vinyl acetate	ug/L	ND	10.0	06/26/18 13:21	
Vinyl chloride	ug/L	ND	5.0	06/26/18 13:21	
1,2-Dichloroethane-d4 (S)	%	119	70-130	06/26/18 13:21	
4-Bromofluorobenzene (S)	%	104	70-130	06/26/18 13:21	
Toluene-d8 (S)	%	110	70-130	06/26/18 13:21	

LABORATORY CONTROL SAMPLE: 2310252

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	50	53.5	107	80-125	
1,1,1-Trichloroethane	ug/L	50	53.5	107	71-129	
1,1,2,2-Tetrachloroethane	ug/L	50	51.8	104	79-124	
1,1,2-Trichloroethane	ug/L	50	53.5	107	85-125	
1,1-Dichloroethane	ug/L	50	53.8	108	73-126	
1,1-Dichloroethene	ug/L	50	56.0	112	66-135	
1,1-Dichloropropene	ug/L	50	56.5	113	74-135	
1,2,3-Trichlorobenzene	ug/L	50	49.7	99	73-135	
1,2,3-Trichloropropane	ug/L	50	50.9	102	75-130	
1,2,4-Trichlorobenzene	ug/L	50	51.3	103	75-134	

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REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: NCDOT 38979.1.2
Pace Project No.: 92388933

LABORATORY CONTROL SAMPLE: 2310252

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trimethylbenzene	ug/L	50	49.2	98	79-125	
1,2-Dibromo-3-chloropropane	ug/L	50	52.3	105	71-133	
1,2-Dibromoethane (EDB)	ug/L	50	53.1	106	83-124	
1,2-Dichlorobenzene	ug/L	50	49.7	99	80-133	
1,2-Dichloroethane	ug/L	50	51.2	102	67-128	
1,2-Dichloroethene (Total)	ug/L	100	109	109	73-128	
1,2-Dichloropropane	ug/L	50	52.9	106	75-132	
1,3,5-Trimethylbenzene	ug/L	50	49.7	99	79-123	
1,3-Dichlorobenzene	ug/L	50	49.9	100	77-130	
1,3-Dichloropropane	ug/L	50	54.4	109	76-131	
1,4-Dichlorobenzene	ug/L	50	48.7	97	78-130	
2,2-Dichloropropane	ug/L	50	55.2	110	40-160	
2-Butanone (MEK)	ug/L	100	126	126	61-144	
2-Chlorotoluene	ug/L	50	48.7	97	74-132	
2-Hexanone	ug/L	100	112	112	68-143	
4-Chlorotoluene	ug/L	50	48.7	97	76-133	
4-Methyl-2-pentanone (MIBK)	ug/L	100	111	111	72-135	
Acetone	ug/L	100	117	117	48-146	
Benzene	ug/L	50	53.5	107	80-125	
Bromobenzene	ug/L	50	50.2	100	75-125	
Bromochloromethane	ug/L	50	50.7	101	71-125	
Bromodichloromethane	ug/L	50	53.4	107	78-124	
Bromoform	ug/L	50	54.4	109	71-128	
Bromomethane	ug/L	50	33.1	66	40-160	
Carbon tetrachloride	ug/L	50	51.0	102	69-131	
Chlorobenzene	ug/L	50	49.4	99	81-122	
Chloroethane	ug/L	50	38.9	78	39-148	
Chloroform	ug/L	50	53.8	108	73-127	
Chloromethane	ug/L	50	37.4	75	44-146	
cis-1,2-Dichloroethene	ug/L	50	55.0	110	74-124	
cis-1,3-Dichloropropene	ug/L	50	57.1	114	72-132	
Dibromochloromethane	ug/L	50	54.0	108	78-125	
Dibromomethane	ug/L	50	48.7	97	82-120	
Dichlorodifluoromethane	ug/L	50	57.6	115	34-157	
Diisopropyl ether	ug/L	50	60.8	122	69-135	
Ethylbenzene	ug/L	50	49.0	98	79-121	
Hexachloro-1,3-butadiene	ug/L	50	48.6	97	72-131	
Isopropylbenzene (Cumene)	ug/L	50	49.6	99	81-132	
m&p-Xylene	ug/L	100	98.4	98	81-124	
Methyl-tert-butyl ether	ug/L	50	56.9	114	74-131	
Methylene Chloride	ug/L	50	71.8	144	64-133	L1
n-Butylbenzene	ug/L	50	50.0	100	78-127	
n-Propylbenzene	ug/L	50	50.2	100	78-130	
Naphthalene	ug/L	50	50.4	101	73-133	
o-Xylene	ug/L	50	49.7	99	79-131	
p-Isopropyltoluene	ug/L	50	49.2	98	80-131	
sec-Butylbenzene	ug/L	50	50.0	100	80-133	

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REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: NCDOT 38979.1.2
Pace Project No.: 92388933

LABORATORY CONTROL SAMPLE: 2310252

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Styrene	ug/L	50	50.4	101	84-126	
tert-Butyl Alcohol	ug/L	500	555	111	36-136	
tert-Butylbenzene	ug/L	50	49.1	98	77-133	
Tetrachloroethene	ug/L	50	51.2	102	78-122	
Toluene	ug/L	50	50.0	100	80-121	
trans-1,2-Dichloroethene	ug/L	50	54.0	108	71-127	
trans-1,3-Dichloropropene	ug/L	50	56.0	112	69-141	
Trichloroethene	ug/L	50	53.9	108	78-122	
Trichlorofluoromethane	ug/L	50	40.1	80	53-137	
Vinyl acetate	ug/L	100	123	123	40-160	
Vinyl chloride	ug/L	50	52.9	106	58-137	
1,2-Dichloroethane-d4 (S)	%			92	70-130	
4-Bromofluorobenzene (S)	%			97	70-130	
Toluene-d8 (S)	%			97	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2310253 2310254

Parameter	Units	92388933001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	ND	10000	10000	8970	9830	90	98	70-130	9	
1,1,1-Trichloroethane	ug/L	ND	10000	10000	10700	11600	107	116	70-130	8	
1,1,2,2-Tetrachloroethane	ug/L	ND	10000	10000	8710	9550	87	96	70-130	9	
1,1,2-Trichloroethane	ug/L	ND	10000	10000	9070	9950	91	99	70-130	9	
1,1-Dichloroethane	ug/L	ND	10000	10000	10900	11500	109	115	70-130	6	
1,1-Dichloroethene	ug/L	ND	10000	10000	11300	12300	113	123	65-160	8	
1,1-Dichloropropene	ug/L	ND	10000	10000	11000	12300	110	123	70-130	11	
1,2,3-Trichlorobenzene	ug/L	ND	10000	10000	8080	8990	81	90	70-130	11	
1,2,3-Trichloropropane	ug/L	ND	10000	10000	9140	9930	91	99	70-130	8	
1,2,4-Trichlorobenzene	ug/L	ND	10000	10000	8430	9320	84	93	70-130	10	
1,2,4-Trimethylbenzene	ug/L	4460	10000	10000	13100	14100	86	96	70-130	8	
1,2-Dibromo-3-chloropropane	ug/L	ND	10000	10000	7820	9210	78	92	70-130	16	
1,2-Dibromoethane (EDB)	ug/L	ND	10000	10000	9120	9880	91	99	60-139	8	
1,2-Dichlorobenzene	ug/L	ND	10000	10000	8410	9470	84	95	70-130	12	
1,2-Dichloroethane	ug/L	ND	10000	10000	10300	11300	103	113	70-130	9	
1,2-Dichloroethene (Total)	ug/L	ND	20000	20000	21600	23200	108	116	70-130	7	
1,2-Dichloropropane	ug/L	ND	10000	10000	9540	10400	95	104	70-130	8	
1,3,5-Trimethylbenzene	ug/L	ND	10000	10000	10000	11000	88	98	70-130	9	
1,3-Dichlorobenzene	ug/L	ND	10000	10000	8470	9550	85	95	70-130	12	
1,3-Dichloropropane	ug/L	ND	10000	10000	9520	10300	95	103	70-130	8	
1,4-Dichlorobenzene	ug/L	ND	10000	10000	8380	9300	84	93	70-130	10	
2,2-Dichloropropane	ug/L	ND	10000	10000	10800	11900	108	119	70-130	9	
2-Butanone (MEK)	ug/L	ND	20000	20000	19000	21400	95	107	70-130	12	
2-Chlorotoluene	ug/L	ND	10000	10000	9360	10300	94	103	70-130	10	
2-Hexanone	ug/L	ND	20000	20000	17700	20100	88	101	70-130	13	
4-Chlorotoluene	ug/L	ND	10000	10000	8760	9710	88	97	70-130	10	

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REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: NCDOT 38979.1.2
Pace Project No.: 92388933

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2310253 2310254

Parameter	Units	92388933001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
4-Methyl-2-pentanone (MIBK)	ug/L	ND	20000	20000	17200	19400	86	97	70-130	12	
Acetone	ug/L	ND	20000	20000	21500	23000	108	115	70-130	7	
Benzene	ug/L	7850	10000	10000	18200	19200	103	113	58-162	5	
Bromobenzene	ug/L	ND	10000	10000	8460	9410	85	94	70-130	11	
Bromochloromethane	ug/L	ND	10000	10000	9940	10100	99	101	70-130	2	
Bromodichloromethane	ug/L	ND	10000	10000	9590	10600	96	106	70-130	10	
Bromoform	ug/L	ND	10000	10000	8720	9310	87	93	70-130	7	
Bromomethane	ug/L	ND	10000	10000	6720	7640	67	76	70-130	13	M1
Carbon tetrachloride	ug/L	ND	10000	10000	10200	11100	102	111	70-130	8	
Chlorobenzene	ug/L	ND	10000	10000	8820	9740	88	97	70-138	10	
Chloroethane	ug/L	ND	10000	10000	9460	9960	95	100	70-130	5	
Chloroform	ug/L	ND	10000	10000	10500	11300	105	113	70-130	8	
Chloromethane	ug/L	ND	10000	10000	7560	8390	74	82	70-130	10	
cis-1,2-Dichloroethene	ug/L	ND	10000	10000	10600	11400	106	114	70-130	7	
cis-1,3-Dichloropropene	ug/L	ND	10000	10000	9990	11000	100	110	70-130	10	
Dibromochloromethane	ug/L	ND	10000	10000	9220	9870	92	99	70-130	7	
Dibromomethane	ug/L	ND	10000	10000	8890	9580	89	96	70-130	7	
Dichlorodifluoromethane	ug/L	ND	10000	10000	9970	10500	100	105	70-130	5	
Diisopropyl ether	ug/L	ND	10000	10000	10400	11000	104	110	70-130	6	
Ethylbenzene	ug/L	3800	10000	10000	13200	14000	94	102	22-189	6	
Hexachloro-1,3-butadiene	ug/L	ND	10000	10000	8470	9090	85	91	70-130	7	
Isopropylbenzene (Cumene)	ug/L	ND	10000	10000	9550	10200	95	102	70-130	6	
m&p-Xylene	ug/L	13500	20000	20000	32200	33500	93	100	32-193	4	
Methyl-tert-butyl ether	ug/L	ND	10000	10000	10700	12300	101	117	37-169	14	
Methylene Chloride	ug/L	ND	10000	10000	11700	13000	112	125	70-130	11	
n-Butylbenzene	ug/L	ND	10000	10000	9300	10100	93	101	70-130	8	
n-Propylbenzene	ug/L	ND	10000	10000	9850	10800	98	108	70-130	9	
Naphthalene	ug/L	ND	10000	10000	9130	10300	80	92	19-212	12	
o-Xylene	ug/L	5680	10000	10000	15200	16000	95	103	70-135	5	
p-Isopropyltoluene	ug/L	ND	10000	10000	8870	9760	89	98	70-130	10	
sec-Butylbenzene	ug/L	ND	10000	10000	9100	9950	91	100	70-130	9	
Styrene	ug/L	ND	10000	10000	9080	9880	91	99	70-130	8	
tert-Butyl Alcohol	ug/L	ND	100000	100000	86800	101000	87	101	70-130	16	
tert-Butylbenzene	ug/L	ND	10000	10000	7800	8690	78	87	70-130	11	
Tetrachloroethene	ug/L	ND	10000	10000	8940	9840	89	98	70-130	10	
Toluene	ug/L	36900	10000	10000	43400	44200	65	72	65-152	2	
trans-1,2-Dichloroethene	ug/L	ND	10000	10000	11000	11800	110	118	70-130	7	
trans-1,3-Dichloropropene	ug/L	ND	10000	10000	9980	10800	100	108	70-130	7	
Trichloroethene	ug/L	ND	10000	10000	9680	10300	97	103	70-142	6	
Trichlorofluoromethane	ug/L	ND	10000	10000	11000	11600	110	116	70-130	6	
Vinyl acetate	ug/L	ND	20000	20000	19000	21000	95	105	70-130	10	
Vinyl chloride	ug/L	ND	10000	10000	10600	11200	106	112	70-130	6	
1,2-Dichloroethane-d4 (S)	%						108	116	70-130		
4-Bromofluorobenzene (S)	%						104	103	70-130		
Toluene-d8 (S)	%						100	99	70-130		

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REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: NCDOT 38979.1.2
Pace Project No.: 92388933

QC Batch: 415852 Analysis Method: EPA 8270
QC Batch Method: EPA 3510 Analysis Description: 8270 Water MSSV RVE
Associated Lab Samples: 92388933001, 92388933002

METHOD BLANK: 2306104 Matrix: Water
Associated Lab Samples: 92388933001, 92388933002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trichlorobenzene	ug/L	ND	10.0	06/20/18 13:22	
1,2-Dichlorobenzene	ug/L	ND	10.0	06/20/18 13:22	
1,3-Dichlorobenzene	ug/L	ND	10.0	06/20/18 13:22	
1,4-Dichlorobenzene	ug/L	ND	10.0	06/20/18 13:22	
1-Methylnaphthalene	ug/L	ND	10.0	06/20/18 13:22	
2,2'-Oxybis(1-chloropropane)	ug/L	ND	10.0	06/20/18 13:22	
2,4,5-Trichlorophenol	ug/L	ND	10.0	06/20/18 13:22	
2,4,6-Trichlorophenol	ug/L	ND	10.0	06/20/18 13:22	
2,4-Dichlorophenol	ug/L	ND	10.0	06/20/18 13:22	
2,4-Dimethylphenol	ug/L	ND	10.0	06/20/18 13:22	
2,4-Dinitrophenol	ug/L	ND	50.0	06/20/18 13:22	
2,4-Dinitrotoluene	ug/L	ND	10.0	06/20/18 13:22	
2,6-Dinitrotoluene	ug/L	ND	10.0	06/20/18 13:22	
2-Chloronaphthalene	ug/L	ND	10.0	06/20/18 13:22	
2-Chlorophenol	ug/L	ND	10.0	06/20/18 13:22	
2-Methylnaphthalene	ug/L	ND	10.0	06/20/18 13:22	
2-Methylphenol(o-Cresol)	ug/L	ND	10.0	06/20/18 13:22	
2-Nitroaniline	ug/L	ND	50.0	06/20/18 13:22	
2-Nitrophenol	ug/L	ND	10.0	06/20/18 13:22	
3&4-Methylphenol(m&p Cresol)	ug/L	ND	10.0	06/20/18 13:22	
3,3'-Dichlorobenzidine	ug/L	ND	20.0	06/20/18 13:22	
3-Nitroaniline	ug/L	ND	50.0	06/20/18 13:22	
4,6-Dinitro-2-methylphenol	ug/L	ND	20.0	06/20/18 13:22	
4-Bromophenylphenyl ether	ug/L	ND	10.0	06/20/18 13:22	
4-Chloro-3-methylphenol	ug/L	ND	20.0	06/20/18 13:22	
4-Chloroaniline	ug/L	ND	20.0	06/20/18 13:22	
4-Chlorophenylphenyl ether	ug/L	ND	10.0	06/20/18 13:22	
4-Nitroaniline	ug/L	ND	20.0	06/20/18 13:22	
4-Nitrophenol	ug/L	ND	50.0	06/20/18 13:22	
Acenaphthene	ug/L	ND	10.0	06/20/18 13:22	
Acenaphthylene	ug/L	ND	10.0	06/20/18 13:22	
Aniline	ug/L	ND	10.0	06/20/18 13:22	
Anthracene	ug/L	ND	10.0	06/20/18 13:22	
Benzo(a)anthracene	ug/L	ND	10.0	06/20/18 13:22	
Benzo(a)pyrene	ug/L	ND	10.0	06/20/18 13:22	
Benzo(b)fluoranthene	ug/L	ND	10.0	06/20/18 13:22	
Benzo(g,h,i)perylene	ug/L	ND	10.0	06/20/18 13:22	
Benzo(k)fluoranthene	ug/L	ND	10.0	06/20/18 13:22	
Benzoic Acid	ug/L	ND	50.0	06/20/18 13:22	
Benzyl alcohol	ug/L	ND	20.0	06/20/18 13:22	
bis(2-Chloroethoxy)methane	ug/L	ND	10.0	06/20/18 13:22	

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REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: NCDOT 38979.1.2
Pace Project No.: 92388933

METHOD BLANK: 2306104 Matrix: Water
Associated Lab Samples: 92388933001, 92388933002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
bis(2-Chloroethyl) ether	ug/L	ND	10.0	06/20/18 13:22	
bis(2-Ethylhexyl)phthalate	ug/L	ND	6.0	06/20/18 13:22	
Butylbenzylphthalate	ug/L	ND	10.0	06/20/18 13:22	
Chrysene	ug/L	ND	10.0	06/20/18 13:22	
Di-n-butylphthalate	ug/L	ND	10.0	06/20/18 13:22	
Di-n-octylphthalate	ug/L	ND	10.0	06/20/18 13:22	
Dibenz(a,h)anthracene	ug/L	ND	10.0	06/20/18 13:22	
Dibenzofuran	ug/L	ND	10.0	06/20/18 13:22	
Diethylphthalate	ug/L	ND	10.0	06/20/18 13:22	
Dimethylphthalate	ug/L	ND	10.0	06/20/18 13:22	
Fluoranthene	ug/L	ND	10.0	06/20/18 13:22	
Fluorene	ug/L	ND	10.0	06/20/18 13:22	
Hexachloro-1,3-butadiene	ug/L	ND	10.0	06/20/18 13:22	
Hexachlorobenzene	ug/L	ND	10.0	06/20/18 13:22	
Hexachlorocyclopentadiene	ug/L	ND	10.0	06/20/18 13:22	
Hexachloroethane	ug/L	ND	10.0	06/20/18 13:22	
Indeno(1,2,3-cd)pyrene	ug/L	ND	10.0	06/20/18 13:22	
Isophorone	ug/L	ND	10.0	06/20/18 13:22	
N-Nitroso-di-n-propylamine	ug/L	ND	10.0	06/20/18 13:22	
N-Nitrosodimethylamine	ug/L	ND	10.0	06/20/18 13:22	
N-Nitrosodiphenylamine	ug/L	ND	10.0	06/20/18 13:22	
Naphthalene	ug/L	ND	10.0	06/20/18 13:22	
Nitrobenzene	ug/L	ND	10.0	06/20/18 13:22	
Pentachlorophenol	ug/L	ND	25.0	06/20/18 13:22	
Phenanthrene	ug/L	ND	10.0	06/20/18 13:22	
Phenol	ug/L	ND	10.0	06/20/18 13:22	
Pyrene	ug/L	ND	10.0	06/20/18 13:22	
2,4,6-Tribromophenol (S)	%	75	31-170	06/20/18 13:22	
2-Fluorobiphenyl (S)	%	66	45-139	06/20/18 13:22	
2-Fluorophenol (S)	%	57	13-118	06/20/18 13:22	
Nitrobenzene-d5 (S)	%	69	40-121	06/20/18 13:22	
Phenol-d6 (S)	%	47	18-105	06/20/18 13:22	
Terphenyl-d14 (S)	%	57	48-146	06/20/18 13:22	

LABORATORY CONTROL SAMPLE: 2306105

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4-Trichlorobenzene	ug/L	50	23.2	46	31-120	
1,2-Dichlorobenzene	ug/L	50	24.1	48	38-120	
1,3-Dichlorobenzene	ug/L	50	22.5	45	30-122	
1,4-Dichlorobenzene	ug/L	50	25.8	52	37-120	
1-Methylnaphthalene	ug/L	50	30.7	61	34-113	
2,2'-Oxybis(1-chloropropane)	ug/L	50	17.0	34	18-120	
2,4,5-Trichlorophenol	ug/L	50	34.4	69	43-113	

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REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: NCDOT 38979.1.2
Pace Project No.: 92388933

LABORATORY CONTROL SAMPLE: 2306105

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2,4,6-Trichlorophenol	ug/L	50	32.7	65	42-120	
2,4-Dichlorophenol	ug/L	50	38.9	78	30-120	
2,4-Dimethylphenol	ug/L	50	34.4	69	29-111	
2,4-Dinitrophenol	ug/L	250	62.5	25	19-132	
2,4-Dinitrotoluene	ug/L	50	36.8	74	58-128	
2,6-Dinitrotoluene	ug/L	50	36.0	72	54-129	
2-Chloronaphthalene	ug/L	50	26.0	52	43-117	
2-Chlorophenol	ug/L	50	33.8	68	37-120	
2-Methylnaphthalene	ug/L	50	31.1	62	33-120	
2-Methylphenol(o-Cresol)	ug/L	50	39.7	79	31-120	
2-Nitroaniline	ug/L	100	58.8	59	48-121	
2-Nitrophenol	ug/L	50	33.8	68	25-116	
3&4-Methylphenol(m&p Cresol)	ug/L	50	34.1	68	23-120	
3,3'-Dichlorobenzidine	ug/L	100	59.1	59	10-154	
3-Nitroaniline	ug/L	100	70.3	70	43-115	
4,6-Dinitro-2-methylphenol	ug/L	100	61.1	61	44-124	
4-Bromophenylphenyl ether	ug/L	50	34.8	70	34-113	
4-Chloro-3-methylphenol	ug/L	100	77.6	78	31-110	
4-Chloroaniline	ug/L	100	73.6	74	20-120	
4-Chlorophenylphenyl ether	ug/L	50	30.7	61	34-116	
4-Nitroaniline	ug/L	100	69.1	69	46-128	
4-Nitrophenol	ug/L	250	109	43	11-120	
Acenaphthene	ug/L	50	30.2	60	48-114	
Acenaphthylene	ug/L	50	31.6	63	48-112	
Aniline	ug/L	50	25.2	50	26-120	
Anthracene	ug/L	50	39.0	78	57-118	
Benzo(a)anthracene	ug/L	50	37.1	74	56-121	
Benzo(a)pyrene	ug/L	50	36.8	74	55-127	
Benzo(b)fluoranthene	ug/L	50	36.5	73	53-128	
Benzo(g,h,i)perylene	ug/L	50	38.1	76	54-125	
Benzo(k)fluoranthene	ug/L	50	39.6	79	51-123	
Benzoic Acid	ug/L	250	26.8J	11	10-120	
Benzyl alcohol	ug/L	100	68.0	68	27-120	
bis(2-Chloroethoxy)methane	ug/L	50	36.0	72	32-120	
bis(2-Chloroethyl) ether	ug/L	50	33.6	67	33-111	
bis(2-Ethylhexyl)phthalate	ug/L	50	33.9	68	50-145	
Butylbenzylphthalate	ug/L	50	33.2	66	54-138	
Chrysene	ug/L	50	36.8	74	58-127	
Di-n-butylphthalate	ug/L	50	36.6	73	56-125	
Di-n-octylphthalate	ug/L	50	30.9	62	50-134	
Dibenz(a,h)anthracene	ug/L	50	39.3	79	53-129	
Dibenzofuran	ug/L	50	32.8	66	45-120	
Diethylphthalate	ug/L	50	34.4	69	53-120	
Dimethylphthalate	ug/L	50	34.8	70	55-116	
Fluoranthene	ug/L	50	38.0	76	57-125	
Fluorene	ug/L	50	34.6	69	53-118	
Hexachloro-1,3-butadiene	ug/L	50	19.9	40	23-120	

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REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: NCDOT 38979.1.2
Pace Project No.: 92388933

LABORATORY CONTROL SAMPLE: 2306105

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Hexachlorobenzene	ug/L	50	37.1	74	49-116	
Hexachlorocyclopentadiene	ug/L	50	14.5	29	26-158	
Hexachloroethane	ug/L	50	22.1	44	30-114	
Indeno(1,2,3-cd)pyrene	ug/L	50	38.7	77	55-128	
Isophorone	ug/L	50	31.5	63	31-118	
N-Nitroso-di-n-propylamine	ug/L	50	39.1	78	32-119	
N-Nitrosodimethylamine	ug/L	50	28.6	57	13-120	
N-Nitrosodiphenylamine	ug/L	50	39.7	79	43-120	
Naphthalene	ug/L	50	30.3	61	32-120	
Nitrobenzene	ug/L	50	36.4	73	33-110	
Pentachlorophenol	ug/L	100	62.8	63	10-137	
Phenanthrene	ug/L	50	38.9	78	57-117	
Phenol	ug/L	50	25.0	50	10-120	
Pyrene	ug/L	50	37.2	74	55-122	
2,4,6-Tribromophenol (S)	%			80	31-170	
2-Fluorobiphenyl (S)	%			68	45-139	
2-Fluorophenol (S)	%			57	13-118	
Nitrobenzene-d5 (S)	%			71	40-121	
Phenol-d6 (S)	%			49	18-105	
Terphenyl-d14 (S)	%			54	48-146	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2306106 2306107

Parameter	Units	92388939003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
1,2,4-Trichlorobenzene	ug/L	ND	41.7	41.7	20.9	20.6	50	50	10-110	1	
1,2-Dichlorobenzene	ug/L	ND	41.7	41.7	21.3	22.1	51	53	10-110	4	
1,3-Dichlorobenzene	ug/L	ND	41.7	41.7	20.4	20.8	49	50	10-110	2	
1,4-Dichlorobenzene	ug/L	ND	41.7	41.7	22.6	23.1	54	56	10-110	2	
1-Methylnaphthalene	ug/L	ND	41.7	41.7	26.0	26.6	62	64	14-110	2	
2,2'-Oxybis(1-chloropropane)	ug/L	ND	41.7	41.7	13.9	13.5	33	32	50-150	3	M1
2,4,5-Trichlorophenol	ug/L	ND	41.7	41.7	26.9	26.6	65	64	19-105	1	
2,4,6-Trichlorophenol	ug/L	ND	41.7	41.7	25.2	25.5	60	61	13-108	1	
2,4-Dichlorophenol	ug/L	ND	41.7	41.7	30.1	29.3	72	70	19-111	3	
2,4-Dimethylphenol	ug/L	ND	41.7	41.7	26.5	25.5	63	61	21-103	4	
2,4-Dinitrophenol	ug/L	ND	208	208	126	127	60	61	10-109	1	
2,4-Dinitrotoluene	ug/L	ND	41.7	41.7	29.3	29.7	70	71	27-104	1	
2,6-Dinitrotoluene	ug/L	ND	41.7	41.7	27.8	28.5	67	68	28-101	2	
2-Chloronaphthalene	ug/L	ND	41.7	41.7	23.4	24.8	56	59	14-102	6	
2-Chlorophenol	ug/L	ND	41.7	41.7	26.7	26.2	64	63	16-110	2	
2-Methylnaphthalene	ug/L	ND	41.7	41.7	26.9	27.0	64	65	13-110	1	
2-Methylphenol(o-Cresol)	ug/L	ND	41.7	41.7	34.1	34.4	82	83	19-110	1	
2-Nitroaniline	ug/L	ND	83.3	83.3	40.3J	41.1J	48	49	26-103		
2-Nitrophenol	ug/L	ND	41.7	41.7	25.8	25.4	62	61	20-110	2	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(704)875-9092

QUALITY CONTROL DATA

Project: NCDOT 38979.1.2
Pace Project No.: 92388933

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2306106 2306107

Parameter	Units	92388939003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
3&4-Methylphenol(m&p Cresol)	ug/L	ND	41.7	41.7	28.6	27.4	69	66	20-110	4	
3,3'-Dichlorobenzidine	ug/L	ND	83.3	83.3	30.8	33.0	37	40	25-112	7	
3-Nitroaniline	ug/L	ND	83.3	83.3	52.1	53.8	63	65	29-110	3	
4,6-Dinitro-2-methylphenol	ug/L	ND	83.3	83.3	59.6	59.0	72	71	10-117	1	
4-Bromophenylphenyl ether	ug/L	ND	41.7	41.7	28.5	28.8	68	69	20-105	1	
4-Chloro-3-methylphenol	ug/L	ND	83.3	83.3	58.0	58.2	70	70	22-110	0	
4-Chloroaniline	ug/L	ND	83.3	83.3	40.4	43.5	48	52	20-100	7	
4-Chlorophenylphenyl ether	ug/L	ND	41.7	41.7	27.3	28.4	66	68	19-102	4	
4-Nitroaniline	ug/L	ND	83.3	83.3	53.1	52.9	64	64	29-110	0	
4-Nitrophenol	ug/L	ND	208	208	116	117	56	56	10-110	1	
Acenaphthene	ug/L	ND	41.7	41.7	26.7	28.2	64	68	17-100	6	
Acenaphthylene	ug/L	ND	41.7	41.7	26.9	28.1	65	67	21-100	4	
Aniline	ug/L	ND	41.7	41.7	3J	8.5	7	20	10-110		M1
Anthracene	ug/L	ND	41.7	41.7	30.6	30.2	73	73	24-109	1	
Benzo(a)anthracene	ug/L	ND	41.7	41.7	29.4	28.1	71	67	22-117	5	
Benzo(a)pyrene	ug/L	ND	41.7	41.7	29.0	28.8	70	69	23-104	1	
Benzo(b)fluoranthene	ug/L	ND	41.7	41.7	29.0	27.6	70	66	23-103	5	
Benzo(g,h,i)perylene	ug/L	ND	41.7	41.7	29.5	28.8	71	69	18-111	2	
Benzo(k)fluoranthene	ug/L	ND	41.7	41.7	31.7	31.3	76	75	22-113	1	
Benzoic Acid	ug/L	ND	208	208	109	109	52	52	10-110	0	
Benzyl alcohol	ug/L	ND	83.3	83.3	52.7	52.2	63	63	19-101	1	
bis(2-Chloroethoxy)methane	ug/L	ND	41.7	41.7	27.3	27.1	65	65	22-110	1	
bis(2-Chloroethyl) ether	ug/L	ND	41.7	41.7	25.2	25.8	60	62	16-110	2	
bis(2-Ethylhexyl)phthalate	ug/L	ND	41.7	41.7	27.7	26.6	66	64	23-102	4	
Butylbenzylphthalate	ug/L	ND	41.7	41.7	26.9	25.7	65	62	25-110	4	
Chrysene	ug/L	ND	41.7	41.7	29.8	28.7	71	69	23-115	4	
Di-n-butylphthalate	ug/L	ND	41.7	41.7	30.5	28.9	73	69	26-110	6	
Di-n-octylphthalate	ug/L	ND	41.7	41.7	25.2	24.0	61	58	23-110	5	
Dibenz(a,h)anthracene	ug/L	ND	41.7	41.7	31.1	29.8	75	72	21-112	4	
Dibenzofuran	ug/L	ND	41.7	41.7	28.5	30.1	68	72	19-102	6	
Diethylphthalate	ug/L	ND	41.7	41.7	27.4	27.6	66	66	29-110	1	
Dimethylphthalate	ug/L	ND	41.7	41.7	27.2	27.5	65	66	27-110	1	
Fluoranthene	ug/L	ND	41.7	41.7	31.8	30.0	76	72	23-112	6	
Fluorene	ug/L	ND	41.7	41.7	29.4	30.4	71	73	22-104	3	
Hexachloro-1,3-butadiene	ug/L	ND	41.7	41.7	18.2	18.1	44	43	10-110	1	
Hexachlorobenzene	ug/L	ND	41.7	41.7	29.2	28.7	70	69	21-116	2	
Hexachlorocyclopentadiene	ug/L	ND	41.7	41.7	14.0	14.6	34	35	10-110	4	
Hexachloroethane	ug/L	ND	41.7	41.7	20.8	21.5	50	51	10-110	3	
Indeno(1,2,3-cd)pyrene	ug/L	ND	41.7	41.7	30.3	29.4	73	71	20-113	3	
Isophorone	ug/L	ND	41.7	41.7	24.0	23.7	58	57	50-150	1	
N-Nitroso-di-n-propylamine	ug/L	ND	41.7	41.7	29.4	30.1	70	72	21-105	2	
N-Nitrosodimethylamine	ug/L	ND	41.7	41.7	22.7	23.3	55	56	10-110	2	
N-Nitrosodiphenylamine	ug/L	ND	41.7	41.7	30.5	29.3	73	70	23-107	4	
Naphthalene	ug/L	ND	41.7	41.7	25.4	25.2	61	61	10-110	1	
Nitrobenzene	ug/L	ND	41.7	41.7	30.0	30.2	72	72	20-110	1	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: NCDOT 38979.1.2
Pace Project No.: 92388933

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2306106 2306107

Parameter	Units	92388939003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Pentachlorophenol	ug/L	ND	83.3	83.3	55.4	52.8	67	63	10-118	5	
Phenanthrene	ug/L	ND	41.7	41.7	31.0	30.5	74	73	24-106	2	
Phenol	ug/L	ND	41.7	41.7	21.4	21.5	51	52	12-110	1	
Pyrene	ug/L	ND	41.7	41.7	29.3	27.9	70	67	24-114	5	
2,4,6-Tribromophenol (S)	%						70	71	31-170		
2-Fluorobiphenyl (S)	%						66	65	45-139		
2-Fluorophenol (S)	%						52	54	13-118		
Nitrobenzene-d5 (S)	%						62	61	40-121		
Phenol-d6 (S)	%						46	47	18-105		
Terphenyl-d14 (S)	%						47	47	48-146		S2

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REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: NCDOT 38979.1.2
Pace Project No.: 92388933

QC Batch: 416575 Analysis Method: MADEP EPH
QC Batch Method: MADEP EPH Analysis Description: MADEP EPH NC Water
Associated Lab Samples: 92388933001, 92388933002

METHOD BLANK: 2309953 Matrix: Water
Associated Lab Samples: 92388933001, 92388933002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aliphatic (C09-C18)	ug/L	ND	100	06/27/18 11:45	N2
Aliphatic (C19-C36)	ug/L	ND	100	06/27/18 11:45	N2
Aromatic (C11-C22)	ug/L	ND	100	06/27/18 11:45	N2
2-Bromonaphthalene (S)	%	42	40-140	06/27/18 11:45	
2-Fluorobiphenyl (S)	%	42	40-140	06/27/18 11:45	
Nonatriacontane (S)	%	38	40-140	06/27/18 11:45	S0
o-Terphenyl (S)	%	39	40-140	06/27/18 11:45	S0

LABORATORY CONTROL SAMPLE & LCSD: 2309954 2309955

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Aliphatic (C09-C18)	ug/L	300	134	123	45	41	40-140	9	50	N2
Aliphatic (C19-C36)	ug/L	400	234	211	58	53	40-140	10	50	N2
Aromatic (C11-C22)	ug/L	850	556	533	65	63	40-140	4	50	N2
2-Bromonaphthalene (S)	%				67	64	40-140			
2-Fluorobiphenyl (S)	%				65	63	40-140			
Nonatriacontane (S)	%				60	56	40-140			
o-Terphenyl (S)	%				71	71	40-140			

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

REPORT OF LABORATORY ANALYSIS

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

QUALIFIERS

Project: NCDOT 38979.1.2
Pace Project No.: 92388933

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

D3	Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
L1	Analyte recovery in the laboratory control sample (LCS) was above QC limits. Results for this analyte in associated samples may be biased high.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
N2	The lab does not hold NELAC/TNI accreditation for this parameter.
S0	Surrogate recovery outside laboratory control limits.
S2	Surrogate recovery outside laboratory control limits due to matrix interferences (confirmed by similar results from sample re-analysis).
S4	Surrogate recovery not evaluated against control limits due to sample dilution.

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

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: NCDOT 38979.1.2
Pace Project No.: 92388933

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92388933001	**TW-1**	MADEP EPH	416575	MADEP EPH	416763
92388933002	**TW-2**	MADEP EPH	416575	MADEP EPH	416763
92388933001	**TW-1**	MADEP VPH	416111		
92388933002	**TW-2**	MADEP VPH	416111		
92388933001	**TW-1**	EPA 3510	415852	EPA 8270	415964
92388933002	**TW-2**	EPA 3510	415852	EPA 8270	415964
92388933001	**TW-1**	EPA 8260	416640		
92388933002	**TW-2**	EPA 8260	416640		

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

Sample Condition Upon Receipt

WO# : 92388933

92388933

Client Name: APEX **Proje**

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

Custody Seal Present? ☐ Yes ☑ No **Seals Intact?** ☐ Yes ☐ No

Date/Initials Person Examining Contents: CM 6-19-18

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): 1.2 **Correction Factor:** Add/Subtract (°C) +0.4

Cooler Temp Corrected (°C): 1.6

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: WT	☑ 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	

COMMENTS/SAMPLE DISCREPANCY

Field Data Required? ☐ Yes ☐ No

Lot ID of split containers:

CLIENT NOTIFICATION/RESOLUTION

Person contacted: _____ Date/Time: _____

Project Manager SCURF Review: TC **Date:** TC 6/19/18

Project Manager SRF Review: TC **Date:** 6/19/18

***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**

Projec **WO# : 92388933**

PM: RWC Due Date: 07/03/18

CLIENT: 92-NCDOTNE

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											2					6											2		
2											2					6											2		
3																												
4																												
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:	APEX Companies - NC	Report To:	Troy Holzschuh	Attention:	Dennis Li
Address:	10610 Metromont Pkwy	Copy To:	Katie Lippard	Company Name:	~~Dennis Li~~ NCDOT
Charlotte, NC 28269				Address:	Raleigh NC
Email:	tholzschuh@apexcos.com	Purchase Order #:		Pace Quote:	
Phone:	704-799-6390 Fax	Project Name:	NCDOT 38979.1.2	Pace Project Manager:	trey.carter@pacelabs.com,
Requested Due Date:	Standard	Project #:	NCDOT-002	Pace Profile #:	8545-2

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	VPH	EPH	8260 VOCs Full List	8270 SVOC	Residual Chlorine (Y/N)	92388933
1	TW-1	WT	G	6-18-18	1400			10		X			X						3	2	3	2		001
2	TW-2	WT	G	6-18-18	1430			10		X			X						3	2	3	2		002
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								

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

Requested Analysis Filtered (Y/N)

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	TL Holzschuh/Apex	6-19-18	830	John Pace	6-19-18	1029				
	John Pace	6-19-18	1050	Erick Hennypace	6-19-18	1050	1.0	X	W	X

SAMPLER NAME AND SIGNATURE			TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
PRINT Name of SAMPLER:	Troy L Holzschuh					
SIGNATURE of SAMPLER:	TL Holzschuh	DATE Signed: 6-19-18				