



March 6, 2013

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

Attention: Mr. Terry W. Fox, L.G. **email:** twfox@ncdot.gov

Reference: **Preliminary Site Assessment Report**
NCDOT Project U-2525B WBS Element 34821.1.1
Greensboro Eastern Loop from North of US 70 Relocation
to US 29 North of Greensboro
Parcel No. 66, Pallet Express, Inc.
2821 Assembly Road, Greensboro, Guilford County, North Carolina
S&ME Project No. 1054-13-008

Dear Mr. Fox,

S&ME, Inc. (S&ME) is submitting this Preliminary Site Assessment (PSA) Report to the North Carolina Department of Transportation (NCDOT). This report presents the background information, field activities, findings, conclusions, and recommendations. These services were performed in general accordance with S&ME Proposal No. P218-12V, Revision 1, dated January 10, 2013, and Contract Number 7000012210 dated June 2, 2012, between NCDOT and S&ME.

1.0 INTRODUCTION

1.1 Background Information

Based on the NCDOT's December 17, 2012, *Request for Technical and Cost Proposal*, and additional information from the NCDOT's file transfer site, the PSA was conducted within the NCDOT right-of-way (ROW) and/or up to the permanent utility easement at the following property:

Parcel #66 Pallet Express, Inc.
2821 Assembly Road, Greensboro, Guilford County, North Carolina

Additional information provided from the NCDOT's file transfer site and additional e-mails, included:

- CADD and PDF files which were used as a base map for preparation of this PSA.

The PSA included a preliminary geophysical site assessment, and subsequent limited soil

sampling (30 borings, up to 25 feet below ground surface) within the designated ROW/Easement assessment areas. **Figure 1** shows the vicinity and site location, and **Figure 2** shows the site and boring locations. The soil sampling results are shown on **Figure 3**.

Project Information

A site specific Health and Safety Plan was prepared prior to field activities. Underground utilities were located and marked by the North Carolina One-Call Service. A private utility locator, Superior Locating Service of Greensboro, North Carolina, was also used to mark on site buried utilities and the potential locations of underground storage tanks (USTs) and associated utilities.

Parcel #66 Pallet Express, Inc. is a pallet manufacturing and sales business located in the northern quadrant of US Highway 29 North and Assembly Road. Twelve underground storage tanks (USTs) were reportedly removed by J.P. Stevens Transportation (the previous owner) in 1989. North Carolina Department of Environment and Natural Resources assigned groundwater Incident No. 5867 to this site in 1990 based on a reported release from one of the UST systems. This incident was closed by the NCDENR in 2001.

S&ME was requested to investigate the reported contaminated area in front of the main office building and along the cut lines for proposed construction Loop A (-Y13LPA-) and UST 29 (-Y13-).

2.0 GEOPHYSICAL SITE ASSESSMENT

2.1 Methods and Field Testing

On January 18, 2013 S&ME personnel performed time domain electromagnetic (TDEM) and ground penetrating radar (GPR) surveys within the proposed right-of-way and/or easement of the accessible areas of Parcel #66. Several areas on the site were inaccessible due to stacked pallets. These technologies were used in conjunction with each other in order to detect the presence of potential USTs at the site. A brief description of each technology is presented in Section 2.2 and 2.3.

2.2 Time Domain Electromagnetic Methodology

TDEM methods measure the electrical conductivity of shallow subsurface materials. The conductivity is determined by transmitting a time-varying magnetic pulse into the ground and measuring the amplitude and phase shift of the secondary magnetic field. The secondary magnetic field is created when the conductive materials become an inductor as the primary magnetic field is passed through them.

The TDEM survey was performed with a Geonics EM-61 MKII system, which has a 1.0-meter by 0.5-meter coil system. The EM-61 TDEM system allows discrimination between moderately conductive subsurface materials and very conductive metallic targets as the secondary electromagnetic response from metallic targets are of longer duration

than those created by moderately conductive subsurface materials. Accordingly, only the later EM arrivals are recorded so that only the very conductive metallic features are targeted. The survey was designed to locate metallic tanks within depths of about 5 feet, the assumed maximum depth at which we anticipated the top of a UST to be present. These data can be acquired with GPS support so the results can be used in Surfer Version 10.0 to geostatistically grid and plot the data. **Figure 4** shows the TDEM location plan.

TDEM data were collected along a grid spaced at approximate 5-foot intervals. **Figures 5 and 6** provide the TDEM dataset collected on Parcel 66.

2.3 Ground Penetrating Radar

GPR is an electromagnetic method that detects interfaces between subsurface materials with differing dielectric constants. The transmitter radiates electromagnetic waves into the earth from an antenna moving across the ground surface. Electromagnetic waves are reflected back to the receiver by interfaces between materials with differing dielectric constants. The intensity of the reflected signal is a function of the contrast in the dielectric constant at the interface, the conductivity of the material that the wave is traveling through, and the frequency of the signal.

The GPR survey was performed with a GSSI SIRS-3000 unit equipped with a 400 MHz shielded antenna. The depth of GPR wave penetration at the site is a function of the conductivity of the subsurface materials and signal frequency. The average maximum depth of penetration for the GPR survey was approximately four feet below ground surface at the site. **Figure 7** shows the GPR test locations. **Figure 8** presents the GPR profiles of the anomalies.

3.0 SOIL ASSESSMENT

3.1 Soil Sampling

From January 30 through February 1, 2013, S&ME advanced 30 soil borings on the subject property within the specified NCDOT ROW/Easement. The soil boring locations were placed along the proposed ROW and near the locations of the previously-identified locations of the former USTs (**Figures 2 and 3**). S&ME utilized a track mounted Geoprobe® rig to perform the borings and to collect soil samples. S&ME's drill crew advanced the Geoprobe® borings up to approximately 25 ft.-bgs. A photographic log is included in **Appendix I**. Soil samples were continuously collected in five foot long disposable acetate-plastic sleeves that line the hollow stainless-steel sample probes. Soil recovered from the sleeves was classified on-site by S&ME personnel and screened with a Photoionization Detector (PID) at approximately two foot intervals to measure relative headspace concentrations of volatile organic compounds (VOCs).

VOC headspace readings were obtained from an aliquot of each soil sample that was placed in a re-sealable bag. Another portion of the sample was placed in a separate re-sealable bag and stored in an insulated container with ice for possible laboratory analyses. After waiting approximately 15 minutes to allow the sample to reach ambient temperature and headspace equilibrium, the PID probe was inserted into the bag to obtain a headspace reading. A summary of the PID readings and logs of the soil borings are included in

Appendix II.

Based upon the field screening results and visual observations, a total of 34 soil aliquots were provided to QROS, LLC (QROS) for on-site analysis of gasoline range organics (TPH-GRO) and diesel range organics (TPH-DRO) by ultra-violet fluorescence spectroscopy. Selected soil samples were placed directly into laboratory-supplied containers and shipped to Pace Analytical Services (Pace), a North Carolina certified laboratory under standard chain-of-custody procedures. The soil samples were analyzed for TPH-GRO by EPA Method 8015B/5030B and for TPH-DRO by EPA Method 8015B/3546.

Borings were backfilled with bentonite pellets and soil. Used gloves were bagged and disposed off-site.

3.2 Soil Sample Analytical Results

The approximate soil boring locations are shown in **Figure 2**. The soil sampling laboratory results are summarized in **Table 1** and shown on **Figure 3**, and a copy of the laboratory analytical report is included as an **Appendix III**.

Concentrations of TPH-DRO were detected in concentrations exceeding the North Carolina UST Action limit of 10 milligrams per kilogram (mg/Kg) in 15 of the soil samples provided to QROS and TPH-DRO was detected in concentrations exceeding the North Carolina UST Action Limit of 10 mg/Kg in six of the soil samples provided to QROS.

A total of eight soil samples were additionally analyzed by Pace. The laboratory analytical results of the soil samples analyzed by Pace indicated that TPH-DRO was detected in four of the soil samples in concentrations exceeding the North Carolina Action Limits and TPH-GRO was detected in concentrations exceeding the North Carolina Action Limits in two of the soil samples submitted for additional analysis.

4.0 CONCLUSIONS AND RECOMMENDATIONS

4.1 Geophysical Assessment

Three TDEM anomalies (Anomalies 1, 2 and 3) not corresponding to site surface features were identified in the TDEM dataset (**Figures 4 through 6**); the anomalies were marked in the field. A total of six GPR profiles were also collected at the site (**Figure 7**). GPR reflections associated with TDEM Anomaly 1 are characterized by relatively small high amplitude responses at about 1 foot below ground surface (bgs). These GPR reflectors are most likely related to a buried reinforced concrete slab. TDEM Anomaly 2 appears to be low amplitude responses at about 1 ft bgs and most likely associated with small buried metallic objects. TDEM Anomaly 3 is characterized by a relatively small high amplitude response at about 2 feet bgs. Example GPR profiles are located in **Figure 8**. Anomalies 1, 2 and 3 do not exhibit TDEM response and/or GPR reflections indicative of USTs.

4.2 Soil Assessment

From January 30 through February 1, 2013, S&ME advanced 30 soil borings on Parcel 66 at the locations shown on **Figure 2**. The on-site analysis (UVF analysis) of the soil samples indicated that concentrations of TPH-DRO ranged from non-detect up to 31,283 mg/Kg (detected in sample 66-6 at a depth of 10 feet below ground surface). TPH-GRO concentrations from the UVF analysis ranged from non-detect to 2,432 mg/Kg (also detected in sample 66-6 at a depth of 10 feet). Concentrations of TPH-GRO and DRO exceeded the North Carolina Action Level in several other soil samples analyzed on-site by UVF analysis.

The off-site laboratory (Pace) analytical results of the soil samples also indicated that the highest concentrations of TPH-GRO and DRO were detected in soil sample 66-6 at a depth of 10 feet below ground surface. Several other soil samples analyzed by Pace exhibited concentrations of TPH-GRO and DRO exceeding their respective North Carolina Action Levels.

4.3 Recommendations

It is possible that during construction, NCDOT may encounter soil impacted with petroleum in the following areas:

- An area with a diameter of approximately 20 feet in the vicinity of sample locations 66-2 and 66-6 at depths between 10 to 20 feet below ground surface (a thickness of 10 feet), approximately 148 cubic yards may be impacted.
- An area with a diameter of approximately 25 feet in the vicinity of sample locations 66-14 and 66-19 at depths between 8 to 15 feet below ground surface (a thickness of 3 feet), approximately 70 cubic yards may be impacted.
- An area with diameter of approximately 10 feet in the vicinity of sample location 66-20 at depths between 10 to 12 feet below ground surface (a thickness of 2 feet), approximately 11 cubic yards may be impacted.
- An area with a diameter of approximately 15 feet in the vicinity of sample locations 66-25 and 66-26 at depths between 10 to 13 feet below ground surface (a thickness of 3 feet), approximately 25 cubic yards may be impacted.

S&ME recommends maintaining an awareness level for the possible presence of petroleum in the soil in these areas.

4.0 LIMITATIONS

The estimated volumes of petroleum impacted soil stated in Section 4.3 above are based on the limited data points and soil samples collected by S&ME for this preliminary investigation. The actual amount of petroleum impacted soil encountered during roadway

expansion activities may vary depending on the actual grading plan for the project within the affected ROW/Easement.

The results of this preliminary investigation are limited to the boring locations presented herein. The results of this Preliminary Site Assessment are not all inclusive and may not represent existing conditions across the entire property. These results only reflect the current conditions at the locations sampled on the date this Preliminary Site Assessment was performed. This report has been prepared in accordance with generally accepted environmental engineering and geophysical practice for specific application to this project. The conclusions and recommendations contained in this report are based upon applicable standards of our practice in this geographic area at the time this report was prepared. No other warranty, expressed or implied, is made.

The conclusions for the geophysical assessment submitted herein are based upon the data obtained from the non-invasive testing. As such, even within the surveyed area, the survey cannot be considered 100 percent accurate due to inherent method limitations, survey limitations, site features, and/or unforeseen site-specific conditions. Accordingly, the possibility exists that not all subsurface, man-made features have been located.

TDEM and GPR are commonly used to locate USTs, however certain limitations exist. Nearby, metallic objects such as vehicles, metal buildings/storage units, heating/air conditioning units, utilities, etc. will interfere with the TDEM survey. Properties of the subsurface materials (e.g., clay content, moisture, etc.) can have a significant impact on the effective depth of penetration of the GPR survey. Accordingly, non-metallic tanks, tanks at depths below about 5 feet, and tanks outside of the survey area may not have been detected using the geophysical techniques. In addition, due to interference, there may be areas within the proposed survey area where an interpretation of subsurface features was not feasible.

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

This Preliminary Site Assessment was performed solely for NCDOT regarding the above-referenced site and assessment area. This report is provided for the sole use of NCDOT. Use of this report by any other parties will be at such party's sole risk. S&ME disclaims liability for any such use or reliance by third parties. The observations presented in this report are indicative of conditions during the time of the assessment and of the specific areas referenced.

CLOSING

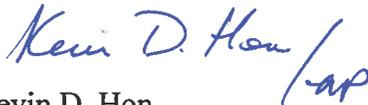
S&ME welcomes the opportunity to assist you with your environmental needs. Should you have any questions regarding this report, please call Tom Raymond at (919) 954-6229.

Sincerely,

S&ME, Inc.



Michael W. Pfeifer
Project Manager



Kevin D. Hon
Project Geophysicist



Thomas P. Raymond, P.E.
Senior Consultant

Attachments: Table 1 – Soil Laboratory Analytical Results
Figure 1 – Vicinity Map
Figure 2 – Site Map with Boring Locations
Figure 3 – Soil Sample Results Map
Figure 4 – TDEM Test Location Plan
Figure 5 – TDEM Data Plot
Figure 6 – TDEM Data Plot with Cadd Overlay
Figure 7 – GPR Test Location Plan
Figure 8 – GPR Profile Lines 074, 075, and 079
Appendix I – Photographic Log
Appendix II – Boring Logs
Appendix III – Laboratory Analytical Report and Chain of Custody

TABLES

TABLE 1
Summary of Soil Analytical Results
NCDOT Project U2525-B
Parcel 66 - Pallett Express
2821 Assembly Road
Greensboro, Guilford County, North Carolina
S&ME Project No. 1054-13-008

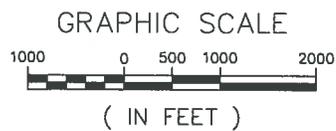
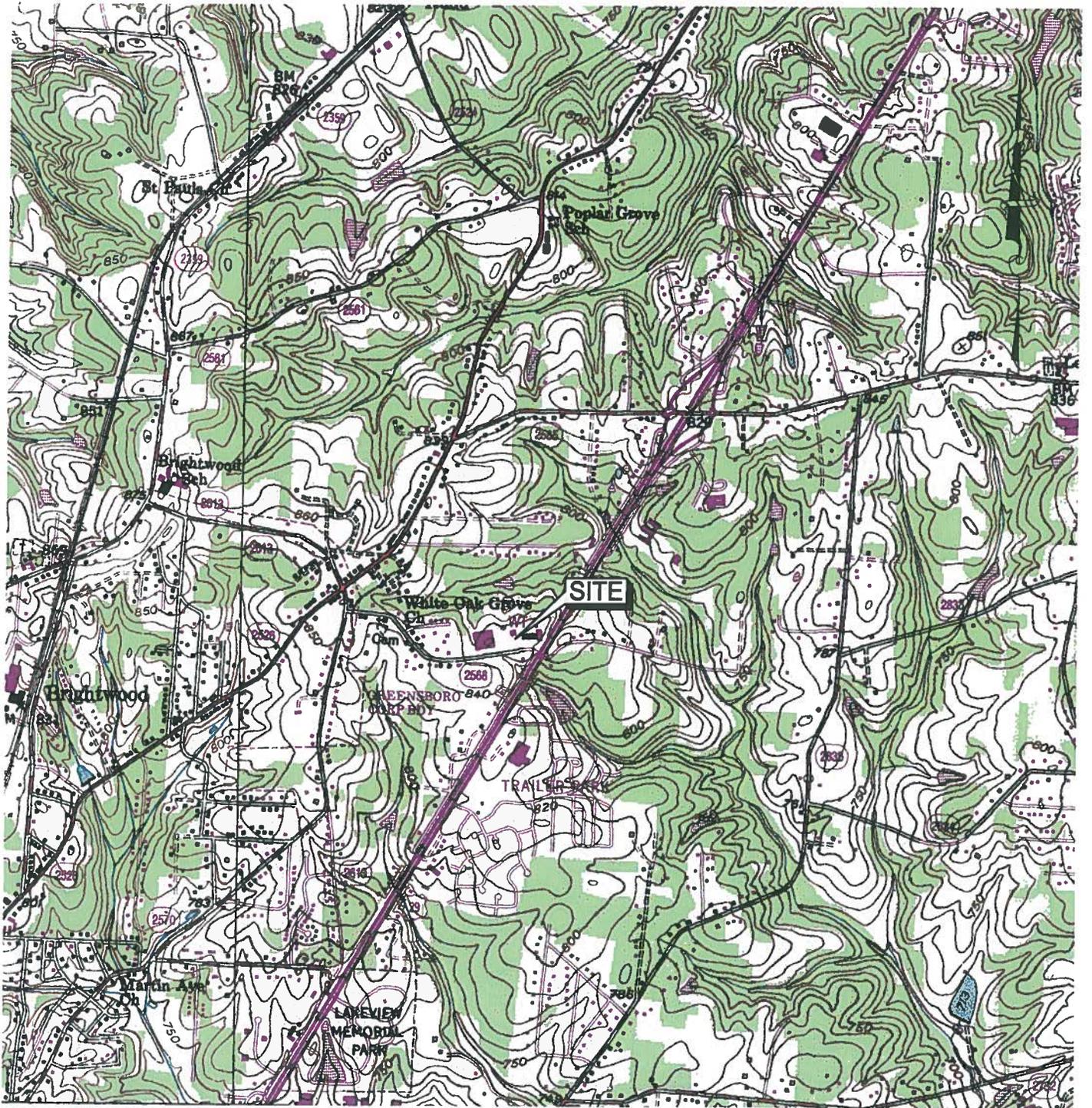
Sample ID	Sample Depth (Ft.-bgs)	Contaminant of Concern	Total Petroleum Hydrocarbons (TPH) Gasoline Range Organics (GRO) and Diesel Range Organics (DRO)			
			GRO by Ultraviolet Fluorescence (UVF) Spectrometry Field Screening	DRO by Ultraviolet Fluorescence (UVF) Spectrometry Field Screening	GRO by EPA Method 8015/3550	DRO by EPA Method 8015/5030
		Date				
66-1-15	15.0	1/30/2013	<1.3	<1.3	Sample Not Submitted for Additional Analysis	
66-2-15	15.0	1/30/2013	<1.3	17		
66-2-20	20.0	1/30/2013	<1.3	10.6		
66-3-15	15.0	1/30/2013	<1.3	<1.3		
66-4-15	15.0	1/30/2013	<1.3	<1.3		
66-5-14	14.0	1/31/2013	<1.3	2.5		
66-6-10	10.0	1/31/2013	2432	31,283	696	26,600
66-6-10 Dup	10.0	1/31/2013	976	27,695	Sample Not Submitted for Additional Analysis	
66-6-20	20.0	1/31/2013	<40	<40	<6.0	7.1
66-7-17	17.0	1/31/2013	<1.3	2.9	Sample Not Submitted for Additional Analysis	
66-7-19	19.0	1/31/2013	<1.3	<1.3		
66-8-15	15.0	1/31/2013	<1.3	<1.3	<6.8	<5.6
66-9-15	15.0	1/31/2013	<1.3	4.2	Sample Not Submitted for Additional Analysis	
66-10-9	9.0	1/31/2013	<1.3	<1.3		
66-11-15	15.0	1/31/2013	<1.3	<1.3		
66-12	NA	1/31/2013	<i>No Samples Collected</i>			
66-13-15	15.0	2/1/2013	<1.3	<1.3	Sample Not Submitted for Additional Analysis	
66-14-8	8.0	2/1/2013	7.6	190	7.9	252
66-14-15	15.0	2/1/2013	22.9	81.1	Sample Not Submitted for Additional Analysis	
66-15	NA	2/1/2013	<i>No Samples Collected</i>			
66-16	NA	2/1/2013	<i>No Samples Collected</i>			
66-17-15	15.0	2/1/2013	<1.2	2	Sample Not Submitted for Additional Analysis	
66-18	NA	2/1/2013	<i>No Samples Collected</i>			
66-19-9	9.0	2/1/2013	83.1	915.3	<6.7	5,460
66-19-11	11.0	2/1/2013	<6	47.1	Sample Not Submitted for Additional Analysis	
66-19-11 Dup	11.0	2/1/2013	<3	49.4		
66-19-13	13.0	2/1/2013	2.6	43.3		
66-19-15	15.0	2/1/2013	5.8	299.3		
66-20-11	11.0	2/1/2013	<2	67.2		
66-20-13	13.0	2/1/2013	Sample Not Analyzed by UVF		<8.3	<6.8
66-21-15	15.0	2/1/2013	<1.3	<1.3	Sample Not Submitted for Additional Analysis	
66-22-7	7.0	2/1/2013	<1.2	<1.2		
66-23-5	5.0	2/1/2013	2.2	23.7		
66-23-15	15.0	2/1/2013	<1.3	2.8		
66-24-13	13.0	2/1/2013	<1.3	<1.3		
66-25-12.5	12.5	2/1/2013	176.2	4,515.8	40.1	4,580
66-26-11	11.0	2/1/2013	54	7,184	<5.3	<5.9
66-27-15	15.0	2/1/2013	<1.3	7.2	Sample Not Submitted for Additional Analysis	
66-28-15	15.0	2/1/2013	<1.3	<1.3		
66-29-15	15.0	2/1/2013	<1.3	<1.3		
66-30	NA	2/1/2013	<i>No Samples Collected</i>			
North Carolina UST Action Levels			10	10	10	10

Notes:

Ultraviolet Fluorescence Spectrometry (UVF) analysis performed with QED HC-1 Analyzer

1. Concentrations are reported in milligrams per kilogram (mg/Kg).
2. Ft.-bgs - feet below ground surface.
3. Sample concentrations that exceed the North Carolina Action Levels are shown in Shaded and **BOLD** fields.
4. UST: Underground Storage Tank
5. NA: Not analyzed/applicable

FIGURES



TOPO SOURCE: NCGS DRG
 LAKE WHEELER, DATED 2002
 CONTOUR INTERVAL 10 FEET

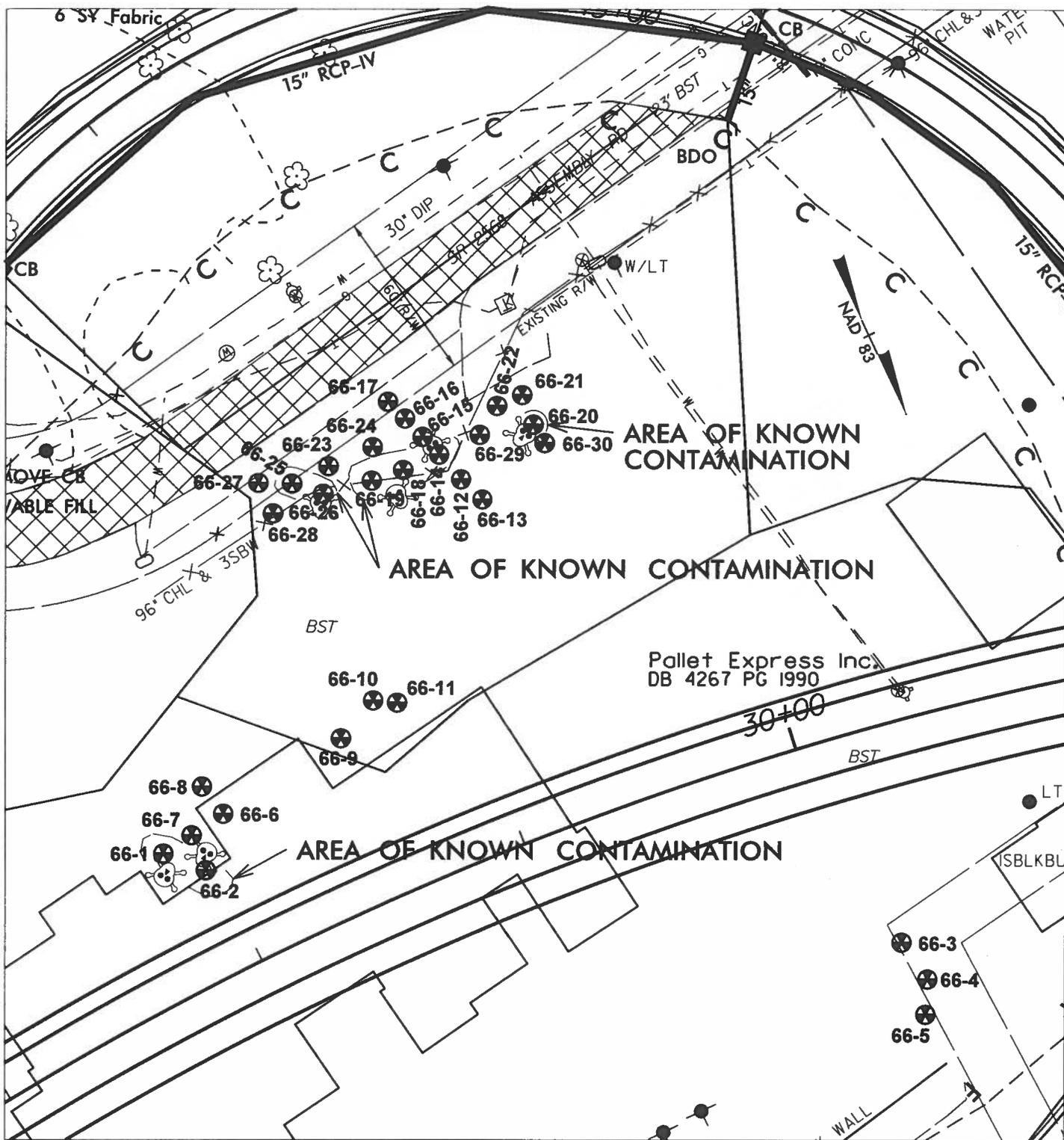
SCALE: 1" = 2000'
 DATE: FEB. 2013
 DRAWN BY: BTR
 PROJECT NO:
 1054-13-008

S&ME
 WWW.SMEINC.COM
 NC ENGINEER LICENSE #F-0176
 3201 SPRING FOREST RD, RALEIGH, NC 27616

VICINITY MAP
 PARCEL 66 - PALLET EXPRESS
 2821 ASSEMBLY RD
 GREENSBORO, NORTH CAROLINA

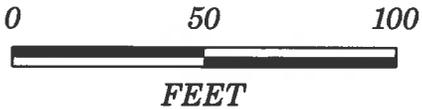
A-3568

FIGURE NO.
 1



LEGEND

Geoenvironmental Boring
 Known Soil Contamination:
 Area or Site

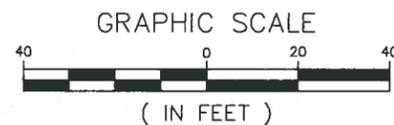


SCALE: 1" = 50'
 DATE: FEB. 2013
 DRAWN BY: BTR
 PROJECT NO: 1054-13-008

S&ME
 WWW.SMEINC.COM
 NC ENGINEER LICENSE #F-0176
 3201 SPRING FOREST RD, RALEIGH, NC 27616

SITE MAP
 PARCEL 66 - PALLET EXPRESS
 2821 ASSEMBLY RD
 GREENSBORO, NORTH CAROLINA

A-3569
 SHEET NO. 2



SCALE: 1" = 40'
PROJECT NUMBER: 1054-13-008
DRAWING NUMBER: B-2118

S&ME
WWW.SMEINC.COM
NC ENGINEER LICENSE #E-0176
3201 SPRING FOREST RD, RALEIGH, NC 27616

SOIL CONSTITUENT MAP
PARCEL 66 - PALLET EXPRESS - 2821 ASSEMBLY RD
GREENSBORO, NORTH CAROLINA

FIGURE NO.
3



REFERENCE:

- Google Earth Aerial Photograph
- Dated February 2, 2012

LEGEND

 TDEM Path

SCALE: NTS

DRAWN BY: KDH

CHECKED BY: DDB

DATE: 1-23-13

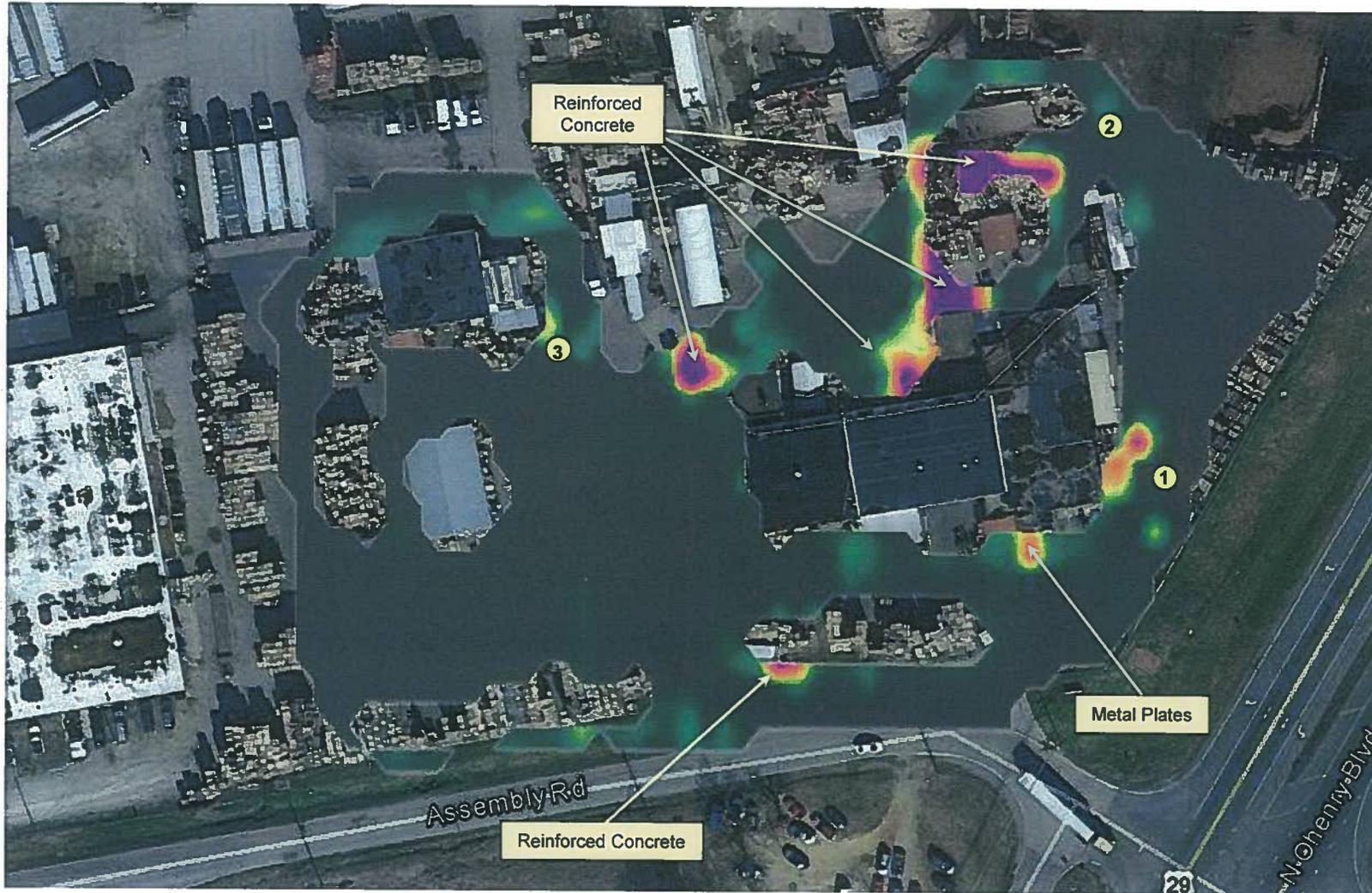


TDEM TEST LOCATION PLAN
NCDOT No. U-2525B – Parcel 66 Pallet Express
2821 Assembly Road, Greensboro, Guilford County, North Carolina

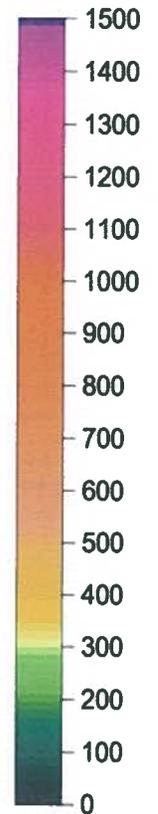
PROJECT NO.: 1054-13-008

FIGURE NO.

4



Conductivity (mV)



REFERENCE:

- Google Earth Aerial Photograph
- Dated February 2, 2012

SCALE: NTS

DRAWN BY: KDH

CHECKED BY: DDB

DATE: 1-23-13



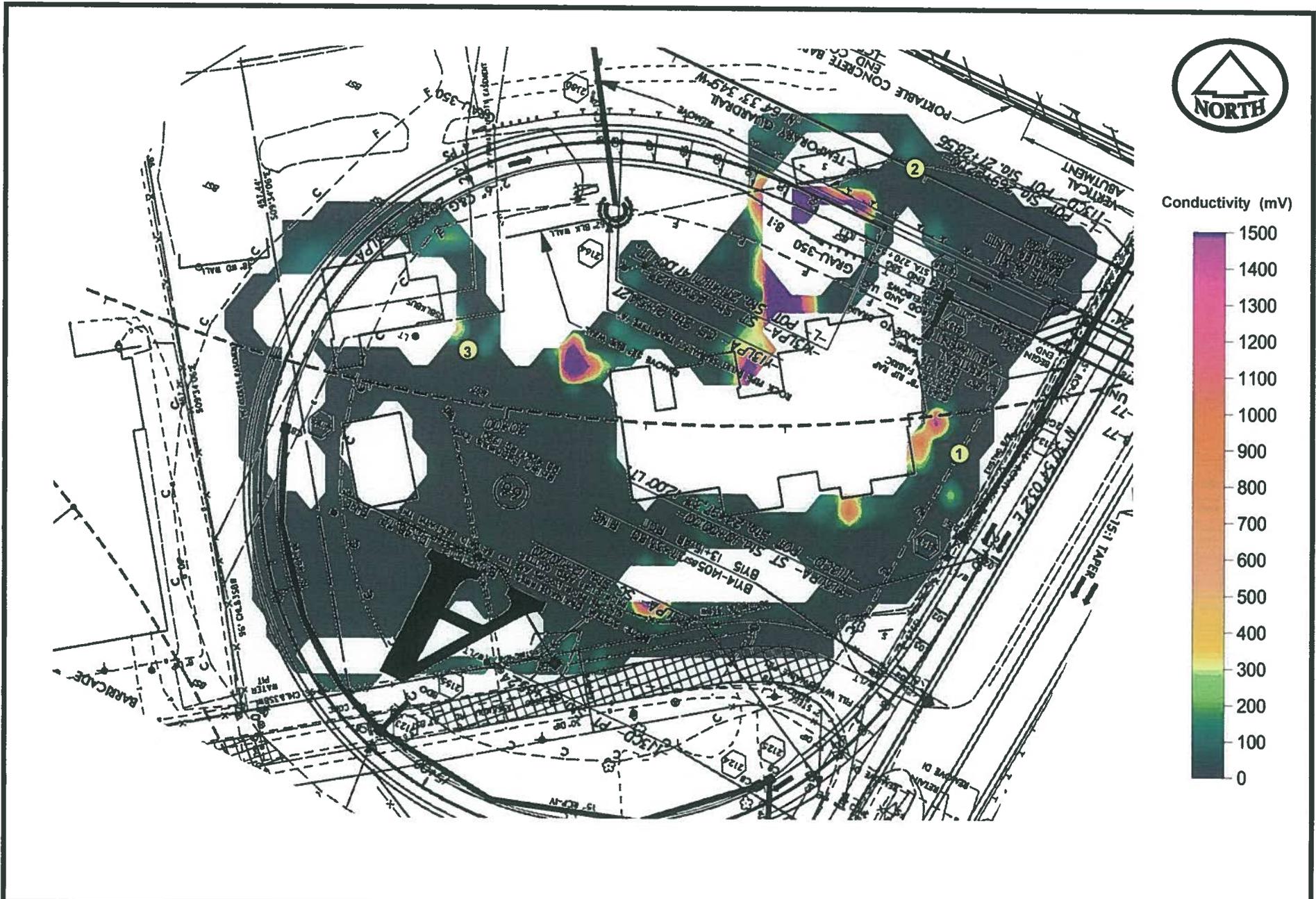
TDEM DATA PLOT

NCDOT No. U-2525B – Parcel 66 Pallet Express
2821 Assembly Road Greensboro, Guilford County, North Carolina

PROJECT NO.: 1054-13-008

FIGURE NO.

5



SCALE: NTS

DRAWN BY: KDH

CHECKED BY: DDB

DATE: 1-23-13



TDEM DATA PLOT WITH CADD OVERLAY

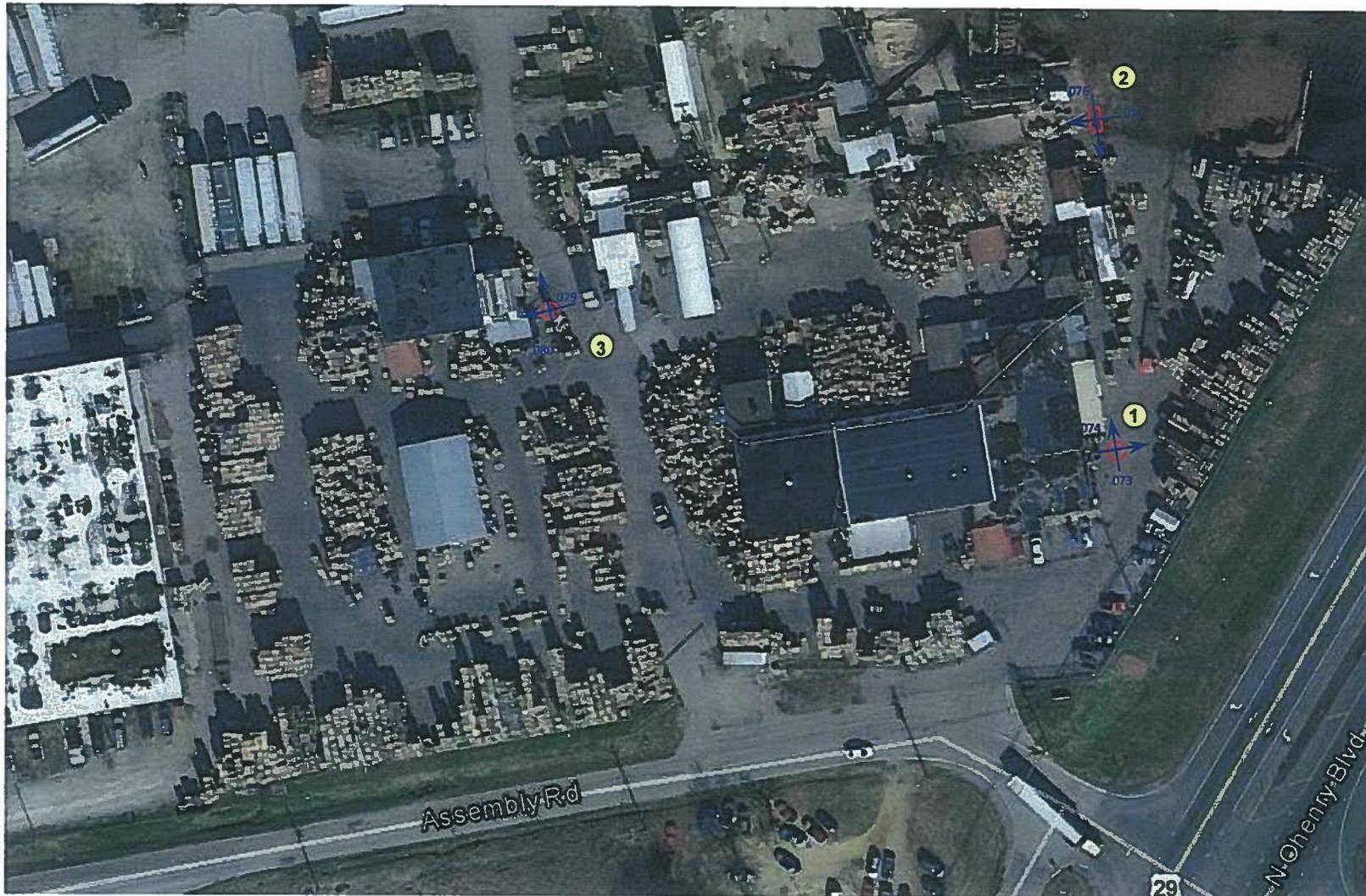
NCDOT No. U-2525B – Parcel 66 Pallet Express

2821 Assembly Road Greensboro, Guilford County, North Carolina

PROJECT NO.: 1054-13-008

FIGURE NO.

6



REFERENCE:

- Google Earth Aerial Photograph
- Dated February 2, 2012

LEGEND

- GPR Line
- TDEM Anomaly

SCALE: NTS
DRAWN BY: KDH
CHECKED BY: DDB
DATE: 1-23-13

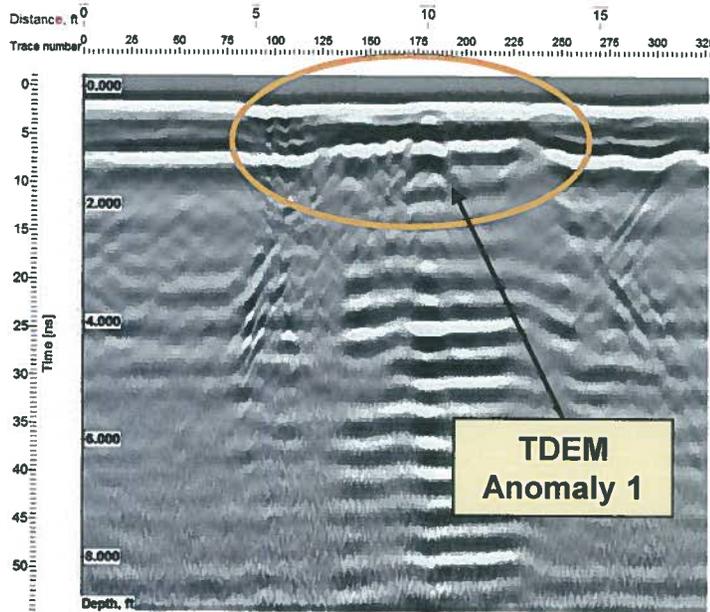


GPR TEST LOCATION PLAN
NCDOT No. U-2525B – Parcel 66 Pallet Express
2821 Assembly Road Greensboro, Guilford County, North Carolina
PROJECT NO.: 1054-13-008

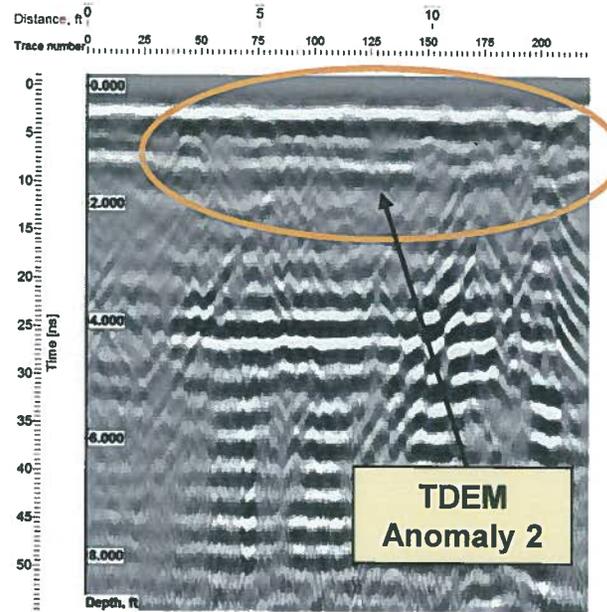
FIGURE NO.

7

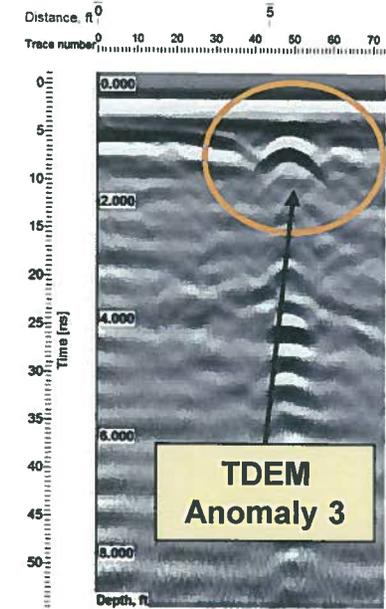
Line 074



Line 075



Line 079



SCALE: AS SHOWN

DRAWN BY: KDH

CHECKED BY: DDB

DATE: 1-23-13



GPR PROFILE EXAMPLES – LINES 074, 075 AND 079
NCDOT No. U-2525B – Parcel 66 Pallet Express
2821 Assembly Road Greensboro, Guilford County, North Carolina

PROJECT NO.: 1054-13-008

FIGURE NO.

8

APPENDIX I

Photographic Log



1 View of area of sample numbers 66-2 and 66-6 in area in front of building. View is to the northeast.



2 Second view of area of sample numbers 66-2 and 66-6 in front of the building. View is to the northwest.



3 View of area of sample numbers 66-14 and 66-19 southwest of building. View is to the east.



4 View of area of sample numbers 66-20 to the southwest of building. View is to the north.



NCDOT Project U2525B
Parcel 66 – Pallet Express, 2821 Assembly Road
Greensboro, Guilford County, North Carolina

S&ME Project No. 1054-13-008

Taken by: ALB

Date Taken: 2/11/2013

APPENDIX II

Boring Logs

BORING LOG



Project Name: NCDOT Project U2525-B
Parcel 66
Job No. 1054-13-008

Boring Number: 66-1
Sampling Personnel: Lyndal Butler
Date Drilled: 1/30/2013
Depth to Groundwater: Not Encountered
Total Depth: 15 ft. bgs.

Drilling method: Geoprobe® Direct Push

STRATIFICATION

Depth (Feet)		Soil Description	PID Reading (ppm)	Sample No. and Depth	
From	To			Sample No.	Depth (Ft-BGS)
0	0.5	Asphalt and base course			
0.5	2.0	ML: Silty Clay, brown orange, dry	<1		
2.0	2.5				
2.5	3.0				
3.0	4.0				
4.0	5.0	SM: Silty fine to medium Sand, yellow and orange tan, dry	<1		
5.0	6.0				
6.0	7.0	ML: Silt, orange red, relict structure, dry	<1		
7.0	8.0				
8.0	10.0				
10.0	12.0		<1		
9.5	15.0	SM: Silty fine Sand, tan, to silty fine to coarse Sand, dry	<1	66-1-15	15.0
<i>Boring terminated at 15.0 ft. bgs.</i>					

Notes:

- 1. Ft-BGS: Feet Below Ground Surface
- 2. PID: Photo-Ionization Detector
- 3. PPM: parts per million (volume/volume)
- 4. * Indicates sample was sent to off-site laboratory for additional analysis.

Boring Number: 66-2
Sampling Personnel: Lyndal Butler
Date Drilled: 1/30/2013
Depth to Groundwater: Not Encountered
Total Depth: 20 ft. bgs.

Drilling method: Geoprobe® Direct Push

STRATIFICATION

Depth (Feet)		Soil Description	PID Reading (ppm)	Sample No. and Depth	
From	To			Sample No.	Depth (Ft-BGS)
0	0.3	Asphalt and base course			
0.3	1.5	ML: Clay, gray, damp, fill	<1		
1.5	4.0				
4.0	6.0	ML: Clayey Silt, yellow tan and orange brown, dry	<1		
6.0	8.0				
8.0	10.0				
10.0	12.0	SM: Silty fine Sand, yellow tan, dry	1.9		
12.0	14.0				
14.0	16.0	ML: Fine sandy Silt, orange tan, dry	8.1		
16.0	18.0				
18.0	20.0				
		SM: Silty fine Sand, dry, fuel odor	14	66-2-15	15.0
			15		
			4.5	66-2-20	20.0
<i>Boring terminated at 20 ft. bgs.</i>					

Notes:

- 1. Ft-BGS: Feet Below Ground Surface
- 2. PID: Photo-Ionization Detector
- 3. PPM: parts per million (volume/volume)
- 4. * Indicates sample was sent to off-site laboratory for additional analysis.

BORING LOG



Project Name: NCDOT Project U2525-B
 Parcel 66
Job No. 1054-13-008

Boring Number: 66-3
Sampling Personnel: Lyndal Butler
Date Drilled: 1/30/2013
Depth to Groundwater: Not Encountered
Total Depth: 15 ft. bgs.

Drilling method: Geoprobe® Direct Push

STRATIFICATION

Depth (Feet)		Soil Description	PID Reading (ppm)	Sample No. and Depth	
From	To			Sample No.	Depth (Ft-BGS)
0	0.5	Asphalt and base course			
0.5	2.5	ML: Clayey Silt, yellow tan and orange brown, dry	<1		
2.5	3.0	ML: Silt, yellow tan, relict structure, dry			
3.0	4.5		<1		
4.5	5.0				
5.0	6.5		<1		
6.5	8.0	SM: Silty fine to medium Sand, white tan, dry	<1		
8.0	10.0		<1		
10.0	12.0		<1		
12.0	15.0		<1	66-3-15	15.0
		<i>Boring terminated at 15 ft. bgs.</i>			

Notes:

- 1. Ft-BGS: Feet Below Ground Surface
- 2. PID: Photo-Ionization Detector
- 3. PPM: parts per million (volume/volume)
- 4. * Indicates sample was sent to off-site laboratory for additional analysis.

Boring Number: 66-4
Sampling Personnel: Lyndal Butler
Date Drilled: 1/30/2013
Depth to Groundwater: Not Encountered
Total Depth: 15 ft. bgs.

Drilling method: Geoprobe® Direct Push

STRATIFICATION

Depth (Feet)		Soil Description	PID Reading (ppm)	Sample No. and Depth	
From	To			Sample No.	Depth (Ft-BGS)
0	0.5	Asphalt and base course			
0.5	2.5	ML: Clayey Silt, yellow tan and orange brown, dry	<1		
2.5	3.0	ML: Silt, yellow tan, relict structure, dry			
3.0	4.5		<1		
4.5	5.0				
5.0	6.5		<1		
6.5	8.0	SM: Silty fine to medium Sand, white tan, dry	<1		
8.0	10.0		<1		
10.0	12.0		<1		
12.0	15.0		<1	66-4-15	15
		<i>Boring terminated at 15 ft. bgs.</i>			

Notes:

- 1. Ft-BGS: Feet Below Ground Surface
- 2. PID: Photo-Ionization Detector
- 3. PPM: parts per million (volume/volume)
- 4. * Indicates sample was sent to off-site laboratory for additional analysis.

BORING LOG



Project Name: NCDOT Project U2525-B
Parcel 66
Job No. 1054-13-008

Boring Number: 66-5
Sampling Personnel: Lyndal Butler
Date Drilled: 1/31/2013
Depth to Groundwater: Not Encountered
Total Depth: 15 ft. bgs.

Drilling method: Geoprobe® Direct Push

STRATIFICATION

Depth (Feet)		Soil Description	PID Reading (ppm)	Sample No. and Depth	
From	To			Sample No.	Depth (Ft-BGS)
0	0.4	Asphalt and base course			
0.4	1.0	ML: Clayey Silt, orange brown, dry, fill	<1		
1.0	2.5	ML: Clayey Silt, yellow tan and orange brown, dry	<1		
2.5	4.0	ML: Silt, yellow tan, relict structure, dry	<1		
4.0	5.5		<1		
5.5	7.0	SM: Silty fine Sand, orange tan, dry	1.4		
7.0	8.5		<1		
8.5	10.0	SM: Silty fine to medium Sand, tan, dry,	<1		
10.0	12.0		<1		
12.0	15.0		<1	66-5-14	14.0
<i>Boring terminated at 15 ft. bgs.</i>					

Notes:

1. Ft-BGS: Feet Below Ground Surface
2. PID: Photo-Ionization Detector
3. PPM: parts per million (volume/volume)

Boring Number: 66-6
Sampling Personnel: Lyndal Butler
Date Drilled: 1/31/2013
Depth to Groundwater: Not Encountered
Total Depth: 25 ft. bgs.

Drilling method: Geoprobe® Direct Push

STRATIFICATION

Depth (Feet)		Soil Description	PID Reading (ppm)	Sample No. and Depth	
From	To			Sample No.	Depth (Ft-BGS)
0	1.0	Asphalt and base course			
1.0	4.0	ML: Clayey Silt, with rock fragments, orange brown, dry, fuel odor	64		
4.0	6.0		127		
6.0	8.0	ML: Silt, orange brown, dry, fill, fuel odor	210		
8.0	10.0	ML: Fine very sandy Silt, tan and orange, fuel odor	244		
10.0	12.5		12.6	66-6-10*	10.0
12.5	15.0	SM: Silty fine to medium Sand, dry, slight fuel odor	28.1		
15.0	18.0		5.7		
18.0	19.5				
19.5	20.0	SM: Silty fine Sand, white, dry	2.5	66-6-20*	20.0
20.0	25.0		<1		
<i>Boring terminated at 25 ft. bgs.</i>					

Notes:

1. Ft-BGS: Feet Below Ground Surface
2. PID: Photo-Ionization Detector
3. PPM: parts per million (volume/volume)
4. *Indicates sample was sent off-site laboratory for additional analysis.

BORING LOG



Project Name: NCDOT Project U2525-B
Parcel 66
Job No. 1054-13-008

Boring Number: 66-7
Sampling Personnel: Lyndal Butler
Date Drilled: 1/31/2013
Depth to Groundwater: Not Encountered
Total Depth: 19 ft. bgs.

Drilling method: Geoprobe® Direct Push

STRATIFICATION

Depth (Feet)		Soil Description	PID Reading (ppm)	Sample No. and Depth	
From	To			Sample No.	Depth (Ft-BGS)
0	1.0	Asphalt and base course			
1.0	2.0	SM: Silty fine to course Sand, green brown, dry, fill	<1		
2.0	7.0		<1		
7.0	8.0				
8.0	8.2	Asphalt debris			
8.2	10.0	ML: Fine sandy Silt, orange brown, dry, soft, poor recovery, fill	<1		
10.0	12.0		<1		
12.0	12.3	Asphalt debris			
12.3	14.0	ML: Fine sandy Silt, orange brown, dry, soft, fill			
14.0	15.0	SM: Silty fine to medium Sand, tan brown, dry; Probe	<1		
15.0	17.0	Refusal at 19 feet	<1	66-7-17	17.0
17.0	19.0		<1	66-7-19	19.0
<i>Boring terminated at 19 ft. bgs.</i>					

Notes:

1. Ft-BGS: Feet Below Ground Surface
2. PID: Photo-Ionization Detector
3. PPM: parts per million (volume/volume)
4. *Indicates sample was sent off-site laboratory for additional analysis.

Boring Number: 66-8
Sampling Personnel: Lyndal Butler
Date Drilled: 1/31/2013
Depth to Groundwater: Not Encountered
Total Depth: 20 ft. bgs.

Drilling method: Geoprobe® Direct Push

STRATIFICATION

Depth (Feet)		Soil Description	PID Reading (ppm)	Sample No. and Depth	
From	To			Sample No.	Depth (Ft-BGS)
0	0.6	Asphalt and base course			
0.6	1.0	SM: Silty fine to course Sand, green brown, dry, fill			
1.0	2.5				
2.5	5.0	ML: Clayey Silt, yellow tan and orange brown, dry	<1		
5.0	7.5	ML: Silt, yellow tan, relict structure, dry	<1		
7.5	10.0	SM: Silty fine to medium Sand, tan brown, dry	<1		
10.0	11.0				
11.0	12.5	SM: Silty fine Sand, white, dry	<1		
12.5	15.0		<1	66-8-15*	15.0
15.0	17.5		<1		
17.5	19.0	SM: Silty fine to medium Sand, tan brown, dry			
19.0	20.0	SM: Silty fine Sand, white, dry; Probe Refusal- 20 ft.	<1		
<i>Boring terminated at 20 ft. bgs.</i>					

Notes:

1. Ft-BGS: Feet Below Ground Surface
2. PID: Photo-Ionization Detector
3. PPM: parts per million (volume/volume)
4. *Indicates sample was sent off-site laboratory for additional analysis.

BORING LOG



Project Name: NCDOT Project U2525-B
Parcel 66
Job No. 1054-13-008

Boring Number: 66-9
Sampling Personnel: Lyndal Butler
Date Drilled: 1/31/2013
Depth to Groundwater: Not Encountered
Total Depth: 15 ft. bgs.

Drilling method: Geoprobe® Direct Push

STRATIFICATION

Depth (Feet)		Soil Description	PID Reading (ppm)	Sample No. and Depth	
From	To			Sample No.	Depth (Ft-BGS)
0	0.4	Asphalt and base course			
0.4	1.0	SM: Silty fine to course Sand, green brown, dry, fill			
1.0	2.0	ML: Clayey Silt, yellow tan and orange brown, dry	<1		
2.0	4.0		<1		
4.0	5.0	ML: Silt, yellow tan, relict structure, dry			
5.0	6.5		<1		
6.5	7.0	ML: Silt, brown orange, damp			
7.0	8.0		<1		
8.0	9.0				
9.0	10.0		<1		
10.0	11.5				
11.5	12.0	ML: Silt, tan and orange brown, relict structure, dry	<1		
12.0	13.0				
13.0	14.0				
14.0	15.0		<1	66-9-15	15.0
		<i>Boring terminated at 15 ft. bgs.</i>			

Notes:

- 1. Ft-BGS: Feet Below Ground Surface
- 2. PID: Photo-Ionization Detector
- 3. PPM: parts per million (volume/volume)
- 4. *Indicates sample was sent off-site laboratory for additional analysis.

Boring Number: 66-10
Sampling Personnel: Lyndal Butler
Date Drilled: 1/31/2013
Depth to Groundwater: Not Encountered
Total Depth: 15 ft. bgs.

Drilling method: Geoprobe® Direct Push

STRATIFICATION

Depth (Feet)		Soil Description	PID Reading (ppm)	Sample No. and Depth	
From	To			Sample No.	Depth (Ft-BGS)
0	0.5	Asphalt and base course			
0.5	2.0	SM: Silty fine to course sand, green brown, gravel, fill			
2.0	3.0	ML: Silty Clay, gray green, dry	<1		
3.0	4.0	ML: Medium sandy Clay, red and tan brown, dry			
4.0	5.0	SM: Silty fine Sand, orange tan, dry	<1		
5.0	7.0		<1		
7.0	9.0		<1	66-10-9	9.0
9.0	11.0		<1		
11.0	13.0		<1		
13.0	13.5	ML: Medium sandy Clay, brown orange, dry			
13.5	15.0	SM: Silty fine to course Sand, tan brown,	<1		
		<i>Boring terminated at 15 ft. bgs.</i>			

Notes:

- 1. Ft-BGS: Feet Below Ground Surface
- 2. PID: Photo-Ionization Detector
- 3. PPM: parts per million (volume/volume)
- 4. *Indicates sample was sent off-site laboratory for additional analysis.

BORING LOG



Project Name: NCDOT Project U2525-B
Parcel 66
Job No. 1054-13-008

Boring Number: 66-11
Sampling Personnel: Lyndal Butler
Date Drilled: 1/31/2013
Depth to Groundwater: Not Encountered
Total Depth: 15 ft. bgs.

Drilling method: Geoprobe® Direct Push

STRATIFICATION

Depth (Feet)		Soil Description	PID Reading (ppm)	Sample No. and Depth	
From	To			Sample No.	Depth (Ft-BGS)
0	1.0	Asphalt and base course			
1.0	1.5	ML: Silty Clay, orange tan to red brown, dry, fill			
1.5	3.0	ML: Clayey Silt, brown orange, dry	<1		
3.0	4.0				
4.0	5.0		<1		
5.0	6.0				
6.0	7.0		<1		
7.0	8.5				
8.5	9.0	ML: Silt, yellow tan and orange brown, relict structure, damp	<1		
9.0	10.0				
10.0	11.0		<1		
11.0	12.5				
12.5	13.0		<1		
13.0	15.0		<1	66-11-15	15.0
<i>Boring terminated at 15.0 ft. bgs.</i>					

Notes:

- 1. Ft-BGS: Feet Below Ground Surface
- 2. PID: Photo-Ionization Detector
- 3. PPM: parts per million (volume/volume)
- 4. *Indicates sample was sent off-site laboratory for additional analysis.

Boring Number: 66-12
Sampling Personnel: Lyndal Butler
Date Drilled: 1/31/2013
Depth to Groundwater: Not Encountered
Total Depth: 20 ft. bgs.

Drilling method: Geoprobe® Direct Push

STRATIFICATION

Depth (Feet)		Soil Description	PID Reading (ppm)	Sample No. and Depth	
From	To			Sample No.	Depth (Ft-BGS)
0	0.2	Topsoil			
0.5	2.0	SM: Silty fine to coarse Sand, green brown, dry, fill			
2.0	4.0		<1		
4.0	6.0				
6.0	8.0		<1		
8.0	9.5				
9.5	10.0	ML: Fine sandy Silt, tan red, damp			
10.0	12.0				
12.0	14.0				
14.0	15.0	SM: Silty fine Sand, white, dry	<1		
15.0	20.0		<1		
<i>Boring terminated at 20 ft. bgs.</i>					

Notes:

- 1. Ft-BGS: Feet Below Ground Surface
- 2. PID: Photo-Ionization Detector
- 3. PPM: parts per million (volume/volume)
- 4. *Indicates sample was sent off-site laboratory for additional analysis.

BORING LOG



Project Name: NCDOT Project U2525-B
Parcel 66
Job No. 1054-13-008

Boring Number: 66-13
Sampling Personnel: Lyndal Butler
Date Drilled: 2/1/2013
Depth to Groundwater: Not Encountered
Total Depth: 15 ft. bgs.

Drilling method: Geoprobe® Direct Push

STRATIFICATION

Depth (Feet)		Soil Description	PID Reading (ppm)	Sample No. and Depth	
From	To			Sample No.	Depth (Ft-BGS)
0	1.0	ML: Clayey Silt with gravel, green and red brown, fill			
1.0	3.0	ML: Clayey Silt, yellow tan and orange brown, dry	<1		
3.0	5.5		<1		
5.5	7.0	ML: Silt with clay seams, orange brown, gravel, dry	<1		
7.0	9.0		<1		
9.0	10.0		<1		
10.0	11.0	SM: Silty fine Sand, white, dry	<1		
11.0	13.5		<1		
13.5	14.5	ML: Fine sandy Clay, tan and orange, dry			
14.5	15.0	Sm: Silty fine to medium Sand, white, dry	<1	66-13-15	15.0
<i>Boring terminated at 15 ft. bgs.</i>					

Notes:

- 1. Ft-BGS: Feet Below Ground Surface
- 2. PID: Photo-Ionization Detector
- 3. PPM: parts per million (volume/volume)
- 4. *Indicates sample was sent off-site laboratory for additional analysis.

Boring Number: 66-14
Sampling Personnel: Lyndal Butler
Date Drilled: 2/1/2013
Depth to Groundwater: Not Encountered
Total Depth: 15 ft. bgs.

Drilling method: Geoprobe® Direct Push

STRATIFICATION

Depth (Feet)		Soil Description	PID Reading (ppm)	Sample No. and Depth	
From	To			Sample No.	Depth (Ft-BGS)
0	8.0	SM: Silty fine to course Sand, green brown, dry, fill	5.5	66-14-8*	8.0
8.0	10.0	ML: Clayey Silt with gravel, gray green, dry, fill	<1		
10.0	13.0		<1		
13.0	15.0	SM: Silty fine Sand, white, dry	2.2	66-14-15	15.0
<i>Boring terminated at 15 ft. bgs.</i>					

Notes:

- 1. Ft-BGS: Feet Below Ground Surface
- 2. PID: Photo-Ionization Detector
- 3. PPM: parts per million (volume/volume)
- 4. *Indicates sample was sent off-site laboratory for additional analysis.

BORING LOG



Project Name: NCDOT Project U2525-B
Parcel 66
Job No. 1054-13-008

Boring Number: 66-15
Sampling Personnel: Lyndal Butler
Date Drilled: 2/1/2013
Depth to Groundwater: Not Encountered
Total Depth: 5 ft. bgs.

Drilling method: Geoprobe® Direct Push

STRATIFICATION

Depth (Feet)		Soil Description	PID Reading (ppm)	Sample No. and Depth	
From	To			Sample No.	Depth (Ft-BGS)
0	5.0	SM: Silty fine to course Sand, green brown, dry, fill	-		
		<i>Boring terminated at 5 ft. bgs.</i>			

Notes:

- 1. Ft-BGS: Feet Below Ground Surface
- 2. PID: Photo-Ionization Detector
- 3. PPM: parts per million (volume/volume)
- 4. *Indicates sample was sent off-site laboratory for additional analysis.

Boring Number: 66-16
Sampling Personnel: Lyndal Butler
Date Drilled: 2/1/2013
Depth to Groundwater: Not Encountered
Total Depth: 5 ft. bgs.

Drilling method: Geoprobe® Direct Push

STRATIFICATION

Depth (Feet)		Soil Description	PID Reading (ppm)	Sample No. and Depth	
From	To			Sample No.	Depth (Ft-BGS)
0	5.0	SM: Silty fine to course Sand, green brown, dry, fill	-		
		<i>Boring terminated at 5 ft. bgs.</i>			

Notes:

- 1. Ft-BGS: Feet Below Ground Surface
- 2. PID: Photo-Ionization Detector
- 3. PPM: parts per million (volume/volume)
- 4. *Indicates sample was sent off-site laboratory for additional analysis.

BORING LOG



Project Name: NCDOT Project U2525-B
Parcel 66
Job No. 1054-13-008

Boring Number: 66-17
Sampling Personnel: Lyndal Butler
Date Drilled: 2/1/2013
Depth to Groundwater: Not Encountered
Total Depth: 15 ft. bgs.

Drilling method: Geoprobe® Direct Push

STRATIFICATION

Depth (Feet)		Soil Description	PID Reading (ppm)	Sample No. and Depth	
From	To			Sample No.	Depth (Ft-BGS)
0	5.0	SM: Silty fine to course Sand, green brown, dry, fill	<1		
5.0	10.0		<1		
10.0	14.0				
14.0	15.0		SM: Silty fine Sand, white, dry	1.0	66-17-15
		<i>Boring terminated at 15.0 ft. bgs.</i>			

Notes:

- 1. Ft-BGS: Feet Below Ground Surface
- 2. PID: Photo-Ionization Detector
- 3. PPM: parts per million (volume/volume)
- 4. *Indicates sample was sent off-site laboratory for additional analysis.

Boring Number: 137-18
Sampling Personnel: Lyndal Butler
Date Drilled: 2/1/2013
Depth to Groundwater: Not Encountered
Total Depth: 5 ft. bgs.

Drilling method: Geoprobe® Direct Push

STRATIFICATION

Depth (Feet)		Soil Description	PID Reading (ppm)	Sample No. and Depth	
From	To			Sample No.	Depth (Ft-BGS)
0	5.0	SM: Silty fine to course Sand, green brown, dry, fill	-		
		<i>Boring terminated at 5 ft. bgs.</i>			

Notes:

- 1. Ft-BGS: Feet Below Ground Surface
- 2. PID: Photo-Ionization Detector
- 3. PPM: parts per million (volume/volume)
- 4. *Indicates sample was sent off-site laboratory for additional analysis.

BORING LOG



Project Name: NCDOT Project U2525-B
Parcel 66
Job No. 1054-13-008

Boring Number: 66-19
Sampling Personnel: Lyndal Butler
Date Drilled: 2/1/2013
Depth to Groundwater: Not Encountered
Total Depth: 15 ft. bgs.

Drilling method: Geoprobe® Direct Push

STRATIFICATION

Depth (Feet)		Soil Description	PID Reading (ppm)	Sample No. and Depth	
From	To			Sample No.	Depth (Ft-BGS)
0	1.0	Asphalt and base course			
1.0	3.0	ML: Clayey Silt, yellow tan and orange brown, dry	<1		
3.0	5.0		<1		
5.0	7.0		<1		
7.0	8.0				
8.0	9.0	ML: Silt, yellow tan, dry	38.1	66-19-9*	9.0
9.0	11.0		3.0	66-19-11	11.0
11.0	12.0				
12.0	13.0	ML: Silt, gray and red brown, relict structure, dry	7.0	66-19-13	13.0
13.0	15.0		4.0	66-19-15	15.0
<i>Boring terminated at 15 ft. bgs.</i>					

Notes:

- 1. Ft-BGS: Feet Below Ground Surface
- 2. PID: Photo-Ionization Detector
- 3. PPM: parts per million (volume/volume)
- 4. *Indicates sample was sent off-site laboratory for additional analysis.

Boring Number: 66-20
Sampling Personnel: Lyndal Butler
Date Drilled: 2/2/2013
Depth to Groundwater: Not Encountered
Total Depth: 15 ft. bgs.

Drilling method: Geoprobe® Direct Push

STRATIFICATION

Depth (Feet)		Soil Description	PID Reading (ppm)	Sample No. and Depth	
From	To			Sample No.	Depth (Ft-BGS)
0	1.0	Asphalt and base course			
1.0	2.5	ML: Silty Clay, tan green, dry, fill (poor recovery)			
2.5	5.0		<1		
5.0	7.0		<1		
7.0	8.0		<1		
8.0	11.0	ML: Silt, orange brown, with oxidation staining, dry	1.5	66-20-11	11.0
11.0	13.0		<1	66-20-13*	13.0
13.0	15.0		<1		
<i>Boring terminated at 15 ft. bgs.</i>					

Notes:

- 1. Ft-BGS: Feet Below Ground Surface
- 2. PID: Photo-Ionization Detector
- 3. PPM: parts per million (volume/volume)
- 4. *Indicates sample was sent off-site laboratory for additional analysis.

BORING LOG



Project Name: NCDOT Project U2525-B
Parcel 66
Job No. 1054-13-008

Boring Number: 66-21
Sampling Personnel: Lyndal Butler
Date Drilled: 2/2/2013
Depth to Groundwater: Not Encountered
Total Depth: 15 ft. bgs.

Drilling method: Geoprobe® Direct Push

STRATIFICATION

Depth (Feet)		Soil Description	PID Reading (ppm)	Sample No. and Depth	
From	To			Sample No.	Depth (Ft-BGS)
0	1.5	Asphalt and base course			
1.5	3.0	ML: Silty Clay with gravel and asphalt debris, dry, fill	1.0		
3.0	5.0		1.0		
5.0	7.0	ML: Clayey Silt with quartz seams, orange brown, dry	<1		
7.0	9.0		<1		
9.0	10.0		<1		
10.0	11.0	ML: Fine slightly sandy Silt, tan orange, damp	<1		
11.0	13.0		<1		
13.0	15.0		1.0	66-21-15	15.0
		<i>Boring terminated at 15 ft. bgs.</i>			

Notes:

- 1. Ft-BGS: Feet Below Ground Surface
- 2. PID: Photo-Ionization Detector
- 3. PPM: parts per million (volume/volume)
- 4. *Indicates sample was sent off-site laboratory for additional analysis.

Boring Number: 66-22
Sampling Personnel: Lyndal Butler
Date Drilled: 2/2/2013
Depth to Groundwater: Not Encountered
Total Depth: 15 ft. bgs.

Drilling method: Geoprobe® Direct Push

STRATIFICATION

Depth (Feet)		Soil Description	PID Reading (ppm)	Sample No. and Depth	
From	To			Sample No.	Depth (Ft-BGS)
0	1.5	SM: Silty fine to coarse Sand, green brown, dry, fill			
1.5	3.0	ML: Silty Clay, oorange brown, dry	<1		
3.0	5.0		<1		
5.0	7.0	ML: Clayey Silt, yellow tan and orange brown, dry	<1	66-22-7	7.0
7.0	8.0		<1		
8.0	9.0		<1		
9.0	11.0	ML: Fine very sandy Silt with gray clay seams, dry	<1		
11.0	12.0		<1		
12.0	13.0	SM: Silty fine Sand, tan orange, dry	<1		
13.0	15.0		<1		
		<i>Boring terminated at 15 ft. bgs.</i>			

Notes:

- 1. Ft-BGS: Feet Below Ground Surface
- 2. PID: Photo-Ionization Detector
- 3. PPM: parts per million (volume/volume)
- 4. *Indicates sample was sent off-site laboratory for additional analysis.

BORING LOG



Project Name: NCDOT Project U2525-B
Parcel 66
Job No. 1054-13-008

Boring Number: 66-23
Sampling Personnel: Lyndal Butler
Date Drilled: 1/1/2013
Depth to Groundwater: Not Encountered
Total Depth: 15 ft. bgs.

Drilling method: Geoprobe® Direct Push

STRATIFICATION

Depth (Feet)		Soil Description	PID Reading (ppm)	Sample No. and Depth	
From	To			Sample No.	Depth (Ft-BGS)
0	0.2	Asphalt pavement			
0.2	0.6	ML: Clayey Silt with gravel, fill			
0.6	3.0	ML: Clary Silt, orange brown, dry, fuel odor	1.2		
3.0	5.0		2.0	66-23-5	5.0
5.0	6.0				
6.0	7.0				
7.0	9.0	ML: Silt, orange brown, relict texture, dry, fuel odor	1.0		
9.0	11.0		1.6		
11.0	12.0		1.2		
12.0	13.0				
13.0	15.0	ML: Silt, orange and purple, with gray clay seams, dry, slight fuel odor	1.2		
			2.2	66-23-15	15.0
<i>Boring terminated at 15 ft. bgs.</i>					

Notes:

- 1. Ft-BGS: Feet Below Ground Surface
- 2. PID: Photo-Ionization Detector
- 3. PPM: parts per million (volume/volume)
- 4. *Indicates sample was sent off-site laboratory for additional analysis.

Boring Number: 66-24
Sampling Personnel: Lyndal Butler
Date Drilled: 2/2/2013
Depth to Groundwater: Not Encountered
Total Depth: 15 ft. bgs.

Drilling method: Geoprobe® Direct Push

STRATIFICATION

Depth (Feet)		Soil Description	PID Reading (ppm)	Sample No. and Depth	
From	To			Sample No.	Depth (Ft-BGS)
0	6.0	SM: Silty fine to coarse Sand, green brown, dry, fill	<1		
6.0	11.0	ML: Silt, orange brown, dry	<1		
11.0	12.0				
12.0	12.5				
12.5	13.0		SM: Very silty fine Sand, orange tan, dry	<1	66-24-13
13.0	14.75	SM: Silty fine to medium Sand, white, dry			
14.75	15.0		<1		
<i>Boring terminated at 15 ft. bgs.</i>					

Notes:

- 1. Ft-BGS: Feet Below Ground Surface
- 2. PID: Photo-Ionization Detector
- 3. PPM: parts per million (volume/volume)
- 4. *Indicates sample was sent off-site laboratory for additional analysis.

BORING LOG



Project Name: NCDOT Project U2525-B
Parcel 66
Job No. 1054-13-008

Boring Number: 66-25
Sampling Personnel: Lyndal Butler
Date Drilled: 2/2/2013
Depth to Groundwater: Not Encountered
Total Depth: 15 ft. bgs.

Drilling method: Geoprobe® Direct Push

STRATIFICATION

Depth (Feet)		Soil Description	PID Reading (ppm)	Sample No. and Depth		
From	To			Sample No.	Depth (Ft-BGS)	
0	1.5	Crushed stone and asphalt debris				
1.5	5.0	ML: Silt, orange brown, with gray clay seams, damp, discolored from 12 to 15 feet, fuel odor	<1			
5.0	8.5					
8.5	10.0					
10.0	12.5			300	66-25-12.5*	12.5
12.5	15.0			2.0		
		<i>Boring terminated at 15 ft. bgs.</i>				

Notes:

- 1. Ft-BGS: Feet Below Ground Surface
- 2. PID: Photo-Ionization Detector
- 3. PPM: parts per million (volume/volume)
- 4. *Indicates sample was sent off-site laboratory for additional analysis.

Boring Number: 66-26
Sampling Personnel: Lyndal Butler
Date Drilled: 2/2/2013
Depth to Groundwater: Not Encountered
Total Depth: 11 ft. bgs.

Drilling method: Geoprobe® Direct Push

STRATIFICATION

Depth (Feet)		Soil Description	PID Reading (ppm)	Sample No. and Depth		
From	To			Sample No.	Depth (Ft-BGS)	
0	1.0	ML: Clay Silt with gravel, fill				
1.0	2.0	SM: Clayey Sand, brown green, with rock fragments, dry				
2.0	3.0					
3.0	4.0					
4.0	5.0			<1		
5.0	6.0					
6.0	7.0					
7.0	8.0					
8.0	9.0					
9.0	10.0		<1			
10.0	11.0	ML: Silt, black (discolored), fuel odor (oil saturated)	30	66-26-11*	11.0	
		<i>Probe Refusal at 11 ft.bgs</i>				

Notes:

- 1. Ft-BGS: Feet Below Ground Surface
- 2. PID: Photo-Ionization Detector
- 3. PPM: parts per million (volume/volume)
- 4. *Indicates sample was sent off-site laboratory for additional analysis.

BORING LOG



Project Name: NCDOT Project U2525-B
Parcel 66
Job No. 1054-13-008

Boring Number: 66-27
Sampling Personnel: Lyndal Butler
Date Drilled: 2/2/2013
Depth to Groundwater: Not Encountered
Total Depth: 15 ft. bgs.

Drilling method: Geoprobe® Direct Push

STRATIFICATION

Depth (Feet)		Soil Description	PID Reading (ppm)	Sample No. and Depth	
From	To			Sample No.	Depth (Ft-BGS)
0	4.0	SM: Silty fine to course Sand, green brown, dry, fill			
4.0	8.0	ML: Clayey Silt, red brown, with gravel, sandrock and asphalt debris			
8.0	12.0				
12.0	13.0	ML: Silt, orange gray, relict structure, damp, slight fuel odor	<1		
13.0	15.0		<1	66-27-15	15.0
		<i>Boring terminated at 15 ft. bgs.</i>			

Notes:

- 1. Ft-BGS: Feet Below Ground Surface
- 2. PID: Photo-Ionization Detector
- 3. PPM: parts per million (volume/volume)
- 4. *Indicates sample was sent off-site laboratory for additional analysis.

Boring Number: 66-28
Sampling Personnel: Lyndal Butler
Date Drilled: 2/2/2013
Depth to Groundwater: Not Encountered
Total Depth: 15 ft. bgs.

Drilling method: Geoprobe® Direct Push

STRATIFICATION

Depth (Feet)		Soil Description	PID Reading (ppm)	Sample No. and Depth	
From	To			Sample No.	Depth (Ft-BGS)
0	5.0	SM: Silty fine to course Sand, green brown, dry, fill	<1		
5.0	10.0		<1		
10.0	15.0		<1	66-28-15	15.0
		<i>Boring terminated at 15 ft. bgs.</i>			

Notes:

- 1. Ft-BGS: Feet Below Ground Surface
- 2. PID: Photo-Ionization Detector
- 3. PPM: parts per million (volume/volume)
- 4. *Indicates sample was sent off-site laboratory for additional analysis.

BORING LOG



Project Name: NCDOT Project U2525-B
Parcel 66
Job No. 1054-13-008

Boring Number: 66-29
Sampling Personnel: Lyndal Butler
Date Drilled: 2/2/2013
Depth to Groundwater: Not Encountered
Total Depth: 15 ft. bgs.

Drilling method: Geoprobe® Direct Push

STRATIFICATION

Depth (Feet)		Soil Description	PID Reading (ppm)	Sample No. and Depth	
From	To			Sample No.	Depth (Ft-BGS)
0	0.8	Asphalt pavement			
0.8	2.0	ML: Clayey Silt, yellow tan and orange brown, dry			
2.0	4.0				
4.0	5.0		<1		
5.0	6.0				
6.0	8.0				
8.0	10.0	ML: Clayey Silt, orange brown, dry	<1		
10.0	13.0	SM: Silty fine Sand, white to tan, dry			
13.0	15.0		<1	66-29-15	15.0
		<i>Boring terminated at 15 ft. bgs.</i>			

Notes:

- 1. Ft-BGS: Feet Below Ground Surface
- 2. PID: Photo-Ionization Detector
- 3. PPM: parts per million (volume/volume)
- 4. *Indicates sample was sent off-site laboratory for additional analysis.

Boring Number: 66-30
Sampling Personnel: Lyndal Butler
Date Drilled: 2/2/2013
Depth to Groundwater: Not Encountered
Total Depth: 15 ft. bgs.

Drilling method: Geoprobe® Direct Push

STRATIFICATION

Depth (Feet)		Soil Description	PID Reading (ppm)	Sample No. and Depth	
From	To			Sample No.	Depth (Ft-BGS)
0	0.5	Asphalt pavement			
0.5	2.5	SM: Silty fine Sand, tan brown, dry, fill	1.0		
2.5	5.0	ML: Clayey Silt, yellow tan and orange brown, dry	<1		
5.0	7.5	ML: Clayey Silt, red brown, dry	1.0		
7.5	9.0	SM: Silty fine Sand, tan orange, dry			
9.0	10.0		<1		
10.0	12.5	ML: Silt, maroon, relict structure and oxidation staining, dry	1.5		
12.5	15.0		1.5		
		<i>Boring terminated at 15 ft. bgs.</i>			

Notes:

- 1. Ft-BGS: Feet Below Ground Surface
- 2. PID: Photo-Ionization Detector
- 3. PPM: parts per million (volume/volume)
- 4. *Indicates sample was sent off-site laboratory for additional analysis.

APPENDIX III

Laboratory Analytical Report and Chain of Custody Form



KB LABS, INC.
6821 SW Archer Road
Gainesville, Florida 32608
Telephone (352) 367-0073
Fax (352) 378-6491
Email: info@kbmobilelabs.com

February 14, 2013

Michael Pfeifer
S&ME
3201 Spring Forest Road
Raleigh, NC 27616

**RE: NCDOT
KB Labs Project # 13-7**

Dear Mr. Pfeifer:

Enclosed is the final report of the on-site analysis performed by KB Labs, Inc. at the above referenced site. Samples were collected and analyzed onsite during January 29-Feb 1. Included are a brief project narrative, data report narrative, final analytical results, and sample chain-of-custody form.

If you have any questions, please do not hesitate to call me or Kelly Bergdoll, President of KB Labs, at (352) 367-0073.

Sincerely,

KB Labs, Inc.

Todd Romero
Director of Operations

PROJECT NARRATIVE

Project Scope

Between January 29 and February 1, 2013, a total of 89 soil samples were analyzed for S&ME in Greensboro. The samples were analyzed for field TPH.

Analytical Procedure

All samples were analyzed using Ultra -violet Fluorescence Spectrometry. For soils, ten grams of soil was extracted in 20 mL of methanol. Extracts were then analyzed on a UV fluorometer. Fluorescence was compared against a series of prepared calibration standards to produce the results. For this project a QED analyzer was used that provides a fluorescence fingerprint image for each sample and uses a spectral library to help identify the dominant hydrocarbon type where possible.

Analytical Results

Laboratory results were provided to the client on an as-completed basis. Final results of the on-site analyses are provided in this report. The data produced and reported in the field has been reviewed and approved for this final report by the Director of Operations for KB Labs and was reviewed by QROS.

Method Blanks: Daily analysis of methanol reagent samples was performed in order to monitor the cleanliness of the analytical system before and during each analytical run.
Continuing Calibration: Following initial standardization with a five point PAH curve, standards were analyzed periodically to determine the stability of the calibration before, during, and after each analytical run.

Data were reported on an as received (wet weight) basis.



Hydrocarbon Analysis Results

Client: S&ME
Address: US-29 Greensboro, NC

Samples taken 1/28/13, 1/29/13
Samples extracted 1/29/13
Samples analysed 1/29/13

Contact: Lyndal Butler

Operator Chris Horrell

Project: NCDOT U2525B

Matrix	Sample ID	Dilution used	BTEX (C6 - C9)	GRO (C5 - C10)	DRO (C10 - C35)	TPH (C5 - C35)	Total Aromatics (C10-C35)	16 EPA PAHs	BaP	Ratios			HC Fingerprint Match
										% light	% mid	% heavy	
s	110-1-2	31.4	<1.6	<1.6	<1.6	<1.6	< 1.57	< 0.16	< 0.078	9.9	24.7	65.4	PAH
s	110-1-4	26.0	<1.3	<1.3	<1.3	<1.3	< 1.3	< 0.13	< 0.065	11.2	24.7	64.2	PAH
s	110-1-6	26.0	<1.3	<1.3	<1.3	<1.3	< 1.3	< 0.13	< 0.065	11.9	22.8	65.3	PAH
s	110-1-8	24.8	<1.2	<1.2	<1.2	<1.2	< 1.24	< 0.12	< 0.062	11.6	26.4	62	V.Deg Fuel (est) 18.5%
s	110-1-10	25.7	<1.3	<1.3	<1.3	<1.3	< 1.29	< 0.13	< 0.064	0	0	100	ID not possible
s	110-2-2	25.5	<1.3	<1.3	<1.3	<1.3	< 1.27	< 0.13	< 0.064	0	5.2	94.8	ID not possible
s	110-2-4	25.5	<1.3	<1.3	<1.3	<1.3	< 1.27	< 0.13	< 0.064	0	10.3	89.7	ID not possible
s	110-2-6	25.5	<1.3	<1.3	<1.3	<1.3	< 1.27	< 0.13	< 0.064	11.6	19.1	69.3	V.Deg Fuel (est) 12.3%
s	110-2-8	24.5	<1.2	<1.2	<1.2	<1.2	< 1.23	< 0.12	< 0.061	12	21.3	66.6	ID not possible
s	116-14-10	26.0	<1.3	<1.3	<1.3	<1.3	< 1.3	< 0.13	< 0.065	6.1	55	38.9	V.Deg.PHC 33.2%

Initial Calibrator QC check

Low Range Calibrator Final check

High Range Calibrator Final check

Results generated by a QED HC-1 analyser

Fingerprints are tentative identifications based on operator selected library matches

Concentration values in mg/kg for soil samples and mg/L for water samples.

Fingerprint match abbreviations

Est = Specific calibrator not used, result estimated (PFM)= Poor library fingerprint match

Soil values are not corrected for moisture or stone content

(SBS)= site specific background subtracted (LBS)= Library background subtracted

%=Overall Fingerprint match confidence



Hydrocarbon Analysis Results

Client: S&ME
Address: US-29 Greensboro, NC

Samples taken 1/28/13, 1/29/13
Samples extracted 1/29/13
Samples analysed 1/29/13

Contact: Lyndal Butler

Operator Chris Horrell

Project: NCDOT U2525B

Matrix	Sample ID	Dilution used	BTEX (C6 - C9)	GRO (C5 - C10)	DRO (C10 - C35)	TPH (C5 - C35)	Total Aromatics (C10-C35)	16 EPA PAHs	BaP	Ratios			HC Fingerprint Match
										% light	% mid	% heavy	
s	110-2-10	24.5	<1.2	<1.2	<1.2	<1.2	< 1.23	< 0.12	< 0.061	0	0	100	ID not possible
s	116-16-10	24.5	<1.2	25.4	21.5	46.9	9.79	< 0.12	< 0.061	98.9	1	0.1	Deg Kerosene (est) + Deg.Petrol (est) 47.4%
s	116-16-10 dup	24.5	10.8	30	28.3	58.3	11.83	0.19	< 0.061	99	0.7	0.3	Deg Kerosene (est) + Deg.Petrol 67.7%
s	110-3-10	26.0	<1.3	<1.3	12.9	12.9	8.02	< 0.13	< 0.065	57.9	34.5	7.5	Degraded Fuel (est) 87.3%
s	116-17-10	25.5	<1.3	<1.3	<1.3	<1.3	< 1.27	< 0.13	< 0.064	0	0	100	ID not possible
s	110-4-10	26.0	<1.3	<1.3	<1.3	<1.3	< 1.3	< 0.13	< 0.065	0	0	100	ID not possible
s	110-5-10	25.2	<1.3	<1.3	<1.3	<1.3	< 1.26	< 0.13	< 0.063	0	0	100	ID not possible
s	116-18-4	26.0	<1.3	<1.3	<1.3	<1.3	< 1.3	< 0.13	< 0.065	0	0	100	ID not possible
s	155-1-6	24.5	<1.2	<1.2	<1.2	<1.2	< 1.23	< 0.12	< 0.061	0	0	100	ID not possible
s	155-3-8	24.5	<1.2	<1.2	2.4	2.4	< 1.23	< 0.12	< 0.061	5.8	72.4	21.8	V.Deg Diesel + Deg.Fuel (est) 48.8%

Initial Calibrator QC check

Low Range Calibrator Final check

High Range Calibrator Final check

Results generated by a QED HC-1 analyser

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Concentration values in mg/kg for soil samples and mg/L for water samples.

Fingerprint match abbreviations

Est = Specific calibrator not used, result estimated (PFM)= Poor library fingerprint match

Soil values are not corrected for moisture or stone content

(SBS)= site specific background subtracted (LBS)= Library background subtracted

%=Overall Fingerprint match confidence



Hydrocarbon Analysis Results

Client: S&ME
Address: Greensboro, NC

Samples taken 1/28, 1/29, 1/30 2013
Samples extracted 1/30/13
Samples analysed 1/30/13

Contact: Lyndal Butler

Operator CAH

Project: NCDOT U2525B

Matrix	Sample ID	Dilution used	BTEX (C6 - C9)	GRO (C5 - C10)	DRO (C10 - C35)	TPH (C5 - C35)	Total Aromatics (C10-C35)	16 EPA PAHs	BaP	Ratios			HC Fingerprint Match
										% light	% mid	% heavy	
s	116-16-8	25.7	<1.3	<1.3	<1.3	<1.3	< 1.29	< 0.13	< 0.064	0	0	100	ID not possible
s	116-16-12	25.5	<1.3	8.8	13.7	22.5	5.99	< 0.13	< 0.064	96.6	2.3	1.1	Deg Kerosene (est) + Deg.Petrol (est) 52%
s	116-16-14	25.0	<1.3	<1.3	<1.3	<1.3	< 1.25	< 0.13	< 0.063	0	3.8	96.2	Background Organics
s	116-18-14	26.0	<1.3	<1.3	<1.3	<1.3	< 1.3	< 0.13	< 0.065	76.8	4.4	18.8	Deg Petrol (est) 1.3%
s	155-4-10	25.7	<1.3	4.2	30.6	34.8	14.29	0.23	< 0.064	91.5	7.3	1.2	Deg Kerosene (est) 58.6%
s	155-4-12	25.7	<1.3	<1.3	<1.3	<1.3	< 1.29	< 0.13	< 0.064	86.9	2.3	10.8	Deg Kerosene (est) 21.4%
s	155-5-10	26.0	<1.3	<1.3	<1.3	<1.3	< 1.3	< 0.13	< 0.065	0	0	100	Background Organics
s	155-6-4	25.7	<1.3	<1.3	<1.3	<1.3	< 1.29	< 0.13	< 0.064	9.9	2.4	87.6	Deg Diesel 44.6%
s	155-7-6	26.0	<1.3	<1.3	<1.3	<1.3	< 1.3	< 0.13	< 0.065	0	0	100	Background Organics
s	155-8-4	25.0	<1.3	<1.3	<1.3	<1.3	< 1.25	< 0.13	< 0.063	83.8	0	16.2	Background Organics

Initial Calibrator QC check

Low Range Calibrator Final check

High Range Calibrator Final check

Results generated by a QED HC-1 analyser

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Concentration values in mg/kg for soil samples and mg/L for water samples.

Fingerprint match abbreviations

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Soil values are not corrected for moisture or stone content

(SBS)= site specific background subtracted (LBS)= Library background subtracted

%=Overall Fingerprint match confidence



Hydrocarbon Analysis Results

Client: S&ME
Address: Greensboro, NC

Samples taken 1/28, 1/29, 1/30 2013
Samples extracted 1/30/13
Samples analysed 1/30/13

Contact: Lyndal Butler

Operator CAH

Project: NCDOT U2525B

Matrix	Sample ID	Dilution used	BTEX (C6 - C9)	GRO (C5 - C10)	DRO (C10 - C35)	TPH (C5 - C35)	Total Aromatics (C10-C35)	16 EPA PAHs	BaP	Ratios			HC Fingerprint Match
										% light	% mid	% heavy	
s	116-2-2	25.5	<1.3	<1.3	<1.3	<1.3	< 1.27	< 0.13	< 0.064	0	0	100	ID not possible
s	116-1-6	26.0	<1.3	<1.3	<1.3	<1.3	< 1.3	< 0.13	< 0.065	0	0	100	ID not possible
s	116-3-2	25.7	<1.3	<1.3	<1.3	<1.3	< 1.29	< 0.13	< 0.064	0	0	100	ID not possible
s	116-4-2	26.0	<1.3	<1.3	<1.3	<1.3	< 1.3	< 0.13	< 0.065	0	0	100	ID not possible
s	116-5-2	24.8	<1.2	<1.2	<1.2	<1.2	< 1.24	< 0.12	< 0.062	0	0	100	ID not possible
s	116-6-2	25.5	<1.3	<1.3	<1.3	<1.3	< 1.27	< 0.13	< 0.064	0	0	100	ID not possible
s	116-7-2	26.0	<1.3	<1.3	<1.3	<1.3	< 1.3	< 0.13	< 0.065	0	0	100	ID not possible
s	116-8-9	25.7	<1.3	<1.3	<1.3	<1.3	< 1.29	< 0.13	< 0.064	41.2	5.7	53.1	Deg Petrol (est) 1.3%
s	116-9-10	25.7	<1.3	<1.3	<1.3	<1.3	< 1.29	< 0.13	< 0.064	80.9	17.3	1.8	Deg Diesel 34.3%
s	116-10-8	25.7	<1.3	<1.3	12.4	12.4	8.22	0.21	< 0.064	55.3	40.8	3.9	+ Deg.Fuel 19.1%

Initial Calibrator QC check

Low Range Calibrator Final check

High Range Calibrator Final check

Results generated by a QED HC-1 analyser

Fingerprints are tentative identifications based on operator selected library matches

Concentration values in mg/kg for soil samples and mg/L for water samples.

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Est = Specific calibrator not used, result estimated (PFM)= Poor library fingerprint match

Soil values are not corrected for moisture or stone content

(SBS)= site specific background subtracted (LBS)= Library background subtracted

%=Overall Fingerprint match confidence



Hydrocarbon Analysis Results

Client: S&ME
Address: Greensboro, NC

Samples taken 1/28, 1/29, 1/30 2013
Samples extracted 1/30/13
Samples analysed 1/30/13

Contact: Lyndal Butler

Operator CAH

Project: NCDOT U2525B

Matrix	Sample ID	Dilution used	BTEX (C6 - C9)	GRO (C5 - C10)	DRO (C10 - C35)	TPH (C5 - C35)	Total Aromatics (C10-C35)	16 EPA PAHs	BaP	Ratios			HC Fingerprint Match
										% light	% mid	% heavy	
s	116-11-4	25.7	<1.3	<1.3	<1.3	<1.3	< 1.29	< 0.13	< 0.064	0	0	100	ID not possible
s	116-12-4	25.7	<1.3	<1.3	<1.3	<1.3	< 1.29	< 0.13	< 0.064	0	0	100	ID not possible
s	66-2-15	25.7	<1.3	<1.3	17	17	9.76	0.19	< 0.064	82.1	12.8	5.1	Deg Diesel 64.9%
s	66-2-20	26.0	<1.3	<1.3	10.6	10.6	6.57	< 0.13	< 0.065	90.3	7.9	1.9	Deg Diesel 47.3%
s	116-13-4	25.2	<1.3	<1.3	<1.3	<1.3	< 1.26	< 0.13	< 0.063	0	0	100	ID not possible
s	137-1-10	25.7	<1.3	<1.3	<1.3	<1.3	< 1.29	< 0.13	< 0.064	0	0	100	ID not possible
s	137-2-10	26.0	<1.3	<1.3	<1.3	<1.3	< 1.3	< 0.13	< 0.065	0	0	100	ID not possible
s	137-3-10	25.2	<1.3	<1.3	<1.3	<1.3	< 1.26	< 0.13	< 0.063	0	0	100	ID not possible
s	137-4-10	25.5	<1.3	<1.3	<1.3	<1.3	< 1.27	< 0.13	< 0.064	0	0	100	Background Organics
s	137-5-6	25.5	<1.3	<1.3	<1.3	<1.3	< 1.27	< 0.13	< 0.064	0	0	100	ID not possible

Initial Calibrator QC check

Low Range Calibrator Final check

High Range Calibrator Final check

Results generated by a QED HC-1 analyser

Fingerprints are tentative identifications based on operator selected library matches

Concentration values in mg/kg for soil samples and mg/L for water samples.

Fingerprint match abbreviations

Est = Specific calibrator not used, result estimated (PFM)= Poor library fingerprint match

Soil values are not corrected for moisture or stone content

(SBS)= site specific background subtracted (LBS)= Library background subtracted

%=Overall Fingerprint match confidence



Hydrocarbon Analysis Results

Client: S&ME
Address: Greensboro NC

Samples taken 1.30, 1.31
Samples extracted 1.31.13
Samples analysed 1/31/13

Contact: Lyndal Butler

Operator Chris Horrell

Project: NCDOT U2525B

Matrix	Sample ID	Dilution used	BTEX (C6 - C9)	GRO (C5 - C10)	DRO (C10 - C35)	TPH (C5 - C35)	Total Aromatics (C10-C35)	16 EPA PAHs	BaP	Ratios			HC Fingerprint Match
										% light	% mid	% heavy	
s	137-9-15	26.0	<1.3	<1.3	<1.3	<1.3	< 1.3	< 0.13	< 0.065	95.5	0	4.5	Deg.Fuel 69.1%
s	137-10-15	25.5	<1.3	<1.3	<1.3	<1.3	< 1.27	< 0.13	< 0.064	94.5	1.6	3.9	Deg.Fuel 62.6%
s	137-8-15	25.7	<1.3	<1.3	<1.3	<1.3	< 1.29	< 0.13	< 0.064	81.8	4.9	13.3	Background Organics
s	137-6-10	26.0	<1.3	<1.3	<1.3	<1.3	< 1.3	< 0.13	< 0.065	0	0	100	Deg.Fuel Residue 18.9%
s	137-7-2	25.5	<1.3	<1.3	2.1	2.1	< 1.27	< 0.13	< 0.064	84.4	14.3	1.3	Deg Petrol (est) 48.2%
s	137-11-15	26.0	<1.3	<1.3	<1.3	<1.3	< 1.3	< 0.13	< 0.065	0	0	100	Deg.Fuel Residue 19.7%
s	66-6-10	1570.3	<39	2432	31283	33715	16658	198	<2	87.8	10.5	1.7	Deg.Fuel
s	66-6-20	1586.0	<40	<40	<40	<40	< 79	<8	<2	0	0	100	Deg.Fuel Residue 9.7%

Initial Calibrator QC check OK

Low Range Calibrator Final check
 High Range Calibrator Final check

Results generated by a QED HC-1 analyser

Fingerprints provide a tentative hydrocarbon identification based on operator selected library matches

Concentration values in mg/kg for soil samples and mg/L for water samples.

Fingerprint match abbreviations

Est = Specific calibrator not used, result estimated (PFM)= Poor library fingerprint match

Soil values are not corrected for moisture or stone content

(SBS)= site specific background subtracted (LBS)= Library background subtracted

% = match confidence



Hydrocarbon Analysis Results

Client: S&ME
Address: Greensboro, NC

Samples taken
Samples extracted
Samples analysed

Contact: Lyndal Butler

Operator

CAH

Project: NCDOT U2525B

Matrix	Sample ID	Dilution used	BTEX (C6 - C9)	GRO (C5 - C10)	DRO (C10 - C35)	TPH (C5 - C35)	Total Aromatics (C10-C35)	16 EPA PAHs	BaP	Ratios			HC Fingerprint Match
										% light	% mid	% heavy	
s	137-12-15	25.7	<1.3	<1.3	<1.3	<1.3	< 1.29	< 0.13	< 0.064	0	0	100	Match not possible
s	137-13-2	26.0	<1.3	<1.3	<1.3	<1.3	< 1.3	< 0.13	< 0.065	97.4	1.1	1.6	Deg Diesel

Initial Calibrator QC check	OK	Low Range Calibrator Final check	OK	0.07
		High Range Calibrator Final check	OK	1.61

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

Fingerprints provide a tentative hydrocarbon identification based on operator selected library matches
 Fingerprint match abbreviations
 (SBS)= site specific background subtracted (LBS)= Library background subtracted

Est = Specific calibrator not used, result estimated (PFM)= Poor library fingerprint match
 % = match confidence



Hydrocarbon Analysis Results

Client: S&ME
Address: Greensboro, NC

Samples taken Thursday, January 31, 2013
Samples extracted Thursday, January 31, 2013
Samples analysed Thursday, January 31, 2013

Contact: Lyndal Butler

Operator CAH

Project: NCDOT U2525B

Matrix	Sample ID	Dilution used	BTEX (C6 - C9)	GRO (C5 - C10)	DRO (C10 - C35)	TPH (C5 - C35)	Total Aromatics (C10-C35)	16 EPA PAHs	BaP	Ratios			HC Fingerprint Match
										% light	% mid	% heavy	
s	66-5-14	25.7	<1.3	<1.3	2.5	2.5	< 1.29	< 0.13	< 0.064	57.6	41.6	0.8	Deg.Fuel Residue 9.9%
s	66-7-19	26.0	<1.3	<1.3	<1.3	<1.3	< 1.3	< 0.13	< 0.065	91.7	6.1	2.2	Match not possible
s	137-14-2	25.7	<1.3	<1.3	2.1	2.1	1.89	< 0.13	< 0.064	47.5	36	16.5	V.Deg.PHC (LBS) 74%
s	137-15-2	25.0	<1.3	<1.3	<1.3	<1.3	< 1.25	< 0.13	< 0.063	0	0	100	Match not possible
s	66-1-15	26.0	<1.3	<1.3	<1.3	<1.3	< 1.3	< 0.13	< 0.065	0	96.6	3.4	Deg.Fuel Residue 57.5%
s	66-3-15	25.7	<1.3	<1.3	<1.3	<1.3	< 1.29	< 0.13	< 0.064	0	0	100	Match not possible
s	66-4-15	25.7	<1.3	<1.3	<1.3	<1.3	< 1.29	< 0.13	< 0.064	0	74.5	25.5	Match not possible
s	66-7-17	26.0	<1.3	<1.3	2.9	2.9	1.84	< 0.13	< 0.065	45.6	38	16.3	Degraded Fuel (est) 77.6%
s	66-8-15	25.0	<1.3	<1.3	<1.3	<1.3	< 1.25	< 0.13	< 0.063	0	0	100	Match not possible
s	66-9-15	25.7	<1.3	<1.3	4.2	4.2	1.69	< 0.13	< 0.064	42.4	33	24.6	Degraded Fuel (est) 62.8%
Initial Calibrator QC check			OK		Low Range Calibrator Final check			OK		0.08			
High Range Calibrator Final check			OK		1.57								

Results generated by a QED HC-1 analyser

Fingerprints provide a tentative hydrocarbon identification based on operator selected library matches

Concentration values in mg/kg for soil samples and mg/L for water samples.

Fingerprint match abbreviations

Est = Specific calibrator not used, result estimated (PFM)= Poor library fingerprint match

Soil values are not corrected for moisture or stone content

(SBS)= site specific background subtracted (LBS)= Library background subtracted

% = match confidence



Hydrocarbon Analysis Results

Client: S&ME
Address: Greensboro, NC

Samples taken 1.31.13
Samples extracted 1.31.13
Samples analysed 1.31.13

Contact: Lyndal Butler

Operator CAH

Project: NCDOT U2525B

Matrix	Sample ID	Dilution used	BTEX (C6 - C9)	GRO (C5 - C10)	DRO (C10 - C35)	TPH (C5 - C35)	Total Aromatics (C10-C35)	16 EPA PAHs	BaP	Ratios			HC Fingerprint Match
										% light	% mid	% heavy	
s	66-10-9	26.0	<1.3	<1.3	<1.3	<1.3	< 1.3	< 0.13	< 0.065	0	0	100	Match not possible
s	66-11-15	25.7	<1.3	<1.3	<1.3	<1.3	< 1.29	< 0.13	< 0.064	0	0	100	Match not possible
Initial Calibrator QC check										OK			
Low Range Calibrator Final check										Low			0.06
High Range Calibrator Final check										OK			1.53

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

Fingerprints provide a tentative hydrocarbon identification based on operator selected library matches
 Fingerprint match abbreviations Est = Specific calibrator not used, result estimated (PFM)= Poor library fingerprint match
 (SBS)= site specific background subtracted (LBS)= Library background subtracted % = match confidence



Hydrocarbon Analysis Results

Client: S&ME
Address: US-29 Greensboro, NC

Samples taken 2.1.13
Samples extracted 2.1.13
Samples analysed 2.1.13

Contact: Lyndal Butler

Operator Chris Horrell

Project: NCDOT U2525B

Matrix	Sample ID	Dilution used	BTEX (C6 - C9)	GRO (C5 - C10)	DRO (C10 - C35)	TPH (C5 - C35)	Total Aromatics (C10-C35)	16 EPA PAHs	BaP	Ratios			HC Fingerprint Match	
										% light	% mid	% heavy		
s	66-19-9	119.6	<6	83.1	915.3	998.4	788.4	9.6	<0.3	96.8	2.6	0.6	Deg Diesel 68.9%	
s	66-19-11	119.6	<6	<6	47.1	47.1	25.7	<0.6	<0.3	92.9	6.1	1	V.Deg Diesel 69.9%	
s	66-19-13	25.5	<1.3	2.6	43.3	45.9	29.25	0.43	< 0.064	93.2	4.6	2.2	V.Deg Diesel 57.9%	
s	66-19-15	60.8	<3	5.8	299.3	305.1	257.31	3.39	< 0.152	90.7	7.6	1.7	V.Deg Diesel 55.4%	
s	66-19-11 Duplicate	60.8	<3	<3	49.4	49.4	29.47	0.51	< 0.152	90.6	6.8	2.6	V.Deg Diesel 62.2%	
s	66-23-5	25.2	<1.3	2.2	23.7	25.9	13.93	0.23	< 0.063	85.6	10.9	3.5	Deg Diesel + Deg.Fuel (est) 68.8%	
s	66-23-15	25.2	<1.3	<1.3	2.8	2.8	2.1	< 0.13	< 0.063	71.5	19.1	9.4	Degraded Fuel (est) 71%	
s	66-13-15	26.0	<1.3	<1.3	<1.3	<1.3	< 1.3	< 0.13	< 0.065	0	0	100	Match not possible	
s	66-14-8	35.7	<1.8	7.6	190	197.5	145	1.92	< 0.090	90.9	7.8	1.3	Deg.Fuel 56.6%	
s	66-14-15	24.8	<1.2	22.9	81.1	104	29.38	0.58	0.07	94.2	3.3	2.5	V.Deg Kerosene (est) (LBS) 60.7%	

Initial Calibrator QC check	OK	Low Range Calibrator Final check	OK	0.08
		High Range Calibrator Final check	OK	1.59

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

Fingerprints provide a tentative hydrocarbon identification based on operator selected library matches
 Fingerprint match abbreviations
 (SBS)= site specific background subtracted (LBS)= Library background subtracted

Est = Specific calibrator not used, result estimated (PFM)= Poor library fingerprint match
 % = match confidence



Hydrocarbon Analysis Results

Client: S&ME
Address: Greensboro NC

Samples taken 2.1.13
Samples extracted 2.1.13
Samples analysed 2.1.13

Contact: Lyndal Butler

Operator Chris Horrell

Project: NCDOT U2525B

Matrix	Sample ID	Dilution used	BTEX (C6 - C9)	GRO (C5 - C10)	DRO (C10 - C35)	TPH (C5 - C35)	Total Aromatics (C10-C35)	16 EPA PAHs	BaP	Ratios			HC Fingerprint Match	
										% light	% mid	% heavy		
s	66-17-15	24.8	<1.2	<1.2	2	2	< 1.24	< 0.12	< 0.062	78.9	17.4	3.7	Match not possible	
s	66-20-11	40.8	<2	<2	67.2	67.2	51.31	0.77	< 0.102	44.6	50.8	4.6	Degraded Fuel (est) 75.9%	
s	66-21-15	25.0	<1.3	<1.3	<1.3	<1.3	< 1.25	< 0.13	< 0.063	0	57.9	42.1	Match not possible	
s	66-22-7	24.8	<1.2	<1.2	<1.2	<1.2	< 1.24	< 0.12	< 0.062	0	0	100	Match not possible	
s	66-24-13	25.2	<1.3	<1.3	<1.3	<1.3	<1.26	<0.13	<0.063	0	0	100	Match not possible	
s	66-25-12.5	806.0	<40.3	176.2	4515.8	4692	3242.7	41.5	<2.02	95.7	3.6	0.7	Deg Diesel 49.8%	
s	66-26-11	1554.9	<39	54	7184	7238	4779	64	<2	94.7	4.5	0.8	Deg Diesel 54.2%	
s	66-6-10 Duplicate	3114.9	<78	976	27695	28671	16407	207	<3	95.6	4.1	0.3	Deg Diesel 55.2%	
s	66-27-15	25.7	<1.3	<1.3	7.2	7.2	4.26	< 0.13	< 0.064	72.5	21.9	5.6	Degraded Fuel (est) 90.3%	
s	66-28-15	26.0	<1.3	<1.3	<1.3	<1.3	< 1.3	< 0.13	< 0.065	0	28.3	71.7	Match not possible	
Initial Calibrator QC check OK														
										Low Range Calibrator Final check			Low	0.06
										High Range Calibrator Final check			Low	1.43

Results generated by a QED HC-1 analyser

Fingerprints provide a tentative hydrocarbon identification based on operator selected library matches

Concentration values in mg/kg for soil samples and mg/L for water samples.

Fingerprint match abbreviations

Est = Specific calibrator not used, result estimated (PFM)= Poor library fingerprint match

Soil values are not corrected for moisture or stone content

(SBS)= site specific background subtracted (LBS)= Library background subtracted

% = match confidence



Hydrocarbon Analysis Results

Client: S&ME
Address: Greensboro NC

Samples taken 2.1.13
Samples extracted 2.1.13
Samples analysed 2.1.13

Contact: Lyndal Butler

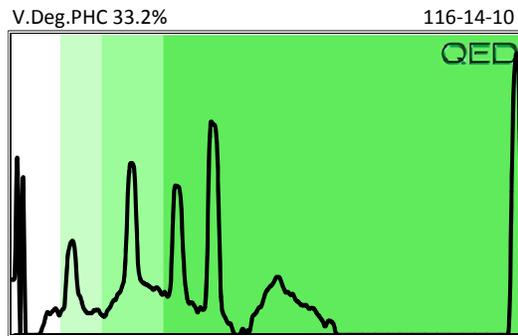
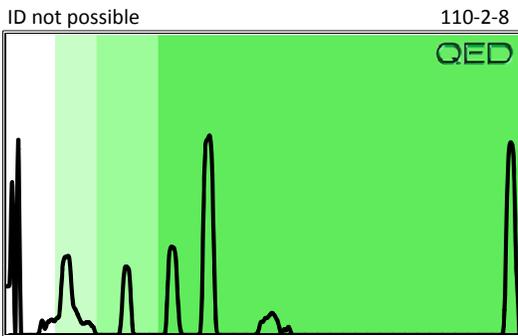
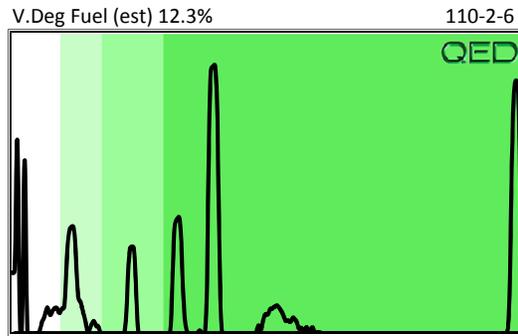
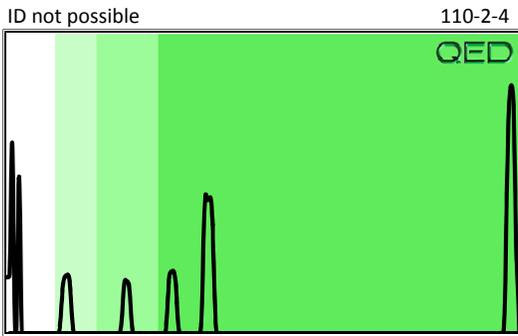
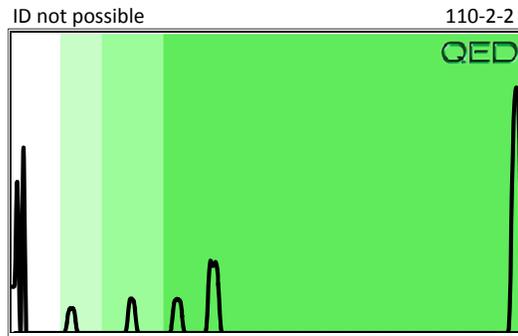
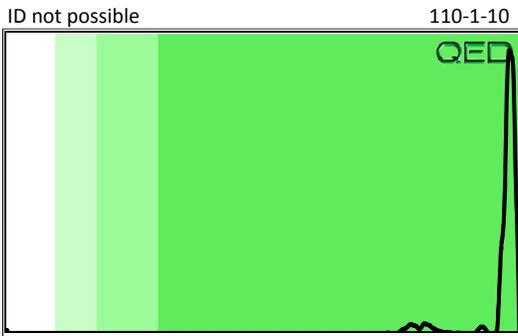
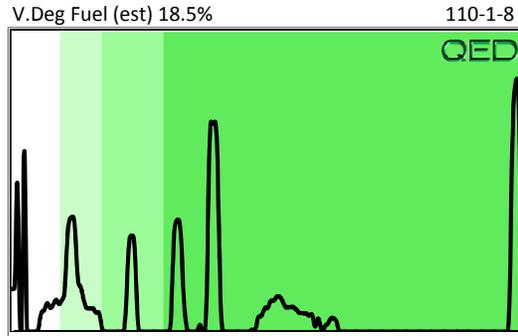
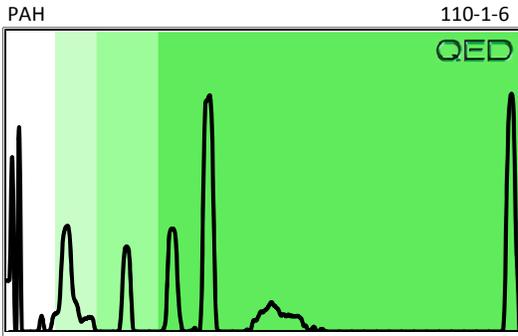
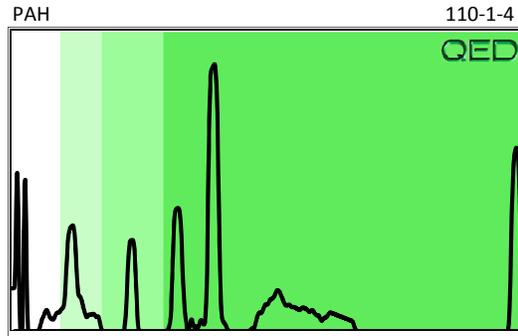
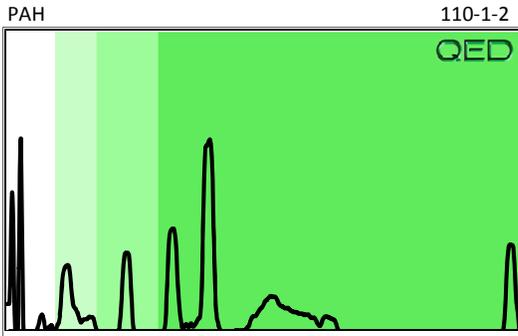
Operator Chris Horrell

Project: NCDOT U2525B

Matrix	Sample ID	Dilution used	BTEX (C6 - C9)	GRO (C5 - C10)	DRO (C10 - C35)	TPH (C5 - C35)	Total Aromatics (C10-C35)	16 EPA PAHs	BaP	Ratios			HC Fingerprint Match
										% light	% mid	% heavy	
s	66-29-15	25.5	<1.3	<1.3	<1.3	<1.3	< 1.27	< 0.13	< 0.064	0	0	100	Match not possible
Initial Calibrator QC check			OK			Low Range Calibrator Final check			OK			0.08	
						High Range Calibrator Final check			Low			1.40	

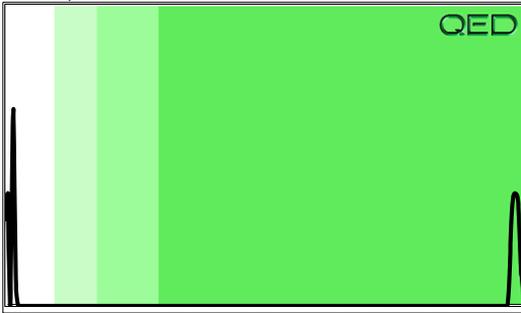
Results generated by a QED HC-1 analyser
 Concentration values in mg/kg for soil samples and mg/L for water samples.
 Soil values are not corrected for moisture or stone content

Fingerprints provide a tentative hydrocarbon identification based on operator selected library matches
 Fingerprint match abbreviations Est = Specific calibrator not used, result estimated (PFM)= Poor library fingerprint match
 (SBS)= site specific background subtracted (LBS)= Library background subtracted % = match confidence

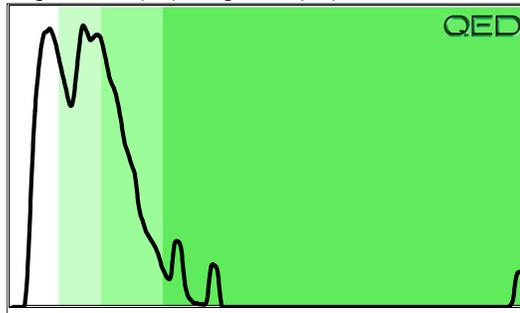


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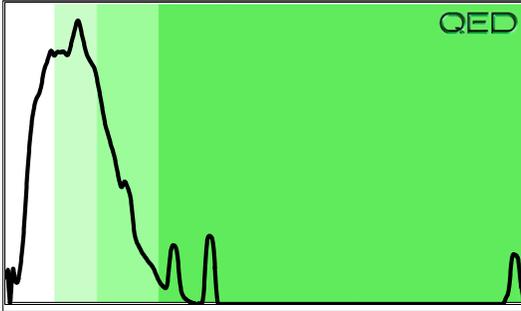
110-2-10



Deg Kerosene (est) + Deg.Petrol (est) 47.4% 116-16-10

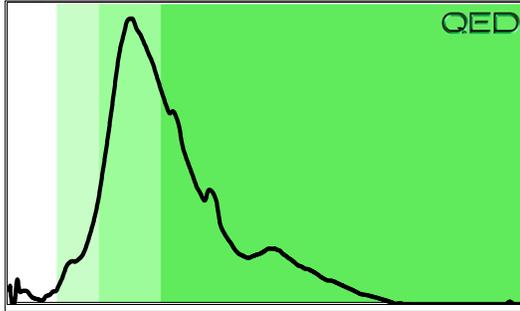


Deg Kerosene (est) + Deg.Petrol 67.7% 116-16-10 dup



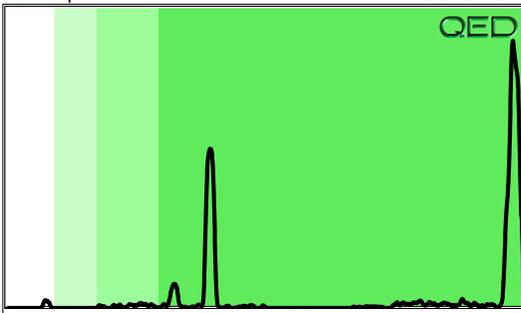
Degraded Fuel (est) 87.3%

110-3-10



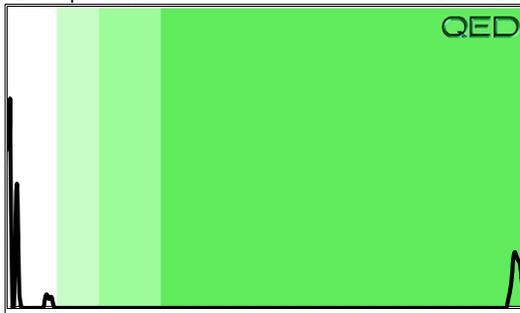
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116-17-10



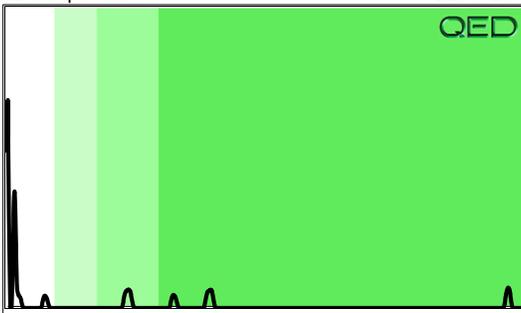
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110-4-10



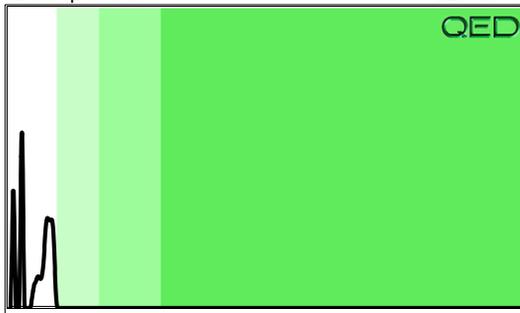
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110-5-10



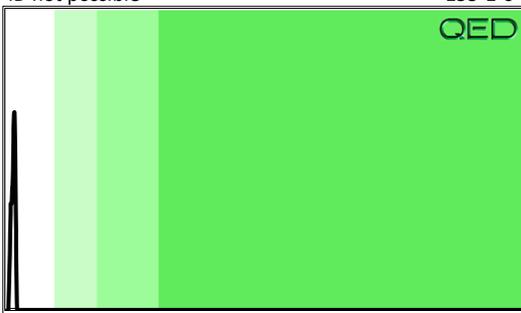
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116-18-4



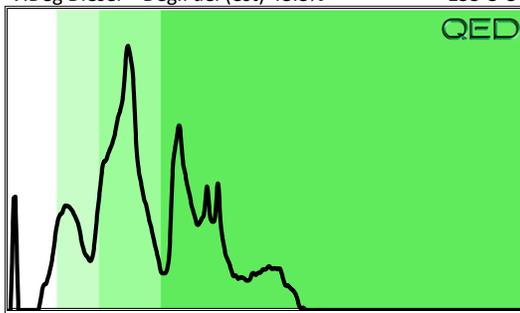
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155-1-6



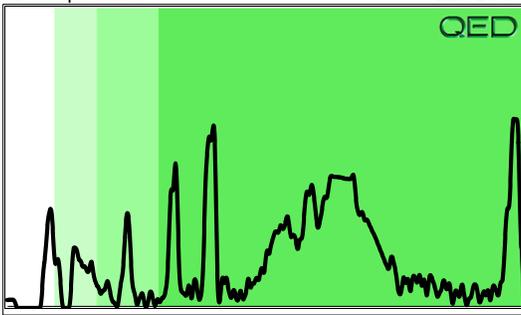
V.Deg Diesel + Deg.Fuel (est) 48.8%

155-3-8



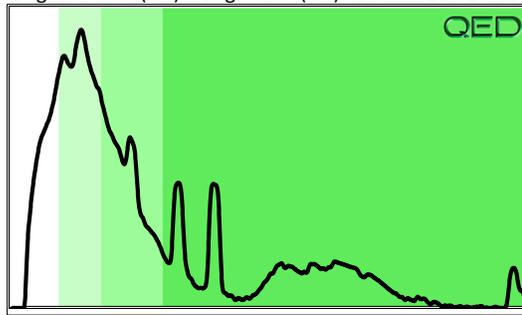
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116-16-8



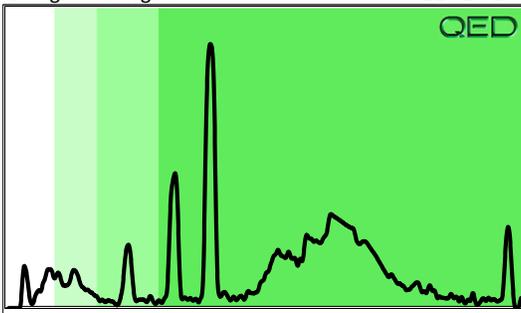
Deg Kerosene (est) + Deg.Petrol (est) 52%

116-16-12



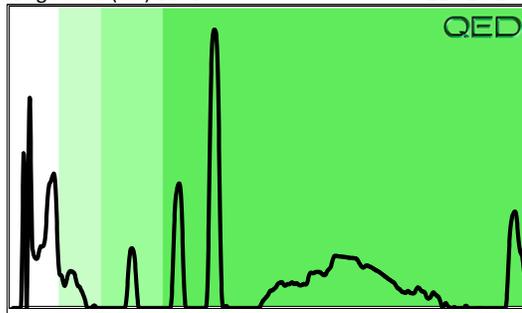
Background Organics

116-16-14



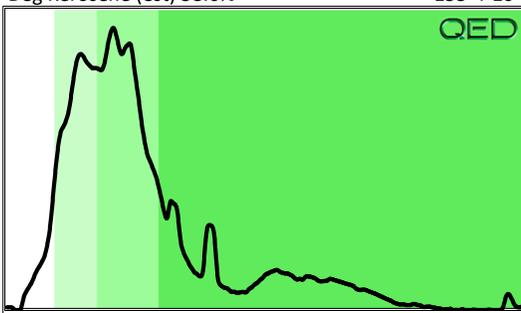
Deg Petrol (est) 1.3%

116-18-14



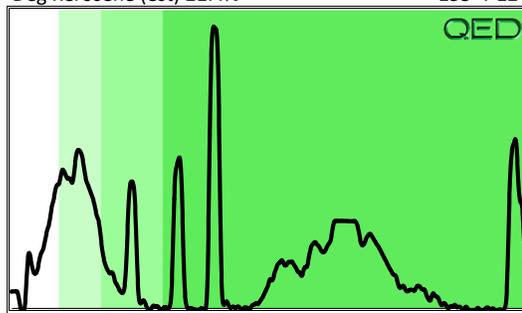
Deg Kerosene (est) 58.6%

155-4-10



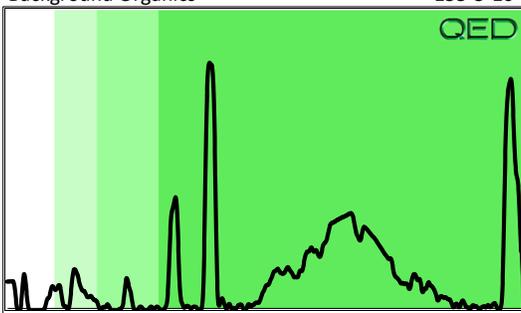
Deg Kerosene (est) 21.4%

155-4-12



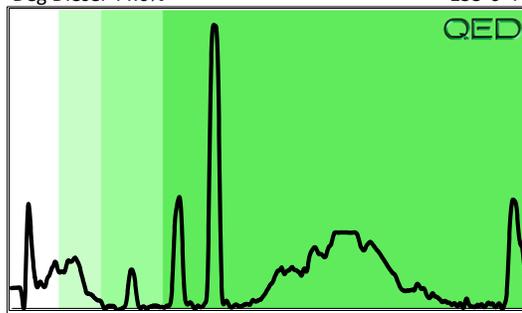
Background Organics

155-5-10



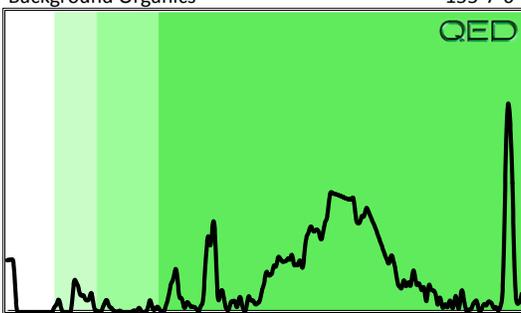
Deg Diesel 44.6%

155-6-4



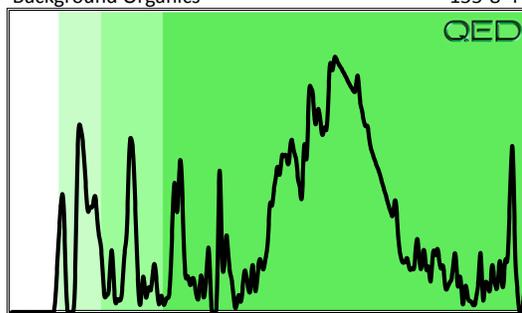
Background Organics

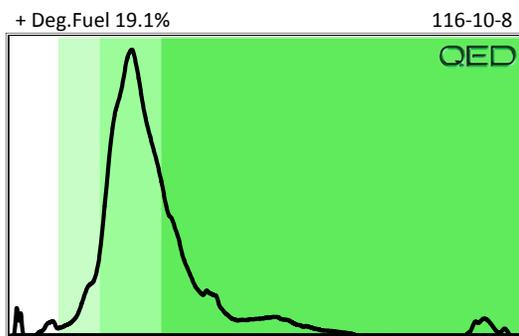
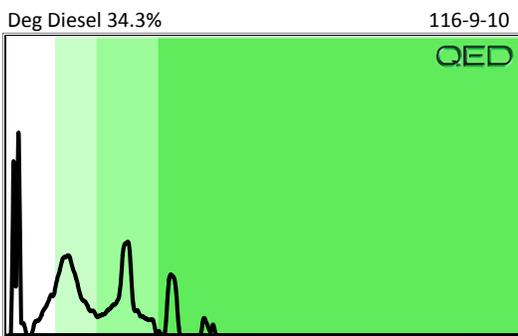
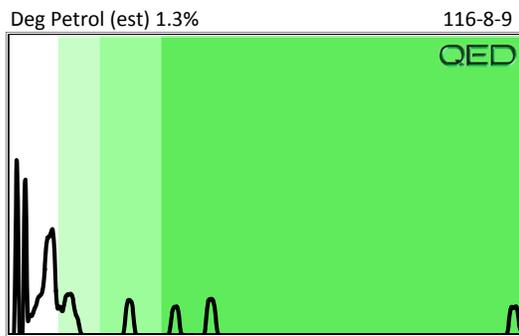
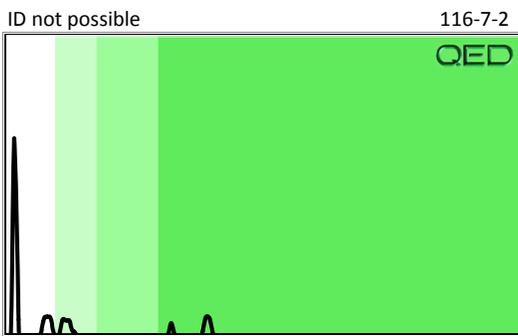
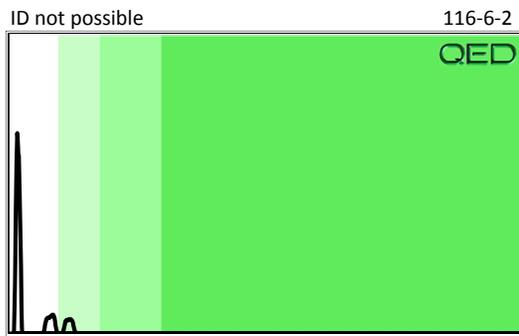
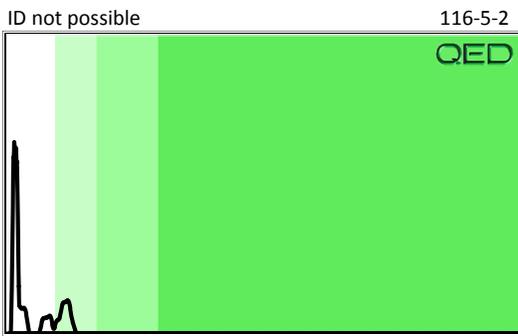
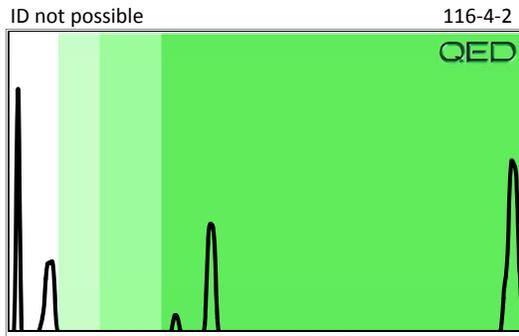
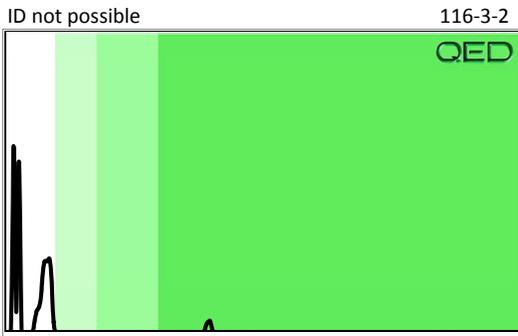
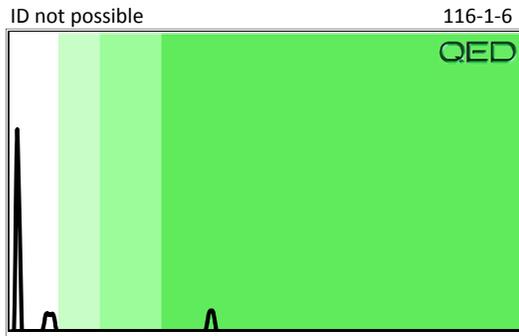
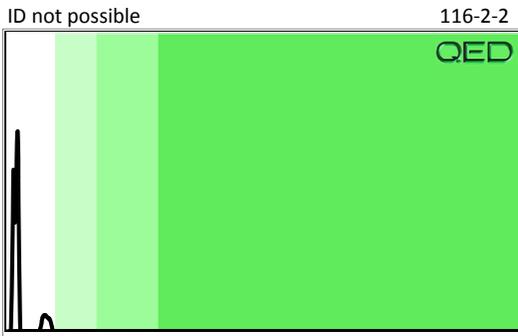
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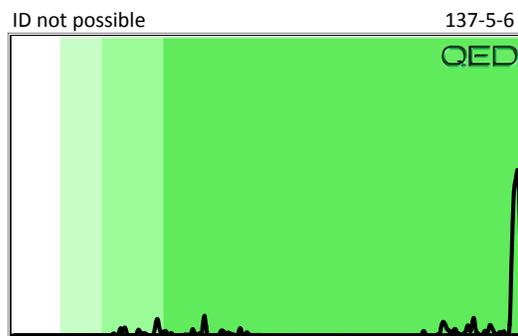
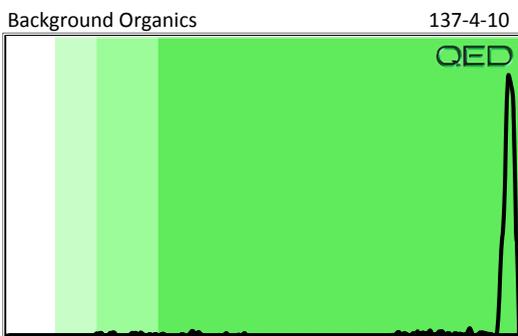
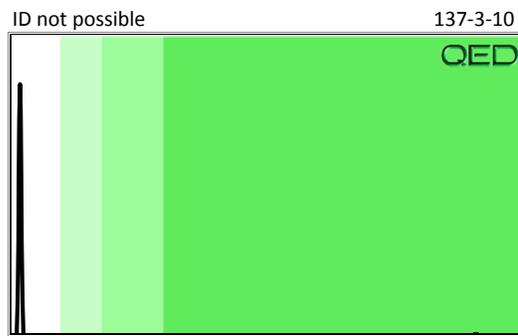
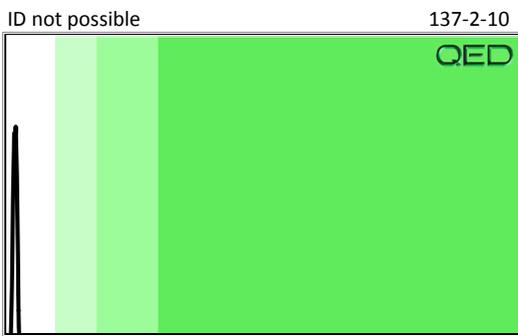
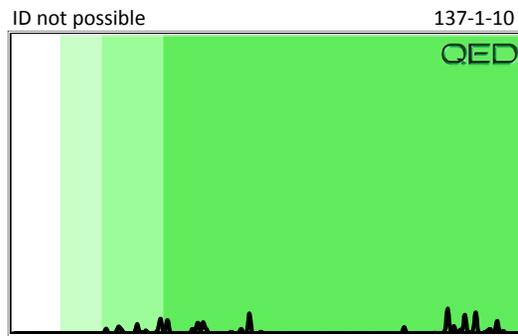
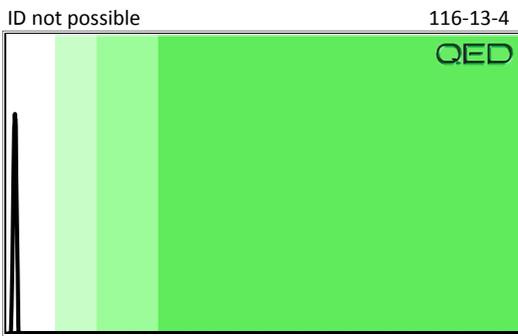
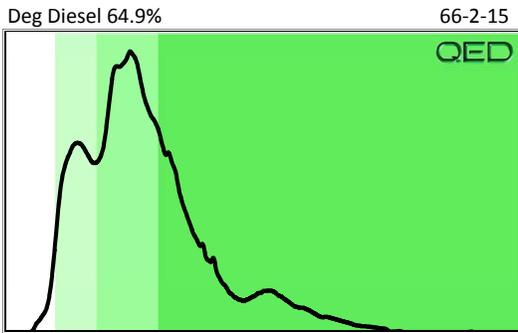
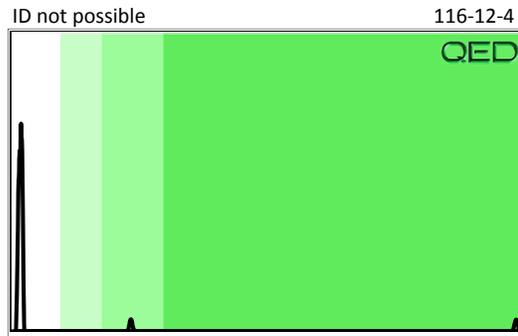
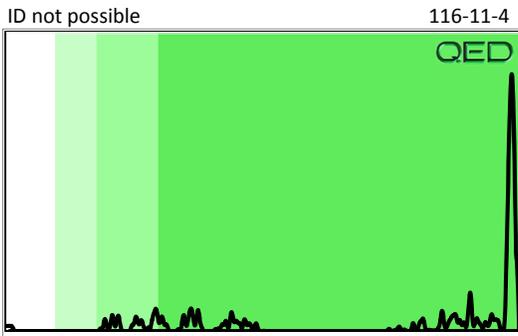


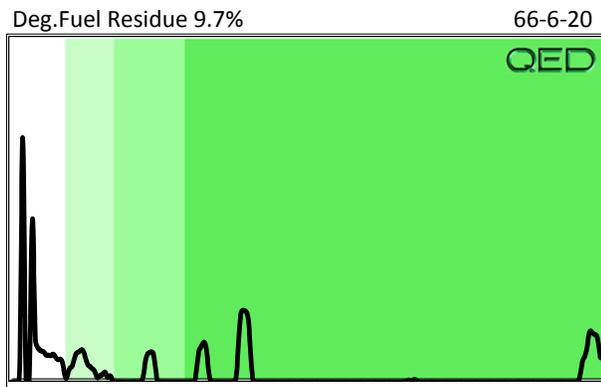
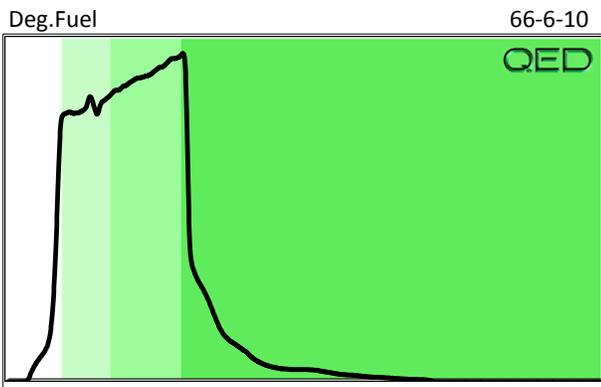
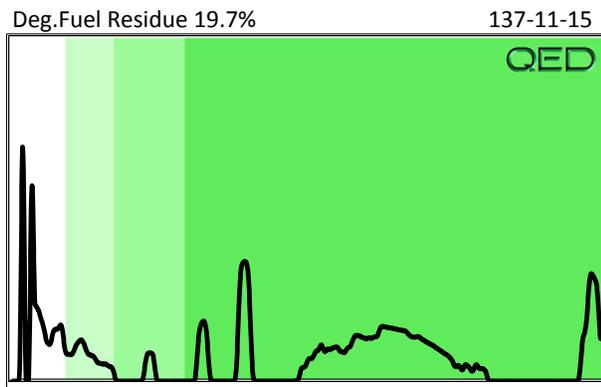
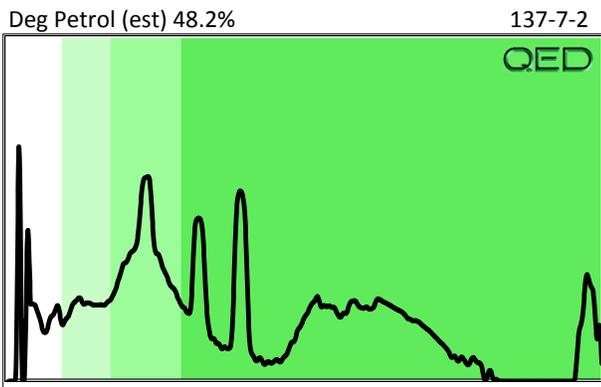
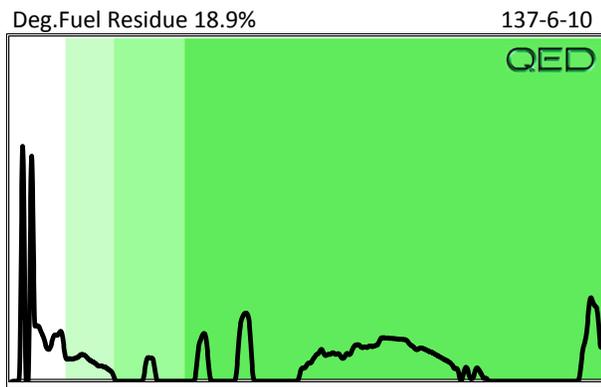
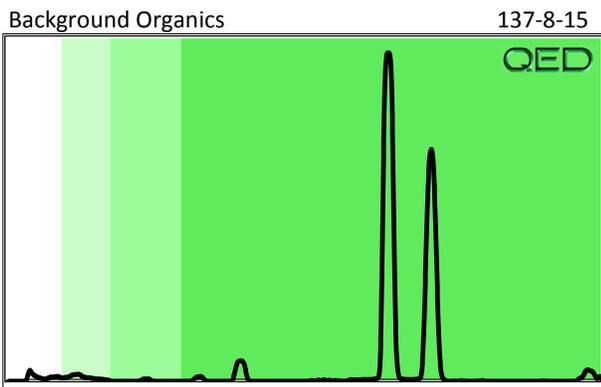
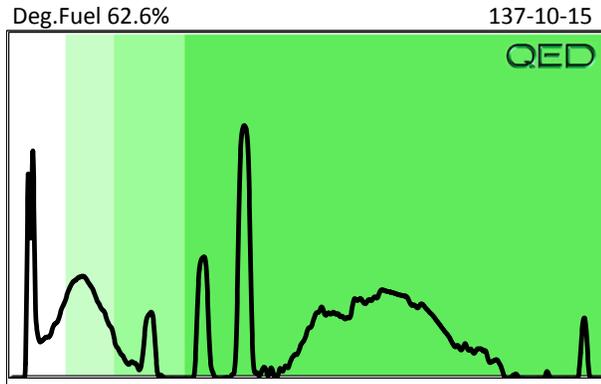
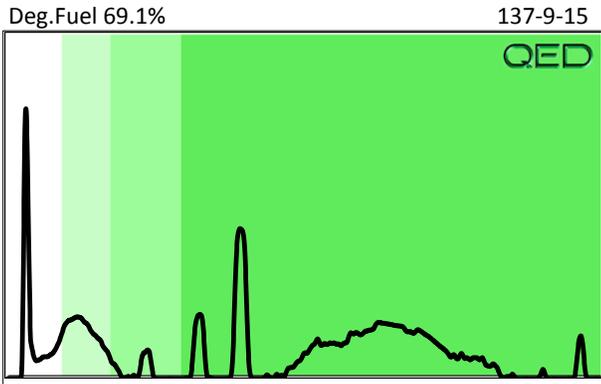
Background Organics

155-8-4







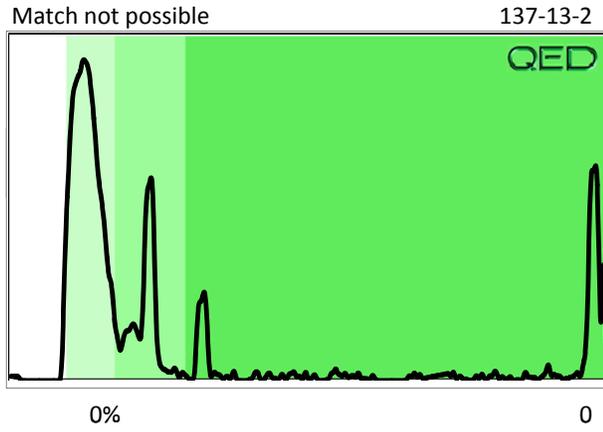
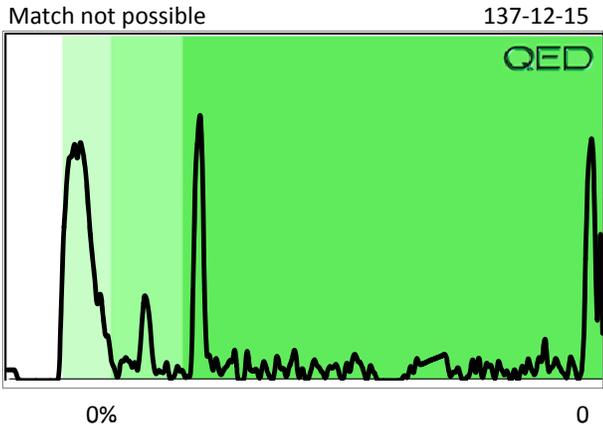


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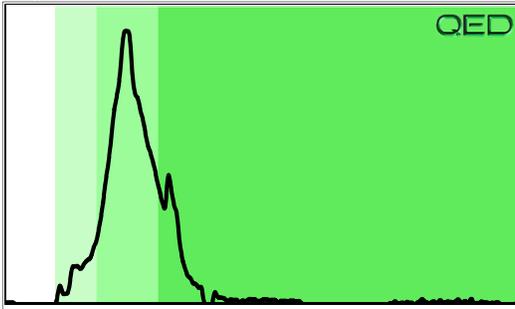
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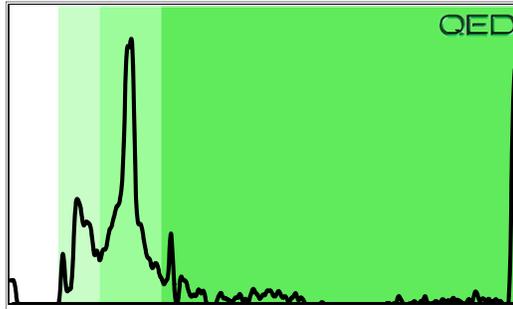
Deg.Fuel Residue 9.9%

66-5-14



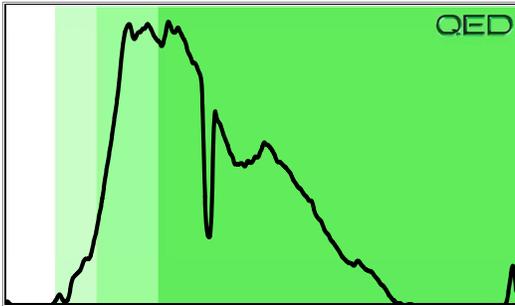
Match not possible

66-7-19



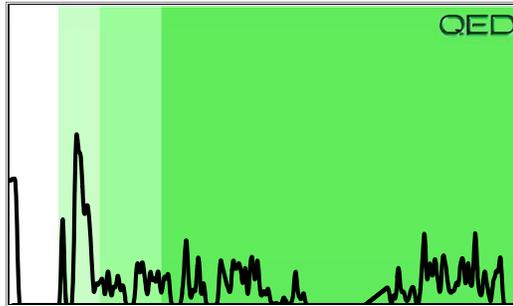
V.Deg.PHC (LBS) 74%

137-14-2



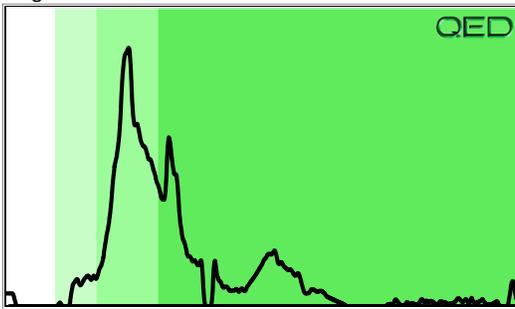
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137-15-2



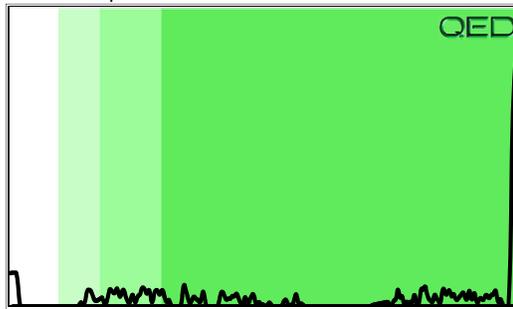
Deg.Fuel Residue 57.5%

66-1-15



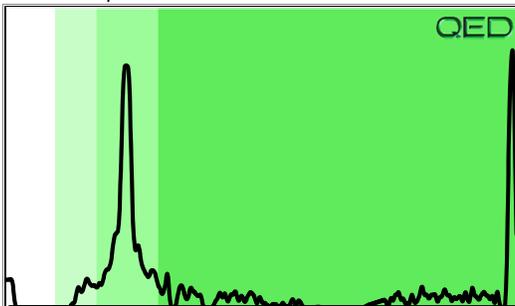
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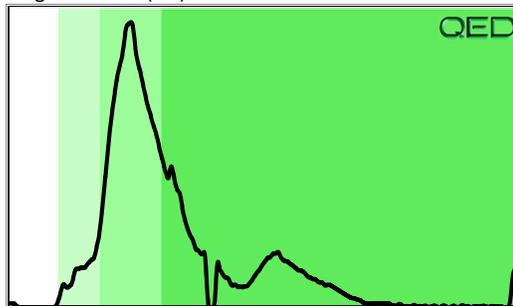
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66-4-15



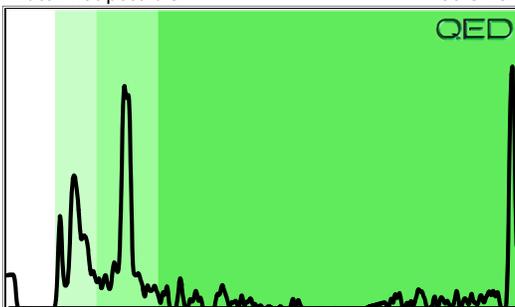
Degraded Fuel (est) 77.6%

66-7-17



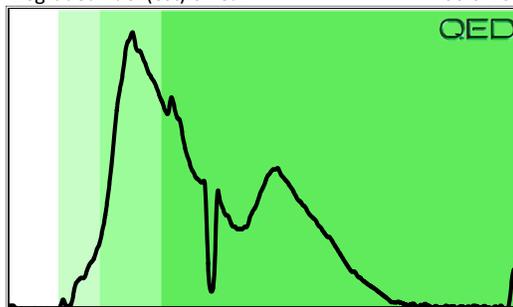
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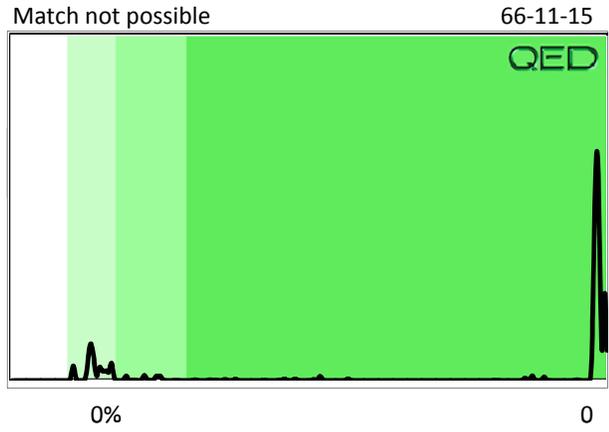
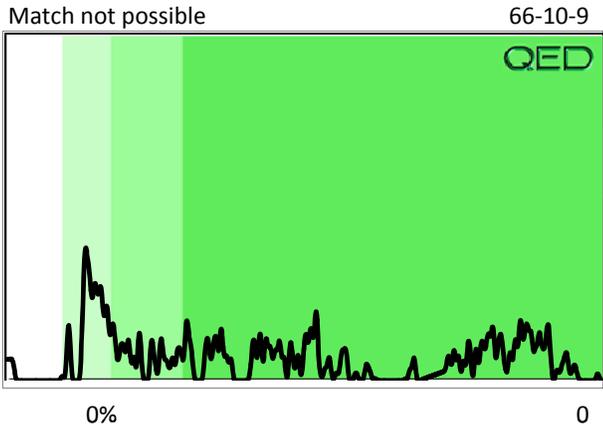
66-8-15



Degraded Fuel (est) 62.8%

66-9-15





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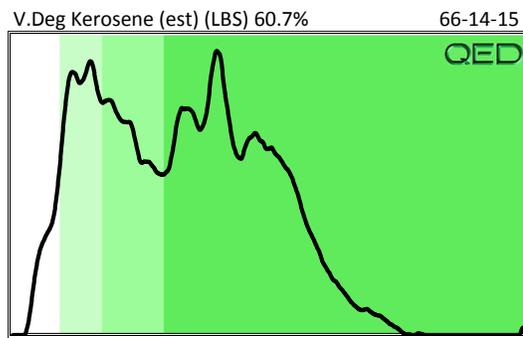
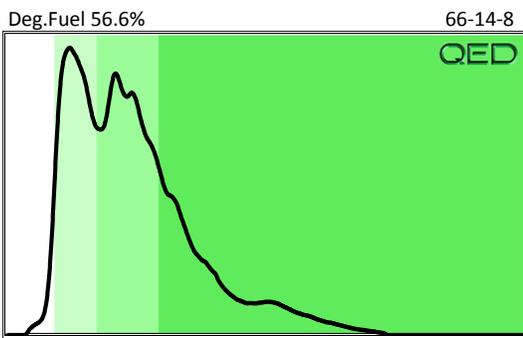
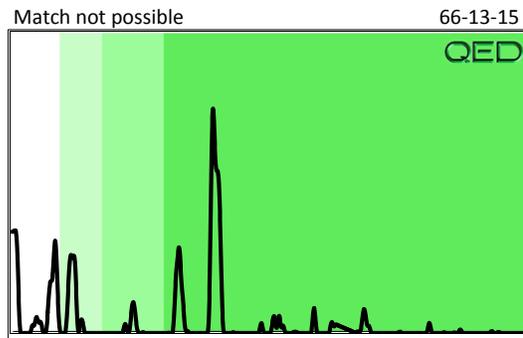
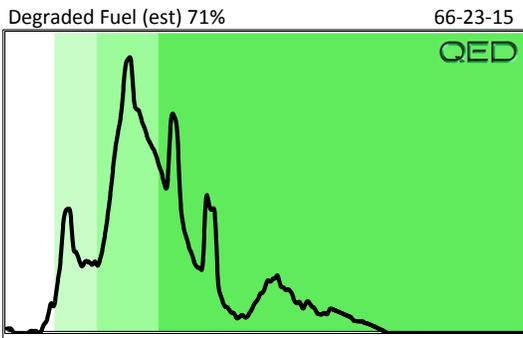
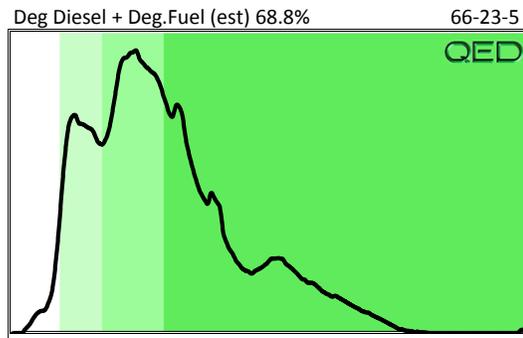
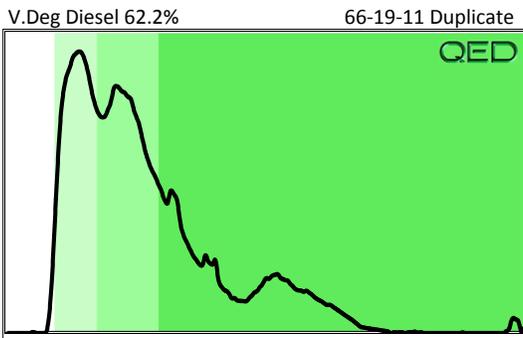
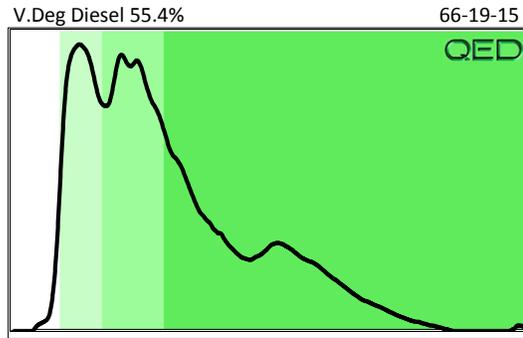
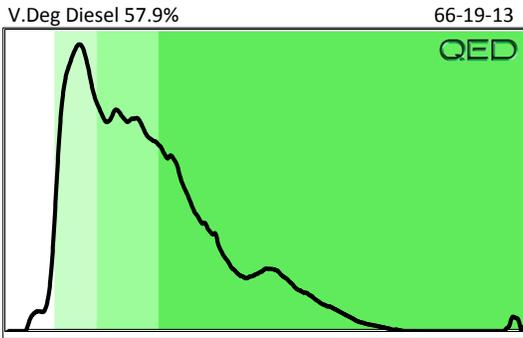
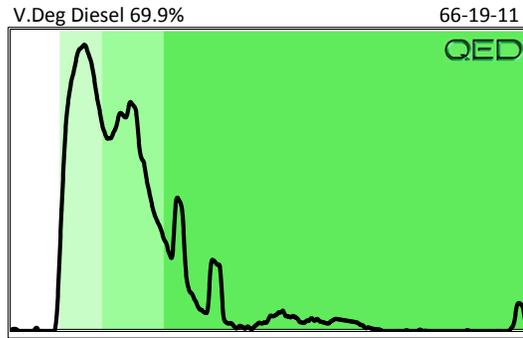
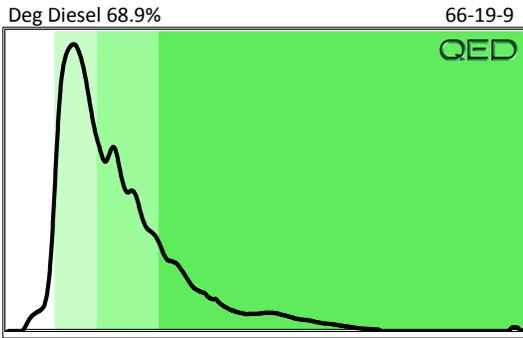
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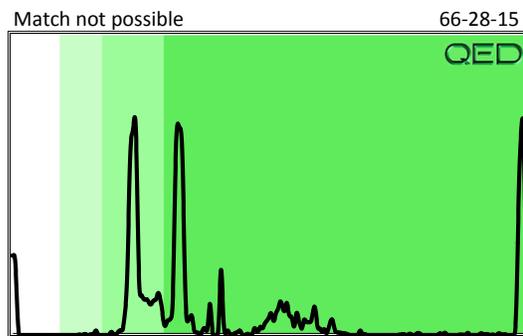
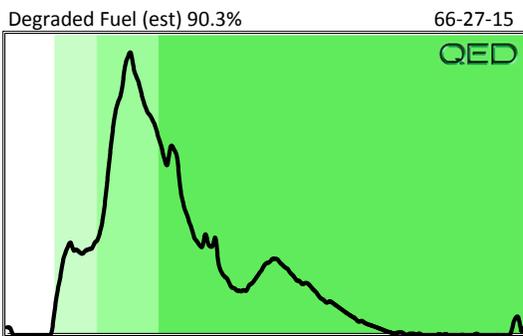
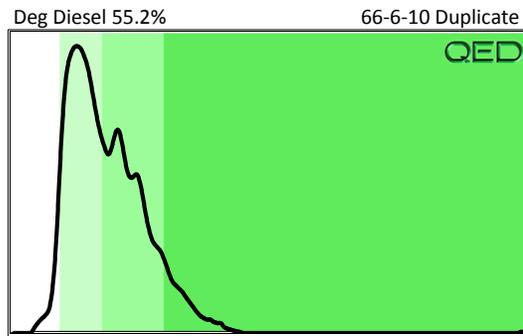
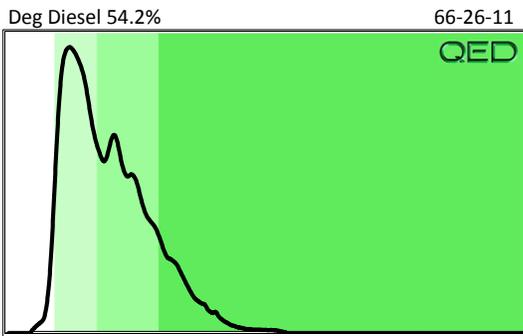
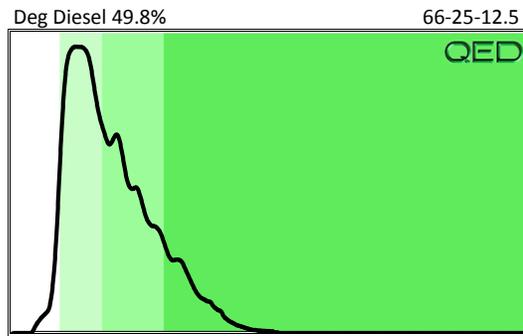
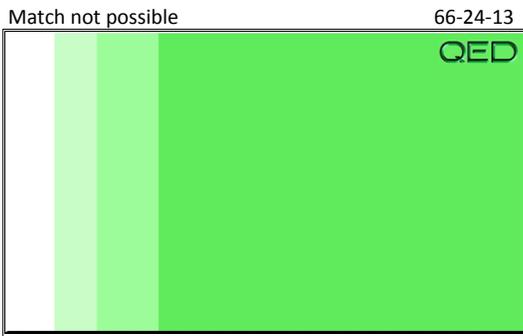
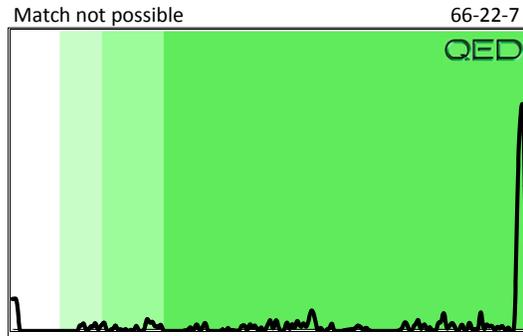
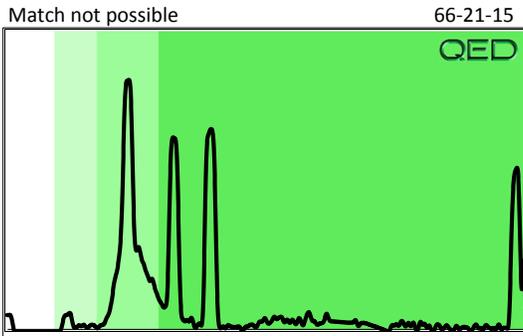
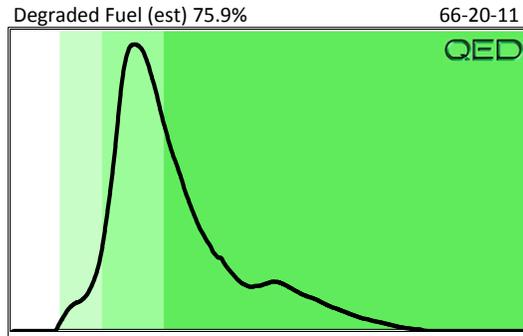
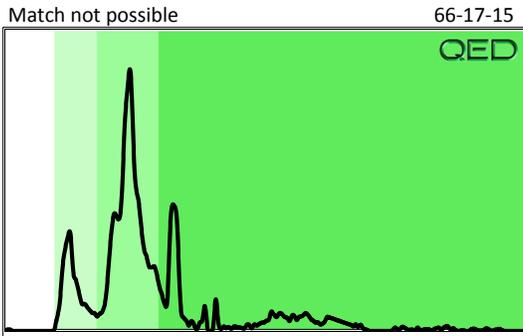
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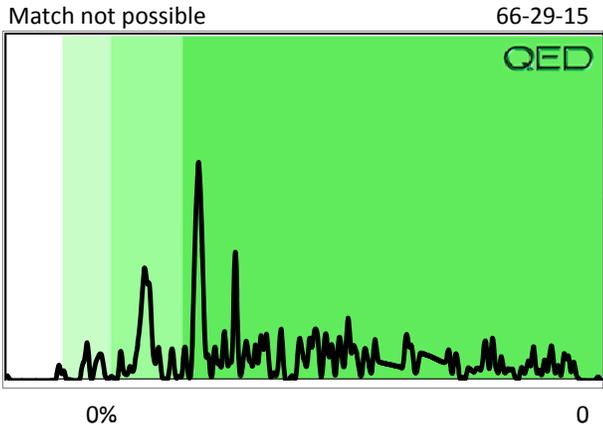
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Project NCDOT U2525B

Date Friday, February 01, 2013



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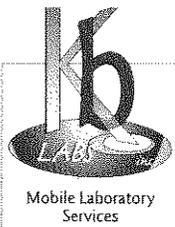
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25132 SW 1st Avenue
 Newberry, FL 32669
 TEL (352) 472-5830
 FAX (352) 472-5832

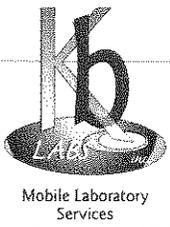
200 Quade Drive
 Cary, NC 27513
 TEL (919) 678-0030

CHAIN-OF-CUSTODY RECORD

MOBILE UNIT #

CLIENT NAME		PROJECT NAME & ADDRESS						SAMPLE MATRIX	NUMBER OF CONTAINERS	IDENTIFY PARAMETERS DESIRED AND NO. OF CONTAINERS	VOLATILES	PRESERVATION	COMMENT / SAMPLE PRE FIX							
S+ME																				
SAMPLERS		CONTACT PERSON				BATCH # (Lab Use Only)		DATE SAMPLED	TIME SAMPLED	COMP.	GRAB	DATE REC'D	TIME REC'D	STATION LOCATION / No.	SAMPLE MATRIX	NUMBER OF CONTAINERS	IDENTIFY PARAMETERS DESIRED AND NO. OF CONTAINERS	VOLATILES	PRESERVATION	COMMENT / SAMPLE PRE FIX
Quantex		Lyndah Butler																		
SAMPLE FIELD ID. \ NUMBER		DATE SAMPLED	TIME SAMPLED	COMP.	GRAB	DATE REC'D	TIME REC'D	STATION LOCATION / No.	SAMPLE MATRIX	NUMBER OF CONTAINERS	IDENTIFY PARAMETERS DESIRED AND NO. OF CONTAINERS	VOLATILES	PRESERVATION	COMMENT / SAMPLE PRE FIX						
110-1-2		1/28/13				1/29/13	12:00		S	1				10.29						
↓ 4		↓												10.0						
↓ 6															10.0					
↓ 8															10.5					
↓ 10															10.1					
110-2-2		↓												10.2						
↓ 4															10.2					
↓ 6															10.2					
↓ 8															10.6					
↓ 10														10.6						
110-3-2		↓												10.4						
↓ 4															} Not analyzed					
↓ 6																				
↓ 8																				
↓ 10														10.0						
Precleaned Containers Relinquished by: (Signature)		Date / Time	Received by: (Signature)				Date / Time	Remarks and Observations												
								baggies												
Relinquished by: (Signature)		Date / Time	Received by: (Signature)				Date / Time													
			CLH				1/29/13													

Matrix Types S Soil SW Surface Water GW Ground Water SG Soil Gas



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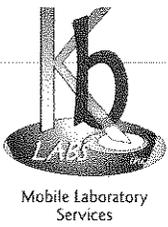
200 Quade Drive
Cary, NC 27513
TEL (919) 678-0030

CHAIN-OF-CUSTODY RECORD

MOBILE UNIT #

CLIENT NAME		PROJECT NAME & ADDRESS						SAMPLE MATRIX	NUMBER OF CONTAINERS	IDENTIFY PARAMETERS DESIRED AND NO. OF CONTAINERS	PRESERVATION	
S+ME												
SAMPLERS		CONTACT PERSON				BATCH # (Lab Use Only)		VOLATILES				
Quantex		Lyndal Butler										
SAMPLE FIELD ID. \ NUMBER	DATE SAMPLED	TIME SAMPLED	COMP.	GRAB	DATE REC'D	TIME REC'D	STATION LOCATION / No.				COMMENT / SAMPLE PRE FIX	
110-4-2	1/28/13				1/29/13	12:00		S	1			} not analyzed as per client 10.0g
↓ 4	↓				↓	↓						
↓ 6	↓				↓	↓						
↓ 8	↓				↓	↓						
110-5-2												} not analyzed as per client 10.3g
↓ 4	↓				↓	↓						
↓ 6	↓				↓	↓						
↓ 8	↓				↓	↓						
155-1-6	1/28/13											} 10.6g 10.6g
3-8												
Pricleaned Containers Relinquished by: (Signature)		Date / Time	Received by: (Signature)				Date / Time	Remarks and Observations				
Relinquished by: (Signature)		Date / Time	Received by: (Signature)				Date / Time	baggies				

Matrix Types S Soil SW Surface Water GW Ground Water SG Soil Gas



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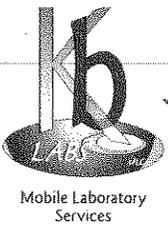
200 Quade Drive
Cary, NC 27513
TEL (919) 678-0030

CHAIN-OF-CUSTODY RECORD

MOBILE UNIT #

CLIENT NAME		PROJECT NAME & ADDRESS						SAMPLE MATRIX	NUMBER OF CONTAINERS	IDENTIFY PARAMETERS DESIRED AND NO. OF CONTAINERS	VOLATILES	PRESERVATION
S+ME		NCDOT U2325B Greensboro NC										
SAMPLERS		CONTACT PERSON				BATCH # (Lab Use Only)		COMMENT / SAMPLE PRE FIX				
Quantex		Lyndal Butler										
SAMPLE FIELD ID# NUMBER	DATE SAMPLED	TIME SAMPLED	COMP.	GRAB	DATE REC'D	TIME REC'D	STATION LOCATION / No.					
116-9-10	1/29/13				1/30/13			S	1		10.1	
116-10-8	↓										10.1	
116-11-4											10.1	
116-12-4											10.1	
116-13-4											10.3	
137-1-10	1/30/13										10.1	
66-2-15 ^{cont}					1/30/13	15:50					10.1	
66-2-18 ²⁰						↓					10.0	
137-2-10											10.0	
137-3-10											10.3	
137-4-10											10.2	
137-5-6											10.2	
Prelabeled Containers Relinquished by: (Signature)		Date / Time	Received by: (Signature)				Date / Time	Remarks and Observations				
Relinquished by: (Signature)		Date / Time	Received by: (Signature)				Date / Time					

Matrix Types S Soil SW Surface Water GW Ground Water SG Soil Gas



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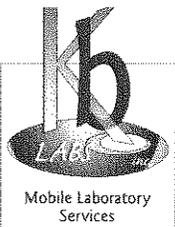
200 Quade Drive
Cary, NC 27513
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CHAIN-OF-CUSTODY RECORD

MOBILE UNIT #

CLIENT NAME		PROJECT NAME & ADDRESS						SAMPLE MATRIX	NUMBER OF CONTAINERS	IDENTIFY PARAMETERS DESIRED AND NO. OF CONTAINERS	PRESERVATION	
S+ME		NC DOT U2525B Greensboro										
SAMPLERS		CONTACT PERSON				BATCH # (Lab Use Only)		VOLATILES				
Quantex		Lyndal Butler										
SAMPLE FIELD ID \ NUMBER	DATE SAMPLED	TIME SAMPLED	COMP.	GRAB	DATE REC'D	TIME REC'D	STATION LOCATION / No.				COMMENT / SAMPLE PRE FIX	
116-18-14					1/29/13			S	1		10.0	
155-4-12											10.1	
155-5-10											10.0	
155-4-10											10.0	
155-6-4											10.1	
155-7-6											10.0	
155-8-4											10.4	
116-2-2					1/30/13						10.2	
116-1-6											10.0	
116-3-2											10.1	
116-4-2											10.0	
116-5-2											10.5	
116-6-2											10.2	
116-7-2					1/30/13						10.0	
116-8-9											10.1	
Prelabeled Containers Relinquished by: (Signature)		Date / Time	Received by: (Signature)				Date / Time	Remarks and Observations				
Relinquished by: (Signature)		Date / Time	Received by: (Signature)				Date / Time					

Matrix Types S Soil SW Surface Water GW Ground Water SG Soil Gas



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CHAIN-OF-CUSTODY RECORD

MOBILE UNIT #

CLIENT NAME		PROJECT NAME & ADDRESS						SAMPLE MATRIX	NUMBER OF CONTAINERS	IDENTIFY PARAMETERS DESIRED AND NO. OF CONTAINERS	VOLATILES	PRESERVATION C Chilled H HCL Ot Other (see Remarks)
SAMPLERS		CONTACT PERSON				BATCH # (Lab Use Only)						
SAMPLE FIELD ID \ NUMBER	DATE SAMPLED	TIME SAMPLED	COMP.	GRAB	DATE REC'D	TIME REC'D	STATION LOCATION / No.				COMMENT / SAMPLE PRE FIX	
116-14-10	1/29/13				1/29/13	14:00		S	1		10.0	
116-16-10	↓				↓			↓			10.6	
116-17-10											10.2	
116-18-14											10.0	
116-16-8											10.1	
↓ ↓ 12											10.2	
↓ ↓ 14											10.4	
Prelined Containers Relinquished by: (Signature)		Date / Time	Received by: (Signature)				Date / Time	Remarks and Observations				
Relinquished by: (Signature)		Date / Time	Received by: (Signature)				Date / Time					
			Cl. H. eo				1/29/13	3				

Matrix Types S Soil SW Surface Water GW Ground Water SG Soil Gas



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 FAX (352) 472-5832

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 Cary, NC 27513
 TEL (919) 678-0030

CHAIN-OF-CUSTODY RECORD

MOBILE UNIT #

CLIENT NAME		PROJECT NAME & ADDRESS						SAMPLE MATRIX	NUMBER OF CONTAINERS	IDENTIFY PARAMETERS DESIRED AND NO OF CONTAINERS	VOLATILES	PRESERVATION
S + ME		NCDOT U2525B US-29 Greensboro										
SAMPLERS		CONTACT PERSON				BATCH # (Lab Use Only)		COMMENT / SAMPLE PRE FIX				
Quantex		Lyndal Butler										
SAMPLE FIELD ID \ NUMBER	DATE SAMPLED	TIME SAMPLED	COMP.	GRAB	DATE REC'D	TIME REC'D	STATION LOCATION / No.					
137-6-10	1/30/13				1/30/13			S	1		10.0g	
↓ 7-2	↓				↓						10.2	
↓ 8-15	↓				↓						10.1	
↓ 9-15	↓				↓						10.3	
↓ 10-15	↓				↓						10.3	
↓ 11-15	↓				↓						10.0	
66-6-10	1/31/13				1/31/13						10.1	
66-6-20	↓				↓						10.0	
137-12-15	1/30/13				1/30/13						10.1	
↓ 13-2	↓				↓						10.0	
66-5-14	1/31/13				1/31/13						10.1	
66-7-19	↓				↓						10.0	
137-14-2	1/30/13				1/30/13						10.1	
137-15-2	1/30/13				1/30/13						10.4	
66-1-15	1/31/13				1/31/13						10.0	
Pricleaned Containers Relinquished by: (Signature)		Date / Time	Received by: (Signature)				Date / Time	Remarks and Observations				
								samples in baggies p. 1				
Relinquished by: (Signature)		Date / Time	Received by: (Signature)				Date / Time					
							1/31/13					

Matrix Types S Soil SW Surface Water GW Ground Water SG Soil Gas



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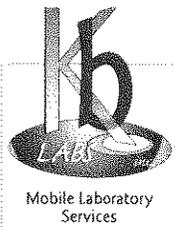
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Cary, NC 27513
TEL (919) 678-0030

CHAIN-OF-CUSTODY RECORD

MOBILE UNIT #

CLIENT NAME		PROJECT NAME & ADDRESS						SAMPLE MATRIX	NUMBER OF CONTAINERS	IDENTIFY PARAMETERS DESIRED AND NO. OF CONTAINERS	PRESERVATION
S+ME		NCDOT U2825B US-29 Greensboro									
SAMPLERS		CONTACT PERSON				BATCH # (Lab Use Only)		VOLATILES			COMMENT / SAMPLE PRE FIX
Quantex		Lyndal Butle									
SAMPLE FIELD ID \ NUMBER	DATE SAMPLED	TIME SAMPLED	COMP.	GRAB	DATE REC'D	TIME REC'D	STATION LOCATION / No.				
66-3-15	1/31/13				1/31/13			S	1		10.1
66-4-15	↓				↓						10.1
66-7-17											10.0
66-8-15											10.4
66-9-15											10.1
66-10-9											10.0
66-11-15	↓				↓						10.1
Pretreated Containers Relinquished by: (Signature)		Date / Time	Received by: (Signature)				Date / Time	Remarks and Observations			
Relinquished by: (Signature)		Date / Time	Received by: (Signature)				Date / Time				

Matrix Types S Soil SW Surface Water GW Ground Water SG Soil Gas



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CHAIN-OF-CUSTODY RECORD

MOBILE UNIT #

CLIENT NAME		PROJECT NAME & ADDRESS						SAMPLE MATRIX	NUMBER OF CONTAINERS	IDENTIFY PARAMETERS DESIRED AND NO. OF CONTAINERS	VOLATILES	PRESERVATION
S+ME		NC DOT U2525B US-29 Greensboro										
SAMPLERS		CONTACT PERSON				BATCH # (Lab Use Only)		STATION LOCATION / No.	COMMENT / SAMPLE PRE FIX			
Quantex		Lyndal Butler										
SAMPLE FIELD ID \ NUMBER	DATE SAMPLED	TIME SAMPLED	COMP.	GRAB	DATE REC'D	TIME REC'D						
66-13-15	2/1/13				2/1/13		S	1			10.0g	
14-8	↓				↓						10.2g	
14-15	↓				↓						10.5	
17-15	↓				↓						10.5	
19-9 *	↓				↓						10.2	
19-11 19-11 *	↓				↓						10.2	
19-13 *	↓				↓						10.2	
19-15 *	↓				↓						10.2	
20-11	↓				↓						10.3	
21-15	↓				↓						10.4	
22-7	↓				↓						10.5	
23-5 *	↓				↓						10.3	
23-15 *	↓				↓						10.3	
24-13	↓				↓						10.3	
25-12.5	↓				↓						10.0 PID: 300	
Pretreated Containers Relinquished by: (Signature)		Date / Time	Received by: (Signature)				Date / Time	Remarks and Observations				
Relinquished by: (Signature)		Date / Time	Received by: (Signature)				Date / Time	p1				

Matrix Types S Soil SW Surface Water GW Ground Water SG Soil Gas



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February 11, 2013

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

RE: Project: NCDOT U-2525B 34821.1.1
Pace Project No.: 92146643

Dear Chemical Engineer:

Enclosed are the analytical results for sample(s) received by the laboratory on February 01, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

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

Sincerely,

Jon D Bradley for
Kevin Herring
kevin.herring@pacelabs.com
Project Manager

Enclosures



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: NCDOT U-2525B 34821.1.1
Pace Project No.: 92146643

Charlotte Certification IDs

9800 Kinsey Ave. Ste 100, Huntersville, NC 28078
North Carolina Drinking Water Certification #: 37706
North Carolina Field Services Certification #: 5342
North Carolina Wastewater Certification #: 12
South Carolina Certification #: 99006001

Florida/NELAP Certification #: E87627
Kentucky UST Certification #: 84
West Virginia Certification #: 357
Virginia/VELAP Certification #: 460221

REPORT OF LABORATORY ANALYSIS

SAMPLE ANALYTE COUNT

Project: NCDOT U-2525B 34821.1.1
Pace Project No.: 92146643

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92146643001	155-3-8	EPA 8015 Modified	MEJ	2	PASI-C
		EPA 8015 Modified	RGF	2	PASI-C
		ASTM D2974-87	TNM	1	PASI-C
92146643002	155-4-10	EPA 8015 Modified	MEJ	2	PASI-C
		EPA 8015 Modified	RGF	2	PASI-C
		ASTM D2974-87	TNM	1	PASI-C
92146643003	116-14-10	EPA 8015 Modified	MEJ	2	PASI-C
		EPA 8015 Modified	RGF	2	PASI-C
		ASTM D2974-87	TNM	1	PASI-C
92146643004	116-16-10	EPA 8015 Modified	MEJ	2	PASI-C
		EPA 8015 Modified	RGF	2	PASI-C
		ASTM D2974-87	TNM	1	PASI-C
92146643005	116-16-12	EPA 8015 Modified	MEJ	2	PASI-C
		EPA 8015 Modified	RGF	2	PASI-C
		ASTM D2974-87	TNM	1	PASI-C
92146643006	116-18-14	EPA 8015 Modified	MEJ	2	PASI-C
		EPA 8015 Modified	RGF	2	PASI-C
		ASTM D2974-87	TNM	1	PASI-C
92146643007	137-9-15	EPA 8015 Modified	MEJ	2	PASI-C
		EPA 8015 Modified	RGF	2	PASI-C
		ASTM D2974-87	TNM	1	PASI-C
92146643008	137-14-2	EPA 8015 Modified	MEJ	2	PASI-C
		EPA 8015 Modified	RGF	2	PASI-C
		ASTM D2974-87	TNM	1	PASI-C
92146643009	66-6-10	EPA 8015 Modified	MEJ	2	PASI-C
		EPA 8015 Modified	RGF	2	PASI-C
		ASTM D2974-87	TNM	1	PASI-C
92146643010	66-6-20	EPA 8015 Modified	MEJ	2	PASI-C
		EPA 8015 Modified	RGF	2	PASI-C
		ASTM D2974-87	TNM	1	PASI-C
92146643011	66-8-15	EPA 8015 Modified	MEJ	2	PASI-C
		EPA 8015 Modified	RGF	2	PASI-C
		ASTM D2974-87	TNM	1	PASI-C

REPORT OF LABORATORY ANALYSIS

HITS ONLY

Project: NCDOT U-2525B 34821.1.1
Pace Project No.: 92146643

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92146643001	155-3-8					
ASTM D2974-87	Percent Moisture	25.4 %		0.10	02/02/13 11:42	
92146643002	155-4-10					
EPA 8015 Modified	Diesel Components	308 mg/kg		6.5	02/04/13 18:11	
ASTM D2974-87	Percent Moisture	22.6 %		0.10	02/02/13 11:42	
92146643003	116-14-10					
ASTM D2974-87	Percent Moisture	9.7 %		0.10	02/02/13 11:42	
92146643004	116-16-10					
EPA 8015 Modified	Diesel Components	148 mg/kg		6.4	02/04/13 18:34	
EPA 8015 Modified	Gasoline Range Organics	63.8 mg/kg		6.6	02/05/13 13:02	
ASTM D2974-87	Percent Moisture	22.0 %		0.10	02/02/13 11:42	
92146643005	116-16-12					
EPA 8015 Modified	Diesel Components	17.0 mg/kg		6.3	02/04/13 18:34	
EPA 8015 Modified	Gasoline Range Organics	120 mg/kg		6.6	02/05/13 13:26	
ASTM D2974-87	Percent Moisture	20.0 %		0.10	02/02/13 11:42	
92146643006	116-18-14					
ASTM D2974-87	Percent Moisture	18.9 %		0.10	02/02/13 11:43	
92146643007	137-9-15					
ASTM D2974-87	Percent Moisture	15.8 %		0.10	02/02/13 11:43	
92146643008	137-14-2					
ASTM D2974-87	Percent Moisture	21.9 %		0.10	02/02/13 11:43	
92146643009	66-6-10					
EPA 8015 Modified	Diesel Components	26600 mg/kg		765	02/05/13 13:41	
EPA 8015 Modified	Gasoline Range Organics	696 mg/kg		27.5	02/07/13 23:18	
ASTM D2974-87	Percent Moisture	18.3 %		0.10	02/02/13 11:43	
92146643010	66-6-20					
EPA 8015 Modified	Diesel Components	7.1 mg/kg		5.4	02/04/13 19:44	
ASTM D2974-87	Percent Moisture	8.1 %		0.10	02/02/13 11:43	
92146643011	66-8-15					
ASTM D2974-87	Percent Moisture	10.0 %		0.10	02/02/13 11:43	

See Pages 15 through 17 for Analytical Data for Parcel 16.

REPORT OF LABORATORY ANALYSIS

PROJECT NARRATIVE

Project: NCDOT U-2525B 34821.1.1
Pace Project No.: 92146643

Method: EPA 8015 Modified
Description: 8015 GCS THC-Diesel
Client: NCDOT East Central
Date: February 11, 2013

General Information:

11 samples were analyzed for EPA 8015 Modified. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:

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

Sample Preparation:

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

Initial Calibrations (including MS Tune as applicable):

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

Continuing Calibration:

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

Surrogates:

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

QC Batch: OEXT/20631

S4: Surrogate recovery not evaluated against control limits due to sample dilution.

- 66-6-10 (Lab ID: 92146643009)
- n-Pentacosane (S)

Method Blank:

All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

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

Additional Comments:

REPORT OF LABORATORY ANALYSIS



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PROJECT NARRATIVE

Project: NCDOT U-2525B 34821.1.1
Pace Project No.: 92146643

Method: EPA 8015 Modified
Description: Gasoline Range Organics
Client: NCDOT East Central
Date: February 11, 2013

General Information:

11 samples were analyzed for EPA 8015 Modified. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:

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

Sample Preparation:

The samples were prepared in accordance with EPA 5035A/5030B with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

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

Continuing Calibration:

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

Internal Standards:

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

Surrogates:

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

Method Blank:

All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

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

Additional Comments:

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

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ANALYTICAL RESULTS

Project: NCDOT U-2525B 34821.1.1
 Pace Project No.: 92146643

Sample: 155-3-8 **Lab ID: 92146643001** Collected: 01/28/13 14:33 Received: 02/01/13 13:07 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015 GCS THC-Diesel		Analytical Method: EPA 8015 Modified Preparation Method: EPA 3546						
Diesel Components	ND	mg/kg	6.7	1	02/02/13 13:00	02/04/13 17:24	68334-30-5	
Surrogates								
n-Pentacosane (S)	67	%	41-119	1	02/02/13 13:00	02/04/13 17:24	629-99-2	
Gasoline Range Organics		Analytical Method: EPA 8015 Modified Preparation Method: EPA 5035A/5030B						
Gasoline Range Organics	ND	mg/kg	6.4	1	02/05/13 07:20	02/05/13 11:54	8006-61-9	
Surrogates								
4-Bromofluorobenzene (S)	102	%	70-167	1	02/05/13 07:20	02/05/13 11:54	460-00-4	
Percent Moisture		Analytical Method: ASTM D2974-87						
Percent Moisture	25.4	%	0.10	1		02/02/13 11:42		

ANALYTICAL RESULTS

Project: NCDOT U-2525B 34821.1.1

Pace Project No.: 92146643

Sample: 155-4-10 **Lab ID: 92146643002** Collected: 01/28/13 14:58 Received: 02/01/13 13:07 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015 GCS THC-Diesel		Analytical Method: EPA 8015 Modified		Preparation Method: EPA 3546				
Diesel Components	308	mg/kg	6.5	1	02/02/13 13:00	02/04/13 18:11	68334-30-5	
Surrogates								
n-Pentacosane (S)	57	%	41-119	1	02/02/13 13:00	02/04/13 18:11	629-99-2	
Gasoline Range Organics		Analytical Method: EPA 8015 Modified		Preparation Method: EPA 5035A/5030B				
Gasoline Range Organics	ND	mg/kg	6.6	1	02/05/13 07:20	02/05/13 12:17	8006-61-9	
Surrogates								
4-Bromofluorobenzene (S)	95	%	70-167	1	02/05/13 07:20	02/05/13 12:17	460-00-4	
Percent Moisture		Analytical Method: ASTM D2974-87						
Percent Moisture	22.6	%	0.10	1		02/02/13 11:42		

ANALYTICAL RESULTS

Project: NCDOT U-2525B 34821.1.1

Pace Project No.: 92146643

Sample: 116-14-10 **Lab ID: 92146643003** Collected: 01/28/13 13:45 Received: 02/01/13 13:07 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015 GCS THC-Diesel		Analytical Method: EPA 8015 Modified Preparation Method: EPA 3546						
Diesel Components	ND	mg/kg	5.5	1	02/02/13 13:00	02/04/13 18:11	68334-30-5	
Surrogates								
n-Pentacosane (S)	67	%	41-119	1	02/02/13 13:00	02/04/13 18:11	629-99-2	
Gasoline Range Organics		Analytical Method: EPA 8015 Modified Preparation Method: EPA 5035A/5030B						
Gasoline Range Organics	ND	mg/kg	5.4	1	02/05/13 07:20	02/05/13 12:40	8006-61-9	
Surrogates								
4-Bromofluorobenzene (S)	92	%	70-167	1	02/05/13 07:20	02/05/13 12:40	460-00-4	
Percent Moisture		Analytical Method: ASTM D2974-87						
Percent Moisture	9.7	%	0.10	1		02/02/13 11:42		

ANALYTICAL RESULTS

Project: NCDOT U-2525B 34821.1.1

Pace Project No.: 92146643

Sample: 116-16-10 **Lab ID: 92146643004** Collected: 01/29/13 14:20 Received: 02/01/13 13:07 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015 GCS THC-Diesel		Analytical Method: EPA 8015 Modified Preparation Method: EPA 3546						
Diesel Components	148	mg/kg	6.4	1	02/02/13 13:00	02/04/13 18:34	68334-30-5	
Surrogates								
n-Pentacosane (S)	65	%	41-119	1	02/02/13 13:00	02/04/13 18:34	629-99-2	
Gasoline Range Organics		Analytical Method: EPA 8015 Modified Preparation Method: EPA 5035A/5030B						
Gasoline Range Organics	63.8	mg/kg	6.6	1	02/05/13 07:20	02/05/13 13:02	8006-61-9	
Surrogates								
4-Bromofluorobenzene (S)	120	%	70-167	1	02/05/13 07:20	02/05/13 13:02	460-00-4	
Percent Moisture		Analytical Method: ASTM D2974-87						
Percent Moisture	22.0	%	0.10	1		02/02/13 11:42		



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ANALYTICAL RESULTS

Project: NCDOT U-2525B 34821.1.1
 Pace Project No.: 92146643

Sample: 116-16-12 **Lab ID: 92146643005** Collected: 01/29/13 14:24 Received: 02/01/13 13:07 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015 GCS THC-Diesel		Analytical Method: EPA 8015 Modified Preparation Method: EPA 3546						
Diesel Components	17.0	mg/kg	6.3	1	02/02/13 13:00	02/04/13 18:34	68334-30-5	
Surrogates								
n-Pentacosane (S)	65 %		41-119	1	02/02/13 13:00	02/04/13 18:34	629-99-2	
Gasoline Range Organics		Analytical Method: EPA 8015 Modified Preparation Method: EPA 5035A/5030B						
Gasoline Range Organics	120	mg/kg	6.6	1	02/05/13 07:20	02/05/13 13:26	8006-61-9	
Surrogates								
4-Bromofluorobenzene (S)	135 %		70-167	1	02/05/13 07:20	02/05/13 13:26	460-00-4	
Percent Moisture		Analytical Method: ASTM D2974-87						
Percent Moisture	20.0	%	0.10	1		02/02/13 11:42		



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ANALYTICAL RESULTS

Project: NCDOT U-2525B 34821.1.1
 Pace Project No.: 92146643

Sample: 116-18-14 Lab ID: 92146643006 Collected: 01/29/13 14:57 Received: 02/01/13 13:07 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015 GCS THC-Diesel		Analytical Method: EPA 8015 Modified Preparation Method: EPA 3546						
Diesel Components	ND	mg/kg	6.2	1	02/02/13 13:00	02/04/13 18:57	68334-30-5	
Surrogates								
n-Pentacosane (S)	65 %		41-119	1	02/02/13 13:00	02/04/13 18:57	629-99-2	
Gasoline Range Organics		Analytical Method: EPA 8015 Modified Preparation Method: EPA 5035A/5030B						
Gasoline Range Organics	ND	mg/kg	5.2	1	02/05/13 07:20	02/07/13 22:32	8006-61-9	
Surrogates								
4-Bromofluorobenzene (S)	90 %		70-167	1	02/05/13 07:20	02/07/13 22:32	460-00-4	
Percent Moisture		Analytical Method: ASTM D2974-87						
Percent Moisture	18.9 %		0.10	1		02/02/13 11:43		



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ANALYTICAL RESULTS

Project: NCDOT U-2525B 34821.1.1
 Pace Project No.: 92146643

Sample: 137-9-15 **Lab ID: 92146643007** Collected: 01/30/13 10:16 Received: 02/01/13 13:07 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015 GCS THC-Diesel		Analytical Method: EPA 8015 Modified Preparation Method: EPA 3546						
Diesel Components	ND	mg/kg	5.9	1	02/02/13 13:00	02/04/13 18:57	68334-30-5	
Surrogates								
n-Pentacosane (S)	66	%	41-119	1	02/02/13 13:00	02/04/13 18:57	629-99-2	
Gasoline Range Organics		Analytical Method: EPA 8015 Modified Preparation Method: EPA 5035A/5030B						
Gasoline Range Organics	ND	mg/kg	7.4	1	02/05/13 07:20	02/05/13 14:12	8006-61-9	
Surrogates								
4-Bromofluorobenzene (S)	109	%	70-167	1	02/05/13 07:20	02/05/13 14:12	460-00-4	
Percent Moisture		Analytical Method: ASTM D2974-87						
Percent Moisture	15.8	%	0.10	1		02/02/13 11:43		



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ANALYTICAL RESULTS

Project: NCDOT U-2525B 34821.1.1
 Pace Project No.: 92146643

Sample: 137-14-2 **Lab ID: 92146643008** Collected: 01/30/13 13:15 Received: 02/01/13 13:07 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015 GCS THC-Diesel		Analytical Method: EPA 8015 Modified Preparation Method: EPA 3546						
Diesel Components	ND	mg/kg	6.4	1	02/02/13 13:00	02/04/13 19:20	68334-30-5	
Surrogates								
n-Pentacosane (S)	70	%	41-119	1	02/02/13 13:00	02/04/13 19:20	629-99-2	
Gasoline Range Organics		Analytical Method: EPA 8015 Modified Preparation Method: EPA 5035A/5030B						
Gasoline Range Organics	ND	mg/kg	6.7	1	02/05/13 07:20	02/05/13 14:35	8006-61-9	
Surrogates								
4-Bromofluorobenzene (S)	94	%	70-167	1	02/05/13 07:20	02/05/13 14:35	460-00-4	
Percent Moisture		Analytical Method: ASTM D2974-87						
Percent Moisture	21.9	%	0.10	1		02/02/13 11:43		

ANALYTICAL RESULTS

Project: NCDOT U-2525B 34821.1.1

Pace Project No.: 92146643

Sample: 66-6-10 Lab ID: 92146643009 Collected: 01/31/13 10:55 Received: 02/01/13 13:07 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015 GCS THC-Diesel	Analytical Method: EPA 8015 Modified		Preparation Method: EPA 3546					
Diesel Components	26600	mg/kg	765	25	02/02/13 13:00	02/05/13 13:41	68334-30-5	
Surrogates								
n-Pentacosane (S)	0 %		41-119	25	02/02/13 13:00	02/05/13 13:41	629-99-2	S4
Gasoline Range Organics	Analytical Method: EPA 8015 Modified		Preparation Method: EPA 5035A/5030B					
Gasoline Range Organics	696	mg/kg	27.5	4	02/05/13 07:20	02/07/13 23:18	8006-61-9	
Surrogates								
4-Bromofluorobenzene (S)	160 %		70-167	4	02/05/13 07:20	02/07/13 23:18	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974-87							
Percent Moisture	18.3	%	0.10	1		02/02/13 11:43		



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ANALYTICAL RESULTS

Project: NCDOT U-2525B 34821.1.1
 Pace Project No.: 92146643

Sample: 66-6-20 Lab ID: 92146643010 Collected: 01/31/13 11:08 Received: 02/01/13 13:07 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015 GCS THC-Diesel								
Analytical Method: EPA 8015 Modified Preparation Method: EPA 3546								
Diesel Components	7.1	mg/kg	5.4	1	02/02/13 13:00	02/04/13 19:44	68334-30-5	
Surrogates								
n-Pentacosane (S)	52	%	41-119	1	02/02/13 13:00	02/04/13 19:44	629-99-2	
Gasoline Range Organics								
Analytical Method: EPA 8015 Modified Preparation Method: EPA 5035A/5030B								
Gasoline Range Organics	ND	mg/kg	6.0	1	02/05/13 07:20	02/07/13 22:55	8006-61-9	
Surrogates								
4-Bromofluorobenzene (S)	100	%	70-167	1	02/05/13 07:20	02/07/13 22:55	460-00-4	
Percent Moisture								
Analytical Method: ASTM D2974-87								
Percent Moisture	8.1	%	0.10	1		02/02/13 11:43		



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ANALYTICAL RESULTS

Project: NCDOT U-2525B 34821.1.1
 Pace Project No.: 92146643

Sample: 66-8-15 Lab ID: 92146643011 Collected: 01/31/13 13:55 Received: 02/01/13 13:07 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015 GCS THC-Diesel	Analytical Method: EPA 8015 Modified Preparation Method: EPA 3546							
Diesel Components	ND	mg/kg	5.6	1	02/02/13 13:00	02/04/13 19:44	68334-30-5	
Surrogates								
n-Pentacosane (S)	59	%	41-119	1	02/02/13 13:00	02/04/13 19:44	629-99-2	
Gasoline Range Organics	Analytical Method: EPA 8015 Modified Preparation Method: EPA 5035A/5030B							
Gasoline Range Organics	ND	mg/kg	6.8	1	02/05/13 07:20	02/08/13 08:49	8006-61-9	
Surrogates								
4-Bromofluorobenzene (S)	96	%	70-167	1	02/05/13 07:20	02/08/13 08:49	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974-87							
Percent Moisture	10.0	%	0.10	1		02/02/13 11:43		

QUALITY CONTROL DATA

Project: NCDOT U-2525B 34821.1.1
Pace Project No.: 92146643

QC Batch: GCV/6612 Analysis Method: EPA 8015 Modified
QC Batch Method: EPA 5035A/5030B Analysis Description: Gasoline Range Organics
Associated Lab Samples: 92146643001, 92146643002, 92146643003, 92146643004, 92146643005, 92146643006, 92146643007, 92146643008, 92146643009, 92146643010, 92146643011

METHOD BLANK: 915953 Matrix: Solid
Associated Lab Samples: 92146643001, 92146643002, 92146643003, 92146643004, 92146643005, 92146643006, 92146643007, 92146643008, 92146643009, 92146643010, 92146643011

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Gasoline Range Organics	mg/kg	ND	6.0	02/05/13 08:50	
4-Bromofluorobenzene (S)	%	91	70-167	02/05/13 08:50	

LABORATORY CONTROL SAMPLE: 915954

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Gasoline Range Organics	mg/kg	25	23.8	95	70-165	
4-Bromofluorobenzene (S)	%			91	70-167	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 915955 915956

Parameter	Units	92146451019 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Gasoline Range Organics	mg/kg	ND	24.3	24.3	31.1	29.5	128	121	47-187	5	
4-Bromofluorobenzene (S)	%						97	99	70-167		

QUALITY CONTROL DATA

Project: NCDOT U-2525B 34821.1.1
Pace Project No.: 92146643

QC Batch: OEXT/20631 Analysis Method: EPA 8015 Modified
QC Batch Method: EPA 3546 Analysis Description: 8015 Solid GCSV
Associated Lab Samples: 92146643001, 92146643002, 92146643003, 92146643004, 92146643005, 92146643006, 92146643007, 92146643008, 92146643009, 92146643010, 92146643011

METHOD BLANK: 915352 Matrix: Solid
Associated Lab Samples: 92146643001, 92146643002, 92146643003, 92146643004, 92146643005, 92146643006, 92146643007, 92146643008, 92146643009, 92146643010, 92146643011

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diesel Components	mg/kg	ND	5.0	02/04/13 15:51	
n-Pentacosane (S)	%	76	41-119	02/04/13 15:51	

LABORATORY CONTROL SAMPLE: 915353

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Diesel Components	mg/kg	66.7	49.8	75	49-113	
n-Pentacosane (S)	%			78	41-119	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 915354 915355

Parameter	Units	92146643001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Diesel Components	mg/kg	ND	89.4	89.4	66.8	63.1	69	65	10-146	6	
n-Pentacosane (S)	%						69	67	41-119		



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QUALITY CONTROL DATA

Project: NCDOT U-2525B 34821.1.1
 Pace Project No.: 92146643

QC Batch: PMST/5285 Analysis Method: ASTM D2974-87
 QC Batch Method: ASTM D2974-87 Analysis Description: Dry Weight/Percent Moisture
 Associated Lab Samples: 92146643001, 92146643002, 92146643003, 92146643004, 92146643005, 92146643006, 92146643007,
 92146643008, 92146643009, 92146643010, 92146643011

SAMPLE DUPLICATE: 915085

Parameter	Units	92146638007 Result	Dup Result	RPD	Qualifiers
Percent Moisture	%	16.4	16.3	1	

SAMPLE DUPLICATE: 915086

Parameter	Units	92146649001 Result	Dup Result	RPD	Qualifiers
Percent Moisture	%	19.5	19.8	2	

QUALIFIERS

Project: NCDOT U-2525B 34821.1.1
Pace Project No.: 92146643

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

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

TNI - The NELAC Institute.

LABORATORIES

PASI-C Pace Analytical Services - Charlotte

ANALYTE QUALIFIERS

S4 Surrogate recovery not evaluated against control limits due to sample dilution.

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: NCDOT U-2525B 34821.1.1
Pace Project No.: 92146643

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92146643001	155-3-8	EPA 3546	OEXT/20631	EPA 8015 Modified	GCSV/13867
92146643002	155-4-10	EPA 3546	OEXT/20631	EPA 8015 Modified	GCSV/13867
92146643003	116-14-10	EPA 3546	OEXT/20631	EPA 8015 Modified	GCSV/13867
92146643004	116-16-10	EPA 3546	OEXT/20631	EPA 8015 Modified	GCSV/13867
92146643005	116-16-12	EPA 3546	OEXT/20631	EPA 8015 Modified	GCSV/13867
92146643006	116-18-14	EPA 3546	OEXT/20631	EPA 8015 Modified	GCSV/13867
92146643007	137-9-15	EPA 3546	OEXT/20631	EPA 8015 Modified	GCSV/13867
92146643008	137-14-2	EPA 3546	OEXT/20631	EPA 8015 Modified	GCSV/13867
92146643009	66-6-10	EPA 3546	OEXT/20631	EPA 8015 Modified	GCSV/13867
92146643010	66-6-20	EPA 3546	OEXT/20631	EPA 8015 Modified	GCSV/13867
92146643011	66-8-15	EPA 3546	OEXT/20631	EPA 8015 Modified	GCSV/13867
92146643001	155-3-8	EPA 5035A/5030B	GCV/6612	EPA 8015 Modified	GCV/6616
92146643002	155-4-10	EPA 5035A/5030B	GCV/6612	EPA 8015 Modified	GCV/6616
92146643003	116-14-10	EPA 5035A/5030B	GCV/6612	EPA 8015 Modified	GCV/6616
92146643004	116-16-10	EPA 5035A/5030B	GCV/6612	EPA 8015 Modified	GCV/6616
92146643005	116-16-12	EPA 5035A/5030B	GCV/6612	EPA 8015 Modified	GCV/6616
92146643006	116-18-14	EPA 5035A/5030B	GCV/6612	EPA 8015 Modified	GCV/6619
92146643007	137-9-15	EPA 5035A/5030B	GCV/6612	EPA 8015 Modified	GCV/6616
92146643008	137-14-2	EPA 5035A/5030B	GCV/6612	EPA 8015 Modified	GCV/6616
92146643009	66-6-10	EPA 5035A/5030B	GCV/6612	EPA 8015 Modified	GCV/6619
92146643010	66-6-20	EPA 5035A/5030B	GCV/6612	EPA 8015 Modified	GCV/6619
92146643011	66-8-15	EPA 5035A/5030B	GCV/6612	EPA 8015 Modified	GCV/6621
92146643001	155-3-8	ASTM D2974-87	PMST/5285		
92146643002	155-4-10	ASTM D2974-87	PMST/5285		
92146643003	116-14-10	ASTM D2974-87	PMST/5285		
92146643004	116-16-10	ASTM D2974-87	PMST/5285		
92146643005	116-16-12	ASTM D2974-87	PMST/5285		
92146643006	116-18-14	ASTM D2974-87	PMST/5285		
92146643007	137-9-15	ASTM D2974-87	PMST/5285		
92146643008	137-14-2	ASTM D2974-87	PMST/5285		
92146643009	66-6-10	ASTM D2974-87	PMST/5285		
92146643010	66-6-20	ASTM D2974-87	PMST/5285		
92146643011	66-8-15	ASTM D2974-87	PMST/5285		



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February 11, 2013

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

RE: Project: NCDOT U-2525B 34821.1.1
Pace Project No.: 92147015

Dear Chemical Engineer:

Enclosed are the analytical results for sample(s) received by the laboratory on February 06, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

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

Sincerely,

Jon D Bradley for
Kevin Herring
kevin.herring@pacelabs.com
Project Manager

Enclosures



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: NCDOT U-2525B 34821.1.1
Pace Project No.: 92147015

Charlotte Certification IDs

9800 Kinsey Ave. Ste 100, Huntersville, NC 28078
North Carolina Drinking Water Certification #: 37706
North Carolina Field Services Certification #: 5342
North Carolina Wastewater Certification #: 12
South Carolina Certification #: 99006001

Florida/NELAP Certification #: E87627
Kentucky UST Certification #: 84
West Virginia Certification #: 357
Virginia/VELAP Certification #: 460221

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SAMPLE ANALYTE COUNT

Project: NCDOT U-2525B 34821.1.1
 Pace Project No.: 92147015

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92147015001	137-7-2	EPA 8015 Modified	MEJ	2	PASI-C
		EPA 8015 Modified	RGF	2	PASI-C
		ASTM D2974-87	TNM	1	PASI-C
92147015002	137-8-15	EPA 8015 Modified	MEJ	2	PASI-C
		EPA 8015 Modified	RGF	2	PASI-C
		ASTM D2974-87	TNM	1	PASI-C
92147015003	137-10-15	EPA 8015 Modified	MEJ	2	PASI-C
		EPA 8015 Modified	RGF	2	PASI-C
		ASTM D2974-87	TNM	1	PASI-C
92147015004	66-14-8	EPA 8015 Modified	MEJ	2	PASI-C
		EPA 8015 Modified	RGF	2	PASI-C
		ASTM D2974-87	TNM	1	PASI-C
92147015005	66-19-9	EPA 8015 Modified	MEJ	2	PASI-C
		EPA 8015 Modified	RGF	2	PASI-C
		ASTM D2974-87	TNM	1	PASI-C
92147015006	66-20-13	EPA 8015 Modified	MEJ	2	PASI-C
		EPA 8015 Modified	RGF	2	PASI-C
		ASTM D2974-87	TNM	1	PASI-C
92147015007	66-25-12.5	EPA 8015 Modified	MEJ	2	PASI-C
		EPA 8015 Modified	RGF	2	PASI-C
		ASTM D2974-87	TNM	1	PASI-C
92147015008	66-26-11	EPA 8015 Modified	MEJ	2	PASI-C
		EPA 8015 Modified	RGF	2	PASI-C
		ASTM D2974-87	TNM	1	PASI-C
92147015009	110-3-10	EPA 8015 Modified	MEJ	2	PASI-C
		EPA 8015 Modified	RGF	2	PASI-C
		ASTM D2974-87	TNM	1	PASI-C

REPORT OF LABORATORY ANALYSIS

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HITS ONLY

Project: NCDOT U-2525B 34821.1.1
Pace Project No.: 92147015

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92147015001	137-7-2					
EPA 8015 Modified	Diesel Components	22.9 mg/kg		6.6	02/07/13 18:02	
EPA 8015 Modified	Gasoline Range Organics	12.9 mg/kg		6.5	02/08/13 11:53	
ASTM D2974-87	Percent Moisture	24.8 %		0.10	02/06/13 15:28	
92147015002	137-8-15					
ASTM D2974-87	Percent Moisture	17.5 %		0.10	02/06/13 15:28	
92147015003	137-10-15					
ASTM D2974-87	Percent Moisture	16.6 %		0.10	02/06/13 15:28	
92147015004	66-14-8					
EPA 8015 Modified	Diesel Components	252 mg/kg		6.1	02/07/13 18:26	
EPA 8015 Modified	Gasoline Range Organics	7.9 mg/kg		5.8	02/08/13 13:48	
ASTM D2974-87	Percent Moisture	18.4 %		0.10	02/06/13 15:29	
92147015005	66-19-9					
EPA 8015 Modified	Diesel Components	5460 mg/kg		170	02/08/13 17:07	
ASTM D2974-87	Percent Moisture	26.5 %		0.10	02/06/13 15:29	
92147015006	66-20-13					
ASTM D2974-87	Percent Moisture	26.2 %		0.10	02/06/13 15:29	
92147015007	66-25-12.5					
EPA 8015 Modified	Diesel Components	4580 mg/kg		177	02/08/13 17:07	
EPA 8015 Modified	Gasoline Range Organics	40.1 mg/kg		7.1	02/08/13 14:57	
ASTM D2974-87	Percent Moisture	29.3 %		0.10	02/06/13 15:29	
92147015008	66-26-11					
ASTM D2974-87	Percent Moisture	15.0 %		0.10	02/06/13 15:29	
92147015009	110-3-10					
ASTM D2974-87	Percent Moisture	28.2 %		0.10	02/06/13 15:29	

See Pages 10 through 14 for Analytical Results for Parcel 66

REPORT OF LABORATORY ANALYSIS

PROJECT NARRATIVE

Project: NCDOT U-2525B 34821.1.1
Pace Project No.: 92147015

Method: EPA 8015 Modified
Description: 8015 GCS THC-Diesel
Client: NCDOT East Central
Date: February 11, 2013

General Information:

9 samples were analyzed for EPA 8015 Modified. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:

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

Sample Preparation:

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

Initial Calibrations (including MS Tune as applicable):

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

Continuing Calibration:

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

Surrogates:

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

QC Batch: OEXT/20683

S4: Surrogate recovery not evaluated against control limits due to sample dilution.

- 66-19-9 (Lab ID: 92147015005)
 - n-Pentacosane (S)
- 66-25-12.5 (Lab ID: 92147015007)
 - n-Pentacosane (S)

Method Blank:

All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

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

Additional Comments:

REPORT OF LABORATORY ANALYSIS

PROJECT NARRATIVE

Project: NCDOT U-2525B 34821.1.1
Pace Project No.: 92147015

Method: EPA 8015 Modified
Description: Gasoline Range Organics
Client: NCDOT East Central
Date: February 11, 2013

General Information:

9 samples were analyzed for EPA 8015 Modified. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:

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

Sample Preparation:

The samples were prepared in accordance with EPA 5035A/5030B with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

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

Continuing Calibration:

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

Internal Standards:

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

Surrogates:

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

Method Blank:

All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

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

Additional Comments:

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

ANALYTICAL RESULTS

Project: NCDOT U-2525B 34821.1.1

Pace Project No.: 92147015

Sample: 137-7-2 **Lab ID: 92147015001** Collected: 01/30/13 09:10 Received: 02/06/13 09:45 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015 GCS THC-Diesel		Analytical Method: EPA 8015 Modified Preparation Method: EPA 3546						
Diesel Components	22.9	mg/kg	6.6	1	02/06/13 13:35	02/07/13 18:02	68334-30-5	
Surrogates								
n-Pentacosane (S)	66	%	41-119	1	02/06/13 13:35	02/07/13 18:02	629-99-2	
Gasoline Range Organics		Analytical Method: EPA 8015 Modified Preparation Method: EPA 5035A/5030B						
Gasoline Range Organics	12.9	mg/kg	6.5	1	02/08/13 08:46	02/08/13 11:53	8006-61-9	
Surrogates								
4-Bromofluorobenzene (S)	116	%	70-167	1	02/08/13 08:46	02/08/13 11:53	460-00-4	
Percent Moisture		Analytical Method: ASTM D2974-87						
Percent Moisture	24.8	%	0.10	1		02/06/13 15:28		



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ANALYTICAL RESULTS

Project: NCDOT U-2525B 34821.1.1
 Pace Project No.: 92147015

Sample: 137-8-15 **Lab ID: 92147015002** Collected: 01/30/13 09:45 Received: 02/06/13 09:45 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015 GCS THC-Diesel		Analytical Method: EPA 8015 Modified Preparation Method: EPA 3546						
Diesel Components	ND	mg/kg	6.1	1	02/06/13 13:35	02/07/13 18:02	68334-30-5	
Surrogates								
n-Pentacosane (S)	47	%	41-119	1	02/06/13 13:35	02/07/13 18:02	629-99-2	
Gasoline Range Organics		Analytical Method: EPA 8015 Modified Preparation Method: EPA 5035A/5030B						
Gasoline Range Organics	ND	mg/kg	7.2	1	02/08/13 08:46	02/08/13 13:02	8006-61-9	
Surrogates								
4-Bromofluorobenzene (S)	109	%	70-167	1	02/08/13 08:46	02/08/13 13:02	460-00-4	
Percent Moisture		Analytical Method: ASTM D2974-87						
Percent Moisture	17.5	%	0.10	1		02/06/13 15:28		



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ANALYTICAL RESULTS

Project: NCDOT U-2525B 34821.1.1
 Pace Project No.: 92147015

Sample: 137-10-15 **Lab ID: 92147015003** Collected: 01/30/13 10:35 Received: 02/06/13 09:45 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015 GCS THC-Diesel		Analytical Method: EPA 8015 Modified Preparation Method: EPA 3546						
Diesel Components	ND	mg/kg	6.0	1	02/06/13 13:35	02/07/13 18:26	68334-30-5	
Surrogates								
n-Pentacosane (S)	60	%	41-119	1	02/06/13 13:35	02/07/13 18:26	629-99-2	
Gasoline Range Organics		Analytical Method: EPA 8015 Modified Preparation Method: EPA 5035A/5030B						
Gasoline Range Organics	ND	mg/kg	5.8	1	02/08/13 08:46	02/08/13 13:25	8006-61-9	
Surrogates								
4-Bromofluorobenzene (S)	100	%	70-167	1	02/08/13 08:46	02/08/13 13:25	460-00-4	
Percent Moisture		Analytical Method: ASTM D2974-87						
Percent Moisture	16.6	%	0.10	1		02/06/13 15:28		



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ANALYTICAL RESULTS

Project: NCDOT U-2525B 34821.1.1
 Pace Project No.: 92147015

Sample: 66-14-8 Lab ID: **92147015004** Collected: 02/01/13 09:32 Received: 02/06/13 09:45 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015 GCS THC-Diesel	Analytical Method: EPA 8015 Modified Preparation Method: EPA 3546							
Diesel Components	252	mg/kg	6.1	1	02/06/13 13:35	02/07/13 18:26	68334-30-5	
Surrogates								
n-Pentacosane (S)	86	%	41-119	1	02/06/13 13:35	02/07/13 18:26	629-99-2	
Gasoline Range Organics	Analytical Method: EPA 8015 Modified Preparation Method: EPA 5035A/5030B							
Gasoline Range Organics	7.9	mg/kg	5.8	1	02/08/13 08:46	02/08/13 13:48	8006-61-9	
Surrogates								
4-Bromofluorobenzene (S)	132	%	70-167	1	02/08/13 08:46	02/08/13 13:48	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974-87							
Percent Moisture	18.4	%	0.10	1		02/06/13 15:29		



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ANALYTICAL RESULTS

Project: NCDOT U-2525B 34821.1.1
 Pace Project No.: 92147015

Sample: 66-19-9 Lab ID: 92147015005 Collected: 02/01/13 11:55 Received: 02/06/13 09:45 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015 GCS THC-Diesel								
Analytical Method: EPA 8015 Modified Preparation Method: EPA 3546								
Diesel Components	5460	mg/kg	170	25	02/06/13 13:35	02/08/13 17:07	68334-30-5	
Surrogates								
n-Pentacosane (S)	0	%	41-119	25	02/06/13 13:35	02/08/13 17:07	629-99-2	S4
Gasoline Range Organics								
Analytical Method: EPA 8015 Modified Preparation Method: EPA 5035A/5030B								
Gasoline Range Organics	ND	mg/kg	6.7	1	02/08/13 08:46	02/08/13 14:11	8006-61-9	
Surrogates								
4-Bromofluorobenzene (S)	104	%	70-167	1	02/08/13 08:46	02/08/13 14:11	460-00-4	
Percent Moisture								
Analytical Method: ASTM D2974-87								
Percent Moisture	26.5	%	0.10	1		02/06/13 15:29		



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ANALYTICAL RESULTS

Project: NCDOT U-2525B 34821.1.1
 Pace Project No.: 92147015

Sample: 66-20-13 Lab ID: 92147015006 Collected: 02/01/13 12:34 Received: 02/06/13 09:45 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015 GCS THC-Diesel	Analytical Method: EPA 8015 Modified Preparation Method: EPA 3546							
Diesel Components	ND	mg/kg	6.8	1	02/06/13 13:35	02/07/13 18:49	68334-30-5	
Surrogates								
n-Pentacosane (S)	62	%	41-119	1	02/06/13 13:35	02/07/13 18:49	629-99-2	
Gasoline Range Organics	Analytical Method: EPA 8015 Modified Preparation Method: EPA 5035A/5030B							
Gasoline Range Organics	ND	mg/kg	8.3	1	02/08/13 08:46	02/08/13 14:34	8006-61-9	
Surrogates								
4-Bromofluorobenzene (S)	100	%	70-167	1	02/08/13 08:46	02/08/13 14:34	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974-87							
Percent Moisture	26.2	%	0.10	1		02/06/13 15:29		



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ANALYTICAL RESULTS

Project: NCDOT U-2525B 34821.1.1
 Pace Project No.: 92147015

Sample: 66-25-12.5 Lab ID: 92147015007 Collected: 02/01/13 14:42 Received: 02/06/13 09:45 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015 GCS THC-Diesel								
		Analytical Method: EPA 8015 Modified			Preparation Method: EPA 3546			
Diesel Components	4580	mg/kg	177	25	02/06/13 13:35	02/08/13 17:07	68334-30-5	
Surrogates								
n-Pentacosane (S)	0	%	41-119	25	02/06/13 13:35	02/08/13 17:07	629-99-2	S4
Gasoline Range Organics								
		Analytical Method: EPA 8015 Modified			Preparation Method: EPA 5035A/5030B			
Gasoline Range Organics	40.1	mg/kg	7.1	1	02/08/13 08:46	02/08/13 14:57	8006-61-9	
Surrogates								
4-Bromofluorobenzene (S)	146	%	70-167	1	02/08/13 08:46	02/08/13 14:57	460-00-4	
Percent Moisture								
		Analytical Method: ASTM D2974-87						
Percent Moisture	29.3	%	0.10	1		02/06/13 15:29		

ANALYTICAL RESULTS

Project: NCDOT U-2525B 34821.1.1
Pace Project No.: 92147015

Sample: 66-26-11 **Lab ID: 92147015008** Collected: 02/01/13 15:13 Received: 02/06/13 09:45 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015 GCS THC-Diesel								
Analytical Method: EPA 8015 Modified Preparation Method: EPA 3546								
Diesel Components	ND	mg/kg	5.9	1	02/06/13 13:35	02/07/13 19:12	68334-30-5	
Surrogates								
n-Pentacosane (S)	80	%	41-119	1	02/06/13 13:35	02/07/13 19:12	629-99-2	
Gasoline Range Organics								
Analytical Method: EPA 8015 Modified Preparation Method: EPA 5035A/5030B								
Gasoline Range Organics	ND	mg/kg	5.3	1	02/08/13 08:46	02/08/13 15:20	8006-61-9	
Surrogates								
4-Bromofluorobenzene (S)	100	%	70-167	1	02/08/13 08:46	02/08/13 15:20	460-00-4	
Percent Moisture								
Analytical Method: ASTM D2974-87								
Percent Moisture	15.0	%	0.10	1		02/06/13 15:29		

ANALYTICAL RESULTS

Project: NCDOT U-2525B 34821.1.1

Pace Project No.: 92147015

Sample: 110-3-10 **Lab ID: 92147015009** Collected: 02/01/13 16:48 Received: 02/06/13 09:45 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015 GCS THC-Diesel		Analytical Method: EPA 8015 Modified		Preparation Method: EPA 3546				
Diesel Components	ND	mg/kg	7.0	1	02/06/13 13:35	02/07/13 19:36	68334-30-5	
Surrogates								
n-Pentacosane (S)	69 %		41-119	1	02/06/13 13:35	02/07/13 19:36	629-99-2	
Gasoline Range Organics		Analytical Method: EPA 8015 Modified		Preparation Method: EPA 5035A/5030B				
Gasoline Range Organics	ND	mg/kg	6.7	1	02/08/13 08:46	02/08/13 15:44	8006-61-9	
Surrogates								
4-Bromofluorobenzene (S)	94 %		70-167	1	02/08/13 08:46	02/08/13 15:44	460-00-4	
Percent Moisture		Analytical Method: ASTM D2974-87						
Percent Moisture	28.2 %		0.10	1		02/06/13 15:29		

QUALITY CONTROL DATA

Project: NCDOT U-2525B 34821.1.1
Pace Project No.: 92147015

QC Batch: GCV/6623 Analysis Method: EPA 8015 Modified
QC Batch Method: EPA 5035A/5030B Analysis Description: Gasoline Range Organics
Associated Lab Samples: 92147015001, 92147015002, 92147015003, 92147015004, 92147015005, 92147015006, 92147015007, 92147015008, 92147015009

METHOD BLANK: 918709 Matrix: Solid
Associated Lab Samples: 92147015001, 92147015002, 92147015003, 92147015004, 92147015005, 92147015006, 92147015007, 92147015008, 92147015009

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Gasoline Range Organics	mg/kg	ND	5.9	02/08/13 11:30	
4-Bromofluorobenzene (S)	%	102	70-167	02/08/13 11:30	

LABORATORY CONTROL SAMPLE: 918710

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Gasoline Range Organics	mg/kg	24.5	23.2	95	70-165	
4-Bromofluorobenzene (S)	%			97	70-167	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 918711 918712

Parameter	Units	92147015001		918711		918712		% Rec	% Rec	% Rec Limits	RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS Result	MSD Result					
Gasoline Range Organics	mg/kg	12.9	27	27	46.0	45.8	122	121	47-187	1		
4-Bromofluorobenzene (S)	%						107	107	70-167			

QUALITY CONTROL DATA

Project: NCDOT U-2525B 34821.1.1

Pace Project No.: 92147015

QC Batch: OEXT/20683 Analysis Method: EPA 8015 Modified
 QC Batch Method: EPA 3546 Analysis Description: 8015 Solid GCSV
 Associated Lab Samples: 92147015001, 92147015002, 92147015003, 92147015004, 92147015005, 92147015006, 92147015007, 92147015008, 92147015009

METHOD BLANK: 916820 Matrix: Solid
 Associated Lab Samples: 92147015001, 92147015002, 92147015003, 92147015004, 92147015005, 92147015006, 92147015007, 92147015008, 92147015009

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diesel Components	mg/kg	ND	5.0	02/07/13 12:41	
n-Pentacosane (S)	%	70	41-119	02/07/13 12:41	

LABORATORY CONTROL SAMPLE: 916821

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Diesel Components	mg/kg	66.7	41.2	62	49-113	
n-Pentacosane (S)	%			66	41-119	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 916822 916823

Parameter	Units	92146950001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Diesel Components	mg/kg	ND	74.8	74.8	40.7	42.4	54	56	10-146	4	
n-Pentacosane (S)	%						52	60	41-119		

QUALIFIERS

Project: NCDOT U-2525B 34821.1.1
Pace Project No.: 92147015

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

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

TNI - The NELAC Institute.

LABORATORIES

PASI-C Pace Analytical Services - Charlotte

ANALYTE QUALIFIERS

S4 Surrogate recovery not evaluated against control limits due to sample dilution.

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: NCDOT U-2525B 34821.1.1

Pace Project No.: 92147015

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92147015001	137-7-2	EPA 3546	OEXT/20683	EPA 8015 Modified	GCSV/13898
92147015002	137-8-15	EPA 3546	OEXT/20683	EPA 8015 Modified	GCSV/13898
92147015003	137-10-15	EPA 3546	OEXT/20683	EPA 8015 Modified	GCSV/13898
92147015004	66-14-8	EPA 3546	OEXT/20683	EPA 8015 Modified	GCSV/13898
92147015005	66-19-9	EPA 3546	OEXT/20683	EPA 8015 Modified	GCSV/13898
92147015006	66-20-13	EPA 3546	OEXT/20683	EPA 8015 Modified	GCSV/13898
92147015007	66-25-12.5	EPA 3546	OEXT/20683	EPA 8015 Modified	GCSV/13898
92147015008	66-26-11	EPA 3546	OEXT/20683	EPA 8015 Modified	GCSV/13898
92147015009	110-3-10	EPA 3546	OEXT/20683	EPA 8015 Modified	GCSV/13898
92147015001	137-7-2	EPA 5035A/5030B	GCV/6623	EPA 8015 Modified	GCV/6625
92147015002	137-8-15	EPA 5035A/5030B	GCV/6623	EPA 8015 Modified	GCV/6625
92147015003	137-10-15	EPA 5035A/5030B	GCV/6623	EPA 8015 Modified	GCV/6625
92147015004	66-14-8	EPA 5035A/5030B	GCV/6623	EPA 8015 Modified	GCV/6625
92147015005	66-19-9	EPA 5035A/5030B	GCV/6623	EPA 8015 Modified	GCV/6625
92147015006	66-20-13	EPA 5035A/5030B	GCV/6623	EPA 8015 Modified	GCV/6625
92147015007	66-25-12.5	EPA 5035A/5030B	GCV/6623	EPA 8015 Modified	GCV/6625
92147015008	66-26-11	EPA 5035A/5030B	GCV/6623	EPA 8015 Modified	GCV/6625
92147015009	110-3-10	EPA 5035A/5030B	GCV/6623	EPA 8015 Modified	GCV/6625
92147015001	137-7-2	ASTM D2974-87	PMST/5292		
92147015002	137-8-15	ASTM D2974-87	PMST/5292		
92147015003	137-10-15	ASTM D2974-87	PMST/5292		
92147015004	66-14-8	ASTM D2974-87	PMST/5292		
92147015005	66-19-9	ASTM D2974-87	PMST/5292		
92147015006	66-20-13	ASTM D2974-87	PMST/5292		
92147015007	66-25-12.5	ASTM D2974-87	PMST/5292		
92147015008	66-26-11	ASTM D2974-87	PMST/5292		
92147015009	110-3-10	ASTM D2974-87	PMST/5292		