P S A R E P O R T

PRELIMINARY SITE ASSESSMENT
PARCEL #026
WHITAKER PROPERTY
5893 US 401N S
YOUNGSVILLE, FRANKLIN COUNTY, NC
STATE PROJECT R-2814C
WBS ELEMENT 34506.1.4

Prepared for

North Carolina Department of Transportation
Geotechnical Engineering Unit
Geoenvironmental Section
Century Center Complex, Building B
1020 Birch Ridge Drive
Raleigh, NC 27610
Tel. (919) 250-4088

23 March 2015

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URS Job No. 3182 9895

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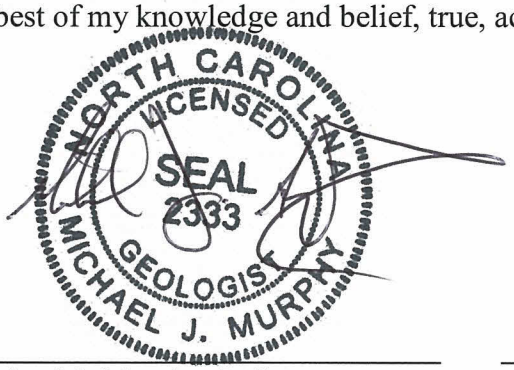
Certification

This Report was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my thorough inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete.



Michael J. Murphy, L.G.	2333	3/23/15
Project Manager	NC License No.	Date
URS Corporation – North Carolina		

1.1 INTRODUCTION

This report documents a Preliminary Site Assessment (PSA) conducted by URS Corporation – North Carolina (URS) on behalf of the North Carolina Department of Transportation (NCDOT). This PSA was conducted at 5893 US 401 S Youngsville, Franklin County, North Carolina (**Figure 1**), owned by Barry Whitaker (the Site). The PSA was performed only within the proposed right-of-way and/or easement for this parcel.

This PSA was performed in general accordance with:

- NCDOT's 1 December 2014 Request for Technical and Cost Proposal (RFP) for the Site. The RFP established the following scope of work (SOW) for the project:
  - Locate USTs and estimate approximate size and contents (if any).
  - Determine if contaminated soils are present.
  - Test soil samples for petroleum using Ultra Violet Florescence Spectroscopy (UVF) methodology.
  - If contamination is evident, estimate the quantity of impacted soils and indicate the approximate area of soil contamination on a Site map.
  - Provide a MicroStation file with the location of (Underground Storage Tanks) USTs, soil contamination and monitoring wells.
  - Prepare a report including field activities, findings, and recommendations for each Site and submit to this office in triplicate and one electronic copy.
- URS's 17 December 2014 Technical and Cost Proposal for the Site.
- NCDOT's 10 January 2015 Notice to Proceed for the Site.

The scope of work included a geophysical survey, soil sampling using a direct push technology (DPT) rig, and laboratory analyses (Total Petroleum Hydrocarbons or TPH) of selected soil samples from within the Site. URS conducted the geophysical survey first in order to identify potential UST and/or anomaly locations within the Site. Based on the results of the geophysical survey and anecdotal evidence, boring locations were identified and completed by a drilling subcontractor (Probe Technology, of Youngsville, North Carolina) under the supervision of a URS geologist. Soil borings were located in areas that were cleared of underground utilities by NC One-Call. Onsite analysis of soil samples were performed by QROS from Wilmington, NC.

1.2 BACKGROUND

The objective for this PSA is to assess the Site for USTs, impacted soil, and to delineate potential impacts found in soils. The major Site features and the surrounding area are shown on **Figures 1** and **2**. The parcel is located on US 401 S and is bounded by NC 98 to the south and east.

The structure has been abandoned, and according to information supplied by NCDOT, this location is a former gas station and convenience store. This parcel does not appear on the UST Section registry. Three vent lines were observed on the southwest side of the building and a dispenser island is located within the existing right of way along the store front. No monitoring

wells were observed onsite and no ground water incidents are known to exist for this location.

2.1 GEOPHYSICAL SURVEY

The primary objective of the geophysical survey was to locate potential USTs or anomalies within the property, and a secondary objective was to identify the general locations of underground utilities at the property in advance of the planned subsurface investigation. The geophysical survey for the property was conducted by URS during the week of January 5, 2015. Ground surface conditions consisted primarily of concrete, asphalt, and a recently cut soybean field.

The geophysical investigation was conducted using the electromagnetic (EM) method augmented by ground-penetrating radar (GPR). The EM survey was completed using a Geonics, Ltd. EM-61 MK2A (EM-61). The GPR survey was completed using a Sensors & Software, Inc. Noggin PLUS Smart Cart System with a 250 MHz scanning antenna.

EM-61 data were collected along parallel profiles with a nominal spacing of 5 feet where accessible. EM-61 data were recorded at a rate of 8 readings per second, which equates to an along-profile data point spacing of less than 1 foot. In areas inaccessible to the EM-61 (e.g. between trees, man-made obstructions, etc.), data were interpolated to provide a continuous electromagnetic surface.

A Hemisphere A100 global positioning system (GPS) was used to record positional data coincident with the EM-61 data. The A100 system provided real-time differential corrections via an Omnistar subscription service. The horizontal accuracy of the differential GPS (DGPS) data is generally 3 feet or less. URS also used the GPS system to record the locations of relevant site features within the survey area (e.g. utility poles, parked cars, etc.).

URS performed in-field analysis of the EM-61 data to identify anomalies indicative of potential USTs. Preliminary interpretations were based on an evaluation of the magnitude of the EM response as well as the dimensions of the anomaly in plan view.

In areas where the EM-61 encountered heavy surficial interference or where EM anomalies could not be readily attributed to site features, GPR was used to conduct a search for potential USTs. GPR surveying consisted of in-field analysis of real-time data. As a result, no post-processing of the GPR data was completed. Relevant GPR profiles were saved to a data file. GPR was selected to augment the EM-61 data due to its effectiveness at characterizing large subsurface metallic objects such as USTs.

The EM-61 data were pre-processed utilizing the accompanying software package, DAT61 MK2 (Geonics, Ltd), which is required before the data can be contoured and graphically displayed via Surfer (Golden Software, Inc.). The presented contoured data represent the Channel 3 response. The Channel 3 response represents the amplitude recorded at the third time interval along the EM-61 response decay curve. These data are applicable to detection of subsurface objects including USTs and other underground obstructions while simultaneously reducing the near-surface component. Common USTs are of sufficient size to resonate the induced magnetic field for long enough to be recorded in this time gate.

2.2 SOIL BORING INSTALLATION AND MEDIA SAMPLING

Nineteen direct-push soil borings, P026-SB-1 through P026-SB-15, were completed on January 19 and 20, 2015, to assess the Site for impacted soil, as shown on **Figure 2**. Several borings were offset from SB-7 to delineate impacts identified in the vicinity of the former dispenser island and given IDs of SB7b through SB-7e. Soil samples were collected and logged continuously at each soil boring location. Soil sample aliquots were field screened for organic vapors with a MiniRae® brand photo-ionization detection (PID) instrument calibrated daily with 100 parts per million (ppm) isobutylene.

Based on field screening results or other evidence of contamination (e.g. visual, olfactory, etc.), soil samples from select intervals were collected from each boring for onsite soil analysis of TPH using UVF technology.

2.3 QUALITY CONTROL/QUALITY ASSURANCE PROCEDURES

While in the field, pertinent observations were recorded in a logbook maintained by the URS field representative. This included pertinent field data collection activities and other observations, as appropriate.

Quality Assurance/Quality Control (QA/QC) of field analyzed data was done by and in accordance with QROS Basic QED QA/QC Components. The QA/QC process includes a five point standard PAH curve, initial calibration, and final calibration after the analyses of each 10 sample set. If any QA/QC measures failed, the QED did not produce data.

3.1 GEOPHYSICAL SURVEY RESULTS

The results of the geophysical survey are presented in accordance with the NCDOT guidelines, dated May 19, 2009, for identifying and ranking potential USTs on NCDOT projects.

The EM-61 Channel 3 response results are provided as a plan view, color-enhanced contour map in **Figure 3**. The results presented in **Figure 3** are superimposed on the parcel base drawing provided by NCDOT. The interpreted background response is represented by the light blue to light green contours and generally corresponds to the range of -40 to 40 milliVolts (mV).

The Channel 3 results indicate an excited response (red) where known surface or near-surface metallic features exist. Observable surface features at the site include utility poles, guy wires, a mailbox, street signs, and a storm drain. These features are responsible for higher than background near surface response over the site, as evident in **Figure 3**.

Two areas of elevated EM responses were noted along the northwest and southwest edges of the building at the site. From the surface, the NW anomaly appears to be a former dispenser island (raised island and some piping still present) and the SW anomaly appears to be a pair of USTs (fill vents visible at surface). GPR sweeps across these areas corroborated the surficial evidence. A GPR sweep over the SW anomaly suggests the presence of two USTs approximately 3 feet below ground surface. Two profiles were saved to disk and are presented as part of **Figure 3**. A GPR sweep across the NW anomaly did not suggest the presence of any USTs and were not saved to disk.

3.2 SOIL SAMPLING RESULTS

A total of nineteen soil borings were advanced to 8 feet below ground surface (ft bgs) during the PSA investigation at the Site. Encountered soils consisted of yellow-orange clay and green-gray silt. All borings reached termination at a depth of 8 ft bgs. Boring locations are shown in **Figure 2**, with complete boring logs provided as **Appendix A**.

As shown in **Appendix A**, soil headspace screening in the field detected organic vapors at levels ranging from 0.3 to 2,984 parts per million (ppm). The analytical results for hydrocarbon analysis for the nineteen samples submitted to QROS are shown in **Appendix B**. Four of the samples exceeded the NCDENR TPH Action Level of 10 milligrams per kilogram (mg/kg) for diesel range organics (DRO) and/or gasoline range organics (GRO). Exceedances of DRO ranged from 10.93 mg/kg in P026 SB-6-2 to 5,075 mg/kg in P026 SB-7-8. Exceedances of GRO ranged from 22.7 mg/kg in P026 SB-7B-6 to 686 mg/kg in P026 SB-7-8.

The approximate extent of potential soil impacts are depicted on **Figure 2** as a conservative approach. The area shown surrounds the former dispenser island and borings P026-SB-6, P026-SB-7, and P026-SB-7B, and is based on DRO exceedances of the NCDENR TPH Action Level. The area is approximately 625 square feet, and using a uniform depth of 8 feet (from 0 to 8 feet bgs), the estimated volume of impacted soil that may be encountered within the upper 8 ft. of the area is approximately 200 cubic yards. It should be noted that in the impacted dispenser island area, based on PID field screening, soil was significantly impacted at boring total depth (8 ft.

bgs). It is likely that significant petroleum odor may occur at 8 ft., and impacted soil may occur at depths below 8 ft.

3.3 SUMMARY

The following summarizes the findings of NCDOT Parcel 026, located at 5893 US 401 S:

- The geophysical survey detected the presence of two subsurface anomalies indicative of probable USTs on the parcel.
- Field screening detected the presence of organic vapors above background in at least 8 of the nineteen soil borings at the Site. This corresponded primarily with the former dispenser island area.
- Four of the samples submitted for onsite TPH analysis exceeded the NCDENR TPH Action Level of 10 mg/kg for DRO and/or GRO.
- Based on the QROS results, approximately 200 cubic yards of impacted soil may be encountered in the upper 8 ft. in the area of the former dispenser island. Significant impact occurs at 8 ft beneath a portion of the island, and this may result in strong petroleum odors at depth.

Based on the Site investigation, future Site workers are likely to encounter impacted soil and in some cases, strong petroleum odor. If encountered, all impacted soil should be properly handled and disposed of in accordance with NCDENR regulations.

SECTION FOUR Limitations

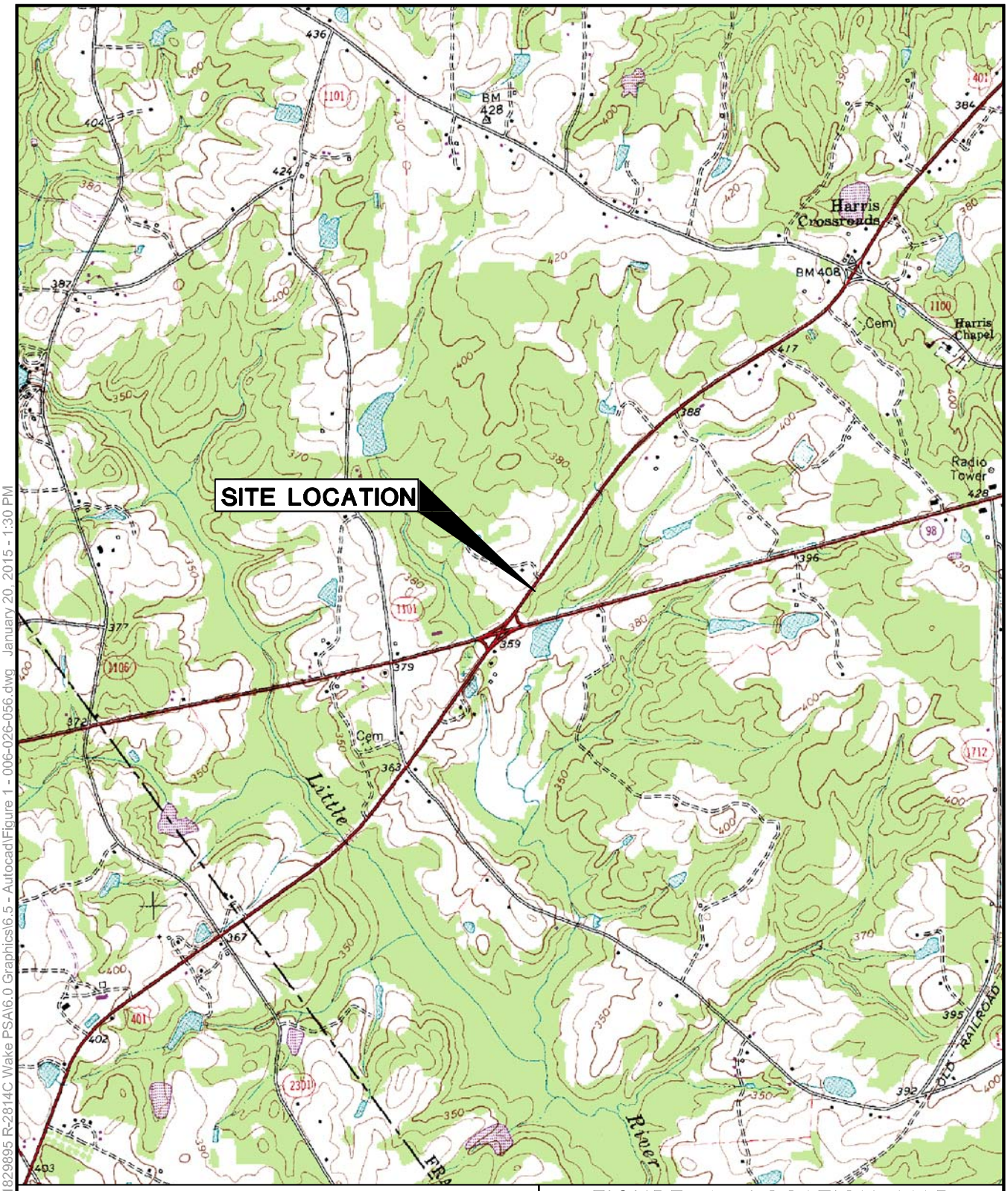
Opinions relating to environmental, geologic, and geotechnical conditions at this parcel are based on limited data, and actual conditions may vary from those encountered at the times and locations where the data was obtained, despite the use of due professional care. The geophysical investigation was conducted in accordance with reasonable and accepted engineering geophysics practices, and the interpretations and conclusions are rendered in a manner consistent with other consultants in our profession. All geophysical techniques have some level of uncertainty and limitations. No other representations of the reported information is expressed or implied, and no warranty or guarantee is included or intended. The results of the geophysical survey are presented in accordance with the NCDOT guidelines, dated May 19, 2009, for identifying and ranking potential USTs on NCDOT projects.

North Carolina Department of Transportation, Request for Technical and Cost Proposal, Preliminary Site Assessment, R-2814C, December 1, 2014.

North Carolina Department of Transportation, Notice to Proceed - Preliminary Site Assessment, R-2814C, January 10, 2015.

URS Corporation, Technical and Cost Proposal, Preliminary Site Assessment, Revision 1, R-2814, December 17, 2014.

Figures



SOURCE: USGS 7.5' TOPOGRAPHIC QUADRANGLE
ROLESVILLE, NC – DATED 1967, PHOTOREVISED 1980

FIGURE 1. LOCATION MAP

PARCEL 026, 5893 US 401 S
STATE PROJECT R-2814
YOUNGSVILLE, NC

Prepared for: NC DOT	URS RDU, NORTH CAROLINA 27560
DRAWN BY: TSH	
DATE: 1/19/15	Fig. 1
PROJECT NO. 31829895	

P:\Jobs4_Projects\NCDOT\31829895 R-2814C Wake PSA\6.0 Graphics\6.5 - Autocad\Figure 1 - 006-026-056.dwg January 20, 2015 - 1:30 PM

Hydrocarbon Analysis Results		
Sample ID	GRO (C5 - C10)	DRO (C10 - C35)
P026 SB-6-2	<1.3	**10.93**
P026 SB-7-8	**686.1**	**5075**
P026 SB-7B-6	**22.7**	**23.17**
P026 SB-7B-8	**605.4**	**4115**

Results generated by a QED HC-1 analyzer.
Concentration values in mg/kg for soil samples.
For clarity purposes, only those wells with exceedances are presented in the above table.
Bold data above the NCDENR Action Level
GRO = gasoline range organics
DRO = diesel range organics

PROJECT REFERENCE NO.	SHEET
R-2814C	

GeoEnvironmental

0 50 100
FEET

LEGEND

- P2-SB6 — SOIL BORING LOCATION
- RW — PROPOSED RIGHT-OF-WAY
- E — PROPOSED EASEMENT
- PROPOSED DRAINAGE STRUCTURE
- KNOWN SOIL CONTAMINATION
- EXISTING MONITORING WELL
- UST — UNDERGROUND STORAGE TANK
- P2-SBI-I0 — ID - DEPTH

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

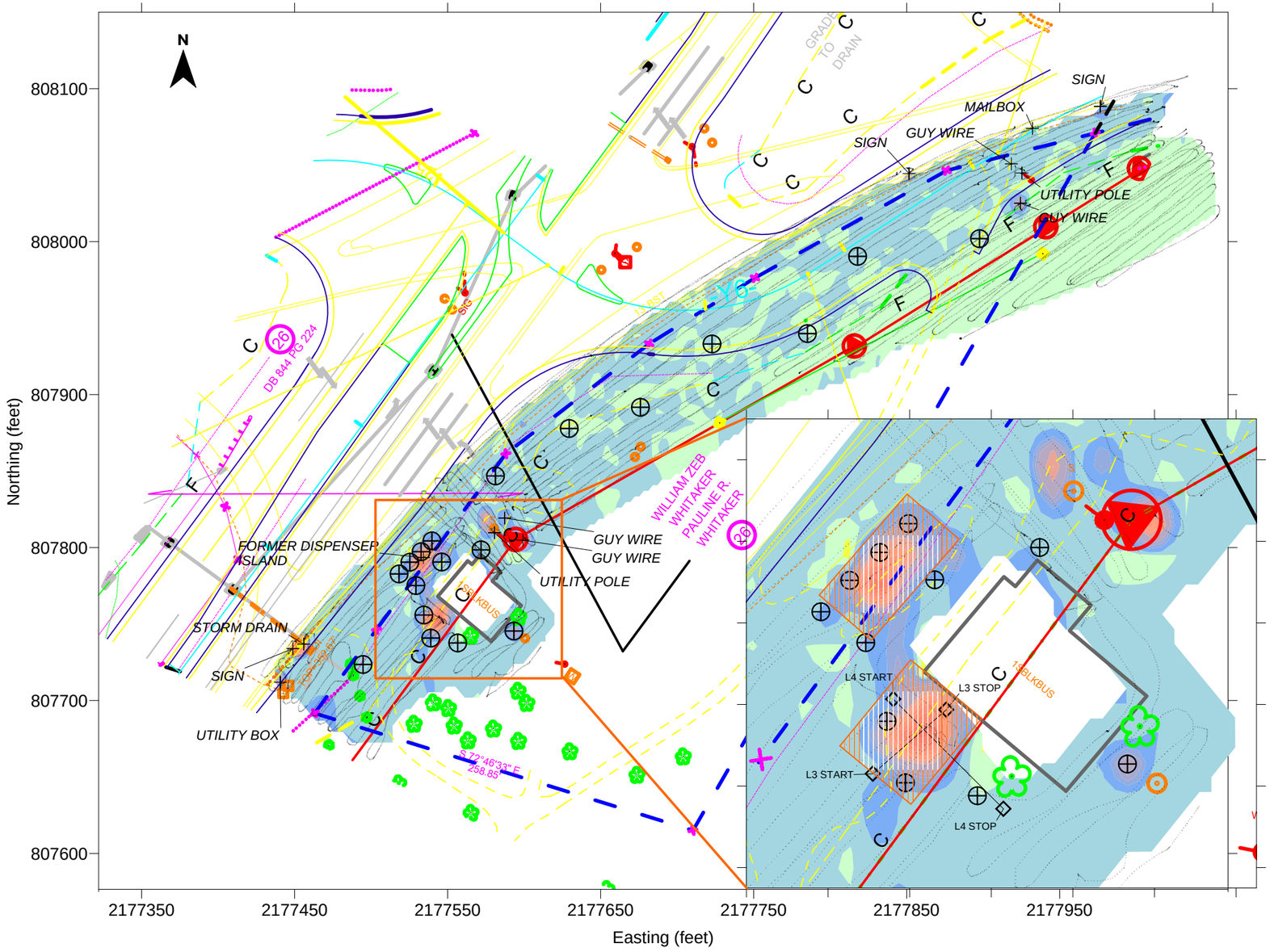
-Y6- PT Sta. 25+24.19
N 36° 27' 09.3" E
S 52° 22' 50.7" E
-Y6- PT Sta. 27+71.57
N 29°58'27" E 526.28'
S 72°46'33" E 258.85'
N 57° 18' 50.2" E
R2814C- 32
DB 844 PG 224 WILLIAM ZEB WHITAKER PAULINE R. WHITAKER
WILLIAM ZEB WHITAKER PAULINE R. WHITAKER DB 844 PG 224
ROADWAY CUT DITCH W/PSRM SEE DETAIL AI
GRADE TO DRAIN
REMOVE
TOP=352.67'
TOP=359.43'
30' SOIL
12' SOIL
13' BST
15" RCP-V
18" RCP-III
18" RCP
2GI
DI
SIG
W/LT
UST
SUB-KBK
P026-SB2
P026-SB3
P026-SB4
P026-SB5
P026-SB6
P026-SB7
P026-SB7B
P026-SB7C
P026-SB7D
P026-SB7E
P026-SB8
P026-SB9
P026-SBI
P026-SBI0
P026-SBI1
P026-SBI2
P026-SBI3
P026-SBI4
P026-SBI5

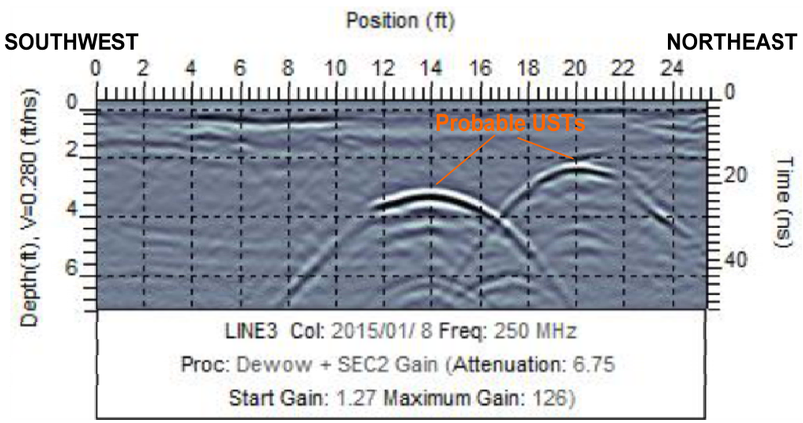
FIGURE 2 SOIL SAMPLING LOCATIONS
PARCEL 026 - WILLIAM & PAULINE WHITAKER PROPERTY
STATE PROJECT R-2814C, WAKE COUNTY, NC

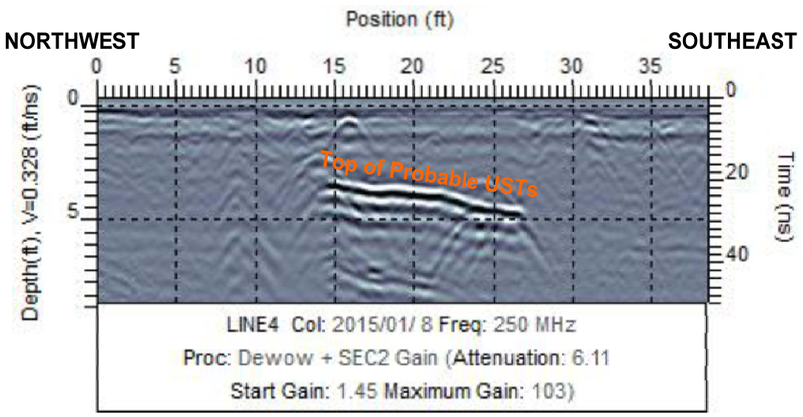
URS Corporation - North Carolina
1600 Perimeter Park Drive
Morrisville, North Carolina 27560
NC LIC # C-2243
TELEPHONE (919) 461-1100 FAX (919) 461-1415

	DRN BY: LHM	DATE:12-11-14	STATE PROJECT: R-2814C
	CHECKED BY: VK	DATE:12-12-14	

PARCEL LOCATION MAP — FIGURE 2







EM-61 MKII Channel 3 Response (milliVolts)

Interpreted Increasing Response from Subsurface Metal

10000 2800 2300 1800 1300 800 300 -200 -10000

Interpreted Background Response

Interpreted Increasing Response from Subsurface Metal

Map Scale
(1 inch = 40 feet)

0' 75' 150'

Notes:

1. Coordinates in NC State Plane NAD 83 (US Feet).
2. Data from Geonics, Ltd. EM-61 MKII instrument.
3. Base drawing after file "Parcel 026.dxf" provided by NCDOT.
4. Location control from DGPS survey by URS.

Legend

- Soil Boring Location
- Interpreted Subsurface Utility Center Line
- ? Utility Termination Point not Known
- Property Boundary
- Inaccessible Area
- EM Anomalies selected for GPR survey
- Proposed Right-of-Way

URS Geophysical Services
1600 Perimeter Park Drive, Suite 400
Raleigh, NC 27560
(919) 461-1387

EM-61 MKII Channel 3 Response Contours
William and Pauline Whitaker Property
(Parcel #026; Tax PIN: 1870-77-7804)

NCDOT WBS 34506.1.4, Wake-Franklin County

Youngsville, Franklin County, North Carolina

DESIGNED BY		DRAWN BY		CHECKED BY		JOB NUMBER	Figure
MJM	02/05/15	CMS	02/05/15	MJM	02/05/15	31829895	3

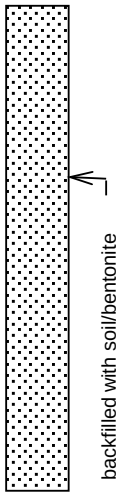
Appendix A
Boring Logs

BORING LOG: P026-SB1

Permit #		Drill Date	***01/19/15***	Site	***Parcel #026***
Client	***NCDOT***	Use		URS Corporation	
Address	***5893 US 401 S, Youngsville, NC 27596***			Total Depth (ft)	***8'***
Drilling Method	***Geoprobe Direct Push***	Boring Depth (ft)	***8'***	Boring Diam. (in)	***1.5***
Backfill Material	***Soil/Bentonite***			Static Water Level	***unknown***
Remarks:		TOC Elevation	**NA**	Sample Method	***Acetate Liner (4 ft)***

Depth (ft.)	Sample ID	Sample Depth (ft)	Blows/ 6"	OVA (ppm)	Geologic Description
0					
	P026-SB1-2	0-2'		0.6	TOPSOIL
2	P026-SB1-4	2-4'		0.3	Med. Stiff, yellowish-orange CLAY
4	P026-SB1-6	4-6'		0.7	Soft
6	P026-SB1-8	6-8'		0.5	f-m SAND with trace silt and clay
8					Boring Terminated at 8' bgs
10					

Typical Diagram



Not to Scale

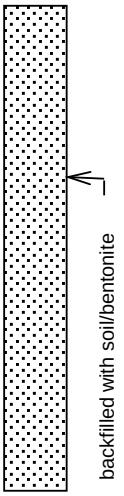
Notes:	All samples submitted to QROS for analysis
Geologist: ***Joseph Kiker***	Driller: ***RPS***

BORING LOG: P026-SB2

Permit #		Drill Date	***01/19/15***	Site	***Parcel #026***
Client	***NCDOT***	Use		URS Corporation	
Address	***5893 US 401 S, Youngsville, NC 27596***			Total Depth (ft)	***8'***
Drilling Method	***Geoprobe Direct Push***	Boring Depth (ft)	***8'***	Boring Diam. (in)	***1.5***
Backfill Material	***Soil/Bentonite***			Static Water Level	***unknown***
Remarks:		TOC Elevation	**NA**	Sample Method	***Acetate Liner (4 ft)***

Depth (ft.)	Sample ID	Sample Depth (ft)	Blows/ 6"	OVA (ppm)	Geologic Description
0	P026-SB2-2	0-2'		0.5	TOPSOIL
2	P026-SB2-4	2-4'		0.5	Med. Stiff, light gray to yellowish-orange CLAY with trace f. sand
4	P026-SB2-6	4-6'		33.4	Stiff, greenish-gray to light brown mottled CLAY
6	P026-SB2-8	6-8'		5.1	Yellowish-orange to greenish gray mottled CLAY
8					Boring Terminated at 8' bgs
10					

Typical Diagram



Not to Scale

Notes: All samples submitted to QROS for analysis

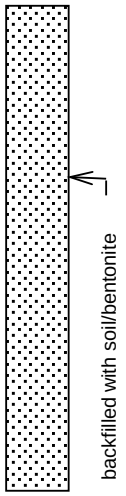
Geologist: ***Joseph Kiker*** Driller: ***RPS***

BORING LOG: P026-SB3

Permit #		Drill Date	*01/19/15*	Site	*Parcel #026*
Client	*NCDOT*	Use		URS Corporation	
Address	*5893 US 401 S, Youngsville, NC 27596*			Total Depth (ft)	*8'*
Drilling Method	*Geoprobe Direct Push*	Boring Depth (ft)	*8'*	Boring Diam. (in)	*1.5*
Backfill Material	*Soil/Bentonite*			Static Water Level	*unknown*
Remarks:		TOC Elevation	**NA**	Sample Method	*Acetate Liner (4 ft)*

Depth (ft.)	Sample ID	Sample Depth (ft)	Blows/ 6"	OVA (ppm)	Geologic Description
0					
	P026-SB3-2	0-2'		1.8	TOPSOIL
					Light gray to dark gray SILT
2	P026-SB3-4	2-4'		1.7	Stiff, Yellowish-orange to light brown CLAY with some m-f sand
4	P026-SB3-6	4-6'		2.8	
6	P026-SB3-8	6-8'		13.3	
8					Boring Terminated at 8' bgs
10					

Typical Diagram



Not to Scale

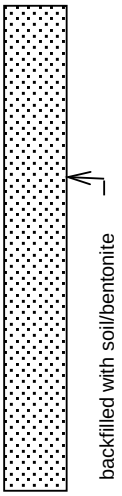
Notes:	All samples submitted to QROS for analysis		
Geologist:	*Joseph Kiker*	Driller:	*RPS*

BORING LOG: P026-SB4

Permit #		Drill Date	***01/19/15***	Site	***Parcel #026***
Client	***NCDOT***	Use		URS Corporation	
Address	***5893 US 401 S, Youngsville, NC 27596***			Total Depth (ft)	***8'***
Drilling Method	***Geoprobe Direct Push***	Boring Depth (ft)	***8'***	Boring Diam. (in)	***1.5***
Backfill Material	***Soil/Bentonite***			Static Water Level	***unknown***
Remarks:		TOC Elevation	**NA**	Sample Method	***Acetate Liner (4 ft)***

Depth (ft.)	Sample ID	Sample Depth (ft)	Blows/ 6"	OVA (ppm)	Geologic Description
0	P026-SB4-2	0-2'		1.6	Olive gray SILT (TOPSOIL)
					Med. Stiff, yellowish-orange to greenish-gray, SILT with organics
2	P026-SB4-4	2-4'		1.0	Dark gray to light gray SILT with organics
4	P026-SB4-6	4-6'		1.2	Soft, Yellowish-orange CLAY with some SAND (WEATHERED GRANITE)
6	P026-SB4-8	6-8'		1.6	
8					Boring Terminated at 8' bgs
10					

Typical Diagram



Not to Scale

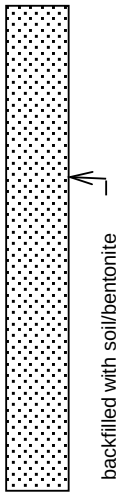
Notes:	All samples submitted to QROS for analysis		
Geologist:	***Joseph Kiker***	Driller:	***RPS***

BORING LOG: P026-SB5

Permit #		Drill Date	*01/19/15*	Site	*Parcel #026*
Client	*NCDOT*	Use		URS Corporation	
Address	*5893 US 401 S, Youngsville, NC 27596*			Total Depth (ft)	*8'*
Drilling Method	*Geoprobe Direct Push*	Boring Depth (ft)	*8'*	Boring Diam. (in)	*1.5*
Backfill Material	*Soil/Bentonite*			Static Water Level	*unknown*
Remarks:		TOC Elevation	**NA**	Sample Method	*Acetate Liner (4 ft)*

Depth (ft.)	Sample ID	Sample Depth (ft)	Blows/ 6"	OVA (ppm)	Geologic Description
0	P026-SB5-2	0-2'		2.2	Light gray silty f. SAND (TOPSOIL)
					Very stiff, yellowish-orange CLAY with some m-f sand
2	P026-SB5-4	2-4'		2.1	Olive gray to light gray sandy SILT, MOIST
4	P026-SB5-6	4-6'		1.9	
6	P026-SB5-8	6-8'		1.8	Stiff, light brown to yellowish-orange to greenish-gray CLAY with some m-f sand (WEATHERED GRANITE)
8					Boring Terminated at 8' bgs
10					

Typical Diagram



Not to Scale

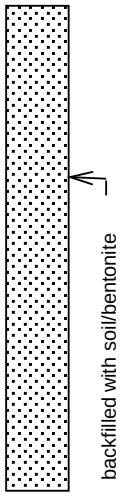
Notes:	All samples submitted to QROS for analysis
Geologist: *Joseph Kiker*	Driller: *RPS*

BORING LOG: P026-SB6

Permit #		Drill Date	***01/19/15***	Site	***Parcel #026***
Client	***NCDOT***	Use		URS Corporation	
Address	***5893 US 401 S, Youngsville, NC 27596***			Total Depth (ft)	***8'***
Drilling Method	***Geoprobe Direct Push***	Boring Depth (ft)	***8'***	Boring Diam. (in)	***1.5***
Backfill Material	***Soil/Bentonite***			Static Water Level	***unknown***
Remarks:		TOC Elevation	**NA**	Sample Method	***Acetate Liner (4 ft)***

Depth (ft.)	Sample ID	Sample Depth (ft)	Blows/ 6"	OVA (ppm)	Geologic Description
0	P026-SB6-2	0-2'		1.9	Greenish-gray sandy SILT to m-f SAND
2	P026-SB6-4	2-4'		3.5	Greenish-gray clayey SILT
4	P026-SB6-6	4-6'		2.5	Moist, yellowish-orange to greenish-gray sandy SILT
6	P026-SB6-8	6-8'		41.9	Stiff, light brown to yellowish-orange to greenish-gray CLAY (WEATHERED GRANITE)
8					Boring Terminated at 8' bgs
10					

Typical Diagram



Not to Scale

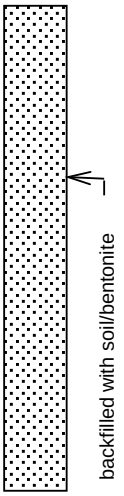
Notes:	All samples submitted to QROS for analysis; petroleum odor at base of soil boring
Geologist: ***Joseph Kiker***	Driller: ***RPS***

BORING LOG: P026-SB7

Permit #		Drill Date	***01/19/15***	Site	***Parcel #026***
Client	***NCDOT***	Use		URS Corporation	
Address	***5893 US 401 S, Youngsville, NC 27596***			Total Depth (ft)	***8'***
Drilling Method	***Geoprobe Direct Push***	Boring Depth (ft)	***8'***	Boring Diam. (in)	***1.5***
Backfill Material	***Soil/Bentonite***			Static Water Level	***unknown***
Remarks:		TOC Elevation	**NA**	Sample Method	***Acetate Liner (4 ft)***

Depth (ft.)	Sample ID	Sample Depth (ft)	Blows/ 6"	OVA (ppm)	Geologic Description
0	P026-SB7-2	0-2'		32.7	Light gray to yellowish-orange to greenish gray clayey SILT
2	P026-SB7-4	2-4'		14.0	
4	P026-SB7-6	4-6'		390	Yellowish-orange sandy SILT (WEATHERED GRANITE)
6	P026-SB7-8	6-8'		1782	Stiff, yellowish-orange CLAY Yellowish-orange to light brown sandy SILT (WEATHERED GRANITE) Petroleum odor
8					Boring Terminated at 8' bgs
10					

Typical Diagram



Not to Scale

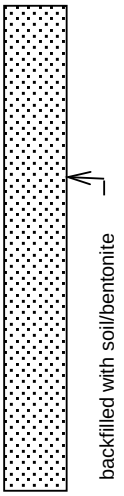
Notes:	All samples submitted to QROS for analysis		
Geologist:	***Joseph Kiker***	Driller:	***RPS***

BORING LOG: P026-SB7B

Permit #		Drill Date	***01/20/15***	Site	***Parcel #026***
Client	***NCDOT***	Use		URS Corporation	
Address	***5893 US 401 S, Youngsville, NC 27596***			Total Depth (ft)	***8'***
Drilling Method	***Geoprobe Direct Push***	Boring Depth (ft)	***8'***	Boring Diam. (in)	***1.5***
Backfill Material	***Soil/Bentonite***			Static Water Level	***unknown***
Remarks:		TOC Elevation	**NA**	Sample Method	***Acetate Liner (4 ft)***

Depth (ft.)	Sample ID	Sample Depth (ft)	Blows/ 6"	OVA (ppm)	Geologic Description
0	P026-SB7B-2	0-2'		10.2	Greenish-gray m-f SAND to yellowish-orange to greenish-gray clayey SILT
2	P026-SB7B-4	2-4'		2.8	
4	P026-SB7B-6	4-6'		2414	Yellowish-orange to light brown mottled sandy SILT (WEATHERED GRANITE)
6	P026-SB7B-8	6-8'		2984	Stiff, yellowish-orange to light gray silty CLAY (WEATHERED GRANITE)
8					Boring Terminated at 8' bgs
10					

Typical Diagram



Not to Scale

Notes: All samples submitted to QROS for analysis; petroleum odor

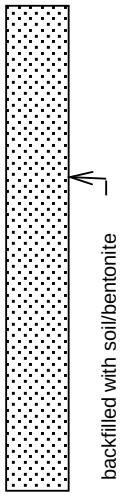
Geologist: ***Joseph Kiker*** Driller: ***RPS***

BORING LOG: P026-SB7C

Permit #		Drill Date	***01/20/15***	Site	***Parcel #026***
Client	***NCDOT***	Use		URS Corporation	
Address	***5893 US 401 S, Youngsville, NC 27596***			Total Depth (ft)	***8'***
Drilling Method	***Geoprobe Direct Push***	Boring Depth (ft)	***8'***	Boring Diam. (in)	***1.5***
Backfill Material	***Soil/Bentonite***			Static Water Level	***unknown***
Remarks:		TOC Elevation	**NA**	Sample Method	***Acetate Liner (4 ft)***

Depth (ft.)	Sample ID	Sample Depth (ft)	Blows/ 6"	OVA (ppm)	Geologic Description
0	P026-SB7C-2	0-2'		5.7	Greenish-gray SILT
2	P026-SB7C-4	2-4'		4.6	Med. Stiff, light brown silty CLAY
4	P026-SB7C-6	4-6'		11.4	Yellowish-orange to light brown mottled CLAY
6	P026-SB7C-8	6-8'		104.3	Yellowish-orange to light brown mottled sandy SILT (WEATHERED GRANITE)
8					Boring Terminated at 8' bgs
10					

Typical Diagram



Not to Scale

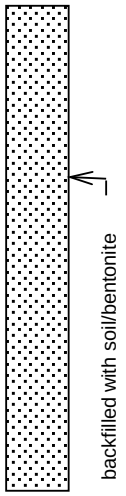
Notes:	All samples submitted to QROS for analysis
Geologist: ***Joseph Kiker***	Driller: ***RPS***

BORING LOG: P026-SB7D

Permit #		Drill Date	***01/20/15***	Site	***Parcel #026***
Client	***NCDOT***	Use		URS Corporation	
Address	***5893 US 401 S, Youngsville, NC 27596***			Total Depth (ft)	***8'***
Drilling Method	***Geoprobe Direct Push***	Boring Depth (ft)	***8'***	Boring Diam. (in)	***1.5***
Backfill Material	***Soil/Bentonite***			Static Water Level	***unknown***
Remarks:		TOC Elevation	**NA**	Sample Method	***Acetate Liner (4 ft)***

Depth (ft.)	Sample ID	Sample Depth (ft)	Blows/ 6"	OVA (ppm)	Geologic Description
0	P026-SB7D-2	0-2'		2.6	Greenish-gray SILT
2	P026-SB7D-4	2-4'		0.6	Med. Stiff, light brown silty CLAY
4	P026-SB7D-6	4-6'		1.1	Yellowish-orange to light brown mottled CLAY
6	P026-SB7D-8	6-8'		17.9	Stiff, yellowish-orange to light gray silty CLAY (WEATHERED GRANITE)
8					Boring Terminated at 8' bgs
10					

Typical Diagram



Not to Scale

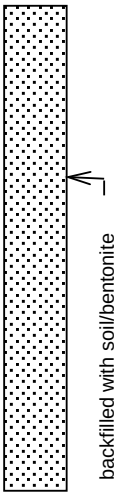
Notes:	All samples submitted to QROS for analysis		
Geologist:	***Joseph Kiker***	Driller:	***RPS***

BORING LOG: P026-SB7E

Permit #		Drill Date	***01/20/15***	Site	***Parcel #026***
Client	***NCDOT***	Use		URS Corporation	
Address	***5893 US 401 S, Youngsville, NC 27596***			Total Depth (ft)	***8'***
Drilling Method	***Geoprobe Direct Push***	Boring Depth (ft)	***8'***	Boring Diam. (in)	***1.5***
Backfill Material	***Soil/Bentonite***			Static Water Level	***unknown***
Remarks:		TOC Elevation	**NA**	Sample Method	***Acetate Liner (4 ft)***

Depth (ft.)	Sample ID	Sample Depth (ft)	Blows/ 6"	OVA (ppm)	Geologic Description
0	P026-SB7E-2	0-2'		1.9	Greenish-gray m-f SAND to yellowish-orange to greenish-gray clayey SILT
2	P026-SB7E-4	2-4'		220.8	
4	P026-SB7E-6	4-6'		87.1	Yellowish-orange to light brown mottled sandy SILT (WEATHERED GRANITE)
6	P026-SB7E-8	6-8'		172.4	
8					Boring Terminated at 8' bgs
10					

Typical Diagram



Not to Scale

Notes: All samples submitted to QROS for analysis; slight petroleum odor

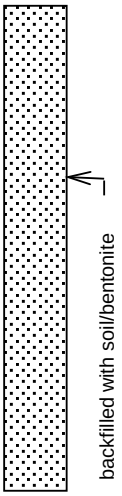
Geologist: ***Joseph Kiker*** Driller: ***RPS***

BORING LOG: P026-SB8

Permit #		Drill Date	***01/19/15***	Site	***Parcel #026***
Client	***NCDOT***	Use		URS Corporation	
Address	***5893 US 401 S, Youngsville, NC 27596***			Total Depth (ft)	***8'***
Drilling Method	***Geoprobe Direct Push***	Boring Depth (ft)	***8'***	Boring Diam. (in)	***1.5***
Backfill Material	***Soil/Bentonite***			Static Water Level	***unknown***
Remarks:		TOC Elevation	**NA**	Sample Method	***Acetate Liner (4 ft)***

Depth (ft.)	Sample ID	Sample Depth (ft)	Blows/ 6"	OVA (ppm)	Geologic Description
0	P026-SB8-2	0-2'		4.8	Olive gray SILT
2	P026-SB8-4	2-4'		4.3	Yellowish-orange clayey SILT with mica
4	P026-SB8-6	4-6'		3.6	Yellowish-orange to greenish-gray clayey SILT (WEATHERED GRANITE)
6	P026-SB8-8	6-8'		3.1	
8					Boring Terminated at 8' bgs
10					

Typical Diagram



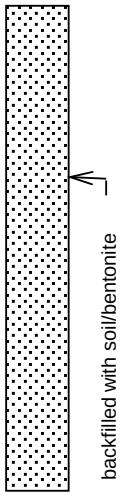
Not to Scale

Notes:	All samples submitted to QROS for analysis
Geologist: ***Joseph Kiker***	Driller: ***RPS***

BORING LOG: P026-SB9

Permit #		Drill Date	***01/19/15***	Site	***Parcel #026***
Client	***NCDOT***	Use		URS Corporation	
Address	***5893 US 401 S, Youngsville, NC 27596***			Total Depth (ft)	***8'***
Drilling Method	***Geoprobe Direct Push***	Boring Depth (ft)	***8'***	Boring Diam. (in)	***1.5***
Backfill Material	***Soil/Bentonite***			Static Water Level	***unknown***
Remarks:		TOC Elevation	**NA**	Sample Method	***Acetate Liner (4 ft)***

Depth (ft.)	Sample ID	Sample Depth (ft)	Blows/ 6"	OVA (ppm)	Geologic Description	Typical Diagram
0						
	P026-SB9-2	0-2'		2.0	Yellowish-orange sandy SILT	
2	P026-SB9-4	2-4'		2.3	Yellowish-orange to light gray to greenish-gray clayey SILT (WEATHERED GRANITE)	
4	P026-SB9-6	4-6'		2.2		
6	P026-SB9-8	6-8'		1.8		
8					Boring Terminated at 8' bgs	
10						



Not to Scale

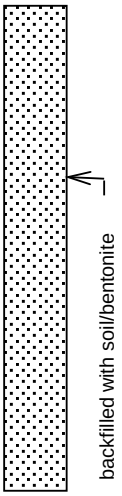
Notes:	All samples submitted to QROS for analysis		
Geologist:	***Joseph Kiker***	Driller:	***RPS***

BORING LOG: P026-SB10

Permit #		Drill Date	***01/19/15***	Site	***Parcel #026***
Client	***NCDOT***	Use		URS Corporation	
Address	***5893 US 401 S, Youngsville, NC 27596***			Total Depth (ft)	***8'***
Drilling Method	***Geoprobe Direct Push***	Boring Depth (ft)	***8'***	Boring Diam. (in)	***1.5***
Backfill Material	***Soil/Bentonite***			Static Water Level	***unknown***
Remarks:		TOC Elevation	**NA**	Sample Method	***Acetate Liner (4 ft)***

Depth (ft.)	Sample ID	Sample Depth (ft)	Blows/ 6"	OVA (ppm)	Geologic Description
0	P026-SB10-2	0-2'		2.5	Light gray sandy SILT
2					Yellowish-orange clayey SILT
	P026-SB10-4	2-4'		2.5	Stiff, yellowish-orange silty CLAY
4					Yellowish-orange to light brown clayey SILT
	P026-SB10-6	4-6'		2.1	Light brown to light gray CLAY (WEATHERED GRANITE)
6	P026-SB10-8	6-8'		2.0	
8					Boring Terminated at 8' bgs
10					

Typical Diagram



Not to Scale

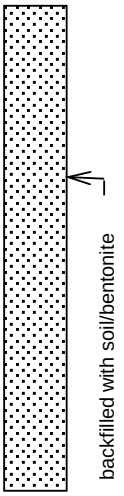
Notes:	All samples submitted to QROS for analysis		
Geologist:	***Joseph Kiker***	Driller:	***RPS***

BORING LOG: P026-SB11

Permit #		Drill Date	***01/19/15***	Site	***Parcel #026***
Client	***NCDOT***	Use		URS Corporation	
Address	***5893 US 401 S, Youngsville, NC 27596***			Total Depth (ft)	***8'***
Drilling Method	***Geoprobe Direct Push***	Boring Depth (ft)	***8'***	Boring Diam. (in)	***1.5***
Backfill Material	***Soil/Bentonite***			Static Water Level	***unknown***
Remarks:		TOC Elevation	**NA**	Sample Method	***Acetate Liner (4 ft)***

Depth (ft.)	Sample ID	Sample Depth (ft)	Blows/ 6"	OVA (ppm)	Geologic Description
0	P026-SB11-2	0-2'		2.5	Olive gray to yellowish-orange sandy SILT to soft silty CLAY
2	P026-SB11-4	2-4'		2.3	Stiff, yellowish-orange silty CLAY
4	P026-SB11-6	4-6'		2.4	Yellowish-orange to light brown to light gray mottled sandy CLAY (WEATHERED GRANITE)
6	P026-SB11-8	6-8'		2.4	Light gray sandy SILT with trace clay (WEATHERED GRANITE)
8					Boring Terminated at 8' bgs
10					

Typical Diagram



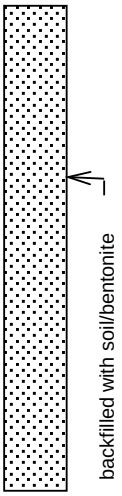
Not to Scale

Notes: All samples submitted to QROS for analysis

Geologist: ***Joseph Kiker*** Driller: ***RPS***

BORING LOG: P026-SB12

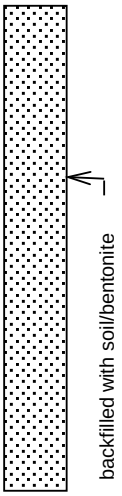
Permit #		Drill Date	***01/19/15***	Site	***Parcel #026***
Client	***NCDOT***	Use		URS Corporation	
Address	***5893 US 401 S, Youngsville, NC 27596***			Total Depth (ft)	***8'***
Drilling Method	***Geoprobe Direct Push***	Boring Depth (ft)	***8'***	Boring Diam. (in)	***1.5***
Backfill Material	***Soil/Bentonite***			Static Water Level	***unknown***
Remarks:		TOC Elevation	**NA**	Sample Method	***Acetate Liner (4 ft)***

Depth (ft.)	Sample ID	Sample Depth (ft)	Blows/ 6"	OVA (ppm)	Geologic Description	Typical Diagram
0	P026-SB12-2	0-2'		2.8	Olive-gray to yellowish-orange sandy SILT to soft silty CLAY	 **Not to Scale**
2	P026-SB12-4	2-4'		3.3	Stiff, yellowish-orange to light brown to light gray mottled silty CLAY	
4	P026-SB12-6	4-6'		2.4		
6	P026-SB12-8	6-8'		1.8	Stiff, light gray to yellowish-orange mottled sandy silty CLAY (WEATHERED GRANITE)	
8					Boring Terminated at 8' bgs	
10						

Notes:	All samples submitted to QROS for analysis		
Geologist:	***Joseph Kiker***	Driller:	***RPS***

BORING LOG: P026-SB13

Permit #		Drill Date	***01/19/15***	Site	***Parcel #026***
Client	***NCDOT***	Use		URS Corporation	
Address	***5893 US 401 S, Youngsville, NC 27596***			Total Depth (ft)	***8'***
Drilling Method	***Geoprobe Direct Push***	Boring Depth (ft)	***8'***	Boring Diam. (in)	***1.5***
Backfill Material	***Soil/Bentonite***			Static Water Level	***unknown***
Remarks:		TOC Elevation	**NA**	Sample Method	***Acetate Liner (4 ft)***

Depth (ft.)	Sample ID	Sample Depth (ft)	Blows/ 6"	OVA (ppm)	Geologic Description	Typical Diagram
0	P026-SB13-2	0-2'		1.5	Olive gray to yellowish-orange sandy SILT to soft silty CLAY	 **Not to Scale**
2	P026-SB13-4	2-4'		0.6	Stiff, yellowish-orange to light brown to light gray mottled silty CLAY	
4	P026-SB13-6	4-6'		3.0		
6	P026-SB13-8	6-8'		2.1	Light gray clayey SILT (WEATHERED GRANITE)	
8					Boring Terminated at 8' bgs	
10						

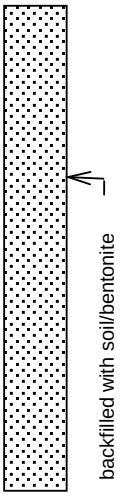
Notes:	All samples submitted to QROS for analysis		
Geologist:	***Joseph Kiker***	Driller:	***RPS***

BORING LOG: P026-SB14

Permit #		Drill Date	*01/19/15*	Site	*Parcel #026*
Client	*NCDOT*	Use		URS Corporation	
Address	*5893 US 401 S, Youngsville, NC 27596*			Total Depth (ft)	*8'*
Drilling Method	*Geoprobe Direct Push*	Boring Depth (ft)	*8'*	Boring Diam. (in)	*1.5*
Backfill Material	*Soil/Bentonite*			Static Water Level	*unknown*
Remarks:		TOC Elevation	**NA**	Sample Method	*Acetate Liner (4 ft)*

Depth (ft.)	Sample ID	Sample Depth (ft)	Blows/ 6"	OVA (ppm)	Geologic Description
0	P026-SB14-2	0-2'		2.9	Olive gray to yellowish-orange sandy SILT to soft silty CLAY
2	P026-SB14-4	2-4'		1.6	Stiff, yellowish-orange silty CLAY
4	P026-SB14-6	4-6'		2.5	Yellowish-orange to light gray to light brown mottled clayey SILT (WEATHERED GRANITE)
6	P026-SB14-8	6-8'		2.5	Yellowish-orange sandy SILT
8					Boring Terminated at 8' bgs
10					

Typical Diagram



Not to Scale

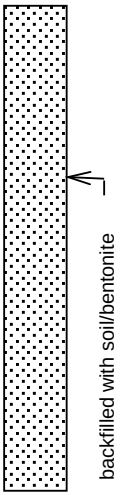
Notes:	All samples submitted to QROS for analysis		
Geologist:	*Joseph Kiker*	Driller:	*RPS*

BORING LOG: P026-SB15

Permit #		Drill Date	*01/19/15*	Site	*Parcel #026*
Client	*NCDOT*	Use		URS Corporation	
Address	*5893 US 401 S, Youngsville, NC 27596*			Total Depth (ft)	*8'*
Drilling Method	*Geoprobe Direct Push*	Boring Depth (ft)	*8'*	Boring Diam. (in)	*1.5*
Backfill Material	*Soil/Bentonite*			Static Water Level	*unknown*
Remarks:		TOC Elevation	**NA**	Sample Method	*Acetate Liner (4 ft)*

Depth (ft.)	Sample ID	Sample Depth (ft)	Blows/ 6"	OVA (ppm)	Geologic Description
0	P026-SB15-2	0-2'		2.2	Olive gray to yellowish-orange sandy SILT to soft silty CLAY
2	P026-SB15-4	2-4'		1.9	Stiff, yellowish-orange silty CLAY
4	P026-SB15-6	4-6'		2.1	Yellowish-orange to light gray clayey SILT (WEATHERED GRANITE)
6	P026-SB15-8	6-8'		1.5	Yellowish-orange sandy SILT
8					Boring Terminated at 8' bgs
10					

Typical Diagram



Not to Scale

Notes: All samples submitted to QROS for analysis

Geologist: ***Joseph Kiker*** Driller: ***RPS***

Appendix B
QED Hydrocarbon Analysis Results

QED

AQROS

Hydrocarbon Analysis Results

Client: AECOM
Address:

Samples taken Sunday, January 19, 2014
Samples extracted Monday, January 20, 2014
Samples analysed Monday, January 20, 2014

Contact: MIKE MURPHY

Operator RACHEL MENOHER

Project: P026

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	P026 SB-1-2	18.6	<0.9	2.08	1.79	3.87	1.59	0.06	<0.019	85.6	7.2	7.2	V.Deg.PHC (PFM) (FCM) 62.7%
s	P026 SB-1-4	11.0	<0.5	1.67	<0.11	1.67	<0.11	<0.01	<0.011	95.7	0.2	4.1	V.Deg Gas (FCM) (P) 53.8%
s	P026 SB-1-6	7.6	<0.4	0.83	0.22	1.05	0.16	<0.01	<0.008	91.1	3.3	5.7	V.Deg.PHC (FCM) 69.8%
s	P026 SB-1-8	8.8	<0.4	0.98	<0.09	0.98	<0.09	<0.01	<0.009	94.5	0	5.5	V.Deg Gas (FCM) 65.7%
s	P026 SB-2-2	9.9	<0.5	<0.5	0.24	0.24	0.2	<0.01	<0.01	59.5	14.1	26.4	V.Deg.PHC (FCM) 74.1%
s	P026 SB-2-4	13.0	<0.6	<0.6	<0.13	<0.13	<0.13	<0.01	<0.013	0	0	100	Pet.Hyd not Detected
s	P026 SB-2-6	13.1	<0.7	<0.7	0.79	0.79	0.2	<0.01	<0.013	0	6.1	93.9	Deg Fuel (FCM) 67.7%
s	P026 SB-2-8	13.2	<0.7	<0.7	<0.13	<0.13	<0.13	<0.01	<0.013	0	0	100	Pet.Hyd not Detected

Initial Calibrator QC check OK

Final FCM QC Check OK 109.9%

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

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

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

QED

AQROS

Hydrocarbon Analysis Results

Client: AECOM
Address:

Samples taken Sunday, January 19, 2014
Samples extracted Monday, January 20, 2014
Samples analysed Monday, January 20, 2014

Contact: MIKE MURPHY

Operator RACHEL MENOHER

Project: P026

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	P026 SB-3-2	14.1	<0.7	<0.7	5.4	5.4	1.71	0.07	<0.014	62.1	22.7	15.1	Deg Fuel (FCM) 67.6%
s	P026 SB-3-4	13.5	<0.7	<0.7	<0.13	<0.13	<0.13	<0.01	<0.013	0	3.8	96.2	Match not possible
s	P026 SB-3-6	8.2	<0.4	0.64	0.27	0.91	0.37	0.02	<0.008	87.6	5.3	7	V.Deg.PHC (FCM) 69.3%
s	P026 SB-3-8	9.5	<0.5	<0.5	<0.1	<0.1	<0.1	<0.01	<0.01	6.1	5.1	88.8	Pet.Hyd not Detected
s	P026 SB-4-2	11.6	<0.6	<0.6	1.42	1.42	1.16	0.06	<0.012	60.5	20.3	19.2	V.Deg.PHC (FCM) 66%
s	P026 SB-4-4	9.7	<0.5	0.63	0.77	1.4	0.32	<0.01	<0.01	88.2	3.5	8.3	Deg.Fuel 70.1%
s	P026 SB-4-6	9.1	<0.5	<0.5	0.87	0.87	0.35	0.02	<0.009	60.6	14.4	25	Deg Fuel (FCM) 68.2%
s	P026 SB-4-8	7.7	<0.4	<0.4	<0.08	<0.08	<0.08	<0.01	<0.008	5.8	4.2	90	Pet.Hyd not Detected

Initial Calibrator QC check OK

Final FCM QC Check OK 98.2%

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

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

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

QED

AQROS

Hydrocarbon Analysis Results

Client: AECOM
Address:

Samples taken Sunday, January 19, 2014
Samples extracted Monday, January 20, 2014
Samples analysed Monday, January 20, 2014

Contact: MIKE MURPHY

Operator RACHEL MENOHER

Project: P026

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	P026 SB-5-2	13.3	<0.7	<0.7	0.89	0.89	0.74	0.03	<0.013	64.6	18.6	16.8	V.Deg.PHC (FCM) 66.6%
s	P026 SB-5-4	12.8	<0.6	<0.6	<0.13	<0.13	<0.13	<0.01	<0.013	100	0	0	Pet.Hyd not Detected
s	P026 SB-5-6	11.2	<0.6	<0.6	<0.11	<0.11	<0.11	<0.01	<0.011	66.8	0	33.2	PAH
s	P026 SB-5-8	14.4	<0.7	<0.7	<0.14	<0.7	<0.14	<0.01	<0.014	0	0	0	Pet.Hyd not Detected
s	P026 SB-6-2	26.3	<1.3	<1.3	10.93	10.93	2	0.07	<0.026	68.3	14.6	17.1	Deg.Fuel (FCM) 74.2%
s	P026 SB-6-4	10.7	<0.5	<0.5	0.3	0.3	0.4	0.02	<0.011	63.9	12.8	23.2	V.Deg.PHC (FCM) 59.6%
s	P026 SB-6-6	22.0	<1.1	<1.1	1.71	1.71	1.31	0.06	<0.022	53.2	16.2	30.6	V.Deg.PHC (FCM) 73.7%
s	P026 SB-6-8	26.3	<1.3	<1.3	<0.26	<1.3	<0.26	<0.03	<0.026	100	0	0	Pet.Hyd not Detected

Initial Calibrator QC check OK

Final FCM QC Check OK 102.6%

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

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

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

QED

AQROS

Hydrocarbon Analysis Results

Client: AECOM
Address:

Samples taken Sunday, January 19, 2014
Samples extracted Monday, January 20, 2014
Samples analysed Monday, January 20, 2014

Contact: MIKE MURPHY

Operator RACHEL MENOHER

Project: P026

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	P026 SB-7-2	13.9	<0.7	<0.7	1.25	1.25	0.44	<0.01	<0.014	76.1	4.8	19	Deg.Fuel 49.1%
s	P026 SB-7-4	13.9	<0.7	<0.7	0.68	0.68	0.3	<0.01	<0.014	100	0	0	Deg.Diesel (FCM) 86.7%
s	P026 SB-7-6	29.2	<1.5	<1.5	3.94	3.94	1.51	0.06	<0.029	82.8	6.6	10.6	Deg.Fuel 71.1%
s	P026 SB-7-8	367.4	<18.4	686.1	5075	5761.1	154.1	3.86	<0.367	99.5	0.5	0	Deg.Fuel 85.9%
s	P026 SB-8-2	28.6	<1.4	7.89	0.47	8.36	0.47	<0.03	<0.029	96.6	0.9	2.5	V.Deg Gas (FCM) (P) 67.4%
s	P026 SB-8-4	23.9	<1.2	0.95	0.79	1.74	0.63	0.04	<0.024	66.8	16.9	16.3	Deg.Fuel (FCM) 96.7%
s	P026 SB-8-6	26.3	<1.3	<1.3	<0.26	<0.26	<0.26	<0.03	<0.026	0	0	100	Pet.Hyd not Detected
s	P026 SB-8-8	24.8	<1.2	<1.2	<0.25	<0.25	<0.25	<0.02	<0.025	0	0	100	Pet.Hyd not Detected

Initial Calibrator QC check OK

Final FCM QC Check OK 97.4%

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

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

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

QED

AQROS

Hydrocarbon Analysis Results

Client: AECOM
Address:

Samples taken Sunday, January 19, 2014
Samples extracted Monday, January 20, 2014
Samples analysed Monday, January 20, 2014

Contact: MIKE MURPHY

Operator RACHEL MENOHER

Project: P026

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	P026 SB-9-2	28.3	<1.4	<1.4	<0.28	<0.28	<0.28	<0.03	<0.028	0	0	100	Pet.Hyd not Detected
s	P026 SB-9-4	26.8	<1.3	<1.3	<0.27	<0.27	<0.27	<0.03	<0.027	0	0	100	Pet.Hyd not Detected
s	P026 SB-9-6	13.6	<0.7	<0.7	0.96	0.96	0.23	<0.01	<0.014	0	30.5	69.5	Deg Fuel (FCM) 65.9%
s	P026 SB-9-8	15.1	<0.8	<0.8	<0.15	<0.15	<0.15	<0.02	<0.015	0	0	100	Pet.Hyd not Detected
s	P026 SB-10-2	11.5	<0.6	<0.6	0.51	0.51	<0.11	<0.01	<0.011	0	4.1	95.9	Deg.Fuel Residue 21.8%
s	P026 SB-10-4	14.1	<0.7	<0.7	<0.14	<0.7	<0.14	<0.01	<0.014	0	0	0	Pet.Hyd not Detected
s	P026 SB-10-6	12.1	<0.6	<0.6	0.49	0.49	0.39	<0.01	<0.012	60.3	14.5	25.1	V.Deg.PHC (FCM) 82.5%
s	P026 SB-10-8	13.7	<0.7	<0.7	<0.14	<0.7	<0.14	<0.01	<0.014	0	0	0	Pet.Hyd not Detected

Initial Calibrator QC check OK

Final FCM QC Check OK 99.5%

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

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

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

QED

AQROS

Hydrocarbon Analysis Results

Client: AECOM
Address:

Samples taken Sunday, January 19, 2014
Samples extracted Monday, January 20, 2014
Samples analysed Monday, January 20, 2014

Contact: MIKE MURPHY

Operator RACHEL MENOHER

Project: P026

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	P026 SB-11-2	27.7	<1.4	<1.4	5.79	5.79	5.51	3.38	0.268	24.1	13.2	62.7	PAH
s	P026 SB-11-4	13.9	<0.7	<0.7	<0.14	<0.14	<0.14	<0.01	<0.014	0	3.6	96.4	Pet.Hyd not Detected
s	P026 SB-11-6	26.5	<1.3	<1.3	<0.27	<1.3	<0.27	<0.03	<0.027	0	0	0	Pet.Hyd not Detected
s	P026 SB-11-8	22.8	<1.1	<1.1	<0.23	<1.1	<0.23	<0.02	<0.023	0	0	0	Pet.Hyd not Detected
s	P026 SB-12-2	12.6	<0.6	<0.6	0.65	0.65	0.62	0.29	0.026	30.4	6.2	63.4	PAH
s	P026 SB-12-4	20.8	<1	<1	<0.21	<1	<0.21	<0.02	<0.021	0	0	0	Pet.Hyd not Detected
s	P026 SB-12-6	23.9	<1.2	<1.2	1.04	1.04	0.89	0.05	<0.024	52.6	17	30.3	V.Deg.PHC (FCM) 68.8%
s	P026 SB-12-8	12.4	<0.6	<0.6	<0.12	<0.12	<0.12	<0.01	<0.012	0	0	100	Pet.Hyd not Detected

Initial Calibrator QC check OK Final FCM QC Check OK 98.4%

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

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

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

QED

AQROS

Hydrocarbon Analysis Results

Client: AECOM
Address:

Samples taken Sunday, January 19, 2014
Samples extracted Monday, January 20, 2014
Samples analysed Monday, January 20, 2014

Contact: MIKE MURPHY

Operator RACHEL MENOHER

Project: P026

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	PO26 SB-13-2	21.5	<1.1	<1.1	0.4	0.4	0.38	0.26	<0.021	0	10.8	89.2	PAH
s	P026 SB-13-4	19.5	<1	<1	<0.2	<0.2	<0.2	<0.02	<0.02	0	0	100	Pet.Hyd not Detected
s	P026 SB-13-6	25.5	<1.3	<1.3	<0.25	<0.25	<0.25	<0.03	<0.025	0	0	100	PAH
s	P026 SB-13-8	25.7	<1.3	<1.3	<0.26	<0.26	<0.26	<0.03	<0.026	0	0	100	Pet.Hyd not Detected
s	P026 SB-14-2	26.5	<1.3	<1.3	<0.27	<0.27	<0.27	<0.03	<0.027	0	0	100	PAH
s	P026 SB-14-4	24.1	<1.2	<1.2	<0.24	<0.24	<0.24	<0.02	<0.024	0	0	100	Pet.Hyd not Detected
s	P026 SB-14-6	26.0	<1.3	<1.3	<0.26	<0.26	<0.26	<0.03	<0.026	0	0	100	Pet.Hyd not Detected
s	P026 SB-14-8	27.1	<1.4	<1.4	<0.27	<0.27	<0.27	<0.03	<0.027	0	0	100	Pet.Hyd not Detected

Initial Calibrator QC check OK

Final FCM QC Check OK 97.0%

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

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

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

QED

AQROS

Hydrocarbon Analysis Results

Client: AECOM
Address:

Samples taken Sunday, January 19, 2014
Samples extracted Monday, January 20, 2014
Samples analysed Monday, January 20, 2014

Contact: MIKE MURPHY

Operator RACHEL MENOHER

Project: P026

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	P026 SB-15-2	10.4	<0.5	<0.5	0.31	0.31	0.3	0.17	<0.01	60.4	9.5	30.1	PAH
s	P026 SB-15-4	14.3	<0.7	<0.7	<0.14	<0.14	<0.14	<0.01	<0.014	0	0	100	Pet.Hyd not Detected
s	P026 SB-15-6	12.6	<0.6	<0.6	<0.13	<0.13	<0.13	<0.01	<0.013	0	0	100	Pet.Hyd not Detected
s	P026 SB-15-8	13.9	<0.7	<0.7	<0.14	<0.7	<0.14	<0.01	<0.014	0	0	0	Pet.Hyd not Detected

Initial Calibrator QC check OK Final FCM QC Check OK 103.9%

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

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

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

QED

AQROS

Hydrocarbon Analysis Results

Client: AECOM
Address:

Samples taken Tuesday, January 20, 2015
Samples extracted Wednesday, January 21, 2015
Samples analysed Wednesday, January 21, 2015

Contact: MIKE MURPHY

Operator RACHEL MENOHER

Project: P026

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	P026 SB-7B-2	9.1	<0.5	<0.5	1.07	1.07	0.32	<0.01	<0.009	62.9	10.2	26.9	Deg Fuel (FCM) 42.1%
s	P026 SB-7B-4	7.8	<0.4	<0.4	<0.08	<0.08	<0.08	<0.01	<0.008	0	0	100	Pet.Hyd not Detected
s	P026 SB-7B-6	11.3	<0.6	22.7	23.17	45.87	8.84	0.27	<0.011	97.7	1.9	0.3	Deg.Diesel (FCM) 87.5%
s	P026 SB-7C-2	14.4	<0.7	<0.7	0.39	0.39	0.32	0.02	<0.014	71.8	9.2	19	V.Deg.PHC (PFM) (FCM) 53.3%
s	P026 SB-7C-4	14.1	<0.7	2.14	<0.14	2.14	<0.14	<0.01	<0.014	95.2	0.3	4.4	Deg.Gas (P)
s	P026 SB-7C-6	13.0	<0.6	<0.6	<0.13	<0.13	<0.13	<0.01	<0.013	0	0	100	Match not possible
s	P026 SB-7C-8	9.0	<0.5	1.46	<0.09	1.46	<0.09	<0.01	<0.009	95.8	0.4	3.8	Deg.Gas (P)
s	P026 SB-7B-8	293.9	<14.7	605.4	4115	4720.4	112.8	2.79	<0.294	99.7	0.3	0	Deg.Fuel 88.7%

Initial Calibrator QC check OK

Final FCM QC Check OK 111.9%

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

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

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

QED

AQROS

Hydrocarbon Analysis Results

Client: AECOM
Address:

Samples taken Tuesday, January 20, 2015
Samples extracted Wednesday, January 21, 2015
Samples analysed Wednesday, January 21, 2015

Contact: MIKE MURPHY

Operator RACHEL MENOHER

Project: P026

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	P026 SB-7D-2	21.1	<1.1	<1.1	0.52	0.52	0.79	0.04	<0.021	61	12.7	26.3	V.Deg.PHC (FCM) 57.3%
s	P026 SB-7D-4	14.6	<0.7	<0.7	<0.15	<0.15	<0.15	<0.01	<0.015	0	0	100	Pet.Hyd not Detected
s	P026 SB-7D-6	14.7	<0.7	<0.7	<0.15	<0.15	<0.15	<0.01	<0.015	0	0	100	Pet.Hyd not Detected
s	P026 SB-7D-8	7.5	<0.4	<0.4	<0.07	<0.07	<0.07	<0.01	<0.007	0	13.4	86.6	PAH
s	P026 SB-7E-2	11.5	<0.6	<0.6	0.29	0.29	0.25	0.02	<0.011	55.2	15.6	29.2	V.Deg.PHC (FCM) 59.1%
s	P026 SB-7E-4	11.3	<0.6	<0.6	<0.11	<0.11	<0.11	<0.01	<0.011	0	0	100	Match not possible
s	P026 SB-7E-6	8.1	<0.4	<0.4	0.65	0.65	0.29	0.02	<0.008	76.2	5.6	18.2	Deg.Fuel 84.9%
s	P026 SB-7E-8	12.1	<0.6	<0.6	1.16	1.16	0.39	0.02	<0.012	73.8	5.7	20.5	Deg.Fuel Residue 88.4%

Initial Calibrator QC check OK

Final FCM QC Check OK 99.8%

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

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

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