

NC Department of Transportation Preliminary Site Assessment State Project: R-3405 WBS Element: 35579.1.1

Grace Shumate Property
Parcel #86
February 22, 2011

AMEC Earth and Environmental, Inc. of North Carolina AMEC Project: 562113405

Troy L. Holzschuh

Engineering Technician

Helen P. Corley, L.G.

Associate Hydrogeologist



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1.0 INTRODUCTION

In accordance with the North Carolina Department of Transportation (NCDOT) Request for Proposal, dated November 19, 2010, AMEC Earth and Environmental, Inc. of North Carolina (AMEC) has performed a Preliminary Site Assessment (PSA) for the Grace Shumate Property Parcel 86 (the Site) to be effected by a road improvement project along NC 18, Sparta Rd. The Site which is located at 1426 Sparta Rd is currently a residential property. The property is located on the northeast side of Sparta Road, near the intersection of Ruritan Park Road in North Wilkesboro of Wilkes County, North Carolina. The investigation was conducted in accordance with AMEC's Technical and Cost proposal dated December 3, 2010.

NCDOT contracted AMEC to perform a PSA on the Grace Shumate Property due to the resemblance of the home's architectural style to that of a gas station. The PSA was performed to determine if underground storage tanks are present and if soils have been impacted by petroleum compounds as a result of past uses of the property within the proposed design project area. This parcel will be affected by construction activities associated with road widening along Sparta Rd.

The following report summarizes the site history, geophysical survey, location and capacities of any USTs, and describes our field investigation with results of chemical analyses. The report includes the evaluation of the analytical data with regards to the presence or absence of soil contamination within the NCDOT design area of parcel #86 and estimates the extent of soil contamination.

1.1 Site Location and Vicinity

The Grace Shumate Property parcel is located on the northeast side of Sparta Road, near the intersection of Ruritan Park Road in North Wilkesboro, Wilkes County, North Carolina, as shown in Figure 1. The properties to the north, southeast, south and northwest are residential with single family homes. The property to the southwest and across Sparta Rd is The Little Dipper restaurant.



1.2 Site Description and History

The Site is currently a residential property. The Site has a two story brick building with an attached covered porch, a detached garage and a storage building north of the main building. The building has a long canopy across the front and two locked bathrooms with outside doors. Two above ground storage tanks (AST) were observed adjacent to the western wall of the house – most likely containing propane and heating oil. These ASTs are outside of the proposed ROW. The proposed DOT project will parallel the southern property edge of Parcel #86 along Sparta Rd. No USTs were observed at this facility. Appendix A includes a photo log for Parcel #86.

AMEC studied the NCDENR UST Registered Tanks Database and no tanks are registered in association with this property. AMEC also reviewed the NCDENR Incident Management Database and did not find any incident numbers associated with this property.

2.0 GEOLOGY

2.1 Regional Geology

The Grace Shumate Property is located within the Alligator Back Formation of the Ocoee Supergroup located in the Blue Ridge Physiographic Province of western North Carolina. The Alligator Back Formation comprises metamorphic sedimentary rocks that are 750 million years in age. The rocks include mica schist and phyllite that are interlayered with minor biotite. The Alligator Back rocks were named for the large sections of gneiss that descend from the peak of Bluff Mountain that resemble an alligator.

2.2 Site Geology

Site geology was observed through the sampling of 4 shallow direct push probe soil borings (SB) onsite. Borings extended to a total depth of 10 feet below ground surface (bgs). Native soils generally consisted of orange, well sorted silt. Boring logs are presented in Appendix B.

Damp soil conditions were typically first encountered at a depth of 0.5 feet (ft) bgs.



3.0 FIELD ACTIVITIES

3.1 Preliminary Activities

Prior to commencing field sampling activities at the site, several tasks were accomplished in preparation for the subsurface investigation. The Health and Safety Plan (HSP) was modified to include the site-specific health and safety information. On January 17, 2011 a private utility locating company, Priority Underground Locating of Huntersville, North Carolina cleared the proposed drilling locations that were marked in the field by AMEC personnel. North Carolina-1-Call was contacted on January 19 to report the proposed drilling activities and subsequently notify all affected utilities for the parcel. Carolina Soil Investigations, LLC (CSI Drilling) of Olin, North Carolina was retained by AMEC to perform the direct push drilling and sampling. AMEC coordinated with Schnabel Engineering South (Schnabel) who performed one geophysical survey (electromagnetic) onsite during December. The geophysical results were reviewed and discussed at the completion of each survey. Prism Laboratories, Inc. was contacted for acquisition of sample bottles. Soil boring locations were focused just beyond the existing ROW. Boring locations were located to optimize the likelihood of intercepting any potential soil contamination by staggering sample locations along the front of the parcel.

3.2 Site Reconnaissance

AMEC personnel completed site reconnaissance on November 22, 2010. During reconnaissance, the area was visually examined for the presence of any UST or areas/obstructions that could potentially affect the subsurface investigation and the number of boring locations was discussed. Boring locations were marked on January 17, 2011.

3.3 Geophysical Survey

Schnabel performed the geophysical surveys for the Sparta Rd corridor from December 10 to 21, 2010. Schnabel utilized a Geonics EM61-MK2 to perform the electromagnetic induction surveys. GPR data were not collected at the site due to a lack of differential EM61 evidence to suggest that unknown USTs were present. The EM61 was specifically calibrated to detect metal anomalies that are buried deeply and are characteristically large. The data collected by Schnabel indicates that no USTs are present within the proposed design area. The complete geophysical survey report can be found in Appendix C.



3.4 Well Survey

A well survey was not performed as part of this PSA and no monitoring wells were observed on the parcel.

3.5 Soil Sampling

Soil boring occurred on January 25, 2011 at Parcel #86. Four direct push soil borings were conducted on Parcel #86, which focused on the southern side of the site. Figure 2 presents the Site Map with boring locations and identifications. These samples were located to optimize the likelihood of intercepting any potential soil contamination by targeting the southern edge of the site which runs parallel to Sparta Rd. The first boring, P86-SB-1, was placed at the southeastern end of the site just inside the proposed ROW. Soil borings P86-SB-2 through P86-SB-4 were located within the proposed ROW, moving in a westerly direction. Boring location P86-SB-1 was the only boring location to exhibit a slightly elevated Photo Ionized Detector (PID) reading at an interval of 7-10 feet bgs. No other soil borings at Parcel # 86 exhibited elevated PID readings; therefore AMEC personnel concluded that adequate coverage of the site had been attained.

Soil samples were collected in accordance with EPA protocols in laboratory-supplied containers. The soil samples for Total Petroleum Hydrocarbons (TPH)–Gasoline Range Organics (GRO) analysis were collected using the 5030 prep method with methanol preservation. Samples for TPH-Diesel Range Organics (DRO) analysis were collected in 4oz. glass containers. Once placed in the containers, the samples were labeled with the sample number, time of collection, date of collection, name of the collector, and the requested analysis. The samples were packed on ice, and then hand delivered to Prism Laboratories in Charlotte, a North Carolina Certified Laboratory following proper chain-of-custody procedures.

4.0 SOIL SAMPLING RESULTS

AMEC conducted soil sampling at the Site on January 25, 2011. The purpose of the sampling was to determine if releases of petroleum hydrocarbons had occurred, and if so, to estimate the volume of soil that might require special handling during construction activities. The sampling was accomplished using direct push methods accompanied by



field screening for organic vapors with a PID. The laboratory results with PID readings are tabulated in Table 1. Figure 3 shows the Site Map with analytical data

A minimum of one soil sample was collected from each of the four completed soil borings from Parcel #86. Typically, if impacted soil is identified, then additional soil samples are obtained. Soil borings did not produce substantially elevated PID readings; therefore additional soil samples were not warranted. Analyses of soil samples for DRO did show results higher than the NC Action Level of 10 mg/kg in one sample, P86-SB-1, with a result of 11 mg/kg. Sample results from the remaining soil borings were all below reporting limits. Analyses of soil samples for GRO were below reporting limits for all soil boring locations.

Since the field investigation and the Laboratory analytical report did not indicate significant contamination, an estimation of contamination was not warranted.

Copies of the original laboratory report and chain-of-custody documentation are included as Appendix D.

5.0 CONCLUSIONS

The following conclusions are based upon AMEC's evaluation of field observations and laboratory analyses of samples collected from the Site on January 25, 2011.

- The Site is presently a residential property.
- The architectural design of the building suggests that it once operated as a gas station.
- Geophysical survey data indicate that no UST are present onsite.
- Four soil samples were collected and analyzed for TPH GRO and DRO.
- There was no field indication of impacted soil. Laboratory analyses of soil samples reported one DRO detection of 11 mg/kg, which is considered isolated based on the data. No GRO detections were reported.



6.0 RECOMMENDATIONS

The proposed NCDOT design at this time has minimal impact intended for Parcel 86. NCDOT should remain cautious of intercepting contaminated soil during road construction activities, thus AMEC recommends the following potential action:

 Segregation with proper assessment and handling of potentially petroleum-impacted soil during roadway improvement construction operations.



Table 1 Soil Sampling Analytical Results, DRO-GRO Parcel 86, Grace Shumate Property NC DOT

North Wilkesboro, Wilkes County, North Carolina

	SAMPLE	SAMPLE DEPTH	PID	EPA Method 8015B		
SAMPLE ID	DATE	(ft bgs)	READINGS (ppm)	DRO (mg/kg)	GRO (mg/kg)	
NC Action Levels				10	10	
P86-SB-1	1/25/2011	8 - 10	1	11	<6.0	
P86-SB-2	1/25/2011	2 - 4	0	<9.2	<5.0	
P86-SB-3	1/25/2011	4 - 6	0	<8.4	<5.1	
P86-SB-4	1/25/2011	2 - 4	0	<8.7	<4.9	

NOTES:

ft bgs = feet below ground surface; ppm = parts per million

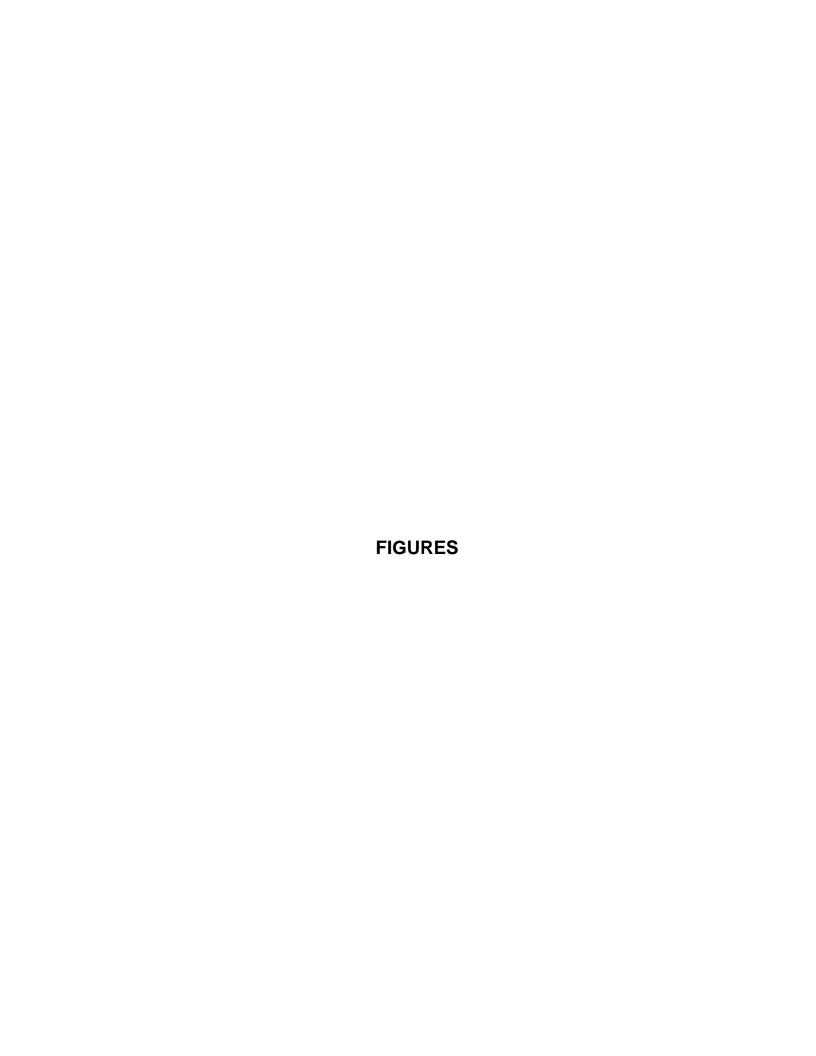
mg/kg = milligrams per kilogram

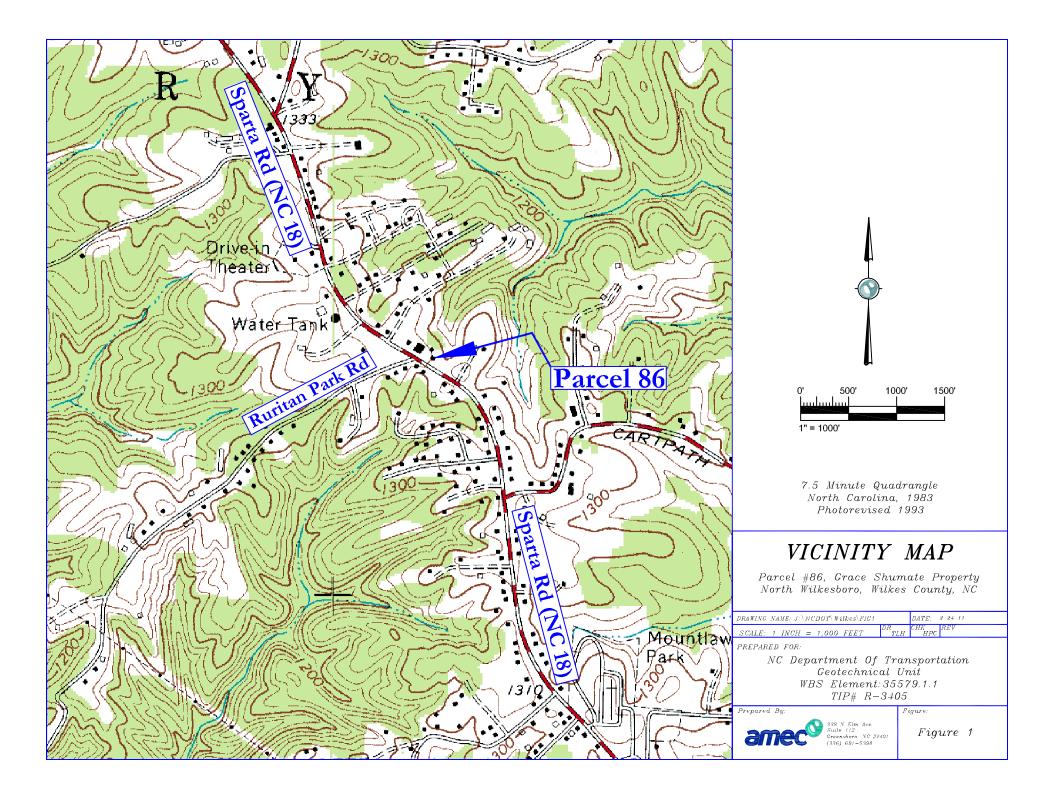
Bold Concentrations Exceed Action Levels

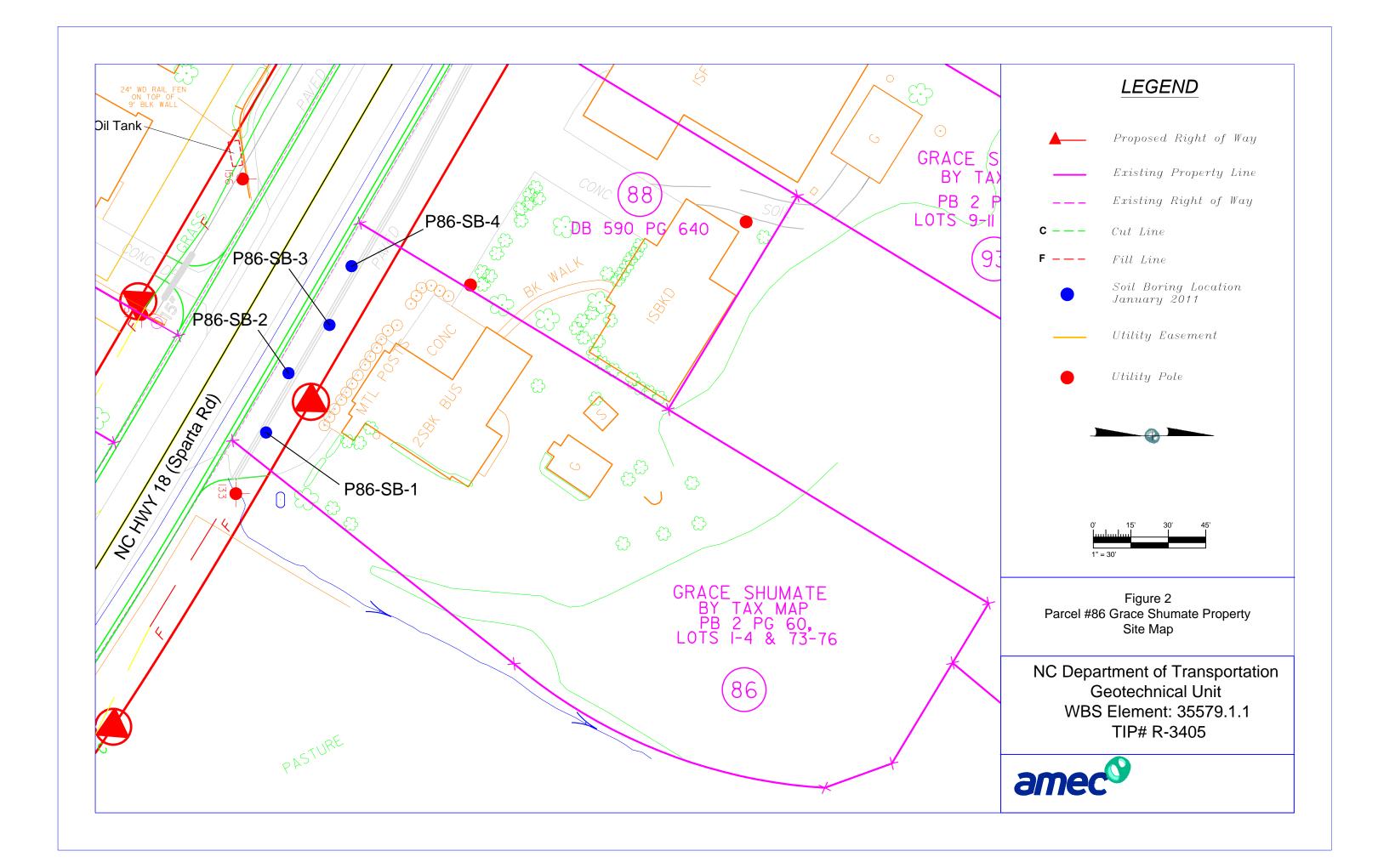
DRO = Diesel Range Organics

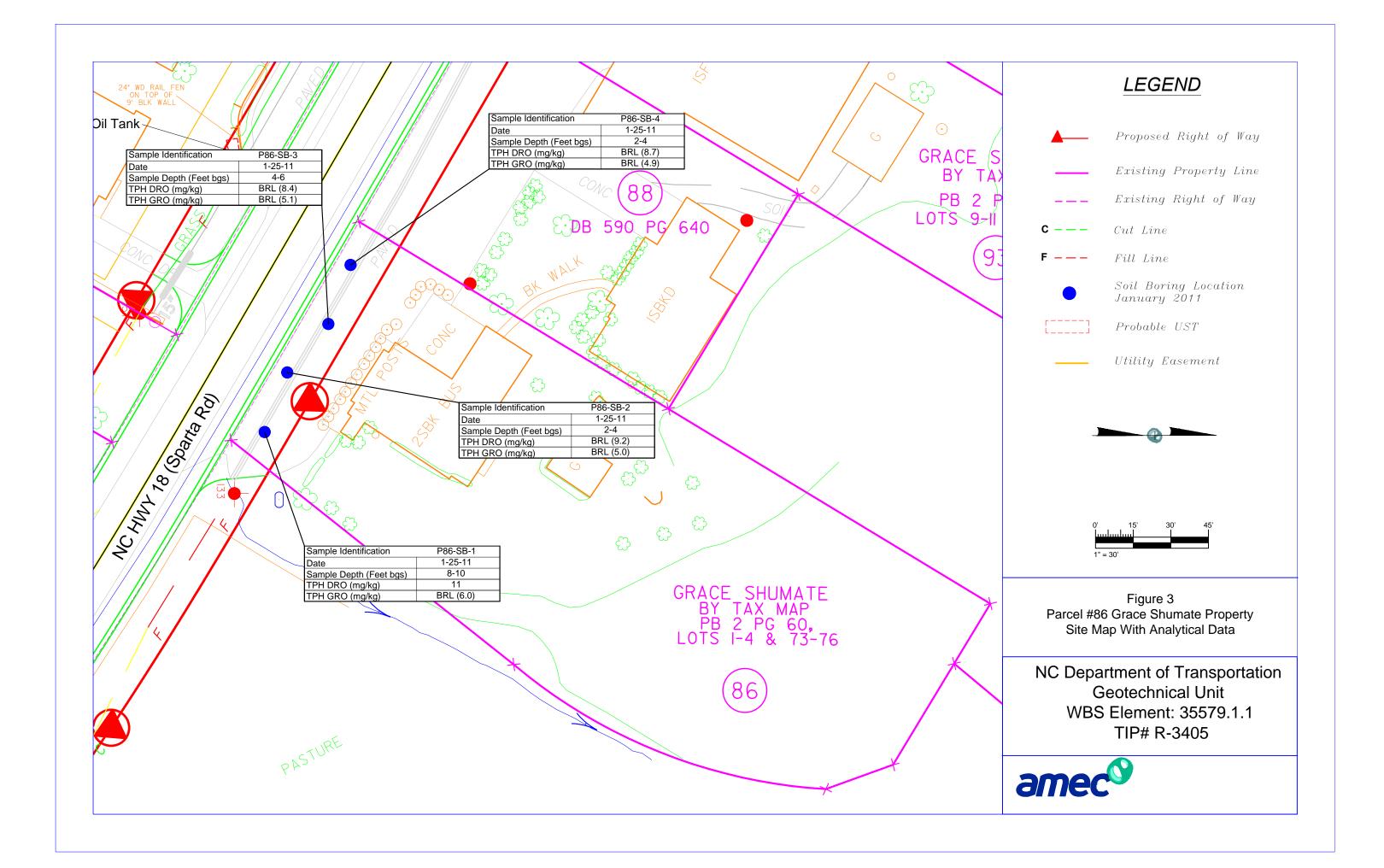
GRO = Gasoline Range Organics

Standards derived from the North Carolina UST Section Guidelines for Assessment and Corrective Action









APPENDIX A

PHOTO LOG



Photo 1

Viewing east from the across Sparta Road. Photo is of the site prior to drilling activities.



Photo 2

The photo shows track rig setting up to drill



W.O. 562113405
PROCESSED TLH
DATE January 2011
PAGE

Preliminary Site Assessment Parcel 86, Sparta Road, North Wilkesboro, NC

APPENDIX B

BORING LOGS



AMEC Earth & Environmental, Inc.

Boring/Well No.: P86-SB1	Site Name: Parcel 86
	Location: North Wilkesboro, Wilkes Co., NC
Job No.: 562113405	Sample Method: Direct Push
AMEC Rep: Troy Holzschuh	Drilling Method: Direct Push
Drilling Company: CSI	Driller Name/Cert #: Keith Speece - 2856-A

Remarks:

Depth (ft BLS)	PID/OVA Reading (ppm)	Blow Counts	
0-0.5			Asphalt/Aggregate
0.5-1	0		Yellow, Well Sorted, Sand, Medium grained, Damp
1-4	0		Orange, Well Sorted, Clayey Silt, Damp
4-7	0		Orange/Yellow, Well Sorted, Silt, Damp
7-10	0.9		Yellow, Well Sorted, Silt, Damp
		1	
		1	
		1	
		+	
		1	
		+	
		+	
		+	
		+	
		1	
		1	
		+	
		WELL CONS	TRUCTION DETAILS (If Applicable)
Well Type/Dian	neter:	71222 00140	Outer Casing Interval:
Total Depth:			Outer Casing Interval: Outer Casing Diameter:
Screen Interval			Bentonite Interval:
Sand Interval:	•		Slot Size:
Grout Interval:			Static Water Level:



AMEC Earth & Environmental, Inc. BORING LOG

Boring/Well No.: P86-SB2	Site Name: Parcel 86
	Location: North Wilkesboro, Wilkes Co., NC
Job No.: 562113405	Sample Method: Direct Push
AMEC Rep: Troy Holzschuh	Drilling Method: Direct Push
Drilling Company: CSI	Driller Name/Cert #: Keith Speece - 2856-A

Remarks:

Grout Interval:

Depth (ft BLS)	PID/OVA Reading (ppm)	Blow Counts	•
0-0.5			Asphalt/Aggregate
0.5-4	0		Orange, Well Sorted, Clayey Silt, Damp
4-6	0		Orange/Yellow, Well Sorted, Silt, Damp
6-8	0		Yellow, Well Sorted, Sandy Silt, Damp
8-10	0		Yellow, Well Sorted, Sandy Silt, Damp
			,
		WELL CONC	I
Vall Tyrs s /D:-:	matari	WELL CONS	TRUCTION DETAILS (If Applicable)
/ell Type/Diar	neter:		Outer Casing Interval:
otal Depth:			Outer Casing Diameter:
creen Interva	l:		Bentonite Interval:
and Interval:			Slot Size:

Static Water Level:



AMEC Earth & Environmental, Inc.

Boring/Well No.: P86-SB3	Site Name: Parcel 86
Date: 1-25-11	Location: North Wilkesboro, Wilkes Co., NC
Job No.: 562113405	Sample Method: Direct Push
AMEC Rep: Troy Holzschuh	Drilling Method: Direct Push
Drilling Company: CSI	Driller Name/Cert #: Keith Speece - 2856-A

Remarks:

Depth (ft BLS)	PID/OVA Reading (ppm)	Blow Counts	Soil/Lithologic Description
0-0.5			Asphalt/Aggregate
0.5-4	0		Orange, Well Sorted, Clayey Silt, Damp
4-6	0		Orange, Well Sorted, Silt, Damp
6-8	0		Yellow/Orange, Well Sorted, Silt, Damp
8-10	0		Yellow/Orange, Well Sorted, Silt, Damp
		WELL CONS	TRUCTION DETAILS (If Applicable)
Well Type/Diam	neter:		Outer Casing Interval:
Total Depth:			Outer Casing Diameter:
Screen Interval	:		Bentonite Interval:
Sand Interval:			Slot Size:
Grout Interval:			Static Water Level:



AMEC Earth & Environmental, Inc. BORING LOG

Boring/Well No.: P86-SB4	Site Name: Parcel 86
	Location: North Wilkesboro, Wilkes Co., NC
Job No.: 562113405	Sample Method: Direct Push
AMEC Rep: Troy Holzschuh	Drilling Method: Direct Push
Drilling Company: CSI	Driller Name/Cert #: Keith Speece - 2856-A

Remarks:

Grout Interval:

(ft BLS)	PID/OVA Reading (ppm)	Blow Counts	Soil/Lithologic Description
0-0.5			Asphalt/Aggregate
0.5-4	0		Orange, Well Sorted, Clayey Silt, Damp
4-6	0		Orange/Yellow/Brown, Well Sorted, Silt, Damp
6-8	0		Orange/Yellow/Brown, Well Sorted, Silt, Damp
8-10	0		Orange/Yellow/Brown, Well Sorted, Silt, Damp
			-
		†	
		†	
		†	
		†	
		WELL CONS	TRUCTION DETAILS (If Applicable)
Vell Type/Dian	neter:	WELL COMS	Outer Casing Interval:
otal Depth:	10.01.		Outer Casing linerval. Outer Casing Diameter:
creen Interval			Bentonite Interval:
and Interval:			Slot Size:

Static Water Level:

APPENDIX C GEOPHYSICAL SURVEY REPORT



January 28, 2011

Ms. Helen Corley, LG AMEC Earth and Environmental of North Carolina, Inc. 101 W. Friendly Avenue, Suite 603 Greensboro, NC 27401

RE: State Project: R-3405

WBS Element: 35579.1.1 County: Wilkes

Description: NC 18 from SR 1002 (Mountain View Road) to SR 1717 (Yellow Banks

Road)

Subject: Project 09210013.34 Report on Geophysical Surveys

Parcel 86, Wilkes County, North Carolina

Dear Ms. Corley:

SCHNABEL ENGINEERING SOUTH, PC (Schnabel) is pleased to present this report on the geophysical surveys we conducted on the subject property. We understand this letter report will be included as an appendix in your report to the NCDOT. The report includes one 11x17 color figure and two 8.5x11 color figures.

INTRODUCTION

The work described in this report was conducted on December 8, 2010, by Schnabel under our 2009 contract with the NCDOT. The work was conducted over the accessible areas of the parcel as indicated by the NCDOT to support their environmental assessment of the subject property. Photographs of the parcel are included on Figure 1. The property is located on the north side of Sparta Road approximately 120 feet east of the intersection with Ruritan Park Road in North Wilkesboro, NC. The purpose of the geophysical surveys was to locate possible metal underground storage tanks (USTs) in the accessible areas of the right-of-way and/or easement.

The geophysical investigation consisted of electromagnetic (EM) induction surveys using a Geonics EM61-MK2 instrument. The EM61 metal detector is used to locate metal objects buried up to about eight feet below ground surface. Ground-penetrating radar (GPR) investigations of selected EM61 anomalies, including areas of reinforced concrete, were conducted using a Geophysical Survey Systems SIR-3000 system equipped with a 400 MHz antenna. Photographs of the equipment used are shown on Figure 2.

FIELD METHODOLOGY

Locations of geophysical data points were obtained using a sub-meter Trimble Pro-XRS DGPS system. References to direction and location in this report are based on the US State Plane 1983 System, North Carolina 3200 Zone, using the NAD 83 datum, with units in US survey feet. The locations of existing site features (monitoring wells, signs, etc.) were recorded for later correlation with the geophysical data and for location references to the NCDOT drawings.

The EM61 data were collected along parallel survey lines spaced approximately 2.5 feet apart. The EM61 and DGPS data were recorded digitally using a field computer and later transferred to a desktop computer for data processing.

DISCUSSION OF RESULTS

The EM61 unit used for data collection on this parcel had an intermittent short in the top coil, which made the differential data unreliable. The data collected from just the bottom coil were not affected by this problem. Only the early time gate data collected from the bottom coil were used to determine anomalous locations to survey with GPR.

The contoured early time gate EM61 data for Parcel 86 are shown on Figure 3. The early time gate data provide the more sensitive detection of metal objects. The early time gate results show anomalies apparently caused by reinforced concrete, buried utilities, or known site features (Figure 3). GPR data were not collected at the site due to a lack of differential EM61 anomalies that suggested the presence of unknown USTs. The geophysical data do not indicate the presence of metallic USTs within the areas surveyed.

CONCLUSIONS

Our evaluation of the geophysical data collected on the subject property on Project R-3405 in North Wilkesboro, NC indicates the following:

The geophysical data do not indicate the presence of metallic USTs in the areas surveyed on the subject property.

NCDOT, Geotechnical Engineering Unit State Project R-3405, Wilkes County

LIMITATIONS

These services have been performed and this report prepared for AMEC Earth and Environmental of North Carolina, Inc. and the North Carolina Department of Transportation in accordance with generally accepted guidelines for conducting geophysical surveys. It is generally recognized that the results of geophysical surveys are non-unique and may not represent actual subsurface conditions.

We appreciate the opportunity to have provided these services. Please call if you need additional information or have any questions.

Sincerely,

SCHNABEL ENGINEERING SOUTH, PC

Jeremy S. Strohmeyer, LG

Project Manager

Edward D. Billington, LG Senior Vice President

JW:JS:NB

Attachments: Figures (3)

FILE: G:\2009 PROJECTS\09210013 (NCDOT 2009 GEOTECH UNIT SERVICES)\09210013.34 (R-3405, WILKES COUNTY)\REPORT\PARCEL 86\SCHNABEL GEOPHYSICAL REPORT ON PARCEL 86 (R-3405) DOCX



Parcel 86 – Grace Shumate Property, looking southeast



Parcel 86 - Grace Shumate Property, looking southeast



STATE PROJECT R-3405 NC DEPT. OF TRANSPORTATION WILKES CO., NORTH CAROLINA PROJECT NO. 09210013.34

PARCEL 86 SITE PHOTOS

FIGURE 1



Geonics EM61-MK2

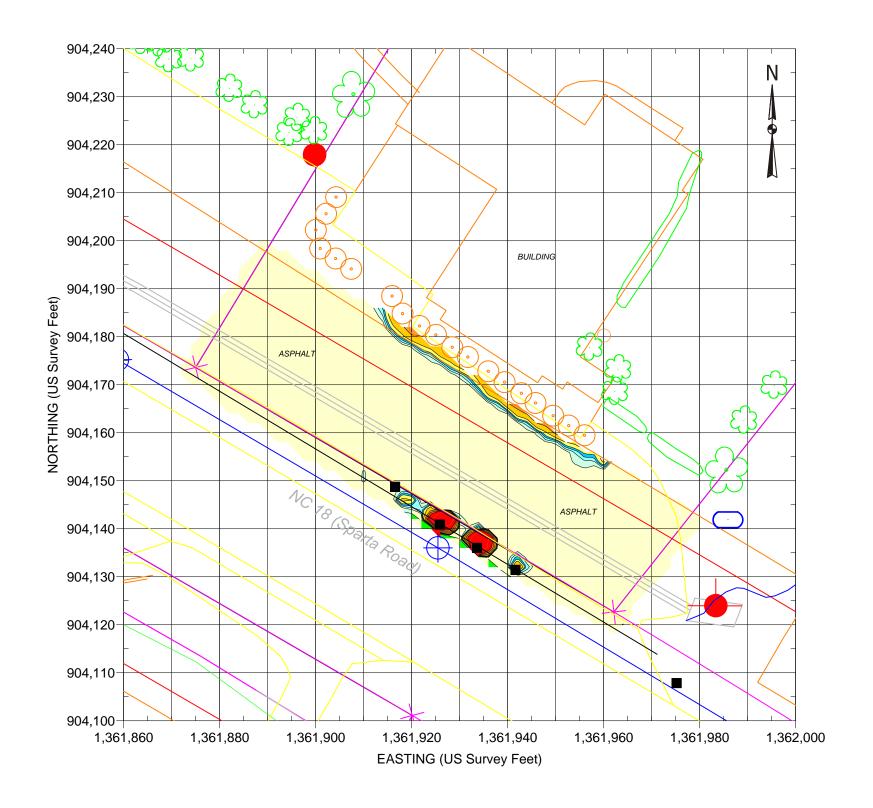


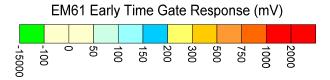
GSSI SIR-3000



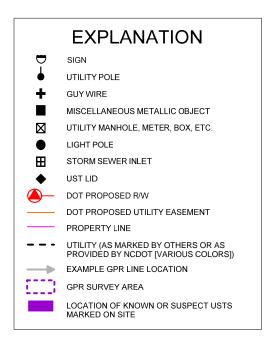
STATE PROJECT R-3405 NC DEPT. OF TRANSPORTATION WILKES CO., NORTH CAROLINA PROJECT NO. 09210013.34 PHOTOS OF GEOPHYSICAL EQUIPMENT USED

FIGURE 2









REF.: NCDOT FILE: r3405_ddc_psh08_060530.dgn (FOR SOME SITE FEATURES)

Note: The contour plot shows the earliest and most sensitive time gate of the EM61 bottom coil/channel in millivolts (mV). The EM data were collected on December 8, 2010, using a Geonics EM61-MK2 instrument. Positioning for the EM61 survey was provided using a submeter Trimble ProXRS DGPS system. Coordinates are in the US State Plane 1983 System, North Carolina Zone 3200, using the NAD 1983 datum.



STATE PROJECT R-3405 WILKES COUNTY, NORTH CAROLINA NC DEPARTMENT OF TRANSPORTATION PROJECT NO. 09210013.34 PARCEL 86 EARLY TIME GATE RESPONSE

FIGURE 3

APPENDIX D

LABORATORY ANALYTICAL RESULTS



NC Certification No. 402 SC Certification No. 99012 NC Drinking Water Cert No. 37735

Case Narrative

02/02/2011

AMEC Earth & Env. Inc.(DOT Gree) Helen Corley 338 North Elm St. Suite 112 Greensboro, NC 27401 Project: NCDOT: Wilkes County Parcel 86

Project No.: WBS #35579.1.1 Lab Submittal Date: 01/26/2011 Prism Work Order: 1010532

This data package contains the analytical results for the project identified above and includes a Case Narrative, Sample Results and Chain of Custody. Unless otherwise noted, all samples were received in acceptable condition and processed according to the referenced methods.

Data qualifiers are flagged individually on each sample. A key reference for the data qualifiers appears at the end of this case narrative.

Please call if you have any questions relating to this analytical report.

Respectfully,

PRISM LABORATORIES, INC.

President/Project Manager

Reviewed By

Korri a.

Data Qualifiers Key Reference:

A Surrogate recovery above the control limits. GRO was not detected in the sample. No further action was taken.

BRL Below Reporting Limit
MDL Method Detection Limit
RPD Relative Percent Difference

* Results reported to the reporting limit. All other results are reported to the MDL with values between MDL and reporting limit indicated with a J.



Sample Receipt Summary

02/02/2011

Prism Work Order: 1010532

Client Sample ID	Lab Sample ID	Matrix	Date Sampled	Date Received
P86-SB-1(8-10)	1010532-01	Solid	01/25/11	01/26/11
P86-SB-2(2-4)	1010532-02	Solid	01/25/11	01/26/11
P86-SB-3(4-6)	1010532-03	Solid	01/25/11	01/26/11
P86-SB-4(2-4)	1010532-04	Solid	01/25/11	01/26/11

Samples received in good condition at 2.7 degrees C unless otherwise noted.



02/02/2011



AMEC Earth & Env. Inc.(DOT Gree)
Attn: Helen Corley
338 North Flm St., Suite 112

338 North Elm St. Suite 112 Greensboro, NC 27401 Project: NCDOT: Wilkes County

Parcel 86

Project No.: WBS #35579.1.1

Sample Matrix: Solid

Client Sample ID: P86-SB-1(8-10)
Prism Sample ID: 1010532-01
Prism Work Order: 1010532
Time Collected: 01/25/11 14:45
Time Submitted: 01/26/11 13:12

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
Diesel Range Organics by GC/FID									
Diesel Range Organics	11	mg/kg dry	8.2	1.3	1	*8015C	1/28/11 19:25	JMV	P1A0489
			Surrogate			Recov	/ery	Control I	_imits
			o-Terphenyl			10	3 %	49-124	
Gasoline Range Organics by GC/FID									
Gasoline Range Organics	BRL	mg/kg dry	6.0	0.78	50	*8015C	1/28/11 2:39	HPE	P1A0466
			Surrogate			Recov	/ery	Control I	_imits
			a,a,a-Trifluoi	otoluene		15	1 %	55-129	Α
General Chemistry Parameters									
% Solids	85.0	% by Weight	0.100	0.100	1	*SM2540 G	2/1/11 15:30	JAB	P1B0014







AMEC Earth & Env. Inc.(DOT Gree) Attn: Helen Corley 338 North Elm St. Suite 112 Greensboro, NC 27401 Project: NCDOT: Wilkes County

Parcel 86

Project No.: WBS #35579.1.1

Sample Matrix: Solid

Client Sample ID: P86-SB-2(2-4) Prism Sample ID: 1010532-02 Prism Work Order: 1010532 Time Collected: 01/25/11 14:50 Time Submitted: 01/26/11 13:12

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
Diesel Range Organics by GC/FID									
Diesel Range Organics	BRL	mg/kg dry	9.2	1.5	1	*8015C	1/28/11 20:0) JMV	P1A0489
			Surrogate			Recov	very	Control	Limits
			o-Terphenyl			99	9 %	49-124	
Gasoline Range Organics by GC/FID									
Gasoline Range Organics	BRL	mg/kg dry	5.0	0.65	50	*8015C	1/28/11 3:10	HPE	P1A0466
			Surrogate			Recov	very	Control	Limits
			a,a,a-Trifluo	rotoluene		11-	4 %	55-129	
General Chemistry Parameters									
% Solids	76.3	% by Weight	0.100	0.100	1	*SM2540 G	2/1/11 15:30	JAB	P1B0014



02/02/2011



AMEC Earth & Env. Inc.(DOT Gree) Attn: Helen Corley 338 North Elm St. Suite 112 Greensboro, NC 27401 Project: NCDOT: Wilkes County

Parcel 86

Project No.: WBS #35579.1.1

Sample Matrix: Solid

Client Sample ID: P86-SB-3(4-6) Prism Sample ID: 1010532-03 Prism Work Order: 1010532 Time Collected: 01/25/11 15:00 Time Submitted: 01/26/11 13:12

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
Diesel Range Organics by GC/FID									
Diesel Range Organics	BRL	mg/kg dry	8.4	1.4	1	*8015C	1/28/11 20:3	5 JMV	P1A0489
			Surrogate			Recov	very	Control	Limits
			o-Terphenyl			99	9 %	49-124	
Gasoline Range Organics by GC/FI	D								
Gasoline Range Organics	BRL	mg/kg dry	5.1	0.66	50	*8015C	1/28/11 3:41	HPE	P1A0466
			Surrogate			Recov	very	Control	Limits
			a,a,a-Trifluo	rotoluene		15	6 %	55-129	Α
General Chemistry Parameters									
% Solids	82.5	% by Weight	0.100	0.100	1	*SM2540 G	2/1/11 15:30	JAB	P1B0014



02/02/2011



AMEC Earth & Env. Inc.(DOT Gree) Attn: Helen Corley 338 North Elm St. Suite 112 Greensboro, NC 27401 Project: NCDOT: Wilkes County

Parcel 86

Project No.: WBS #35579.1.1

Sample Matrix: Solid

Client Sample ID: P86-SB-4(2-4) Prism Sample ID: 1010532-04 Prism Work Order: 1010532 Time Collected: 01/25/11 15:05 Time Submitted: 01/26/11 13:12

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
Diesel Range Organics by GC/FID									
Diesel Range Organics	BRL	mg/kg dry	8.7	1.4	1	*8015C	1/28/11 21:1	1 JMV	P1A0489
			Surrogate			Reco	very	Control	Limits
			o-Terphenyl			98	5 %	49-124	
Gasoline Range Organics by GC/FII)								
Gasoline Range Organics	BRL	mg/kg dry	4.9	0.64	50	*8015C	1/28/11 4:12	HPE	P1A0466
			Surrogate			Reco	very	Control	Limits
			a,a,a-Trifluo	rotoluene		11	0 %	55-129	
General Chemistry Parameters									
% Solids	80.1	% by Weight	0.100	0.100	1	*SM2540 G	2/1/11 15:30	JAB	P1B0014



AMEC Earth & Env. Inc.(DOT Gree) Attn: Helen Corley 338 North Elm St. Suite 112 Greensboro, NC 27401 Project: NCDOT: Wilkes County Parcel

86

Project No: WBS #35579.1.1

Prism Work Order: 1010532

Time Submitted: 1/26/11 1:12:00PM

Gasoline Range Organics by GC/FID - Quality Control

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch P1A0466 - 5035										
Blank (P1A0466-BLK1)			F	Prepared	& Analyze	d: 01/27/1	1			
Gasoline Range Organics	BRL	5.0	mg/kg wet							
Surrogate: a,a,a-Trifluorotoluene	5.40		mg/kg wet	5.00		108	55-129			
LCS (P1A0466-BS1)			F	Prepared	& Analyze	d: 01/27/1	1			
Gasoline Range Organics	42.3	5.0	mg/kg wet	50.0		85	67-116			
Surrogate: a,a,a-Trifluorotoluene	5.35		mg/kg wet	5.00		107	55-129			
LCS Dup (P1A0466-BSD1)			F	Prepared	& Analyze	d: 01/27/1	1			
Gasoline Range Organics	42.9	5.0	mg/kg wet	50.0		86	67-116	1	200	
Surrogate: a,a,a-Trifluorotoluene	5.25		mg/kg wet	5.00		105	55-129			



AMEC Earth & Env. Inc.(DOT Gree) Attn: Helen Corley 338 North Elm St. Suite 112 Greensboro, NC 27401 Project: NCDOT: Wilkes County Parcel

86

Project No: WBS #35579.1.1

Prism Work Order: 1010532

Time Submitted: 1/26/11 1:12:00PM

Diesel Range Organics by GC/FID - Quality Control

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch P1A0489 - 3545A										
Blank (P1A0489-BLK1)			ı	Prepared	: 01/27/11	Analyzed	: 01/28/11			
Diesel Range Organics	BRL	7.0	mg/kg wet							
Surrogate: o-Terphenyl	1.31		mg/kg wet	1.60		82	49-124			
LCS (P1A0489-BS1)			ı	Prepared	: 01/27/11	Analyzed	: 01/28/11			
Diesel Range Organics	57.3	7.0	mg/kg wet	79.7		72	55-109			
Surrogate: o-Terphenyl	1.39		mg/kg wet	1.59		87	49-124			
LCS Dup (P1A0489-BSD1)			ı	Prepared	: 01/27/11	Analyzed	: 01/28/11			
Diesel Range Organics	59.3	7.0	mg/kg wet	79.8		74	55-109	3	200	
Surrogate: o-Terphenyl	1.43		mg/kg wet	1.60		89	49-124			

RPD



AMEC Earth & Env. Inc.(DOT Gree) Attn: Helen Corley 338 North Elm St. Suite 112 Greensboro, NC 27401 Project: NCDOT: Wilkes County Parcel

86

Project No: WBS #35579.1.1

Reporting

Prism Work Order: 1010532

%REC

Time Submitted: 1/26/11 1:12:00PM

General Chemistry Parameters - Quality Control

Analyte	Result	Limit Un	ts Level	Result	%REC	Limits	RPD	Limit	Notes
Batch P1B0014 - NO PREP									
Blank (P1B0014-BLK1)			Prepare	d & Analyze	ed: 02/01/1	1			
% Solids	100	0.100 % by	Weight						
Duplicate (P1B0014-DUP1)	Sour	rce: 1010532-04	Prepare	d & Analyze	ed: 02/01/1	1			
% Solids	79.9	0.100 % by	Weight	80.1			0.2	20	_

Spike

Source

Sample Extraction Data

Prep Method: 3545A

Lab Number	Batch	Initial	Final	Date	
1010532-01	P1A0489	25.15 g	1 mL	01/27/11	
1010532-02	P1A0489	25.02 g	1 mL	01/27/11	
1010532-03	P1A0489	25.16 g	1 mL	01/27/11	
1010532-04	P1A0489	25.18 g	1 mL	01/27/11	

Prep Method: 5035

Lab Number	Batch	Initial	Final	Date
1010532-01	P1A0466	4.93 g	5 mL	01/27/11
1010532-02	P1A0466	6.52 g	5 mL	01/27/11
1010532-03	P1A0466	5.96 g	5 mL	01/27/11
1010532-04	P1A0466	6.36 g	5 mL	01/27/11

NO PREP

Lab Number	Batch	Initial	Final	Date
1010532-01	P1B0014	30 g	30 mL	02/01/11
1010532-02	P1B0014	30 g	30 mL	02/01/11
1010532-03	P1B0014	30 g	30 mL	02/01/11
1010532-04	P1B0014	30 g	30 mL	02/01/11

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LABORATORIES, INC.

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CLIENT	DATE	TIME	MATRIX (SOIL,		E CONTA	INER	PRESERVA-	/	\Qo	ANALYS	ES REQU	JESTE) /		DI/O	PRISM LAB
SAMPLE DESCRIPTION	COLLECTED	MILITARY HOURS	WATER OR SLUDGE)	*TYPE SEE BELOW	NO.	SIZE	TIVES	1	\$\frac{1}{2}\text{8}	ZX.				ŖEMAI	RKS	ID NO.
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Upon relinquishing, this submitted in writing to t	Chain of Custo	ody <mark>/</mark> s your auth	orization for	Prism to proce	eed with changes	the analyses	s as requested a ses have been in	bove. A	ny chang	jes mus	t be				PRISM	USE ONLY
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*CONTAINER TYPE CO	DES: A = Am	nber C = Clear	G = Glass	│	_ = Teflor	Lined Cap	VOA = Volatile		⊒ s Analys	is (Zero		pace)			Union	