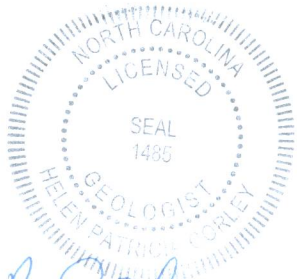
NC Department of Transportation
Preliminary Site Assessment
State Project: R-3405
WBS Element: 35579.1.1

Olaf &Valeria Adams Property
Parcel #87
February 24, 2011

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



Troy L. Holzschuh
Engineering Technician

Helen P. Corley, L.G.
Senior Project Manager

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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 Olaf &Valeria Adams Property (the Site) to be effected by a road improvement project along NC 18, Sparta Rd. The Site, which is located at 1429 Sparta Rd, currently houses a vacant store building and is identified as Parcel #87. The property is located on the southwestern corner of the intersection of Sparta and Ruritan Park Roads 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 Olaf &Valeria Adams Property because historically the site operated as a gas station. The PSA was performed to determine if soils have been impacted by petroleum compounds as a result of past and present uses of the property within the proposed design project area. This parcel will be affected by construction activities associated with road widening and new drainage features 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 #87 and estimates the extent of soil contamination.

1.1 Site Location and Vicinity

The Olaf &Valeria Adams Property parcel is located on the southwestern corner of the intersection of Sparta and Ruritan Park Roads in North Wilkesboro, Wilkes County, North Carolina, as shown in Figure 1. The properties to the northeast, east, southeast, south and west are residential with single family homes. The property to the north across Ruritan Park Rd is a restaurant called The Little Dipper Restaurant.

1.2 Site Description and History

The Site currently consists of a vacant store building, which historically was a gas station. The Site has one inactive raised-concrete dispenser island, seven USTs and associated fuel lines. Four buildings are located on the entire parcel. A brick house and wood sided shed are on the residential portion of the parcel to the south; while a plaster sided building plus separate restroom building are located on the former gas station and store side of the parcel to the north. The gas station is separated from the residential side of the parcel by a retaining wall. The proposed DOT project will parallel the eastern property edge of Parcel #87 along Sparta Rd. Appendix A includes a photo log for Parcel #1.

AMEC studied the NCDENR UST Registered Tanks Database and the NCDENR Incident Management Database and there are no known Groundwater incidents nor Facility IDs associated with this Parcel.

2.0 GEOLOGY

2.1 Regional Geology

The Olaf & Valeria Adams 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 10 shallow direct push probe soil borings (SB) onsite. Borings ranged in total depth from 10 to 15 feet below ground surface (bgs). Native soils generally consisted of orange, well sorted and clayey 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, 2011 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 two geophysical surveys (electromagnetic and ground penetrating radar) 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 strategically placed as close to or around the probable USTs and along the front of the parcel to maximize the likelihood of intercepting any potential soil contamination.

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 between December 7 and 20, 2010 for the Sparta Rd corridor and returned on February 7, 2011 to collect more data. Schnabel utilized a Geonics EM61-MK2 to perform the electromagnetic induction surveys and a Geophysical Survey Systems SIR-3000 to conduct the ground-penetrating radar (GPR) investigations. These instruments are specifically calibrated to detect metal anomalies that are buried deeply and are characteristically large. The data collected by Schnabel

indicates the presence of seven USTs within the proposed design area. The USTs are denoted in Figure 2 and their capacities and depths buried are tabulated below. The complete geophysical survey report can be found in Appendix C.

Probable UST-1	2,000 gal.	2-4.5 ft bgs
Probable UST-2	1,000 gal.	2.5-4 ft bgs
Probable UST-3	1,000 gal.	2.5-4 ft bgs
Probable UST-4	275 gal.	2.5-3.5 ft bgs
Probable UST-5	150 gal.	3-4 ft bgs
Possible UST-6	2,000 gal.	2-4.5 ft bgs
Probable UST-7	560 gal.	0-1 ft bgs

3.4 Well Survey

No well survey was performed as part of this PSA and no monitoring wells were observed on the parcel.

3.5 Soil Sampling

Soil boring occurred on January 28, 2011 at Parcel #87. Ten direct push soil borings were conducted within the NCDOT design project on Parcel #87, which includes the eastern side of the site. Probable UST-7 was identified near the end of the drilling day and had not yet been surveyed by geophysical methods. Therefore after discussion with the NCDOT PM it was agreed to not place soil borings around UST-7 since it's layout in the subsurface had not been confirmed.

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 six USTs in the northern parcel area as well as the western edge of the site which runs parallel to Sparta Rd. Soil borings, P87-SB-1 through P87-SB-5 were placed at around probable USTs-1, -2, -3, and -5, and possible UST-6. Borings P87-SB-6 and P87-SB-8 targeted the former dispenser island and probable UST-4. Boring location P87-SB-6 was the only boring location to exhibit an elevated Photo Ionized Detector (PID) reading at an interval of 13-15 feet bgs. AMEC personnel decided to add a boring location (P87-SB-7) ten feet south and east of P87-SB-6. P87-SB-7 did not exhibit elevated PID readings. P87-SB-9 and P87-SB-10 were placed in thirty foot intervals south of P87-SB-7.

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 28, 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.

A minimum of one soil sample was collected from each of the 10 completed soil borings from Parcel #87. Typically, if impacted soil is identified, then additional soil samples are obtained. Since P87-SB-6 had an elevated PID reading of 306 ppm at the 13-15 foot interval an additional sample was collected and analyzed from the 4-6 foot interval. No other soil borings exhibited elevated PID readings; consequently additional soil samples were not warranted. Results from just one of the ten samples analyzed for DRO and GRO analyses reported any detections of TPH. In boring P87-SB-6, which had the highest PID values during drilling, the sample from 13 to 15 ft bgs was measured to have 57 mg/kg DRO and 46 mg/kg GRO. These concentrations are just nominally greater than the NC Action Limit of 10 mg/kg. The remaining soil boring sample results were all below reporting limits. Figure 3 shows the Site Map with Analytical Data.

Based on the field investigation and laboratory data, AMEC drew an estimated area of contamination as shown on Figure 4. The former dispenser island or adjacent probable USTs-4 or -5 appear to be the source of impacted soil as nearby boring P87-SB-6 exhibited elevated PID readings from about 9 ft bgs to the total boring depth at 15 ft bgs. This

estimated contamination area equals 72 square ft and has a thickness from 9 ft bgs to at least 15 ft bgs. Using a thickness of 6 ft, the resultant volume of estimated contamination would be 432 cubic feet, which is roughly 16 cubic yards.

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 28, 2011.

- The property is presently vacant however historically the site was a gas station and grocery store.
- The NCDENR's UST Registered Tanks Database and NCDENR's Incident Management Database does not have any information associated with this parcel.
- The geophysical data indicate the presence of 6 probable USTs and 1 possible UST. The 7 USTs are totally within the planned ROW or easement.
- Ten soil samples were collected and analyzed for TPH GRO and DRO.
- Laboratory analyses did indicate DRO and/or GRO detections above the analytical method reporting level in one soil sample from the boring location closest to the former dispenser island.
- An estimated volume of at least 16 cubic yards of contaminated soil has been calculated as being onsite based on this PSA.

6.0 RECOMMENDATIONS

All seven of the USTs are within the proposed ROW. Removal of USTs and any associated piping by the UST owner is recommended. Soil will have to be sampled during closure activities and handled following NCDENR's Tank Closure Guidelines.

Since a party other than NCDOT may implement the UST closure, NCDOT should remain cautious of intercepting contaminated soil during road construction activities. If potentially impacted soils are intercepted, AMEC recommends the following action:

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

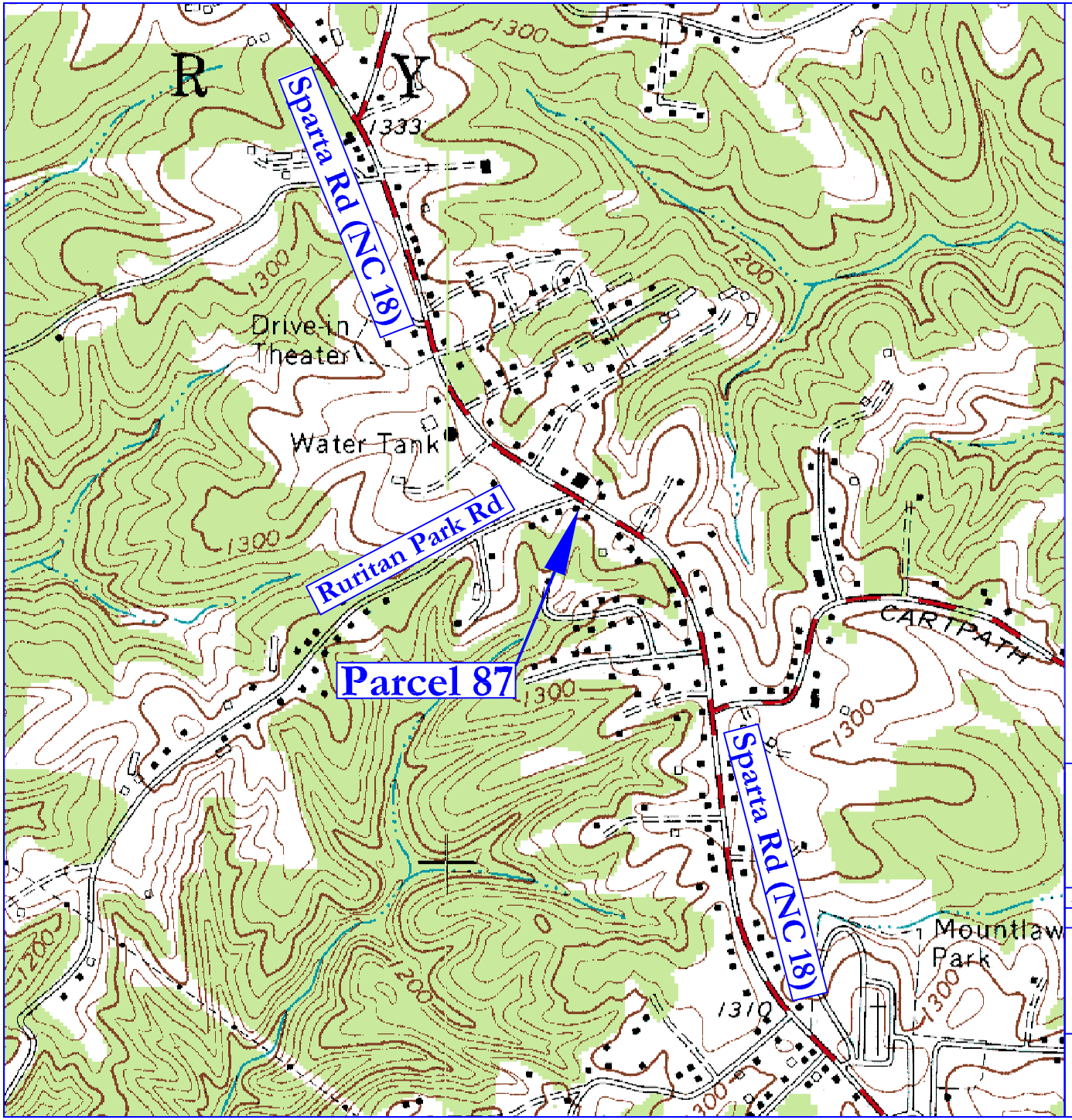
TABLES

Table 1
Soil Sampling Analytical Results, DRO-GRO
Parcel 87, Olaf and Valeria Adams Property
NC DOT
North Wilkesboro, Wilkes County, North Carolina

SAMPLE ID	SAMPLE DATE	SAMPLE DEPTH (ft bgs)	PID READINGS (ppm)	EPA Method 8015B	
				DRO (mg/kg)	GRO (mg/kg)
NC Action Levels				**10**	**10**
P87-SB-1	1/28/2011	3 - 5	0	<7.6	<5.3
P87-SB-2	1/28/2011	3 - 5	0	<9.0	<5.0
P87-SB-3	1/28/2011	3 - 5	0	<8.8	<4.8
P87-SB-4	1/28/2011	3 - 5	0	<8.7	<4.1
P87-SB-5	1/28/2011	3 - 5	0	<9.2	<4.5
P87-SB-6	1/28/2011	4 - 6	1	<9.0	<5.1
P87-SB-6	1/28/2011	13 - 15	306	**57**	**46**
P87-SB-7	1/28/2011	4 - 6	4	<8.1	<4.8
P87-SB-8	1/28/2011	4 - 6	2	<8.0	<5.1
P87-SB-9	1/28/2011	4 - 6	2	<9.1	<4.7
P87-SB-10	1/28/2011	4 - 6	0	<8.5	<4.0

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

FIGURES



0' 500' 1000' 1500'

1" = 1000'

7.5 Minute Quadrangle
North Carolina, 1983
Photorevised 1993

VICINITY MAP

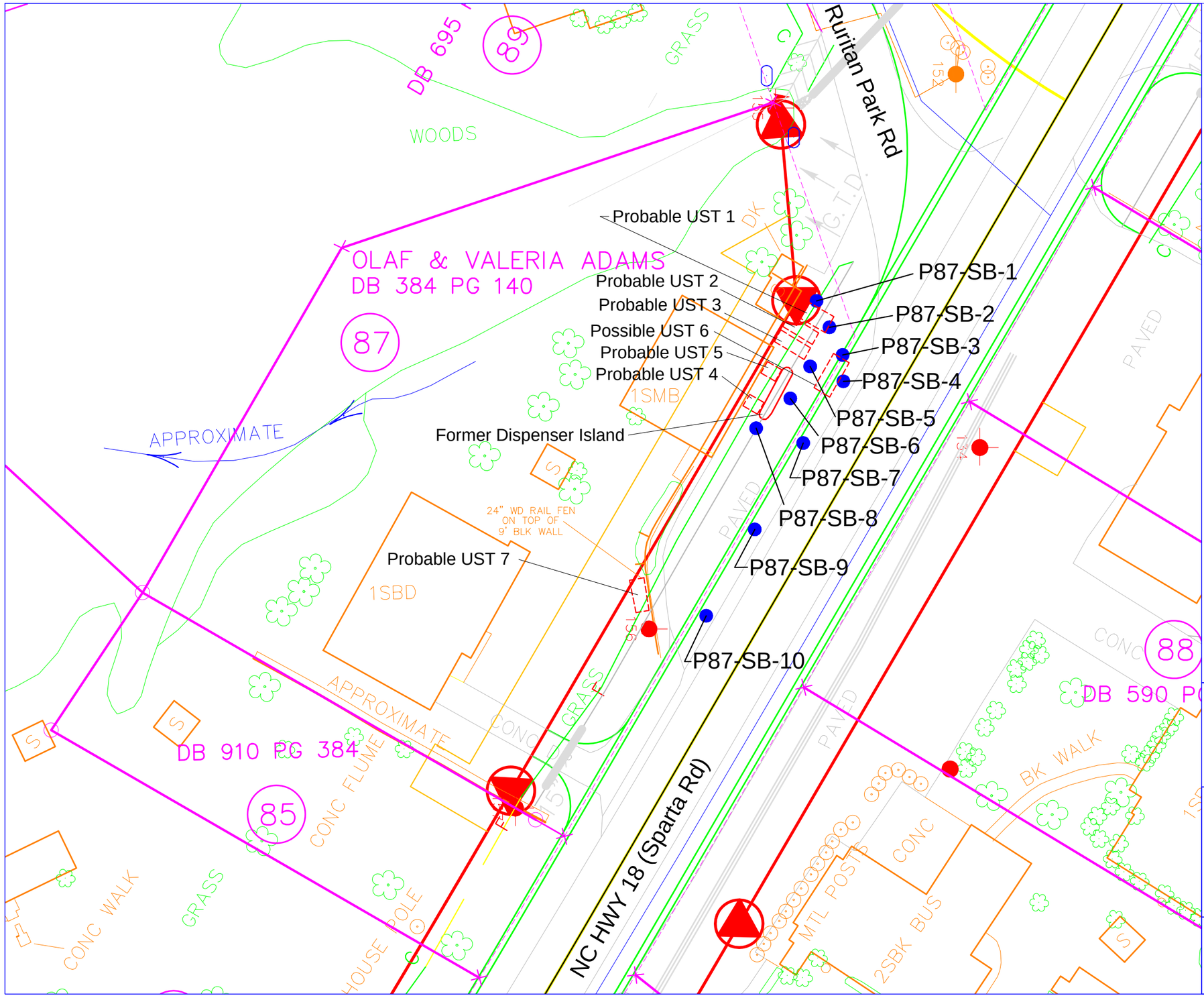
Parcel #87, Olaf & Valeria Adams Property
North Wilkesboro, Wilkes County, NC

DRAWING NAME: J:\NCDOT\Wilkes\FIG1		DATE: 2 24 11	
SCALE: 1 INCH = 1,000 FEET	DR TLH	CHK HPC	REV

PREPARED FOR:
NC Department Of Transportation
Geotechnical Unit
WBS Element: 35579.1.1
TIP# R-3405

Prepared By:
amec
338 N Elm Ave
Suite 112
Greensboro, NC 27401
(336) 691-5398

Figure:
Figure 1



LEGEND

- Proposed Right of Way
- Existing Property Line
- Existing Right of Way
- C — Cut Line
- F — Fill Line
- Soil Boring Location January 2011
- Probable UST
- Utility Easement
- Dispenser Islands
- Utility Pole

0' 15' 30' 45'

1" = 30'

Figure 2
Parcel #87 Olaf & Valeria Adams Property
Site Map

NC Department of Transportation
Geotechnical Unit
WBS Element: 35579.1.1
TIP# R-3405

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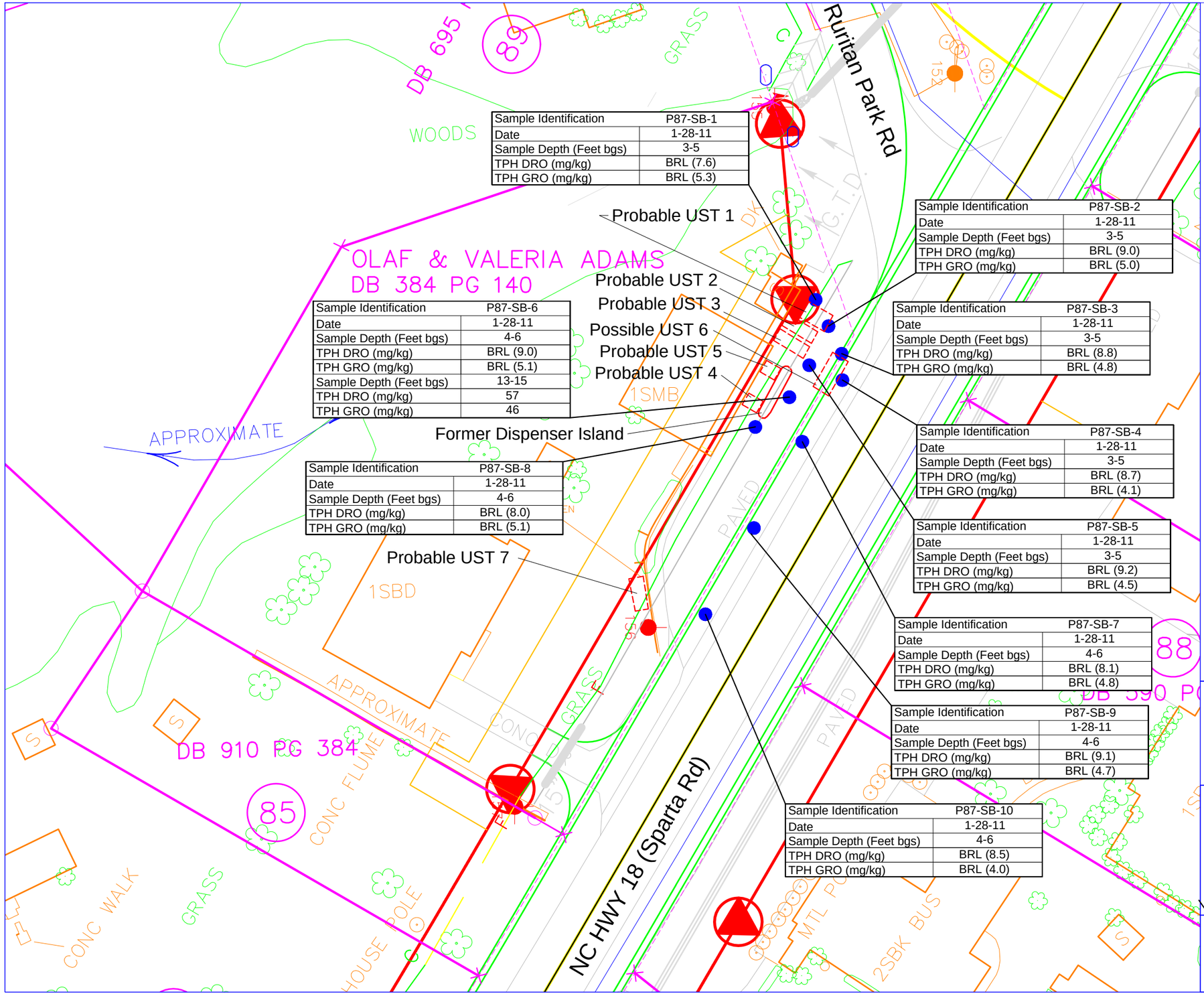

Sample Identification	P87-SB-1
Date	1-28-11
Sample Depth (Feet bgs)	3-5
TPH DRO (mg/kg)	BRL (7.6)
TPH GRO (mg/kg)	BRL (5.3)

Sample Identification	P87-SB-2
Date	1-28-11
Sample Depth (Feet bgs)	3-5
TPH DRO (mg/kg)	BRL (9.0)
TPH GRO (mg/kg)	BRL (5.0)

Sample Identification	P87-SB-3
Date	1-28-11
Sample Depth (Feet bgs)	3-5
TPH DRO (mg/kg)	BRL (8.8)
TPH GRO (mg/kg)	BRL (4.8)

Sample Identification	P87-SB-4
Date	1-28-11
Sample Depth (Feet bgs)	3-5
TPH DRO (mg/kg)	BRL (8.7)
TPH GRO (mg/kg)	BRL (4.1)

Sample Identification	P87-SB-5
Date	1-28-11
Sample Depth (Feet bgs)	3-5
TPH DRO (mg/kg)	BRL (9.2)
TPH GRO (mg/kg)	BRL (4.5)

Sample Identification	P87-SB-6
Date	1-28-11
Sample Depth (Feet bgs)	4-6
TPH DRO (mg/kg)	BRL (9.0)
TPH GRO (mg/kg)	BRL (5.1)
Sample Depth (Feet bgs)	13-15
TPH DRO (mg/kg)	57
TPH GRO (mg/kg)	46

Sample Identification	P87-SB-7
Date	1-28-11
Sample Depth (Feet bgs)	4-6
TPH DRO (mg/kg)	BRL (8.1)
TPH GRO (mg/kg)	BRL (4.8)

Sample Identification	P87-SB-8
Date	1-28-11
Sample Depth (Feet bgs)	4-6
TPH DRO (mg/kg)	BRL (8.0)
TPH GRO (mg/kg)	BRL (5.1)

Sample Identification	P87-SB-9
Date	1-28-11
Sample Depth (Feet bgs)	4-6
TPH DRO (mg/kg)	BRL (9.1)
TPH GRO (mg/kg)	BRL (4.7)

Sample Identification	P87-SB-10
Date	1-28-11
Sample Depth (Feet bgs)	4-6
TPH DRO (mg/kg)	BRL (8.5)
TPH GRO (mg/kg)	BRL (4.0)

LEGEND

- Proposed Right of Way
- Existing Property Line
- Existing Right of Way
- C — Cut Line
- F — Fill Line
- Soil Boring Location January 2011
- Probable UST
- Utility Easement
- Dispenser Islands

0' 15' 30' 45'

1" = 30'

Figure 3
Parcel #87 Olaf & Valeria Adams Property
Site Map With Analytical Data

NC Department of Transportation
Geotechnical Unit
WBS Element: 35579.1.1
TIP# R-3405

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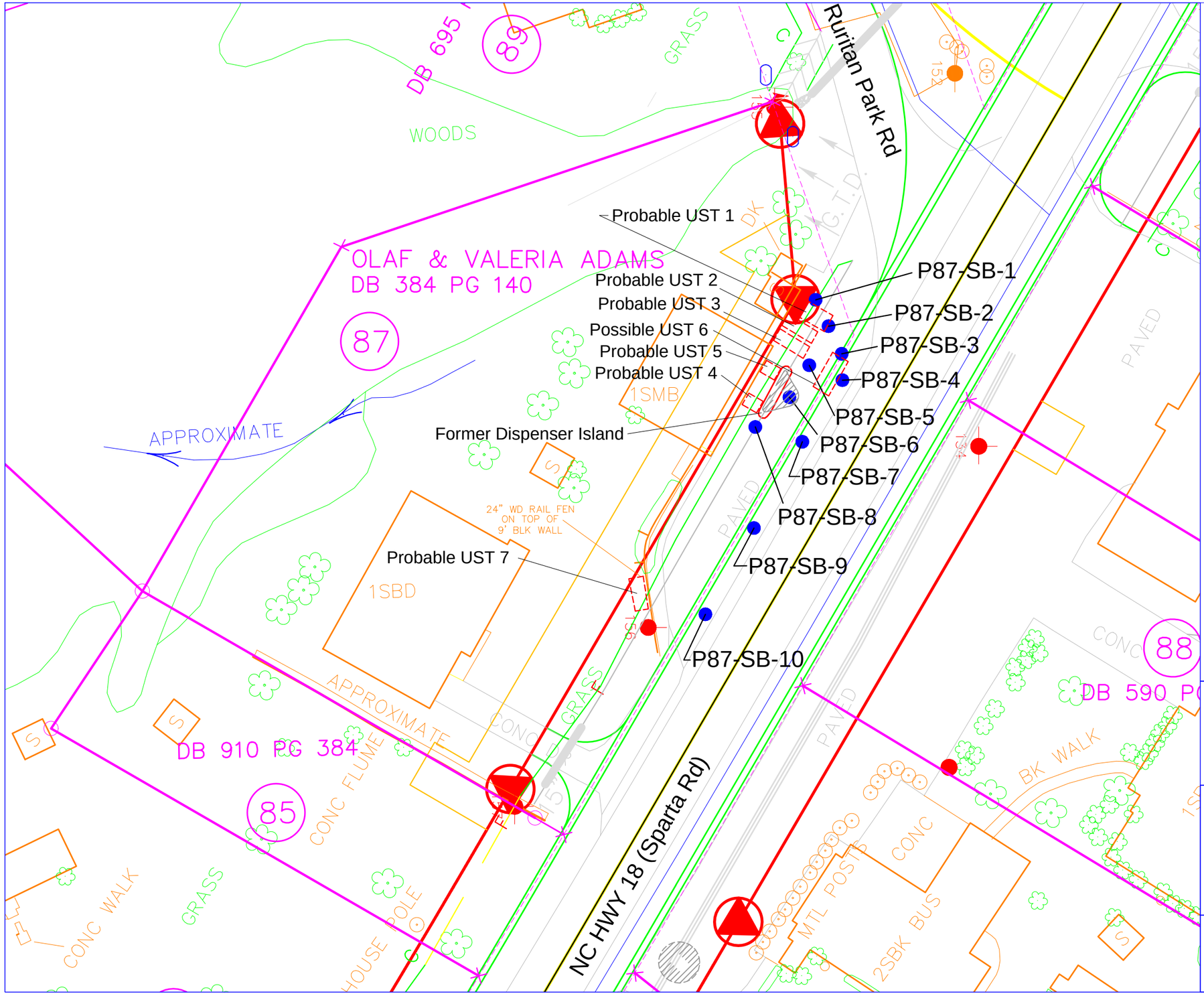

LEGEND

- Proposed Right of Way
- Existing Property Line
- Existing Right of Way
- C — Cut Line
- F — Fill Line
- T — Transition Line
- Soil Boring Location January 2011
- Probable UST
- Utility Easement
- Utility Pole
- Estimated Area of Contamination = 72 ft^2

0' 15' 30' 45'

1" = 30'

Figure 4
Parcel #87 Olaf & Valeria Adams Property
Site Map With Estimated Area of Contamination

NC Department of Transportation
Geotechnical Unit
WBS Element: 35579.1.1
TIP# R-3405

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APPENDIX A

PHOTO LOG

Photo 1

Viewing northwest from across Sparta Road. The photo is of the site prior to drilling activities.

Photo 2

Viewing northwest from northeast portion of the site. The photo shows probable UST-1.

Photo 3

Viewing west from the north eastern portion of the site. The photo shows probable UST-2 and probable UST-3

Photo 4

Viewing north from the east central portion of the site. The photo shows probable UST-6

Photo 5

Viewing west from the east central portion of the site. The photo shows probable UST-4.

Photo 6

Viewing west from the east central portion of the site. The photo shows probable UST-5.

Photo 7

Viewing northwest from the east central portion of the site. The photo shows a former dispenser island.

Photo 8

Viewing west from the northeastern corner of the site. The photo shows a ROW marker set by NCDOT.

APPENDIX B

BORING LOGS

AMEC Earth & Environmental, Inc.

BORING LOG

Boring/Well No.: P87-SB1	**Site Name: Parcel 87**
Date: 1-28-11	**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
0.5-1.5	0		Orange, Well Sorted, Clayey Silt, Damp
1.5-3	0		Brown, Well Sorted, Sand, Fine, Damp
3-5	0		Brown, Well Sorted, Sand, Fine, Damp
5-7	0		Brown, Well Sorted, Sand, Fine, Damp
7-9	0		Brown, Well Sorted, Sand, Fine, Damp
9-11	0		Brown, Well Sorted, Sand, Fine, Damp
11-13	0		Pink, Well Sorted, Silt, Damp
13-15	0		Pink, Well Sorted, Silt, Damp

WELL CONSTRUCTION DETAILS (If Applicable)

Well Type/Diameter:	Outer Casing Interval:
Total Depth:	Outer Casing Diameter:
Screen Interval:	Bentonite Interval:
Sand Interval:	Slot Size:
Grout Interval:	Static Water Level:

AMEC Earth & Environmental, Inc.

BORING LOG

Boring/Well No.: P87-SB2	**Site Name: Parcel 87**
Date: 1-28-11	**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
0.5-1.5	0		Brown, Well Sorted, Clayey Silt, Damp
1.5-3	0		Orange, Well Sorted, Clayey Silt, Damp
3-6	0		Orange, Well Sorted, Clayey Silt, Damp
6-9	0		Orange, Well Sorted, Silt, Damp
9-11	0		Pink, Well Sorted Silt, Damp
11-13	0		Pink, Well Sorted Silt, Damp
13-15	0		Pink, Well Sorted Silt, Damp

WELL CONSTRUCTION DETAILS (If Applicable)

Well Type/Diameter:	Outer Casing Interval:
Total Depth:	Outer Casing Diameter:
Screen Interval:	Bentonite Interval:
Sand Interval:	Slot Size:
Grout Interval:	Static Water Level:

AMEC Earth & Environmental, Inc.

BORING LOG

Boring/Well No.: P87-SB3	**Site Name: Parcel 87**
Date: 1-28-11	**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
0.5-1	0		Brown, Well Sorted, Sand, Medium, Damp
1-3	0		Orange, Well Sorted, Clayey Silt, Damp
3-6	0		Orange, Well Sorted, Clayey Silt, Damp
6-8	0		Pink/Yellow, Well Sorted, Silt, Damp
8-10	0		Pink/Yellow, Well Sorted, Silt, Damp
10-12	0		Pink/Yellow, Well Sorted, Silt, Damp
12-15	0		Pink/Yellow, Well Sorted, Silt, Damp

WELL CONSTRUCTION DETAILS (If Applicable)

Well Type/Diameter:	Outer Casing Interval:
Total Depth:	Outer Casing Diameter:
Screen Interval:	Bentonite Interval:
Sand Interval:	Slot Size:
Grout Interval:	Static Water Level:

AMEC Earth & Environmental, Inc.

BORING LOG

Boring/Well No.: P87-SB4	**Site Name: Parcel 87**
Date: 1-28-11	**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
0.5-1	0		Orange, Well Sorted, Clay, Damp
1-2	0		Orange/Brown, Well Sorted, Clayey Silt, Damp
2-6	0		Orange, Well Sorted, Clayey Silt, Damp
6-8	0		Orange/Yellow, Well Sorted, Silt, Damp
8-11	0		Pink/Yellow, Well Sorted, Silt, Damp
11-13	0		Yellow/White, Well Sorted, Silt, Damp
13-15	0		Yellow, Well Sorted, Silt, Damp

WELL CONSTRUCTION DETAILS (If Applicable)

Well Type/Diameter:	Outer Casing Interval:
Total Depth:	Outer Casing Diameter:
Screen Interval:	Bentonite Interval:
Sand Interval:	Slot Size:
Grout Interval:	Static Water Level:

AMEC Earth & Environmental, Inc.

BORING LOG

Boring/Well No.: P87-SB5	**Site Name: Parcel 87**
Date: 1-28-11	**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
0.5-1.5	0		Orange, Well Sorted, Clay, Damp
1.5-3	0		Orange, Well Sorted, Clayey Silt, Damp
3-6	0		Orange, Well Sorted, Clayey Silt, Damp
6-9	0		Orange, Well Sorted, Silt, Damp
9-11	0		Orange/Yellow, Well Sorted, Silt, Damp
11-13	0		Orange/Yellow, Well Sorted, Silt, Damp
13-15	0		Orange/Yellow, Well Sorted, Silt, Damp

WELL CONSTRUCTION DETAILS (If Applicable)

Well Type/Diameter:	Outer Casing Interval:
Total Depth:	Outer Casing Diameter:
Screen Interval:	Bentonite Interval:
Sand Interval:	Slot Size:
Grout Interval:	Static Water Level:

AMEC Earth & Environmental, Inc.

BORING LOG

Boring/Well No.: P87-SB6	**Site Name: Parcel 87**
Date: 1-28-11	**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
0.5-1	0		Brown, Well Sorted, Sand, Medium, Damp
1.4	0		Brown, Well Sorted, Clayey Silt, Damp
4-6	0.6		Orange/Yellow, Marbled, Well Sorted, Clayey Silt, Damp
6-9	0.4		Orange/Yellow, Well Sorted, Silt, Damp
9-11	48.8		Orange, Well Sorted, Silt, Damp
11-13	95.7		Pink, Well Sorted, Silt, Damp
13-15	306.4		Yellow, Well Sorted, Silt, Damp

WELL CONSTRUCTION DETAILS (If Applicable)

Well Type/Diameter:	Outer Casing Interval:
Total Depth:	Outer Casing Diameter:
Screen Interval:	Bentonite Interval:
Sand Interval:	Slot Size:
Grout Interval:	Static Water Level:

AMEC Earth & Environmental, Inc.

BORING LOG

Boring/Well No.: P87-SB7	**Site Name: Parcel 87**
Date: 1-28-11	**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
0.5-2	0		Brown, Well Sorted, Clayey Silt, Damp
2-4	1.2		Orange, Well Sorted, Clayey Silt, Damp
4-6	4.2		Orange, Well Sorted, Silt, Damp
6-8	3.0		Pink/Yellow, Marbled, Well Sorted, Silt, Damp
8-10	2.6		Pink/Yellow, Marbled, Well Sorted, Silt, Damp

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

AMEC Earth & Environmental, Inc.

BORING LOG

Boring/Well No.: P87-SB8	**Site Name: Parcel 87**
Date: 1-28-11	**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	2.4		Yellow, Well Sorted, Silt, Damp
6-8	1.8		Yellow, Well Sorted, Silt, Damp
8-10	2.2		Yellow, Well Sorted, Silt, Damp

WELL CONSTRUCTION DETAILS (If Applicable)

Well Type/Diameter:	Outer Casing Interval:
Total Depth:	Outer Casing Diameter:
Screen Interval:	Bentonite Interval:
Sand Interval:	Slot Size:
Grout Interval:	Static Water Level:

AMEC Earth & Environmental, Inc.

BORING LOG

Boring/Well No.: P87-SB9	**Site Name: Parcel 87**
Date: 1-28-11	**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
0.5-1.5	0.6		Brown, Well Sorted, Clayey Silt, Damp
1.5-3	0.6		Orange, Well Sorted, Clayey Silt, Damp
3-6	2.2		Orange, Well Sorted, Clayey Silt, Damp
6-8	1.4		Orange, Well Sorted, Silt, Damp
8-10	1.1		Yellow, Well Sorted, Silt, Damp

WELL CONSTRUCTION DETAILS (If Applicable)

Well Type/Diameter:	Outer Casing Interval:
Total Depth:	Outer Casing Diameter:
Screen Interval:	Bentonite Interval:
Sand Interval:	Slot Size:
Grout Interval:	Static Water Level:

AMEC Earth & Environmental, Inc.

BORING LOG

Boring/Well No.: P87-SB10	**Site Name: Parcel 87**
Date: 1-28-11	**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
0.5-2	0		Orange, Well Sorted, Clayey Silt, Damp
2-2.5	0		Yellow, Well Sorted, Silt, Damp
2.5-6	0		Orange/Brown, Well Sorted, Clayey Silt, Damp
6-8	0		Orange, Well Sorted, Silt, Damp
8-10	0		Yellow, Well Sorted, Silt, Damp

WELL CONSTRUCTION DETAILS (If Applicable)

Well Type/Diameter:	Outer Casing Interval:
Total Depth:	Outer Casing Diameter:
Screen Interval:	Bentonite Interval:
Sand Interval:	Slot Size:
Grout Interval:	Static Water Level:

APPENDIX C

GEOPHYSICAL SURVEY REPORT

Schnabel
ENGINEERING

March 4, 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 Revised Report on Geophysical Surveys**
Parcel 87, 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 two 11x17 color figures and four 8.5x11 color figures.

INTRODUCTION

The work described in this report was conducted on December 7 and 20, 2010, and February 7, 2011, 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 southwest quadrant of the intersection of Ruritan Park Road and Sparta Road in North Wilkesboro, NC. The purpose of the geophysical surveys was to locate suspect 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.

schnabel-eng.com
T/ 336-274-9456 F/ 336-274-9486
11A Oak Branch Drive / Greensboro, NC / 27407

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. The GPR data were collected along survey lines spaced one to two feet apart in orthogonal directions over areas of reinforced concrete and anomalous EM readings not attributed to cultural features. The GPR data were reviewed in the field to evaluate the possible presence of USTs. The GPR data also were recorded digitally and later transferred to a desktop computer for further review.

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 87 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 of unknown cause, in addition to those apparently caused by reinforced concrete, buried utilities, or known site features (Figure 3). The GPR data collected near the northernmost building corner indicate the presence of five probable USTs and one possible UST located within approximately 20 feet of the northernmost building corner. The GPR data collected south of the retaining wall in the southeastern portion of the parcel indicate the presence of one probable UST within 5 feet of the retaining wall. The USTs are all at least partially inside the limits of the planned right-of way and/or easement. Example GPR images showing the reflections from the suspect USTs are shown on Figure 4. Figure 3 shows the location of the suspect USTs as marked in the field.

The GPR data indicate that probable UST No. 1 and possible UST No. 6 are buried approximately 2.0 to 4.5 feet below ground surface and are each about 5.5 feet in diameter and about 12 feet long, equivalent to a capacity of about 2,000 gallons. The GPR data indicate that probable UST Nos. 2 and 3 are buried approximately 2.5 to 4.0 feet below ground surface and are each about 4 feet in diameter and about 10.5 feet long, equivalent to a capacity of about 1,000 gallons. The GPR data indicate that probable UST No. 4 is buried approximately 2.5 to 3.5 feet below ground surface and is about 4 feet in diameter and about 5 feet long, equivalent to a capacity of about 275 gallons. The GPR data indicate that probable UST No. 5 is buried approximately 3.0 to 4.0 feet below ground surface and is about 3 feet in diameter and about 3 feet long, equivalent to a capacity of about 150 gallons. The GPR data indicate that probable UST No. 7 is buried approximate 0.0 to 1.0 feet below ground surface and is about 3.5 feet in diameter and about 7.5 feet long, equivalent to a capacity of about 560 gallons. The western end of probable UST No. 7 is exposed at the ground surface. The property owner indicated that UST No. 7 probably still contains about

100 gallons of heating oil, but that he no longer uses heating oil in his residence. Photographs of the suspect UST locations, as marked in the field, are included on Figures 5 and 6.

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 indicate the presence of six probable USTs and one possible UST on Parcel 87. The seven USTs are at least partially inside the planned right-of-way and/or easement. Suspect UST Nos. 1 and 6 are about 2,000-gallon capacity and are buried about 2.0 to 4.5 feet below ground surface. Probable UST Nos. 2 and 3 are about 1,000-gallon capacity and are buried about 2.5 to 4.0 feet below ground surface. Probable UST No. 4 is about 275-gallon capacity and is buried about 2.5 to 3.5 feet below ground surface. Probable UST No. 5 is about 150-gallon capacity and is buried about 3.0 to 4.0 feet below ground surface. Probable UST No. 7 is about 560-gallon capacity and is buried about 0.0 to 1.0 foot below ground surface.

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 (6)
FILE: G:\2009 PROJECTS\09210013 (NCDOT 2009 GEOTECH UNIT SERVICES)\09210013.34 (R-3405, WILKES COUNTY)\REPORT\PARCEL 87\SCHNABEL GEOPHYSICAL REPORT ON PARCEL 87 (R-3405)_REVISED.DOCX

Parcel 87 – Olaf & Valeria Adams Property, looking northwest

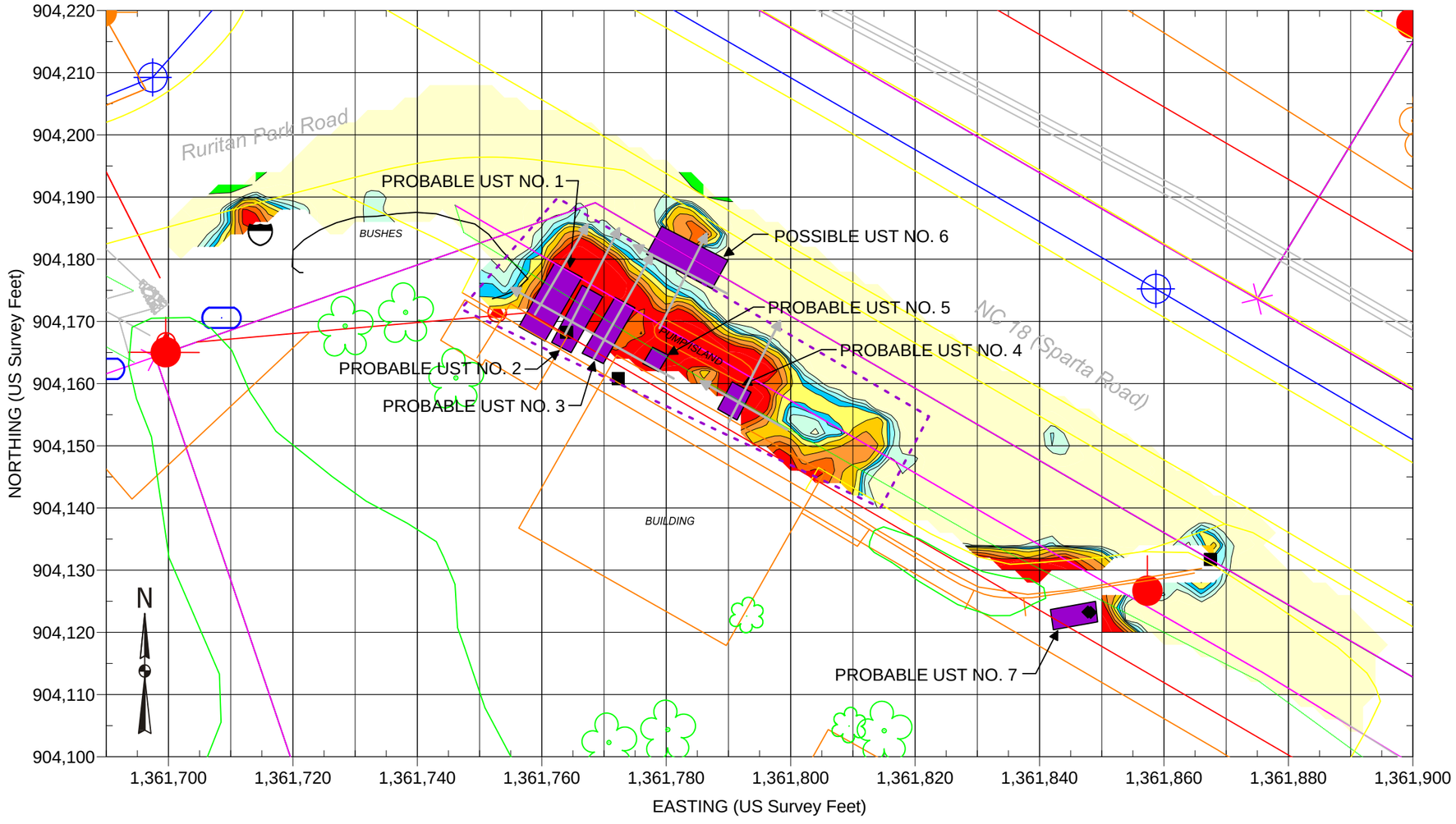
Parcel 87 – Olaf and Valeria Adams Property, looking southwest

Schnabel ENGINEERING	STATE PROJECT R-3405 NC DEPT. OF TRANSPORTATION WILKES CO., NORTH CAROLINA PROJECT NO. 09210013.34	PARCEL 87 SITE PHOTOS FIGURE 1

Geonics EM61-MK2

GSSI SIR-3000

Schnabel ENGINEERING	STATE PROJECT R-3405 NC DEPT. OF TRANSPORTATION WILKES CO., NORTH CAROLINA PROJECT NO. 09210013.34	PHOTOS OF GEOPHYSICAL EQUIPMENT USED FIGURE 2



EXPLANATION

- SIGN
- UTILITY POLE
- GUY WIRE
- MISCELLANEOUS METALLIC OBJECT
- UTILITY MANHOLE, METER, BOX, ETC.
- LIGHT POLE
- STORM SEWER INLET
- UST LID
- DOT PROPOSED R/W
- DOT PROPOSED UTILITY EASEMENT
- PROPERTY LINE
- UTILITY (AS MARKED BY OTHERS OR AS PROVIDED BY NCDOT [VARIOUS COLORS])
- EXAMPLE GPR LINE LOCATION
- GPR SURVEY AREA
- LOCATION OF KNOWN OR SUSPECT USTS MARKED ON SITE

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

EM61 Early Time Gate Response (mV)

-15000 -100 0 50 100 150 200 300 500 750 1000 2000

Scale in US Survey Feet

0 20 40 60

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 7, 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. GPR data were acquired on December 20, 2010, using a Geophysical Survey Systems SIR 3000 equipped with a 400 MHz antenna.

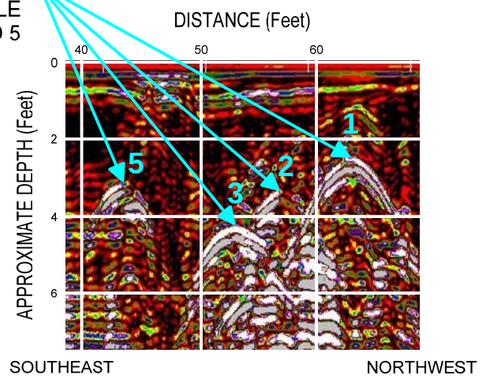
Schnabel ENGINEERING

STATE PROJECT R-3405
WILKES COUNTY, NORTH CAROLINA
NC DEPARTMENT OF TRANSPORTATION
PROJECT NO. 09210013.34

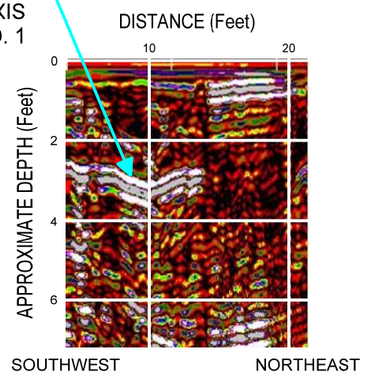
PARCEL 87
EARLY TIME GATE RESPONSE

FIGURE 3

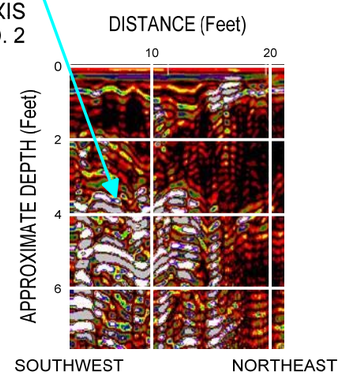
EXAMPLE GPR RESPONSE FROM THE SHORT AXES OF PROBABLE UST NOS. 1, 2, 3, AND 5



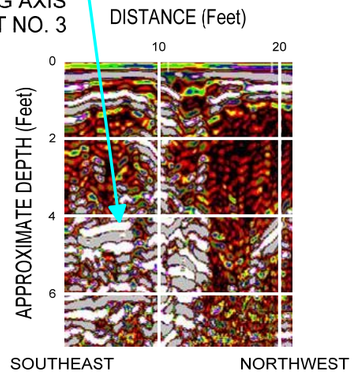
EXAMPLE GPR RESPONSE FROM THE LONG AXIS OF PROBABLE UST NO. 1



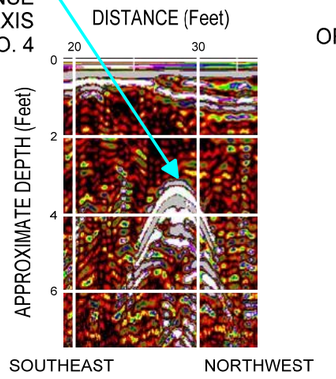
EXAMPLE GPR RESPONSE FROM THE LONG AXIS OF PROBABLE UST NO. 2



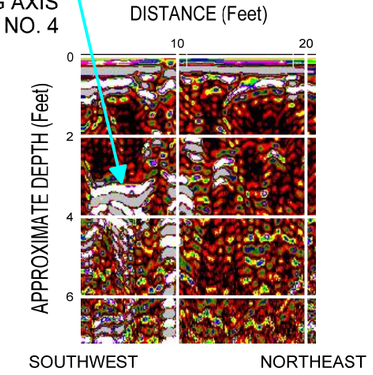
EXAMPLE GPR RESPONSE FROM THE LONG AXIS OF PROBABLE UST NO. 3



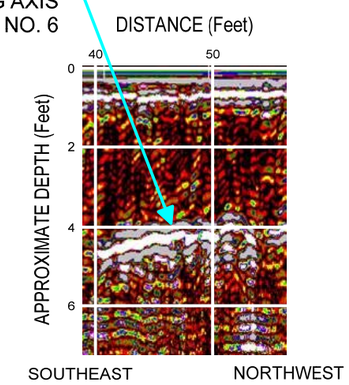
EXAMPLE GPR RESPONSE FROM THE SHORT AXIS OF PROBABLE UST NO. 4



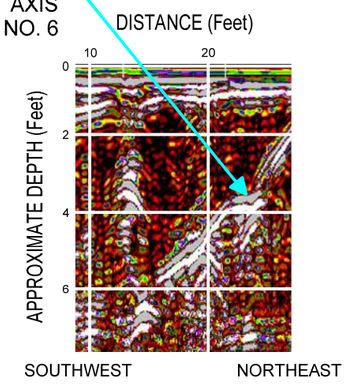
EXAMPLE GPR RESPONSE FROM THE LONG AXIS OF PROBABLE UST NO. 4



EXAMPLE GPR RESPONSE FROM THE LONG AXIS OF POSSIBLE UST NO. 6



EXAMPLE GPR RESPONSE FROM THE SHORT AXIS OF POSSIBLE UST NO. 6



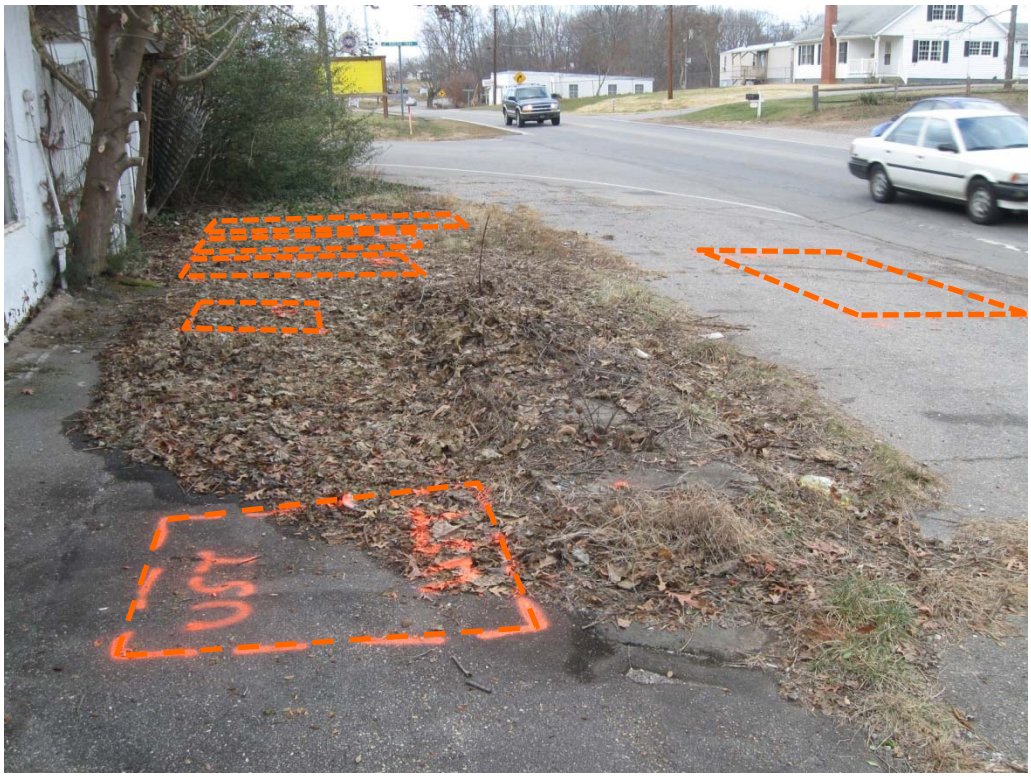
Schnabel ENGINEERING

STATE PROJECT R-3405
WILKES COUNTY, NORTH CAROLINA
NC DEPARTMENT OF TRANSPORTATION
PROJECT NO. 09210013.34

PARCEL 87
ADDITIONAL GPR IMAGES

FIGURE 4

Parcel 87 – Olaf & Valeria Adams Property, looking southeast. Photo shows approximate marked location of the probable USTs on the east side of the property.



Parcel 87 – Olaf & Valeria Adams Property, looking northwest. Photo shows approximate marked location of the probable USTs near the east side of the property.

Schnabel ENGINEERING	STATE PROJECT R-3405 WILKES CO., NORTH CAROLINA NC DEPT. OF TRANSPORTATION PROJECT NO. 09210013.34	PHOTOS OF PROBABLE UST LOCATIONS FIGURE 5

Parcel 87 – Olaf & Valeria Adams Property, looking north. Photo shows approximate marked location of the probable UST on the southeast side of the property.

Parcel 87 – Olaf & Valeria Adams Property, looking west. Photo shows approximate marked location of the probable UST near the southeast side of the property.

Schnabel ENGINEERING	STATE PROJECT R-3405 WILKES CO., NORTH CAROLINA NC DEPT. OF TRANSPORTATION PROJECT NO. 09210013.34	PHOTOS OF PROBABLE UST LOCATIONS FIGURE 6

APPENDIX D

LABORATORY ANALYTICAL RESULTS

PRISM LABORATORIES, INC.
Full-Service Analytical & Environmental Solutions

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

Case Narrative

02/08/2011

AMEC Earth & Env. Inc.(DOT Gree)
Helen Corley
338 North Elm St. Suite 112
Greensboro, NC 27401

Project: NCDOT: Wilkes County Parcel 87
Project No.: WBS #35579.1.1
Lab Submittal Date: 01/28/2011
Prism Work Order: 1010641

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

Data Qualifiers Key Reference:

SR	Surrogate recovery outside the QC limits.
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

02/08/2011

Prism Work Order: 1010641

Client Sample ID	Lab Sample ID	Matrix	Date Sampled	Date Received
P87-SB-1(3-5)	1010641-01	Solid	01/28/11	01/28/11
P87-SB-2(3-5)	1010641-02	Solid	01/28/11	01/28/11
P87-SB-3(3-5)	1010641-03	Solid	01/28/11	01/28/11
P87-SB-4(3-5)	1010641-04	Solid	01/28/11	01/28/11
P87-SB-5(3-5)	1010641-05	Solid	01/28/11	01/28/11
P87-SB-6(4-6)	1010641-06	Solid	01/28/11	01/28/11
P87-SB-6(13-15)	1010641-07	Solid	01/28/11	01/28/11
P87-SB-7(4-6)	1010641-08	Solid	01/28/11	01/28/11
P87-SB-8(4-6)	1010641-09	Solid	01/28/11	01/28/11
P87-SB-9(4-6)	1010641-10	Solid	01/28/11	01/28/11
P87-SB-10(4-6)	1010641-11	Solid	01/28/11	01/28/11

Samples received in good condition at 0.3 degrees C unless otherwise noted.

449 Springbrook Road - P.O. Box 240543 - Charlotte, NC 28224-0543
Phone: 704/529-6364 - Toll Free Number: 1-800/529-6364 - Fax: 704/525-0409

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

Project: NCDOT: Wilkes County
Parcel 87
Project No.: WBS #35579.1.1
Sample Matrix: Solid

Client Sample ID: P87-SB-1(3-5)
Prism Sample ID: 1010641-01
Prism Work Order: 1010641
Time Collected: 01/28/11 10:00
Time Submitted: 01/28/11 14:40

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	7.6	1.2	1	*8015C	2/4/11 19:53	JMV	P1B0092
			Surrogate			Recovery		Control Limits	
			o-Terphenyl			*89 %*		*49-124*	
Gasoline Range Organics by GC/FID									
Gasoline Range Organics	BRL	mg/kg dry	5.3	0.69	50	*8015C	2/3/11 0:45	HPE	P1B0047
			Surrogate			Recovery		Control Limits	
			a,a,a-Trifluorotoluene			*96 %*		*55-129*	
General Chemistry Parameters									
% Solids	**91.5**	**% by Weight**	**0.100**	**0.100**	**1**	***SM2540 G**	**2/4/11 16:00**	**JAB**	**P1B0104**

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

Project: NCDOT: Wilkes County
Parcel 87
Project No.: WBS #35579.1.1
Sample Matrix: Solid

Client Sample ID: P87-SB-2(3-5)
Prism Sample ID: 1010641-02
Prism Work Order: 1010641
Time Collected: 01/28/11 10:10
Time Submitted: 01/28/11 14:40

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	9.0	1.5	1	*8015C	2/4/11 20:29	JMV	P1B0092
			Surrogate			Recovery		Control Limits	
			o-Terphenyl			*86 %*		*49-124*	
Gasoline Range Organics by GC/FID									
Gasoline Range Organics	BRL	mg/kg dry	5.0	0.65	50	*8015C	2/3/11 1:16	HPE	P1B0047
			Surrogate			Recovery		Control Limits	
			a,a,a-Trifluorotoluene			*121 %*		*55-129*	
General Chemistry Parameters									
% Solids	**77.1**	**% by Weight**	**0.100**	**0.100**	**1**	***SM2540 G**	**2/4/11 16:00**	**JAB**	**P1B0104**

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

Project: NCDOT: Wilkes County
Parcel 87
Project No.: WBS #35579.1.1
Sample Matrix: Solid

Client Sample ID: P87-SB-3(3-5)
Prism Sample ID: 1010641-03
Prism Work Order: 1010641
Time Collected: 01/28/11 10:30
Time Submitted: 01/28/11 14:40

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	8.8	1.4	1	*8015C	2/4/11 21:04	JMV	P1B0092
			Surrogate			Recovery		Control Limits	
			o-Terphenyl			*74 %*		*49-124*	
Gasoline Range Organics by GC/FID									
Gasoline Range Organics	BRL	mg/kg dry	4.8	0.63	50	*8015C	2/3/11 1:48	HPE	P1B0047
			Surrogate			Recovery		Control Limits	
			a,a,a-Trifluorotoluene			*126 %*		*55-129*	
General Chemistry Parameters									
% Solids	**79.6**	**% by Weight**	**0.100**	**0.100**	**1**	***SM2540 G**	**2/4/11 16:00**	**JAB**	**P1B0104**

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

Project: NCDOT: Wilkes County
Parcel 87
Project No.: WBS #35579.1.1
Sample Matrix: Solid

Client Sample ID: P87-SB-4(3-5)
Prism Sample ID: 1010641-04
Prism Work Order: 1010641
Time Collected: 01/28/11 10:40
Time Submitted: 01/28/11 14:40

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	2/4/11 21:40	JMV	P1B0092
			Surrogate			Recovery		Control Limits	
			o-Terphenyl			*102 %*		*49-124*	
Gasoline Range Organics by GC/FID									
Gasoline Range Organics	BRL	mg/kg dry	4.1	0.53	50	*8015C	2/3/11 2:19	HPE	P1B0047
			Surrogate			Recovery		Control Limits	
			a,a,a-Trifluorotoluene			*120 %*		*55-129*	
General Chemistry Parameters									
% Solids	**80.0**	**% by Weight**	**0.100**	**0.100**	**1**	***SM2540 G**	**2/4/11 16:00**	**JAB**	**P1B0104**

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

Project: NCDOT: Wilkes County
Parcel 87
Project No.: WBS #35579.1.1
Sample Matrix: Solid

Client Sample ID: P87-SB-5(3-5)
Prism Sample ID: 1010641-05
Prism Work Order: 1010641
Time Collected: 01/28/11 10:50
Time Submitted: 01/28/11 14:40

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	2/4/11 22:15	JMV	P1B0092
			Surrogate			Recovery		Control Limits	
			o-Terphenyl			*109 %*		*49-124*	
Gasoline Range Organics by GC/FID									
Gasoline Range Organics	BRL	mg/kg dry	4.5	0.59	50	*8015C	2/3/11 2:51	HPE	P1B0047
			Surrogate			Recovery		Control Limits	
			a,a,a-Trifluorotoluene			*119 %*		*55-129*	
General Chemistry Parameters									
% Solids	**75.5**	**% by Weight**	**0.100**	**0.100**	**1**	***SM2540 G**	**2/4/11 16:00**	**JAB**	**P1B0104**

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

Project: NCDOT: Wilkes County
Parcel 87
Project No.: WBS #35579.1.1
Sample Matrix: Solid

Client Sample ID: P87-SB-6(4-6)
Prism Sample ID: 1010641-06
Prism Work Order: 1010641
Time Collected: 01/28/11 11:05
Time Submitted: 01/28/11 14:40

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	9.0	1.4	1	*8015C	2/4/11 22:51	JMV	P1B0092
			Surrogate			Recovery		Control Limits	
			o-Terphenyl			*92 %*		*49-124*	
Gasoline Range Organics by GC/FID									
Gasoline Range Organics	BRL	mg/kg dry	5.1	0.66	50	*8015C	2/3/11 3:22	HPE	P1B0047
			Surrogate			Recovery		Control Limits	
			a,a,a-Trifluorotoluene			*112 %*		*55-129*	
General Chemistry Parameters									
% Solids	**77.7**	**% by Weight**	**0.100**	**0.100**	**1**	***SM2540 G**	**2/4/11 16:00**	**JAB**	**P1B0104**

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

Project: NCDOT: Wilkes County
Parcel 87
Project No.: WBS #35579.1.1
Sample Matrix: Solid

Client Sample ID: P87-SB-6(13-15)
Prism Sample ID: 1010641-07
Prism Work Order: 1010641
Time Collected: 01/28/11 11:15
Time Submitted: 01/28/11 14:40

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
Diesel Range Organics by GC/FID									
Diesel Range Organics	**57**	**mg/kg dry**	**7.8**	**1.3**	**1**	***8015C**	**2/4/11 23:26**	**JMV**	**P1B0092**
			Surrogate			Recovery		Control Limits	
			o-Terphenyl			*101 %*		*49-124*	
Gasoline Range Organics by GC/FID									
Gasoline Range Organics	**46**	**mg/kg dry**	**9.5**	**1.2**	**200**	***8015C**	**2/3/11 8:07**	**HPE**	**P1B0047**
			Surrogate			Recovery		Control Limits	
			a,a,a-Trifluorotoluene			*144 %*		*55-129*	*SR*
General Chemistry Parameters									
% Solids	**89.9**	**% by Weight**	**0.100**	**0.100**	**1**	***SM2540 G**	**2/4/11 16:00**	**JAB**	**P1B0104**

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

Project: NCDOT: Wilkes County
Parcel 87
Project No.: WBS #35579.1.1
Sample Matrix: Solid

Client Sample ID: P87-SB-7(4-6)
Prism Sample ID: 1010641-08
Prism Work Order: 1010641
Time Collected: 01/28/11 11:25
Time Submitted: 01/28/11 14:40

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	8.1	1.3	1	*8015C	2/5/11 0:37	JMV	P1B0092
			Surrogate			Recovery		Control Limits	
			o-Terphenyl			*89 %*		*49-124*	
Gasoline Range Organics by GC/FID									
Gasoline Range Organics	BRL	mg/kg dry	4.8	0.62	50	*8015C	2/3/11 3:53	HPE	P1B0047
			Surrogate			Recovery		Control Limits	
			a,a,a-Trifluorotoluene			*152 %*		*55-129*	*SR*
General Chemistry Parameters									
% Solids	**86.2**	**% by Weight**	**0.100**	**0.100**	**1**	***SM2540 G**	**2/4/11 16:00**	**JAB**	**P1B0104**

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

Project: NCDOT: Wilkes County
Parcel 87
Project No.: WBS #35579.1.1
Sample Matrix: Solid

Client Sample ID: P87-SB-8(4-6)
Prism Sample ID: 1010641-09
Prism Work Order: 1010641
Time Collected: 01/28/11 11:40
Time Submitted: 01/28/11 14:40

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	8.0	1.3	1	*8015C	2/5/11 1:12	JMV	P1B0092
			Surrogate			Recovery		Control Limits	
			o-Terphenyl			*99 %*		*49-124*	
Gasoline Range Organics by GC/FID									
Gasoline Range Organics	BRL	mg/kg dry	5.1	0.67	50	*8015C	2/3/11 4:25	HPE	P1B0047
			Surrogate			Recovery		Control Limits	
			a,a,a-Trifluorotoluene			*144 %*		*55-129*	*SR*
General Chemistry Parameters									
% Solids	**87.1**	**% by Weight**	**0.100**	**0.100**	**1**	***SM2540 G**	**2/4/11 16:00**	**JAB**	**P1B0104**

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

Project: NCDOT: Wilkes County
Parcel 87
Project No.: WBS #35579.1.1
Sample Matrix: Solid

Client Sample ID: P87-SB-9(4-6)
Prism Sample ID: 1010641-10
Prism Work Order: 1010641
Time Collected: 01/28/11 11:50
Time Submitted: 01/28/11 14:40

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	9.1	1.5	1	*8015C	2/5/11 1:48	JMV	P1B0092
			Surrogate			Recovery		Control Limits	
			o-Terphenyl			*88 %*		*49-124*	
Gasoline Range Organics by GC/FID									
Gasoline Range Organics	BRL	mg/kg dry	4.7	0.61	50	*8015C	2/3/11 4:57	HPE	P1B0047
			Surrogate			Recovery		Control Limits	
			a,a,a-Trifluorotoluene			*95 %*		*55-129*	
General Chemistry Parameters									
% Solids	**76.2**	**% by Weight**	**0.100**	**0.100**	**1**	***SM2540 G**	**2/4/11 16:00**	**JAB**	**P1B0104**

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

Project: NCDOT: Wilkes County
Parcel 87
Project No.: WBS #35579.1.1
Sample Matrix: Solid

Client Sample ID: P87-SB-10(4-6)
Prism Sample ID: 1010641-11
Prism Work Order: 1010641
Time Collected: 01/28/11 12:00
Time Submitted: 01/28/11 14:40

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	8.5	1.4	1	*8015C	2/5/11 2:23	JMV	P1B0092
			Surrogate			Recovery		Control Limits	
			o-Terphenyl			*91 %*		*49-124*	
Gasoline Range Organics by GC/FID									
Gasoline Range Organics	BRL	mg/kg dry	4.0	0.52	50	*8015C	2/3/11 5:28	HPE	P1B0047
			Surrogate			Recovery		Control Limits	
			a,a,a-Trifluorotoluene			*102 %*		*55-129*	
General Chemistry Parameters									
% Solids	**81.9**	**% by Weight**	**0.100**	**0.100**	**1**	***SM2540 G**	**2/4/11 16:00**	**JAB**	**P1B0104**

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

Project: NCDOT: Wilkes County Parcel 87
Project No: WBS #35579.1.1

Prism Work Order: 1010641
Time Submitted: 1/28/11 2:40:00PM

Gasoline Range Organics by GC/FID - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P1B0047 - 5035										
Blank (P1B0047-BLK1)				Prepared & Analyzed: 02/02/11						
Gasoline Range Organics	BRL	5.0	mg/kg wet							
Surrogate: a,a,a-Trifluorotoluene	*5.10*		*mg/kg wet*	*5.00*		*102*	*55-129*			
LCS (P1B0047-BS1)				Prepared & Analyzed: 02/02/11						
Gasoline Range Organics	39.4	5.0	mg/kg wet	50.0		79	67-116			
Surrogate: a,a,a-Trifluorotoluene	*5.15*		*mg/kg wet*	*5.00*		*103*	*55-129*			
LCS Dup (P1B0047-BSD1)				Prepared & Analyzed: 02/02/11						
Gasoline Range Organics	40.2	5.0	mg/kg wet	50.0		80	67-116	2	200	
Surrogate: a,a,a-Trifluorotoluene	*5.10*		*mg/kg wet*	*5.00*		*102*	*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 87
Project No: WBS #35579.1.1

Prism Work Order: 1010641
Time Submitted: 1/28/11 2:40:00PM

Diesel Range Organics by GC/FID - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P1B0092 - 3545A										
Blank (P1B0092-BLK1)				Prepared: 02/03/11 Analyzed: 02/04/11						
Diesel Range Organics	BRL	7.0	mg/kg wet							
Surrogate: o-Terphenyl	*1.35*		*mg/kg wet*	*1.59*		*84*	*49-124*			
LCS (P1B0092-BS1)				Prepared: 02/03/11 Analyzed: 02/04/11						
Diesel Range Organics	55.1	7.0	mg/kg wet	79.9		69	55-109			
Surrogate: o-Terphenyl	*1.44*		*mg/kg wet*	*1.60*		*90*	*49-124*			
LCS Dup (P1B0092-BSD1)				Prepared: 02/03/11 Analyzed: 02/04/11						
Diesel Range Organics	55.9	7.0	mg/kg wet	79.9		70	55-109	1	200	
Surrogate: o-Terphenyl	*1.48*		*mg/kg wet*	*1.60*		*93*	*49-124*			

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

Project: NCDOT: Wilkes County Parcel 87
Project No: WBS #35579.1.1

Prism Work Order: 1010641
Time Submitted: 1/28/11 2:40:00PM

General Chemistry Parameters - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P1B0104 - NO PREP										
Blank (P1B0104-BLK1)				Prepared & Analyzed: 02/04/11						
% Solids	100	0.100	% by Weight							
Duplicate (P1B0104-DUP1)		**Source: 1010641-11**		Prepared & Analyzed: 02/04/11						
% Solids	81.8	0.100	% by Weight		81.9			0.1	20	
Duplicate (P1B0104-DUP2)		**Source: 1010641-01**		Prepared & Analyzed: 02/04/11						
% Solids	92.3	0.100	% by Weight		91.5			0.9	20	

Sample Extraction Data

Prep Method: 3545A

Lab Number	Batch	Initial	Final	Date
1010641-01	P1B0092	25.12 g	1 mL	02/03/11
1010641-02	P1B0092	25.19 g	1 mL	02/03/11
1010641-03	P1B0092	25.03 g	1 mL	02/03/11
1010641-04	P1B0092	25.04 g	1 mL	02/03/11
1010641-05	P1B0092	25.09 g	1 mL	02/03/11
1010641-06	P1B0092	25.14 g	1 mL	02/03/11
1010641-07	P1B0092	25.1 g	1 mL	02/03/11
1010641-08	P1B0092	25.21 g	1 mL	02/03/11
1010641-09	P1B0092	25.04 g	1 mL	02/03/11
1010641-10	P1B0092	25.12 g	1 mL	02/03/11
1010641-11	P1B0092	25.09 g	1 mL	02/03/11

Prep Method: 5035

Lab Number	Batch	Initial	Final	Date
1010641-01	P1B0047	5.13 g	5 mL	02/02/11
1010641-02	P1B0047	6.52 g	5 mL	02/02/11
1010641-03	P1B0047	6.48 g	5 mL	02/02/11
1010641-04	P1B0047	7.69 g	5 mL	02/02/11
1010641-05	P1B0047	7.28 g	5 mL	02/02/11
1010641-06	P1B0047	6.36 g	5 mL	02/02/11
1010641-07	P1B0047	11.65 g	5 mL	02/02/11
1010641-08	P1B0047	6.1 g	5 mL	02/02/11
1010641-09	P1B0047	5.59 g	5 mL	02/02/11
1010641-10	P1B0047	6.98 g	5 mL	02/02/11
1010641-11	P1B0047	7.6 g	5 mL	02/02/11

NO PREP

Lab Number	Batch	Initial	Final	Date
1010641-01	P1B0104	30 g	30 mL	02/04/11
1010641-02	P1B0104	30 g	30 mL	02/04/11
1010641-03	P1B0104	30 g	30 mL	02/04/11
1010641-04	P1B0104	30 g	30 mL	02/04/11
1010641-05	P1B0104	30 g	30 mL	02/04/11
1010641-06	P1B0104	30 g	30 mL	02/04/11
1010641-07	P1B0104	30 g	30 mL	02/04/11
1010641-08	P1B0104	30 g	30 mL	02/04/11
1010641-09	P1B0104	30 g	30 mL	02/04/11
1010641-10	P1B0104	30 g	30 mL	02/04/11
1010641-11	P1B0104	30 g	30 mL	02/04/11

449 Springbrook Road - P.O. Box 240543 - Charlotte, NC 28224-0543
Phone: 704/529-6364 - Toll Free Number: 1-800/529-6364 - Fax: 704/525-0409

CHAIN OF CUSTODY RECORD

PRISM LABORATORIES, INC. | Full-Service Analytical & Environmental Solutions

449 Springbrook Road • P.O. Box 240543 • Charlotte, NC 28224-0543
Phone: 704/529-6364 • Fax: 704/525-0409

PAGE ___ OF ___ QUOTE # TO ENSURE PROPER BILLING: WBS: 35579.1.1

Project Name: Wilkes County
Short Hold Analysis: (Yes) (No) UST Project: (Yes) (No)
*Please ATTACH any project specific reporting (QC LEVEL I II III IV) provisions and/or QC Requirements
Invoice To: Helen Corley
Address: Same

Client Company Name: AMEC E&E
Report To/Contact Name: Helen Corley
Reporting Address: 338 N Elm St
Greensboro, NC 27401
Phone: 336-691-5398 Fax (Yes) (No):
Email (Yes) (No) Email Address helen.corley@amec.com
EDD Type: PDF ✓ Excel ✓ Other
Site Location Name: Parcel 87
Site Location Physical Address: N Wilkesboro

Purchase Order No./Billing Reference WBS: 35579.1.1
Requested Due Date ☐ 1 Day ☐ 2 Days ☐ 3 Days ☐ 4 Days ☐ 5 Days
"Working Days" ☐ 6-9 Days ☒ Standard 10 days ☐ Rush Work Must Be Pre-Approved
Samples received after 15:00 will be processed next business day.
Turnaround time is based on business days, excluding weekends and holidays.
(SEE REVERSE FOR TERMS & CONDITIONS REGARDING SERVICES RENDERED BY PRISM LABORATORIES, INC. TO CLIENT)

LAB USE ONLY

	YES	NO	N/A
Samples INTACT upon arrival?	X		
Received ON WET ICE? Temp 0.3	X		
PROPER PRESERVATIVES indicated?	X		
Received WITHIN HOLDING TIMES?	X		
CUSTODY SEALS INTACT?			X
VOLATILES rec'd W/OUT HEADSPACE?		X	X
PROPER CONTAINERS used?	X		

TO BE FILLED IN BY CLIENT/SAMPLING PERSONNEL
Certification: NELAC ___ USACE ___ FL ___ NC ✓
SC ___ OTHER ___ N/A ___
Water Chlorinated: YES ___ NO ___
Sample Iced Upon Collection: YES ✓ NO ___

CLIENT SAMPLE DESCRIPTION	DATE COLLECTED	TIME COLLECTED MILITARY HOURS	MATRIX (SOIL, WATER OR SLUDGE)	SAMPLE CONTAINER *TYPE SEE BELOW	NO.	SIZE	PRESERVATIVES	ANALYSES REQUESTED DRO	GRO (8015)					REMARKS	PRISM LAB ID NO.
P87-SB-1(3-5)	1-28-11	1000	Soil	G/VOA	4	2 6 2VOA	None Methanol	X	X					2x40(MeOH), 1x4oz(clr) 1x2oz	01
P87-SB-2(3-5)		1010						X	X						02
P87-SB-3(3-5)		1030						X	X						03
P87-SB-4(3-5)		1040						X	X						04
P87-SB-5(3-5)		1050						X	X						05
P87-SB-6(4-6)		1105						X	X						06
P87-SB-6(13-15)		1115						X	X						07
P87-SB-7(4-6)		1125						X	X						08
P87-SB-8(4-6)		1140						X	X						09
P87-SB-9(4-6)		1150						X	X						10
P87-SB-10(4-6)		1200						X	X						11

Sampler's Signature: Troy L Holzschuh
Sampled By (Print Name): Troy L Holzschuh
Affiliation: AMEC

PRESS DOWN FIRMLY - 3 COPIES

Upon relinquishing, this Chain of Custody is your authorization for Prism to proceed with the analyses as requested above. Any changes must be submitted in writing to the Prism Project Manager. There will be charges for any changes after analyses have been initialized.

Relinquished By: (Signature)	Received By: (Signature)	Date	Military/Hours
Troy L Holzschuh		1-28-11	1440
Relinquished By: (Signature)	Received By: (Signature)	Date	
Relinquished By: (Signature)	Received For Prism Laboratories By:	Date	
		1/28/11	1440

Method of Shipment: NOTE: ALL SAMPLE COOLERS SHOULD BE TAPED SHUT WITH CUSTODY SEALS FOR TRANSPORTATION TO THE LABORATORY. SAMPLES ARE NOT ACCEPTED AND VERIFIED AGAINST COC UNTIL RECEIVED AT THE LABORATORY.
☐ Fed Ex ☐ UPS ☐ Hand-delivered ☐ Prism Field Service ☐ Other
COC Group No. 1010641

Additional Comments:

PRISM USE ONLY
Site Arrival Time:
Site Departure Time:
Field Tech Fee:
Mileage:

NPDES:	UST:	GROUNDWATER:	DRINKING WATER:	SOLID WASTE:	RCRA:	CERCLA	LANDFILL	OTHER:
☐ NC ☐ SC	☐ NC ☐ SC	☐ NC ☐ SC	☐ NC ☐ SC	☐ NC ☐ SC	☐ NC ☐ SC	☐ NC ☐ SC	☐ NC ☐ SC	☐ NC ☐ SC
☐ ___	☐	☐	☐	☐	☐	☐	☐ ___	☐ ___

*CONTAINER TYPE CODES: A = Amber C = Clear G = Glass P = Plastic TL = Teflon-Lined Cap VOA = Volatile Organics Analysis (Zero Head Space)

SEE REVERSE FOR T...

ORIGINAL