

Preliminary Site Assessment
Ray Khan Property Parcel #38
Boone, Watauga County, NC

State Project U-4020
WBS Element # 35015.1.1
H&H Job No. ROW-148
May 29, 2008



2923 South Tryon Street
Suite 100
Charlotte, NC 28203
704-586-0007

3334 Hillsborough Street
Raleigh, NC 27607
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**Preliminary Site Assessment Report
Ray Khan Property, Parcel #38
Boone, Watauga County, North Carolina
H&H Project ROW-148**

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**Preliminary Site Assessment
Ray Khan Property, Parcel #38
Boone, Watauga County, North Carolina
H&H Project ROW-148**

1.0 Introduction

Hart & Hickman, PC (H&H) has prepared this Preliminary Site Assessment (PSA) to document assessment activities performed at the Ray Khan property (Parcel #38) located at 450 East King Street (US Highway 421) at the southeast corner of the East King Street and NC Highway 105 intersection in Boone, Watauga County, North Carolina. This assessment was conducted on behalf of the North Carolina Department of Transportation (NC DOT) in accordance with the scope of work outlined in our February 29, 2008 proposal.

The purpose of this assessment was to determine the presence or absence of impacted soil at the subject property in the proposed right-of-way (ROW) construction areas related to the widening of US Highway 421 (State Project U-4020). Because Parcel 38 may be a total take by NC DOT, the entire parcel was investigated. A site location map is included as Figure 1 and a site map is presented as Figure 2. The NC DOT preliminary plan of the US Highway 421 widening area near the Ray Khan property is included in Appendix A.

Based on information provided by NC DOT and visual inspection, the Ray Khan property operates as an active gas station identified as Pennywise Food Store. According to NC DOT, the property contains five registered USTs. H&H confirmed surface evidence of current USTs (fill ports and vent pipes). The USTs are situated in a common basin.

2.0 Site Assessment

Soil Assessment Field Activities

H&H mobilized to the Ray Khan property on April 9 and 10, 2008 to advance 21 soil borings (38-1 through 38-21) by direct push technology (DPT). Prior to advancing the soil borings, H&H reviewed a Geophysical Investigation Report (GIR) and UST Delineation report prepared by URS Corporation (URS) dated March 31, 2008. URS utilized ground penetrating radar (GPR) and time

domain electromagnetic (TDEM) technology to identify potential geophysical anomalies, potential USTs, and underground utilities at the site. The URS report indicated three TDEM anomalies on the property. GPR did not confirm potential USTs at these three locations. The GPR was used to outline the active UST basin. URS's GIR, including a map depicting the results of the geophysical survey, is included in Appendix B.

Prior to conducting soil borings, utilities were marked by NC One Call and by DOTS's contractor, Vaughn and Melton. Borings were also cleared of potential utilities to 5 foot depth by hand auger. H&H utilized Geologic Exploration of Statesville, North Carolina to advance soil borings 38-1 through 38-21 by DPT at the locations shown on Figure 2. To facilitate the selection of soil samples for laboratory analysis from these borings, soil was screened continuously for the presence of volatile organic compounds (VOCs) with an organic vapor analyzer (OVA). Additionally, H&H observed the soil for visual and olfactory indications of petroleum impacts. In general, soil samples that exhibited the highest readings on the OVA were selected for laboratory analysis. Soil boring logs are included in Appendix C.

Samples were collected around the existing UST basin, between the UST basin and the dispensers, and near each dispenser. H&H submitted 21 samples for laboratory analysis (Table 1). Soil Samples are identified by the NC DOT Parcel Number, soil boring, and the depth interval in ft. All samples were sent to Prism Laboratories Inc., of Charlotte, North Carolina for analysis of total petroleum hydrocarbons (TPH) for gasoline-range organics (GRO) and diesel-range organics (DRO) by EPA Method 8015B. Sample depths and analytical results are summarized in Table 1. Laboratory analytical data sheets for Parcel 38 soil samples and chain-of-custody documentation for this site are provided in Appendix D. The chain-of-custody includes samples collected from other sites during the same mobilization. The analytical results are discussed below.

3.0 Analytical Results

Target analytes were detected the soil samples collected from Parcel 38. TPH GRO (up to 8,000 mg/kg) and DRO (up to 950 mg/kg) were detected in 10 of the 21 samples analyzed. TPH DRO concentrations were detected in samples 38-3 (5-7 ft), 38-4 (0-2 ft), 38-7 (0-2 ft), 38-12 (5-7 ft), 38-

18 (5-7 ft), and 38-20 (5-7 ft) above the NC DENR Action Level of 10 mg/kg. TPH GRO concentrations were detected in samples 38-4 (0-2 ft), 38-6 (2-5 ft), 38-10 (8-12 ft) and 38-13 (0-2.5 ft) above the NC DENR Action Level of 10 mg/kg. Impacts are present beneath the pump island and near the northeastern and western ends of the active UST basin.

Based on laboratory analytical results and OVA readings, TPH impacts are present along and within the proposed right of way line. H&H estimates that there are roughly 1,150 cubic yards (1610 tons) of impacted soil beneath the dispenser area and west of the UST basin between the surface and a depth of 12 ft. In addition, there are roughly 750 cubic yards (1,050 tons) north and east of the UST basin between the surface and a depth of 12 ft. Soil impacts are also likely present at depths greater than 12 ft. DOT plans indicate a proposed fill of approximately 2 ft in this area. Because this is a fill area, most of the impacted soil will not likely be disturbed. However, impacted soil will be generated by any soil grading work below the existing grade, during UST system removal work, and during utility line installations in the aforementioned areas. Of the above total impacts, H&H estimates that roughly 200 cubic yards (280 tons) of impacted soil may be excavated during removal of the UST system. Impacted soil that is removed should be properly managed and disposed at a permitted facility.

The active UST basin and the dispenser area straddle the proposed right of way line. The UST system and its contents should be removed and disposed in accordance with NCDENR regulations.

4.0 Summary and Regulatory Considerations

H&H has reviewed Geophysical survey results and collected soil samples at Parcel 38. A basin containing five USTs and a dispenser area straddle the proposed right of way line. Analytical results and OVA readings indicate TPH GRO and TPH DRO above NC DENR Action Levels. H&H estimates that there are a total of 1,900 cubic yards (2,660 tons) of impacted soil above 12 ft at Parcel 38. DOT plans indicate a proposed fill of 2 ft in this area. Because this is a fill area, most of the impacted soil will not likely be disturbed. However, impacted soil will be generated by UST system removal work, any soil grading work below the existing grade and during utility line installations in the aforementioned areas. Impacted soil that is removed should be properly

managed and disposed at a permitted facility. The UST system and its contents should also be removed and disposed in accordance with NCDENR regulations.

5.0 Signature Page

This report was prepared by:

A handwritten signature in blue ink that reads "David Graham". The signature is written in a cursive style and is positioned above a horizontal line.

David Graham
Project Geologist for
Hart and Hickman, PC

This report was reviewed by:

A handwritten signature in blue ink that reads "Matt Bramblett". The signature is written in a cursive style and is positioned above a horizontal line.

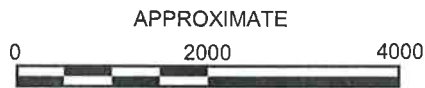
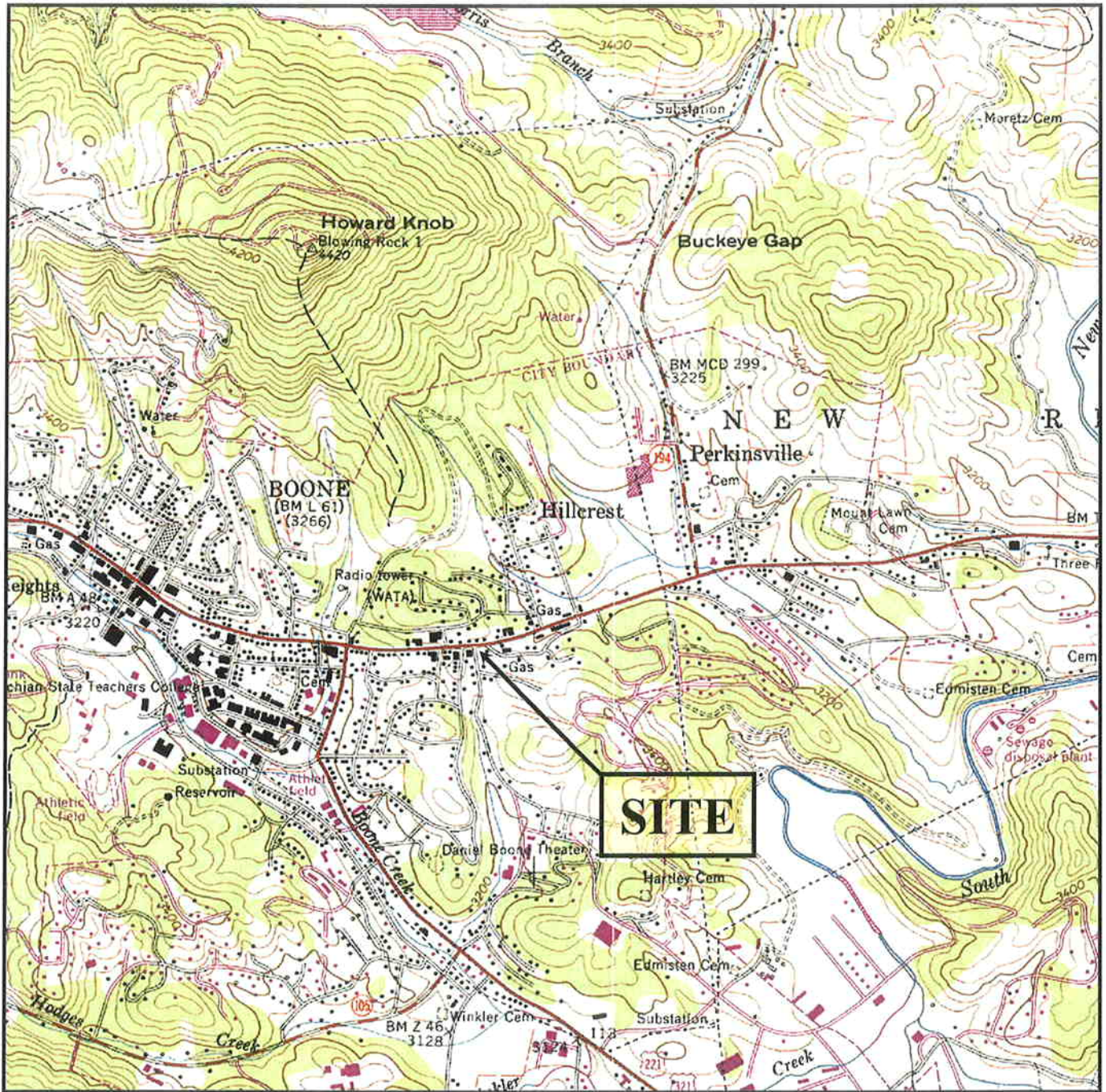
Matt Bramblett, PE
Principal and Project Manager for
Hart and Hickman, PC

Table 1
Soil Analytical Results
Ray Khan Property, Parcel #38
Boone, North Carolina
H&H Job No. ROW-148

Sample ID Sample Depth (ft) Sample Date Units	38-1	38-2	38-3	38-4	38-5	38-6	38-7	38-8	38-9	38-10	NC DENR Action Level (mg/kg)
	2-4 4/9/2008 (mg/kg)	9-12 4/9/2008 (mg/kg)	5-7 4/9/2008 (mg/kg)	0-2 4/9/2008 (mg/kg)	1-3 4/9/2008 (mg/kg)	2-5 4/9/2008 (mg/kg)	0-2 4/9/2008 (mg/kg)	0-2 4/9/2008 (mg/kg)	0-2 4/9/2008 (mg/kg)	8-12 4/9/2008 (mg/kg)	
<u>TPH-DRO/GRO (8015B)</u> Diesel-Range Organics (DRO) Gasoline-Range Organics (GRO)	<7.8 <5.6	<7.7 <5.5	43 <5.5	950 8,000	<8.8 <6.3	<8.0 37	15 <6.6	<9.3 9.1	<9.2 <6.7	<9.0 220	10 10

Sample ID Sample Depth (ft) Sample Date Units	38-11	38-12	38-13	38-14	38-15	38-16	38-17	38-18	38-19	38-20	38-21	NC DENR Action Level (mg/kg)
	2-5 4/9/2008 (mg/kg)	2-3 4/9/2008 (mg/kg)	0-2.5 4/9/2008 (mg/kg)	4-6 4/9/2008 (mg/kg)	10-12 4/10/2008 (mg/kg)	5-7 4/10/2008 (mg/kg)	2-5 4/10/2008 (mg/kg)	10-12 4/10/2008 (mg/kg)	7-9 4/10/2008 (mg/kg)	7-9 4/10/2008 (mg/kg)	7-9 4/10/2008 (mg/kg)	
<u>TPH-DRO/GRO (8015B)</u> Diesel-Range Organics (DRO) Gasoline-Range Organics (GRO)	<9.5 <6.9	21 <5.9	<8.3 16	<8.4 <6.1	<8.7 <6.3	<9.1 <6.5	<8.5 <6.1	17 <5.6	<7.5 <5.4	41 <6.5	<7.7 <5.5	10 10

Notes:
EPA Method follows parameter in parenthesis
Bold denotes a value exceeds NCDENR Action Level
TPH = Total petroleum hydrocarbons




SCALE IN FEET

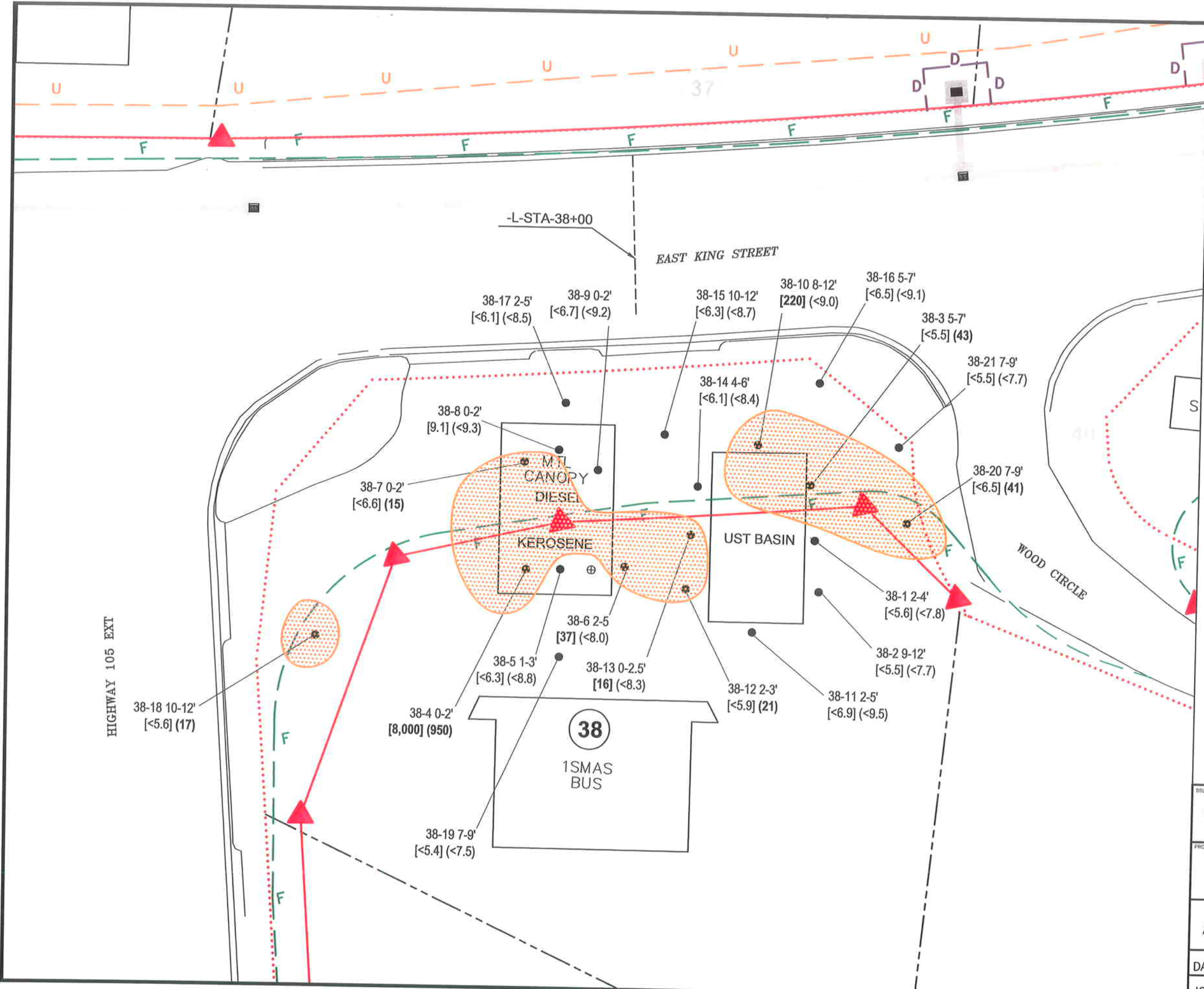
U.S.G.S. QUADRANGLE MAP

**BOONE, NC 1959
PHOTOREVISED 1978**

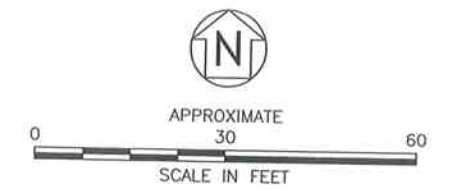
QUADRANGLE
7.5 MINUTE SERIES (TOPOGRAPHIC)


TITLE	SITE LOCATION MAP	
PROJECT	RAY KHAN PROPERTY PARCEL #38 BOONE, NORTH CAROLINA	
	 2923 South Tryon Street-Suite 100 Charlotte, North Carolina 28203 A PROFESSIONAL CORPORATION 704-586-0007 (p) 704-586-0370 (f)	
DATE:	4-28-08	REVISION NO: 0
JOB NO:	ROW-148	FIGURE NO: 1

S:\AAA-Master Projects\NC DOT Right-of-Way - ROW\ROW-148 Boone PSAs\Files from DOT\Proj\FIGURES\37,41-43,45,47,48 A.dwg, 38, 5/29/2008 12:22:44 PM



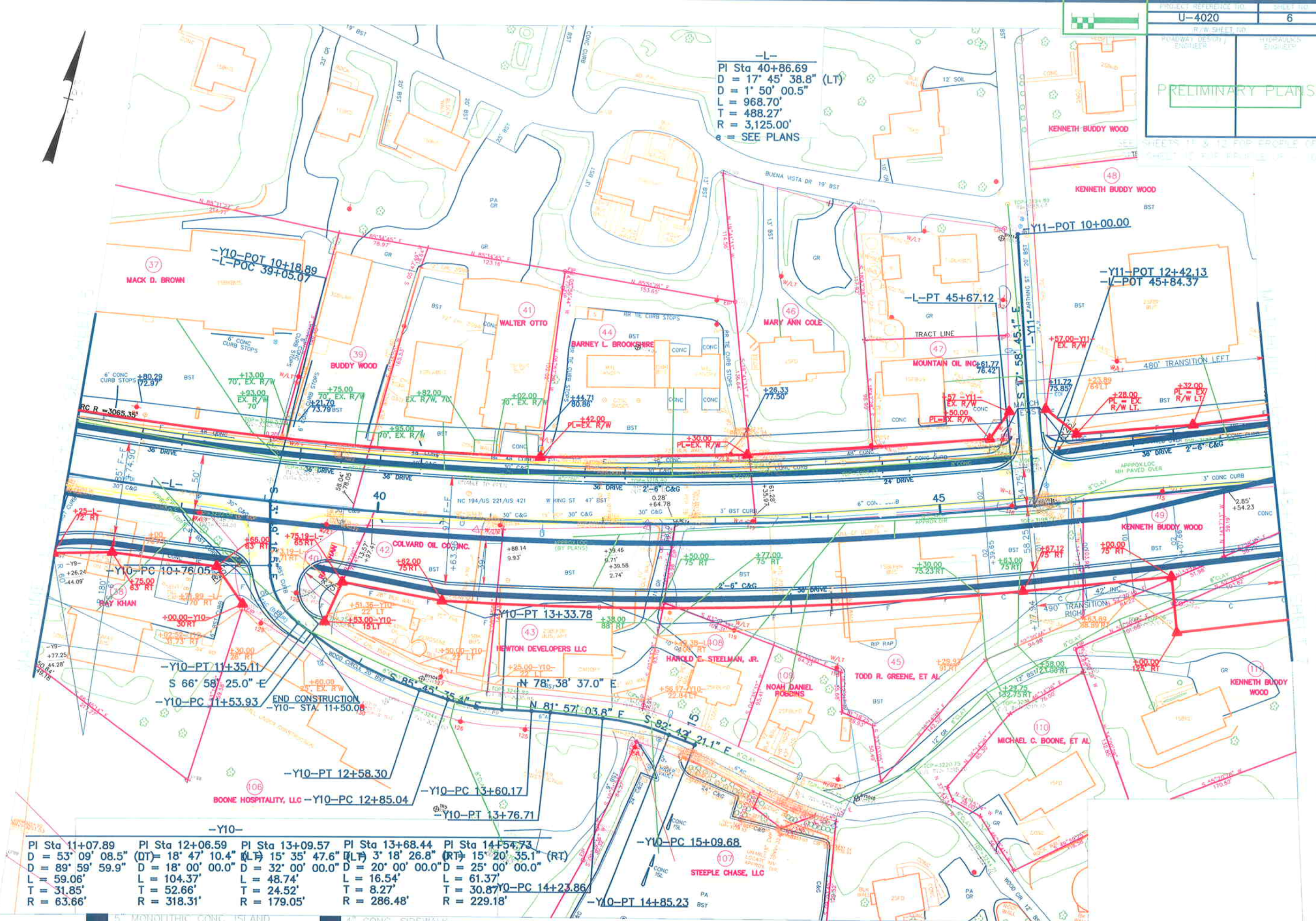
- LEGEND**
- - - - - PROPERTY LINE
 - EXISTING RIGHT-OF-WAY
 - ▲ PROPOSED RIGHT-OF-WAY
 - F- PROPOSED FILL LINE
 - D- PROPOSED DRAINAGE EASEMENT
 - U- PROPOSED UTILITY EASEMENT
 - IMPACTED SOIL AREA
 - PROPOSED DRAINAGE PIPE
 - PROPOSED CATCH BASIN
 - SOIL BORING
 - 38** PARCEL NUMBER
 - ⊕ ATTEMPTED SOIL BORING
 - [] = TPH GRO mg/kg
 - () = TPH DRO mg/kg
 - BOLD DENOTES EXCEEDANCE OF NCDENR ACTION LEVEL**



TITLE SITE MAP AND SOIL ANALYTICAL RESULTS	
PROJECT RAY KHAN PROPERTY PARCEL #38 BOONE, NORTH CAROLINA	
 2923 South Tryon Street-Suite 100 Charlotte, North Carolina 28203 704-586-0007(p) 704-586-0373(f)	
DATE: 4-24-08	REVISION NO. 0
JOB NO: ROW-148	FIGURE: 2

Appendix A
NC DOT Preliminary Plan

-L-
 PI Sta 40+86.69
 D = 17' 45" 38.8" (LT)
 D = 1' 50' 00.5"
 L = 968.70'
 T = 488.27'
 R = 3,125.00'
 e = SEE PLANS



PI Sta 11+07.89	PI Sta 12+06.59	PI Sta 13+09.57	PI Sta 13+68.44	PI Sta 14+54.73
D = 53' 09' 08.5" (DT)	D = 18' 47' 10.4" (LT)	D = 15' 35' 47.6" (LT)	D = 3' 18' 26.8" (RT)	D = 15' 20' 35.1" (RT)
D = 89' 59' 59.9"	D = 18' 00' 00.0"	D = 32' 00' 00.0"	D = 20' 00' 00.0"	D = 25' 00' 00.0"
L = 59.06'	L = 104.37'	L = 48.74'	L = 16.54'	L = 61.37'
T = 31.85'	T = 52.66'	T = 24.52'	T = 8.27'	T = 30.87'
R = 63.66'	R = 318.31'	R = 179.05'	R = 286.48'	R = 229.18'

S:\AAA-Master Projects\NC DOT Right-of-Way - ROW\ROW-148 Boone PSAs\Figures\bind.dwg, Model, 5/28/2008 1:26:33 PM, 1/90

5" MONOLITHIC CONC. ISLAND 4" CONC. SIDEWALK

Appendix B

URS Geophysical Services Report



March 31, 2008

Mr. Matt Bramblett, P.E.
Hart & Hickman
2923 South Tryon Street
Suite 100
Charlotte, North Carolina 28203

**Subject: Geophysical Investigation Report and UST Delineation
NCDOT State Project U-4020, Watauga County
Parcels #30, 31, 33, 35, 37, 38
Boone, North Carolina
URS Project No. 31825704**

Dear Mr. Bramblett:

In accordance with our technical and cost proposal (TCP) submitted to North Carolina Department of Transportation (NCDOT) on March 7, 2008, URS Corporation (URS) is pleased to present the findings of the geophysical investigation conducted as part of NCDOT State Project U-4020, Watauga County, WBS Element 35015.1.1. The objective of the investigation was to locate underground storage tanks (USTs) within the NCDOT right-of-way and construction easements along US 421/King Street in Boone, North Carolina. The geophysical investigation was conducted in advance of proposed widening of US 421/King Street and will be used to assist with the Preliminary Site Assessment (PSA) of individual parcels within the right-of-way and easement.

Site Description

The geophysical investigation was conducted for Hart & Hickman at Parcels #30, 31, 33, 35, 37, and 38. According to the Request for Proposal (RFP) issued by NCDOT, dated February 20, 2008, Parcels #30, 33, and 35 are expected to be total takes. Therefore, all accessible portions of these parcels were surveyed for this investigation. For Parcels #31, 37, and 38, the right-of-way and construction easements were surveyed for this investigation. These limits had been physically marked in the field by others prior to conducting the geophysical investigation. None of these parcels were abandoned at the time of the geophysical investigation. The majority of the survey areas consisted of asphalt driveways or parking lots.

Survey Methods

The geophysical investigation was conducted using primarily the electromagnetic (EM) method. The Geonics, Ltd. EM-61 MKII (EM-61) instrument was used to perform the investigation. Ground-penetrating radar (GPR) was used as a follow-up technique to the

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EM-61 survey. The GPR survey was completed using a Sensors & Software, Inc. Noggin PLUS Smart Cart System with a 250 MHz scanning antenna.

Electromagnetic Surveying with the EM-61 MKII (EM-61)

The EM-61 is a time domain EM instrument specifically designed to detect buried metal objects. The EM-61 generates rapid EM pulses through a transmitter coil. These pulses induce secondary EM fields in the near subsurface. The secondary EM fields induced from moderately conductive subsurface materials (i.e. soil and rock) are of relatively short duration. However, the secondary EM fields induced from metallic objects, such as reinforced concrete or steel drums, are of relatively long duration. The EM-61 measures this prolonged response from metallic objects after the EM response from conductive earth materials dissipates. This design provides high resolution of metallic targets. The depth of investigation of the instrument is relatively unaffected by site specific subsurface conditions.

The EM-61 measures the EM response in milliVolts (mV). The variations in EM response readings from some background level are more diagnostic than the absolute values. EM response values can be plotted and contoured to evaluate the variations across the site. Variations in the EM response resulting from buried metallic objects such as cast iron pipes are generally manifested by relatively large amplitude (greater than about 50 mV) anomalies.

The response amplitude for a given buried metallic object is primarily a function of burial depth and size of the object. It is thus useful to have some means of interpreting the depth of a given object. The EM-61 uses a two receiver coil system consisting of a top coil and a bottom coil. This design facilitates the recognition of near-surface objects from deeper targets. The EM-61 record includes the response from the top coil, the bottom coil and the differential response between the two coils. Near surface objects, such as small pieces of scrap metal, can mask the response from larger objects, such as utility lines, drums or underground storage tanks, at deeper depths. The two-coil design of the EM-61, and differential processing, allows for this masking effect to be significantly reduced. Although the EM-61 is designed to mitigate interference from surface features, large metallic objects at the surface, such as cars, buildings, and fences can effectively saturate the EM response and mask potential buried metal objects below.

Ground Penetrating Radar (GPR)

The GPR method involves transmitting relatively high-frequency electromagnetic pulses into the subsurface using a transducer antenna, and recording the subsequent signal from reflected and refracted electromagnetic energy using a receiving antenna. The electromagnetic pulses, or radar waves are influenced by many factors in the subsurface, the most important being the dielectric constant of the soil. The dielectric constant is the ratio of the speed of light in a vacuum (0.3m/ns) to the velocity of the GPR wave, quantity squared. Therefore, changes in dielectric constant correspond to changes in electromagnetic wave propagation velocity. When the wavelength is short compared to the thickness of soil layers, which is generally

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Hart & Hickman
March 31, 2008
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true, electromagnetic waves are reflected at the interfaces of dielectric contrast in accordance with the principles of optics.

GPR is useful in mapping and locating subsurface features and stratigraphy under a variety of conditions. The method is useful in many types of geologic, environmental, and engineering applications including: locating and mapping buried waste materials; locating and delineating metallic and nonmetallic utilities, pipes, underground storage tanks and drums; mapping geological strata, fractures, and voids; and delineating and mapping previously excavated and backfilled areas.

The effectiveness of GPR surveying at a given site is directly related to the dielectric properties of the subsurface materials. The effective depth of exploration provided by the method can be limited by subsurface materials characterized with high conductivity and dielectric constants, including clay, metal and metallic minerals, or reinforced pavement, all of which absorb radar energy instead of reflecting waves back to the surface receiver. In general, the depth of investigation at a given site is inversely proportional to frequency and the degree of feature resolution is proportional to frequency. Irregular and/or rough terrain can negatively impact the quality of GPR data.

Field Investigation

The field investigation was conducted between March 18 and 22, 2008. EM-61 data were collected along parallel profiles spaced approximately 3 feet apart across the portions of the survey areas that were accessible with the EM-61. Inaccessible areas included portions of the parcels containing parked cars, dumpsters, and landscaping features. EM-61 data were recorded at a rate of 5 readings per second, which equates to an along-profile data point spacing of less than 1 foot.

A Trimble ProXRS global positioning system (GPS) was used to record simultaneous positional data coincident with the EM-61 data. The ProXRS system provides real-time differential corrections via an Omnistar subscription service. The acquired differential GPS (DGPS) have a horizontal accuracy of approximately 3 feet. URS also used the GPS system to record the locations of relevant site features.

Prior to conducting the GPR investigation, URS performed preliminary in-field analysis of the EM-61 data to identify anomalies potentially indicative of USTs. GPR follow-up was conducted at individual point target locations identified in the EM-61 data or within the sections of the parcels that could not be accessed using the EM-61. Because GPR was used as a follow-up technique, no data sets were post-processed for purposes of this investigation.

Data Processing

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Hart & Hickman
March 31, 2008
Page 4

The EM-61 data were pre-processed using the program DAT61 MK2, issued by Geonics Ltd. The program was used primarily to prepare the data for contouring in Surfer, issued by Golden Software. Contoured data represent EM-61 Channel 3 response data. Channel 3 data include milliVolt readings recorded at a relatively later time interval during the measured response from the secondary EM field. Thus, this channel generally records secondary field responses from depths consistent with USTs. Interference from surface or near-surface features (e.g. reinforced concrete, buried catch basin, etc.) will also be recorded by this channel, which is why the GPR follow-up survey was conducted over EM-61 anomalies that could not be readily attributed to existing site features.

Investigation Results

The results of the geophysical investigation for Parcels #30, 31, and 33 are presented as **Figure 1**. The results for Parcel #35 are presented as **Figures 2 and 3**. The results for Parcels #37 and 38 are presented as **Figures 4 and 5**, respectively.

Responses from metallic objects are represented by color-shaded contours outside the interpreted background response range. Relatively strong responses (i.e. yellow to dark red contours) generally indicate buried objects of significant metal mass or surface or near-surface features (e.g. reinforced concrete pad). Relatively muted responses (i.e. dark blue contours) generally indicate decreased metal mass or metallic objects potentially buried to greater depths. Sources of known or suspected metallic interference are identified accordingly in **Figures 1 through 5**. Anomalies consistent with EM-61 response patterns for USTs are identified in **Figures 1 through 5** with either green or magenta ellipses. These anomalies were subsequently targeted for GPR follow-up surveying.

The EM-61 anomaly annotated with the green ellipse in **Figure 1** indicates a potential UST as indicated by both the EM-61 and GPR surveys. GPR surveying across this anomaly revealed parabolic-shaped reflection patterns that are consistent with USTs. The EM-61 anomalies annotated with magenta ellipses in **Figures 1, 4, and 5** indicate that the GPR follow-up survey did not reveal the characteristic parabolic-shaped reflection patterns typically associated with USTs. However, it should be noted that USTs that may no longer be intact may not exhibit characteristic GPR reflection patterns. Therefore, intrusive investigations of the EM-61 anomalies annotated with magenta ellipses in **Figures 1, 4, and 5** may be warranted if it is necessary for completion of the PSA to have confirmation of the identity of these anomalies.

A single UST appears to be buried along the southern edge of the building situated at Parcel #35. The EM-61 results in **Figure 2** indicate high-amplitude responses consistent with the presence of a UST. Follow-up GPR surveying also revealed the presence of parabolic-shaped reflection patterns associated with USTs. A fill port is situated within the center of the geophysical anomaly. The GPR antenna was used to identify the perimeter of the UST.

Mr. Matt Bramblett, P.E.
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March 31, 2008
Page 5

Figure 3 presents a photo of the field markings that indicate the interpreted UST perimeter at Parcel #35.

In general, sections of the parcels that are represented by the interpreted background range of colors in the EM-61 results appear to be free of buried metal to depths within the survey capabilities of the instrument. The results presented in **Figures 1 through 5** do not constitute an underground utility avoidance survey and therefore should be used in conjunction with proper utility marking protocol prior to beginning any intrusive work at these parcels.


Limitations

This geophysical investigation was conducted in accordance with reasonable and accepted engineering geophysics practices, and the interpretations and conclusions are rendered in a manner consistent with other consultants in our profession. All geophysical techniques have some level of uncertainty and limitations. No other representations of the reported information is expressed or implied, and no warranty or guarantee is included or intended.

We greatly appreciate the opportunity to work with you on this project. We will transmit AutoCAD files (.DXF type) of the geophysical results in a separate submittal. Please contact Matt Barner at (704) 716-0737 if you have any questions regarding this report.

Very truly yours,

URS Corporation – North Carolina



Matthew A. Barner
Senior Geophysicist



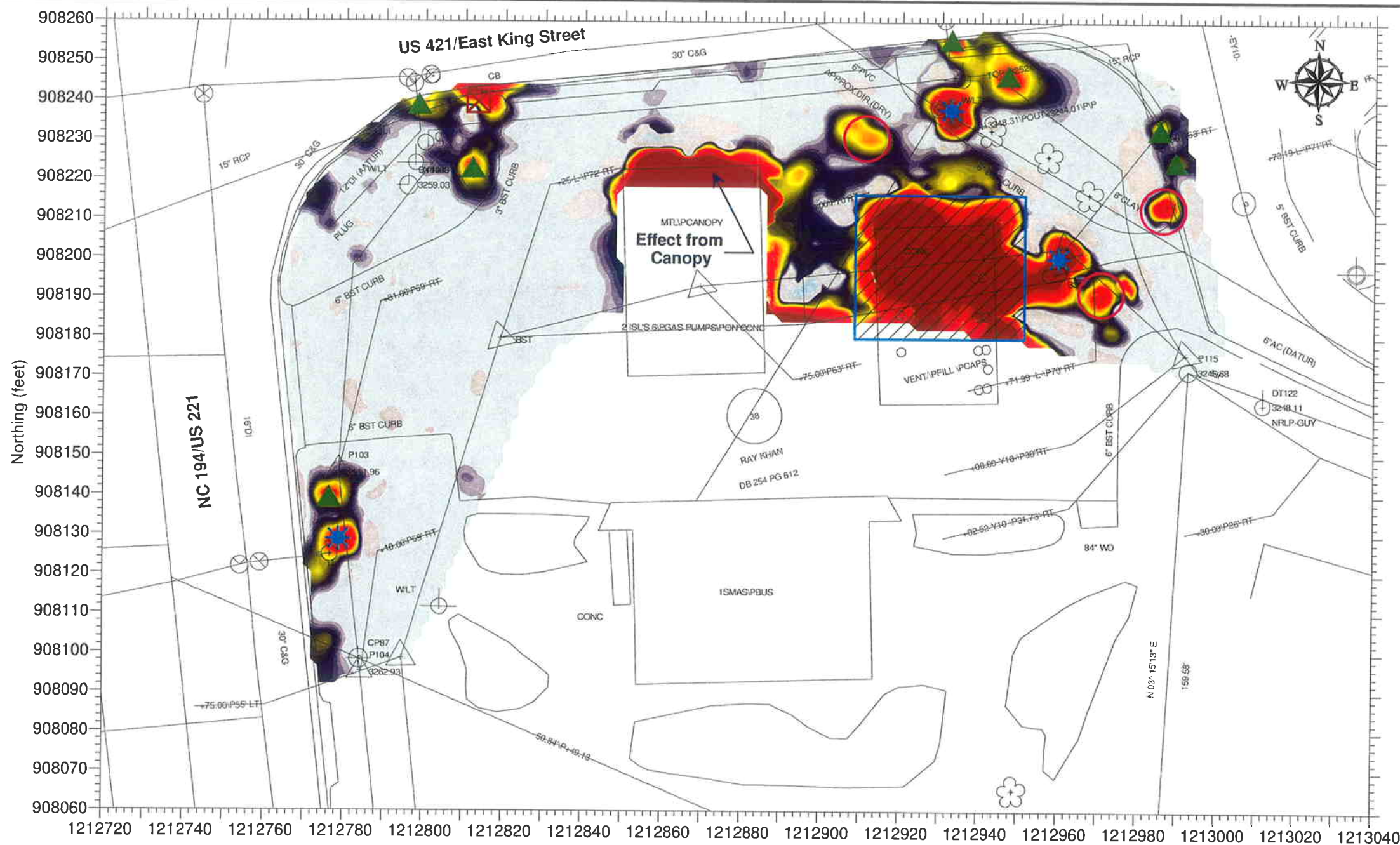
Timothy J. King
Principal Geophysicist



Walt Plekan, L.G.
Project Manager

Enc.: Figure 1 – Geophysical Investigation Results, Parcels #30, 31, 33
Figure 2 – Geophysical Investigation Results, Parcel #35
Figure 3 – Site Photograph, Parcel #35
Figure 4 – Geophysical Investigation Results, Parcel #37
Figure 5 – Geophysical Investigation Results, Parcel #38

lc: Vernon Keys, URS, Raleigh
File 3182 5704 – 4.2

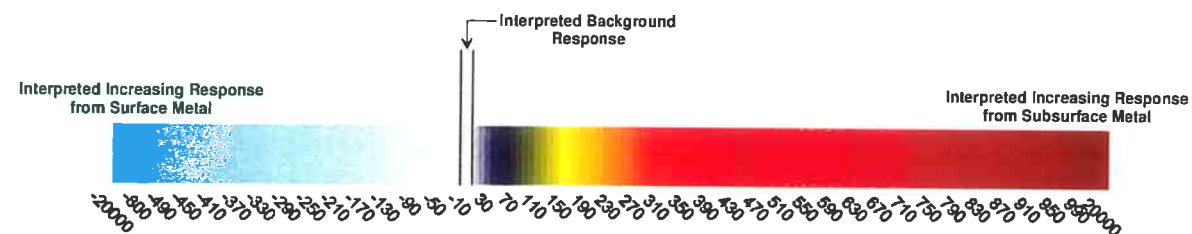
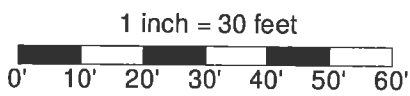


Legend

- EM-61 Anomaly Surveyed with GPR Follow-Up (GPR Does not Indicate Potential UST)
- Effect from Existing USTs and Tank Mat
- Utility Feature
- Pole/Light/Sign
- Electrical Box

Notes:

1. Coordinates in NC State Plane, NAD-83 datum.
2. Data from Geonics, Ltd. EM-61 MKII instrument.
3. Base drawing from U-4020 contract drawings provided by NCDOT.
4. EM-61 location control and additional site features from DGPS survey by URS Corporation.



EM-61 MKII Channel 3 Response Contours

		6135 Park South Dr., Ste. 300 Charlotte, NC 28210 (704) 522-0330	
Geophysical Investigation Results Parcel #38			
NCDOT State Project U-4020, Watauga County Boone, North Carolina			
DESIGNED BY	DRAWN BY	CHECKED BY	JOB NUMBER
MAB	03/27/08	MAB	03/27/08
		SJH	03/28/08
			31825704
			Figure 5

Appendix C
Soil Boring Logs



BORING NUMBER 38-1

2923 South Tryon Street-Suite 100
Charlotte, North Carolina 28203
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street
Raleigh, North Carolina 27607
919-847-4241(p) 919-847-4261(f)

PROJECT: Boone PSAs

JOB NUMBER: ROW-148

LOCATION: Boone, NC

LOG OF BORING - HART HICKMAN.GDT - 5/29/08 08:32 - S:\AAA-MASTER PROJECTS\NC DOT RIGHT-OF-WAY -ROW\ROW-148 BOONE PSAS\BORING LOGS\ROW-148 (38).GPJ

DEPTH (ft)	RECOVERY (%)	BLOW COUNT	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	WELL DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0.0						Brown, orange, medium sandy, SILT, dry		0.0
2.5	100		0.5	12.4		Brown, tan, fine to medium, sandy, SILT		2.5
5.0				23				5.0
7.5	80			16.7		Light red, brown, tan, medium silty, SAND, with some partially weathered rock (PWR)		7.5
10.0				7.6				10.0
12.5	75			8.2		White, grey, silty, medium SAND, with some PWR		12.5
15.0						Bottom of borehole at 12.0 feet.		15.0

DRILLING CONTRACTOR: Geologic Exploration
DRILL RIG/ METHOD: Geoprobe 66DT
SAMPLING METHOD: DPT Sleeves
LOGGED BY: MHF
DRAWN BY:

BORING STARTED: 4/9/08
BORING COMPLETED: 4/9/08
TOTAL DEPTH: 12
SURFACE ELEV:
DEPTH TO WATER:

Remarks:
 Borehole hand-augered to 5'
 Soil sample collected from 2-4' for laboratory analysis.



BORING NUMBER 38-2

2923 South Tryon Street-Suite 100
Charlotte, North Carolina 28203
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street
Raleigh, North Carolina 27607
919-847-4241(p) 919-847-4261(f)

PROJECT: Boone PSAs
JOB NUMBER: ROW-148
LOCATION: Boone, NC

LOG OF BORING - HART HICKMAN.GDT - 5/29/08 08:33 - S:\AAA-MASTER PROJECTS\INC DOT RIGHT-OF-WAY -ROW\ROW-148 BOONE PSAS\BORING LOGS\ROW-148 (38).GFPJ

DEPTH (ft)	RECOVERY (%)	BLOW COUNT	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	WELL DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0.0			0.3	0.8		Brown, fine to medium, sandy, SILT		0.0
2.5	100			0.7				2.5
5.0				1		Brown, red, medium, sandy, SILT		5.0
7.5	100			1.4				7.5
10.0				3.1		Light green, brown, medium, sandy, SILT, with some red clay		10.0
12.5	80					Bottom of borehole at 12.0 feet.		12.5
15.0								15.0

DRILLING CONTRACTOR: Geologic Exploration
DRILL RIG/ METHOD: Geoprobe 66DT
SAMPLING METHOD: DPT Sleeves
LOGGED BY: MHF
DRAWN BY:

BORING STARTED: 4/9/08
BORING COMPLETED: 4/9/08
TOTAL DEPTH: 12
SURFACE ELEV:
DEPTH TO WATER:

Remarks:
Borehole hand-augered to 5'
Soil sample collected from 9-12' for laboratory analysis.



BORING NUMBER 38-3

2923 South Tryon Street-Suite 100
Charlotte, North Carolina 28203
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street
Raleigh, North Carolina 27607
919-847-4241(p) 919-847-4261(f)

PROJECT: Boone PSAs
JOB NUMBER: ROW-148
LOCATION: Boone, NC

LOG OF BORING - HART HICKMAN.GDT - 5/29/08 08:33 - S:\AAA-MASTER PROJECTS\NC DOT RIGHT-OF-WAY -ROW\ROW-148 BOONE PSAS\BORING LOGS\ROW-148 (38).GPJ

DEPTH (ft)	RECOVERY (%)	BLOW COUNT	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	WELL DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0.0						Black, brown, silty, medium SAND		0.0
2.5	100		0.5	17.1				2.5
5.0				10.2		Brown, medium, sandy SILT		5.0
7.5	75			38.1				7.5
10.0				15.2		Light green, brown, medium sandy, SILT, dry		10.0
12.5	100			15.7				12.5
15.0						Bottom of borehole at 12.0 feet.		15.0

DRILLING CONTRACTOR: Geologic Exploration
DRILL RIG/ METHOD: Geoprobe 66DT
SAMPLING METHOD: DPT Sleeves
LOGGED BY: MHF
DRAWN BY:

BORING STARTED: 4/9/08
BORING COMPLETED: 4/9/08
TOTAL DEPTH: 12
SURFACE ELEV:
DEPTH TO WATER:

Remarks:
Borehole hand-augered to 5'
Soil sample collected from 5-7' for laboratory analysis.



BORING NUMBER 38-4

2923 South Tryon Street-Suite 100
Charlotte, North Carolina 28203
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street
Raleigh, North Carolina 27607
919-847-4241(p) 919-847-4261(f)

PROJECT: Boone PSAs
JOB NUMBER: ROW-148
LOCATION: Boone, NC

LOG OF BORING - HART HICKMAN.GDT - 5/29/08 08:33 - S:\AAA-MASTER PROJECTS\INC DOT RIGHT-OF-WAY -ROW\ROW-148 BOONE PSAS\BORING LOGS\ROW-148 (38).GPJ

DEPTH (ft)	RECOVERY (%)	BLOW COUNT	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	WELL DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0.0						Tan, brown, fine sandy, SILT		0.0
2.5	100		0.5	2285		Brown, fine sandy, SILT		2.5
				2226		Tan, fine sandy SILT		
5.0				1635		Bottom of borehole at 5.0 feet.		5.0
7.5								7.5
10.0								10.0
12.5								12.5
15.0								15.0

DRILLING CONTRACTOR: GEOLOGIC EXPLORATION
DRILL RIG/ METHOD: Hand Auger
SAMPLING METHOD: Hand Auger
LOGGED BY: MHF
DRAWN BY:

BORING STARTED: 4/9/08
BORING COMPLETED: 4/9/08
TOTAL DEPTH: 5
SURFACE ELEV:
DEPTH TO WATER:

Remarks:

Borehole hand-augered to 5'
Soil sample collected from 0-2' for laboratory analysis.



BORING NUMBER 38-5

2923 South Tryon Street-Suite 100
Charlotte, North Carolina 28203
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street
Raleigh, North Carolina 27607
919-847-4241(p) 919-847-4261(f)

PROJECT: Boone PSAs
JOB NUMBER: ROW-148
LOCATION: Boone, NC

LOG OF BORING - HART HICKMAN.GDT - 5/29/08 08:33 - S:\AAA-MASTER PROJECTS\NC DOT RIGHT-OF-WAY -ROW\ROW-148 BOONE PSAs\BORING LOGS\ROW-148 (38).GPJ

DEPTH (ft)	RECOVERY (%)	BLOW COUNT	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	WELL DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0.0								0.0
1.0			0.5	64.5	[Stippled pattern]	Dark brown, medium sandy, SILT	[Well diagram area]	1.0
2.5	100			68.3				2.5
3.0						Bottom of borehole at 3.0 feet.		3.0
5.0								5.0
7.5								7.5
10.0								10.0
12.5								12.5
15.0								15.0

DRILLING CONTRACTOR: GEOLOGIC EXPLORATION
DRILL RIG/ METHOD: Hand Auger
SAMPLING METHOD: Hand Auger
LOGGED BY: MHF
DRAWN BY:

BORING STARTED: 4/9/08
BORING COMPLETED: 4/9/08
TOTAL DEPTH: 3
SURFACE ELEV:
DEPTH TO WATER:

Remarks:

Borehole hand-augered to 3'
Soil sample collected from 1-3' for laboratory analysis.



BORING NUMBER 38-6

2923 South Tryon Street-Suite 100
Charlotte, North Carolina 28203
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street
Raleigh, North Carolina 27607
919-847-4241(p) 919-847-4261(f)

PROJECT: Boone PSAs
JOB NUMBER: ROW-148
LOCATION: Boone, NC

LOG OF BORING - HART HICKMAN.GDT - 5/29/08 08:33 - S:\AAA-MASTER PROJECTS\NC DOT RIGHT-OF-WAY -ROW\ROW-148 BOONE PSAs\BORING LOGS\ROW-148 (38).GPJ

DEPTH (ft)	RECOVERY (%)	BLOW COUNT	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	WELL DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0.0						Brown, medium sandy, SILT		0.0
1.0			0.5	116				
2.5						Tan, brown, medium sandy, SILT		2.5
4.0				776				
5.0						Bottom of borehole at 5.0 feet.		5.0
7.5								7.5
10.0								10.0
12.5								12.5
15.0								15.0

DRILLING CONTRACTOR: GEOLOGIC EXPLORATION
DRILL RIG/ METHOD: Hand Auger
SAMPLING METHOD: Hand Auger
LOGGED BY: MHF
DRAWN BY:

BORING STARTED: 4/9/08
BORING COMPLETED: 4/9/08
TOTAL DEPTH: 5
SURFACE ELEV:
DEPTH TO WATER:

Remarks:
Borehole hand-augered to 5'
Soil sample collected from 2-5' for laboratory analysis.



BORING NUMBER 38-7

2923 South Tryon Street-Suite 100
Charlotte, North Carolina 28203
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street
Raleigh, North Carolina 27607
919-847-4241(p) 919-847-4261(f)

PROJECT: Boone PSAs
JOB NUMBER: ROW-148
LOCATION: Boone, NC

LOG OF BORING - HART HICKMAN.GDT - 5/29/08 08:33 - S:\AAA-MASTER PROJECTS\INC DOT RIGHT-OF-WAY -ROW\ROW-148 BOONE PSAs\BORING LOGS\ROW-148 (38).GDT

DEPTH (ft)	RECOVERY (%)	BLOW COUNT	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	WELL DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0.0						Red, brown, fine sandy, SILT, dry		0.0
100			0.5	1.7		Dark, brown, fine sandy, SILT, slightly damp		2.5
2.5	100			1.2				
Bottom of borehole at 3.0 feet.								
5.0								5.0
7.5								7.5
10.0								10.0
12.5								12.5
15.0								15.0

DRILLING CONTRACTOR: GEOLOGIC EXPLORATION
DRILL RIG/ METHOD: Hand Auger
SAMPLING METHOD: Hand Auger
LOGGED BY: MHF
DRAWN BY:

BORING STARTED: 4/9/08
BORING COMPLETED: 4/9/08
TOTAL DEPTH: 3
SURFACE ELEV:
DEPTH TO WATER:

Remarks:
Borehole hand-augered to 3'
Soil sample collected from 0-2' for laboratory analysis.



BORING NUMBER 38-8

2923 South Tryon Street-Suite 100
Charlotte, North Carolina 28203
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street
Raleigh, North Carolina 27607
919-847-4241(p) 919-847-4261(f)

PROJECT: Boone PSAs
JOB NUMBER: ROW-148
LOCATION: Boone, NC

LOG OF BORING - HART HICKMAN_GDT - 5/29/08 08:33 - S:\AAA-MASTER PROJECTS\INC DOT RIGHT-OF-WAY -ROW\ROW-148 BOONE PSAS\BORING LOGS\ROW-148 (38).GPJ

DEPTH (ft)	RECOVERY (%)	BLOW COUNT	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	WELL DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0.0						Brown, grey, silty, medium, SAND, with rock fragments		0.0
2.5	100		0.5	206				2.5
				118.6				
5.0				19.7		Bottom of borehole at 5.0 feet.		5.0
7.5								7.5
10.0								10.0
12.5								12.5
15.0								15.0

DRILLING CONTRACTOR: GEOLOGIC EXPLORATION
DRILL RIG/ METHOD: Hand Auger
SAMPLING METHOD: Hand Auger
LOGGED BY: MHF
DRAWN BY:

BORING STARTED: 4/9/08
BORING COMPLETED: 4/9/08
TOTAL DEPTH: 5
SURFACE ELEV:
DEPTH TO WATER:

Remarks:
Borehole hand-augered to 5'
Soil sample collected from 0-2' for laboratory analysis.



BORING NUMBER 38-9

2923 South Tryon Street-Suite 100
Charlotte, North Carolina 28203
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street
Raleigh, North Carolina 27607
919-847-4241(p) 919-847-4261(f)

PROJECT: Boone PSAs
JOB NUMBER: ROW-148
LOCATION: Boone, NC

DEPTH (ft)	RECOVERY (%)	BLOW COUNT	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	WELL DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0.0			0.5	6.2		Red, brown, silty, medium SAND		0.0
2.5	100			4.7				2.5
5.0				3.1		Bottom of borehole at 5.0 feet.		5.0
7.5								7.5
10.0								10.0
12.5								12.5
15.0								15.0

LOG OF BORING - HART HICKMAN.GDT - 5/29/08 08:33 - S:\AAA-MASTER PROJECTS\NC DOT RIGHT-OF-WAY -ROW\ROW-148 BOONE PSAs\BORING LOGS\ROW-148 (38).GPJ

DRILLING CONTRACTOR: GEOLOGIC EXPLORATION
DRILL RIG/ METHOD: Hand Auger
SAMPLING METHOD: Hand Auger
LOGGED BY: MHF
DRAWN BY:

BORING STARTED 4/9/08
BORING COMPLETED: 4/9/08
TOTAL DEPTH: 5
SURFACE ELEV:
DEPTH TO WATER:

Remarks:
 Borehole hand-augered to 5'
 Soil sample collected from 0-2' for laboratory analysis.



BORING NUMBER 38-10

2923 South Tryon Street-Suite 100
Charlotte, North Carolina 28203
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street
Raleigh, North Carolina 27607
919-847-4241(p) 919-847-4261(f)

PROJECT: Boone PSAs
JOB NUMBER: ROW-148
LOCATION: Boone, NC

LOG OF BORING - HART HICKMAN.GDT - 5/29/08 08:32 - S:\AAA-MASTER PROJECTS\NC DOT RIGHT-OF-WAY -ROW\ROW-148 BOONE PSAS\BORING LOGS\ROW-148 (38).GPJ

DEPTH (ft)	RECOVERY (%)	BLOW COUNT	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	WELL DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0.0						Light brown, medium sandy, SILT, dry		0.0
2.5	100		0.5	47.6				2.5
5.0	33			61.2		Dark brown, tan, silty, SAND		5.0
7.5				80.7				7.5
10.0	90			136				10.0
12.5	90			3876				12.5
15.0						Bottom of borehole at 12.0 feet.		15.0

DRILLING CONTRACTOR: GEOLOGIC EXPLORATION
DRILL RIG/ METHOD: Geoprobe 6620DT
SAMPLING METHOD: DPT Sleeves
LOGGED BY: MHF
DRAWN BY:

BORING STARTED: 4/9/08
BORING COMPLETED: 4/9/08
TOTAL DEPTH: 12
SURFACE ELEV:
DEPTH TO WATER:

Remarks:
Borehole hand-augered to 5'
Soil sample collected from 8-12' for laboratory analysis.



BORING NUMBER 38-11

2923 South Tryon Street-Suite 100
Charlotte, North Carolina 28203
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street
Raleigh, North Carolina 27607
919-847-4241(p) 919-847-4261(f)

PROJECT: Boone PSAs
JOB NUMBER: ROW-148
LOCATION: Boone, NC

LOG OF BORING - HART HICKMAN.GDT - 5/29/08 08:32 - S:\AAA-MASTER PROJECTS\NC DOT RIGHT-OF-WAY -ROW\ROW-148 BOONE PSAS\BORING LOGS\ROW-148 (38).GPJ

DEPTH (ft)	RECOVERY (%)	BLOW COUNT	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	WELL DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0.0								0.0
100			0.5	0.9		Red, brown, medium silty, SAND, dry		100
2.5				1.1				2.5
75								5.0
1								7.5
1								10.0
12.5					Bottom of borehole at 12.0 feet.		12.5	
15.0							15.0	

DRILLING CONTRACTOR: GEOLOGIC EXPLORATION
DRILL RIG/ METHOD: Geoprobe 6620DT
SAMPLING METHOD: DPT Sleeves
LOGGED BY: MHF
DRAWN BY:

BORING STARTED: 4/9/08
BORING COMPLETED: 4/9/08
TOTAL DEPTH: 12
SURFACE ELEV:
DEPTH TO WATER:

Remarks:

Borehole hand-augered to 5'
Soil sample collected from 2-5' for laboratory analysis.



BORING NUMBER 38-12

2923 South Tryon Street-Suite 100
Charlotte, North Carolina 28203
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street
Raleigh, North Carolina 27607
919-847-4241(p) 919-847-4261(f)

PROJECT: Boone PSAs
JOB NUMBER: ROW-148
LOCATION: Boone, NC

LOG OF BORING - HART HICKMAN.GDT - 5/29/08 08:32 - S:\AAA-MASTER PROJECTS\INC DOT RIGHT-OF-WAY -ROW\ROW-148 BOONE PSAs\BORING LOGS\ROW-148 (38).GPJ

DEPTH (ft)	RECOVERY (%)	BLOW COUNT	O/A (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	WELL DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0.0						Red, brown, fine sandy, SILT, dry		0.0
			0.5	1.7				
2.5				2		Light brown, white, sandy SILT, with some clays, dry		2.5
						Bottom of borehole at 3.0 feet.		
5.0								5.0
7.5								7.5
10.0								10.0
12.5								12.5
15.0								15.0

DRILLING CONTRACTOR: GEOLOGIC EXPLORATION
DRILL RIG/ METHOD: Hand Auger
SAMPLING METHOD: Hand Auger
LOGGED BY: MHF
DRAWN BY:

BORING STARTED: 4/9/08
BORING COMPLETED: 3/9/08
TOTAL DEPTH: 3
SURFACE ELEV:
DEPTH TO WATER:

Remarks:
Borehole hand-augered to 3'
Soil sample collected from 2-3' for laboratory analysis.



BORING NUMBER 38-13

2923 South Tryon Street-Suite 100
 Charlotte, North Carolina 28203
 704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street
 Raleigh, North Carolina 27607
 919-847-4241(p) 919-847-4261(f)

PROJECT: Boone PSAs
JOB NUMBER: ROW-148
LOCATION: Boone, NC

LOG OF BORING - HART HICKMAN.GDT - 5/29/08 08:32 - S:\AAA-MASTER PROJECTS\INC DOT RIGHT-OF-WAY -ROW\ROW-148 (38).GPJ

DEPTH (ft)	RECOVERY (%)	BLOW COUNT	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	WELL DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0.0				24.6		Dark brown, silty SAND, dry, some rock fragment		0.0
2.5						Bottom of borehole at 2.5 feet.		2.5
5.0								5.0
7.5								7.5
10.0								10.0
12.5								12.5
15.0								15.0

DRILLING CONTRACTOR: GEOLOGIC EXPLORATION
DRILL RIG/ METHOD: Hand Auger
SAMPLING METHOD: Hand Auger
LOGGED BY: MHF
DRAWN BY:

BORING STARTED: 4/9/08
BORING COMPLETED: 4/9/08
TOTAL DEPTH: 2.5
SURFACE ELEV:
DEPTH TO WATER:

Remarks:
 Borehole hand-augered to 2.5'
 Soil sample collected from 0-2.5' for laboratory analysis.



BORING NUMBER 38-14

2923 South Tryon Street-Suite 100
Charlotte, North Carolina 28203
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street
Raleigh, North Carolina 27607
919-847-4241(p) 919-847-4261(f)

PROJECT: Boone PSAs
JOB NUMBER: ROW-148
LOCATION: Boone, NC

LOG OF BORING - HART HICKMAN.GDT - 5/29/08 08:32 - S:\AAA-MASTER PROJECTS\INC DOT RIGHT-OF-WAY -ROW\ROW-148 BOONE PSAS\BORING LOGS\ROW-148 (38).GPJ

DEPTH (ft)	RECOVERY (%)	BLOW COUNT	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	WELL DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0.0			0.6			Light brown, grey, silty SAND, coarse		0.0
2.5				6.9				2.5
5.0				7.8				5.0
7.5				224		Light brown, white, silty SAND, medium density		7.5
10.0				144				10.0
12.5				93.4				12.5
15.0						Bottom of borehole at 12.0 feet.		15.0

DRILLING CONTRACTOR: GEOLOGIC EXPLORATION
DRILL RIG/ METHOD: Geoprobe 6620DT
SAMPLING METHOD: DPT Sleeves
LOGGED BY: MHF
DRAWN BY:

BORING STARTED: 4/9/08
BORING COMPLETED: 4/9/08
TOTAL DEPTH: 12
SURFACE ELEV:
DEPTH TO WATER:

Remarks:
Borehole hand-augered to 5'
Soil sample collected from 4-6' for laboratory analysis.



BORING NUMBER 38-15

2923 South Tryon Street-Suite 100
Charlotte, North Carolina 28203
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street
Raleigh, North Carolina 27607
919-847-4241(p) 919-847-4261(f)

PROJECT: Boone PSAs
JOB NUMBER: ROW-148
LOCATION: Boone, NC

LOG OF BORING - HART HICKMAN.GDT - 5/29/08 08:32 - S:\AAA-MASTER PROJECTS\INC DOT RIGHT-OF-WAY -ROW\ROW-148 BOONE PSAS\BORING LOGS\ROW-148 (38).GDT

DEPTH (ft)	RECOVERY (%)	BLOW COUNT	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	WELL DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0.0						Brown, red SILT, dry		0.0
0.5			0.5	1.1				
2.5						Dark brown, fine sandy SILT, dry		2.5
2.3								
5.0								5.0
2.2								
7.5						Brown, orange, SILT, dry		7.5
19.8								19.8
26.8								26.8
12.5						Bottom of borehole at 12.0 feet.		12.5
15.0								15.0

DRILLING CONTRACTOR: GEOLOGIC EXPLORATION
DRILL RIG/ METHOD: Geoprobe 6620DT
SAMPLING METHOD: DPT Sleeves
LOGGED BY: MHF
DRAWN BY:

BORING STARTED: 4/10/08
BORING COMPLETED: 4/10/08
TOTAL DEPTH: 12
SURFACE ELEV:
DEPTH TO WATER:

Remarks:
Borehole hand-augered to 5'
Soil sample collected from 10-12' for laboratory analysis.



BORING NUMBER 38-16

2923 South Tryon Street-Suite 100
Charlotte, North Carolina 28203
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street
Raleigh, North Carolina 27607
919-847-4241(p) 919-847-4261(f)

PROJECT: Boone PSAs
JOB NUMBER: ROW-148
LOCATION: Boone, NC

LOG OF BORING - HART HICKMAN.GDT - 5/29/08 08:32 - S:\AAA-MASTER PROJECTS\INC DOT RIGHT-OF-WAY -ROW\ROW-148 BOONE PSAS\BORING LOGS\ROW-148 (38).GPFJ

DEPTH (ft)	RECOVERY (%)	BLOW COUNT	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	WELL DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0.0						Brown, fine, sandy SILT		0.0
0.5			0.5	0.7				
2.5				0.7		Tan, brown, black, silty medium SAND		2.5
5.0				1.3		Brown, fine, sandy SILT		5.0
7.5				0.8		Brown, fine, sandy SILT, slightly micaceous		7.5
10.0				1				10.0
12.5						Bottom of borehole at 12.0 feet.		12.5
15.0								15.0

DRILLING CONTRACTOR: GEOLOGIC EXPLORATION
DRILL RIG/ METHOD: Geoprobe 6620DT
SAMPLING METHOD: DPT Sleeves
LOGGED BY: MHF
DRAWN BY:

BORING STARTED: 4/10/08
BORING COMPLETED: 4/10/08
TOTAL DEPTH: 12
SURFACE ELEV:
DEPTH TO WATER:

Remarks:
Borehole hand-augered to 5'
Soil sample collected from 5-7' for laboratory analysis.



BORING NUMBER 38-17

2923 South Tryon Street-Suite 100
Charlotte, North Carolina 28203
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street
Raleigh, North Carolina 27607
919-847-4241(p) 919-847-4261(f)

PROJECT: Boone PSAs
JOB NUMBER: ROW-148
LOCATION: Boone, NC

LOG OF BORING - HART HICKMAN.GDT - 5/29/08 08:32 - S:\AAA-MASTER PROJECTS\INC DOT RIGHT-OF-WAY -ROW\ROW-148 BOONE PSAs\BORING LOGS\ROW-148 (38).GPJ

DEPTH (ft)	RECOVERY (%)	BLOW COUNT	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	WELL DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0.0			0.5	2.3	[Lithology pattern: dotted]	Tan, beige, medium, sandy SILT		0.0
2.5				2.4		Tan, beige, medium, sandy SILT, w/ partially weathered rock (PWR)		2.5
5.0						Bottom of borehole at 5.0 feet.		5.0
7.5								7.5
10.0								10.0
12.5								12.5
15.0								15.0

DRILLING CONTRACTOR: GEOLOGIC EXPLORATION
DRILL RIG/ METHOD: Hand Auger
SAMPLING METHOD: Hand Auger
LOGGED BY: MHF
DRAWN BY:

BORING STARTED: 4/10/08
BORING COMPLETED: 4/10/08
TOTAL DEPTH: 5
SURFACE ELEV:
DEPTH TO WATER:

Remarks:
 Boring hand-augered to 5'
 Soil sample collected from 2-5' for laboratory analysis.



BORING NUMBER 38-18

2923 South Tryon Street-Suite 100
Charlotte, North Carolina 28203
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street
Raleigh, North Carolina 27607
919-847-4241(p) 919-847-4261(f)

PROJECT: Boone PSAs
JOB NUMBER: ROW-148
LOCATION: Boone, NC

LOG OF BORING - HART HICKMAN.GDT - 5/29/08 08:33 - S:\AAA-MASTER PROJECTS\NC DOT RIGHT-OF-WAY -ROW\ROW-148 BOONE PSAs\BORING LOGS\ROW-148 (38).GPJ

DEPTH (ft)	RECOVERY (%)	BLOW COUNT	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	WELL DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0.0								0.0
0.5			0.5	1.8		Tan, beige, medium SAND, dry		
2.4						Tan, beige, silty, fine, SAND		
2.3								
1.9						Dark brown, clayey SILT		
4.9								
12.0						Bottom of borehole at 12.0 feet.		
12.5								12.5
15.0								15.0

DRILLING CONTRACTOR: GEOLOGIC EXPLORATION
DRILL RIG/ METHOD: Geoprobe 6620DT
SAMPLING METHOD: DPT Sleeves
LOGGED BY: MHF
DRAWN BY:

BORING STARTED: 4/10/08
BORING COMPLETED: 4/10/08
TOTAL DEPTH: 12
SURFACE ELEV:
DEPTH TO WATER:

Remarks:
Borehole hand-augered to 5'
Soil sample collected from 10-12' for laboratory analysis.



BORING NUMBER 38-19

2923 South Tryon Street-Suite 100
Charlotte, North Carolina 28203
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street
Raleigh, North Carolina 27607
919-847-4241(p) 919-847-4261(f)

PROJECT: Boone PSAs
JOB NUMBER: ROW-148
LOCATION: Boone, NC

LOG OF BORING - HART HICKMAN.GDT - 5/29/08 08:33 - S:\AAA-MASTER PROJECTS\INC DOT RIGHT-OF-WAY -ROW\ROW-148 BOONE PSAs\BORING LOGS\ROW-148 (38).GPJ

DEPTH (ft)	RECOVERY (%)	BLOW COUNT	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	WELL DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0.0			0.05	2.3	Orange, tan, medium SAND, dry			0.0
2.5				2.2				2.5
5.0				2.4				5.0
7.5				3.6	Light tan, fine sandy, SILT, dry			7.5
10.0				2.2				10.0
12.5					Bottom of borehole at 12.0 feet.			12.5
15.0								15.0

DRILLING CONTRACTOR: GEOLOGIC EXPLORATION
DRILL RIG/ METHOD: Geoprobe 6620DT
SAMPLING METHOD: DPT Sleeves
LOGGED BY: MHF
DRAWN BY:

BORING STARTED: 4/10/08
BORING COMPLETED: 4/10/08
TOTAL DEPTH: 12
SURFACE ELEV:
DEPTH TO WATER:

Remarks:
Borehole hand-augered to 5'
Soil sample collected from 7-9' for laboratory analysis.



BORING NUMBER 38-20

2923 South Tryon Street-Suite 100
Charlotte, North Carolina 28203
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street
Raleigh, North Carolina 27607
919-847-4241(p) 919-847-4261(f)

PROJECT: Boone PSAs
JOB NUMBER: ROW-148
LOCATION: Boone, NC

LOG OF BORING - HART HICKMAN.GDT - 5/29/08 08:33 - S:\AAA-MASTER PROJECTS\NC DOT\RIGHT-OF-WAY -ROW\ROW-148 BOONE PSAS\BORING LOGS\ROW-148 (38).GPJ

DEPTH (ft)	RECOVERY (%)	BLOW COUNT	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	WELL DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0.0						Red, brown, medium sandy SILT, dry		0.0
100			0.5	1.8				
2.5				1.9		Brown, pink, silty, medium, SAND, dry		2.5
100								
5.0				2.1		Light orange, brown, silty, medium SAND, dry		5.0
50								
7.5				2.4				7.5
50								
10.0				1.9		Light orange, brown, medium SAND, with some PWR, dry		10.0
33								
12.5						Bottom of borehole at 12.0 feet.		12.5
15.0								15.0

DRILLING CONTRACTOR: GEOLOGIC EXPLORATION
DRILL RIG/ METHOD: Geoprobe 6620DT
SAMPLING METHOD: DPT Sleeves
LOGGED BY: MHF
DRAWN BY:

BORING STARTED: 4/10/08
BORING COMPLETED: 4/10/08
TOTAL DEPTH: 12
SURFACE ELEV:
DEPTH TO WATER:

Remarks:
Borehole hand-augered to 5'
Soil sample collected from 7-9' for laboratory analysis.



BORING NUMBER 38-21

2923 South Tryon Street-Suite 100
Charlotte, North Carolina 28203
704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street
Raleigh, North Carolina 27607
919-847-4241(p) 919-847-4261(f)

PROJECT: Boone PSAs
JOB NUMBER: ROW-148
LOCATION: Boone, NC

LOG OF BORING - HART HICKMAN.GDT - 5/29/08 08:33 - S:\AAA-MASTER PROJECTS\NC DOT RIGHT-OF-WAY -ROW\ROW-148 BOONE PSAS\BORING LOGS\ROW-148 (38).GPJ

DEPTH (ft)	RECOVERY (%)	BLOW COUNT	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	WELL DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0.0						Dark brown, red, clayey, SILT, dry		0.0
2.5	100		0.5	1.9		Red, brown, fine sandy, SILT, dry		2.5
5.0				2.3				5.0
7.5	75			1.4		Tan, beige, fine sandy, SILT, dry		7.5
10.0				2.7		Bottom of borehole at 9.0 feet.		10.0
12.5								12.5
15.0								15.0

DRILLING CONTRACTOR: GEOLOGIC EXPLORATION
DRILL RIG/ METHOD: Geoprobe 6620DT
SAMPLING METHOD: DPT Sleeves
LOGGED BY: MHF
DRAWN BY:

BORING STARTED: 4/10/08
BORING COMPLETED: 4/10/08
TOTAL DEPTH: 9
SURFACE ELEV:
DEPTH TO WATER:

Remarks:
Borehole hand-augered to 5'
Soil sample collected from 7-9' for laboratory analysis.

Appendix D
Laboratory Analytical Report



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

Laboratory Report

04/28/08

North Carolina Department of
 Transportation
 Attn: David Graham
 c/o Hart and Hickman
 2923 South Tryon St. Ste 100
 Charlotte, NC 28203

Project Name: Boone PSAs
 Project ID: ROW-148
 Project No.: WBS# 35015.1.1
 Sample Matrix: Soil

Client Sample ID: 38-1 (2-4)
 Prism Sample ID: 211280
 COC Group: G0408351
 Time Collected: 04/09/08 15:00
 Time Submitted: 04/11/08 9:20

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
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Percent Solids Determination

Percent Solids	88.9	%			1	SM2540 G	04/15/08 11:15	mbarber	
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Diesel Range Organics (DRO) by GC-FID

Diesel Range Organics (DRO)	BRL	mg/kg	7.8	1.3	1	8015B	04/23/08 10:54	jvogel	Q31936
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Sample Preparation: 25.16 g / 1 mL 3545 04/21/08 15:15 wconder P21394

Surrogate	% Recovery	Control Limits
o-Terphenyl	120	49 - 124

Sample Weight Determination

Weight 1	5.95	g			1	GRO	04/15/08 0:00	Lbrown	
Weight 2	5.83	g			1	GRO	04/15/08 0:00	lbrown	

Gasoline Range Organics (GRO) by GC-FID

Gasoline Range Organics (GRO)	BRL	mg/kg	5.6	3.5	50	8015B	04/18/08 17:34	grappaccioli	Q31819
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Surrogate	% Recovery	Control Limits
aaa-TFT	124	55 - 129

Sample Comment(s):

BRL = Below Reporting Limit

Values are reported down to the reporting limit only. No J-Flags applied.

The results in this report relate only to the samples submitted for analysis and meet state certification requirements other than NELAC certification except for those instances indicated in the case narrative and/or test comments.

All results are reported on a dry-weight basis

Angela D. Overcash, V.P. Laboratory Services

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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



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

Laboratory Report

04/28/08

North Carolina Department of
 Transportation
 Attn: David Graham
 c/o Hart and Hickman
 2923 South Tryon St. Ste 100
 Charlotte, NC 28203

Project Name: Boone PSAs
 Project ID: ROW-148
 Project No.: WBS# 35015.1.1
 Sample Matrix: Soil

Client Sample ID: 38-2 (9-12)
 Prism Sample ID: 211284
 COC Group: G0408351
 Time Collected: 04/09/08 15:35
 Time Submitted: 04/11/08 9:20

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
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Percent Solids Determination

Percent Solids	90.3	%			1	SM2540 G	04/15/08 11:15	mbarber	
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Diesel Range Organics (DRO) by GC-FID

Diesel Range Organics (DRO)	BRL	mg/kg	7.7	1.2	1	8015B	04/23/08 14:51	jvogel	Q31961
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Sample Preparation: 25.12 g / 1 mL 3545 04/22/08 16:30 wconder P21413

Surrogate	% Recovery	Control Limits
o-Terphenyl	51	49 - 124

Sample Weight Determination

Weight 1	6.42	g			1	GRO	04/15/08 0:00	Lbrown	
Weight 2	5.64	g			1	GRO	04/15/08 0:00	lbrown	

Gasoline Range Organics (GRO) by GC-FID

Gasoline Range Organics (GRO)	BRL	mg/kg	5.5	3.5	50	8015B	04/18/08 19:40	grappaccioli	Q31819
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One surrogate recovery was outside the control limits. No target compounds were detected in this sample. No further action was taken.

Surrogate	% Recovery	Control Limits
aaa-TFT	151 #	55 - 129

Sample Comment(s):

BRL = Below Reporting Limit

Values are reported down to the reporting limit only. No J-Flags applied.

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

Laboratory Report

04/28/08

North Carolina Department of
 Transportation
 Attn: David Graham
 c/o Hart and Hickman
 2923 South Tryon St. Ste 100
 Charlotte, NC 28203

Project Name: Boone PSAs
 Project ID: ROW-148
 Project No.: WBS# 35015.1.1
 Sample Matrix: Soil

Client Sample ID: 38-3 (5-7)
 Prism Sample ID: 211281
 COC Group: G0408351
 Time Collected: 04/09/08 15:15
 Time Submitted: 04/11/08 9:20

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
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Percent Solids Determination

Percent Solids	90.6	%			1	SM2540 G	04/15/08 11:15	mbarber	
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Diesel Range Organics (DRO) by GC-FID

Diesel Range Organics (DRO)	43	mg/kg	7.7	1.2	1	8015B	04/23/08 11:31	lvogel	Q31936
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Sample Preparation: 25.14 g / 1 mL 3545 04/21/08 15:15 wconder P21394

Surrogate	% Recovery	Control Limits
o-Terphenyl	121	49 - 124

Sample Weight Determination

Weight 1	4.20	g			1	GRO	04/15/08 0:00	Lbrown	
Weight 2	4.54	g			1	GRO	04/15/08 0:00	lbrown	

Gasoline Range Organics (GRO) by GC-FID

Gasoline Range Organics (GRO)	BRL	mg/kg	5.5	3.5	50	8015B	04/18/08 18:06	grappaccioli	Q31819
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Surrogate	% Recovery	Control Limits
aaa-TFT	126	55 - 129

Sample Comment(s):

BRL = Below Reporting Limit

Values are reported down to the reporting limit only. No J-Flags applied.

The results in this report relate only to the samples submitted for analysis and meet state certification requirements other than NELAC certification except for those instances indicated in the case narrative and/or test comments.

All results are reported on a dry-weight basis

Angela D. Overcash, V.P. Laboratory Services

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

Laboratory Report

04/28/08

North Carolina Department of
 Transportation
 Attn: David Graham
 c/o Hart and Hickman
 2923 South Tryon St. Ste 100
 Charlotte, NC 28203

Project Name: Boone PSAs
 Project ID: ROW-148
 Project No.: WBS# 35015.1.1
 Sample Matrix: Soil

Client Sample ID: 38-4 (0-2)
 Prism Sample ID: 211278
 COC Group: G0408351
 Time Collected: 04/09/08 14:15
 Time Submitted: 04/11/08 9:20

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
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Percent Solids Determination

Percent Solids	85.5	%			1	SM2540 G	04/15/08 11:15	mbarber	
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Diesel Range Organics (DRO) by GC-FID

Diesel Range Organics (DRO)	950	mg/kg	82	13	10	8015B	04/22/08 17:39	jvogel	Q31936
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Sample Preparation: 25.25 g / 1 mL 3545 04/21/08 15:15 wconder P21394

Surrogate	% Recovery	Control Limits
o-Terphenyl	DO #	49 - 124

Sample Weight Determination

Weight 1	5.60	g			1	GRO	04/17/08 0:00	athao	
Weight 2	5.57	g			1	GRO	04/17/08 0:00	athao	

Gasoline Range Organics (GRO) by GC-FID

Gasoline Range Organics (GRO)	8000	mg/kg	230	150	2000	8015B	04/19/08 4:39	grappaccloll	Q31819
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Surrogate	% Recovery	Control Limits
aaa-TFT	DO #	55 - 129

Sample Comment(s):

BRL = Below Reporting Limit

Values are reported down to the reporting limit only. No J-Flags applied.

The results in this report relate only to the samples submitted for analysis and meet state certification requirements other than NELAC certification except for those instances indicated in the case narrative and/or test comments.

All results are reported on a dry-weight basis

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

Laboratory Report

04/28/08

North Carolina Department of
 Transportation
 Attn: David Graham
 c/o Hart and Hickman
 2923 South Tryon St. Ste 100
 Charlotte, NC 28203

Project Name: Boone PSAs
 Project ID: ROW-148
 Project No.: WBS# 35015.1.1
 Sample Matrix: Soil

Client Sample ID: 38-5 (1-3)
 Prism Sample ID: 211282
 COC Group: G0408351
 Time Collected: 04/09/08 15:20
 Time Submitted: 04/11/08 9:20

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
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Percent Solids Determination

Percent Solids	79.0	%			1	SM2540 G	04/15/08 11:15	mbarber	
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Diesel Range Organics (DRO) by GC-FID

Diesel Range Organics (DRO)	BRL	mg/kg	8.8	1.4	1	8015B	04/22/08 19:32	lvogel	Q31936
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Sample Preparation: 25.07 g / 1 mL 3545 04/21/08 15:15 wcondor P21394

Surrogate	% Recovery	Control Limits
o-Terphenyl	76	49 - 124

Sample Weight Determination

Weight 1	6.03	g			1	GRO	04/15/08 0:00	Lbrown
Weight 2	6.51	g			1	GRO	04/15/08 0:00	lbrown

Gasoline Range Organics (GRO) by GC-FID

Gasoline Range Organics (GRO)	BRL	mg/kg	6.3	4.0	50	8015B	04/18/08 18:38	grappaccioli	Q31819
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One surrogate recovery was outside the control limits. No target compounds were detected in this sample. No further action was taken.

Surrogate	% Recovery	Control Limits
aaa-TFT	133 #	55 - 129

Sample Comment(s):

BRL = Below Reporting Limit

Values are reported down to the reporting limit only. No J-Flags applied.

The results in this report relate only to the samples submitted for analysis and meet state certification requirements other than NELAC certification except for those instances indicated in the case narrative and/or test comments.

All results are reported on a dry-weight basis

Angela D. Overcash, V.P. Laboratory Services

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

Laboratory Report

04/28/08

North Carolina Department of
 Transportation
 Attn: David Graham
 c/o Hart and Hickman
 2923 South Tryon St. Ste 100
 Charlotte, NC 28203

Project Name: Boone PSAs
 Project ID: ROW-148
 Project No.: WBS# 35015.1.1
 Sample Matrix: Soil

Client Sample ID: 38-6 (2-5)
 Prism Sample ID: 211279
 COC Group: G0408351
 Time Collected: 04/09/08 14:30
 Time Submitted: 04/11/08 9:20

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
Percent Solids Determination									
Percent Solids	87.7	%			1	SM2540 G	04/15/08 11:15	mbarber	
Diesel Range Organics (DRO) by GC-FID									
Diesel Range Organics (DRO)	BRL	mg/kg	8.0	1.3	1	8015B	04/23/08 12:09	jvogel	Q31936
Sample Preparation:			25.06 g	/	1 mL	3545	04/21/08 15:15	wconder	P21394
						Surrogate	% Recovery	Control Limits	
						o-Terphenyl	105	49 - 124	
Sample Weight Determination									
Weight 1	5.53	g			1	GRO	04/15/08 0:00	Lbrown	
Weight 2	5.96	g			1	GRO	04/15/08 0:00	lbrown	
Gasoline Range Organics (GRO) by GC-FID									
Gasoline Range Organics (GRO)	37	mg/kg	5.7	3.6	50	8015B	04/18/08 16:41	grappaccioli	Q31819
						Surrogate	% Recovery	Control Limits	
						aaa-TFT	112	55 - 129	

Sample Comment(s):

BRL = Below Reporting Limit

Values are reported down to the reporting limit only. No J-Flags applied.

The results in this report relate only to the samples submitted for analysis and meet state certification requirements other than NELAC certification except for those instances indicated in the case narrative and/or test comments.

All results are reported on a dry-weight basis

Angela D. Overcash, V.P. Laboratory Services

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

Laboratory Report

04/28/08

North Carolina Department of
 Transportation
 Attn: David Graham
 c/o Hart and Hickman
 2923 South Tryon St. Ste 100
 Charlotte, NC 28203

Project Name: Boone PSAs
 Project ID: ROW-148
 Project No.: WBS# 35015.1.1
 Sample Matrix: Soil

Client Sample ID: 38-7 (0-2)
 Prism Sample ID: 211288
 COC Group: G0408351
 Time Collected: 04/09/08 16:05
 Time Submitted: 04/11/08 9:20

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
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Percent Solids Determination

Percent Solids	75.6	%			1	SM2540 G	04/15/08 11:15	mbarber	
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Diesel Range Organics (DRO) by GC-FID

Diesel Range Organics (DRO)	15	mg/kg	9.1	1.5	1	8015B	04/23/08 17:51	jvogel	Q31961
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Sample Preparation: 25.37 g / 1 mL 3545 04/22/08 16:30 wconder P21413

Surrogate	% Recovery	Control Limits
o-Terphenyl	69	49 - 124

Sample Weight Determination

Weight 1	4.87	g			1	GRO	04/15/08 0:00	Lbrown	
Weight 2	4.84	g			1	GRO	04/15/08 0:00	lbrown	

Gasoline Range Organics (GRO) by GC-FID

Gasoline Range Organics (GRO)	BRL	mg/kg	6.6	4.1	50	8015B	04/18/08 22:19	grappaccioli	Q31819
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One surrogate recovery was outside the control limits. No target compounds were detected in this sample. No further action was taken.

Surrogate	% Recovery	Control Limits
aaa-TFT	133 #	55 - 129

Sample Comment(s):

BRL = Below Reporting Limit

Values are reported down to the reporting limit only. No J-Flags applied.

The results in this report relate only to the samples submitted for analysis and meet state certification requirements other than NELAC certification except for those instances indicated in the case narrative and/or test comments.

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Angela D. Overcash, V.P. Laboratory Services

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

Laboratory Report

04/28/08

North Carolina Department of
 Transportation
 Attn: David Graham
 c/o Hart and Hickman
 2923 South Tryon St. Ste 100
 Charlotte, NC 28203

Project Name: Boone PSAs
 Project ID: ROW-148
 Project No.: WBS# 35015.1.1
 Sample Matrix: Soil

Client Sample ID: 38-8 (0-2)
 Prism Sample ID: 211289
 COC Group: G0408351
 Time Collected: 04/09/08 16:10
 Time Submitted: 04/11/08 9:20

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
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Percent Solids Determination

Percent Solids	75.0	%			1	SM2540 G	04/15/08 11:15	mbarber	
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Diesel Range Organics (DRO) by GC-FID

Diesel Range Organics (DRO)	BRL	mg/kg	9.3	1.5	1	8015B	04/24/08 9:53	jvogel	Q31961
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Sample Preparation: 25.22 g / 1 mL 3545 04/22/08 16:30 wconder P21413

Surrogate	% Recovery	Control Limits
o-Terphenyl	50	49 - 124

Sample Weight Determination

Weight 1	5.67	g			1	GRO	04/15/08 0:00	Lbrown	
Weight 2	5.53	g			1	GRO	04/15/08 0:00	lbrown	

Gasoline Range Organics (GRO) by GC-FID

Gasoline Range Organics (GRO)	9.1	mg/kg	6.7	4.2	50	8015B	04/18/08 22:51	grappaccioli	Q31819
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Surrogate	% Recovery	Control Limits
aaa-TFT	122	55 - 129

Sample Comment(s):

BRL = Below Reporting Limit

Values are reported down to the reporting limit only. No J-Flags applied.

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Angela D. Overcash, V.P. Laboratory Services

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

Laboratory Report

04/28/08

North Carolina Department of
 Transportation
 Attn: David Graham
 c/o Hart and Hickman
 2923 South Tryon St. Ste 100
 Charlotte, NC 28203

Project Name: Boone PSAs
 Project ID: ROW-148
 Project No.: WBS# 35015.1.1
 Sample Matrix: Soil

Client Sample ID: 38-9 (0-2)
 Prism Sample ID: 211283
 COC Group: G0408351
 Time Collected: 04/09/08 15:30
 Time Submitted: 04/11/08 9:20

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<u>Percent Solids Determination</u>									
Percent Solids	74.5	%			1	SM2540 G	04/15/08 11:15	mbarber	
<u>Diesel Range Organics (DRO) by GC-FID</u>									
Diesel Range Organics (DRO)	BRL	mg/kg	9.2	1.5	1	8015B	04/22/08 18:16	jvogel	Q31936
Sample Preparation:			25.61 g	/	1 mL	3545	04/21/08 15:15	wconder	P21394
					Surrogate	% Recovery	Control Limits		
					o-Terphenyl	80	49 - 124		
<u>Sample Weight Determination</u>									
Weight 1	4.63	g			1	GRO	04/15/08 0:00	Lbrown	
Weight 2	4.36	g			1	GRO	04/15/08 0:00	lbrown	
<u>Gasoline Range Organics (GRO) by GC-FID</u>									
Gasoline Range Organics (GRO)	BRL	mg/kg	6.7	4.2	50	8015B	04/18/08 19:09	grappaccioli	Q31819

One surrogate recovery was outside the control limits. No target compounds were detected in this sample. No further action was taken.

Surrogate	% Recovery	Control Limits
aaa-TFT	133 #	55 - 129

Sample Comment(s):

BRL = Below Reporting Limit

Values are reported down to the reporting limit only. No J-Flags applied.

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Laboratory Report

04/28/08

North Carolina Department of
 Transportation
 Attn: David Graham
 c/o Hart and Hickman
 2923 South Tryon St. Ste 100
 Charlotte, NC 28203

Project Name: Boone PSAs
 Project ID: ROW-148
 Project No.: WBS# 35015.1.1
 Sample Matrix: Soil

Client Sample ID: 38-10 (8-12)
 Prism Sample ID: 211285
 COC Group: G0408351
 Time Collected: 04/09/08 15:40
 Time Submitted: 04/11/08 9:20

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
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Percent Solids Determination

Percent Solids	77.6	%			1	SM2540 G	04/15/08 11:15	mbarber	
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Diesel Range Organics (DRO) by GC-FID

Diesel Range Organics (DRO)	BRL	mg/kg	9.0	1.5	1	8015B	04/23/08 15:27	jvogel	Q31961
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Sample Preparation: 25.1 g / 1 mL 3545 04/22/08 16:30 wconder P21413

Surrogate	% Recovery	Control Limits
o-Terphenyl	49	49 - 124

Sample Weight Determination

Weight 1	5.82	g			1	GRO	04/15/08 0:00	Lbrown	
Weight 2	5.85	g			1	GRO	04/15/08 0:00	lbrown	

Gasoline Range Organics (GRO) by GC-FID

Gasoline Range Organics (GRO)	220	mg/kg	6.4	4.0	50	8015B	04/18/08 20:12	grappaccioli	Q31819
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One surrogate recovery was outside of the control limits. Matrix interference is suspected.

Surrogate	% Recovery	Control Limits
aaa-TFT	136 #	55 - 129

Sample Comment(s):

BRL = Below Reporting Limit

Values are reported down to the reporting limit only. No J-Flags applied.

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 2923 South Tryon St. Ste 100
 Charlotte, NC 28203

Project Name: Boone PSAs
 Project ID: ROW-148
 Project No.: WBS# 35015.1.1
 Sample Matrix: Soil

Client Sample ID: 38-11 (2-5)
 Prism Sample ID: 211287
 COC Group: G0408351
 Time Collected: 04/09/08 16:00
 Time Submitted: 04/11/08 9:20

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
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Percent Solids Determination

Percent Solids	72.4	%			1	SM2540 G	04/15/08 11:15	mbarber	
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Diesel Range Organics (DRO) by GC-FID

Diesel Range Organics (DRO)	BRL	mg/kg	9.5	1.5	1	8015B	04/23/08 17:15	jvogel	Q31961
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Sample Preparation:			25.33 g	/	1 mL	3545	04/22/08 16:30	wconder	P21413
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Surrogate	% Recovery	Control Limits
o-Terphenyl	49	49 - 124

Sample Weight Determination

Weight 1	4.89	g			1	GRO	04/15/08 0:00	Lbrown	
Weight 2	4.75	g			1	GRO	04/15/08 0:00	lbrown	

Gasoline Range Organics (GRO) by GC-FID

Gasoline Range Organics (GRO)	BRL	mg/kg	6.9	4.3	50	8015B	04/18/08 21:47	grappaccioli	Q31819
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Surrogate	% Recovery	Control Limits
aaa-TFT	112	55 - 129

Sample Comment(s):

BRL = Below Reporting Limit

Values are reported down to the reporting limit only. No J-Flags applied.

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 2923 South Tryon St. Ste 100
 Charlotte, NC 28203

Project Name: Boone PSAs
 Project ID: ROW-148
 Project No.: WBS# 35015.1.1
 Sample Matrix: Soil

Client Sample ID: 38-12 (2-3)
 Prism Sample ID: 211292
 COC Group: G0408351
 Time Collected: 04/09/08 16:45
 Time Submitted: 04/11/08 9:20

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
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Percent Solids Determination

Percent Solids	85.4	%			1	SM2540 G	04/15/08 11:15	mbarber	
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Diesel Range Organics (DRO) by GC-FID

Diesel Range Organics (DRO)	21	mg/kg	8.1	1.3	1	8015B	04/23/08 20:50	jvogel	Q31961
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Sample Preparation: 25.31 g / 1 mL 3545 04/22/08 16:30 wconder P21413

Surrogate	% Recovery	Control Limits
o-Terphenyl	74	49 - 124

Sample Weight Determination

Weight 1	2.89	g			1	GRO	04/17/08 0:00	athao	
Weight 2	5.69	g			1	GRO	04/17/08 0:00	athao	

Gasoline Range Organics (GRO) by GC-FID

Gasoline Range Organics (GRO)	BRL	mg/kg	5.9	3.7	50	8015B	04/19/08 0:27	grappaccioli	Q31819
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One surrogate recovery was outside the control limits. No target compounds were detected in this sample. No further action was taken.

Surrogate	% Recovery	Control Limits
aaa-TFT	138 #	55 - 129

Sample Comment(s):

BRL = Below Reporting Limit

Values are reported down to the reporting limit only. No J-Flags applied.

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North Carolina Department of
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 2923 South Tryon St. Ste 100
 Charlotte, NC 28203

Project Name: Boone PSAs
 Project ID: ROW-148
 Project No.: WBS# 35015.1.1
 Sample Matrix: Soil

Client Sample ID: 38-13 (0-25) 
 Prism Sample ID: 211291
 COC Group: G0408351
 Time Collected: 04/09/08 16:30
 Time Submitted: 04/11/08 9:20

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
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Percent Solids Determination

Percent Solids	84.1	%			1	SM2540 G	04/15/08 11:15	mbarber	
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Diesel Range Organics (DRO) by GC-FID

Diesel Range Organics (DRO)	BRL	mg/kg	8.3	1.3	1	8015B	04/23/08 20:14	jvogel	Q31961
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Sample Preparation: 25.22 g / 1 mL 3545 04/22/08 16:30 wonder P21413

Surrogate	% Recovery	Control Limits
o-Terphenyl	73	49 - 124

Sample Weight Determination

Weight 1	6.33	g			1	GRO	04/15/08 0:00	Lbrown	
Weight 2	6.95	g			1	GRO	04/15/08 0:00	lbrown	

Gasoline Range Organics (GRO) by GC-FID

Gasoline Range Organics (GRO)	16	mg/kg	5.9	3.7	50	8015B	04/18/08 23:54	grappaccioli	Q31819
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One surrogate recovery was outside the control limits. No target compounds were detected in this sample. No further action was taken.

Surrogate	% Recovery	Control Limits
aaa-TFT	136 #	55 - 129

Sample Comment(s):

BRL = Below Reporting Limit
 Values are reported down to the reporting limit only. No J-Flags applied.
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 Charlotte, NC 28203

Project Name: Boone PSAs
 Project ID: ROW-148
 Project No.: WBS# 35015.1.1
 Sample Matrix: Soil

Client Sample ID: 38-14 (4-6)
 Prism Sample ID: 211286
 COC Group: G0408351
 Time Collected: 04/09/08 15:45
 Time Submitted: 04/11/08 9:20

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
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Percent Solids Determination

Percent Solids	81.7	%			1	SM2540 G	04/15/08 11:15	mbarber	
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Diesel Range Organics (DRO) by GC-FID

Diesel Range Organics (DRO)	BRL	mg/kg	8.4	1.3	1	8015B	04/23/08 16:39	jvogel	Q31961
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Sample Preparation: 25.63 g / 1 mL 3545 04/22/08 16:30 wconder P21413

Surrogate	% Recovery	Control Limits
o-Terphenyl	53	49 - 124

Sample Weight Determination

Weight 1	4.57	g			1	GRO	04/17/08 0:00	athao	
Weight 2	4.64	g			1	GRO	04/17/08 0:00	athao	

Gasoline Range Organics (GRO) by GC-FID

Gasoline Range Organics (GRO)	BRL	mg/kg	6.1	3.8	50	8015B	04/18/08 20:43	grappaccioli	Q31819
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One surrogate recovery was outside the control limits. No target compounds were detected in this sample. No further action was taken.

Surrogate	% Recovery	Control Limits
aaa-TFT	148 #	55 - 129

Sample Comment(s):

BRL = Below Reporting Limit

Values are reported down to the reporting limit only. No J-Flags applied.

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04/28/08

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Project Name: Boone PSAs
 Project ID: ROW-148
 Project No.: WBS# 35015.1.1
 Sample Matrix: Soil

Client Sample ID: 38-15 (10-12)
 Prism Sample ID: 211293
 COC Group: G0408351
 Time Collected: 04/10/08 8:45
 Time Submitted: 04/11/08 9:20

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
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Percent Solids Determination

Percent Solids	79.6	%			1	SM2540 G	04/16/08 15:15	mbarber	
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Diesel Range Organics (DRO) by GC-FID

Diesel Range Organics (DRO)	BRL	mg/kg	8.7	1.4	1	8015B	04/24/08 1:01	jbarrette	Q31961
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Sample Preparation: 25.3 g / 1 mL 3545 04/22/08 16:30 wconder P21413

Surrogate	% Recovery	Control Limits
o-Terphenyl	62	49 - 124

Sample Weight Determination

Weight 1	5.02	g			1	GRO	04/17/08 0:00	athao	
Weight 2	5.29	g			1	GRO	04/17/08 0:00	athao	

Gasoline Range Organics (GRO) by GC-FID

Gasoline Range Organics (GRO)	BRL	mg/kg	6.3	3.9	50	8015B	04/19/08 13:57	grappaccioli	Q31853
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Surrogate	% Recovery	Control Limits
aaa-TFT	102	55 - 129

Sample Comment(s):

BRL = Below Reporting Limit

Values are reported down to the reporting limit only. No J-Flags applied.

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North Carolina Department of
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 2923 South Tryon St. Ste 100
 Charlotte, NC 28203

Project Name: Boone PSAs
 Project ID: ROW-148
 Project No.: WBS# 35015.1.1
 Sample Matrix: Soil

Client Sample ID: 38-16 (5-7)
 Prism Sample ID: 211294
 COC Group: G0408351
 Time Collected: 04/10/08 8:55
 Time Submitted: 04/11/08 9:20

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
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Percent Solids Determination

Percent Solids	76.6	%			1	SM2540 G	04/16/08 15:15	mbarber	
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Diesel Range Organics (DRO) by GC-FID

Diesel Range Organics (DRO)	BRL	mg/kg	9.1	1.5	1	8015B	04/24/08 2:14	jvogel	Q31961
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Sample Preparation: 25.24 g / 1 mL 3545 04/22/08 16:30 wconder P21413

Surrogate	% Recovery	Control Limits
o-Terphenyl	57	49 - 124

Sample Weight Determination

Weight 1	6.72	g			1	GRO	04/17/08 0:00	athao	
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Weight 2	6.63	g			1	GRO	04/17/08 0:00	athao	
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Gasoline Range Organics (GRO) by GC-FID

Gasoline Range Organics (GRO)	BRL	mg/kg	6.5	4.1	50	8015B	04/19/08 15:00	grappaccioli	Q31853
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Surrogate	% Recovery	Control Limits
aaa-TFT	114	55 - 129

Sample Comment(s):

BRL = Below Reporting Limit

Values are reported down to the reporting limit only. No J-Flags applied.

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04/28/08

North Carolina Department of
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 2923 South Tryon St. Ste 100
 Charlotte, NC 28203

Project Name: Boone PSAs
 Project ID: ROW-148
 Project No.: WBS# 35015.1.1
 Sample Matrix: Soil

Client Sample ID: 38-17 (2-5)
 Prism Sample ID: 211295
 COC Group: G0408351
 Time Collected: 04/10/08 9:15
 Time Submitted: 04/11/08 9:20

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
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Percent Solids Determination

Percent Solids	81.6	%			1	SM2540 G	04/16/08 15:15	mbarber	
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Diesel Range Organics (DRO) by GC-FID

Diesel Range Organics (DRO)	BRL	mg/kg	8.5	1.4	1	8015B	04/23/08 19:02	jvogel	Q31961
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Sample Preparation: 25.1 g / 1 mL 3545 04/22/08 16:30 wconder P21413

Surrogate	% Recovery	Control Limits
o-Terphenyl	54	49 - 124

Sample Weight Determination

Weight 1	8.64	g			1	GRO	04/15/08 0:00	Lbrown	
Weight 2	12.15	g			1	GRO	04/15/08 0:00	lbrown	

Gasoline Range Organics (GRO) by GC-FID

Gasoline Range Organics (GRO)	BRL	mg/kg	6.1	3.8	50	8015B	04/19/08 15:32	grappaccioli	Q31853
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One surrogate recovery was outside of the control limits. The analysis was repeated, with no improvement in recovery. Matrix interference is suspected.

Surrogate	% Recovery	Control Limits
aaa-TFT	51 #	55 - 129

Sample Comment(s):

BRL = Below Reporting Limit

Values are reported down to the reporting limit only. No J-Flags applied.

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 2923 South Tryon St. Ste 100
 Charlotte, NC 28203

Project Name: Boone PSAs
 Project ID: ROW-148
 Project No.: WBS# 35015.1.1
 Sample Matrix: Soil

Client Sample ID: 38-18 (10-12)
 Prism Sample ID: 211296
 COC Group: G0408351
 Time Collected: 04/10/08 9:20
 Time Submitted: 04/11/08 9:20

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
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Percent Solids Determination

Percent Solids	89.7	%			1	SM2540 G	04/16/08 15:15	mbarber	
----------------	------	---	--	--	---	----------	----------------	---------	--

Diesel Range Organics (DRO) by GC-FID

Diesel Range Organics (DRO)	17	mg/kg	7.7	1.3	1	8015B	04/23/08 21:26	jvogel	Q31961
-----------------------------	----	-------	-----	-----	---	-------	----------------	--------	--------

Sample Preparation: 25.18 g / 1 mL 3545 04/22/08 16:30 wcondor P21413

Surrogate	% Recovery	Control Limits
o-Terphenyl	66	49 - 124

Sample Weight Determination

Weight 1	5.73	g			1	GRO	04/15/08 0:00	Lbrown	
Weight 2	5.76	g			1	GRO	04/15/08 0:00	lbrown	

Gasoline Range Organics (GRO) by GC-FID

Gasoline Range Organics (GRO)	BRL	mg/kg	5.6	3.5	50	8015B	04/19/08 16:04	grappaccioli	Q31853
-------------------------------	-----	-------	-----	-----	----	-------	----------------	--------------	--------

Surrogate	% Recovery	Control Limits
aaa-TFT	117	55 - 129

Sample Comment(s):

BRL = Below Reporting Limit

Values are reported down to the reporting limit only. No J-Flags applied.

The results in this report relate only to the samples submitted for analysis and meet state certification requirements other than NELAC certification except for those instances indicated in the case narrative and/or test comments.

All results are reported on a dry-weight basis

Angela D. Overcash, V.P. Laboratory Services

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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



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

Laboratory Report

04/28/08

North Carolina Department of
 Transportation
 Attn: David Graham
 c/o Hart and Hickman
 2923 South Tryon St. Ste 100
 Charlotte, NC 28203

Project Name: Boone PSAs
 Project ID: ROW-148
 Project No.: WBS# 35015.1.1
 Sample Matrix: Soil

Client Sample ID: 38-19 (7-9)
 Prism Sample ID: 211299
 COC Group: G0408351
 Time Collected: 04/10/08 9:45
 Time Submitted: 04/11/08 9:20

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
-----------	--------	-------	--------------	-----	-----------------	--------	--------------------	---------	----------

Percent Solids Determination

Percent Solids	91.9	%			1	SM2540 G	04/16/08 15:15	mbarber	
----------------	------	---	--	--	---	----------	----------------	---------	--

Diesel Range Organics (DRO) by GC-FID

Diesel Range Organics (DRO)	BRL	mg/kg	7.5	1.2	1	8015B	04/23/08 23:13	jbogel	Q31961
-----------------------------	-----	-------	-----	-----	---	-------	----------------	--------	--------

Sample Preparation: 25.51 g / 1 mL 3545 04/22/08 16:30 wconder P21413

Surrogate	% Recovery	Control Limits
o-Terphenyl	79	49 - 124

Sample Weight Determination

Weight 1	5.77	g			1	GRO	04/15/08 0:00	Lbrown	
Weight 2	5.62	g			1	GRO	04/15/08 0:00	lbrown	

Gasoline Range Organics (GRO) by GC-FID

Gasoline Range Organics (GRO)	BRL	mg/kg	5.4	3.4	50	8015B	04/19/08 17:38	grappaccioli	Q31853
-------------------------------	-----	-------	-----	-----	----	-------	----------------	--------------	--------

Surrogate	% Recovery	Control Limits
aaa-TFT	109	55 - 129

Sample Comment(s):

BRL = Below Reporting Limit

Values are reported down to the reporting limit only. No J-Flags applied.

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All results are reported on a dry-weight basis

Angela D. Overcash, V.P. Laboratory Services

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

Laboratory Report

04/28/08

North Carolina Department of
 Transportation
 Attn: David Graham
 c/o Hart and Hickman
 2923 South Tryon St. Ste 100
 Charlotte, NC 28203

Project Name: Boone PSAs
 Project ID: ROW-148
 Project No.: WBS# 35015.1.1
 Sample Matrix: Soil

Client Sample ID: 38-20 (7-9)
 Prism Sample ID: 211298
 COC Group: G0408351
 Time Collected: 04/10/08 9:40
 Time Submitted: 04/11/08 9:20

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
Percent Solids Determination									
Percent Solids	76.7	%			1	SM2540 G	04/16/08 15:15	mbarber	
Diesel Range Organics (DRO) by GC-FID									
Diesel Range Organics (DRO)	41	mg/kg	9.0	1.5	1	8015B	04/23/08 22:37	jvogel	Q31961
Sample Preparation:			25.38 g	/	1 mL	3545	04/22/08 16:30	wconder	P21413
					Surrogate	% Recovery	Control Limits		
					o-Terphenyl	78	49 - 124		
Sample Weight Determination									
Weight 1	4.19	g			1	GRO	04/15/08 0:00	Lbrown	
Weight 2	5.12	g			1	GRO	04/15/08 0:00	lbrown	
Gasoline Range Organics (GRO) by GC-FID									
Gasoline Range Organics (GRO)	BRL	mg/kg	6.5	4.1	50	8015B	04/19/08 17:06	grappaccioli	Q31853
					Surrogate	% Recovery	Control Limits		
					aaa-TFT	112	55 - 129		

Sample Comment(s):

BRL = Below Reporting Limit

Values are reported down to the reporting limit only. No J-Flags applied.

The results in this report relate only to the samples submitted for analysis and meet state certification requirements other than NELAC certification except for those instances indicated in the case narrative and/or test comments.

All results are reported on a dry-weight basis

Angela D. Overcash, V.P. Laboratory Services

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

Laboratory Report

04/28/08

North Carolina Department of
 Transportation
 Attn: David Graham
 c/o Hart and Hickman
 2923 South Tryon St. Ste 100
 Charlotte, NC 28203

Project Name: Boone PSAs
 Project ID: ROW-148
 Project No.: WBS# 35015.1.1
 Sample Matrix: Soil

Client Sample ID: 38-21 (7-9)
 Prism Sample ID: 211297
 COC Group: G0408351
 Time Collected: 04/10/08 9:30
 Time Submitted: 04/11/08 9:20

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
Percent Solids Determination									
Percent Solids	90.8	%			1	SM2540 G	04/16/08 15:15	mbarber	
Diesel Range Organics (DRO) by GC-FID									
Diesel Range Organics (DRO)	BRL	mg/kg	7.7	1.2	1	8015B	04/23/08 22:01	jvogel	Q31961
Sample Preparation:			25.13 g /		1 mL	3545	04/22/08 16:30	wconder	P21413
						Surrogate	% Recovery	Control Limits	
						o-Terphenyl	60	49 - 124	
Sample Weight Determination									
Weight 1	5.28	g			1	GRO	04/17/08 0:00	athao	
Weight 2	5.33	g			1	GRO	04/17/08 0:00	athao	
Gasoline Range Organics (GRO) by GC-FID									
Gasoline Range Organics (GRO)	BRL	mg/kg	5.5	3.4	50	8015B	04/19/08 16:35	grappaccioli	Q31853
						Surrogate	% Recovery	Control Limits	
						aaa-TFT	118	55 - 129	

Sample Comment(s):

BRL = Below Reporting Limit

Values are reported down to the reporting limit only. No J-Flags applied.

The results in this report relate only to the samples submitted for analysis and meet state certification requirements other than NELAC certification except for those instances indicated in the case narrative and/or test comments.

All results are reported on a dry-weight basis

Angela D. Overcash, V.P. Laboratory Services

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Full Service Analytical & Environmental Solutions

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

Client Company Name: HART & HILBORN
Report To/Contact Name: D. GORAN
Reporting Address: 2903 S. JAPAN ST

Phone: 704-586-0001 Fax (Yes) (No):
Email (Yes) (No) Address: dog@hartandhilborn.com
EDD Type: PDF Excel Other
Site Location Name: Boone - DOT
Site Location Physical Address: Boone, NC

CHAIN OF CUSTODY RECORD

PAGE 7 OF 10 QUOTE # TO ENSURE PROPER BILLING:

Project Name: Row-148
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:
Address:

LAB USE ONLY

Samples INTACT upon arrival? YES NO N/A
Received ON WET ICE? Temp 13
PROPER PRESERVATIVES indicated?
Received WITHIN HOLDING TIMES?
CUSTODY SEALS INTACT?
VOLATILES rec'd W/OUT HEADSPACE?
PROPER CONTAINERS used?

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		PRESERVATIVES	ANALYSES REQUESTED	REMARKS	PRISM LAB ID NO.
				*TYPE SEE BELOW	NO. SIZE				
42-21(2-4)	4/19/08	1200	soil	VOP1	3	none	TPH-GOL		211272
42-23(2-5)		1210	soil	CG	602				211273
42-24(2-5)		1220	soil						211274
42-25(5-7)		1230	soil						211275
42-26(5-7)		1240	soil						211276
42-27(5-7)		1300	soil						211277
38-4(0-2)		1415	soil						211273
38-6(2-5)		1430	soil						211274
38-1(2-4)		1500	soil						211235
38-3(5-7)		1515	soil						211231

PRISM USE ONLY

PRESS DOWN FIRMLY - 3 COPIES

Site Arrival Time:
Site Departure Time:
Field Tech Fee:
Mileage:

Additional Comments:

Received By: (Signature) _____ Date _____ Military/Hours _____
Received By: (Signature) _____ Date _____
Relinquished By: (Signature) _____ Date _____
Relinquished By: (Signature) _____ Date _____
Relinquished By: (Signature) _____ Date _____

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
NPDES: NC SC NC SC NC SC NC SC NC SC
GROUNDWATER: NC SC NC SC NC SC NC SC
DRINKING WATER: NC SC NC SC NC SC NC SC
SOLID WASTE: NC SC NC SC NC SC NC SC
RCRA: NC SC NC SC NC SC NC SC
CERCLA: NC SC NC SC NC SC NC SC
LANDFILL: NC SC NC SC NC SC NC SC
OTHER: NC SC NC SC NC SC NC SC
Date: 4/19/08 920
COC Group No. 6043351

SEE REVERSE FOR TERMS & CONDITIONS

ORIGINAL



Full Service Analytical & Environmental Solutions

449 Springbrook Road • P.O. Box 240543 • Charlotte, NC 28224-0543
Phone: 704.529-6364 • Fax: 704.529-0409

Client Company Name: HAZEL HICKMAN
Report To/Contact Name: 2423 S. TOWN ST. #
Reporting Address: D. GORWARD

Phone: 704-529-0007 Fax (Yes) (No):
Email (Yes) (No):
EDD Type: PDF / Excel / Other
Site Location Name: BRONX - DOT
Site Location Physical Address: BRONX, NY

CHAIN OF CUSTODY RECORD

PAGE 8 OF 12 QUOTE # TO ENSURE PROPER BILLING:
Project Name: ROW-148 UST Project: (Yes) (No)
Short Hold Analysis: (Yes) (No) Project: (Yes) (No) (No)
*Please ATTACH any project specific reporting (QC LEVEL I III III IV) provisions and/or QC Requirements
Invoice To:
Address:

LAB USE ONLY

Samples INTACT upon arrival? YES NO N/A
Received ON WET ICE? Temp 1.3
PROPER PRESERVATIVES indicated?
Received WITHIN HOLDING TIMES?
CUSTODY SEALS INTACT?
VOLATILES rec'd W/OUT HEADSPACE?
PROPER CONTAINERS used?

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			PRESERVATIVES	ANALYSES REQUESTED	REMARKS	PRISM LAB ID NO.
				TYPE SEE BELOW	NO.	SIZE				
38-5 (1-3)	4/9/08	1520	soil	veg	3	10ml, 6oz	none, meth			211232
38-9 (0-2)		1530	soil							211233
38-2 (9-12)		1535	soil							211234
38-10 (8-12)		1540	soil							211235
38-14 (4-6)		1545	soil							211236
38-11 (2-5)		1600	soil							211237
38-7 (0-2)		1605	soil							211233
38-8 (0-2)		1610	soil							211235
38-9 (0-2)		1615	soil							211230
38-13 (0-25)		1630	soil							211231
38-0 (0-3)		1645	soil							211231
Sampler's Signature				M. Falkner			Affiliation	H&H		

Additional Comments: (2-12) 2-3 → 211232
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PRISM USE ONLY

Site Arrival Time:
Site Departure Time:
Field Tech Fee:
Mileage:

Additional Comments:
Date _____ Military/Hours _____
Date _____
Date 4/11/08 920
COC Group No. 50423351

Received By: (Signature) _____
Received For Prism (laboratorian) _____
Received By: (Signature) _____

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

NPDES: NC SC US: NC SC DRINKING WATER: NC SC SOLID WASTE: NC SC CERCLA NC SC LANDFILL NC SC OTHER: NC SC NC SC

CONTAINED TYPE CODES: A - Amber C - Clear G - Glass D - Glass E - Teflon-lined Pan VOA - Volatile Organics Analysis (7-pan Head Space)



Full Service Analytical & Environmental Solutions

448 Springbrook Road • P.O. Box 240543 • Charlotte, NC 28224-0543
 Phone: 704/529-6384 • Fax: 704/525-0409
 Client Company Name: HART & Fickman
 Report To/Contact Name: D. Graham
 Reporting Address: 2973 Seaman St.

Phone: 704-536-0007 Fax (Yes) (No):
 Email (Yes) (No) Address: 2973 Seaman St. Charlotte, NC
 EDD Type: PDF Excel Other
 Site Location Name: Boone-DOT
 Site Location Physical Address: Boone, NC

CHAIN OF CUSTODY RECORD

PAGE 9 OF 10 QUOTE # TO ENSURE PROPER BILLING:

Project Name: Row-148 UST Project: (Yes) (No)
 Short Hold Analysis: (Yes) (No) UST Project: (Yes) (No) III IV
 *Please ATTACH any project specific reporting (QC LEVEL I III IV) provisions and/or QC Requirements
 Invoice To:
 Address:

Purchase Order No./Billing Reference
 Requested Due Date 1 Day 2 Days 3 Days 4 Days 5 Days
 "Working Days" 6-9 Days Standard 10 days 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

Samples INTACT upon arrival? YES NO N/A
 Received ON WET ICE? Temp 1.3
 PROPER PRESERVATIVES indicated?
 Received WITHIN HOLDING TIMES?
 CUSTODY SEALS INTACT?
 VOLATILES rec'd W/OUT HEADSPACE?
 PROPER CONTAINERS used?

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			PRESERVATIVES	ANALYSES REQUESTED	REMARKS	PRISM LAB ID NO.
				*TYPE SEE BELOW	NO.	SIZE				
38-15(10-2)	4/10/08	0845	soil	VOA CO	3	Hand Gae	none held	TOT-Cred		211293
38-16(5-7)	4/10/08	0855	soil							211294
38-17(2-5)		0915	soil							211295
38-18(10-2)		0920	soil							211296
38-21(7-9)		0930	soil							211297
38-20(7-9)		0940	soil							211299
38-19(7-9)		0945	soil							211300
42-28(2-5)		1000	soil							211301
42-29(7-9)		1010	soil							211302
42-30(7-9)		1020	soil							211322

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Sampler's Signature: [Signature] Sampled By (Print Name): M. Falkner Affiliation: H&F

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) [Signature] Received By: (Signature) [Signature]
 Relinquished By: (Signature) [Signature] Received By: (Signature) [Signature]
 Relinquished By: (Signature) [Signature] Received By: (Signature) [Signature]
 Date: 4/10/08 Date: 4/10/08
 Military/Hours: 720 COC Group No.: 60408351

Method of Shipment: Fed Ex UPS Hand-delivered Prism Field Service Other
 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.

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

*CONTAINER TYPE CODES: A = Amber C = Clear G = Glass P = Plastic TI = Teflon-lined Can VOA = Volatile Organics Analysis (7erm Head Space)

SEE REVERSE FOR TERMS & CONDITIONS

ORIGINAL