Preliminary Site Assessment
Khans of Franklin, Inc. Property Parcel #24
Franklin, Macon County, NC

H&H Job No. ROW-150
State Project R-2408A and B
WBS Element # 34427.1.1
July 14, 2008

Hart & Hickman

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

3334 Hillsborough Street
Raleigh, NC 27607
919-847-4241

Preliminary Site Assessment
Khans of Franklin, Inc. Property Parcel #24
Franklin, Macon County, North Carolina
H&H Project ROW-150

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Preliminary Site Assessment Report
Khans of Franklin, Inc. Property Parcel #24
Franklin, Macon County, North Carolina
H&H Project ROW-150

1.0 Introduction

Hart & Hickman PC (H&H) has prepared this Preliminary Site Assessment (PSA) report to document assessment activities performed at the Khans of Franklin, Inc. property (NC DOT Parcel #24) located at 1515 Bryson City Road in Franklin, Macon 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 May 21, 2008 proposal.

The purpose of this assessment was to check for the presence or absence of impacted soil at the subject property in the proposed construction areas related to the widening of US Highway 28 (Bryson City Road) and SR 1323 (Riverview Street, State Project R-2408A and B). 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 28 and SR 1323 widening area near the Khans of Franklin, Inc. property is included in Appendix A.

Based on information provided by NC DOT and visual inspection, the Khans of Franklin, Inc. property operates as an active gasoline station/convenience store. According to NC DOT, the property contains four registered Underground Storage Tanks (USTs) installed in a common basin. The UST basin is located approximately 69 to 100 feet from the center line of Bryson City Road.

No monitoring wells or indications of remediation are present at the site. H&H conducted a file review at the North Carolina Department of Natural Resources (NC DENR) Asheville Regional Office (ARO). The ARO files did not contain information that indicated a release had been reported from the UST system. ARO UST compliance files indicated that no USTs are present in the right-of-way at this site.

2.0 Site Assessment

Soil Assessment Field Activities

H&H mobilized to the Khans of Franklin, Inc. property on May 29, 2008 to advance seven soil borings (24-1 through 24-7) by direct push technology (DPT). Prior to advancing the soil borings, H&H reviewed a geophysical survey performed by Schnabel Engineering on May 22 and May 27, 2008. Schnabel utilized ground penetrating radar (GPR) and time domain electromagnetic (TDEM) technology to identify geophysical anomalies and potential USTs at the site. Schnabel identified several anomalies attributed to above ground site features and a linear anomaly, likely in response to an underground storm sewer. The underground storm sewer is installed parallel to Bryson City Road. The geophysical data did not indicate the presence of USTs in the areas surveyed at the subject property. Schnabel's report including a site map depicting the results of the GPR and TDEM survey is included in Appendix B.

Prior to conducting soil borings, utilities were marked by NC One Call and by Schnabel. Borings were also cleared to four to five foot depth by hand auger unless refusal occurred. H&H utilized Subsurface Environmental Investigations, LLC (SEI) of Statesville, North Carolina to advance soil borings 24-1 through 24-7 (Figure 2). To facilitate the selection of soil samples for laboratory analysis, soil from each boring 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.

Soil borings 24-1 to 24-3, located along Riverview Street, were installed to a total depth of approximately 20 feet bgs. The soil borings were located on a soil berm that extends upward approximately 8 feet above surrounding grade. To determine if impacted soil was present at/or below the site grade, these borings were advanced deeper than typical for such PSAs.

H&H submitted seven samples (24-1 @ 0-2 ft; 24-2 @ 8-10 ft; 24-3 @ 8-10 ft; and 24-4 @ 2-4 ft, 24-5 @ 2-4 ft; 24-6 @ 2-4 ft; and 24-7 @ 2-4 ft) for laboratory analysis. Soil samples are identified

by the NC DOT Parcel number, soil boring number, and the depth interval in ft. Samples were sent to Research and Analytical Laboratories, Inc (RAL) for analysis under standard chain-of-custody protocol. All soil samples were analyzed for total petroleum hydrocarbons (TPH) for gasoline-range organics (GRO) by EPA Method 5030/8015B and diesel-range organics (DRO) by EPA Method 3550/8015B. Sample depths and analytical results are summarized in Table 1. Laboratory analytical data sheets for the Parcel 24 samples and chain-of-custody documentation are provided in Appendix D. Data for other sites unrelated to Parcel 24 are also shown on the laboratory report. The analytical results are discussed below.

3.0 Analytical Results

TPH GRO and DRO were detected in one soil sample analyzed for Parcel #24 (24-1 @ 0-2 ft) at levels slightly above the NC DENR Action Levels. As discussed previously, soil boring 24-1 was advanced to approximately 20 feet bgs. The PID reading at 0 to 2 ft was elevated in boring 24-1. No PID readings from 2 to 20 feet in boring 24-1 were above background levels. Therefore, deeper impacts are not suspected. As indicated on Table 1, no other soil samples contained detectable levels of GRO or DRO. Therefore, it appears that impacted soil is limited to a small area on the top of the soil berm. H&H estimates that approximately 30 yd^3 (42 tons) of impacted soil are present within the right-of-way along Riverview Street.

DOT plans indicate a proposed cut in the area along Riverview Street. Impacted soil may be generated as a result of the cut activities at the site in the vicinity of boring 24-1. Any impacted soil that is removed should be properly managed and disposed at a permitted facility.

4.0 Summary and Regulatory Considerations

H&H has reviewed geophysical survey results and collected soil samples at Parcel 24. No USTs appear to be present in the right-of-way on this parcel. TPH GRO and DRO were detected in the vicinity of boring 24-1 at levels above the NCDENR Action Levels. The soil impacts appear to be limited in extent. DOT plans indicate a proposed cut in this area. Based on the results of soil sampling activities, impacted soil may be encountered at this site during NC DOT road work. Any impacted soil that is removed should be properly managed and disposed at a permitted facility.

5.0 Signature Page

This report was prepared by:

Matthew J. Tendam, PE
Senior Project Engineer for
Hart and Hickman, PC

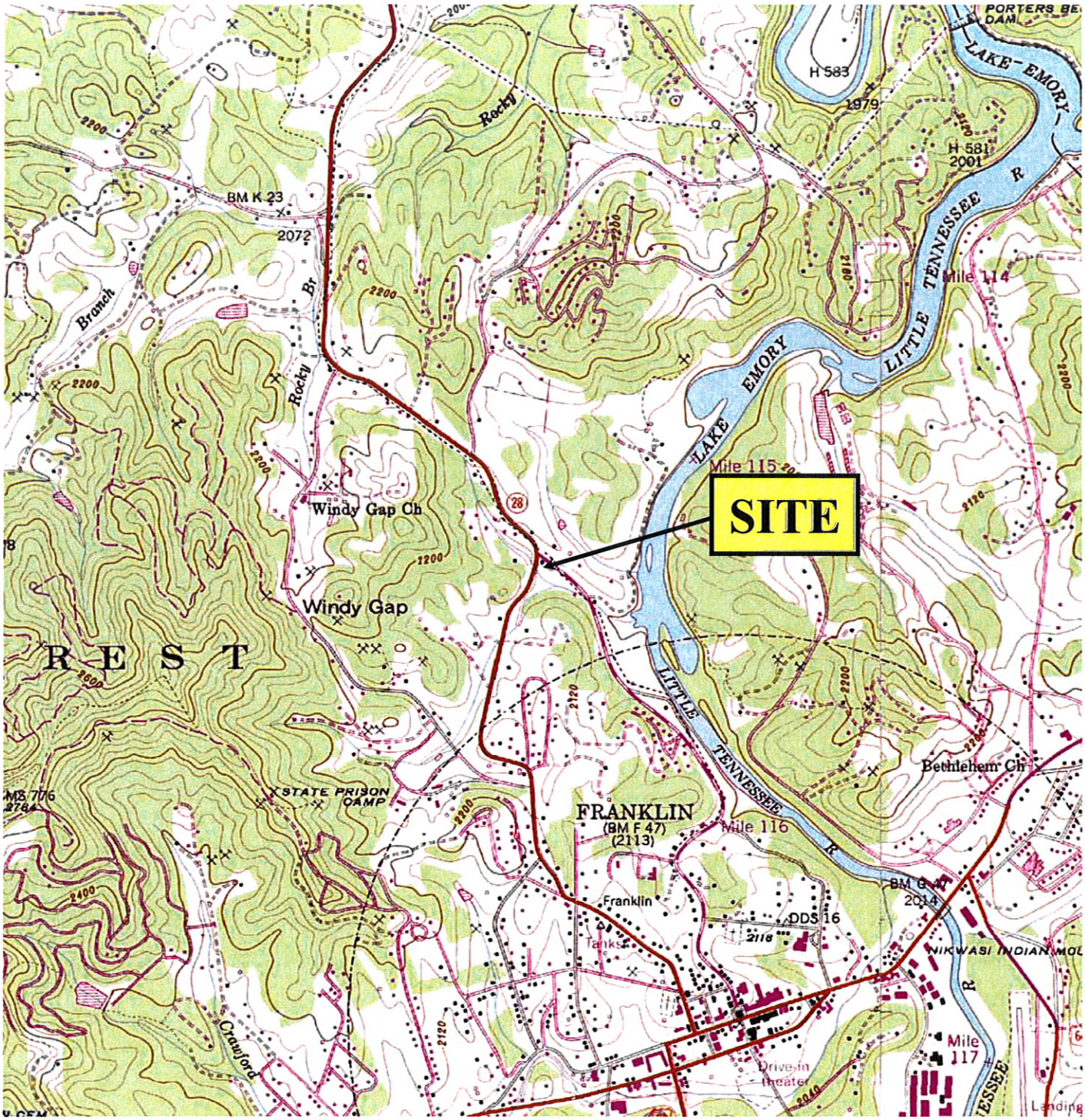
This report was reviewed by:

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

Table 1
Soil Analytical Results - Khans of Franklin, Inc. Property - Parcel 24
Franklin, North Carolina
H&H Job No. ROW-150

Sample ID	24-1	24-2	24-3	24-4	24-5	24-6	24-7	NC DENR
Sample Depth (ft)	0-2	8-10	8-10	2-4	2-4	2-4	2-4	Action
Sample Date	5/29/2008	5/29/2008	5/29/2008	5/29/2008	5/29/2008	5/29/2008	5/29/2008	Level
Units	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
TPH-GRO (EPA Method 5030)								
Gasoline-Range Organics (GRO)	**13.3**	<10	<10	<10	<10	<10	<10	10
TPH-DRO (EPA Method 3550)								
Diesel-Range Organics (DRO)	**17.4**	<10	<10	<10	<10	<10	<10	10

Notes:
TPH=total petroleum hydrocarbons
mg/kg=milligrams per kilogram



N

APPROXIMATE

0 2000 4000

SCALE IN FEET

U.S.G.S. QUADRANGLE MAP

FRANKLIN, NC 1946
PHOTOREVISED 1978

QUADRANGLE
7.5 MINUTE SERIES (TOPOGRAPHIC)

TITLE	SITE LOCATION MAP
PROJECT	KHANS OF FRANKLIN, INC PROPERTY PARCEL 24 FRANKLIN, NORTH CAROLINA

Hart & Hickman
A PROFESSIONAL CORPORATION
2923 South Tryon Street-Suite 100
Charlotte, North Carolina 28203
704-586-0007 (p) 704-586-0373 (f)

DATE:	7/08/08	REVISION NO:	0
JOB NO:	ROW-150	FIGURE NO:	1

HTR
1SFD
1SFD
1SFBUS
1SFD
UST BASIN
4-ISL'S
4 GAS PUMPS
U/MTL CANOPY
PUMP ISLAND
24
23
W
S
S
S
NC 28 BRYSON CITY ROAD
STEEP SLOPE
SOIL BERM
24-7 2-4'
[<10] (<10)
24-6 2-4'
[<10] (<10)
24-5 2-4'
[<10] (<10)
24-4 2-4'
[<10] (<10)
24-3 8-10'
[<10] (<10)
24-2 8-10'
[<10] (<10)
24-1 0-2'
[13.3] (17.4)
Sta
50+00
SR 1323 RIVERVIEW STREET

LEGEND

- PROPERTY LINE
- EXISTING RIGHT-OF-WAY
- PROPOSED RIGHT-OF-WAY
- PROPOSED CUT LINE
- PROPOSED FILL LINE
- PROPOSED TRANSITION LINE
- SOIL BORING
- 24 PARCEL NUMBER

[] = TPH GRO IN mg/kg

() = TPH DRO IN mg/kg

BOLD DENOTES EXCEEDENCE OF NCDENR ACTION LEVEL OF 10 mg/kg

EXTENT OF SOIL IMPACTS

N

APPROXIMATE

0 40 80

SCALE IN FEET

TITLE:

SITE MAP AND SOIL ANALYTICAL RESULTS

PROJECT:

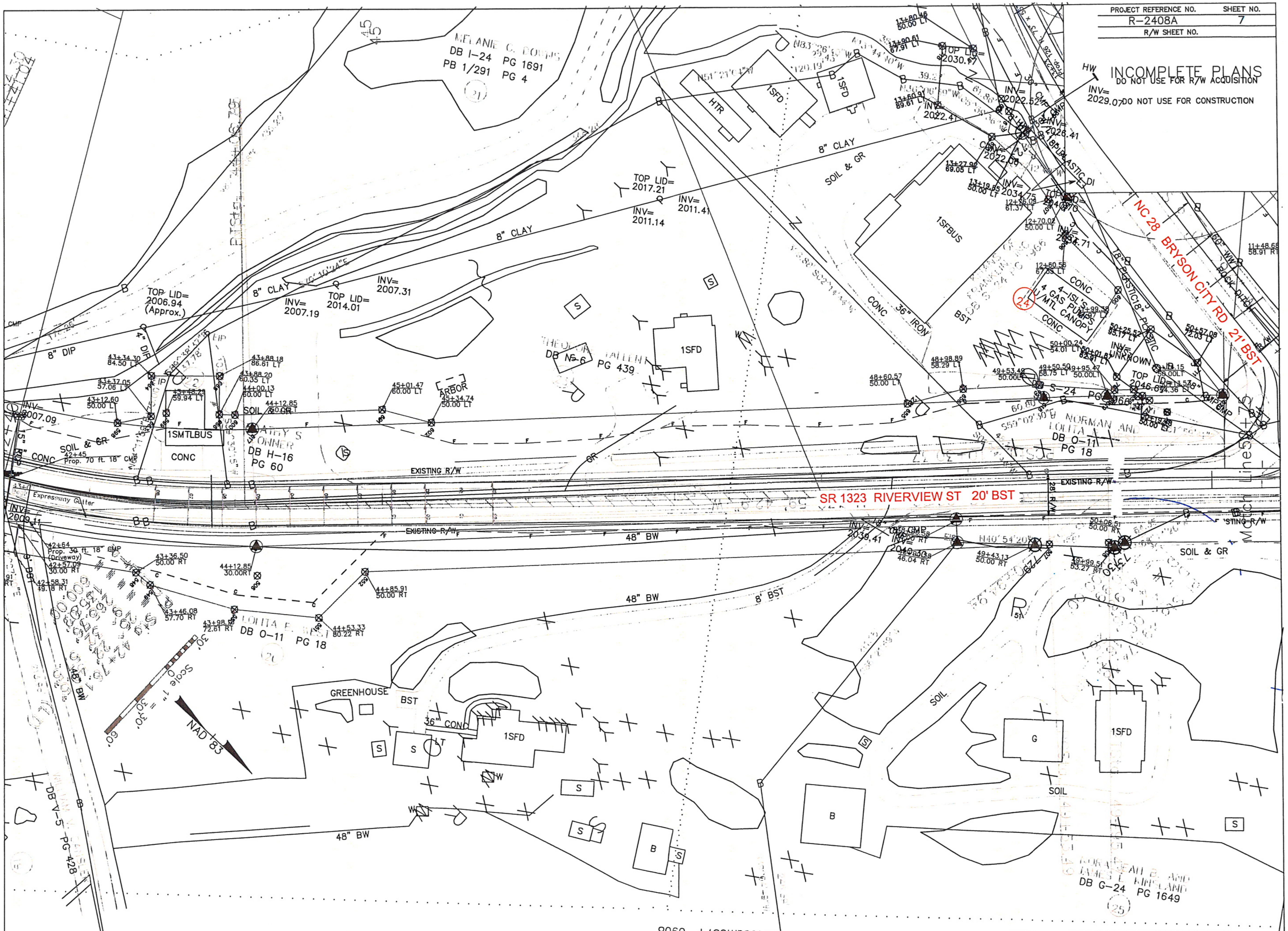
KHANS OF FRANKLIN, INC. PROPERTY
PARCEL #24
FRANKLIN, NORTH CAROLINA

Hart & Hickman
A PROFESSIONAL CORPORATION
2923 South Tryon Street-Suite 100
Charlotte, North Carolina 28203
704-586-0007(p) 704-586-0373(f)

DATE: 6-9-08	REVISION NO. 0
JOB NO: ROW-150	FIGURE: 2

Appendix A

NC DOT Preliminary Plan


PROJECT REFERENCE NO.
R-2408A
SHEET NO.
7
R/W SHEET NO.
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
DO NOT USE FOR CONSTRUCTION
NC 28 BRYSON CITY RD 21' BST
SR 1323 RIVERVIEW ST 20' BST
EXISTING R/W
MELANIE C. DOWNS
DB I-24 PG 1691
PB 1/291 PG 4
8" CLAY
SOIL & GR
TOP LID= 2017.21
INV= 2011.14
INV= 2011.41
TOP LID= 2006.94 (Approx.)
INV= 2007.31
INV= 2007.19
TOP LID= 2014.01
8" DIP
4" DIP
1SFD
1SFBUS
1SMTLBUS
HTR
CONC
36" IRON
4-ISL'S 4 GAS PUMPS W/MTL CANOPY
DB H-16
PG 60
DB O-11
PG 18
48" BW
8" BST
GREENHOUSE
BST
36" CONC
SOIL
G
B
S
DB G-24 PG 1649
DB V-5 PG 428
Scale 1" = 30'
NAD 83
Expressway Gutter
INV= 2009.11
INV= 2007.09
15" RCP
18" CONC

Appendix B

Schnabel Geophysical Report

Schnabel Engineering South

11-A Oak Branch Drive
Greensboro, NC 27407

Phone (336) 274-9456
Fax (336) 274-9486
www.schnabel-eng.com

June 5, 2008

Mr. Matt Bramblett, PE
Hart & Hickman, PC
2923 South Tryon Street, Suite 100
Charlotte, NC 28203

Via email (pdf)

cc: Mr. Cyrus Parker, NCDOT

State Project:	R-2408A and B
WBS Element:	34427.1.1
County:	Macon
Description:	Riverview Street (SR 1323) and Bryson City Road (NC 28) from Depot Street Extension (SR 1729) to Bennett Road (SR 1378)

SUBJECT: **Parcel #24, Khans of Franklin, Inc. Property**
Report on Geophysical Surveys to Locate Possible UST's
Schnabel Engineering Project No. 07210023.10

Dear Mr. Bramblett:

This letter contains our report on the geophysical surveys we conducted on the subject property. We understand this letter report will be included as an appendix in your report to the NCDOT. The report includes one 8.5x11 color figure and two 11x17 color figures.

1.0 INTRODUCTION

Schnabel Engineering conducted geophysical surveys on May 22 and May 27, 2008, in the accessible areas of the proposed right-of-way (ROW) section of Parcel 24 (Khans of Franklin, Inc. Property) under our 2007 contract with the NCDOT. Parcel 24 is located at the south corner of the intersection of NC 28 (Bryson City Road) and SR 1323 (Riverview Street). A site photo of the parcel is shown in Figure 1. The work was conducted at the locations indicated by Hart & Hickman to support their environmental assessment of the subject parcel. The purpose of the geophysical surveys was to locate

possible metal underground storage tanks (UST's) and associated metal product lines in the accessible areas of the site, and to investigate planned boring locations for the presence of buried utilities.

2.0 FIELD METHODOLOGY

Locations of geophysical data points were obtained using a sub-meter Trimble Pro-XRS DGPS system. References to direction and location in this report are based on the US State Plane 1983 system, North Carolina 3200 zone, using the NAD 83 datum, with units in US survey feet. The locations of existing site features (building, curbs, signs, etc.) were recorded for later correlation with the geophysical data and for location references to the NCDOT drawings. The geophysical investigation consisted of an electromagnetic (EM) induction survey using a Geonics EM61-MK2 instrument, and a Ground-Penetrating Radar (GPR) survey using a Geophysical Survey Systems SIR-3000 system equipped with a 400 MHz antenna.

The EM61 data were collected along parallel survey lines spaced about 2.5 feet apart. The EM61 and DGPS data were recorded digitally using a field computer and later transferred to a desktop computer for data processing. The GPR data were collected over selected EM61 anomalies and over the planned boring locations.

3.0 DISCUSSION OF RESULTS

The contoured EM61 data are shown on Figures 2 and 3. The EM61 early time gate results are plotted on Figure 2. The early time gate data provide the most sensitive detection of metal object targets, regardless of size. Figure 3 shows the difference between the response of the top and bottom coils of the EM61 instrument (differential response). The difference is taken to remove the effect of surface and very shallowly buried metallic objects. Typically, the differential response emphasizes anomalies from deeper and larger objects such as UST's.

The early time gate and differential results show several anomalies attributed to known site features, and a linear anomaly probably in response to a buried storm sewer (Figures 3 and 4). GPR data were collected along several lines perpendicular to the suspected storm sewer to mark the approximate location of the storm sewer on the ground surface. The geophysical data do not indicate the presence of metal UST's in the areas surveyed on Parcel 24.

4.0 CONCLUSIONS

Our evaluation of the geophysical data collected on Parcel 24 of Project R-2408A and B in Franklin, NC indicates the following:

- The geophysical data do not indicate the presence of metal UST's in the areas surveyed.

5.0 LIMITATIONS

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

Thank you for the opportunity to serve you on this project. Please call if you need additional information or have any questions.

Sincerely,

SCHNABEL ENGINEERING SOUTH, P.C.

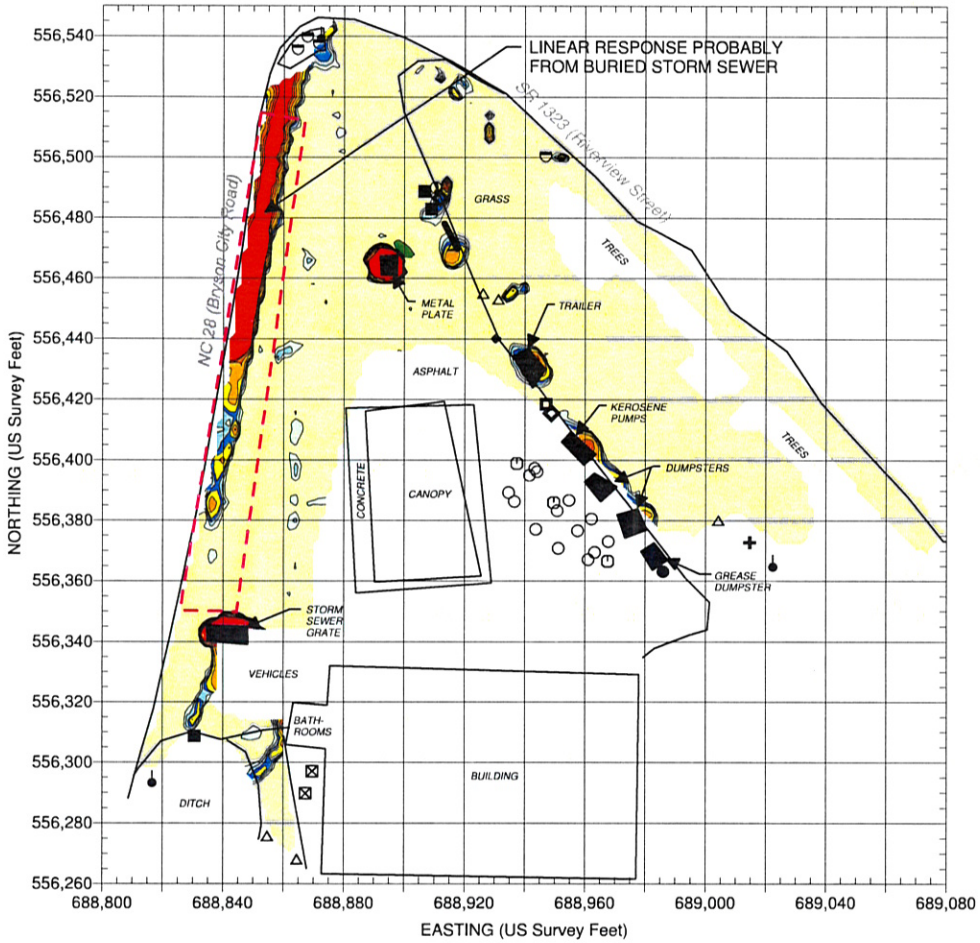
Jeremy S. Strohmeyer, L.G.
Project Manager

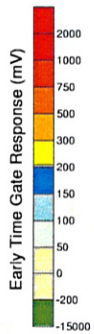
Edward D. Billington, L.G.
Senior Vice President

JS/NB
Attachment: Figures (3)
FILE: G:\2007 PROJECTS\07210023 (NCDOT 2007 GEOPHYSICAL SERVICES)\PHASE 10 (R-2408A AND B - FRANKLIN AND MACON CO)\REPORT\PARCEL 24\REPORT ON PARCEL 24.DOC

Parcel 24 – Khans of Franklin, Inc., looking south

Schnabel Engineering	NC Department of Transportation Geotechnical Engineering Unit	**PARCEL 24** **SITE PHOTO**
	State Project No. R-2408A and B Macon County, North Carolina	FIGURE 1





EXPLANATION

- UTILITY POLE
- GUY WIRE
- UST LID
- UTILITY LID
- METALLIC OBJECT
- METAL DRUM
- NCDOT ROW/EASEMENT MARKER
- SIGN
- MONITORING WELL
- ELECTRIC BOX
- TELEPHONE
- AIR PUMP
- GPR SURVEY AREA

Scale in US Survey Feet

0 40 80 120

Note: The contour plot shows the earliest and most sensitive time gate of the EM61 bottom coil/channel in millivolts (mV). The EM data were collected on May 22, 2008, using a Geonics EM61-MK2 instrument. Positioning for EM61 survey provided using a submeter Trimble ProXRS DGPS system. Coordinates are in the US State Plane 1983 System, North Carolina Zone 3200, using the NAD 1983 datum. GPR data were acquired on May 27, 2008, using a Geophysical Survey Systems SIR 3000 equipped with a 400 MHz antenna.

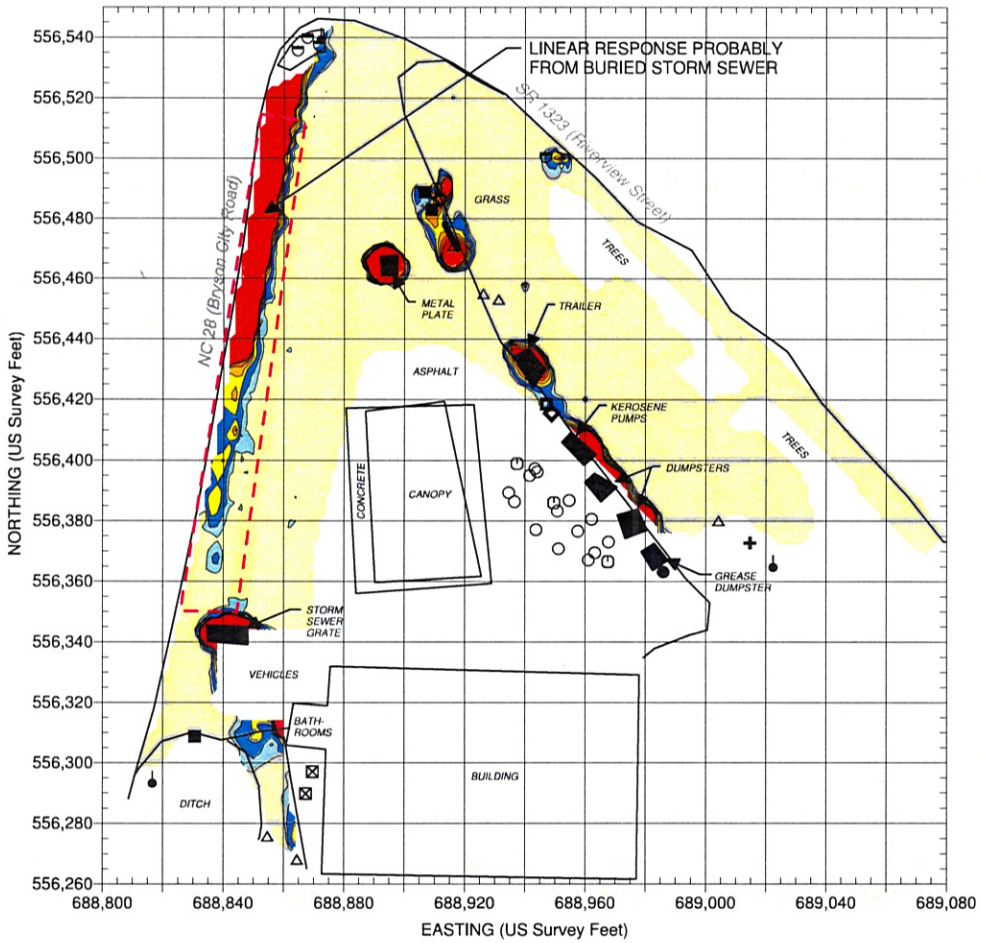
Schnabel Engineering

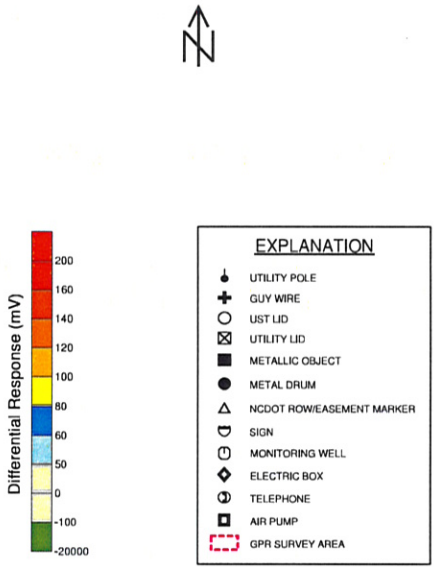
NC Department of Transportation
Geotechnical Engineering Group

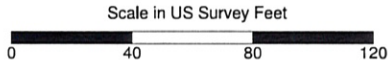
State Project R-2408A and B
Macon County, NC

PARCEL 24
EM61 EARLY TIME GATE RESULTS

FIGURE 2







Note: The contour plot shows the difference, in millivolts (mV), between the readings from the top and bottom coils of the EM61. The difference is taken to reduce the effect of shallow metal objects and emphasize anomalies caused by deeper metallic objects, such as pipes and tanks. The EM data were collected on May 22, 2008, using a Geonics EM61-MK2 instrument. Positioning for the EM61 survey provided using a submeter Trimble ProXRS DGPS system. Coordinates are in the US State Plane 1983 System, North Carolina 3200 Zone, using the NAD 1983 datum. GPR data were acquired on May 27, 2008, using a Geophysical Survey Systems SIR 3000 equipped with a 400 MHz antenna.

Schnabel Engineering	NC Department of Transportation Geotechnical Engineering Group State Project R-2408A and B Macon County, NC	**PARCEL 24** **EM61 DIFFERENTIAL RESULTS** FIGURE 3

Appendix C

Soil Boring Logs

Hart & Hickman
ENVIRONMENTAL CONSULTANTS

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)

BORING NUMBER 24-1

PROJECT: Franklin PSAs
JOB NUMBER: ROW.150
LOCATION: Franklin, NC

DEPTH (ft)	RECOVERY (%)	BLOW COUNT	OVA (ppm) BKG.	OVA (ppm) SAMP.	LITHOLOGY	MATERIAL DESCRIPTION	WELL DIAGRAM	DEPTH (ft)
0						Grass.		0
	100		0	66.7		Red clayey-silt with some sand and organics. Moist.		
						Red clayey-silt with some sand. Moist.		
5				0				5
	100			0				
				0		Red, brown, and black clayey-silt with some sand. Stiff. Moist.		
10				0				10
	100			0		Red clayey-silt with some sand. Stiff. Moist.		
						Red, brown, and black clayey-silt with some sand. Stiff. Moist.		
15				0				15
	100			0				
20				0		Bottom of borehole at 20.0 feet.		20
25								25

DRILLING CONTRACTOR: SEI
DRILL RIG/ METHOD: 6620 DT / Direct-Push Sleeve
SAMPLING METHOD: DPT Sleeves
LOGGED BY WP
DRAWN BY:

BORING STARTED 5/29/08
BORING COMPLETED: 5/29/08
TOTAL DEPTH: 20
SURFACE ELEV:
DEPTH TO WATER:

Remarks:

Borehole hand-augered to 4 feet. Soil sample collected at 0-2 feet for laboratory analysis. Boring installed on top of 8 foot embankment.

LOG OF BORING - HART HICKMAN.GDT - 7/8/08 15:12 - S:\AAA-MASTER GINT PROJECTS\ROW.150.GPJ

Hart & Hickman
ENVIRONMENTAL CONSULTANTS

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)

BORING NUMBER 24-2

PROJECT: Franklin PSAs
JOB NUMBER: ROW.150
LOCATION: Franklin, NC

DEPTH (ft)	RECOVERY (%)	BLOW COUNT	OVA (ppm) BKG.	OVA (ppm) SAMP.	LITHOLOGY	MATERIAL DESCRIPTION	WELL DIAGRAM	DEPTH (ft)
0						Grass.		0
			0	0		Red clayey-silt with sand and organics. Moist		
	100			0		Red clayey-silt with sand. Moist.		
						Orange clayey-silt with sand. Stiff. Moist.		
5				0				5
	100							
				0				
10				0				10
	100					Black clayey-silt with sand. Stiff. Moist.		
				0		Dark orange clayey-silt with sand.		
15				0				15
	100					Red, brown, and black clayey-silt with sand. Stiff. Moist.		
				0				
20				0		Bottom of borehole at 20.0 feet.		20
25								25

DRILLING CONTRACTOR: SEI
DRILL RIG/ METHOD: 6620 DT / Direct-Push Sleeve
SAMPLING METHOD: DPT Sleeves
LOGGED BY WP
DRAWN BY:

BORING STARTED 5/29/08
BORING COMPLETED: 5/29/08
TOTAL DEPTH: 20
SURFACE ELEV:
DEPTH TO WATER:

Remarks:

Borehole hand-augered to 4 feet. Soil sample collected at 8-10 feet for laboratory analysis. Boring installed on top of 8 foot embankment.

LOG OF BORING - HART HICKMAN.GDT - 7/8/08 15:12 - S:\AAA-MASTER GINT PROJECTS\ROW.150.GPJ

Hart & Hickman
ENVIRONMENTAL CONSULTANTS

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3334 Hillsborough Street
Raleigh, North Carolina 27607
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BORING NUMBER 24-3

PROJECT: Franklin PSAs
JOB NUMBER: ROW.150
LOCATION: Franklin, NC

DEPTH (ft)	RECOVERY (%)	BLOW COUNT	OVA (ppm) BKG.	OVA (ppm) SAMP.	LITHOLOGY	MATERIAL DESCRIPTION	WELL DIAGRAM	DEPTH (ft)
0						Grass.		0
	100		0	0		Red clayey-silt with some sand and organics.		
				1				
5				0		Brown and black clayey-silt with sand. Stiff. Moist		5
	100			0				
10				0				10
				0				
	100			0		Red, brown, and black clayey-silt with some sand. Stiff. Moist.		
15				0				15
	100			0		Red and tan clayey-silt. Stiff. Moist.		
20						Bottom of borehole at 20.0 feet.		20
25								25

DRILLING CONTRACTOR: SEI
DRILL RIG/ METHOD: 6620 DT / Direct-Push Sleeve
SAMPLING METHOD: DPT Sleeves
LOGGED BY WP
DRAWN BY:

BORING STARTED 5/29/08
BORING COMPLETED: 5/29/08
TOTAL DEPTH: 20
SURFACE ELEV:
DEPTH TO WATER:

Remarks:

Borehole hand-augered to 4 feet. Soil sample collected at 8-10 feet for laboratory analysis. Boring installed on top of 8 foot embankment.

LOG OF BORING - HART HICKMAN.GDT - 7/8/08 15:12 - S:\AAA-MASTER GINT PROJECTS\ROW.150.GPJ

Hart & Hickman
ENVIRONMENTAL CONSULTANTS

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)

BORING NUMBER 24-4

PROJECT: Franklin PSAs
JOB NUMBER: ROW.150
LOCATION: Franklin, NC

DEPTH (ft)	RECOVERY (%)	BLOW COUNT	OVA (ppm) BKG.	OVA (ppm) SAMP.	LITHOLOGY	MATERIAL DESCRIPTION	WELL DIAGRAM	DEPTH (ft)
0						Asphalt.		0
	100		0	0		Red-brown clayey-silt with sand and gravel. Moist.		
				0		Red and black clayey-silt with sand. Stiff. Moist.		
5	100			0		Orange clayey-silt with sand. Stiff. Moist.		5
				0		Brown and red clayey-silt with sand. Stiff. Moist.		
10	100			0		Tan silty-sand. Stiff. Moist		10
						Bottom of borehole at 12.0 feet.		
15								15
20								20
25								25

DRILLING CONTRACTOR: SEI
DRILL RIG/ METHOD: 6620 DT / Direct-Push Sleeve
SAMPLING METHOD: DPT Sleeves
LOGGED BY WP
DRAWN BY:

BORING STARTED 5/29/08
BORING COMPLETED: 5/29/08
TOTAL DEPTH: 12
SURFACE ELEV:
DEPTH TO WATER:

Remarks:

Hand-auger refusal at 3 feet. Soil sample collected at 2-4 feet for laboratory analysis.

LOG OF BORING - HART HICKMAN.GDT - 7/8/08 15:12 - S:\AAA-MASTER GINT PROJECTS\ROW.150.GPJ

Hart & Hickman
ENVIRONMENTAL CONSULTANTS

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)

BORING NUMBER 24-5

PROJECT: Franklin PSAs
JOB NUMBER: ROW.150
LOCATION: Franklin, NC

DEPTH (ft)	RECOVERY (%)	BLOW COUNT	OVA (ppm) BKG.	OVA (ppm) SAMP.	LITHOLOGY	MATERIAL DESCRIPTION	WELL DIAGRAM	DEPTH (ft)
0						Asphalt.		0
	100		0	0		Red clayey-silt with sand. Stiff. Moist.		
				0				
5				0		Quartz		5
	100					Red clayey-silt with sand. Stiff. Moist.		
				0		Orange clayey-silt with sand. Stiff. Moist.		
				0				
10	100					Red and black clayey-silt with coarse sand. Stiff. Moist.		10
				0				
						Bottom of borehole at 12.0 feet.		
15								15
20								20
25								25

DRILLING CONTRACTOR: SEI
DRILL RIG/ METHOD: 6620 DT / Direct-Push Sleeve
SAMPLING METHOD: DPT Sleeves
LOGGED BY WP
DRAWN BY:

BORING STARTED 5/29/08
BORING COMPLETED: 5/29/08
TOTAL DEPTH: 12
SURFACE ELEV:
DEPTH TO WATER:

Remarks:

Hand-auger refusal at one foot. Soil sample collected at 2-4 feet for laboratory analysis.

LOG OF BORING - HART HICKMAN.GDT - 7/8/08 15:12 - S:\AAA-MASTER GINT PROJECTS\ROW.150.GPJ

BORING NUMBER 24-6

Hart & Hickman
ENVIRONMENTAL CONSULTANTS

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: Franklin PSAs
JOB NUMBER: ROW.150
LOCATION: Franklin, NC

DEPTH (ft)	RECOVERY (%)	BLOW COUNT	OVA (ppm) BKG.	OVA (ppm) SAMP.	LITHOLOGY	MATERIAL DESCRIPTION	WELL DIAGRAM	DEPTH (ft)
0						Asphalt.		0
			0	0		Brown clayey-silt with sand and gravel. Stiff. Moist.		
	100			0		Red clayey-silt with sand. Stiff. Moist.		
5	21			0		Red clayey-silt with sand. Loose. Moist		5
				0				
10	100			0		Orange and black clayey-silt with coarse sand. Stiff. Moist.		10
						Bottom of borehole at 12.0 feet.		
15								15
20								20
25								25

DRILLING CONTRACTOR: SEI
DRILL RIG/ METHOD: 6620 DT / Direct-Push Sleeve
SAMPLING METHOD: DPT Sleeves
LOGGED BY WP
DRAWN BY:

BORING STARTED 5/29/08
BORING COMPLETED: 5/29/08
TOTAL DEPTH: 12
SURFACE ELEV:
DEPTH TO WATER:

Remarks:

Hand-auger refusal at one foot. Soil sample collected at 2-4 feet for laboratory analysis.

LOG OF BORING - HART HICKMAN.GDT - 7/8/08 15:12 - S:\AAA-MASTER GINT PROJECTS\ROW.150.GPJ

Hart & Hickman
ENVIRONMENTAL CONSULTANTS

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)

BORING NUMBER 24-7

PROJECT: Franklin PSAs
JOB NUMBER: ROW.150
LOCATION: Franklin, NC

DEPTH (ft)	RECOVERY (%)	BLOW COUNT	OVA (ppm) BKG.	OVA (ppm) SAMP.	LITHOLOGY	MATERIAL DESCRIPTION	WELL DIAGRAM
0						Asphalt.	
			0	0		Quartz	
	79			0		Red clayey silt with some sand and rock. Stiff. Moist to very moist	
5				0			
	100			0			
				0			
10	90			0		Quartz	
						Orange clayey-silt with some sand. Stiff. Moist.	
						Bottom of borehole at 12.0 feet.	
15							
20							
25							

DRILLING CONTRACTOR: SEI
DRILL RIG/ METHOD: 6620 DT / Direct-Push Sleeve
SAMPLING METHOD: DPT Sleeves
LOGGED BY WP
DRAWN BY:

BORING STARTED 5/29/08
BORING COMPLETED: 5/29/08
TOTAL DEPTH: 12
SURFACE ELEV:
DEPTH TO WATER:

Remarks:

Hand-auger refusal at one foot. Soil sample collected at 2-4 feet for laboratory analysis.

LOG OF BORING - HART HICKMAN.GDT - 7/8/08 15:12 - S:\AAA-MASTER GINT PROJECTS\ROW.150.GPJ

Appendix D

Laboratory Analytical Report

RESEARCH & ANALYTICAL LABORATORIES, INC.
Analytical/Process Consultations

RESEARCH & ANALYTICAL LABS. SIDNEY L. CHAMPION NC #34 DIRECTOR CERTIFIED ANALYSIS

RECEIVED
JUN 16 2008
BY:

June 11, 2008

Hart & Hickman, PC
2923 S. Tryon St. Suite 100
Charlotte, NC 28203
Attention: Matt Tendam

Chemical Analysis for Total Petroleum Hydrocarbons (TPH) Sampling identified as Franklin PSA's (A Hart & Hickman, PC Project #ROW.150, collected 28-29 May 2008)

Sample Identification	RAL Sample#	Date Taken	Time (hrs)	Quantitation Limit (mg/kg)	EPA Method 5030 (mg/kg)	EPA Method 3550 (mg/kg)
39-1 (2-4')	618465	05/29/08	1245	10	BQL	BQL
39-2 (2-4')	618466	05/29/08	1300	10	BQL	BQL
39-3 (2-4')	618467	05/29/08	1310	10	BQL	BQL
39-4 (2-4')	618468	05/29/08	1320	10	BQL	BQL
39-5 (2-4')	618469	05/29/08	1330	10	BQL	BQL
24-1 (0-2')	618470	05/29/08	0845	10	**13.3**	**17.4**
24-2 (8-10')	618471	05/29/08	0910	10	BQL	BQL
24-3 (8-10')	618472	05/29/08	0925	10	BQL	BQL
24-4 (2-4')	618473	05/29/08	1020	10	BQL	BQL
24-5 (2-4')	618474	05/29/08	1030	10	BQL	BQL
24-6 (2-4')	618475	05/29/08	1040	10	BQL	BQL
24-7 (2-4')	618476	05/29/08	1055	10	BQL	BQL
83-1 (10-12')	618477	05/28/08	1945	10	BQL	BQL
83-2 (10-12')	618478	05/28/08	2000	10	BQL	BQL
83-3 (10-12')	618479	05/28/08	2005	10	BQL	BQL
83-4 (10-12')	618480	05/28/08	2016	10	BQL	BQL
83-5 (10-12')	618481	05/28/08	2025	10	BQL	BQL
83-6 (10-12')	618482	05/28/08	2040	10	BQL	BQL
81-1 (3-5')	618483	05/28/08	1835	10	BQL	**31.6**
81-1 (10-12')	618484	05/28/08	1840	10	**13.6**	**59.4**
81-2 (0-2')	618485	05/28/08	1815	10	**23.2**	**375**
81-3 (10-12')	618486	05/28/08	1855	10	BQL	**13.3**

mg kg = milligrams per kilogram = parts per million (ppm)

BQL = Below Quantitation Limit

---- = Not Requested

EPA Method 3550 = Total Petroleum Hydrocarbons as Diesel

EPA Method 5030 = Total Petroleum Hydrocarbons as Gasoline

Research & Analytical Laboratories, Inc.
Analytical/Process Consultations

RESEARCH & ANALYTICAL LABS. SIDNEY L. CHAMPION NC #34 DIRECTOR CERTIFIED ANALYSIS

June 11, 2008

Hart & Hickman, PC
2923 S. Tryon St. Suite 100
Charlotte, NC 28203
Attention: Matt Tendam

Chemical Analysis for Sample Locations Identified as Franklin PSA's (A Hart & Hickman, PC Project #ROW.150, collected 28-29 May 2008)

Sample Identification	RAL Sample#	Date Taken	Time (hrs)	Moisture (%)
39-1 (2-4')	618465	05/29/08	1245	17.8
39-2 (2-4')	618466	05/29/08	1300	19.6
39-3 (2-4')	618467	05/29/08	1310	20.9
39-4 (2-4')	618468	05/29/08	1320	21.4
39-5 (2-4')	618469	05/29/08	1330	23.4
24-1 (0-2')	618470	05/29/08	0845	25
24-2 (8-10')	618471	05/29/08	0910	18.2
24-3 (8-10')	618472	05/29/08	0925	22.2
24-4 (2-4')	618473	05/29/08	1020	20.9
24-5 (2-4')	618474	05/29/08	1030	20.5
24-6 (2-4')	618475	05/29/08	1040	16.1
24-7 (2-4')	618476	05/29/08	1055	20.5
83-1 (10-12')	618477	05/28/08	1945	22.3
83-2 (10-12')	618478	05/28/08	2000	19.7
83-3 (10-12')	618479	05/28/08	2005	33.4
83-4 (10-12')	618480	05/28/08	2016	20.8
83-5 (10-12')	618481	05/28/08	2025	20.2
83-6 (10-12')	618482	05/28/08	2040	37.3
81-1 (3-5')	618483	05/28/08	1835	26.2
81-1 (10-12')	618484	05/28/08	1840	23.2
81-2 (0-2')	618485	05/28/08	1815	5.1
81-3 (10-12')	618486	05/28/08	1855	15.5

% = Percent

---- = Not Requested

Research & Analytical Laboratories, Inc.

Analytical / Process Consultations
Phone (336) 996-2841

CHAIN OF CUSTODY RECORD

COMPANY: HART & HICKMAN
STREET ADDRESS: 2923 S. TRYON St. SUITE 100
CITY, STATE, ZIP: CHARLOTTE, NC 28203
CONTACT: MATT TENDAM PHONE: 704-887-4623

JOB NO.: ROW. 150
PROJECT: FRANKLIN PSAs
SAMPLER NAME (PLEASE PRINT): CAROL MATTHEWS
SAMPLER SIGNATURE: C. V. Matthews

SAMPLE NUMBER (LAB USE ONLY)	DATE	TIME	COMP	GRAB	TEMP °C	RES Cl	CHLORINE REMOVED (Y or N)	SAMPLE MATRIX (S or W)	SAMPLE LOCATION / I.D.	NO. OF CONTAINERS	REQUESTED ANALYSIS
018470	052908	0845						S	24-1 (0-2')	4	TPH-GRO/DRO & % Moisture
471		0910							24-2 (8-10')	4	
472		0925							24-3 (8-10')	4	
473		1020							24-4 (2-4')	4	
474		1030							24-5 (2-4')	4	
475		1040							24-6 (2-4')	4	
476		1055							24-7 (2-4')	4	

WATER / WASTEWATER | MISC.

2L G (BNA, Herb. / Pest.)	2 40ml Vials (VOA) HCL	250ml G (TOX)	250ml P (TOC) H_2SO_4	1L P.G (BOD, TSS, Unpreserved, etc.)	1L G (Phenol, Oil & Grease) H_2SO_4	1L P.G (COD, N, P) H_2SO_4	1L P.G (Metals: Hardness) HNO_3	1L P.G (CYANIDE) NaOH	Sterile P.G (Coliform)	40ml v.vials (VOA) CH_3OH	40ml vial (VOA)	4 oz. G	REQUESTED ANALYSIS
										2	1	1	TPH-GRO/DRO & % Moisture

RELINQUISHED BY	DATE/TIME	RECEIVED BY
C. V. Matthews	052908 0800	M. Bowman 5/30/08 10:20
M. Bowman	5/30/08	Amy Perry

REMARKS: INVOICE TO NCDOT - WBS #: 34427.1.1
PROJECT: R-2408A & B

ONE 3

SAMPLE TEMPERATURE AT RECEIPT _____ °C