PRELIMINARY SITE ASSESSMENT

GORDON MASON PROPERTY – PARCEL 038
STOP N' SHOP
1899 RAY ROAD
SPRING LAKE, HARNETT COUNTY, NORTH CAROLINA
STATE PROJECT: U-3465
WBS ELEMENT: 39017.1.1
OCTOBER 24, 2012

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1.0 Introduction

Pyramid Environmental & Engineering P.C. (Pyramid) has prepared this Preliminary Site Assessment (PSA) report documenting background information, field activities, assessment activities, findings, conclusions, and recommendations for the Gordon Property (Parcel 038). The property (Parcel 038) is owned by Gordon Mason and contains an active convenience store located at 1899 Ray Road, Spring Lake, Harnett County, North Carolina. Previously, the store was called Dalton Holder Store and Holders Grocery, and the former service station had a UST system. This preliminary site assessment was conducted on behalf of the North Carolina Department of Transportation (NCDOT) in accordance with Pyramid's August 17, 2012 technical proposal.

The purpose of this assessment was to determine the presence or absence of underground storage tanks (USTs) and impacted soils at the subject property in the proposed right-of-way and construction easement areas related to the widening of Ray Road (State Project U-3465). The location of the subject site is shown on **Figure 1**, and a site map is presented as **Figure 2**. **Figure 3** presents a scaled out perspective of the entire Parcel showing property boundaries, property owner name, and station number/alignment, from the NCDOT engineering files provided to Pyramid.

1.1 Background Information

Based on the NCDOT's July 23, 2012, *Request for Technical and Cost Proposal*, the PSA was conducted within the NCDOT right of way (ROW), easements, or proposed utility easements. The PSA included the following:

- Research the property for past uses and possible releases.
- Conduct a preliminary geophysical site assessment and limited soil assessment in the proposed ROW and easements.
- Report the depth to groundwater and obtain one groundwater sample for the site for laboratory analysis by installing a temporary monitoring well.

1.2 Project Information

On September 5, 2012, Pyramid personnel talked with the tenant and property owner's representative (Gordon Mason's son) of Parcel 038 and received access to the property to complete the PSA field work. Gordon Mason and his son both live on the Parcel 038 property, and Mr. Mason's son phone number is (910) 308 – 6693.

Prior to field activities, a Health and Safety Plan was prepared. Prior to drilling activities, the public underground utilities were located and marked by the North Carolina One-Call Service. A private utility locator, Northstate Utility Locating Incorporated of Colfax, North Carolina was used to mark the on site private, buried utilities.

As stated previously, the Gordon Mason Property (Parcel 038) contains an active convenience store. Previously the store was called Dalton Holder Store and Holders Grocery. According to the NCDENR UST Registration database, the former UST system was comprised of three (3) 3,000-gallon gasoline USTs. The Facility ID number for the site is 0-017886.

Pyramid also completed PSAs for an additional six properties along Ray Road (Parcel #'s 004, 009, 019, 021, 022, and 069). As requested by the NCDOT, Pyramid prepared separate PSA reports for each property.

2.0 Site History

Pyramid completed a records review, NCDENR file review, interviewed NCDENR personnel, and reviewed aerial photographs in order to determine past uses of the property. Pyramid reviewed the 1938, 1955, 1964, 1971, 1983, 1993, 1999, and 2010 aerial photographs for past uses. Historical information reviewed as part of the PSA indicated that the subject site was first developed for commercial use between 1964 and 1971. The earliest aerial to show the building was the 1971 aerial. The canopy was first seen in the 1993 aerial photograph. The 1938 air photo showed the property to be undeveloped wooded land. The 1955 and 1964 aerial photographs indicate the land was most likely used for residential and agricultural purposes. The 1938, 1955, 1964, 1971, 1983, 1993, 1999, and 2010 aerial photographs are included in **Appendix A**.

On September 7, 2012, Pyramid interviewed Mr. James Brown, the incident manager for Harnett County with the NCDENR UST Section. Mr. Brown stated, according to the NCDENR Incident Database, a UST release had occurred at the site (Incident # 17793), and an aboveground storage tank (AST) release had occurred at the site (Incident # 85611). Pyramid requested a NCDNER file review from the Fayetteville Regional Office. On September 11, 2012, Pyramid completed the NCDENR file review for the Gordon Mason Property site (Parcel 038).

The file review indicated the three 3,000-gallon gasoline USTs were closed by excavation and removal on July 28, 1997. The file review indicated a release had occurred from the former UST system (Dalton Holder Store). Portions of the *UST Closure and Site Check Report* dated August 28, 1997 are included in **Appendix B**. According to the *Initial Abatement Measures and Site Check Report* dated December 19, 1997 (Dalton Holder Store), approximately 135 tons of contaminated soil was excavated from the former UST basin. The laboratory results for the soil samples collected from the limits of the soil

excavation were below the NCDENR Action Level of 10 mg/kg. Portions of the *Initial Abatement Measures and Site Check Report* are included in **Appendix B**.

During the NCDENR file review, Pyramid reviewed the aboveground storage tank (AST) release. According the *Comprehensive Site Assessment* (CSA) dated August 20, 2001, a cable contractor severed the gasoline product lines from the ASTs to the pump island in July 2000. Approximately 1,600-gallons of gasoline was released from the broken product lines. In October and November 2000, approximately 500 tons of gasoline impacted soil was excavated from the release area. Portions of the CSA report are included in Appendix B. In November 2002, a soil vapor extraction system and air sparge system were installed to clean up residual soil contamination and petroleum impacted groundwater. Portions of the Corrective Action Plan (CAP) are included in Appendix B. Portions of the two latest groundwater monitoring reports are included in Appendix B. Most of the remaining petroleum impacted soil and groundwater is located outside of the proposed ROW and easements.

As part of the PSA, a background review to identify onsite and potential off-site sources of environmental contamination was performed. The background review included Federal and Non-Federal database searches. FirstSearch Technology Corporation, a commercially available database service was used for the search. Pyramid ordered a road corridor search for the Ray Road sites. The database search indicated the site (Parcel 038) was on the NCDENR UST Registered tank data base, the NCDENR Leaking UST Incident database (Dalton Holder Store #17793), and the NCDENR Spills database (Holders Grocery #85611) for release from an AST system. The Environmental FirstSearch Report is included in **Appendix C**.

3.0 Geophysical Investigation

Geophysical investigation results indicate there are no metallic USTs present on the surveyed area at this time. The majority of the EM61 anomalies mapped can be directly attributed to visible objects at the ground surface such as metal water meter covers, metal signs, storm drains, utilities, and concrete traffic medians.

GPR scans were performed and data viewed in real time across all EM61 anomalies that could not be attributed to visible objects at the ground surface. The GPR scans did not indicate the presence of any metallic USTs at the site, suggesting the isolated minor EM61 anomalies are the result of isolated areas of buried metallic debris that is not attenuated by the GPR signal. The geophysical investigation suggests that the area containing the proposed ROW and easement at Parcel 038 does <u>not</u> contain metallic USTs. The full details of the geophysical investigation are included in the Geophysical Investigation Report as **Appendix D**.

4.0 Soil Sampling Activities & Results

4.1 Soil Assessment Field Activities

On September 13 and 14, 2012, Pyramid mobilized to the site to drill soil borings, install a temporary monitoring well, and collect the proposed soil samples and groundwater sample for the PSA. The soil borings and temporary well were completed using a track mounted Geoprobe® Direct-Push rig. Ten (10) soil borings were advanced on the subject property within the proposed NCDOT ROW, Easement, and Proposed Utility Easement. Soil borings 38-1, 38-2, 38-3, and 38-10 were installed adjacent to the gasoline product lines from the ASTs to the pump island. Soil borings 38-4 and 38-7 were advanced adjacent to the pump island. Soil boring 38-6 was installed adjacent to the former UST basin and product lines, and soil boring 38-5 was installed adjacent to the former UST product lines. Soil boring 38-9 was installed adjacent to the AST product lines and pump island. Soil boring 38-8 was installed between the pump island and Ray Road. The selected locations were chosen for sampling near the former UST system, current product lines from the ASTs, and the sampling locations were also chosen to avoid public utilities along Ray Road and private buried utilities. The locations of the borings are shown on **Figure 2**.

Soil samples were continuously collected in five foot long disposable sleeves from each boring for geologic description, and visual examination for signs of contamination. Soil recovered from each sleeve was field screened using a Photo-Ionization Detector (PID) every 2 to 2.5 feet depending on the soil recovery of each sleeve. In general, the soil sample with the highest PID readings was selected from each boring for laboratory analysis. The soil boring logs with the soil descriptions, visual examination, and PID screening results are included in **Appendix E**. The PID field screening results are summarized in **Table 1**.

In order to prevent cross contamination, new disposable nitrile gloves were worn by the sampling technician during the sampling activities, and were changed between samples. The soil samples selected for laboratory analyses were placed in laboratory prepared containers and shipped to SGS Laboratories in Wilmington, NC. The selected soil samples were analyzed for total petroleum hydrocarbons (TPH) as gasoline range organics (GRO) by EPA Method 8015C/5035 and diesel range organics (DRO) by EPA Method 8015C/3541.

4.2 Soil Sample Analytical Results

The laboratory results for soil sample 38-1(7.5-10) detected TPH-DRO at a concentration of 1060 mg/kg and TPH-GRO at a concentration of 1150 mg/kg at a depth of 7.5 to 10 feet bls. The NCDENR Action Levels for TPH-DRO and TPH-GRO is 10 mg/kg. The laboratory results for soil samples 38-2(3-5), 38-3(3-5), 38-4(5-7.5), 38-5(2-5), 38-6(7.5-10), 38-7(7.5-10), 38-8(5-7.5), 38-9(3-5), and 38-10(2-5) did not detect any TPH-DRO or TPH-GRO above laboratory detection limits. The soil sample laboratory results are summarized in **Table 2**. A copy of the laboratory report and chain-of-custody is included in **Appendix F**.

4.3 Temporary Monitoring Well Installation

On September 14, 2012, Pyramid converted soil boring 38-8 into a 1-inch diameter temporary monitoring well. Soil boring 38-8 was completed to a total depth of 38 feet bls. The temporary well was constructed with 28 feet of 1-inch diameter of schedule 80 PVC casing and 10 feet of 1-inch diameter of schedule 80 PVC slotted screen. The temporary well was set in the boring with 10 feet of slotted screen at the bottom of the well.

On September 14, 2012, temporary monitoring well 38-8 was gauged using a properly decontaminated electric water level probe. The depth-to-groundwater was gauged at 36 feet bls. The temporary monitoring well was sampled using a new 1-inch disposal bailer. After the well was gauged and sampled, the temporary monitoring well was properly abandoned by the drillers by removing all the casing, and filling the bore hole with bentonite chips and portland cement.

4.4 Groundwater Analytical Results

The groundwater sample 38-8(TW) was placed in laboratory prepared containers for analysis of volatile organic compounds (VOCs) by EPA Method 6200B, and the sample was shipped to SGS Laboratories in Wilmington, NC. The laboratory results detected compounds chloroform (0.44 µg/l), toluene (0.17 µg/l), total xylenes (1.35 µg/l), and 1,3,5-Trimethylbenzene (0.8 µg/l) above laboratory detection limits, but below the NCAC 2L Groundwater Standards for each compound. No other compounds were detected above laboratory limits. The groundwater results for sample 38-8(TW) are summarized in **Table 3**. A copy of the laboratory report and chain-of-custody is included in **Appendix F**.

5.0 Conclusions and Recommendations

As requested by NCDOT, Pyramid has completed a PSA at Parcel 038 located 1899 Ray Road, Harnett County, Spring Lake, NC. According to the NCDENR UST Registration database, a former UST system at the property was comprised of three (3) 3,000-gallon gasoline USTs. The current AST system consists of three (3) gasoline ASTs. Pyramid completed the NCDENR file review for the Parcel 038 site. The NCDENR file review indicated the three (3) 3,000-gallon gasoline USTs were closed by excavation and removal, and approximately 135 tons of petroleum impacted soil was excavated from the former UST basin for proper disposal. The NCDNER file review indicated a release had occurred from both the former UST and the current AST system. The file review of the AST release indicated approximately 500 tons of petroleum impacted soil was excavated from the release area. In November 2002, a soil vapor extraction system and air sparge system was installed to cleanup the residual soil contamination and groundwater contamination. The following is a summary of the assessment activities and results.

5.1 Geophysical Investigation

GPR scans were performed and data viewed in real time across all EM61 anomalies that could not be attributed to visible objects at the ground surface. The GPR scans did not indicate the presence of any metallic USTs at the site, suggesting the isolated minor EM61 anomalies are the result of isolated areas of buried metallic debris that is not attenuated by the GPR signal. The geophysical investigation suggests that the proposed ROW and easement areas at the property do not contain metallic USTs.

5.2 Limited Soil Assessment

Soil borings 38-1, 38-2, 38-3, 38-9, and 38-10 were installed adjacent to the current product lines and pump island. Soil borings 38-4, 38-5, and 38-7 were advanced adjacent to the former UST product lines and pump island. Soil boring 38-6 was installed adjacent to the former UST basin and product lines, and soil boring 38-8 was installed between the pump island and Ray Road.

The laboratory results for soil sample 38-1(7.5-10) detected TPH-DRO at a concentration of 1060 mg/kg and TPH-GRO at a concentration of 1150 mg/kg at a depth of 7.5 to 10 feet bls. The NCDENR Action Levels for TPH-DRO and TPH-GRO is 10 mg/kg. The laboratory results for soil samples 38-2(3-5), 38-3(3-5), 38-4(5-7.5), 38-5(2-5), 38-6(7.5-10), 38-7(7.5-10), 38-8(5-7.5), 38-9(3-5), and 38-10(2-5) did not detect any TPH-DRO or TPH-GRO above laboratory detection limits.

The UST closure and site check report reviewed by Pyramid indicated a petroleum release from both the former UST system and the current AST system. The limited soil assessment completed by Pyramid and discussed in this PSA confirmed a petroleum release from the current AST system.

5.3 Limited Groundwater Assessment

Soil boring 38-8 was converted to a 1-inch diameter temporary monitoring well to a total depth of 38 feet bls. The depth-to-groundwater was gauged at 36 feet bls. The laboratory results for groundwater sample 38-8(TW) detected compounds chloroform (0.44 µg/l), toluene (0.17 µg/l), total xylenes (1.35 µg/l), and 1,3,5-Trimethylbenzene (0.8 µg/l) above laboratory detection limits, but below the NCAC 2L Groundwater Standards for each compound. No other compounds were detected above laboratory limits.

5.4 Monitor and Supply Wells

Review of the CSA for the property also indicated 3 monitor wells within the project boundaries, one of which had been destroyed or abandoned and two that were active. Pyramid's on-site inspection found the active monitor well (MW-3) to the south of the store building (shown on **Figure 2**). The well was also evidenced in the geophysical survey. Pyramid did not find any evidence of the second active well MW-8 during the inspection. The third well, MW-14, was listed as destroyed.

5.5 Recommendations

Since releases have previously occurred at this site, it is possible the NCDOT may encounter petroleum impacted soil over the NCDENR Action Levels or petroleum impacted soil under the NCDENR Action Levels during road and ROW construction.

If the petroleum impacted soil is excavated near soil boring 38-1, located along the proposed utility easement, to a depth of 10 feet, approximately 230 cubic yards of petroleum impacted soil may be encountered. Pyramid estimates approximately 115 cubic yards of impacted soil may be encountered from 0 to 5 feet near soil boring 38-1.

If impacted soil is encountered and removed from the former UST basin, the impacted soil should be managed according to NCDENR DWM UST Section Guidelines and disposed of at a permitted facility. Petroleum impacted soil from a UST system is considered non-hazardous waste. A list of permitted soil remediation facilities can be found on the NCDENR DWM UST Section web-page (http://portal.ncdenr.org/web/wm/ust/soilsites).

6.0 Limitations

The estimated volumes of petroleum contaminated soil are based on the limited data points and soil samples collected by Pyramid for this preliminary investigation. The actual amount of petroleum impacted/contaminated soil may vary depending on the actual grading and excavation plan for the project within the affected ROW and easement.

The results of this preliminary investigation are limited to the boring locations completed during this limited assessment and presented in this report. The laboratory results only reflect the current conditions at the locations sampled on the date this Preliminary Site Assessment was performed.

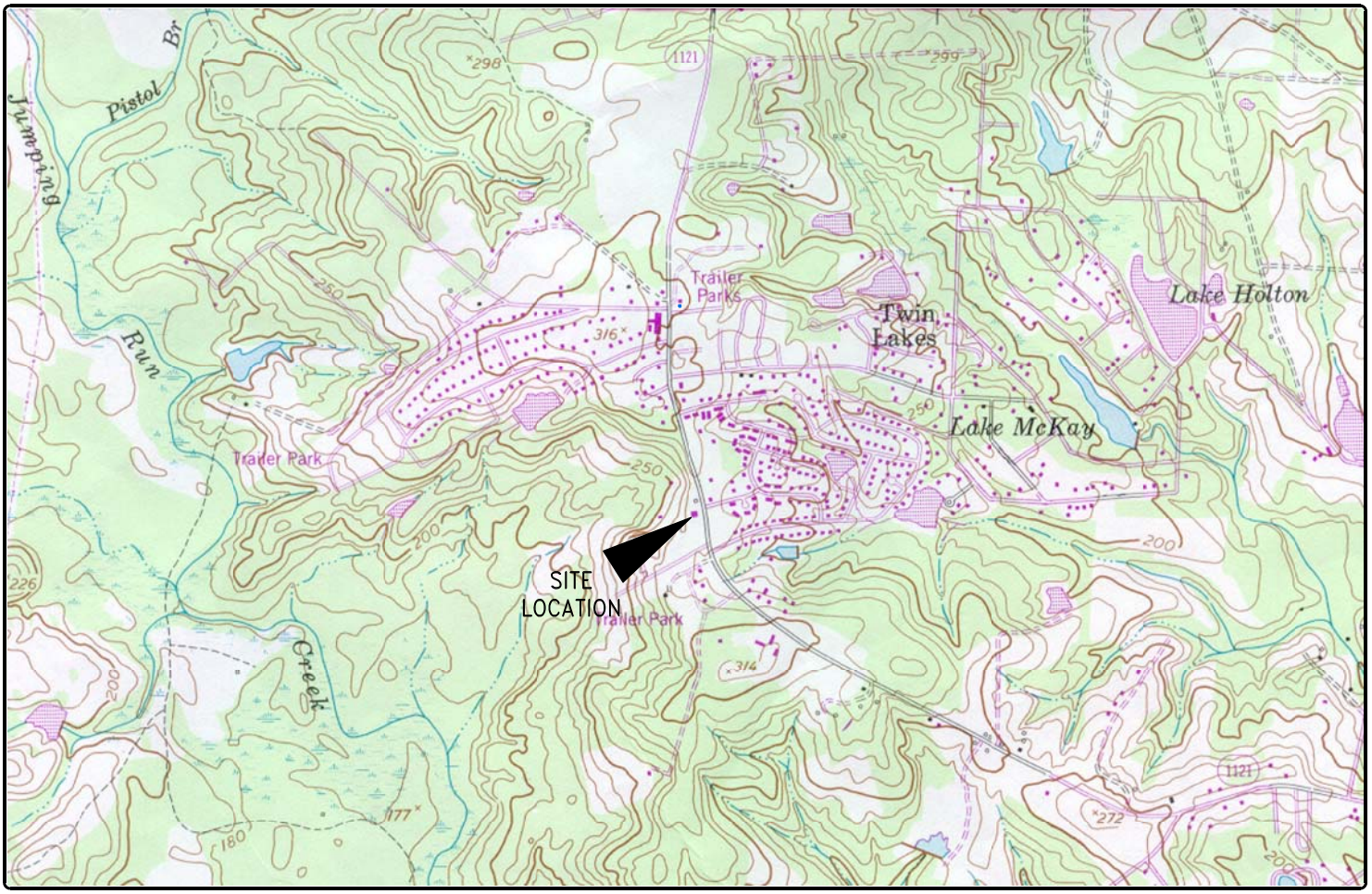
7.0 Closure

This report was prepared for, and is available solely for use by NCDOT and their designees. The contents thereof may not be used or relied upon by any other person without the express written consent and authorization of Pyramid Environmental & Engineering, P.C. (Pyramid). The observations, conclusions, and recommendations documented in this report are based on site conditions and information reviewed at the time of Pyramid's investigation. Pyramid appreciates the opportunity to provide this environmental service.

FIGURES

USGS TOPOGRAPHIC MAP

SITE: 1899 RAY ROAD LOCATION: SPRING LAKE, NORTH CAROLINA



USGS IDENTIFICATION

USGS 7.5 MINUTE MAP	MANCHESTER, NC
ORIGINAL DATE:	1957
PHOTOREVISION DATE:	1987

	PRIMARY HIGHWAY, HARD SURFACE
	SECONDARY HIGHWAY, HARD SURFACE
	LIGHT-DUTY ROAD HARD OR IMPROVED SURFACE
	UNIMPROVED ROAD
	STATE ROAD
	U.S. ROUTE
	INTERSTATE ROUTE

SCALES

MILES: 1/2 0 1

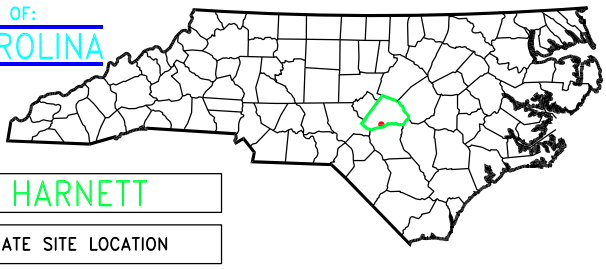
FEET: 1000 0 2000 4000 6000

1" = 2000'

NOTES:
- TOPOGRAPHICAL CONTOUR INTERVAL = 10 FEET
- PHOTOREVISIONS DENOTED IN PURPLE

MAGNETIC NORTH

COUNTY MAP OF: NORTH CAROLINA



COUNTY: HARNETT

APPROXIMATE SITE LOCATION

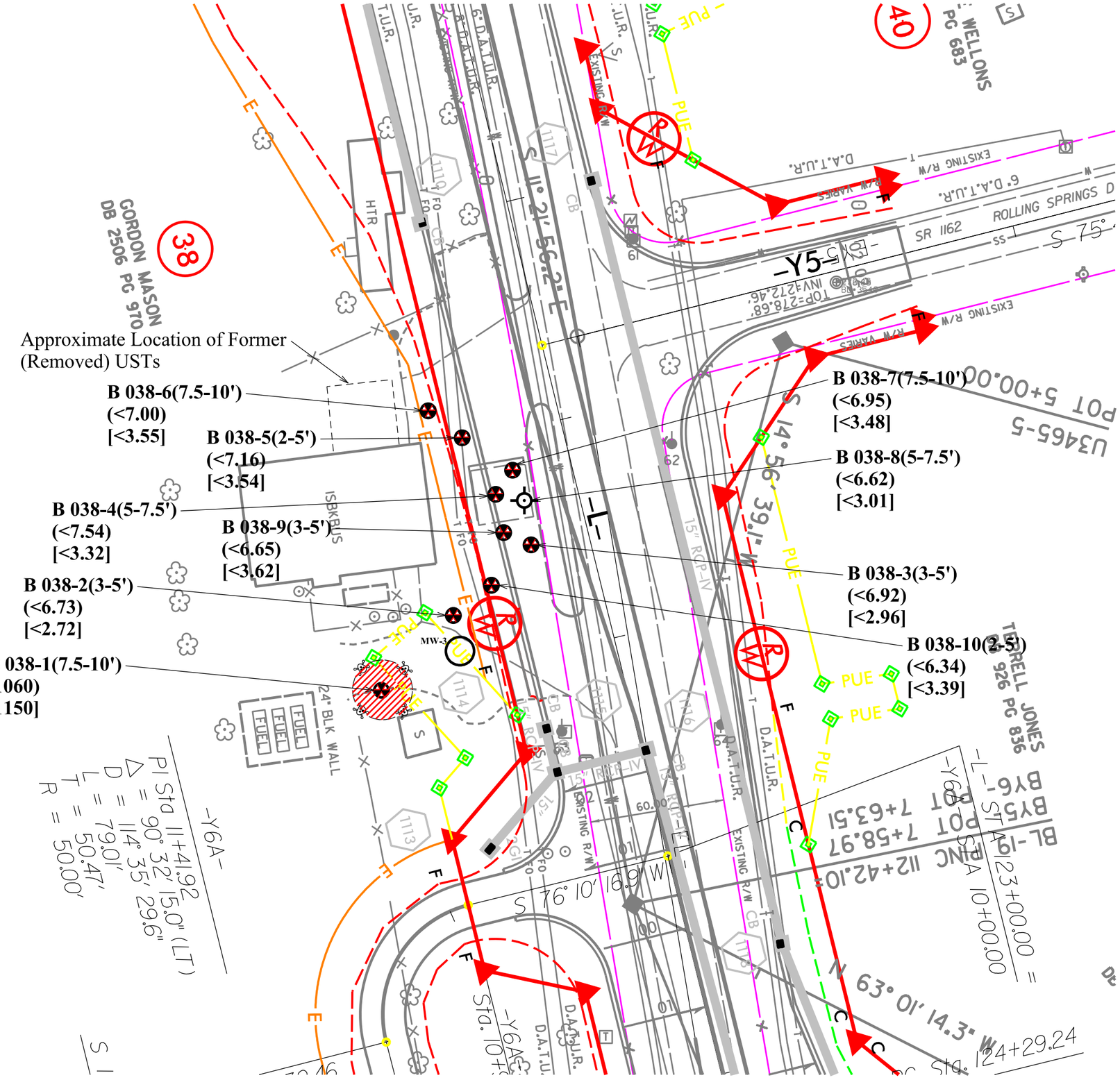
PYRAMID ENVIRONMENTAL & ENGINEERING, P.C.

CLIENT:	NC DOT U-3465
PROPERTY NAME:	1899 RAY RD. PARCEL 038
CITY:	SPRING LAKE
STATE:	NORTH CAROLINA
TITLE:	TOPOGRAPHIC MAP
SCALE:	1"=2000'
DRAWN BY:	KAM
CHECK BY:	TDL
DATE:	9/21/12
JOB NO.:	2012-228
TYPE:	PHASE II
DRAWING NAME:	USGSTOPO
FIGURE NUMBER:	1

NOTES

TOPOGRAPHIC MAP USED IN THIS GRAPHIC IS MAPPED, EDITED, AND PUBLISHED BY THE UNITED STATES GEOLOGIC SURVEY, DEPARTMENT OF THE INTERIOR, RESTON VIRGINIA.

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS.



LEGEND

- PROPOSED UTILITY EASEMENT
- EXISTING ROW
- EXISTING PROPERTY BOUNDARY
- PROPOSED ROW
- PROPOSED CONST. EASEMENT
- PROP. DRAINAGE UTIL. EASEMENT
- PROPOSED SS CUT LINE
- PROPOSED SS FILL LINE
- PROPOSED SS TRANSITION LINE
- PROPOSED DRAINAGE PIPING
- PROPOSED DRAINAGE EASEMENT
- PROPOSED CATCH BASIN
- SOIL SAMPLE BORING LOCATION
- BORING CONVERTED TO MW
- AREA OF CONTAMINATION (>BDL, <10 PPM)
- AREA OF CONTAMINATION (>10 PPM)
- POSSIBLE UST
- PROBABLE UST

(<6.1) TPH-DRO concentration (mg/kg)

[<6.1] TPH-GRO concentration (mg/kg)

MW-3 MONITOR WELL

N

0 50 100

FEET

TITLE
SOIL BORING LOCATIONS AND ESTIMATED AREA OF CONTAMINATION

PROJECT
NCDOT ROW PROJECT U-3465 (3907.1.1)
GORDON MASON PROPERTY - PARCEL 038
RAY ROAD, HARNETT COUNTY, NORTH CAROLINA

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DATE: 9-19-12	REVISION NO. 0
PYRAMID PROJECT NO. 2012-228	FIGURE NO. 2

LEGEND

- PROPOSED UTILITY EASEMENT
- EXISTING ROW
- EXISTING PROPERTY BOUNDARY
- PROPOSED ROW
- PROPOSED CONST. EASEMENT
- PROP. DRAINAGE UTIL. EASEMENT
- PROPOSED SS CUT LINE
- PROPOSED SS FILL LINE
- PROPOSED SS TRANSITION LINE
- PROPOSED DRAINAGE PIPING
- PROPOSED DRAINAGE EASEMENT
- PROPOSED CATCH BASIN
- SOIL SAMPLE BORING LOCATION
- BORING CONVERTED TO MW
- AREA OF CONTAMINATION (>BDL, <10 PPM)
- AREA OF CONTAMINATION (>10 PPM)
- POSSIBLE UST
- PROBABLE UST
- (<6.1) TPH-DRO concentration (mg/kg)
- [<6.1] TPH-GRO concentration (mg/kg)
- MONITOR WELL
- PARCEL 038 BOUNDARY

N

0 100 200

FEET

TITLE

PROPERTY BOUNDARIES AND OWNER/STATION INFORMATION

PROJECT

NCDOT ROW PROJECT U-3465 (3907.1.1)
GORDON MASON PROPERTY - PARCEL 038
RAY ROAD, HARNETT COUNTY, NORTH CAROLINA

PYRAMID ENVIRONMENTAL & ENGINEERING, P.C.
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DATE: 9-19-12	REVISION NO. 0
PYRAMID PROJECT NO. 2012-228	FIGURE NO. 3

TABLES

TABLE 1

Summary of PID Screening Results

NCDOT Project U-3465

1899 Ray Road - Parcel 038

Harnett County, Spring Lake, North Carolina

SOIL BORING	SAMPLE ID	DEPTH (feet bgs)	PID READINGS (PPM)
38-1	38-1(2-5)	2 to 5	5
	38-1(5-7.5)	5 to 7.5	190
	38-1(7.5-10)	7.5 to10	**800**
38-2	38-2(3-5)	3 to 5	**50**
	38-2(5-7.5)	5 to 7.5	15
	38-2(7.5-10)	7.5 to10	35
38-3	38-3(3-5)	3 to 5	**15**
	38-3(5-7.5)	5 to 7.5	15
	38-3(7.5-10)	7.5 to10	15
38-4	38-4(3-5)	3 to 5	5
	38-4(5-7.5)	5 to 7.5	**10**
	38-4(7.5-10)	7.5 to 10	5
38-5	38-5(2-5)	2 to 5	**5**
	38-5(5-7.5)	5 to 7.5	0
	38-5(7.5-10)	7.5 to 10	0
38-6	38-6(3-5)	3 to 5	15
	38-6(5-7.5)	5 to 7.5	5
	38-6(7.5-10)	7.5 to 10	**20**
38-7	38-7(3-5)	3 to 5	15
	38-7(5-7.5)	5 to 7.5	25
	38-7(7.5-10)	7.5 to 10	**70**
38-8	38-8(3-5)	3 to 5	25
	38-8(5-7.5)	5 to 7.5	**35**
	38-8(7.5-10)	7.5 to 10	30
	38-8(13-15)	13 to 15	35
38-9	38-9(3-5)	3 to 5	**55**
	38-9(5-7.5)	5 to 7.5	15
	38-9(7.5-10)	7.5 to 10	40
38-10	38-10(2-5)	2 to 5	**40**
	38-10(5-7.5)	5 to 7.5	20
	38-10(7.5-10)	7.5 to 10	15

bgs= below ground surface

PID= photo-ionization detector

PPM= parts-per-million

TABLE 2

Summary of Soil Sample Analytical Results

NCDOT Project U-3465

1899 Ray Road - Parcel 038

Harnett County, Spring Lake, North Carolina

SAMPLE ID	DATE	DEPTH (feet)	PID (ppm)	EPA Method 3550 DRO (mg/kg)	EPA Method 5035 GRO (mg/kg)
38-1(7.5-10)	9/13/2012	7.5 to 10	800	**1060**	**1150**
38-2(3-5)	9/13/2012	3 to 5	50	<6.73	<2.72
38-3(3-5)	9/13/2012	3 to 5	15	<6.92	<2.96
38-4(5-7.5)	9/14/2012	5 to 7.5	10	<7.54	<3.32
38-5(2-5)	9/14/2012	2 to 5	5	<7.16	<3.54
38-6(7.5-10)	9/14/2012	7.5 to 10	20	<7.00	<3.55
38-7(7.5-10)	9/14/2012	7.5 to 10	70	<6.95	<3.48
38-8(5-7.5)	9/14/2012	5 to 7.5	35	<6.62	<3.01
38-9(3-5)	9/14/2012	3 to 5	55	<6.65	<3.62
38-10(2-5)	9/14/2012	2 to 5	40	<6.34	<3.39
NC Initial Cleanup Level - UST Section for 5035/5030-GRO; 3550-DRO				10	10

PID= photo-ionizaton detector
PPM= parts-per-million
GRO= Gasoline Range Organics
DRO= Diesel Range Organics
mg/kg= micograms-per-kilogram

TABLE 3

Summary of Groundwater Analytical Results

NCDOT Project U-3465

1899 Ray Road - Parcel 038

Harnett County, Spring Lake, North Carolina

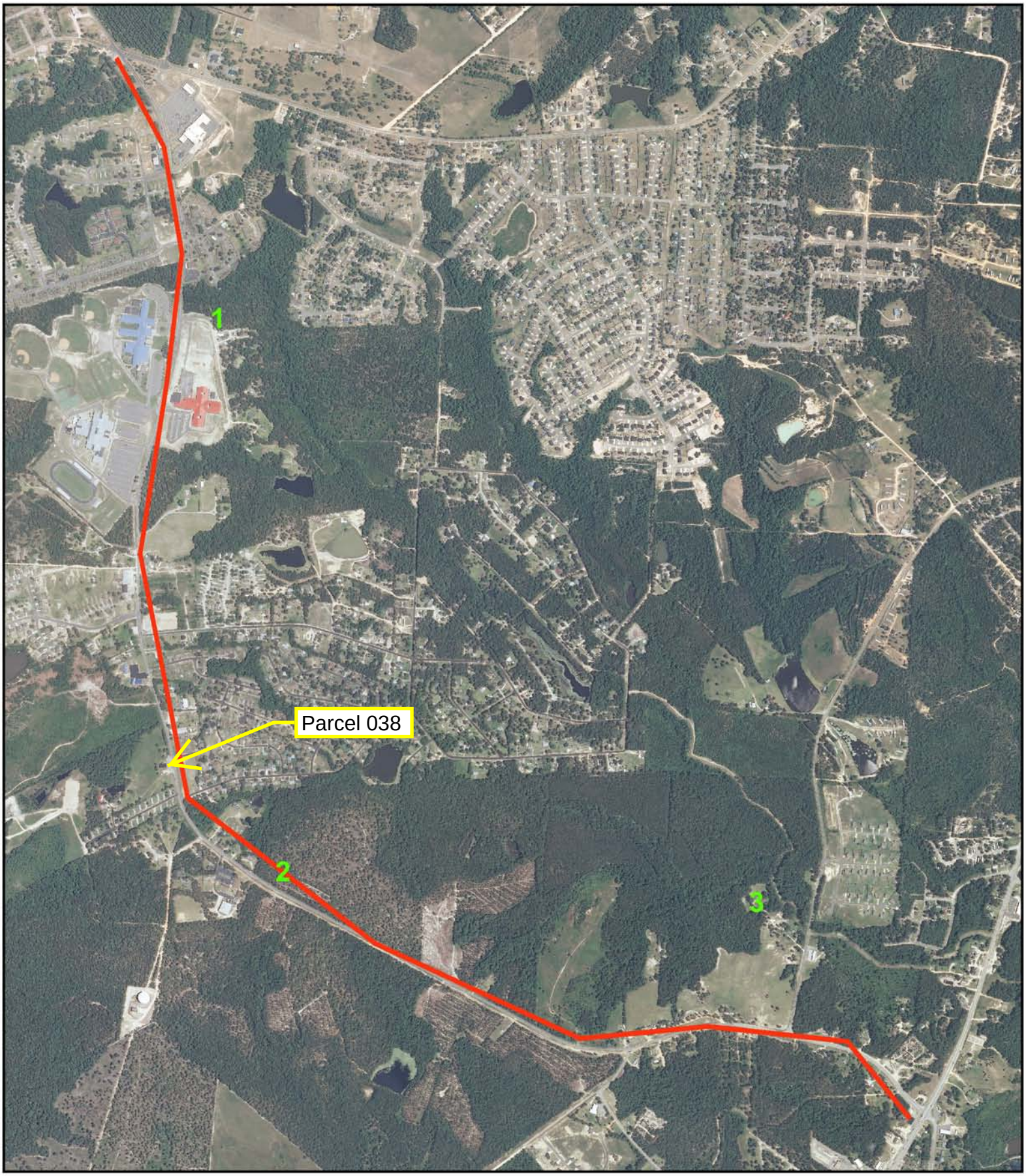
PARAMETER	UNITS	SAMPLE ID	NCAC 2L GROUNDWATER STANDARD
		38-8(TW)	
EPA Method 6200B; Sample Collection Date: 9/14/12			
Benzene	ug/L	ND	1
Chloroform	ug/L	0.44	70
Diisopropyl Ether (IPE)	ug/L	ND	70
Ethyl Benzene	ug/L	ND	600
Isopropylbenzene (Cumene)	ug/L	ND	70
Naphthalene	ug/L	ND	6
Styrene	ug/L	ND	70
Toluene	ug/L	0.17	600
Total Xylenes	ug/L	1.35	500
n-Propylbenzene	ug/L	ND	70
sec-Butylbenzene	ug/L	ND	70
tert-Butyl methyl ether (MTBE)	ug/L	ND	20
tert-Butylbenzene	ug/L	ND	70
1,2,4-Trimethylbenzene	ug/L	ND	400
1,2-Dichloroethane	ug/L	ND	0.4
1,3,5-Trimethylbenzene	ug/L	0.8	400
4-Isopropyltoluene	ug/L	ND	25
All Other Parameters	ug/L	ND	NA

ug/L= micrograms-per-liter

ND= Not Detected

NA= Not Applicable

APPENDIX A



Historical Aerial Photo

2010 - REFERENCE MOSAIC

SR 1121 FROM NC 210 TO SR 1120

SPRING LAKE, NC 28390

Target Site: 35.240729, -78.953625; Job Number: 2012-228

FIRSTSEARCH

N W E S

1 inch equals 1,416 feet

Historical Aerial Photo
2010 - SECTION 2
SR 1121 FROM NC 210 TO SR 1120
SPRING LAKE, NC 28390

FIRSTSEARCH

Target Site: 35.240729, -78.953625; Job Number: 2012-228

N
W E
S

1 inch equals 750 feet

Historical Aerial Photo
1999 - SECTION 2
SR 1121 FROM NC 210 TO SR 1120
SPRING LAKE, NC 28390

FIRSTSEARCH

Target Site: 35.240729, -78.953625; Job Number: 2012-228

N
W E
S

1 inch equals 750 feet

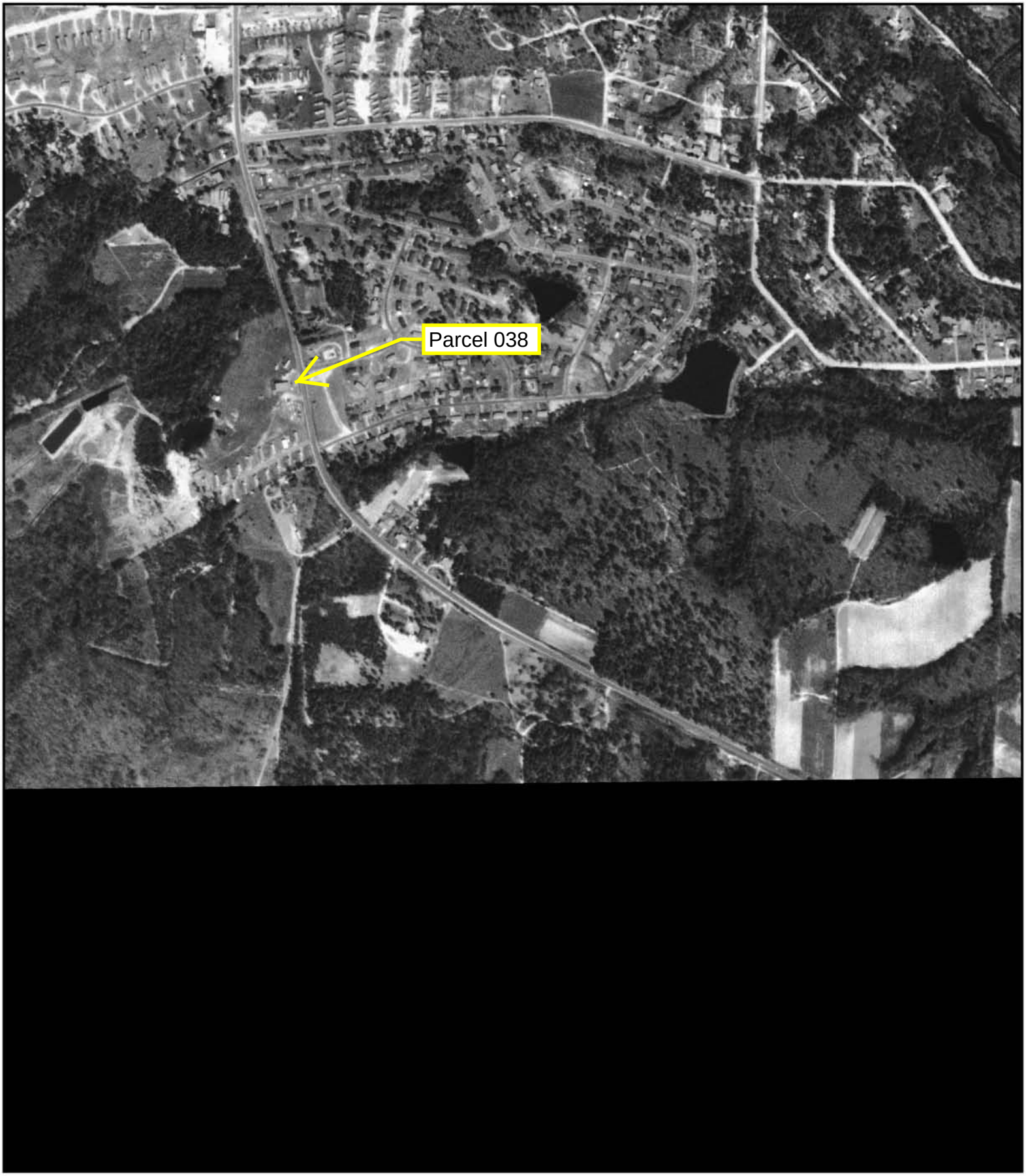
Historical Aerial Photo
1993 - SECTION 2
SR 1121 FROM NC 210 TO SR 1120
SPRING LAKE, NC 28390

FIRSTSEARCH

Target Site: 35.240729, -78.953625; Job Number: 2012-228

N
W E
S

1 inch equals 750 feet



FIRSTSEARCH

Historical Aerial Photo
1983 - SECTION 2
SR 1121 FROM NC 210 TO SR 1120
SPRING LAKE, NC 28390

Target Site: 35.240729, -78.953625; Job Number: 2012-228

N
W E
S

1 inch equals 750 feet

Historical Aerial Photo
1971 - SECTION 2
SR 1121 FROM NC 210 TO SR 1120
SPRING LAKE, NC 28390

Target Site: 35.240729, -78.953625; Job Number: 2012-228

FIRSTSEARCH

N
W E
S

1 inch equals 750 feet

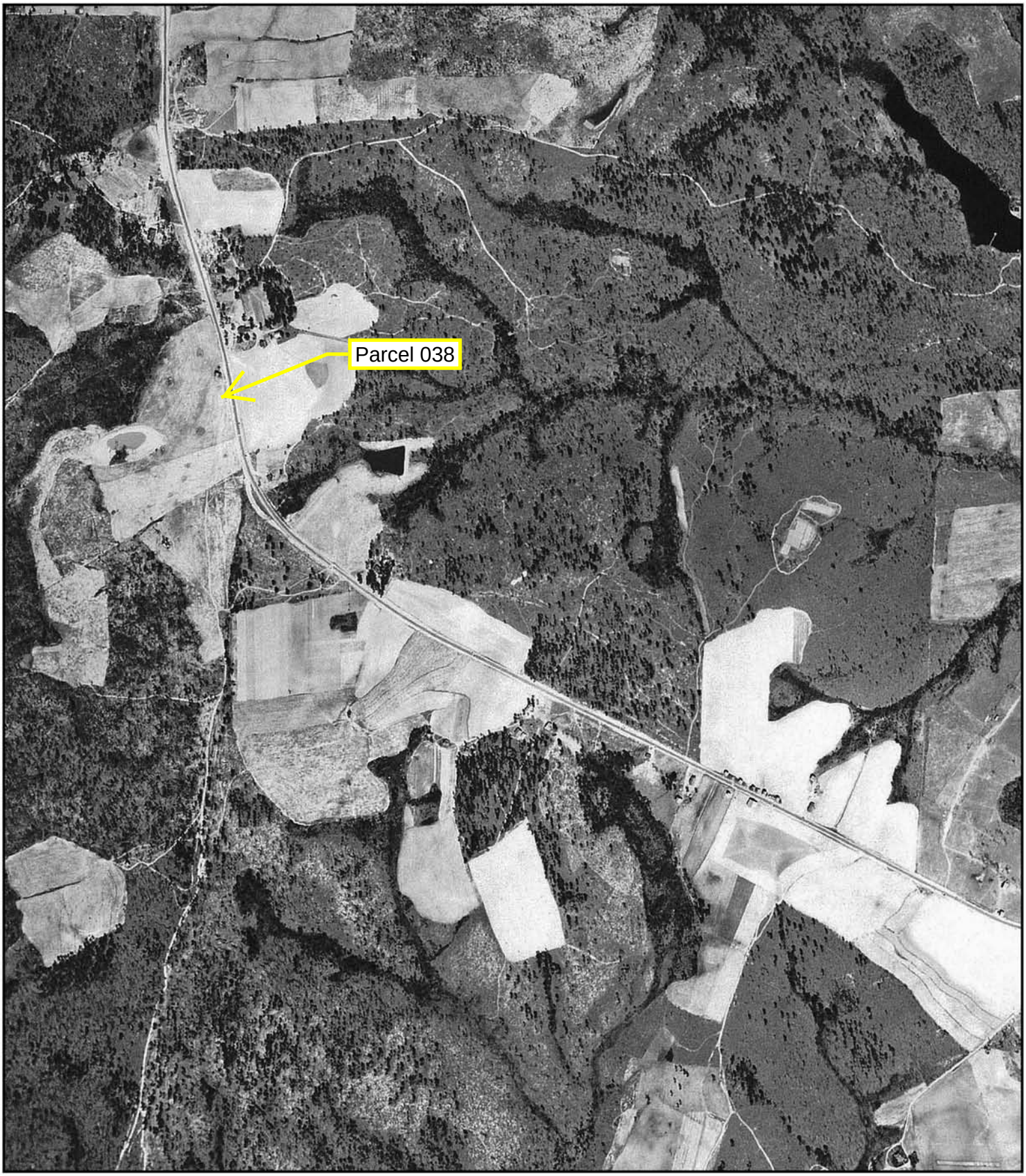
Historical Aerial Photo
1964 - SECTION 2
SR 1121 FROM NC 210 TO SR 1120
SPRING LAKE, NC 28390

Target Site: 35.240729, -78.953625; Job Number: 2012-228

FIRSTSEARCH

N
W E
S

1 inch equals 750 feet



Historical Aerial Photo
1955 - SECTION 2
SR 1121 FROM NC 210 TO SR 1120
SPRING LAKE, NC 28390

FIRSTSEARCH

Target Site: 35.240729, -78.953625; Job Number: 2012-228

N
W E
S

1 inch equals 750 feet

Historical Aerial Photo
1938 - SECTION 2
SR 1121 FROM NC 210 TO SR 1120
SPRING LAKE, NC 28390

FIRSTSEARCH

Target Site: 35.240729, -78.953625; Job Number: 2012-228

N
W E
S

1 inch equals 750 feet

APPENDIX B

(6)

UNDERGROUND STORAGE TANK CLOSURE REPORT (GW/UST-12)

AT THE

DALTON HOLDEN STORE

SPRING LAKE, NORTH CAROLINA

CES PROJECT #97157

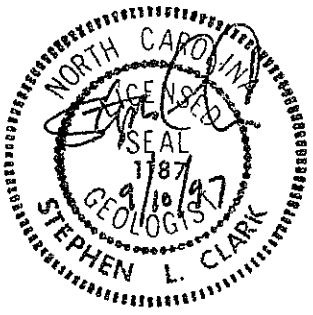
FACILITY ID# 0-017886

PREPARED FOR

GLENN'S BACKHOE SERVICE, INC.

RICHLANDS, NORTH CAROLINA

AUGUST 28, 1997

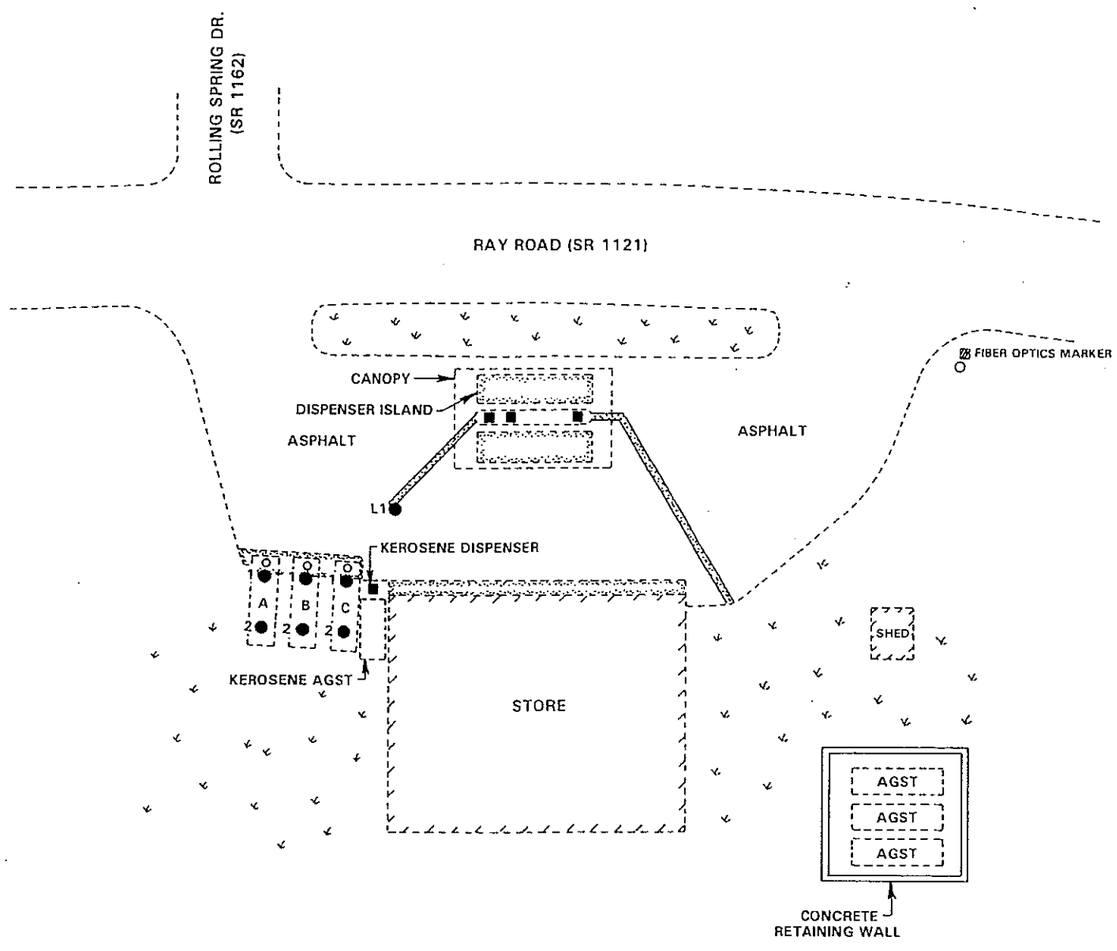


PREPARED BY

CLARK ENVIRONMENTAL SERVICES, INC.
POST OFFICE BOX 10136
WILMINGTON, NORTH CAROLINA 28405
{910} 256-8894

DALTON HOLDEN STORE

SPRING LAKE, NC
CES PROJECT # 97157



N

APPROXIMATE SCALE: 1" = 30'

LEGEND

- ○ TANK FILL
- ● SOIL BORING
- ■ DISPENSER
- ○ POWER POLE

TANK DATA						
TANK #	DATE OF INSTALLATION	SIZE IN GALLONS	TANK DIMENSIONS	LAST CONTENTS	PREVIOUS CONTENTS	CONDITION
A	04/20/94	3,000	5.3' X 18'	GASOLINE	N/A	FAIR; EXTENSIVE CORROSION, DEEP PITTING, NO HOLES OBSERVED
B	04/20/74	3,000	5.3' X 18'	GASOLINE	N/A	FAIR; EXTENSIVE CORROSION, DEEP PITTING, NO HOLES OBSERVED
C	04/20/74	3,000	5.3' X 18'	GASOLINE	N/A	FAIR; EXTENSIVE CORROSION, DEEP PITTING, NO HOLES OBSERVED

FIELD AND LABORATORY DATA FOR SOIL SAMPLES COLLECTED ON 07/28/97				
SAMPLE	SAMPLE DEPTH (FT.)	HNU (ppm)	EPA 5030 TPH-GASOLINE (ppm)	EXCEEDS NC-DWQ ACTION LEVEL
A-1	8	30	73	YES
A-2	8	46	110	YES
B-1	8	34	165	YES
B-2	8	104	92	YES
C-1	8	110	47	YES
C-2	8	110	146	YES
L-1	2	160	84	YES
STOCKPILE	COMPOSITE	200	63	YES

NOTE:

1) ALL CONCENTRATIONS ARE REPRESENTED IN PARTS PER MILLION (ppm).
2) NC-DWQ ACTION LEVEL FOR TPH-GASOLINE IS 10 PARTS PER MILLION (ppm).

SITE SKETCH
FIGURE 2

INITIAL ABATEMENT MEASURES AND SITE CHECK REPORT

AT

DALTON HOLDEN R STORE

SPRING LAKE, NORTH CAROLINA

HARNETT COUNTY

CES PROJECT #97157-A

PREPARED FOR

MR. GORDON MASON

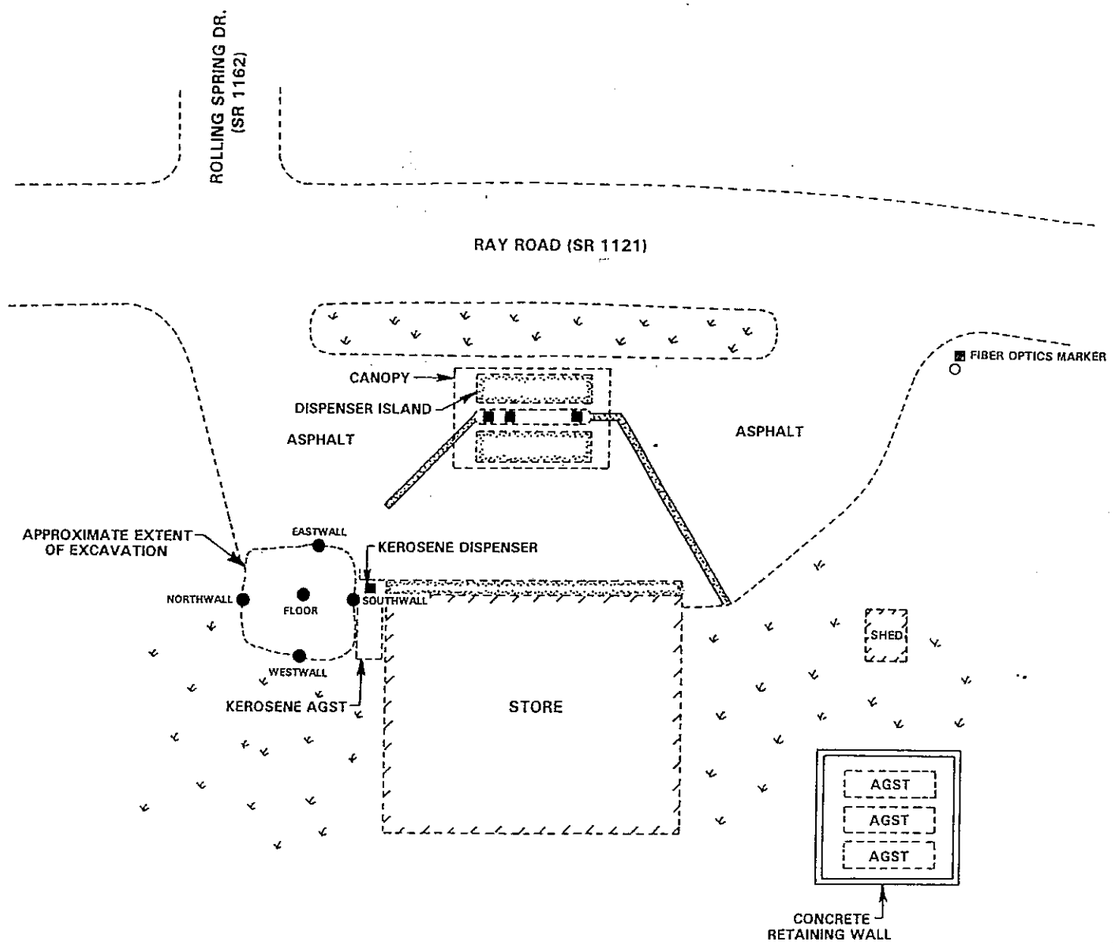
SPRING LAKE, NORTH CAROLINA

DECEMBER 19, 1997

CLARK
ENVIRONMENTAL SERVICES, P.C.

DALTON HOLDEN STORE

SPRING LAKE, NC
CES PROJECT # 97157-A



N

APPROXIMATE SCALE: 1" = 30'

LEGEND

- o TANK FILL
- ● SOIL SAMPLE
- ■ DISPENSER
- o POWER POLE

FIELD AND LABORATORY DATA FOR SOIL SAMPLES COLLECTED ON 11/7/97

SAMPLE	SAMPLE DEPTH (FT)	HNU (ppm)	EPA 5030 TPH-GASOLINE (ppm)	EXCEEDS NC TPH-ACTION LEVEL (10 ppm)
SOUTH WALL #1	4.0	18	-	-
SOUTH WALL #2	6.0	10	-	-
SOUTH WALL #3	4.5	1	<10	NO
EAST WALL #1	4.0	22	-	-
EAST WALL #2	4.0	1	<10	NO
NORTH WALL #1	4.0	46	-	-
NORTH WALL #2	3.5	28	-	-
NORTH WALL #3	4.0	2	<10	NO
WEST WALL	4.5	1	<10	NO
FLOOR #1	8.0	80	-	-
FLOOR #2	9.0	70	-	-
FLOOR #3	9.5	12	-	-
FLOOR #4	10.0	40	-	-
FLOOR #5	10.5	2	<10	NO
STOCKPILE	COMPOSITE	80	82	YES

NOTE:

1) ALL CONCENTRATIONS ARE REPRESENTED IN PARTS PER MILLION (ppm).
2) < = BELOW LABORATORY DETECTION LIMITS

SITE SKETCH
FIGURE 2

EHC, INC.
Environmental Hydrogeological Consultants, Inc.

Post Office Box 902
207 West Fourth Avenue
Red Springs, North Carolina 28377
Telephone: (910) 843-4456
Fax (910) 843-5376

REPORT OF COMPREHENSIVE SITE ASSESSMENT HOLDERS GROCERY 1899 RAY ROAD SPRING LAKE, NORTH CAROLINA

Prepared for

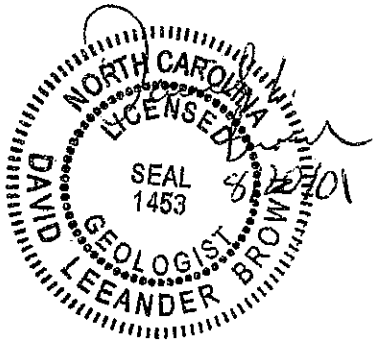
H&H CABLE CONTRACTORS INC
RICK HOPPER – PRESIDENT
1092 PONDEROSA ROAD
CAMERON, NC 28326
(919) 499-1130
INCIDENT NUMBER: PENDING

Current Property Owner

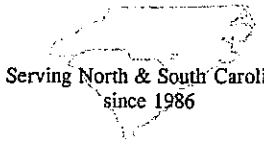
GORDON MASON
154 GORDON LANE
SPRING LAKE, NC 28390
Ph. (910) 497-8229

Prepared by

ENVIRONMENTAL HYDROGEOLOGICAL CONSULTANTS, INC.
207 WEST 4TH AVENUE
RED SPRINGS, NORTH CAROLINA 28377
PH. (910) 843-4456



EHC Project No. 01-EV0708-3
August 20, 2001



Serving North & South Carolina since 1986

EXECUTIVE SUMMARY

The Holders Grocery Convenience Store is located at 1899 Ray Road near Town of Spring Lake in Harnett County, North Carolina. The store is leased from property owner Gordon Mason of 154 Gordon Mason Road, Spring Lake, North Carolina to Mr. Dayton Holder also of Spring Lake. Holders Grocery is a convenience-type grocery store that sells petroleum fuel (gasoline) to refuel vehicles. Holders Grocery contains 3-3,000 gallon above ground storage tanks (ASTs) for the storage of the three grades of gasoline. The site contains one pump island that is connected by underground, fiberglass transport lines. In addition to the gasoline AST system, K-1 kerosene is stored at the site in a separate 2,000 gallon AST system for re-sale.

This Comprehensive Site Assessment Report (CSA) has been prepared to address petroleum contamination related to a gasoline spill from an accidental line cut. The CSA does not address additional environmental concerns that may be onsite.

On or around July 4, 2000, H and H Cable Contractors struck and severed the buried gasoline transport lines that extend underground from the gasoline AST system to the pump islands while entrenching cable television service to the Holders Grocery Store. The leaking lines were discovered on July 5, 2000. Based on inventory records, it is believed that approximately 1,600 gallons of gasoline was released before discovery and subsequent shutoff.

Emergency response included shutting off valves from the gasoline AST system and shutting off the gasoline pumps. The pumps remained off/closed until the lines could be repaired on July 7, 2000. Additional emergency abatement included the construction of a temporary well (GW-1) to check for free product. Free product was not observed at the time, however free product has since been detected in wells that were installed during Comprehensive Site Investigation Activities. Free product recovery has been performed using Aggressive Fluid Vapor Recovery (AFVR). In addition to AFVR, soil excavation has been performed at the site. In late October and early November, 2000 approximately 500 tons of gasoline-impacted soil was excavated from the spill area. The combination of free product recovery and the soil excavation is believed to have significantly recovered the released gasoline however; the amount of product recovered may not reasonably be estimated.

Chemical analysis of ground-water samples collected from well GW-1 indicated gasoline constituents within the ground water in excess of North Carolina NCAC 2L Ground Water Standards.

The area is supplied municipal water service by the Town of Spring Lake and use is mandatory. According to Spring Lake Municipal Services personnel, wellhead protection zones have not been established for areas surrounding the site. Site survey and reconnaissance indicated six private water wells at properties within a 1,000 foot radius of the release. Two wells were identified in a 500-foot radius of the site that were originally installed as public supply wells for the Spring Lake area. However, the wells are no longer used for that purpose. The wells are currently listed as private wells and no longer used for potable water. The wells are reportedly installed to depths ranging from 400 to 600 feet below land surface (bls). Of the six wells, one was identified in a downgradient location on the Gordon Mason property, approximately 400 feet from the release. According to Mr. Mason, the well is steel cased to bedrock, which occurs at 290 feet below land surface. The well was then drilled into the rock to 400 feet. The well contains a 12 hp submersible pump placed in the open rock well at approximately 380 feet. As part of the CSA investigation, water samples were collected from the Mason well for analysis of gasoline constituents. Gasoline constituents were not detected in the water sample from the well. The well is currently being used for irrigation and to provide water to fowl.

The site is located in the Atlantic Coastal Plain Physiographic Province of North Carolina, which, in the subject area, consists of approximately 300 feet of surficial beds of sand, which overlie a Metavolcanic Series (Schipf, 1961). The surficial materials reportedly consist of surficial deposits that are Pleistocene and Pliocene in age. The Cretaceous age Middendorf, Upper and Lower Cape Fear Formation, respectively, underlie the surficial deposits. Each of the formations contains aquifers that are separated by confining layers. The surficial materials vary in composition and include orange-red to brown, silty sand and sandy clay. The underlying Middendorf and Cape Fear Formations contain silt and clay as well as beds of graded sand. These formations are part of the primary water bearing units in the eastern North Carolina area.

The surrounding land is a mixture of residential and commercial uses. The site contains few subsurface structures related to utilities. These utilities include, buried water, sewer, power and cable TV. Due to the location of the water table, which is approximately 28 to

30 feet below land surface, these utilities are not believed to be viable pathways for contaminant transport.

The nearest surface water body is a small man-made, private pond owned by the property owner, Gordon Mason located downgradient of the subject release approximately 500 feet. The pond discharges into an un-named stream which in turn discharges in to Jumping Run Creek located over a mile from the site. Surface water also appears as springs near the bottom of the slope near the pond. An intermittent stream is created by the discharging springs. Two stream samples were collected at this location for analysis of gasoline constituents. Gasoline constituents were not detected in the water sample from the springs.

EHC has installed 17 ground-water monitoring wells at the Holders site in an effort to delineate the contaminant plume vertically and horizontally. The nature and extent of contamination from the release is specifically related to gasoline constituents; benzene, toluene, ethylbenzene and xylenes (BTEX), methyl-tert butyl ether (MTBE), isopropyl ether (IPE) and naphthalene. The BTEX plume was identified onsite by the monitoring well network where constituents were either BDL or elevated to "gross contamination levels" (GCLs) including free phase product. GCLs are defined by Table 7 of the "Groundwater Section Guidelines for the Investigation and Remediation of Soils and Groundwater", Volume 1, Sources Other Than Petroleum Underground Storage Tanks, dated May 1998, for a CSA. The plume is approximately 140 feet in width (W) by 550 feet in length (L).

Free phase petroleum product has been detected in the site wells initially in wells MW-4 and MW-5 ranging from 0.25 inches to 8 inches. To recover the free product, two additional wells were installed to enhance recovery and two AFVR events have been performed at the site. Free product was not observed in two of the four wells as of the last gauging event in wells MW-5 and MW-9.

Due to the overall slope of the site, lithologies are encountered at varying depths. Generally, materials encountered in onsite borings are slightly to moderately permeable sediments described as fine silty sands to approximately 13 feet bls. Moderately impermeable clayey silt to silty clay is encountered at 13 feet. The clay is underlain by fine sand that extends to approximately 23 feet bls. In many of the borings, a permeable fine to coarse sand was encountered from 23 to 35 feet and represents the location of the water

table. As indicated in deep well MW-12D, a relatively impermeable unit of sandy silt and clay underlies the surficial sand that likely impedes the downward movement of ground water from the shallow aquifer to deeper portions of the aquifer due to the proximity of the adjacent discharge point or the springs along the un-named creek. Borings were not advanced below the silt strata.

Depth to ground water at the site ranges from approximately 4 - 35 feet below land surface and is dependant on the relative position of the monitoring well to the slope of the site. Horizontal ground water flow on the site is northwest / west in the downslope direction with an average horizontal gradient of approximately 0.02 feet/foot. Slug test data indicated average hydraulic conductivity values of approximately 32 feet per day. Calculated seepage velocity is approximately 2.4 feet/day or 876 feet/year.

The plume of ground water contamination has been partially delineated onsite by a ring of monitoring wells. Monitoring wells installed upgradient and laterally were either below detectable limits (BDL) of gasoline compounds or were below state action levels. Spring and stream sampling performed at the downgradient location were also BDL. EHC therefore believes the plume is adequately defined.

Subsurface structures that could allow accumulation of harmful vapors were not observed therefore vapor or explosive hazards are minimal. Other preferred pathways for contamination migration or underground structures including buried utilities such as storm sewer, water lines and sewer lines are entrenched above the water table and are not believed to be a migration pathway.

Based on contamination above the NCAC 2L Standard; remediation of ground water is required at the Holders Grocery site. EHC recommends that remedial action take place as soon as equipment may be designed and placed in operation. EHC proposes to explore the use of air sparge/vapor extraction (AS/VE) to remediate the ground water to reduce migration of the plume and to volatilize the gasoline constituents. A pilot test well be required for the AS/VE system design. EHC also recommends that AFVR continue to reduce/remove free product currently observed in two of the site monitoring wells.

4.2 Soil Borings and Sampling

EHC conducted soil boring advancement, soil sampling and descriptions, and monitoring well installation activities from July 2000 to July 2001. A total of 17 soil borings including 15 shallow wells, and 2 deep wells were drilled at the study area to explore subsurface conditions and allow for soil sampling and monitoring well construction.

The advancement of the soil borings and well installations was conducted by EHC (NC Well Driller Registration #1028) using a mechanical drill rig. The mechanical drilling was accomplished using hollow-stem auger (HSA) techniques. Boring depths ranged from 13 feet bls for soil boring MW-12 to 65 feet bls for monitoring well MW-2. Down-hole drilling equipment was physically scrubbed and steam cleaned prior to the advancement of each boring.

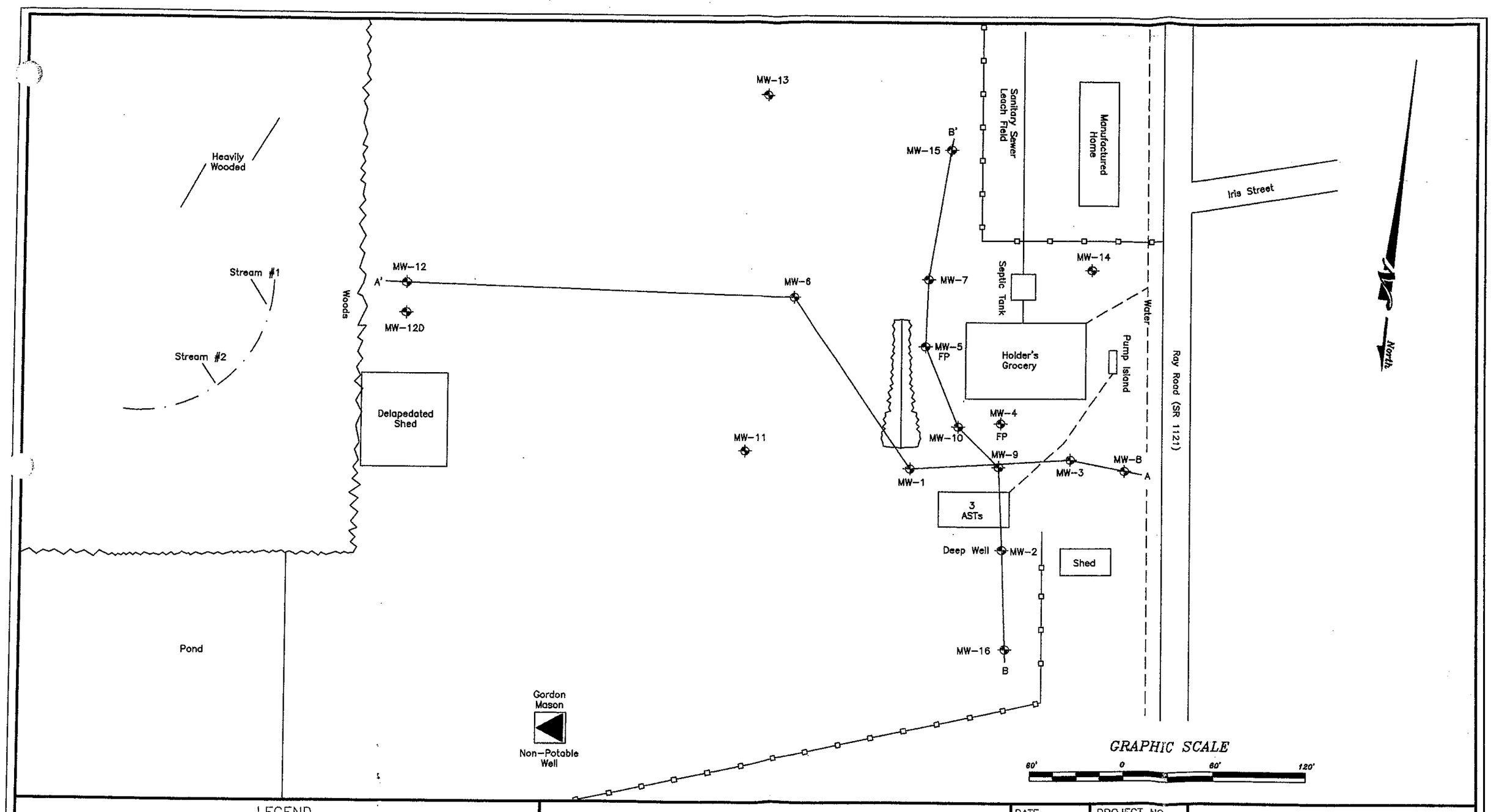
During the drilling process, soil samples were collected and were logged in the field by an EHC geologist who maintained boring logs and records of well construction details that are included as Appendix C and D respectively.

4.3 Site Geology

The locations of two geologic cross-sections are shown on Figure 4. The cross sections were developed from the boring logs to illustrate EHC's interpretation of subsurface lithologic and stratigraphic conditions (See Figures 5 and 6). The cross section on Figure 5 (A to A') is oriented east to west while the second cross section on Figure 6 (B to B') is oriented north to south. The vertical distribution of total volatile organic compounds (VOC's) as the summary of benzene, toluene, ethylbenzene and total xylenes (BTEX) in ground water is also shown on the cross sections.

On the basis of the soils encountered from drilling activities at the site, the following interpretation of the site geology was developed. Boring logs have been prepared for each of the locations and are included as Appendix C.

As shown on the cross sections, an approximate 50-foot difference in elevation can occur across the area of investigation. In general, the sub-surface materials encountered from the ground



LEGEND

- Monitoring Well Location
- A ——— A' Geologic Cross Section
- — — — Water Line

EHC

ENVIRONMENTAL HYDROGEOLOGICAL CONSULTANTS

HYDROLOGY • GEOLOGY • EXPLORATION • ANALYTICAL

DATE: 7/20/01	PROJECT NO.: 01-EV0708-3
DRAWN BY: KAM	SCALE: 1" = 60'
REVIEWED BY: AJB	FIGURE 4

Monitor Well Location Map
w/ Geologic Cross Section
and Subsurface Utilites

Holder's Grocery
Spring Lake, NC

GROUNDWATER MONITORING REPORT
2nd Semi-Annual Sampling Event 2010

Holder's Grocery
1899 Ray Road
Spring Lake, Harnett County, North Carolina
Pollution Incident No. 85611

January 18, 2011

Prepared For:

Hartford Consulting
Hartford Plaza T7-92
Hartford, Connecticut 06115

Prepared By:

The Booth Company Consulting Group, PLLC
2411 Oak Street, Suite 108
Myrtle Beach, South Carolina 29577

GROUNDWATER MONITORING REPORT
2nd Semi-Annual Sampling Event 2010

FEB 25 2011

Holder's Grocery
1899 Ray Road
Spring Lake, Harnett County, North Carolina

UST System Owner at time of Release:
Mr. Gordon Mason
154 Gordon Lane
Spring Lake, NC 28390
(910) 497-8229

UST System Operator at time of Release:
Mr. Dayton Holder
7329 Overhills Road
Spring Lake, NC 28390
(910) 497-7950

Current Property Owner:
Mr. Gordon Mason
55 Pete Mason Drive
Spring Lake, NC 28390
(910) 497-8229

Incident No.:.....85611
Risk Classification:.....Low
Facility ID No.:.....N/A
Land Use: .....Residential

Discovery Date.....July 4, 2000
Estimated Quantity of Release.....1,600 gallons
Source of Release.....Severed Product Line
Size of Contents of AST System three 10,000 gallon – gasoline
Latitude/Longitude.....N 35° 14' 5.964" / W -78° 58' 1.6278"

I, Timothy A. Metten a Professional Engineer / **Licensed Geologist** of The Booth Company Consulting Group, PLLC, do certify that the information contained in this report is correct and accurate to the best of my knowledge.

Licensed N.C. Geologist: _____
N.C. Geologist License No: 1875

SEAL
NORTH CAROLINA LICENSED SEAL 1875 GEOLOGIST TIMOTHY A. METTEN

The Booth Company Consulting Group, PLLC is licensed to practice geology / engineering in North Carolina. The certification number of the company or corporation is C-0426.

1.0 INTRODUCTION

1.1 Project Information

The North Carolina Department of Environment and Natural Resources (NCDENR), Division of Waste Management (DWM), Underground Storage Tank (UST) Section issued a letter to Hartford Consulting dated December 17, 2009 requesting a semi-annual groundwater sampling event at the Holders Grocery facility located at 1899 Ray Road in Spring Lake, Harnett County, North Carolina ("subject property"/"Site") (Figures 1and 2).

1.2 Site Location and General Information

The Holders Grocery facility is located on Ray Road near the intersection of Gordon Lane in Spring Lake, Harnett County, North Carolina (Figure 1). Directly east and south of the subject facility are paved parking areas along with a gasoline pump island to the east. An undeveloped field is located to the west and north of the subject property, and residential areas are surrounding the property. The site is currently an active grocery/fuel station.

The property contains three gasoline aboveground storage tanks (AST). The subsurface release of gasoline at the subject site occurred on July 4, 2000, when utility construction sub-contractors for H and H Cable Construction came into contact with the gasoline transfer lines running from the ASTs to the dispenser island. The product lines were severed while the sub-contractors were entrenching cable television service to the site convenience store. After being damaged, it is believed the lines leaked until July 5, 2000 when the release was discovered. Based upon a review of inventory records, it appears that approximately 1,600 gallons of gasoline were released before discovery and subsequent shutoff by store operator, Mr. Dayton Holder.

Approximately 500 tons of gasoline-impacted soils were removed during soil excavation activities and were transported for off-site land application/disposal.

A series of groundwater monitoring wells were installed during CSA/CSA-Addendum activities. A total of fourteen out of nineteen monitoring wells contained petroleum hydrocarbons at concentrations exceeding the North Carolina Administrative Code 2L Groundwater Standards ("NCAC 2L"/"2L Standards") from 2002 to present. The concentrations of petroleum hydrocarbon contaminants have been on the decline since the installation of the monitoring wells.

A Comprehensive Site Assessment (CSA) and a Corrective Action Plan (CAP) were prepared for the release. The CAP was developed utilizing an active soil and ground water remediation system for the property.

Free Product Recovery

Free product was first detected at the site on April 24, 2001 in wells MW-4 and MW-5. See Figure 2. Wells MW-9 and 10 were installed in the area observed to contain free product to potentially enhance free product recovery. A gauging event was conducted on May 16, 2001 to the presence of free product, wells MW-4, MW-5, MW-9 and MW-10 were gauged on May 16, 2001. Free product was found in each of the wells; therefore, an aggressive fluid vapor recovery (AFVR) event was conducted on May 22, 2001. A vacuum was applied to the four wells containing free-product by pumping approximately 450 cubic feet per minute (fpm) between 24 and 30 inches of mercury for eight hours. Approximately 900 gallons of fluid was recovered, including 54 gallons of gasoline. In addition to the liquids, significant quantities of vapors were also removed from the subsurface. Free product was detected during a gauging event on May 31, 2001. A second AFVR event was performed on June 15, 2001 and recovered 891 gallons of fluid and 16 gallons of product. A gauging event performed on December 4, 2001 indicated minor amounts of product in wells MW-4, MW-5, MW-9 and MW-10. The reduction of free product thickness suggests AFVR was successful in the removal of free product.

From April 2003 through June 2010, gauging and sampling event, free product has not been observed in the monitoring wells.

Groundwater Remediation Activities

Upon approval of the CAP, a vapor extraction/air sparge (VE/AS) remediation system was constructed at the site. The system consisted of air sparge and vent wells connected to a sparge blower and vapor extraction vacuum pump. The air was injected into 30 sparge wells located throughout the plume to volatilize the dissolved petroleum hydrocarbons and to increase aerobic conditions thereby enhancing biodegradation. The VE network of wells, also located throughout the plume, collected the volatilized hydrocarbons and discharged them into the atmosphere. The system became operational on November 18, 2002. The system operated, with normal maintenance activities, until its manual shutdown in early January 2007.

Groundwater Sampling Activities

Periodic groundwater monitoring activities have been conducted at the site. The following report provides a summary of the field activities and findings of the second Semi-Annual groundwater monitoring event performed at the site on October 20, 2010.

2.0 FIELD ACTIVITIES

2.1 Sampling Activities

On October 20, 2010, Mr. Grady Dobson and Ricky Locklear of EHC conducted groundwater monitoring activities at the subject site. EHC personnel accessed and gauged the twelve (12) accessible groundwater monitoring wells at the site (MW-1, MW-2, MW-3, MW-4, MW-5, MW-6, MW-7, MW-8, MW-9, MW-10, MW-11, MW-13). Monitor wells MW-12, MW-12D, MW-14, MW-15, MW-16, MW-17, and MW-18 had previously been damaged or destroyed, and the wells were not gauged. Free product was not encountered in any of the site wells during this work event. Groundwater gauging data is presented on Table 1.

Sampling was conducted on wells that had historically indicated the presence of petroleum impact and on the downgradient wells at the site. Monitor wells MW-4, MW-5, MW-6, MW-7, MW-9, MW-10, and MW-13 were sampled during this work event.

The seven monitoring wells were purged and sampled in accordance with sampling protocol using a dedicated polyethylene disposable bailer and monofilament rope. Sample aliquots were placed into appropriate laboratory supplied glassware and preservative and were preserved in an ice-filled cooler. The samples were shipped via courier to the Environmental Science Corporation (ESC) laboratory in Mt. Juliet, Tennessee for chemical testing. The samples were analyzed for Volatile Organic Compounds (VOCs) by EPA Method 602 modified to include MTBE, IPE, and Naphthalene. A Site Map indicating monitoring well locations is presented as Figure 2.

2.2 Hydrogeologic Data

Ground water levels obtained on October 20, 2010 ranged from approximately 15.95 feet below land surface (bls) in MW-13 to 32.82 feet bls in MW-10. The groundwater elevations are summarized on Table 1, and the contours are illustrated on Figure 3.

The elevations are recorded based on their relation to a temporary benchmark with assumed elevation of 100 feet. The data from this monitoring event suggests that ground water is flowing to the north/northwest away from the initial petroleum release area.

2.3 Groundwater Analytical Results

Analytical results for the October 2010 groundwater sampling event are summarized in Table 2. Historical groundwater analytical results are provided in Table 3.

Groundwater samples were collected from monitor wells MW-4, MW-5, MW-6, MW-7, MW-9, MW-10, and MW-13. The samples were analyzed by EPA Method 602 modified methyl tert-butyl

ether (MTBE), di-isopropyl ether (IPE), and naphthalene. The following text summarizes the reported analytical results from this sampling event:

- MTBE concentrations exceeded its North Carolina Groundwater Quality Standard (NCGQS) of 20 micrograms per liter (ug/l) in sample MW-5 (230 ug/l).
- Naphthalene concentrations exceeded its NCGQS of 6 ug/l in sample MW-7 (47 ug/l).
- Ethylbenzene was detected in sample MW-5 at concentrations below its NCGQS standard.
- Xylenes were detected in samples MW-5 and MW-7 at a concentration below its NCGQS standard.
- MTBE was detected in samples MW-4, MW-6, MW-10 and MW-13 at concentrations below or equal to its NCGQS standard.

Concentrations of dissolved petroleum compounds have generally decreased over time. A slight increase in the concentration of MTBE was observed in monitor wells MW-5 and MW-10, but MW-5 was the only one of the two that exceeded State standards. The following chemical constituents have increased, but not above their NCGQS: Toluene increased from BDL in the 1st 2010 sampling to 6.3 ug/l in this sampling event at MW-5; Ethylbenzene increased from BDL in 1st 2010 sampling event to 3.2 ug/l in MW-6 at the time of this sampling; total Xylenes have increased in MW-4 from BDL to 9.5 ug/l, in MW-5 from 6.4 to 7 ug/l, in MW-7 from 140 to 320 mg/l, and in MW-10 from BDL to 4.3 ug/l; Naphthalene has increased in MW-7 from 11 to 47 ug/l. All other chemical constituents from each well have either remained the same or decreased from sampling event of the first half of 2010.

Analytical results are illustrated on Figure 4. Copies of the laboratory reports and chain-of-custody records for these analyses are included in Appendix A.

3.0 CONCLUSIONS AND RECOMMENDATIONS

Conclusions

The following conclusions are based on the field activities and findings of this investigation:

- Twelve monitor wells (MW-1 thru MW-11, MW-13) were gauged and seven monitor wells (MW-4 thru MW-7, MW-9, MW-10, MW-13) were sampled on October 20, 2010 at the former Holder's Grocery facility in Spring Lake, North Carolina. Collected groundwater samples were analyzed for volatile organic compounds by EPA Method 602 modified to include MTBE, IPE, and naphthalene.
- During the monitoring event, depth to groundwater ranged from 15.95 feet bgs in well MW-13 to 32.82 feet bgs in well MW-10.
- Free phase petroleum product was not detected on the groundwater at the site during the work of this monitoring event.
- Analytical testing indicated the presence of MTBE in samples MW-5 and Naphthalene in sample MW-7 at concentrations in excess of their respective NCGQS standards. It should be noted that analytical concentrations in MW-7 have increased over the past three monitoring events.
- Ethylbenzene, Xylenes, Toluene and MTBE were detected in some of the samples at concentrations below their corresponding NCGQS standards.
- Comparisons with historical analytical results indicate that the concentrations of dissolved petroleum compounds have decreased significantly since the initial site assessment activities conducted in June 2001.

Recommendations

The following recommendations are provided based on the scope and findings of this investigation:

- Periodic groundwater monitoring activities should continue at the site.
- A copy of this report should be submitted to the NCDENR – Fayetteville Regional Office for their review and comment.

Table 1
Depth to Groundwater Data
Holder's Grocery
Spring Lake, North Carolina

Well Number	Well Depth (feet)	Screened Interval (feet)	Top of Casing Elevation (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)
MW-1	45	25-45	96.70	24.92	71.78
MW-2	65	45-65	104.52	24.79	79.73
MW-3	36	26-36	100.38	32.63	67.75
MW-4	35	25-35	100.35	31.37	68.98
MW-5	35	25-35	95.43	29.22	66.21
MW-6	25	15-25	88.21	21.23	66.98
MW-7	34	24-34	96.11	28.96	67.15
MW-8	40	30-40	99.99	31.82	68.17
MW-9	37	27-37	100.40	28.69	71.71
MW-10	37	27-37	100.09	32.82	67.27
MW-11	26	16-26	88.76	19.48	69.28
MW-12	13	3-13	65.91	destroyed	
MW-12D	35	30-35	65.55	destroyed	
MW-13	22	12-22	82.65	15.69	66.96
MW-14	38	28-38	103.47	destroyed	
MW-15	30	20-30	91.89	destroyed	
MW-16	35	25-35	102.64	destroyed	
MW-17	13	3-13	86.96	destroyed	
MW-18	35	25-35	80.48	destroyed	

Well gauging measurements were recorded on October 20, 2010

Table 2
Groundwater Analytical Results
Holder's Grocery
Spring Lake, North Carolina

Chemical Constituent	MW-4	MW-5	MW-6	MW-7	MW-9	MW-10	MW-13	NCGQS
EPA Method 602								
Benzene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	1
Toluene	BDL	6.3	BDL	BDL	BDL	BDL	BDL	600
Ethylbenzene	BDL	BDL	3.2	45.0	BDL	BDL	BDL	600
Xylenes	9.5	7.0	BDL	320.0	BDL	4.3	BDL	550
Methyl tert-butyl ether	7.0	**230.0**	20.0	2.0	BDL	7.4	BDL	20
Di-isopropyl ether	BDL	BDL	BDL	BDL	BDL	BDL	BDL	70
Naphthalene	BDL	BDL	BDL	**47.0**	BDL	BDL	BDL	6

Notes:

Results are presented in micrograms per liter (ug/L).
BDL = below laboratory minimum detection limits
NCGQS = North Carolina Groundwater Quality Standard

Groundwater samples collected on October 20, 2010

Table 3
Historical Groundwater Results Summary
Holders' Grocery
Spring Lake, North Carolina

	MW-1															
	29-Jun-01	27-Mar-02	16-Dec-02	23-Apr-03	26-Jun-03	15-Oct-03	30-Jun-04	11-Jan-05	18-Sep-05	9-Mar-06	9-Aug-06	27-Jan-07	18-3-09	26-Apr-10	20-Oct-10	NCGQS
Benzene	BDL	BDL	0.65	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NA	NA	1
Toluene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NA	NA	600
Ethylbenzene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NA	NA	600
Xylenes	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NA	NA	550
Total BTEX	0	0	0.65	0	0	0	0	0	0	0	0	0	NA	NA	NA	NS
Methyl tert-butyl ether	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NA	NA	BDL	BDL	BDL	NA	NA	20
Naphthalene	BDL	BDL	BDL	BDL	NA	NA	BDL	BDL	NA	NA	NA	NA	BDL	NA	NA	6

	MW-2															
	29-Jun-01	27-Mar-02	16-Dec-02	23-Apr-03	26-Jun-03	15-Oct-03	30-Jun-04	11-Jan-05	18-Sep-05	9-Mar-06	9-Aug-06	27-Jan-07	18-3-09	26-Apr-10	20-Oct-10	NCGQS
Benzene	**5.5**	**8.5**	**2.7**	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NA	NA	1
Toluene	9.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NA	NA	600
Ethylbenzene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NA	NA	600
Xylenes	BDL	BDL	2.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NA	NA	550
Total BTEX	14.7	8.5	4.9	0	0	0	0	0	0	0	0	0	NA	NA	NA	NS
Methyl tert-butyl ether	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NA	NA	BDL	BDL	BDL	NA	NA	20
Naphthalene	BDL	BDL	BDL	BDL	NA	NA	BDL	BDL	NA	NA	NA	BDL	NA	NA	NA	6

	MW-3															
	29-Jun-01	27-Mar-02	16-Dec-02	23-Apr-03	26-Jun-03	15-Oct-03	30-Jun-04	11-Jan-05	18-Sep-05	9-Mar-06	9-Aug-06	27-Jan-07	18-3-09	26-Apr-10	20-Oct-10	NCGQS
Benzene	**28**	**2200**	**1.3**	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NA	NA	1
Toluene	52	**4600**	8.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NA	NA	600
Ethylbenzene	1.5	99	2.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NA	NA	600
Xylenes	25	**3000**	22	3.4	BDL	BDL	2.4	BDL	BDL	BDL	BDL	BDL	BDL	NA	NA	550
Total BTEX	106.5	9899	34.3	3.4	0	0	2.4	0	0	0	0	0	NA	NA	NA	NS
Methyl tert-butyl ether	8.7	**2200**	12	**370**	BDL	9	31	BDL	NA	NA	BDL	BDL	BDL	NA	NA	20
Naphthalene	BDL	BDL	BDL	BDL	NA	NA	BDL	BDL	NA	NA	NA	NA	BDL	NA	NA	6

Notes:
BDL = Below Detection Limit
Bold numbers indicate the NCAC 2L Standard is exceeded.
NA = Not Analyzed
FP = Free Product
NS= No Standard

Table 3 (Cont.)
Historical Groundwater Results Summary
Holders' Grocery
Spring Lake, North Carolina

	MW-4														
	29-Jun-01	27-Mar-02	16-Dec-02	23-Apr-03	26-Jun-03	15-Oct-03	30-Jun-04	11-Jan-05	18-Sep-05	9-Mar-06	9-Aug-06	27-Jan-07	18-Mar-09	26-Apr-10	20-Oct-10	NCGQS
Benzene	FP	FP	Not Found	0.83	7.5	22	17	BDL	2.1	1.9	5.2	BDL	BDL	BDL	BDL	1
Toluene	FP	FP	Not Found	7.5	170	300	170	BDL	10	BDL	13	BDL	BDL	BDL	BDL	600
Ethylbenzene	FP	FP	Not Found	4.3	34	250	260	27	31	9.3	26	1.6	BDL	BDL	BDL	600
Xylenes	FP	FP	Not Found	51	390	2400	2600	320	290	110	410	29	BDL	BDL	9.5	550
Total BTEX	FP	FP	Not Found	63.63	601.5	2972	3047	347	333.1	121.2	454.2	30.6	NA	BDL	9.5	NS
Methyl tert-butyl ether	FP	FP	Not Found	170	10	BDL	BDL	680	NA	NA	19	4.5	BDL	8.1	7	20
Naphthalene	FP	FP	Not Found	420	NA	NA	300	BDL	NA	NA	NA	BDL	BDL	BDL	BDL	6

	MW-5														
	29-Jun-01	27-Mar-02	16-Dec-02	23-Apr-03	26-Jun-03	15-Oct-03	30-Jun-04	11-Jan-05	18-Sep-05	9-Mar-06	9-Aug-06	27-Jan-07	18-Mar-09	26-Apr-10	20-Oct-10	NCGQS
Benzene	5200	FP	1800	62	6.1	4	0.91	4.1	BDL	BDL	0.8	BDL	BDL	BDL	BDL	1
Toluene	13000	FP	13000	2100	860	510	16	36	24	11	BDL	BDL	BDL	BDL	6.3	600
Ethylbenzene	BDL	FP	1500	280	240	360	39	110	230	130	7.3	18	BDL	BDL	BDL	600
Xylenes	7800	FP	13000	2900	2000	2600	370	1400	1800	1200	96	240	BDL	6.4	7	550
Total BTEX	26000	FP	29300	5342	3106.1	3474	425.91	1550.1	2054	1341	104.1	258	NA	6.4	13.3	NS
Methyl tert-butyl ether	180000	FP	3700	260	78	BDL	BDL	590	NA	NA	22	16	320	76	230	20
Naphthalene	BDL	FP	BDL	BDL	NA	NA	20	150	NA	NA	NA	BDL	BDL	BDL	BDL	6

	MW-6														
	29-Jun-01	27-Mar-02	16-Dec-02	23-Apr-03	26-Jun-03	15-Oct-03	30-Jun-04	11-Jan-05	18-Sep-05	9-Mar-06	9-Aug-06	27-Jan-07	18-Mar-09	26-Apr-10	20-Oct-10	NCGQS
Benzene	7500	FP	96	40	BDL	1.2	BDL	BDL	1.1	BDL	BDL	BDL	BDL	BDL	BDL	1
Toluene	15000	FP	62	360	BDL	54	BDL	33	BDL	BDL	BDL	BDL	BDL	BDL	BDL	600
Ethylbenzene	1300	FP	BDL	7.7	BDL	55	1.4	620	24	11	0.57	BDL	BDL	BDL	3.2	600
Xylenes	12000	FP	52	350	BDL	380	42	4800	310	310	4.6	BDL	BDL	BDL	BDL	550
Total BTEX	35800	FP	210	757.7	0	490.2	43.4	5453	335.1	321	5.17	0	NA	BDL	3.2	NS
Methyl tert-butyl ether	81000	FP	170	250	24	12	2.4	10	NA	NA	53	19	BDL	30	20	20
Naphthalene	340	FP	BDL	BDL	NA	NA	BDL	250	NA	NA	NA	NA	BDL	BDL	BDL	6

Notes:
BDL = Below Detection Limit
Bold numbers indicate the NCAC 2L Standard is exceeded.
NA = Not Analyzed
FP = Free Product
NS= No Standard

Table 3 (Cont.)
Historical Groundwater Results Summary
Holders' Grocery
Spring Lake, North Carolina

	MW-7															
	29-Jun-01	27-Mar-02	16-Dec-02	23-Apr-03	26-Jun-03	15-Oct-03	30-Jun-04	11-Jan-05	18-Sep-05	9-Mar-06	9-Aug-06	27-Jan-07	18-Mar-09	26-Apr-10	20-Oct-10	NCGQS
Benzene	**270**	**280**	**90**	**320**	**16**	4	BDL	BDL	BDL	BDL	9.8	BDL	BDL	BDL	BDL	1
Toluene	580	840	540	**2800**	540	**1400**	**1300**	660	71	17	BDL	BDL	BDL	BDL	BDL	600
Ethylbenzene	66	58	100	330	31	320	130	260	55	150	320	200	BDL	17	45	600
Xylenes	470	540	**1100**	**2400**	480	**2100**	**2900**	**1600**	**650**	**1000**	**1900**	**1200**	BDL	140	320	550
Total BTEX	1386	1718	1830	5850	1067	3824	4330	2520	776	1167	2229.8	1400	NA	157	365	NS
Methyl tert-butyl ether	**260**	**280**	**39**	BDL	2.4	BDL	BDL	BDL	NA	NA	39	BDL	BDL	BDL	2	20
Naphthalene	BDL	BDL	**26**	**66**	NA	NA	BDL	**100**	NA	NA	NA	**58**	BDL	**11**	47	6

	MW-8															
	25-Apr-01	27-Mar-02	16-Dec-02	23-Apr-03	15-Oct-03	26-Jun-03	30-Jun-04	11-Jan-05	18-Sep-05	9-Mar-06	9-Aug-06	27-Jan-07	18-Mar-09	26-Apr-10	20-Oct-10	NCGQS
Benzene	BDL	BDL	BDL	BDL	NA	BDL	BDL	BDL	BDL	1.1	BDL	BDL	BDL	NA	NA	1
Toluene	2.4	BDL	BDL	BDL	NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NA	NA	600
Ethylbenzene	BDL	BDL	BDL	BDL	NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NA	NA	600
Xylenes	BDL	BDL	2.4	1.9	NA	2.7	BDL	BDL	BDL	BDL	1.7	BDL	BDL	NA	NA	550
Total BTEX	2.4	0	2.4	1.9	NA	2.7	0	0	0	1.1	1.7	0	NA	NA	NA	NS
Methyl tert-butyl ether	BDL	BDL	BDL	BDL	NA	BDL	BDL	75	NA	NA	BDL	BDL	BDL	NA	NA	20
Naphthalene	BDL	BDL	BDL	BDL	NA	NA	BDL	BDL	NA	NA	NA	BDL	BDL	NA	NA	6

	MW-9															
	29-Jun-01	27-Mar-02	16-Dec-02	23-Apr-03	26-Jun-03	15-Oct-03	30-Jun-04	11-Jan-05	18-Sep-05	9-Mar-06	9-Aug-06	27-Jan-07	18-Mar-09	26-Apr-10	20-Oct-10	NCGQS
Benzene	FP	**2100**	**340**	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	1
Toluene	FP	**5700**	**1000**	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	600
Ethylbenzene	FP	470	120	BDL	BDL	BDL	BDL	BDL	1.5	BDL	BDL	BDL	BDL	BDL	BDL	600
Xylenes	FP	**8400**	**2000**	BDL	1.6	BDL	BDL	3	20	3.3	BDL	BDL	BDL	BDL	BDL	550
Total BTEX	FP	0	0	0	1.6	0	0	3	21.5	3.3	0	0	NA	BDL	BDL	NS
Methyl tert-butyl ether	FP	**8000**	**1400**	BDL	1.0	BDL	BDL	16	NA	NA	BDL	BDL	19	BDL	BDL	20
Naphthalene	FP	BDL	BDL	BDL	NA	NA	BDL	BDL	NA	NA	NA	BDL	BDL	BDL	BDL	6

Notes:
BDL = Below Detection Limit
Bold numbers indicate the NCAC 2L Standard is exceeded.
NA = Not Analyzed
FP = Free Product
NS= No Standard

Table 3 (Cont.)
Historical Groundwater Results Summary
Holders' Grocery
Spring Lake, North Carolina

	MW-12D															
	27-Jul-01	27-Mar-02	16-Dec-02	23-Apr-03	26-Jun-03	15-Oct-03	30-Jun-04	11-Jan-05	18-Sep-05	9-Mar-06	9-Aug-06	27-Jan-07	18-Mar-09	26-Apr-10	20-Oct-10	NCGQS
Benzene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	Destroyed	Destroyed	Destroyed	1
Toluene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	Destroyed	Destroyed	Destroyed	600
Ethylbenzene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	Destroyed	Destroyed	Destroyed	600
Xylenes	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	Destroyed	Destroyed	Destroyed	550
Total BTEX	0	0	0	0	0	0	0	0	0	0	0	0	Destroyed	Destroyed	Destroyed	NS
Methyl tert-butyl ether	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NA	NA	BDL	BDL	Destroyed	Destroyed	Destroyed	20
Naphthalene	BDL	BDL	BDL	BDL	NA	NA	BDL	BDL	NA	NA	NA	BDL	Destroyed	Destroyed	Destroyed	6

	MW-13															
	29-Jun-01	27-Mar-02	16-Dec-02	23-Apr-03	26-Jun-03	15-Oct-03	30-Jun-04	11-Jan-05	18-Sep-05	9-Mar-06	9-Aug-06	27-Jan-07	18-Mar-09	26-Apr-10	20-Oct-10	NCGQS
Benzene	BDL	BDL	**110**	BDL	BDL	BDL	BDL		BDL	BDL	BDL	BDL	BDL	BDL	BDL	1
Toluene	BDL	BDL	38	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	600
Ethylbenzene	BDL	BDL	5.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	600
Xylenes	BDL	BDL	140	BDL	2.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	550
Total BTEX	0	0	293.5	0	2.6	0	0	0	0	0	0	0	NA	BDL	BDL	NS
Methyl tert-butyl ether	BDL	BDL	BDL	BDL	2.1	BDL	BDL	BDL	NA	NA	BDL	1.4	BDL	1.5	BDL	20
Naphthalene	BDL	BDL	BDL	BDL	NA	NA	BDL	BDL	NA	NA	NA	BDL	BDL	BDL	BDL	6

	MW-14															
	29-Jun-01	27-Mar-02	16-Dec-02	23-Apr-03	26-Jun-03	15-Oct-03	30-Jun-04	11-Jan-05	18-Sep-05	9-Mar-06	9-Aug-06	27-Jan-07	18-Mar-09	26-Apr-10	20-Oct-10	NCGQS
Benzene	BDL	1.4	**1.1**	BDL	BDL	BDL	BDL	BDL	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	1
Toluene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	600
Ethylbenzene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	600
Xylenes	130	22	BDL	14	10	16	17	5.2	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	550
Total BTEX	130	23.4	1.1	14	10	16	17	5.2	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	NS
Methyl tert-butyl ether	BDL	BDL	BDL	BDL	1.4	BDL	BDL	BDL	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	20
Naphthalene	12	BDL	BDL	6.6	NA	NA	BDL	BDL	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	6

BDL = Below Detection Limit
Bold numbers indicate the NCAC 2L Standard is exceeded.
NA = Not Analyzed
FP = Free Product
NS= No Standard
Wells MW-4, 5, 9 and 10 were also gauged for free product, May 30, 2001 and June 29, 2001.

SEMI-ANNUAL GROUNDWATER MONITORING REPORT

Holders Grocery
1899 Ray Road
Spring Lake, Harnett County, North Carolina
Pollution Incident No. 85611

-Prepared for-

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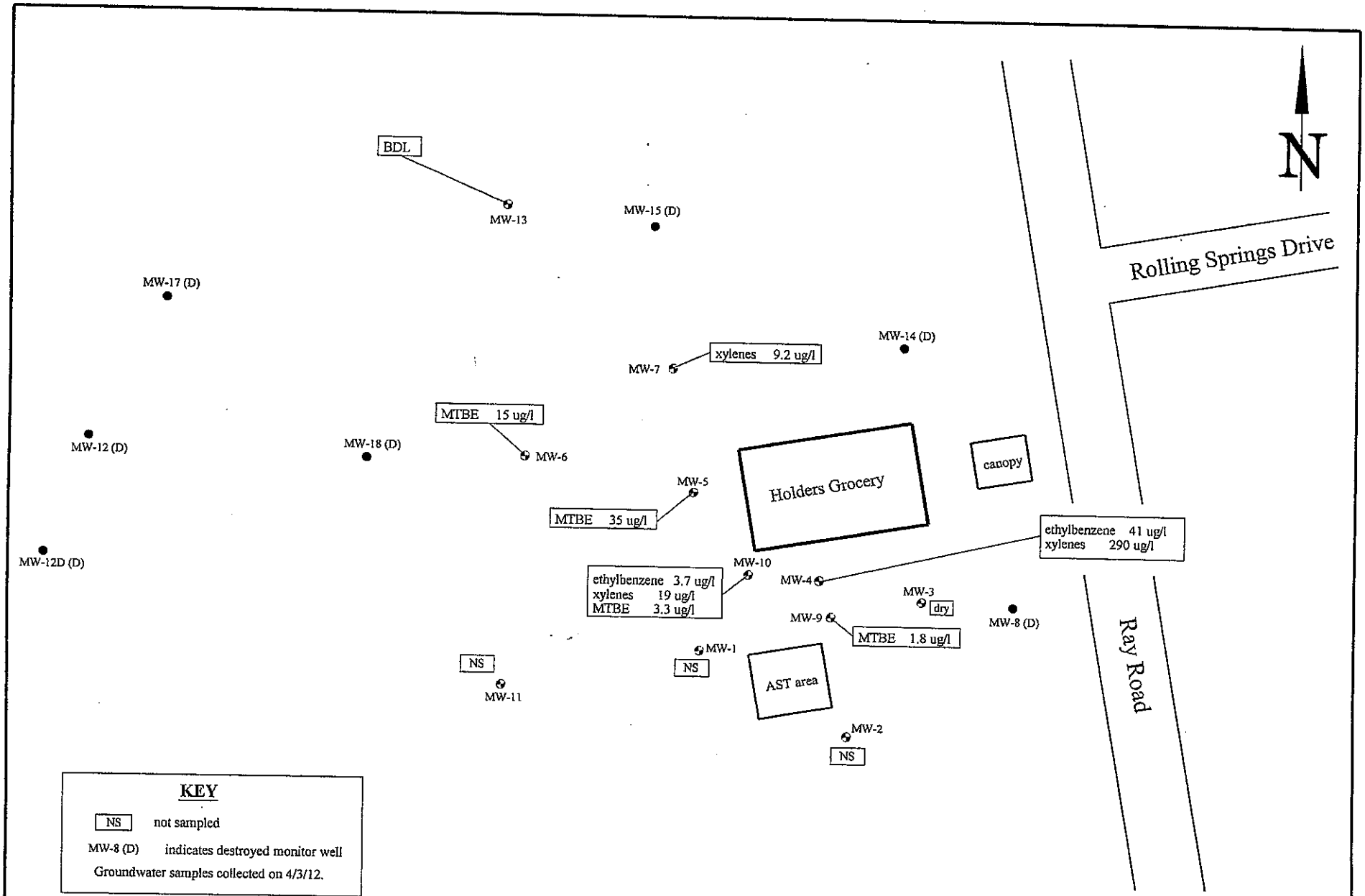
Senior Hydrogeologist

NORTH CAROLINA LICENSED GEOLOGIST THOMAS H. BOLYARD



Base map derived from Groundwater Analytical Map prepared by The Booth Company Consulting Group.

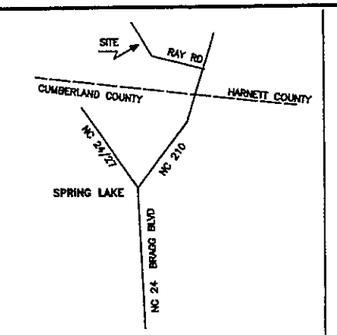
ENVIRO-PRO	FIGURE 5 Groundwater Analytical Results Map Holders Grocery Spring Lake, North Carolina	APPROXIMATE SCALE (feet) 0 30 60	Project No. EPC-422 Date: 4/13/12 Drawing No: GW-422

TABLE 2
CURRENT GROUNDWATER ANALYTICAL RESULTS
HOLDERS GROCERY
SPRING LAKE, HARNETT COUNTY, NORTH CAROLINA

	MW-4	MW-5	MW-6	MW-7	MW-9	MW-10	MW-13	NCGQS
benzene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	1
toluene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	600
ethylbenzene	41	BDL	BDL	BDL	BDL	3.7	BDL	600
total xylenes	290	BDL	BDL	9.2	BDL	19	BDL	500
methyl tert-butyl ether (MTBE)	BDL	*35*	15	BDL	1.8	3.3	BDL	20
di isopropyl ether (IPE)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	70
naphthalene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	6

Notes:

- Analytical results are presented in micrograms per liter (ug/l).
- BDL = below minimum detection limits
- NCGQS = North Carolina Groundwater Quality Standard
- Groundwater samples were collected by EHC Environmental personnel on April 3, 2012.
- The groundwater samples were analyzed by ESC Lab Sciences of Mt. Juliet, Tennessee.



VICINITY MAP

MW 17
Destroyed

MW 12
Destroyed

MW 12D
Destroyed

MW 18
Destroyed

MW 13
ELEV. 70.70

MW 15
ELEV. 70.88

MW 7
ELEV. 70.97

MW 14
Destroyed

MW 6
ELEV. 70.76

MW 5
ELEV. 70.11

HOLDER'S GROCERY

RAY ROAD

Groundwater Flow Direction

STORAGE

MW 10
ELEV. 71.25

MW 4
ELEV. 71.59

MW 9
ELEV. 73.09

MW 3
ELEV. 71.63

MW 8
ELEV. 72.04

MW 1
ELEV. 72.06

ABOVE GROUND STORAGE TANKS

MW 11
ELEV. 70.36

MW 2
ELEV. 80.77

70'
71'
72'
73'

GRAPHIC SCALE
40' 0 40' 80'

LEGEND

Monitoring Well Location

Groundwater Flow Contour (April 2010 Data)

Elevations listed in feet (ft.)

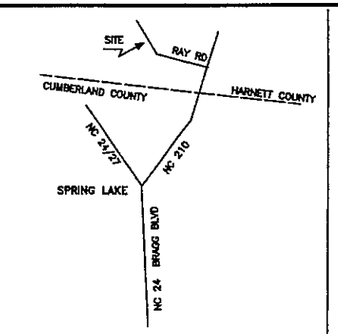
TBCCG, PLLC

2411 North Oak Street, Suite 108
Myrtle Beach, South Carolina 29577

DATE: 07/2002	PROJECT NO.: 01-EV0708-3
DRAWN BY: Hasty Land Surveying / AC	SCALE: AS SHOWN
REVIEWED BY: CH	FIGURE 3

POTENTIOMETRIC MAP
(April 2010 Data)

HOLDER'S GROCERY
1899 RAY ROAD
SPRING LAKE, NORTH CAROLINA
HARNETT COUNTY



VICINITY MAP

MW 17
NS

BTEX = BDL
MTBE = 1.5 ug/L
Naphthalene = BDL
MW 13

MW 15
NS

MW 12
NS

MW 12D
NS

MW 18
NS

BTEX = 157.0 ug/L
MTBE = BDL
Naphthalene = 11.0 ug/L
MW 7

MW 14
NS

BTEX = BDL
MTBE = 30.0 ug/L
Naphthalene = BDL
MW 6

RAY ROAD

BTEX = 6.4 ug/L
MTBE = 76.0 ug/L
Naphthalene = BDL
MW 5

HOLDER'S GROCERY

BTEX = BDL
MTBE = 6.5 ug/L
Naphthalene = BDL
MW 10

STORAGE

MW 4

BTEX = BDL
MTBE = 8.1 ug/L
Naphthalene = BDL

MW 11
NS

MW 1
NS

MW 9

MW 3
NS

MW 8
NS

ABOVE GROUND STORAGE TANKS

BTEX = BDL
MTBE = BDL
Naphthalene = BDL

MW 2
NS

GRAPHIC SCALE

40' 0 40' 80'

LEGEND

BTEX Total Benzene, Toluene, Ethylebenzene and Xylene
MTBE Methyl tert-butyl ether
NS Not Sampled
ug/L Micrograms per Liter
Monitoring Well Location
BDL Below Method Detection Limit
Concentrations above North Carolina Groundwater Quality Standards are listed in red

TBCCG, PLLC
2411 North Oak Street, Suite 108
Myrtle Beach, South Carolina 29577

DATE: 07/2002	PROJECT NO.: 01-EV0708-3
DRAWN BY: Hasty Land Surveying / AC	SCALE: AS SHOWN
REVIEWED BY: CH	FIGURE 4

GROUNDWATER ANALYTICAL MAP
(April 2010 Data)

HOLDER'S GROCERY
1899 RAY ROAD
SPRING LAKE, NORTH CAROLINA
HARNETT COUNTY

APPENDIX C

FIRSTSEARCH

ENVIRONMENTAL FIRSTSEARCH REPORT

TARGET PROPERTY:

NCDOT PROJECT U-3465

SR 1121 - NC 210 - SR 1120

SPRING LAKE, NC 28390

JOB NUMBER: 2012-228

PREPARED FOR:

Pyramid Environmental & Engineering, PC

503 Industrial Ave.

Greensboro, NC 27406

September 6, 2012

Environmental FirstSearch
Search Summary Report

Target Site: SR 1121 - NC 210 - SR 1120
SPRING LAKE, NC 28390

FirstSearch Summary

Database	Sel	Updated	Radius	Site	1/8	1/4	1/2	1/2>	ZIP	TOTALS
NPL	Y	07-09-12	1.00	0	0	0	0	0	0	0
NPL Delisted	Y	07-09-12	0.50	0	0	0	0	-	0	0
CERCLIS	Y	08-01-12	0.50	0	0	0	0	-	0	0
NFRAP	Y	08-01-12	0.50	0	0	0	0	-	0	0
RCRA COR ACT	Y	07-10-12	1.00	0	0	0	0	0	0	0
RCRA TSD	Y	07-10-12	0.50	0	0	0	0	-	0	0
RCRA GEN	Y	07-10-12	0.25	0	0	0	-	-	0	0
Federal Brownfield	Y	07-15-12	0.25	0	0	0	-	-	0	0
ERNS	Y	07-05-12	0.12	0	0	-	-	-	1	1
Tribal Lands	Y	12-15-08	1.00	0	0	0	0	0	1	1
State/Tribal Sites	Y	06-08-12	1.00	0	0	0	0	0	0	0
State Spills 90	Y	06-01-12	0.12	3	0	-	-	-	0	3
State/Tribal SWL	Y	05-26-11	0.50	0	0	0	0	-	0	0
State/Tribal LUST	Y	06-01-12	0.50	2	1	0	2	-	2	7
State/Tribal UST/AST	Y	06-01-12	0.25	5	0	0	-	-	1	6
State/Tribal EC	Y	NA	0.25	0	0	0	-	-	0	0
State/Tribal IC	Y	06-08-12	0.25	0	0	0	-	-	0	0
State/Tribal VCP	Y	07-30-07	0.50	0	0	0	0	-	0	0
State/Tribal Brownfields	Y	08-10-12	0.50	0	0	0	0	-	0	0
Federal IC/EC	Y	06-13-12	0.50	0	0	0	0	-	0	0
-TOTALS-				10	1	0	2	0	5	18

Notice of Disclaimer

Due to the limitations, constraints, and inaccuracies and incompleteness of government information and computer mapping data currently available to FirstSearch Technology Corp., certain conventions have been utilized in preparing the locations of all federal, state and local agency sites residing in FirstSearch Technology Corp.'s databases. All EPA NPL and state landfill sites are depicted by a rectangle approximating their location and size. The boundaries of the rectangles represent the eastern and western most longitudes; the northern and southern most latitudes. As such, the mapped areas may exceed the actual areas and do not represent the actual boundaries of these properties. All other sites are depicted by a point representing their approximate address location and make no attempt to represent the actual areas of the associated property. Actual boundaries and locations of individual properties can be found in the files residing at the agency responsible for such information.

Waiver of Liability

Although FirstSearch Technology Corp. uses its best efforts to research the actual location of each site, FirstSearch Technology Corp. does not and can not warrant the accuracy of these sites with regard to exact location and size. All authorized users of FirstSearch Technology Corp.'s services proceeding are signifying an understanding of FirstSeaarch Technology Corp.'s searching and mapping conventions, and agree to waive any and all liability claims associated with search and map results showing incomplete and or inaccurate site locations.

Environmental FirstSearch
Site Information Report

Request Date:	09-06-12	**Search Type:**	LINEAR
Requestor Name:	Brett Higgins		3.499 mile(s)
Standard:	ASTM-05	**Job Number:**	2012-228
		Filtered Report	

Target Site: SR 1121 - NC 210 - SR 1120
SPRING LAKE, NC 28390

Demographics

Sites:	18	**Non-Geocoded:**	5	**Population:**	NA

Radon: 0 PCI/L

Fire Insurance Map Coverage: No (>350 Ft. From Coverage)

Site Location

	Degrees (Decimal)	Degrees (Min/Sec)		UTMs
Longitude:	-78.953625	-78:57:13	**Easting:**	686206.771
Latitude:	35.240729	35:14:27	**Northing:**	3901460.421
Elevation:	213		**Zone:**	17

Comment

Comment:

Additional Requests/Services

Adjacent ZIP Codes:

ZIP Code	City Name	ST	Dist/Dir	Sel

Services:

	Requested?	Date
Fire Insurance Maps	No	
Aerial Photographs	Yes	09-06-12
Historical Topos	No	
City Directories	No	
Title Search	No	
Municipal Reports	No	
Liens	No	
Historic Map Works	No	
Online Topos	No	

Environmental FirstSearch
Target Site Summary Report

Target Property: SR 1121 - NC 210 - SR 1120
SPRING LAKE, NC 28390

JOB: 2012-228

TOTAL: 18 **GEOCODED:** 13 **NON GEOCODED:** 5 **SELECTED:** 0

Map ID	DB Type	Site Name/ID/Status	Address	Dist/Dir	ElevDiff	Page No.
1	SPILLS	RYAN S GROCERY 12015/CURRENT RECORD	7939 RAY RD SPRING LAKE NC 28390	0.00 --	+ 106	1
1	UST	RYAN S GROCERY 0-026491/TEMPORARILY CLOSED	7939 RAY RD SPRINGLAKE NC 28390	0.00 --	+ 106	2
1	UST	RYAN S GROCERY FA-675/UNKNOWN	7939 RAY RD SPRING LAKE NC 28390	0.00 --	+ 106	5
1	LUST	RYAN S GROCERY NCI-012015/RESPONSE	7939 RAY RD SPRING LAKE NC 28390	0.00 --	+ 106	7
2	SPILLS	DALTON HOLDER STORE 17793/CURRENT RECORD	6701 RAY RD SPRING LAKE NC 28390	0.00 --	+ 81	8
2	UST	DATON HOLDER 0-017886/PERM CLOSED REMOVED	6701 RAY RD SPRING LAKE NC 28390	0.00 --	+ 81	9
2	LUST	DALTON HOLDER STORE NCI-017793/RESPONSE	6701 RAY RD SPRING LAKE NC 28390	0.00 --	+ 81	12
3	SPILLS	HOLDERS GROCERY 85611/CURRENT RECORD	UNKNOWN SPRING LAKE NC 28390	0.00 --	+ 13	13
4	UST	MATTHEWS GENERAL STORE 0-002736/CURRENTLY OPERATIONAL	7100 RAY RD SPRING LAKE NC 28390	0.00 --	+ 64	14
5	UST	SHORT STOP FOOD MARTS 8 0-021508/CURRENTLY OPERATIONAL	7925 RAY RD SPRING LAKE NC 28390	0.00 --	+ 105	17

Environmental FirstSearch
Sites Summary Report

Target Property: SR 1121 - NC 210 - SR 1120
SPRING LAKE, NC 28390

JOB: 2012-228

TOTAL: 18 **GEOCODED:** 13 **NON GEOCODED:** 5 **SELECTED:** 0

Map ID	DB Type	Site Name/ID/Status	Address	Dist/Dir	ElevDiff	Page No.
1	SPILLS	RYAN S GROCERY 12015/CURRENT RECORD	7939 RAY RD SPRING LAKE NC 28390	0.00 --	+ 106	1
1	UST	RYAN S GROCERY 0-026491/TEMPORARILY CLOSED	7939 RAY RD SPRINGLAKE NC 28390	0.00 --	+ 106	2
1	UST	RYAN S GROCERY FA-675/UNKNOWN	7939 RAY RD SPRING LAKE NC 28390	0.00 --	+ 106	5
1	LUST	RYAN S GROCERY NCI-012015/RESPONSE	7939 RAY RD SPRING LAKE NC 28390	0.00 --	+ 106	7
2	SPILLS	DALTON HOLDER STORE 17793/CURRENT RECORD	6701 RAY RD SPRING LAKE NC 28390	0.00 --	+ 81	8
2	UST	DATON HOLDER 0-017886/PERM CLOSED REMOVED	6701 RAY RD SPRING LAKE NC 28390	0.00 --	+ 81	9
2	LUST	DALTON HOLDER STORE NCI-017793/RESPONSE	6701 RAY RD SPRING LAKE NC 28390	0.00 --	+ 81	12
3	SPILLS	HOLDERS GROCERY 85611/CURRENT RECORD	UNKNOWN SPRING LAKE NC 28390	0.00 --	+ 13	13
4	UST	MATTHEWS GENERAL STORE 0-002736/CURRENTLY OPERATIONAL	7100 RAY RD SPRING LAKE NC 28390	0.00 --	+ 64	14
5	UST	SHORT STOP FOOD MARTS 8 0-021508/CURRENTLY OPERATIONAL	7925 RAY RD SPRING LAKE NC 28390	0.00 --	+ 105	17
6	LUST	HOLDERS GROCERY NCI-085611/ASSESSMENT	1899 RAY RD SPRING LAKE NC	0.11 SW	+ 53	20
7	LUST	LEWIS OIL CO. NCI-005466/	0 HIGHWAY 210 MANCHESTER NC	0.27 SE	+ 4	21
8	LUST	LEWIS OIL GROCERY STORE NCI-014732/RESPONSE	0 NC 210 & SR 1600 SPRING LAKE NC 28390	0.38 SE	- 53	22

Environmental FirstSearch
Sites Summary Report

Target Property: SR 1121 - NC 210 - SR 1120
SPRING LAKE, NC 28390

JOB: 2012-228

TOTAL: 18 **GEOCODED:** 13 **NON GEOCODED:** 5 **SELECTED:** 0

Map ID	DB Type	Site Name/ID/Status	Address	Dist/Dir	ElevDiff	Page No.
	ERNS	BETWEEN THE TOWNS SPRING LAKE NRC-554942/FIXED	AND SANFORD ON HWY SPRING LAKE NC	NON GC	N/A	N/A
	UST	STEWARTS OF SPRING LAKE 0-036564/PERM CLOSED REMOVED	SR 2045 AND SR 2048 SPRING LAKE NC	NON GC	N/A	N/A
	LUST	DEVON S GROCERY NCI-015437/RESPONSE	ROUTE 1, BOX 425, SR2048 SPRING LAKE NC 28390	NON GC	N/A	N/A
	LUST	LONG VALLEY FARM NCI-012016/CLOSED OUT	MANCHESTER ROAD SPRING LAKE NC 28390	NON GC	N/A	N/A
	TRIBALLA	BUREAU OF INDIAN AFFAIRS CONTACT I BIA-28390/	UNKNOWN NC 28390	NON GC	N/A	N/A

Environmental FirstSearch
Site Detail Report

Target Property: SR 1121 - NC 210 - SR 1120
SPRING LAKE, NC 28390

JOB: 2012-228

SPILLS

SEARCH ID: 18 **DIST/DIR:** 0.00 -- **ELEVATION:** 319 **MAP ID:** 1

NAME: RYAN S GROCERY
ADDRESS: 7939 RAY RD
SPRING LAKE NC 28390
HARNETT
CONTACT:
SOURCE: NCDENR

REV: 9/23/11
ID1: 12015
ID2: FA-675
STATUS: CURRENT RECORD
PHONE:

SITE INFORMATION

OWNER/OPERATOR: CHRISTINE RYAN

RT. 3, BOX 599-A
SPRING LAKE NC 28390

DATE OF RELEASE: 12/21/1993
DATE SUBMITTED: 4/11/1994
DESCRIPTION OF INCIDENT: A LEAK WAS DISCOVERED WHEN USTS WERE RMEOVED

CONTAMINATION INFORMATION
GROUNDWATER CONTAMINATED?: Y
MAJOR SOIL CONTAMINATION?: N

MATERIAL INVOLVED (1): GASOLINE
AMOUNT LOST (1):
AMOUNT RECOVERED (1):

MATERIAL INVOLVED (2):
AMOUNT LOST (2):
AMOUNT RECOVERED (2):

MATERIAL INVOLVED (3):
AMOUNT LOST (3):
AMOUNT RECOVERED (3):

NUMBER OF WELLS AFFECTED: 0
NAME(S) OF CONTAMINATED WELLS:

PRIORITY INFORMATION:
RISK SITE?: H
SITE PRIORITY: 085B
PRIORITY CODE: H
PRIORITY UPDATE: 4/15/1998

STATUS INFORMATION:
LAST MODIFIED:
INCIDENT PHASE: RESPONSE
NOV ISSUED:
NORR ISSUED:
45 DAY REPORT:
CORRECTIVE ACTION PLAN:
CLOSURE REQ DATE:
CLOSE-OUT REPORT:

Environmental FirstSearch
Site Detail Report

Target Property: SR 1121 - NC 210 - SR 1120
SPRING LAKE, NC 28390

JOB: 2012-228

UST

SEARCH ID: 4 **DIST/DIR:** 0.00 -- **ELEVATION:** 319 **MAP ID:** 1

NAME: RYAN S GROCERY
ADDRESS: 7939 RAY RD
SPRINGLAKE NC 28390
HARNETT
CONTACT: CHRISTINE RYAN
SOURCE: NCDENR

REV: 6/1/12
ID1: 0-026491
ID2: 00-0-0000026491
STATUS: TEMPORARILY CLOSED
PHONE:

SITE INFORMATION

TOTAL NUMBER OF TANKS: 5

CONTACT INFORMATION: CHRISTINE RYAN
7939 RAY ROAD
SPRINGLAKE NC 28390

TANK NUMBER: 1
ROOT TANK ID:
TANK STATUS:
INSTALLATION DATE:
PERM CLOSED:
CONTENTS: Gasoline, Gas Mix
CAPACITY IN GALLONS: 6000
TANK CONSTRUCTION:3
PIPE CONSTRUCTION:4
MAIN TANK:NO
COMPARTMENT TANK:NO
MANIFOLD TANK:
COMMERCIAL TANK:YES
REGULATED TANK:YES

TANK NUMBER: 2
ROOT TANK ID:
TANK STATUS:
INSTALLATION DATE:
PERM CLOSED:
CONTENTS: Gasoline, Gas Mix
CAPACITY IN GALLONS: 6000
TANK CONSTRUCTION:3
PIPE CONSTRUCTION:4
MAIN TANK:NO
COMPARTMENT TANK:NO
MANIFOLD TANK:
COMMERCIAL TANK:YES
REGULATED TANK:YES

TANK NUMBER: 3
ROOT TANK ID:
TANK STATUS:
INSTALLATION DATE:
PERM CLOSED:
CONTENTS: Gasoline, Gas Mix
CAPACITY IN GALLONS: 1000
TANK CONSTRUCTION:3

- Continued on next page -

Target Property: SR 1121 - NC 210 - SR 1120
SPRING LAKE, NC 28390

JOB: 2012-228

UST

SEARCH ID: 4 **DIST/DIR:** 0.00 -- **ELEVATION:** 319 **MAP ID:** 1

NAME: RYAN S GROCERY
ADDRESS: 7939 RAY RD
SPRINGLAKE NC 28390
HARNETT
CONTACT: CHRISTINE RYAN
SOURCE: NCDENR

REV: 6/1/12
ID1: 0-026491
ID2: 00-0-0000026491
STATUS: TEMPORARILY CLOSED
PHONE:

PIPE CONSTRUCTION:4
MAIN TANK:NO
COMPARTMENT TANK:NO
MANIFOLD TANK:
COMMERCIAL TANK:NO
REGULATED TANK:YES

TANK NUMBER: 4
ROOT TANK ID:
TANK STATUS:
INSTALLATION DATE:
PERM CLOSED:
CONTENTS: Gasoline, Gas Mix
CAPACITY IN GALLONS: 1000
TANK CONSTRUCTION:3
PIPE CONSTRUCTION:4
MAIN TANK:NO
COMPARTMENT TANK:NO
MANIFOLD TANK:
COMMERCIAL TANK:NO
REGULATED TANK:YES

TANK NUMBER: 5
ROOT TANK ID:
TANK STATUS:
INSTALLATION DATE:
PERM CLOSED:
CONTENTS: Gasoline, Gas Mix
CAPACITY IN GALLONS: 500
TANK CONSTRUCTION:3
PIPE CONSTRUCTION:4
MAIN TANK:NO
COMPARTMENT TANK:NO
MANIFOLD TANK:
COMMERCIAL TANK:NO
REGULATED TANK:YES

ARCHIVED INFORMATION AS OF 2011

TANK NUMBER: 1
INSTALLATION DATE: 19841231
CLOSED DATE: 19931221
STATUS: PERMANENTLY CLOSED
CONTENTS: GASOLINE, GASOLINE MIXTURE
CAPACITY IN GALLONS: 6000
COMMENTS:
CONSTRUCTION MATERIAL: STEEL

- Continued on next page -

Environmental FirstSearch
Site Detail Report

Target Property: SR 1121 - NC 210 - SR 1120
SPRING LAKE, NC 28390

JOB: 2012-228

UST

SEARCH ID: 4 **DIST/DIR:** 0.00 -- **ELEVATION:** 319 **MAP ID:** 1

NAME: RYAN S GROCERY
ADDRESS: 7939 RAY RD
SPRINGLAKE NC 28390
HARNETT
CONTACT: CHRISTINE RYAN
SOURCE: NCDENR

REV: 6/1/12
ID1: 0-026491
ID2: 00-0-0000026491
STATUS: TEMPORARILY CLOSED
PHONE:

INTERIOR: UNKNOWN
EXTERIOR: UNKNOWN
CORROSION PROTECTION:
LEAK DETECTION:
PIPING MATERIAL: STEEL
PIPE CORROSION PROTECTION:
PIPE LEAK DETECTION:
OVERFLOW PROTECTION:
FINANCIAL RESPONSIBILITY:
CERTIFICATION TYPE:
GPS SITING CONFIRMED:N
PERSON CONFIRMING:

TANK NUMBER: 2
INSTALLATION DATE: 19841231
CLOSED DATE: 19931221
STATUS: PERMANENTLY CLOSED
CONTENTS: GASOLINE, GASOLINE MIXTURE
CAPACITY IN GALLONS: 6000
COMMENTS:
CONSTRUCTION MATERIAL: STEEL
INTERIOR: UNKNOWN
EXTERIOR: UNKNOWN
CORROSION PROTECTION:
LEAK DETECTION:
PIPING MATERIAL: STEEL
PIPE CORROSION PROTECTION:
PIPE LEAK DETECTION:
OVERFLOW PROTECTION:
FINANCIAL RESPONSIBILITY:
CERTIFICATION TYPE:
GPS SITING CONFIRMED:N
PERSON CONFIRMING:

TANK NUMBER: 3
INSTALLATION DATE: 19701231
CLOSED DATE: 19931221
STATUS: PERMANENTLY CLOSED
CONTENTS: GASOLINE, GASOLINE MIXTURE
CAPACITY IN GALLONS: 1000
COMMENTS:
CONSTRUCTION MATERIAL: STEEL
INTERIOR: UNKNOWN
EXTERIOR: UNKNOWN
CORROSION PROTECTION:
LEAK DETECTION:
PIPING MATERIAL: STEEL

- More Details Exist For This Site; Max Page Limit Reached -

Environmental FirstSearch
Site Detail Report

Target Property: SR 1121 - NC 210 - SR 1120
SPRING LAKE, NC 28390

JOB: 2012-228

UST

SEARCH ID: 5 **DIST/DIR:** 0.00 -- **ELEVATION:** 319 **MAP ID:** 1

NAME: RYAN S GROCERY
ADDRESS: 7939 RAY RD
SPRING LAKE NC 28390
HARNETT
CONTACT: CHRISTINE RYAN
SOURCE: NCDENR

REV: 6/1/12
ID1: FA-675
ID2:
STATUS: UNKNOWN
PHONE:

SITE INFORMATION

REGIONAL UST DATA

UST NUMBER:FA-675
INCIDENT NUMBER:12015
CD NUMBER:0
REEL NUMBER:0
REGIONAL CONTACT:JWB
REGIONAL OFFICE:FAY
DATE OCCURRED:12/21/1993

RESPONSIBLE COMPANY:

790 JOHN RYAN LANE
SPRING LAKE ,NC , 28390

SOURCE:LEAK, UST
PETROLEUM TYPE:PETROLEUM
COMMERCIAL/NONCOMMERCIAL:COMMERCIAL
REGULATED:REGULATED
REGULATORY REQUIREMENT:9/28/2001
VIOLATION:

PHASE REQUIRED:
SITE PRIORITY:085B
RISK:H
RISK OF INCIDENT:L
INTERMEDIATE CONDITION:
LAND USE:

CORRECTIVE ACTION PLAN:
RBCA:
CLOSED REVIEW REQUESTED:
CASE CLOSED:
CONTAMINATION:GROUNDWATER/BOTH
SUPPLY WELLS:
MTBE IN WELL:
MTBE IN GROUNDWATER:UNKNOWN

LEAK DISCOVERED:0
LAND USE RESTRICTION FILED:
CLEAN UP:12/21/1993
CURRENT STATUS:CURRENT RECORD

RBCA GROUNDWATER:
POLLUTANT TYPE:GASOLINE/DIESEL/KEROSENE
CD NUMBER:0
RESPONSIBLE OWNER:0

- Continued on next page -

Environmental FirstSearch
Site Detail Report

Target Property: SR 1121 - NC 210 - SR 1120
SPRING LAKE, NC 28390

JOB: 2012-228

UST

SEARCH ID: 5 **DIST/DIR:** 0.00 -- **ELEVATION:** 319 **MAP ID:** 1

NAME:	RYAN S GROCERY	**REV:**	6/1/12
ADDRESS:	7939 RAY RD	**ID1:**	FA-675
	SPRING LAKE NC 28390	**ID2:**	
	HARNETT	**STATUS:**	UNKNOWN
CONTACT:	CHRISTINE RYAN	**PHONE:**	
SOURCE:	NCDENR		

RESPONSIBLE OPERATOR:0
RESPONSIBLE LANDOWNER:0
COMMENTS:

Environmental FirstSearch
Site Detail Report

Target Property: SR 1121 - NC 210 - SR 1120
SPRING LAKE, NC 28390

JOB: 2012-228

LUST

SEARCH ID: 9 **DIST/DIR:** 0.00 -- **ELEVATION:** 319 **MAP ID:** 1

NAME:	RYAN S GROCERY	**REV:**	6/1/12
ADDRESS:	7939 RAY RD	**ID1:**	NCI-012015
	SPRING LAKE NC 28390	**ID2:**	12015
	HARNETT	**STATUS:**	RESPONSE
CONTACT:	CHRISTINE RYAN	**PHONE:**	
SOURCE:	NCDENR		

REGIONAL UST DATA

UST NUMBER:FA-675
INCIDENT NUMBER:12015
CD NUMBER:0
REEL NUMBER:0
REGIONAL CONTACT:JWB
REGIONAL OFFICE:FAY
DATE OCCURRED:12/21/1993

RESPONSIBLE COMPANY:

790 JOHN RYAN LANE
SPRING LAKE ,NC , 28390

SOURCE:LEAK, UST
PETROLEUM TYPE:PETROLEUM
COMMERCIAL/NONCOMMERCIAL:COMMERCIAL
REGULATED:REGULATED
REGULATORY REQUIREMENT:9/28/2001
VIOLATION:

PHASE REQUIRED:
SITE PRIORITY:085B
RISK:H
RISK OF INCIDENT:L
INTERMEDIATE CONDITION:
LAND USE:

CORRECTIVE ACTION PLAN:
RBCA:
CLOSED REVIEW REQUESTED:
CASE CLOSED:
CONTAMINATION:GROUNDWATER/BOTH
SUPPLY WELLS:
MTBE IN WELL:
MTBE IN GROUNDWATER:UNKNOWN

LEAK DISCOVERED:0
LAND USE RESTRICTION FILED:
CLEAN UP:12/21/1993
CURRENT STATUS:CURRENT RECORD

RBCA GROUNDWATER:
POLLUTANT TYPE:GASOLINE/DIESEL/KEROSENE
CD NUMBER:0
RESPONSIBLE OWNER:0
RESPONSIBLE OPERATOR:0
RESPONSIBLE LANDOWNER:0

Environmental FirstSearch
Site Detail Report

Target Property: SR 1121 - NC 210 - SR 1120
SPRING LAKE, NC 28390

JOB: 2012-228

SPILLS

SEARCH ID: 1 **DIST/DIR:** 0.00 -- **ELEVATION:** 294 **MAP ID:** 2

NAME: DALTON HOLDER STORE
ADDRESS: 6701 RAY RD
SPRING LAKE NC 28390
HARNETT
CONTACT:
SOURCE: NCDENR

REV: 9/23/11
ID1: 17793
ID2: FA-934
STATUS: CURRENT RECORD
PHONE:

SITE INFORMATION

OWNER/OPERATOR: GORDON MASON

6701 RAY ROAD
SPRING LAKE NC 28390

DATE OF RELEASE: 8/28/1997
DATE SUBMITTED: 9/16/1997
DESCRIPTION OF INCIDENT: RECEIVED CLOSURE REPORT; SOIL ANALYTICAL RESULTS SHOWED TPH>10PPM FOR ALL SAMPLES COLLECTED AROUND TANKS; GROUNDWATER WAS NOT ENCOUNTERED DURING TK REMOVAL

CONTAMINATION INFORMATION
GROUNDWATER CONTAMINATED?: Y
MAJOR SOIL CONTAMINATION?: N

MATERIAL INVOLVED (1): GASOLINE
AMOUNT LOST (1):
AMOUNT RECOVERED (1): UNKNOWN

MATERIAL INVOLVED (2):
AMOUNT LOST (2):
AMOUNT RECOVERED (2):

MATERIAL INVOLVED (3):
AMOUNT LOST (3):
AMOUNT RECOVERED (3):

NUMBER OF WELLS AFFECTED: 0
NAME(S) OF CONTAMINATED WELLS:

PRIORITY INFORMATION:
RISK SITE?: U
SITE PRIORITY: 10E
PRIORITY CODE: E
PRIORITY UPDATE:

STATUS INFORMATION:
LAST MODIFIED:
INCIDENT PHASE: RESPONSE
NOV ISSUED:
NORR ISSUED:
45 DAY REPORT:
CORRECTIVE ACTION PLAN:
CLOSURE REQ DATE:
CLOSE-OUT REPORT:

Target Property: SR 1121 - NC 210 - SR 1120
SPRING LAKE, NC 28390

JOB: 2012-228

UST

SEARCH ID: 7 **DIST/DIR:** 0.00 -- **ELEVATION:** 294 **MAP ID:** 2

NAME: DATON HOLDER
ADDRESS: 6701 RAY RD
SPRING LAKE NC 28390
HARNETT
CONTACT: GORDON A MASON
SOURCE: NCDENR

REV: 6/1/12
ID1: 0-017886
ID2: 00-0-0000017886
STATUS: PERM CLOSED REMOVED
PHONE:

SITE INFORMATION

TOTAL NUMBER OF TANKS: 3

CONTACT INFORMATION: GORDON A MASON
6701 B RAY RD
SPRING LAKE NC 28390

TANK NUMBER: 1
ROOT TANK ID:
TANK STATUS:
INSTALLATION DATE:
PERM CLOSED:
CONTENTS: Gasoline, Gas Mix
CAPACITY IN GALLONS: 3000
TANK CONSTRUCTION:3
PIPE CONSTRUCTION:4
MAIN TANK:NO
COMPARTMENT TANK:NO
MANIFOLD TANK:
COMMERCIAL TANK:YES
REGULATED TANK:YES

TANK NUMBER: 2
ROOT TANK ID:
TANK STATUS:
INSTALLATION DATE:
PERM CLOSED:
CONTENTS: Gasoline, Gas Mix
CAPACITY IN GALLONS: 3000
TANK CONSTRUCTION:3
PIPE CONSTRUCTION:4
MAIN TANK:NO
COMPARTMENT TANK:NO
MANIFOLD TANK:
COMMERCIAL TANK:YES
REGULATED TANK:YES

TANK NUMBER: 3
ROOT TANK ID:
TANK STATUS:
INSTALLATION DATE:
PERM CLOSED:
CONTENTS: Gasoline, Gas Mix
CAPACITY IN GALLONS: 3000
TANK CONSTRUCTION:3

- Continued on next page -

Target Property: SR 1121 - NC 210 - SR 1120
SPRING LAKE, NC 28390

JOB: 2012-228

UST

SEARCH ID: 7 **DIST/DIR:** 0.00 -- **ELEVATION:** 294 **MAP ID:** 2

NAME: DATON HOLDER
ADDRESS: 6701 RAY RD
SPRING LAKE NC 28390
HARNETT
CONTACT: GORDON A MASON
SOURCE: NCDENR

REV: 6/1/12
ID1: 0-017886
ID2: 00-0-0000017886
STATUS: PERM CLOSED REMOVED
PHONE:

PIPE CONSTRUCTION:4
MAIN TANK:NO
COMPARTMENT TANK:NO
MANIFOLD TANK:
COMMERCIAL TANK:YES
REGULATED TANK:YES

REGIONAL UST DATA

UST NUMBER:FA-934
INCIDENT NUMBER:17793
CD NUMBER:0
REEL NUMBER:0
REGIONAL CONTACT:JWB
REGIONAL OFFICE:FAY
DATE OCCURRED:8/28/1997

RESPONSIBLE COMPANY:

6701 RAY ROAD
SPRING LAKE ,NC , 28390

SOURCE:LEAK, UST
PETROLEUM TYPE:PETROLEUM
COMMERCIAL/NONCOMMERCIAL:COMMERCIAL
REGULATED:REGULATED
REGULATORY REQUIREMENT:
VIOLATION:

PHASE REQUIRED:
SITE PRIORITY:
RISK:L
RISK OF INCIDENT:L
INTERMEDIATE CONDITION:
LAND USE:RES

CORRECTIVE ACTION PLAN:
RBCA:
CLOSED REVIEW REQUESTED:
CASE CLOSED:
CONTAMINATION:GROUNDWATER/BOTH
SUPPLY WELLS:0
MTBE IN WELL:0
MTBE IN GROUNDWATER:UNKNOWN

LEAK DISCOVERED:0
LAND USE RESTRICTION FILED:
CLEAN UP:8/27/1997
CURRENT STATUS:CURRENT RECORD

- Continued on next page -

Environmental FirstSearch
Site Detail Report

Target Property: SR 1121 - NC 210 - SR 1120
SPRING LAKE, NC 28390

JOB: 2012-228

UST

SEARCH ID: 7 **DIST/DIR:** 0.00 -- **ELEVATION:** 294 **MAP ID:** 2

NAME: DATON HOLDER
ADDRESS: 6701 RAY RD
SPRING LAKE NC 28390
HARNETT
CONTACT: GORDON A MASON
SOURCE: NCDENR

REV: 6/1/12
ID1: 0-017886
ID2: 00-0-0000017886
STATUS: PERM CLOSED REMOVED
PHONE:

RBCA GROUNDWATER:
POLLUTANT TYPE:GASOLINE/DIESEL/KEROSENE
CD NUMBER:0
RESPONSIBLE OWNER:0
RESPONSIBLE OPERATOR:0
RESPONSIBLE LANDOWNER:0
COMMENTS:

ARCHIVED INFORMATION AS OF 2011

TANK NUMBER: 1
INSTALLATION DATE: 19740420
CLOSED DATE: 19970728
STATUS: PERMANENTLY CLOSED
CONTENTS: GASOLINE, GASOLINE MIXTURE
CAPACITY IN GALLONS: 3000
COMMENTS:
CONSTRUCTION MATERIAL: STEEL
INTERIOR: NONE
EXTERIOR: PAINT
CORROSION PROTECTION:
LEAK DETECTION:
PIPING MATERIAL: STEEL
PIPE CORROSION PROTECTION:
PIPE LEAK DETECTION:
OVERFLOW PROTECTION:
FINANCIAL RESPONSIBILITY:
CERTIFICATION TYPE:
GPS SITING CONFIRMED:N
PERSON CONFIRMING:

TANK NUMBER: 2
INSTALLATION DATE: 19740420
CLOSED DATE: 19970728
STATUS: PERMANENTLY CLOSED
CONTENTS: GASOLINE, GASOLINE MIXTURE
CAPACITY IN GALLONS: 3000
COMMENTS:
CONSTRUCTION MATERIAL: STEEL
INTERIOR: NONE
EXTERIOR: PAINT
CORROSION PROTECTION:
LEAK DETECTION:
PIPING MATERIAL: STEEL
PIPE CORROSION PROTECTION:
PIPE LEAK DETECTION:

- More Details Exist For This Site; Max Page Limit Reached -

Environmental FirstSearch
Site Detail Report

Target Property: SR 1121 - NC 210 - SR 1120
SPRING LAKE, NC 28390

JOB: 2012-228

LUST

SEARCH ID: 8 **DIST/DIR:** 0.00 -- **ELEVATION:** 294 **MAP ID:** 2

NAME:	DALTON HOLDER STORE	**REV:**	6/1/12
ADDRESS:	6701 RAY RD	**ID1:**	NCI-017793
	SPRING LAKE NC 28390	**ID2:**	17793
	HARNETT	**STATUS:**	RESPONSE
CONTACT:	GORDON MASON	**PHONE:**	9104978229
SOURCE:	NCDENR		

REGIONAL UST DATA

UST NUMBER:FA-934
INCIDENT NUMBER:17793
CD NUMBER:0
REEL NUMBER:0
REGIONAL CONTACT:JWB
REGIONAL OFFICE:FAY
DATE OCCURRED:8/28/1997

RESPONSIBLE COMPANY:

6701 RAY ROAD
SPRING LAKE ,NC , 28390

SOURCE:LEAK, UST
PETROLEUM TYPE:PETROLEUM
COMMERCIAL/NONCOMMERCIAL:COMMERCIAL
REGULATED:REGULATED
REGULATORY REQUIREMENT:
VIOLATION:

PHASE REQUIRED:
SITE PRIORITY:
RISK:L
RISK OF INCIDENT:L
INTERMEDIATE CONDITION:
LAND USE:RES

CORRECTIVE ACTION PLAN:
RBCA:
CLOSED REVIEW REQUESTED:
CASE CLOSED:
CONTAMINATION:GROUNDWATER/BOTH
SUPPLY WELLS:0
MTBE IN WELL:0
MTBE IN GROUNDWATER:UNKNOWN

LEAK DISCOVERED:0
LAND USE RESTRICTION FILED:
CLEAN UP:8/27/1997
CURRENT STATUS:CURRENT RECORD

RBCA GROUNDWATER:
POLLUTANT TYPE:GASOLINE/DIESEL/KEROSENE
CD NUMBER:0
RESPONSIBLE OWNER:0
RESPONSIBLE OPERATOR:0
RESPONSIBLE LANDOWNER:0

Target Property: SR 1121 - NC 210 - SR 1120
SPRING LAKE, NC 28390

JOB: 2012-228

SPILLS

SEARCH ID: 2 **DIST/DIR:** 0.00 -- **ELEVATION:** 226 **MAP ID:** 3

NAME: HOLDERS GROCERY
ADDRESS: UNKNOWN
SPRING LAKE NC 28390
HARNETT
CONTACT:
SOURCE: NCDENR

REV: 6/1/12
ID1: 85611
ID2: FA-85611
STATUS: CURRENT RECORD
PHONE:

SITE INFORMATION

OWNER/OPERATOR: HOPPER-PRESIDENT, RICK
H&H CABLE CONTRACTORS, INC.
1092 PONDEROSA ROAD
CAMERON 9194991130

DATE OF RELEASE: 6/4/2000
DATE SUBMITTED: 4/12/2001
DESCRIPTION OF INCIDENT:

CONTAMINATION INFORMATION
GROUNDWATER CONTAMINATED?: Y
MAJOR SOIL CONTAMINATION?:

MATERIAL INVOLVED (1):
AMOUNT LOST (1):
AMOUNT RECOVERED (1):

MATERIAL INVOLVED (2):
AMOUNT LOST (2):
AMOUNT RECOVERED (2):

MATERIAL INVOLVED (3):
AMOUNT LOST (3):
AMOUNT RECOVERED (3):

NUMBER OF WELLS AFFECTED: 0
NAME(S) OF CONTAMINATED WELLS:

PRIORITY INFORMATION:
RISK SITE?:
SITE PRIORITY:
PRIORITY CODE: B
PRIORITY UPDATE:

STATUS INFORMATION:
LAST MODIFIED: 5/9/2002
INCIDENT PHASE: ASSESSMENT
NOV ISSUED:
NORR ISSUED:
45 DAY REPORT:
CORRECTIVE ACTION PLAN: 5/9/2002
CLOSURE REQ DATE:
CLOSE-OUT REPORT:

Target Property: SR 1121 - NC 210 - SR 1120
SPRING LAKE, NC 28390

JOB: 2012-228

UST

SEARCH ID: 3 **DIST/DIR:** 0.00 -- **ELEVATION:** 277 **MAP ID:** 4

NAME: MATTHEWS GENERAL STORE
ADDRESS: 7100 RAY RD
SPRING LAKE NC 28390
HARNETT
CONTACT: FOSTER . MATTHEWS
SOURCE: NCDENR

REV: 6/1/12
ID1: 0-002736
ID2: 00-0-0000002736
STATUS: CURRENTLY OPERATIONAL
PHONE:

SITE INFORMATION

TOTAL NUMBER OF TANKS: 3

CONTACT INFORMATION: FOSTER . MATTHEWS
1863 WILL LUCAS RD
LINDEN NC 28356-8523

TANK NUMBER: 001
ROOT TANK ID:
TANK STATUS:
INSTALLATION DATE:
PERM CLOSED:
CONTENTS: Gasoline, Gas Mix
CAPACITY IN GALLONS: 6000
TANK CONSTRUCTION:3
PIPE CONSTRUCTION:1
MAIN TANK:NO
COMPARTMENT TANK:NO
MANIFOLD TANK:NO
COMMERCIAL TANK:YES
REGULATED TANK:YES

TANK NUMBER: 002
ROOT TANK ID:
TANK STATUS:
INSTALLATION DATE:
PERM CLOSED:
CONTENTS: Gasoline, Gas Mix
CAPACITY IN GALLONS: 6000
TANK CONSTRUCTION:3
PIPE CONSTRUCTION:1
MAIN TANK:NO
COMPARTMENT TANK:NO
MANIFOLD TANK:NO
COMMERCIAL TANK:YES
REGULATED TANK:YES

TANK NUMBER: 003
ROOT TANK ID:
TANK STATUS:
INSTALLATION DATE:
PERM CLOSED:
CONTENTS: Gasoline, Gas Mix
CAPACITY IN GALLONS: 6000
TANK CONSTRUCTION:3

- Continued on next page -

Target Property: SR 1121 - NC 210 - SR 1120
SPRING LAKE, NC 28390

JOB: 2012-228

UST

SEARCH ID: 3 **DIST/DIR:** 0.00 -- **ELEVATION:** 277 **MAP ID:** 4

NAME: MATTHEWS GENERAL STORE
ADDRESS: 7100 RAY RD
SPRING LAKE NC 28390
HARNETT
CONTACT: FOSTER . MATTHEWS
SOURCE: NCDENR

REV: 6/1/12
ID1: 0-002736
ID2: 00-0-0000002736
STATUS: CURRENTLY OPERATIONAL
PHONE:

PIPE CONSTRUCTION:1
MAIN TANK:NO
COMPARTMENT TANK:NO
MANIFOLD TANK:NO
COMMERCIAL TANK:YES
REGULATED TANK:YES

ARCHIVED INFORMATION AS OF 2011

TANK NUMBER: 001
INSTALLATION DATE: 19940504
CLOSED DATE:
STATUS: CURRENTLY OPERATIONAL
CONTENTS: GASOLINE, GASOLINE MIXTURE
CAPACITY IN GALLONS: 6000
COMMENTS:
CONSTRUCTION MATERIAL: STEEL
INTERIOR: UNKNOWN
EXTERIOR: UNKNOWN
CORROSION PROTECTION: IMPRESSED CURRENT
LEAK DETECTION:
PIPING MATERIAL: UNKNOWN
PIPE CORROSION PROTECTION: IMPRESSED CURRENT
PIPE LEAK DETECTION:
OVERFLOW PROTECTION: CATCHMENT BASIN
FINANCIAL RESPONSIBILITY:
CERTIFICATION TYPE:
GPS SITING CONFIRMED:Y
PERSON CONFIRMING:KCC

TANK NUMBER: 002
INSTALLATION DATE: 19940504
CLOSED DATE:
STATUS: CURRENTLY OPERATIONAL
CONTENTS: GASOLINE, GASOLINE MIXTURE
CAPACITY IN GALLONS: 6000
COMMENTS:
CONSTRUCTION MATERIAL: STEEL
INTERIOR: UNKNOWN
EXTERIOR: UNKNOWN
CORROSION PROTECTION: IMPRESSED CURRENT
LEAK DETECTION:
PIPING MATERIAL: UNKNOWN
PIPE CORROSION PROTECTION: IMPRESSED CURRENT
PIPE LEAK DETECTION:
OVERFLOW PROTECTION: CATCHMENT BASIN
FINANCIAL RESPONSIBILITY:

- Continued on next page -

Target Property: SR 1121 - NC 210 - SR 1120
SPRING LAKE, NC 28390

JOB: 2012-228

UST

SEARCH ID: 3 **DIST/DIR:** 0.00 -- **ELEVATION:** 277 **MAP ID:** 4

NAME: MATTHEWS GENERAL STORE
ADDRESS: 7100 RAY RD
SPRING LAKE NC 28390
HARNETT
CONTACT: FOSTER . MATTHEWS
SOURCE: NCDENR

REV: 6/1/12
ID1: 0-002736
ID2: 00-0-0000002736
STATUS: CURRENTLY OPERATIONAL
PHONE:

CERTIFICATION TYPE:
GPS SITING CONFIRMED:Y
PERSON CONFIRMING:KCC

TANK NUMBER: 003
INSTALLATION DATE: 19940504
CLOSED DATE:
STATUS: CURRENTLY OPERATIONAL
CONTENTS: GASOLINE, GASOLINE MIXTURE
CAPACITY IN GALLONS: 6000
COMMENTS:
CONSTRUCTION MATERIAL: STEEL
INTERIOR: UNKNOWN
EXTERIOR: UNKNOWN
CORROSION PROTECTION: IMPRESSED CURRENT
LEAK DETECTION:
PIPING MATERIAL: UNKNOWN
PIPE CORROSION PROTECTION: IMPRESSED CURRENT
PIPE LEAK DETECTION:
OVERFLOW PROTECTION: CATCHMENT BASIN
FINANCIAL RESPONSIBILITY:
CERTIFICATION TYPE:
GPS SITING CONFIRMED:Y
PERSON CONFIRMING:KCC

Target Property: SR 1121 - NC 210 - SR 1120
SPRING LAKE, NC 28390

JOB: 2012-228

UST

SEARCH ID: 6 **DIST/DIR:** 0.00 -- **ELEVATION:** 318 **MAP ID:** 5

NAME: SHORT STOP FOOD MARTS 8
ADDRESS: 7925 RAY RD
SPRING LAKE NC 28390
HARNETT
CONTACT: LI L THRIFT FOOD MARTS, INC.
SOURCE: NCDENR

REV: 6/1/12
ID1: 0-021508
ID2: 00-0-0000021508
STATUS: CURRENTLY OPERATIONAL
PHONE:

SITE INFORMATION

TOTAL NUMBER OF TANKS: 3

CONTACT INFORMATION: LI L THRIFT FOOD MARTS, INC.
1007 ARSENAL AVENUE
FAYETTEVILLE NC 28305-5329

TANK NUMBER: 1
ROOT TANK ID:
TANK STATUS:
INSTALLATION DATE:
PERM CLOSED:
CONTENTS: Gasoline, Gas Mix
CAPACITY IN GALLONS: 6000
TANK CONSTRUCTION:3
PIPE CONSTRUCTION:3
MAIN TANK:NO
COMPARTMENT TANK:NO
MANIFOLD TANK:NO
COMMERCIAL TANK:YES
REGULATED TANK:YES

TANK NUMBER: 2
ROOT TANK ID:
TANK STATUS:
INSTALLATION DATE:
PERM CLOSED:
CONTENTS: Gasoline, Gas Mix
CAPACITY IN GALLONS: 6000
TANK CONSTRUCTION:3
PIPE CONSTRUCTION:3
MAIN TANK:NO
COMPARTMENT TANK:NO
MANIFOLD TANK:NO
COMMERCIAL TANK:YES
REGULATED TANK:YES

TANK NUMBER: 3
ROOT TANK ID:
TANK STATUS:
INSTALLATION DATE:
PERM CLOSED:
CONTENTS: Gasoline, Gas Mix
CAPACITY IN GALLONS: 4000
TANK CONSTRUCTION:3

- Continued on next page -

Target Property: SR 1121 - NC 210 - SR 1120
SPRING LAKE, NC 28390

JOB: 2012-228

UST

SEARCH ID: 6 **DIST/DIR:** 0.00 -- **ELEVATION:** 318 **MAP ID:** 5

NAME:	SHORT STOP FOOD MARTS 8	**REV:**	6/1/12
ADDRESS:	7925 RAY RD	**ID1:**	0-021508
	SPRING LAKE NC 28390	**ID2:**	00-0-0000021508
	HARNETT	**STATUS:**	CURRENTLY OPERATIONAL
CONTACT:	LI L THRIFT FOOD MARTS, INC.	**PHONE:**	
SOURCE:	NCDENR		

PIPE CONSTRUCTION:3
MAIN TANK:NO
COMPARTMENT TANK:NO
MANIFOLD TANK:NO
COMMERCIAL TANK:YES
REGULATED TANK:YES

ARCHIVED INFORMATION AS OF 2011

TANK NUMBER: 1
INSTALLATION DATE: 19731003
CLOSED DATE:
STATUS: CURRENTLY OPERATIONAL
CONTENTS: GASOLINE, GASOLINE MIXTURE
CAPACITY IN GALLONS: 6000
COMMENTS:
CONSTRUCTION MATERIAL: STEEL
INTERIOR: INTERNAL LINING
EXTERIOR: CATHODIC PROTECTION
CORROSION PROTECTION: INTERNAL LINING
LEAK DETECTION: PERIODIC TANK TIGHTNESS TESTING
PIPING MATERIAL: FRP
PIPE CORROSION PROTECTION: FRP TANK/PIPING
PIPE LEAK DETECTION: AUTOMATIC LINE LEAK DETECTORS
OVERFLOW PROTECTION: CATCHMENT BASIN
FINANCIAL RESPONSIBILITY:
CERTIFICATION TYPE:
GPS SITING CONFIRMED:Y
PERSON CONFIRMING:KCC

TANK NUMBER: 2
INSTALLATION DATE: 19731003
CLOSED DATE:
STATUS: CURRENTLY OPERATIONAL
CONTENTS: GASOLINE, GASOLINE MIXTURE
CAPACITY IN GALLONS: 6000
COMMENTS:
CONSTRUCTION MATERIAL: STEEL
INTERIOR: INTERNAL LINING
EXTERIOR: CATHODIC PROTECTION
CORROSION PROTECTION: INTERNAL LINING
LEAK DETECTION: PERIODIC TANK TIGHTNESS TESTING
PIPING MATERIAL: FRP
PIPE CORROSION PROTECTION: FRP TANK/PIPING
PIPE LEAK DETECTION: AUTOMATIC LINE LEAK DETECTORS
OVERFLOW PROTECTION: CATCHMENT BASIN
FINANCIAL RESPONSIBILITY:

- Continued on next page -

Target Property: SR 1121 - NC 210 - SR 1120
SPRING LAKE, NC 28390

JOB: 2012-228

UST

SEARCH ID: 6 **DIST/DIR:** 0.00 -- **ELEVATION:** 318 **MAP ID:** 5

NAME: SHORT STOP FOOD MARTS 8
ADDRESS: 7925 RAY RD
SPRING LAKE NC 28390
HARNETT
CONTACT: LI L THRIFT FOOD MARTS, INC.
SOURCE: NCDENR

REV: 6/1/12
ID1: 0-021508
ID2: 00-0-0000021508
STATUS: CURRENTLY OPERATIONAL
PHONE:

CERTIFICATION TYPE:
GPS SITING CONFIRMED:Y
PERSON CONFIRMING:KCC

TANK NUMBER: 3
INSTALLATION DATE: 19861001
CLOSED DATE:
STATUS: CURRENTLY OPERATIONAL
CONTENTS: GASOLINE, GASOLINE MIXTURE
CAPACITY IN GALLONS: 4000
COMMENTS:
CONSTRUCTION MATERIAL: STEEL
INTERIOR: INTERNAL LINING
EXTERIOR: CATHODIC PROTECTION
CORROSION PROTECTION: INTERNAL LINING
LEAK DETECTION: PERIODIC TANK TIGHTNESS TESTING
PIPING MATERIAL: FRP
PIPE CORROSION PROTECTION: FRP TANK/PIPING
PIPE LEAK DETECTION: AUTOMATIC LINE LEAK DETECTORS
OVERFLOW PROTECTION: CATCHMENT BASIN
FINANCIAL RESPONSIBILITY:
CERTIFICATION TYPE:
GPS SITING CONFIRMED:Y
PERSON CONFIRMING:KCC

Target Property: SR 1121 - NC 210 - SR 1120
SPRING LAKE, NC 28390

JOB: 2012-228

LUST

SEARCH ID: 10 **DIST/DIR:** 0.11 SW **ELEVATION:** 266 **MAP ID:** 6

NAME:	HOLDERS GROCERY	**REV:**	10/1/01
ADDRESS:	1899 RAY RD	**ID1:**	NCI-085611
	SPRING LAKE NC	**ID2:**	
	HARNETT	**STATUS:**	ASSESSMENT
CONTACT:	RICK HOPPER-PRESIDENT	**PHONE:**	9194991130
SOURCE:			

OWNER/OPERATOR: RICK HOPPER-PRESIDENT
H&H CABLE CONTRACTORS, INC.
1092 PONDEROSA ROAD
CAMERON NORT 28326

DATE OF RELEASE: 6/4/2000
DATE SUBMITTED: 4/12/2001
DESCRIPTION OF INCIDENT:

CONTAMINATION INFORMATION
GROUNDWATER CONTAMINATED?: Y
MAJOR SOIL CONTAMINATION?:

MATERIAL INVOLVED (1):
AMOUNT LOST (1):
AMOUNT RECOVERED (1):

MATERIAL INVOLVED (2):
AMOUNT LOST (2):
AMOUNT RECOVERED (2):

MATERIAL INVOLVED (3):
AMOUNT LOST (3):
AMOUNT RECOVERED (3):

NUMBER OF WELLS AFFECTED: 0
NAME(S) OF CONTAMINATED WELLS:

PRIORITY INFORMATION:
RISK SITE?:
SITE PRIORITY: 160
PRIORITY CODE: B
PRIORITY UPDATE:

STATUS INFORMATION:
LAST MODIFIED:
INCIDENT PHASE: ASSESSMENT
NOV ISSUED:
NORR ISSUED:
45 DAY REPORT:
CORRECTIVE ACTION PLAN: 5/9/2002
CLOSURE REQ DATE:
CLOSE-OUT REPORT:

Environmental FirstSearch
Site Detail Report

Target Property: SR 1121 - NC 210 - SR 1120
SPRING LAKE, NC 28390

JOB: 2012-228

LUST

SEARCH ID: 11 **DIST/DIR:** 0.27 SE **ELEVATION:** 217 **MAP ID:** 7

NAME: LEWIS OIL CO.
ADDRESS: 0 HIGHWAY 210
MANCHESTER NC
HARNETT
CONTACT:
SOURCE:

REV: 10/1/01
ID1: NCI-005466
ID2:
STATUS:
PHONE:

OWNER/OPERATOR:

DATE OF RELEASE:
DATE SUBMITTED: 3/12/1990
DESCRIPTION OF INCIDENT:

CONTAMINATION INFORMATION
GROUNDWATER CONTAMINATED?: NOD
MAJOR SOIL CONTAMINATION?:

MATERIAL INVOLVED (1):
AMOUNT LOST (1):
AMOUNT RECOVERED (1):

MATERIAL INVOLVED (2):
AMOUNT LOST (2):
AMOUNT RECOVERED (2):

MATERIAL INVOLVED (3):
AMOUNT LOST (3):
AMOUNT RECOVERED (3):

NUMBER OF WELLS AFFECTED: 0
NAME(S) OF CONTAMINATED WELLS:

PRIORITY INFORMATION:
RISK SITE?:
SITE PRIORITY: 0
PRIORITY CODE: E
PRIORITY UPDATE:

STATUS INFORMATION:
LAST MODIFIED:
INCIDENT PHASE:
NOV ISSUED:
NORR ISSUED:
45 DAY REPORT:
CORRECTIVE ACTION PLAN:
CLOSURE REQ DATE:
CLOSE-OUT REPORT:

Target Property: SR 1121 - NC 210 - SR 1120
SPRING LAKE, NC 28390

JOB: 2012-228

LUST

SEARCH ID: 12 **DIST/DIR:** 0.38 SE **ELEVATION:** 160 **MAP ID:** 8

NAME:	LEWIS OIL GROCERY STORE	**REV:**	6/1/12
ADDRESS:	0 NC 210 & SR 1600	**ID1:**	NCI-014732
	SPRING LAKE NC 28390	**ID2:**	14732
	CUMBERLAND	**STATUS:**	RESPONSE
CONTACT:	STEWART LEWIS	**PHONE:**	
SOURCE:	NCDENR		

REGIONAL UST DATA

UST NUMBER:FA-797
INCIDENT NUMBER:14732
CD NUMBER:0
REEL NUMBER:0
REGIONAL CONTACT:JWB
REGIONAL OFFICE:FAY
DATE OCCURRED:10/18/1995

RESPONSIBLE COMPANY:

STUART LEWIS OIL CO.
HWY 210 N.
SPRING LAKE ,NC , 28390

SOURCE:LEAK, UST
PETROLEUM TYPE:PETROLEUM
COMMERCIAL/NONCOMMERCIAL:COMMERCIAL
REGULATED:REGULATED
REGULATORY REQUIREMENT:
VIOLATION:

PHASE REQUIRED:
SITE PRIORITY:090B
RISK:H
RISK OF INCIDENT:L
INTERMEDIATE CONDITION:
LAND USE:

CORRECTIVE ACTION PLAN:
RBCA:
CLOSED REVIEW REQUESTED:
CASE CLOSED:
CONTAMINATION:GROUNDWATER/BOTH
SUPPLY WELLS:
MTBE IN WELL:
MTBE IN GROUNDWATER:UNKNOWN

LEAK DISCOVERED:0
LAND USE RESTRICTION FILED:
CLEAN UP:10/18/1995
CURRENT STATUS:CURRENT RECORD

RBCA GROUNDWATER:
POLLUTANT TYPE:GASOLINE/DIESEL/KEROSENE
CD NUMBER:0
RESPONSIBLE OWNER:0
RESPONSIBLE OPERATOR:0
RESPONSIBLE LANDOWNER:0

Environmental FirstSearch Descriptions

NPL: EPA NATIONAL PRIORITY LIST - The National Priorities List is a list of the worst hazardous waste sites that have been identified by Superfund. Sites are only put on the list after they have been scored using the Hazard Ranking System (HRS), and have been subjected to public comment. Any site on the NPL is eligible for cleanup using Superfund Trust money. A Superfund site is any land in the United States that has been contaminated by hazardous waste and identified by the Environmental Protection Agency (EPA) as a candidate for cleanup because it poses a risk to human health and/or the environment.FINAL - Currently on the Final NPLPROPOSED - Proposed for NPL

NPL DELISTED: EPA NATIONAL PRIORITY LIST Subset - Database of delisted NPL sites. The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.DELISTED - Deleted from the Final NPL

CERCLIS: EPA COMPREHENSIVE ENVIRONMENTAL RESPONSE COMPENSATION AND LIABILITY INFORMATION SYSTEM (CERCLIS)- CERCLIS is a database of potential and confirmed hazardous waste sites at which the EPA Superfund program has some involvement. It contains sites that are either proposed to be or are on the National Priorities List (NPL) as well as sites that are in the screening and assessment phase for possible inclusion on the NPL.PART OF NPL- Site is part of NPL siteDELETED - Deleted from the Final NPLFINAL - Currently on the Final NPLNOT PROPOSED - Not on the NPLNOT VALID - Not Valid Site or IncidentPROPOSED - Proposed for NPLREMOVED - Removed from Proposed NPLSCAN PLAN - Pre-proposal SiteWITHDRAWN - Withdrawn

NFRAP: EPA COMPREHENSIVE ENVIRONMENTAL RESPONSE COMPENSATION AND LIABILITY INFORMATION SYSTEM ARCHIVED SITES - database of Archive designated CERCLA sites that, to the best of EPA's knowledge, assessment has been completed and has determined no further steps will be taken to list this site on the National Priorities List (NPL). This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site.NFRAP – No Further Remedial Action PlanP - Site is part of NPL siteD - Deleted from the Final NPLF - Currently on the Final NPLN - Not on the NPLO - Not Valid Site or IncidentP - Proposed for NPLR - Removed from Proposed NPLS - Pre-proposal SiteW – Withdrawn

RCRA COR ACT: EPA RESOURCE CONSERVATION AND RECOVERY INFORMATION SYSTEM SITES - Database of hazardous waste information contained in the Resource Conservation and Recovery Act Information (RCRAInfo), a national program management and inventory system about hazardous waste handlers. In general, all generators, transporters, treaters, storers, and disposers of hazardous waste are required to provide information about their activities to state environmental agencies. These agencies, in turn pass on the information to regional and national EPA offices. This regulation is governed by the Resource Conservation and Recovery Act (RCRA), as amended by the Hazardous and Solid Waste Amendments of 1984.RCRAInfo facilities that have reported violations and subject to corrective actions.

RCRA TSD: EPA RESOURCE CONSERVATION AND RECOVERY INFORMATION SYSTEM TREATMENT, STORAGE, and DISPOSAL FACILITIES. - Database of hazardous waste information contained in the Resource Conservation and Recovery Act Information (RCRAInfo), a national program management and inventory system about hazardous waste handlers. In general, all generators, transporters, treaters, storers, and disposers of hazardous waste are required to provide information about their activities to state environmental agencies. These agencies, in turn pass on the information to regional and national EPA offices. This regulation is governed by the Resource Conservation and Recovery Act (RCRA), as amended by the Hazardous and Solid Waste Amendments of 1984.Facilities that treat, store, dispose, or incinerate hazardous waste.

RCRA GEN: EPA/MA DEP/CT DEP RESOURCE CONSERVATION AND RECOVERY INFORMATION SYSTEM GENERATORS - Database of hazardous waste information contained in the Resource Conservation and Recovery Act Information (RCRAInfo), a national program management and inventory system about hazardous waste handlers. In general, all generators, transporters, treaters, storers, and disposers of hazardous waste are required to provide information about their activities to state environmental agencies. These agencies, in turn pass on the information to regional and national EPA offices. This regulation is governed by the Resource Conservation and Recovery Act (RCRA), as amended by the Hazardous and Solid Waste Amendments of 1984.Facilities that generate or transport hazardous waste or meet other RCRA requirements.LGN - Large Quantity GeneratorsSGN - Small Quantity GeneratorsVGN – Conditionally Exempt Generator.Included are RAATS (RCRA Administrative Action Tracking System) and CMEL (Compliance Monitoring & Enforcement List) facilities. CONNECTICUT HAZARDOUS WASTE MANIFEST – Database of all shipments of hazardous waste within, into or from Connecticut. The data includes date of shipment, transporter and TSD info, and material shipped and quantity. This data is appended to the details of existing generator records. MASSACHUSETTES HAZARDOUS WASTE GENERATOR – database of generators that are regulated under the MA DEP. VQN-MA = generates less than 220 pounds or 27 gallons per month of hazardous waste or waste oil.SQN-MA = generates 220 to 2,200 pounds or 27 to 270 gallons per month of waste oil.LQG-MA = generates greater than 2,200 lbs of hazardous waste or waste oil per month.

Fed Brownfield: EPA BROWNFIELD MANAGEMENT SYSTEM (BMS) - database designed to assist EPA in collecting, tracking, and updating information, as well as reporting on the major activities and accomplishments of the various Brownfield grant Programs./n CLEANUPS IN MY COMMUNITY (subset) - Sites, facilities and properties that have been contaminated by hazardous materials and are being, or have been, cleaned up under EPA's brownfield's program.

ERNS: EPA/NRC EMERGENCY RESPONSE NOTIFICATION SYSTEM (ERNS) - Database of incidents reported to the National Response Center. These incidents include chemical spills, accidents involving chemicals (such as fires or explosions), oil spills, transportation accidents that involve oil or chemicals, releases of radioactive materials, sightings of oil sheens on bodies of water, terrorist incidents involving chemicals, incidents where illegally dumped chemicals have been found, and drills intended to prepare responders to handle these kinds of incidents. Data since January 2001 has been received from the National Response System database as the EPA no longer maintains this data.

Tribal Lands: DOI/BIA INDIAN LANDS OF THE UNITED STATES - Database of areas with boundaries established by treaty, statute, and (or) executive or court order, recognized by the Federal Government as territory in which American Indian tribes have primary governmental authority. The Indian Lands of the United States map layer shows areas of 640 acres or more, administered by the Bureau of Indian Affairs. Included are Federally-administered lands within a reservation which may or may not be considered part of the reservation.BUREAU OF INDIAN AFFIARS CONTACT - Regional contact information for the Bureau of Indian Affairs offices.

State/Tribal Sites: NCDENR STATE INACTIVE HAZARDOUS SITES LIST - database of sites and Facilities that are being investigated due to reported releases of Hazardous substances. Included within this Inactive Hazardous Waste Sites Inventory database are the following classifications: Inactive Hazardous Waste Sites (IHS), No Further Action Sites (NFA), Duplicate Sites (DS), Inactive Hazardous Waste Sites Priority List Sites (SPL)

State Spills 90: NCDENR INCIDENT MANAGEMENT DATA (UST and Groundwater) - database of possible releases/spills of contaminants. The data includes media effected, material released, source and site priority.

State/Tribal SWL: NCDENR ALL PERMITTED SOLID WASTE FACILITIES - database of C&D Landfill, Compost, House Hold Hazardous Waste landfill, Incinerator (Industrial) Landfill, Incinerator (Medical) Landfill, Industrial Landfill, Land Clearing and Inert Debris Landfill, Mixed Waste Processing Landfill, Municipal Solid Waste Landfill, Tire Treatment and Processing Landfill, and Transfer and Processing Stations.

State/Tribal LUST: NCDENR INCIDENT MANAGEMENT DATA (UST and Groundwater) - database of leaking underground storage tanks. This database is a subset of the Incident Management Data (UST and Groundwater) where the source is a leaking ust. This data is concerned with petroleum storage systems and includes facilities and/or locations that have reported the possible release of contaminants. This database also includes State Spill Sites. REGIONAL UST DATABASE (SUBSET) - database of information obtained from the Regional Offices in which an incident has occurred. It provides a more detailed explanation of current and historic activity for individual sites, as well as what was previously found in the Incident Management Database.

State/Tribal UST/AST: NCDENR/EPA REGISTERED TANKS and FACILITY DATABASE - database of underground storage tanks registered with the North Carolina Department of Environment and Natural Resources. Inclusion on this list indicates the presence of underground petroleum storage tanks and therefore the potential for environmental problems. It does not necessarily indicate existing problems.TRIBAL LAND UNDERGROUND STORAGE TANKS - database of underground storage tanks that are reported to be on Native American lands.REGIONAL UST DATABASE - database of information obtained from the Regional Offices. It provides a more detailed explanation of current and historic activity for individual sites, as well as what was previously found in the Incident Management Database.

State/Tribal IC: NCDENR STATE INACTIVE HAZARDOUS SITES LIST SUBSET - database of sites and Facilities that have land use restrictions and are being investigated due to reported releases of Hazardous substances. Included within this Inactive Hazardous Waste Sites Inventory database are the following classifications: Inactive Hazardous Waste Sites (IHS), No Further Action Sites (NFA), Duplicate Sites (DS), Inactive Hazardous Waste Sites Priority List Sites (SPL)

State/Tribal VCP: NCDENR STATE INACTIVE HAZARDOUS SITES LIST SUBSET- database of sites and Facilities that are being investigated due to reported releases of Hazardous substances and have a voluntary cleanup aggreement. Included within this Inactive Hazardous Waste Sites Inventory database are the following classifications: Inactive Hazardous Waste Sites (IHS), No Further Action Sites (NFA), Duplicate Sites (DS), Inactive Hazardous Waste Sites Priority List Sites (SPL)

State/Tribal Brownfields: NCDENR BROWNFIELD PROJECTS INVENTORY - database of Active Eligible Sites, Projects Pending Eligibility, and Finalized Brownfields Agreements.

Federal IC / EC: EPA FEDERAL ENGINEERING AND INSTITUTIONAL CONTROLS- Superfund sites that have either an engineering or an institutional control. The data includes the control and the media contaminated. RESOURCE CONSERVATION AND RECOVERY INFORMATION SYSTEM SITES (RCRA) – RCRA site the have institutional controls.

Environmental FirstSearch Database Sources

NPL: EPA Environmental Protection Agency

Updated quarterly

NPL DELISTED: EPA Environmental Protection Agency

Updated quarterly

CERCLIS: EPA Environmental Protection Agency

Updated quarterly

NFRAP: EPA Environmental Protection Agency.

Updated quarterly

RCRA COR ACT: EPA Environmental Protection Agency.

Updated quarterly

RCRA TSD: EPA Environmental Protection Agency.

Updated quarterly

RCRA GEN: EPA/MA DEP/CT DEP Environmental Protection Agency, Massachusetts Department of Environmental Protection, Connecticut Department of Environmental Protection

Updated quarterly

Fed Brownfield: EPA Environmental Protection Agency

Updated quarterly

ERNS: EPA/NRC Environmental Protection AgencyNational Response Center.

Updated annually

Tribal Lands: DOI/BIA United States Department of the InteriorBureau of Indian Affairs

Updated annually

State/Tribal Sites: NCDENR North Carolina Department of Environment and Natural Resources, Division of Waste Management

Updated quarterly

State Spills 90: NCDENR North Carolina Department of Environment and Natural Resources, Division of Water Quality/Groundwater Section

Updated quarterly

State/Tribal SWL: NCDENR North Carolina Department of Environment and Natural Resources, Division of Waste Management

Updated annually

State/Tribal LUST: NCDENR North Carolina Department of Environment and Natural Resources, Division of Water Quality/Groundwater Section

Updated quarterly

State/Tribal UST/AST: NCDENR/EPA North Carolina Department of Environment and Natural Resources, Division of Waste ManagementEnvironmental Protection Agency

Updated quarterly

State/Tribal IC: NCDENR North Carolina Department of Environment and Natural Resources, Division of Waste Management

Updated quarterly

State/Tribal VCP: NCDENR North Carolina Department of Environment and Natural Resources, Division of Waste Management

Updated quarterly

State/Tribal Brownfields: NCDENR North Carolina Department of Environment and Natural Resources

Updated quarterly

Federal IC / EC: EPA Environmental Protection Agency

Updated quarterly

Environmental FirstSearch
Street Name Report for Streets within .25 Mile(s) of Target Property

Target Property: SR 1121 - NC 210 - SR 1120
SPRING LAKE, NC 28390

JOB: 2012-228

Street Name	Dist/Dir	Street Name	Dist/Dir
Alan Parker Cir	0.19 NE	Leeks Ln	0.25 SE
Andrew Cox Ln	0.00--	Leopard Ln	0.01 NW
Appaloosa Dr	0.25 SE	Little M Dr	0.00--
Aspen Ave	0.04 NW	Loblolly	0.19 NW
Astor Pl	0.05 NW	Lous Chapel Rd	0.00--
Austin Ave	0.24 SE	Lynx Ln	0.08 NW
Azalea Dr	0.00--	Mckay Dr	0.00--
Balsom Pl	0.09 NW	Mcneil Cemetery Rd	0.00--
Bluegill Ln	0.00--	Misty Cove Ln	0.00--
Burro Ln	0.03 SE	Narcissus Pl	0.03 NW
Burro Rd	0.03 SE	Narcissys	0.02 NW
Camellia Ln	0.00--	Nc Highway 210 S	0.00--
Canopy Ln	0.07 SW	Northpoint Cir	0.05 NE
Capital Dr	0.25 SE	Oakdale Dr	0.02 NW
Capitol Dr	0.22 SE	Old Farms Maple St	0.14 NW
Carnation Cir	0.25 NE	Orchid	0.13 NE
Cedar Dr	0.25 NE	Orchid Dr	0.13 NE
Chestnutt	0.21 NW	Pansey Cir	0.08 NE
Citron Pl	0.08 NW	Pansy Cir	0.08 NE
Clove Ln	0.09 NW	Panther Ln	0.05 NW
Connie Ct	0.14 NE	Peonie Pl	0.21 NW
Cooper Ave	0.00--	Pete Mason Dr	0.14 NW
Creeksville Church Rd	0.09 SE	Pinecrest Dr	0.06 NE
Daffodil Pl	0.09 NW	Primrose	0.21 NW
Daisy Cir	0.1 NE	Primrose St	0.14 NW
Dandelion Pl	0.13 NW	Pvt Rd	0.00--
Dogwood Dr	0.16 NW	Rachel Rd	0.03 SE
Dove Ridge Ln	0.18 NE	Ray Rd	0.00--
E Northpoint St	0.00--	Rolling Springs Dr	0.00--
Elm St	0.22 NW	Rosebud St	0.1 NE
Elma Black Ln	0.09 NW	Ruby Clara Ln	0.00--
Erica Ln	0.18 SE	S and S Ln	0.00--
Eugene Ln	0.03 NE	Sandclay Rd	0.00--
FROM NC 210 TO SR 1120	0.00--	Secondary Road 1121	0.00--
Gardenia Cir	0.16 NE	Secondary Road 1122	0.00--
Gena Ln	0.17 NW	Secondary Road 1123	0.09 SE
Gerber Ln	0.00--	Secondary Road 1142 Rd	0.00--
Gordon Ln	0.01 NW	Secondary Road 1151	0.22 SE
Helen Matthews Dr	0.00--	Secondary Road 1160	0.00--
Holly St	0.18 NW	Secondary Road 1161	0.1 NE
Honey Dr	0.14 NW	Secondary Road 1162	0.00--
Jde St	0.00--	Secondary Road 1163	0.08 NE
Jeff St	0.13 NE	Secondary Road 1165	0.25 NE
John Ryan Ln	0.00--	Secondary Road 1166	0.25 NE
Killdeer Dr	0.16 NW	Secondary Road 2051	0.03 SE
Killdeer Ln	0.00--	Shady Dr	0.04 NE
Lake Ave	0.00--	Slate Dr	0.15 NW
Lakeview Dr	0.22 SE	Sring Valley Dr	0.15 NW

Environmental FirstSearch
Street Name Report for Streets within .25 Mile(s) of Target Property

Target Property: SR 1121 - NC 210 - SR 1120
SPRING LAKE, NC 28390

JOB: 2012-228

Street Name	Dist/Dir	Street Name	Dist/Dir
Stallion Ln	0.00--		
State Hwy 210	0.00--		
Stone Cross Dr	0.07 NE		
Sweet Ln	0.11 NW		
Tommy Dr	0.00--		
Tommys Dr	0.00--		
Twin Lake Rd	0.00--		
W Northpoint Rd	0.00--		
Ward Ln	0.15 NE		
Wedgewood Dr	0.01 NE		
White Pine Pl	0.02 NW		
Woodbridge Dr	0.25 NE		
Zena Ln	0.1 NW		

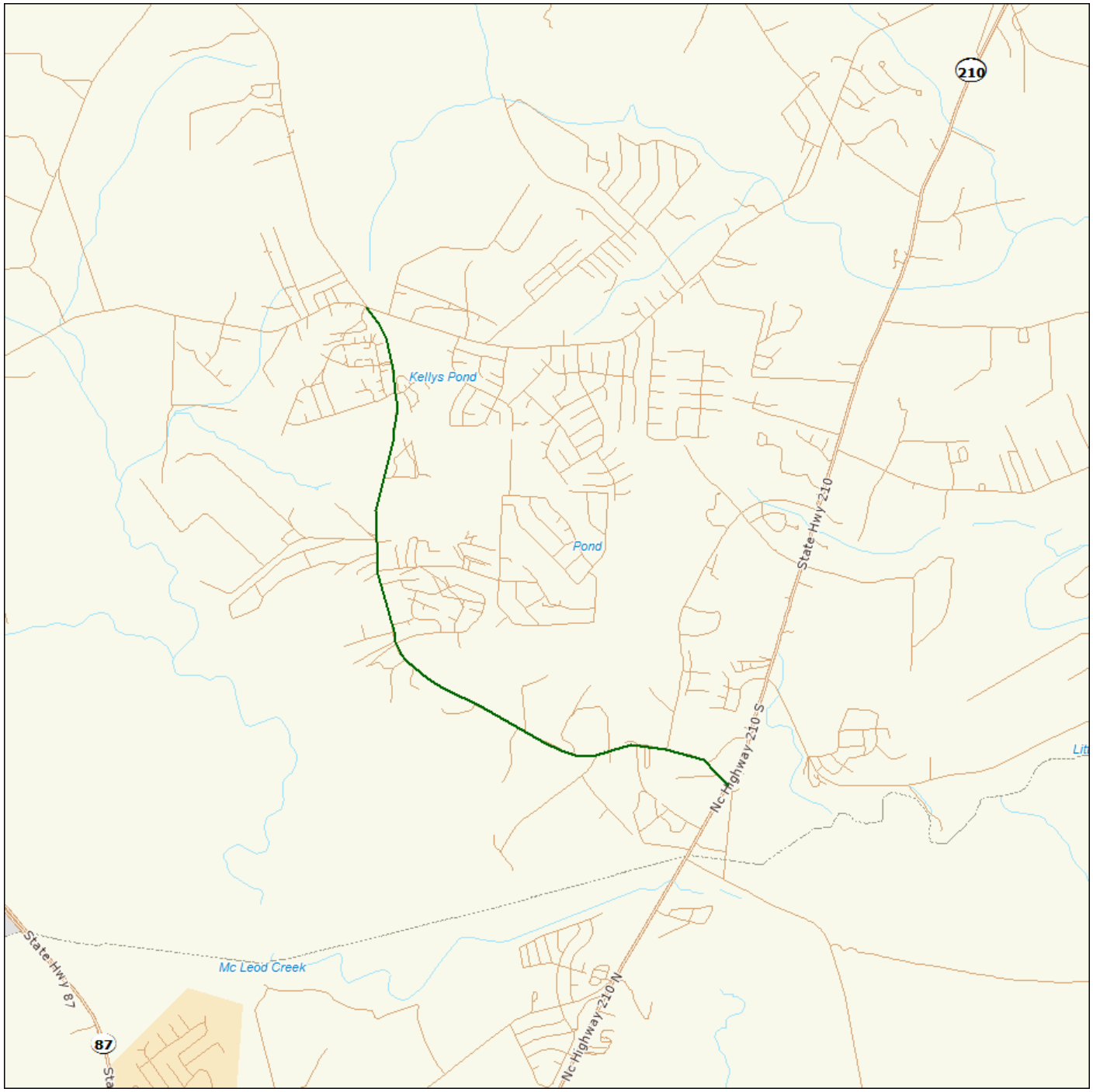
Environmental FirstSearch

1 Mile Radius from Line

ASTM Map: NPL, RCRACOR, STATE Sites

FIRSTSEARCH

SR 1121 - NC 210 - SR 1120 , SPRING LAKE, NC 28390



Source: Tele Atlas

Linear Search Line .....

Identified Site, Multiple Sites, Receptor .....

NPL, DELNPL, Brownfield, Solid Waste Landfill (SWL), Hazardous Waste

Triballand.....

Black Rings Represent 1/4 Mile Radius; Red Ring Represents 500 ft. Radius

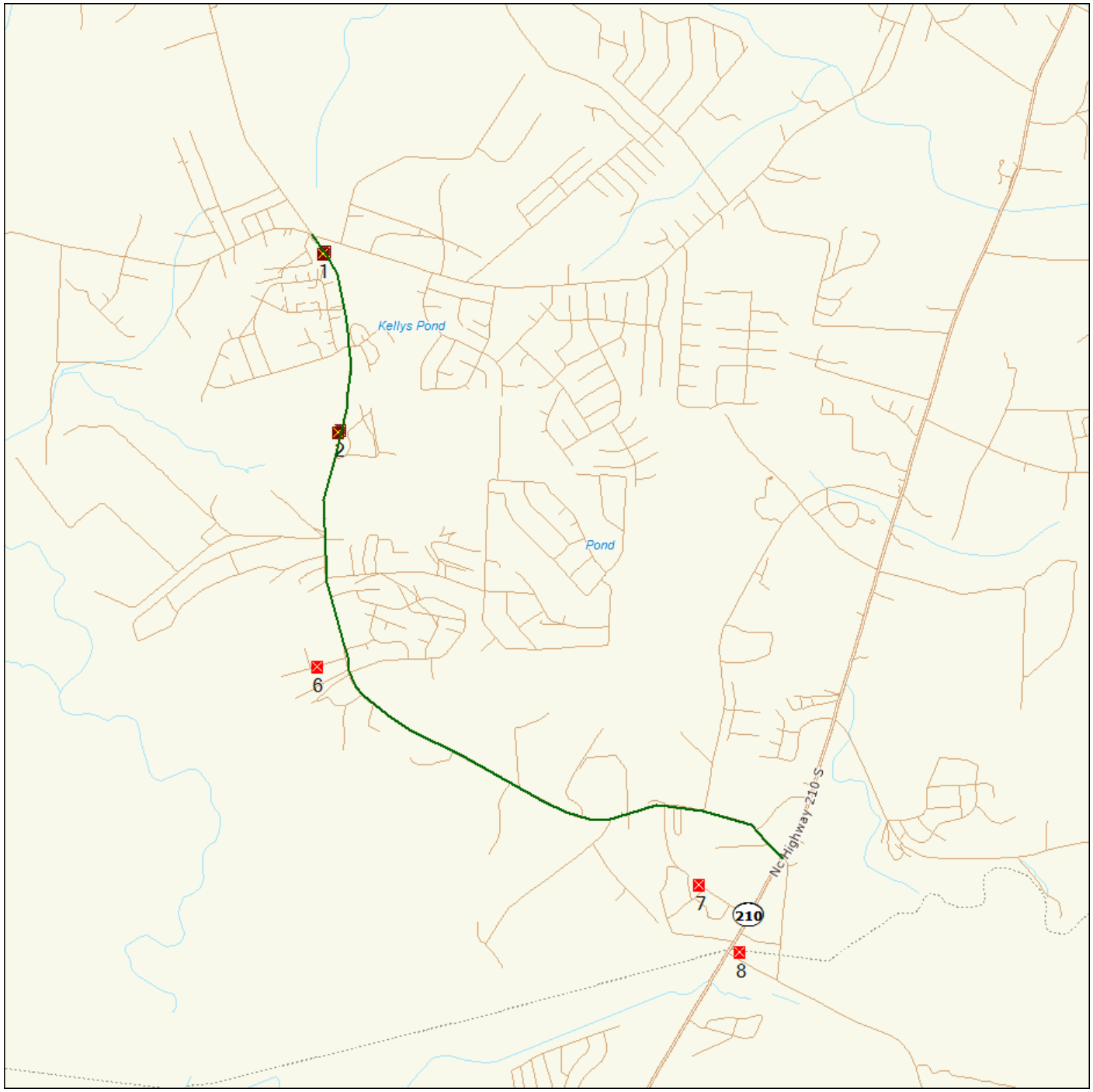
Environmental FirstSearch

.5 Mile Radius from Line

ASTM Map: CERCLIS, RCRATSD, LUST, SWL

FIRSTSEARCH

SR 1121 - NC 210 - SR 1120 , SPRING LAKE, NC 28390



Source: Tele Atlas

Linear Search Line .....

Identified Site, Multiple Sites, Receptor .....

NPL, DELNPL, Brownfield, Solid Waste Landfill (SWL), Hazardous Waste

Triballand.....

Black Rings Represent 1/4 Mile Radius; Red Ring Represents 500 ft. Radius

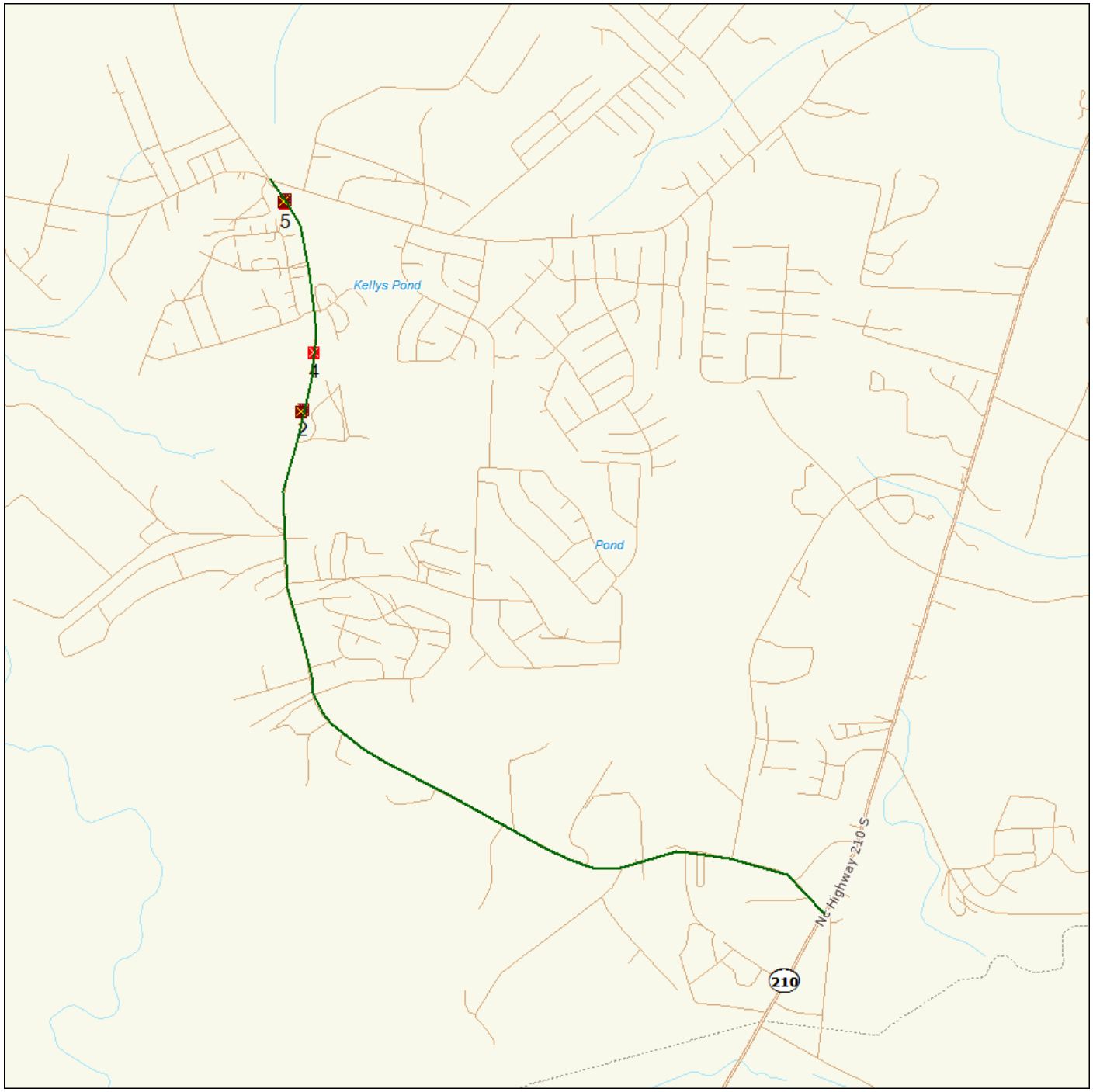
Environmental FirstSearch

.25 Mile Radius from Line

ASTM Map: RCRAGEN, ERNS, UST, FED IC/EC, METH LABS

FIRSTSEARCH

SR 1121 - NC 210 - SR 1120 , SPRING LAKE, NC 28390



Source: Tele Atlas

Linear Search Line .....

Identified Site, Multiple Sites, Receptor .....

NPL, DELNPL, Brownfield, Solid Waste Landfill (SWL), Hazardous Waste

Triballand.....

Black Rings Represent 1/4 Mile Radius; Red Ring Represents 500 ft. Radius

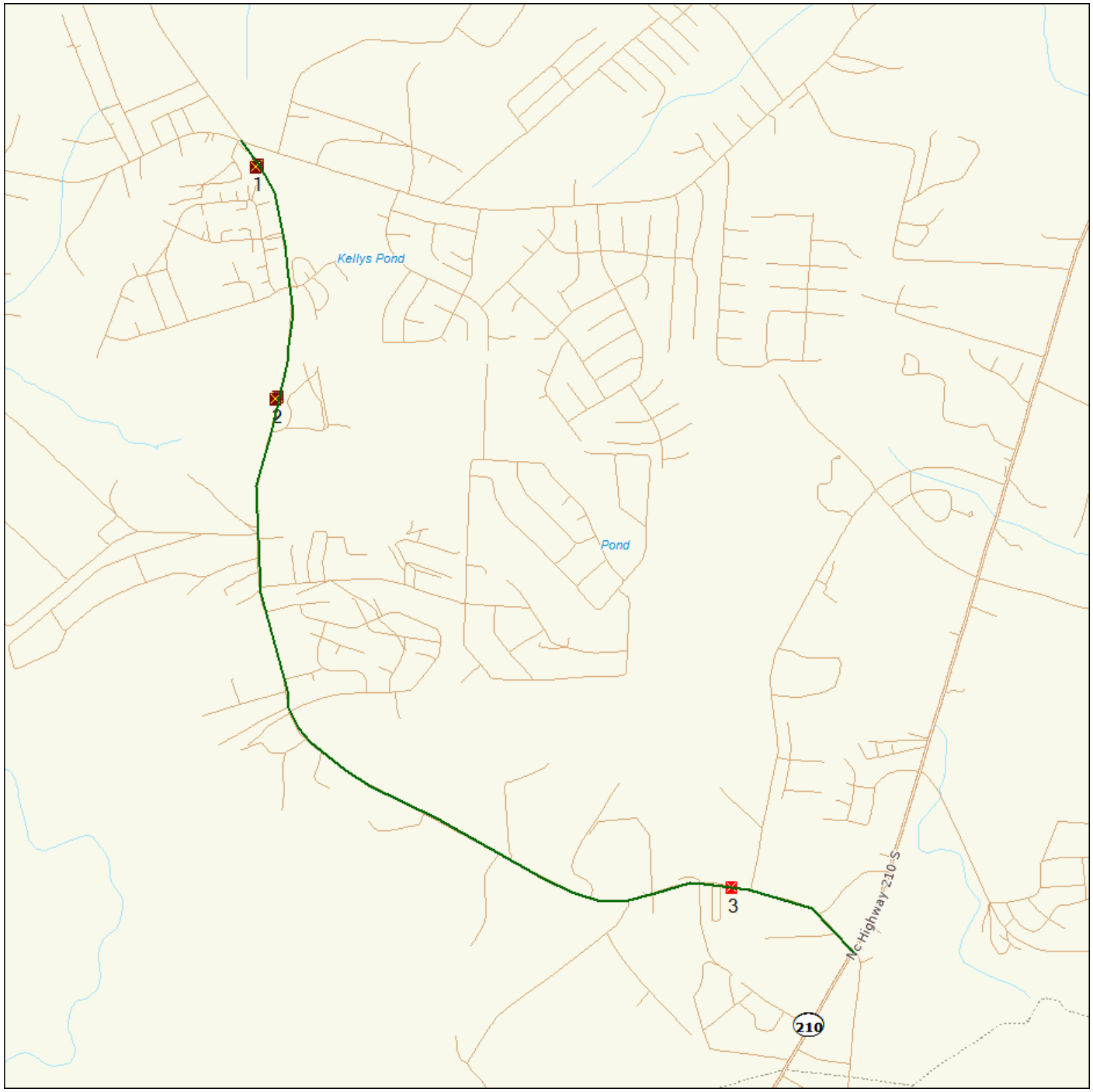
Environmental FirstSearch

.12 Mile Radius from Line

Non-ASTM Map: Spills 90

FIRSTSEARCH

SR 1121 - NC 210 - SR 1120 , SPRING LAKE, NC 28390



Source: Tele Atlas

Linear Search Line .....

Identified Site, Multiple Sites, Receptor .....

NPL, DELNPL, Brownfield, Solid Waste Landfill (SWL), Hazardous Waste

Triballand.....

National Historic Sites and Landmark Sites .....

Black Rings Represent 1/4 Mile Radius; Red Ring Represents 500 ft. Radius

APPENDIX D

GEOPHYSICAL INVESTIGATION REPORT

EM61 & GPR SURVEYS

NCDOT ROW PROJECT
STOP 'N SHOP, 1899 RAY ROAD, SPRING LAKE, NC (PARCEL 038)
NCDOT Project U-3465 (39017.1.1)
Harnett County, North Carolina

October 11, 2012

Report prepared for: **Mr. Gordon Box**
North Carolina Department of Transportation
GeoEnvironmental Project Manager
Geotechnical Engineering Unit
GeoEnvironmental Section
1589 Mail Service Center
Raleigh, North Carolina 27699-1589

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NCDOT Contract 700012300
PO# 6300031797

NC Board for Licensing of Geologists C-257
NC Board of Examiners for Engineers & Surveyors C-1251

NCDOT – Geotechnical Engineering Unit
NCDOT ROW PROJECT
STOP 'N SHOP, 1899 RAY ROAD, SPRING LAKE, NC (PARCEL 038)
NCDOT Project U-3465 (39017.1.1)
Harnett County, North Carolina

TABLE OF CONTENTS PAGE

FIGURES

1.0 INTRODUCTION

Pyramid Environmental & Engineering, PC (Pyramid) conducted a geophysical investigation for the North Carolina Department of Transportation (NCDOT) across the proposed right-of way (ROW) and easement areas of the Stop 'N Shop property and surrounding area located at 1899 Ray Road, Spring Lake, NC (Parcel 038). The survey area, as directed by the NCDOT, spanned from approximately 430 feet south of the Stop 'N Shop building to approximately 200 feet north of the building, and extended from Ray Road to the west approximately 110 feet at its maximum width. Conducted on September 10, 2012, the geophysical investigation was performed as part of the NCDOT ROW expansion project to determine if unknown, metallic underground storage tanks (USTs) were present beneath the proposed ROW areas of the site.

The area of the site surveyed was predominantly a concrete and asphalt parking lot near the convenience store building, with open grassy area to the north and south. The geophysical survey area had a maximum width (east/west) of approximately 110 feet and a maximum length (north/south) of approximately 680 feet. Photographs of the site are shown in **Figure 1**.

2.0 FIELD METHODOLOGY

Prior to conducting the geophysical investigation, a 10-foot by 10-foot survey grid was established across the geophysical survey area using measuring tapes and water-based marking paint. These grid marks were used as X-Y coordinates for location control when collecting the geophysical data and establishing base maps for the geophysical results.

The geophysical investigation consisted of electromagnetic (EM) induction-metal detection surveys and ground penetrating radar (GPR) surveys. The EM survey was performed on September 10, 2012, using a Geonics EM61-MK2 metal detection instrument. According to the instrument specifications, the EM61 can detect a metal drum down to a maximum depth of approximately 8 feet. Smaller objects (1-foot or less in size) can be detected to a maximum depth of 4 to 5 feet. All of the EM61 data were digitally collected at approximately 0.8 foot intervals along north-south trending, parallel

survey lines spaced five feet apart. All of the data were downloaded to a computer and reviewed in the field and office using the Geonics DAT61MK2 and Surfer for Windows Version 7.0 software programs.

GPR data were acquired on September 10, 2012, across selected EM61 differential anomalies using a GSSI SIR-3000 unit equipped with a 400 MHz antenna. Data were collected generally from east to west and north to south across specific EM61 anomalies. All of the GPR data were viewed in real time using a vertical scan of 512 samples, at a rate of 48 scans per second. GPR data were viewed down to a maximum depth of approximately 8 feet, based on an estimated two-way travel time of 8 nanoseconds per foot. Due to the lack of any GPR response related to possible metallic USTs, GPR image files were not saved, and only the real-time data collection was used to confirm the nature of the anomalies.

Preliminary geophysical results were emailed to Gordon Box on September 28, 2012.

3.0 DISCUSSION OF RESULTS

Contour plots of the EM61 bottom coil and differential results obtained across the proposed ROW and easement areas at the property are presented in **Figures 2 and 3,** respectively. The bottom coil results represent the most sensitive component of the EM61 instrument and detect metal objects regardless of size. The bottom coil response can be used to delineate metal conduits or utility lines, small, isolated metal objects, and areas containing insignificant metal debris. The differential results are obtained from the difference between the top and bottom coils of the EM61 instrument. The differential results focus on the larger metal objects such as drum and UST-size objects and ignore the smaller insignificant metal objects.

The majority of the EM61 anomalies mapped can be directly attributed to visible objects at the ground surface such as metal water meter covers, metal signs, storm drains, utilities, and concrete traffic medians (see annotations on **Figures 2 and 3**). The high amplitude response recorded to the east of the Stop ‘N Shop building was the result of the pump islands and reinforcement within the

concrete. The high amplitude response surrounding the mobile home at the south end of the survey area was due to the metal siding of the home. High amplitude responses to the south and north of the store were the result of chain link fences. The EM anomaly at X=55, Y=410 was due to a metal cap on a monitor well. Minor EM responses were recorded at coordinates X=70, Y=50 and at isolated areas between Gordon Lane and the Stop 'N Shop building. However, GPR surveys across all of these anomalies (see discussion below) did not indicate the presence of any USTs associated with the EM61 responses. Figures 2 and 3 provide annotations for the majority of the anomalies and the interpreted cause of the EM61 response (i.e. buried metallic debris, utility, guy wire, building, etc.). These figures can be referred to for additional descriptions of the subsurface objects that are creating the EM61 response.

As stated above, GPR scans were performed and data viewed in real time across all EM61 anomalies that could not be attributed to visible objects at the ground surface. The GPR scans did not indicate the presence of any metallic USTs at the site, suggesting the isolated minor anomalies are the result of isolated areas of buried metallic debris that is not attenuated by the GPR signal.

The geophysical investigation suggests that the area containing the proposed ROW and easement at Parcel 038 does not contain metallic USTs.

In accordance with the scope of work provided to Pyramid by the NCDOT, we also searched the property for any signs of monitor wells or groundwater wells within the proposed ROW or easement areas. A monitor well was observed to the south of the Stop 'N Shop building at coordinates X=55, Y=410. Additional monitor wells were observed outside of the ROW/easement area. Review of incident documents for the Parcel indicate that these monitor wells were put in place to monitor contaminant migration from a petroleum release in the past (see main report).

4.0 SUMMARY & CONCLUSIONS

Our evaluation of the EM61 and GPR data collected across the proposed ROW area at the NCDOT Stop 'N Shop property (Parcel 038) located at 1899 Ray Road, Spring Lake, North Carolina provides the following summary and conclusions:

- The EM61 and GPR surveys provided reliable results for the detection of metallic USTs within the geophysical survey area.

- The majority of the EM61 anomalies mapped can be directly attributed to visible objects at the ground surface such as metal water meter covers, metal signs, storm drains, utilities, and concrete traffic medians (see annotations on **Figures 2 and 3**). The high amplitude response recorded to the east of the Stop 'N Shop building was the result of the pump islands and reinforcement within the concrete. The high amplitude response surrounding the mobile home at the south end of the survey area was due to the metal siding of the home. High amplitude responses to the south and north of the store were the result of chain link fences. The EM anomaly at X=55, Y=410 was due to a metal cap on a monitor well. Minor EM responses were recorded at coordinates X=70, Y=50 and at isolated areas between Gordon Lane and the Stop 'N Shop building.

- GPR scans were performed and data viewed in real time across all EM61 anomalies that could not be attributed to visible objects at the ground surface. The GPR scans did not indicate the presence of any metallic USTs at the site, suggesting the isolated minor anomalies are the result of isolated areas of buried metallic debris that is not attenuated by the GPR signal.

- The geophysical investigation suggests that the proposed ROW and easement areas at the property do <u>not</u> contain metallic USTs.

- A monitor well was observed to the south of the Stop 'N Shop building at coordinates X=55, Y=410. Additional monitor wells were observed outside of the ROW/easement area. Review of incident documents for the Parcel indicate that these monitor wells were put in

place to monitor contaminant migration from a petroleum release in the past (see main report).

5.0 LIMITATIONS

EM61 and GPR surveys have been performed and this report prepared for the NCDOT in accordance with generally accepted guidelines for EM61 and GPR surveys. It is generally recognized that the results of the EM61 and GPR surveys are non-unique and may not represent actual subsurface conditions. The EM61 and GPR results obtained for this project have not conclusively determined that metallic USTs do not lie within the proposed ROW and easement area of the Harnett County property, but that none were detected.

FIGURES

Photograph of North Survey Area, Facing Approximately North

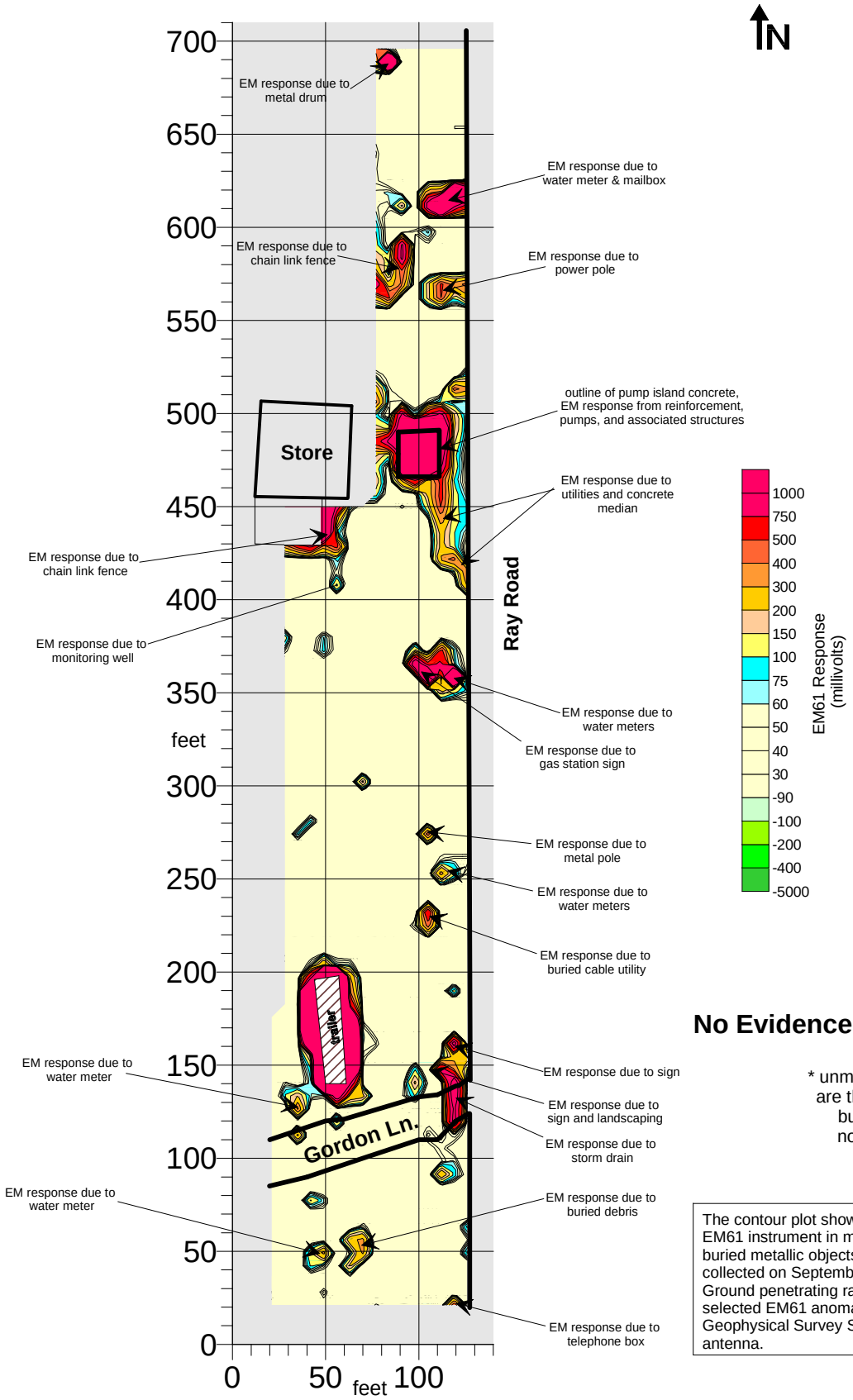
Photograph of South Survey Area, Facing Approximately South

PYRAMID
ENVIRONMENTAL & ENGINEERING, P.C.

CLIENT	NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	DATE	09/07/12	DRWN	ECC
SITE	NCDOT PROJECT U-3465 (39017.1.1) - PARCEL 038	LAY		CHKD	
CITY	SPRING LAKE	STATE	NORTH CAROLINA	DWG	
TITLE	GEOPHYSICAL RESULTS	JOB	2012-228	FIGURE	

SITE PHOTOGRAPHS

FIGURE 1



No Evidence of Metallic USTs Observed

* unmarked minor EM61 anomalies are the result of isolated unkown buried metal objects/debris, none are indicative of USTs

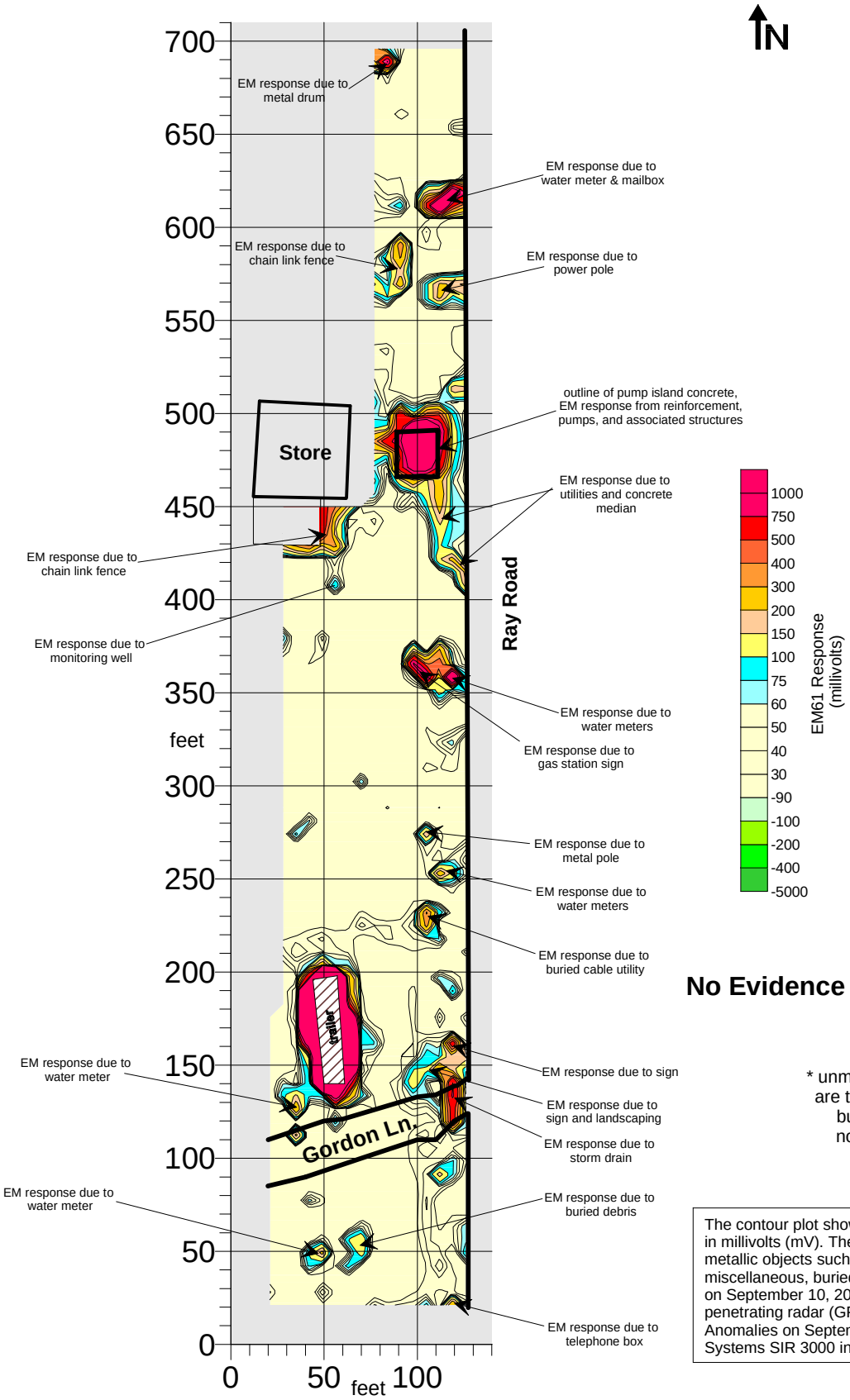
The contour plot shows the bottom coil (most sensitive) results of the EM61 instrument in millivolts (mV). The bottom coil response shows buried metallic objects regardless of size. The EM61 data were collected on September 10, 2012 using a Geonics EM61 instrument. Ground penetrating radar (GPR) data were acquired across selected EM61 anomalies on September 10, 2012, using a Geophysical Survey Systems SIR 3000 instrument with a 400 MHz antenna.

PYRAMID
ENVIRONMENTAL & ENGINEERING, P.C.

CLIENT	NORTH CAROLINA DEPARTMENT OF TRANSPORTATION		DATE	09/10/12	DRWN ECC
SITE	NCDOT PROJECT U-3465 (39017.1.1) - PARCEL 038		LAY		CHKD
CITY	SPRING LAKE	STATE NORTH CAROLINA	DWG		
TITLE	GEOPHYSICAL RESULTS		JOB	2012-228	FIGURE

EM61 BOTTOM COIL RESPONSE CONTOURS

FIGURE 2



No Evidence of Metallic USTs Observed

* unmarked minor EM61 anomalies are the result of isolated unkown buried metal objects/debris, none are indicative of USTs

The contour plot shows the differential results of the EM61instrument in millivolts (mV). The differential response focuses on larger, buried metallic objects such as drums and USTs and ignores smaller miscellaneous, buried, metal debris. The EM61 data were collected on September 10, 2012 using a Geonics EM61 instrument. Ground penetrating radar (GPR) data were acquired across selected EM61 Anomalies on September 10, 2012 using a Geophysical Survey Systems SIR 3000 instrument with a 400 MHz antenna.

PYRAMID
ENVIRONMENTAL & ENGINEERING, P.C.

CLIENT	NORTH CAROLINA DEPARTMENT OF TRANSPORTATION		DATE	09/10/12	DRWN ECC
SITE	NCDOT PROJECT U-3465 (39017.1.1) - PARCEL 038		LAY		CHKD
CITY	SPRING LAKE	STATE NORTH CAROLINA	DWG		
TITLE	GEOPHYSICAL RESULTS		JOB	2012-228	FIGURE

EM61 DIFFERENTIAL RESPONSE CONTOURS

FIGURE 3

APPENDIX E

Pyramid Environmental & Engineering, P.C.

FIELD DRILLING RECORD

PROJECT NAME: **PROJECT NUMBER:**	NC DOT U-3465 Harnett County, Ray Road, Spring Lake / 2012-228	**BORING/WELL NO:**	38-1
SITE LOCATION:	1899 Ray Road - Parcel 038 Harnett County	**BORING/WELL LOCATION:**	Parcel 038 - Near Current Product Lines
START DATE:	9/13/12	**COMPLETED:**	9/13/12
GEOLOGIST:	T. Leatherman	**DRILLER:**	AEDI
DRILL METHOD:	Geoprobe	**SAMPLE METHOD:**	Maco-core
BORING DIA:	2-inch	**CASING DIA:**	None
TOTAL DEPTH:	10 feet	**CASING DEPTH:**	None

DEPTH (ft.)	**VISUAL MANUAL SOIL CLASSIFICATION COLOR, TEXTURE, STRUCTURE, CONSISTENCY, ODOR, ETC.**	**OVA RESULTS PERCENT RECOVERY BLOW COUNTS**
0 to 5'	Brown, clayey-sand (SC), moist, slight petroleum odor	PID=38-1(3-5'): 5 PPM
5 to 10'	Brown, clayey-sand (SC), moist, petroleum odor	PID=38-1(5-7.5'): 190 PPM
		PID=38-1(7.5-10'): 800 PPM

MONITORING WELL INFORMATION (IF APPLICABLE)

RISER LENGTH (ft) ___ DEPTH (ft) _____ DIAMETER (in) ___ MATERIAL _____.
SCREEN LENGTH (ft) ___ DEPTH (ft) _____ DIAMETER (in) ___ MATERIAL _____.
DEPTH TO TOP OF SAND _____ BAGS OF SAND ___.
DEPTH TO TOP SEAL _____ BENTONITE USED _____ BAGS OF CEMENT USED ___.

Pyramid Environmental & Engineering, P.C.

FIELD DRILLING RECORD

PROJECT NAME: PROJECT NUMBER:	NC DOT U-3465 Harnett County, Ray Road, Spring Lake / 2012-228	**BORING/WELL NO:**	38-2
SITE LOCATION:	1899 Ray Road - Parcel 038 Harnett County	**BORING/WELL LOCATION:**	Parcel 038 - Near Current Product Lines
START DATE:	9/13/12	**COMPLETED:**	9/13/12
GEOLOGIST:	T. Leatherman	**DRILLER:**	AEDI
DRILL METHOD:	Geoprobe	**SAMPLE METHOD:**	Maco-core
BORING DIA:	2-inch	**CASING DIA:**	None
TOTAL DEPTH:	10 feet	**CASING DEPTH:**	None

DEPTH (ft.)	**VISUAL MANUAL SOIL CLASSIFICATION COLOR, TEXTURE, STRUCTURE, CONSISTENCY, ODOR, ETC.**	**OVA RESULTS PERCENT RECOVERY BLOW COUNTS**
0 to 5'	Brown, sand to clayey-sand (SP to SC), moist, no odor	PID=38-2(3-5'): 50 PPM
5 to 10'	Brown, clayey-sand (SC), no odor	PID=38-2(5-7.5'): 15 PPM
		PID=38-2(7.5-10'): 35 PPM

MONITORING WELL INFORMATION (IF APPLICABLE)

RISER LENGTH (ft) ___ DEPTH (ft) _____ DIAMETER (in) ___ MATERIAL _____.
SCREEN LENGTH (ft) ___ DEPTH (ft) _____ DIAMETER (in) ___ MATERIAL _____.
DEPTH TO TOP OF SAND _____ BAGS OF SAND ___.
DEPTH TO TOP SEAL _____ BENTONITE USED _____ BAGS OF CEMENT USED ___.

Pyramid Environmental & Engineering, P.C.

FIELD DRILLING RECORD

PROJECT NAME: **PROJECT NUMBER:**	NC DOT U-3465 Harnett County, Ray Road, Spring Lake / 2012-228	**BORING/WELL NO:**	38-3
SITE LOCATION:	1899 Ray Road - Parcel 038 Harnett County	**BORING/WELL LOCATION:**	Parcel 038 - Near Current Product Lines & Pump Island
START DATE:	9/13/12	**COMPLETED:**	9/13/12
GEOLOGIST:	T. Leatherman	**DRILLER:**	AEDI
DRILL METHOD:	Geoprobe	**SAMPLE METHOD:**	Maco-core
BORING DIA:	2-inch	**CASING DIA:**	None
TOTAL DEPTH:	10 feet	**CASING DEPTH:**	None

DEPTH (ft.)	**VISUAL MANUAL SOIL CLASSIFICATION COLOR, TEXTURE, STRUCTURE, CONSISTENCY, ODOR, ETC.**	**OVA RESULTS PERCENT RECOVERY BLOW COUNTS**
0 to 5'	Brown to tan, sand to clayey-sand (SP to SC), moist, no odor	PID=38-3(3-5'): 15 PPM
5 to 10'	Brown, clayey-sand to sandy-clay (SC to SP), moist, no odor	PID=38-3(5-7.5'): 15 PPM
		PID=38-3(7.5-10'): 15 PPM

MONITORING WELL INFORMATION (IF APPLICABLE)

RISER LENGTH (ft) ___ DEPTH (ft) _____ DIAMETER (in) ___ MATERIAL _____.
SCREEN LENGTH (ft) ___ DEPTH (ft) _____ DIAMETER (in) ___ MATERIAL _____.
DEPTH TO TOP OF SAND _____ BAGS OF SAND ___.
DEPTH TO TOP SEAL _____ BENTONITE USED _____ BAGS OF CEMENT USED ___.

Pyramid Environmental & Engineering, P.C.

FIELD DRILLING RECORD

PROJECT NAME: **PROJECT NUMBER:**	NC DOT U-3465 Harnett County, Ray Road, Spring Lake / 2012-228	**BORING/WELL NO:**	38-4
SITE LOCATION:	1899 Ray Road - Parcel 038 Harnett County	**BORING/WELL LOCATION:**	Parcel 038 - Near Pump Island Former UST Product Lines
START DATE:	9/14/12	**COMPLETED:**	9/14/12
GEOLOGIST:	T. Leatherman	**DRILLER:**	AEDI
DRILL METHOD:	Geoprobe	**SAMPLE METHOD:**	Maco-core
BORING DIA:	2-inch	**CASING DIA:**	None
TOTAL DEPTH:	10 feet	**CASING DEPTH:**	None

DEPTH (ft.)	**VISUAL MANUAL SOIL CLASSIFICATION COLOR, TEXTURE, STRUCTURE, CONSISTENCY, ODOR, ETC.**	**OVA RESULTS PERCENT RECOVERY BLOW COUNTS**
0 to 5'	Brown to tan, sand to clayey-sand (SP to SC), moist, no odor	PID=38-4(3-5'): 5 PPM
5 to 10'	Brown, clayey-sand (SC), moist, no odor	PID=38-4(5-7.5'): 10 PPM
		PID=38-4(7.5-10'): 5 PPM

MONITORING WELL INFORMATION (IF APPLICABLE)

RISER LENGTH (ft) ___ DEPTH (ft) _____ DIAMETER (in) ___ MATERIAL _____.
SCREEN LENGTH (ft) ___ DEPTH (ft) _____ DIAMETER (in) ___ MATERIAL _____.
DEPTH TO TOP OF SAND _____ BAGS OF SAND ___.
DEPTH TO TOP SEAL _____ BENTONITE USED _____ BAGS OF CEMENT USED ___.

Pyramid Environmental & Engineering, P.C.

FIELD DRILLING RECORD

PROJECT NAME: PROJECT NUMBER:	NC DOT U-3465 Harnett County, Ray Road, Spring Lake / 2012-228	**BORING/WELL NO:**	38-5
SITE LOCATION:	1899 Ray Road - Parcel 038 Harnett County	**BORING/WELL LOCATION:**	Parcel 038 - Near Former UST Product Lines
START DATE:	9/14/12	**COMPLETED:**	9/14/12
GEOLOGIST:	T. Leatherman	**DRILLER:**	AEDI
DRILL METHOD:	Geoprobe	**SAMPLE METHOD:**	Maco-core
BORING DIA:	2-inch	**CASING DIA:**	None
TOTAL DEPTH:	10 feet	**CASING DEPTH:**	None

DEPTH (ft.)	**VISUAL MANUAL SOIL CLASSIFICATION COLOR, TEXTURE, STRUCTURE, CONSISTENCY, ODOR, ETC.**	**OVA RESULTS PERCENT RECOVERY BLOW COUNTS**
0 to 5'	Brown, sand with small amount of fines (SP to SW), moist, no odor	PID=38-5(3-5'): 5 PPM
5 to 10'	Brown, clayey-sand (SC), moist, no odor	PID=38-5(5-7.5'): 0 PPM
		PID=38-5(7.5-10'): 0 PPM

MONITORING WELL INFORMATION (IF APPLICABLE)

RISER LENGTH (ft) ___ DEPTH (ft) _____ DIAMETER (in) ___ MATERIAL _____.
SCREEN LENGTH (ft) ___ DEPTH (ft) _____ DIAMETER (in) ___ MATERIAL _____.
DEPTH TO TOP OF SAND _____ BAGS OF SAND ___.
DEPTH TO TOP SEAL _____ BENTONITE USED _____ BAGS OF CEMENT USED ___.

Pyramid Environmental & Engineering, P.C.

FIELD DRILLING RECORD

PROJECT NAME: PROJECT NUMBER:	NC DOT U-3465 Harnett County, Ray Road, Spring Lake / 2012-228	**BORING/WELL NO:**	38-6
SITE LOCATION:	1899 Ray Road - Parcel 038 Harnett County	**BORING/WELL LOCATION:**	Parcel 038 - Near Former UST Basin & Product Lines
START DATE:	9/14/12	**COMPLETED:**	9/14/12
GEOLOGIST:	T. Leatherman	**DRILLER:**	AEDI
DRILL METHOD:	Geoprobe	**SAMPLE METHOD:**	Maco-core
BORING DIA:	2-inch	**CASING DIA:**	None
TOTAL DEPTH:	10 feet	**CASING DEPTH:**	None

DEPTH (ft.)	**VISUAL MANUAL SOIL CLASSIFICATION COLOR, TEXTURE, STRUCTURE, CONSISTENCY, ODOR, ETC.**	**OVA RESULTS PERCENT RECOVERY BLOW COUNTS**
0 to 5'	Brown to tan, sand with a small amount of fines, moist, no odor	PID=38-6(3-5'): 15 PPM
5 to 10'	Brown, clayey-sand (SC), moist, no odor	PID=38-6(5-7.5'): 5 PPM
		PID=38-6(7.5-10'): 20 PPM

MONITORING WELL INFORMATION (IF APPLICABLE)

RISER LENGTH (ft) ___ DEPTH (ft) _____ DIAMETER (in) ___ MATERIAL _____.
SCREEN LENGTH (ft) ___ DEPTH (ft) _____ DIAMETER (in) ___ MATERIAL _____.
DEPTH TO TOP OF SAND _____ BAGS OF SAND ___.
DEPTH TO TOP SEAL _____ BENTONITE USED _____ BAGS OF CEMENT USED ___.

Pyramid Environmental & Engineering, P.C.

FIELD DRILLING RECORD

PROJECT NAME: **PROJECT NUMBER:**	NC DOT U-3465 Harnett County, Ray Road, Spring Lake / 2012-228	**BORING/WELL NO:**	38-7
SITE LOCATION:	1899 Ray Road - Parcel 038 Harnett County	**BORING/WELL LOCATION:**	Parcel 038 - Near Pump Island & Product Lines
START DATE:	9/14/12	**COMPLETED:**	9/14/12
GEOLOGIST:	T. Leatherman	**DRILLER:**	AEDI
DRILL METHOD:	Geoprobe	**SAMPLE METHOD:**	Maco-core
BORING DIA:	2-inch	**CASING DIA:**	None
TOTAL DEPTH:	10 feet	**CASING DEPTH:**	None

DEPTH (ft.)	**VISUAL MANUAL SOIL CLASSIFICATION COLOR, TEXTURE, STRUCTURE, CONSISTENCY, ODOR, ETC.**	**OVA RESULTS PERCENT RECOVERY BLOW COUNTS**
0 to 5'	Brown to tan, clayey-sand (SC), moist, no odor	PID=38-7(3-5'): 15 PPM
5 to 10'	Brown to tan, clayey-sand (SC), moist, slight petroleum odor	PID=38-7(5-7.5'): 25 PPM
		PID=38-7(7.5-10'): 70 PPM

MONITORING WELL INFORMATION (IF APPLICABLE)

RISER LENGTH (ft) ___ DEPTH (ft) _____ DIAMETER (in) ___ MATERIAL _____.
SCREEN LENGTH (ft) ___ DEPTH (ft) _____ DIAMETER (in) ___ MATERIAL _____.
DEPTH TO TOP OF SAND _____ BAGS OF SAND ___.
DEPTH TO TOP SEAL _____ BENTONITE USED _____ BAGS OF CEMENT USED ___.

Pyramid Environmental & Engineering, P.C.

FIELD DRILLING RECORD

PROJECT NAME: PROJECT NUMBER:	NC DOT U-3465 Harnett County, Ray Road, Spring Lake / 2012-228	**BORING/WELL NO:**	38-8
SITE LOCATION:	1899 Ray Road - Parcel 038 Harnett County	**BORING/WELL LOCATION:**	Parcel 038 - Near Pump Island and Ray Road
START DATE:	9/14/12	**COMPLETED:**	9/14/12
GEOLOGIST:	T. Leatherman	**DRILLER:**	AEDI
DRILL METHOD:	Geoprobe	**SAMPLE METHOD:**	Maco-core
BORING DIA:	2-inch	**CASING DIA:**	1-inch
TOTAL DEPTH:	38 feet	**CASING DEPTH:**	38 feet

DEPTH (ft.)	**VISUAL MANUAL SOIL CLASSIFICATION COLOR, TEXTURE, STRUCTURE, CONSISTENCY, ODOR, ETC.**	**OVA RESULTS PERCENT RECOVERY BLOW COUNTS**
0 to 5'	Brown to tan, sand with small amount of fines (SP), moist, no odor	PID=38-8(3-5'): 25 PPM
5 to 10'	Brown, clayey-sand to sandy-clay (SC to CL), moist, no odor	PID=38-8(5-7.5'): 35 PPM
		PID=38-8(7.5-10'): 30 PPM
10 to 15'	Brown to tan, clayey-sand (SC), moist, no odor	PID=38-8(13-15'): 35 PPM
	Set 1-inch temporary well at 38 feet with 10 feet of screen.	
	Depth-to-Groundwater = 36 feet below land surface (BLS)	

MONITORING WELL INFORMATION (IF APPLICABLE)

RISER LENGTH (ft) 28 DEPTH (ft) 0-28 DIAMETER (in) 1 MATERIAL PVC.
SCREEN LENGTH (ft) 10 DEPTH (ft) 28-38 DIAMETER (in) 1 MATERIAL PVC.
DEPTH TO TOP OF SAND NA BAGS OF SAND NA.
DEPTH TO TOP SEAL NA BENTONITE USED NA BAGS OF CEMENT USED NA.

Pyramid Environmental & Engineering, P.C.

FIELD DRILLING RECORD

PROJECT NAME: **PROJECT NUMBER:**	NC DOT U-3465 Harnett County, Ray Road, Spring Lake / 2012-228	**BORING/WELL NO:**	38-9
SITE LOCATION:	1899 Ray Road - Parcel 038 Harnett County	**BORING/WELL LOCATION:**	Parcel 038 - Near Pump Island & Product Lines
START DATE:	9/14/12	**COMPLETED:**	9/14/12
GEOLOGIST:	T. Leatherman	**DRILLER:**	AEDI
DRILL METHOD:	Geoprobe	**SAMPLE METHOD:**	Maco-core
BORING DIA:	2-inch	**CASING DIA:**	None
TOTAL DEPTH:	10 feet	**CASING DEPTH:**	None

DEPTH (ft.)	**VISUAL MANUAL SOIL CLASSIFICATION COLOR, TEXTURE, STRUCTURE, CONSISTENCY, ODOR, ETC.**	**OVA RESULTS PERCENT RECOVERY BLOW COUNTS**
0 to 5'	Brown to tan, sand with a small amount of fines (SP), moist, no odor	PID=38-9(3-5'): 55 PPM
5 to 10'	Brown, clayey-sand to sandy-clay (SC to SP), moist, no odor	PID=38-9(5-7.5'): 15 PPM
		PID=38-9(7.5-10'): 40 PPM

MONITORING WELL INFORMATION (IF APPLICABLE)

RISER LENGTH (ft) ___ DEPTH (ft) _____ DIAMETER (in) ___ MATERIAL _____.
SCREEN LENGTH (ft) ___ DEPTH (ft) _____ DIAMETER (in) ___ MATERIAL _____.
DEPTH TO TOP OF SAND _____ BAGS OF SAND ___.
DEPTH TO TOP SEAL _____ BENTONITE USED _____ BAGS OF CEMENT USED ___.

Pyramid Environmental & Engineering, P.C.

FIELD DRILLING RECORD

PROJECT NAME: **PROJECT NUMBER:**	NC DOT U-3465 Harnett County, Ray Road, Spring Lake / 2012-228	**BORING/WELL NO:**	38-10
SITE LOCATION:	1899 Ray Road - Parcel 038 Harnett County	**BORING/WELL LOCATION:**	Parcel 038 - Near Current Product Lines
START DATE:	9/14/12	**COMPLETED:**	9/14/12
GEOLOGIST:	T. Leatherman	**DRILLER:**	AEDI
DRILL METHOD:	Geoprobe	**SAMPLE METHOD:**	Maco-core
BORING DIA:	2-inch	**CASING DIA:**	None
TOTAL DEPTH:	10 feet	**CASING DEPTH:**	None

DEPTH (ft.)	**VISUAL MANUAL SOIL CLASSIFICATION COLOR, TEXTURE, STRUCTURE, CONSISTENCY, ODOR, ETC.**	**OVA RESULTS PERCENT RECOVERY BLOW COUNTS**
0 to 5'	Brown to tan, sand to clayey-sand (SC to SP), moist, no odor	PID=38-10(2-5'): 40 PPM
5 to 10'	Brown, clayey-sand to sandy-clay (SC to SP), moist, no odor	PID=38-10(5-7.5'): 20 PPM
		PID=38-10(7.5-10'): 15 PPM

MONITORING WELL INFORMATION (IF APPLICABLE)

RISER LENGTH (ft) ___ DEPTH (ft) _____ DIAMETER (in) ___ MATERIAL _____.
SCREEN LENGTH (ft) ___ DEPTH (ft) _____ DIAMETER (in) ___ MATERIAL _____.
DEPTH TO TOP OF SAND _____ BAGS OF SAND ___.
DEPTH TO TOP SEAL _____ BENTONITE USED _____ BAGS OF CEMENT USED ___.

APPENDIX F

Laboratory Report of Analysis

To: Tim Leatherman
Pyramid
PO Box 16265
Greensboro, NC 27416

Report Number: **31202964**

Client Project: **Ray Rd. Parcel 038**

Dear Tim Leatherman,

Enclosed are the results of the analytical services performed under the referenced project for the received samples and associated QC as applicable. The samples are certified to meet the requirements of the National Environmental Laboratory Accreditation Conference Standards. Copies of this report and supporting data will be retained in our files for a period of five years in the event they are required for future reference. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. Any samples submitted to our laboratory will be retained for a maximum of thirty (30) days from the date of this report unless other arrangements are requested.

If there are any questions about the report or services performed during this project, please call Barbara A. Hager at (910) 350-1903. We will be happy to answer any questions or concerns which you may have.

Thank you for using SGS North America Inc. for your analytical services. We look forward to working with you again on any additional analytical needs.

Sincerely,
SGS North America Inc.

Barbara A. Hager
2012.09.27 12:43:41 -05'00'

Barbara A. Hager — Date
Project Manager
barbara.hager@sgs.com

Print Date: 09/27/2012 N.C. Certification # 481

ANALYTICAL PERSPECTIVES IS NOW PART OF SGS, THE WORLD'S LEADING INSPECTION, VERIFICATION, TESTING AND CERTIFICATION COMPANY.

Laboratory Qualifiers

Report Definitions

DL	Method, Instrument, or Estimated Detection Limit per Analytical Method
CL	Control Limits for the recovery result of a parameter
LOQ	Reporting Limit
DF	Dilution Factor
RPD	Relative Percent Difference
LCS(D)	Laboratory Control Spike (Duplicate)
MS(D)	Matrix Spike (Duplicate)
MB	Method Blank

Qualifier Definitions

*	Recovery or RPD outside of control limits
B	Analyte was detected in the Lab Method Blank at a level above the LOQ
U	Undetected (Reported as ND or < DL)
V	Recovery is below quality control limit. The data has been validated based on a favorable signal-to-noise and detection limit
A	Amount detected is less than the Lower Method Calibration Limit
J	Estimated Concentration.
O	The recovery of this analyte in the OPR is above the Method QC Limits and the reported concentration in the sample may be biased high
E	Amount detected is greater than the Upper Calibration Limit
S	The amount of analyte present has saturated the detector. This situation results in an underestimation of the affected analyte(s)
Q	Indicates the presence of a quantitative interference. This situation may result in an underestimation of the affected analyte(s)
I	Indicates the presence of a qualitative interference that could cause a false positive or an overestimation of the affected analyte(s)
DPE	Indicates the presence of a peak in the polychlorinated diphenylether channel that could cause a false positive or an overestimation of the affected analyte(s)
TIC	Tentatively Identified Compound
EMPC	Estimated Maximum possible Concentration due to ion ratio failure
ND	Not Detected
K	Result is estimated due to ion ratio failure in High Resolution PCB Analysis
P	RPD > 40% between results of dual columns
D	Spike or surrogate was diluted out in order to achieve a parameter result within instrument calibration range

Samples requiring manual integrations for various congeners and/or standards are marked and dated by the analyst. A code definition is provided below:

M1	Mis-identified peak

Note Results pages that include a value for "Solids (%)" have been adjusted for moisture content.

Sample Summary

Client Sample ID	Lab Sample ID	Collected	Received	Matrix
38-1 (7.5-10)	31202964001	09/13/2012 15:35	09/18/2012 10:30	Soil-Solid as dry weight
38-2 (3-5)	31202964002	09/13/2012 15:38	09/18/2012 10:30	Soil-Solid as dry weight
38-3 (3-5)	31202964003	09/13/2012 15:50	09/18/2012 10:30	Soil-Solid as dry weight
38-4 (5-7.5)	31202964004	09/14/2012 08:25	09/18/2012 10:30	Soil-Solid as dry weight
38-5 (2-5)	31202964005	09/14/2012 08:35	09/18/2012 10:30	Soil-Solid as dry weight
38-6 (7.5-10)	31202964006	09/14/2012 09:00	09/18/2012 10:30	Soil-Solid as dry weight
38-7 (7.5-10)	31202964007	09/14/2012 09:30	09/18/2012 10:30	Soil-Solid as dry weight
38-8 (5-7.5)	31202964008	09/14/2012 09:50	09/18/2012 10:30	Soil-Solid as dry weight
38-8 (3-5)	31202964009	09/14/2012 10:25	09/18/2012 10:30	Soil-Solid as dry weight
38-10 (2-5)	31202964010	09/14/2012 10:35	09/18/2012 10:30	Soil-Solid as dry weight
38-8 (TW)	31202964011	09/14/2012 11:10	09/18/2012 10:30	Water

Detectable Results Summary

Client Sample ID: **38-1 (7.5-10)**
Lab Sample ID: 31202964001-C
SW-846 8015C DRO
SW-846 8015C GRO

Parameter	Result	Units
Diesel Range Organics (DRO)	1060	mg/kg
Gasoline Range Organics (GRO)	1150	mg/kg

Client Sample ID: **38-8 (TW)**
Lab Sample ID: 31202964011-A
SM 6200-B

Parameter	Result	Units	
1,3,5-Trimethylbenzene	0.800	ug/L	
Chloroform	0.440	ug/L	J
Toluene	0.170	ug/L	J
Xylene (total)	1.35	ug/L	J
m,p-Xylene	1.14	ug/L	
o-Xylene	0.210	ug/L	J

Results of **38-1 (7.5-10)**

Client Sample ID: **38-1 (7.5-10)**
Client Project ID: **Ray Rd. Parcel 038**
Lab Sample ID: 31202964001-A
Lab Project ID: 31202964

Collection Date: 09/13/2012 15:35
Received Date: 09/18/2012 10:30
Matrix: Soil-Solid as dry weight
Solids (%): 90.50

Results by **SW-846 8015C GRO**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Gasoline Range Organics (GRO)	**1150**		141	141	mg/kg	40	09/25/2012 12:38
Surrogates							
4-Bromofluorobenzene	110			70.0-130	%	40	09/25/2012 12:38

Batch Information

Analytical Batch: **VGC2155**
Analytical Method: **SW-846 8015C GRO**
Instrument: **GC7**
Analyst: **MDY**

Prep Batch: **VXX4044**
Prep Method: **SW-846 5035**
Prep Date/Time: **09/18/2012 16:38**
Prep Initial Wt./Vol.: **6.29 g**
Prep Extract Vol: **5 mL**

Print Date: 09/27/2012

N.C. Certification # 481

Results of **38-1 (7.5-10)**

Client Sample ID: **38-1 (7.5-10)**
Client Project ID: **Ray Rd. Parcel 038**
Lab Sample ID: 31202964001-C
Lab Project ID: 31202964

Collection Date: 09/13/2012 15:35
Received Date: 09/18/2012 10:30
Matrix: Soil-Solid as dry weight
Solids (%): 90.50

Results by **SW-846 8015C DRO**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Diesel Range Organics (DRO)	**1060**		35.6	35.6	mg/kg	5	09/24/2012 19:26
Surrogates							
o-Terphenyl	97.4			40.0-140	%	5	09/24/2012 19:26

Batch Information

Analytical Batch: **XGC2554**
Analytical Method: **SW-846 8015C DRO**
Instrument: **GC6**
Analyst: **DTF**

Prep Batch: **XXX3075**
Prep Method: **SW-846 3541**
Prep Date/Time: **09/20/2012 10:09**
Prep Initial Wt./Vol.: **31.09 g**
Prep Extract Vol: **10 mL**

Print Date: 09/27/2012

N.C. Certification # 481

v esults of **38-1 (3-7.**

Client Sample ID: **38-1 (3-7.**
Client Project ID: **5 0) 5 Ray 0dPr ce38**
Lab Sample ID: 31202964002-A
Lab Project ID: 31202964

Collection Date: 09/13/2012 15:3R
v eceide8 Date: 09/1R/2012 10:30
Matrix: Soil-Soli8 as 8ry weight
Soli8s (%): 90.50

v esults by **I S -8W 8e67C G5 O**

Parameter	v esult	Qual	DL	LOQ/CL	Units	DF	Date Analyze8
Gasoline v ange Organics (Gv O)	k D	U	2.72	2.72	mg/Bg	1	09/25/2012 13:03
I udbg0tr s							
4-Tromofluorobenzene	107			70.0-130	%	1	09/25/2012 13:03

B0tPh Infodm0tion

Analytical Tatch: **VGC1677**
Analytical Metho8: **I S -8W 8e67C G5 O**
Instrument: **GCL**
Analyst: **MDY**

Prep Tatch: **VXXWeWW**
Prep Metho8: **I S -8W 7e37**
Prep Date/Wime: **e9/68/1e61 64239**
Prep Initial V t./Eol.: **8a61 g**
Prep Nxtract Eol: **7 m:**

v esults of **38-1 (3-7.**

Client Sample ID: **38-1 (3-7.**
Client Project ID: **5 0) 5 Ray 0dPr ce38**
Lab Sample ID: 31202964002-C
Lab Project ID: 31202964

Collection Date: 09/13/2012 15:3R
v eceide8 Date: 09/1R/2012 10:30
Matrix: Soil-Soli8 as 8ry weight
Soli8s (%): 90.50

v esults by **I S -8W4 8e67C D5 O**

Parameter	v esult	Qual	DL	LOQ/CL	Units	DF	Date Analyze8
Diesel v ange Organics (Dv O)	k D	U	6.73	6.73	mg/Tg	1	09/22/2012 2:49
I udbg0tr s							
o-Berphenyl	102			40.0-140	%	1	09/22/2012 2:49

B0tPh Infodm0tion

Analytical Watch: **XGC177e**
Analytical Metho8: **I S -8W4 8e67C D5 O**
Instrument: **GC4**
Analyst: **DTF**

Prep Watch: **XXX3e97**
Prep Metho8: **I S -8W4 37W6**
Prep Date/Bime: **e/ 2 e2 e61 6e:e/**
Prep Initial V t./Eol.: **31a8Wg**
Prep Nxtract Eol: **6e mL**

Print Date: 09/27/2012

k .C. Certification # 4R1

Results of 38-313-(7

Client Sample ID: **38-313-(7**
Client Project ID: **. 501) Ra 5ydPr1c38**
Lab Sample ID: 31202964003-A
Lab Project ID: 31202964

Collection Date: 09/13/2012 15:50
Received Date: 09/18/2012 10:30
Matrix: Soil-Solid as dry weight
Solids (%): 94.60

Results by el -8SW8c4(6 1C. G

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Gasoline Range Organics (GRO)	k D	U	2.96	2.96	mg/Bg	1	09/24/2012 18:24
eOyyuo5gPt							
4-7romofluorobenzene	10T			T0.0-130	%	1	09/24/2012 18:24

s 5gdB1i nuyf 5gnl

Analytical 7atch: i C6 / 4(/
Analytical Method: el -8SW8c4(6 1C. G
Instrument: C6 :
Analyst: MDY

Prep 7atch: i VVSc3(
Prep Method: el -8SW(c3(
Prep Date/Wime: cX9489' c4/ 1i4W2S4
Prep Initial V t./Eol.: : R4S1o
Prep Nxtract Eol: (1f L

Print Date: 09/2T/2012

k .C. Certification # 481

Results of **38-313-(7**

Client Sample ID: **38-313-(7**
Client Project ID: **. 501) Ra 5ydPr1c38**
Lab Sample ID: 31202964003-C
Lab Project ID: 31202964

Collection Date: 09/13/2012 15:50
Received Date: 09/18/2012 10:30
Matrix: Soil-Solid as dry weight
Solids (%): 94.60

Results by **e l -8SW8c4(6 1C. D**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Diesel Range Organics (DRO)	k D	U	6.92	6.92	mg/Tg	1	09/22/2012 3:17
e Oyyuo5gPt							
o-Berphenyl	108			40.0-140	%	1	09/22/2012 3:17

s 5gdB1i nuyf 5gnl

Analytical Watch: **i G6 2((c**
Analytical Method: **e l -8SW8c4(6 1C. D**
Instrument: **G6 W**
Analyst: **CTF**

Prep Watch: **i i i 3cX(**
Prep Method: **e l -8SW3(S4**
Prep Date/Bime: **c9/2c/2c421i4c:c9**
Prep Initial V t./Eol.: **3cR(1o**
Prep Nxtract Eol: **4c1f L**

Print Date: 09/27/2012

k .C. Certification # 481

v esults of **38-1 (7-. 570**

Client Sample ID: **38-1 (7-. 570**
Client Project ID: **) Ra) y5dRPr cel 38**
Lab Sample ID: 31202964004-A
Lab Project ID: 31202964

Collection Date: 09/14/2012 05:2R
v eceide8 Date: 09/15/2012 10:30
Matrix: Soil-Soli8 as 8ry weight
Soli8s (%): 51.90

v esults by **SW-814 8l 67C G) O**

Parameter	v esult	Qual	DL	LOQ/CL	Units	DF	Date Analyze8
Gasoline v ange Organics (Gv O)	k D	U	3.32	3.32	mg/Bg	1	09/24/2012 15:49
SuPPogRtcs							
4-7 romofluorobenzene	10T			T0.0-130	%	1	09/24/2012 15:49

BRtr h InfoPmRtion

Analytical 7 atch: **VGC2672**
Analytical Metho8: **SW-814 8l 67C G) O**
Instrument: **GC.**
Analyst: **MDY**

Prep 7 atch: **VXX1l 37**
Prep Metho8: **SW-814 7l 37**
Prep Date/Wime: **l 9/68/2l 62 64:16**
Prep Initial V t./Eol.: **. 531. g**
Prep Nxtract Eol: **7 mL**

Print Date: 09/2T/2012

k .C. Certification # 451

v esults of **38-1 (7-. 570**

Client Sample ID: **38-1 (7-. 570**
Client Project ID: **) Ra) y5dRRr cel 38**
Lab Sample ID: 31202964004-C
Lab Project ID: 31202964

Collection Date: 09/14/2012 05:2R
v eceide8 Date: 09/15/2012 10:30
Matrix: Soil-Soli8 as 8ry weight
Soli8s (%): 51.90

v esults by **SW-814 8l 67C D) O**

Parameter	v esult	Qual	DL	LOQ/CL	Units	DF	Date Analyze8
Diesel v ange Organics (Dv O)	k D	U	7.R4	7.R4	mg/Tg	1	09/22/2012 4:42
SuRRogRtcs							
o-Berphenyl	99.4			40.0-140	%	1	09/22/2012 4:42

BRtr h InfoRmRtion

Analytical Watch: **XGC277l**
Analytical Metho8: **SW-814 8l 67C D) O**
Instrument: **GC4**
Analyst: **DTF**

Prep Watch: **XXX3l . 7**
Prep Metho8: **SW-814 3716**
Prep Date/Bime: **l 9/2l /2l 62 6l :l 9**
Prep Initial V t./Eol.: **325l6 g**
Prep Nxtract Eol: **6l mL**

Print Date: 09/27/2012

k .C. Certification # 451

v esults of **38-1 (7-1.**

Client Sample ID: **38-1 (7-1.**
Client Project ID: **5 0) 5 Ray 0d Pr ce38**
Lab Sample ID: 3120296400- A
Lab Project ID: 31202964

Collection Date: 095145 2012 0R3-
v eceide8 Date: 0951 R5 2012 10:30
Matrix: SoilA Soli8 as 8ry weight
Soli8s (%): R3.30

v esults by **I S -8W 8e61C G5 O**

Parameter	v esult	Qual	DL	LOQ5CL	Units	DF	Date / nalyze8
Gasoline v ange Organics (Gv O)	k D	U	3.- 4	3.- 4	mg5Bg	1	095245 2012 19:1-
I udbg0tr s							
4A romofluorobenzene	109			T0.0A130	%	1	095245 2012 19:1-

B0tPh Infodm0tion

/ nalytical 7 atch: **VGC7617**
/ nalytical Metho8: **I S -8W 8e61C G5 O**
Instrument: **GC:**
/ nalyst: **MDY**

Prep 7 atch: **VXXW631**
Prep Metho8: **I S -8W 1e31**
Prep Date5Wme: **e9/68/7e67 642W**
Prep Initial V t.5Eol.: **4a : 4 g**
Prep Nxtract Eol: **1 mL**

Print Date: 0952T5 2012

k .C. Certification # 4R1

v esults of **38-1 (7-1.**

Client Sample ID: **38-1 (7-1.**
Client Project ID: **5 0) 5 Ray 0d Pr ce38**
Lab Sample ID: 3120296400- /C
Lab Project ID: 31202964

Collection Date: 095145 2012 0R3-
v eceide8 Date: 0951 R5 2012 10:30
Matrix: Soil/Soli8 as 8ry weight
Soli8s (%): R3.30

v esults by **I S -8W4 8e61C D5 O**

Parameter	v esult	Qual	DL	LOQ5CL	Units	DF	Date Analyze8
Diesel v ange Organics (Dv O)	k D	U	7.16	7.16	mg5Tg	1	095225 2012 - :10
I udbg0tr s							
o/Berphenyl	93.9			40.0/140	%	1	095225 2012 - :10

B0tPh Infodm0tion

Analytical Watch: **XGC711e**
Analytical Metho8: **I S -8W4 8e61C D5 O**
Instrument: **GC4**
Analyst: **DTF**

Prep Watch: **XXX3e91**
Prep Metho8: **I S -8W4 31W6**
Prep Date5Bime: **e/ 27e27e67 6e:e/**
Prep Initial V t.5Eol.: **33a13 g**
Prep Nxtract Eol: **6e mL**

Print Date: 095275 2012

k .C. Certification # 4R1

5 exQltx oF38-1 (7.5-0) R

Client Sample ID: **38-1 (7.5-0) R**
Client Project ID: **a yd a P. r yœl S) 38**
Lab Sample ID: 31202964006-A
Lab Project ID: 31202964

Collection Date: 09/14/2012 09:00
5 eceiRev Date: 09/1d/2012 10:30
8 atriM Soil-Soliv ax vrs y eiwgt
Solivx h(% d9)10

5 exQltx bs W4 -861 8) 05C Ga O

Parameter	5 exQlt	OQal	DL	L. O/CL	u nitx	DU	Date Analsf ev
z axoline 5 anwe . rwanicx hz 5 . %	GD	u	3)BB	3)BB	mw/kw	1	09/24/2012 19:40
Wuccogytl s							
4-7 romoffQbrobenf ene	103			T0)0-130	(	1	09/24/2012 19:40

Byteh Infoamytion

Analstical 7 atcg: **VGC2052**
Analstical 8 etgov: **W4 -861 8) 05C Ga O**
InxtrQment: **GC7**
Analsxt: **MDY**

Prep 7 atcg: **VXX6) 35**
Prep 8 etgov: **W4 -861 5) 35**
Prep Date/Wime: **) 9/08/2) 02 01:63**
Prep Initial V t)/Eol): **1.325 g**
Prep NMract Eol: **5 mL**

Print Date: 09/2T/2012

G)C) Certification # 4d1

5 exQtx oF**38-1 (7.5-0) R**

Client Sample ID: **38-1 (7.5-0) R**
Client Project ID: **a yd a P. r yœl S) 38**
Lab Sample ID: 31202964006-C
Lab Project ID: 31202964

Collection Date: 09/14/2012 09:00
5 eceiRev Date: 09/1d/2012 10:30
8 atriM Soil-Soliv ax vrs y eiwgt
Solivx h(% d9)10

5 exQtx bs **W4 -861 8) 05C Da O**

Parameter	5 exQt	OQal	DL	L. O/CL	u nitx	DU	Date f nalsAev
Diexel 5 anwe . rwanicx hD5 . %	z D	u	T)00	T)00	mw/kw	1	09/22/2012 7:3d
Wuccogytl s							
o-Berpgensl	111			40)0-140	(	1	09/22/2012 7:3d

Byteh Infoamytion

f nalstical Watcg: **XGC255)**
f nalstical 8 etgov: **W4 -861 8) 05C Da O**
InxtrQment: **GC1**
f nalsxt: **DTF**

Prep Watcg: **XXX3) 75**
Prep 8 etgov: **W4 -861 3560**
Prep Date/Bime: **) 9/2) /2) 02 0) :) 9**
Prep Initial V t)/Eol): **32.) 7 g**
Prep NMract Eol: **0) mL**

Print Date: 09/2T/2012

z)C) Certification # 4d1

Results of **38-1 (17. -50)**

Client Sample ID: **38-1 (17. -50)**
Client Project ID: **Ray Rd7Parcel 038**
Lab Sample ID: 3120296400- A
Lab Project ID: 31202964

Collection Date: 095145 2012 09:30
Received Date: 095185 2012 10:30
Matrix: SoilASolid as dry weight
Solids (%): 8- .60

Results by **SW-846 805. C GRO**

Parameter	Result	Qual	DL	LOQ5CL	Units	DF	Date / nalyzed
Gasoline Range Organics (GRO)	k D	U	3.48	3.48	mg5Bg	1	095245 2012 20:07
Surrogates							
4ATromofluorobenzene	108			- 0.0A130	%	1	095245 2012 20:07

Batch Information

/ nalytical Tatch: **VGC25. 2**
/ nalytical Method: **SW-846 805. C GRO**
Instrument: **GC1**
/ nalyst: **MDY**

Prep Tatch: **VXX403.**
Prep Method: **SW-846 . 03.**
Prep Date5Wme: **09/58/2052 56:43**
Prep Initial V t.5Eol.: **67. 62 g**
Prep Nxtract Eol: **. mL**

Print Date: 095- 52012

k .C. Certification # 481

Results of **38-1 (17. -50)**

Client Sample ID: **38-1 (17. -50)**
Client Project ID: **Ray Rd7Parcel 038**
Lab Sample ID: 3120296400- /C
Lab Project ID: 31202964

Collection Date: 095145 2012 09:30
Received Date: 095185 2012 10:30
Matrix: Soil/Solid as dry weight
Solids (%): 8- .60

Results by **SW-846 805. C DRO**

Parameter	Result	Qual	DL	LOQ5CL	Units	DF	Date Analyzed
Diesel Range Organics (DRO)	k D	U	6.97	6.97	mg5Tg	1	095225 2012 6:0-
Surrogates							
o/Berphenyl	103			40.0/140	%	1	095225 2012 6:0-

Batch Information

Analytical Watch: **XGC2. . 0**
Analytical Method: **SW-846 805. C DRO**
Instrument: **GC6**
Analyst: **DTF**

Prep Watch: **XXX301.**
Prep Method: **SW-846 3. 45**
Prep Date5Bime: **09/20/2052 50:09**
Prep Initial V t.5Eol.: **32782 g**
Prep Nxtract Eol: **50 mL**

Print Date: 095- 52012

k .C. Certification # 481

v esults of 38-81(-7.(5

Client Sample ID: **38-81(-7.(5**
Client Project ID: **0) R10 a.1y) dPr cle38**
Lab Sample ID: 3120296400- A
Lab Project ID: 31202964

Collection Date: 095145 2012 09:R0
v eceide8 Date: 0951 - 52012 10:30
Matrix: SoilASoli8 as 8ry weight
Soli8s (%): - - .20

v esults by I S -8W41Be6(C1G0 O

Parameter	v esult	Qual	DL	LOQ5CL	Units	DF	Date / nalyze8
Gasoline v ange Organics (Gv O)	k D	U	3.01	3.01	mg5Bg	1	0952R52012 13:2-
I udbg) tr s							
4A7 romofluorobenzene	106			T0.0A130	%	1	0952R52012 13:2-

B) tPh1nfodm) tion

/ nalytical 7atch: **VGC26((**
/ nalytical Metho8: **I S -8W41Be6(C1G0 O**
Instrument: **GC7**
/ nalyst: **MDY**

Prep 7atch: **VXXWeWW**
Prep Metho8: **I S -8W41(e3(**
Prep Date5Wme: **e9/68/2e62164:WW**
Prep Initial V t.5Eol.: **7.(W71g**
Prep Nxtract Eol: **(1mL**

Print Date: 0952T52012

k .C. Certification # 4- 1

Results of **38-81(-7.(5**

Client Sample ID: **38-81(-7.(5**
Client Project ID: **0) R10 a.1y) dPr cte38**
Lab Sample ID: 31202964008-C
Lab Project ID: 31202964

Collection Date: 09/14/2012 09:50
Received Date: 09/18/2012 10:30
Matrix: Soil-Solid as dry weight
Solids (%): 88.20

Results by **I S -8W4-18e6(C1D0 O**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Diesel Range Organics (DRO)	ND	U	6.62	6.62	mg/kg	1	09/22/2012 6:35
I udbg) tr s							
o-Terphenyl	86.3			40.0-140	%	1	09/22/2012 6:35

B) tPh1nfodm) tion

Analytical Batch: **XGC2((e**
Analytical Method: **I S -8W4-18e6(C1D0 O**
Instrument: **GC4**
Analyst: **DTF**

Prep Batch: **XXX3e7(**
Prep Method: **I S -8W4-13(W6**
Prep Date/Time: **e9/2e/2e6216e:e9**
Prep Initial Wt./Vol.: **3W281g**
Prep Extract Vol: **6e1mL**

Print Date: 09/27/2012

N.C. Certification # 481

Results of 38-813-(7

Client Sample ID: **38-813-(7**
Client Project ID: **. 501) Ra 5ydPr1c38**
Lab Sample ID: 31202964009-A
Lab Project ID: 31202964

Collection Date: 09/14/2012 10:25
Received Date: 09/18/2012 10:30
Matrix: Soil-Solid as dry weight
Solids (%): 93.00

Results by el -8SW8c4(6 1C. G

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Gasoline Range Organics (GRO)	k D	U	3.62	3.62	mg/Bg	1	09/25/2012 13:54
eOyyuo5gPt							
4-7romofluorobenzene	106			T0.0-130	%	1	09/25/2012 13:54

s 5gdB1i nuyf 5gnl

Analytical 7atch: i C6 / 4((
Analytical Method: el -8SW8c4(6 1C. G
Instrument: C6 L
Analyst: MDY

Prep 7atch: i VVScSS
Prep Method: el -8SW(c3(
Prep Date/Wime: cX9489' c4/ 1l4W2S(
Prep Initial V t./Eol.: (RKS81o
Prep Nxtract Eol: (1f :

Print Date: 09/2T/2012

k .C. Certification # 481

Results of **38-813-(7**

Client Sample ID: **38-813-(7**
Client Project ID: **. 501) Ra 5ydPr1c38**
Lab Sample ID: 31202964009-C
Lab Project ID: 31202964

Collection Date: 09/14/2012 10:25
Received Date: 09/18/2012 10:30
Matrix: Soil-Solid as dry weight
Solids (%): 93.00

Results by **e l -8SW8c4(6 1C. D**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Diesel Range Organics (DRO)	k D	U	6.65	6.65	mg/Tg	1	09/22/2012 7:03
e Oyyuo5gPt							
o-Berphenyl	97.5			40.0-140	%	1	09/22/2012 7:03

s 5gdB1i nuyf 5gnl

Analytical Watch: **i G6 2((c**
Analytical Method: **e l -8SW8c4(6 1C. D**
Instrument: **G6 W**
Analyst: **CTF**

Prep Watch: **i i i 3cX(**
Prep Method: **e l -8SW3(S4**
Prep Date/Bime: **c9/2c/2c421i4c:c9**
Prep Initial V t./Eol.: **32R3(1o**
Prep Nxtract Eol: **4c1f L**

Print Date: 09/27/2012

k .C. Certification # 481

Results of 38-1 (7. -50

Client Sample ID: **38-1 (7. -50**
Client Project ID: **) Ra() yd(PRrcel(38**
Lab Sample ID: 31202964010-A
Lab Project ID: 31202964

Collection Date: 09/14/2012 10:35
Received Date: 09/18/2012 10:30
Matrix: Soil-Solid as dry weight
Solids (%): 92.90

Results by SW-846(8 15C(G) O

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Gasoline Range Organics (GRO)	k D	U	3.39	3.39	mg/Bg	1	09/25/2012 14:19
SurrogRtes							
4-7romofluorobenzene	10T			T0.0-130	%	1	09/25/2012 14:19

BRtch(InformRtion

Analytical 7atch: **VGC. 155**
Analytical Method: **SW-846(8 15C(G) O**
Instrument: **GCL**
Analyst: **MDY**

Prep 7atch: **VXX4 44**
Prep Method: **SW-846(5 35**
Prep Date/Wme: **9/18/. 1. ((16246**
Prep Initial V t./Eol.: **6d855(g**
Prep Nxtract Eol: **5(m:**

Print Date: 09/2T/2012

k .C. Certification # 481

Results of **38-1 (7. -50**

Client Sample ID: **38-1 (7. -50**
Client Project ID: **) Ra() yd(PRrcel(38**
Lab Sample ID: 31202964010-C
Lab Project ID: 31202964

Collection Date: 09/14/2012 10:35
Received Date: 09/18/2012 10:30
Matrix: Soil-Solid as dry weight
Solids (%): 92.90

Results by **SW-846(8 15C(D) O**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Diesel Range Organics (DRO)	k D	U	6.34	6.34	mg/Tg	1	09/22/2012 7:31
SurrogRtes							
o-Berphenyl	94.7			40.0-140	%	1	09/22/2012 7:31

BRtch(InformRtion

Analytical Watch: **XGC. 55**
Analytical Method: **SW-846(8 15C(D) O**
Instrument: **GC6**
Analyst: **DTF**

Prep Watch: **XXX3 95**
Prep Method: **SW-846(3541**
Prep Date/Bime: **/ 2 2 1. ((1 : /**
Prep Initial V t./Eol.: **33d 5(g**
Prep Nxtract Eol: **1 (mL**

Print Date: 09/27/2012

k .C. Certification # 481

Results of **38-8 (TW)**

Client Sample ID: **38-8 (TW)**
Client Project ID: **Ray Rd. Parcel 038**
Lab Sample ID: 31202964011-A
Lab Project ID: 31202964

Collection Date: 09/14/2012 11:10
Received Date: 09/18/2012 10:30
Matrix: Water

Results by **SM 6200-B**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
1,1,1,2-Tetrachloroethane	ND	U	0.104	0.500	ug/L	1	09/19/2012 15:59
1,1,1-Trichloroethane	ND	U	0.123	0.500	ug/L	1	09/19/2012 15:59
1,1,2,2-Tetrachloroethane	ND	U	0.156	0.500	ug/L	1	09/19/2012 15:59
1,1,2-Trichloroethane	ND	U	0.126	0.500	ug/L	1	09/19/2012 15:59
1,1-Dichloroethane	ND	U	0.165	0.500	ug/L	1	09/19/2012 15:59
1,1-Dichloroethene	ND	U	0.212	0.500	ug/L	1	09/19/2012 15:59
1,1-Dichloropropene	ND	U	0.112	0.500	ug/L	1	09/19/2012 15:59
1,2,3-Trichlorobenzene	ND	U	0.110	0.500	ug/L	1	09/19/2012 15:59
1,2,3-Trichloropropane	ND	U	0.212	0.500	ug/L	1	09/19/2012 15:59
1,2,4-Trichlorobenzene	ND	U	0.0913	0.500	ug/L	1	09/19/2012 15:59
1,2,4-Trimethylbenzene	ND	U	0.0961	0.500	ug/L	1	09/19/2012 15:59
1,2-Dibromo-3-chloropropane	ND	U	0.748	5.00	ug/L	1	09/19/2012 15:59
1,2-Dibromoethane	ND	U	0.120	0.500	ug/L	1	09/19/2012 15:59
1,2-Dichlorobenzene	ND	U	0.137	0.500	ug/L	1	09/19/2012 15:59
1,2-Dichloroethane	ND	U	0.167	0.500	ug/L	1	09/19/2012 15:59
1,2-Dichloropropane	ND	U	0.163	0.500	ug/L	1	09/19/2012 15:59
1,3,5-Trimethylbenzene	**0.800**		0.113	0.500	ug/L	1	09/19/2012 15:59
1,3-Dichlorobenzene	ND	U	0.103	0.500	ug/L	1	09/19/2012 15:59
1,3-Dichloropropane	ND	U	0.189	0.500	ug/L	1	09/19/2012 15:59
1,4-Dichlorobenzene	ND	U	0.130	0.500	ug/L	1	09/19/2012 15:59
2,2-Dichloropropane	ND	U	0.393	0.500	ug/L	1	09/19/2012 15:59
2-Chlorotoluene	ND	U	0.113	0.500	ug/L	1	09/19/2012 15:59
4-Chlorotoluene	ND	U	0.125	0.500	ug/L	1	09/19/2012 15:59
4-Isopropyltoluene	ND	U	0.0769	0.500	ug/L	1	09/19/2012 15:59
Benzene	ND	U	0.113	0.500	ug/L	1	09/19/2012 15:59
Bromobenzene	ND	U	0.110	0.500	ug/L	1	09/19/2012 15:59
Bromochloromethane	ND	U	0.211	0.500	ug/L	1	09/19/2012 15:59
Bromodichloromethane	ND	U	0.110	0.500	ug/L	1	09/19/2012 15:59
Bromoform	ND	U	0.0974	0.500	ug/L	1	09/19/2012 15:59
Bromomethane	ND	U	0.237	0.500	ug/L	1	09/19/2012 15:59
n-Butylbenzene	ND	U	0.0769	0.500	ug/L	1	09/19/2012 15:59
Carbon tetrachloride	ND	U	0.101	0.500	ug/L	1	09/19/2012 15:59
Chlorobenzene	ND	U	0.116	0.500	ug/L	1	09/19/2012 15:59
Chloroethane	ND	U	0.311	0.500	ug/L	1	09/19/2012 15:59
Chloroform	**0.440**	J	0.139	0.500	ug/L	1	09/19/2012 15:59
Chloromethane	ND	U	0.448	0.500	ug/L	1	09/19/2012 15:59
Dibromochloromethane	ND	U	0.134	0.500	ug/L	1	09/19/2012 15:59
Dibromomethane	ND	U	0.168	0.500	ug/L	1	09/19/2012 15:59
Dichlorodifluoromethane	ND	U	0.171	5.00	ug/L	1	09/19/2012 15:59
cis-1,3-Dichloropropene	ND	U	0.0767	0.500	ug/L	1	09/19/2012 15:59
trans-1,3-Dichloropropene	ND	U	0.0862	0.500	ug/L	1	09/19/2012 15:59
Diisopropyl Ether	ND	U	0.155	0.500	ug/L	1	09/19/2012 15:59
Ethyl Benzene	ND	U	0.0877	0.500	ug/L	1	09/19/2012 15:59

Print Date: 09/27/2012

N.C. Certification # 481

Results of **38-8 (TW)**

Client Sample ID: **38-8 (TW)**
Client Project ID: **Ray Rd. Parcel 038**
Lab Sample ID: 31202964011-A
Lab Project ID: 31202964

Collection Date: 09/14/2012 11:10
Received Date: 09/18/2012 10:30
Matrix: Water

Results by **SM 6200-B**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF	Date Analyzed
Hexachlorobutadiene	ND	U	0.0792	0.500	ug/L	1	09/19/2012 15:59
Isopropylbenzene (Cumene)	ND	U	0.0869	0.500	ug/L	1	09/19/2012 15:59
Methylene chloride	ND	U	0.152	5.00	ug/L	1	09/19/2012 15:59
Naphthalene	ND	U	0.0855	0.500	ug/L	1	09/19/2012 15:59
Styrene	ND	U	0.102	0.500	ug/L	1	09/19/2012 15:59
Tetrachloroethene	ND	U	0.155	0.500	ug/L	1	09/19/2012 15:59
Toluene	**0.170**	J	0.133	0.500	ug/L	1	09/19/2012 15:59
Trichloroethene	ND	U	0.125	0.500	ug/L	1	09/19/2012 15:59
Trichlorofluoromethane	ND	U	0.137	0.500	ug/L	1	09/19/2012 15:59
Vinyl chloride	ND	U	0.124	0.500	ug/L	1	09/19/2012 15:59
Xylene (total)	**1.35**	J	0.269	1.50	ug/L	1	09/19/2012 15:59
cis-1,2-Dichloroethene	ND	U	0.136	0.500	ug/L	1	09/19/2012 15:59
m,p-Xylene	**1.14**		0.182	1.00	ug/L	1	09/19/2012 15:59
n-Propylbenzene	ND	U	0.113	0.500	ug/L	1	09/19/2012 15:59
o-Xylene	**0.210**	J	0.0874	0.500	ug/L	1	09/19/2012 15:59
sec-Butylbenzene	ND	U	0.112	0.500	ug/L	1	09/19/2012 15:59
tert-Butyl methyl ether (MTBE)	ND	U	0.144	0.500	ug/L	1	09/19/2012 15:59
tert-Butylbenzene	ND	U	0.0855	0.500	ug/L	1	09/19/2012 15:59
trans-1,2-Dichloroethene	ND	U	0.223	0.500	ug/L	1	09/19/2012 15:59
Surrogates							
1,2-Dichloroethane-d4	102			64.0-140	%	1	09/19/2012 15:59
4-Bromofluorobenzene	107			85.0-115	%	1	09/19/2012 15:59
Toluene d8	107			82.0-117	%	1	09/19/2012 15:59

Batch Information

Analytical Batch: **VMS2561**
Analytical Method: **SM 6200-B**
Instrument: **MSD8**
Analyst: **BWS**

Prep Batch: **VXX4021**
Prep Method: **SM 6200-B Prep**
Prep Date/Time: **09/19/2012 08:35**
Prep Initial Wt./Vol.: **40 mL**
Prep Extract Vol: **40 mL**

Print Date: 09/27/2012

N.C. Certification # 481

Batch Summary

Analytical Method: SM 6200-B

Prep Method: SW-846 5030B
Prep Batch: VXX4021
Prep Date: 09/19/2012 08:52

Client Sample ID	Lab Sample ID	Analysis Date	Analytical Batch	Instrument	Analyst
LCS for HBN 29035 [VXX/4021]	90096	09/19/2012 10:40	VMS2561	MSD8	BWS
LCSD for HBN 29035 [VXX/4021]	90097	09/19/2012 11:04	VMS2561	MSD8	BWS
MB for HBN 29035 [VXX/4021]	90098	09/19/2012 11:53	VMS2561	MSD8	BWS
38-8 (TW)	31202964011	09/19/2012 15:59	VMS2561	MSD8	BWS
4-5 (TW)(89998DUP)	90222	09/19/2012 17:12	VMS2561	MSD8	BWS
9-9 (TW)(89985MS)	90223	09/19/2012 17:37	VMS2561	MSD8	BWS

Method Blank

Blank ID: MB for HBN 29035 [VXX/4021]
Blank Lab ID: 90098
QC for Samples:
31202964011

Matrix: Water

Results by **SM 6200-B**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF
Dichlorodifluoromethane	ND	U	0.171	5.00	ug/L	1
Chloromethane	ND	U	0.448	0.500	ug/L	1
Vinyl chloride	ND	U	0.124	0.500	ug/L	1
Bromomethane	ND	U	0.237	0.500	ug/L	1
Chloroethane	ND	U	0.311	0.500	ug/L	1
Trichlorofluoromethane	ND	U	0.137	0.500	ug/L	1
1,1-Dichloroethene	ND	U	0.212	0.500	ug/L	1
Methylene chloride	ND	U	0.152	5.00	ug/L	1
trans-1,2-Dichloroethene	ND	U	0.223	0.500	ug/L	1
tert-Butyl methyl ether (MTBE)	ND	U	0.144	0.500	ug/L	1
1,1-Dichloroethane	ND	U	0.165	0.500	ug/L	1
Diisopropyl Ether	ND	U	0.155	0.500	ug/L	1
2,2-Dichloropropane	ND	U	0.393	0.500	ug/L	1
cis-1,2-Dichloroethene	ND	U	0.136	0.500	ug/L	1
Bromochloromethane	ND	U	0.211	0.500	ug/L	1
Chloroform	ND	U	0.139	0.500	ug/L	1
1,1,1-Trichloroethane	ND	U	0.123	0.500	ug/L	1
Carbon tetrachloride	ND	U	0.101	0.500	ug/L	1
1,1-Dichloropropene	ND	U	0.112	0.500	ug/L	1
Benzene	ND	U	0.113	0.500	ug/L	1
1,2-Dichloroethane	ND	U	0.167	0.500	ug/L	1
Trichloroethene	ND	U	0.125	0.500	ug/L	1
1,2-Dichloropropane	ND	U	0.163	0.500	ug/L	1
Dibromomethane	ND	U	0.168	0.500	ug/L	1
Bromodichloromethane	ND	U	0.110	0.500	ug/L	1
cis-1,3-Dichloropropene	ND	U	0.0767	0.500	ug/L	1
Toluene	ND	U	0.133	0.500	ug/L	1
trans-1,3-Dichloropropene	ND	U	0.0862	0.500	ug/L	1
1,1,2-Trichloroethane	ND	U	0.126	0.500	ug/L	1
Tetrachloroethene	ND	U	0.155	0.500	ug/L	1
1,3-Dichloropropane	ND	U	0.189	0.500	ug/L	1
Dibromochloromethane	ND	U	0.134	0.500	ug/L	1
1,2-Dibromoethane	ND	U	0.120	0.500	ug/L	1
Chlorobenzene	ND	U	0.116	0.500	ug/L	1
1,1,1,2-Tetrachloroethane	ND	U	0.104	0.500	ug/L	1
Bromoform	ND	U	0.0974	0.500	ug/L	1
Bromobenzene	ND	U	0.110	0.500	ug/L	1
1,1,2,2-Tetrachloroethane	ND	U	0.156	0.500	ug/L	1
1,2,3-Trichloropropane	ND	U	0.212	0.500	ug/L	1
Ethyl Benzene	ND	U	0.0877	0.500	ug/L	1
m,p-Xylene	ND	U	0.182	1.00	ug/L	1

Print Date: 09/27/2012

N.C. Certification # 481

Method Blank

Blank ID: MB for HBN 29035 [VXX/4021]
Blank Lab ID: 90098
QC for Samples:
31202964011

Matrix: Water

Results by **SM 6200-B**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF
Styrene	ND	U	0.102	0.500	ug/L	1
o-Xylene	ND	U	0.0874	0.500	ug/L	1
Xylene (total)	ND	U	0.269	1.50	ug/L	1
Isopropylbenzene (Cumene)	ND	U	0.0869	0.500	ug/L	1
n-Propylbenzene	ND	U	0.113	0.500	ug/L	1
2-Chlorotoluene	ND	U	0.113	0.500	ug/L	1
4-Chlorotoluene	ND	U	0.125	0.500	ug/L	1
1,3,5-Trimethylbenzene	ND	U	0.113	0.500	ug/L	1
tert-Butylbenzene	ND	U	0.0855	0.500	ug/L	1
1,2,4-Trimethylbenzene	ND	U	0.0961	0.500	ug/L	1
sec-Butylbenzene	ND	U	0.112	0.500	ug/L	1
1,3-Dichlorobenzene	ND	U	0.103	0.500	ug/L	1
4-Isopropyltoluene	ND	U	0.0769	0.500	ug/L	1
1,4-Dichlorobenzene	ND	U	0.130	0.500	ug/L	1
1,2-Dichlorobenzene	ND	U	0.137	0.500	ug/L	1
n-Butylbenzene	ND	U	0.0769	0.500	ug/L	1
1,2-Dibromo-3-chloropropane	ND	U	0.748	5.00	ug/L	1
1,2,4-Trichlorobenzene	ND	U	0.0913	0.500	ug/L	1
Hexachlorobutadiene	ND	U	0.0792	0.500	ug/L	1
Naphthalene	ND	U	0.0855	0.500	ug/L	1
1,2,3-Trichlorobenzene	ND	U	0.110	0.500	ug/L	1
Surrogates						
1,2-Dichloroethane-d4	97.5			64.0-140	%	1
Toluene d8	102			82.0-117	%	1
4-Bromofluorobenzene	101			85.0-115	%	1

Batch Information

Analytical Batch: VMS2561
Analytical Method: SM 6200-B
Instrument: MSD8
Analyst: BWS

Prep Batch: VXX4021
Prep Method: SW-846 5030B
Prep Date/Time: 9/19/2012 8:52:28AM
Prep Initial Wt./Vol.: 40 mL
Prep Extract Vol: 40 mL

Print Date: 09/27/2012

N.C. Certification # 481

Blank Spike Summary

Blank Spike ID: LCS for HBN 29035 [VXX/4021]
Blank Spike Lab ID: 90096
Date Analyzed: 09/19/2012 10:40

Spike Duplicate ID: LCSD for HBN 29035 [VXX/4021]
Spike Duplicate Lab ID: 90097
Date Analyzed: 09/19/2012 11:04
Matrix: Water

QC for Samples: 31202964011

Results by **SM 6200-B**

	Blank Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Dichlorodifluoromethane	5.00	5.35	107	5.00	5.76	115	33.0-170	7.4	30.00
Chloromethane	5.00	5.45	109	5.00	5.62	112	57.0-132	3.1	30.00
Vinyl chloride	5.00	4.58	92	5.00	4.76	95	59.0-138	3.9	30.00
Bromomethane	5.00	5.92	118	5.00	5.93	119	51.0-134	0.17	30.00
Chloroethane	5.00	5.49	110	5.00	5.48	110	64.0-145	0.18	30.00
Trichlorofluoromethane	5.00	5.30	106	5.00	5.81	116	64.0-133	9.2	30.00
1,1-Dichloroethene	5.00	5.93	119	5.00	5.44	109	71.0-128	8.6	30.00
Methylene chloride	5.00	5.32	106	5.00	5.78	**116***	70.0-113	8.3	30.00
trans-1,2-Dichloroethene	5.00	5.96	119	5.00	5.86	117	57.0-138	1.7	30.00
tert-Butyl methyl ether (MTBE)	5.00	5.79	116	5.00	5.48	110	47.0-142	5.5	30.00
1,1-Dichloroethane	5.00	6.35	127	5.00	6.13	123	68.0-133	3.5	30.00
Diisopropyl Ether	5.00	6.52	130	5.00	6.16	123	66.0-132	5.7	30.00
2,2-Dichloropropane	5.00	6.88	**138***	5.00	5.91	118	74.0-125	15	30.00
cis-1,2-Dichloroethene	5.00	6.55	**131***	5.00	5.51	110	73.0-128	17	30.00
Bromochloromethane	5.00	5.77	115	5.00	5.66	113	73.0-128	1.9	30.00
Chloroform	5.00	6.61	**132***	5.00	5.59	112	74.0-124	17	30.00
1,1,1-Trichloroethane	5.00	5.83	117	5.00	5.77	115	76.0-119	1.0	30.00
Carbon tetrachloride	5.00	5.89	118	5.00	5.67	113	75.0-120	3.8	30.00
1,1-Dichloropropene	5.00	5.32	106	5.00	5.47	109	76.0-124	2.8	30.00
Benzene	5.00	5.53	111	5.00	5.43	109	76.0-124	1.8	30.00
1,2-Dichloroethane	5.00	5.86	117	5.00	5.56	111	76.0-119	5.3	30.00
Trichloroethene	5.00	5.25	105	5.00	5.19	104	74.0-121	1.1	30.00
1,2-Dichloropropane	5.00	5.29	106	5.00	5.49	110	74.0-124	3.7	30.00
Dibromomethane	5.00	5.07	101	5.00	5.49	110	71.0-128	8.0	30.00
Bromodichloromethane	5.00	5.65	113	5.00	5.42	108	72.0-120	4.2	30.00
cis-1,3-Dichloropropene	5.00	5.11	102	5.00	4.98	100	73.0-122	2.6	30.00
Toluene	5.00	5.12	102	5.00	5.45	109	75.0-123	6.2	30.00
trans-1,3-Dichloropropene	5.00	5.30	106	5.00	5.07	101	70.0-125	4.4	30.00
1,1,2-Trichloroethane	5.00	5.71	114	5.00	5.68	114	76.0-121	0.53	30.00
Tetrachloroethene	5.00	5.50	110	5.00	5.51	110	59.0-112	0.18	30.00
1,3-Dichloropropane	5.00	5.70	114	5.00	5.59	112	74.0-120	1.9	30.00
Dibromochloromethane	5.00	5.65	113	5.00	5.29	106	67.0-122	6.6	30.00
1,2-Dibromoethane	5.00	5.46	109	5.00	5.45	109	74.0-119	0.18	30.00
Chlorobenzene	5.00	5.37	107	5.00	5.36	107	74.0-120	0.19	30.00

Print Date: 09/27/2012

N.C. Certification # 481

Blank Spike Summary

Blank Spike ID: LCS for HBN 29035 [VXX/4021]
Blank Spike Lab ID: 90096
Date Analyzed: 09/19/2012 10:40

Spike Duplicate ID: LCSD for HBN 29035 [VXX/4021]
Spike Duplicate Lab ID: 90097
Date Analyzed: 09/19/2012 11:04
Matrix: Water

QC for Samples: 31202964011

Results by **SM 6200-B**

	Blank Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
1,1,1,2-Tetrachloroethane	5.00	5.62	112	5.00	5.43	109	73.0-119	3.4	30.00
Bromoform	5.00	5.47	109	5.00	5.43	109	62.0-127	0.73	30.00
Bromobenzene	5.00	5.00	100	5.00	5.41	108	75.0-120	7.9	30.00
1,1,2,2-Tetrachloroethane	5.00	5.40	108	5.00	5.20	104	68.0-129	3.8	30.00
1,2,3-Trichloropropane	5.00	5.05	101	5.00	5.19	104	67.0-126	2.7	30.00
Ethyl Benzene	5.00	6.02	120	5.00	5.38	108	76.0-123	11	30.00
m,p-Xylene	10.0	10.8	108	10.0	9.81	98	76.0-124	9.6	30.00
Styrene	5.00	5.43	109	5.00	4.87	97	76.0-121	11	30.00
o-Xylene	5.00	6.03	121	5.00	5.03	101	75.0-124	18	30.00
Isopropylbenzene (Cumene)	5.00	5.60	112	5.00	5.27	105	77.0-120	6.1	30.00
n-Propylbenzene	5.00	5.62	112	5.00	5.07	101	77.0-123	10	30.00
2-Chlorotoluene	5.00	5.52	110	5.00	5.29	106	74.0-127	4.3	30.00
4-Chlorotoluene	5.00	5.52	110	5.00	5.05	101	77.0-123	8.9	30.00
1,3,5-Trimethylbenzene	5.00	5.50	110	5.00	5.20	104	76.0-122	5.6	30.00
tert-Butylbenzene	5.00	5.12	102	5.00	5.12	102	67.0-122	0.0	30.00
1,2,4-Trimethylbenzene	5.00	5.32	106	5.00	5.11	102	76.0-124	4.0	30.00
sec-Butylbenzene	5.00	5.22	104	5.00	5.03	101	78.0-121	3.7	30.00
1,3-Dichlorobenzene	5.00	5.63	113	5.00	5.54	111	75.0-120	1.6	30.00
4-Isopropyltoluene	5.00	5.12	102	5.00	4.86	97	77.0-120	5.2	30.00
1,4-Dichlorobenzene	5.00	5.10	102	5.00	5.25	105	70.0-125	2.9	30.00
1,2-Dichlorobenzene	5.00	5.51	110	5.00	4.83	97	76.0-118	13	30.00
n-Butylbenzene	5.00	4.72	94	5.00	4.49	90	78.0-118	5.0	30.00
1,2-Dibromo-3-chloropropane	30.0	32.9	110	30.0	28.4	95	62.0-130	15	30.00
1,2,4-Trichlorobenzene	5.00	4.73	95	5.00	4.16	83	72.0-119	13	30.00
Hexachlorobutadiene	5.00	5.16	103	5.00	4.32	86	69.0-121	18	30.00
Naphthalene	5.00	4.48	90	5.00	4.15	83	67.0-122	7.6	30.00
1,2,3-Trichlorobenzene	5.00	5.21	104	5.00	4.69	94	21.0-193	11	30.00
Surrogates									
1,2-Dichloroethane-d4			96.8			104	64.0-140		
Toluene d8			95.6			98.9	82.0-117		
4-Bromofluorobenzene			99			103	85.0-115		

Print Date: 09/27/2012

N.C. Certification # 481

Blank Spike Summary

Blank Spike ID: LCS for HBN 29035 [VXX/4021]
Blank Spike Lab ID: 90096
Date Analyzed: 09/19/2012 10:40

Spike Duplicate ID: LCSD for HBN 29035 [VXX/4021]
Spike Duplicate Lab ID: 90097
Date Analyzed: 09/19/2012 11:04
Matrix: Water

QC for Samples: 31202964011

Results by **SM 6200-B**

	Blank Spike (%)			Spike Duplicate (%)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL

Batch Information

Analytical Batch: **VMS2561**
Analytical Method: **SM 6200-B**
Instrument: **MSD8**
Analyst: **BWS**

Prep Batch: **VXX4021**
Prep Method: **SW-846 5030B**
Prep Date/Time: **09/19/2012 08:52**
Spike Init Wt./Vol.: **40 mL** Extract Vol: **40 mL**
Dupe Init Wt./Vol.: **40 mL** Extract Vol: **40 mL**

Print Date: 09/27/2012

N.C. Certification # 481

Batch Summary

Analytical Method: SW-846 8015C GRO

Prep Method: SW-846 5035
Prep Batch: VXX4035
Prep Date: 09/24/2012 08:43

Client Sample ID	Lab Sample ID	Analysis Date	Analytical Batch	Instrument	Analyst
LCS for HBN 29252 [VXX/4035]	90939	09/24/2012 10:46	VGC2152	GC7	MDY
LCSD for HBN 29252 [VXX/4035]	90940	09/24/2012 11:12	VGC2152	GC7	MDY
MB for HBN 29252 [VXX/4035]	90941	09/24/2012 11:37	VGC2152	GC7	MDY
38-3 (3-5)	31202964003	09/24/2012 18:24	VGC2152	GC7	MDY
38-4 (5-7.5)	31202964004	09/24/2012 18:49	VGC2152	GC7	MDY
38-5 (2-5)	31202964005	09/24/2012 19:15	VGC2152	GC7	MDY
38-6 (7.5-10)	31202964006	09/24/2012 19:40	VGC2152	GC7	MDY
38-7 (7.5-10)	31202964007	09/24/2012 20:05	VGC2152	GC7	MDY
38-7 (7.5-10)(89971MS)	91255	09/24/2012 20:31	VGC2152	GC7	MDY
38-7 (7.5-10)(89971MSD)	91256	09/24/2012 20:56	VGC2152	GC7	MDY

Method Blank

Blank ID: MB for HBN 29252 [VXX/4035]
Blank Lab ID: 90941
QC for Samples:
31202964003, 31202964004, 31202964005, 31202964006, 31202964007

Matrix: Soil-Solid as dry weight

Results by **SW-846 8015C GRO**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF
Gasoline Range Organics (GRO)	ND	U	4.00	4.00	mg/kg	1
Surrogates						
4-Bromofluorobenzene	104			70.0-130	%	1

Batch Information

Analytical Batch: VGC2152
Analytical Method: SW-846 8015C GRO
Instrument: GC7
Analyst: MDY

Prep Batch: VXX4035
Prep Method: SW-846 5035
Prep Date/Time: 9/24/2012 8:43:54AM
Prep Initial Wt./Vol.: 5 g
Prep Extract Vol: 5 mL

Print Date: 09/27/2012

N.C. Certification # 481

Blank Spike Summary

Blank Spike ID: LCS for HBN 29252 [VXX/4035]
Blank Spike Lab ID: 90939
Date Analyzed: 09/24/2012 10:46

Spike Duplicate ID: LCSD for HBN 29252 [VXX/4035]
Spike Duplicate Lab ID: 90940
Date Analyzed: 09/24/2012 11:12
Matrix: Soil-Solid as dry weight

QC for Samples: 31202964003, 31202964004, 31202964005, 31202964006, 31202964007

Results by **SW-846 8015C GRO**

	Blank Spike (mg/kg)			Spike Duplicate (mg/kg)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Gasoline Range Organics (GRO)	16.0	16.3	102	16.0	16.9	106	70.0-130	3.6	30.00
Surrogates									
4-Bromofluorobenzene			99.6			104	70.0-130		

Batch Information

Analytical Batch: **VGC2152**
Analytical Method: **SW-846 8015C GRO**
Instrument: **GC7**
Analyst: **MDY**

Prep Batch: **VXX4035**
Prep Method: **SW-846 5035**
Prep Date/Time: **09/24/2012 08:43**
Spike Init Wt./Vol.: **5 g** Extract Vol: **5 mL**
Dupe Init Wt./Vol.: **5 g** Extract Vol: **5 mL**

Print Date: 09/27/2012

N.C. Certification # 481

Matrix Spike Summary

Original Sample ID: 31202964007 (38-7 (7.5-10))
MS Sample ID: 91255
MSD Sample ID: 91256

Analysis Date: 09/24/2012 20:05
Analysis Date: 09/24/2012 20:31
Analysis Date: 09/24/2012 20:56
Matrix: Soil-Solid as dry weight

QC for Samples: 31202964003, 31202964004, 31202964005, 31202964006, 31202964007

Results by **SW-846 8015C GRO**

		Matrix Spike (mg/kg)			Spike Duplicate (mg/kg)					
Parameter	Sample	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Gasoline Range Organics (GRO)	ND	13.9	15.6	112	13.9	14.5	104	70.0-130	7.6	30.00

Batch Information

Analytical Batch: **VGC2152**
Analytical Method: **SW-846 8015C GRO**
Instrument: **GC7**
Analyst: **MDY**

Prep Batch: **VXX4035**
Prep Method: **SW-846 5035**
Prep Date/Time: **09/18/2012 16:43**
MS Init Wt./Vol.: **6.562 g** Extract Vol.: **5 mL**
MSD Init Wt./Vol.: **6.562 g** Extract Vol.: **5 mL**

Print Date: 09/27/2012

N.C. Certification # 481

Batch Summary

Analytical Method: SW-846 8015C GRO

Prep Method: SW-846 5035
Prep Batch: VXX4044
Prep Date: 09/25/2012 08:52

Client Sample ID	Lab Sample ID	Analysis Date	Analytical Batch	Instrument	Analyst
LCS for HBN 29355 [VXX/4044]	91167	09/25/2012 11:21	VGC2155	GC7	MDY
LCSD for HBN 29355 [VXX/4044]	91168	09/25/2012 11:46	VGC2155	GC7	MDY
MB for HBN 29355 [VXX/4044]	91169	09/25/2012 12:12	VGC2155	GC7	MDY
38-1 (7)5-10.	31202964001	09/25/2012 12:38	VGC2155	GC7	MDY
38-2 (3-5.	31202964002	09/25/2012 13:03	VGC2155	GC7	MDY
38-8 (5-7)5.	31202964008	09/25/2012 13:28	VGC2155	GC7	MDY
38-8 (3-5.	31202964009	09/25/2012 13:54	VGC2155	GC7	MDY
38-10 (2-5.	31202964010	09/25/2012 14:19	VGC2155	GC7	MDY
4-5 (5-7)5.(89995MS.	91581	09/25/2012 21:04	VGC2155	GC7	MDY
4-5 (5-7)5.(89995MSD.	91582	09/25/2012 21:29	VGC2155	GC7	MDY

Method Blank

Blank ID: MB for HBN 295[[VX/ / 40300]
Blank Lab ID: 911t 9
CU for - aO6lgy:
512329t 0331, 512329t 0332, 512329t 0337, 512329t 0339, 512329t 0313

MairxS: - oxld- olxs ay srwe gxhRi

ugyPliy bw **SW-846 8015C GRO**

maraOgigr	ugyPli	CPal	DL	LQC4JL	Fnxiy	Dp
Gayolxng u anhg Qrhanxcy (Gu Q)	ND	F	0.33	0.33	Oh4kh	1
Surrogates						
0dBroOoflPorobgnzgng	131			%3.3d153	W	1

Batch Information

Analwixcal BaicR: XGU21[[
Analwixcal MgiRos: - 8 d70t 731[U Gu Q
InyirPOgni: GU%
Analwyi: MDY

mrg6 BaicR: X/ / 0300
mrg6 MgiRos: - 8 d70t [35[
mrg6 Daig4TxOg: 942[42312 7:[2:33AM
mrg6 Inxixal 8 i.4Xol.: [h
mrg6 ESiraci Xol: [OL

Blank Spike Summary

Blank Spike ID: LCS for HBN 29355 [VXX/4044]
Blank Spike Lab ID: 91167
Date Analyzed: 09/25/2012 11:21

Spike Duplicate ID: LCSD for HBN 29355 [VXX/4044]
Spike Duplicate Lab ID: 91168
Date Analyzed: 09/25/2012 11:46
Matrix: Soil-Solid as dry weight

QC for Samples: 31202964001, 31202964002, 31202964008, 31202964009, 31202964010

Results by **SW-846 8015C GRO**

	Blank Spike (mg/kg)			Spike Duplicate (mg/kg)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Gasoline Range Organics (GRO)	16.0	16.1	101	16.0	17.1	107	70.0-130	6.0	30.00
Surrogates									
4-Bromofluorobenzene			101			104	70.0-130		

Batch Information

Analytical Batch: **VGC2155**
Analytical Method: **SW-846 8015C GRO**
Instrument: **GC7**
Analyst: **MDY**

Prep Batch: **VXX4044**
Prep Method: **SW-846 5035**
Prep Date/Time: **09/25/2012 08:52**
Spike Init Wt./Vol.: **5 g** Extract Vol: **5 mL**
Dupe Init Wt./Vol.: **5 g** Extract Vol: **5 mL**

Print Date: 09/27/2012

N.C. Certification # 481

Batch Summary

Analytical Method: SW-846 8015C DRO

Prep Method: SW-846 3541
Prep Batch: XXX3075
Prep Date: 09/20/2012 10:09

Client Sample ID	Lab Sample ID	Analysis Date	Analytical Batch	Instrument	Analyst
MB for HBN 29081 [XXX/3075]	90342	09/20/2012 19:40	XGC2545	GC6	DTF
LCS for HBN 29081 [XXX/3075]	90343	09/20/2012 20:09	XGC2545	GC6	DTF
38-2 (3-5)	31202964002	09/22/2012 02:49	XGC2550	GC6	DTF
38-3 (3-5)	31202964003	09/22/2012 03:17	XGC2550	GC6	DTF
38-4 (5-7.5)	31202964004	09/22/2012 04:42	XGC2550	GC6	DTF
38-5 (2-5)	31202964005	09/22/2012 05:10	XGC2550	GC6	DTF
38-6 (7.5-10)	31202964006	09/22/2012 05:38	XGC2550	GC6	DTF
38-7 (7.5-10)	31202964007	09/22/2012 06:07	XGC2550	GC6	DTF
38-8 (5-7.5)	31202964008	09/22/2012 06:35	XGC2550	GC6	DTF
38-8 (3-5)	31202964009	09/22/2012 07:03	XGC2550	GC6	DTF
38-10 (2-5)	31202964010	09/22/2012 07:31	XGC2550	GC6	DTF
38-1 (7.5-10)	31202964001	09/24/2012 19:26	XGC2554	GC6	DTF
38-1 (7.5-10)(89965MS)	90344	09/24/2012 19:55	XGC2554	GC6	DTF
38-1 (7.5-10)(89965MSD)	90345	09/24/2012 20:23	XGC2554	GC6	DTF

Method Blank

Blank ID: MB for HBN 29081 [XXX/3075]
Matrix: Soil-Solid as dry weight
Blank Lab ID: 90342
QC for Samples:
31202964001, 31202964002, 31202964003, 31202964004, 31202964005, 31202964006, 31202964007, 31202964008, 31202964009, 31202964010

Results by **SW-846 8015C DRO**

Parameter	Result	Qual	DL	LOQ/CL	Units	DF
Diesel Range Organics (DRO)	ND	U	6.25	6.25	mg/kg	1
Surrogates						
o-Terphenyl	104			40.0-140	%	1

Batch Information

Analytical Batch: XGC2545
Analytical Method: SW-846 8015C DRO
Instrument: GC6
Analyst: DTF

Prep Batch: XXX3075
Prep Method: SW-846 3541
Prep Date/Time: 9/20/2012 10:09:26AM
Prep Initial Wt./Vol.: 32 g
Prep Extract Vol: 10 mL

Print Date: 09/27/2012
N.C. Certification # 481

Blank Spike Summary

Blank Spike ID: LCS for HBN 29081 [XXX/3075]
Blank Spike Lab ID: 90343
Date Analyzed: 09/20/2012 20:09

Matrix: Soil-Solid as dry weight

QC for Samples: 31202964001, 31202964002, 31202964003, 31202964004, 31202964005, 31202964006, 31202964007, 31202964008, 31202964009, 31202964010

Results by **SW-846 8015C DRO**

Blank Spike (mg/kg)

Parameter	Spike	Result	Rec (%)	CL
Diesel Range Organics (DRO)	62.5	67.2	107	55.0-137
Surrogates				
o-Terphenyl			113	40.0-140

Batch Information

Analytical Batch: **XGC2545**
Analytical Method: **SW-846 8015C DRO**
Instrument: **GC6**
Analyst: **DTF**

Prep Batch: **XXX3075**
Prep Method: **SW-846 3541**
Prep Date/Time: **09/20/2012 10:09**
Spike Init Wt./Vol.: **32 g** Extract Vol: **10 mL**
Dupe Init Wt./Vol.: Extract Vol:

Print Date: 09/27/2012

N.C. Certification # 481

Matrix Spike Summary

Original Sample ID: 31202964001 (38-1 (7.5-10))
MS Sample ID: 90344
MSD Sample ID: 90345

Analysis Date: 09/24/2012 19:26
Analysis Date: 09/24/2012 19:55
Analysis Date: 09/24/2012 20:23
Matrix: Soil-Solid as dry weight

QC for Samples: 31202964001, 31202964002, 31202964003, 31202964004, 31202964005, 31202964006, 31202964007, 31202964008, 31202964009, 31202964010

Results by **SW-846 8015C DRO**

		Matrix Spike (mg/kg)			Spike Duplicate (mg/kg)					
Parameter	Sample	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Diesel Range Organics (DRO)	1060	70.9	1140	120	72.4	1260	274 *	40.0-140	9.2	30.00
Surrogates										
o-Terphenyl				102			96.4	40.0-140		

Batch Information

Analytical Batch: **XGC2554**
Analytical Method: **SW-846 8015C DRO**
Instrument: **GC6**
Analyst: **DTF**

Prep Batch: **XXX3075**
Prep Method: **SW-846 3541**
Prep Date/Time: **09/20/2012 10:09**
MS Init Wt./Vol.: **31.16 g** Extract Vol.: **10 mL**
MSD Init Wt./Vol.: **30.52 g** Extract Vol.: **10 mL**

Print Date: 09/27/2012

N.C. Certification # 481

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SGS North America Inc.

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• New Jersey • New York
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(1)
CLIENT: NCDOT U-3465 WBS: 39017.1.1
CONTACT: Gordon Box PHONE NO: 336 335.3174
PROJECT: Ray Rd. Parcel 038 SITE/PWSID#:
REPORTS TO: Tim Leatherman
Pyramid Environmental FAX NO.:( )
INVOICE TO: NCDOT QUOTE #: NCDOT
Gordon Box P.O. NUMBER: 39017.1.1

SGS Reference: 31202964
PAGE 1 OF 2

(2) (3)

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX	No CONTAINERS	SAMPLE TYPE (C= COMP, G= GRAB)	5035-GRO (Preservatives Used: Me OH)	3550-DRO (Preservatives Used: None)								REMARKS
	38-1 (7.5-10)	9.13.12	15:35	Soil	3	G	X	X								
	38-2 (3-5)	9.13.12	15:38	Soil	3	G	X	X								
	38-3 (3-5)	9.13.12	15:50	Soil	3	G	X	X								
	38-4 (5-7.5)	9.14.12	8:25	Soil	3	G	X	X								
	38-5 (2-5)	9.14.12	8:35	Soil	3	G	X	X								
	38-6 (7.5-10)	9.14.12	9:00	Soil	3	G	X	X								
	38-7 (7.5-10)	9.14.12	9:30	Soil	3	G	X	X								
	38-8 (5-7.5)	9.14.12	9:50	Soil	3	G	X	X								
	39-9 (3-5)	9.14.12	10:25	Soil	3	G	X	X								
	39-10 (2-5)	9.14.12	10:35	Soil	3	G	X	X								

(5)

	Date	Time	Received By:
Collected/Relinquished By:(1) Timothy [signature]	9/17/12	19:00	Fed-X
Relinquished By: (2)	9/18/12	1030	[signature]
Relinquished By: (3)			
Relinquished By: (4)			

(4)
Shipping Carrier:
Shipping Ticket No:
Special Deliverable Requirements:
Special Instructions:
Requested Turnaround Time:
☐ RUSH ________ Date Needed ☐ STD

Samples Received Cold? (Circle) **YES** (circled) NO
Temperature°C: 2.8°C
Chain of Custody Seal: (Circle)
INTACT BROKEN **ABSENT** (circled)

☐ 200 W. Potter Drive Anchorage, AK 99518 Tel: (907) 562-2343 Fax: (907) 561-5301
☐ 5500 Business Drive Wilmington, NC 28405 Tel: (910) 350-1903 Fax: (910) 350-1557

White - Retained by Lab
Pink - Retained by Client

SGS ANALYTICAL PERSPECTIVES

CHAIN OF CUSTODY

SGS ANALYTICAL PERSPECTIVES
5500 Business Drive
Wilmington, NC 28405
+1 910 350 1903
WWW.SGS.COM

CLIENT: NCDOT U-3465 WBS: 39017.1.1
CONTACT: Gordon Box PHONE NO: 336 335-3174
PROJECT: Ray Rd. Parcel 038 SITE / PWSID / WBS #: 39017.1.1
REPORTS TO: Tim Leatherman/Pyramid Environmental
EMAIL: tim@pyramidenvironmental.com
INVOICE TO: NCDOT QUOTE # NCDOT
Gordon Box P.O. NUMBER 39017.1.1

SGS Reference #: 31202964

PAGE 2 OF 2

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX	# CONTAINERS	SAMPLE TYPE (C=COMP G=GRAB)	PRESERVATIVES USED: HCl	ANALYSIS REQUIRED: 6200B	REMARKS
	38-8(TW)	9-14-12	11:10	Water	2	G		X	

	DATE	TIME	
COLLECTED/RELINQUISHED BY: (1) Timothy P. Leatherman	9/17/12	19:00	RECEIVED BY: Fed-X
Relinquished By: (2)	Date	Time	Received By:
Relinquished By: (3)	Date	Time	Received By:
Received For Laboratory By:	Date 9/18/12	Time 1030	CoC Seal: INTACT BROKEN ABSENT Sample Receipt Temp: C 28°C

REPORT LEVEL: ☐ Level I ☐ Level II ☐ Level IV

REQUESTED TURNAROUND TIME: ☐ Rush:_____ ☐ Standard

SPECIAL DELIVERABLES: State of Origin:_____ ☐ Trust Fund
☐ DoD ☐ EDD:_____ Other:_____

SPECIAL INSTRUCTIONS:

Shipping Carrier:
Shipping Ticket No:

Notes:

SGS-00055 (06/12)

ANALYTICAL PERSPECTIVES IS NOW PART OF SGS, THE WORLD'S LEADING INSPECTION, VERIFICATION, TESTING AND CERTIFICATION COMPANY.

White - Retained by Lab
Yellow - Retained by Client

SGS North America Inc.

Sample Receipt Checklist (SRC)

Client: **NCDOT-Pyramid** Work Order No.: **31202964**

1. _X_ Shipped — Notes:
   ___ Hand Delivered
2. _X_ COC Present on Receipt
   ___ No COC
   ___ Additional Transmittal Forms
3. ___ Custody Tape on Container
   _X_ No Custody Tape
4. _X_ Samples Intact
   ___ Samples Broken / Leaking
5. _X_ Chilled on Receipt Actual Temp.(s) in °C: 2.8
   ___ Ambient on Receipt
   ___ Walk-in on Ice; Coming down to temp.
   ___ Received Outside of Temperature Specifications
6. _X_ Sufficient Sample Submitted
   ___ Insufficient Sample Submitted
7. ___ Chlorine absent
   ___ HNO3 < 2
   ___ HCL < 2
   ___ Additional Preservatives verified (see notes)
8. _X_ Received Within Holding Time
   ___ Not Received Within Holding Time
9. ___ No Discrepancies Noted
   _X_ Discrepancies Noted
   ___ NCDENR notified of Discrepancies*
10. _X_ No Headspace present in VOC vials
    ___ Headspace present in VOC vials >6mm

Comments: COC says 39-9 (3-5) and 39-10 (2-5), samples are labeled 38-9 (3-5) and 38-10 (2-5).

Inspected and Logged in by: JJ

Date: Tue-9/18/12 00:00

*NCDENR must be notified when collection, holding time or preservation requirements are not met. MI_11.6

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(1)

CLIENT: NCDOT U-3465 WBS: 39017.1.1
CONTACT: Gordon Box PHONE NO: 336 335 3174
PROJECT: Ray Rd. Parcel 038 SITE/PWSID# :
REPORTS TO: Tim Leatherman
Pyramid Environmental FAX NO.:( )
INVOICE TO: NCDOT QUOTE #: NCDOT
Gordon Box P.O. NUMBER: 39017.1.1

SGS Reference: 31202964

PAGE 1 OF 2

(2)

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX	No CONTAINERS	SAMPLE TYPE (C=COMP G=GRAB)	Preservatives Used: Ice, HCl, None	Analysis Required (3): 5035-GRO, 3550-DRO	REMARKS
	38-1 (7.5-10)	9-13-12	15:35	Soil	3	G			
	38-2 (3-5)	9-13-12	15:38	Soil	3	G			
	38-3 (3-5)	9-13-12	15:50	Soil	3	G			
	38-4 (5-7.5)	9-14-12	8:25	Soil	3	G			
	38-5 (2-5)	9-14-12	8:35	Soil	3	G			
	38-6 (7.5-10)	9-14-12	9:00	Soil	3	G			
	38-7 (7.5-10)	9-14-12	9:30	Soil	3	G			
	38-8 (5-7.5)	9-14-12	9:50	Soil	3	G			
	39-9 (3-5)	9-14-12	10:25	Soil	3	G			
	39-10 (2-5)	9-14-12	10:35	Soil	3	G			

(5)

Collected/Relinquished By:(1)	Date	Time	Received By:
Timothy N. Leatherman	9/17/12	19:00	Fed-X
Relinquished By: (2)	Date	Time	Received By:
	9/18/12	1030	
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date	Time	Received By:

(4)

Shipping Carrier:
Shipping Ticket No:
Samples Received Cold? (Circle) YES NO
Temperature°C: 2.8°C
Special Deliverable Requirements:
Chain of Custody Seal: (Circle)
INTACT BROKEN ABSENT
Special Instructions:
Requested Turnaround Time:
☐ RUSH _____ (Date Needed) ☐ STD

SGS ANALYTICAL PERSPECTIVES

CHAIN OF CUSTODY

SGS ANALYTICAL PERSPECTIVES
5500 Business Drive
Wilmington, NC 28405
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CLIENT: NCDOT U-3465 WBS: 39017.1.1
CONTACT: Gordon Box PHONE NO: 336 335-3174
PROJECT: Ray Rd. Parcel 038 SITE / PWSID / WBS #: 39017.1.1
REPORTS TO: Tim Leatherman/Pyramid Environmental
EMAIL: tim@pyramidenvironmental.com
INVOICE TO: NCDOT QUOTE # NCDOT
Gordon Box P.O. NUMBER 39017.1.1

SGS Reference #: 3120264

PAGE 2 OF 2

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX	# CONTAINERS	SAMPLE TYPE (C=COMP G=GRAB)	PRESERVATIVES USED: HCl	ANALYSIS REQUIRED: 6200B	REMARKS
	38-8(TW)	9-14-12	11:10	Water	2	G		X	

	DATE	TIME	
COLLECTED/RELINQUISHED BY: (1) Timothy F. Leatherman	9/17/12	19:00	RECEIVED BY: Fed-X
Relinquished By: (2)	Date	Time	Received By:
Relinquished By: (3)	Date	Time	Received By:
Received For Laboratory By:	Date 9/18/12	Time 1030	CoC Seal: INTACT BROKEN ABSENT Sample Receipt Temp: C 2.8°C

REPORT LEVEL: ☐ Level I ☐ Level II ☐ Level IV

REQUESTED TURNAROUND TIME: ☐ Rush:_____ ☐ Standard

SPECIAL DELIVERABLES: State of Origin:_____ ☐ Trust Fund
☐ DoD ☐ EDD:_____ Other:_____

SPECIAL INSTRUCTIONS:

Shipping Carrier:
Shipping Ticket No:

Notes:

SGS-00055 (06/12)

ANALYTICAL PERSPECTIVES IS NOW PART OF SGS, THE WORLD'S LEADING INSPECTION, VERIFICATION, TESTING AND CERTIFICATION COMPANY.

White - Retained by Lab
Yellow - Retained by Client

SGS North America Inc.

Sample Receipt Checklist (SRC)

Client: **NCDOT-Pyramid** Work Order No.: **31202964**

1. _X_ Shipped — Notes:
   ___ Hand Delivered
2. _X_ COC Present on Receipt
   ___ No COC
   ___ Additional Transmittal Forms
3. ___ Custody Tape on Container
   _X_ No Custody Tape
4. _X_ Samples Intact
   ___ Samples Broken / Leaking
5. _X_ Chilled on Receipt Actual Temp.(s) in °C: 2.8
   ___ Ambient on Receipt
   ___ Walk-in on Ice; Coming down to temp.
   ___ Received Outside of Temperature Specifications
6. _X_ Sufficient Sample Submitted
   ___ Insufficient Sample Submitted
7. ___ Chlorine absent
   ___ HNO3 < 2
   ___ HCL < 2
   ___ Additional Preservatives verified (see notes)
8. _X_ Received Within Holding Time
   ___ Not Received Within Holding Time
9. ___ No Discrepancies Noted
   _X_ Discrepancies Noted
   ___ NCDENR notified of Discrepancies*
10. _X_ No Headspace present in VOC vials
    ___ Headspace present in VOC vials >6mm

Comments: COC says 39-9 (3-5) and 39-10 (2-5), samples are labeled 38-9 (3-5) and 38-10 (2-5).

Inspected and Logged in by: JJ

Date: Tue-9/18/12 00:00

*NCDENR must be notified when collection, holding time or preservation requirements are not met.

APPENDIX G

FIELD PERSONNEL LOG

PROJECT NAME: NCDOT Harnett County ROW
TRACTS: ALL

PROJECT NO.: U-3465

Name: Tim Leatherman **Date:** 9/4/12 **Mon** [**Tue**] **Wed Th Fri Sat Sun**

TASKS PERFORMED:

11:00 to 12:00 Load

12:30 to 13:00 Lunch

13:00 to 14:30 Travel to Ray Road Sites/Parcels.

14:30 to 17:00 Talked with property tenants and property owners for Parcels 004, 019, 021, 022, 038, and 071. Granted access to all Parcels, but Parcel 071. Denied access to Parcel 071.

FIELD PERSONNEL LOG

PROJECT NAME: NCDOT Harnett County ROW **PROJECT NO.:** U-3465
TRACTS: 9,19,22,38

Name: Tim Leatherman **Date:** 9/5/12 **Mon Tue Wed Th Fri Sat Sun**

TASKS PERFORMED:

8:00 to 9:00 a.m. Meet Eric at Parcel 019 and 022 about starting Geophysics surveys.

9:00 to 9:30 a.m. Talked to property owner and store manager about access to Parcel 038. Property owner and store manager granted access to Parcel 038.

9:30 to 10:30 a.m. Talked to store manager for Parcel 009. Store manager gave me additional contact information for access to Parcel 009.

10:30 to 13:00 Travel back to Office and unload.

FIELD PERSONNEL LOG

PROJECT NAME: NCDOT Harnett County ROW TRACT:38 **PROJECT NO.:** U-3465

Name: Eric Cross/Alan McFadden **Date:** 9/10/12 **Mon** **Tue Wed Th Fri Sat Sun**

TASKS PERFORMED:

Performed geophysical surveys using EM61 magnetometer and GSSI SIR 2000 ground penetrating radar equipment at Parcel 038. Performed geophysical data analysis/processing in field and from home office in evening.

FIELD PERSONNEL LOG

PROJECT NAME: NCDOT Harnett County ROW **PROJECT NO.:** U-3465
TRACTS: ALL

Name: Tim Leatherman **Date:** 9/10/12 **Mon Tue Wed Th Fri Sat Sun**

TASKS PERFORMED:

9:00 to 11:00 Load and Travel to Parcel 038

11:00 to 12:00 Helped Eric with Geophysics Survey at Parcel 038

12:00 to 13:00 Meet with Public Utility Locators at Parcels 004, 009, 019, 021, 022, 038, & 069.

13:00 to 13:30 Lunch

13:30 to 18:00 Helped Eric with Geophysics Survey at Parcels 038 and 009.

FIELD PERSONNEL LOG

PROJECT NAME: NCDOT Harnett County ROW **PROJECT NO.:** U-3465
TRACTS: ALL

Name: Tim Leatherman **Date:** 9/11/12 **Mon Tue Wed Th Fri Sat Sun**

TASKS PERFORMED:

8:00 to 9:00 Meet private utility locator North State Locating at Parcels 019 & 021. Discussed project with them and looked at Parcels 004, 009, 019, 021, 022, 038, and 069.

9:00 to 13:00 Travel and NCDENR File Review at the Fayetteville Regional Office

13:00 to 13:30 Discussed the utilities found at each site with utility locators.

13:30 to 14:00 Lunch

14:00 to 15:00 Go over the preliminary geophysical results with Eric for each site/parcel.

15:00 to 17:00 Travel back to office and home to pickup sampling supplies.

FIELD PERSONNEL LOG

PROJECT NAME: NCDOT Harnett County ROW TRACTS: 19,21,22,38,69 **PROJECT NO.:** U-3465

Name: Tim Leatherman **Date:** 9/13/12 **Mon Tue Wed [Th] Fri Sat Sun**

TASKS PERFORMED:

8:00 to 8:45 Site notes and measurements for Parcels 019 and 021. Site measurements for soil boring locations.

8:45 to 11:30 Completed 4 soil borings a Parcel 022 and measured soil boring locations.

11:30 to 12:30 Lunch

12:30 to 15:15 Installed 3 soil borings and collects soil samples at Parcel 069.

15:15 to 17:30 Completed 3 soil borings and collected soil samples at Parcel 038. Finalized COCs, packed samples in coolers, and Adam with SGS Laboratories picked up samples.

FIELD PERSONNEL LOG

PROJECT NAME: NCDOT Harnett County ROW TRACTS: 4,9,38,69 **PROJECT NO.:** U-3465

Name: Tim Leatherman **Date:** 9/14/12 **Mon Tue Wed Th Fri Sat Sun**

TASKS PERFORMED:

8:00 to 12:00 Finished soil borings at Parcel 038, and completed site measurements.

12:00 to 13:00 Lunch

13:00 to 16:00 Completed soil borings and soil sampling at Parcel 004.

16:00 to 17:00 Additional Site Recon. at Parcels 009 and 069.

17:00 to 19:00 Travel back to office and unload.