wood.

North Carolina Department of Transportation

Preliminary Site Assessment
State Project: R-2307B
WBS Element: 37944.1.FR5
Parcel Number: 4647463988
Iredell County

Parcel 170
Wilco Hess, LLC
558 NC 150 (River Highway)
Mooresville, North Carolina
January 24, 2019

Wood Environment and Infrastructure Solutions, Inc.
Project: 188322307

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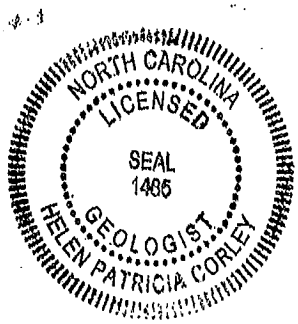

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1.0 INTRODUCTION

In response to the North Carolina Department of Transportation (NCDOT) Request for Proposal, dated September 17, 2018, Wood Environment and Infrastructure Solutions, Inc. (Wood) has performed a Preliminary Site Assessment (PSA) for Parcel 170 (Site). The investigation was conducted in accordance with Wood's Technical and Cost proposal dated September 27, 2018. NCDOT contracted Wood to perform the PSA at the parcel, within the area to be affected by future road construction activities, to identify potential impacts from the former use of the property.

The parcel is located on the north side of River Highway and west of Bluefield Road, approximately 2,700 feet west of I-77, as shown in the Vicinity Map, **Figure 1**. The parcel, which is located at 558 NC 150 (River Highway), was formerly occupied by a gas station and currently occupied by a home furnishings retail business. It is identified as Parcel 170, and Wilco Hess, LLC within the NCDOT R-2307B design file. The Site is in Mooresville of Iredell County, North Carolina. The area of investigation within the parcel as shown on **Figure 2**.

The following report summarizes a geophysical survey and describes our subsurface field investigation at the Site. The report also presents onsite soil analyses to evaluate potential soil contamination within Parcel 170, the Wilco Hess, LLC property.

1.1 Site History

The Site was formerly occupied by a gas station and currently occupied by a home furnishings retail business. The single-story building on Site was reportedly constructed in 2000 along River Highway. The infrastructure of the former gas station was observed to still be located on site, including USTs, fuel dispensers, and the dispenser canopy. Wood interviewed the store manager, Mr. Brad Doane in person on September 21, 2018. Mr. Doane stated that the store was on public water and sewer. This parcel appears on the UST Section Registry as Site ID: Facility #00-0-0000036164.

According to the Recordation of Structural Fill Facilities on February 2000, an agreement between Duke Power Company and DTH Holdings, LLC agreed upon buying fly ash from Duke Power Company from Plant Marshall Steam Station to use as structural fill on the Site

and the neighboring property adjacent to the west (560 River Highway). The total volume of ash placed on both parcels (Site and adjacent parcel west) is approximately 60,000 cubic yards. Associated documents are included in **Appendix A**.

One closed incident was identified on the NCDEQ Laserfiche website as Incident #40116. In the Site Check Report by Geological Resources, Inc. (GRI), dated September 2012, free product was encountered in a monitoring well for a separate facility down gradient of the Site in June 2012. Per a June 6, 2012 direction from NCDEQ, hydrostatic tests were conducted on the Site spill buckets, tank containment sumps, and dispenser sumps. The STP-Premium sump and dispenser sumps failed the tests. On June 29, 2012, NCDEQ directed a Site Check on the sumps that had failed the hydrostatic tests. A limited receptor survey occurred by vehicular reconnaissance within the immediate area surrounding the subject Site. The limited receptor survey identified two water supply wells (one to the southwest and one to the southeast) located 1,000-feet of the subject property. On August 7, 2012, GRI advanced 13 soil samples using direct push technology and/or hand auger at each of the dispensers and at the Premium STP sump. Soil samples were collected and submitted for laboratory analyses of total petroleum hydrocarbons-gasoline range organics (TPH-GRO) and TPH-diesel range organics (TPH-DRO). No soil excavation was conducted. Four dispenser samples exceeded the TPH-DRO regulatory action level (RAL). NCDEQ issued a Notice of Regulatory Requirements (NORR) September 25, 2012.

Per the Site Check Report from Excel Civil & Environmental Associates, PLLC (Excel), dated November 13, 2012, Excel mobilized to the Site for the advancement of twenty-five soil borings on October 25, 2012. Twenty-seven soil samples were collected and measured for TPH-DRO and TPH-GRO by EPA Method 8015 Volatile Organic Compounds (VOCs) by EPA Methods 8260, Semi-Volatile Organic Compounds (SVOCs) by EPA Methods 8270 and MADEP EPH & VPH. Laboratory analysis did not identify TPH-DRO & GRO concentrations above their respective reporting limits and VOC or SVOC concentrations which exceeded their respective Soil-to-Water Maximum Soil Contaminant Concentrations Levels (MSCCs). NCDEQ issued a Notice of No Further Action (NFA) on November 20, 2012.

Incident # 40116 also includes a surface release which occurred in October 2012. Per the 24-Hour Release and UST Leak Reporting Form dated October 2012, a release occurred onsite October 22, 2012. An individual reportedly drove away from a gasoline dispenser

with the dispenser still located in the vehicle's fuel port. This damaged the dispenser's plumbing and caused a slow leak of approximately 20-27 gallons. The release was contained before it migrated to the onsite storm sewer system with oil absorbent material. Excel was retained by Circle K to perform an observation of the spill. Excel personnel visited the Site on October 24, 2012 and reported the release was contained and properly disposed. Excel observed the onsite storm sewer system for the presence of residual petroleum from the spill but reported no obvious signs of impact to the system. Site Check Reports and associated documents are included in **Appendix A**.

1.2 Site Description

The Site is located in a commercial area of Mooresville in Iredell County and covers approximately 1.87 acres. The Site was previously occupied by a gas station and is currently occupied by a home furnishings retail business. The majority of the Site ground cover is comprised of concrete and asphalt with some grassy areas surrounding the edge of the property. An inactive UST bed is located within the area of investigation, in the southeast quadrant. Per the Site Check Report from Excel, dated November 13, 2012, three USTs are located on Site; one 20,000-gallon gasoline UST, one compartmentalized UST with a 12,000-gallon gasoline compartment and a 6,000-gallon diesel compartment, and one 3,000-gallon gasoline UST. Eight canopy-covered fuel dispenser pumps are located on the parcel, six are outside the area of investigation and two are located within the area of investigation. The topography is sloping to the west. Photographs taken of the Site are included in **Appendix B.**

2.0 GEOLOGY

2.1 Regional Geology

The Site is located within the Charlotte Terrane of the Piedmont Physiographic Province of North Carolina. According to the 1985 State Geologic Map of North Carolina, the area is underlain by granitic rock of Permian/Pennsylvanian age.

2.2 Site Geology

Site geology was observed through the drilling of ten shallow direct push probe soil borings (P170B1 to P170B10). **Figure 2** presents the boring locations and Site layout. Borings did not exceed a total depth of 10 feet bgs. Soils encountered in the borings consisted mostly of red orange and brown silty clay underlain by orange, red, tan silt. Staining was not observed in the borings. Fly ash was observed in four of the ten borings (P170-B1, P170-B2, P170-B3, and P170-B7), which are located within close proximity of the metal canopy onsite. The fly ash was observed to the maximum depth of seven feet bgs. The fly ash was used as structural fill for the parcel and neighboring property (560 River Highway). Groundwater was not encountered in the borings. Based on observations of topography of the site vicinity, the groundwater flow direction is inferred to be generally to the south or southeast. Boring logs are presented in **Appendix C**.

3.0 FIELD ACTIVITIES

3.1 Preliminary Activities

Prior to commencing field sampling activities at the Site, several tasks were accomplished in preparation for the subsurface investigation. A Health and Safety Plan (HASP) was created including the site-specific health and safety information necessary for the field activities. North Carolina One Call was contacted on November 5th to report the proposed drilling activities and subsequently notify affected utilities for the parcel. GEL Solutions (GEL) was procured by Wood to perform utility locating and perform a geophysical survey at the Site. Innovation Environmental Technologies, Inc. (IET) of Concord, North Carolina was retained by Wood to perform the direct push sampling for soil borings.

Wood understands that acquisition of the right-of-way is necessary for the widening of NC 150. Boring locations were strategically placed within the parcel to maximize the opportunity to encounter potential contaminated soil. Boring depths were extended to approximately 10 feet bgs.

3.2 Site Reconnaissance

Wood personnel performed a Site reconnaissance on September 21, 2018. During the Site reconnaissance, the area was visually examined for the presence of any areas/obstructions

that could potentially affect the subsurface investigation. The existing tank basin, which is assumed no longer active due to the change of business, was found within the area of investigation. The UST basin was found in the southeast quadrant of the parcel just outside the metal canopy. No other obstructions were noted during the reconnaissance.

3.3 Geophysics Survey Results and Utility Locating

The geophysical survey of the Site occurred between October 15 and 25, 2018. GEL performed an electromagnetic (EM) survey of the Site with a ground penetrating radar (GPR) survey conducted across select EM anomalies. Time domain electromagnetic methodology (TDEM) was also utilized to measure electrical conductivity of subsurface materials. GEL's complete geophysical report is presented as **Appendix D**. GEL reported one subsurface geophysical anomaly detected within the limits of investigation that indicated the presence of USTs. This anomaly was identified as a "Known UST" and is located within the inactive UST basin on the southeast quadrant of the parcel. The other anomalies identified are indicative of known metallic surface features and/or cultural interference.

In advance of drilling activities, GEL also performed utility locating at the Site between October 15 and 25, 2018. Gel identified underground electric, waterline and telecommunications utilities identified on the parcel. Underground electric lines were identified extending from the southern portion of the parcel to the pump islands, then to the eastern side of the store and canopy, then to the northern side of the store and terminating in the northeastern portion of the parcel. One waterline was identified extending west from Bluefield Road to the northern side of the store. A telecommunications line was identified along the northeastern portion of the parcel. Overhead powerlines were located along the southern portion of the Site along River Highway.

3.4 Soil Sampling

Wood conducted drilling activities at the Site on November 14, 2018. Wood's drilling subcontractor, IET, advanced ten direct push soil borings across the area of investigation to

an approximate depth of 10 feet bgs. Figure 2 presents the Site Map with boring locations and identifications. Boring locations targeted subsurface design features and potential environmental sources in the area of investigation dependent on utility clearance.

The purpose of soil sampling was to determine if a past petroleum release had impacted the Site and if so, to estimate the volume of impacted soil that might require special handling during construction activities. Soil sampling was performed utilizing direct push methods accompanied by field screening. Wood conducted field screening of the soil borings with a PID that was used to screen recovered soil at approximate one-foot intervals. The interval of the soil boring exhibiting the greatest PID reading was selected for analysis of total petroleum hydrocarbons (TPH), diesel range organics (DRO), gasoline range organics (GRO), benzene, toluene, ethylbenzene, and xylene (BTEX), total aromatics, and polycyclic aromatic hydrocarbons (PAH) soil via onsite ultraviolet fluorescence (UVF). Thirteen samples were collected from the Site from the borings for UVF onsite analysis.

Fly ash was observed in four of the ten borings (P170B1, P170B2, P170B3, and P170B7) which were located within close proximity of the metal canopy onsite. The fly ash was observed to the depths of seven feet, seven feet, four feet and six feet bgs, respectively in the above listed borings. One sample of the fly ash material (P170B2-3-5) was submitted for off-site laboratory analysis for metals by EPA Methods 6010 MET ICP, 6010 MET ICP TCLP and 7471.

4.0 SOIL SAMPLING RESULTS

Based on PID field screening and UVF hydrocarbon analysis, evidence of petroleum hydrocarbon impacts was not identified within the area of investigation.

No PID readings above zero parts per million (ppm) were detected in the 10 soil borings. The PID field screening results are summarized in **Table 1** and provided on the boring logs in Appendix C.

Results from the onsite UVF petroleum soil analyses are presented in **Table 2**, with instrument generated tables in **Appendix E**. Several categories of analyses were

measured such as: DRO, GRO, TPH, PAHs, and total aromatics. **Figure 3** presents the GRO and DRO results at each boring.

Elevated TPH values above the NCDEQ Action Limits of 50 milligrams per kilogram (mg/kg) for GRO and 100 mg/kg for DRO were not detected in samples from the ten borings advanced at the Site. The hydrocarbon analysis results from the QED QROS Hydrocarbon Analyzer are provided in Appendix E.

One sample which included fly ash (P170B2-3-5) was analyzed for metals by EPA Methods 6010 MET ICP, 6010 MET ICP TCLP and 7471. Analytical results identified a chromium concentration (26.4 mg/kg) which exceeded the Soil-to-Water MSCCs of 5.4 mg/kg. The United States Environmental Protection Agency (USEPA) has established separate regional screening levels (RSLs) for chromium (III) and chromium (VI). Speciated chromium samples were not analyzed during this assessment. The total chromium concentration in sample P170B2-3-5 exceeded the USEPA Composite Worker Soil Carcinogenic Target Risk (TR) RSL for chromium (VI) (6.3 mg/kg) but did not exceed for chromium (III). Analytical results identified an arsenic concentration (28.8 mg/kg) which exceeded the USEPA Composite Worker Carcinogenic TR RSL of 3 mg/kg. Results from the metal analysis are summarized in **Table 3**. **Figure 4** shows the estimated area of fly ash impact on the parcel's area of investigation.

5.0 CONCLUSIONS

Based on Site observations and UVF onsite analysis, petroleum-impacted soil contamination was not identified above the NCDEQ Action level of 100 mg/kg for DRO and 50 mg/kg for GRO and the NCDEQ DWM MSCCs during the field activities. Fly ash fill material was identified and laboratory analysis indicated select metals concentrations exceeding MSCCs and RSLs.

The following bulleted summary is based upon Wood's evaluation of field observations, and onsite and offsite quantitative analyses of samples collected from the Site on November 14, 2018.

- The parcel is located in the area of proposed highway widening activities and is occupied by an outdoor furniture store. The majority of the Site ground cover is

comprised of concrete and asphalt with some grassy areas surrounding the edge of the property.

- A UST basin was identified within the area of investigation in the southeast quadrant of the parcel. The USTs are currently in-place; however they are not utilized by the current occupant of the property. In addition, two fueling dispensers were located within the area of investigation underneath the metal canopy.

- Results of the geophysical survey identified one Known UST within the area of investigation associated. The survey did not identify other probable or possible USTs or subsurface magnetic anomalies at the Site.

- Ten soil borings were advanced to an approximate depth of 10 feet bgs. Groundwater was not encountered in the borings. Samples from each boring were screened at two-foot intervals in the field by a PID. No PID readings above zero parts per million (ppm) were detected in the 10 soil borings. Soils encountered in the borings consisted mostly of red orange and brown silty clay underlain by orange, red, tan silt. Staining was not observed in the borings.

- Fly ash was observed in four of the ten borings (P170B1, P170B2, P170B3, and P170B7) which were located within close proximity of the metal canopy onsite. The fly ash was observed to the maximum depth of seven feet bgs.

- Analytical results identified a chromium concentration (26.4 mg/kg) in fly ash sample P170B2-3-5 which exceeded the Soil-to-Water MSCCs of 5.4 mg/kg. The USEPA has established separate RSLs for chromium (III) and chromium (VI). Speciated chromium samples were not analyzed during this assessment. The total chromium concentration in fly ash sample P170B2-3-5 exceeded the USEPA Composite Worker Soil Carcinogenic Target Risk RSL for chromium (VI) (6.3 mg/kg) but did not exceed for chromium (III).

- Analytical results identified an arsenic concentration (28.8 mg/kg) in fly ash sample P170B2-3-5 which exceeded the EPA Composite Worker Carcinogenic TR RSL of 3 mg/kg.

- Elevated TPH values above the NCDEQ Action Limit of 50 mg/kg for GRO were not detected in the samples from ten borings advanced at the Site.
- Elevated TPH values above the NCDEQ Action Limit of 100 mg/kg for DRO were not detected in the samples from ten borings advanced at the Site.
- The estimated volume of ash in the area of investigation is 65,694 cubic feet or 2,433 yards, based on an average depth of 6 feet.

6.0 RECOMMENDATIONS

Wood recommends the current UST system be removed in accordance with the NCDEQ guidelines with a release to soil and possibly groundwater anticipated. During the UST closure by removal petroleum-impacted soil that may be intercepted during the road construction should be excavated and disposed offsite. Wood can assist with UST system removal by selecting a qualified specialty contractor and providing oversight.

Historical records and current assessment observations identified coal fly ash as subsurface fill material at the Site. Special handling should be performed during excavation and construction if this material is anticipated to be encountered. The fly ash is considered a coal combustion residual, which should be handled by a qualified specialty contractor. Such qualified specialty contractors may differ from the selected R-2307B roadway contractor. A qualified specialty contractor should take into account factors such as, but not limited to the following: moisture management and dust control; erosion control planning; soil stabilization; possible overexcavation with suitable fill import for base material; worker safety; personal protective equipment; community perception; and proper hauling with lining and containment suitable for fly ash. Wood can assist with qualified specialty contractor selected and/or oversight.

TABLES

Table 1
PID Field Screening Results
R-2307B, Parcel 170, Wilco Hess, LLC-Iredell County
Mooresville, North Carolina

SAMPLE ID	Sample Date	Sample Depth (feet bgs)	PID Screening (ppm)
P170B1-0-2	11/14/2018	0-2	0
P170B1-6-8	11/14/2018	6-8	0
P170B2-0-2	11/14/2018	0-2	0
P170B3-0-2	11/14/2018	0-2	0
P170B4-0-2	11/14/2018	0-2	0
P170B4-4-6	11/14/2018	4-6	0
P170B5-2-4	11/14/2018	2-4	0
P170B6-0-2	11/14/2018	0-2	0
P170B7-0-2	11/14/2018	0-2	0
P170B7-2-4	11/14/2018	2-4	0
P170B8-2-4	11/14/2018	2-4	0
P170B9-0-2	11/14/2018	0-2	0
P170B10-0-2	11/14/2018	0-2	0
		Prepared By/Date	DRH 12/6/18
		Checked By/Date	RPD 12/7/18

Notes: PPM = Parts Per Million
ft bgs = feet below ground surface

Table 2
UVF Petroleum Soil Results, 11/14/2018
R-2307B, Parcel 170, Wilco Hess, LLC-Iredell County
Mooresville, North Carolina

Sample ID Number	Sample Depth (ft bgs)	BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	PAHs (mg/kg)
NC State Action Level	**NA**	**NA**	**50**	**100**	**NA**
P170B1-0-2	0-2	<0.22	<0.22	<0.22	<0.07
P170B1-6-8	6-8	<0.24	<0.24	<0.24	<0.08
P170B2-0-2	0-2	<0.27	0.6	<0.27	<0.09
P170B3-0-2	0-2	<0.23	<0.23	1.2	<0.07
P170B4-0-2	0-2	<0.26	0.6	24.6	0.69
P170B4-4-6	4-6	<0.28	<0.28	<0.28	<0.09
P170B5-2-4	2-4	<0.3	<0.3	3.3	0.14
P170B6-0-2	0-2	<0.23	<0.23	0.89	<0.07
P170B7-0-2	0-2	<0.29	1.0	23.5	0.7
P170B7-2-4	2-4	<0.28	<0.28	<0.28	<0.09
P170B8-2-4	2-4	<0.24	0.42	1.7	<0.08
P170B9-0-2	0-2	<0.21	<0.21	0.41	<0.07
P170B10-0-2	0-2	<0.26	<0.26	0.26	<0.08

NOTES:
(mg/kg) = Millograms per kilogram
GRO = Gasoline Range Organics
DRO = Diesel Range Organics
BTEX = Benzene, Toluene, Ethylbenzene and Xylenes
PAHs = Polycyclic Aromatic Hydrocarbon
ft bgs = feet below ground surface
NA= Not applicable

Prepared By/Date DRH 11/26/18
Checked By/Date RPD 12/7/18

Table 3: Summary of Laboratory Analytical Results
R-2307B, Parcel Number: 170, NC 150 Road Extension
Mooresville, North Carolina
Wood Project: 188322307

Constituent	Mercury	Arsenic	Barium	Cadmium	Chromium (Total)	Lead	Selenium	Silver
Soil-to-Water MSCCs	NE	NE	290	NE	5.4	270	NE	0.25
Industrial/Commercial MSCCs	NE	NE	8,100	NE	1,226	400	NE	2,044
EPA Composite Worker Soil Carcinogenic TR RSL	NE	3	NE	9,300	(III) NE (VI) 6.3	NE	NE	NE
EPA Composite Worker Soil Noncancer HI RSL	46	480	220,000	980	(III) 1,800,000 (VI) 3,500	800	5,800	5,800
Metals by EPA Methods 6010 MET ICP and 7471								
P170B2-(3-5)	0.10	*28.8*	225	0.42	***26.4***	17.3	13.6	<0.48
Metals by EPA Method 6010 MET ICP, TCLP								
P170B2-(3-5)	NR	<0.05	1.4	<0.005	<0.05	<0.025	<0.10	<0.025

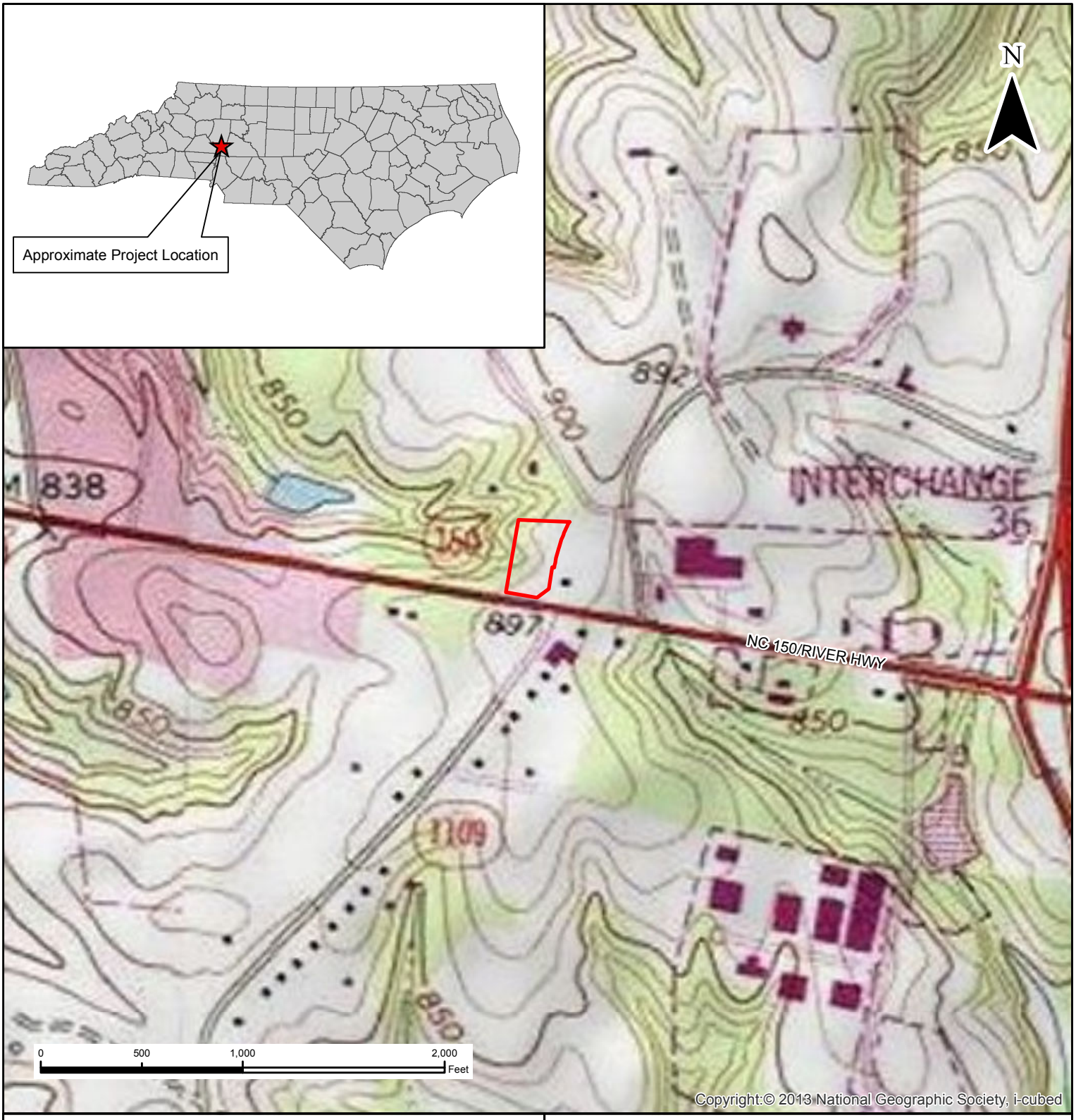
Notes:

Prepared By/Date: DRH 12/11/18

Checked By/Date: RFS 12/12/18

1. Sample collected on November 14, 2018
2. Concentrations reported in milligrams per kilogram (mg/kg)
3. Depth of sample interval shown in feet bgs in parenthases (i.e. (3-5))
4. MSCCs = NCDEQ Division of Waste Management Maximum Soil Contaminant Concentrations Levels, dated May 2017
5. EPA RSL = EPA Regional Screening Levels (RSL), Carcinogenic Target Risk (TR) = 1E-06, Noncancer Hazard Index (HI) = 1, dated November 2018
6. Bold value indicates concentration exceeds Soil-to-Water MSCC
7. Shaded value indicates concentration exceeds Industrial/Commercial MSCC
8. Italics value indicates concentration exceeds EPA Regional Screening Level for either Carcinogenic TR or Noncancer HI
9. Separate RSLs are established for Chromium (III) and (VI) variants. Speciated Chromium samples were not analyzed, only total Chromium
10. NE = Not Established
11. NR= Constituent was not run for that analysis

FIGURES



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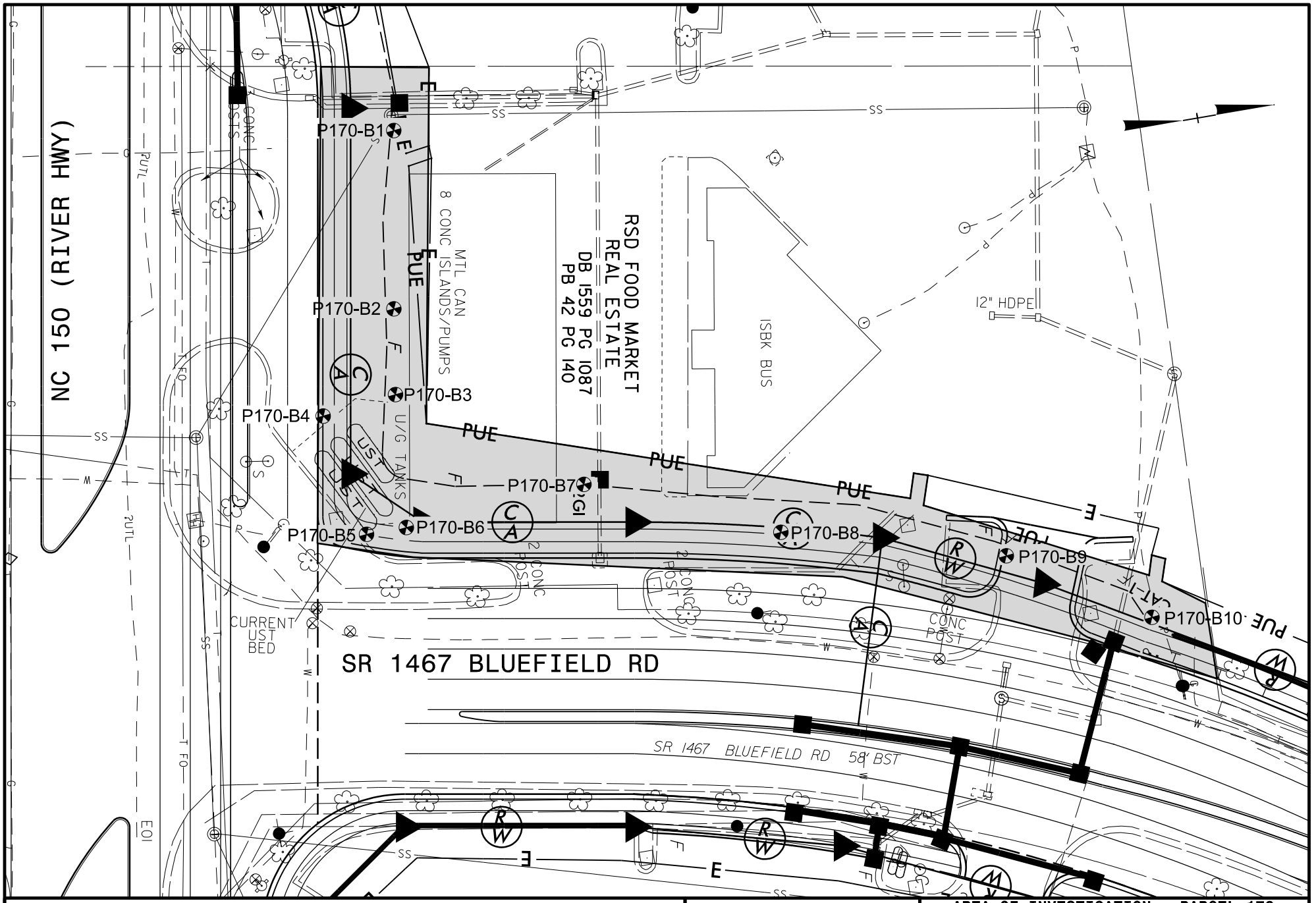
VICINITY MAP

Parcel 170
Wilco Hess LLC
558 NC 150 (River Hwy)
Mooresville, North Carolina

Site Boundary

Prepared By: LMM Date: 9/20/2018	Checked By: AJF Date: 9/20/2018	Project No.: 188322307	Figure No.: 1



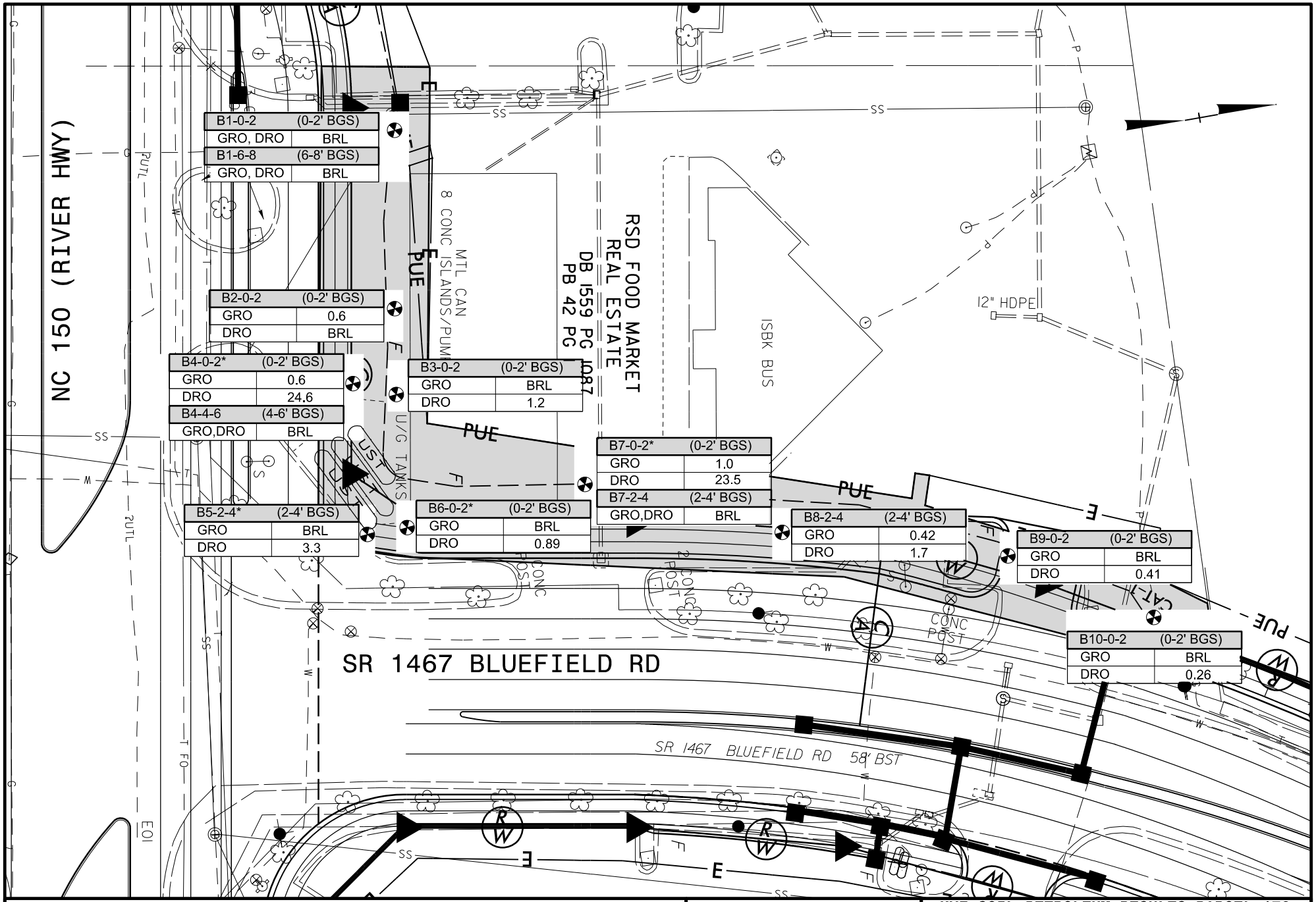
AREA OF INVESTIGATION
BORING LOCATION

25' 0' 25' 50'
12.5'
(ENGLISH)

wood.

AREA OF INVESTIGATION - PARCEL 170
WILCO HESS LLC, R-2307B
558 NC 150 (RIVER HWY)
MOORESVILLE, NC 28117

PREPARED BY:	DATE:	CHECKED BY:	DATE:	JOB NUMBER	FIGURE
LPL	1/23/19	HPC	1/23/19	188322307	2



AREA OF INVESTIGATION
BORING LOCATION
GRO = GASOLINE RANGE ORGANICS
DRO = DIESEL RANGE ORGANICS
BRL = BELOW REPORTABLE LIMITS
* PAH EXCEEDS LIMITS. SEE TABLE 2 FOR ADDITIONAL INFORMATION

25' 0' 25' 50'
12.5'
(ENGLISH)

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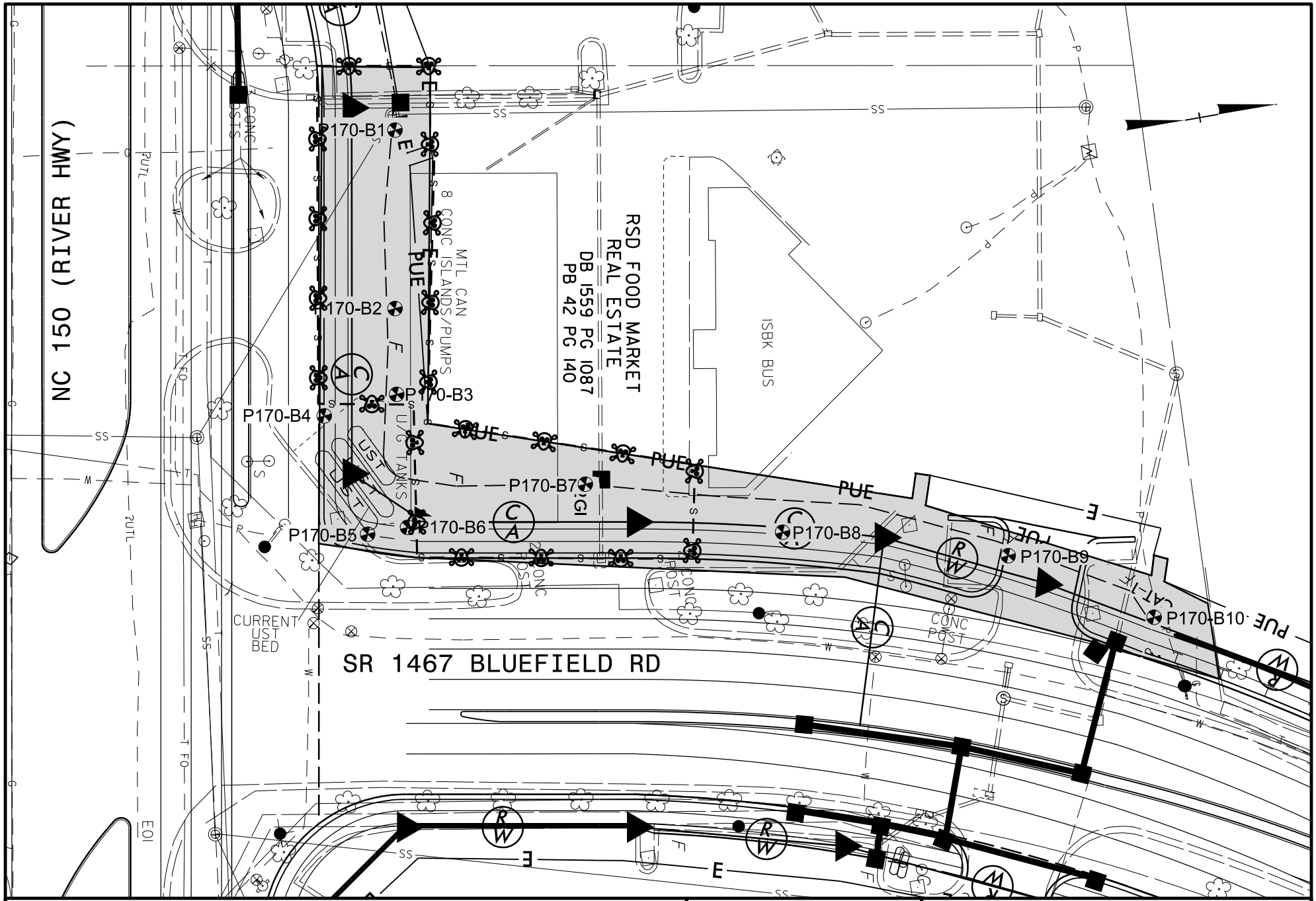
UVF SOIL PETROLEUM RESULTS-PARCEL 170
WILCO HESS LLC, R-2307B
558 NC 150 (RIVER HWY)
MOORESVILLE, NC 28117

PREPARED BY:	DATE:	CHECKED BY:	DATE:	JOB NUMBER	FIGURE
LPL	1/23/19	HPC	1/23/19	188322307	3



wood.

KNOWN CONTAMINATION AREA - PARCEL 170
WILCO HESS LLC, R-2307B
558 NC 150 (RIVER HWY)
MOORESVILLE, NC 28117

PREPARED BY:	DATE:	CHECKED BY:	DATE:	JOB NUMBER	FIGURE
LPL	1/23/19	HPC	1/23/19	188322307	4

APPENDIX A
HISTORICAL REPORTS AND DOCUMENTS

COPY

NCDENR

North Carolina Department of Environment and Natural Resources

Beverly Eaves Perdue, Governor

Division of Waste Management
UST Section

Dee Freeman, Secretary
Dexter R. Matthews, Director

September 25, 2012

Heather Hermansen
Circle K Stores, Inc.
2440 Whitehall Park Drive #800
Charlotte, NC 28273

Re: Notice of Regulatory Requirements
15A NCAC 2N .0603
Investigation and Confirmation of Suspected Release

Circle K #1517
558 River Highway
Iredell County
Facility ID#: 0-036164
Incident Number: 40116
Risk Classification: U
Ranking: Pending

Dear Ms. Hermansen:

Analytical data received by this office on September 20, 2012 from samples collected from soil samples that were collected on August 7, indicate that a release or discharge from a petroleum underground storage tank (UST) system may have occurred at the above-referenced location. Records indicate that you are the owner or operator of this UST system. Therefore, you must immediately investigate and confirm the suspected release pursuant to **Title 15A NCAC 2N .0603.** The site check that was sent to this office was not for the entire system at the above referenced location.

To achieve compliance with this rule, you must conduct a tank tightness test for **each** UST (or provide the results of one that has been conducted in the last 360 days) in accordance with federal regulation 40 CFR 280.43(c) (as incorporated by Title 15A NCAC 2N .0504) and a line tightness test for each piping system associated with a UST in accordance with 40 CFR 280.44(b) (as incorporated by Title 15A NCAC 2N .0505). Conduct a site check in accordance with 40 CFR 280.52(b) (as incorporated by Title 15A NCAC 2N .0603) in accordance with the most recent version of the *Guidelines for Site Checks, Tank Closure, and Initial Response and Abatement Action for UST Releases*, which is available on the internet at http://portal.ncdenr.org/web/wm/ust/guidance.

The results of the tank tightness test(s) and line tightness test(s) must be received by this office within 7 days of receipt of this notice. The results of the site check must be received by this office within 30 days of receipt of this notice. If a release or discharge is confirmed, a Licensed Geologist or a Professional Engineer, certified by the State of North Carolina, is required to prepare and certify all reports submitted to the Department in accordance with Title 15A NCAC 2L .0103(e) and 2L .0111(b). Failure to comply with the State's rules in the

manner and time specified, may result in the assessment of civil penalties and /or the use of other enforcement mechanisms.

If you have any questions regarding the actions that must be taken or the rules mentioned in this letter, please contact me at the address or telephone number listed below.

Sincerely,

Erin Fogarty
Hydrogeologist
Mooresville Regional Office

cc: Johanna M. Teschner, P.G., Geological Resources, Inc.
David Hinson, Iredell County Health Department

UST Regional Offices

Asheville (ARO) – 2090 US Highway 70, Swannanoa, NC 28778 **(828) 296-4500**

Fayetteville (FAY) – 225 Green Street, Suite 714, Systel Building, Fayetteville, NC 28301 **(910) 433-3300**

Mooresville (MOR) – 610 East Center Avenue, Suite 301, Mooresville, NC 28115 **(704) 663-1699**

Raleigh (RRO) – 1628 Mail Service Center, Raleigh, NC 27699 **(919) 791-4200**

Washington (WAS) – 943 Washington Square Mall, Washington, NC 27889 **(252) 946-6481**

Wilmington (WIL) – 127 Cardinal Drive Extension, Wilmington, NC 28405 **(910) 796-7215**

Winston-Salem (WS) – 585 Waughtown Street, Winston-Salem, NC 27107 **(336) 771-5000**

Guilford County Environmental Health, 400 West Market Street, Suite 300, Greensboro, NC 27401, **(336) 641-3771**

COPY

NCDENR

North Carolina Department of Environment and Natural Resources

Beverly Eaves Perdue, Governor

Division of Waste Management
UST Section

Dee Freeman, Secretary
Dexter R. Matthews, Director

October 17, 2012

Heather Hermansen
Circle K Stores, Inc.
2440 Whitehall Park Drive #800
Charlotte, NC 28273

Re: Extension Request
Circle K #1517
558 River Highway
Iredell County
Facility ID#: 0-036164
Incident Number: 40116
Risk Classification: U
Ranking: Pending

Dear Ms. Hermansen:

Your consultant's request for additional time to submit a Site Check Report for the above referenced site has been reviewed by the Underground Storage Tank Section of the Division of Waste Management (the Division), Mooresville Regional Office. The request is hereby granted until December 14, 2012. Failure to submit work associated with the September 25, 2012 Notice of Regulatory Requirement by the extended due date may result in a recommendation for the assessment of civil penalties beginning from the original due date. If you have any questions regarding the actions that must be taken or the rules mentioned in this letter, please contact me at the address or telephone number listed below.

Sincerely,

Erin Fogarty

Erin Fogarty
Hydrogeologist II
Mooresville Regional Office

cc: Thomas Garrison, Excel Civil & Environmental Associates

UST Regional Offices

Asheville (ARO) – 2090 US Highway 70, Swannanoa, NC 28778 **(828) 296-4500**

Fayetteville (FAY) – 225 Green Street, Suite 714, Systel Building, Fayetteville, NC 28301 **(910) 433-3300**

Mooresville (MOR) – 610 East Center Avenue, Suite 301, Mooresville, NC 28115 **(704) 663-1699**

Raleigh (RRO) – 1628 Mail Service Center, Raleigh, NC 27699 **(919) 791-4200**

Washington (WAS) – 943 Washington Square Mall, Washington, NC 27889 **(252) 946-6481**

Geological Resources, Inc.

September 5, 2012

Mr. Kevin Fite
Raleigh Regional Office
1637 Mail Service Center
Raleigh, North Carolina 27699-1637

Re: Site Check Report
Circle K No. 1517
558 River Highway
Mooresville, Iredell County, NC
Incident No. N/A

Dear Mr. Fite:

Please find enclosed the referenced report for the above mentioned site. If you have any questions, please do not hesitate to contact Johanna M. Teschner, PG at (704) 845-4010.

Sincerely,
Geological Resources, Inc.

Jackie Donnelly
Administrative Assistant

Enclosure

cc: Ms. Heather Hermansen, Circle K Stores, Inc.

file

2301 Crown Point Executive Drive Suite F Charlotte, NC 28227
Phone: (704) 845-4010 / (888) 870-4133 Fax: (704) 845-4012

SITE CHECK REPORT
CIRCLE K NO. 1517
558 RIVER HIGHWAY
MOORESVILLE, IREDELL COUNTY
NORTH CAROLINA
INCIDENT NUMBER: NA

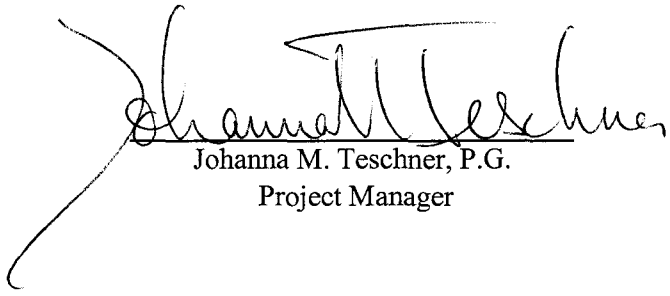
Prepared for:

Ms. Heather Hermansen
Circle K Stores, Inc.
2440 Whitehall Park Drive, Suite 800
Charlotte, NC 28273

Prepared by:

Geological Resources, Inc
2301 Crown Point Executive Drive, Suite F
Charlotte, North Carolina 28227

September 5, 2012



Johanna M. Teschner, P.G.
Project Manager

A. SITE INFORMATION

1. Site Identification:

Date of Report: August 29, 2012
Facility ID Number: 0-036164 **Incident Number:** NA
Site Name: Circle K #1517
Site Address: 558 River Highway
City: Mooresville **State:** NC **Zip Code:** 28117 **County:** Iredell
Description of Geographical Data Point: Calculated from the center of the property.
Latitude: 35.5953326° N **Longitude:** 80.8692666° W

2. Contacts Associated with Leaking UST System:

UST Owner:
Circle K Stores, Inc.
2440 Whitehall Park Drive, Suite 800
Charlotte, NC, 28273
704-583-5700

UST Operator:
Circle K Stores, Inc.
2440 Whitehall Park Drive, Suite 800
Charlotte, NC, 28273
704-583-5700

Property Owner:
RSD Food Market Real Estate Holding #2100, LLC
P.O. Box 3756
Mooresville, NC, 28115

Primary Consultant:
Geological Resources, Inc.
2301 Crown Point Executive Drive, Suite F
Charlotte, North Carolina 28227
(704) 845-4010

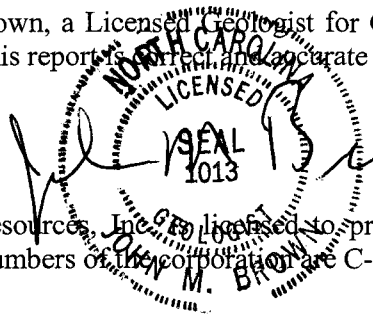
Laboratory:
Accutest Laboratories-Southeast
4405 Vineland Road, Suite C-15
Orlando, Florida 32811
(407) 425-6700
North Carolina Certification No. 573

3. Release Information

Date Reported: August 23, 2012
Estimated Quantity of Release: Unknown
Cause of Release: Unknown
Source of Release: Unknown
UST Size/Contents: One 20,000-gallon gasoline UST, one 12,000-gallon gasoline UST, one 3,000-gallon gasoline UST and one 6,000-gallon diesel UST.

4. Certification:

I, John M. Brown, a Licensed Geologist for Geological Resources, Inc., do certify that the information contained in this report is correct and accurate to the best of my knowledge.



Geological Resources, Inc. is licensed to practice geology and engineering in North Carolina. The certification numbers of the corporation are C-127 and C-2727, respectively.

B. EXECUTIVE SUMMARY

The Circle K No. 1517 site is located at 558 River Highway, at the corner of Bluefield Road in Mooresville, Iredell County, North Carolina (**Figure 1**). The property is a commercial convenience market and gas station. On June 19, 2012, the NCDENR directed a site check be conducted at the site. On August 7, 2012, 13 soil samples were collected using direct push technology at each of the dispensers and at the Premium STP sump. Total petroleum hydrocarbons-diesel range organics were reported in four of the samples collected from dispensers DISP 5/6, DISP 9/10, DISP 17/18, and DISP 23/24 above the regulatory action level of 10 milligrams per kilogram, indicating a possible UST release at the site.

C. TABLE OF CONTENTS

FIGURES

TABLES

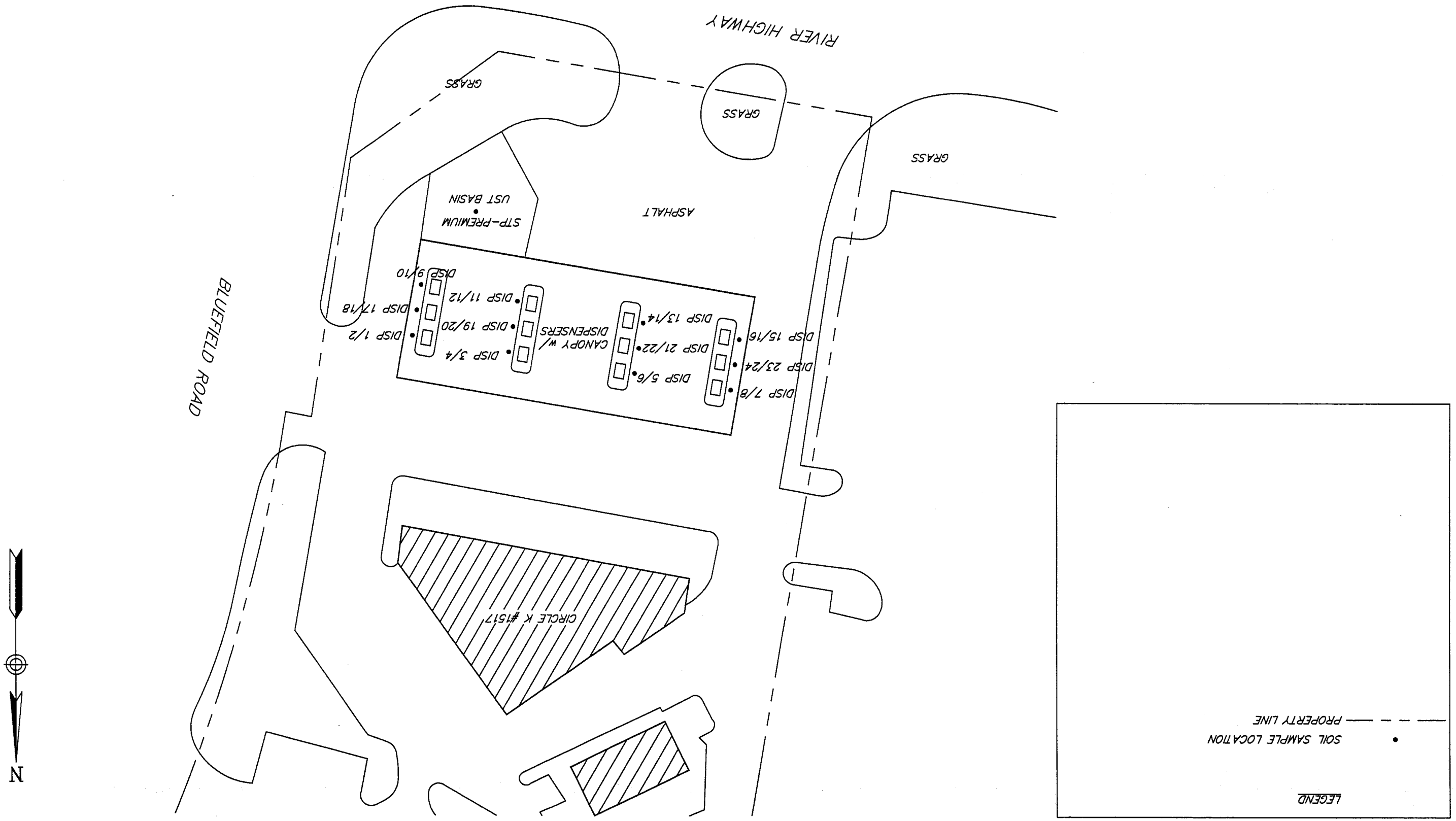
APPENDICES

Geological Resources, Inc.

(IN FEET)
1 inch = 40 ft

0 20 40 80

SITE MAP			
Circle K #1517		558 River Highway	
Mooresville, Iredell County, NC		Incident # N/A	
Date: 8/24/12	Drawn by: AMB	Figure:	2



LEGEND

• SOIL SAMPLE LOCATION

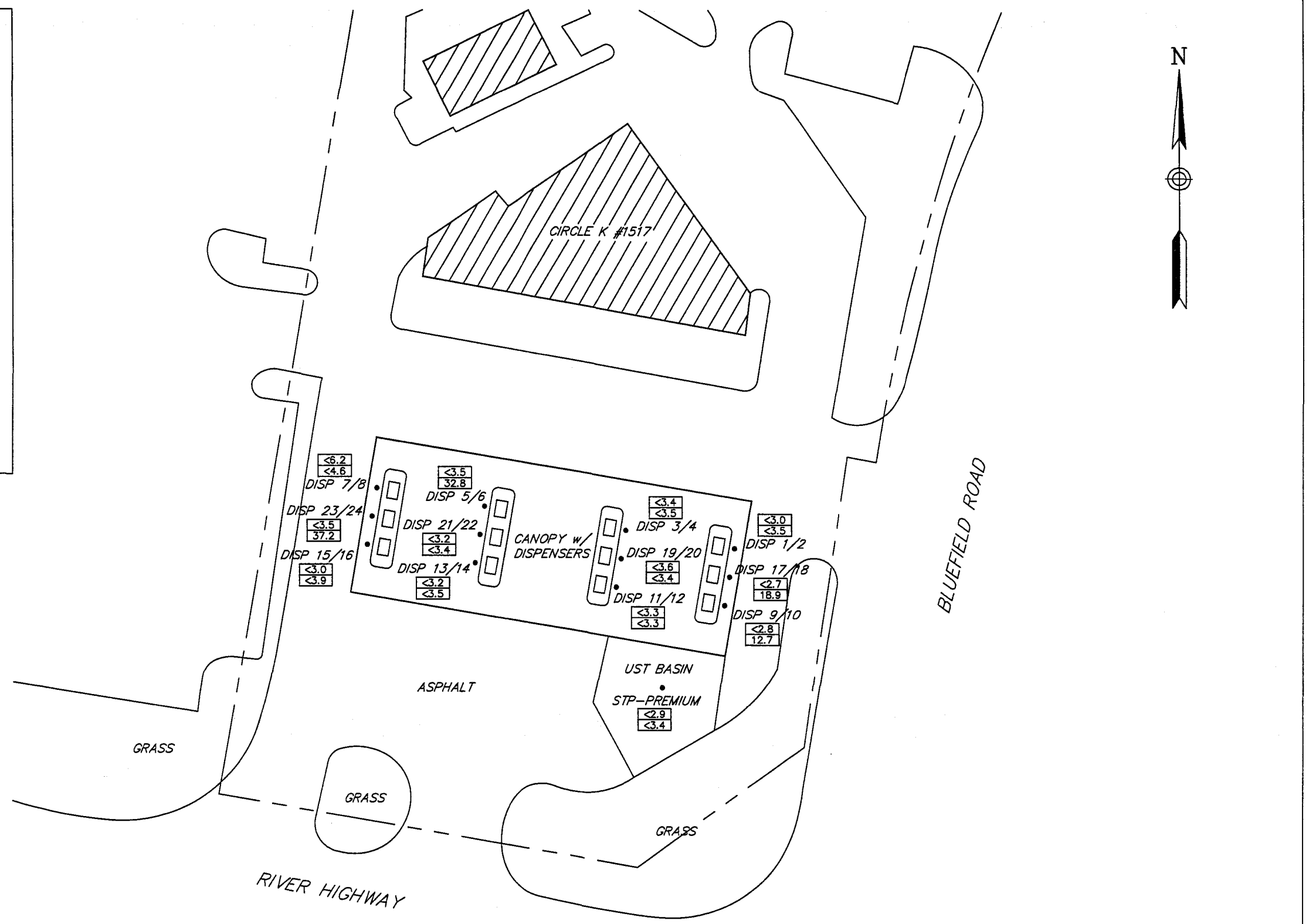
— — — — PROPERTY LINE

<3.5 / 37.2 GASOLINE-RANGE TPH / DIESEL-RANGE TPH

CONCENTRATIONS IN mg/kg

<2.9 LESS THAN THE METHOD DETECTION LIMIT SPECIFIED IN THE LABORATORY REPORT

NOTE: ALL SAMPLES COLLECTED AT DEPTH OF 3' BGS



Geological Resources, Inc.

0 20 40 80

(IN FEET)
1 inch = 40 ft

SOIL QUALITY MAP (8/7/12)

Circle K #1517 — 558 River Highway

Mooresville, Iredell County, NC — Incident # N/A

Date:	8/24/12	Drawn by:	AWB	Figure:	3

TABLES

TABLE 1
UST OWNER/OPERATOR INFORMATION
CIRCKLE K NO. 1517

UST ID Number	1, 2A, 2B, 3	**Facility ID Number**	0-036164
Name of Owner or Operator		**Dates of Ownership / Operation**	**Owner or Operator?**
Circle K Stores, Inc.		08/15/2011 to present	Owner/Operator
Address			**Telephone Number**
2440 Whitehall Park Drive, Suite 800, Charlotte, NC, 28273			704-583-5700

F. SITE INVESTIGATION

1. Field Screening:

GRI preformed a site check on August 7, 2012, that included 13 soil borings advanced at each dispenser and at the Premium STP sump. The depth of the borings was 3 feet. No petroleum odors were detected in any of the borings. Soil samples were collected at a depth of three feet bgs to evaluate the subsurface directly below the dispenser piping/Premium STP sump, and submitted for laboratory analyses of TPH-GRO and TPH-DRO.

2. Soil Sampling:

The soil was predominantly sand and gravel except at borings for DISP 7/8, DISP 15/16 and DISP 23/24, in which a stiff, dry, red silty clay was encountered at one foot below ground surface (bgs). Soil boring logs are presented as **Appendix A**. Soil grab samples were collected from the auger bucket at a depth of three feet bgs and submitted for laboratory analyses of TPH-GRO and TPH-DRO.

3. Ground Water Sampling:

Ground water was not encountered in the soil borings.

4. Quality Control:

Soil grab samples were collected from the auger bucket and immediately placed in laboratory-supplied containers, which were then placed in iced coolers. The hand auger bucket was decontaminated between borings using an Alconox® solution followed by a clean distilled water rinse. New latex or nitrile gloves were worn at each boring. Samples were logged using proper chain-of-custody procedures. The samples were transported to a North Carolina Certified laboratory for analysis. The chain of custody and laboratory quality control documentation is included in the laboratory analytical report provided as **Appendix C**.

5. Investigation Results:

Concentrations of TPH-DRO that exceeded the RAL were reported in soil samples collected from DISP 5/6, DISP 9/10, DISP 17/18, and DISP 23/24. After receipt of laboratory results confirming a release, a UST-61 Form was submitted on August 23, and is presented as **Appendix B**. A summary of soil sample analytical results is presented as **Table 3**. A Soil Quality Map is provided as **Figure 3**. The laboratory analytical report is provided as **Appendix C**.

G. CONCLUSIONS

- A Site Check was conducted on August 7, 2012, for a possible petroleum release. Thirteen soil borings were advanced and soil samples were collected for laboratory analyses. Neither ground water nor bedrock was encountered in the borings.

D. SITE HISTORY AND CHARACTERIZATION

1. UST Owner and Operator Information:

In accordance with the Site Check Report guidelines, the Underground Storage Tank (UST) owner and operator information has been summarized in **Table 1.**

2. UST System Information:

In accordance with the Site Check Report guidelines, the UST system information has been summarized in **Table 2.**

3. Non-UST Information:

Not applicable.

4. Description of the Site Characteristics:

The Circle K No. 1517 site is located at 558 River Highway, at the corner of Bluefield Road in Mooresville, Iredell County, North Carolina (**Figure 1**). The property is a commercial convenience market and gas station. The site is covered by asphalt, concrete, and grass. There are four USTs located on the site that contain gasoline and diesel fuel ranging in size from 3,000 gallons to 20,000 gallons. There are eight gasoline dispensers and four diesel dispensers. The area is commercial and the adjacent properties are a Walgreen Store and restaurants. A site map is included as **Figure 2.**

E. SITE CHECK PROCEDURES

1. Tank and Line Tightness Testing:

NO

In June 2012 free product was encountered in a monitoring well for a separate facility down gradient of the site. Per June 6, 2012 direction from NCDENR, hydrostatic tests were conducted on all spill buckets, tank containment sumps, and dispenser sumps. The STP-Premium sump and dispenser sumps failed the tests. On June 29, 2012, NCDENR directed a Site Check on all sumps that failed the hydrostatic tests.

2. Site Check Procedure:

On August 7, 2012, 13 soil samples were collected using direct push technology and/or a hand auger at each of the dispensers and at the Premium STP sump. Soil samples were collected and submitted for laboratory analyses of total petroleum hydrocarbons-gasoline range organics (TPH-GRO) and TPH-diesel range organics (TPH-DRO).

3. Soil Excavation:

Soil excavation was not conducted.

- The site is commercial and surrounding properties are commercial. Public water is available to the site and surrounding properties.
- Concentrations of TPH-DRO that exceeded the RAL were reported in soil samples collected from DISP 5/6, DISP 9/10, DISP 17/18, and DISP 23/24.

F. LIMITATIONS

This report has been prepared for the exclusive use of Circle K Stores, Inc. for the specific application to the referenced site in Iredell County, North Carolina. The assessment was conducted based on the scope of work and level of effort specified by the NCDENR and with resources adequate only for that scope of work. Our findings have been developed in accordance with generally accepted standards of geology and hydrogeology practices in the State of North Carolina, available information, and our professional judgment. No other warranty is expressed or implied.

The data that are presented in this report are indicative of conditions that existed at the precise locations sampled and at the time the samples were collected. In addition, the data obtained from samples would be interpreted as being meaningful with respect to parameters indicated in the laboratory report. No additional information can logically be inferred from these data.

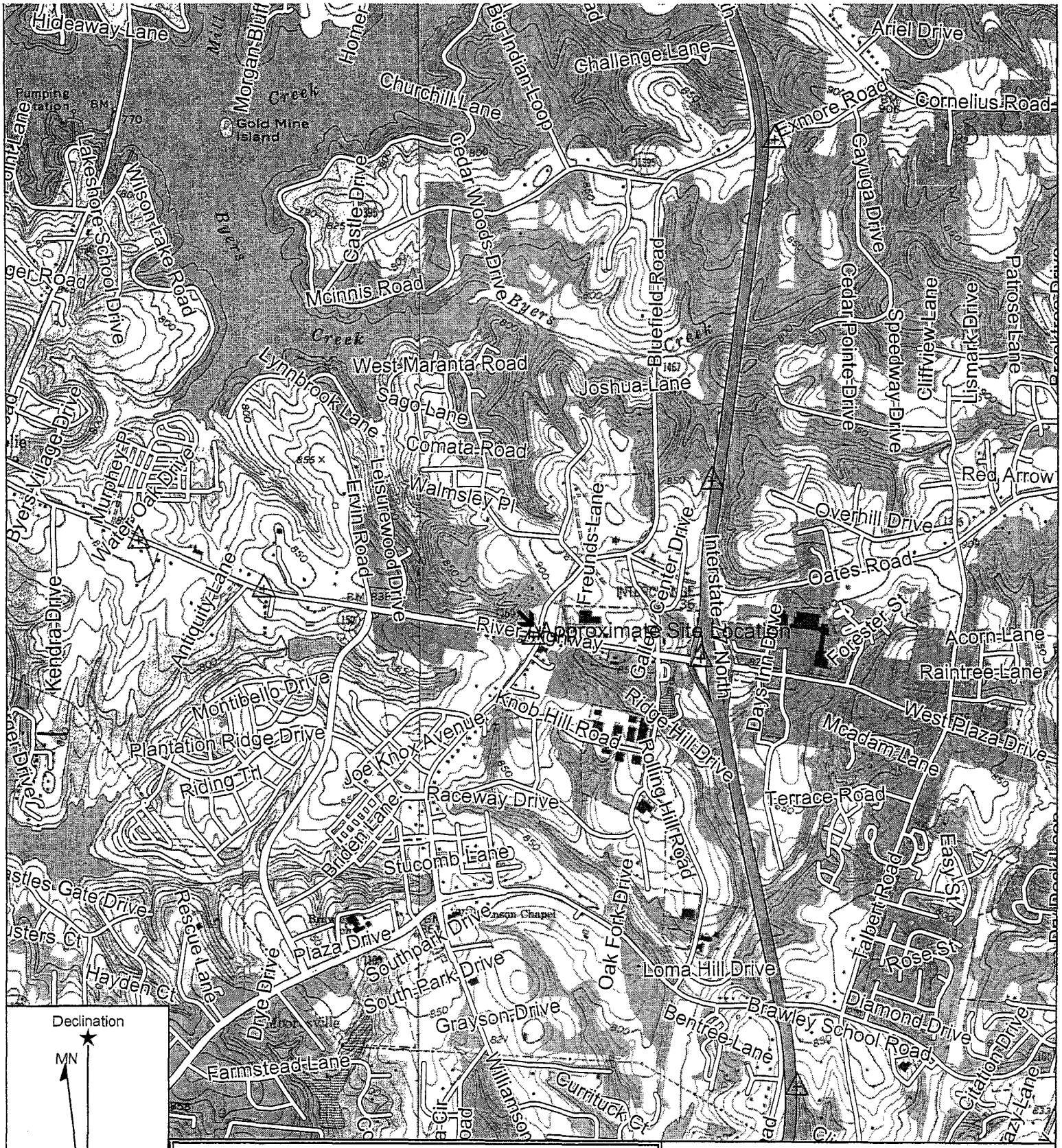


Figure 1
Circle K #1517
558 River Highway
Mooresville, NC

Name: MOORESVILLE
Date: 08/10/12
Scale: 1 inch = 2.000 ft.

Location: 035.5953326° N 080.8692666° W

TABLE 2
UST SYSTEM INFORMATION
CIRCLE K NO. 1517

Date: 07/03/12 **Facility ID # :** 0-036164

UST ID No.	Current or Most Recent Contents	Previous Contents	Capacity (gallons)	Date Installed	Construction Details	Tank Dimensions	Description of Associated Product Piping and Pumps	Status of UST	Was Release Associated with UST System? (Yes / No)
1	Gasoline	NA	20,000	05/15/2000	FRP Coated Steel	10.5' x 31'	Flexible	Active	No
2A	Gasoline	NA	12,000	05/15/2000	FRP Coated Steel	8' x 32'	Flexible	Active	No
2B	Diesel	NA	6,000	05/15/2000	FRP Coated Steel	8' x 16'	Flexible	Active	Yes
3	Gasoline	NA	3,000	05/15/2000	FRP Coated Steel	64" x 18'	Flexible	Active	No

TABLE 3
SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS
CIRCLE K #1517

Date: 08/10/12 **Facility ID #:** 0-036164

Analytical Method			→	TPH-GRO	TPH-DRO
Sample ID	**Date Collected** (mm/dd/yy)	**Sample Location**	**Sample Depth** (ft-BGS)	**Gasoline-Range TPH**	**Diesel-Range TPH**
RAL				**10**	**10**
STP-Premium	08/07/12	UST Basin	3	<2.9	<3.4
DISP 1/2	08/07/12	Dispenser	3	<3.0	<3.5
DISP 3/4	08/07/12	Dispenser	3	<3.4	<3.5
DISP 5/6	08/07/12	Dispenser	3	<3.5	**32.8**
DISP 7/8	08/07/12	Dispenser	3	<6.2	<4.6
DISP 9/10	08/07/12	Dispenser	3	<2.8	**12.7**
DISP 11/12	08/07/12	Dispenser	3	<3.3	<3.3
DISP 13/14	08/07/12	Dispenser	3	<3.2	<3.5
DISP 15/16	08/07/12	Dispenser	3	<3.0	<3.9
DISP 17/18	08/07/12	Dispenser	3	<2.7	**18.9**
DISP 19/20	08/07/12	Dispenser	3	<3.6	<3.4
DISP 21/22	08/07/12	Dispenser	3	<3.2	<3.4
DISP 23/24	08/07/12	Dispenser	3	<3.5	**37.2**

Notes:
- Results reported in mg/kg (milligrams per kilogram).
- ft-BGS: feet below ground surface.
- RAL: Regulatory Action Level.
- <: Less than the reporting limit specified in the laboratory report.
- Concentrations in bold face type exceed the RALs.

Appendix A

Soil Boring Logs

Geological Resources, Inc.
2301-F Crown Point Executive Drive
Charlotte, NC 28227

Phone: (704) 845-4010
Fax: (704) 845-4012

SUBSURFACE LOG

Project	Circle K #1517		
Address	558 River Highway, Mooresville NC		
Boring Number	STP-Premium	Date Drilled	08/07/12
Sample Method	Grab	Drilling Method	Geoprobe®/Hand Auger
Completion Details	Backfill with cuttings and bentonite		
Driller	Justin Radford	Log By	Johanna M. Teschner

Depth			Lab Sample	Sample Interval(ft)	OVA ppm	LITHOLOGY
0						0-3' Sand and gravel (fill)
2						
4						3' Boring terminated
6						
8						
10						
12						
14						
16						
18						
20						
22						
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Geological Resources, Inc.
2301-F Crown Point Executive Drive
Charlotte, NC 28227

Phone: (704) 845-4010
Fax: (704) 845-4012

SUBSURFACE LOG

Project	Circle K #1517		
Address	558 River Highway, Mooresville NC		
Boring Number	DISP 1/2	Date Drilled	08/07/12
Sample Method	Grab	Drilling Method	Geoprobe®/Hand Auger
Completion Details	Backfill with cuttings and bentonite		
Driller	Justin Radford	Log By	Johanna M. Teschner

Depth			Lab Sample	Sample Interval(ft)	OVA ppm	LITHOLOGY
0						0-3' Sand and gravel (fill)
2						3' Boring terminated
4						
6						
8						
10						
12						
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Geological Resources, Inc.
2301-F Crown Point Executive Drive
Charlotte, NC 28227

Phone: (704) 845-4010
Fax: (704) 845-4012

SUBSURFACE LOG

Project	Circle K #1517		
Address	558 River Highway, Mooresville NC		
Boring Number	DISP 3/4	Date Drilled	08/07/12
Sample Method	Grab	Drilling Method	Geoprobe®/Hand Auger
Completion Details	Backfill with cuttings and bentonite		
Driller	Justin Radford	Log By	Johanna M. Teschner

Depth			Lab Sample	Sample Interval(ft)	OVA ppm	LITHOLOGY
0						0-3' Sand and gravel (fill)
2						
4						3' Boring terminated
6						
8						
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12						
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Geological Resources, Inc.
2301-F Crown Point Executive Drive
Charlotte, NC 28227

Phone: (704) 845-4010
Fax: (704) 845-4012

SUBSURFACE LOG

Project	Circle K #1517		
Address	558 River Highway, Mooresville NC		
Boring Number	DISP 5/6	Date Drilled	08/07/12
Sample Method	Grab	Drilling Method	Geoprobe®/Hand Auger
Completion Details	Backfill with cuttings and bentonite		
Driller	Justin Radford	Log By	Johanna M. Teschner

Depth			Lab Sample	Sample Interval(ft)	OVA ppm	LITHOLOGY
0						0-3' Sand and gravel (fill)
2						3' Boring terminated
4						
6						
8						
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Geological Resources, Inc.
2301-F Crown Point Executive Drive
Charlotte, NC 28227

Phone: (704) 845-4010
Fax: (704) 845-4012

SUBSURFACE LOG

Project	Circle K #1517		
Address	558 River Highway, Mooresville NC		
Boring Number	DISP 7/8	Date Drilled	08/07/12
Sample Method	Grab	Drilling Method	Geoprobe®/Hand Auger
Completion Details	Backfill with cuttings and bentonite		
Driller	Justin Radford	Log By	Johanna M. Teschner

Depth			Lab Sample	Sample Interval(ft)	OVA ppm	LITHOLOGY
0						0-1' Sand and gravel (fill) 1-3' Stiff dry red silty CLAY
2						
4						3' Boring terminated
6						
8						
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Geological Resources, Inc.
2301-F Crown Point Executive Drive
Charlotte, NC 28227

Phone: (704) 845-4010
Fax: (704) 845-4012

SUBSURFACE LOG

Project	Circle K #1517		
Address	558 River Highway, Mooresville NC		
Boring Number	DISP 9/10	Date Drilled	08/07/12
Sample Method	Grab	Drilling Method	Geoprobe®/Hand Auger
Completion Details	Backfill with cuttings and bentonite		
Driller	Justin Radford	Log By	Johanna M. Teschner

Depth			Lab Sample	Sample Interval(ft)	OVA ppm	LITHOLOGY
0						0-3' Sand and gravel (fill)
2						3' Boring terminated
4						
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Geological Resources, Inc.
2301-F Crown Point Executive Drive
Charlotte, NC 28227

Phone: (704) 845-4010
Fax: (704) 845-4012

SUBSURFACE LOG

Project	Circle K #1517		
Address	558 River Highway, Mooresville NC		
Boring Number	DISP 11/12	Date Drilled	08/07/12
Sample Method	Grab	Drilling Method	Geoprobe®/Hand Auger
Completion Details	Backfill with cuttings and bentonite		
Driller	Justin Radford	Log By	Johanna M. Teschner

Depth			Lab Sample	Sample Interval(ft)	OVA ppm	LITHOLOGY
0						0-3' Sand and gravel (fill)
2						
4						3' Boring terminated
6						
8						
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Geological Resources, Inc.
2301-F Crown Point Executive Drive
Charlotte, NC 28227

Phone: (704) 845-4010
Fax: (704) 845-4012

SUBSURFACE LOG

Project	Circle K #1517		
Address	558 River Highway, Mooresville NC		
Boring Number	DISP 13/14	Date Drilled	08/07/12
Sample Method	Grab	Drilling Method	Geoprobe®/Hand Auger
Completion Details	Backfill with cuttings and bentonite		
Driller	Justin Radford	Log By	Johanna M. Teschner

Depth			Lab Sample	Sample Interval(ft)	OVA ppm	LITHOLOGY
0						0-3' Sand and gravel (fill)
2						3' Boring terminated
4						
6						
8						
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Geological Resources, Inc.
2301-F Crown Point Executive Drive
Charlotte, NC 28227

Phone: (704) 845-4010
Fax: (704) 845-4012

SUBSURFACE LOG

Project	Circle K #1517		
Address	558 River Highway, Mooresville NC		
Boring Number	DISP 15/16	Date Drilled	08/07/12
Sample Method	Grab	Drilling Method	Geoprobe®/Hand Auger
Completion Details	Backfill with cuttings and bentonite		
Driller	Justin Radford	Log By	Johanna M. Teschner

Depth			Lab Sample	Sample Interval(ft)	OVA ppm	LITHOLOGY
0						0-1' Sand and gravel (fill) 1-3' Stiff dry red silty CLAY
2						
4						3' Boring terminated
6						
8						
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Geological Resources, Inc.
2301-F Crown Point Executive Drive
Charlotte, NC 28227

Phone: (704) 845-4010
Fax: (704) 845-4012

SUBSURFACE LOG

Project	Circle K #1517		
Address	558 River Highway, Mooresville NC		
Boring Number	DISP 17/18	Date Drilled	08/07/12
Sample Method	Grab	Drilling Method	Geoprobe®/Hand Auger
Completion Details	Backfill with cuttings and bentonite		
Driller	Justin Radford	Log By	Johanna M. Teschner

Depth			Lab Sample	Sample Interval(ft)	OVA ppm	LITHOLOGY
0						0-3' Sand and gravel (fill)
2						
						3' Boring terminated
4						
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Geological Resources, Inc.
2301-F Crown Point Executive Drive
Charlotte, NC 28227

Phone: (704) 845-4010
Fax: (704) 845-4012

SUBSURFACE LOG

Project	Circle K #1517		
Address	558 River Highway, Mooresville NC		
Boring Number	DISP 19/20	Date Drilled	08/07/12
Sample Method	Grab	Drilling Method	Geoprobe®/Hand Auger
Completion Details	Backfill with cuttings and bentonite		
Driller	Justin Radford	Log By	Johanna M. Teschner

Depth			Lab Sample	Sample Interval(ft)	OVA ppm	LITHOLOGY
0						0-3' Sand and gravel (fill)
2						
4						3' Boring terminated
6						
8						
10						
12						
14						
16						
18						
20						
22						
24						
26						
28						
30						
32						
34						
36						

Geological Resources, Inc.
2301-F Crown Point Executive Drive
Charlotte, NC 28227

Phone: (704) 845-4010
Fax: (704) 845-4012

SUBSURFACE LOG

Project	Circle K #1517		
Address	558 River Highway, Mooresville NC		
Boring Number	DISP 21/22	Date Drilled	08/07/12
Sample Method	Grab	Drilling Method	Geoprobe®/Hand Auger
Completion Details	Backfill with cuttings and bentonite		
Driller	Justin Radford	Log By	Johanna M. Teschner

Depth			Lab Sample	Sample Interval(ft)	OVA ppm	LITHOLOGY
0						0-3' Sand and gravel (fill)
2						
4						3' Boring terminated
6						
8						
10						
12						
14						
16						
18						
20						
22						
24						
26						
28						
30						
32						
34						
36						

Geological Resources, Inc.
2301-F Crown Point Executive Drive
Charlotte, NC 28227

Phone: (704) 845-4010
Fax: (704) 845-4012

SUBSURFACE LOG

Project	Circle K #1517		
Address	558 River Highway, Mooresville NC		
Boring Number	DISP 23/24	Date Drilled	08/07/12
Sample Method	Grab	Drilling Method	Geoprobe®/Hand Auger
Completion Details	Backfill with cuttings and bentonite		
Driller	Justin Radford	Log By	Johanna M. Teschner

Depth			Lab Sample	Sample Interval(ft)	OVA ppm	LITHOLOGY
0						0-1' Sand and gravel (fill) 1-3' Stiff dry red silty CLAY
2						
4						3' Boring terminated
6						
8						
10						
12						
14						
16						
18						
20						
22						
24						
26						
28						
30						
32						
34						
36						

APPENDICES

APPENDIX B

UST-61 Form

UST-61 24-Hour Release and UST Leak Reporting Form.

For Releases in NC

This form should be completed and submitted to the UST Section's regional office following a known or suspected release from an underground storage tank (UST) system. This form is required to be submitted within 24 hours of discovery of a known or suspected release

(DWM USE ONLY)
Incident # _____ Risk (H,I,L,U) _____
Received On _____ Received By _____
Reported by (*circle one*): Phone, Fax or Report
Region _____

Suspected Contamination? (Y/N) _____
Confirmed GW Contamination? (Y/N) _____
Confirmed Soil Contamination ?(Y/N) _____
Samples Taken?(Y/N) _____
Free Product? (Y/N) _____ If Yes, State Greatest Thickness _____

Facility ID Number 0-036164
Date Leak Discovered 08/18/17
Comm/Non-Commercial? COMM
Reg/Non-regulated? REG

INCIDENT DESCRIPTION

Incident Name: CIRCLE K #1517

Address: 558 RIVER HIGHWAY | County: IREDELL

City/Town: MOORESVILLE | Zip Code: 28115 | Regional Office (*circle one*): Asheville, (Mooresville), Fayetteville, Raleigh, Washington, Wilmington, Winston-Salem

Latitude (decimal degrees): 35.59533 Longitude (decimal degrees): 80.869267

Obtained by:
- ☐ GPS
- ☒ Topographic map
- ☐ GIS Address matching
- ☐ Other
- ☐ Unknown

Describe location:

Briefly describe suspected or confirmed release: *(including but not limited to: nature of release, date of release, amount of release, amount of free product present and recovery efforts, initial responses conducted, impacts to receptors)*

CONTAMINATED WELL DOWNGRADIENT PROMPTED DENR TO DIRECT HYDROSTATIC TESTS ON ALL SPILL BUCKETS AND TANK & DISPENSER SUMPS. DENR DIRECTED SITE CHECK ON ALL SUMPS THAT FAILED. RELEASE CONFIRMED THROUGH SOIL SAMPLING AND LABORATORY ANALYSIS.

HOW RELEASE WAS DISCOVERED (Release Code)

(Check one)

- ☐ Release Detection Equipment or Methods
- ☐ During UST Closure/Removal
- ☐ Property Transfer
- ☐ Visual/Odor
- ☐ Water in Tank
- ☐ Water Supply Well Contamination
- ☐ Groundwater Contamination
- ☐ Surface Water Contamination
- ☒ Other (specify) SITE CHECK

SOURCE OF CONTAMINATION

Source of Release *(Check one to indicate primary source)*
- ☐ Tank
- ☐ Piping
- ☒ Dispenser
- ☐ Submersible Turbine Pump
- ☐ Delivery Problem
- ☐ Other
- ☐ Unknown

Definitions presented on reverse

Cause of Release *(Check one to indicate primary cause)*
- ☐ Spill
- ☐ Overfill
- ☐ Corrosion
- ☐ Physical or Mechanical Damage
- ☐ Install Problem
- ☐ Other
- ☐ Unknown

Definitions presented on reverse

Type of Release *(Check one)*
- ☒ Petroleum
- ☐ Non-Petroleum
- ☐ Both

Location *(Check one)*
- ☒ Facility
- ☐ Residence
- ☐ Other

Product Type Released *(Check one to indicate primary product type released)*
- ☒ Gasoline/ Diesel/ Kerosene
- ☐ Heating Oil
- ☐ Other Petroleum Products
- ☐ Metals
- ☐ Other Inorganics
- ☐ Other Organics
- ☐ Diesel/Veg. Oil Blend
- ☐ Vegetable Oil 100%
- ☐ E10 – E20
- ☐ E21 – E84
- ☐ E85 – E99
- ☐ Ethanol 100%
- ☐ E01 – E09

Ownership
1. Municipal 2. Military 3. Unknown (4. Private) 5. Federal 6. County 7. State

Operation Type
1. Public Service 2. Agricultural 3. Residential 4. Education/Relig. 5. Industrial (6. Commercial) 7. Mining

IMPACT ON DRINKING WATER SUPPLIES

Water Supply Wells Affected? 1. Yes 2. No (3. Unknown)

Number of Water Supply Wells Affected _____

Water Supply Wells Contaminated: (*Include Users Names, Addresses and Phone Numbers. Attach additional sheet if necessary*)

1.
2.
3.

UST SYSTEM OWNER

UST Owner/Company			
CIRCLE K STORES, INC.			
Point of Contact		Address	
HEATHER HERMANSEN		2440 WHITEHALL PARK DRIVE #800	
City	State	Zip Code	Telephone Number
CHARLOTTE	NC	28273-3553	704-583-5700

UST SYSTEM OPERATOR

UST Operator/Company		Address	
SAME			
City	State	Zip Code	Telephone Number

LANDOWNER AT LOCATION OF UST INCIDENT

Landowner		Address ATTN: ROB DUCKWORTH, JR.	
RSD FOOD MARKET REAL ESTATE HOLDING #2100, LLC		P.O. BOX 3756	
City	State	Zip Code	Telephone Number
MOORESVILLE	NC	28117	

Draw Sketch of Area (showing two major road intersections) or Attach Map

Person Reporting Incident J. TESCHNER	Company GEOLOGICAL RESOURCES, INC	Telephone Number 704 845 4010
Title PROJECT MANAGER	Address 2301-F CROWN POINT EXECUTIVE DR	Date 08/23/2012
	CHARLOTTE, NC 28227	

Definitions of Sources

Tank: means the tank that stores the product and is part of the underground storage tank system

Piping: means the piping and connectors running from the tank or submersible turbine pump to the dispenser or other end-use equipment (Vent, vapor recovery, or fill lines are excluded.)

Dispenser: includes the dispenser and the equipment used to connect the dispenser to the piping (e.g., a release from a suction pump or from components located above the shear valve)

Submersible Turbine Pump (STP) Area includes the submersible turbine pump head (typically located in the tank sump), the line leak detector, and the piping that connects the submersible turbine pump to the tank

Delivery Problem: identifies releases that occurred during product delivery to the tank. (Typical causes associated with this source are spills and overfills.)

Other: serves as the option to use when the release source is known but does not fit into one of the preceding categories (e.g., for releases from vent lines, vapor recovery lines, and fill lines)

Unknown: identifies releases for which the source has not been determined

Definitions of Causes

Spill: use this cause when a spill occurs (e.g., when the delivery hose is disconnected from the tank fill pipe or when the nozzle is removed from the dispenser)

Overfill: use when an overfill occurs (e.g., overfills may occur from the fill pipe at the tank or when the nozzle fails to shut off at the dispenser)

Physical or Mechanical Damage: use for all types of physical or mechanical damage, except corrosion (e.g., puncture of tank or piping, loose fittings, broken components, and components that have changed dimension)

Corrosion: use when a metal tank, piping, or other component has a release due to corrosion (e.g., for steel, corrosion takes the form of rust)

Installation Problem: use when the problem is determined to have occurred specifically because the UST system was not installed properly

Other: use this option when the cause is known but does not fit into one of the preceding categories (e.g., putting regulated substances into monitoring wells)

Unknown: use when the cause has not been determined

UST-61 — 24-Hour Release and UST Leak Reporting Form.

For Releases in NC

This form should be completed and submitted to the UST Section's regional office following a known or suspected release from an underground storage tank (UST) system. This form is required to be submitted within 24 hours of discovery of a known or suspected release

(DWM USE ONLY)
Incident # _____ Risk (H,I,L,U)_____
Received On _____ Received By _____
Reported by (*circle one*): Phone, Fax or Report
Region _____

Suspected Contamination? (Y/N) N
Confirmed GW Contamination? (Y/N) N
Confirmed Soil Contamination ?(Y/N) N
Samples Taken?(Y/N) N
Free Product? (Y/N) N If Yes, State Greatest Thickness N/A

Facility ID Number 0-036164
Date Leak Discovered _____
Comm/Non-Commercial? Comm
Reg/Non-regulated? Reg

INCIDENT DESCRIPTION

Incident Name: Circle K # 1517

Address: 558 River Highway County: Iredell

City/Town: Mooresville, NC Zip Code: 28117

Regional Office (*circle one*): Asheville, (Mooresville), Fayetteville, Raleigh, Washington, Wilmington, Winston-Salem

Latitude (decimal degrees): 35.59533 Longitude (decimal degrees): 80.869267

Obtained by:
- ☐ GPS
- ☐ Topographic map
- ☐ GIS Address matching
- ☐ Other
- ☐ Unknown

Describe location:

Briefly describe suspected or confirmed release: *(including but not limited to: nature of release, date of release, amount of release, amount of free product present and recovery efforts, initial responses conducted, impacts to receptors)*

20-27 gallons were spilled onto the concrete from a broken hose due to a drive off. Absorbent materials were immediately placed onto the spill and the fire department was contacted. The gasoline was contained.

HOW RELEASE WAS DISCOVERED (Release Code)

(Check one)

- ☐ Release Detection Equipment or Methods
- ☐ During UST Closure/Removal
- ☐ Property Transfer
- ☒ (Visual/Odor)
- ☐ Water in Tank
- ☐ Water Supply Well Contamination
- ☐ Groundwater Contamination
- ☐ Surface Water Contamination
- ☒ Other (specify) _____

SOURCE OF CONTAMINATION

Source of Release *(Check one to indicate primary source)*
- ☐ Tank
- ☐ Piping
- ☒ Dispenser
- ☐ Submersible Turbine Pump
- ☐ Delivery Problem
- ☐ Other
- ☐ Unknown

Definitions presented on reverse

Cause of Release *(Check one to indicate primary cause)*
- ☐ Spill
- ☒ Overfill
- ☐ Corrosion
- ☒ Physical or Mechanical Damage Drive off
- ☐ Install Problem
- ☐ Other
- ☐ Unknown

Definitions presented on reverse

Type of Release *(Check one)*
- ☒ Petroleum
- ☐ Non-Petroleum
- ☐ Both

Location *(Check one)*
- ☐ Facility
- ☐ Residence
- ☐ Other

Product Type Released *(Check one to indicate primary product type released)*
- ☒ (Gasoline/ Diesel/ Kerosene)
- ☐ Heating Oil
- ☐ Other Petroleum Products
- ☐ Metals
- ☐ Other Inorganics
- ☐ Other Organics
- ☐ Diesel/Veg. Oil Blend
- ☐ Vegetable Oil 100%
- ☒ E10 – E20
- ☐ E21 – E84
- ☐ E85 – E99
- ☐ Ethanol 100%
- ☐ E01 – E09

Ownership
1. Municipal 2. Military 3. Unknown (4. Private) 5. Federal 6. County 7. State

Operation Type
1. Public Service 2. Agricultural 3. Residential 4. Education/Relig. 5. Industrial (6. Commercial) 7. Mining

10-22-12

IMPACT ON DRINKING WATER SUPPLIES

Water Supply Wells Affected? 1. Yes (2. No) 3. Unknown

Number of Water Supply Wells Affected 0

Water Supply Wells Contaminated: (*Include Users Names, Addresses and Phone Numbers. Attach additional sheet if necessary*)

1. N/A
2.
3.

UST SYSTEM OWNER

UST Owner/Company: Circle K Stores Inc

Point of Contact	Address		
Heather Hermansen	2440 Whitehall Park Dr., Ste 800		
City	**State**	**Zip Code**	**Telephone Number**
Charlotte	NC	28273	704-583-5762

UST SYSTEM OPERATOR

UST Operator/Company	Address		
Circle K Stores Inc	2440 Whitehall Park Dr., Ste 800		
City	**State**	**Zip Code**	**Telephone Number**
Charlotte	NC	28273	704-583-5762

LANDOWNER AT LOCATION OF UST INCIDENT

Landowner	Address	
RSD Food Market Real Estate Holding #2100, LLC	ATTN: Rob Duckworth, Jr. P.O. Box 3756	
City	**State**	**Zip Code**	**Telephone Number**
Mooresville	NC	28117	

Draw Sketch of Area (showing two major road intersections) or Attach Map

Person Reporting Incident Heather Hermansen	Company Circle K Stores Inc	Telephone Number 704/583-5762
Title Environmental Manager	Address 2440 Whitehall Park Dr., Ste 800 Charlotte NC 28273	Date 10/22/12

Definitions of Sources

Tank: means the tank that stores the product and is part of the underground storage tank system

Piping: means the piping and connectors running from the tank or submersible turbine pump to the dispenser or other end-use equipment (Vent, vapor recovery, or fill lines are excluded.)

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Other: serves as the option to use when the release source is known but does not fit into one of the preceding categories (e.g., for releases from vent lines, vapor recovery lines, and fill lines)

Unknown: identifies releases for which the source has not been determined

Definitions of Causes

Spill: use this cause when a spill occurs (e.g., when the delivery hose is disconnected from the tank fill pipe or when the nozzle is removed from the dispenser)

Overfill: use when an overfill occurs (e.g., overfills may occur from the fill pipe at the tank or when the nozzle fails to shut off at the dispenser)

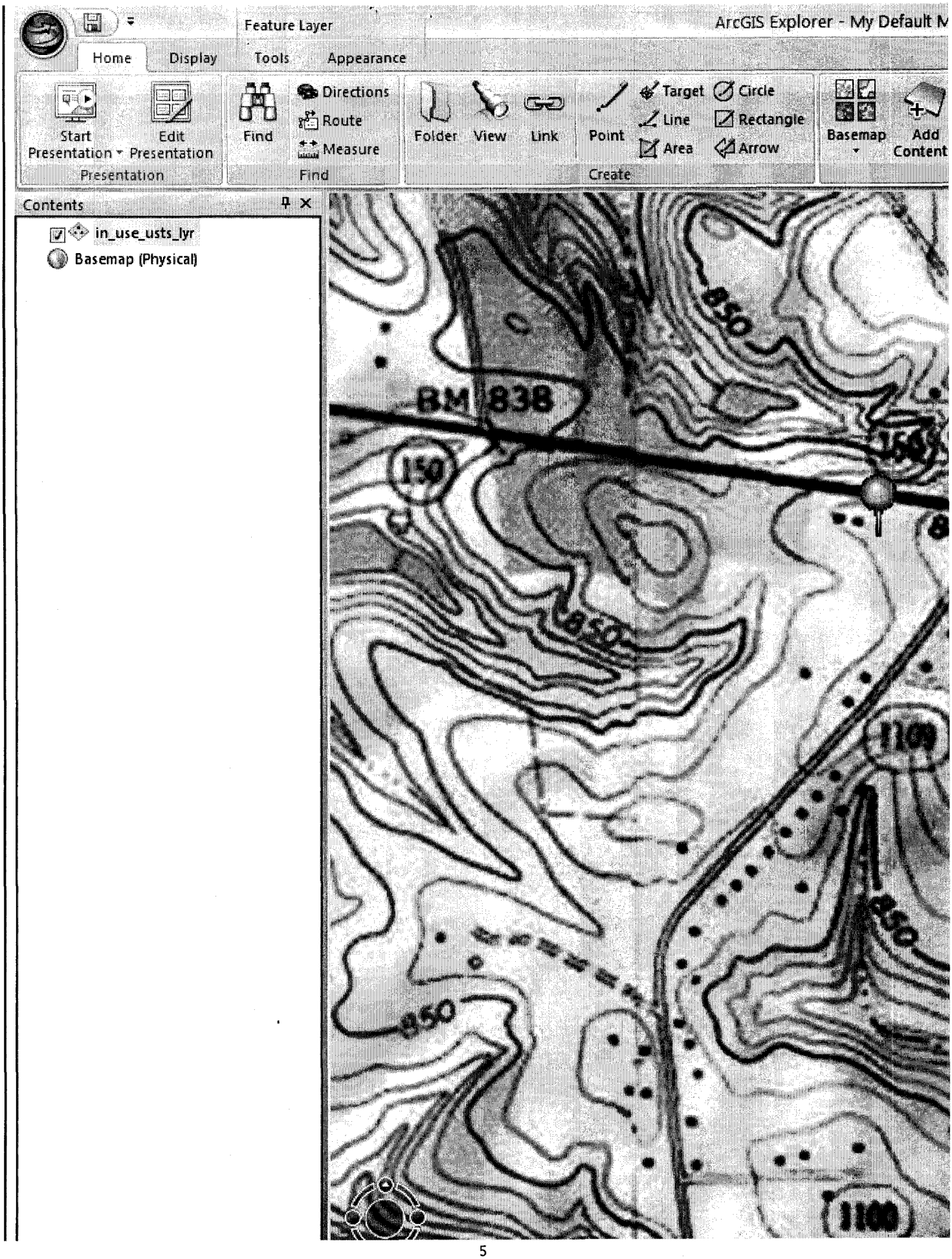
Physical or Mechanical Damage: use for all types of physical or mechanical damage, except corrosion (e.g., puncture of tank or piping, loose fittings, broken components, and components that have changed dimension)

Corrosion: use when a metal tank, piping, or other component has a release due to corrosion (e.g., for steel, corrosion takes the form of rust)

Installation Problem: use when the problem is determined to have occurred specifically because the UST system was not installed properly

Other: use this option when the cause is known but does not fit into one of the preceding categories (e.g., putting regulated substances into monitoring wells)

Unknown: use when the cause has not been determined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Home
Display
Tools
Appearance
Start Presentation
Edit Presentation
Presentation
Find
Directions
Route
Measure
Find
Folder
View
Link
Point
Target
Line
Area
Circle
Rectangle
Arrow
Create
Basemap
Add Content
Contents
in_use_usts_lyr
Basemap (Physical)
BM 838
850
150
1100

From: Fogarty, Erin
Sent: Friday, June 22, 2012 7:38 AM
To: Ghiold, Sharon
Cc: Booe, Steve
Subject: Duckworks & Wilco

Sharon,

Thanks for the update.

I am extremely familiar with the area, but do not know of any former gas stations at the CVS site. The entire area is retail retail, retail. The CVS site sits below road grade. There is a Walgreens directly across the street (corner of 150 & Bluefield) that is fairly new. It is directly across from Duckworth's. When I was out there, I thought that Duckworth's was upgradient. Directly behind the Walgreens is a tire facility.

I looked at a topo map and it appears as though the contours level off at that intersection, with a high contour of 897 feet. I don't have a GW flow map, but I am assuming since the LN Animal Hospital has a contaminated well that flow is to the SE, which would make Duckworth's & Walgreens upgradient.

I am unfamiliar with a lake in the area, other than Lake Norman which is several miles away. There are some drainage and run off lakes to the SE. They are situated in the race shop industrial park.

I will scour our database to see if I find any old sites.

Thanks again, and have a great weekend!

Erin Fogarty
Hydrogeologist II
North Carolina Dept. of Environment & Natural Resources
Division of Waste Management
610 E. Center Avenue • Suite 301
Mooresville, NC 28115
704.235.2195 • 704.663.6040 (fax)

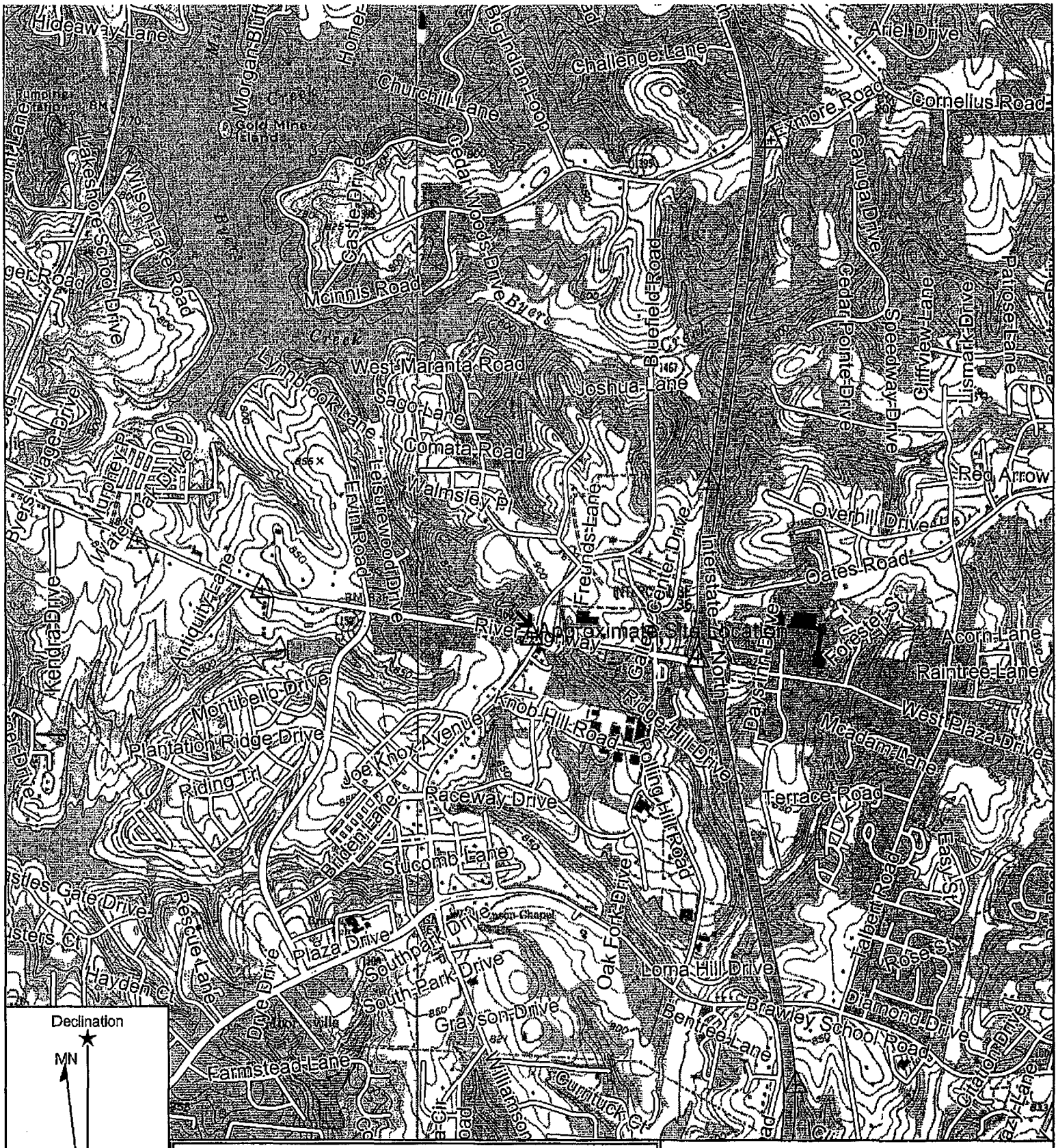


Figure 1
Circle K #1517
558 River Highway
Mooresville, NC

Name: MOORESVILLE
Date: 08/10/12
Scale: 1 inch = 2.000 ft.

Location: 035.5953326° N 080.8692666° W

Excel Civil & Environmental Associates, PLLC
625 Huntsman Court
Gastonia, North Carolina 28054
NC License No. P-0129
Telephone: (704) 853-0800
Facsimile: (704) 853-3949
Internet: www.excelengr.com

October 30, 2012

Mrs. Heather Hermansen
Circle K Stores, Inc.
2400 Whitehall Park Drive, Ste. 800
Charlotte, North Carolina 28273

Re: Spill Response Observation Letter
Circle K No. 1517
558 River Highway
Mooresville, North Carolina
Excel Project Number **2012072**

Dear Mrs. Hermansen:

In response to a minor spill (approximately 20 to 27-gallons) at the above referenced facility, Excel Civil & Environmental Associates, PLLC (Excel) has completed an observation report which also summarizes response actions taken by Circle K, Incorporated (Circle K) during October 2012. As requested, Excel personnel visited the site on October 24, 2012 to observe and evaluate the subject property primarily surrounding Gasoline Dispenser Pump No. 3/4 and the adjacent stormwater conveyance system.

On October 22, 2012 during normal retail dispensing, an individual reportedly drove away from the subject dispenser following fueling which caused immediate damage to the dispensing plumbing. During the next customer use, gasoline was observed being discharged on to the impervious surface at a slow rate from the damaged dispenser. Upon this observation, the Circle K Personnel began spill response efforts as per the applicable Spill Prevention Control and Countermeasures (SPCC) Plan. Response efforts included the use of absorbent material at the subject dispenser island, along the spill path, and at the closest downgradient catchbasin (located approximately 45-feet from the subject dispenser pump). All materials were disposed of in accordance with acceptable industry standards. In addition, Excel inspected the onsite storm sewer system for the presence of any significant residual petroleum from the recent spill. No obvious signs of significant impact to the onsite storm sewer system were apparent during the October 22, 2012 inspection.

According to Circle K representatives, the spill was approximately 20 to 27-gallons and was contained prior to entering the onsite storm sewer system with oil absorbent material. Furthermore, based on Excel's inspection, it appears the spill did not cause a significant impact to the onsite storm sewer system which would threaten nearby surface water bodies and remained on the impervious pavement. Additionally, the facility is not located near a large body of water therefore no additional assessment should be required at this time in regards to the reported spill.

Limitations

This report is based on a general observation and information obtained by Excel or as detailed by others. The conclusions presented in this report are based only on the observations made during this investigation and on data provided by others. The report presents a description of the locations evaluated during this investigation at the time of the investigation only. Conclusions and recommendations set forth herein are applicable only to the facts and conditions described at the time of this report.

In performing its professional services, Excel uses that degree of care and skill exercised under similar circumstances by members of the environmental profession practicing at the same or similar locality under similar conditions. The standard of care shall be judged exclusively as of the time these services are rendered and not according to later standards. Excel makes no express or implied warranty beyond its conformance to this standard. Excel shall not be responsible for conditions or consequences arising from the relevant facts that were concealed, withheld or not fully disclosed for this report. Excel believes that all information contained in this report is factual, but no guarantee is made or implied.

Thank you for giving us the opportunity to handle your engineering consulting needs and we look forward to serving you in the future. If you have any questions after review of this report, please feel free to contact either of the following at (704) 853-0800.

Sincerely yours,

EXCEL CIVIL & ENVIRONMENTAL ASSOCIATES

Thomas W. Garrison
Senior Project Manager

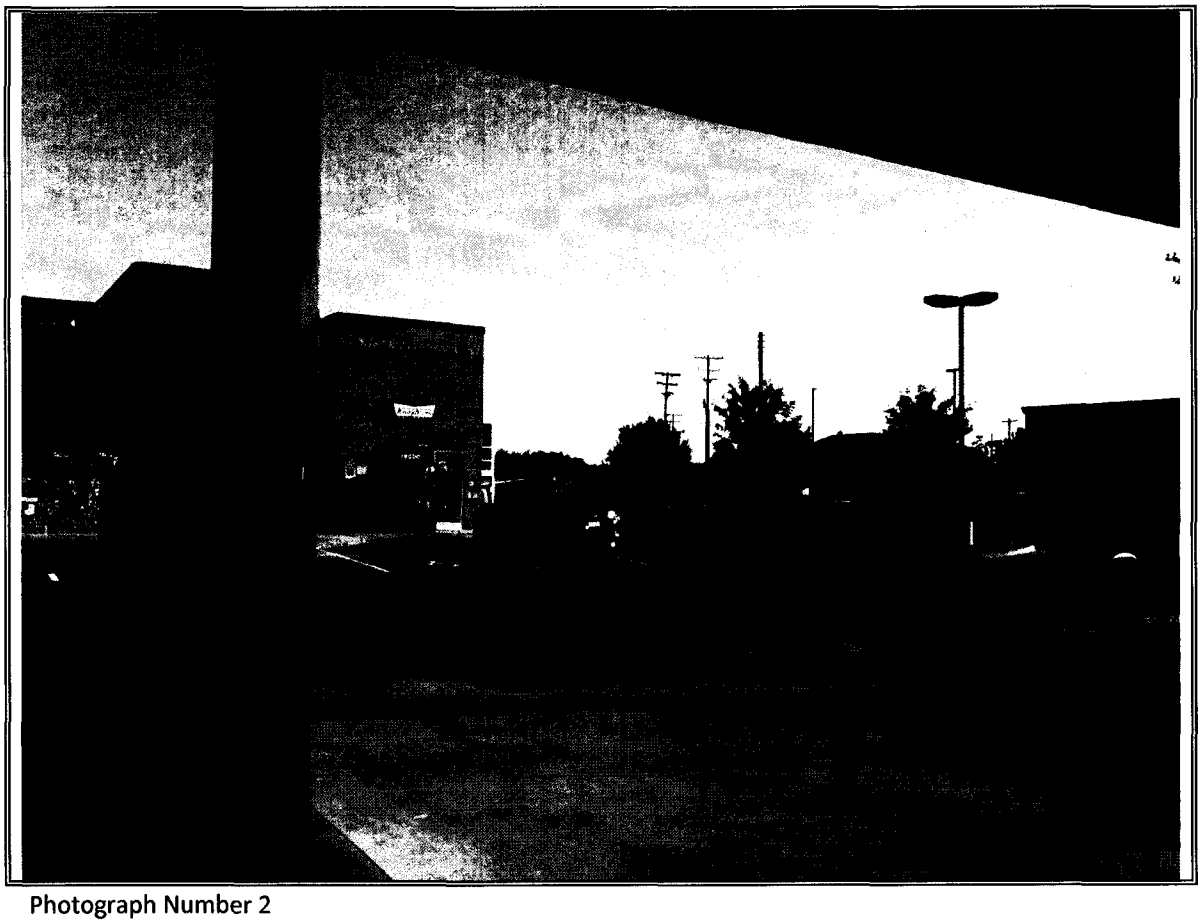
Michael T. Stanforth, P.E.
Project Engineer

ATTACHMENTS

Site Photographs

PHOTOGRAPH LOG	
PHOTOGRAPH NUMBER	**PHOTOGRAPH REVIEW & COMMENT**
1	View looking west towards subject dispenser pump from nearest catchbasin.
2	View looking northeast from area of spill towards nearest catchbasin.

Photograph Number 1



Photograph Number 2

UST-61 24-Hour Release and UST Leak Reporting Form.

For Releases in NC

This form should be completed and submitted to the UST Section's regional office following a known or suspected release from an underground storage tank (UST) system. This form is required to be submitted within 24 hours of discovery of a known or suspected release

(DWM USE ONLY)
Incident # _____ Risk (H,I,L,U)_____
Received On _____ Received By _____
Reported by (*circle one*): Phone, Fax or Report
Region _____

Suspected Contamination? (Y/N) N
Confirmed GW Contamination? (Y/N) N
Confirmed Soil Contamination ?(Y/N) N
Samples Taken?(Y/N) N
Free Product? (Y/N) N If Yes, State Greatest Thickness N/A

Facility ID Number 0-036164
Date Leak Discovered _____
Comm/Non-Commercial? Comm
Reg/Non-regulated? Reg

INCIDENT DESCRIPTION

Incident Name: Circle K # 1517

Address: 558 River Highway County: Iredell

City/Town: Mooresville, NC Zip Code: 28117

Regional Office (*circle one*): Asheville, (Mooresville,) Fayetteville, Raleigh, Washington, Wilmington, Winston-Salem

Latitude (decimal degrees): 35.59533 Longitude (decimal degrees): 80.869267

Obtained by:
- ☐ GPS
- ☐ Topographic map
- ☐ GIS Address matching
- ☐ Other
- ☐ Unknown

Describe location:

Briefly describe suspected or confirmed release: *(including but not limited to: nature of release, date of release, amount of release, amount of free product present and recovery efforts, initial responses conducted, impacts to receptors)*

20-27 gallons were spilled onto the concrete from a broken hose due to a drive off. Absorbent materials were immediately placed onto the spill and the fire department was contacted. The gasoline was contained.

HOW RELEASE WAS DISCOVERED (Release Code)

(Check one)

- ☐ Release Detection Equipment or Methods
- ☐ During UST Closure/Removal
- ☐ Property Transfer
- ☒ (Visual/Odor)
- ☐ Water in Tank
- ☐ Water Supply Well Contamination
- ☐ Groundwater Contamination
- ☐ Surface Water Contamination
- ☒ Other (specify) _____

SOURCE OF CONTAMINATION

Source of Release *(Check one to indicate primary source)*
- ☐ Tank
- ☐ Piping
- ☒ Dispenser
- ☐ Submersible Turbine Pump
- ☐ Delivery Problem
- ☐ Other
- ☐ Unknown

Definitions presented on reverse

Cause of Release *(Check one to indicate primary cause)*
- ☐ Spill
- ☒ Overfill
- ☐ Corrosion
- ☒ Physical or Mechanical Damage Drive off
- ☐ Install Problem
- ☐ Other
- ☐ Unknown

Definitions presented on reverse

Type of Release *(Check one)*
- ☒ Petroleum
- ☐ Non-Petroleum
- ☐ Both

Location *(Check one)*
- ☐ Facility
- ☐ Residence
- ☐ Other

Product Type Released *(Check one to indicate primary product type released)*
- ☒ (Gasoline/ Diesel/ Kerosene)
- ☐ Heating Oil
- ☐ Other Petroleum Products
- ☐ Metals
- ☐ Other Inorganics
- ☐ Other Organics
- ☐ Diesel/Veg. Oil Blend
- ☐ Vegetable Oil 100%
- ☒ E10 – E20
- ☐ E21 – E84
- ☐ E85 – E99
- ☐ Ethanol 100%
- ☐ E01 – E09

Ownership
1. Municipal 2. Military 3. Unknown (4. Private) 5. Federal 6. County 7. State

Operation Type
1. Public Service 2. Agricultural 3. Residential 4. Education/Relig. 5. Industrial (6. Commercial) 7. Mining

IMPACT ON DRINKING WATER SUPPLIES

Water Supply Wells Affected? 1. Yes (2. No) 3. Unknown

Number of Water Supply Wells Affected 0

Water Supply Wells Contaminated: (*Include Users Names, Addresses and Phone Numbers. Attach additional sheet if necessary*)

1. N/A
2.
3.

UST SYSTEM OWNER

UST Owner/Company			
Circle K Stores Inc			
Point of Contact		**Address**	
Heather Hermansen		2440 Whitehall Park Dr., Ste 800	
City	**State**	**Zip Code**	**Telephone Number**
Charlotte	NC	28273	704-583-5762

UST SYSTEM OPERATOR

UST Operator/Company			
Circle K Stores Inc		2440 Whitehall Park Dr., Ste 800	
City	**State**	**Zip Code**	**Telephone Number**
Charlotte	NC	28273	704-583-5762

LANDOWNER AT LOCATION OF UST INCIDENT

Landowner		Address	ATTN: Rob Duckworth, Jr.
RSD Food Market Real Estate Holding #2100, LLC		P.O. Box 3756	
City	**State**	**Zip Code**	**Telephone Number**
Mooresville	NC	28117	

Draw Sketch of Area (showing two major road intersections) or Attach Map

Person Reporting Incident Heather Hermansen	Company Circle K Stores Inc	Telephone Number 704/583-5762
Title Environmental Manager	Address 2440 Whitehall Park Dr., Ste 800 Charlotte NC 28273	Date 10/22/12

Definitions of Sources

Tank: means the tank that stores the product and is part of the underground storage tank system

Piping: means the piping and connectors running from the tank or submersible turbine pump to the dispenser or other end-use equipment (Vent, vapor recovery, or fill lines are excluded.)

Dispenser: includes the dispenser and the equipment used to connect the dispenser to the piping (e.g., a release from a suction pump or from components located above the shear valve)

Submersible Turbine Pump (STP) Area includes the submersible turbine pump head (typically located in the tank sump), the line leak detector, and the piping that connects the submersible turbine pump to the tank

Delivery Problem: identifies releases that occurred during product delivery to the tank. (Typical causes associated with this source are spills and overfills.)

Other: serves as the option to use when the release source is known but does not fit into one of the preceding categories (e.g., for releases from vent lines, vapor recovery lines, and fill lines)

Unknown: identifies releases for which the source has not been determined

Definitions of Causes

Spill: use this cause when a spill occurs (e.g., when the delivery hose is disconnected from the tank fill pipe or when the nozzle is removed from the dispenser)

Overfill: use when an overfill occurs (e.g., overfills may occur from the fill pipe at the tank or when the nozzle fails to shut off at the dispenser)

Physical or Mechanical Damage: use for all types of physical or mechanical damage, except corrosion (e.g., puncture of tank or piping, loose fittings, broken components, and components that have changed dimension)

Corrosion: use when a metal tank, piping, or other component has a release due to corrosion (e.g., for steel, corrosion takes the form of rust)

Installation Problem: use when the problem is determined to have occurred specifically because the UST system was not installed properly

Other: use this option when the cause is known but does not fit into one of the preceding categories (e.g., putting regulated substances into monitoring wells)

Unknown: use when the cause has not been determined

Excel Civil & Environmental Associates, PLLC
625 Huntsman Court
Gastonia, North Carolina 28054
NC License No. P-0129
Telephone: (704) 853-0800
Facsimile: (704) 853-3949
Internet: www.excelengr.com

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NCDENR
Division of Waste Management

NOV 15 2012

UST Section
Mooresville Regional Office

November 13, 2012

Mrs. Erin Fogarty
NCDENR / DWM / UST Section
Mooresville Regional Office
610 East Center Avenue
Mooresville, North Carolina 28115

Re: **Site Check Report**
Circle K No. 1517
558 River Highway
Mooresville, North Carolina
Risk Classification: **N/A**
Land Use: **N/A**
NCDENR Facility ID No. **0-036164**
NCDENR Incident No. **40116**
EXCEL Project No. **2012072**

Dear Mrs. Fogarty:

Oh behalf of Circle K Stores, Incorporated (Circle K), Excel Civil & Environmental Associates, PLLC (Excel) respectfully submits for your review and approval this Site Check Report for the above-referenced facility.

If you have any questions, please contact Thomas Garrison or myself.

Sincerely yours,

EXCEL CIVIL & ENVIRONMENTAL ASSOCIATES

M.T. Stanforth, P.E.
Principal Engineer

p.c. *Heather Hermansen – Circle K, Charlotte-NC*

SITE CHECK REPORT

CIRCLE K NO. 1517
558 RIVER HIGHWAY
MOORESVILLE, IREDELL COUNTY, NORTH CAROLINA

NCDENR FACILITY ID NO. **0-036164**
NCDENR INCIDENT NO. **40116**
EXCEL PROJECT NO. **2012072**

LATITUDE = 35.595632° / LONGITUDE = (-)80.869114°

Date submitted

November 13, 2012

Prepared for

Mrs. Heather Hermansen
Environmental Manager
Circle K Stores, Incorporated
2440 Whitehall Park Drive, Suite 800
Charlotte, North Carolina 28273

Prepared by

Excel Civil & Environmental Associates, PLLC
625 Huntsman Court
Gastonia, North Carolina 28054
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ecea
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NORTH CAROLINA PROFESSIONAL SEAL 26038 ENGINEER MICHAEL TRENT STANFORTH 11/14/12

Thomas W. Garrison, III
Senior Project Manager

Michael T. Stanforth, P.E., DEE
Principal Engineer

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1.0 INTRODUCTION

Excel Civil & Environmental Associates, PLLC (Excel) was contracted by Mrs. Heather Hermansen of Circle K Stores, Incorporated (Circle K) to complete site check activities for their Circle K No. 1517 facility located at 558 River Highway located inside the incorporated limits of Mooresville, Iredell County, North Carolina (refer to **Figure 1**). This assessment was conducted as a result of a Notice of Regulatory Requirements issued by the NCDENR, Division of Waste Management dated September 25, 2012. The following report will discuss the site check activities conducted by Excel during the month of October 2012 and activities conducted by others in August 2012. The site check and Initial Abatement Action (IAA) activities completed by Excel included the installation of twenty-five (25) soil borings, site reconnaissance, soil sampling with associated laboratory analysis and the completion of this report.

2.0 BACKGROUND INFORMATION

2.1 AREA OF INVESTIGATION

The facility is located on the north side of River Highway (NC Highway 150) at the intersection of River Highway and Bluefield Road inside the incorporated limits of Mooresville, North Carolina. The facility is located on one (1) parcel of land totaling approximately 1.870-acres in size and being utilized as an active convenience store/gas station. River Highway tracks in an east-west direction along the southern perimeter of the subject property with Bluefield Road tracking in a north-south direction along the eastern perimeter. Bounding the property in all directions are commercial properties

A total of three (3) regulated underground storage tanks (USTs) containing various grades of gasoline and diesel fuel are located onsite for retail sales which distribute petroleum through a total of twenty-four (24) dispenser pumps (twelve islands, two pumps per island). The current tank sizes are as follows; UST No. 1 - 20,000-gallon gasoline; UST No. 2A - 12,000-gallon gasoline; UST No. 2B - 6,000-gallon diesel; and UST No. 3 - 3,000-gallon gasoline. At the time of this assessment, structures located onsite consisted of a one-story convenience store, a fuel canopy with the associated UST system, asphalt/concrete parking/drive areas and a carwash (refer to **Figure 2**).

The subject site is located in the Carolina Slate Belt of the Inner Piedmont Physiographic Province of North Carolina, the elevation in the area of investigation is approximately 890-feet above mean sea level (refer to **Figure 1**). The majority of the site is covered by impervious surfacing (i.e. buildings, asphalt, concrete, etc...). The general topography of the site slopes from the outer edges of the property perimeter towards the inner parking areas of the property. Surface drainage generally follows the general topography of the site and ultimately discharges to a pond located northwest of the subject property which feeds Byers Creek.

Based on information obtained from a Site Check Report completed by Geological Resources, Incorporated (GRI) in September 2012, four (4) of thirteen (13) soil samples collected during initial site check activities were found to be slightly above the NCDENR action level of 10-mg/kg for TPH-DRO. The quantity of the release at this time, at these locations is not known and appears to be localized surrounding the four dispensers and possibly from minor spillage generated from fueling operations by customers.

2.2 RECEPTOR SURVEY

As part of the site check activities, Excel conducted a limited receptor survey by vehicular reconnaissance within the immediate area surrounding the subject site. As a result of this survey, Excel identified two (2) water supply wells located 1,000-feet of the subject property (refer to **Figure 3**). According to information received from Sharon Ghiold of the NCDENR, Raleigh Regional Office, UST Section, supply well SW-1 has historically been impacted with gasoline constituents. It should be noted that supply well SW-1 is located adjacent and downgradient to a LUST facility referred to as the (Former) Country Corner Marina (NCDENR Incident No. **5406**) and that no Gasoline Range Organics were discovered in onsite soils above laboratory method detection limits. The nearest surface water body is an unnamed pond located approximately 1,200-feet northwest of the subject site and feeds an unnamed tributary of Byers Creek. In addition, the site does not appear to be located within a wellhead protection area and is not located within the Coastal Plain Physiographic Province of North Carolina.

2.3 PREVIOUS INVESTIGATIONS

As requested by the NCDENR, in June 2012 hydrostatic testing was completed on all spill buckets, tank containment sumps and dispenser sumps of which the premium UST sump and all dispenser sumps reportedly failed. Geological Resources, Incorporated (GRI) was contracted by Circle K in August 2012 to collect soil samples adjacent to all containment sumps that failed testing as required by the NCDENR. GRI installed thirteen (13) soil borings via hand-auger to a reported depth of 3-fbgl immediately adjacent to all the dispenser islands and the premium UST sump. Soil samples were collected for laboratory analysis of both TPH-Diesel and Gasoline Range Organics (TPH-DRO & GRO) by EPA Method 3550 and 5030, respectively. Laboratory data indicated that TPH-DRO was detected in four of the soil samples at concentrations ranging from 12.7-mg/kg to 37.2-mg/kg, levels which slightly exceeds the NCDENR agency action level of 10-mg/kg. Additionally, TPH-GRO was not detected in any of the soil samples at levels above the laboratory reporting limit. The Site Check Report was submitted by GRI on September 5, 2012 to the NCDENR, UST Section and subsequently a "Notice of Regulatory Requirements" was issued by the UST Section on September 25, 2012 requesting a site check be conducted at the site for the entire system.

A follow-up request was made by Excel to Mrs. Erin Fogarty of the NCDENR, UST Section on October 2, 2012 to complete risk-based soil sampling at previously identified impacted areas by GRI as part of site check or IAA activities (refer to **Appendix C** for record of communication). As requested by Mrs. Fogarty, remaining soil sampling would be completed to fulfill site check requirements for the entire system. Excel was contracted to conduct site check activities in October 2012 as per the current NCDENR guidelines which included the installation of twenty-one (21) additional soil borings, collection of twenty-three (23) soil samples for laboratory analysis of the required TPH methods and completion of a receptor survey conducted surrounding the subject facility. As part of the IAA activities, four (4) soil samples were collected from the locations of samples previously found to contain TPH-DRO levels above the agency action level and laboratory analyzed for the suite of risk-based analysis typically required for a diesel release. The afore-mentioned activities and findings are summarized in subsequent sections of this report.

3.0 GEOLOGIC FRAMEWORK

3.1 REGIONAL GEOLOGY

Geologically, the subject site is located in the Carolina Slate Belt of the Inner Piedmont Physiographic Province of North Carolina. The 1985 Geologic Map of North Carolina indicates this area as being underlain by grantic rock characterized as mega-crystic to equigranular. During drilling activities conducted by Excel, no rock or groundwater was encountered to a terminal depth of approximately 14-fbgl.

3.2 Site Geology

During the completion of soil borings on October 24, 2012, overburden soils surrounding the UST basin were observed to consist of a reddish-orange, silt-clay mixture from grade to approximately 14-fbgl (refer to **Appendix A** for soil boring logs). Lithology beneath the canopy area varied consisting of a reddish-orange, silt-clay mixture and a gray, silt material which appeared to be a process backfill material. The type of soils observed at the drilling locations appear consistent with the surficial sediments common for this area with exceptions noted above. Additionally, no soil samples collected by Excel displayed any initial evidence of potential impact (i.e. staining, organic vapors, etc...).

4.0 FIELD ACTIVITIES

As part of the site check activities, Excel performed a reconnaissance for areas of potential vapor intrusion at the site. The field inspection revealed no areas of immediate concern for vapor collection/intrusion (storm sewer catchbasins, subterranean structures, etc....). Additionally, Precision Tank Service, Incorporated (PTS) was contracted by Circle K to complete tank tightness testing in June 2012, results of the testing reportedly indicated all equipment tested tight, (testing reports were previously submitted to the NCDENR by Circle K).

As part of the site check and IAA activities, to assess underlying soil conditions, Excel mobilized to the site both an Earthprobe® Model No. 2000, truck-mounted drill-rig and a Geoprobe® 7822DT track-mounted drill-rig on October 24, 2012 for the installation of twenty-five (25) soil borings located as shown on **Figure 4**. A total of twenty-seven (27) soil samples were collected during drilling activities at approximately 2 to 4-fbgl or 12 to 14-fbgl to coincide with the approximated depths of the product lines or USTs, respectively. Descriptions regarding soil classification, color, geologic and/or sedimentary structures and staining were detailed in soil boring logs included in **Appendix A**. Wearing new latex gloves, Excel personnel inspected the samples for soil characteristics and evidence of hydrocarbon compounds; soil descriptions were recorded on subsurface logs.

Soil samples collected on October 24, 2012 were submitted to Environmental Science Corporation (ESC) of Mt. Juliet, Tennessee for analysis by the following methods as applicable:

- Total Petroleum Hydrocarbons, Diesel Range Organics by EPA Method 3550;
- Total Petroleum Hydrocarbons, Gasoline Range Organics by EPA Method 5030;
- Volatile & Semivolatile Organics by EPA Methods 8260 & 8270, respectively;
- and MADEP EPH & VPH.

5.0 LABORATORY ANALYSIS

As previously mentioned, Excel collected a total of twenty-three (23) soil samples to complete site check activities which were analyzed at a minimum for TPH-GRO by EPA Method 5030 with some samples also analyzed for TPH-DRO by EPA Method 3550 as applicable. All soil samples collected by Excel in October 2012 were found to be below laboratory detection limits for both TPH-DRO & GRO (refer to **Table 1** and **Figure 5**). Review of the initial site check activities conducted by GRI in August 2012 indicated that four of the thirteen soil samples collected indicated TPH-DRO levels ranging from 12.7-mg/kg to 37.2-mg/kg which exceeds the NCDENR agency action level of 10-mg/kg (refer to refer to **Table 1** and **Figure 5**).

Due to the relatively low levels of TPH-DRO contamination and in an attempt to further assess impacted areas as previously identified by GRI, soil samples were collected at the locations of DISP 5/6, DISP 9/10, DISP 17/18 and DISP 23/24 (areas found to be above NCDENR action levels for TPH-DRO) for risk-based analysis. Soil samples were submitted for laboratory analysis of volatile organics by EPA Method 8260, semivolatile organics EPA Method 8270 and MADEP Methods EPH and VPH. The soil samples collected by Excel in October 2012 at the above referenced locations were found to be below the Soil-to-Water Maximum Soil Contaminant Concentrations (MSCCs) for all constituents (refer to **Table 2**). The analytical laboratory report for the soil sampling activities and associated chain of custody (C.O.C.) forms are presented in **Appendix B**.

6.0 SUMMARY & RECOMMENDATIONS

- Site check activities and the associated report have been completed by Excel along with additional Initial Abatement Action activities. Soil samples collected as part of the assessment activities were found to be below both the NCDENR Agency Action Levels for TPH-DRO & GRO and below the Soil-to-Water MSCCs for risk-based analysis for all constituents (refer to **Table 1** and **Table 2**);

- Tank tightness testing completed by PTS in June 2012 reportedly indicates the system tested tight;

- During completion of the limited receptor survey, Excel identified two (2) water supply well located within 1,000-feet of the subject property (refer to **Figure 3**). According to information received from Sharon Ghiold of the NCDENR, Raleigh Regional Office, UST Section, supply well SW-1 has historically been impacted with gasoline constituents. It should be noted that supply well SW-1 is located adjacent and downgradient to a LUST facility referred to as the (Former) Country Corner Marina (NCDENR Incident No. **5406**) and that no Gasoline Range Organics were discovered in onsite soils above laboratory method detection limits.

  Additionally regarding receptors, the site does not appear to be located within a wellhead protection area and is not located within the Coastal Plain Physiographic Province of North Carolina;

- Based on the information in this report, Excel recommends no further assessment be required for Incident No. **40116** and the incident be closed through the issuance of a "No Further Action" Letter by the UST Section.

7.0 LIMITATIONS

This report is based on a limited number of soil and groundwater samples and chemical analyses. The conclusions presented in this report are based only on the observations made during this investigation and data provided by others. Subsurface conditions may vary significantly with time, particularly with respect to groundwater elevations and quality. Conclusions and recommendations set forth herein are applicable only to the facts and conditions described at the time of this report.

In performing its professional services, Excel uses that degree of care and skill exercised under similar circumstances by members of the environmental profession practicing in the same or similar locality under similar conditions. The standard of care shall be judged exclusively as of the time these services are rendered and not according to later standards. Excel makes no express or implied warranty beyond its conformance to this standard. Excel shall not be responsible for conditions or consequences arising from relevant facts that were concealed, withheld or not fully disclosed for this report. Excel believes that all information contained in this report is factual, but no guarantee is made or implied.

8.0 REFERENCES

Driscoll, "Groundwater and Wells", 2nd edition, (St. Paul, Minnesota, Johnson Division).

R. Perry and C. Chilton, "Chemical Engineer's Handbook", 5th edition, (New York: McGraw Hill, Inc. 1973).

"Guidelines for Assessment and Corrective Action for UST Releases" completed by the UST Section of the NCDENR, Division of Waste Management dated December 1, 2008 and any applicable amendments.

Geological Resources, Incorporated, September 5, 2012, "Site Check Report".

LIST OF TABLES

Table 1 - Site Check Data Summary
Circle K No. 1517
558 River Highway
Mooresville, North Carolina

SAMPLE ID & LOCATION	DATE COLLECTED	DEPTH	TPH-DRO	TPH-GRO
STP-Premium*	7-Aug-12	3 FBGL	< 3.4	< 2.9
DISP 1/2*			< 3.5	< 3
DISP 3/4*			< 3.5	< 3.4
DISP 5/6*			**32.8**	< 3.5
DISP 7/8*			< 4.6	< 6.2
DISP 9/10*			**12.7**	< 2.8
DISP 11/12*			< 3.3	< 3.3
DISP 13/14*			< 3.5	< 3.2
DISP 15/16*			< 3.9	< 3
DISP 17/18*			**18.9**	< 2.7
DISP 19/20*			< 3.4	< 3.6
DISP 21/22*			< 3.4	< 3.2
DISP 23/24*			**37.2**	< 3.5
SS-1	24-Oct-12	2-4 FBGL	NOT APPLICABLE	< 0.17
SS-2			< 4.8	< 0.15
SS-3			< 4.9	< 6.1
SS-4			NOT APPLICABLE	< 6
SS-5			< 4.9	< 7
SS-6			< 5	< 8.3
SS-7			NOT APPLICABLE	< 6.3
SS-8			< 5.1	< 8.1
SS-9			< 5	< 6.7
SS-10		12-14 FBGL	NOT APPLICABLE	< 6.1
SS-11				< 6
SS-12				< 7.4
SS-13				< 6.2
SS-14			< 5.6	< 7.3
SS-15			NOT APPLICABLE	< 5.5
SS-16				< 5.8
SS-17				< 6.6
SS-18				< 6.6
SS-19				< 5
SS-20 (2')		2-4 FBGL	< 4.8	< 5.6
SS-20 (12')		12-14 FBGL	< 4.8	< 6
SS-21 (2')		2-4 FBGL	< 5.2	< 5.6
SS-21 (12')		12-14 FBGL	< 5.1	< 5.3
NCDENR ACTION LEVELS			**10**	**10**

NOTES:

* - Indicates sample collected by GRI

Data provided in mg/kg

DRO - Diesel Range Organics

FBGL - Feet Below Grade Level

GRO - Gasoline Range Organics

Highlighted data represents levels above NCDENR Action Levels

Table 2 - IAA Data Summary
Circle K No. 1517
558 River Highway
Mooresville, North Carolina

[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	Soil-to-Water MSCCs
DATE SAMPLED	24-Oct-12				
EPH C_9 - C_{18} Aliphatics	< 7.9	< 7.8	< 8	< 7.8	--
EPH C_{19} - C_{36} Aliphatics	< 7.9	< 7.8	< 8	< 7.8	--
EPH C_{11} - C_{22} Aromatics	< 7.9	< 7.8	< 8	< 7.8	--
VPH C_5 - C_8 Aliphatics	11	< 7.2	< 8.4	< 6.2	68
VPH C_9 - C_{12} Aliphatics	15	< 7.2	< 8.4	< 6.2	--
VPH C_9 - C_{10} Aromatics	< 6.7	< 7.2	< 8.4	< 6.2	--
TOTAL C_9 - C_{18} Aliphatics	15	BDL	BDL	BDL	540
TOTAL C_9 - C_{22} Aromatics	BDL	BDL	BDL	BDL	31
BENZENE	< 0.0014	< 0.0012	< 0.0014	< 0.0012	0.0056
TOLUENE	< 0.007	< 0.006	< 0.0071	< 0.006	4.3
ETHYLBENZENE	< 0.0014	< 0.0012	< 0.0014	< 0.0012	4.9
XYLENES	< 0.0042	< 0.0036	< 0.0043	< 0.0036	4.6
MTBE	< 0.0014	< 0.0012	< 0.0014	< 0.0012	0.091
NAPHTHALENE	< 0.007	< 0.006	< 0.0071	< 0.006	0.16
1,2,4-TRIMETHYLBENZENE	0.0017	< 0.0012	< 0.0014	< 0.0012	8.5

NOTES:

BDL - Below Detection Limits

Data in mg/kg

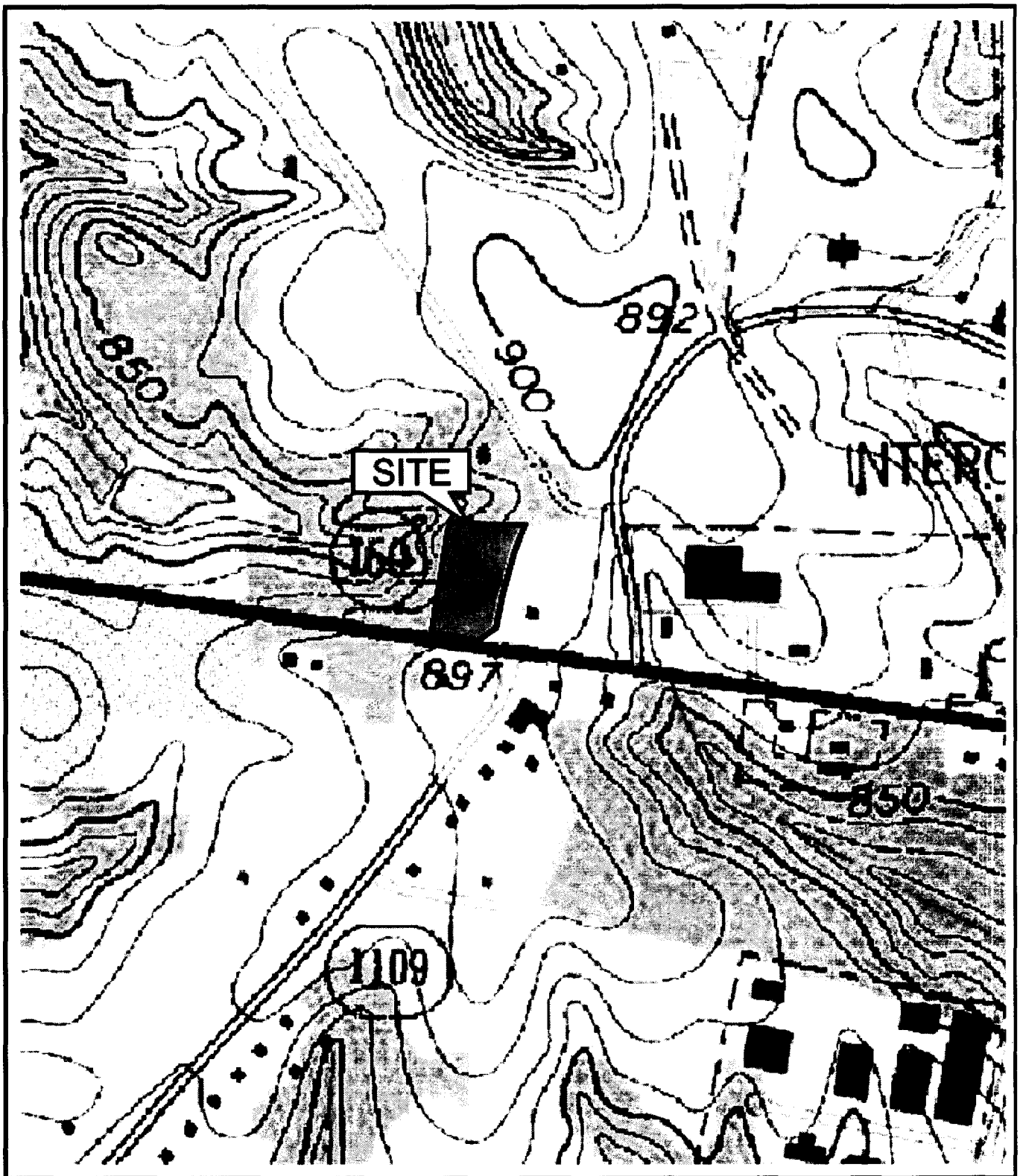
EPH - Extractable Petroleum Hydrocarbons

MSCCs - Maximum Soil Contaminant Concentrations

MTBE - Methyl Tert Butyl Ether

VPH - Volatile Petroleum Hydrocarbons

LIST OF FIGURES



EXCEL CIVIL & ENVIRONMENTAL
ASSOCIATES, PLLC
625 HUNTSMAN COURT
GASTONIA, NC 28054
(704) 853-08000

FIGURE 1 – SITE VICINITY MAP

Excel Project Number 2012072

Source: www.terraserver-usa.com

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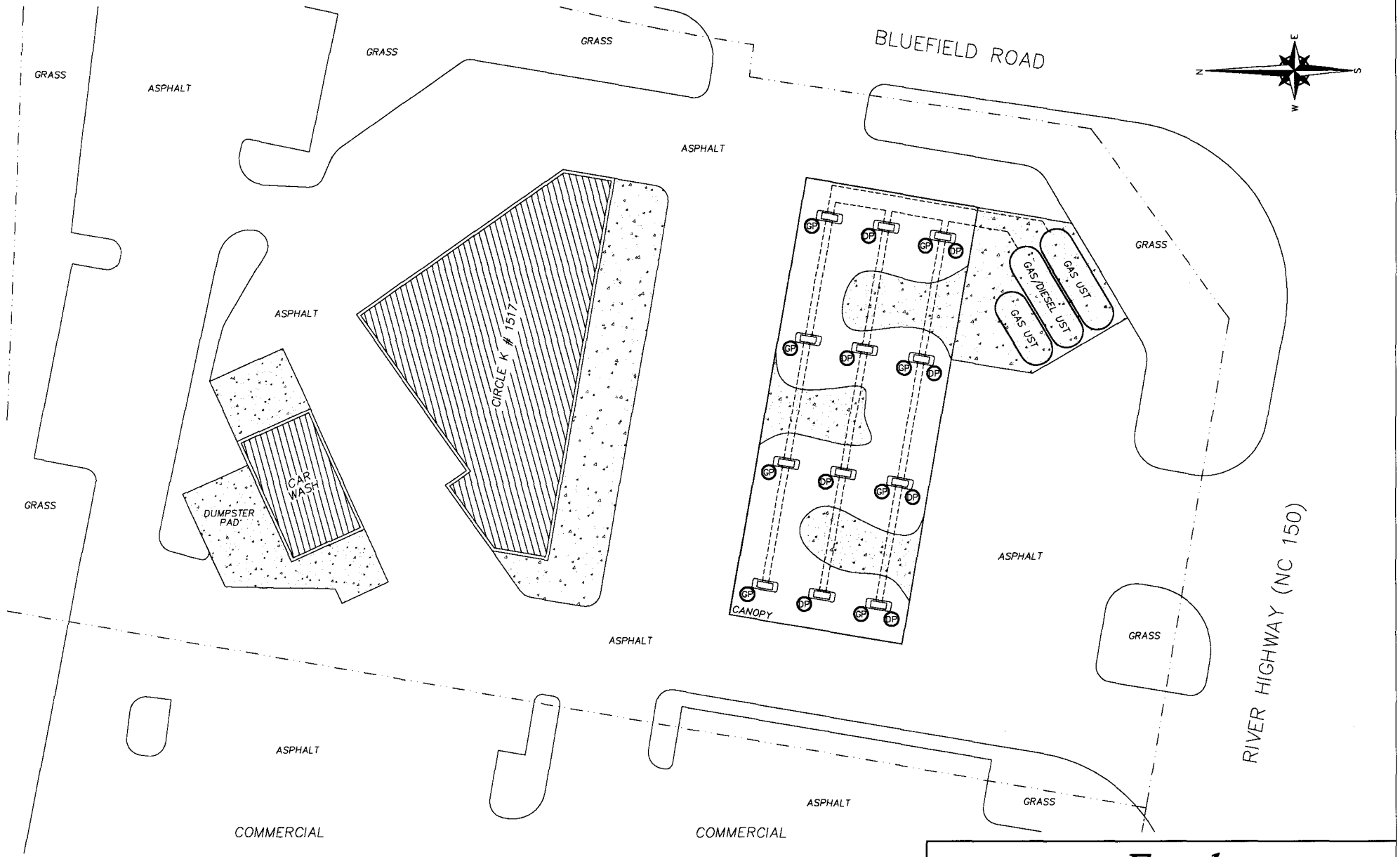


LEGEND

- Property Line (Approx)
- Right-of-Way (Approx)
- Product Line Trench (Approx)
- Underground Tank (Approx)

NOTES

Map adapted from aerial photograph from Iredell County GIS.

Structure locations are approximate

DP – Diesel Dispenser

GP – Gas Dispenser

UST – Underground Storage Tank

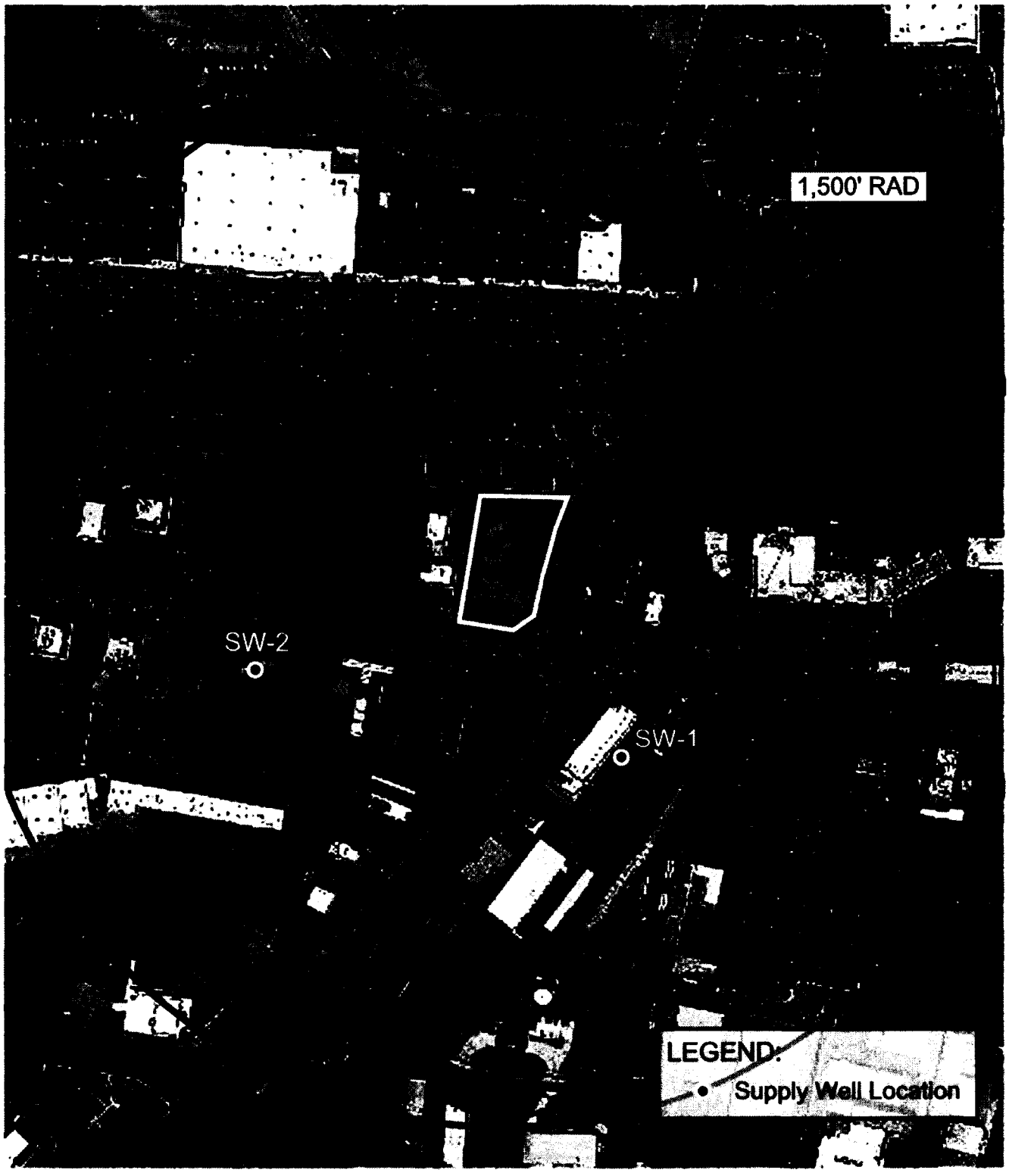
Excel

Civil & Environmental Associates, PLLC

625 HUNTSMAN COURT, GASTONIA, NC 28054 PHONE : (704) 853-0000

PREPARED FOR :	*CIRCLE K STORES, INCORPORATED* *CIRCLE K NO. 1517* *558 RIVER HIGHWAY, MOORESVILLE, NC*
MAP TITLE :	*FIGURE 2 - SITE PLAN* *SITE CHECK REPORT*

PROJECT NO. :	DRAWN BY :	SCALE :	DATE :
2012072	TWG	1" = 40'	11/4/12



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GASTONIA, NC 28054
(704) 853-08000

FIGURE 3 – POTABLE WELLS MAP

Excel Project Number 2012072

Source: www.co.iredell.nc.us

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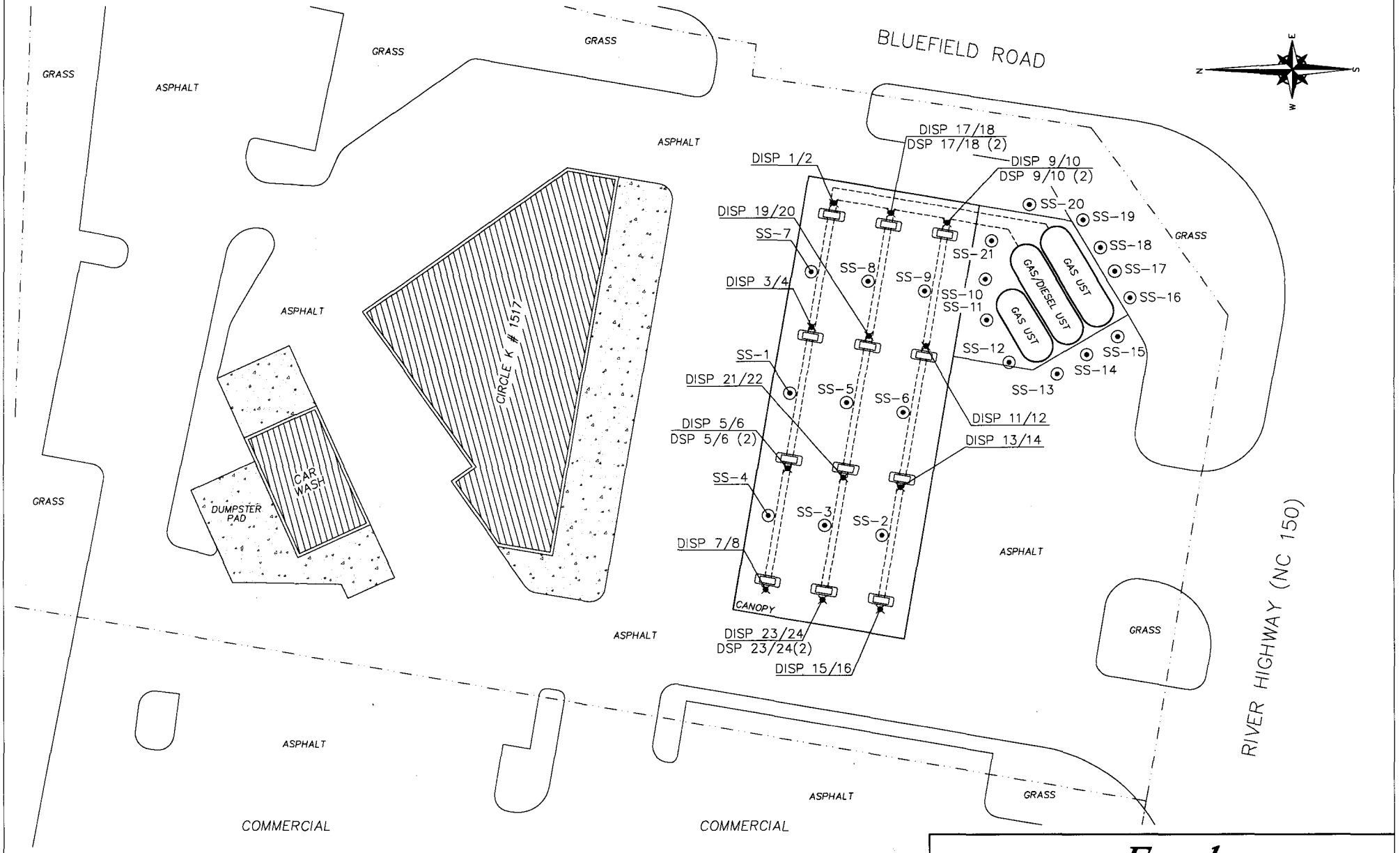


LEGEND

- Property Line (Approx)
- Right-of-Way (Approx)
- Product Line Trench (Approx)
- Underground Tank (Approx)
- Soil Boring Location (Excel)
- Soil Boring Location (GRI)

NOTES

Map adapted from aerial photograph from Iredell County GIS.

Structure locations are approximate

UST ~ Underground Storage Tank

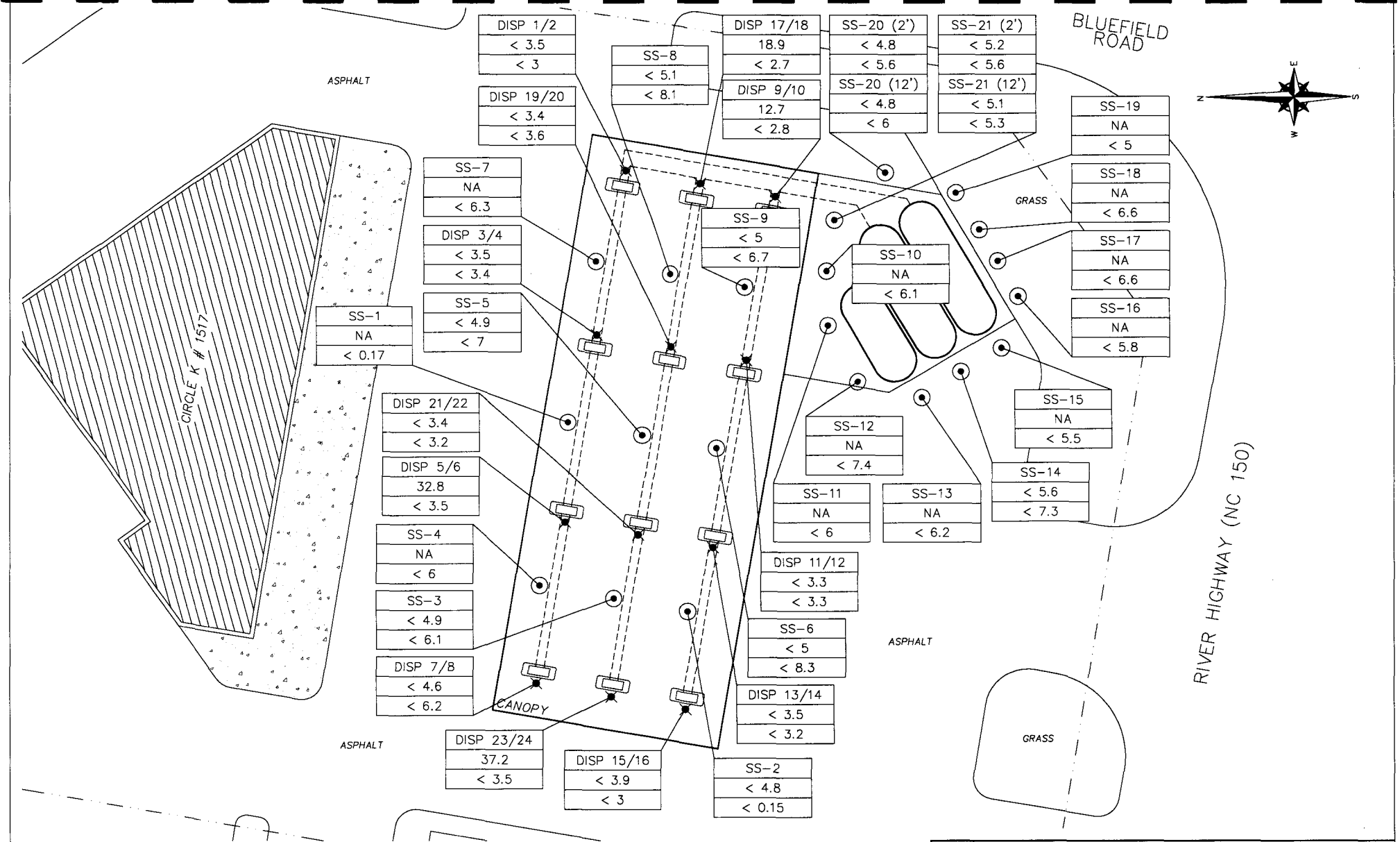
Excel

Civil & Environmental Associates, PLLC

635 HUNTSMAN COURT, GASTONIA, NC 28054 PHONE : (704) 853-0000

PREPARED FOR :	*CIRCLE K STORES, INCORPORATED* *CIRCLE K NO. 1517* *558 RIVER HIGHWAY, MOORESVILLE, NC*
MAP TITLE :	*FIGURE 4 - SAMPLING LOCATIONS MAP* *SITE CHECK REPORT*

PROJECT NO. :	DRAWN BY :	SCALE :	DATE :
2012072	TWG	1" = 40'	11/4/12



LEGEND

- Property Line (Approx)
- Right-of-Way (Approx)
- Product Line Trench (Approx)
- Underground Tank (Approx)
- Soil Boring Location (Excel)
- Soil Boring Location (GRI)

Sample ID
TPH-DRO
TPH-GRO

Data Box Legend

NOTES

Map adapted from aerial photograph from Iredell County GIS.

Structure locations are approximate

DRO – Diesel Range Organics

GRO – Gasoline Range Organics

Data provided in mg/kg

Data from samples collected on 8/7/12 & 10/24/12

NA – Not Applicable

Excel
Civil & Environmental Associates, PLLC
625 HUNTSMAN COURT, GASTONIA, NC 28054 PHONE : (704) 853-8000

PREPARED FOR :	*CIRCLE K STORES, INCORPORATED* *CIRCLE K NO. 1517* *558 RIVER HIGHWAY, MOORESVILLE, NC*
MAP TITLE :	*FIGURE 5 - TPH IN SOILS MAP* *SITE CHECK REPORT*

PROJECT NO. :	DRAWN BY :	SCALE :	DATE :
2012072	TWG	1" = 30'	11/4/12

LIST OF APPENDICES

APPENDIX A – SOIL BORING LOG(S)

APPENDIX B – LABORATORY REPORTS & CHAIN OF CUSTODY FORM(S)

APPENDIX C – ANCILLARY ITEMS

APPENDIX A

SOIL BORING LOG(S)

Boring / Well Construction Log

Well Construction Permit Number --NA--

ecea
Excel Civil & Environmental Associates
Quality • Reliability • Integrity • Professionality

I. D. Number:	SS-1	**Purpose:**	Environmental Assessment
Project Name:	Circle K No. 1517	**Contractor:**	ECEA
Project No:	2012072	**Registration No:**	--
Field Personnel:	T. Garrison	**Driller:**	J. McGraw
Start Date:	24-Oct-12 **Complete Date:** 24-Oct-12	**Equipment:**	Geoprobe® 7822DT Track Rig

Drilling Method:	Direct-push, hand-auger
Comments:	Soil sample collected from 2-fbgl to 4-fbgl
	Boring backfilled with recovered material and grouted following sample completion.

Well Construction Information		**Depth (BGL)**	**Soil / Rock Description / Comments**	**USCS Symbol / SPT "N_{field}" Value (bpf)**
Borehole Dia.	Not Applicable	0 - 1'	Concrete & ABC Stone	--
Manhole Dia.				
Riser Material		1' - 2'	Dark gray, silt material (processed backfill), dry, no odor.	ML / --
Diameter				
Screen Material		2' - 4'	Reddish orange, silt-clay mixture, dry, no odor.	CL / --
Diameter				
Riser Interval		--	Boring terminated at target depth of 4-fbgl, no refusal or	--
Screen Interval			groundwater encountered prior to completion	
Slot Size				
Grout Type				
Interval				
Bentonite Type				
Interval				
Filter Pack				
Interval				
Total Depth				
R.P. Elevation				
Datum				
Water Level Information				
Date - Elaps Min	**W.L. Below R.P.**			
Not Applicable				

R.P. = Reference Point *W.L. = Water Level* *TBM = Temporary Benchmark* *BGL = Below Grade Level*

NA = Not Applicable

Note: Classification is based on field observation not laboratory sieve analysis.

Boring / Well Construction Log

Well Construction Permit Number --NA--

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I. D. Number:	SS-2	**Purpose:**	Environmental Assessment
Project Name:	Circle K No. 1517	**Contractor:**	ECEA
Project No:	2012072	**Registration No:**	--
Field Personnel:	T. Garrison	**Driller:**	J. McGraw
Start Date:	24-Oct-12 **Complete Date:** 24-Oct-12	**Equipment:**	Geoprobe® 7822DT Track Rig

Drilling Method:	Direct-push, hand-auger
Comments:	Soil sample collected from 2-fbgl to 4-fbgl
	Boring backfilled with recovered material and grouted following sample completion.

Well Construction Information		**Depth (BGL)**	**Soil / Rock Description / Comments**	**USCS Symbol / SPT "N_{field}" Value (bpf)**
Borehole Dia.	Not Applicable	0 - 1'	Concrete & ABC Stone	--
Manhole Dia.				
Riser Material		1' - 2'	Dark gray, silt material (processed backfill), dry, no odor.	ML / --
Diameter				
Screen Material		2' - 4'	Reddish orange, silt-clay mixture, dry, no odor.	CL / --
Diameter				
Riser Interval		--	Boring terminated at target depth of 4-fbgl, no refusal or	--
Screen Interval			groundwater encountered prior to completion	
Slot Size				
Grout Type				
Interval				
Bentonite Type				
Interval				
Filter Pack				
Interval				
Total Depth				
R.P. Elevation				
Datum				
Water Level Information				
Date - Elaps Min	**W.L. Below R.P.**			
Not Applicable				

R.P. = Reference Point *W.L. = Water Level* *TBM = Temporary Benchmark* *BGL = Below Grade Level*
NA = Not Applicable
Note: Classification is based on field observation not laboratory sieve analysis.

Boring / Well Construction Log

Well Construction Permit Number --NA--

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I. D. Number:	SS-3	**Purpose:**	Environmental Assessment
Project Name:	Circle K No. 1517	**Contractor:**	ECEA
Project No:	2012072	**Registration No:**	--
Field Personnel:	T. Garrison	**Driller:**	J. McGraw
Start Date:	24-Oct-12 **Complete Date:** 24-Oct-12	**Equipment:**	Geoprobe® 7822DT Track Rig

Drilling Method:	Direct-push, hand-auger
Comments:	Soil sample collected from 2-fbgl to 4-fbgl
	Boring backfilled with recovered material and grouted following sample completion.

Well Construction Information		**Depth (BGL)**	**Soil / Rock Description / Comments**	**USCS Symbol / SPT "N_{field}" Value (bpf)**
Borehole Dia.	Not Applicable	0 - 1'	Concrete & ABC Stone	--
Manhole Dia.				
Riser Material		1' - 2'	Dark gray, silt material (processed backfill), dry, no odor.	ML / --
Diameter				
Screen Material		2' - 4'	Reddish orange, silt-clay mixture, dry, no odor.	CL / --
Diameter				
Riser Interval		--	Boring terminated at target depth of 4-fbgl, no refusal or	--
Screen Interval			groundwater encountered prior to completion	
Slot Size				
Grout Type				
Interval				
Bentonite Type				
Interval				
Filter Pack				
Interval				
Total Depth				
R.P. Elevation				
Datum				
Water Level Information				
Date - Elaps Min	**W.L. Below R.P.**			
Not Applicable				

R.P. = Reference Point *W.L. = Water Level* *TBM = Temporary Benchmark* *BGL = Below Grade Level*

NA = Not Applicable

Note: Classification is based on field observation not laboratory sieve analysis.

Boring / Well Construction Log

Well Construction Permit Number --NA--

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I. D. Number:	SS-4	**Purpose:**	Environmental Assessment
Project Name:	Circle K No. 1517	**Contractor:**	ECEA
Project No:	2012072	**Registration No:**	--
Field Personnel:	T. Garrison	**Driller:**	J. McGraw
Start Date:	24-Oct-12 **Complete Date:** 24-Oct-12	**Equipment:**	Geoprobe® 7822DT Track Rig

Drilling Method:	Direct-push, hand-auger
Comments:	Soil sample collected from 2-fbgl to 4-fbgl
	Boring backfilled with recovered material and grouted following sample completion.

Well Construction Information		Depth (BGL)	Soil / Rock Description / Comments	USCS Symbol / SPT "N_{field}" Value (bpf)
Borehole Dia.	Not Applicable	0 - 1'	Concrete & ABC Stone	--
Manhole Dia.				
Riser Material		1' - 3'	Dark gray, silt material (processed backfill), dry, no odor.	ML / --
Diameter				
Screen Material		3' - 4'	Reddish orange, silt-clay mixture, dry, no odor.	CL / --
Diameter				
Riser Interval		--	Boring terminated at target depth of 4-fbgl, no refusal or	--
Screen Interval			groundwater encountered prior to completion	
Slot Size				
Grout Type				
Interval				
Bentonite Type				
Interval				
Filter Pack				
Interval				
Total Depth				
R.P. Elevation				
Datum				
Water Level Information				
Date - Elaps Min	**W.L. Below R.P.**			
Not Applicable				

R.P. = Reference Point *W.L. = Water Level* *TBM = Temporary Benchmark* *BGL = Below Grade Level*
NA = Not Applicable
Note: Classification is based on field observation not laboratory sieve analysis.

Boring / Well Construction Log

Well Construction Permit Number --NA--

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I. D. Number:	SS-5	**Purpose:**	Environmental Assessment
Project Name:	Circle K No. 1517	**Contractor:**	ECEA
Project No:	2012072	**Registration No:**	--
Field Personnel:	T. Garrison	**Driller:**	J. McGraw
Start Date:	24-Oct-12 **Complete Date:** 24-Oct-12	**Equipment:**	Geoprobe® 7822DT Track Rig

Drilling Method:	Direct-push, hand-auger
Comments:	Soil sample collected from 2-fbgl to 4-fbgl
	Boring backfilled with recovered material and grouted following sample completion.

Well Construction Information		**Depth (BGL)**	**Soil / Rock Description / Comments**	**USCS Symbol / SPT "N_{field}" Value (bpf)**
Borehole Dia.	Not Applicable	0 - 1'	Concrete & ABC Stone	--
Manhole Dia.				
Riser Material		1' - 4'	Dark gray, silt material (processed backfill), dry, no odor.	ML / --
Diameter				
Screen Material		--	Boring terminated at target depth of 4-fbgl, no refusal or	--
Diameter			groundwater encountered prior to completion	
Riser Interval				
Screen Interval				
Slot Size				
Grout Type				
Interval				
Bentonite Type				
Interval				
Filter Pack				
Interval				
Total Depth				
R.P. Elevation				
Datum				
Water Level Information				
Date - Elaps Min	**W.L. Below R.P.**			
Not Applicable				

R.P. = Reference Point *W.L. = Water Level* *TBM = Temporary Benchmark* *BGL = Below Grade Level*
NA = Not Applicable
Note: Classification is based on field observation not laboratory sieve analysis.

Boring / Well Construction Log

Well Construction Permit Number --NA--

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I. D. Number:	SS-6	**Purpose:**	Environmental Assessment
Project Name:	Circle K No. 1517	**Contractor:**	ECEA
Project No:	2012072	**Registration No:**	--
Field Personnel:	T. Garrison	**Driller:**	J. McGraw
Start Date:	24-Oct-12 **Complete Date:** 24-Oct-12	**Equipment:**	Geoprobe® 7822DT Track Rig

Drilling Method:	Direct-push, hand-auger
Comments:	Soil sample collected from 2-fbgl to 4-fbgl
	Boring backfilled with recovered material and grouted following sample completion.

Well Construction Information		**Depth (BGL)**	**Soil / Rock Description / Comments**	**USCS Symbol / SPT "N_{field}" Value (bpf)**
Borehole Dia.	Not Applicable	0 - 1'	Concrete & ABC Stone	--
Manhole Dia.				
Riser Material		1' - 4'	Dark gray, silt material (processed backfill), dry, no odor.	ML / --
Diameter				
Screen Material		--	Boring terminated at target depth of 4-fbgl, no refusal or	--
Diameter			groundwater encountered prior to completion	
Riser Interval				
Screen Interval				
Slot Size				
Grout Type				
Interval				
Bentonite Type				
Interval				
Filter Pack				
Interval				
Total Depth				
R.P. Elevation				
Datum				
Water Level Information				
Date - Elaps Min	**W.L. Below R.P.**			
Not Applicable				

R.P. = Reference Point *W.L. = Water Level* *TBM = Temporary Benchmark* *BGL = Below Grade Level*
NA = Not Applicable
Note: Classification is based on field observation not laboratory sieve analysis.

Boring / Well Construction Log

Well Construction Permit Number --NA--

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I. D. Number:	SS-7	**Purpose:**	Environmental Assessment
Project Name:	Circle K No. 1517	**Contractor:**	ECEA
Project No:	2012072	**Registration No:**	--
Field Personnel:	T. Garrison	**Driller:**	J. McGraw
Start Date:	24-Oct-12 **Complete Date:** 24-Oct-12	**Equipment:**	Geoprobe® 7822DT Track Rig

Drilling Method:	Direct-push, hand-auger
Comments:	Soil sample collected from 2-fbgl to 4-fbgl
	Boring backfilled with recovered material and grouted following sample completion.

Well Construction Information		**Depth (BGL)**	**Soil / Rock Description / Comments**	**USCS Symbol / SPT "N_{field}" Value (bpf)**
Borehole Dia.	Not Applicable	0 - 1'	Concrete & ABC Stone	--
Manhole Dia.				
Riser Material		1' - 2'	Dark gray, silt material (processed backfill), dry, no odor.	ML / --
Diameter				
Screen Material		2' - 4'	Reddish orange, silt-clay mixture, dry, no odor.	CL / --
Diameter				
Riser Interval		--	Boring terminated at target depth of 4-fbgl, no refusal or	--
Screen Interval			groundwater encountered prior to completion	
Slot Size				
Grout Type				
Interval				
Bentonite Type				
Interval				
Filter Pack				
Interval				
Total Depth				
R.P. Elevation				
Datum				
Water Level Information				
Date - Elaps Min	**W.L. Below R.P.**			
Not Applicable				

R.P. = Reference Point *W.L. = Water Level* *TBM = Temporary Benchmark* *BGL = Below Grade Level*
NA = Not Applicable
Note: Classification is based on field observation not laboratory sieve analysis.

Boring / Well Construction Log

Well Construction Permit Number --NA--

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I. D. Number:	SS-8	**Purpose:**	Environmental Assessment
Project Name:	Circle K No. 1517	**Contractor:**	ECEA
Project No:	2012072	**Registration No:**	--
Field Personnel:	T. Garrison	**Driller:**	J. McGraw
Start Date:	24-Oct-12 **Complete Date:** 24-Oct-12	**Equipment:**	Geoprobe® 7822DT Track Rig

Drilling Method:	Direct-push, hand-auger
Comments:	Soil sample collected from 2-fbgl to 4-fbgl
	Boring backfilled with recovered material and grouted following sample completion.

Well Construction Information		Depth (BGL)	Soil / Rock Description / Comments	USCS Symbol / SPT "N_{field}" Value (bpf)
Borehole Dia.	Not Applicable	0 - 1'	Concrete & ABC Stone	--
Manhole Dia.				
Riser Material		1' - 4'	Dark gray, silt material (processed backfill), dry, no odor.	ML / --
Diameter				
Screen Material		--	Boring terminated at target depth of 4-fbgl, no refusal or	--
Diameter			groundwater encountered prior to completion	
Riser Interval				
Screen Interval				
Slot Size				
Grout Type				
Interval				
Bentonite Type				
Interval				
Filter Pack				
Interval				
Total Depth				
R.P. Elevation				
Datum				
Water Level Information				
Date - Elaps Min	**W.L. Below R.P.**			
Not Applicable				

R.P. = Reference Point *W.L. = Water Level* *TBM = Temporary Benchmark* *BGL = Below Grade Level*
NA = Not Applicable
Note: Classification is based on field observation not laboratory sieve analysis.

Boring / Well Construction Log

Well Construction Permit Number --NA--

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I. D. Number:	SS-9	**Purpose:**	Environmental Assessment
Project Name:	Circle K No. 1517	**Contractor:**	ECEA
Project No:	2012072	**Registration No:**	--
Field Personnel:	T. Garrison	**Driller:**	J. McGraw
Start Date:	24-Oct-12 **Complete Date:** 24-Oct-12	**Equipment:**	Geoprobe® 7822DT Track Rig

Drilling Method:	Direct-push, hand-auger
Comments:	Soil sample collected from 2-fbgl to 4-fbgl
	Boring backfilled with recovered material and grouted following sample completion.

Well Construction Information		**Depth (BGL)**	**Soil / Rock Description / Comments**	**USCS Symbol / SPT "N_{field}" Value (bpf)**
Borehole Dia.	Not Applicable	0 - 1'	Concrete & ABC Stone	--
Manhole Dia.				
Riser Material		1' - 3'	Dark gray, silt material (processed backfill), dry, no odor.	ML / --
Diameter				
Screen Material		3' - 4'	Dark brown, silt-sand, dry, no odor.	SC / --
Diameter				
Riser Interval		--	Boring terminated at target depth of 4-fbgl, no refusal or	--
Screen Interval			groundwater encountered prior to completion	
Slot Size				
Grout Type				
Interval				
Bentonite Type				
Interval				
Filter Pack				
Interval				
Total Depth				
R.P. Elevation				
Datum				
Water Level Information				
Date - Elaps Min	**W.L. Below R.P.**			
Not Applicable				

R.P. = Reference Point *W.L. = Water Level* *TBM = Temporary Benchmark* *BGL = Below Grade Level*
NA = Not Applicable
Note: Classification is based on field observation not laboratory sieve analysis.

Boring / Well Construction Log

Well Construction Permit Number --NA--

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I. D. Number:	SS-10	**Purpose:**	Environmental Assessment
Project Name:	Circle K No. 1517	**Contractor:**	ECEA
Project No:	2012072	**Registration No:**	--
Field Personnel:	T. Garrison	**Driller:**	J. McGraw
Start Date:	24-Oct-12 **Complete Date:** 24-Oct-12	**Equipment:**	Geoprobe® 7822DT Track Rig

Drilling Method:	Direct-push, Geoprobe® 3.25-Ø Macrocore Sampler
Comments:	Soil sample collected from 12-fbgl to 14-fbgl
	Boring backfilled with recovered material and grouted following sample completion.

Well Construction Information		**Depth (BGL)**	**Soil / Rock Description / Comments**	**USCS Symbol / SPT "N_{field}" Value (bpf)**
Borehole Dia.	Not Applicable	0 - 1'	Concrete & ABC Stone	--
Manhole Dia.				
Riser Material		1' - 3'	Dark gray, silt material (processed backfill), dry, no odor.	ML / --
Diameter				
Screen Material		3' - 14'	Reddish orange, silt-clay mixture, dry, no odor.	CL / --
Diameter				
Riser Interval		--	Boring terminated at target depth of 14-fbgl, no refusal or	--
Screen Interval			groundwater encountered prior to completion	
Slot Size				
Grout Type				
Interval				
Bentonite Type				
Interval				
Filter Pack				
Interval				
Total Depth				
R.P. Elevation				
Datum				
Water Level Information				
Date - Elaps Min	**W.L. Below R.P.**			
Not Applicable				

R.P. = Reference Point *W.L. = Water Level* *TBM = Temporary Benchmark* *BGL = Below Grade Level*
NA = Not Applicable
Note: Classification is based on field observation not laboratory sieve analysis.

Boring / Well Construction Log

Well Construction Permit Number --NA--

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I. D. Number:	SS-11	**Purpose:**	Environmental Assessment
Project Name:	Circle K No. 1517	**Contractor:**	ECEA
Project No:	2012072	**Registration No:**	--
Field Personnel:	T. Garrison	**Driller:**	J. McGraw
Start Date:	24-Oct-12 **Complete Date:** 24-Oct-12	**Equipment:**	Geoprobe® 7822DT Track Rig

Drilling Method:	Direct-push, Geoprobe® 3.25-Ø Macrocore Sampler
Comments:	Soil sample collected from 12-fbgl to 14-fbgl
	Boring backfilled with recovered material and grouted following sample completion.

Well Construction Information		**Depth (BGL)**	**Soil / Rock Description / Comments**	**USCS Symbol / SPT "N_{field}" Value (bpf)**
Borehole Dia.	Not Applicable	0 - 1'	Concrete & ABC Stone	--
Manhole Dia.				
Riser Material		1' - 3'	*Dark gray, silt material (processed backfill), dry, no odor.*	ML / --
Diameter				
Screen Material		3' - 14'	Reddish orange, silt-clay mixture, dry, no odor.	CL / --
Diameter				
Riser Interval		--	Boring terminated at target depth of 14-fbgl, no refusal or	--
Screen Interval			*groundwater encountered prior to completion*	
Slot Size				
Grout Type				
Interval				
Bentonite Type				
Interval				
Filter Pack				
Interval				
Total Depth				
R.P. Elevation				
Datum				
Water Level Information				
Date - Elaps Min	**W.L. Below R.P.**			
Not Applicable				

R.P. = Reference Point *W.L. = Water Level* *TBM = Temporary Benchmark* *BGL = Below Grade Level*

NA = Not Applicable

Note: Classification is based on field observation not laboratory sieve analysis.

Boring / Well Construction Log

Well Construction Permit Number --NA--

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I. D. Number:	SS-12			**Purpose:**	Environmental Assessment
Project Name:	Circle K No. 1517			**Contractor:**	ECEA
Project No:	2012072			**Registration No:**	--
Field Personnel:	T. Garrison			**Driller:**	J. McGraw
Start Date:	24-Oct-12	**Complete Date:**	24-Oct-12	**Equipment:**	Geoprobe® 7822DT Track Rig

Drilling Method:	Direct-push, Geoprobe® 3.25-Ø Macrocore Sampler
Comments:	Soil sample collected from 12-fbgl to 14-fbgl
	Boring backfilled with recovered material and grouted following sample completion.

Well Construction Information		**Depth (BGL)**	**Soil / Rock Description / Comments**	**USCS Symbol / SPT "N_{field}" Value (bpf)**
Borehole Dia.	Not Applicable	0 - 1'	Concrete & ABC Stone	--
Manhole Dia.				
Riser Material		1' - 3'	Dark gray, silt material (processed backfill), dry, no odor.	ML / --
Diameter				
Screen Material		3' - 14'	Reddish orange, silt-clay mixture, dry, no odor.	CL / --
Diameter				
Riser Interval		--	Boring terminated at target depth of 14-fbgl, no refusal or	--
Screen Interval			groundwater encountered prior to completion	
Slot Size				
Grout Type				
Interval				
Bentonite Type				
Interval				
Filter Pack				
Interval				
Total Depth				
R.P. Elevation				
Datum				
Water Level Information				
Date - Elaps Min	**W.L. Below R.P.**			
Not Applicable				

R.P. = Reference Point *W.L. = Water Level* *TBM = Temporary Benchmark* *BGL = Below Grade Level*

NA = Not Applicable

Note: Classification is based on field observation not laboratory sieve analysis.

Boring / Well Construction Log

Well Construction Permit Number --NA--

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I. D. Number:	SS-13	**Purpose:**	Environmental Assessment
Project Name:	Circle K No. 1517	**Contractor:**	ECEA
Project No:	2012072	**Registration No:**	--
Field Personnel:	T. Garrison	**Driller:**	T. Garrison
Start Date:	24-Oct-12 **Complete Date:** 24-Oct-12	**Equipment:**	Earthprobe® 2000 Truck Rig

Drilling Method:	Direct-push, Geoprobe® 1.25-Ø Largebore Sampler
Comments:	Soil sample collected from 12-fbgl to 14-fbgl
	Boring backfilled with recovered material and grouted following sample completion.

Well Construction Information		**Depth (BGL)**	**Soil / Rock Description / Comments**	**USCS Symbol / SPT "N_{field}" Value (bpf)**
Borehole Dia.	Not Applicable	0 - 1'	Asphalt & ABC Stone	--
Manhole Dia.				
Riser Material		12' - 14'	Reddish orange, silt-clay mixture, dry, no odor.	CL / --
Diameter				
Screen Material		--	Boring terminated at target depth of 14-fbgl, no refusal or	--
Diameter			groundwater encountered prior to completion	
Riser Interval				
Screen Interval				
Slot Size				
Grout Type				
Interval				
Bentonite Type				
Interval				
Filter Pack				
Interval				
Total Depth				
R.P. Elevation				
Datum				
Water Level Information				
Date - Elaps Min	**W.L. Below R.P.**			
Not Applicable				

R.P. = Reference Point *W.L. = Water Level* *TBM = Temporary Benchmark* *BGL = Below Grade Level*
NA = Not Applicable
Note: Classification is based on field observation not laboratory sieve analysis.

Boring / Well Construction Log

Well Construction Permit Number --NA--

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I. D. Number:	SS-14	**Purpose:**	Environmental Assessment
Project Name:	Circle K No. 1517	**Contractor:**	ECEA
Project No:	2012072	**Registration No:**	--
Field Personnel:	T. Garrison	**Driller:**	T. Garrison
Start Date:	24-Oct-12 **Complete Date:** 24-Oct-12	**Equipment:**	Earthprobe® 2000 Truck Rig

Drilling Method:	Direct-push, Geoprobe® 1.25-Ø Largebore Sampler
Comments:	Soil sample collected from 12-fbgl to 14-fbgl
	Boring backfilled with recovered material and grouted following sample completion.

Well Construction Information		**Depth (BGL)**	**Soil / Rock Description / Comments**	**USCS Symbol / SPT "N_{field}" Value (bpf)**
Borehole Dia.	Not Applicable	0 - 1'	Asphalt & ABC Stone	--
Manhole Dia.				
Riser Material		12' - 14'	Reddish orange, silt-clay mixture, dry, no odor.	CL / --
Diameter				
Screen Material		--	Boring terminated at target depth of 14-fbgl, no refusal or	--
Diameter			groundwater encountered prior to completion	
Riser Interval				
Screen Interval				
Slot Size				
Grout Type				
Interval				
Bentonite Type				
Interval				
Filter Pack				
Interval				
Total Depth				
R.P. Elevation				
Datum				
Water Level Information				
Date - Elaps Min	**W.L. Below R.P.**			
Not Applicable				

R.P. = Reference Point *W.L. = Water Level* *TBM = Temporary Benchmark* *BGL = Below Grade Level*

NA = Not Applicable

Note: Classification is based on field observation not laboratory sieve analysis.

Boring / Well Construction Log

Well Construction Permit Number --NA--

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I. D. Number:	SS-15			**Purpose:**	Environmental Assessment
Project Name:	Circle K No. 1517			**Contractor:**	ECEA
Project No:	2012072			**Registration No:**	--
Field Personnel:	T. Garrison			**Driller:**	T. Garrison
Start Date:	24-Oct-12	**Complete Date:**	24-Oct-12	**Equipment:**	Earthprobe® 2000 Truck Rig

Drilling Method:	Direct-push, Geoprobe® 1.25-Ø Largebore Sampler
Comments:	Soil sample collected from 12-fbgl to 14-fbgl
	Boring backfilled with recovered material and grouted following sample completion.

Well Construction Information		**Depth (BGL)**	**Soil / Rock Description / Comments**	**USCS Symbol / SPT "N_{field}" Value (bpf)**
Borehole Dia.	Not Applicable	0 - 1'	Asphalt & ABC Stone	--
Manhole Dia.				
Riser Material		12' - 14'	Reddish orange, silt-clay mixture, dry, no odor.	CL / --
Diameter				
Screen Material		--	Boring terminated at target depth of 14-fbgl, no refusal or	--
Diameter			groundwater encountered prior to completion	
Riser Interval				
Screen Interval				
Slot Size				
Grout Type				
Interval				
Bentonite Type				
Interval				
Filter Pack				
Interval				
Total Depth				
R.P. Elevation				
Datum				
Water Level Information				
Date - Elaps Min	**W.L. Below R.P.**			
Not Applicable				

R.P. = Reference Point *W.L. = Water Level* *TBM = Temporary Benchmark* *BGL = Below Grade Level*

NA = Not Applicable

Note: Classification is based on field observation not laboratory sieve analysis.

Boring / Well Construction Log

Well Construction Permit Number --NA--

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I. D. Number:	SS-16	**Purpose:**	Environmental Assessment
Project Name:	Circle K No. 1517	**Contractor:**	ECEA
Project No:	2012072	**Registration No:**	--
Field Personnel:	T. Garrison	**Driller:**	T. Garrison
Start Date:	24-Oct-12 **Complete Date:** 24-Oct-12	**Equipment:**	Earthprobe® 2000 Truck Rig

Drilling Method:	Direct-push, Geoprobe® 1.25-Ø Largebore Sampler
Comments:	Soil sample collected from 12-fbgl to 14-fbgl
	Boring backfilled with recovered material and grouted following sample completion.

Well Construction Information		**Depth (BGL)**	***Soil / Rock Description / Comments***	**USCS Symbol / SPT "N_{field}" Value (bpf)**
Borehole Dia.	Not Applicable	0 - 1'	Topsoil (Organic Material)	--
Manhole Dia.				
Riser Material		12' - 14'	Reddish orange, silt-clay mixture, dry, no odor.	CL / --
Diameter				
Screen Material		--	Boring terminated at target depth of 14-fbgl, no refusal or	--
Diameter			groundwater encountered prior to completion	
Riser Interval				
Screen Interval				
Slot Size				
Grout Type				
Interval				
Bentonite Type				
Interval				
Filter Pack				
Interval				
Total Depth				
R.P. Elevation				
Datum				
Water Level Information				
Date - Elaps Min	**W.L. Below R.P.**			
Not Applicable				

R.P. = Reference Point *W.L. = Water Level* *TBM = Temporary Benchmark* *BGL = Below Grade Level*
NA = Not Applicable
Note: Classification is based on field observation not laboratory sieve analysis.

Boring / Well Construction Log

Well Construction Permit Number --NA--

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I. D. Number:	SS-17	**Purpose:**	Environmental Assessment
Project Name:	Circle K No. 1517	**Contractor:**	ECEA
Project No:	2012072	**Registration No:**	--
Field Personnel:	T. Garrison	**Driller:**	T. Garrison
Start Date:	24-Oct-12 **Complete Date:** 24-Oct-12	**Equipment:**	Earthprobe® 2000 Truck Rig

Drilling Method:	Direct-push, Geoprobe® 1.25-Ø Largebore Sampler
Comments:	Soil sample collected from 12-fbgl to 14-fbgl
	Boring backfilled with recovered material and grouted following sample completion.

Well Construction Information		**Depth (BGL)**	**Soil / Rock Description / Comments**	**USCS Symbol / SPT "N_{field}" Value (bpf)**
Borehole Dia.	Not Applicable	0 - 1'	Topsoil (Organic Material)	--
Manhole Dia.				
Riser Material		12' - 14'	Reddish orange, silt-clay mixture, dry, no odor.	CL / --
Diameter				
Screen Material		--	Boring terminated at target depth of 14-fbgl, no refusal or	--
Diameter			groundwater encountered prior to completion	
Riser Interval				
Screen Interval				
Slot Size				
Grout Type				
Interval				
Bentonite Type				
Interval				
Filter Pack				
Interval				
Total Depth				
R.P. Elevation				
Datum				
Water Level Information				
Date - Elaps Min	**W.L. Below R.P.**			
Not Applicable				

R.P. = Reference Point *W.L. = Water Level* *TBM = Temporary Benchmark* *BGL = Below Grade Level*

NA = Not Applicable

Note: Classification is based on field observation not laboratory sieve analysis.

Boring / Well Construction Log

Well Construction Permit Number --NA--

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I. D. Number:	SS-18	**Purpose:**	Environmental Assessment
Project Name:	Circle K No. 1517	**Contractor:**	ECEA
Project No:	2012072	**Registration No:**	--
Field Personnel:	T. Garrison	**Driller:**	T. Garrison
Start Date:	24-Oct-12 **Complete Date:** 24-Oct-12	**Equipment:**	Earthprobe® 2000 Truck Rig

Drilling Method:	Direct-push, Geoprobe® 1.25-Ø Largebore Sampler
Comments:	Soil sample collected from 12-fbgl to 14-fbgl
	Boring backfilled with recovered material and grouted following sample completion.

Well Construction Information		Depth (BGL)	Soil / Rock Description / Comments	USCS Symbol / SPT "N_{field}" Value (bpf)
Borehole Dia.	Not Applicable	0 - 1'	Topsoil (Organic Material)	--
Manhole Dia.				
Riser Material		12' - 14'	Reddish orange, silt-clay mixture, dry, no odor.	CL / --
Diameter				
Screen Material		--	Boring terminated at target depth of 14-fbgl, no refusal or	--
Diameter			groundwater encountered prior to completion	
Riser Interval				
Screen Interval				
Slot Size				
Grout Type				
Interval				
Bentonite Type				
Interval				
Filter Pack				
Interval				
Total Depth				
R.P. Elevation				
Datum				
Water Level Information				
Date - Elaps Min	**W.L. Below R.P.**			
Not Applicable				

R.P. = Reference Point *W.L. = Water Level* *TBM = Temporary Benchmark* *BGL = Below Grade Level*

NA = Not Applicable

Note: Classification is based on field observation not laboratory sieve analysis.

Boring / Well Construction Log

Well Construction Permit Number --NA--

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I. D. Number:	SS-19	**Purpose:**	Environmental Assessment
Project Name:	Circle K No. 1517	**Contractor:**	ECEA
Project No:	2012072	**Registration No:**	--
Field Personnel:	T. Garrison	**Driller:**	J. McGraw
Start Date:	24-Oct-12 **Complete Date:** 24-Oct-12	**Equipment:**	Geoprobe® 7822DT Track Rig

Drilling Method:	Direct-push, Geoprobe® 3.25-Ø Macrocore Sampler
Comments:	Soil sample collected from 12-fbgl to 14-fbgl
	Boring backfilled with recovered material and grouted following sample completion.

Well Construction Information		Depth (BGL)	Soil / Rock Description / Comments	USCS Symbol / SPT "N_{field}" Value (bpf)
Borehole Dia.	Not Applicable	0 - 1'	Concrete & ABC Stone	--
Manhole Dia.				
Riser Material		1' - 5'	Dark red, silt-clay mixture, dry, no odor.	CL / --
Diameter				
Screen Material		5' - 14'	Reddish orange, silt-clay mixture, dry, no odor.	CL / --
Diameter				
Riser Interval		--	Boring terminated at target depth of 14-fbgl, no refusal or	--
Screen Interval			groundwater encountered prior to completion	
Slot Size				
Grout Type				
Interval				
Bentonite Type				
Interval				
Filter Pack				
Interval				
Total Depth				
R.P. Elevation				
Datum				
Water Level Information				
Date - Elaps Min	**W.L. Below R.P.**			
Not Applicable				

R.P. = Reference Point *W.L. = Water Level* *TBM = Temporary Benchmark* *BGL = Below Grade Level*

NA = Not Applicable

Note: Classification is based on field observation not laboratory sieve analysis.

Boring / Well Construction Log

Well Construction Permit Number --NA--

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I. D. Number:	SS-20	**Purpose:**	Environmental Assessment
Project Name:	Circle K No. 1517	**Contractor:**	ECEA
Project No:	2012072	**Registration No:**	--
Field Personnel:	T. Garrison	**Driller:**	T. Garrison
Start Date:	24-Oct-12 **Complete Date:** 24-Oct-12	**Equipment:**	Earthprobe® 2000 Truck Rig

Drilling Method:	Direct-push, Geoprobe® 1.25-Ø Largebore Sampler
Comments:	Soil sample collected from 2-fbgl to 4-fbgl and 12-fbgl to 14-fbgl
	Boring backfilled with recovered material and grouted following sample completion.

Well Construction Information		**Depth (BGL)**	**Soil / Rock Description / Comments**	**USCS Symbol / SPT "N_{field}" Value (bpf)**
Borehole Dia.	Not Applicable	0 - 1'	Asphalt & ABC Stone	--
Manhole Dia.				
Riser Material		2' - 4'	Reddish orange, silt-clay mixture, dry, no odor.	CL / --
Diameter				
Screen Material		12' - 14'	Reddish orange, silt-clay mixture, dry, no odor.	CL / --
Diameter				
Riser Interval		--	Boring terminated at target depth of 14-fbgl, no refusal or	--
Screen Interval			groundwater encountered prior to completion	
Slot Size				
Grout Type				
Interval				
Bentonite Type				
Interval				
Filter Pack				
Interval				
Total Depth				
R.P. Elevation				
Datum				
Water Level Information				
Date - Elaps Min	**W.L. Below R.P.**			
Not Applicable				

R.P. = Reference Point *W.L. = Water Level* *TBM = Temporary Benchmark* *BGL = Below Grade Level*
NA = Not Applicable
Note: Classification is based on field observation not laboratory sieve analysis.

Boring / Well Construction Log

Well Construction Permit Number --NA--

ecea
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I. D. Number:	SS-21	**Purpose:**	Environmental Assessment
Project Name:	Circle K No. 1517	**Contractor:**	ECEA
Project No:	2012072	**Registration No:**	--
Field Personnel:	T. Garrison	**Driller:**	J. McGraw
Start Date:	24-Oct-12 **Complete Date:** 24-Oct-12	**Equipment:**	Geoprobe® 7822DT Track Rig

Drilling Method:	Direct-push, Geoprobe® 3.25-Ø Macrocore Sampler
Comments:	Soil sample collected from 2-fbgl to 4-fbgl and 12-fbgl to 14-fbgl
	Boring backfilled with recovered material and grouted following sample completion.

Well Construction Information		Depth (BGL)	Soil / Rock Description / Comments	USCS Symbol / SPT "N_{field}" Value (bpf)
Borehole Dia.	Not Applicable	0 - 1'	Concrete & ABC Stone	--
Manhole Dia.				
Riser Material		1' - 3'	Dark gray, silt material (processed backfill), dry, no odor.	ML / --
Diameter				
Screen Material		3' - 14'	Reddish orange, silt-clay mixture, dry, no odor.	CL / --
Diameter				
Riser Interval		--	Boring terminated at target depth of 14-fbgl, no refusal or	--
Screen Interval			groundwater encountered prior to completion	
Slot Size				
Grout Type				
Interval				
Bentonite Type				
Interval				
Filter Pack				
Interval				
Total Depth				
R.P. Elevation				
Datum				
Water Level Information				
Date - Elaps Min	**W.L. Below R.P.**			
Not Applicable				

R.P. = Reference Point *W.L. = Water Level* *TBM = Temporary Benchmark* *BGL = Below Grade Level*
NA = Not Applicable
Note: Classification is based on field observation not laboratory sieve analysis.

APPENDIX C

ANCILLARY ITEMS

Excel Civil & Environmental Associates, PLLC

625 Huntsman Court
Gastonia, North Carolina 28054
NC License No. P-0129
Telephone: (704) 853-0800
Facsimile: (704) 853-3949
Internet: www.excelengr.com

RECORD OF COMMUNICATION

ECEA Personnel:	Thomas Garrison
Point of Contact:	Erin Fogarty, NCDENR, MRO, UST Section
Date & Time:	October 2, 2012 @ 1600
Re:	Circle K No. 1517, Site Check (Excel # 2012072)

At the request of Circle K, contact with Mrs. Erin Fogarty of the NCDENR was made regarding the NORR issued on September 25, 2012 and tasks which would be required to complete the site check activities and additional requirements for previously identified impacted soils. A request was made by Excel with Mrs. Fogarty to complete risk-based sampling at the locations previously identified by Geological Resources, Incorporated (GRI) during site check activities conducted in August 2012 in lieu of completing over-excavation activities due to the use of the site as an active gas station and the relatively low levels of TPH-DRO. Mrs. Fogarty agreed that 1) soil samples previously collected by GRI could be used to fulfill site check requirements and 2) additional risk-based sampling could be completed to evaluate whether soil constituents exceeded Soil-to-Water MSCCs in order to determine if any further assessment or abatement would be required.

Thomas W. Garrison, III
Senior Project Manager

NCDENR

North Carolina Department of Environment and Natural Resources

Beverly Eaves Perdue, Governor

Division of Waste Management
UST Section

Dee Freeman, Secretary
Dexter R. Matthews, Director

November 20, 2012

Heather Hermansen
Circle K Stores, Inc.
2440 Whitehall Park Drive #800
Charlotte, NC 28273

Re: Notice of No Further Action
15A NCAC 2L .0407(d)
Risk-based Assessment and Corrective Action
for Petroleum Underground Storage Tanks

Circle K #1517
558 River Highway
Iredell County
Facility ID#: 0-036164
Incident Number: 40116
Risk Classification: Low

Dear Ms. Hermansen:

The Site Check Report received by the UST Section, Mooresville Regional Office on November 15, 2012 has been reviewed. The review indicates that soil contamination does not exceed the maximum soil contaminant concentrations (MSCCs), established in Title 15A NCAC 2L.

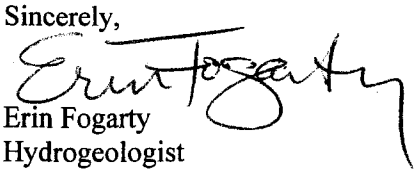
The UST Section determines that no further action is warranted for this incident. This determination shall apply unless the UST Section later finds that the discharge or release poses an unacceptable risk or a potentially unacceptable risk to human health or the environment. Pursuant to Title 15A NCAC 2L .0407(a) you have a continuing obligation to notify the Department of any changes that might affect the risk or land use classifications that have been assigned.

If soil contamination exceeds the lower of the soil-to-groundwater or residential MSCCs, public notice in accordance with 15A NCAC 2L .0409(b) is required. Thus, within 30 days of receipt of this letter, a copy of the letter must be provided by certified mail, or by posting in a prominent place, if certified mail is impractical, to the local health director, the chief administrative officer of each political jurisdiction in which the contamination occurs, all property owners and occupants within or contiguous to the area containing contamination, and all property owners and occupants within or contiguous to the area where the contamination is expected to migrate. Within 60 days of receiving this no further action letter, this office must be provided with proof of receipt of the copy of the letter or of refusal by the addressee to accept delivery of the copy of the letter or with a description of the manner in which the letter was posted. This No Further Action determination will not become valid until public notice requirements are completed. Interested parties may examine the Soil Cleanup Report/ Site Closure Request by contacting this regional office and may submit comments on the site to the regional office at the address or telephone number listed below.

This No Further Action determination applies only to the subject incident; for any other incidents at the subject site, the responsible party must continue to address contamination as required.

If you have any questions regarding this notice, please contact me at the address or telephone number listed below.

Sincerely,



Erin Fogarty
Hydrogeologist
Mooresville Regional Office

cc: Thomas Garrison, Excel Civil & Environmental Associates, ***via email***

UST Regional Offices

Asheville (ARO) – 2090 US Highway 70, Swannanoa, NC 28778 **(828) 296-4500**

Fayetteville (FAY) – 225 Green Street, Suite 714, Systel Building, Fayetteville, NC 28301 **(910) 433-3300**

Mooresville (MOR) – 610 East Center Avenue, Suite 301, Mooresville, NC 28115 **(704) 663-1699**

Raleigh (RRO) – 1628 Mail Service Center, Raleigh, NC 27699 **(919) 791-4200**

Washington (WAS) – 943 Washington Square Mall, Washington, NC 27889 **(252) 946-6481**

Wilmington (WIL) – 127 Cardinal Drive Extension, Wilmington, NC 28405 **(910) 796-7215**

Winston-Salem (WS) – 585 Waughtown Street, Winston-Salem, NC 27107 **(336) 771-5000**

Guilford County Environmental Health, 400 West Market Street, Suite 300, Greensboro, NC 27401, **(336) 641-3771**

FTP: NFA low-noNRP NOR0512.dot

FOR REFERENCE TO
ROB DUCKWORTH PROJECT.

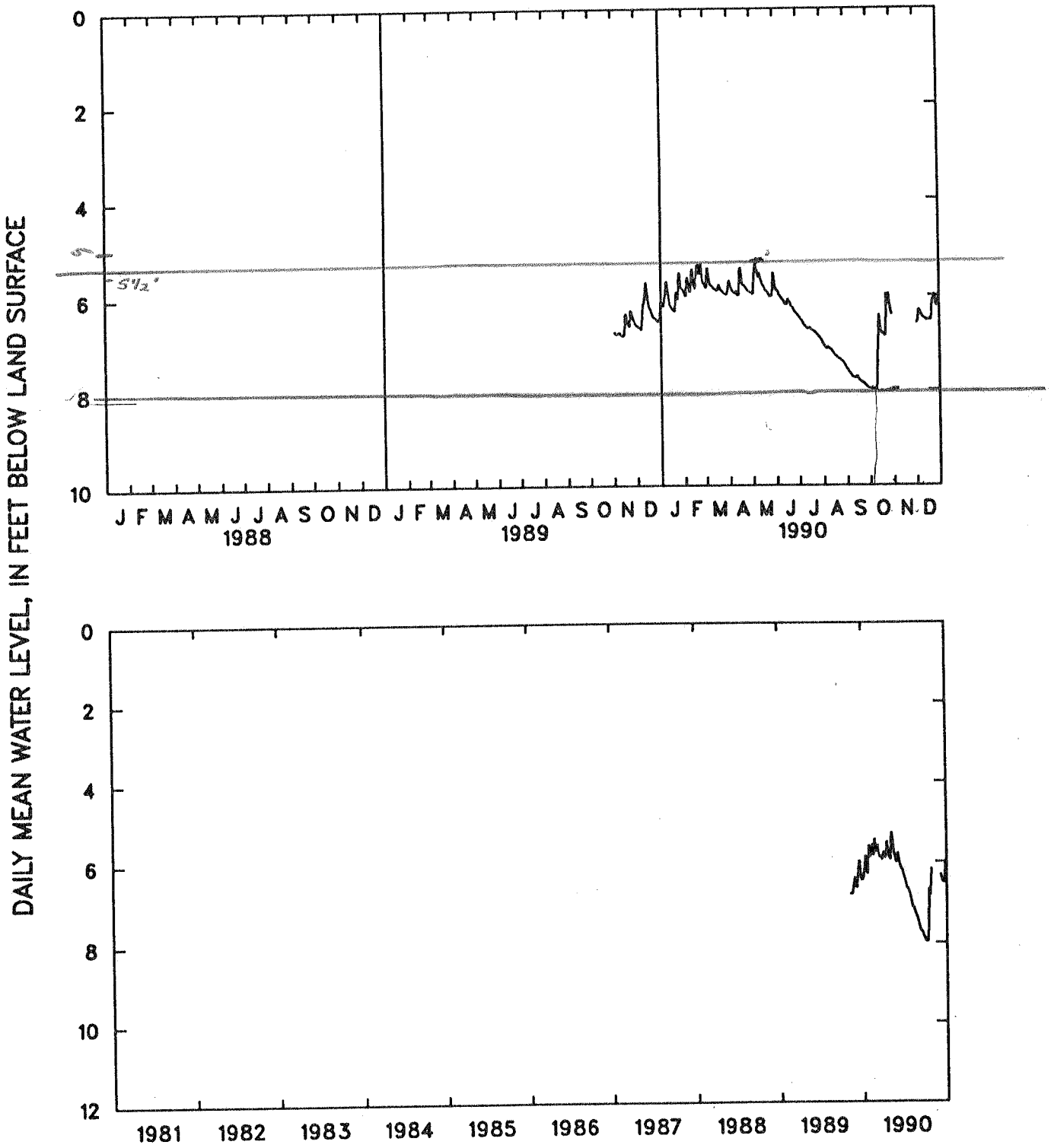


Figure 24.--Water level in observation well NC-193 (regolith), Rowan County.

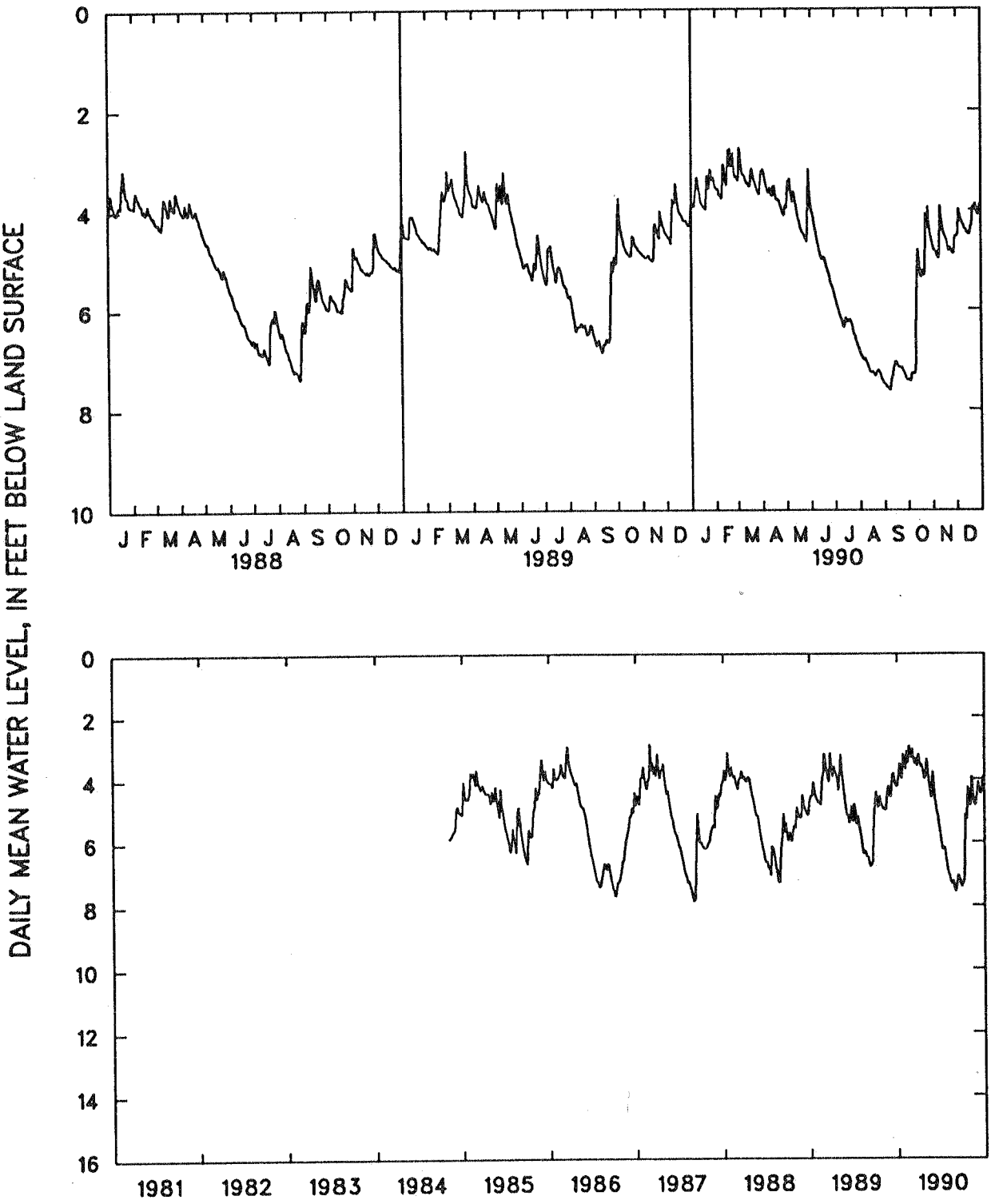


Figure 13.--Water level in observation well NC-146 (regolith), Mecklenburg County.

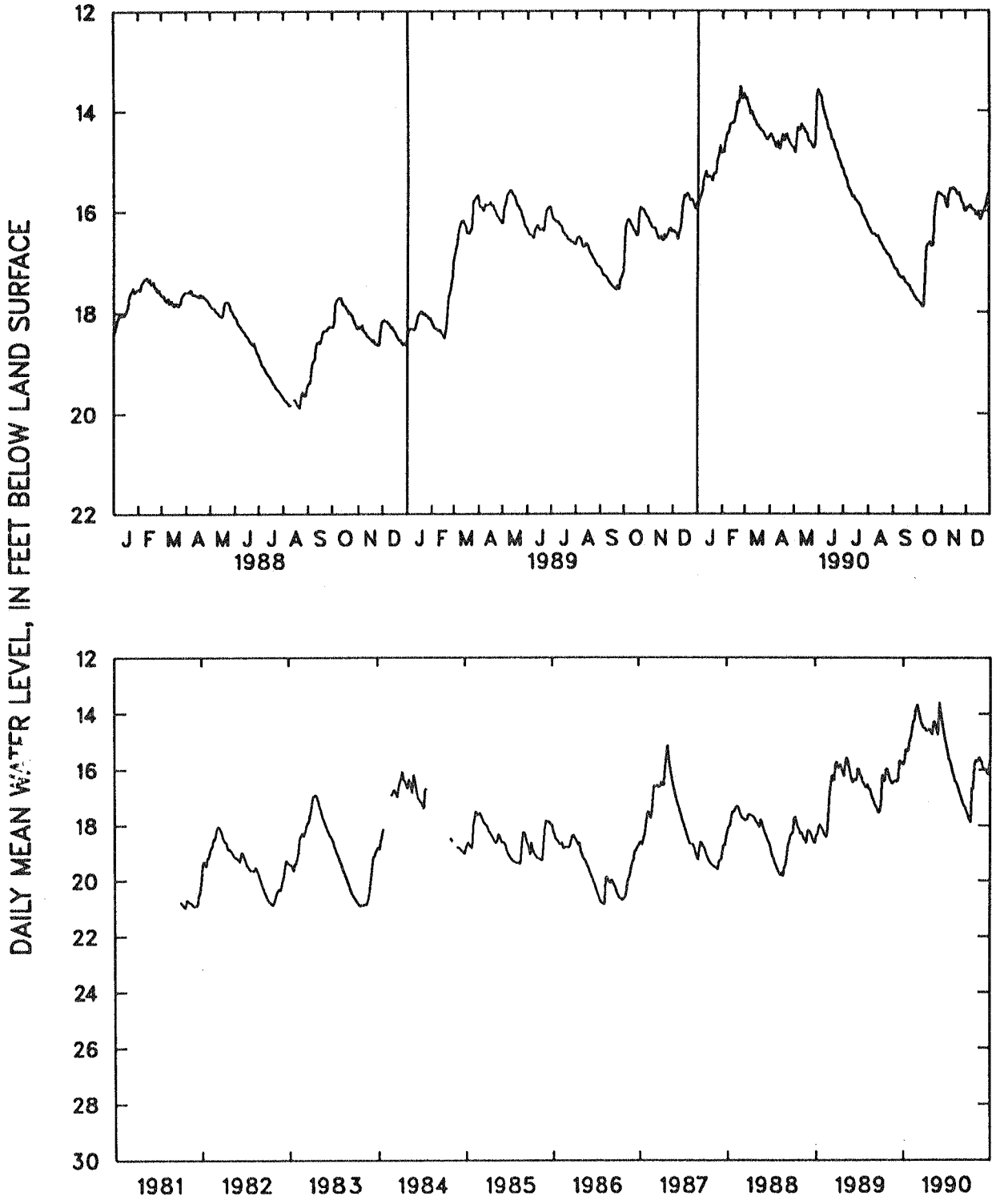


Figure 10.--Water level in observation well NC-142 (regolith), Davie County.

p. 1153

THIS DOCUMENT PREPARED BY AND AFTER RECORDING RETURN TO: ANTHONY S. PRIVETTE, P.O. DRAWER 1776, STATESVILLE, NC 28687 704-873-2131

NORTH CAROLINA

IREDELL COUNTY

RECORDATION OF STRUCTURAL FILL FACILITIES

OTH HOLDINGS, LLC, Owner of the below-described property, hereby acknowledges the use of coal combustion by products as structural fill on the below-described property. The volume of ash placed on the below described property is approximately 60,000 cubic yards. 10/2

DESCRIPTION

All that certain parcel of land situated in the City of Mooresville, Iredell County, North Carolina more particularly described as follows:

> BEING all of Lot No. One (1) of the Atwell Property as the same is platted, planned and recorded in Plat Book 34, Page 136 of the plat records of Iredell County, North Carolina. Being a portion of the property conveyed by deed recorded in Book 80, Page 140, Iredell County Registry.

OTH HOLDINGS, LLC

By: _____
Rob Duckworth, Member/Manager

OFFICIAL SEAL
Notary Public, North Carolina
ROBYN L. LUJAN
MECKLENBURG COUNTY
My Commission Expires Dec. 5, 2005.

Robyn L. Lujan

IREDELL COUNTY NC
Book 1241
Pages 1974-1975
FILED 2 PAGE(S)
02/14/2001 12:25 PM
BRENDA D. BELL
Register Of Deeds

MAR 2001
Received
Solid Waste
Section

U:\USERS\Stikeleather\OTH HOLDINGS.asp.wpd

NORTH CAROLINA)
)
IREDELL COUNTY)

I, Robyn L. Lujan, a Notary Public for said County and State, do hereby certify that Rob Duckworth, Member/Manager of Oth Holdings, L.L.C., a limited liability company, personally appeared before me this day and acknowledged the due execution of the foregoing instrument on behalf of the company.

Witness my hand and official stamp or seal, this 7th day of February, 2001.

OFFICIAL SEAL
Notary Public, North Carolina
ROBYN L. LUJAN
MECKLENBURG COUNTY
My Commission Expires Dec. 5, 2005.

Robyn L. Lujan
NOTARY PUBLIC

My Commission Expires: Dec 5, 2005

The foregoing Certificate(s) of Robyn L Lujan

is/~~are~~ certified to be correct. This instrument and this certificate are duly registered at the date and time and in the Book and Page shown on the first page hereof.

Brenda D Bell REGISTER OF DEEDS FOR Iredell COUNTY
By Kay W Mills ~~Deputy~~/Assistant-Register of Deeds

AGREEMENT

THIS AGREEMENT (this "Agreement") is made as of the 29 day of February 2000 between **DUKE POWER COMPANY**, a division of Duke Energy Corporation, a North Carolina corporation having its principal office in Charlotte, North Carolina ("**Duke Power**"), and ~~ROB DUCKWORTH~~ DTH Holdings, LLC a ~~PROPERTY OWNER~~ WV Limited Liability Corporation, having its principal office in ~~MOORESVILLE, NC~~ Mineral Wells, WV ("**Buyer**").

RECITALS

A. Duke Power is a public utility engaged in the generation and sale of electrical energy and uses coal as a fuel in its Marshall Steam Station located in Terrell, North Carolina. The burning of coal produces ash as a byproduct ("Ash").

B. Duke Power is willing to sell Ash to Buyer only on the terms and conditions of this Agreement. Buyer is willing to comply with all of those terms and conditions.

NOW, THEREFORE, in consideration of the recitals, the mutual promises in this Agreement, and other valuable consideration, the receipt and sufficiency of which the parties acknowledge, the parties stipulate and agree as follows:

1. Sale. Seller shall sell to Buyer, and Buyer shall purchase from Seller, the Ash specified on **Exhibit A** attached to this Agreement (the "Purchased Ash") on the terms and conditions of this Agreement. Buyer shall only use the Purchased Ash at the location listed on Exhibit A and only in accordance with any site plan attached to Exhibit A.

2. Other Terms. Buyer shall comply with all of the restrictions and requirements specified in **Exhibits C and D.** A condition precedent to Duke Power's obligation to deliver any Purchased Ash under this Agreement shall be Buyer's delivering to Duke Power a consent in the form of **Exhibit E** attached to this Agreement executed and delivered by the owner of the land described on Exhibit A. The Duke Power material handling data sheets for the Purchased Ash are attached to this Agreement as **Exhibit F. Exhibits A, B, C, D, E, and F** attached to this Agreement are incorporated into this Agreement by reference.

3. Merger. This Agreement, including the attached exhibits, constitutes the entire agreement between the parties and supersedes all prior and contemporaneous understandings and agreements, verbal and written, usages of trade, and courses of dealing. This Agreement may be modified only by a written agreement signed by both parties expressly purporting to modify this Agreement.

IN WITNESS WHEREOF, the parties execute this Agreement under seal, as is their intention, as of the date first above written.

DUKE POWER COMPANY

By:
Title: Coal Ash Mgr / Duke Energy
Date: 3/3/00

[BUYER]

By: DTH Holdings LLC
Title: Vice President
Date: 3/1/00

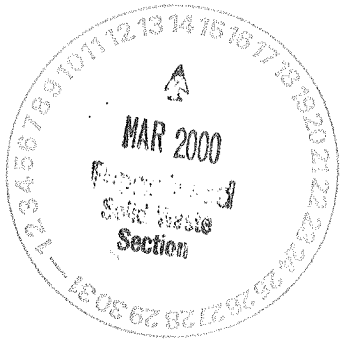


EXHIBIT A

	Pond Ash	Conditioned Ash*
1. Price:		$.50 TON
2. Payment Terms:		INVOICE 15 DAYS
3. Quantity:		60,000 yds / 72,000 TONS not limited to *
4. Delivery Terms:		F.O.B. PLANT MARSHALL
5. Delivery Location:		HWY 150 / BLUEFIELD RD. DRWG JOB # 99-01-04, DATED 2-22-00, BY B.K. BARRINGER NC 150 CONVENIENCE STORE, REF LOT 1-A, E. GATES SITE PD ATWELL, DEED BOOK 80 PG 140
6. Land Owner:		~~ROB DUCKWORTH~~ OTH HOLDINGS, LLC

CD 3/1/00 BJ 3/1/00 3/3/00

7. Special Terms and Conditions: Delivery by trucker chosen by ABC in compliance with attached documents, drawings, etc.

Working hours and loading to be provided during the hours of 7:00 am to 5:00 pm MON-FRI - SAT. IF NEEDED

PAYMENTS SHALL BE SENT: DUKE ENERGY CORP., ATTN. JOE WHITE P.O. BOX 1006, EC11W, 526 S. CHURCH ST. CHARLOTTE, NC. 28201-1006

THIS AGREEMENT IS SOLELY CONTINGENT UPON THE PURCHASE OF SAID PROPERTY BY OTH HOLDINGS, LLC. CD 3/1/00 BJ 3/1/00 3/3/00

* Duke reserves the right to supplement Conditioned Ash with Pond Ash from time to time as appropriate. Any variance in the type and quantity of Ash from the terms of this agreement will be evidenced on the delivery ticket.

3/1/00 JOB START DATE TO BE 3/15/2000. IMMEDIATELY FOLLOWING SITE PREP & EROSION CONTROL ASH HAUL & PLACEMENT BEGI TRUCK WEIGHTS TO BE TWICE PER TRUCK EACH DAY

BJ 3/1/00 3/3/00

EXHIBIT B

1. Compliance with Law. Buyer represents and warrants to Duke Power that all uses Buyer and any other person or entity makes of the Purchased Ash shall at all times comply in all respects with all applicable laws, statutes, regulations, orders, rules and decrees.

2. Taxes, Charges, Duties and Levies. The prices stated in this contract do not include taxes, charges, duties or levies of any kind imposed by any federal, state, local or foreign government or authority, including any present or future sales, use, revenue, excise or other tax (collectively, "Taxes"). Buyer shall pay all Taxes and all interest and penalties relating to Taxes.

3. Cancellation. Buyer may not cancel all or part of this contract without Duke Power's prior written consent.

4. Delivery Dates. Any delivery date Duke Power specifies is an estimate only based on, among other things, present material availability. No delay in delivery shall entitle Buyer to cancel all or any part of this contract.

5. Delivery. All prices are net of delivery charges unless otherwise specified in this contract unless Buyer and Duke Power agree otherwise in writing, Buyer shall arrange and pay for the shipment of the Purchased Ash. If Duke Power agrees to arrange for the shipment of the Purchased Ash, Buyer shall pay associated costs. Delivery shall occur, and title and all risk of loss shall pass to Buyer, on the earlier to occur of: (a) Buyer's taking possession of the Purchased Ash; (b) Duke Power's placing the Purchased Ash in the possession of a common, contract or other carrier for shipment to Buyer or its designee. Duke Power's obligation to deliver the Purchased Ash is subject to Buyers compliance with the terms and conditions of this contract and maintaining credit satisfactory at Duke Power. Duke Power may suspend or delay performance or delivery at any time pending its receipt of assurances of Buyer's ability to pay (including former partial or prepayment) satisfactory to Duke Power.

6. Purchased Ash SOLD "AS IS"; ALL WARRANTIES DISCLAIMED. BUYER IS PURCHASING THE PURCHASED ASH FROM DUKE POWER "AS IS." DUKE POWER DISCLAIMS ALL WARRANTIES AND REPRESENTATIONS OF ANY KIND, EITHER EXPRESS OR IMPLIED, AS TO THE PURCHASED ASH, INCLUDING ALL REPRESENTATIONS AND WARRANTIES: As To (A) THE QUALITY OR CONDITION OF THE PURCHASED ASH; (B) THE MERCHANTABILITY OR FITNESS OF THE PURCHASED ASH FOR ANY PARTICULAR PURPOSE; AND (C) THE SUITABILITY OF THE PURCHASED ASH FOR BUYER'S PURPOSES OR THE IMPACT OF THE PURCHASED ASH ON BUYER'S OPERATIONS. Duke Power makes no warranties or guarantees regarding the production or performance Buyer or any other person or entity may obtain from the Purchased Ash. Buyer shall be responsible for all decisions regarding the use and placement of the Purchased Ash.

7. Notice of Non-Conformity. Buyer must give Duke Power written notice of any claim that it has regarding the condition, quantity or quality of the Purchased Ash or the non-conformity of the Purchased Ash with this contract within thirty days after the delivery of the Purchased Ash. The notice must specify the basis of in detail and identify the Purchased Ash at issue. Duke Power shall have a reasonable opportunity to inspect the Purchased Ash at issue and a reasonable time to cure any non-conformity. Buyer's failure to comply with this paragraph shall constitute Buyer's acceptance of the Purchased Ash.

8. Limitation of Liability. Duke Power shall not be liable under any circumstances for any special, indirect, incidental, consequential or punitive damages, including but not limited to lost revenues and profits and damages for breach of contract, breach of warranty, and negligence. In no event shall Duke Power be liable for any amount in excess of the total price listed on Exhibit A.

9. Time Limitation. Any action or proceeding by arising out of or relating to this contract or Purchased Ash will be forever barred unless it is commenced within the early of: (a) one year after the claim or cause of action has accrued; or (b) the applicable statue of limitation or repose.

10. Product Safety. BUYER will follow all instructions and directions Duke Power provides with the Purchased Ash and to Buyer for the use of the Purchased Ash.

11. Indemnification. BUYER shall defend, and indemnify and hold Duke Power harmless from and against any and all claims, demands, liabilities, obligations, losses, attorneys' fees and expenses arising out of or relating to Buyer's failure to comply with the terms and conditions of this contract.

12. Default of Buyer. The occurrence of any of the following shall constitute an event of fault by Buyer under this contract: (a) Buyer's failure to pay any sum to Duke Power as and when due; or (b) Buyer's default under any other term of this contract which is not cured within ten days after Duke Power gives Buyer written notice of default.

13. Remedies on Default. Upon the occurrence of an event of default by Buyer under this contract, and in addition to any other rights and remedies that Duke Power may have, Duke Power shall have the right, at its option, to take one or more of the following actions: (a) to declare all or part of Buyer's obligations to Duke Power or under this contract immediately due and payable; or (b) suspended performance under or terminate this contract. All amounts Buyer does not pay as when due shall accrue interest at the rate of 16% per annum until paid in full. If Buyer defaults under its obligations to Duke Power, Buyer shall pay Duke Power all costs of collection, including reasonable attorneys' fees and costs.

14. Force Majeure. Duke Power shall not be liable for delays or failure to perform directly or indirectly resulting from events and causes beyond Duke Power's reasonable control, accidents, acts of God, acts and omissions of any governmental authority, declared or undeclared wars, strikes or other labor disputes, fires and natural collimates (including floods, earthquakes, storms, and epidemics) and delay in obtaining or inability to obtain labor materials or services through Duke Power's usual and regular sources.

15. No Assignment. Buyer may not assign to any person or entity all or any portion of its rights or obligations under this contract without Duke Power's prior written consent.

16. Notices. Any notice permitted or required under this contract shall be deemed given if in writing and delivered personally, by facsimile or deposited in the United States mail, certified mail, return receipt requested to the respective addresses of Duke Power and Buyer listed below or such other addresses of which either party gives the other party written notice:

To Buyer: ~~DUCKWORTH'S FOOD MARKETS INC.~~ 8TH HOLDINGS, LLC 3/1/00, ATTN: ROB DUCKWORTH 3/3/00
~~P.O. Box 3756~~
~~MOORESVILLE, N.C. 28115~~
P: 704-895-9688
FAX: 704-987-8151

To Duke Power: ~~Duke Power Company~~ DUKE ENERGY CORP.
Attn: Ash Group Manager, STEVE IMMEL
Mail Code ~~WC32B~~ EC11W
P.O. Box ~~1002~~ 1006
Charlotte, N.C. 28201-~~1002~~ 1006
P: 704-382-5388
FAX: 704-382-4568

17. Applicable Laws; Arbitration. This contract and any controversy relating to this contract shall be governed by and construed according to the laws of the State of North Carolina, excluding its conflict of law principles. Any claim or controversy arising out of or relating to this contract shall be settled by binding arbitration in Charlotte, North Carolina in accordance with the commercial law of arbitration rules of the American Arbitration Association then in effect, and judgment may be entered on the award by any court of competent jurisdiction.

EXHIBIT C

~~POND ASH USE RESTRICTIONS~~ NA 3/1/00 3/3/00

1. Buyer shall not use the Pond Ash in a manner that results in contamination of surface water or groundwater. Should contamination occur, it is the responsibility of the Buyer to cease the particular ash reuse operation and take any immediate corrective actions as may be required by the Division of Water Quality of NCDENR or Duke.

2. Buyer shall not place any Pond Ash within 50 feet of surface waters.

3. Buyer shall not place the Pond Ash within 100 feet of a potable water supply well.

4. Buyer shall provide to Duke written verification acceptable to Duke, documenting the elevation (MSL) of the surficial groundwater table. Buyer shall not place Pond Ash within three feet of the surficial groundwater table.

5. No Ash is to be applied in inclement weather or until 24 hours following a precipitation event equal to a rainfall event of ½-inch or greater in 24 hours.

6. No Ash shall be utilized as pipe bedding for sewer or potable water lines.

7. If Duke Power does not provide transportation of Pond Ash, then Buyer shall insure that the transportation of ash does not cause any adverse impact (i.e., transport in a leak proof truck for wet material; ensure that trucks are covered for dry material and otherwise protected to prevent any adverse impact resulting form the operation).

NONCOMPLIANCE NOTIFICATION

1. Buyer must notify Duke by phone no later than 8 hours following the occurrence or first knowledge of any release of Pond Ash into surface waters or any spillage or discharge from a vehicle or piping system during transportation. Buyer shall send a written follow-up notification within 3 days of any release.

2. In giving notification, the following individuals should be contacted in this order:

   A. Call the Environmental Hotline at 1-704-875-5293 during business hours (7:30-5:00).

   B. If after business hours or if you receive no answer, page Larry Evans at 1-800-777-DUKE, then pager number 778-6355. Leave your return phone number, and wait 30 minutes.

   C. If no return phone call is received within 30 minutes, page Ron Lewis at 1-800-777-DUKE, then pager number 778-9778.

EXHIBIT D

CONDITIONED ASH USE RESTRICTIONS

This Conditioned Ash shall only be used in accordance with the standard of care of the State of North Carolina. These conditions are set forth below:

15A-13B.17. REQUIREMENTS FOR BENEFICIAL USE OF COAL COMBUSTION BY-PRODUCTS

15A-13B.1701. DEFINITIONS.
15A-13B.1702. GENERAL PROVISIONS FOR STRUCTURAL FILL FACILITIES.
15A-13B.1703. NOTIFICATION FOR STRUCTURAL FILL FACILITIES.
15A-13B.1704. SITING FOR STRUCTURAL FILL FACILITIES.
15A-13B.1705. DESIGN, CONSTRUCTION, AND OPERATION FOR STRUCTURAL FILL FACILITIES
15A-13B.1706. CLOSURE OF STRUCTURAL FILL FACILITIES.
15A-13B.1707. RECORDATION OF STRUCTURAL FILL FACILITIES.
15A-13B.1708. OTHER USES FOR COAL COMBUSTION BY-PRODUCTS.
15A-13B.1709. STORAGE AND CONTAINMENT OF COAL COMBUSTION BY-PRODUCTS.
15A-13B.1710. ANNUAL REPORTING.

15A-13B.1701. DEFINITIONS

The following definitions shall apply throughout this Section:
(1) "Beneficial and beneficial use" means projects promoting public health and environmental protection, offering equivalent success relative to other alternatives, and preserving natural resources.
(2) "Coal combustion by-products" means residuals, including fly ash, bottom ash, boiler slag and flue gas desulfurization residue produced by coal fired electrical or steam generation units.
(3) "Jurisdictional wetland" means those areas that meet the criteria established by the United States Environmental Protection Agency for delineating wetlands and are considered by the Division to be waters of the United States.
(4) "Structural fill" means an engineered fill with a projected beneficial end use constructed using coal combustion by-products properly placed and compacted.
(5) "Use or reuse of coal combustion by-products" means the procedure whereby coal combustion by-products are directly used as follows:
(a) As an ingredient in an industrial process to make a product, unless distinct components of the coal combustion by-products are recovered as separate end products; or
(b) In a function or application as an effective substitute for a commercial product or natural resource.
Statutory authority
Statutory Authority G.S. 130A-294;
Effective dates
Eff. January 4, 1994.

15A-13B.1702. GENERAL PROVISIONS FOR STRUCTURAL FILL FACILITIES
The provisions of this Section shall apply to the siting, design, construction, operation, closure and recordation of projects which utilize coal combustion by-products as structural fill material or as specified in Item (4) of Rule .1708 of this Section and shall apply to structural fills other than those which received written approval from the Division prior to the effective date of this Section. A solid waste management permit is not required for coal combustion by-products structural fills which meet the requirements listed in this Section.
Statutory authority
Statutory Authority G.S. 130A-294;
Effective dates
Eff. January 4, 1994.

15A-13B.1703. NOTIFICATION FOR STRUCTURAL FILL FACILITIES

(a) A minimum of 30 days before using coal combustion by-products in structural fill projects, the person proposing the use shall submit a written notice to the Division. The notice shall contain, at a minimum:

(1) A description of the nature, purpose and location of the project, including the name of the United States Geological Survey seven and one-half minute map on which the project is located and a Department of Transportation map or an eight and one-half by 11 inch topographic map showing the project.

(2) The estimated start and completion dates for the project.

(3) An estimate of the volume of coal combustion by-products to be used for the project.

(4) A Toxicity Characteristic Leaching Procedure (TCLP) analysis from a representative sample of each different coal combustion by-product source to be used in the project. The TCLP analysis shall be conducted and certified by the generator to be representative of each coal combustion by-product source used in the project. A TCLP analysis shall be conducted at least annually. A minimum analysis shall include: arsenic, barium, cadmium, lead, chromium, mercury, selenium and silver.

(5) A signed and dated statement by the owner(s) of the land on which the structural fill is to be placed, acknowledging and consenting to the use of coal combustion by-products as structural fill and agreeing to record the fill in accordance with Rule .1707 of this Section.

(6) The notification shall include:

(A) Name of coal combustion by-products generator;

(B) Physical location of the generating facility;

(C) Address of generator;

(D) Name of contact for generator;

(E) Telephone number of generator; and

(F) Changes that occur will require subsequent notification of the Division of Solid Waste Management.

(b) In addition to the notification requirements under Paragraph (a) of this Rule, at least 30 days before using coal combustion by-products as a structural fill in projects with a volume of more than 10,000 cubic yards, the person proposing the use shall submit a written notice to the Division containing construction plans for the structural fill facility, including a stability analysis when necessary, which shall be prepared, signed and sealed by a registered professional engineer in accordance with sound engineering practices. The Department of Transportation is not required to submit construction plans with the written notice. The Department of Transportation shall maintain a complete set of construction plans and shall notify the Division where the construction plans are located.

Statutory authority

Statutory Authority G.S. 130A-294;

Effective dates

Eff. January 4, 1994.

15A-13B.1704. SITING FOR STRUCTURAL FILL FACILITIES

(a) Coal combustion by-products used as a structural fill shall not be placed:

(1) Within 50 horizontal feet of a jurisdictional wetland unless after consideration of the chemical and physical impact on the wetland, the U.S. Corps of Engineers issues a permit or waiver for the fill;

(2) Within 50 horizontal feet of the top of the bank of a perennial stream or other surface water body;

(3) Within two feet of the seasonal high ground-water table;

(4) Within 100 horizontal feet of any source of drinking water, such as a well, spring or other groundwater source of drinking water;

(5) Within an area subject to a one-hundred year flood, unless it can be demonstrated to the Division that the facility will be protected from inundation, and washout, and the flow of water is not restricted and the storage volume of the flood plain will not be significantly reduced;

(6) Within 25 feet of any property boundary; and

(7) Within 25 feet of a bedrock outcrop.

(b) The Division and the Department of Transportation may agree on specific structural fill siting criteria that may be used on Department of Transportation projects.

Statutory authority

Statutory Authority G.S. 130A-294;

Effective dates
Eff. January 4, 1994.

15A-13B.1705. DESIGN, CONSTRUCTION, AND OPERATION FOR STRUCTURAL FILL FACILITIES

(a) The structural fill facility must be designed, constructed, operated, closed, and maintained in such a manner as to minimize the potential for harmful release of constituents of coal combustion by-products to the environment or create a nuisance to the public.

(b) Coal combustion by-products shall be collected and transported in a manner that will prevent nuisances and hazards to public health and safety. Coal combustion by-products shall be moisture conditioned, as necessary, and transported in covered trucks to prevent dusting.

(c) Coal combustion by-products shall be placed uniformly and compacted in lifts not exceeding one foot in thickness and shall be compacted to standards, including in-situ density, compaction effort and relative density, specified by a registered professional engineer for a specific end use purpose.

(d) Equipment shall be provided which is capable of placing and compacting the coal combustion by-products and handling the earthwork required during the periods that coal combustion by-products are received at the fill area.

(e) The coal combustion by-product structural fill facility shall be effectively maintained and operated as a non-discharge system to prevent discharge to surface water resulting from the operation of the facility.

(f) The coal combustion by-product structural fill facility shall be effectively maintained and operated to ensure no violations of ground water standards, 15A NCAC 2L.

(g) Surface waters resulting from precipitation shall be diverted away from the active coal combustion by-product placement area during filling and construction activity.

(h) Site development shall comply with the North Carolina Sedimentation Pollution Control Act of 1973, as amended.

(i) The structural fill project must be operated with sufficient dust control measures to minimize airborne emissions and to prevent dust from creating a nuisance or safety hazard and must not violate applicable air quality regulations.

(j) All structural fills shall be covered with a minimum of 12 inches compacted earth, and an additional surface six inches of soil capable of supporting native plant growth.

(k) Compliance with these standards does not insulate any of the owners or operators from claims for damages to surface waters, ground-water or air resulting from the operation of the structural fill facility. If the facility fails to comply with the requirements of this Section, the constructor, generator, owner or operator shall notify the Division and shall take such immediate corrective action as may be required by the Department.

(l) Coal combustion by-products utilized on an exterior slope of a structural fill shall not be placed with a slope greater than 3.0 horizontal to 1.0 vertical.

(m) The Division and the Department of Transportation may agree on specific design, construction, and operation criteria that may apply to the Department of Transportation projects.

Statutory authority
Statutory Authority G.S. 130A-294;
Effective dates
Eff. January 4, 1994.

15A-13B.1706. CLOSURE OF STRUCTURAL FILL FACILITIES

(a) No later than 30 working days or 60 calendar days, whichever is less after coal combustion by-product placement has ceased, the final cover shall be applied over the coal combustion by-product placement area.

(b) The final surface of the structural fill shall be graded and provided with drainage systems that:

(1) Minimize erosion of cover materials; and

(2) Promote drainage of area precipitation, minimize infiltration and prevent ponding of surface water on the structural fill.

(c) Other erosion control measures, such as temporary mulching, seeding, or silt barriers shall be installed to ensure no visible coal combustion by-product migration to adjacent properties until the beneficial end use of the project is realized.

(d) The constructor or operator shall submit a certification to the Division signed and sealed by a registered professional engineer or signed by the Secretary of the Department of Transportation or his designee certifying that all requirements in the Rules of this Section have been met. The report shall be submitted within 30 days of application of the final cover.
(e) The Division and the Department of Transportation shall agree on specific closure criteria that apply to Department of Transportation projects.
Statutory authority
Statutory Authority G.S. 130A-294;
Effective dates
Eff. January 4, 1994.

15A-13B.1707. RECORDATION OF STRUCTURAL FILL FACILITIES
(a) The owners of land where coal combustion by-products have been utilized in volumes of more than 1,000 cubic yards shall file a statement of the volume and locations of the coal combustion by-products with the Register of Deeds in the county or counties where the property is located. The statement shall identify the parcel of land according to the complete legal description on the recorded deed, either by metes and bounds, or by reference to a recorded plat map. The statement shall be signed and acknowledged by the landowners(s) in the form prescribed by G.S. 47-38 through 47-43.
(b) Recordation shall be required within 90 days after completion of coal combustion by-product fill project.
(c) The Register of Deeds in accordance with G.S. 161-14 shall record the notarized statement and index it in the Grantor Index under the name of the owner(s) of the land. The original notarized statement with the Register's seal and the date, book and page number of recording shall be returned to the Division after recording.
(d) When property with more than 1,000 cubic yards of coal combustion by-products is sold, leased, conveyed or transferred in any manner, the deed or other instrument of transfer shall contain in the description section in no smaller type than used in the body of the deed or instrument a statement that coal combustion by-products have been used as fill material on the property.
Statutory authority
Statutory Authority G.S. 130A-294;
Effective dates
Eff. January 4, 1994.

15A-13B.1708. OTHER USES FOR COAL COMBUSTION BY-PRODUCTS
Coal combustion by-products may be beneficially used on one or more of the following applications or when handled, processed, transported or stockpiled for such beneficial use applications and do not require a solid waste permit provided the uses are consistent with the requirements identified below:
(1) Coal combustion by-products used as soil nutrient additives or other agricultural purposes under the authority of the North Carolina Department of Agriculture;
(2) Coal combustion bottom ash or boiler slag used as a traction control material or road surface material if the use is approved by the North Carolina Department of Transportation;
(3) Coal combustion by-products used as material in the manufacturing of another product, including, but not limited to concrete products, lightweight aggregate, roofing materials, plastics, paint, flowable fill and roller compacted concrete or as a substitute for a product or material resource, including but not limited to, blasting grit, roofing granules, filter cloth precoat for sludge dewatering and pipe bedding;
(4) Coal combustion by-products used as a structural fill for the base, sub-base, under a structure or the footprint of a paved road, a parking lot, sidewalk, walkway or similar structure;
(5) Coal combustion by-products used for the extraction or recovery of materials and compounds contained within the coal combustion by-products. Residuals from the processing operations shall remain solid waste and be subject to this Section and Section .1600 of this Subchapter; and
(6) Coal combustion by-products processed with a cementitious binder to produce a stabilized structural fill product which is spread and compacted for the construction of a project with a planned end use.
Statutory authority
Statutory Authority G.S. 130A-294;

Effective dates
Eff. January 4, 1994.

15A-13B.1709. STORAGE AND CONTAINMENT OF COAL COMBUSTION BY-PRODUCTS
(a) Coal combustion by-products may not be stored or speculatively accumulated at the immediate area where they will be put to beneficial use for a longer period of time than necessary to complete the project. Coal combustion by-products are not being speculatively accumulated when a minimum of 75 percent of the coal combustion by-products are removed from the facility and beneficially used annually.
(b) Compliance with this Section does not exempt the owner or operator of the structural fill facility from applicable North Carolina Water Pollution Control Regulations (15A NCAC 2H), the North Carolina Air Pollution Control Regulations (15A NCAC 2D) and all other federal, state and local laws and regulations.
Statutory authority
Statutory Authority G.S. 130A-294;
Effective dates
Eff. January 4, 1994.

EXHIBIT E

STATE OF North Carolina
COUNTY OF Iredell

OWNER'S ACKNOWLEDGMENT AND CONSENT

OTH Holdings LLC ("Owners") hereby execute this Owner's Acknowledgment and Consent as of the 1 day of March, 199~~-~~. 2000.

1. We are the Owners of the property located in Iredell County, North Carolina and described in more detail on Schedule 1 which is attached hereto and incorporated herein by reference (the "Property"):

2. We consent to the use of coal ash as structural fill on the Property and to the recording of this instrument with the Register of Deeds in the County where the Property is located. We also authorize Duke Power and it employees, contractors and agents to enter the Property to review the placement coal ash from time to time.

OTH Holdings, LLC By
Owner
Vice President
Owner

I Beverly J Woodworth, a Notary Public in the County of Mecklenburg and State of North Carolina certify that Robert Stephen Duckworth Jr. personally appeared before me this day and acknowledged the due execution of the foregoing instrument.
Witness my hand and Notarial seal, this 1st day of March, 199~~-~~2000

Beverly J Woodworth
Notary Public
My Commission Expires: 11-29-2003

OFFICIAL SEAL
BEVERLY J. WOODWORTH
NOTARY PUBLIC--NORTH CAROLINA
COUNTY OF IREDELL

I _____, a Notary Public in the County of _____ and State of _____ certify that _____ personally appeared before me this day and acknowledged the due execution of the foregoing instrument.
Witness my hand and Notarial seal, this _____ day of _____, 199_.

_____
Notary Public
My Commission Expires: _____

Iredell-17

Iredell County; Duckworth Site, NC 150 & Bluefield Rd.;
Duke Power; Ash Basics Co.; Oth Holdings, LLC ;
Approx. May, 2000; Approx. Feb., 2001;

The Division received the March 1, 2000 Notification of this CCBP structural fill project on March 7, 2000. It proposed that site clearing and prep and installation of erosion control measures begin on March 15, 2000 and placement of ash to begin by April 1, 2000. An estimated 60,000 cub. yds. (72,000 tons) of ash were to be utilized on the 7.59 acre project (site area only stated in Corps of Engineers General Permit) with the generating site being Duke Power's Marshall Steam Plant at Terrell, NC. Representative TCLP data was submitted. An 8.5 X 11 copy of the USGS 7.5 minute series, Mooresville , NC map was supplied with the site location marked. A copy of the Army Corps of Engineers authorization to impact 0.04 acres of wetlands in the fill activity as long as done according to submitted plans and attached conditions (copy of conditions not supplied with Notification). A signed Owners Acknowledgment and Consent form was submitted but was judged unacceptable by the Division.

Jim Barber and Bill Hocutt of the Permitting Branch met on March 9 to evaluate the plan narrative and attachments associated with the subject notification. A list of twelve items of concern were subsequently placed in a March 10, 2000 memorandum to file.

On March 14, 2000, Mr. Dean Johnston met with Jim Barber and Bill Hocutt at 401 Oberlin Road. The purpose of this meeting was to improve Waste Management's understanding of some points concerning the notification and to finalize a list of additional data, information or other items which were needed and to list questions needing to be answered. A March 15, 2000 letter to Mr. Johnston listed four unresolved issues. These were: (1) a possible spring at a wetland feature, (2) the need to provide a drawing revision to show the limits of ash application to occur, (3) no excavations to exceed two feet in depth (unless a cross section was supplied showing existing grades, excavation limits, groundwater elevations and final grades) and (4) a need to revise the owner's Acknowledgment and Consent Form. In an undated reply letter from Mr. Johnston that was received on March 27, 2000, he agreed to supply a drawing outlining the ash placement limits but took exception to the other three items and in addition brought up the siting setback requirement of 25 feet from any property line saying that a permanent easement from an adjacent property owner allows him some latitude in the 25 foot requirement.

On March 28, 2000, a letter was issued by the Permitting Section to Mr. Johnston which refuted his arguments relating to:(1) set backs from property line even when an easement has been obtained from an adjacent property owner,(2) excavations are not allowed at fill sites,(3) the need for improved clarity of the landowner's personal responsibility in recordation and (4) the denial of placing ash in a wetland feature. Mr. Johnston agreed to the Division's interpretation on all of these issues in his letter of March 31, 2000 to the Permitting Branch.

On May 2, 2000, a letter was issued acknowledging receipt of the necessary information to indicate that construction of this structural fill will be according to the .1700 Rules for Beneficial use of CCBPs. An objection was stated to the use of marking a drawing rather than issuing a revision since the certifying Professional Engineer doesn't have a copy. He needs a copy since he must certify that the project was according to the .1700 Rules at all times. On July 18, 2001 and on Aug. 24. 2001 letters were sent to Mr. Johnston answering his questions about Certification of Closure and recordation notification. The Division had received neither.

C:\WP6DOCS\Struct-Fill-Rpt-01\Iredell\Iredell-17.wpd

ASH BASICS COMPANY

"UTILIZATION ALTERNATIVES FOR THE FUTURE"

128 EAST PLAZA DRIVE
MOORESVILLE, N.C. 28115
(O. 704-799-2944) (M. 704-906-3735)
E-MAIL - GO4DEAN@AOL.COM

3-1-2000

WILLIAM R. HOCUTT
ENVIRONMENTAL CHEMIST
NCDEHNR SOLID WASTE SECTION
P.O. BOX 27687
RALEIGH , N. C. 27611-7687

Dear Mr. Hocutt,

Per the requirements of Solid Waste Management, Section .1700, Requirements For Beneficial Use Of Coal Combustion By-Products find the enclosed submittal for notification.

I am enclosing a drawing for your review for the use of fly ash produced at the Duke Energy's Plant Marshall in Terrell N.C..

Enclosed are the following documents:

1) Drawing of proposed site and erosion control plan
2) Copy of Corp. of Engineer evaluation
3) Owners Acknowledge and Consent Agreement to Record.
4) TCLP Analysis
5) 8.5 X 11 copy of USGS location map, 7.5 Minute Series , Mooresville NC

A) The property is located at the corner of NC Hwy 150 and Bluefield Rd. The end use is intended for convenience store, restaurant and out parcels to be developed at a later date.

B) The estimated start date is 3-15-2000. Site clearing and prep and erosion control measures will be installed prior to ash placement. Ash placement estimated to begin by 4-1-2000.

C) Estimated fill volume is 60,000 cu. yd. / 72,000 tons. ($2400 LB/YD^3 \Rightarrow 89 LB/FT^3$ WET DENSITY?

D) The generator of the product is Duke Energy.

E) The location of the generator is 8320 East Hwy 150 Terrell, NC 28682. Catawba County

F) The name of contact for the generator is Larry Harper @ 704-382-7982

Pg. 2 Submittal

G) Notes for the use and handling of the by-products are on Drawing labeled EC-2.

I am submitting this notification on behalf of the owner.
Owner: Rob Duckworth P.O. Box 3756 Mooresville, NC 28115

Ash Basics Company, Inc has been contracted by the owner to provide these services for development of this property using the Coal Combustion By-Products under the current NCDEHNR state regulations.

Ash Basics Company, Inc. has performed these services in surrounding areas since 1989 and are familiar with the standards required by the guidelines.

I would appreciate a response to this matter as soon as possible due to time restraints. I will gladly meet with you at your convenience for the review.

Please feel free to contact me any time at (704) 799-2944 O. or (704) 906-3735 M.
I look forward to hearing from you. Thanks!

Sincerely,

Dean Johnston - President
Ash Basics Company, Inc.

~~Ryder~~
JIM BARBER
910 624 6081 car phone
1-800 412 2687 pager

U.S. ARMY CORPS OF ENGINEERS
WILMINGTON DISTRICT

Action Id. **199930603** County **Iredell**

GENERAL PERMIT (REGIONAL AND NATIONWIDE) VERIFICATION

Property owner: **Mr. Stan Atwell**

Address: **Carruthers & Associates, P.O. Box 540**
Greensboro, NC 27402

Telephone No.:

Size and Location of project (water body, road name/number, town, etc.):

"Atwell NC 150 Site Project" located on 7.59 acre parcel N.W. of NC 150 and Bluefield Rd. Intersection; in Mooresville

Description of Activity:

Place fill in < 100 LF of an unnamed tributary to Lake Norman for the purpose of constructing a dam for a stormwater management pond. In addition, impact approx. 0.04 acre of wetlands as part of a fill slope necessary for commercial development on the property.

Applicable Law: __X__ Section 404 (Clean Water Act, 33 U.S.C.1344).
(check all that apply) _____ Section 10 (River and Harbor Act of 1899).

Authorization: _____ Regional General Permit Number.
__26__ Nationwide Permit Number.

Your work is authorized by this Regional General (RGP) or Nationwide Permit (NWP) provided it is accomplished in strict accordance with the attached conditions and your submitted plans. For any activity within the twenty coastal counties, before beginning work you must contact the N.C. Division of Coastal Management, telephone (919)733-2293.

Please read and carefully comply with the attached conditions of the RGP or NWP. Any violation of the conditions of the RGP or the NWP referenced above may subject the permittee to a stop work order, a restoration order, and/or appropriate legal action.

This Department of the Army RGP or NWP verification does not relieve the permittee of the responsibility to obtain any other required Federal, State, or local approvals/permits. The permittee may need to contact appropriate State and local agencies before beginning work.

If there are any questions regarding this authorization or any of the conditions of the General Permit or Nationwide Permit, please contact the Corps Regulatory Official specified below.

Date March 22, 1999
Corps Regulatory Official Steve Chapin Telephone No. (828) 271-4014
Expiration Date of Verification September 15, 1999

cc: **B.K. Barringer & Associates**

CESAW Form 591
Revised July 1995

DONALD M. CHEEK, PRINCIPAL

EDUCATION:

Bachelor of Arts, Urban Geography, University of North Carolina

Masters, Regional Planning University of North Carolina

Wetland Delineation & Management, Chinn Environmental Training, Inc.

Plant Identification, Wetland Resources

Wetland Mitigation, Environmental Concerns, Inc.

EXPERIENCE:

Principal, Donald M. Cheek, Wetland Consultant
Davidson, North Carolina

Director of Project Development, Sawgrass Ltd.,
Ponte Vedra Beach, Florida

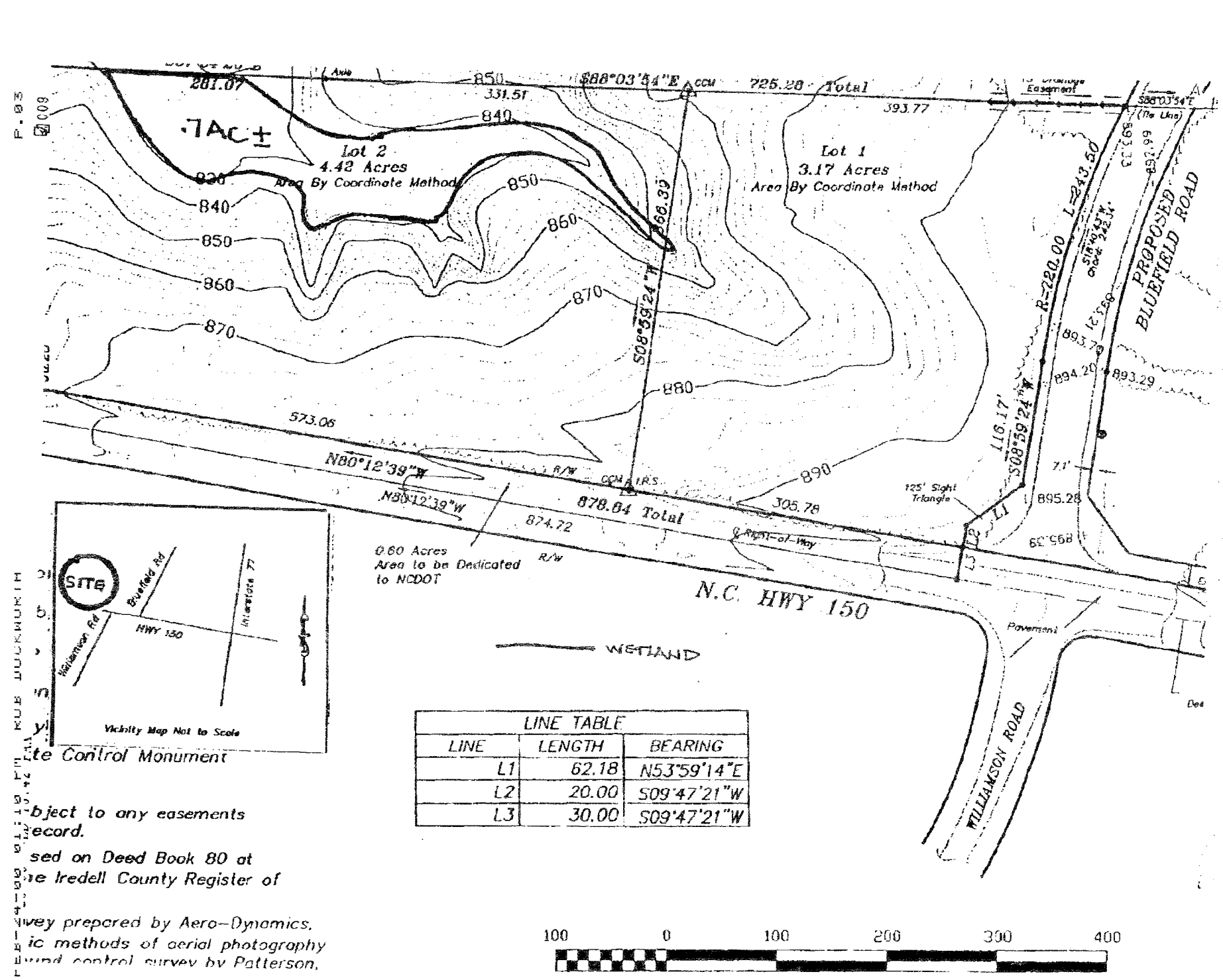
President, Cheek-Godwin Associates, Architects and Planners, Inc.,
Jacksonville, Florida

Vice President-Planning, Reynolds, Smith, and Hills,
Architects-Engineers-Planners, Inc.,
Jacksonville, Florida

Vice-President-Planning and Research, Conway Research, Inc.,
Atlanta, Georgia

Director of Planning, City of Fayetteville,
Fayetteville, North Carolina

Assistant Director of Planning, City of Durham,
Durham, North Carolina



LINE TABLE		
LINE	LENGTH	BEARING
L1	62.18	N53°59'14"E
L2	20.00	S09°47'21"W
L3	30.00	S09°47'21"W

te Control Monument

bject to any easements
ecord.

sed on Deed Book 80 at
he Iredell County Register of

vey prepared by Aero-Dynamics.
ic methods of aerial photography
ound control survey by Patterson,

INTERMITTENT CHANNEL EVALUATION FORM

ACTION ID _____ APPLICANT NAME Stan Atwell DATE 1-25-99

PROPOSED CHANNEL WORK (i.e., culvert, relocation, etc.) Detention basin

WATERBODY/RIVER BASIN Lake Norman COUNTY/CITY Iredell

RECENT WEATHER CONDITIONS rain showers

P	SP	NP	Observation	Comments or Description
		✓	Fish/Shellfish/Crustaceans Present	
		✓	Benthic Macro Invertebrates	
		✓	Amphibians Present/Breeding	
✓			Algae And/Or Fungus (water quality function)	
✓			Wildlife Channel Use (i.e. tracks, feces, shells, others)	
		✓	Federally Protected Species Present (Discontinue)	
			Riffle/Pool Structure	
✓			Stable Streambanks	
✓			Channel Substrate (i.e. gravel, cobble, rock, coarse sand)	
		✓	Riparian Canopy Present (SP =/> 50% closure)	
		✓	Undercut Banks/Instream Habitat Structure	
✓			Flow In Channel	
✓			Wetlands Adjacent To/Contig. With Channel (Discontinue)	
✓			Persistent Pools/Saturated Bottom (June thru Sept.)	
✓			Seeps/Groundwater Discharge (June thru Sept.)	
✓			Adjecent Floodplain Present	
✓			Wrack Material or Drift Lines	
✓			Hydrophytic Vegetation In/Adjacent to channel	

Important To Domestic Water Supply? Y /(N)

Does Channel Appear On A Quad Or Soils Map? (Y)/ N Approx. Drainage Area: 100 AC ±

Determination:

- [ ] Perennial Channel (stop)
- [x] Intermittent Channel (proceed)
- [ ] Ephemeral Channel (no jd)
- [ ] Ditch Through Upland (no jd)

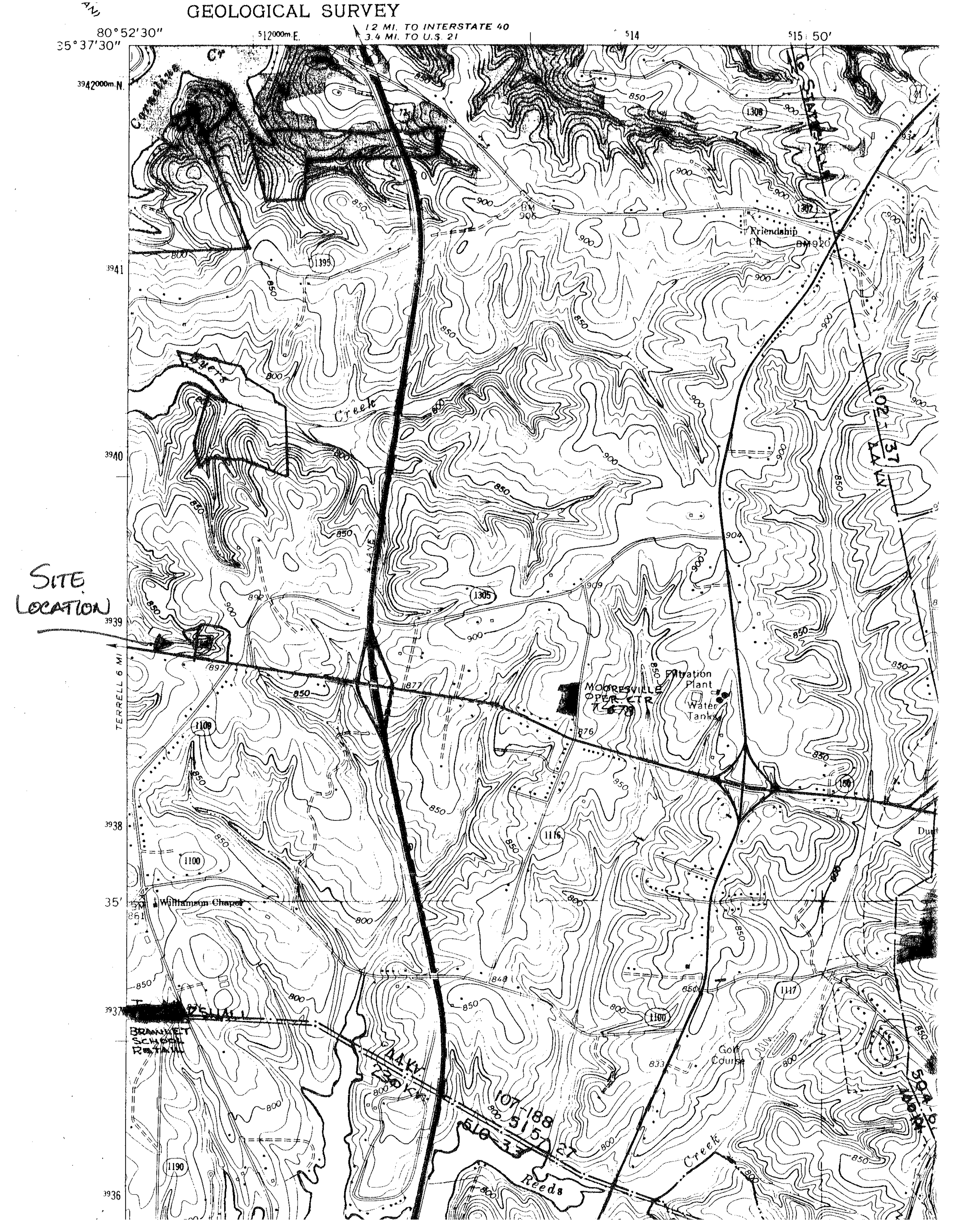
- [ ] Important Channel: _____ LF
- [x] Unimportant Channel: 4,000 LF

(attach map indicating location of important/unimportant channel)

PROJECT MGR. Initials _____

Evaluator's Signature: Dan Cheek
(if other than C.O.E. project manager)

P=Present SP=Stongly Present NP=Not Present


GEOLOGICAL SURVEY
80°52'30"
35°37'30"
512000m.E.
12 MI. TO INTERSTATE 40
3.4 MI. TO U.S. 21
514
515
50'
3942000m.N.
3941
3940
3939
3938
35'
3937
3936
Cr
Creek
Friendship Ch
BM 920
BM 906
SITE LOCATION
TERRELL 6 MI
MOORESVILLE OPER CTR
Filtration Plant
Water Tanks
Williamson Chapel
BRANDET SCHOOL RETAIL
Golf Course
Creek
Reeds
1395
1305
1308
1302
1109
1100
1116
1117
1190
150
107-188
515
510-37
230 KV
44 KV
102-37
44 KV
850
900
800

Duke Power
A Duke Energy Company

Hazardous Waste Analysis Results

Environmental Center - McGuire Nuclear Complex - Building 7405

North Carolina Department of Environmental Health & Natural Resources (DENR) Certification # 248
South Carolina Department of Health & Environmental Control (DHEC) Laboratory Certification # 99005

Field I.D.	MARSHALL ASH		
Station / Contact	MARSHALL	LARRY EVANS	
Collection Date	03/01/99	Analysis Date	03/18/99
Laboratory I.D.	99-MAR-0005 99005031	Matrix Type	SOLID NA % Volume NA Weight (g)
Laboratory Contact	Penny Franklin		(704) 875-5209

Analyte	T.C.L.P. Conc.		T.C.L.P. Regulatory Limit	Waste Code	Analytical Method (U.S.E.P.A. SW-846 METHODS)
Silver (Ag)	< 0.005	mg/L	5 mg/l	D011	7760
Barium (Ba)	0.24	mg/L	100 mg/l	D005	6010
Cadmium (Cd)	< 0.03	mg/L	1 mg/l	D006	6010
Chromium (Cr)	0.15	mg/L	5 mg/l	D007	6010
Lead (Pb)	< 0.09	mg/L	5 mg/l	D008	6010
Arsenic (As)	< 0.1	mg/L	5 mg/l	D004	6010
Selenium (Se)	0.38	mg/L	1 mg/l	D010	6010
Mercury (Hg)	< 0.001	mg/L	0.2 mg/l	D009	7471
Nickel (Ni)			134 mg/l	---	6010
Thallium (Tl)			130 mg/l	---	6010
% Ash @ 550° C			N/A	---	ASTM D297/D817 E830 @ 550° C
B.T.U.			N/A	---	ASTM D3286-91
Total Sulfur			N/A	---	ASTM D4239-85
Total Chlorine			N/A	---	EPA 9076
Ignitibility			(Y/N)	---	EPA 1010
pH			< 2.0 or > 12.5	---	EPA 9040
% Water			N/A	---	ASTM D3792

EXHIBIT E

STATE OF North Carolina
COUNTY OF Iredell

OWNER'S ACKNOWLEDGMENT AND CONSENT

OTH Holdings LLC ("Owners") hereby execute this Owner's Acknowledgment and Consent as of the 1 day of March, ~~199~~ 2000.

1. We are the Owners of the property located in Iredell County, North Carolina and described in more detail on Schedule 1 which is attached hereto and incorporated herein by reference (the "Property"):

2. We consent to the use of coal ash as structural fill on the Property and to the recording of this instrument with the Register of Deeds in the County where the Property is located. We also authorize Duke Power and it employees, contractors and agents to enter the Property to review the placement coal ash from time to time.

OTH Holdings, LLC By
Owner
Vice President
Owner

I Beverly J Woodworth, a Notary Public in the County of Mecklenburg and State of North Carolina certify that Robert Stephen Duckworth Jr.
personally appeared before me this day and acknowledged the due execution of the foregoing instrument.
Witness my hand and Notarial seal, this 1st day of March, ~~199~~ 2000

Beverly J Woodworth
Notary Public
My Commission Expires: 11-29-2003

OFFICIAL SEAL
BEVERLY J. WOODWORTH
NOTARY PUBLIC–NORTH CAROLINA
COUNTY OF IREDELL

I _____, a Notary Public in the County of _____ and State of _____ certify that _____
personally appeared before me this day and acknowledged the due execution of the foregoing instrument.
Witness my hand and Notarial seal, this _____ day of _____, 199_.

_____
Notary Public
My Commission Expires: _____

EXHIBIT E

STATE OF North Carolina
COUNTY OF Iredell

OWNER'S ACKNOWLEDGMENT AND CONSENT

OTH Holdings LLC ("Owners") hereby execute this Owner's Acknowledgment and Consent as of the 1 day of March, ~~199~~ 2000.

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OTH Holdings LLC By
Owner
Vice President
Owner

I Beverly J. Woodworth, a Notary Public in the County of Mecklenburg and State of North Carolina certify that Robert Stephen Duckworth Jr. personally appeared before me this day and acknowledged the due execution of the foregoing instrument.
Witness my hand and Notarial seal, this 1st day of March, ~~199~~ 2000

Beverly J. Woodworth
Notary Public
My Commission Expires: 11-29-2003

OFFICIAL SEAL
BEVERLY J. WOODWORTH
NOTARY PUBLIC—NORTH CAROLINA
COUNTY OF IREDELL

I _____, a Notary Public in the County of _____ and State of _____ certify that _____ personally appeared before me this day and acknowledged the due execution of the foregoing instrument.
Witness my hand and Notarial seal, this _____ day of _____, 199_.

_____
Notary Public
My Commission Expires: _____

MEMORANDUM
March 10, 2000

To : Jim Coffey
Jim Barber

From: Bill Hocutt WRH.

Reference: Coal Combustion By- Products Structural Fill Notification Received March 7, 2000. This project is proposed for Mooresville (in Iredell County), NC with a requested start date of March 15, 2000. The amount of fly ash fill projected to be used is 60,000 cubic yards generated at Duke Power's Marshall Steam Plant located in Terrell, NC.

The submitted narrative and engineering drawings were reviewed by Jim Barber and Bill Hocutt on March 9, 2000 with the following points listed as needing clarification. The subject structural fill notification was submitted by Mr. Dean Johnston who is a consultant and president of Ash Basics Company of Moooresville, NC. Bill Hocutt telephoned Mr. Johnston on March 9 and the list of points needing clarification were reviewed with him. Since Mr. Johnston had volunteered to come to Raleigh if needed it was pointed out that this would be very useful especially with him already aware of the points of concern. He agreed to meet with the Solid Waste Section at 10:00 AM on Tuesday March 14.

1. It appears that three separate pieces of property are being impacted by fly ash. The owners are David M. Bean, R. J. Atwell heirs and Rob Duckworth.
2. The Owner's Acknowledgement & Consent Form was signed by Robert Stephen Duckworth, Jr. The owner cannot assign away his recordation rights, he must request and get the recording done. All three owners may need to sign agreement.
3. Is Robert Stephen Duckworth, Jr. the Rob Duckworth owner?
4. Need to identify the location of the 100 linear feet of tributary that is being impacted. Need to delineate the 0.04 acres of wetlands impacted.
5. Will the 0.26 acres of wetlands be filled with ash?
6. We are unable to determine exactly where the ash is to be placed. Perhaps a clean site plan would allow this to be drawn in clearly.
7. A typical cross section showing locations of ash and foundations is needed to understand the site.
8. Who owns lot #1? Duckworth?
9. A FEMA flood plain map is needed that shows the 100 year flood plain in relation to the wet lands and the tributary.
10. Need statements of conforming to .1700 rules.
11. Need statements concerning locations of nearest sources of drinking water (springs, wells) , distances of existing ground surfaces to seasonal high groundwater levels and descriptions of how those groundwater seasonal high levels were determined.
12. Are DOT's agreements to encroachments upon their right of ways and/or easements needed? Are these agreements in hand?

c:/wp6docs/memos/dukpwr03-10

COPY

Prepared by and return to: Anthony S. Privette, P.O. Drawer 1776, Statesville, NC 28677

IREDELL COUNTY NC
Book 1189
Pages 1684-1687
FILED 4 PAGE(S)
03/13/2000 1:41 PM
BRENDA D. BELL
Register Of Deeds

STATE OF NORTH CAROLINA

COUNTY OF IREDELL

GRANT OF EASEMENT

KNOW ALL MEN BY THESE PRESENTS, that CHARLES E. ATWELL and wife, LAVON B. ATWELL; CAROLYN A. MOORE and husband, REECE MOORE; FRANK BAKER, widower; JOANNE A. SMITH, Trustee of the Atwell Family Trust as created by the Will of Joseph Q. Atwell; and SPOON FAMILY PARTNERSHIP (herein referred to as the "Grantor") for good and valuable consideration received from OTH HOLDINGS, LLC, a West Virginia Limited Liability Company (hereinafter referred to as the "Grantee"), the receipt and sufficiency of which is hereby acknowledged, does hereby give, grant and convey to Grantee, its successors and assigns, for the benefit of the land described as Lot 1, in the Plat recorded at Plat Book 34, Page 136, Iredell County Registry, (herein referred to as the "Property") and as a burden on the land described as Lot 3, and Lot 4, in the Plat recorded at Plat Book 34, Page 136, Iredell County Registry (herein referred to as the "Adjoining Property"), a perpetual non-exclusive easement (herein referred to as the "Easement" to construct, establish, maintain and repair, cut and fill slopes (herein referred to as the "Slope System") on that certain portion of the Adjoining Property being approximately 0.15 acres of Lot 4 and 0.13 acres of Lot 3 for an approximate total of 0.28 acres and marked as the "Slope Easement" on the Plat map recorded at Plat Book 34, Page 136, Iredell County Registry (herein referred to as the "Easement Area") for the purpose of establishing the necessary slopes and grades for the Property to meet the design and engineering standards for the Property as well as the minimum requirements of the Town of Mooresville, North Carolina and Iredell County, North Carolina. Grantee's rights under the Easement shall be subject to and limited by the following:

1. All grading within the Easement Area shall be done in accordance with the "Grading/Drainage and Erosion Control Plan" prepared by B. K. Barringer and Associates, P.A., a copy of which, signed by the Grantor and Grantee is in the possession of each party (the "Grading Plan").

2. Grantee shall stabilize and seed the slopes and shall comply with all applicable laws, regulations and ordinances, including the erosion control ordinances of Iredell County and the appropriate requirements of the North Carolina Department of Environment, Health and Natural Resources.

3. Grantee shall maintain the Easement Area in a clean and sightly condition and shall maintain adequate ground cover and landscaping, and shall repair and replace the slope as necessary so as to protect erosion of the slopes and to maintain lateral support of the Property and the Adjoining Property.

The Grantee agrees that the installation, maintenance, repair and replacement of the Slope System shall be performed at no cost or expense to the Grantor. Grantor shall have the right, but not the obligation, to maintain the slope in the event that Grantee does not do so and to collect the costs of such work from Grantee upon demand.

TO HAVE AND TO HOLD the Easement granted hereunder unto the Grantee, its successors and assigns forever.

The Grantee agrees to defend, indemnify and hold harmless the Grantor, their heirs, devisees, personal representatives, successors and assigns, from and against any and all claims and demands asserted or arising out of this Easement and the construction, repair and maintenance of the Slope System as contemplated hereby and any and all loss, cost, damage, liability and expense incurred by the Grantor in connection therewith, including, without limitation, court costs and attorneys fees.

The covenants and agreements made and reserved and the easements granted hereunder shall run with the land and be binding upon and inure to the benefit of the Grantor and the Grantee and their respective heirs devisees, personal representatives, successors and assigns and shall burden the Easement Area of the Adjoining Property and, to the extent of Grantee's maintenance obligations, the Property.

Nothing herein shall prohibit Grantor from using the Adjoining Property, including the Easement Area, in any manner not inconsistent with the Easement granted hereby.

IN WITNESS WHEREOF, the Grantor has caused this Grant of Easement to be duly executed, by and through its duly authorized representatives under seal, as of the 10 day of March, 2000.

GRANTOR:

Charles E. Atwell
CHARLES E. ATWELL

LAVON B. ATWELL

Carolyn A. Moore
CAROLYN A. MOORE

Reece Moore
REECE MOORE

Frank Baker
FRANK BAKER

Joanne A. Smith, Trustee
JOANNE A. SMITH as Trustee of the Atwell Family Trust as created by the Will of Joseph Q. Atwell

SPOON FAMILY PARTNERSHIP

By: Carolyn A. Fincher (SEAL)

STATE OF NORTH CAROLINA

COUNTY OF Guilford

I, a Notary Public of the County and State aforesaid, certify that CHARLES E. ATWELL and wife, LAVON B. ATWELL personally appeared before me this day and acknowledged the execution of the foregoing instrument.

WITNESS my hand and official stamp or seal, this 11 day of March 2000.

J. STANLEY ATWELL
NOTARY PUBLIC
GUILFORD COUNTY, NC
Comm. Expires 10-27-02

Notary Public

My Commission Expires:
10/27/02

STATE OF NORTH CAROLINA

COUNTY OF Mecklenburg

I, a Notary Public of the County and State aforesaid, certify that CAROLYN A. MOORE and husband, REECE MOORE personally appeared before me this day and acknowledged the execution of the foregoing instrument.

WITNESS my hand and official stamp or seal, this 12 day of March 2000.

Notary Public

My Commission Expires:
11-7-2002

STATE OF NORTH CAROLINA

COUNTY OF Iredell

I, a Notary Public of the County and State aforesaid, certify that FRANK BAKER, widower personally appeared before me this day and acknowledged the execution of the foregoing instrument.

WITNESS my hand and official stamp or seal, this 12 day of March 2000.

BETTY M. BRAWLEY NOTARY PUBLIC IREDELL COUNTY, N.C.

Notary Public

My Commission Expires: 11-25-2001

STATE OF NORTH CAROLINA

COUNTY OF Guilford

I, a Notary Public of the County and State aforesaid, certify that JOANNE A. SMITH, Trustee personally appeared before me this day and acknowledged the execution of the foregoing instrument.

WITNESS my hand and official stamp or seal, this 11 day of March, 2000.

J. STANLEY ATWELL
NOTARY PUBLIC
GUILFORD COUNTY, NC
Comm. Expires 10-27-02

Notary Public

My Commission Expires: 10/27/02

STATE OF NORTH CAROLINA

COUNTY OF Mecklenburg

I, a Notary Public for said County and State, do hereby certify that Carolyn S. Fincher, a partner of SPOON FAMILY PARTNERSHIP, personally appeared before me this day and acknowledged the due execution of the foregoing instrument.

WITNESS my hand and notarial seal this 12 day of March 2000.

Peggy J. Bates
Notary Public

My commission expires:
11-7-2002

The Foregoing Certificate(s)
of _____
_____
_____
_____
_____
_____
is/are certified to be correct. This instrument and this certificate are duly registered at the date and time and in the Book and Page shown on the first page hereof. BRENDA D. BELL
REGISTER OF DEEDS FOR IREDELL COUNTY
By: _____ Deputy/Assistant-Register of Deeds

ASH BASICS COMPANY

"UTILIZATION ALTERNATIVES FOR THE FUTURE"

128 EAST PLAZA DRIVE
MOORESVILLE, N.C. 28115
(O. 704-799-2944) (M. 704-906-3735)
E-MAIL - GO4DEAN@AOL.COM

PROPOSAL

DATE: 2-23-2000
OTH HOLDINGS, LLC
ROB DUCKWORTH
P.O. BOX 3756
MOORESVILLE, N.C. 28115

Dear Rob,

Find below the terms of which the fly ash from Plant Marshall Steam Station will be utilized on your site at Hwy 150 / Bluefield Road.

A contract for trucking and material will be through Ash Basics Company and Duke Energy. A contract for the construction services will be with your chosen contractor or mine with the Duke performance criteria understanding.

THESE ASSUMPTIONS WOULD APPLY:

1) SITE TO BE CLEARED AND FREE OF DEBRIS
2) SUB-BASED TO BE COMPACTED AND ESTABLISHED AT LEAST 2 FEET ABOVE SEASONAL HIGH GROUND WATER LEVEL
3) EROSION CONTROL MEASURES i.e.: SEDIMENT POND, SILT FENCE, PIPING, ETC. INSTALLED
4) INSTALL APPR. 100 FEET OF TRUCK ENTRANCE i.e.: (ROCK)
5) ALL PERMITS, EASEMENTS AND APPROVALS IN PLACE

TERMS FOR ASH:

ASH BASICS CO. WILL SUPPLY UP TO 60,000 CU. YDS. BUT NOT LIMITED TO AT A COST OF $ 3.00 PER CU. YD. IN PLACE.
THIS COST WILL INCLUDE LOADING, HAULING, PLACEMENT, AND COMPACTION.

ASH BASICS CO. WILL INCLUDE CONSTRUCTION SERVICES FOR INSTALLATION OF EROSION CONTROL MEASURES AT THE COST PER THE ATTACHED PROPOSAL.

ASH BASICS CO. WILL PROVIDE PROJECT MANAGEMENT DURING THE COURSE OF ALL ACTIVITIES UNTIL JOB IS COMPLETED.

ASH BASICS WILL ADHERE TO COMPLIANCE WITH DUKE ENERGY'S PERFORMANCE STANDARDS, N.C. STATE REGULATORY REQUIREMENTS AND ANY OTHER LOCAL REQUIREMENTS.

OWNERS RESPONSIBILITY:

OBTAIN ALL LOCAL AND STATE PERMITS AND APPROVALS.

SUPPLY ABC WITH EASEMENTS AND ADJOINING LANDOWNERS APPROVALS.

AGREE TO CONSENT AND COMPLIANCE WITH DUKE ENERGY AND N.C. STATE REQUIREMENTS. (ATTACHED)

I look forward to working with you on this and other possible projects.
If you have any further questions feel free to call anytime at (704) 799-2944 or (704) 906-3735

Sincerely,

Dean Johnston
President, Ash Basics Company, Inc.

3/1/00 3/1/00
OTH HOLDINGS, LLC
ACCEPTED: ROB DUCKWORTH _____ DATE 3/1/00

ACCEPTED: DEAN JOHNSTON _____ DATE: 3/1/00

ACCEPTED: BEN JOHNSON _____ DATE: _____
JOHNSON BULLDOZING

cc: LARRY S. HARPER / DUKE ENERGY

ASH BASICS COMPANY

"UTILIZATION ALTERNATIVES FOR THE FUTURE"

128 EAST PLAZA DRIVE
MOORESVILLE, N.C. 28115
(O. 704-799-2944) (M. 704-906-3735)
E-MAIL GO4DEAN@AOL.COM

ATTN: LANDOWNERS / CONTRACTORS / / BUILDERS / REALTORS

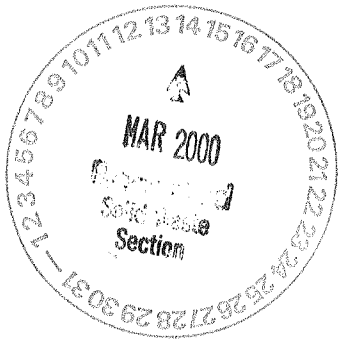
ECONOMICAL CLEAN FILL MATERIAL

Also offering:

* DESIGN WORK / SITE PREP
* ENGINEERING
* TRUCKING
* PLACEMENT
* TESTING
* UTILITIES / PIPING
* PROJECT MANAGEMENT
* TURN KEY PROJECTS
* CONSULTING

FOR MORE INFO OR A QUOTE CALL:

Dean Johnston @ 704-799-2944
704-906-3735



NCDENR

JAMES B. HUNT JR.
GOVERNOR

BILL HOLMAN
SECRETARY

WILLIAM L. MEYER
DIRECTOR

NORTH CAROLINA DEPARTMENT OF
ENVIRONMENT AND NATURAL RESOURCES

DIVISION OF WASTE MANAGEMENT

March 15, 2000

Mr. Dean Johnston, President
Ash Basics Company
128 East Plaza Drive
Mooresville, NC 28115

Subject: A Notification Letter for a proposed coal combustion By-Product Structural Fill in Mooresville, NC (Iredell County) was Received on March 7, 2000. The fly ash for this proposed project is planned to be supplied by the Duke Power Marshall Steam Plant at Terrell, NC.

Dear Mr. Johnston:

Thank you for meeting with Jim Barber and myself of NC DENR on March 14, 2000 here in Raleigh concerning the subject Notification.The purpose of this meeting was to improve Waste Management's understanding of some points concerning this Notification and to finalize a list of additional data or drawings needed or questions needing to be answered. Assuming that the following items can be satisfactorally resolved, an acknowledgement letter can then be issued and the project can then proceed.

1. The wetland feature / with a potential spring along the western property line of lot # 1 could pose a problem if it were to be mishandled. If coal fly ash were to be placed at this point of the site and a spring were then found to be there, then drainage of that area by use of a spring relief system would not be allowed. The solution to this potential problem is to not place any fly ash in this region of the site and to provide the twenty foot set-back from this property line as stated in Rule .1704 (a) (6).

2. Mr. Johnston agreed to supply a drawing that clearly describes where fly ash is to placed on the site.

3. If any mass on site excavations exceed two feet from existing contours, then a cross section of the site will be required which includes existing grades, excavation limits, groung water elevations and final finished grades.

1646 MAIL SERVICE CENTER, RALEIGH, NORTH CAROLINA 27699-1646
401 OBERLIN ROAD, SUITE 150, RALEIGH, NC 27605
PHONE 919-733-4996 FAX 919-715-3605

NCDENR

JAMES B. HUNT JR.
GOVERNOR

BILL HOLMAN
SECRETARY

WILLIAM L. MEYER
DIRECTOR

NORTH CAROLINA DEPARTMENT OF
ENVIRONMENT AND NATURAL RESOURCES

DIVISION OF WASTE MANAGEMENT

May 2, 2000

Mr. Dean Johnston, President
Ash Basics Company
128 East Plaza Drive
Mooresville, NC 28115

Subject: A March 1, 2000 Notification Letter for a proposed coal combustion By-Product Structural Fill in Mooresville, NC (Iredell County) was Received on March 7, 2000. The fly ash for this proposed project is planned to be supplied by the Duke Power Marshall Steam Plant at Terrell, NC.

References:
1.) March 15, 2000 letter from William Hocutt of NC DENR to Mr. Dean Johnston giving details of procedures to be followed during construction and changing of the form for the land owner's signature declaring agreement by the land owner to recordation of the fill on the property deed.
2.) Undated response letter to reference # 1. This letter from Mr. Dean Johnston to William Hocutt was mailed on March 24, 2000 and states the reasons for not wanting to follow the procedures given in reference letter # 1.
3.) March 28, 2000 letter from James C. Coffey of NC DENR to Mr. Dean Johnston stating additional emphasis to the Division of Waste Management's (DWM's) position on wetland features, the communication of the proposed area planned to receive fly ash, Recordation and requirement of no property lines within a fill area.
4.) March 31, 2000 letter from Mr. Dean Johnston to William Hocutt agreeing to Reference Letter #3 stipulations on dealing with the wetlands features, submitting a marked drawing showing where fly ash is proposed to be placed on the site, containing a description of how some escavation is planned on the site and how he proposes to limit that activity on the site, a revised Recordation agreement as requested and agreement to not place any fly ash on adjacent landowner's properties even though "Grants of Easesments" exist.

Dear Mr. Johnston:

This is to acknowledge receipt of your Subject Notification Letter and also your Reference letters numbers two and four. Your coming to Raleigh on March 14 to meet with Jim Barber and Bill Hocutt about this project also needs to be

1646 MAIL SERVICE CENTER, RALEIGH, NORTH CAROLINA 27699-1646
401 OBERLIN ROAD, SUITE 150, RALEIGH, NC 27605
PHONE 919-733-4996 FAX 919-715-3605

North Carolina
Department of Environment and Natural Resources

Division of Waste Management

Michael F. Easley, Governor
William G. Ross Jr., Secretary
Dexter R. Matthews, Interim Director

July 18, 2001

Mr. Dean Johnston
Ash Basics Company
P.O. Box 3573
Mooresville, NC 28117

References: 1) Iredell County CCBP structural fill located in Mooresville, NC and named the Duckworth Project. Owner is stated to be OTH HOLDINGS, LLC; Rob Duckworth, Member/manager.
2) Catawba County CCBP structural fill located at 7836 NC Highway 150E known as the Jeten Project. Owners are stated to be Edward and Nadine Tarantino c/o Jeten Properties, Inc. On the "Owner's Acknowledgment and Consent Form", Jeten Properties is shown to be the owner with Edward Tarantina's signature.

Dear Mr. Johnston:

On June 20, 2001 you and I discussed the recordation of completed CCBP structural fills and I promised to look at the two reference files to see if recordation documents had been received on the two reference projects. I have now searched those files and find that we have received a recordation document for the reference number one project but not for reference number two. Please have the owner(s) record that project as per Rule .1707 with the Catawba County Register of Deeds. Please note that in my previous correspondences about the Reference Number two site I have in error identified it as being in Iredell County when it is actually in Catawba. I apologize for any confusion this may have caused.

In searching the files I have also found that Certificates of Closure have not been received by the Division on either project. At your earliest convenience, please forward Certificates of Closure for both projects signed and sealed by a NC registered Professional Engineer. Rule .1706(d) states that these are due within 30 days after application of the final cover.

Sincerely,

William R. Hocutt

William R. Hocutt, Chemist
Solid Waste Section

cc: Jim Coffey
Jim Barber
Tim Jewett
Anthony Foster

c:/wp6docs/letters/dukpwr07-18.wpd

North Carolina
Department of Environment and Natural Resources

Division of Waste Management

Michael F. Easley, Governor
William G. Ross Jr., Secretary
Dexter R. Matthews, Interim Director

August 24, 2001

Mr. Dean Johnston
Ash Basics Company
P.O. Box 3573
Mooresville, NC 28117

Reference: July 18, 2001 letter from William Hocutt to Dean Johnston concerning Certificates of Closure and Recordation Statements for the Iredell County Duckworth Project and the Catawba County Jeten Project.

Dear Mr. Johnston:

The reference letter reported if the identified required documents for those two completed coal fly ash structural fill projects had been received by the Division of Waste Management. In checking those files again, I find that the status remains unchanged from that found in July.

As you know, the 15A NCAC 13B .1700 rules specify when the Certificate of Closure and the Recordation Statements are due to the Division. The Certificate of Closure is due to the Division within 30 days after application of the final cover on the site. Within ninety days after completion of the project, the Recordation Statement is to be filed with the County Register of Deeds. After notarization and specified recording the original is then forwarded to the Division.

As was stated in the Reference letter, the Division has not received a Certificate of Closure for either of these two projects. Also, the Division has received the Recordation Statement on the Duckworth project but not for the Jeten project. Please expedite preparation of these missing documents and forward them to the Division as soon as they are available.

Sincerely,

William R. Hocutt

William R. Hocutt, Chemist
Solid Waste Section

cc: Jim Coffey
Jim Barber
Tim Jewett
Anthony Foster

c:wp6docs/letters/dukpwr08-24-01

NCDENR

JAMES B. HUNT JR.
GOVERNOR

BILL HOLMAN
SECRETARY

WILLIAM L. MEYER
DIRECTOR

NORTH CAROLINA DEPARTMENT OF
ENVIRONMENT AND NATURAL RESOURCES

DIVISION OF WASTE MANAGEMENT

March 15, 2000

Mr. Dean Johnston, President
Ash Basics Company
128 East Plaza Drive
Mooresville, NC 28115

Subject: A Notification Letter for a proposed coal combustion By-Product Structural Fill in Mooresville, NC (Iredell County) was Received on March 7, 2000. The fly ash for this proposed project is planned to be supplied by the Duke Power Marshall Steam Plant at Terrell, NC.

Dear Mr. Johnston:

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1. The wetland feature / with a potential spring along the western property line of lot # 1 could pose a problem if it were to be mishandled. If coal fly ash were to be placed at this point of the site and a spring were then found to be there, then drainage of that area by use of a spring relief system would not be allowed. The solution to this potential problem is to not place any fly ash in this region of the site and to provide the twenty foot set-back from this property line as stated in Rule .1704 (a) (6).

2. Mr. Johnston agreed to supply a drawing that clearly describes where fly ash is to placed on the site.

3. If any mass on site excavations exceed two feet from existing contours, then a cross section of the site will be required which includes existing grades, excavation limits, groung water elevations and final finished grades.

1646 MAIL SERVICE CENTER, RALEIGH, NORTH CAROLINA 27699-1646
401 OBERLIN ROAD, SUITE 150, RALEIGH, NC 27605
PHONE 919-733-4996 FAX 919-715-3605

4. The submitted owner's Acknowledgement and Consent Form does not compel The owner to proceed with recordation at the completion of the project. Mr. Duckworth needs to provide a written statement agreeing to his active participation in getting recordation accomplished.

Please contact me at 919-733-0692, extension # 260 if you have any questions about the contents of this letter.

Sincerely,

William R. Hocutt

William R. Hocutt
Solid Waste Section Chemist

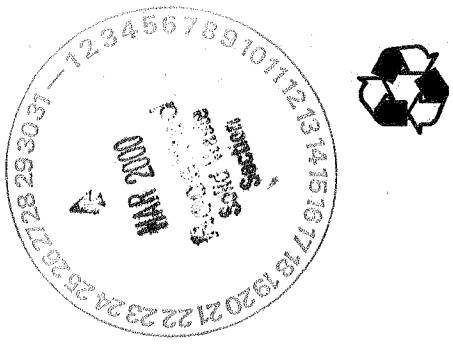
cc: Jim Coffey
Jim Barber
Tim Jewett

c:/wp6docs/letters/dukpwr03-15

ASH BASICS COMPANY

"UTILIZATION ALTERNATIVES FOR THE FUTURE"

128 EAST PLAZA DRIVE
MOORESVILLE, N.C. 28115
(O. 704-799-2944) (M. 704-906-3735)
E-MAIL - GO4DEAN@AOL.COM



WILLIAM R. HOCUTT
ENVIRONMENTAL CHEMIST
NCDEHNR SOLID WASTE SECTION
401 OBERLIN RD. SUITE 150
RALEIGH N.C. 27605

Dear Mr. Hocutt,

Thanks for your quick response to our meeting on March 14, 2000 in Raleigh concerning the notification requirements for Beneficial Use of Coal Combustion By-Products.

After reviewing your response of March 15, I have gotten some clarifications and comments concerning the four issues pending your acknowledgment letter.

1.) We are aware of the wetlands issue and potential hazards of springs to the integrity of the fill. We have built in safety zones for these issues, IE; french drains, compacted soil buffers, piping, etc. These apply to our sites when soil is used also but we factor additional measures when ash is being placed on these sites, IE; additional soil buffers beyond the two feet above seasonal high groundwater levels.

2.) I will supply a drawing outlining the ash placement area pending resolution of items 1, 3, & 4, Of your memo and Item 5, of this memo.

3.) Mass excavations are not intended to take place from existing contours but will be handled in adherence to the Reg.'s requirements addressing groundwater. As indicated by the copy borings I supplied, the groundwater table is far below the excavation points...10-15 feet.

4.) Please read carefully the "Owners Acknowledgment and Consent Form", we feel this is an intent by the owner to compel him to abide by the requirements of the Reg.'s. This is also addressed in the owners contract with ABC & Duke Energy. It is my understanding that this form has been sufficient in the past.

5.) The issue of encroachment of the property boundaries needs to be addressed while obtaining in writing the adjacent property owners permission of permanent easement and indemnification to the developing property owner. This was outlined in the copies of the "Grant of Easement" I supplied you with. It was the original intend to encroach with the fly ash within the sloped area within the requirements of the Reg.'s with this "Grant of Easement". It has been my understanding that with the adjacent owners approval this could take place. Example: What happens when separate parcels are sold to several different land Purchasers?

I look forward to hearing from you concerning these issues. Thanks for your time on these matters. 704-799-2944

Sincerely,

Dean Johnston, President
ASH BASICS COMPANY, INC.

3/24/00 Returned telephone call from me to Dean Johnston Re: 3/20/00 Fax

1. Copy but very Legible
   Mr Johnston Requests:
2. Adjacent property owners prop. line
   Duke claims they were told that adjacent property owner's approval allows the park to be placed across property lines. This has been discussed in past but nothing in writing (Leary Evans has moved)
   Johnston claims Duke looking for "it".

3. Check Jim Barbra about 2' excavation will require cross sectioning. Dean thought this is maybe appropriate in east NC (Jim Bs. end of the state) but not the West. end.

Hocutt - FILE

NCDENR

NORTH CAROLINA DEPARTMENT OF
ENVIRONMENT AND NATURAL RESOURCES

DIVISION OF WASTE MANAGEMENT

JAMES B. HUNT JR.
GOVERNOR

BILL HOLMAN
SECRETARY

WILLIAM L. MEYER
DIRECTOR

March 28, 2000

Mr. Dean Johnston, President
Ash Basics Company
128 East Plaza Drive
Mooresville, NC 28115

Subject: A Notification Letter for a proposed coal combustion By-Product Structural Fill in Mooresville, NC (Iredell County) was Received on March 7, 2000. The fly ash for this proposed project is planned to be supplied by the Duke Power Marshall Steam Plant at Terrell, NC.

References: 1.) March 15, 2000 letter from William Hocutt of NC DENR to Mr. Dean Johnston giving details of procedures to be followed during construction and changing of the form for the land owner's signature declaring agreement by the land owner to recordation of the fill on the property deed.
2.) Undated response letter to reference # 1. This letter from Mr. Dean Johnston to William Hocutt was mailed on March 24, 2000 and states the reasons for not wanting to follow the procedures given in reference letter # 1.

Dear Mr. Johnston:

Your reference #2 letter arrived in the morning mail Tuesday, March 28th. As was discussed with you on Friday, the faxed copy was not legible and we thank you for the hard copy. My letter will address each of the five issues to which you have taken exception in relation to this project. Hopefully, the result will be your agreeing to these conditions. Then, with a letter of acknowledgement from us, you could then begin the project.

1. The wetland feature / with a potential spring along the western property line of lot # 1 would provide a "conduit" for the coal ash leachate to the ground water if it were piped or drained. If coal ash were placed at this point of the site and a spring were to be detected, then none of the measures you mention (french drains, compacted soil buffers, piping, etc.) would be considered adequate protective measures in relation to coal combustion by-product structural fills. The solution is to not place any fly ash in this region of the site and to provide the twenty five foot set back from the property line as stated in Rule .1704 (a) (6). Please note

1646 MAIL SERVICE CENTER, RALEIGH, NORTH CAROLINA 27699-1646
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PHONE 919-733-4996 FAX 919-715-3605

that reference letter #1 erroneously stated this set back to be twenty feet.

2. We are requiring that you provide us with a drawing that clearly describes where fly ash is to be placed on the site.

3. The only reason for allowing any grading of a proposed structural fill site is to provide a method to accomplish some smoothing of the original land contours. In some instances, some topsoil might be stockpiled in this smoothing. Significant movement of soil constitutes excavation which is not allowed in structural fills. Excavating a site and placing coal ash in that site would be considered landfilling, not structural filling.

4. The submitted owner's Acknowledgement and Consent Form does not compel the owner to actively participate in making the recordation happen upon completion of the project. Mr. Duckworth needs to provide a written statement agreeing to his active participation in getting recordation accomplished.You state that the "Owners Acknowledgement and Consent Form" supplied by Duke Power and used by you in this notification has been sufficient in the past. Please be aware that Duke Power has had problems in getting the owners to follow through with recordation in the past. Attached please find a copy of a different owner's Acknowledgement and Consent Form that has been used by Duke Power on at least one occasion. This was attached to a legal description of the property which included metes and bounds. The language states that the owners agree to record the document and are not merely consenting to the recordation. You need to be aware that merely changing the language to active participation as this form specifies may not be enough, within itself, to insure that recordation will happen. Even in the example cited, Duke Power was unsucessful in getting the owner to perform as promised. However, it will put you in a stronger position to demand it after construction of the project is finished and closed. Duke Power has asked that the DWM become involved in this procedure but this was refused since the Division is not directly involved in contractural arrangements in these fills.

5. Your reference # 2 letter states that your understanding was that having the adjacent property owner's "Grant of Easement" for placing fly ash on his property would allow that to happen. This is not true. The only way for the ash to be placed within the twenty five foot buffer is for the property line to no longer exist. This will occur when both pieces of property are owned by the same party.

Please contact me at 919-733-0692, extension # 255 or Bill Hocutt at extension 260 if you have any questions about the contents of this letter.

Sincerely,

James C Coffey

James C. Coffey, Supervisor
Permitting Branch
Solid Waste Section

cc: Jim Coffey
Jim Barber
Tim Jewett

c:/wp6docs/letters/dukpwr03-28

We further acknowledge and consent to the use of coal combustion byproducts as structural fill on the above-described property. The volume of ash placed on this property is 500,000 cubic yards. We agree to record this document in accordance with 15A NCAC 13B1707.

Signed this 18th day of March, 1996.

PORT VILLAGE ASSOCIATION

BY: B V Belk
B. V. Belk, Managing General Partner

STATE OF NORTH CAROLINA
COUNTY OF MECKLENBURG

I, a Notary Public in and for said County and State aforesaid, do hereby certify that B. V. Belk Jr. personally appeared before me this day and acknowledged the due execution of the foregoing instrument.

WITNESS my hand and Notarial seal, this 18th day of March, 1996.

Terry S. Scott
Notary Public

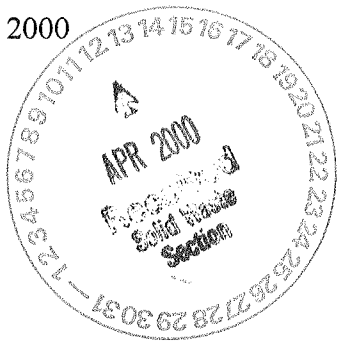
My Commission Expires: 4-10-96

ASH BASICS COMPANY

"UTILIZATION ALTERNATIVES FOR THE FUTURE"

128 EAST PLAZA DRIVE
MOORESVILLE, N.C. 28115
(O. 704-799-2944) (M. 704-906-3735)
E-MAIL - GO4DEAN@AOL.COM

MARCH 31, 2000



Mr. William R. Hocutt
Environmental Chemist
NCDEHNR Division of Waste Management
401 Oberlin Rd. Suite 150
Raleigh, N.C. 27605

Dear Mr. Hocutt:

In reference to the letter from Jim Coffey dated March 28, concerning notification for a proposed structural fill project in Mooresville NC, please find the following.

1. Set backs as required by you along the western property line will be adhered to as required by the Reg.'s in Rule .1704.

2. Attached find a drawing indicating the proposed fill area to be utilized with fly ash fill.

3. Depth of excavations of top soil will be determined by obtaining a sufficient base for achieving density requirements before placing fly ash.

4. Attached is the owners acknowledge, consent and written agreement to recordation and compliance with 15A NCAC 13B1707 of the Reg.'S and the description of the property location.

5. We understand the property boundary set backs and "Grant of Easement" is not permission to encroach with fly ash.

Please understand it is not the intent of Ash Basics Co. to try and change the Reg.'s or deviate in any way, but to clarify any mis-conceptions. Previous projects were performed under the Water Quality Requirements.

Please contact me if you have any questions regarding the enclosed @ 704-799-2944.

Sincerely,

Dean Johnston
President, Ash Basics Company, Inc.

AGREEMENT TO RECORD FLY ASH APPLICATION TO DEED OF PROPERTY

I Rob Duckworth **FURTHER ACKNOWLEDGE TO THE USE OF COAL COMBUSTION BY PRODUCTS AS STRUCTURAL FILL ON THE BELOW DESCRIBED PROPERTY. THE VOLUME OF ASH PLACED ON THE PROPERTY IS APPROXIMATELY 60,000 CUBIC YARDS. I AGREE TO RECORD THIS DOCUMENT IN ACCORDANCE WITH 15A NCAC 13B1707.**

SIGNED THIS 11 **DAY OF** April **, 2000.**

OTH HOLDINGS, LLC BY: _____
ROB DUCKWORTH , PROPERTY OWNER

PROPERTY AS DESCRIBED ON DRAWINGS AS: 558 RIVER HWY / NC HWY 150
FORMERLY P. D. ATWELL
DEED BK: 34 PAGE: 136
STATE OF NORTH CAROLINA
COUNTY OF IREDELL

I, A NOTARY PUBLIC IN SAID STATE AFORESAID DO HEREBY CERTIFY THAT Rob Duckworth **PERSONALLY APPEARED BEFORE ME THIS DAY AND ACKNOWLEDGED THE DUE EXECUTION OF THE FOREGOING INSTRUMENT.**

WITNESS MY HAND AND NOTARIAL SEAL, THIS 11 **DAY OF** April **2000.**

_____
NOTARY PUBLIC

MY COMMISSION EXPIRES: 7-26-2004

North Carolina
Department of Environment and Natural Resources

Division of Waste Management

Michael F. Easley, Governor
William G. Ross Jr., Secretary
William L. Meyer, Director

April 16, 2001

Mr. Anthony S. Privette
P.O. Drawer 1776
Statesville, NC 28687

Dear Mr. Privette:

Enclosed please find a photocopy of the Structural Fill Facility Recordation Document for the Atwell Property in Iredell County. The note at the top of the document states that "THIS DOCUMENT PREPARED BY AND AFTER RECORDING RETURN TO: ANTHONY S. PRIVETTE, P.O.DRAWER 1776, STATESVILLE, NC 28687". I am sending **a copy** of this Recordation Document to you and am retaining the original copy for the Division of Waste Management files. This is in conformance to the Section .1700 Coal Combustion By-Products Rules within the 15A NCAC 13B Solid Waste Managemenr Rules, specifically the .1707(c) rule.

I am enclosing for your reference a photocopy of the two pages of the Section .1700 Rules which contain the pertinent information about recordation. I am doing this in the event that you do not have a copy of our 15A NCAC 13B rules. The .1707(c) rule states that "the original notarized statement with the Register's seal and date, book and page number of recording shall be returned to the Division after recording". Should you have any questions about this please contact me at (919) 733-0692, extension 260 or by mail at the below address.

Sincerely,

William R. Hocutt

William R. Hocutt, Chemist
Solid Waste Section

cc: Jim Coffey

c:/wp6docs/letters/Recordation-dukpwr05-02

Post July 2000

May 2, 2000

Mr. Dean Johnston, President
Ash Basics Company
128 East Plaza Drive
Mooresville, NC 28115

Subject: A March 1, 2000 Notification Letter for a proposed coal combustion By-Product Structural Fill in Mooresville, NC (Iredell County) was Received on March 7, 2000. The fly ash for this proposed project is planned to be supplied by the Duke Power Marshall Steam Plant at Terrell, NC.

References: 1.) March 15, 2000 letter from William Hocutt of NC DENR to Mr. Dean Johnston giving details of procedures to be followed during construction and changing of the form for the land owner's signature declaring agreement by the land owner to recordation of the fill on the property deed.
2.) Undated response letter to reference # 1. This letter from Mr. Dean Johnston to William Hocutt was mailed on March 24, 2000 and states the reasons for not wanting to follow the procedures given in reference letter # 1.
3.) March 28, 2000 letter from James C. Coffey of NC DENR to Mr. Dean Johnston stating additional emphasis to the Division of Waste Management's (DWM's) position on wetland features, the communication of the proposed area planned to receive fly ash, Recordation and requirement of no property lines within a fill area. 4.) March 31, 2000 letter from Mr. Dean Johnston to William Hocutt agreeing to Reference Letter #3 stipulations on dealing with the wetlands features, submitting a marked drawing showing where fly ash is proposed to be placed on the site, containing a description of how some escavation is planned on the site and how he proposes to limit that activity on the site, a revised Recordation agreement as requested and agreement to not place any fly ash on adjacent landowner's properties even though "Grants of Easesments" exist.

Dear Mr. Johnston:

This is to acknowledge receipt of your Subject Notification Letter and also your Reference letters numbers two and four. Your coming to Raleigh on March 14 to meet with Jim Barber and Bill Hocutt about this project also needs to be

mentioned in order to describe the degree of communications that have occurred concerning this project. The Division of Waste Management acknowledges receipt of the necessary information from you to indicate that construction of this structural fill can proceed according to the Section .1700 Rules for Beneficial Use of Coal Combustion By-Products. The DWM does have some concerns about potential inaccuracies in some phases of this project.

The forementioned concerns are primarily involved with the first hand knowlege about this project by the certifying Professional Engineer. **He is required to sign the certification described in Rule .1706 (d) stating that all the requirements in the {.1700} Rules have been met.** For instance, the PE will therefore need to know exactly the limits of application of fly ah on the site. The only description present in the file is a marked -up copy of drawing EC-1, Rev.#2 furnished by you. Customarily a Revision #3 to EC-1 would have been drawn and thereby insured that all individuals with a complete set of prints would have this information. All of the design, construction, operation and closure details specified in .1700 can cause similar concerns due to the detailed knowledge required of the PE. We are sending Mr. Donald L. Munday, the signing PE in this case, a copy of this letter c/o B.K. Barringer & Associates, P.A.

The DWM has consistently stated that excavating is not allowed in the fill sites. Excavating and then filling is considered to be landfilling which is not an alternative since these sites are not permitted landfills. Please contact me at 919-733-0692, extension #255 or Bill Hocutt at extension # 260 if you have any questions.

Sincerely,

James C. Coffey, Supervisor
Permitting Branch
Solid Waste Section

cc: Donald L. Munday, PE
Jim Barber
Tim Jewett
Bill Hocutt

c:/wp6docs/letters/dukpwr05-02

North Carolina
Department of Environment and Natural Resources

Division of Waste Management

Michael F. Easley, Governor
William G. Ross Jr., Secretary
Dexter R. Matthews, Interim Director

August 24, 2001

Mr. Dean Johnston
Ash Basics Company
P.O. Box 3573
Mooresville, NC 28117

Reference: July 18, 2001 letter from William Hocutt to Dean Johnston concerning Certificates of Closure and Recordation Statements for the Iredell County Duckworth Project and the Catawba County Jeten Project.

Dear Mr. Johnston:

The reference letter reported if the identified required documents for those two completed coal fly ash structural fill projects had been received by the Division of Waste Management. In checking those files again, I find that the status remains unchanged from that found in July.

As you know, the 15A NCAC 13B .1700 rules specify when the Certificate of Closure and the Recordation Statements are due to the Division. The Certificate of Closure is due to the Division within 30 days after application of the final cover on the site. Within ninety days after completion of the project, the Recordation Statement is to be filed with the County Register of Deeds. After notarization and specified recording the original is then forwarded to the Division.

As was stated in the Reference letter, the Division has not received a Certificate of Closure for either of these two projects. Also, the Division has received the Recordation Statement on the Duckworth project but not for the Jeten project. Please expedite preparation of these missing documents and forward them to the Division as soon as they are available.

Sincerely,

William R. Hocutt

William R. Hocutt, Chemist
Solid Waste Section

cc: Jim Coffey
Jim Barber
Tim Jewett
Anthony Foster

c:wp6docs/letters/dukpwr08-24-01

LAWGIBB GROUP

July 19, 2000
Revised October 16, 2000

Mr. Robert Duckworth
Duckworth's Food Markets, Inc.
P.O. Box 3756
Mooresville, North Carolina 28115

Subject: **Summary of Testing Services**
Duckworth's Food Markets, Inc.
Mooresville, North Carolina
LAW Project No. 30100-0-0490

Dear Mr. Duckworth:

As authorized, Law Engineering and Environmental Services, Inc. (LAW) has completed engineering and testing services during construction for the Duckworth's Food Markets site located in Mooresville, North Carolina. The scope of our work included proofrolling of requested areas, performing laboratory Proctor tests and compaction testing during fill placement, performing shallow foundation excavation inspection, and monitoring and inspection of the fill during placement for the retaining wall. The following is a brief summary of our work. Test results and engineering reports were issued under separate cover.

A total of six bulk samples of proposed fill material were obtained during grading operations for standard Proctor testing (ASTM D 698). Between May 8 and July 7, 2000, field density tests were performed. The field density tests, including any retests, met or exceeded the specified compaction requirement of 95 percent. We note that flyash material was utilized for structural fill beginning at 25 ft from the edge of Highway 150 toward the structural footprint of the proposed building as requested by North Carolina Department of Transportation. The zone between the edge of the highway and the edge of the flyash was filled with structural soil material. The flyash was placed in general accordance with sections 1704 through 1706 of the "Beneficial Use of Coal Combustion By-Products."

Shallow foundation excavation inspections were performed between May 23 and May 25, 2000 for column, wall and car wash foundations bearing in flyash fill material. The areas tested met the required bearing capacity of 3,000 psf at the planned foundation bearing elevation.

LAW Engineering and Environmental Services, Inc.
2801 Yorkmont Road, Suite 100 • Charlotte NC 28208
704-357-8600 • Fax: 704-357-8638

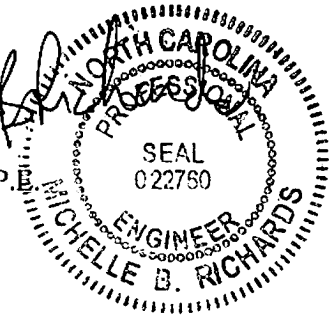
LAW appreciates the opportunity to provide our professional services for you on this project. If you have any questions concerning the information in this report or if we can be of further service, please contact us.

Sincerely,

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC.

Kelly C. Clemons
Project Coordinator

Michelle B. Richards, P.E.
Principal Engineer



KCC/MBR:kcc

cc: Ash Basics Company – Dean Johnson

October 26, 2000

Mr. Dean Johnston
Ash Basics Company
128 East Plaza Drive
Mooresville, NC 28115

Note: This site is known as the Highway 150 Project.

Subject: October 9, 2000 Notification letter from Mr. Dean Johnston to William Hocutt concerning a proposed coal combustion by-product structural fill near Lake Norman in Iredell County with construction planned to start on November 1, 2000 and estimated to be completed by March 1, 2001.

Dear Mr. Johnston:

This is to confirm the additions and changes required in the material and information submitted by you with your subject letter. These are the items which were discussed in the October 25, 2000 meeting in Raleigh between you, Jim Barber of the Solid Waste Section and I. There were two other additional items that you furnished on the 25th when you came to the meeting. Those were a Land Quality Section letter of approval for your site erosion and sedimentation control and TCLP data on the Duke Power Marshall Steam Plant fly ash.

Following are the required additional information and changes in submitted items which were discussed in the 10/25/00 meeting:

(1) Provide information/confirmation that the two foot separation to seasonal high groundwater table will be maintained before coal flyash is placed on-site. (This can be done by revising drawings and providing a representative cross-section through the project.)

(2) Does a spring exist within the lower portion of the site that would account for the shallow water table measurements provided by Tim Hunsucker of Duke Power?

(3) Are wetlands present within the project area, within the property boundaries?

(4) Based on the proposed fill height, and total length of slope on the east side of the project, are any erosion control devices planned to shorten the effective length of slope? (i.e. benches, swales, or surface berms).

(5) In accordance with .1703(b), has a stability analysis been performed for the

proposed fill height (estimated to be 35' to 40') to ensure an adequate "factor of safety" against slope failure or sliding of the fill mass?

(6) Illustrate on the site drawing the complete limits of the coal flyash fill.

(7) Revise the site plan drawings to comply with .1704(a)(6), in that coal flyash is not to be placed within 25' of the east property line.

(8) Locate and define on the drawings the proposed borrow area to be used on-site for obtaining final cover for the coal flyash fill.

(9) Please place the deed book and page reference on the site plan drawings.

One additional item of needed information was noted afer the 10/25 meeting and that is an estimate of the completion date for the project as specified in .1703(a)(2). I will ask for that date when I telephone you today to tell you that I am ready to fax this letter to you. I will then add that date in the subject at the beginning above. Please telephone me at (919) 733-0692, extension 260 if you have any questions about the content of this letter.

Sincerely,

William R. Hocutt
Environmental Chemist II
Solid Waste Section

cc: James C. Coffey
Jim Barber
Tim Jewett

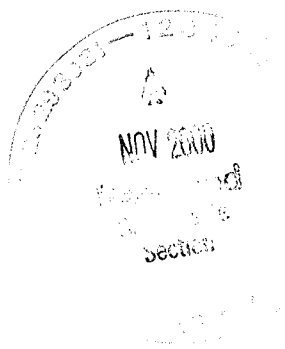
c:/wp6docs/letters/dukpwr10-26

ASH
BASICS
COMPANY

128 EAST PLAZA DRIVE MOORESVILLE, N.C. 28115

(O. 704-799-2944) (M. 704-906-3735)

E-MAIL GO4DEAN@AOL.COM



10-30-2000

WILLIAM R. HOCUTT
ENVIRONMENTAL CHEMIST
NCDEHNR SOLID WASTE SECTION
401 OBERLIN ROAD, SUITE 150
RALEIGH, N.C. 27605

Dear Mr. Hocutt,

Per your letter of 10-26-2000 concerning our meeting on 10-25, find the following requested info and clarifications concerning the proposed coal fly ash structural fill project.

(1) Find on the drawing an illustration of current established grade of el. 770 which is approximately 10 feet above surface water elevation and as determined by Tim Hunsucker of Duke Energy, 8-10 feet above potential ground water.

(2) There are no springs present on the site as a result of monitoring the site in excess of the past year and observations after clearing occurred. The week of testing had experienced daily rainfall as well as the day the test was taken as indicated in the D.E. / Tim Hunsucker report.

(3) Wetlands do not exist as per visual observation and USGS Lake Norman Quadrangle map previously supplied.

(4) Additional erosion control measures are not required on the east slope as per the approved erosion control plan by the state and presiding engineer of the drawings due to surface slope drains and storm water piping.

(5) Slope indentures have been established prior to ash placement to aide in cohesion of ash placement and slippage. Find enclosed engineering data representing the ash for adequate safety factor. The ash fill was taken in consideration by the design engineer and the local state approval of this project. There are currently several projects in the area utilizing coal ash with similar slopes that have no known problems.

(6) Find enclosed a drawing depicting proposed ash fill limits.

(7) Find illustrated on the drawing also the 25' setback on all property boundaries affected by ash placement. Cross section also outlines boundaries and cover requirements.

(8) Find borrow area outlined on drawing.

(9) Find deed book and page reference on drawings.

(10) Estimated completion date to be 3-1-2000. 2001

Please feel free to contact me at your earliest convenience concerning this project @ 704-906-3735 or 704-799-2944. I look forward to hearing from you. Thanks!

Sincerely,

Dean Johnston - President
Ash Basics Company, Inc.

cc: Larry Harper / Duke Energy
Ed Tarantino / JETEN Properties, LLC

ENGINEERING DATA
MARSHALL SILO ASH

Duke Power Company
System Coal Ash Analysis

Plant	Marshall	Report Date:	7/26/95
Ash Type	Silo Flyash		
Application	Sampled 2/24/94, lab testing completed 4/19/94		

Structural Fill Properties

Classification Tests		
	Specific Gravity	2.5
	Classification	Gray Fine Sandy Clayey Silt
	Atterberg Limits	Non-plastic

Moisture and Density			
	Natural Moisture Content		0.002
	Standard Proctor	Optimum Moisture, %	24
		Maximum Dry Density, PCF	80.8

Triaxial Shear Strength (Saturated, Consolidated, Drained)					
	Wet Density, PCF, avg.	Initial:	96.4	Final:	110.3
	Dry Density, PCF, avg.		77.2		79.9
	Moisture Content, %, avg.		24.8		38.1
	Cohesion, c	2448			
	Friction Angle, phi	26.5			
	Bearing Capacity, PSF	>5000			

Permeability, k, cm/sec	3.45 x 10^-4

Consolidation					
	Void Ratio, e	Initial:	1.037	Final:	0.92
	Compression Index, Cc	0.114			
	Strain, %, at 3000 PSF	1.66			

CONSOLIDATED DRAINED TRIAXIAL COMPRESSION TEST
SPECIMEN DATA

PROJECT:	MARSHALL STEAM STATION – SILOS
BOREHOLE NO.:	N/A
STATION:	N/A
DEPTH:	N/A
ELEVATION:	N/A

SAMPLE DESCRIPTION: TOP ASH, DESCRIBED AS: GRAY FINE SANDY CLAYEY SILT

INITIAL CONDITIONS

SPECIMEN NO.	1	2	3	AVERAGE
WET WEIGHT, PCF	96.0	96.5	96.6	96.4
DRY WEIGHT, PCF	77.1	77.0	77.4	77.2
WATER CONTENT %	24.5	25.2	24.8	24.8
SATURATION %	59.9	61.5	61.1	60.8
VOID RATIO	1.0227	1.0251	1.0160	1.0213

FINAL CONDITIONS

SPECIMEN NO.	1	2	3	AVERAGE
WET WEIGHT, PCF	110.9	109.4	110.6	110.3
DRY WEIGHT, PCF	80.8	78.4	80.4	79.9
WATER CONTENT %	37.2	39.6	37.6	38.1
SATURATION %	100.0	100.0	100.0	100.0
VOID RATIO	0.9300	0.9900	0.9400	0.9533

SPECIFIC GRAVITY: 2.50

SCALE ID: SYSTL 10068

OVEN ID: 19423

INSPECTOR J. S. Tatum DATE 3-31-94

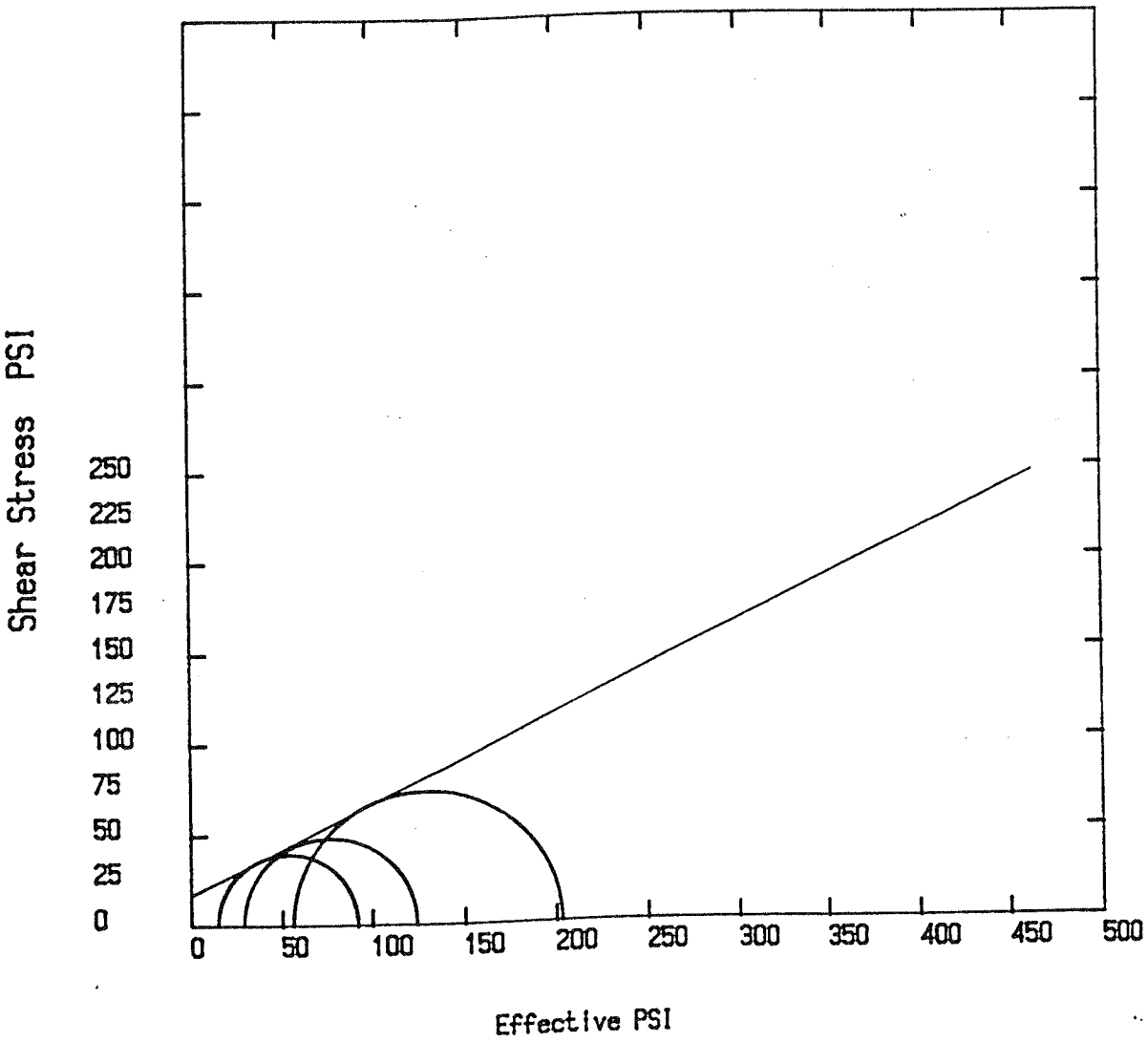
LEVEL 2 EVALUATION N/A DATE N/A

CONSOLIDATED DRAINED TRIAXIAL COMPRESSION TEST

SHEAR STAGE

C = 17.0PSI

PHI = 26.5 Degrees



Sample type N/A

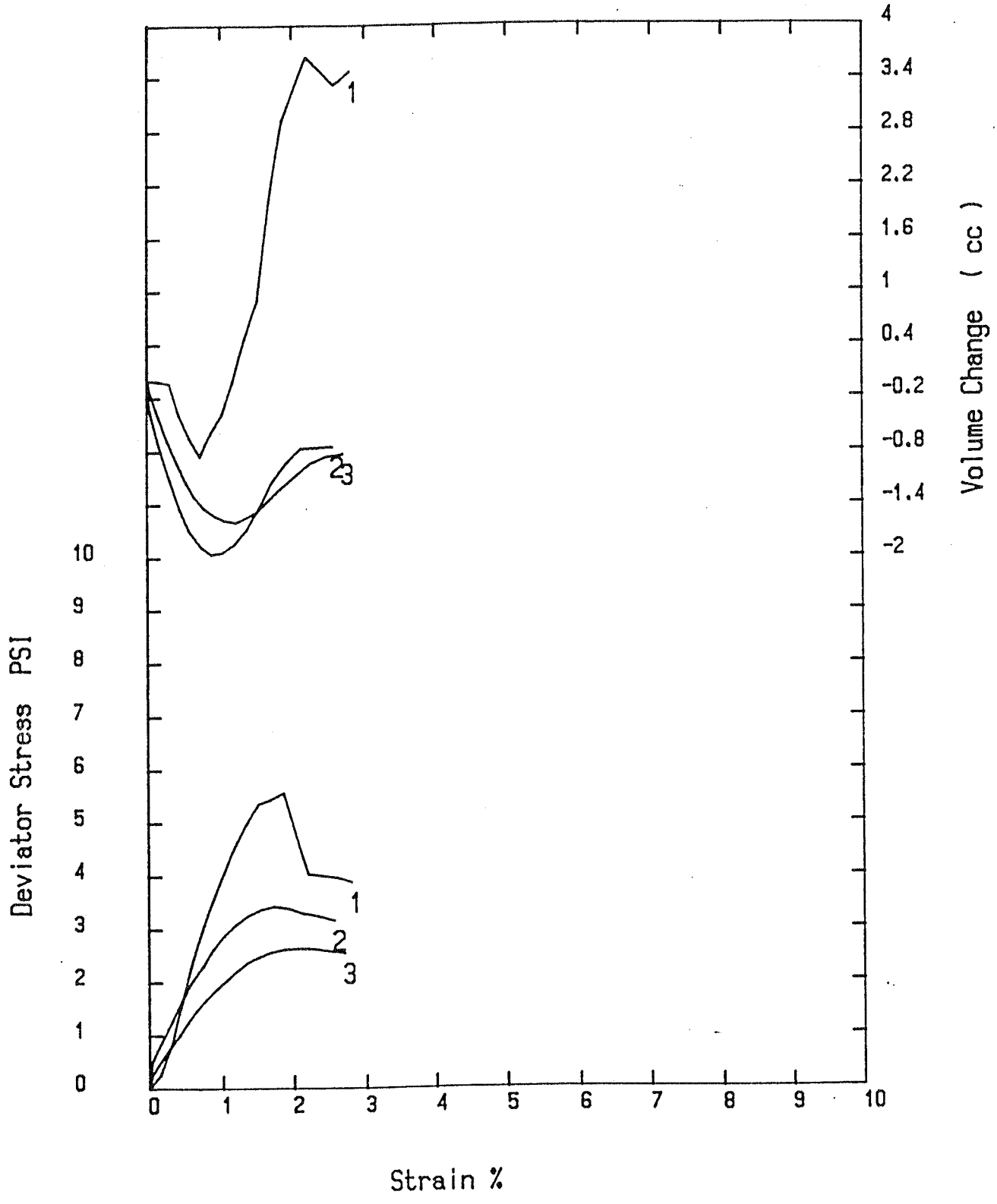
Sample Description TOP ASH, DESCRIBED AS: GRAY FINE SANDY CLAYEY SILT

Borehole No : N/A Sample No: 1 Depth : N/A

	Site ref : MARSHALL STEAM STATION - SILOS (ASH)	Job No : Fig No :

CONSOLIDATED DRAINED TRIAXIAL COMPRESSION TEST

SHEAR STAGE



Sample type N/A

Sample Description TOP ASH, DESCRIBED AS: GRAY FINE SANDY CLAYEY SILT

Borehole No : N/A Sample No: 1 Depth : N/A

	Site ref : MARSHALL STEAM STATION - SILOS (ASH)	Job No : Fig No :

DUKE POWER COMPANY
ONE DIMENSIONAL CONSOLIDATION TEST

COMPRESSION INDEX = .114

* INITIAL PROPERTIES *

VOID RATIO = 1.037

UNIT WEIGHT : WET = 95.1 PCF

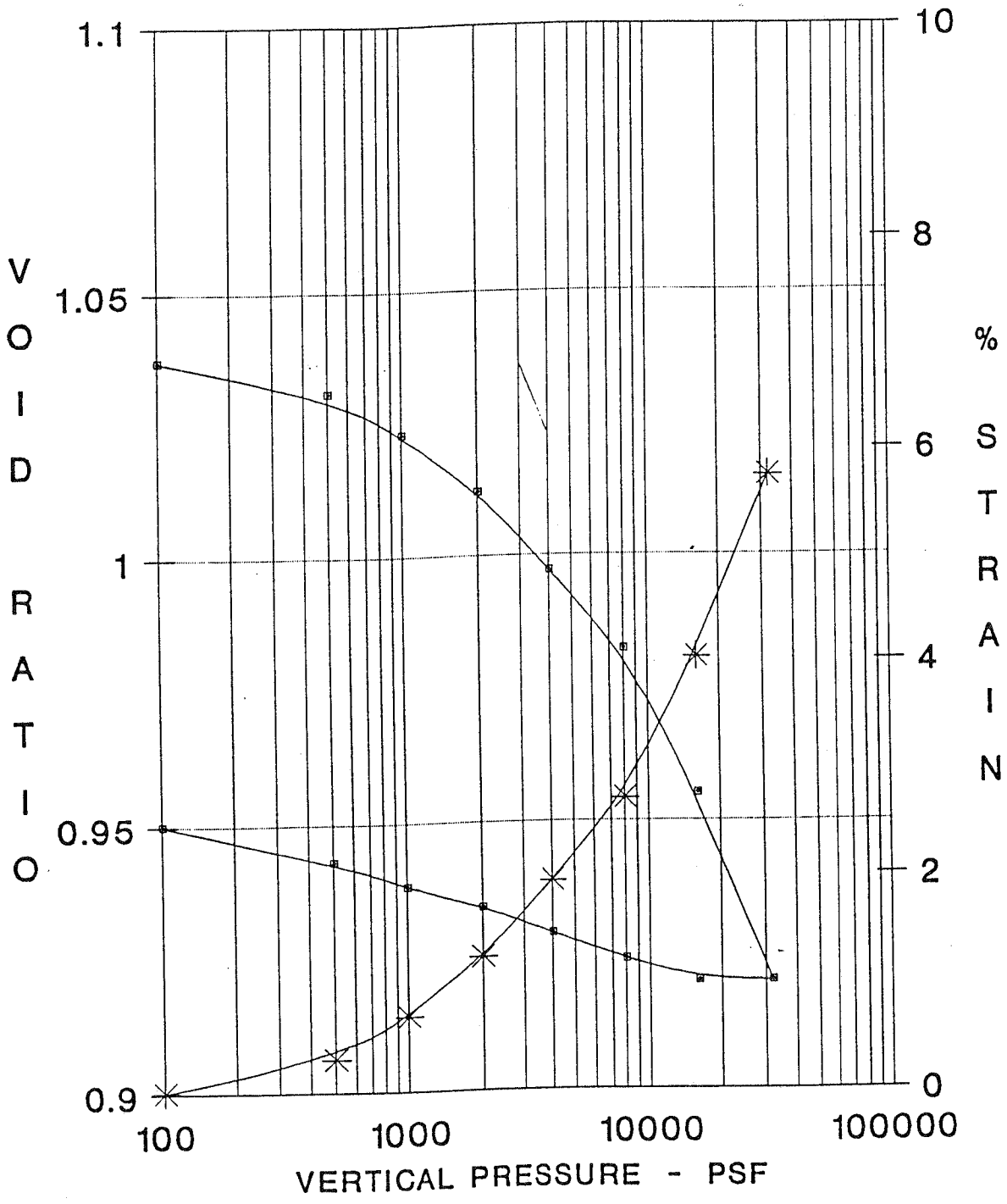
DRY = 76.6 PCF

PERCENT MOISTURE = 24.1 %

PERCENT SATURATION = 58.1 %

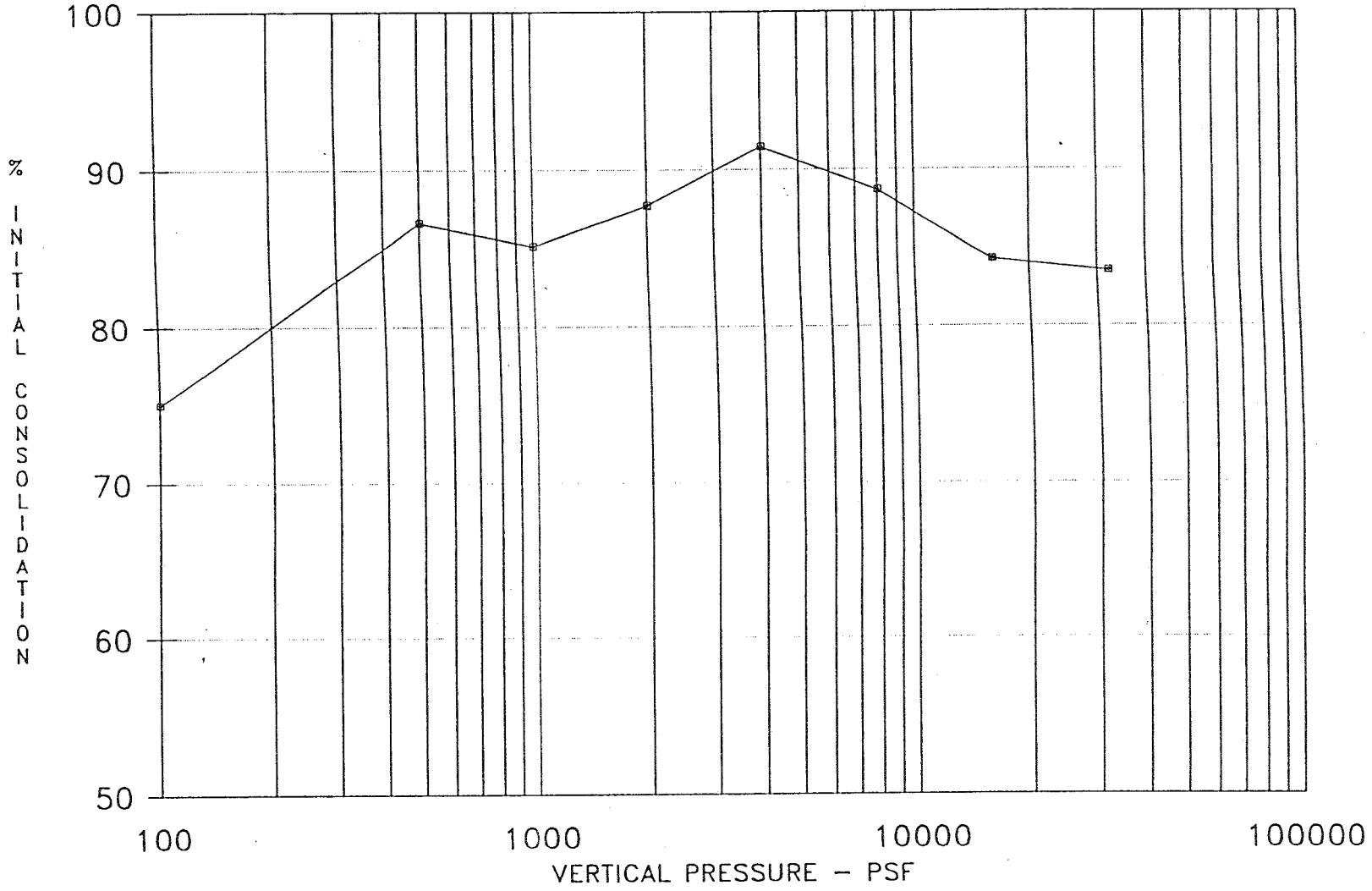
MARSHALL STEAM STATION SILOS-FLY ASH

DUKE POWER COMPANY
ONE DIMENSIONAL CONSOLIDATION TEST



MARSHALL STEAM STATION SILOS-FLY ASH

DUKE POWER COMPANY
ONE DIMENSIONAL CONSOLIDATION TEST



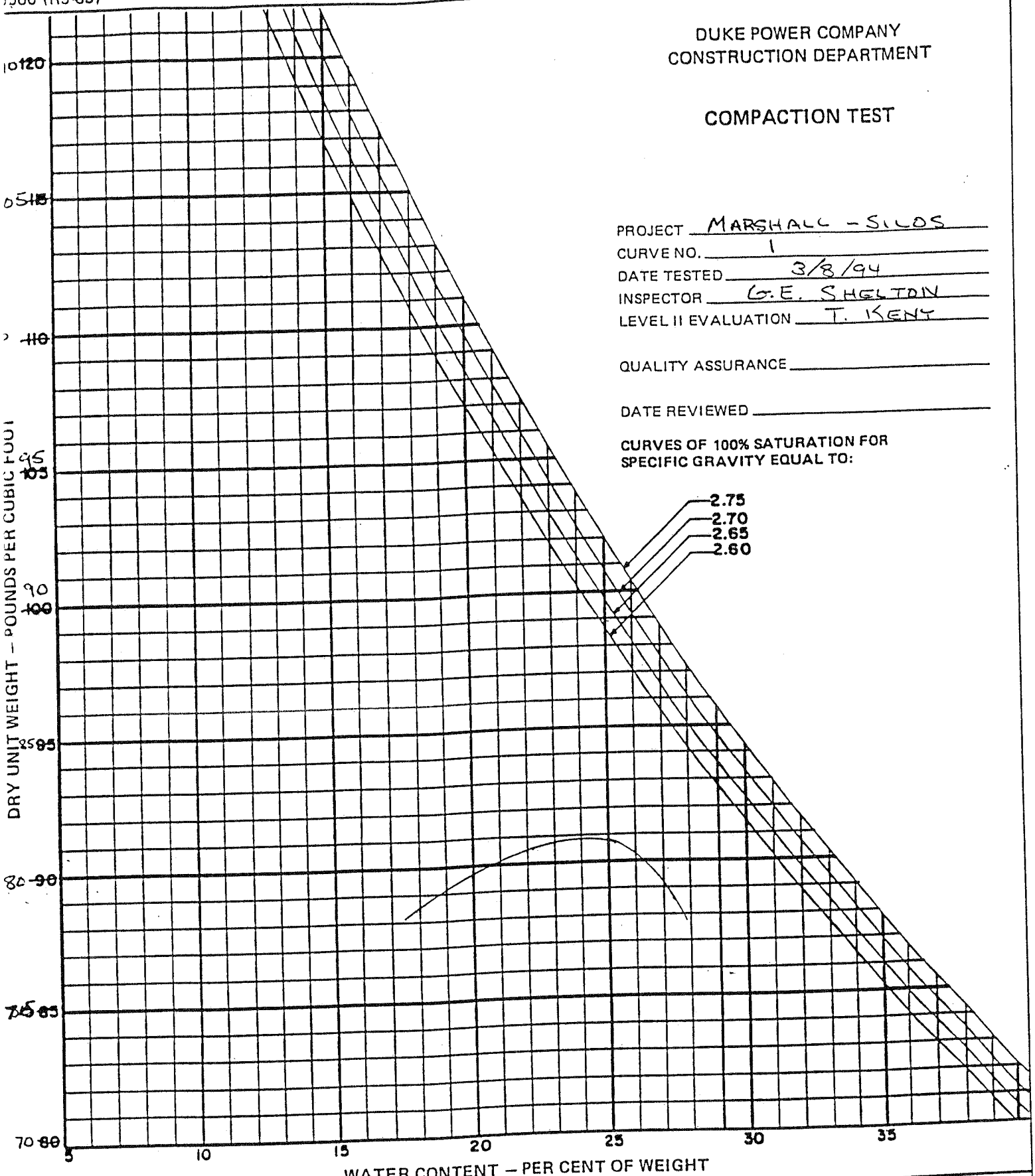
MARSHALL STEAM STATION SILOS–FLY ASH

DUKE POWER COMPANY
CONSTRUCTION DEPARTMENT

COMPACTION TEST

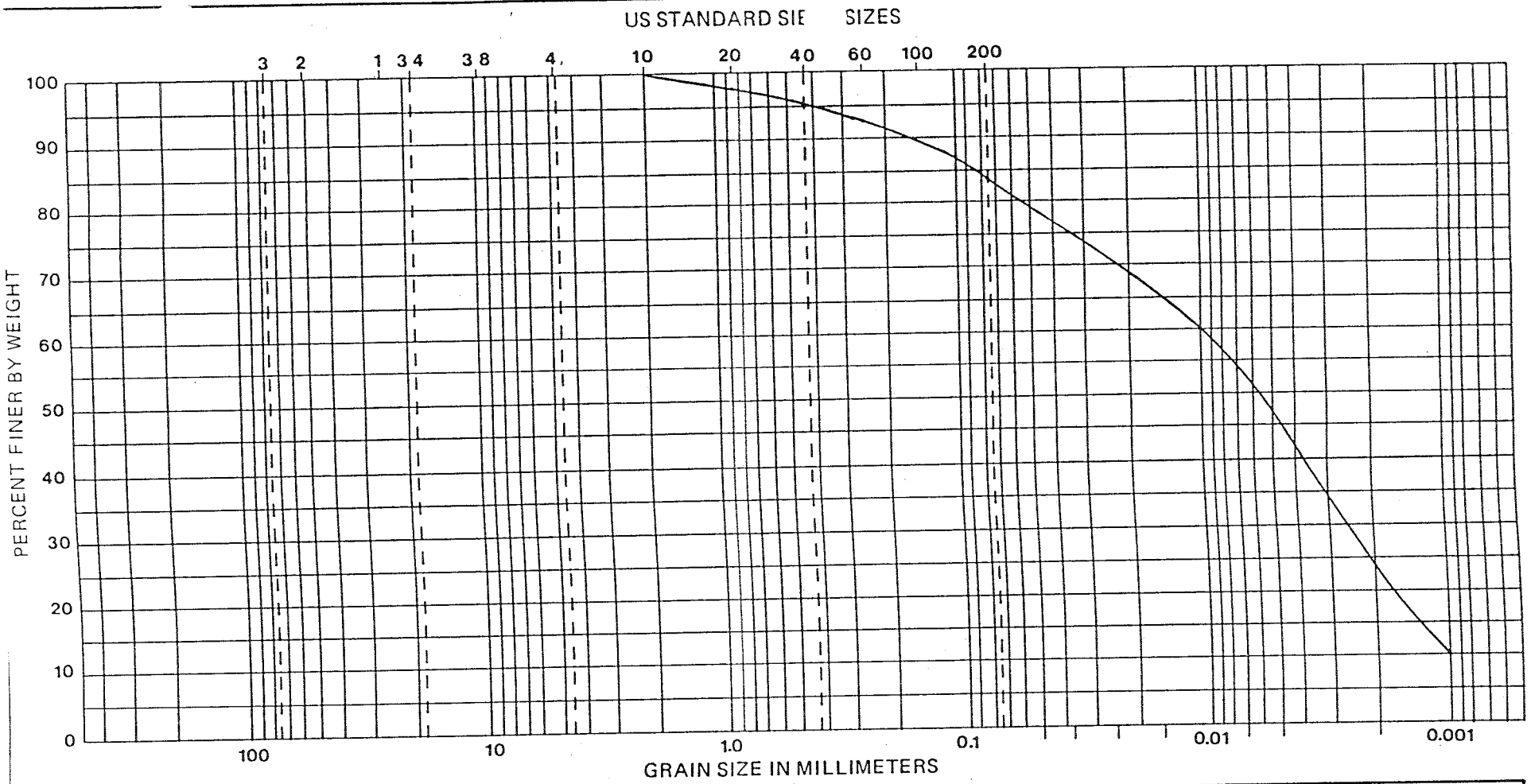
PROJECT MARSHALL - SILOS
CURVE NO. 1
DATE TESTED 3/8/94
INSPECTOR G.E. SHELTON
LEVEL II EVALUATION T. KENT
QUALITY ASSURANCE
DATE REVIEWED

CURVES OF 100% SATURATION FOR SPECIFIC GRAVITY EQUAL TO:



MOISTURE DENSITY RELATION	METHOD OF TEST	MAX. DRY DENSITY PCF	OPTIMUM MOISTURE CONTENT %	SOIL DESCRIPTION OR CLASSIFICATION AND SAMPLE LOCATION
N/A	ASTM D 698 METHOD	80.8		TOP ASH

25565 (R9-85)



BOULDERS	COBBLES	GRAVEL		SAND			FINES	
		COARSE	FINE	COARSE	MEDIUM	FINE	SILT SIZES	CLAY SIZES

PROJECT MARSHALL
SILOS - TOP ASH

BORING NO	ELEV OR DEPTH	NAT WC	LL	PL	PI	DESCRIPTION OR CLASSIFICATION
SILOS - TOP ASH	N/A	0.002%	N/A	N/A	N/A	~~GRAY~~ DST TOP ASH DESCRIBED AS: GRAY FINE SANDY CLAYEY SILT

GRAIN SIZE DISTRIBUTION

TEST NO. 1 JOB NO. N/A

INSPECTOR J. S. Jatum

DATE 3-14-94

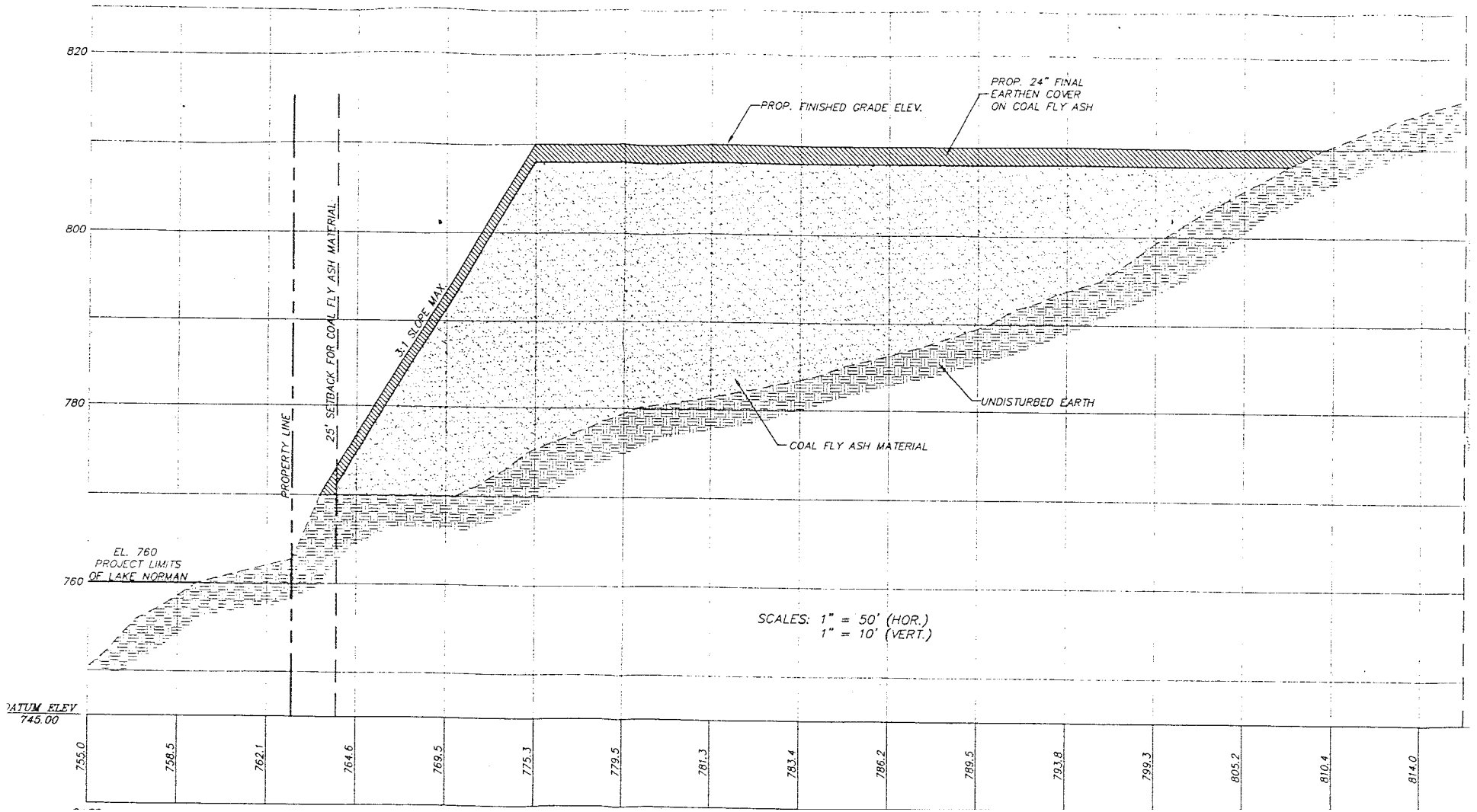
DUKE POWER COMPANY
CONSTRUCTION DEPARTMENT

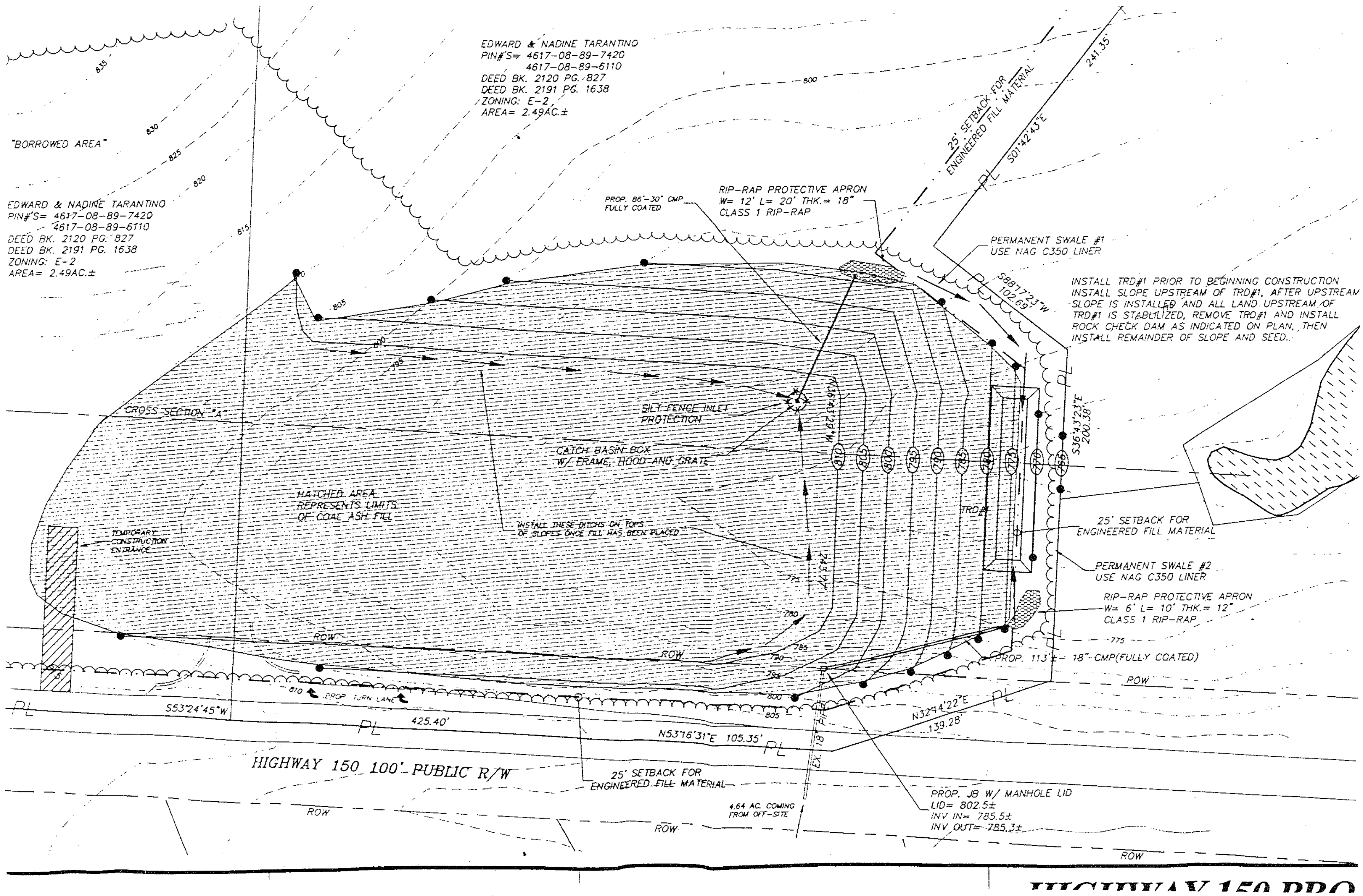
LEVEL II EVALUATION N/A

QA APPROVAL N/A DATE N/A

FORM M-1L

REV. 5


820
800
780
760
PROP. FINISHED GRADE ELEV.
PROP. 24" FINAL EARTHEN COVER ON COAL FLY ASH
3:1 SLOPE MAX.
25' SETBACK FOR COAL FLY ASH MATERIAL
PROPERTY LINE
UNDISTURBED EARTH
COAL FLY ASH MATERIAL
EL. 760
PROJECT LIMITS
OF LAKE NORMAN
SCALES: 1" = 50' (HOR.)
1" = 10' (VERT.)
DATUM ELEV.
745.00
755.0
758.5
762.1
764.6
769.5
775.3
779.5
781.3
783.4
786.2
789.5
793.8
799.3
805.2
810.4
814.0


"BORROWED AREA"
EDWARD & NADINE TARANTINO
PIN#'S= 4617-08-89-7420
4617-08-89-6110
DEED BK. 2120 PG. 827
DEED BK. 2191 PG. 1638
ZONING: E-2
AREA= 2.49AC.±
EDWARD & NADINE TARANTINO
PIN#'S= 4617-08-89-7420
4617-08-89-6110
DEED BK. 2120 PG. 827
DEED BK. 2191 PG. 1638
ZONING: E-2
AREA= 2.49AC.±
25' SETBACK FOR ENGINEERED FILL MATERIAL
S01°42'43"E
241.35'
RIP-RAP PROTECTIVE APRON
W= 12' L= 20' THK.= 18"
CLASS 1 RIP-RAP
PROP. 86'-30" CMP FULLY COATED
PERMANENT SWALE #1
USE NAG C350 LINER
S88°17'23"W
102.69'
INSTALL TRD#1 PRIOR TO BEGINNING CONSTRUCTION
INSTALL SLOPE UPSTREAM OF TRD#1, AFTER UPSTREAM
SLOPE IS INSTALLED AND ALL LAND UPSTREAM OF
TRD#1 IS STABILIZED, REMOVE TRD#1 AND INSTALL
ROCK CHECK DAM AS INDICATED ON PLAN, THEN
INSTALL REMAINDER OF SLOPE AND SEED.
S36°43'23"E
200.38'
N36°43'29"W
SILT FENCE INLET PROTECTION
CATCH BASIN BOX W/ FRAME, HOOD AND GRATE
CROSS SECTION "A"
HATCHED AREA REPRESENTS LIMITS OF COAL ASH FILL
INSTALL THESE DITCHS ON TOPS OF SLOPES ONCE FILL HAS BEEN PLACED
TEMPORARY CONSTRUCTION ENTRANCE
243.77'
TRD#1
810
805
800
795
790
785
780
775
770
765
25' SETBACK FOR ENGINEERED FILL MATERIAL
PERMANENT SWALE #2
USE NAG C350 LINER
RIP-RAP PROTECTIVE APRON
W= 6' L= 10' THK.= 12"
CLASS 1 RIP-RAP
PROP. 113'± 18" CMP(FULLY COATED)
ROW
PROP TURN LANE
S53°24'45"W
425.40'
N53°16'31"E 105.35'
N32°14'22"E
139.28'
EX. 18" PIPE
PL
HIGHWAY 150 100' PUBLIC R/W
25' SETBACK FOR ENGINEERED FILL MATERIAL
4.64 AC. COMING FROM OFF-SITE
PROP. JB W/ MANHOLE LID
LID= 802.5±
INV IN= 785.5±
INV OUT= 785.3±
835
830
825
820
815

NCDENR

NORTH CAROLINA DEPARTMENT OF
ENVIRONMENT AND NATURAL RESOURCES

DIVISION OF WASTE MANAGEMENT

JAMES B. HUNT JR.
GOVERNOR

BILL HOLMAN
SECRETARY

WILLIAM L. MEYER
DIRECTOR

November 3, 2000

Mr. Dean Johnston
Ash Basics Company
128 East Plaza Drive
Mooresville, NC 28115

Subject: Proposed coal combustion by-product structural fill identified as the Highway 150 Project located near Lake Norman in ~~Iredell~~ Catawba County. Construction planned to start on November 1, 2000 and estimated to be completed by March 1, 2001.

References: (1) October 9, 2000 Notification letter and attachments from Mr. Dean Johnston to William Hocutt of NC DENR.

(2) October 26, 2000 letter from William Hocutt to Mr. Dean Johnston specifying additional information and construction drawings needed to complete the Notification.

(3) October 30, 2000 letter with attachments complying with Ref. #2 from Mr. Dean Johnston to William Hocutt.

Dear Mr. Johnston:

This letter acknowledges receipt of the above references numbers (1) and (3) which combined satisfy the Notification requirements specified in Section .1700 of the North Carolina Solid Waste Management 15A NCAC 13B Rules. Construction can now begin on this project.

If you have any questions about this please contact me at 919-733-0692, extension 255 or William Hocutt at extension 260.

Sincerely,

James C Coffey

James C. Coffey, Supervisor
Permitting Branch
Solid Waste Section

cc: Jim Barber
Tim Jewett
Bill Hocutt

c:/wp6docs/letters/dukpwr11-03

1646 MAIL SERVICE CENTER, RALEIGH, NORTH CAROLINA 27699-1646
401 OBERLIN ROAD, SUITE 150, RALEIGH, NC 27605
PHONE 919-733-4996 FAX 919-715-3605

Jim Barber

NCDENR

NORTH CAROLINA DEPARTMENT OF
ENVIRONMENT AND NATURAL RESOURCES

DIVISION OF WASTE MANAGEMENT

JAMES B. HUNT JR.
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cc: Jim Barber
Tim Jewett
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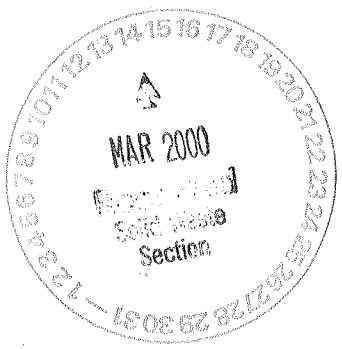
c:/wp6docs/letters/dukpwr11-03

1646 MAIL SERVICE CENTER, RALEIGH, NORTH CAROLINA 27699-1646
401 OBERLIN ROAD, SUITE 150, RALEIGH, NC 27605
PHONE 919-733-4996 FAX 919-715-3605

LAW

LAWGIBB Group Member

November 12, 1999



Mr. Robert Duckworth
Duckworth's Food Markets, Inc.
Post Office Box 3756
Mooresville, North Carolina 28115

Subject: **Report of Geotechnical Exploration**
Duckworth's Food Markets
Highway 150
Mooresville, North Carolina
LAW Project 30100-9-5046

Dear Mr. Duckworth:

As authorized by your acceptance of our proposal No. 5103 dated September 24, 1999, Law Engineering and Environmental Services, Inc. (LAW) has completed a subsurface exploration for the project. The purpose of this exploration was to develop information about the site and subsurface conditions and to provide foundation recommendations for the proposed construction. This report describes the work performed and presents the results obtained, along with our geotechnical recommendations for foundation design and site preparation.

Site and Project Information

The proposed Duckworth's Food Markets is to be located at the northwest quadrant of Highway 150 and the newly-relocated Bluefield Road in Mooresville, North Carolina. Newly-relocated Bluefiled Road runs together with Williamson Road. Development of the site will consist of a gasoline/convenience mart-type structure (1-story with slab-on-grade, approximately 4,748 SF). Gasoline pumps will be located in the southeast corner of the site, with the station building located in the northeast portion. Asphaltic-concrete paved parking will be provided. The finished floor elevation of the gasoline/convenience store is expected to be 890 feet. This elevation matches the existing site grade on the east side of the building and will require about 12 ft of underfloor fill at the westernmost corner.

LAW Engineering and Environmental Services, Inc.
2801 Yorkmont Road • Charlotte, NC 28208
704-357-8600 • Fax: 704-357-8638

Originally, we understood that plans called for placing fill to raise the grade over the western portion of the site. Either a fill slope or retaining was being considered along the western property boundary to effect the grade change (up to about 25 to 30 ft of fill). A one-story office building was planned on the west side of the site. We now understand that the sloping western half of the property may remain undeveloped, with a fill slope being constructed along the west side of the currently planned convenience store development.

Presently, the site is heavily wooded. The site generally slopes down from the east along Bluefield Road to a drainage area located on the western side of the property. The existing ground surface elevations range from about 894 ft along Bluefield Road to 856 ft in the drainage bottom on the west side of the property.

The above project information was obtained from Mr. Robert Duckworth, from Mr. Dick Brolin of B.K.Barringer & Associates, from preliminary site drawings prepared by B.K. Barringer & Associates, dated, August 23, 1999, and from site observations by our personnel.

Field Exploration

Fifteen soil test borings were drilled at the site at the approximate locations shown on the attached Boring Location Plan (Figure 1). The boring locations were mutually selected by Mr. Duckworth and LAW and were established in the field by our field personnel from map-scaled distances, by measuring from site property corners and estimating right angles. Ground surface elevations on the Test Boring Records were estimated from the furnished topographic site plan. Use of our all-terrain drill rig along with rental of a bulldozer to clear access roads, was required to perform the borings.

The borings were made by mechanically twisting a continuous flight steel auger into the soil. Soil sampling and penetration testing were performed in general accordance with ASTM D 1586. The penetration testing, when properly evaluated, is an index to the soil's strength and foundation supporting capability.

Representative portions of the soil samples, thus obtained, were placed in glass jars and transported to the laboratory. In the laboratory, the samples were examined by a geotechnical engineer to verify the

driller's field classifications. The Test Boring Records are attached, showing the soil descriptions and penetration resistances.

Area Geology

The project site is located in the Piedmont Physiographic Province, an area underlain by ancient igneous and metamorphic rocks. The virgin soils encountered in this area are the residual product of in-place chemical weathering of rock which was similar to the rock presently underlying the site. In areas not altered by erosion or disturbed by the activities of man, the typical residual soil profile consists of clayey soils near the surface, where soil weathering is more advanced, underlain by sandy silts and silty sands. The boundary between soil and rock is not sharply defined. This transitional zone termed "partially weathered rock" is normally found overlying the parent bedrock. Partially weathered rock is defined, for engineering purposes, as residual material with standard penetration resistances in excess of 100 blows per foot. Weathering is facilitated by fractures, joints and by the presence of less resistant rock types. Consequently, the profile of the partially weathered rock and hard rock is quite irregular and erratic, even over short horizontal distances. Also, it is not unusual to find lenses and boulders of hard rock and zones of partially weathered rock within the soil mantle, well above the general bedrock level.

Often, the upper soils along drainage features and in flood plain areas are water-deposited (alluvial) materials that have been eroded and washed down from adjacent higher ground. These alluvial soils are usually soft and compressible, having never been consolidated by pressures in excess of their present overburden.

Subsurface Conditions

The subsurface conditions encountered by the borings are described below and depicted graphically on the attached subsurface fence diagram.

No topsoil was encountered at the borings since they were located on recently dozed access roads.

Uncompacted fill material was encountered to a depth of 2.5 feet below the ground surface in boring B-10. This fill was placed by the dozer during clearing of access for the drill rig. The sampled fill consisted of silty sand with a standard penetration resistance of 3 blows per foot.

Alluvial (water-deposited) soils were not encountered by the borings but are likely present in some portions of the drainage feature located on the western side of the site.

Residual soils were encountered beneath the fill in boring B-10 and from the ground surface in the remaining borings. The sampled residual soils consisted of stiff to hard clayey sandy silts, sandy clayey silts and sandy silts, and loose to dense clayey silty sands and silty sands. The soils contained varying percentages of mica particles. The more clayey residual soils were generally encountered within the upper few feet of the sampled soil profile. The standard penetration resistances ranged from 8 to 40 blows per foot.

No ground water was encountered in the borings during drilling. The borings were checked for stabilized ground water after about 24 hours following boring completion. After 24 hours, the borings were partially filled with soil, termed as caved depths on the boring logs. Caved depths may indicate ground water is present, at or just below the depth and caused the soils to collapse into the hole. It may also be the result of soil cuttings left in the hole when the hollow stem flight augers were removed at the end of drilling. The caved depths varied from 2.0 to 6.1 feet in the borings. These generally shallow caved depths are likely due to soil fall-in rather than ground water.

Groundwater levels may fluctuate several feet with seasonal and rainfall variations and with changes in the water level in adjacent drainage features. Normally, the highest groundwater levels occur in late winter and spring and the lowest levels occur in late summer and fall.

The above descriptions provide a general summary of the subsurface conditions encountered. The attached Test Boring Records contain detailed information recorded at each boring location. These Test Boring Records represent our interpretation of the field logs based on engineering examination of the field samples. The lines designating the interfaces between various strata represent approximate boundaries and the transition between strata may be gradual.

Foundation Evaluation and Recommendations

Foundations

Based on the boring data and our past experience with similar soils, the undisturbed residual soils encountered in the borings should provide adequate support for a system of shallow foundations for the proposed structure, subject to the criteria and site preparation recommendations that follow.
For foundations bearing in the firm (N>9 or better) residual soils at the borings, we recommend a maximum allowable net soil bearing pressure of 4000 psf, based on total foundation design load. Foundations should be extended through any disturbed soils or fill such as found to 2.5 ft in B-10.

For foundations bearing in structural fill soils compacted to 95 percent of the standard Proctor maximum dry density and placed on a properly prepared residual soil surface, we recommend that a maximum net bearing pressure of 3000 psf be used to size the foundations. If you wish to utilize a higher bearing pressure of 4000 psf, the structural fill should be compacted to at least 98 percent. However, extra earthwork costs may be associated with this higher degree of compaction.

We recommend that any masonry walls be provided with periodically spaced suitable movement joints, in order to accommodate some possible normal differential settlement. Individual column footings should bear entirely in either compacted fill or residual soil over their entire bearing area.

We recommend that the minimum widths for individual column and continuous wall footings be 24 and 18 inches, respectively. The minimum widths are considered advisable to provide a margin of safety against a local or punching shear failure of the foundation soils. Footings should bear at least 18 inches below final exterior grade and finished floor elevation to provide frost protection (for exterior footings) and protective embedment. Footings should bear outside a 45 degree line drawn upward from any buried utilities.

In order to verify that the soils encountered in footing excavations are similar to those encountered in the soil test borings, we recommend that foundation excavations be examined and checked with a dynamic hand penetrometer by an experienced engineering technician working under the direct supervision of the geotechnical engineer.

Exposure to the environment may weaken the soils at the footing bearing level if the foundation excavations remain open for long periods of time. Therefore, we recommend that foundation excavations be extended to final grade and the footings constructed as soon as possible to minimize the potential damage to bearing soils. The foundation bearing area should be level or suitably benched and be free of loose soil, ponded water and debris. Foundation concrete should not be placed on soils that have been disturbed by seepage. If the bearing soils are softened by surface water intrusion or exposure, the softened soils must be removed from the foundation excavation bottom immediately prior to placement of concrete. If the excavation must remain open overnight or if rainfall becomes imminent while the bearing soils are exposed, we recommend that a 2 to 4-inch thick "mud-mat" of "lean" (2000 psi) concrete be placed on the bearing soils before the placement of reinforcing steel.

Grade Slab

The grade slab may be soil supported in accordance with the recommendations in this report. The grade slab should be jointed around columns and along footing supported walls so that the slab and foundations can settle differentially without damage. Joints containing dowels may be used in the slab to permit movement between parts of the slab without cracking or sharp vertical displacements. We recommend that a suitable vapor barrier be placed below the grade slab, to minimize potential for soil moisture vapor transmission through the slab.

Site Preparation and Grading

Existing topsoil, disturbed soils, fill, vegetation, and surface soils containing organic matter or other deleterious materials should be stripped from within the proposed construction area. After stripping of topsoil and organics, and rough excavation grading, we recommend that areas to provide support for the foundations, floor slab, structural fill and any pavements be carefully inspected for soft surficial soils and proofrolled with a 25 to 35-ton, four-wheeled, rubber-tired roller, a loaded dumptruck or similar approved equipment. The proofroller should make at least four passes over each location, with the last two passes perpendicular to the first two. Any areas which wave, rut or deflect excessively and continue to do so after several passes of the proofroller should be undercut to firmer soils. The undercut areas should be backfilled in thin lifts with suitable compacted fill materials. The proofrolling and undercutting operations should be carefully monitored by an experienced engineering technician working under the direct supervision of the geotechnical engineer.

The residual soils encountered by the borings should be excavatable with standard earthwork equipment such as dozers and pans.

Groundwater

The borings did not encounter groundwater within the expected shallow construction depths. However, the contractor should be prepared to promptly remove any surface water, perched water, or groundwater from the construction area. This has been done effectively on past jobs by means of gravity ditches and pumping from filtered sumps. In general, we recommend that the groundwater table be lowered and maintained at a depth of at least 2 ft below bearing levels and excavation bottoms during construction. There would be somewhat greater potential need for ground water control for the gasoline tank excavations. If ground water is encountered above the tank bottoms, proper design precautions should be taken to provide sufficient dead weight to the tanks to prevent them from being floated out of the ground when empty due to hydrostatic uplift. This is generally accomplished by strapping the tanks to concrete slabs below the tank bottoms.

Engineered Fill

All fill used for raising site grade or for replacement of material that is undercut should be uniformly compacted in thin lifts to at least 95 percent of the standard Proctor maximum dry density (ASTM D 698). In addition, at least the upper 18 inches of subgrade fill beneath pavements and floor slabs and 24 inches below pavements subject to truck traffic should be compacted to 100 percent of the same specification. In cut areas of the site, undisturbed residual soils should provide adequate floor slab support after proofrolling.

Although we have not performed any laboratory classification or compaction testing, based on our visual examination and experience with similar type soils, the on-site soil should be suitable for use as structural fill, after moisture adjustment as required. In general, soils containing more than 5 percent (by weight) fibrous organic materials or having a Plasticity Index (PI) greater than 30 (less than 15 is preferable) should not be used for fill.

Before filling operations begin, representative samples of each proposed fill material should be collected and tested to determine the compaction and classification characteristics. The maximum dry density and

optimum moisture content should be determined. Once compaction begins, a sufficient number of density tests should be performed by an experienced engineering technician working under the direct supervision of the geotechnical engineer to measure the degree of compaction being obtained.

In site areas where more than about 6 feet of structural fill will be placed to achieve proposed grades, we recommend that construction be delayed to allow time for the underlying soils and fill to "settle out" as they adjust to the overlying weight of materials. In the deepest fill areas, a period of 2 to 3 weeks may be required for this adjustment. Settlement pins installed at the top of the fill and monitored with a precision level would aid in determining when settlements are negligible and construction could begin.

The edge of the structural fill should extend horizontally beyond the outside edge of the building foundations at least 10 ft or a distance equivalent to the height of fill to be placed, whichever is greater, before sloping. The outer edge of fill should be at least 5 ft beyond paved areas. We have not performed any laboratory triaxial shear tests for slope stability calculations, but our experience suggests that permanent cut and fill slopes placed on a suitable foundation should be constructed at 2:1 (horizontal to vertical) and 2.5:1, respectively, or flatter. Fill slopes should be adequately compacted. Cut and fill slope surfaces should be protected from erosion by grassing or other means. Permanent slopes of 3:1 or flatter may be desirable for mowing.

The surface of compacted subgrade soils can deteriorate and lose its support capabilities when exposed to environmental changes and construction activity. Deterioration can occur in the form of freezing, formation of erosion gullies, extreme drying, exposure for a long period of time or rutting by construction traffic. We recommend that the surfaces of floor slab and pavement subgrades that have deteriorated or softened be proofrolled, scarified and recompacted (and additional fill placed, if necessary) immediately prior to construction of the floor slab or pavement. Additionally, any excavations through the subgrade soils (such as utility trenches) should be properly backfilled in compacted lifts. Recompaction of subgrade surfaces and compaction of backfill should be checked with a sufficient number of density tests to determine if adequate compaction is being achieved.

Qualification of Report

Our evaluation of foundation support conditions has been based on our understanding of the site and project information and the data obtained in our exploration. The general subsurface conditions utilized in our

foundation evaluation have been based on interpolation of subsurface data between the borings. In evaluating the boring data, we have examined previous correlations between penetration resistances and foundation bearing pressures observed in soil conditions similar to those at your site. If the project information is incorrect or if the structure location (horizontal or vertical) and/or dimensions are changed, please contact us so that our recommendations can be reviewed. The discovery of any site or subsurface conditions during construction which deviate from the data outlined in this exploration should be reported to us for our evaluation. The assessment of site environmental conditions or the presence of pollutants in the soil, rock and ground water of the site was beyond the scope of this exploration.

Closing

Thank you for the opportunity to provide our professional geotechnical services during this phase of your project. Please contact us when we can be of further service or if you have any questions concerning this report.

Sincerely,

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC.

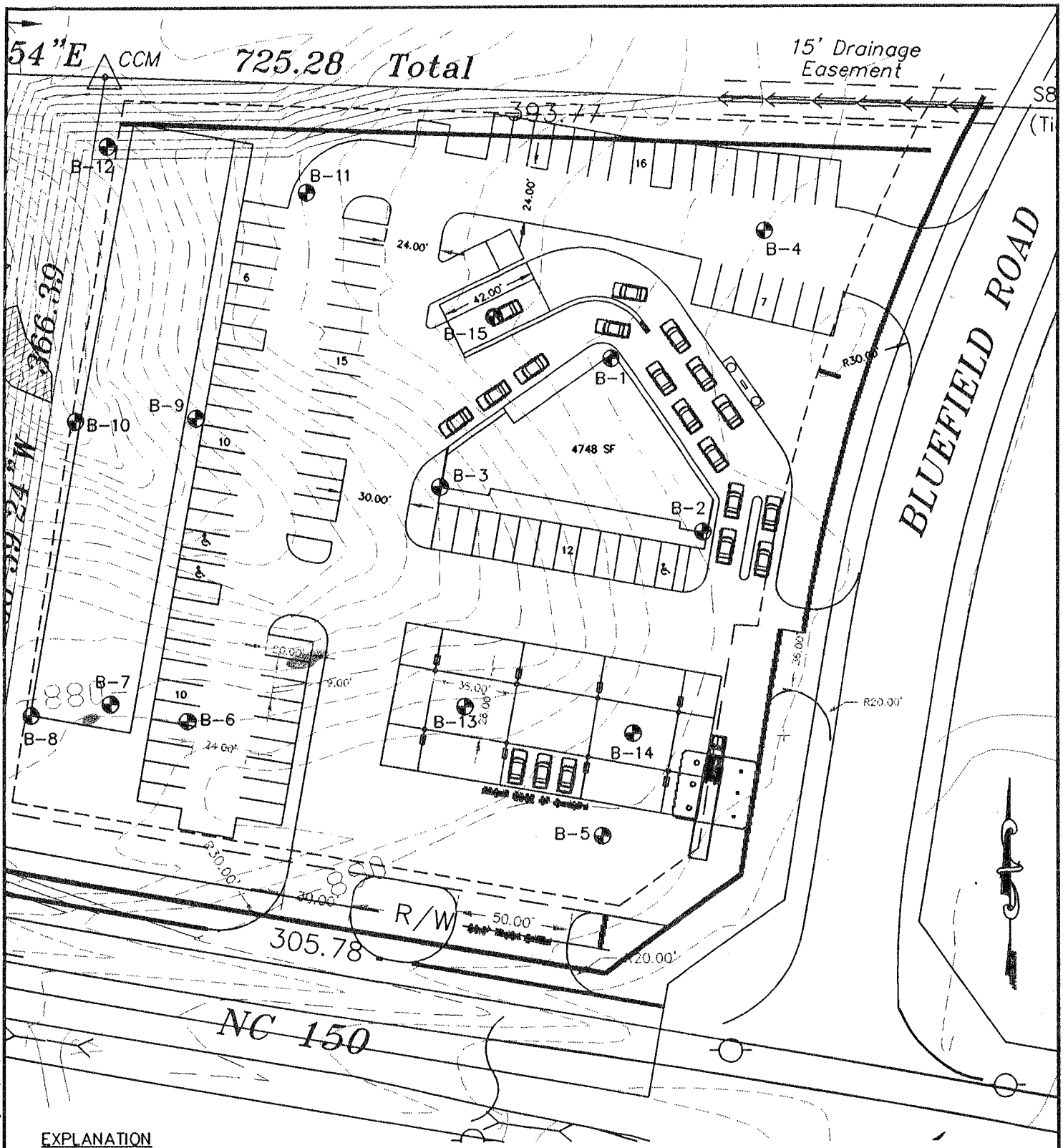
Stacie L. Edwards
Stacie L. Edwards, E.I.T.
Engineer In Training

Mel Y. Browning
Mel Y. Browning, P.E.
Principal Geotechnical Engineer
Registered, N.C. 8696

BY adh WITH PERMISSION

SLE/MYB:adh

Attachments



REF: ELECTRONIC DRAWING FILE PREPARED BY B.K. BARRINGER & ASSOCIATES, P.A.; SHEET S-1 OF 1; DATED 01/04/99.

LAW
ENGINEERING AND ENVIRONMENTAL SERVICES
CHARLOTTE, NORTH CAROLINA

BORING LOCATION PLAN
DUCKWORTH'S FOOD MARKETS
MOORESVILLE, NORTH CAROLINA

PREPARED BY	DATE	CHECKED	DATE	JOB NO.	30100-9-5046	FIGURE	1

G:\PROJECTS\30120 GEOTECHNICAL\BLPLAN.dwg 11/12/99 MHARRISON

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE GRAINED SOILS (More than 50% of material is LARGER than No. 200 sieve size)	GRAVELS (More than 50% of coarse fraction is LARGER than the No. 4 sieve size)	CLEAN GRAVELS (Little or no fines)	GW	Well graded gravels, gravel - sand mixtures, little or no fines.
			GP	Poorly graded gravels or grave - sand mixtures, little or no fines.
		GRAVELS WITH FINES (Appreciable amount of fines)	GM	Silty gravels, gravel - sand - silt mixtures.
			GC	Clayey gravels, gravel - sand - clay mixtures.
	SANDS (More than 50% of coarse fraction is SMALLER than the No. 4 Sieve Size)	CLEAN SANDS (Little or no fines)	SW	Well graded sands, gravelly sands, little or no fines
			SP	Poorly graded sands or gravelly sands, little or no fines
		SANDS WITH FINES (Appreciable amount of fines)	SM	Silty sands, sand - silt mixtures
			SC	Clayey sands, sand - clay mixtures.
FINE GRAINED SOILS (More than 50% of material is SMALLER than No. 200 sieve size)	SILTS AND CLAYS (Liquid limit LESS than 50)		ML	Inorganic silts and very fine sands, rock flour, silty of clayey fine sands or clayey silts and with slight plasticity.
			CL	Inorganic lays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.
			OL	Organic silts and organic silty clays of low plasticity.
	SILTS AND CLAYS (Liquid limit GREATER than 50)		MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts.
			CH	Inorganic clays of high plasticity, fat clays
			OH	Organic clays of medium to high plasticity, organic silts.
HIGHLY ORGANIC SOILS			PT	Peat and other highly organic soils.

BOUNDARY CLASSIFICATIONS: Soils possessing characteristics of two groups are designated by combinations of group symbols.

SILT OR CLAY	SAND			GRAVEL		Cobbles	Boulders
	Fine	Medium	Coarse	Fine	Coarse		

No.200 No.40 No.10 No.4 3/4" 3" 12"

U.S. STANDARD SIEVE SIZE

Reference: The Unified Soil Classification System, Corps of Engineers, U.S. Army Technical Memorandum No. 3-357, Vol. 1, March, 1953 (Revised April, 1960)

	Undisturbed Sample		Auger Cuttings
	Split Spoon Sample		Bulk Sample
	Rock Core		Crandall Sampler
	Dilatometer		Pressure Meter
	Packer		No Recovery
	Water Table at time of drilling		Water Table after 24 hours
	Caved Depth		

Correlation of Penetration Resistance with Relative Density and Consistency

SAND & GRAVEL		SILT & CLAY	
No. of Blows	Relative Density	No. of Blows	Consistency
0 - 4	Very Loose	0 - 1	Very Soft
5 - 10	Loose	2 - 4	Soft
11 - 20	Firm	5 - 8	Firm
21 - 30	Very Firm	9 - 15	Stiff
31 - 50	Dense	16 - 30	Very Stiff
Over 50	Very Dense	Over 31	Hard

KEY TO SYMBOLS AND DESCRIPTIONS

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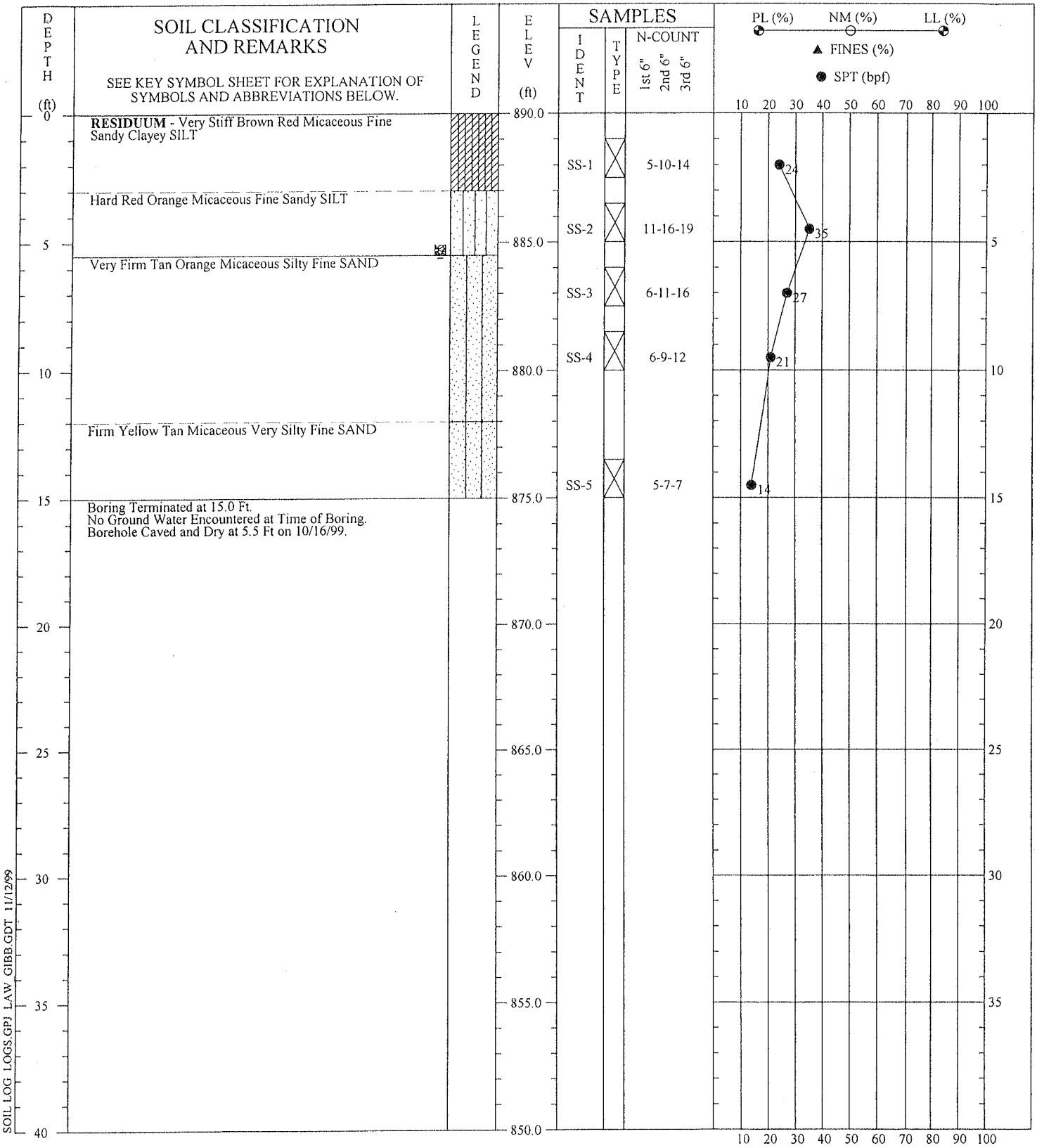

SOIL LOG LOGS.GPJ LAW GIBB.GDT 11/12/99

DRILLER: David
EQUIPMENT:
METHOD: Hollow-stem Auger
HOLE DIA.: 6"
REMARKS:

THIS RECORD IS A REASONABLE INTERPRETATION OF SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND AT OTHER TIMES MAY DIFFER. INTERFACES BEWEEN STRATA ARE APPROXIMATE. TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.

SOIL TEST BORING RECORD

PROJECT: Duckworth's Food Mart **BORING NO.:** B- 1
COORD N:
COORD E:
DRILLED: October 14, 1999
PROJ. NO.: 30100-9-5046 **PAGE** 1 **OF** 1

LAW
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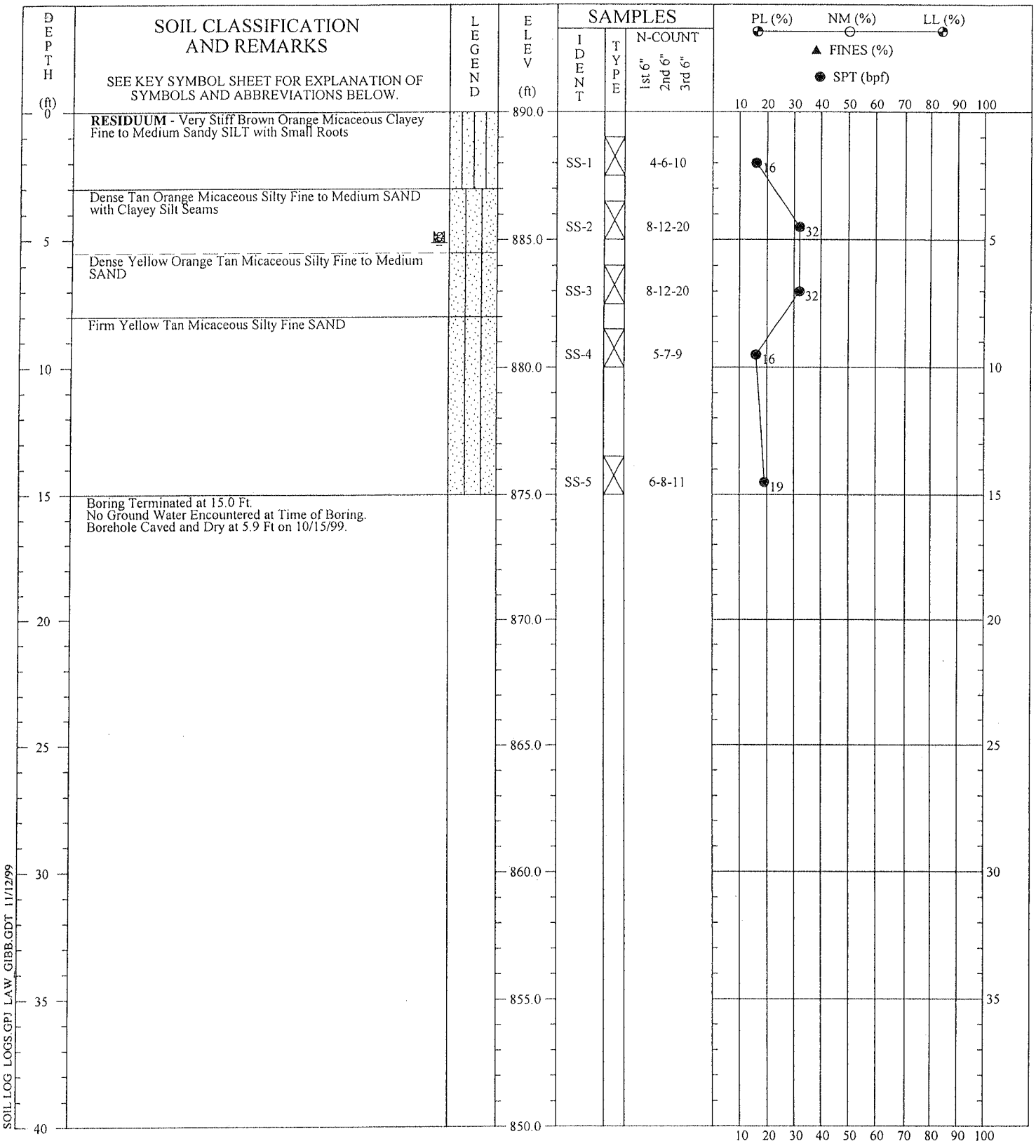

SOIL_LOG LOGS.GPJ LAW_GIBB.GDT 11/12/99

DRILLER: David
EQUIPMENT:
METHOD: Hollow-stem Auger
HOLE DIA.: 6"
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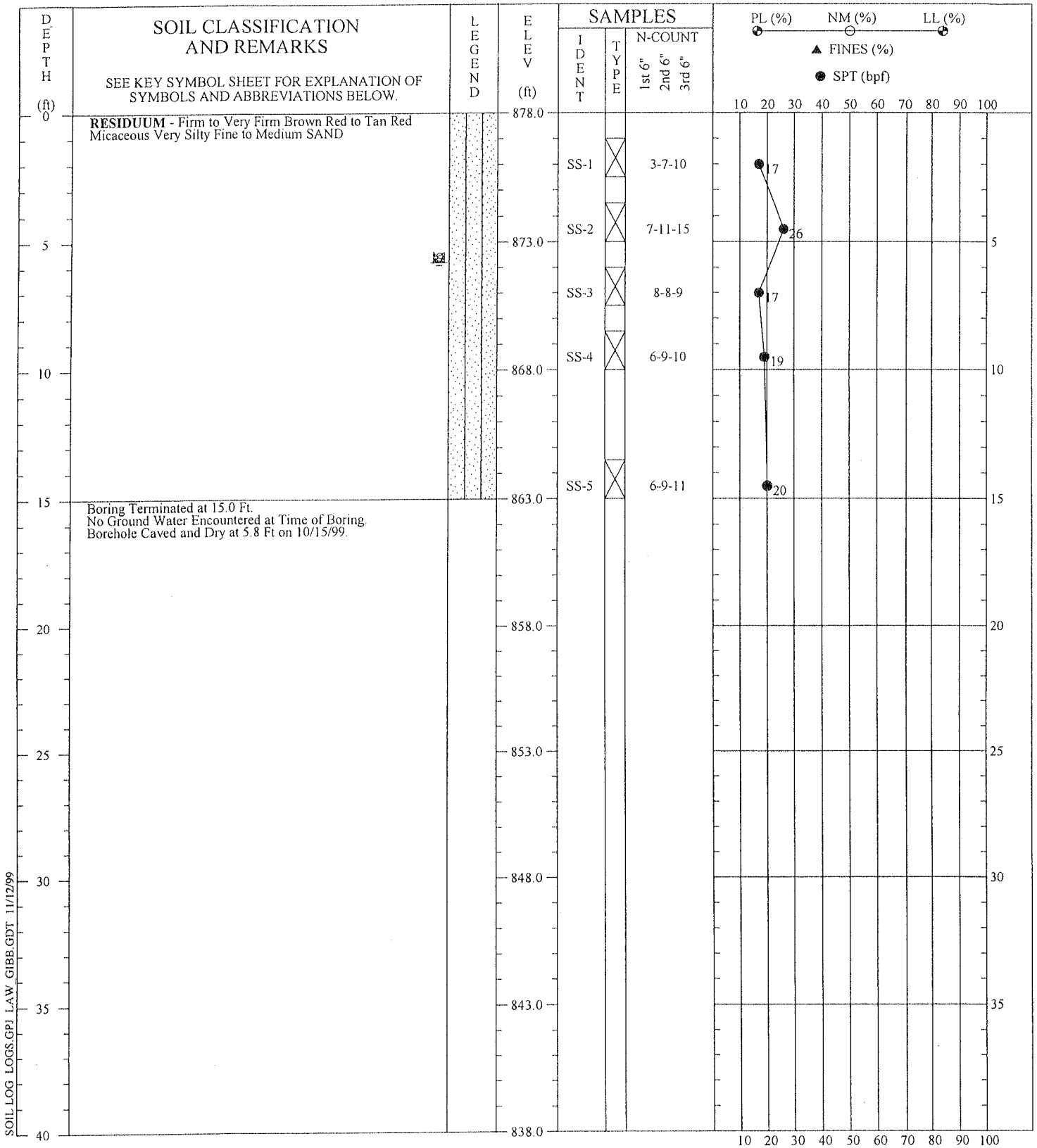
SOIL TEST BORING RECORD

PROJECT: Duckworth's Food Mart **BORING NO.:** B- 2
COORD N:
COORD E:
DRILLED: October 14, 1999
PROJ. NO.: 30100-9-5046 **PAGE 1 OF 1**

LAW
LAWGIBB Group Member



SOIL LOG LOGS.GPJ LAW_GIBB.GDT 11/12/99

DRILLER: David
EQUIPMENT:
METHOD: Hollow-stem Auger
HOLE DIA.: 6"
REMARKS:

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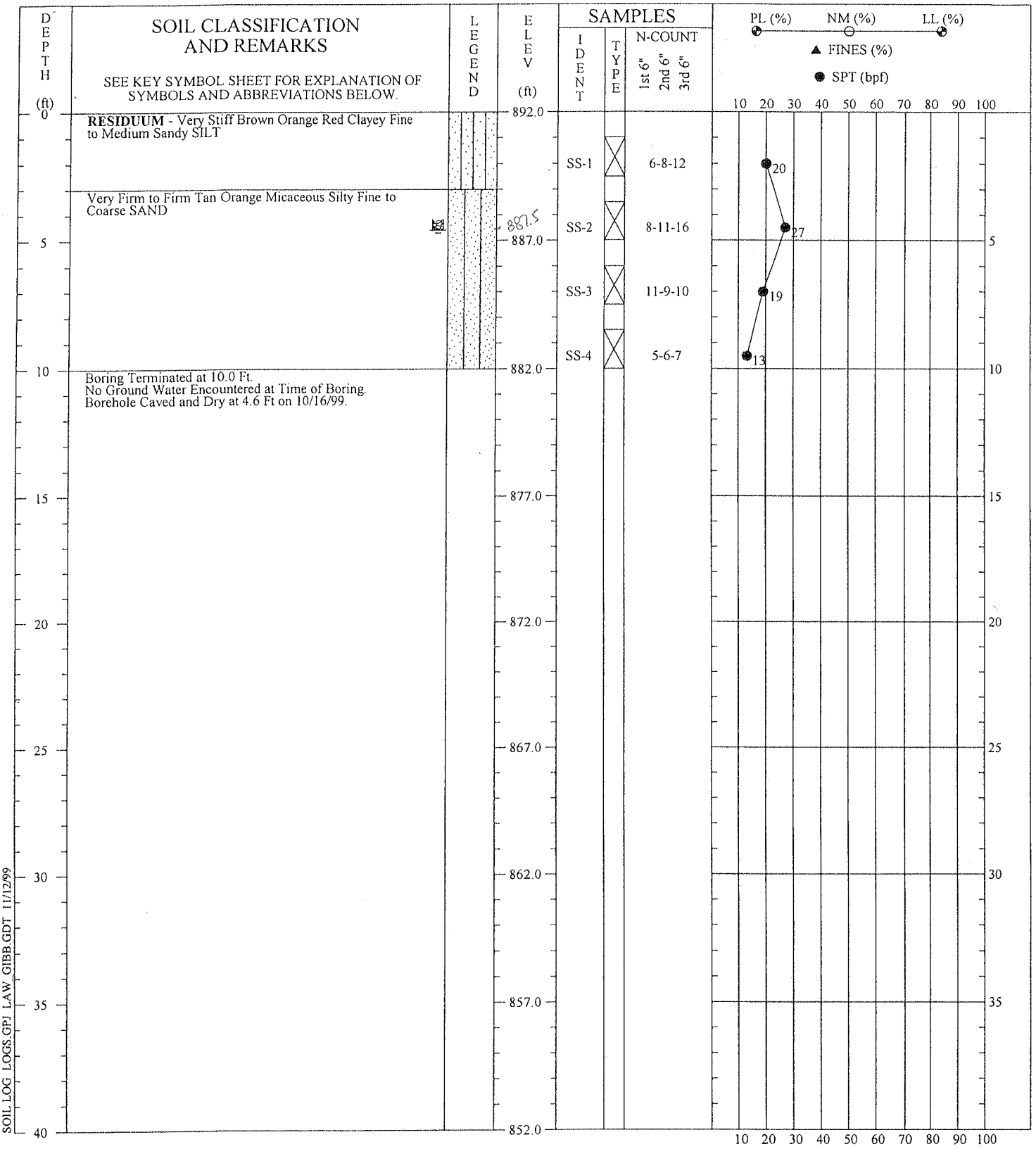
SOIL TEST BORING RECORD

PROJECT: Duckworth's Food Mart **BORING NO.:** B- 3
COORD N:
COORD E:
DRILLED: October 14, 1999
PROJ. NO.: 30100-9-5046 **PAGE 1 OF 1**

LAW
LAWGIBB Group Member



DRILLER: David
EQUIPMENT:
METHOD: Hollow-stem Auger
HOLE DIA.: 6"
REMARKS:

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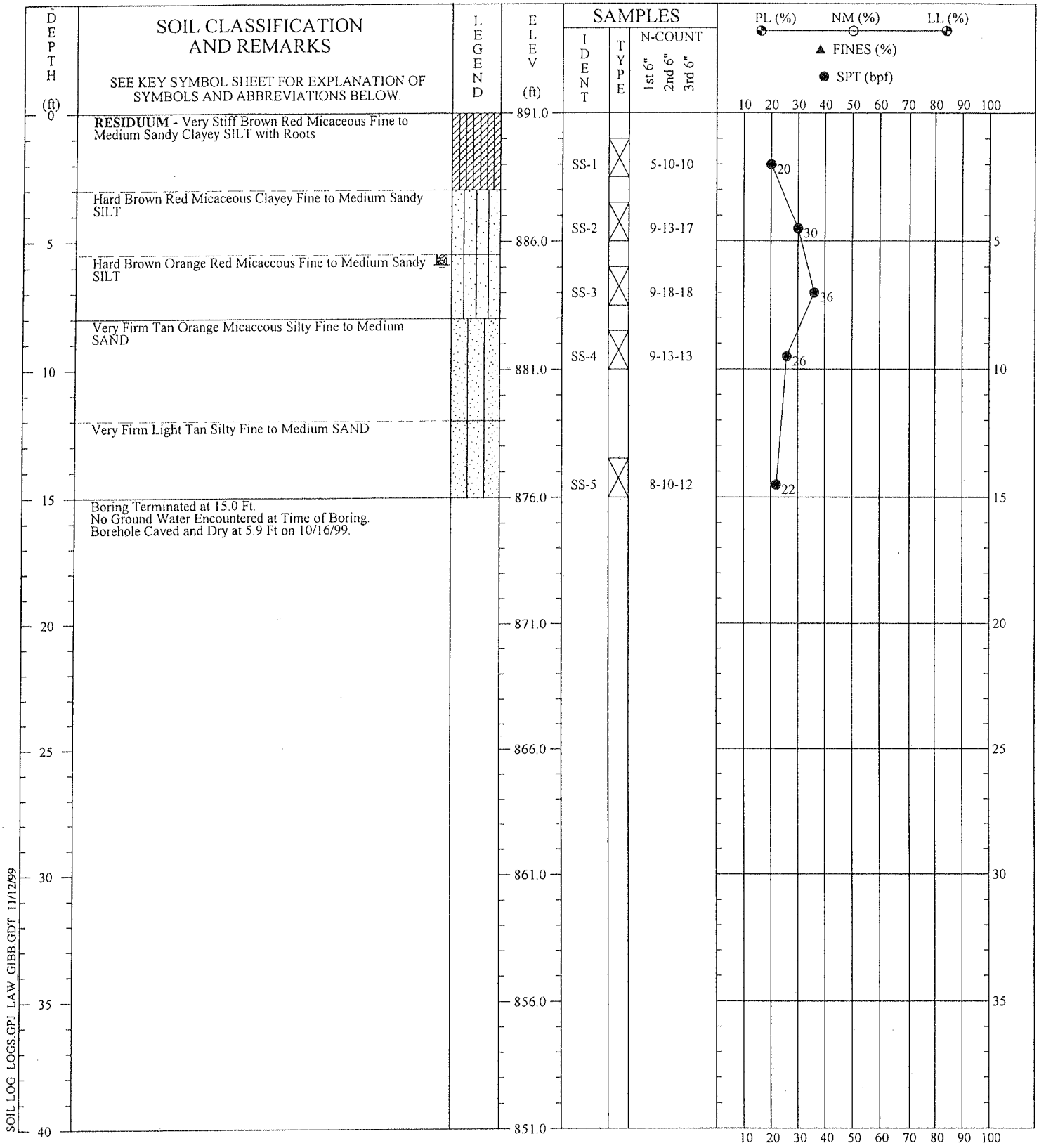
SOIL TEST BORING RECORD

PROJECT: Duckworth's Food Mart **BORING NO.:** B- 4
COORD N:
COORD E:
DRILLED: October 15, 1999
PROJ. NO.: 30100-9-5046 **PAGE** 1 **OF** 1

LAW
LAWGIBB Group Member



SOIL LOG LOGS.GPJ LAW_GIBB.GDT 11/12/99

DRILLER: David
EQUIPMENT:
METHOD: Hollow-stem Auger
HOLE DIA.: 6"
REMARKS:

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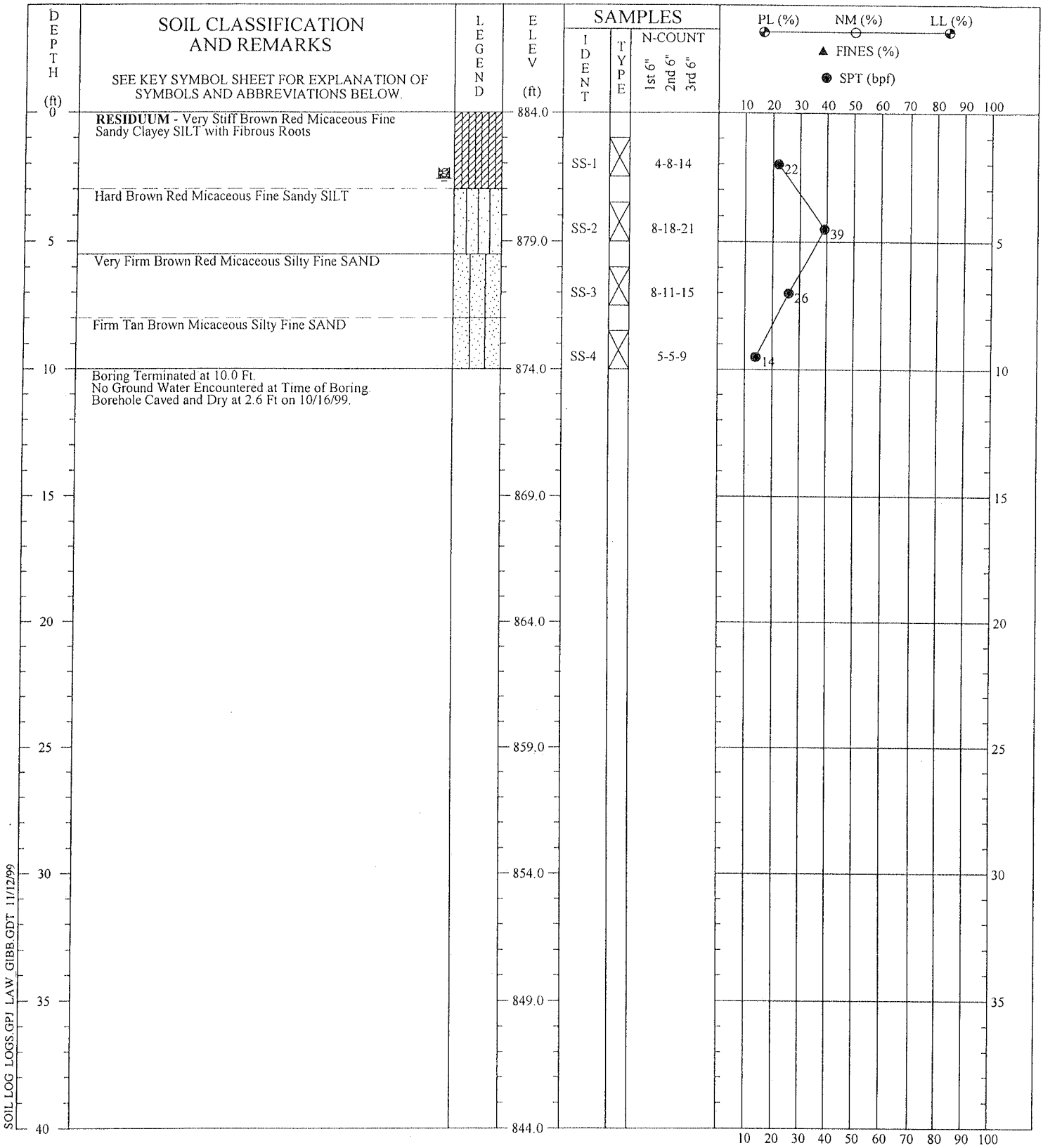
SOIL TEST BORING RECORD

PROJECT: Duckworth's Food Mart **BORING NO.:** B- 5
COORD N:
COORD E:
DRILLED: October 15, 1999
PROJ. NO.: 30100-9-5046 **PAGE 1 OF 1**

LAW
LAWGIBB Group Member



SOIL LOG LOGS.GPJ LAW_GIBB.GDT 11/12/99

DRILLER: David
EQUIPMENT:
METHOD: Hollow-stem Auger
HOLE DIA.: 6"
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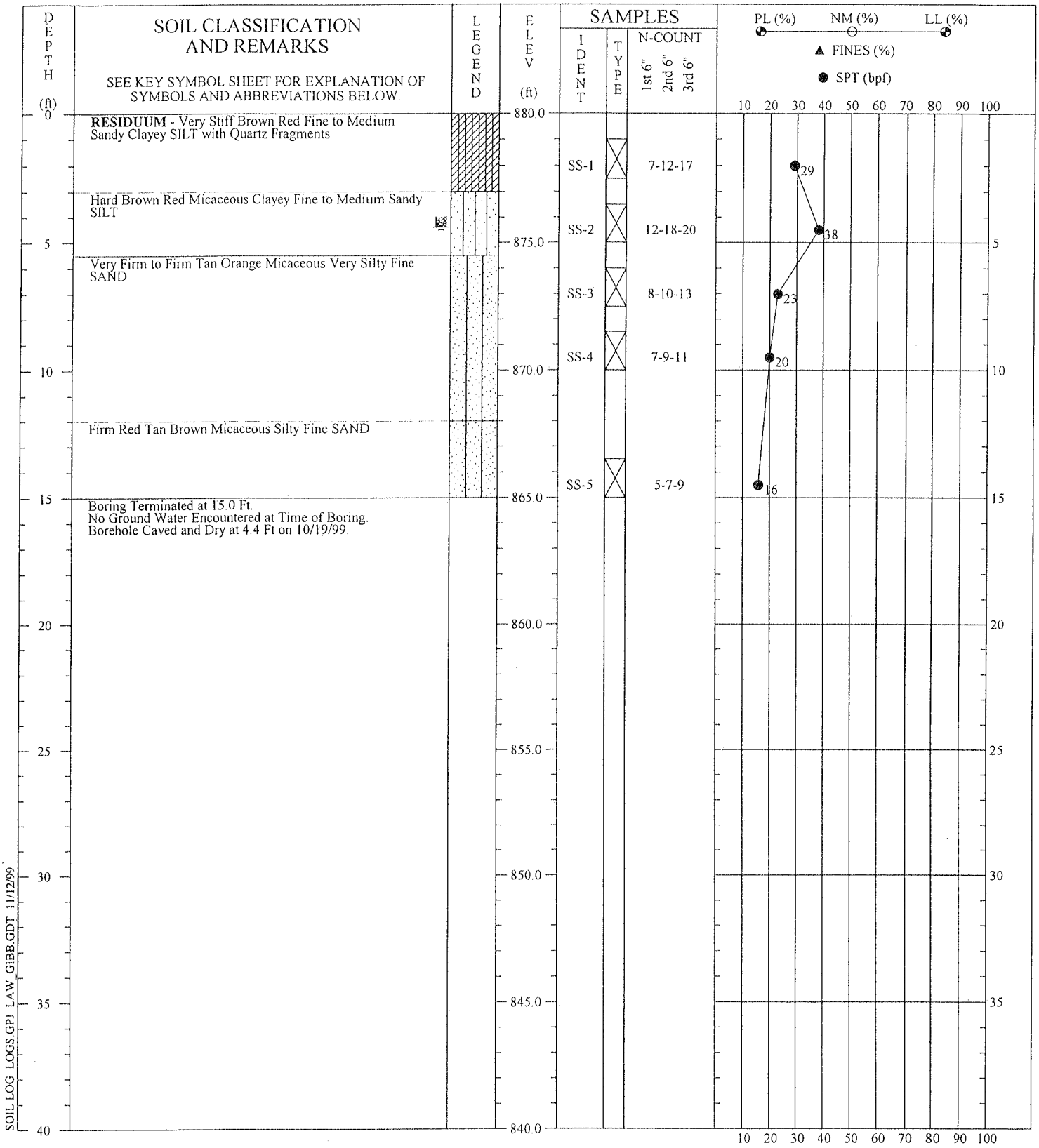
SOIL TEST BORING RECORD

PROJECT: Duckworth's Food Mart **BORING NO.:** B- 6
COORD N:
COORD E:
DRILLED: October 15, 1999
PROJ. NO.: 30100-9-5046 **PAGE 1 OF 1**

LAW
LAWGIBB Group Member



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DRILLER: David
EQUIPMENT:
METHOD: Hollow-stem Auger
HOLE DIA.: 6"
REMARKS:

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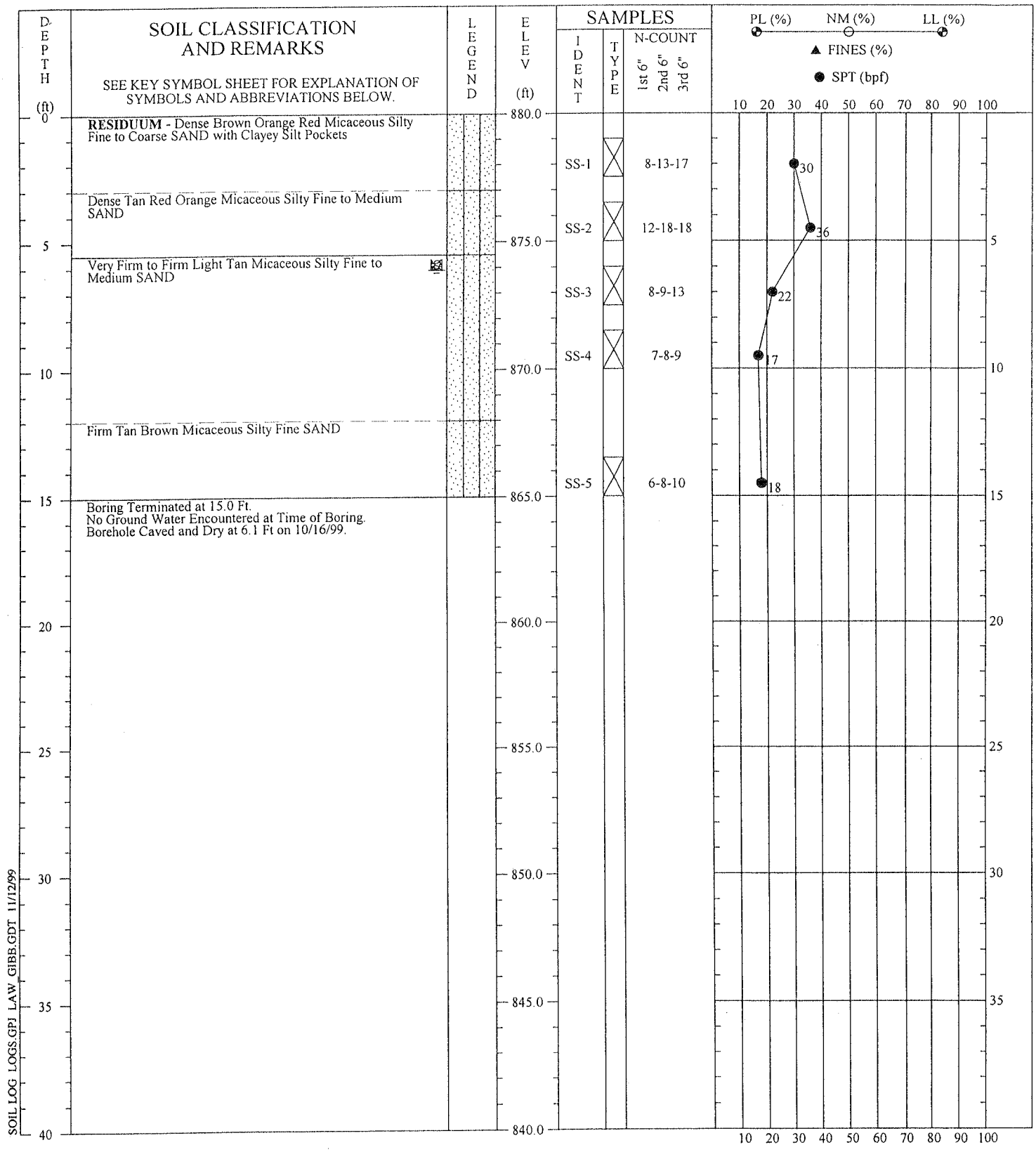
SOIL TEST BORING RECORD

PROJECT: Duckworth's Food Mart **BORING NO.:** B- 7
COORD N:
COORD E:
DRILLED: October 16, 1999
PROJ. NO.: 30100-9-5046 **PAGE** 1 **OF** 1

LAW
LAWGIBB Group Member



SOIL LOG LOGS.GPJ LAW_GIBB.GDT 11/12/99

DRILLER: David
EQUIPMENT:
METHOD: Hollow-stem Auger
HOLE DIA.: 6"
REMARKS:

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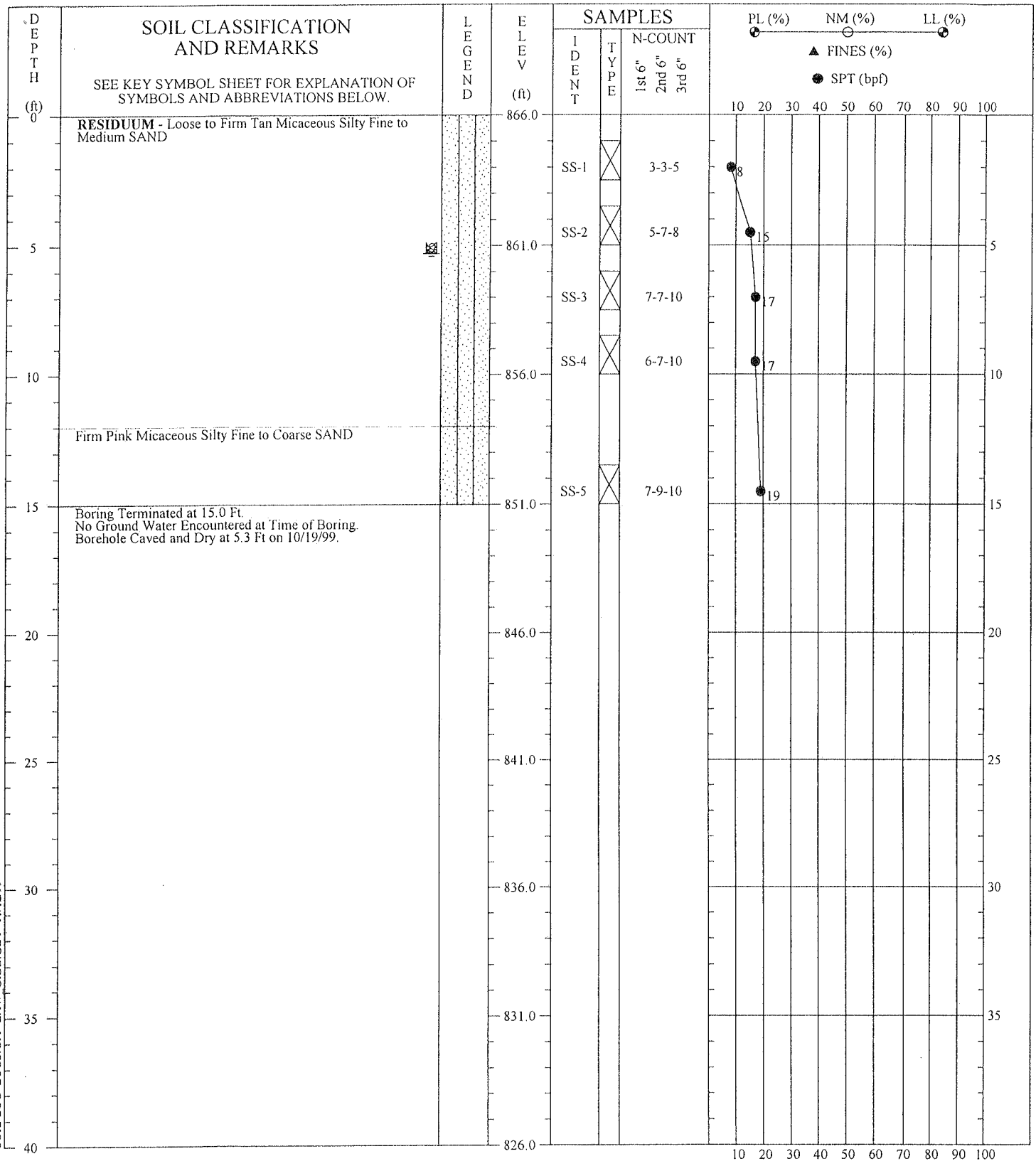
SOIL TEST BORING RECORD

PROJECT: Duckworth's Food Mart **BORING NO.:** B- 8
COORD N:
COORD E:
DRILLED: October 15, 1999
PROJ. NO.: 30100-9-5046 **PAGE 1 OF 1**

LAW
LAWGIBB Group Member



SOIL LOG LOGS.GPJ LAW_GIBB.GDT 11/12/99

DRILLER: David
EQUIPMENT:
METHOD: Hollow-stem Auger
HOLE DIA.: 6"
REMARKS:

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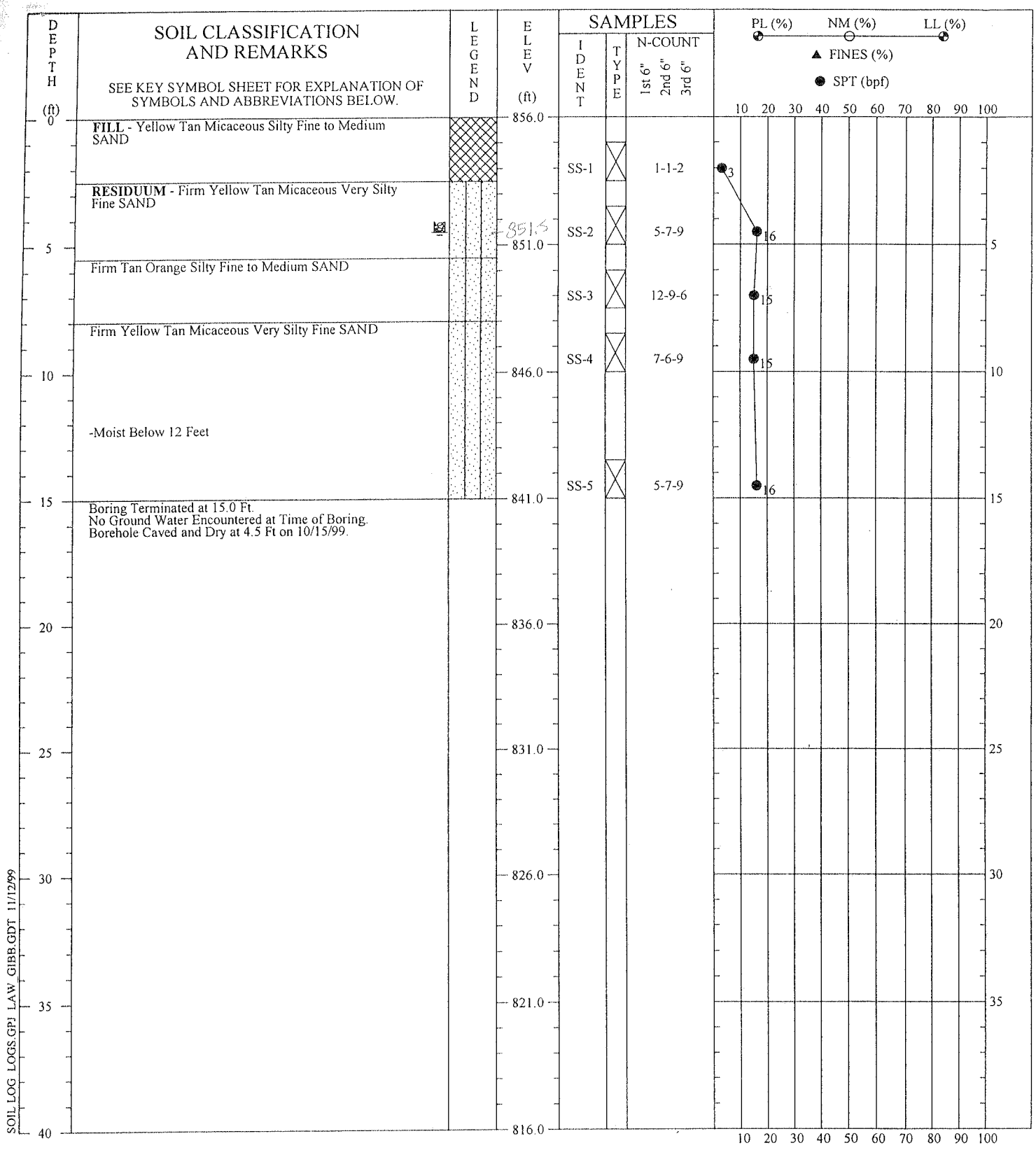
SOIL TEST BORING RECORD

PROJECT: Duckworth's Food Mart **BORING NO.:** B- 9
COORD N:
COORD E:
DRILLED: October 15, 1999
PROJ. NO.: 30100-9-5046 **PAGE 1 OF 1**

LAW
LAWGIBB Group Member



SOIL LOG LOGS.GPJ LAW_GIBB.GDT 11/12/99

DRILLER: David
EQUIPMENT:
METHOD: Hollow-stem Auger
HOLE DIA.: 6"
REMARKS:

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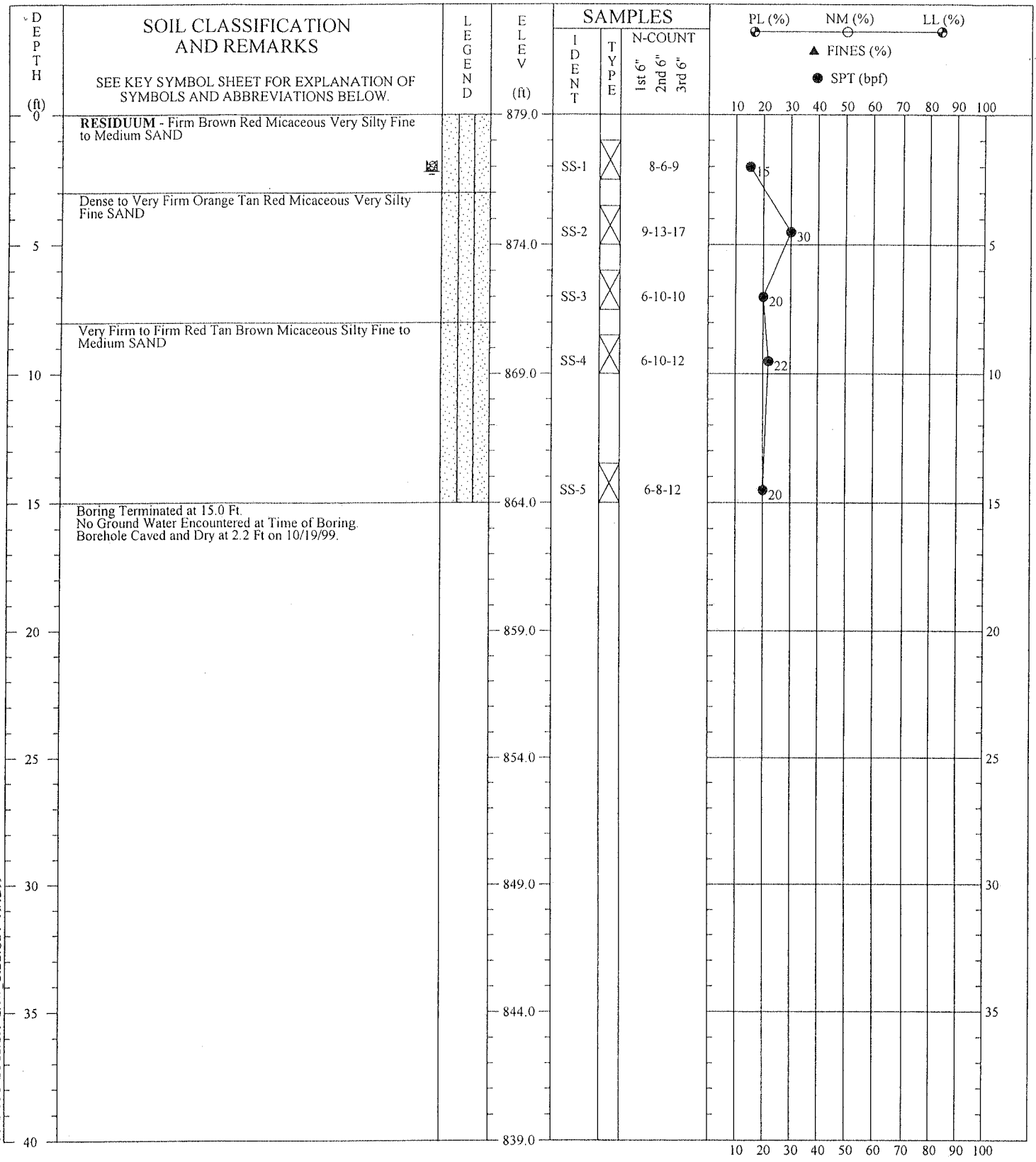
SOIL TEST BORING RECORD

PROJECT: Duckworth's Food Mart **BORING NO.:** B-10
COORD N:
COORD E:
DRILLED: October 14, 1999
PROJ. NO.: 30100-9-5046 **PAGE 1 OF 1**

LAW
LAWGIBB Group Member



SOIL LOG LOGS.GPJ LAW_GIBB.GDT 11/12/99

DRILLER: David
EQUIPMENT:
METHOD: Hollow-stem Auger
HOLE DIA.: 6"
REMARKS:

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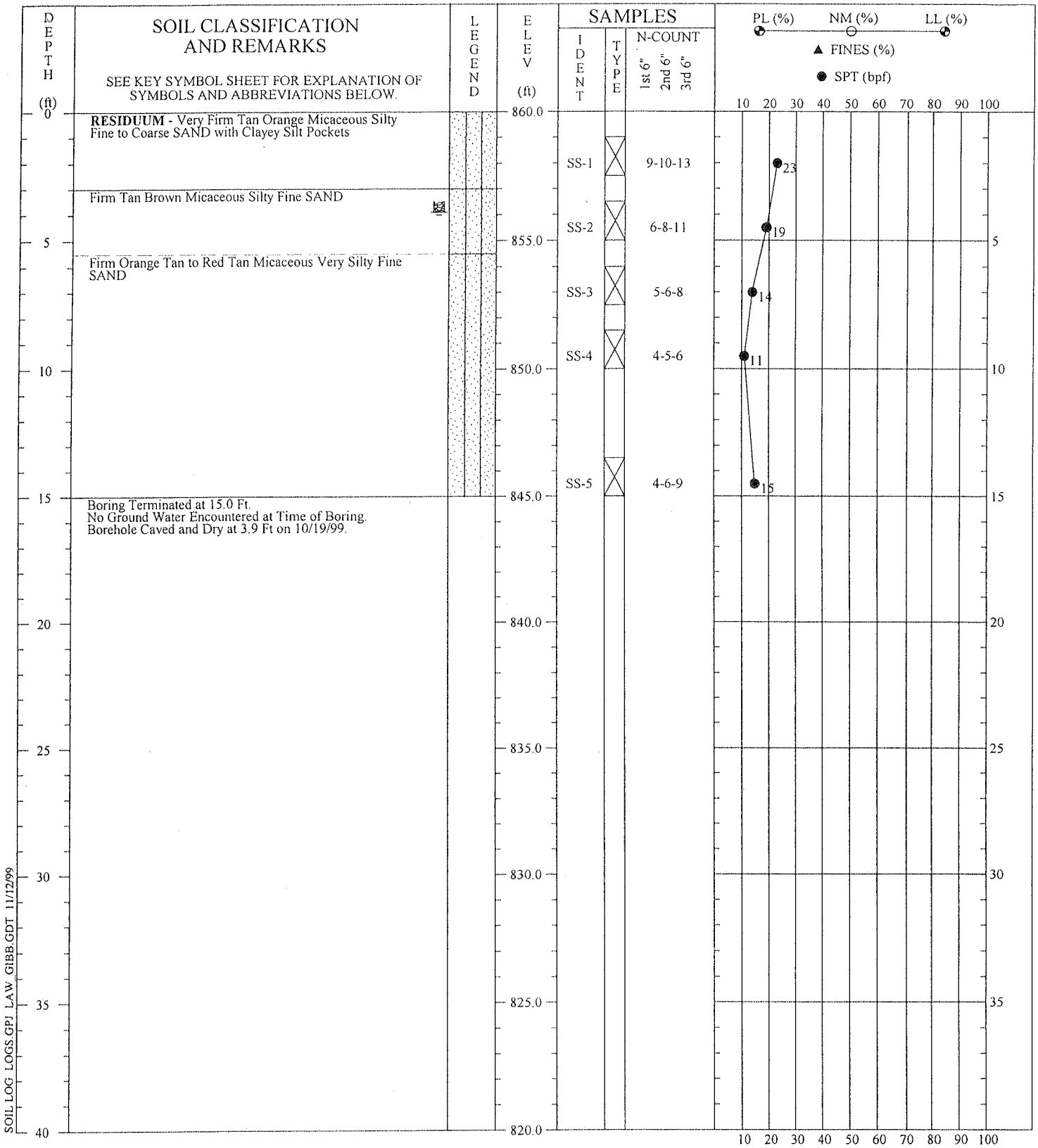
SOIL TEST BORING RECORD

PROJECT: Duckworth's Food Mart **BORING NO.:** B-11
COORD N:
COORD E:
DRILLED: October 16, 1999
PROJ. NO.: 30100-9-5046 **PAGE 1 OF 1**

LAW
LAWGIBB Group Member



SOIL LOG LOGS.GPJ LAW_GIBB.GDT 11/12/99

DRILLER: David
EQUIPMENT:
METHOD: Hollow-stem Auger
HOLE DIA.: 6"
REMARKS:

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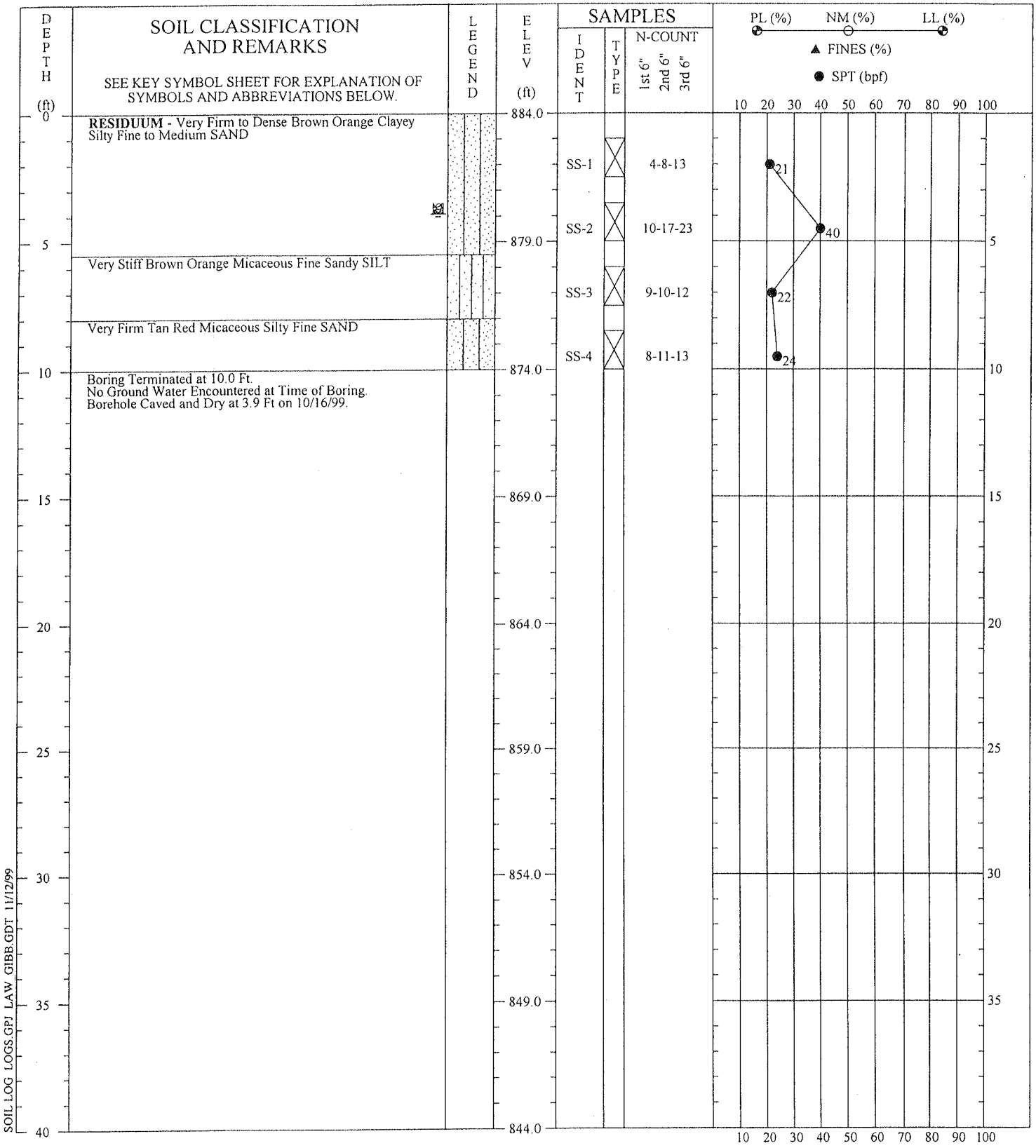
SOIL TEST BORING RECORD

PROJECT: Duckworth's Food Mart **BORING NO.:** B-12
COORD N:
COORD E:
DRILLED: October 16, 1999
PROJ. NO.: 30100-9-5046 **PAGE** 1 **OF** 1

LAW
LAWGIBB Group Member



DRILLER: David
EQUIPMENT:
METHOD: Hollow-stem Auger
HOLE DIA.: 6"
REMARKS:

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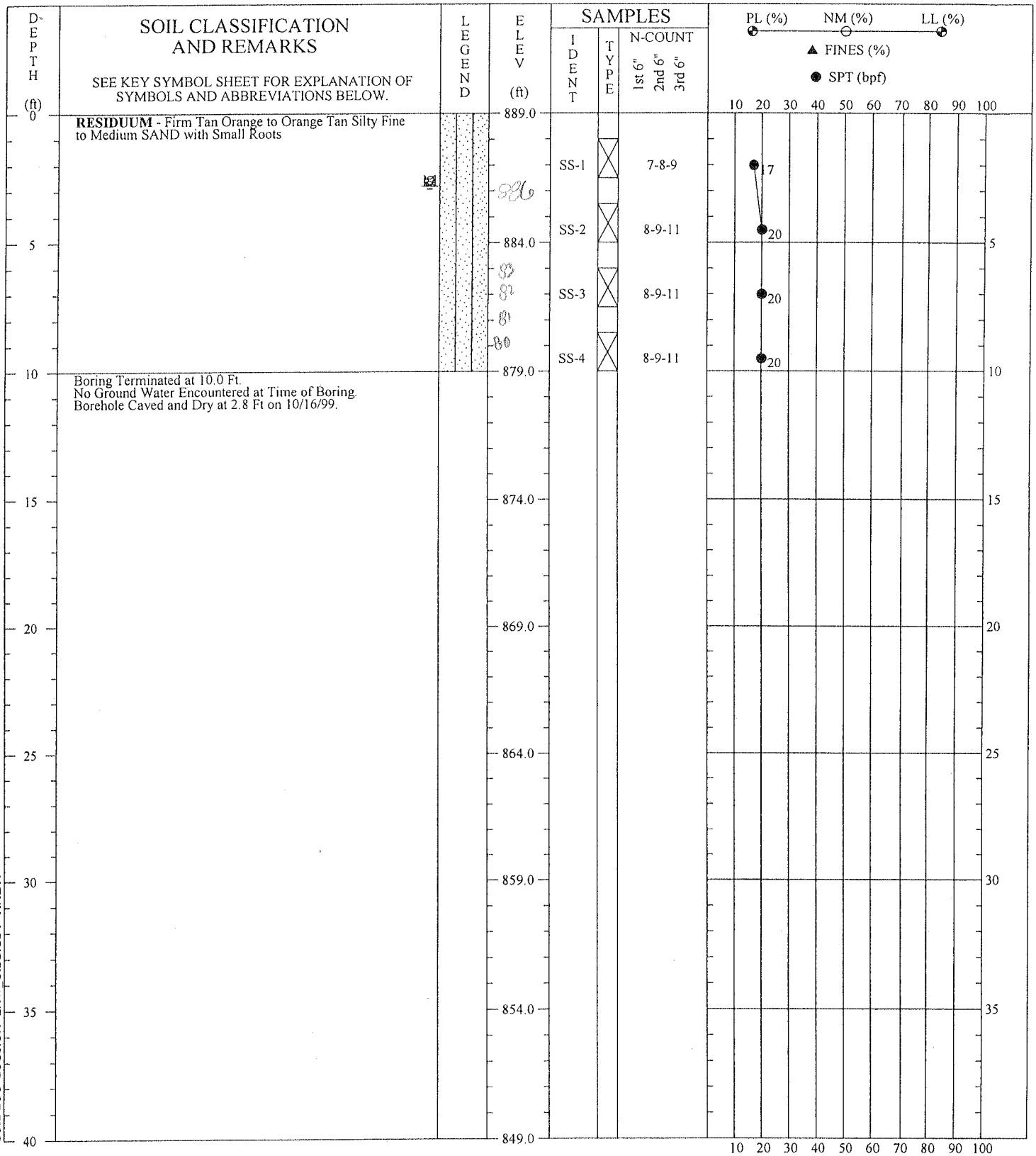
SOIL TEST BORING RECORD

PROJECT: Duckworth's Food Mart **BORING NO.:** B-13
COORD N:
COORD E:
DRILLED: October 15, 1999
PROJ. NO.: 30100-9-5046 **PAGE 1 OF 1**

LAW
LAWGIBB Group Member



SOIL LOG LOGS.GPJ LAW_GIBB.GDT 11/12/99

DRILLER: David
EQUIPMENT:
METHOD: Hollow-stem Auger
HOLE DIA.: 6"
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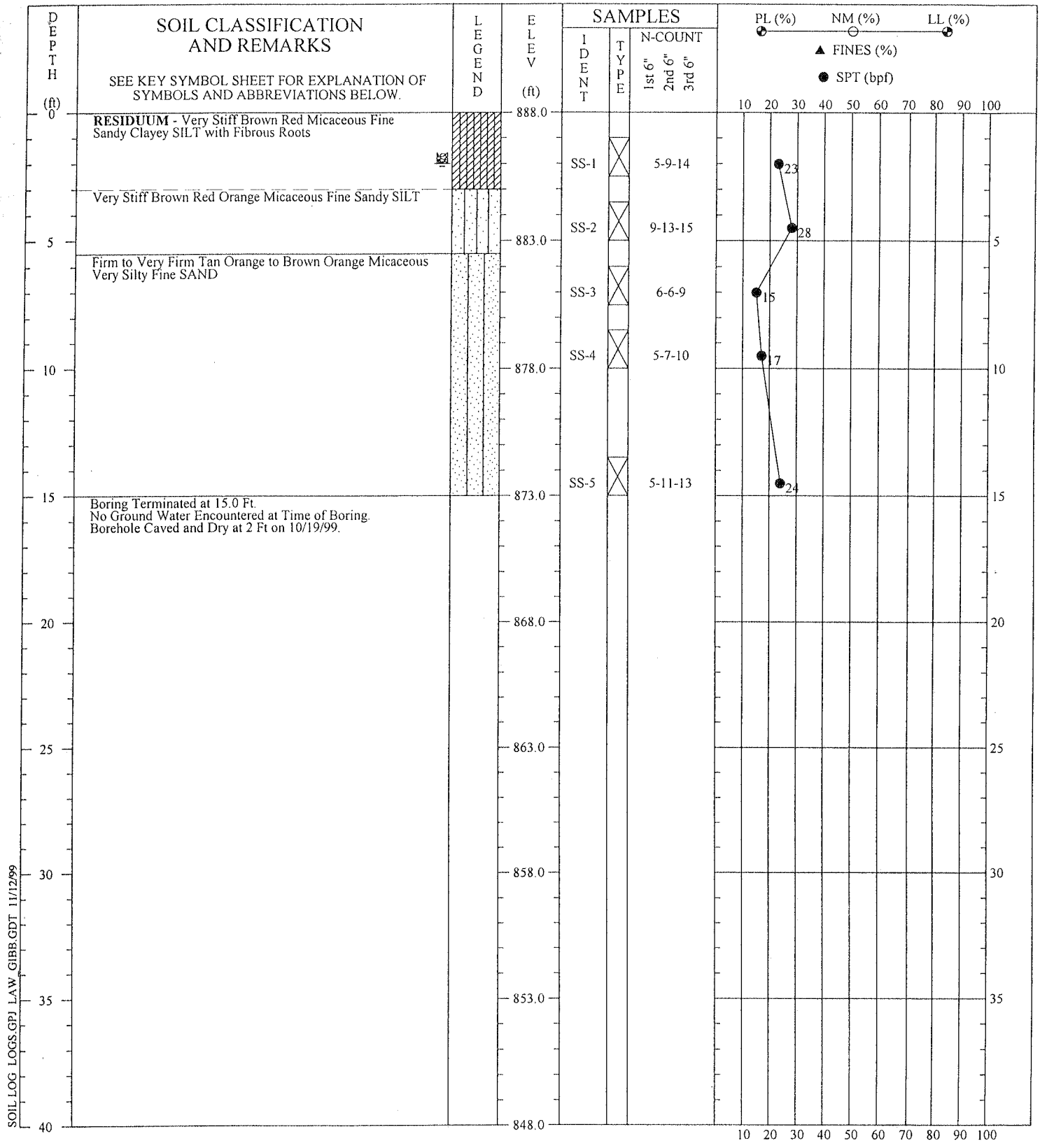
SOIL TEST BORING RECORD

PROJECT: Duckworth's Food Mart **BORING NO.:** B-14
COORD N:
COORD E:
DRILLED: October 15, 1999
PROJ. NO.: 30100-9-5046 **PAGE** 1 **OF** 1

LAW
LAWGIBB Group Member



SOIL LOG LOGS.GPJ LAW_GIBB.GDT 11/12/99

DRILLER: David
EQUIPMENT:
METHOD: Hollow-stem Auger
HOLE DIA.: 6"
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SOIL TEST BORING RECORD

PROJECT: Duckworth's Food Mart **BORING NO.:** B-15
COORD N:
COORD E:
DRILLED: October 16, 1999
PROJ. NO.: 30100-9-5046 **PAGE 1 OF 1**

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LAWGIBB Group Member

APPENDIX B
PHOTOGRAPH LOG

PHOTO 1:

View of the site and inactive pump islands with inactive UST basin, facing north.

Photo taken 9/21/18.

PHOTO 2:

Looking north from southeast corner of property.

Photo taken 9/21/18.

PHOTO 3:

Facing south toward furniture store.

Photo taken 9/21/18.

PHOTO 4:

Fly ash used as structural fill for the site.

Photo taken 11/14/18.

PHOTO 5:

Zoomed in photo of fly ash.

Photo taken 11/14/18.

APPENDIX C
BORING LOGS

SOIL BORING FIELD WORKSHEET

BORING #	**B-1**	BORING DEPTH (ft)	**10**	NUMBER OF PAGES	**1**
PROJECT #	**188322307**			PROJECT NAME	**NCDOT Mooresville-Parcel 170.**
DATE DRILLED	**11/14/2018**			WEATHER CONDITIONS	**Cloudy, 40˚F**
DRILLING SUB-CONTRACTOR	**IET**			DRILL RIG	**AMS PowerProbe**

DEPTH (ft bgs)	PID (ppm)	SOIL DESCRIPTION	SAMPLE INFO
2	0.0	Mixed fill, gray suspect fly ash, tan sand	Sample taken at 0-2'
4	0.0		
6	0.0	Gray, suspect fly ash	Sample taken at 6-8'
8	0.0		
10	0.0	Red orange brown, sandy silty CLAY	
		*Boring terminated at 10'	

Log Completed By: **DRH**

Page: **1**

SOIL BORING FIELD WORKSHEET

BORING #	**B-2**	BORING DEPTH (ft)	**10**	NUMBER OF PAGES	**1**
PROJECT #	**188322307**			PROJECT NAME	**NCDOT Mooresville-Parcel 170.**
DATE DRILLED	**11/14/2018**			WEATHER CONDITIONS	**Cloudy, 40˚F**
DRILLING SUB-CONTRACTOR	**IET**			DRILL RIG	**AMS PowerProbe**

DEPTH (ft bgs)	PID (ppm)	SOIL DESCRIPTION	SAMPLE INFO
2	0.0	Mixed fill, gray suspect fly ash, tan sand	Sample taken at 0-2'
4	0.0		
6	0.0	Gray, suspect fly ash	
8	0.0		
10	0.0	Red orange brown, sandy silty CLAY	
		*Boring terminated at 10'	

Log Completed By: **DRH**

Page: **1**

SOIL BORING FIELD WORKSHEET

BORING #	**B-3**	BORING DEPTH (ft)	**10**	NUMBER OF PAGES	**1**
PROJECT #	**188322307**			PROJECT NAME	**NCDOT Mooresville-Parcel 170.**
DATE DRILLED	**11/14/2018**			WEATHER CONDITIONS	**Cloudy, 40˚F**
DRILLING SUB-CONTRACTOR	**IET**			DRILL RIG	**AMS PowerProbe**

DEPTH (ft bgs)	PID (ppm)	SOIL DESCRIPTION	SAMPLE INFO
2	0.0	Orange brown, sandy clayey SILT, fill, some gravels	Sample taken at 0-2'
4	0.0	Gray, suspect fly ash	
6	0.0	Red orange brown, sandy silty CLAY	
8	0.0		
10	0.0	Orange tan, sandy clayey SILT	
		*Boring terminated at 10'	

Log Completed By: **DRH**

SOIL BORING FIELD WORKSHEET

BORING #	**B-4**	BORING DEPTH (ft)	**10**	NUMBER OF PAGES	**1**
PROJECT #	**188322307**			PROJECT NAME	**NCDOT Mooresville-Parcel 170.**
DATE DRILLED	**11/14/2018**			WEATHER CONDITIONS	**Cloudy, 40˚F**
DRILLING SUB-CONTRACTOR	**IET**			DRILL RIG	**AMS PowerProbe**

DEPTH (ft bgs)	PID (ppm)	SOIL DESCRIPTION	SAMPLE INFO
2	0.0	Tan gray SAND, some gravels, fill	Sample taken at 0-2'
4	0.0		
6	0.0	Orange tan, silty sandy CLAY, fill	Sample taken at 4-6'
8	0.0	Tan gray SAND, gravels, fill	
10	0.0		
		*Boring terminated at 10'	

Log Completed By: **DRH**

SOIL BORING FIELD WORKSHEET

BORING #	**B-5**	BORING DEPTH (ft)	**10**	NUMBER OF PAGES	**1**
PROJECT #	**188322307**			PROJECT NAME	**NCDOT Mooresville-Parcel 170.**
DATE DRILLED	**11/14/2018**			WEATHER CONDITIONS	**Cloudy, 40˚F**
DRILLING SUB-CONTRACTOR	**IET**			DRILL RIG	**AMS PowerProbe**

DEPTH (ft bgs)	PID (ppm)	SOIL DESCRIPTION	SAMPLE INFO
2	0.0	Tan gray SAND, gravels	
4	0.0		Sample taken at 2-4'
6	0.0	Red orange tan, clayey sandy SILT	
8	0.0		
10	0.0		
		*Boring terminated at 10'	

Log Completed By: **DRH**

Page: **1**

SOIL BORING FIELD WORKSHEET

BORING #	**B-6**	BORING DEPTH (ft)	**10**	NUMBER OF PAGES	**1**
PROJECT #	**188322307**			PROJECT NAME	**NCDOT Mooresville-Parcel 170.**
DATE DRILLED	**11/14/2018**			WEATHER CONDITIONS	**Cloudy, 40˚F**
DRILLING SUB-CONTRACTOR	**IET**			DRILL RIG	**AMS PowerProbe**

DEPTH (ft bgs)	PID (ppm)	SOIL DESCRIPTION	SAMPLE INFO
2	0.0	Tan red, orange, sandy silty CLAY, gravels, fill	Sample taken at 0-2'
4	0.0	Red orange brown, silty CLAY	
6	0.0		
8	0.0	Orange red tan, clayey SILT	
10	0.0		
		*Boring terminated at 10'	

Log Completed By: **DRH**

SOIL BORING FIELD WORKSHEET

BORING #	**B-7**	BORING DEPTH (ft)	**10**	NUMBER OF PAGES	**1**
PROJECT #	**188322307**			PROJECT NAME	**NCDOT Mooresville-Parcel 170.**
DATE DRILLED	**11/14/2018**			WEATHER CONDITIONS	**Cloudy, 40˚F**
DRILLING SUB-CONTRACTOR	**IET**			DRILL RIG	**AMS PowerProbe**

DEPTH (ft bgs)	PID (ppm)	SOIL DESCRIPTION	SAMPLE INFO
2	0.0	Tan, SAND, gravels, fill	Sample taken at 0-2'
4	0.0	Gray, suspect Ash	Sample taken at 2-4'
6	0.0		
8	0.0	Red orange brown, silty CLAY	
10	0.0	Orange red tan, clayey SILT	
		*Boring terminated at 10'	

Log Completed By: **DRH**

Page: **1**

SOIL BORING FIELD WORKSHEET

BORING #	**B-8**	BORING DEPTH (ft)	**10**	NUMBER OF PAGES	**1**
PROJECT #	**188322307**			PROJECT NAME	**NCDOT Mooresville-Parcel 170.**
DATE DRILLED	**11/14/2018**			WEATHER CONDITIONS	**Cloudy, 40˚F**
DRILLING SUB-CONTRACTOR	**IET**			DRILL RIG	**AMS PowerProbe**

DEPTH (ft bgs)	PID (ppm)	SOIL DESCRIPTION	SAMPLE INFO
2	0.0	Tan orange, sandy clayey SILT, some gravels	
4	0.0	Red orange brown, silty CLAY	Sample taken at 2-4'
6	0.0	Orange red tan, clayey SILT	
8	0.0		
10	0.0		
		*Boring terminated at 10'	

Log Completed By: **DRH**

Page: **1**

SOIL BORING FIELD WORKSHEET

BORING #	**B-9**	BORING DEPTH (ft)	**10**	NUMBER OF PAGES	**1**
PROJECT #	**188322307**			PROJECT NAME	**NCDOT Mooresville-Parcel 170.**
DATE DRILLED	**11/14/2018**			WEATHER CONDITIONS	**Cloudy, 40˚F**
DRILLING SUB-CONTRACTOR	**IET**			DRILL RIG	**AMS PowerProbe**

DEPTH (ft bgs)	PID (ppm)	SOIL DESCRIPTION	SAMPLE INFO
2	0.0	Tan orange, sandy clayey SILT, some gravels	Sample taken at 0-2'
4	0.0	Red orange brown, silty CLAY	
6	0.0	Orange red tan, clayey SILT	
8	0.0		
10	0.0		
		*Boring terminated at 10'	

Log Completed By: **DRH**

SOIL BORING FIELD WORKSHEET

BORING #	**B-10**	BORING DEPTH (ft)	**10**	NUMBER OF PAGES	**1**
PROJECT #	**188322307**			PROJECT NAME	**NCDOT Mooresville-Parcel 170.**
DATE DRILLED	**11/14/2018**			WEATHER CONDITIONS	**Cloudy, 40˚F**
DRILLING SUB-CONTRACTOR	**IET**			DRILL RIG	**AMS PowerProbe**

DEPTH (ft bgs)	PID (ppm)	SOIL DESCRIPTION	SAMPLE INFO
2	0.0	Tan orange, sandy clayey SILT, some gravels	Sample taken at 0-2'
4	0.0	Red orange brown, silty CLAY	
6	0.0	Orange red tan, clayey SILT	
8	0.0		
10	0.0		
		*Boring terminated at 10'	

Log Completed By: **DRH**

APPENDIX D
GEOPHYSICAL REPORT

GEL Solutions

55 Shiloh Road, Suite 6
Asheville, NC 28803
P 828.782.3523

www.gel-solutions.com

November 2, 2018

Mr. John Maas, PG
Wood, PLC
2801 Yorkmont Road, Suite 100
Charlotte, NC 28208

Re: Report for Geophysical Survey to Identify Underground Storage Tanks
And Underground Utilities
Parcel #170
558 NC 150 (River Highway)
Mooresville, North Carolina 28117

Dear Mr. Maas,

GEL Solutions appreciates the opportunity to provide Wood with this report of our geophysical investigation for the referenced project. This investigation was designed to determine the potential presence of underground storage tanks (USTs) at the site and underground utilities that would obstruct drilling activities at the site. The geophysical field investigation was successfully performed on October 15, 2018 through October 25, 2018.

1.0 Summary of Results

One subsurface anomaly was identified in the geophysical data. Figure 1 depicts the approximate location and size of the anomaly as well as the known metallic surface objects present at the time of the investigation. The anomaly was denoted as "Known UST" with respect to the UST level of confidence rating. Any anomalies not denoted with the UST level of confidence rating in post processed data (Figure 1) are consistent with known metallic surface objects, utilities, and/or cultural interference. Although geophysical methods provide a high level of assurance for the location of subsurface objects, the possibility exists that not all features can or will be identified. Therefore, due caution should be used when performing any subsurface excavation, and GEL Solutions, LLC will not be liable for any damages that may occur. Descriptions of the technologies employed during this geophysical investigation are provided below.

2.0 Overview of Geophysical Investigation

The geophysical evaluation included the deployment of radio-frequency electromagnetic (EM), ground penetrating radar (GPR) and time-domain electromagnetic (TDEM) technologies to the site. These technologies were used in concert with one another in order to identify the presence of potential underground utilities and USTs at the site. A brief description of each technology is presented in the following paragraphs.

Radio-Frequency Electromagnetic

Radio-Frequency Electromagnetic (EM) utility locating equipment consists of a transmitter and a dual-function receiver. The receiver can be operated in a "passive" mode or in an "active" mode. The two modes of operation provide various levels of detection capabilities depending on the specific target or application.

The EM system is operated in the "active" mode by either inducting or conducting a signal into the underground utility to be traced. A transmitter is placed over and in line with a suspected buried utility. The transmitter induces a signal, which propagates along the buried utility. As the receiver is moved back and forth across the suspected path of the utility, the trace signal induces a signal into the receiver's coil sensor. A visual and audio response indicates when the receiver is directly over the buried utility.

Another means of detecting in the "active" mode utilizes a method to "conduct" a signal within the buried utility. To accomplish this, a cable from the transmitter is clamped onto an exposed section of the buried utility and a signal propagates along the buried line. This technique minimizes any interference caused by parasitic emissions from adjacent cables in congested areas. When the system is utilized in the "passive" mode, the receiver is responding to a 60 Hertz cycle current energized by underground utilities.

Interference can and may occur when buried utilities intersect or are adjacent to each other. This effect referred to as "bleed-off" may provide a false response to the identification of the tracked utility. "Bleed-off" is caused by utilities that may be energized in the "active" or "passive" mode.

Ground Penetrating Radar Methodology

A RAMAC digital radar control system configured with a 450-Megahertz (MHz) antenna array was used in this investigation. GPR is an electromagnetic geophysical method that detects interfaces between subsurface materials with differing dielectric constants. The GPR system consists of an antenna which houses the transmitter and receiver, a digital control unit which both generates and digitally records the GPR data, and a color video monitor to view data as it is collected in the field.

The transmitter radiates repetitive short-duration electromagnetic waves (at radar frequencies) into the earth from an antenna moving across the ground surface. These radar waves are reflected back to the receiver from the interface of materials with different dielectric constants. The intensity of the reflected signal is a function of the contrast in the dielectric constant between the materials, the conductivity of the material through which the wave is traveling, and the frequency of the signal.

Subsurface features that commonly cause such reflections are: 1) natural geologic conditions, such as changes in sediment composition, bedding, and cementation horizons and voids; or 2) unnatural changes to the subsurface such as disturbed soils, soil backfill, buried debris, tanks, pipelines, and utilities. The digital control unit processes the signal from the receiver and produces a continuous cross-section of the subsurface interface reflection events.

GPR data profiles were collected along transects covering the entire rights of ways. Depth of investigation of the GPR signal is highly site-specific and is limited by signal attenuation (absorption) in the subsurface materials. Signal attenuation is dependent upon the electrical conductivity of the subsurface materials. Signal attenuation is greatest in materials with relatively high electrical conductivities such as clays, brackish groundwater, or groundwater with a high dissolved solid content from natural or manmade sources. Signal attenuation is lowest in relatively low conductivity materials such as dry sand or rock. Depth of investigation is also dependent on the antenna's transmitting frequency. Depth of investigation generally increases as transmitting frequency decreases; however, the ability to resolve smaller subsurface features is diminished as frequency is decreased. The average depth of penetration at this site was approximately 2-5 feet below the surface.

The GPR antenna used at this site is internally shielded from aboveground interference sources. Accordingly, the GPR response is not affected by overhead power lines, metallic buildings, or nearby objects.

Time Domain Electromagnetic Methodology

TDEM methods measure the electrical conductivity of subsurface materials. The conductivity is determined by inducing (from a transmitter) a time or frequency-varying magnetic field and measuring (with a receiver) the amplitude and phase shift of an induced secondary magnetic field. The secondary magnetic field is created by subsurface conductive materials behaving as an inductor as the primary magnetic field is passed through them.

The Geonics EM-61 system used in this investigation operates within these principles. However, the EM-61 TDEM system can discriminate between moderately conductive earth materials and very conductive metallic targets. The EM-61 consists of a portable coincident loop time domain transmitter and receiver with a 1.0-meter by 0.5-meter coil system. The EM-61 generates 150 pulses per second and measures the response from the ground after transmission or between pulses. The secondary EM responses from metallic targets are of longer duration than those created by conductive earth materials. By recording the later time EM arrivals, only the response from metallic targets is measured, rather than the field generated by the earth material.

3.0 Field Procedures and Results

The geophysical field investigation was successfully performed on October 15 through October 25, 2018 at the 11 DOT parcels located in the immediate vicinity of Highway 150 in Mooresville, NC. Interpretation of the GPR data was conducted in the field and any potential anomalies were marked in the field. GPR data processing typically included band pass filtering, background removal, horizontal smoothing, and gain adjustments. TDEM was also used to scan the project site. Any electromagnetic anomalies detected during field activities that were indicative of buried metallic objects were also marked in the field.

One subsurface geophysical anomaly was detected during the investigation of Parcel #170 as depicted in Figure 1. The anomaly was indicative of a "Known UST" with respect to the UST level of confidence rating system based on TDEM and GPR investigation. Figure 1 depicts the approximate location and size of the anomaly as well as the known metallic surface objects present at the time of the investigation. Known metallic surface objects in Figure 1 are noted with a brief identifiable description.

The UST level of confidence rating system was developed by NCDOT in May 2009 (“Known UST,” “Probable UST,” “Possible UST,” or “No Confidence”) and was used in the interpretation and presentation of this report.

Additional TDEM responses were present in the data but correlated to surface metallic debris and/or above ground metal structures and are not considered to be representative of “Potential USTs.”

The locations of underground utilities were designated using EM and GPR equipment, and their locations were marked with paint on the land surface, and additionally shown in Figure 1. Positioning data was obtained using a Trimble R10 GPS antenna.

4.0 Closing

GEL Solutions appreciates the opportunity to assist Wood with this project. If you have any questions or need further information regarding the project, please do not hesitate to call me at (828) 782-3523.

Yours very truly,

William R. Adgate
Senior Project Manager

Enclosures
fc: 170.AMEC01118.Report.pdf

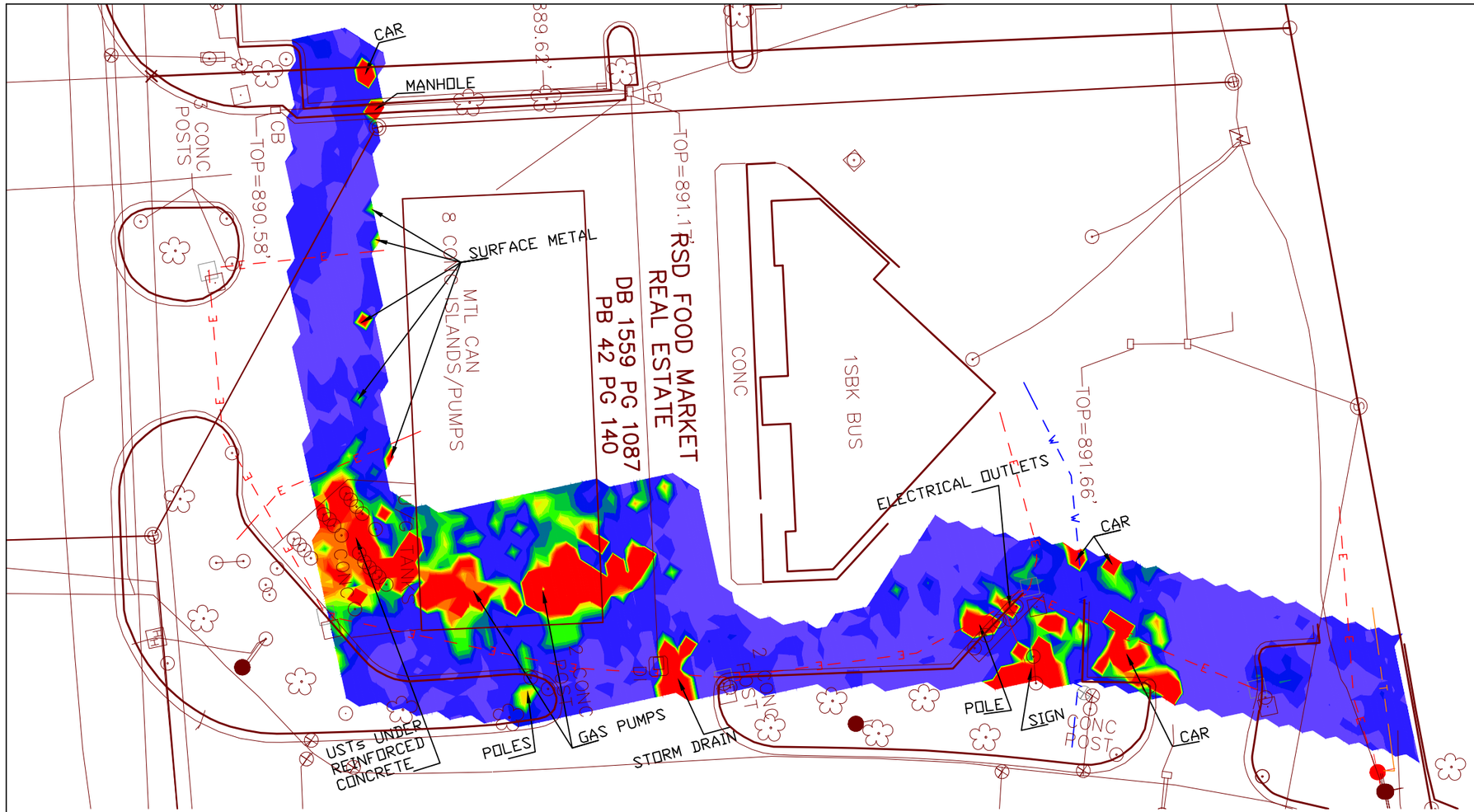
Site Photos

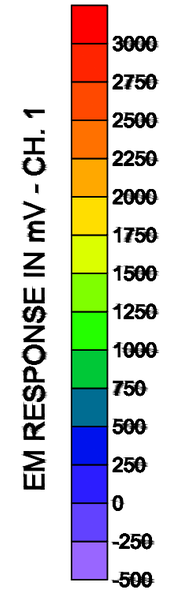
Photo 1: Looking east from southwest corner

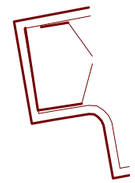
Photo 2: Looking northeast showing known USTs in southeast corner

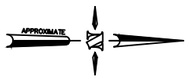
Photo 3: Looking north from southeast corner

Photo 4: Looking south









LEGEND

- UK — APPROXIMATE LOCATION OF SUSPECTED UNDERGROUND UNKNOWN UTILITY LINE
- W — APPROXIMATE LOCATION OF SUSPECTED UNDERGROUND WATER LINE
- E — APPROXIMATE LOCATION OF SUSPECTED UNDERGROUND ELECTRICAL POWER LINE
- G — APPROXIMATE LOCATION OF SUSPECTED UNDERGROUND GAS LINE
- T — APPROXIMATE LOCATION OF SUSPECTED UNDERGROUND COMMUNICATIONS LINE
- LIMITED ACCESSIBILITY

GRAPHIC SCALE

0 20 40 80 160

(IN FEET)

1 INCH = 40 ft.

NOTES

1) UNDERGROUND FEATURES WERE LOCATED USING VISUAL EVIDENCE, GROUND PENETRATING RADAR (GPR), AND TIME DOMAIN ELECTROMAGNETIC (TDEM) METHODS. OTHER BURIED UTILITIES AND STRUCTURES MAY EXIST BUT WERE NOT DETECTED DUE TO LIMITATIONS OF THE GEOPHYSICAL METHODS, SITE ACCESS, AUTHORIZED SCOPE-OF-WORK, AND/OR HIGH TARGET CONGESTION. THEREFORE, DUE CAUTION SHOULD BE USED WHEN PERFORMING SUBSURFACE EXCAVATION ACTIVITIES WHERE POTENTIAL CONFLICTS EXIST. GEL SOLUTIONS IS NOT RESPONSIBLE FOR DAMAGES THAT MAY OCCUR. IDENTIFYING THE LOCATION OF SOME UTILITIES AND STRUCTURES MAY ONLY BE POSSIBLE WITH VACUUM OR OTHER EXCAVATION METHODS.
2) FIELD SURVEY CONDUCTED ON 10.15.2018 - 10.24.2018.
3) GEOPHYISICAL DATA GENERATED USING MALA GEOSCIENCE GPR SYSTEM CONFIGURED WITH A 45OMHZ ANTENNA AND A GEONICS EM-61 TDEM SYSTEM. APPROXIMATE POSITIONING WAS PROVIDED USING TRIMBLE RTK/GPS.
4) GEL SOLUTIONS IS NOT LIABLE FOR ACCURACY OF BASE MAP PROVIDED BY WOOD.

GEL SOLUTIONS
55 SHILOH ROAD, SUITE 6
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PROJECT: AMEC01118

GEOPHYSICAL INVESTIGATION FOR USTs
PARCEL #170
558 NC 150 (RIVER HIGHWAY)
MOORESVILLE, NORTH CAROLINA

RESULTS OF GEOPHYSICAL INVESTIGATION

FIGURE 1

DATE: 10/30/18

DRAWN BY: JAT APPRV. BY: WRA

APPENDIX E
RESULTS FROM ONSITE UVF SOIL ANALYSES

QED

AQROS

Hydrocarbon Analysis Results

Client: Wood
Address: 2801 Yorkmont Rd
Charlotte, NC 28208

Samples taken Wednesday, November 14, 2018
Samples extracted Wednesday, November 14, 2018
Samples analysed Thursday, November 15, 2018

Contact: Helen Corley

Operator Ian Ros

Project: NCDOT Mooresville - Parcel 170

U00904

Matrix	Sample ID	Dilution used	BTEX (C6 - C9)	GRO (C5 - C10)	DRO (C10 - C35)	TPH (C5 - C35)	Total Aromatics (C10-C35)	16 EPA PAHs	BaP	% Ratios			HC Fingerprint Match
										C5 - C10	C10 - C18	C18	
s	P170B1-0-2	8.9	<0.22	<0.22	<0.22	<0.22	<0.04	<0.07	<0.009	0	100	0	V.Deg.PHC,(FCM)
s	P170B1-6-8	9.5	<0.24	<0.24	<0.24	0.12	0.12	<0.08	<0.01	0	65.7	34.3	Residual HC
s	P170B2-0-2	10.8	<0.27	0.6	<0.27	0.6	<0.05	<0.09	<0.011	100	0	0	PHC not detected 58.7%
s	P170B3-0-2	9.3	<0.23	<0.23	1.2	1.2	1	<0.07	<0.009	0	90.3	9.7	Deg Fuel 79.2%,(FCM)
s	P170B4-0-2	10.2	<0.26	0.6	24.6	25.2	12.4	0.69	<0.01	6.2	83.6	10.2	Deg Fuel 89.8%,(FCM),(BO)
s	P170B5-2-4	12.2	<0.3	<0.3	3.3	3.3	2.5	0.14	<0.012	0	87.2	12.8	Deg Fuel 77.1%,(FCM)
s	P170B6-0-2	9.2	<0.23	<0.23	0.89	0.89	0.71	<0.07	<0.009	0	90.8	9.2	Deg Fuel 79.8%,(FCM)
s	P170B7-0-2	11.7	<0.29	1	23.5	24.5	12.3	0.7	<0.012	9.4	83.7	6.9	Deg Fuel 77.1%,(FCM),(BO)
s	P170B7-2-4	11.3	<0.28	<0.28	<0.28	<0.28	<0.06	<0.09	<0.011	0	0	0	V.Deg.PHC,(FCM)
s	P170B8-2-4	9.5	<0.24	0.42	1.7	2.1	1.2	<0.08	<0.009	35.6	55.2	9.2	Deg Fuel 92.7%,(FCM)

Initial Calibrator QC check OK Final FCM QC Check OK 104.2 %

Concentration values in mg/kg for soil samples and mg/L for water samples. Soil values uncorrected for moisture or stone content. Fingerprints provide a tentative hydrocarbon identification.

Abbreviations :- FCM = Results calculated using Fundamental Calibration Mode : % = confidence of hydrocarbon identification : (PFM) = Poor Fingerprint Match : (T) = Turbid : (P) = Particulate detected

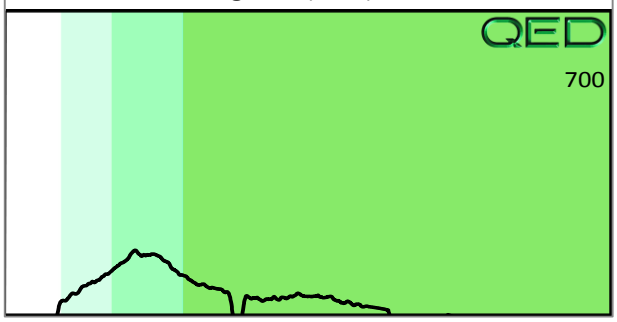
B = Blank Drift : (SBS)/(LBS) = Site Specific or Library Background Subtraction applied to result : (BO) = Background Organics detected : (OCR) = Outside cal range : (M) = Modifed Result.

% Ratios estimated aromatic carbon number proportions : HC = Hydrocarbon : PHC = Petroleum HC : FP = Fingerprint only. **Data generated by HC-1 Analyser**

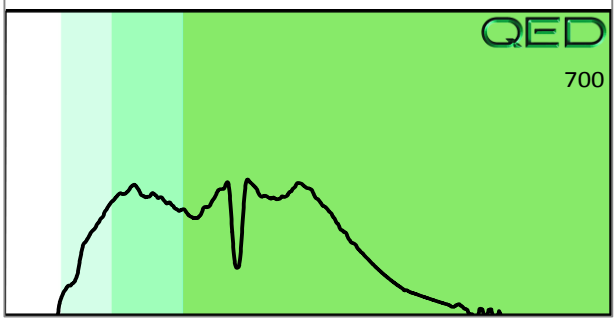
QED Hydrocarbon Fingerprints

Project: NCDOT Mooresville - Parcel 170 ##################

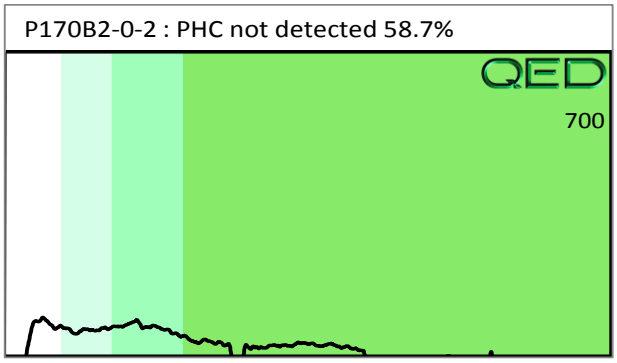
P170B1-0-2 : V.Deg.PHC,(FCM)



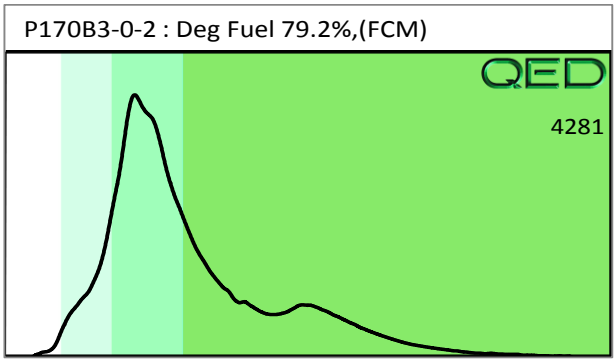
P170B1-6-8 : Residual HC



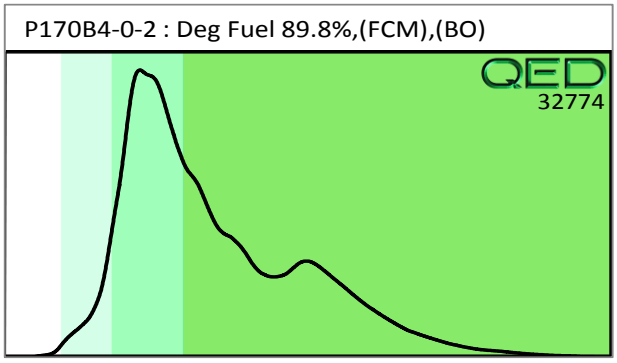
P170B2-0-2 : PHC not detected 58.7%



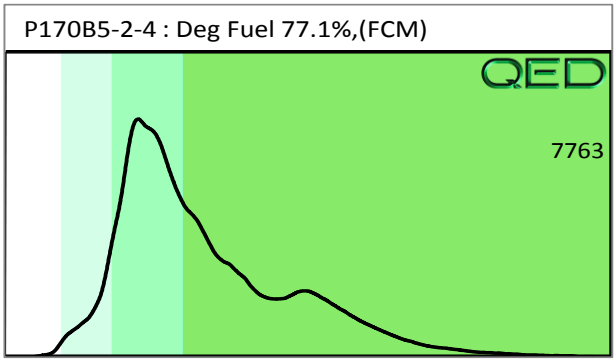
P170B3-0-2 : Deg Fuel 79.2%,(FCM)



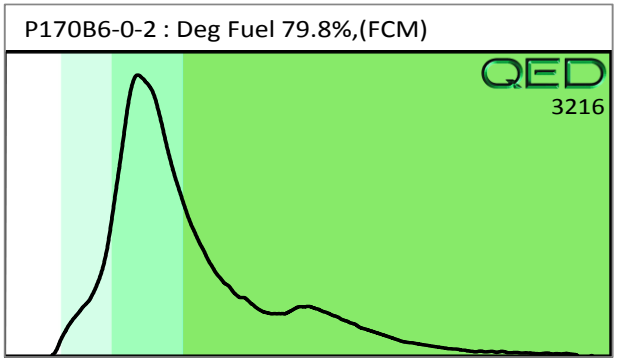
P170B4-0-2 : Deg Fuel 89.8%,(FCM),(BO)



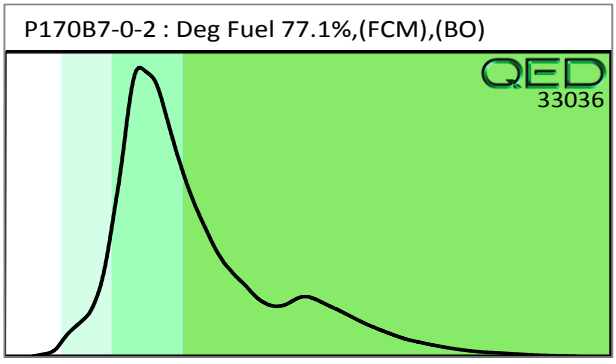
P170B5-2-4 : Deg Fuel 77.1%,(FCM)



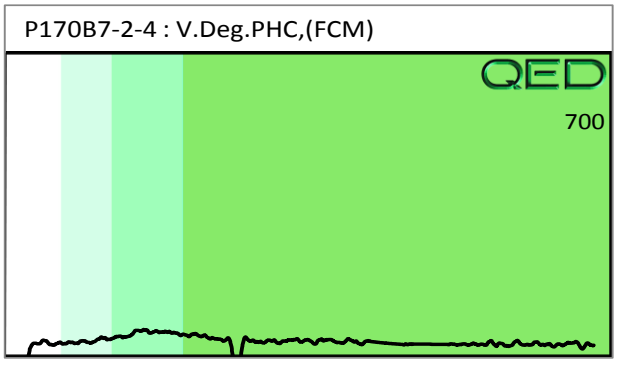
P170B6-0-2 : Deg Fuel 79.8%,(FCM)



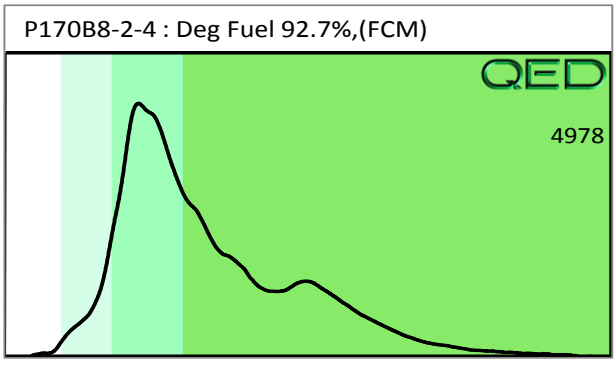
P170B7-0-2 : Deg Fuel 77.1%,(FCM),(BO)



P170B7-2-4 : V.Deg.PHC,(FCM)



P170B8-2-4 : Deg Fuel 92.7%,(FCM)



QED

AQROS

Hydrocarbon Analysis Results

Client: Wood
Address: 2801 Yorkmont Rd
Charlotte, NC 28208

Samples taken Wednesday, November 14, 2018
Samples extracted Wednesday, November 14, 2018
Samples analysed Thursday, November 15, 2018

Contact: Helen Corley

Operator Ian Ros

Project: NCDOT Mooresville - Parcel 170

U00904

Matrix	Sample ID	Dilution used	BTEX (C6 - C9)	GRO (C5 - C10)	DRO (C10 - C35)	TPH (C5 - C35)	Total Aromatics (C10-C35)	16 EPA PAHs	BaP	% Ratios			HC Fingerprint Match
										C5 - C10	C10 - C18	C18	
s	P170B9-0-2	8.4	<0.21	<0.21	0.41	0.41	0.28	<0.07	<0.008	0	83.3	16.7	Deg Fuel 77.2%,(FCM)
s	P170B10-0-2	10.2	<0.26	<0.26	0.26	0.26	0.13	<0.08	<0.01	0	77	23	V.Deg.PHC 92.4%,(FCM)
s	P170B4-4-6	11.2	<0.28	<0.28	<0.28	<0.28	<0.06	<0.09	<0.011	0	0	0	Residual HC

Initial Calibrator QC check OK Final FCM QC Check OK 99.7 %

Concentration values in mg/kg for soil samples and mg/L for water samples. Soil values uncorrected for moisture or stone content. Fingerprints provide a tentative hydrocarbon identification.

Abbreviations :- FCM = Results calculated using Fundamental Calibration Mode : % = confidence of hydrocarbon identification : (PFM) = Poor Fingerprint Match : (T) = Turbid : (P) = Particulate detected

B = Blank Drift : (SBS)/(LBS) = Site Specific or Library Background Subtraction applied to result : (BO) = Background Organics detected : (OCR) = Outside cal range : (M) = Modifed Result.

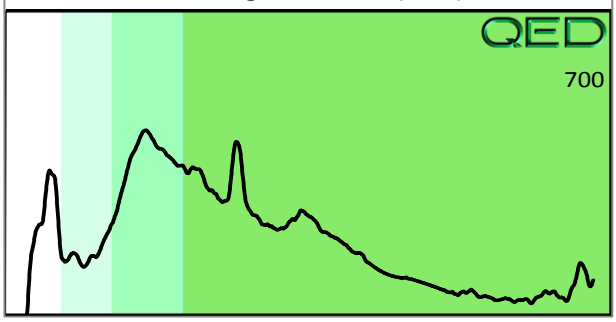
% Ratios estimated aromatic carbon number proportions : HC = Hydrocarbon : PHC = Petroleum HC : FP = Fingerprint only. **Data generated by HC-1 Analyser**

QED Hydrocarbon Fingerprints

Project: NCDOT Mooresville - Parcel 170 ##################

P170B9-0-2 : Deg Fuel 77.2%,(FCM)

P170B10-0-2 : V.Deg.PHC 92.4%,(FCM)



P170B4-4-6 : Residual HC