

April 11, 1994

Mr. C. Edward Hales, III
North Carolina Department of Transportation
Geotechnical Unit
P.O. Box 25201
Raleigh, North Carolina 27611-5201

EI PROJECT NO. 14-402-688

Re: Preliminary Site Assessment Report
State Project: 8.T020401 (R-2414)
County: Camden
Description: Site 5: Charlie Hodges Store; Widening of US 158 from Elizabeth City to Belcross

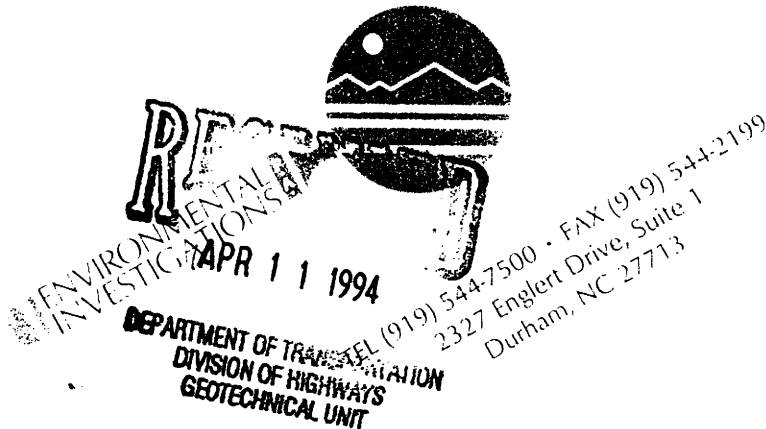
Dear Mr. Hales:

On February 25, 1994, Environmental Investigations, P.A. performed a Preliminary Site Assessment at Charlie Hodges Store located at 100 West US 158 in Camden County, North Carolina. A Location Map is included in this report as Figure 1. The scope-of-work for this project included the verification of existence and location of underground storage tanks (USTs) located on the site by means of a limited electromagnetic survey. UST assessments were subsequently performed by advancing soil borings in the area of the USTs and fuel dispensers to determine the absence/presence of soil contamination in association with the USTs located on-site.

SITE DESCRIPTION

The subject property consists of one building which is currently utilized as a gas station and food mart named Charlie Hodges Store. Three UST fill pipes and vent pipes are located on the western side of the building. A kerosene above-ground storage tank (AST), fuel dispenser, and LP gas container are also located on the western side of the building. Three gasoline fuel dispensers are located approximately fourteen feet south of the building. A Site Map of the property is included as Figure 2.

Three gasoline USTs (all 2,000 gallons) are currently registered with the North Carolina Division of Environmental Management (NCDEM). All three of the USTs have cathodic protection, but the USTs' material of construction is unknown. All of the USTs have been in place since April 3, 1990, and are located approximately ten feet west of the building. One observation well is located in each corner of the UST pit. A rectangular concrete pad is located in the area of the fill pipes.



Topographically, the site slopes gradually to the south. Soil type in the area of the UST pit and fuel dispensers varied from well-graded sand with silt to well-graded sand with silty clay. Site photographs are included in Appendix A of this report.

UST ASSESSMENT

On February 9, 1994, a limited electromagnetic survey was performed in order to locate and define the dimensions of the USTs located on-site. Subsequently, on February 25, 1994, soil borings were advanced in the area of the magnetic anomaly around the USTs and adjacent to the kerosene and gasoline fuel dispensers in order to determine the absence/presence of soil contamination in association with the USTs.

Due to suspected shallow groundwater conditions in this part of the state, hand-augers were utilized to advance the borings and perform soil sampling activities. A total of eleven soil borings were attempted. The USTs were oriented in a west/southwest direction.

Soil borings SB-1 through SB-8 were advanced in the area of the three USTs. Hand-augers were decontaminated between each boring location and auger-heads were decontaminated prior to each sampling event. Each soil boring was sampled at two foot intervals from a depth of two feet and continued to groundwater. Groundwater was encountered at a depth of 3.5 to 4.0 feet in soil borings SB-3 and SB-4, while groundwater was encountered at a depth of 1.5 to 2.0 feet at the remaining soil borings.

Soil boring SB-9 was advanced adjacent to the kerosene fuel dispenser. Soil borings SB-10 and SB-11 were advanced adjacent to the gasoline fuel dispensers. Soil boring SB-9 was advanced to a depth of 2.0 feet utilizing hand-augers. An electric jackhammer was first used to penetrate the asphalt in soil borings SB-10 and SB-11, and hand-augers were utilized once soil was encountered. The borings were subsequently advanced to a depth of 2.0 feet. A Sample Location Map is included as Figure 3. Field soil boring logs containing soil classifications are included in Appendix B of this report.

All soil samples were collected using clean vinyl gloves and placed in two zip-lock plastic bags. One bag was placed on ice while the other bag was allowed to equilibrate for 15 minutes. A HNu photoionization detector was then used to screen the head space in the equilibrated samples. HNu screening and laboratory analytical results are summarized in Table 1. The soil sample from each soil boring exhibiting the highest HNu reading was then placed in a clean laboratory supplied jar, placed on ice, and delivered under chain-of-custody protocol to CompuChem Laboratories, Inc., located at 3308 Chapel Hill/Nelson Highway, Research Triangle Park, North Carolina.

Eleven soil samples were submitted to the laboratory for analysis of Total Petroleum Hydrocarbons (TPH) by California Gas Chromatograph Method with SW-846 Method 5030 (purge and trap) and Method 3550 (sonification extraction). Method 5030 identifies volatile fuels such as gasoline, and Method 3550 identifies less volatile fuels such as diesel, fuel oil, and kerosene. The laboratory analytical report is included in Appendix C of this report.

RESULTS AND CONCLUSIONS

Of the eleven borings performed, HNu screening results for samples collected from borings SB-1, SB-2, SB-3, SB-7, SB-8, SB-9, SB-10, and SB-11 indicated organic vapor concentrations ranging from 3 to 380 parts per million (ppm). Laboratory analysis of these samples indicated that petroleum hydrocarbon contamination was present in the samples submitted from SB-1, SB-2, SB-9, SB-10, and SB-11. Soil sample SB-1 (collected from 1.5-2.0 feet) contained 270 ppm of gasoline and 21 ppm of diesel fuel. Soil sample SB-2 (collected from 1.5-2.0 feet) contained 4.8 ppm of gasoline. Soil sample SB-9 (collected from 1.5-2.0 feet) contained 29 ppm of diesel fuel. Soil sample SB-10 (collected from 1.5-2.0 feet) contained 13 ppm of gasoline, and soil sample SB-11 (collected from 1.5-2.0 feet) contained 1,600 ppm of gasoline and 3,000 ppm of diesel fuel. The concentration in soil samples SB-1, SB-10, and SB-11 exceed the NCDEM standard of 10 ppm for gasoline contaminated soil. The concentration in soil sample SB-11 exceeds the NCDEM standard of 40 ppm for diesel contaminated soil. No other samples contained TPH concentrations which exceeded NCDEM standards when analyzed in the laboratory.

Table 1 contains a summary of HNu soil screening results and laboratory analytical results for these samples.

Information gathered during field activities and from the laboratory analytical report indicates that there has been a release of petroleum hydrocarbons from the USTs and fuel dispensers located on the Charlie Hodges Store property that exceed NCDEM standards. Also, since the USTs are potentially located at a depth below the groundwater table, groundwater has likely been impacted from petroleum hydrocarbon contamination.

It is recommended that the USTs located at Charlie Hodges Store be removed and properly disposed and that contaminated soil encountered during removal activities also be excavated and properly disposed.

If you have any questions, please do not hesitate to contact Gary D. Babb or myself at (919) 544-7500.

Sincerely,



Scott M. Eden
Project Geologist



Gary D. Babb, P.G.
Vice President

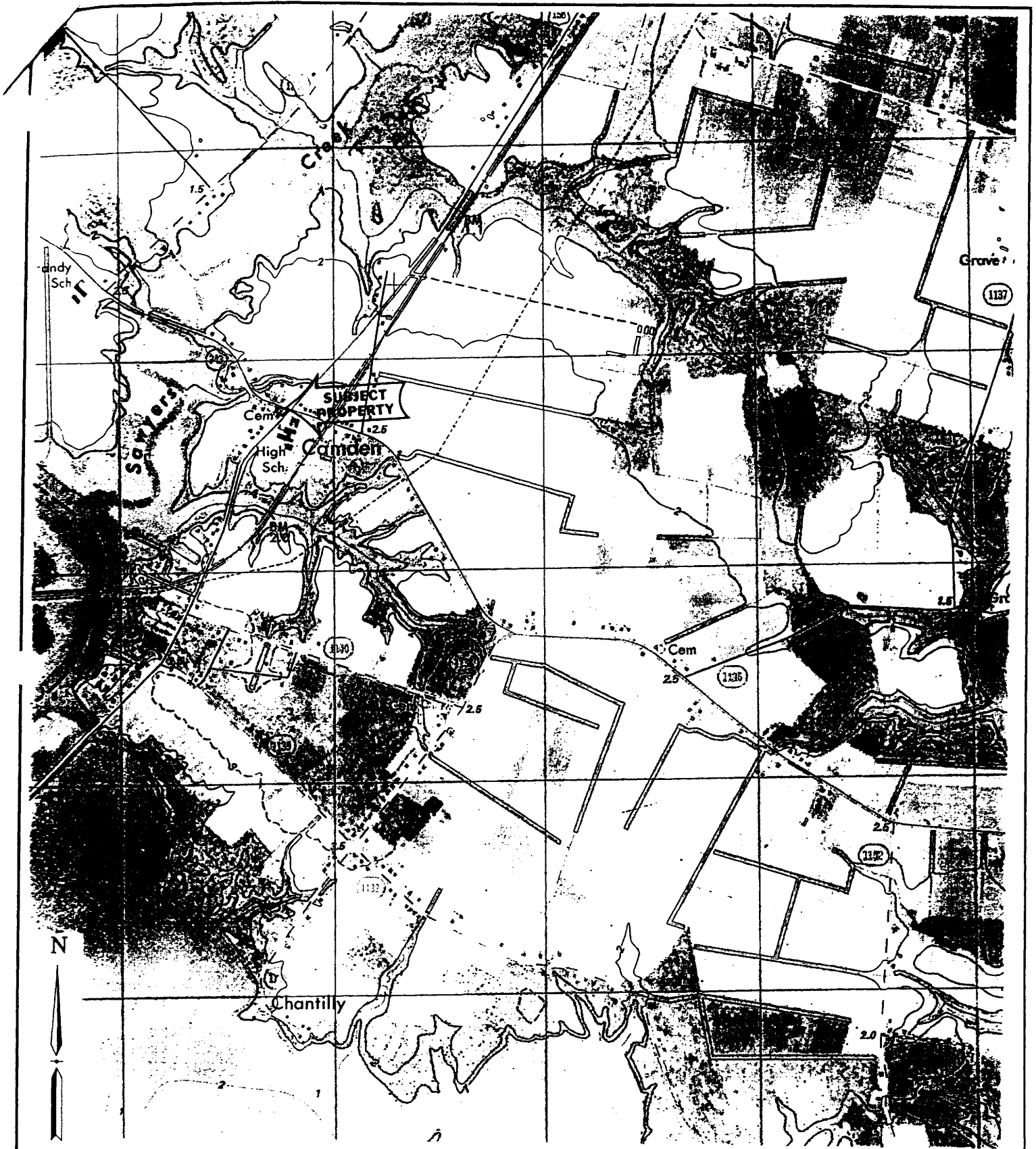
Attachments

TABLE 1

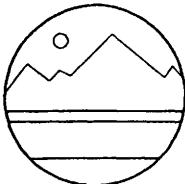
HNu Screening Results and TPH Laboratory Results
 Site 5: Charlie Hodges Store
 100 West US 158
 Camden County, North Carolina

Sample ID	Depth (ft.)	HNu (ppm)	TPH 5030 (mg/kg)	TPH 3550 (mg/kg)
SB-1	1.5-2.0	320	270 ¹	21 ²
SB-2	1.5-2.0	380	4.8 ¹	BDL ³
SB-3	1.5-2.0 3.5-4.0	0 5	BDL	BDL
SB-4	1.5-2.0 3.5-4.0	0 0	BDL	BDL
SB-5	1.5-2.0	0	BDL	BDL
SB-6	1.5-2.0	0	BDL	BDL
SB-7	1.5-2.0	6	BDL	BDL
SB-8	1.5-2.0	3	BDL	BDL
SB-9	1.5-2.0	50	BDL	29 ²
SB-10	1.5-2.0	60	13 ¹	BDL
SB-11	1.5-2.0	220	1,600 ¹	3,000 ²

Notes: 1 - Sample contains a petroleum hydrocarbon blend with a distillation range similar to gasoline.
 2 - Sample contains a petroleum hydrocarbon blend with a distillation range similar to diesel fuel.
 3 - BDL: Below detection limit
 mg/kg: milligrams per kilogram
 ppm: parts per million
 ppm = mg/kg



ENVIRONMENTAL INVESTIGATIONS



PROJECT TITLE:

LOCATION MAP

Charlie Hodges Store
100 West US 158
Camden County, North Carolina

PROJECT NO.:

14-402-688

CHECKED BY:

DRAWN BY:

SME

FIGURE NO.:

Figure 1

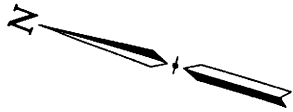
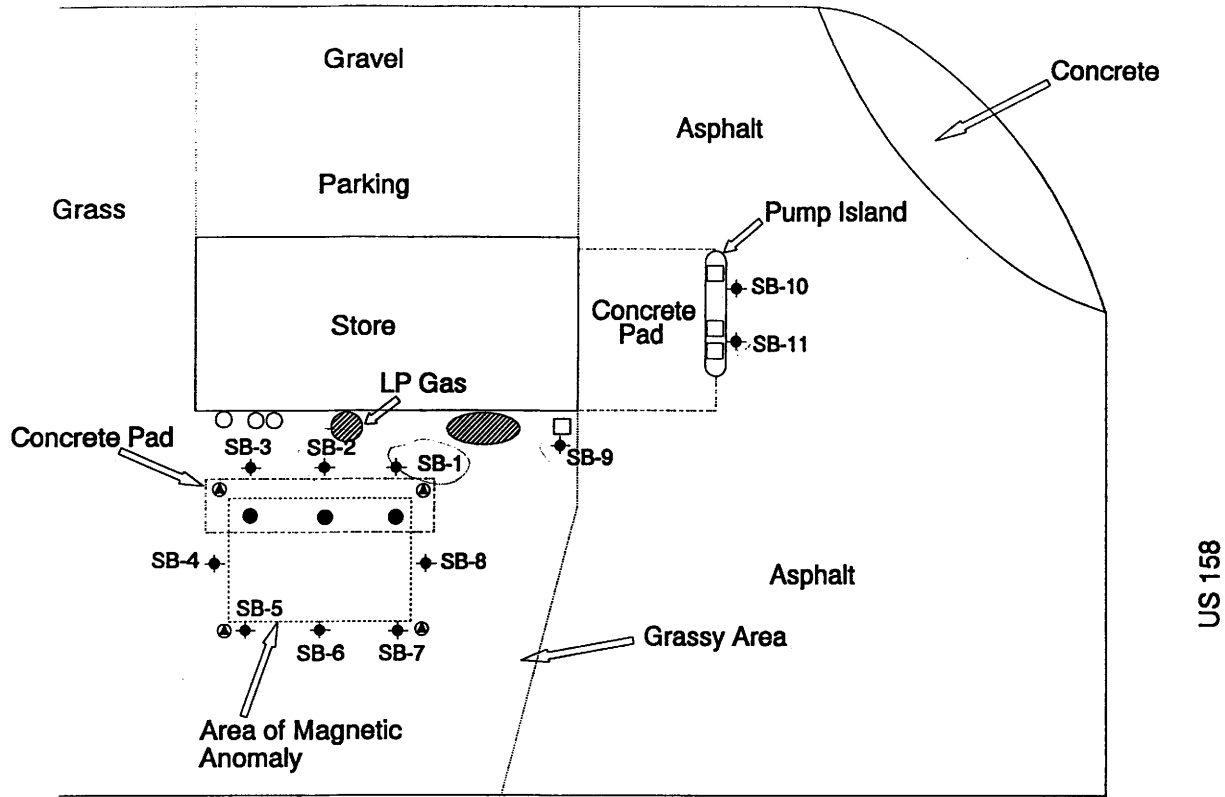
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1"=2000'

DATE:

3-10-94

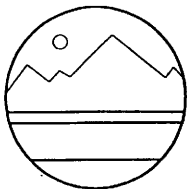
NC 343



LEGEND

- ⊙ Observation Well
- Fill Pipe
- Vent Pipe
- ◆ Sample Location

ENVIRONMENTAL INVESTIGATIONS



PROJECT TITLE:
SAMPLE LOCATION MAP
 Charlie Hodges Store
 100 West US 158
 Camden County, North Carolina

PROJECT NO.:
 14-402-688

FIGURE NO.:
 Figure 3

CHECKED BY:

SCALE:
1"=20'

DRAWN BY:

SME

DATE:

3-11-94

APPENDIX A: SITE PHOTOGRAPHS

**PROJECT TITLE: DOT-Camden County
LOCATION: Site 5: Charlie Hodges Store**

**JOB NUMBER: 14-402-688
DATE: 2/25/94**



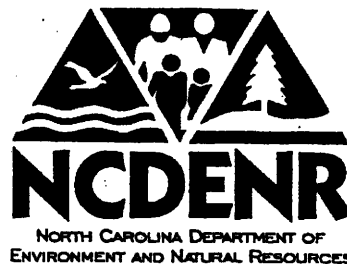
**Photograph 1: A view of Charlie Hodges Store.
Pump island is located in front of the building.**



**Photograph 2: The UST pit, vent pipes, LP gas container, and kerosene AST and pump
located on the western side of Charlie Hodges Store.**

State of North Carolina
Department of Environment
and Natural Resources
Washington Regional Office

James B. Hunt, Jr., Governor
Wayne McDevitt, Secretary



**DIVISION OF WASTE MANAGEMENT
UNDERGROUND STORAGE TANK SECTION**

MEMORANDUM

TO: George Matthis, Head, Trust Fund Branch

THRU: Richard Powers, Regional Supervisor *REP*

FROM: Scott Bullock, Hydrogeologist II *ASB*

DATE: June 25, 1999

SUBJECT: Recommendation for Federal Trust Fund/State-Lead
Charlie Hodges Store
100 West Highway 158
Camden, Camden County, North Carolina
Groundwater Incident No. 12704
Risk Category: High

The Underground Storage Tank (UST) Section of the Washington Regional Office (WaRO) recommends that the Charlie Hodges Store site be placed on the State-Lead status for the following reasons:

1. Mr. Hollowell indicated that Sinclair Oil Company operated a gas station at the site prior to 1990 and that the contamination at the site is due entirely to past operations of petroleum underground storage tanks that existed at the site. Information is not available concerning past locations of USTs and pump islands.
2. Mr. Hollowell installed USTs at the site on April 3, 1990. Mr. Hollowell is using groundwater monitoring as his method of leak detection for the tanks. Free product has not been detected in the leak detection wells. Leak detection for the piping is not required because the piping system is European Suction.

Memorandum

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3. A Preliminary Site Assessment Report submitted by the NCDOT on April 28, 1994 indicated that one soil sample adjacent to the current UST pit and two soil samples near the current pump island were above TPH action levels. Mr. Hollowell contends that all the contamination is from past operations of USTs at the site by Sinclair Oil Company.
4. UST Compliance Inspections have not discovered any leaks from the tanks nor the piping system, spills, nor any overfill problems. Mr. Hollowell contends that his UST system is not leaking.
5. Mr. Hollowell is not willing to proceed with any further investigations/corrective actions.

Please find attached a copy of file information for the site.