PRELIMINARY SITE ASSESSMENT

PARCEL 10 – VERNON POOLE & CO, INC.
1140 US HWY 64 WEST
ASHEBORO, RANDOLPH COUNTY, NORTH CAROLINA
STATE PROJECT: U-5305
WBS ELEMENT: 47025.1.1
MAY 22, 2014

Report prepared for:

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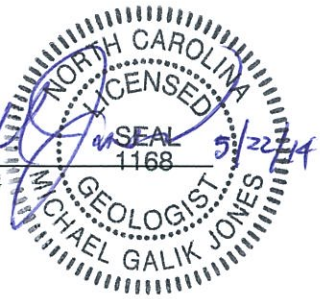

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PYRAMID
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C-257 –Geology
C-1251 – Engineering

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1140 US HWY 64 WEST
ASHEBORO, RANDOLPH COUNTY, NORTH CAROLINA

EXECUTIVE SUMMARY OF RESULTS

Pyramid Environmental & Engineering P.C. (Pyramid) has prepared this Preliminary Site Assessment (PSA) report documenting background information, field activities, assessment activities, findings, conclusions, and recommendations for Parcel 10, Vernon Poole & Co, Inc. The purpose of this assessment was to determine the presence or absence of underground storage tanks (USTs) and impacted soils across the entire parcel (State Project U-5305). The PSA was conducted with particular attention to the areas to be cut as indicated by slope stake lines and cross sections or to be excavated for the installation of drainage features, as well as areas of concern identified during Pyramid's initial geophysical investigation of the site in June 2013. This preliminary site assessment was conducted on behalf of the North Carolina Department of Transportation (NCDOT) in accordance with Pyramid's April 10, 2014, technical proposal.

The following statements summarize the results of the PSA:

- **Site History:** On April 11, 2014, Pyramid emailed the Randolph County U-5305 parcel address, facility ID, and groundwater incident # to Mr. Stephen Williams, the Winston-Salem Region Incident Manager for the DENR UST Section, with a request to investigate any environmental incidents associated with the parcels. Mr. Williams responded to the email and verified that site address 1140 US 64 West (Parcel 10) had an environmental incident (incident #13629) associated with the property, with the facility ID listed as 0-018606, Econo Oil 64 West. Pyramid staff performed a file review of the incident on April 17, 2014, at the Winston-Salem Regional DENR office and made copies of all available materials associated with the incident. The following is a summary of these materials:

    - A state site inspection in 1992 indicated a possible leak in a 550 gallon kerosene UST at the property. After the DENR inspection, the owner agreed to remove and close this UST.
    - UST removal of the kersosene UST also revealed an orphan 550 gallon fuel oil UST. Both tanks were removed in December 1992, and contaminated soil was excavated.
    - Two larger USTs (2,000 and 4,000 gallon) remained in place at the site. Subsequent soil borings and analyses performed revealed contamination around these USTs.

- The 2,000 and 4,000 gallon USTs were removed in December 1993, 135-140 cubic yards of contaminated soil was excavated and removed.
- Various Site Sensitivity Evaluations (SSE) and supplemental soil sampling were performed at the site between 1993 and 1997.
- NC DENR provided a notice of UST system closure for the site in August of 1997.

On April 17, 2014, Pyramid Project Manager Eric Cross performed a site visit at the property and interviewed Mr. Vernon Poole. The site visit verified that the service station was operating off of multiple ASTs, the majority of which were located on the north side of the parcel, as shown on the aerial photographs. Mr. Poole confirmed that four USTs had been present at the property in the past, but were removed in the 1990's. He was aware of at least one petroleum incident in the vicinity of his property. To his knowledge there are no open incidents associated with the parcel.

- **Geophysical Survey:** The majority of the EM anomalies detected during the survey were associated with known cultural features or reinforced concrete. Verification GPR surveys did not record evidence of any subsurface structures. No evidence of metallic USTs was recorded at the property.

- **Limited Soil Assessment:** A total of twenty one borings were performed across the property. The DENR action levels for both TPH-GRO and TPH-DRO are 10 mg/kg. The QED results for soil samples at boring locations 10-1, 10-3, 10-4, 10-11, 10-12, 10-14, 10-18, and 10-21 did not detect TPH-GRO or TPH-DRO concentrations above 10 mg/kg. The QED results did detect DRO and/or GRO concentrations above 10 mg/kg at the locations of the remaining 13 borings. Specifically, DRO concentrations ranging from 10.63 mg/kg to 83,418 mg/kg were recorded in these borings. GRO concentrations ranging from 10.14 mg/kg to 2,000 mg/kg were detected.

- **Limited Groundwater Assessment:** A temporary well was not installed based on the NCDOT RFP, and no existing groundwater monitoring wells were found. No water samples were collected or analyzed as part of this investigation, and depth to groundwater was not measured.

- **Contaminated Soil Volumes:** Pyramid's PSA investigation resulted in an estimated area of 22,006 square feet of impacted soil in the larger area on the central and west side of the parcel, and an estimated are of 3,106 square feet of impacted soil on the south side of the east pump island area. **This results in a total estimated area of contamination of 25,112 square feet of impacted soil at the property**. The deepest soil samples exhibiting contamination were observed to be at the sample depth 6-8 feet. For this reason, a maximum depth of 8 feet will be used to approximate total volumes of contaminated soil. It should

be noted that this is a gross estimate based on the data available. Using a total thickness of 8 feet of contaminated soil, Pyramid estimates a total of approximately 200,896 cubic feet, or **7,441 cubic yards of impacted soils between 0 and 8 feet BLS** in the two areas of contamination combined. The boundaries of the areas of contamination are approximate due to limited soil data.

1.0 Introduction

Pyramid Environmental & Engineering P.C. (Pyramid) has prepared this Preliminary Site Assessment (PSA) report documenting background information, field activities, assessment activities, findings, conclusions, and recommendations for Parcel 10 (formerly Parcel 9), Vernon Poole & Co, Inc. The Vernon Poole & Co, Inc. property is currently an active fuel service station and office building located at 1140 US Hwy 64 W., Asheboro, NC. This preliminary site assessment was conducted on behalf of the North Carolina Department of Transportation (NCDOT) in accordance with Pyramid's April 10, 2014, technical proposal.

The purpose of this assessment was to determine the presence or absence of underground storage tanks (USTs) and impacted soils across the entire parcel (State Project U-5305). The PSA was conducted with particular attention to the areas to be cut as indicated by slope stake lines and cross sections or to be excavated for the installation of drainage features, as well as areas of concern identified during Pyramid's initial geophysical investigation of the site in June 2013, which was focused between the existing edge of pavement and proposed ROW/easements. The location of the subject site is shown on **Figure 1**.

1.1 Background Information

Based on the NCDOT's March 31, 2014, *Request for Technical and Cost Proposal,* the PSA was conducted across all accessible portions of the parcel, with emphasis on the areas to be cut as indicated by slope stake lines and cross sections or to be excavated for the installation of drainage features and/or other utilities, in accordance with the CADD files provided to Pyramid by the NCDOT. The PSA included the following:

- Research the properties for past uses and possible releases.
- Conduct a preliminary geophysical site assessment and limited soil assessment across the entire parcel with emphasis on the areas to be cut as indicated by slope stake lines and cross sections or to be excavated for the installation of drainage features and/or other utilities.
- Should an existing monitor well be present at the property, report the depth to groundwater for that site and attempt to obtain one groundwater sample for laboratory analysis.

1.2 Project Information

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

2.0 Site History

Pyramid completed a records review of the parcel, interviewed DENR personnel, interviewed the property owner, and reviewed readily available aerial photographs, and DENR incident files to assess past uses of the property. Pyramid reviewed historical aerial photographs dating back to 1993 available from Google Earth for past uses. The 1993, 1999, 2006, 2008, 2009, 2010, 2012, and 2013 aerial photographs are included in **Appendix A**. The property currently contains an active service station consisting of a convenience store building, an office building, several smaller storage sheds/structures, two canopied pump islands, and multiple aboveground storage tanks (ASTs). The historical aerials indicate that all of the current buildings and structures have been present since at least 1993. The NCDOT RFP indicate that the parcel was associated with a groundwater incident in the past (Facility ID 0-018606, Groundwater Incident #13629).

On April 11, 2014, Pyramid emailed the Randolph County U-5305 parcel address, facility ID, and groundwater incident # to Mr. Stephen Williams, the Winston-Salem Region Incident Manager for the DENR UST Section, with a request to investigate any environmental incidents associated with the parcels. Mr. Williams responded to the email and verified that site address 1140 US 64 West (Parcel 10) had an environmental incident (incident #13629) associated with the property, with the facility ID listed as 0-018606, Econo Oil 64 West. Pyramid staff performed a file review of the incident on April 17, 2014, at the DENR Winston-Salem Regional office and made copies of all available materials associated with the incident.

The documents associated with the incident included: 1) A Site Assessment and Tank Closure Report submitted by Certifoam Services in December 1992, 2) Closure Report for USTs by Certifoam Services in December 1993, 3) A Soil Boring Investigation and Site Sensitivity Evaluation submitted by Certifoam Services in October 1994, 4) Supplemental Soil Sampling Letter Reports submitted by Certifoam Services in 1997, and 5) Various NC DENR correspondence letters, including a confirmation of UST closure letter in August of 1997. The following is a summary of these materials:

- A state site inspection in 1992 indicated a possible leak in a 550 gallon kerosene UST at the property. After the DENR inspection, the owner agreed to remove and close this UST.
- UST removal of the kersosene UST also revealed an orphan 550 gallon fuel oil UST. Both tanks were removed in December 1992, and contaminated soil was excavated.
- Two larger USTs (2,000 and 4,000 gallon) remained in place at the site. Subsequent soil borings and analyses performed revealed contamination around these USTs.
- The 2,000 and 4,000 gallon USTs were removed in December 1993, and 135-140 cubic yards of contaminated soil was excavated and removed.

- Various Site Sensitivity Evaluations (SSE) and supplemental soil sampling were performed at the site between 1993 and 1997.
- NC DENR provided a notice of UST system closure for the site in August of 1997.

The above information summarizes the documents provided to us by DENR for this site. Copies of all of the Certifoam Services Reports and correspondence, as well as the associated NCDENR letters, are included in **Appendix B**.

On April 17, 2014, Pyramid Project Manager Eric Cross performed a site visit at the property and interviewed Mr. Vernon Poole. The site visit verified that the service station was operating off of multiple ASTs, the majority of which were located on the north side of the parcel, as shown on the aerial photographs. Mr. Poole confirmed that four USTs were present at the property in the past, but were removed in the 1990's. He was aware of at least one other petroleum incident in the vicinity of his property. To his knowledge there were no open incidents associated with the parcel.

3.0 Geophysical Investigation

Pyramid performed electromagnetic (EM) and ground penetrating radar (GPR) surveys across the accessible portions of the Parcel. Several of the EM61 anomalies detected could be attributed to visible objects at the ground surface such as signs, culverts, and other cultural features. Large areas of reinforced concrete were recorded as anomalies by the EM, and verified by the GPR. No structures were observed beneath the reinforcement that were indicative of USTs. GPR transects were performed across the apparent former UST field, and no evidence of USTs was recorded in this area.

The full details of the geophysical investigation are included in the Geophysical Investigation Report as **Appendix C**.

4.0 Soil Sampling Activities & Results

4.1 Soil Assessment Field Activities

On April 30 and May 1, 2014, Pyramid mobilized to the site, drilled soil borings and collected some of the proposed soil samples for the PSA. The soil borings were completed using a track mounted Geoprobe® Direct-Push rig. Fourteen (14) soil borings (10-1 through 10-14) were advanced on the subject property between the NCDOT proposed ROW and easements, and edge of pavement. The selected locations were chosen to avoid public utilities along the adjacent roads and private utilities associated with the business while remaining in the proposed right of way and/or easement.

The soil borings were installed at or adjacent to proposed drainage piping, as indicated by the NCDOT engineering plans, near the former UST field, adjacent to existing pump islands, ASTs, and product lines, or within the proposed ROW and/or easement to obtain additional information. Subsequent to the initial contaminant analysis (see below), seven additional borings (10-15 through 10-21) were performed on May 1, 2014, to further delineate potential soil contamination at the parcel. The locations of the borings are shown on **Figure 2**.

Soil samples were continuously collected in four-foot long disposable sleeves from each boring for geologic description, and visual examination for signs of contamination. Soil recovered from each sleeve was screened in the field using a Photo-Ionization Detector (PID) approximately every 2 feet depending on the soil recovery of each sleeve. In general, the soil sample with the highest PID reading was selected from each boring for laboratory analysis. If field screening detected an elevated reading, then additional soil samples from each boring were selectively analyzed with the QED UVF HC-1 Analyzer. The soil boring logs with the soil descriptions, visual examination, and PID screening results are included in **Appendix D**. The PID field screening results are summarized in **Table 1**. To prevent cross contamination, new disposable nitrile gloves were worn by the sampling technician during the sampling activities, and were changed between samples. Possible to strong petroleum odors were detected in the majority of the borings during the field screening.

The soil samples selected for Total Petroleum Hydrocarbon (TPH) analyses were analyzed utilizing the QED UVF HC-1 Analyzer system from QROS-US. The NCDOT has indicated that this instrument is an acceptable method to provide total petroleum hydrocarbon (TPH) results for soil analysis for the PSA projects. Pyramid's QED-certified technician performed the soil analyses. The soil samples selected for analysis using the QED Analyzer were analyzed for TPH as diesel range organics (DRO) and TPH as gasoline range organics (GRO). The soil samples selected for analysis using the QED were preserved in the field with methanol and were analyzed at the end of each day using the QED.

4.2 Soil Sample Analytical Results

QED Results

The DENR action levels for both TPH-GRO and TPH-DRO are 10 mg/kg. The QED results for soil samples at boring locations 10-1, 10-3, 10-4, 10-11, 10-12, 10-14, 10-18, and 10-21 did not detect TPH-GRO or TPH-DRO concentrations above 10 mg/kg. The QED results did detect DRO and/or GRO concentrations above 10 mg/kg at the locations of the remaining 13 borings. Specifically, DRO concentrations ranging from 10.63 mg/kg to 83,418 mg/kg were recorded in these borings. GRO concentrations ranging from 10.14 mg/kg to 2,000 mg/kg were detected. The soil sample QED results are summarized in **Table 2**. A copy of the QED analysis report is included in **Appendix E**.

4.3 Temporary Monitoring Well Installation

The NCDOT RFP provided to Pyramid indicated to search for existing monitor wells on the property, and if one was located to obtain a groundwater sample. Although historical research indicated a monitor well had been installed at some point in the past as part of a DENR investigation at the property, Pyramid personnel were not able to locate the well. It is likely that ground vegetation or other factors have since buried the top of the well. Pyramid was not directed to install our own temporary well.

4.4 Groundwater Analytical Results

As discussed above, a temporary well was not installed based on the NCDOT RFP, and no existing wells were found, thus no water samples were collected or analyzed.

5.0 Conclusions and Recommendations

As requested by NCDOT, Pyramid has completed a PSA at the Vernon Poole & Co, Inc. property located 1140 US Hwy 64 W., Asheboro, NC (Parcel 10). The following is a summary of the assessment activities and results. Personnel logs for all field work are included in **Appendix F.**

5.1 Geophysical Investigation

The majority of the EM anomalies detected during the survey were associated with known cultural features or reinforced concrete. Verification GPR surveys did not record evidence of any subsurface structures. No evidence of metallic USTs was recorded at the property.

5.2 Limited Soil Assessment

The DENR action levels for both TPH-GRO and TPH-DRO are 10 mg/kg. The QED results for soil samples at boring locations 10-1, 10-3, 10-4, 10-11, 10-12, 10-14, 10-18, and 10-21 did not detect TPH-GRO or TPH-DRO concentrations above 10 mg/kg. The QED results did detect DRO and/or GRO concentrations above 10 mg/kg at the locations of the remaining 13 borings. Specifically, DRO concentrations ranging from 10.63 mg/kg to 83,418 mg/kg were recorded in these borings. GRO concentrations ranging from 10.14 mg/kg to 2,000 mg/kg were detected.

5.3 Limited Groundwater Assessment

A temporary well was not installed based on the NCDOT RFP, and no existing groundwater monitoring wells were found. No water samples were collected or analyzed as part of this investigation, and depth to groundwater was not measured.

5.4 Recommendations

Petroleum-Impacted Soils

During road construction activities, it is possible the NCDOT may encounter petroleum impacted soil near soil borings 10-2, 10-5, 10-6, 10-7, 10-8, 10-9, 10-10, 10-13, 10-15, 10-16, 10-17, 10-19, and 10-20. The direct source of this petroleum is likely from the existing fuel pump dispensers, existing ASTs, existing product lines, and potentially also related to the former UST basin and former product lines.

The NCDOT Microstation files indicate that the areas of contamination extend into the proposed ROW and easements, as well as across drainage features proposed to be constructed at the parcel that will require soil excavation.

Estimating the Areas of Contamination

The estimated areas of contamination are depicted on **Figure 2**. Two areas of contamination are identified. The boundaries of the areas of contamination are generally

estimated by applying a circular area of contamination around a boring exhibiting DRO/GRO levels above 10 mg/kg with a radius equal to half the distance between that boring and the nearest "clean" boring. In cases where this approach is not feasible, such as near property boundaries or where data does not exist to provide a definitive boundary, the area of contamination is terminated using the distance to the property boundary as a radius, or an educated approximation is applied. For this parcel, the borings exhibiting DRO and GRO concentrations below 10 mg/kg (10-1, 10-3, 10-4, 10-11, 10-12, 10-14, 10-18, and 10-21) were used as boundary markers to delineate the extent of contamination.

Pyramid's PSA investigation resulted in an estimated area of 22,006 square feet of impacted soil in the larger area on the central and west side of the parcel, and an estimated are of 3,106 square feet of impacted soil on the south side of the east pump island area. **This results in a total estimated area of contamination of 25,112 square feet of impacted soil at the property**. The deepest soil samples exhibiting contamination was observed to be at the sample depth 6-8 feet. For this reason, a maximum depth of 8 feet will be used to approximate total volumes of contaminated soil. It should be noted that this is a gross estimate based on the data available. Using a total thickness of 8 feet of contaminated soil, Pyramid estimates a total of approximately 200,896 cubic feet, or **7,441 cubic yards of impacted soils between 0 and 8 feet BLS** in the two areas of contamination combined. The boundaries of the areas of contamination are approximate due to limited soil data.

It should be noted that, if impacted soil is encountered during road construction outside of the area analyzed by this investigation, the impacted soil should be managed according to NC DENR Division of Waste Management (DWM) Guidelines and disposed of at a permitted facility.

6.0 Limitations

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

7.0 Closure

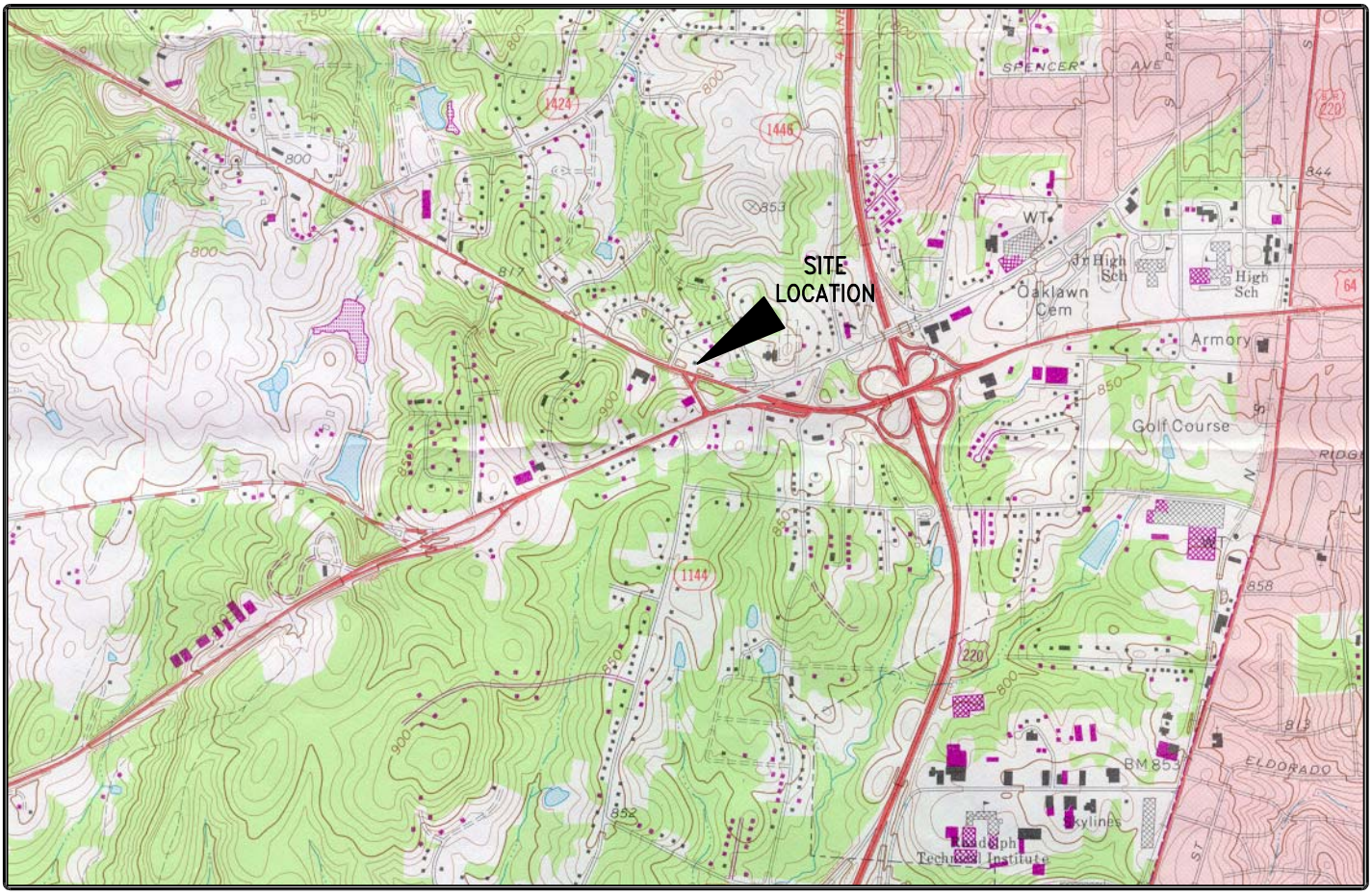
This report was prepared for, and is available solely for use by NCDOT and their designees. The contents thereof may not be used or relied upon by any other person without the express written consent and authorization of Pyramid Environmental & Engineering, P.C. (Pyramid). The observations, conclusions,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

time of Pyramid's investigation. Pyramid appreciates the opportunity to provide this environmental service.

FIGURES

USGS TOPOGRAPHIC MAP

SITE: 1140 HWY 64 WEST LOCATION: ASHEBORO, NORTH CAROLINA



USGS IDENTIFICATION

USGS 7.5 MINUTE MAP	ASHEBORO, N.C.
ORIGINAL DATE:	1970
PHOTOREVISION DATE:	1981

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

SCALES

MILES: 1/2 0 1

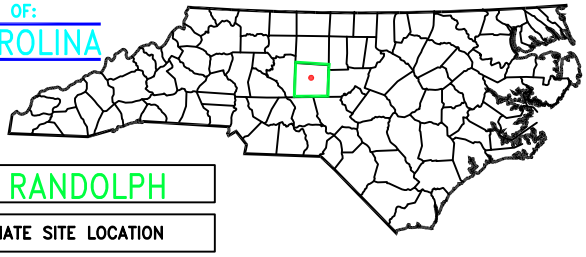
FEET: 1000 0 2000 4000 6000

1" = 2000'

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

MAGNETIC NORTH

COUNTY MAP OF: NORTH CAROLINA



COUNTY: RANDOLPH

APPROXIMATE SITE LOCATION

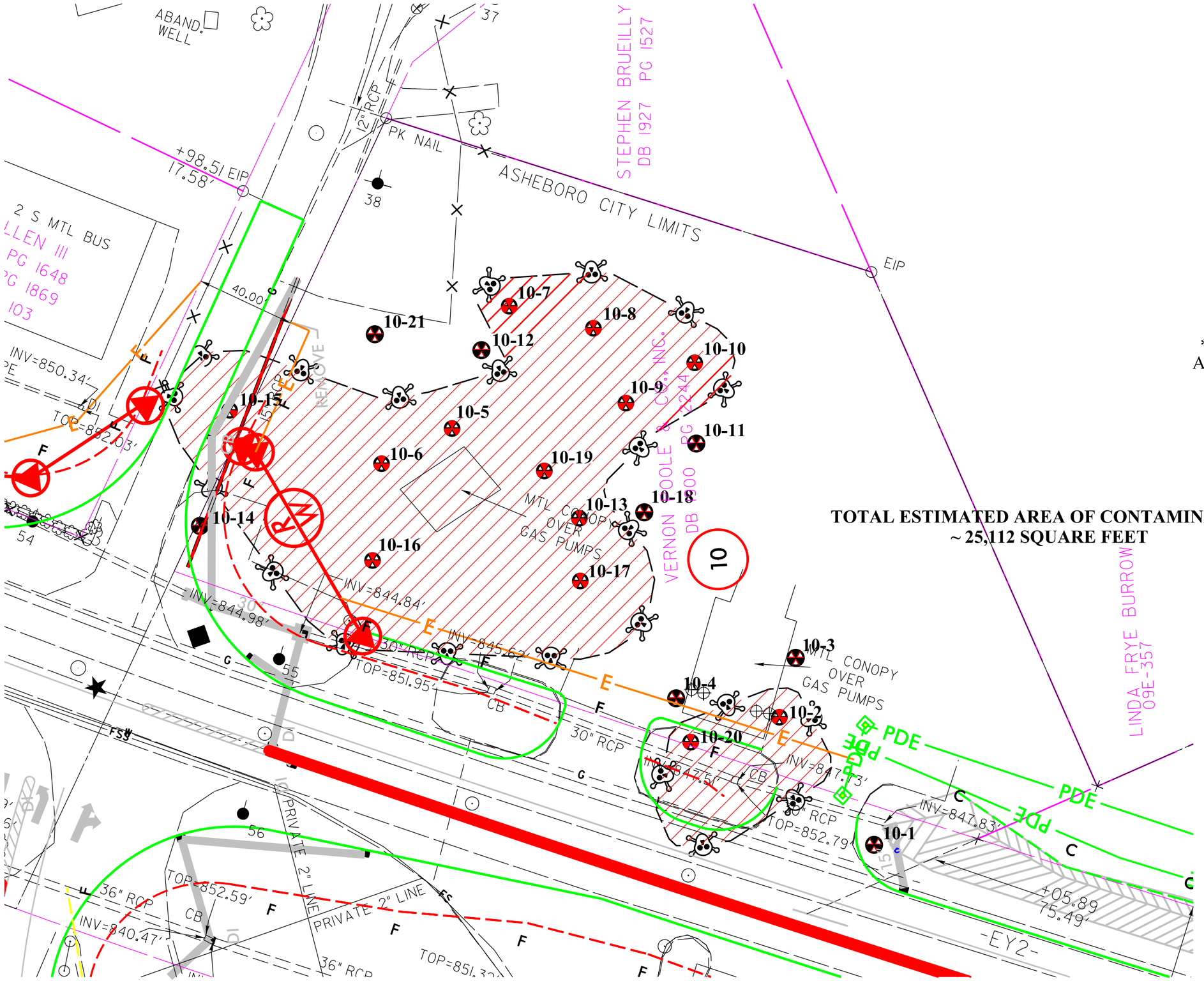
PYRAMID
ENVIRONMENTAL & ENGINEERING, P.C.

CLIENT: NC DOT U-5305		SCALE: 1"=2000'	DRAWN BY: KAM
PROPERTY NAME: PARCEL #10 VERNON POOLE & CO.			CHECK BY: TDL
CITY: ASHEBORO	STATE: NORTH CAROLINA	DATE: 5/7/14	JOB NO.: 2014-070
TITLE: TOPOGRAPHIC MAP		DRAWING NAME: USGSTOPO	TYPE: PSA
			FIGURE NUMBER: 1

NOTES

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

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS.



LEGEND

- PDE — PROPOSED DRAINAGE EASEMENT
- EXISTING ROW
- EXISTING PROPERTY BOUNDARY
- RW — PROPOSED ROW
- E — PROPOSED CONST. EASEMENT
- PROP. EOT
- PROPOSED SS CUT LINE
- PROPOSED SS FILL LINE
- PROPOSED SS TRANSITION LINE
- PROPOSED DRAINAGE PIPING
- SOIL SAMPLE BORING LOCATION (DRO/GRO < 10 mg/kg)*
- SOIL SAMPLE BORING LOCATION (DRO/GRO > 10 mg/kg)*
- AREA OF CONTAMINATION (>10 PPM)

*Analytical Results Presented in Table 2
Analytical data collected by the method of QROS, QED Analyzer

TOTAL ESTIMATED AREA OF CONTAMINATION:
~ 25,112 SQUARE FEET

N

0 25 50
FEET

TITLE: SOIL BORING LOCATIONS AND ESTIMATED AREA OF CONTAMINATION

PROJECT: NCDOT ROW PROJECT B-4565 (47025.1.1)
VERNON POOLE & CO., INC. - PARCEL 010
US 64, RANDOLPH COUNTY, NORTH CAROLINA

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DATE: 4-30-14	REVISION NO. 0
PYRAMID PROJECT NO. 2014-070	FIGURE NO. 2

TABLES

TABLE 1

Summary of Soil Field Screening Results

NCDOT Project U-5305
1140 US HWY 64 W. - Parcel 10
Asheboro, Randolph County, North Carolina

SOIL BORING	SAMPLE ID	DEPTH (feet bgs)	PID READINGS (PPM)
10-1	10-1(0-2)	0 to 2	20.0
	10-1(2-4)	2 to 4	90.0
	10-1(4-6)	4 to 6	95.0
	10-1(6-7)	6 to 7	0.0
10-2	10-2(0-2)	0 to 2	1100.0
	10-2(2-4)	2 to 4	7000.0
	10-2(4-6)	4 to 6	7000.0
	10-2(6-8)	6 to 8	6300.0
10-3	10-3(0-2)	0 to 2	230.0
	10-3(2-4)	2 to 4	50.0
	10-3(4-6)	4 to 6	570.0
	10-3(6-8)	6 to 8	90.0
10-4	10-4(0-2)	0 to 2	35.0
	10-4(2-4)	2 to 4	540.0
	10-4(4-6)	4 to 6	540.0
	10-4(6-8)	6 to 8	370.0
10-5	10-5(0-2)	0 to 2	0.0
	10-5(2-4)	2 to 4	0.0
	10-5(4-6)	4 to 6	10.0
	10-5(6-8)	6 to 8	15.0
10-6	10-6(1-2)	1 to 2	110.0
	10-6(2-4)	2 to 4	300.0
	10-6(4-6)	4 to 6	80.0
	10-6(6-8)	6 to 8	60.0
10-7	10-7(0-2)	0 to 2	10.0
	10-7(2-4)	2 to 4	15.0
	10-7(4-6)	4 to 6	130.0
	10-7(6-8)	6 to 8	140.0
10-8	10-8(0-2)	0 to 2	85.0
	10-8(2-4)	2 to 4	385.0
	10-8(4-6)	4 to 6	970.0
	10-8(6-8)	6 to 8	985.0

SOIL BORING	SAMPLE ID	DEPTH (feet bgs)	PID READINGS (PPM)
10-9	10-9(0-2)	0 to 2	50.0
	10-9(2-4)	2 to 4	5.0
	10-9(4-6)	4 to 6	25.0
	10-9(6-8)	6 to 8	290.0
10-10	10-10(0-2)	0 to 2	10.0
	10-10(2-4)	2 to 4	340.0
	10-10(4-6)	4 to 6	39250.0
	10-10(6-8)	6 to 8	11500.0
10-11	10-11(0-2)	0 to 2	15.0
	10-11(2-4)	2 to 4	45.0
	10-11(4-6)	4 to 6	160.0
	10-11(6-8)	6 to 8	35.0
10-12	10-12(0-2)	0 to 2	5.0
	10-12(2-4)	2 to 4	65.0
	10-12(4-6)	4 to 6	20.0
	10-12(6-8)	6 to 8	10.0
10-13	10-13(0-2)	0 to 2	120.0
	10-13(2-4)	2 to 4	585.0
	10-13(4-6)	4 to 6	490.0
	10-13(6-8)	6 to 8	845.0
10-14	10-14(2-4)	2 to 4	0.0
	10-14(4-6)	4 to 6	65.0
10-15	10-15(0-2)	0 to 2	45.0
	10-15(2-4)	2 to 4	10.0
	10-15(4-6)	4 to 6	5.0
	10-15(6-8)	6 to 8	10.0
10-16	10-16(0-2)	0 to 2	85.0
	10-16(2-4)	2 to 4	890.0
	10-16(4-6)	4 to 6	490.0
	10-16(6-8)	6 to 8	640.0

SOIL BORING	SAMPLE ID	DEPTH (feet bgs)	PID READINGS (PPM)
10-17	10-17(0-2)	0 to 2	205.0
	10-17(2-4)	2 to 4	440.0
	10-17(4-6)	4 to 6	105.0
	10-17(6-8)	6 to 8	170.0
10-18	10-18(0-2)	0 to 2	15.0
	10-18(2-4)	2 to 4	0.0
	10-18(4-6)	4 to 6	110.0
	10-18(6-8)	6 to 8	10.0
10-19	10-19(1-2)	1 to 2	15.0
	10-19(2-4)	2 to 4	0.0
	10-19(6-8)	6 to 8	320.0
10-20	10-20(1-2)	1 to 2	0.0
	10-20(2-4)	2 to 4	980.0
	10-20(4-6)	4 to 6	8450.0
	10-20(6-7)	6 to 7	21400.0
10-21	10-21(0-2)	0 to 2	25.0
	10-21(2-4)	2 to 4	5.0
	10-21(4-6)	4 to 6	180.0
	10-21(6-8)	6 to 8	0.0

bgs= below ground surface
PID= photo-ionization detector
PPM= parts-per-million
= sampled for lab analysis &/or QROS-QED analysis
OVA= Organic Vapor Analyzer

TABLE 2

Summary of Soil Sample QED Analytical Results for GRO/DRO

NCDOT State Project U-5305
1140 US HWY 64 W. - Parcel 10
Asheville, Randolph County, North Carolina

				QROS - QED Analysis		
SAMPLE ID	**DATE**	**DEPTH (feet)**	**PID (ppm)**	**GRO (mg/kg) (C5-C10)**	**DRO (mg/kg) (C10-C35)**	**TPH (mg/kg) (C5-C35)**
10-1(2-4)	4/30/2014	2 to 4	90.0	0.27	<0.08	0.27
10-1(4-6)	4/30/2014	4 to 6	95.0	1.02	0.7	1.72
10-2(2-4)	4/30/2014	2 to 4	7000.0	**112.5**	**253.3**	365.8
10-2(4-6)	4/30/2014	4 to 6	7000.0	**79.1**	**239.2**	318.3
10-3(4-6)	4/30/2014	4 to 6	570	<1.1	4.51	4.51
10-4(2-4)	4/30/2014	2 to 4	540	3.07	3.24	6.31
10-5(6-8)	4/30/2014	6 to 8	15	<0.4	**10.63**	10.63
10-6(2-4)	4/30/2014	2 to 4	300	<97.1	**100.7**	100.7
10-7(6-8)	4/30/2014	6 to 8	140	**23.5**	**12.12**	35.62
10-8(4-6)	4/30/2014	4 to 6	970	**30.67**	**408.1**	438.8
10-8(6-8)	4/30/2014	6 to 8	985	**100.3**	**589.2**	689.5
10-9(0-2)	4/30/2014	0 to 2	50	**2000**	**83418**	85418
10-9(6-8)	4/30/2014	6 to 8	290	<9.9	<1.98	15
10-10(4-6)	4/30/2014	4 to 6	39250.0	**755.2**	**1489**	2244.2
NC Initial Action Level - UST Section for 5035/5030-GRO; 3550-DRO				10	10	NA

PID= photo-ionizaton detector
PPM= parts-per-million
GRO= Gasoline Range Organics
DRO= Diesel Range Organics
mg/kg= milligrams-per-kilogram
TPH= Total Petroleum Hydrocarbons (GRO + DRO)
NA= Not Applicable
"------" = No Laboratory Analysis

*** Bold values indicate concentrations above initial action levels**

TABLE 2, Contd.

Summary of Soil Sample QED Analytical Results for GRO/DRO

NCDOT State Project U-5305
1140 US HWY 64 W. - Parcel 10
Asheboro, Randolph County, North Carolina

				QROS - QED Analysis		
SAMPLE ID	**DATE**	**DEPTH (feet)**	**PID (ppm)**	**GRO (mg/kg) (C5-C10)**	**DRO (mg/kg) (C10-C35)**	**TPH (mg/kg) (C5-C35)**
10-11(4-6)	4/30/2014	4 to 6	160.0	4.49	<0.31	4.49
10-12(2-4)	4/30/2014	2 to 4	65.0	<0.4	<0.08	<0.4
10-13(2-4)	4/30/2014	2 to 4	585.0	**1674**	**9579**	11253
10-13(6-8)	4/30/2014	4 to 6	845.0	**26.76**	**261.2**	287.96
10-14(4-6)	4/30/2014	4 to 6	65	<6.4	6.64	6.64
10-15(0-2)	5/1/2014	0 to 2	45	<0.6	**29.67**	29.67
10-16(2-4)	5/1/2014	2 to 4	890	<2.5	**34.32**	34.32
10-16(6-8)	5/1/2014	6 to 8	640	<3.4	<0.67	<0.67
10-17(2-4)	5/1/2014	2 to 4	440	<1.7	**52.49**	52.49
10-18(4-6)	5/1/2014	4 to 6	110	<0.9	3.57	3.57
10-19(6-8)	5/1/2014	6 to 8	320	**10.14**	**19.24**	29.38
10-20(6-7)	5/1/2014	6 to 7	21400	**167.2**	**291.4**	458.6
10-21(4-6)	5/1/2014	4 to 6	180	<1.3	3.83	3.83
NC Initial Action Level - UST Section for 5035/5030-GRO; 3550-DRO				10	10	NA

PID= photo-ionizaton detector
PPM= parts-per-million
GRO= Gasoline Range Organics
DRO= Diesel Range Organics
mg/kg= milligrams-per-kilogram
TPH= Total Petroleum Hydrocarbons (GRO + DRO)
NA= Not Applicable
"------" = No Laboratory Analysis

*** Bold values indicate concentrations above initial action levels**

APPENDIX A


1993 Aerial
U-5305 Parcel 10
64
Google earth
Image U.S. Geological Survey
N
200 ft


1999 Aerial
U-5305 Parcel 10
64
Google earth
Image U.S. Geological Survey
N
200 ft


2006 Aerial
U-5305 Parcel 10
64
N
200 ft
Google earth


2008 Aerial
U-5305 Parcel 10
64
N
200 ft
Google earth


2009 Aerial
U-5305 Parcel 10
64
Google earth
Image USDA Farm Service Agency
N
200 ft


2010 Aerial
U-5305 Parcel 10
64
Google earth
N
200 ft


2012 Aerial
U-5305 Parcel 10
64
N
200 ft
Google earth


2013 Aerial
U-5305 Parcel 10
64
N
200 ft
Google earth

APPENDIX B

CERTIFOAM SERVICES, INC.
P.O. BOX 5524
WINSTON-SALEM, N.C. 27113
~~919/659-0779~~
919/661-9231
919/661-9241 (FAX)

21 October 1992

NC DEHNR
Groundwater Section
8025 North Point Blvd.
Winston-Salem, NC 27106

Re: Econo Oil West 64
Hwy 64 West
Asheboro, NC 27203
Facility ID #0-018606

Sir:

On 10/7/92 Mr. Mitchell Bowyer of the DEM inspected this site to determine whether any violations of 15A NCAC 2N were present. His review indicated that 2N .0801 was not complied with, and closure per 2N .0800 or leak detection per 2N .0501 would be required as corective action.

After a discussion with myself and Mr. Andrew Raring, P.G., Mr. Poole agreed that permanent closure would be the corrective action taken.

As a report is required within 30 days of receipt of the notice of violation (by 11/20/92), Mr. Raring asks that the usual 30 day waiting period be waived. The Winston-Salem Regional Groundwater Office will be notified by fax or phone 48 hours prior to removal activities. Currently, a date of either 10/29 or 30 is planned. Please advise.

I can be contacted at 919/661-9231 in connection, or Mr. Raring is available at 919/724-6994 for any additional information.

Sincerely,

Harvey C. Danner, Jr.
President

cc/Mr. Mitchell Bowyer
Mr. Andrew Raring, Ph.D., P.G.
Mr. Phillip Poole

Revised Copy as requested -

Notice of Intent: L -In-Service

FOR TANKS IN **NC**

Return Completed Form To: The appropriate DEM Regional location. [SEE REVERSE SIDE OFFICE ADDRESS].

State Use Only
D. Number _____
Date Received _____

RECEIVED
N.C. Dept. of EHN
OCT 29 1992
Winston-Salem Regional Office

Complete and return thirty (30) days prio vice.

I. OWNERSHIP OF TANK(S)

Tank Owner Name: Vernon Poole & Co., Inc
(Corporation, Individual, Public Agency, or Other Entity)
Street Address: P.O. Box 506
County: Randolph
City: Asheboro State: NC Zip Code: 27203
Tele. No. (Area Code): 919-629-3134

I. OF TANK(S)

F Econo 0:1 64 West
Facility ID # (if available) 0-018606
Street Address or State Road: US 64 West
County: Randolph City: Asheboro Zip Code: 27203
Tele. No. (Area Code): Same

III. CONTACT PERSON

Name: Phillip Poole Job Title: Pres. Telephone Number: (919) 629-3134

IV. TANK REMOVAL, CLOSURE IN PLACE, CHANGE-IN-SERVICE

1. Contact Local Fire Marshall.
2. Plan the entire closure event.
3. Conduct Site Soil Assessments.
4. If Removing Tanks or Closing in Place refer to API Publications. 2015 "Cleaning Petroleum Storage Tanks" & 1604 "Removal & Disposal of Used Underground Petroleum Storage Tanks".
5. Provide a sketch locating piping, tanks and soil sampling locations.
6. Fill out form GW/UST-2 "Site Investigation Report for Permanent Closure" and return within 30 days following the site investigation.
7. Keep records for 3 years.

V. WORK TO BE PERFORMED BY:

(Contractor) Name: Certifoam Services, Inc.
Address: P.O. Box 5524 State: Winston-Salem, N.C. Zip Code: 27113
Contact: Harvey C. Danner, Jr. Phone: 919-661-9231

VI. TANK(S) SCHEDULED FOR CLOSURE OR CHANGE-IN-SERVICE

TANK ID#	TANK CAPACITY	LAST CONTENTS	PROPOSED ACTIVITY: CLOSURE – Removal	CLOSURE – Abandonment In Place	CHANGE-IN-SERVICE – New Contents Stored
3	550	Kerosene	☒	☐	
			☐	☐	
			☐	☐	
			☐	☐	
			☐	☐	
			☐	☐	
			☐	☐	
			☐	☐	

VII. OWNER OR OWNER'S AUTHORIZED REPRESENTATIVE

Print name and official title: Harvey C. Danner, Jr., President
*Scheduled Removal Date: 1 Dec '92
Signature: Harvey C Danner, Jr.
Date Submitted: 28 Oct '92

*If scheduled work date changes, notify your appropriate DEM Regional Office 48 hours prior to originally scheduled date.

GW/UST-3 White Copy - Regional Office Yellow Copy - Central Office Blue Copy - Owner

Notice of Intent: UST Permanent Closure or Change-In-Service

RECEIVED
N.C. Dept. of EHNR
OCT 22 1992
Winston-Salem Regional Office

FOR TANKS IN NC

Return Completed Form To:
The appropriate DEM Regional Office according to the county of the facility's location. [SEE REVERSE SIDE OF OWNER'S COPY (BLUE) FOR REGIONAL OFFICE ADDRESS].

State Use Only
I. D. Number
Date Received

INSTRUCTIONS

Complete and return thirty (30) days prior to closure or change-in-service.

I. OWNERSHIP OF TANK(S)

Tank Owner Name: Vernon Poole & Co., Inc.
(Corporation, Individual, Public Agency, or Other Entity)
Street Address: P.O. Box 506
County: Randolph
City: Asheboro State: NC Zip Code: 27203
Tele. No. (Area Code): 919-629-3134

II. LOCATION OF TANK(S)

Facility Name or Company: Econo Oil 64 West
Facility ID # (if available): 0-018606
Street Address or State Road: US. 64 W.
County: Rand. City: Asheboro Zip Code: 27203
Tele. No. (Area Code): None

III. CONTACT PERSON

Name: Phillip Poole Job Title: Pres. Telephone Number: (919) 629-3134

IV. TANK REMOVAL, CLOSURE IN PLACE, CHANGE-IN-SERVICE

1. Contact Local Fire Marshall.
2. Plan the entire closure event.
3. Conduct Site Soil Assessments.
4. If Removing Tanks or Closing in Place refer to API Publications. 2015 "Cleaning Petroleum Storage Tanks" & 1604 "Removal & Disposal of Used Underground Petroleum Storage Tanks".
5. Provide a sketch locating piping, tanks and soil sampling locations.
6. Fill out form GW/UST-2 "Site Investigation Report for Permanent Closure" and return within 30 days following the site investigation.
7. Keep records for 3 years.

V. WORK TO BE PERFORMED BY:

(Contractor) Name: Certifoam Services, Inc.
Address: P.O. Box 5524 State: Winston-Salem, NC Zip Code: 27113
Contact: Harvey Danner Phone: 919/XXXXXXXX 661-9231

VI. TANK(S) SCHEDULED FOR CLOSURE OR CHANGE-IN-SERVICE

TANK ID#	TANK CAPACITY	LAST CONTENTS	PROPOSED ACTIVITY: CLOSURE – Removal	CLOSURE – Abandonment In Place	CHANGE-IN-SERVICE – New Contents Stored
3	550	Kerosene	☒	☐	
			☐	☐	
			☐	☐	
			☐	☐	
			☐	☐	
			☐	☐	
			☐	☐	
			☐	☐	

VII. OWNER OR OWNER'S AUTHORIZED REPRESENTATIVE

Print name and official title: Harvey C. Danner, Jr., Pres
Signature: Harvey C Danner Jr
*Scheduled Removal Date: 48 hr. notice requested
Date Submitted: 10/21/92

*If scheduled work date changes, notify your appropriate DEM Regional Office 48 hours prior to originally scheduled date.

GW/UST-3 White Copy - Regional Office Yellow Copy - Central Office Blue Copy - Owner

550 kerosene
550 fuel oil

15 December 1992

Site Assessment & Closure Report for Two 550 gallon Underground Storage Tanks (USTs)

Econo Oil 64 West
Facility #0-018606
US Hwy 64 West
Randolph County
Asheboro, NC 27203

Prepared By: Certifoam Services, Inc.
P.O. Box 5524
Winston-Salem, NC 27113-5524
919/661-9231
919/661-9241 (FAX)

Harvey Danner, Project Manager
Andrew Raring, Ph.D., P.G., Site Geologist & Supervisor

Site Investigation Report For Permanent Closure of U.S.T.

FOR TANKS IN **NC**

Return Completed Form To:
The appropriate DEM Regional Office according to the county of the facility's location. [SEE MAP ON REVERSE SIDE OF OWNER'S COPY (BLUE) FOR REGIONAL OFFICE ADDRESS].

Sate Use Only
I.D. Number
Date Received DEC 21 1992

N.C. Dept. of EHNR

INSTRUCTIONS

Please complete and return within (30) days following completion of site investigation.

Winston-Salem Regional Office

I. Ownership of Tank(s)

Vernon Poole & Company, Inc.
Owner Name (Corporation, Individual, Public Agency, or Other Entity)
P.O. Box 506
Street Address
Randolph
County
Asheboro NC 27203
City State Zip Code
919- 629-3134
Area Code Telephone Number

II. Location of Tank(s)

Econo Oil, 64 West
Facility Name or Company
0-018606
Facility ID # (if available)
US 64 West
Street Address or State Road
Randolph Asheboro 27203
County City Zip Code
Area Code Telephone Number

III. Contact Person

Phillip Poole — Job Title: President — Telephone Number: (919) 629-3134 / 661-19231

Closure Contractor (Name) Certifoam Services, Inc. (Address) P.O. Box 5524 Winston-Salem, NC 27113 919/[redacted]

Lab (Name) Blue Ridge Labs, Inc. (Address) P.O. Box 2940 Lenoir, NC 28645 704/728-0149

IV. U.S.T. Information

V. Excavation Condition

Tank No.	Size in Gallons	Tank Dimensions	Last Contents	Water In Excavation Yes	Water In Excavation No	Free Product Yes	Free Product No	Notable Odor or Visible Soil Contamination Yes	Notable Odor or Visible Soil Contamination No
1	550	42x92	Kerosene		X		X	X	
2	550*	42x92	fuel oil		X		X	X	
	*- "Orphan" UST, discovered								
		in removal							

VI. Additional Information Required

See reverse side of blue copy (owner's copy) for additional information required by N.C. - DEM in the written report and sketch.

VII. Check List

Check the activities completed.

- [x] Contact local fire marshall
- [x] Notify DEM Regional Office before abandonment
- [x] Drain & flush piping into tank.
- [x] Remove all product and residuals from tank
- [x] Excavate down to tank.
- [x] Clean and inspect tank.
- [ ] Remove drop tube, fill pipe, gauge pipe, vapor recovery tank connections, submersible pumps and other tank fixtures.
- [x] Cap or plug all lines except the vent and fill lines.
- [x] Purge tank of all product & flammable vapors.
- [ ] Cut one or more large holes in the tanks.
- [x] Backfill the area.

Date Tank Permanently closed: 1 Dec 1992

ABANDONMENT IN PLACE
- [ ] Fill tank until material overflows tank opening;
- [ ] Plug or cap all openings;.
- [ ] Disconnect and cap or remove vent line
- [ ] Solid inert material used - please specify: _____

REMOVAL
- [x] Create vent hole
- [x] Label tank
- [ ] Dispose of tank in approved manner

Final tank destination: Poole Oil Co. to be sold as scrap

VIII. Certification (Read and Sign)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete.

Print name and official title of owner or owner's authorized representative	Signature	Date Signed
Harvey C. Danner, Jr., President	Harvey C. Danner, Jr.	15 Dec 1992

GW/UST-2 White Copy - Regional Office Yellow Copy - Central Office Blue Copy - Owner

I. Background & Scope of Operations

On 7 October 1992 Mr Mitchell Bowyer of the N.C. Division of Environmental Management (DEM) visited this site to perform an inspection of the UST system. During the course of this investigation Mr Phillip Poole of Econo Oil freely admitted that one 550 gallon UST that once supplied kerosene had been out of service for slightly over one year. As this is in violation of NCAC Title 15A, Subchapter 2N, Section .0801, a notice was sent to Poole Oil, the UST owner, notifying them of this on 20 October.

Two courses of corrective action were presented to the owner, and his selection was to complete a permanent closure by removal in accordance with 2N .0800 as suggested in the 20 October correspondence. This report involves sampling at locations selected by the site geologist, who was on site throughout on 1 December to supervise the closure and collect the samples. Waiver of the 30 day period for submittal of results from the corrective actions was waived by the Winston-Salem Regional Office of the DEM.

Poole Oil retained the services of Morton Grading of Asheboro as their subcontractor for the excavation operations. They were under the control of Mr Raring while on site, and any additional information on their operations may be obtained by contacting Mr Phillip Poole at 919/629-3134.

II. Site/Area Description

A base map copied from the Asheboro Quadrangle, U.S. Geologic Survey 7.5 Minute Series, is enclosed (scale: 1" = 2000'). The site is circled. The area is predominately commercial along US 64, and some residences are to the north and west. Municipal water and sewer serve the vicinity, and no known operational water supply wells are within 1500'. There has been a groundwater investigation conducted by the state for a nearby site that has necessitated the installation of groundwater monitoring wells on land bordering the site along the right-of-way, however.

The site sits on level ground along the highway. Poole Oil maintains offices there in the same structure as the convenience store. Five 20,000 gallon aboveground stprage tanks (ASTs) supply gasoline and heating fuels to a loading rack for tankwagon delivery trucks. One of these ASTs furnishes K-1 kerosene to a pump adjacent to the excavation site. Two USTs supply on and off-road diesel fuel to the pump island.

Please note that an "orphan" UST was discovered when the digging began. It is UST #2 on the detailed map, which supplies the proper information as required on the site features. All four USTs are buried under gravel. Surficial drainage is to the west along US 64, collecting into a drainage-way beside the road.

The site rests in the Carolina Slate Belt's Uwharrie Formation. This region is characterized by metamorphosed, felsic metavolcanic rock occuring in rhyolitic flows & tuffs, which is colored from a light gray to green-gray. Meta-argillite or metamudstone is often encountered.

III. Field Operations

With the site geologist supervising, the USTs were pulled on 1 December. Significant soil discoloration (grayish) was seen between the USTs and the pump island. This continued to a depth of 5', where it ended. The soil still had a strong kerosene odor at 5'; however, any deeper soil removal proximate to the island could cause it to collapse, so digging stopped at that depth.

One line supplying the diesel pump was disconnected so the pit could be expanded under the USTs. This area also had a strong kerosene odor in places, especially under the end of UST #1 closest to the pumps. Here, the pit was dug to a depth of 13', and sample #POC-1 was collected off the bottom (at 13'). Samples #POC-2 & 3 were taken at 11'. UST bottoms were at 5'9".

The spread of the plume was hindered by the nature of the underlying soil; it was a dense, plastic, sandy-clay saprolite varying from a light tan to off-white color, extending to the base of the excavation. Shallower subsoils were an orange silt clay.

USTs have been stored at the site and are available for inspection. Poole Oil intends to sell these for scrap or culvert use. Condition was fair, with pitting and rust evident. Approximately 50-55 yards of impacted dirt has been stockpiled to the building rear. Intended disposition is by incineration at Cunningham Brick once lab results are received so a quote can be made. The hole was backfilled with a mixture of clean fill dirt and crusher run stone.

IV. Lab Results

Both USTs removed contained middle distillates (#1 - kerosene & #2 - diesel fuel), so the SW-846/EPA 5030 & EPA 3550 Methods were used in soil analysis. Sample #POC-2 registered 16.8 ppm (parts per million) per the 3550 analysis; otherwise, all tests on all samples were less than 1.0 ppm.

V. Geologist's Assessment

This is contained on the insert page labeled #3A.

VI. Quality Control

Soils for lab analysis were collected by a hand trowel and packed tightly into lab-supplied glass bottles with aluminum seal screw caps. They were maintained under 40 degrees Fahrenheit by ice chest or refrigerator until presented to the lab. Field and lab ID's are cross-referenced on the actual results. Chain of custody accompanies. The sampling tools were decon-taminated by a tap water and phosphate-free soap wash before each use.

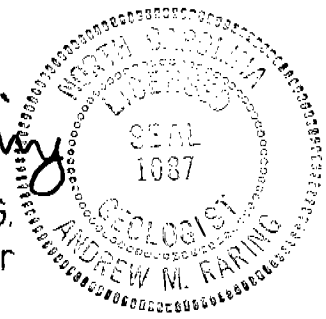
VII. Warranty

Work on site proceeded with due respect to all pertinent DEM regulations. If DEM rules were not applicable, then standard industry practices were followed. Results are warranted for the time and place of sampling only and do not express or imply any broad warranty against future activities on site that could impact the site soils or groundwater. Lab data obtained from the subcontractor is assumed to be accurate. The assessment of the geologist is based on his specific knowledge of the site and general geology of the area.

Sincerely,

Harvey C. Danner, Jr.
President/Project Manager

Andrew M. Raring, Ph.D., P.G.
Site Geologist & Supervisor



V. Geologist's Assessment

The two underground storage tanks removed from the Poole Oil Company, Econo Oil 64 West, location in Ashboro were immediately adjacent to one another and within ten feet of the concrete pump island. Additionally, suction lines carrying product to the diesel and fuel oil pumps from USTs to the west of those removed passed over the area of the closed USTs. The line to the K-1 pump was also in the vicinity. In summary, the two 550 gallon USTs were in a confined setting, making excavation difficult.

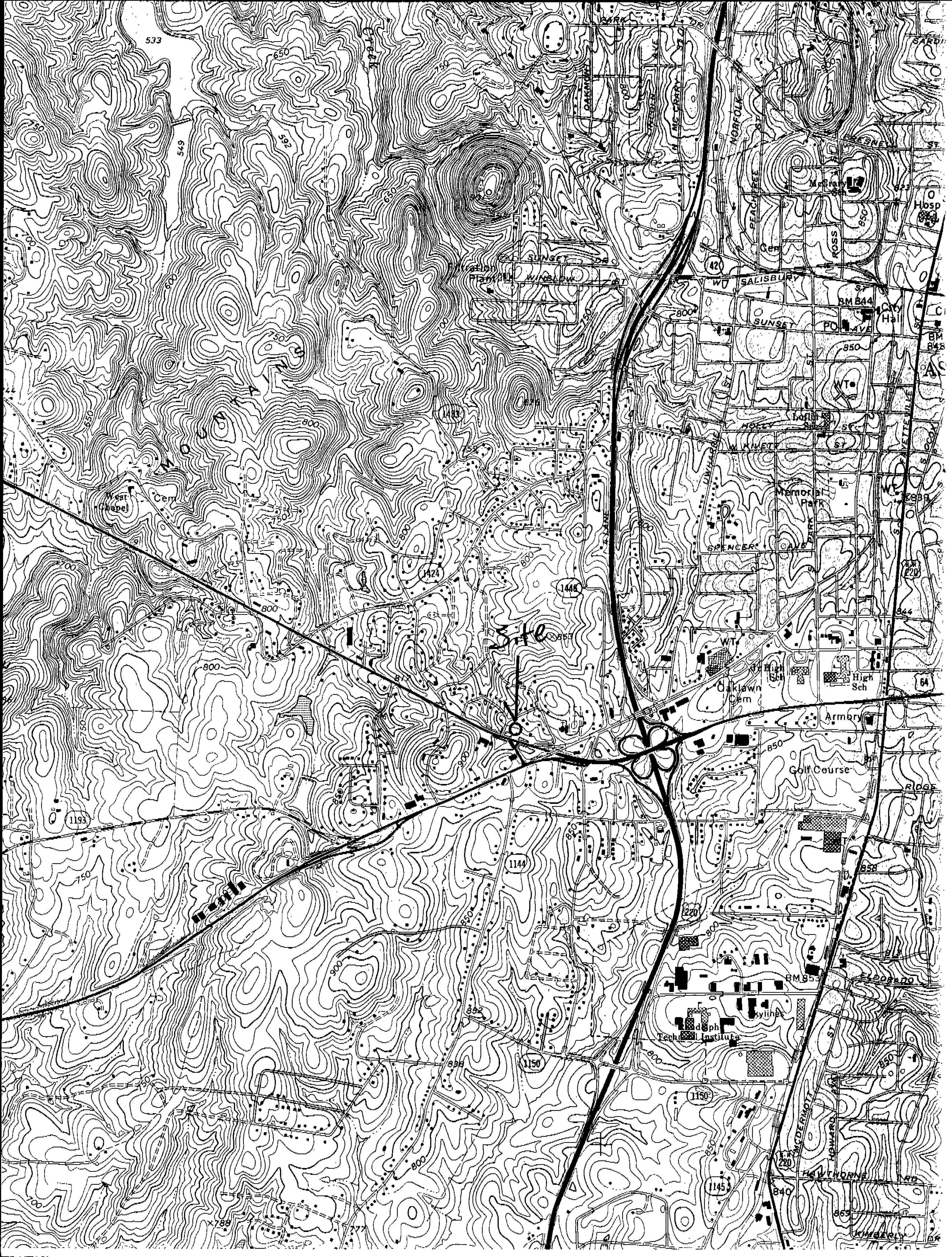
No source of petroleum release from the USts and their lines was observed. The tanks were free of holes; rust and pitting were minor. The tanks had not been used in over one year. The were pumped of remaining free product, which totaled less than twenty gallons between the two tanks. Total depth of the excavation was 13 feet beneath the south end of tank one and was shallower by several feet elsewhere. The entire floor of the excavation appeared to be free of petroleum impact.

The tanks installation had been backfilled with native clayey sand to sandy clay soil. This soil was a typical brick red Piedmont color. Topsoil to the pump island side of the tanks was a dense, plastic clay, extending to a depth of at least several feet. Saprolite toward the base of the excavation was a white to light tan clayey sand with relict fractures marked by dark staining and relict texture.

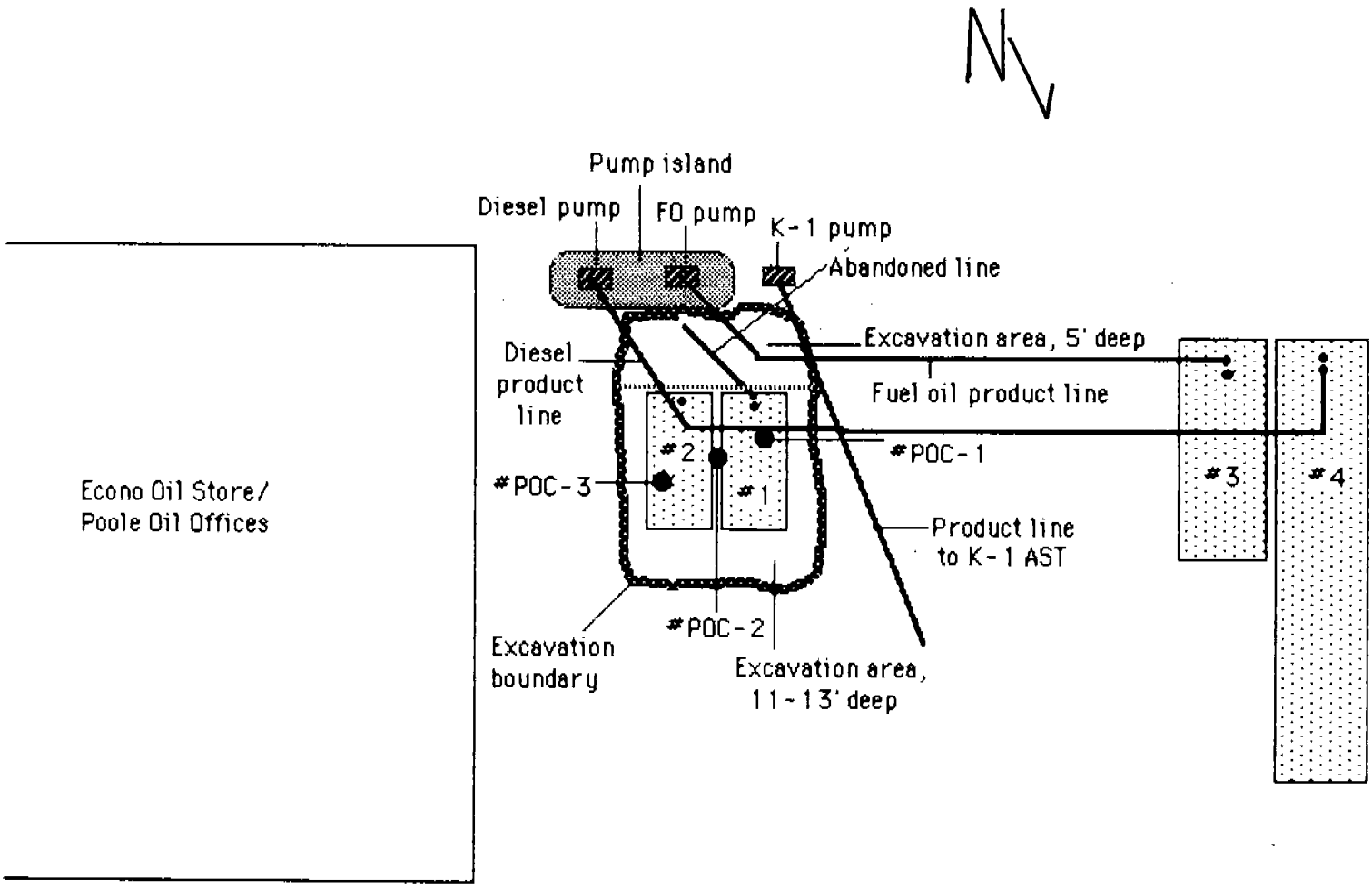
The only environmental impact from petroleum storage and retailing at the closure site appears to have been caused by customers disposing of residual kerosene in take home containers prior to refilling with new product. Poole Oil Company has repeatedly replaced gravel and shallow dirt behind the kerosene pump. Nevertheless, the soil and stone was stained black the day of the closure and kerosene odor was noticed in soil beneath the south end of UST #2 and the area between it and the kerosene pump.

All soil containing kerosene odor beneath the tanks was successfully excavated and stockpiled. Only a small volume of clay soil with kerosene odor was left in place beneath the edge of the pump island. With reference to the site map, note that the kerosene pump is on a concrete island added to the original one marked on this map. The excavation extended closer to the kerosene pump than the site map implies. Kerosene odor played out in the south wall of the excavation with depth, demonstrating that the contamination is surficial and not a threat to ground water quality.

A ground water incident in the area has been under investigation by the NC DEM, Groundwater Section, for several years. Ground water in monitor wells on or immediately adjacent to the Poole Oil Company site has not been found to be impacted, according to Mr. Poole. The suspected source of contamination was a Quik Chek convenience store to the east, where a known release occurred.



Site
Filtration Plant
SUNSET DR
WINSLOW ST
SALISBURY ST
SUNSET AVE
PO
City Hall
BM 844
McCrary Sch
Hosp
Cem
NORFOLK
PEACHTREE
ROSS
MOUNTAINS
West Chapel
Cem
HOLLY
Memorial Park
SPENCER AVE
WT
Jr High Sch
High Sch
Oaklawn Cem
Armory
Golf Course
RIDGE
BM 853
ELDORADO
Skyline
Randolph Technical Institute
McDERMOTT ST
HOWARD AVE
HAWTHORNE RD
KIMBERLY DR



Site: Econo Oil
US 64 West
Asheboro, NC
Scale: 1" = 10'
Key: #1/#2 = 550 USTs
#3 = 2000 UST
#4 = 4000 UST
● #POC= Sampling Points w/ ID's
= Boundary between excavation depths

212-2166

CHAIN OF CUSTODY RECORD

Use ballpoint pen only, press hard

Client Name: Poole Oil Co / Danner (Certigram)

Project : _____

~~E. T. Job #~~: _____

Attention: Andrew Ramey / Harvey Danner

Telephone: _____

ENGINEERING TECTONICS, P.A.

1720 Vargrave Street
Winston-Salem, NC 27107

P.O. Box I
Winston-Salem, NC 27108

Telephone (919) 724-6994 1-800-394-8807

Fax (919) 724-7095

Please indicate the number of each size of sample container and any preservatives which were used. e.g., 2-HNO3 indicates 2 containers w/ nitric acid.

Sample ID	Yr. 92 Date	Time	Matrix	40 ml	120 ml	250 ml	500 ml	950 ml	other	Suspected Contaminent	Level 0	Level Low	Level Med	Level High	Analysis Requested	Lab use only Lab ID
POC-1	12/01		Soil			1/mm				Kerosene					5030/3550 TPH	
POC-2	↓		↓			↓									"	
POC-3															"	
POC-4	↓		↓												[illegible]	
						↓										

	Date	Time		Date	Time
Relinquished by: (Sig.) Andrew Ramey Collector	12/1	4:50	Received by: [signature]	12/1	4:50
Relinquished by: (Sig.) [signature]	12/2	11:50	Received by: [signature]	12/2	11:50
Relinquished by: (Sig.)			Received by: Lab		

Remarks: 8015 mod., GC

POC-C1 for TCLP and other tests required for brick kiln if decided to go rather than landfarm

Blue Ridge Labs
P.O. Box 2940 • Pine Mountain Road
Lenoir, North Carolina 28645
Telephone (704) 728-0149

CLIENT: Certifoam Services, Inc.
P. O. Box 5524
Winston-Salem, NC 27113

Attention: Mr. H. Danner, Jr.

DATE RECEIVED: December 2, 1992

DATE REPORTED: December 3, 1992

SAMPLE NUMBER	SAMPLE DESCRIPTION
212-2166A	Soil; POC-1 for 5030 & 3550.
212-2166B	Soil; POC-2 for 5030 & 3550.
212-2166C	Soil; POC-3 for 5030 & 3550.

PARAMETER	RESULTS	MQL		DATE ANALYZED
212-2166A - 5030	*	1.0	mg/kg	12/2/92
- 3550	*	1.0	mg/kg	12/2/92
212-2166B - 5030	*	1.0	mg/kg	12/2/92
- 3550	16.8	1.0	mg/kg	12/2/92
212-2166C - 5030	*	1.0	mg/kg	12/2/92
- 3550	*	1.0	mg/kg	12/2/92

REPORTED BY: _____
D. R. Wessinger - General Manager

* Concentrations are below Minimum Quantification Limit except where noted.

NC Laboratory Certificate No. 275.

RECEIVED
N.C. Dept. of EHN

Notice of Intent: UST Permanent Closure or Change-In-Service

FOR TANKS IN **NC**

Return Completed Form To:
The appropriate DEM Regional Office according to the county of the facility's location. [SEE REVERSE SIDE OF OWNER'S COPY (BLUE) FOR REGIONAL OFFICE ADDRESS].

State Use Only
I. D. Number
Date Received OCT 28 1993 Winston-Salem Regional Office

INSTRUCTIONS

Complete and return thirty (30) days prior to closure or change-in-service.

I. OWNERSHIP OF TANK(S)

Tank Owner Name: Vernon Poole & Company, Inc.
(Corporation, Individual, Public Agency, or Other Entity)
Street Address: P.O. Box 506
County: Randolph
City: Asheboro State: 27204 Zip Code:
Tele. No. (Area Code): 919-629-3134

II. LOCATION OF TANK(S)

Facility Name or Company: Econo Oil 64 West
Facility ID # (if available): 0-018606
Street Address or State Road: US Hwy 64 W.
County: Rand. City: Asheboro Zip Code: 27203
Tele. No. (Area Code):

III. CONTACT PERSON

Name: Phillip Poole Job Title: Pres. Telephone Number: (919) 629-3134

IV. TANK REMOVAL, CLOSURE IN PLACE, CHANGE-IN-SERVICE

1. Contact Local Fire Marshall.
2. Plan the entire closure event.
3. Conduct Site Soil Assessments.
4. If Removing Tanks or Closing in Place refer to API Publications. 2015 "Cleaning Petroleum Storage Tanks" & 1604 "Removal & Disposal of Used Underground Petroleum Storage Tanks".
5. Provide a sketch locating piping, tanks and soil sampling locations.
6. Fill out form GW/UST-2 "Site Investigation Report for Permanent Closure" and return within 30 days following the site investigation.
7. Keep records for 3 years.

V. WORK TO BE PERFORMED BY:

(Contractor) Name: Certifoam Services, Inc.
Address: P.O. Box 5524 State: Winston-Salem, N.C. Zip Code: 27113
Contact: Harvey C. Danner, Jr. Phone: 919-661-9231

VI. TANK(S) SCHEDULED FOR CLOSURE OR CHANGE-IN-SERVICE

TANK ID#	TANK CAPACITY	LAST CONTENTS	PROPOSED ACTIVITY: CLOSURE – Removal	CLOSURE – Abandonment In Place	CHANGE-IN-SERVICE – New Contents Store
3	4000	Diesel	X		
4	2000	"	X		

VII. OWNER OR OWNER'S AUTHORIZED REPRESENTATIVE

Print name and official title: Harvey C. Danner, Jr., President
Signature: Harvey C. Danner, Jr., Pres.
*Scheduled Removal Date: 7 Dec 1993
Date Submitted: 25 Oct. 1993

*If scheduled work date changes, notify your appropriate DEM Regional Office 48 hours prior to originally scheduled date.

GW/UST-3 White Copy - Regional Office Yellow Copy - Central Office Blue Copy - Owner

OCTOBER 3RD, 1994

SOIL BORINGS INVESTIGATION FOR COMPLETION OF A SITE SENSITIVITY EVALUATION (SSE), WITH GEOLOGIST'S ASSESSMENT & RECOMMENDATIONS

SITE: ECONO OIL 64 WEST
US HWY 64 WEST, ASHEBORO
RANDOLPH COUNTY, NC
FACILITY ID #0-018606

OWNER/OPERATOR: VERNON POOLE & COMPANY
P.O. BOX 506
ASHEBORO, NC 27204-0506
910/629-3134

PREPARED BY: CERTIFOAM SERVICES, INC./
SALEM ENVIRONMENTAL, INC.
P.O. BOX 5524
WINSTON-SALEM, NC 27113-5524
910/661-9231
910/661-9241 (FAX)

HARVEY DANNER, PROJECT MANAGER
ANDREW RARING, Ph.D., P.G., PROJ. GEOLOGIST

1.0 PROJECT SUMMARY

Three soil borings were advanced at a site where minor soil impact was left unexcavated after a 4,000 gallon UST was closed by excavation. One boring was advanced to 30 feet without intercepting ground water, and all three showed TPH (total petroleum hydrocarbon) counts below permissible levels at least 5 feet above the deepest boring level.

2.0 BACKGROUND & SCOPE OF OPERATIONS

A copy of our December, 1993, closure report is enclosed; this details our earlier work on site. Our purpose is to advance a series of borings to determine the acceptable cleanup level by completing a SSE (Site Sensitivity Evaluation) for the site.

3.0 FIELD INVESTIGATION

On August 7th two borings were advanced by our drill rig (Mobile B-57), using 3.25 inch I.D. hollow-stem augers and split spoon sampler. A third, at the pump, was collected by stainless steel hand auger. Decontamination of the augers and the split spoon between samples was per tap water/phosphate-free soap wash followed by a methanol rinse and drying period. Care was taken to avoid disturbing the soil excessively.

Boring #4A was advanced to a depth of 30 feet without intercepting ground water; from 28'+ drilling was extremely hard. Rock fragments were expelled, suggesting that bedrock would be intercepted before ground water. In our closure report lithology was detailed to 16.5 feet, and the white clay layer there was found to continue to 20'. There, it altered to a light brown silt until completion. Our sample was collected at 25 feet, but soil cuttings were collected for screening as the auger string advanced. This soil was screened for volatiles with a Gastech Model 1238 Organic Vapor Analyzer (OVA). The process involves placing soil into a ziplock type bag (about 1/4 to 1/3rd its volume), sealing the bag and allowing 10 to 15 minutes for the soil gasses to equilibrate. Then, the probe from the OVA is inserted into the bag. The subsequent reading, expressed in parts per million of total organics, can suggest if hydrocarbon contamination is present, especially when coupled with a petroleum odor of any kind.

OVA readings throughout advancement fell from 190 ppm (parts per million) total organics at 15', 150 ppm at 20', 95 ppm at 25' and 50 ppm at 30'. At #4B the sample was collected at 12 feet, where the OVA level was 50 ppm total organics. The pump sample (#4P) was collected by hand auger, and its OVA count was 75 ppm at the collection depth of 8 feet.

Disposable latex gloves were worn during sample collection to prevent cross-contamination. Soil was packed tightly into the glass jars supplied by the lab, which had teflon seal, screw caps. Temperature was maintained under 40 degrees by ice chest with a solid block coolant and refrigeration throughout our hold time.

4.0 LABORATORY DATA

Blue Ridge Labs, Inc., (N.C. License #275) of Lenoir, N.C., handled the analytical procedures. Any questions involving their activity should be referred to Mr David Wessinger of the same, who is the general manager. Office hours are 8:30 AM to 5:30 PM; telephone is 704/728-0149.

As the system supplied diesel fuel, analysis was per EPA 5030-8015 Modified, Purge & Trap Method, with EPA 3550 Sonication Process added. These are required under current regulatory guidelines. Results were the following, expressed in ppm of TPH:

Sample ID#	EPA 5030	EPA 3550
4A-25'	5.6	<5.0
4B-12'	2.4	<5.0
4P-8'	2.8	<5.0

Chain of sample custody is enclosed, as are the results. Those results reference the field to lab ID's.

5.0 GEOLOGIST'S ASSESSMENT/SSE CALCULATION

A conservative approach was used to score the SSE. First, grain size was to be calculated; this was a brown silt at 25' at #4A, so 50 points was scored here. Relict structures were assumed, adding another 10 pts. Also, the most cautious figure was assumed for distance to ground water (5-10'). This scores another 20 points. Finally, it was established that bedrock is above the seasonal high shallow water table (20 pts.); no artificial conduits are within the contamination zone (0 pts.). The total comes to 100 points, which is noted on Table 2. The site has municipal water, and no known wells are within 1500 feet. This entails the site as being under Category E. Such sites allow a trebling of the score on Table 2.

When the final calculations are made, acceptable in-place TPH counts are 120 ppm for the 5030 analysis and 480 ppm per the 3550. From the closure report the highest TPH counts were 26.8 (5030) and 60.8 (3550), well under both thresholds. It appears no further action will be necessary at this site.

6.0 WARRANTY & LIMITATIONS

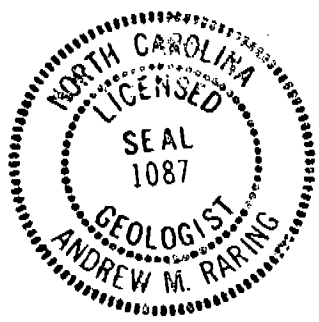
We, the undersigned, attest that our work was carried out with full respect to regulatory guidance and, where such guidance was not applicable, standard industry procedures. The data received from the independent lab is assumed to be accurately delineated and transposed. Should we find otherwise, we reserve the right to alter this report as necessary. The

assessment applies to the time and place of sampling only; no other expressed or implied warranty is offered. This report is the exclusive property of Vernon Poole & Company, and it will not be released without prior approval.

Sincerely,

Harvey C. Danner, Jr.
President/Project Manager

Andrew M. Raring, Ph.D., P.G.
Senior Geologist



cc: Mr Phillip Poole, Vernon Poole & Company

Table 1

Site Sensitivity Evaluation (SSE)

Site Characteristics Evaluation (Step 1)

Characteristic	Condition	Rating	
Grain Size*	Gravel Sand Silt Clay	150 100 50 0	50
Are relict structures, sedimentary structures, and/or textures present in the zone of contamination and underlying "soils".	Present and intersecting the water table. Present but not intersecting the water table. None present.	10 5 0	10
Distance from location of deepest contaminated soil** to water table.	5 - 10 feet >10 - 40 feet >40 feet	20 10 0	20
Is the top of bedrock or transmissive indurated sediments located above the water table?	Yes No	20 0	20
Artificial conduits present within the zone of contamination.	Present and intersecting the water table. Present but not intersecting the water table. Not present.	10 5 0	—
		Total Site Characteristics Score:	100

* Predominant grain size based on Unified Soil Classification System or U.S. Dept. of Agriculture's Soil Classification Method.

** (>10 ppm TPH by Method 5030; >40 ppm TPH by Method 3550; >250 ppm O&G by Method 9071)

Table 2

Site Sensitivity Evaluation (SSE)

Initial Cleanup Level (Step 2) — Final Cleanup Level (Step 3)

Low Boiling Point Hydrocarbons

Total Site Characteristics Score	Initial Cleanup Level TPFH (ppm) EPA Method 5030
>150	≤10
121-150	20
91-120 ✓	40
61-90	60
31-60	80
0-30	100

Select Site Category* →

		Final Cleanup Level
Category A & B (Multiply initial cleanup level by 1)	1 x ____ =	____ ppm
Category C & D (Multiply initial cleanup level by 2)	2 x ____ =	____ ppm
Category E (Multiply initial cleanup level by 3)	3 x 40 =	120 ppm

Medium Boiling Point Hydrocarbons

Total Site Characteristics Score	Initial Cleanup Level TPFH (ppm) EPA Method 3550
>150	≤40
121-150	80
91-120 ✓	160
61-90	240
31-60	320
0-30	400

Select Site Category* →

		Final Cleanup Level
Category A & B (Multiply initial cleanup level by 1)	1 x ____ =	____ ppm
Category C & D (Multiply initial cleanup level by 2)	2 x ____ =	____ ppm
Category E (Multiply initial cleanup level by 3)	3 x 160 =	480 ppm

Oil & Grease (O&G)

Total Site Characteristics Score	Initial Cleanup Level O&G (ppm) EPA Method 9071
>150	≤250
121-150	400
91-120	550
61-90	700
31-60	850
0-30	1000

Select Site Category* →

		Final Cleanup Level
Category A & B (Multiply initial cleanup level by 1)	1 x ____ =	____ ppm
Category C & D (Multiply initial cleanup level by 2)	2 x ____ =	____ ppm
Category E (Multiply initial cleanup level by 3)	3 x ____ =	____ ppm

* See Site Category Descriptions

TABLE 3
SITE SENSITIVITY EVALUATION (SSE)

SITE CATEGORY DESCRIPTIONS

CATEGORY A (*Site meets any one of the criteria)*

1. Water Supply well(s) contaminated and not served by accessible public water supply.
2. Vapors present in confined areas at explosive or health concern levels.
3. Treated surface water supply in violation of the safe drinking water standards.

CATEGORY B (*Any One*)

1. Water supply well(s) contaminated, but served by accessible public water supply.
2. Water supply well(s) within 1500 feet of site, but not contaminated and not served by accessible public water supply.
3. Vapors present in confined areas but not at explosive or health concern levels.

CATEGORY C (*Both*)

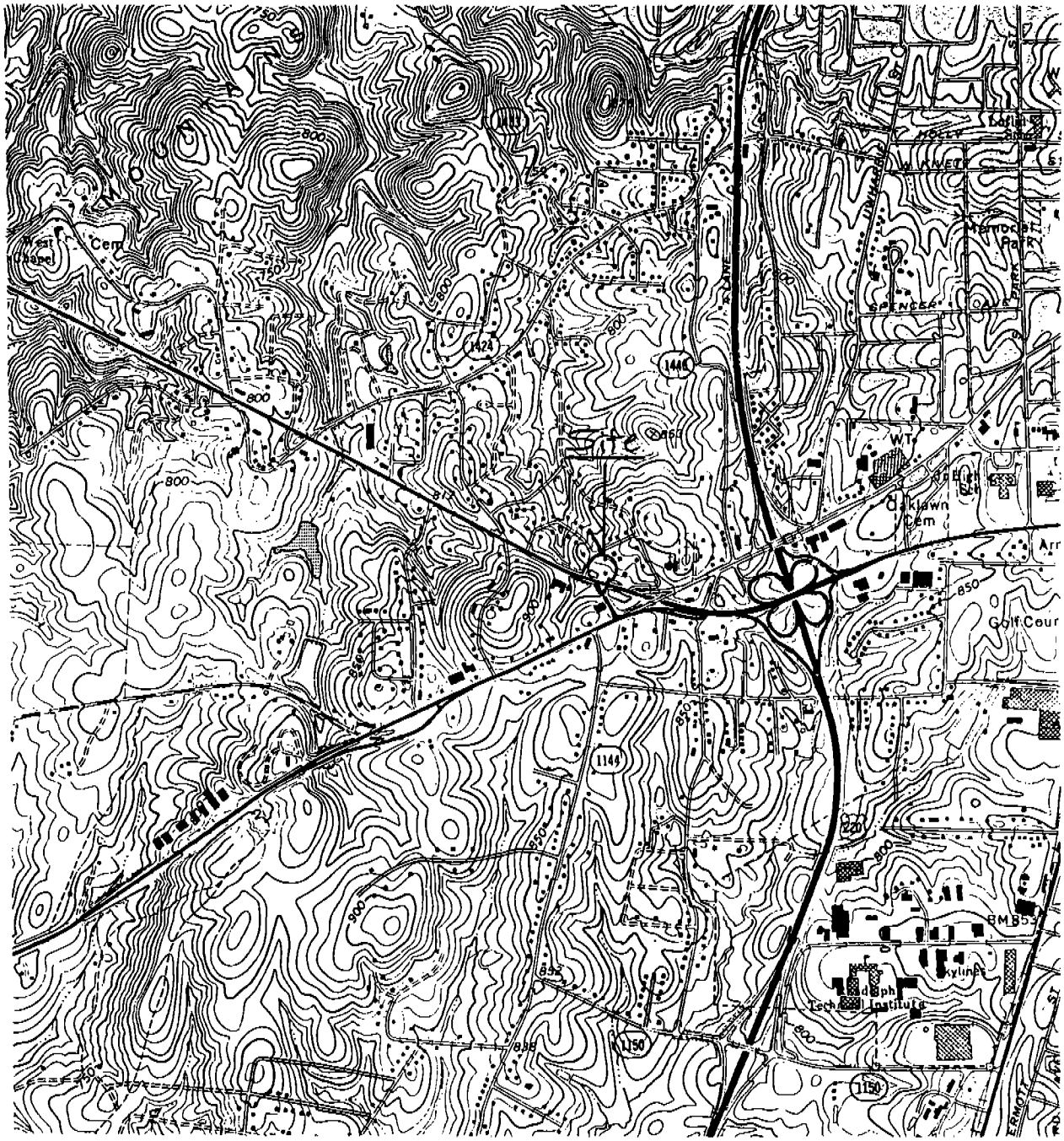
1. No known water supply well(s) contaminated.
2. Water supply well(s) greater than 1500 feet from site but not served by accessible public water supply.

CATEGORY D (*Both*)

1. No known water supply well(s) contaminated.
2. Water supply well(s) within 1500 feet of site but served by accessible public water supply.

CATEGORY E (*Both*)

1. No known water supply well(s) contaminated or within 1500 feet of site.
2. Area served by accessible public water supply.



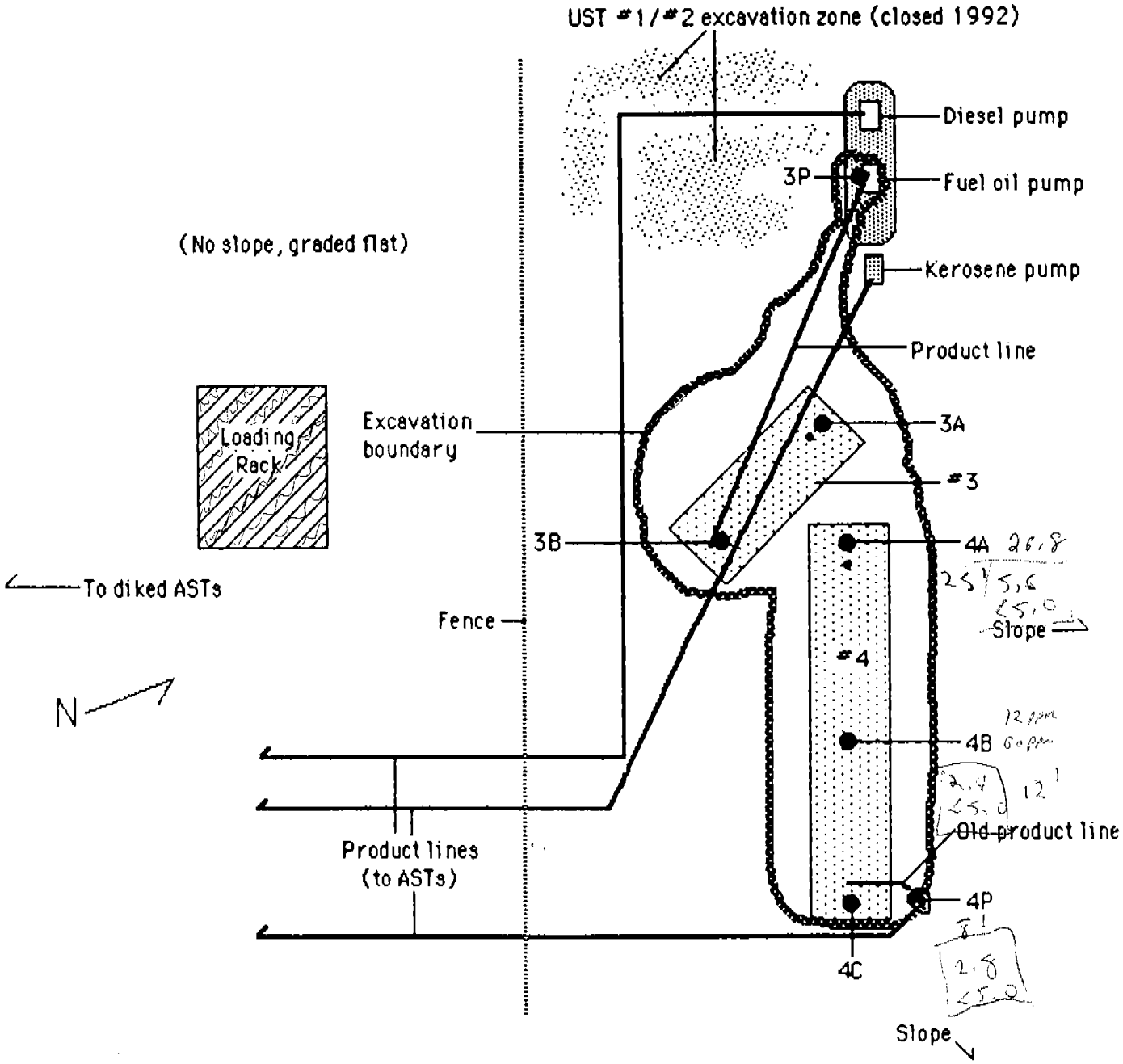
BASE MAP

UST INVESTIGATION FOR VERNON POOLE & COMPANY, INC.

ECONO OIL 64 WEST, ASHEBORO, NC 27203

USGS ASHEBORO QUADRANGLE, 7.5 MINUTE SERIES MAP

SCALE: 1" = 2,000'



Site: Econo Oil 64 West
Asheboro, NC
Scale: 1" = 10'
Key: #3 = 2000 UST/fuel oil
#4 = 4000 UST/diesel
●— 3P = Sample points with ID's

Blue Ridge Labs
P.O. Box 2940 • Pine Mountain Road
Lenoir, North Carolina 28645
Telephone (704) 728-0149

CLIENT: Certifoam Services, Inc.
P. O. Box 5524
Winston-Salem, NC 27113

Attention: Mr. H. Danner, Jr.

DATE RECEIVED: September 12, 1994

DATE REPORTED: September 13, 1994

SAMPLE NUMBER	SAMPLE DESCRIPTION
409-1961A	Soil; 4A-[illegible]-EO for 5030/3550. 4A-25'
409-1961B	Soil; 4B-[illegible]-EO for 5030/3550. 4B-12'
409-1961C	Soil; 4[illegible]-8-EO for 5030/3550.

PARAMETER	RESULTS	MQL	DATE ANALYZED
409-1961A - 5030	5.6	1.0 mg/kg	9/12/94
3550	*	5.0 mg/kg	9/12/94
409-1961B - 5030	2.4	1.0 mg/kg	9/12/94
3550	*	5.0 mg/kg	9/12/94
409-1961C - 5030	2.8	1.0 mg/kg	9/12/94
3550	*	5.0 mg/kg	9/12/94

REPORTED BY: _____
D. R. Wessinger - General Manager

* Concentrations are below Minimum Quantification Limit except where noted.

NC Laboratory Certificate No. 275.

409-1961

Blue Ridge Labs
P.O. Box 2940 • Pine Mountain Road
Lenoir, North Carolina 28645
Telephone (704) 728-0149

CHAIN OF CUSTODY RECORD

CLIENT: Certi Foam Services

PROJECT NAME: Econo oil

Sample I.D.	Sample Type	Collection Date	Collection Time	Pres.	Int.	Requested Analysis
4A-2' - E.O.	soil	9-7-94	10:15	iced	D.E.	5030/3550
4B-2' E.O.	soil	9-7-94	10:50	iced	D.E.	5030/3550
4P-8' E.O.	soil	9-7-94	11:50	iced	D.E	5030/3550

RELINQUISHED BY:	DATE	RECEIVED BY:
David A Eaker	9-7-94 (3:30)	Nancy Dunn
Nancy Dunn	9/12/94 (8:30)	

Page 1 of 1

DECEMBER 20TH, 1993

CLOSURE REPORT & GEOLOGIST'S ASSESSMENT: REMOVAL OF 1 - 2,000 GALLON AND 1 - 4,000 GALLON UNDERGROUND STORAGE TANKS (USTs)

SITE: ECONO OIL 64 WEST
US HWY 64 WEST, ASHEBORO
RANDOLPH COUNTY, NC
FACILITY ID #0-018606

TANK OWNER: VERNON POOLE & COMPANY
P.O. BOX 506
ASHEBORO, NC 27204
910/629-3134

PREPARED BY: CERTIFOAM SERVICES, INC./
SALEM ENVIRONMENTAL, INC.
P.O. BOX 5524
WINSTON-SALEM, NC 27113-5524
910/661-9231
910/661-9241 (FAX)

HARVEY DANNER, PROJECT MANAGER
ANDREW RARING, PH.D., P.G., PROJ. GEOLOGIST

1.0 PROJECT SUMMARY

Removal of the two remaining USTs at this facility uncovered soil contamination. Source was line/pump leakage coupled with overfill. Soil will be removed to Soil Reclaiming, Inc., of Sanford for disposal. Minor soil impact remains in situ, with a borings investigation planned to determine the plume spread.

2.0 SITE & AREA CHACTERISTICS

The site is located in west Asheboro on US Hwy 64 amidst rolling hills with an average relief of 50-100 feet. All municipal services are available, and no known supply wells operate within 1500 feet of the site. A copy from the Asheboro Quadrangle, US Geological Survey 7.5 Minute Series, has the site circled. Scale is 1" = 2,000'.

Slope falls toward the site from a steep bank at its rear (north). Ground cover is a mix of grass, asphalt and gravel. Surficial drainage would accumulate into a drainage ditch in along Hwy. 64; it then runs NNW, discharging into a creek about 400' from the site. There are monitor wells on site which have been installed by the DEM; they are tied to the investigation of another site in the vicinity

Beside the two USTs to be removed, there are ASTs (aboveground storage tanks) supplying gasoline and other fuels to the station, and all are inside a diked enclosure. Two USTs were also closed by removal in 1992. A loading rack for tank wagon truck delivery is situated between these ASTs and the USTs to be removed. A detailed site map is furnished.

Anticipated bedrock is hard to determine when the 1985 NC Geologic Map is consulted, as the site rests close to the boundary of three distinct formations. Metavolcanics are predominant, but the rock here could either be a felsic, mafic or metamudstone/meta-argillite. Residence is in the Carolina Slate Belt of the Piedmont Physiographic Province.

3.0 FIELD INVESTIGATION

Operations commenced on the 8th and concluded on the 9th of December. Excavation subcontractor was Ray Morton Construction of Asheboro (910-625-5204). After a product line to another pump was removed and capped temporarily, excavation began. Both tanks were purged by addition of dry ice.

Discolored and odorous soil was noted on top of and beside UST #3; overfill and product line leakage were the apparent sources. Tank bottom of #3 was at 8'3", and initial samples were collected at 9.5 feet. Soil was screened for volatiles with a Gastech Model 1238 Organic Vapor Analyzer (OVA). The process involves placing soil into a ziplock type bag (about 1/4 to 1/3rd its volume), sealing the bag and allowing 10 to 15 minutes for the soil gasses to equilibrate. Then, the probe from the OVA is inserted into the bag. The subsequent reading, expressed in parts per million of total organics, can suggest if hydrocarbon contamination is present, especially when coupled with a petroleum odor of any kind. Total organics levels as

high as 2400 ppm (parts per million) were recorded by the OVA at the 9.5' depth, so excavation continued until these subsided. By then, the pit had been deepened to between 15-16 feet. There, additional samples were collected, again by a hand trowel from the trackhoe bucket. Decontamination of the trowel was per tap water/phosphate-free soap wash followed by a methanol rinse and drying period. Care was taken to avoid disturbing the soil excessively. Disposable latex gloves were worn during sample collection to prevent cross-contamination. Soil was packed tightly into the glass jars supplied by the lab, which had teflon seal, screw caps. Temperature was maintained under 40 degrees by ice chest with a solid block coolant and refrigeration throughout our hold time. At the pump associated with UST #3 the sample was collected at a depth of 5' by stainless steel hand auger. Here, soil as discolored extremely shallow depths (6-8"), and odor subsided by 1.5'. OVA of the soil at 5' was under 50 ppm.

At UST #4 there was evidence of overfill and line leakage as well. However, it subsided at much shallower depths, except at the fill end (#4A). Tank bottom was at 7' 11", so #4B & #4C were collected at 9'. At the pump #4P was taken at 3.5 feet, while #4A was from 14'. Again, silt backfill was present around the UST, and native soil was similar, as follows:

-0 to 0.5': unsorted gravel
-0.5 to 9': brown tan silt, with white clay blebs beginning @ 6'
-9 to 10': gray siltstone, brown relicts, very brittle
-10 to 15': white clay mixed with gray siltstone and light amounts of brown silt clay
-15 to 16.5': white clays, very plastic & dense

Approximately 135-140 cubic yards of soil was stockpiled on site per DEM regulations. Disposition will be by transfer to a commercial incineration facility, once quotes are received. UST condition was also good, with only light rusting present. No noteworthy pitting was seen. Clean, compacted fill was added to grade. Ground water was not intercepted during our investigation.

4.0 LABORATORY DATA

Blue Ridge Labs, Inc., (N.C. License #275) of Lenoir, N.C., handled the analytical procedures. Any questions involving their activity should be referred to Mr David Wessinger of the same, who is the general manager. Office hours are 8:30 AM to 5:30 PM; telephone is 704/728-0149.

As both tanks supplied middle distillates, samples were analyzed per EPA 5030-8015, Purge & Trap Method, with EPA 3550 Sonication Process added. Chains of sample custody are enclosed, as are the results, which cross-reference the lab to field ID's. The following are the

TPH (total petroleum hydrocarbon) counts, expressed in ppm:

Sample ID#	EPA 5030	EPA 3550
3A-9.5'	37.4*	290*
3A-16'	<1.0	<5.0
3B-9.5'	221*	1309*
3B-15'	<1.0	<5.0
3P-5'	<1.0	<5.0
4A-14'	26.8*	<5.0
4B-9'	12.0*	60.8*
4C-9'	<1.0	<5.0
4P-3.5'	19.1*	6.8

* - Exceeds current regulatory guidance thresholds for additional investigation of 10 ppm (5030) & 40 ppm (3550).

5.0 GEOLOGIST'S ASSESSMENT

Closure of two USTs at this facility uncovered widespread soil contamination. The majority has been removed and stored on site. The only impacted soil, albeit minor, remains under where UST #4 was buried. Here, a SSE (Site Sensitivity Evaluation) will be completed. which will require a borings investigation. The impacted soil under #3 has been removed to below regulatory limits. Once the stockpile is remediated and the SSE establishes a cleanup level for TPH, below which impacted soil can be left in place, a clean closure should be achieved.

6.0 WARRANTY & LIMITATIONS

We, the undersigned, attest that our work was carried out with full respect to regulatory guidance and, where such guidance was not applicable, standard industry procedures. The data received from the independent lab is assumed to be accurately delineated and transposed. Should we find otherwise, we reserve the right to alter this report as necessary. The assessment applies to the time and place of sampling only; no other expressed or implied warranty is offered. This report is the exclusive property of Vernon Poole & Company, and it will not be released without prior approval.

Sincerely,

Harvey C. Danner, Jr.
President/Project Manager

Andrew M. Raring, Ph.D., P.G.
Senior Project Geologist

GW/UST-2

Site Investigation Report For Permanent Closure or Change-in-Service of U.S.T.

FOR TANKS IN **NC**

Return Completed Form To:
The appropriate DEM Regional Office according to the county of the facility's location. [SEE MAP ON REVERSE SIDE OF OWNER'S COPY (PINK) FOR REGIONAL OFFICE ADDRESS].

State Use Only
I.D. Number _____
Date Received _____

INSTRUCTIONS

Complete and return within (30) days following completion of site investigation.

I. Ownership of Tank(s)

Owner Name: Vernon Poole & Company
(Corporation, Individual, Public Agency, or Other Entity)
Street Address: P.O. Box 506
County: Randolph
City: Asheboro State: NC Zip Code: 27204
Telephone Number: 910, 629-3134
(Area Code)

II. Location of Tank(s)

Facility Name: Ecoue Oil 64 West
(or Company)
Facility ID # (if available): 0-018606
Street Address (or State Road) US 64 West
County: Randolph City: Asheboro Zip Code: 27203
Telephone Number: 910, 629-3134
(Area Code)

III. Contact Person

Name: Phillip Poole Job Title: Pres. Tel. No.: 910/629-3134
Closure Contractor: Certifoam Services, Inc Address: P.O. Box 5524; W-S, N.C. 27113 Tel. No.: 910/661-9231
Primary Consultant: Andrew Paring Address: Same Tel. No.: 910/661-9295
Lab: Blue Ridge Labs, Inc. Address: P.O. Box 2940; Lenoir, N.C. 28645 Tel. No.: 704/728-0149

IV. U.S.T. Information

V. Excavation Condition

VI. Additional Information Required

Tank No.	Size in Gallons	Tank Dimensions	Last Contents	Water in Excavation		Free Product		Notable Odor or Visible Soil Contamination	
				Yes	No	Yes	No	Yes	No
3	2000	64x144	Kerosene		X		X	X	
4	4000	64x288	Diesel		X		X	X	

See reverse side of pink copy (owner's copy) for additional information required by N.C. - DEM in the written report and sketch.

NOTE: The site assessment portion of the tank closure must be conducted under the supervision of a Professional Engineer or Licensed Geologist. After Jan.1, 1994, all closure site assessment reports must be signed and sealed by a P.E. or L.G.

VII. Check List (Check the activities completed)

PERMANENT CLOSURE (For Removing or Abandoning-in-place)

- [x] Contact local fire marshal.
- [x] Notify DEM Regional Office before abandonment.
- [x] Drain & flush piping into tank.
- [x] Remove all product and residuals from tank.
- [x] Excavate down to tank.
- [x] Clean and inspect tank.
- [x] Remove drop tube, fill pipe, gauge pipe, vapor recovery tank connections, submersible pumps and other tank fixtures.
- [x] Cap or plug all lines except the vent and fill lines.
- [ ] Purge tank of all product & flammable vapors.
- [x] Cut one or more large holes in the tanks.
- [x] Backfill the area.

Date Tank(s) Permanently closed: December 8th, 1993
Date of Change-In-Service: _____

ABANDONMENT IN PLACE

- [ ] Fill tank until material overflows tank opening.
- [ ] Plug or cap all openings.
- [ ] Disconnect and cap or remove vent line.
- [ ] Solid inert material used - specify: _____

REMOVAL

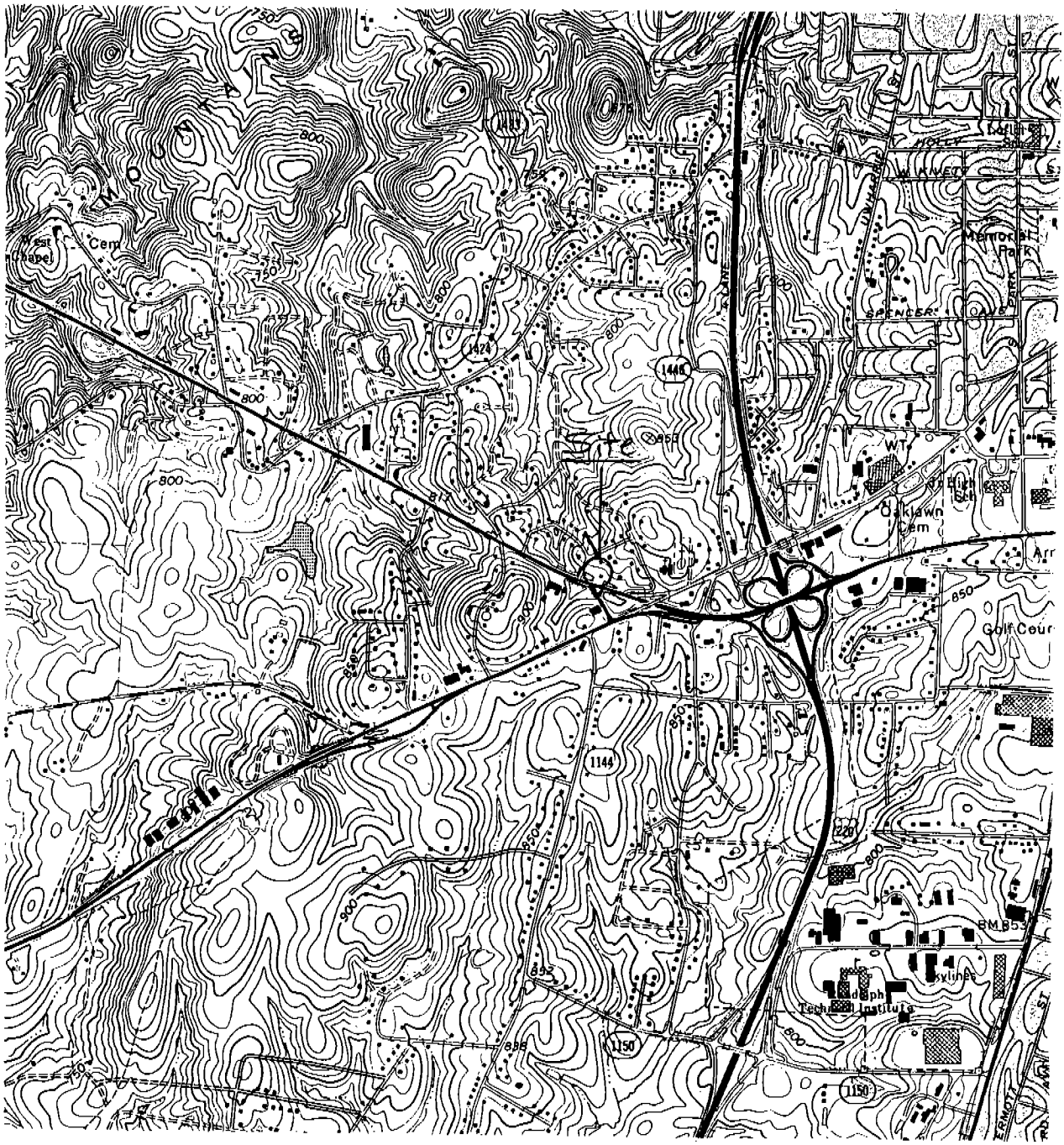
- [x] Create vent hole.
- [x] Label tank.
- [ ] Dispose of tank in approved manner.

Final tank destination: Safeway Tank Disposal; Colfax, N.C.

VIII. Certification (Read and Sign)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete.

Print name and official title of ~~owner~~ owner's authorized representative	Signature	Date Signed
Harvey C. Danner, Jr.; Pres	Harvey Danner	Dec. 20th, 1993



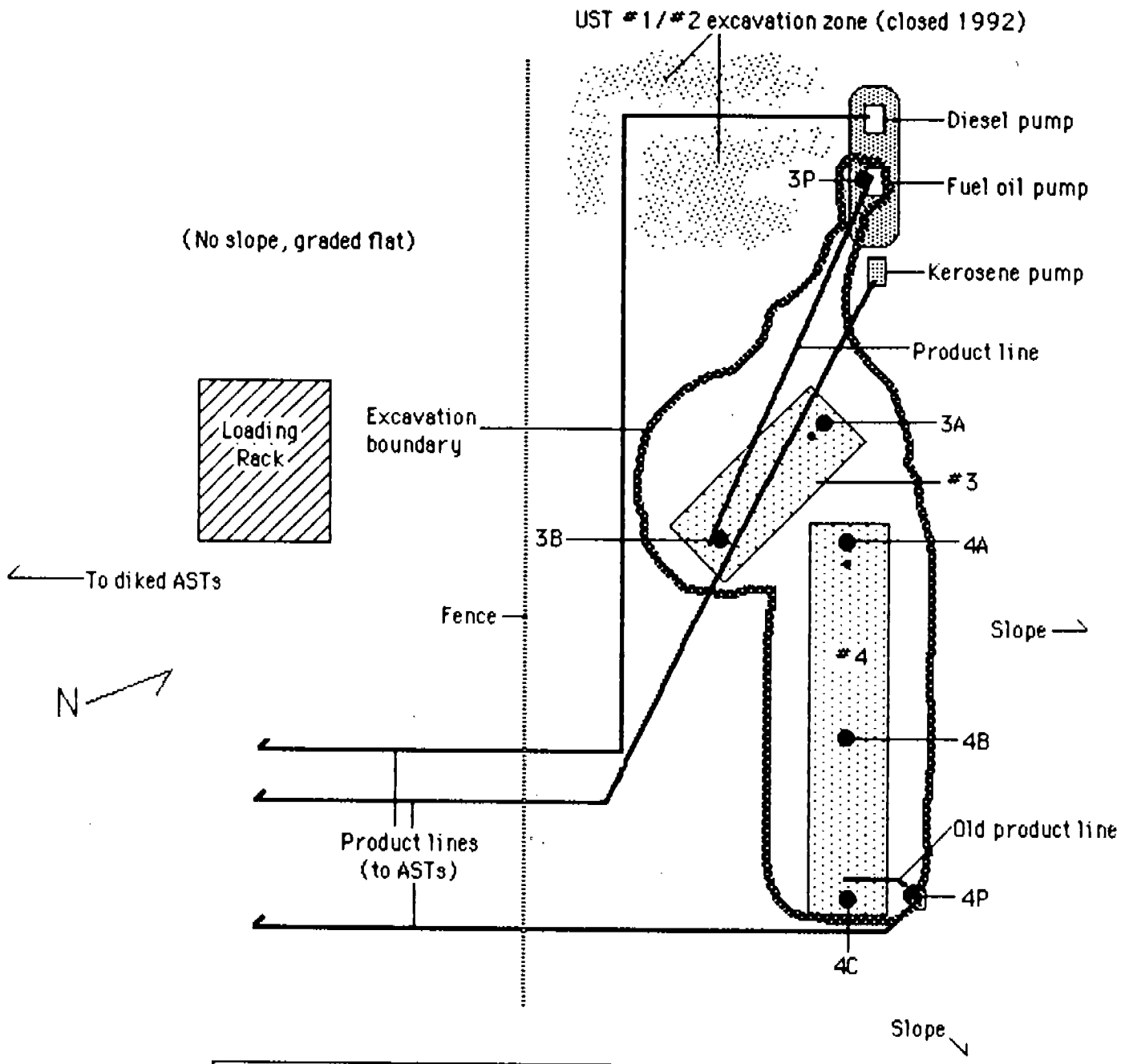
BASE MAP

UST INVESTIGATION FOR VERNON POOLE & COMPANY, INC.

ECONO OIL 64 WEST, ASHEBORO, NC 27203

USGS ASHEBORO QUADRANGLE, 7.5 MINUTE SERIES MAP

SCALE: 1" = 2,000'



Site: Econo Oil 64 West
Asheboro, NC
Scale: 1" = 10'
Key: #3 = 2000 UST/fuel oil
#4 = 4000 UST/diesel
● 3P = Sample points with ID's

Certifoam

Site: Econo Oil
64 West
Asheboro, NC.

CHAIN OF CUSTODY RECORD

SAMPLE ID: 3A-9.5-POC
TYPE OF SAMPLE: Soil
LOCATION
DATE SAMPLED: 12/8/93 TIME SAMPLED: 12:10
TESTS REQUESTED: 3550/5030
PRESERVATIVE: Iced/Refrig
SIGNATURE: HCO

SAMPLE ID: 3B-9.5-POC
TYPE OF SAMPLE: Soil
LOCATION
DATE SAMPLED: 12/8/93 TIME SAMPLED: 12:01
TESTS REQUESTED: 3550/5030
PRESERVATIVE: Iced/Refrig
SIGNATURE: HCO

SAMPLE ID: 3A-16-POC
TYPE OF SAMPLE: Soil
LOCATION
DATE SAMPLED: 12/9/93 TIME SAMPLED: 10:22
TESTS REQUESTED: 3550/5030
PRESERVATIVE: Iced/Refrig
SIGNATURE: HCO

SAMPLE ID: 3B-15-POC
TYPE OF SAMPLE: Soil
LOCATION
DATE SAMPLED: 12/9/93 TIME SAMPLED: 9:58
TESTS REQUESTED: 3550/5030
PRESERVATIVE: Iced/Refrig
SIGNATURE: HCO

SAMPLE ID: 3P-5-POC
TYPE OF SAMPLE: Soil
LOCATION
DATE SAMPLED: 12/9/93 TIME SAMPLED: 11:26
TESTS REQUESTED: 3550/5030
PPESERVATIVE: Iced/Refrig
SIGNATURE: HCO

SAMPLE ID:
TYPE OF SAMPLE:
LOCATION
DATE SAMPLED: TIME SAMPLED:
TESTS REQUESTED:
PRESERVATIVE:
SIGNATURE:

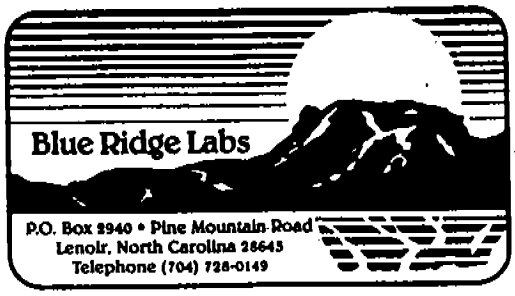
RELINQUISHED BY:	DATE	RELINQUISHED TO:
Nancy Danner	12/10/93 (3:15)	

NOTE: Use back for additional information and maps.

3/25/91

312-2927

Certified



Site: Econo Oil
64 West
Asheboro, NC.

CHAIN OF CUSTODY RECORD

SAMPLE ID: 4A-14-POC
TYPE OF SAMPLE: Soil
LOCATION:
DATE SAMPLED: 12/9/93 TIME SAMPLED: 11:10
TESTS REQUESTED: 3550/5030
PRESERVATIVE: Iced/Refrig
SIGNATURE: HCD.

SAMPLE ID: 4B-9-POC
TYPE OF SAMPLE: Soil
LOCATION:
DATE SAMPLED: 12/8/93 TIME SAMPLED: 4:06
TESTS REQUESTED: 3550/5030
PRESERVATIVE: Iced/Refrig
SIGNATURE: HCD.

SAMPLE ID: 4C-9-POC
TYPE OF SAMPLE: Soil
LOCATION:
DATE SAMPLED: 12/8/93 TIME SAMPLED: 3:59
TESTS REQUESTED: 3550/5030
PRESERVATIVE: Iced/Refrig
SIGNATURE: HCD.

SAMPLE ID: 4P-3.5-POC
TYPE OF SAMPLE: Soil
LOCATION:
DATE SAMPLED: 12/9/93 TIME SAMPLED: 10:34
TESTS REQUESTED: 3550/5030
PRESERVATIVE: Iced/Refrig
SIGNATURE: HCD.

SAMPLE ID:
TYPE OF SAMPLE:
LOCATION:
DATE SAMPLED: TIME SAMPLED:
TESTS REQUESTED:
PPESERVATIVE:
SIGNATURE:

SAMPLE ID:
TYPE OF SAMPLE:
LOCATION:
DATE SAMPLED: TIME SAMPLED:
TESTS REQUESTED:
PRESERVATIVE:
SIGNATURE:

RELINQUISHED BY:	DATE	RELINQUISHED TO:
Jenny Damm	12/10/93 (3:15)	

NOTE: Use back for additional information and maps.

3/25/91

Blue Ridge Labs
P.O. Box 2940 • Pine Mountain Road
Lenoir, North Carolina 28645
Telephone (704) 728-0149

CLIENT: Certifoam Services, Inc.
P. O. Box 5524
Winston-Salem, NC 27113

Attention: Mr. H. Danner, Jr.

DATE RECEIVED: December 10, 1993

DATE REPORTED: December 15, 1993

SAMPLE NUMBER	SAMPLE DESCRIPTION
312-2928A	Soil; 3A-9.5-POC for 5030, 3550.
312-2928B	Soil; 3A-16-POC for 5030, 3550.
312-2928C	Soil; 3B-9.5-POC for 5030, 3550.
312-2928D	Soil; 3B-15-POC for 5030, 3550.
312-2928E	Soil; 3P-5-POC for 5030, 3550.

PARAMETER	RESULTS	MQL		DATE ANALYZED
312-2928A - 5030	37.4	1.0	mg/kg	12/13/93
- 3550	290	5.0	mg/kg	12/13/93
312-2928B - 5030	*	1.0	mg/kg	12/13/93
- 3550	*	5.0	mg/kg	12/13/93
312-2928C - 5030 **	221	1.0	mg/kg	12/13/93
- 3550 **	1309	5.0	mg/kg	12/13/93

* Concentrations are below Minimum Quantification Limit except where noted.

NC Laboratory Certificate No. 275.

PARAMETER	RESULTS	MQL		DATE ANALYZED
312-2928D - 5030	*	1.0	mg/kg	12/13/93
- 3550	*	5.0	mg/kg	12/13/93
312-2928E - 5030	*	1.0	mg/kg	12/13/93
- 3550	*	5.0	mg/kg	12/13/93

** NOTE: Estimated values beyond linear range.

REPORTED BY: _____

D. R. Wessinger - General Manager

* Concentrations are below Minimum Quantification Limit except where noted.

NC Laboratory Certificate No. 275.

Blue Ridge Labs
P.O. Box 2940 • Pine Mountain Road
Lenoir, North Carolina 28645
Telephone (704) 728-0149

CLIENT: Certifoam Services, Inc.
P. O. Box 5524
Winston-Salem, NC 27113

Attention: Mr. H. Danner, Jr.

DATE RECEIVED: December 10, 1993

DATE REPORTED: December 14, 1993

SAMPLE NUMBER	SAMPLE DESCRIPTION
312-2927A	Soil; 4A-14-POC for 5030, 3550.
312-2927B	Soil; 4B-9-POC for 5030, 3550.
312-2927C	Soil; 4C-9-POC for 5030, 3550.
312-2927D	Soil; 4P-3.5-POC for 5030, 3550.

PARAMETER	RESULTS	MQL		DATE ANALYZED
312-2927A - 5030	26.8	1.0	mg/kg	12/13/93
- 3550	*	5.0	mg/kg	12/13/93
312-2927B - 5030	12.0	1.0	mg/kg	12/13/93
- 3550	60.8	5.0	mg/kg	12/13/93
312-2927C - 5030	*	1.0	mg/kg	12/13/93
- 3550	*	5.0	mg/kg	12/13/93
312-2927D - 5030	19.1	1.0	mg/kg	12/13/93
- 3550	6.8	5.0	mg/kg	12/13/93

REPORTED BY: _____

D. R. Wessinger - General Manager

* Concentrations are below Minimum Quantification Limit except where noted.

NC Laboratory Certificate No. 275.

Salem Environmental/Certifoam Services
P.O. Box 5535
Winston-Salem, North Carolina 27113-5535
(800) 862-9231 (910) 661-9231
Fax (910) 661-9241

December 30th, 1996

Mr Thomas Moore
NC-DEHNR
DWQ/Groundwater
585 Waughtown Street
Winston-Salem, North Carolina 27107-2241

Re: Econo Mart 64 West; Vernon Poole & Co., Asheboro, Randolph County

Dear Mr Moore:

Enclosed is the combined site map from the above site along with the certificates of disposal. The USTs closed in 1993 (2000 & 4000) were carried to Safeway Tank, while those in 1992 (2-550's) are in use at one of Mr Poole's customers.

Please call either Andrew or myself with any questions.

Sincerely,

Harvey C. Danner, Jr.
President/Project Manager

Andrew M. Raring, Ph.D., P.G.
Senior Geologist

NORTH CAROLINA LICENSED SEAL 1087 GEOLOGIST ANDREW M. RARING

cc: Mr Phillip Poole, Econo Oil
econo64m.doc

Vernon Poole & Co., Inc.
D/B/A ECONO OIL CO. &
ECONO MARTS

GASOLINE — FUEL OIL — KEROSENE

POST OFFICE BOX 506 • ASHEBORO, NORTH CAROLINA 27204
DAY PHONE: (910) 629-3134 • FAX: (910) 626-7945

MAY 27, 1997

MR. THOMAS MOORE
NC-DWQ/GROUNDWATER
585 WAUGHTOWN ST.
WINSTON-SALEM, NC 27107-2241

DEAR MR. MOORE;

IN 1992 TWO 550 GALLONS USTS WERE CLOSED BY EXCAVATION AT MY ECONO 64 WEST SITE. UPON REMOVAL THEY WERE FOUND TO BE IN GOOD CONDITION. THEY WERE CLEANED, REPAINTED AND ARE IN USE AS SKID FUEL ASTS BY VARIOUS CUSTOMERS WHKN THE NEED ARISES.

SINCERELY,

Phillip V. Poole

PHILLIP V. POOLE
PRESIDENT
VERNON POOLE & CO.INC
D/B/A ECONO OIL COMPANY

TOTAL P.01

SAFEWAY TANK DISPOSAL, Inc.

CERTIFICATE OF TANK DISPOSAL

Customer
Certifoam Services
P.O. Box 5535
Winston Salem, N.C. 27113

Date May 22, 1997

Transported by: L&M

TANK #	SIZE	WEIGHT	PRODUCT	RESIDUE	ORIGIN
7997	4,000	3640#	D. Fuel	16 gals	Econo Oil
7998	2,000	1820#	D. Fuel	10 gals	Asheboro, N.C.
Total residue				26 gals	

Tanks were disposed in accordance with API 1604, 1987 Removal and Disposal of used Underground Petroleum Storage Tanks. Residue was Disposed in accordance with U.S.EPA Regulations by licensed sub-contractor. Lead free scrap steel was recycled by

United Metal Recyclers on 1/11/94 .

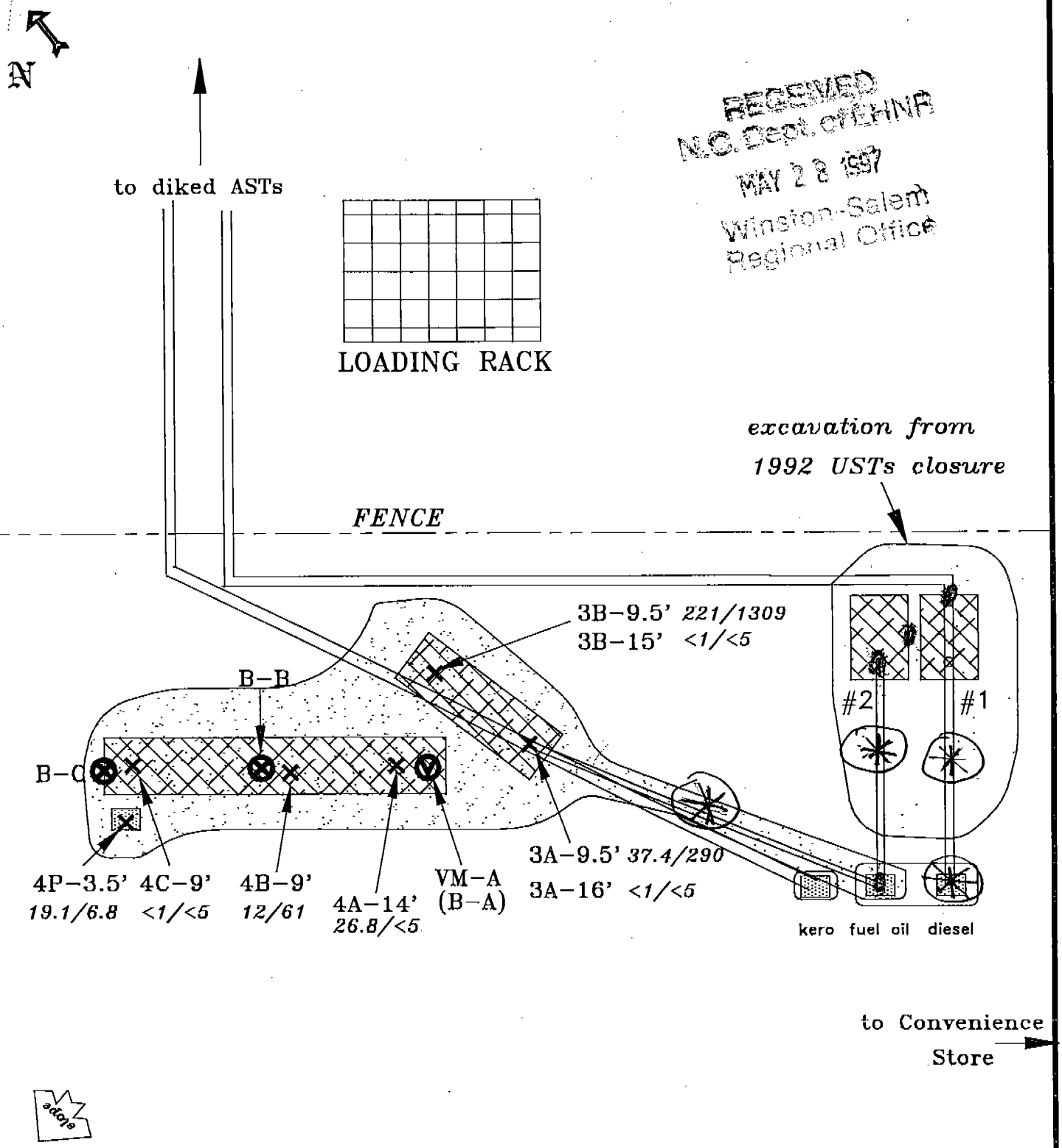


FIGURE 2-SITE MAP: ECONO OIL

BULK PLANT, US 64W., ASHEBORO, RANDOLPH COUNTY

⊗ *soil samples boring* × *soil grab sample* ⊛ -Needs samples

⊘ *soil boring/vapor monitoring well*

SCALE: 1" = 10'

SALEM/CERTIFOAM, Inc. *SEPTEMBER, 1994*

Salem Environmental/Certifoam Services
P.O. Box 5535
Winston-Salem, North Carolina 27113-5535
(800) 862-9231 (910) 759-9700
(910) 759-9704 Fax

May 16th, 1997

Mr Larry Coble
NC-DEHNR/DWQ
585 Waughtown Street
Winston-Salem, North Carolina 27107-2241

Re: Econo Oil 64 West, Randolph County; Enforcement Action response

Dear Mr Coble:

The enclosed response to you office's 12/3 request for data on this site was forwarded in early January along with data on another of Econo's sites located on E. Salisbury St. (Econo #11). The Groundwater Section responded to the Econo #11 site, but Mr Poole never received a reply to the above site. No additional response was made by Mr Poole, as he was waiting for yours.

In light of this, he requests that enforcement be waived. Mr Poole had responded through this report, which covered all aspects needing remedy in the 12/3 DWQ correspondence.

Sincerely yours,

Harvey C. Danner, Jr.
President/Project Manager

Salem Environmental/Certifoam Services
P.O. Box 5535
Winston-Salem, North Carolina 27113-5535
(800) 862-9231 (910) 661-9231
Fax (910) 661-9241

December 30th, 1996

Mr Thomas Moore
NC-DEHNR
DWQ/Groundwater
585 Waughtown Street
Winston-Salem, North Carolina 27107-2241

Re: Econo Oil 64 West; Asheboro, Randolph County
Incident #13629

Dear Mr Moore:

Thank you for your letter of 12/3 with regard to this site. Each item will be covered in order as listed.

A/B. *Dispenser/line sampling:* Excavation did extend to each associated dispenser at USTs 3 & 4. At #4 the pump was only 2' from the UST's side. so no line sample was collected. At #3 no sample was collected along the line; the area under line #3 was excavated to a depth of 15-16'. A sample can be obtained here if the regional office wishes.

At USTs 1 & 2 the product lines had been disconnected and mostly removed. Only UST #2 had a capped line extending from it (4-5' long). This was done at least one year before closure. This was documented during an inspection by Mitchell Bowyer of the DEHNR/DWQ. As there were no lines extending to the pump island at closure, no samples were collected.

Please note that three lines now extending to the three operating dispensers are from ASTs. These are on the 1993 closure map.

C. *Disposal manifests:* Econo Oil had pumped the contents from all four tanks for re-use. The residues and tanks were disposed of by Safeway Tank of Colfax; copies of the manifests are enclosed.

D. *Base Map:* The map from the 1993 closure is enclosed, which is the correct map. (The 1992 map is also supplied). USTs #3 & #4 were incorrectly shown on the 1992 map. I have

drawn in USTs 1 & 2, as well as their excavation boundary, on the 1993 map.

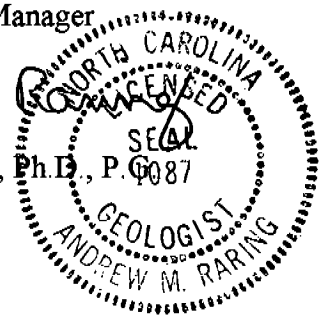
The kerosene pump/line situation was detailed in our 1992 closure report, and a highlighted copy is enclosed. I hope the product lines associated with the ASTs are clear from this map. Please do not hesitate to call either Andrew Raring or myself with any questions.

We, the undersigned, attest that our work was carried out with full respect to regulatory guidance and, where such guidance was not applicable, standard industry procedures. The data received from the independent lab is assumed to be accurately delineated and transposed. Should we find otherwise, we reserve the right to alter this report as necessary. The assessment applies to the time and place of sampling only; no other expressed or implied warranty is offered. This report is the exclusive property of Vernon Poole & Company, and it will not be released without prior approval.

Sincerely,

Harvey C. Danner, Jr.
President/Project Manager

Andrew M. Raring, Ph.D., P.G.
Senior Geologist



cc: Mr Phillip Poole, Econo Oil
econo64e.doc

Vernon Poole & Co., Inc.
D/B/A ECONO OIL CO. &
ECONO MARTS

GASOLINE — FUEL OIL — KEROSENE

POST OFFICE BOX 506 • ASHEBORO, NORTH CAROLINA 27204
DAY PHONE: (910) 629-3134 • FAX: (910) 626-7945

MAY 27, 1997

MR. THOMAS MOORE
NC-DWQ/GROUNDWATER
585 WAUGHTOWN ST.
WINSTON-SALEM, NC 27107-2241

DEAR MR. MOORE;

IN 1992 TWO 550 GALLONS USTS WERE CLOSED BY EXCAVATION AT MY ECONO 64 WEST SITE. UPON REMOVAL THEY WERE FOUND TO BE IN GOOD CONDITION. THEY WERE CLEANED, REPAINTED AND ARE IN USE AS SKID FUEL ASTS BY VARIOUS CUSTOMERS WHEN THE NEED ARISES.

SINCERELY,

Phillip V. Poole

PHILLIP V. POOLE
PRESIDENT
VERNON POOLE & CO.INC
D/B/A ECONO OIL COMPANY

Salem Environmental/Certifoam Services
P.O. Box 5535
Winston-Salem, North Carolina 27113-5535
(800) 862-9231 (910) 759-9700
(910) 759-9704 Fax

July 14th, 1997

Ms Thomas Moore
NC-DEHNR
DWQ/Groundwater
585 Waughtown Street
Winston-Salem, North Carolina 27107-2241

Re: Econo Oil 64 West, Asheboro, Randolph County

Dear Mr Moore:

Per your letter of June 16th, we have collected soil samples at the four points indicated. The presence of a 550 gallon skirted AST forced the location of one sample (L2-3') to be about 2' from where requested.

Field Operations: The consulting geologist reviewed the site and marked the sample points. The project manager supervised collection on Monday, July 7th.

The only notable odor was at boring #PD. Here, soil was lightly odorous to a depth of 2-2.5'. Our organic vapor analyzer (OVA) registered 35 ppm total organics from soil collected between 1-1.5'. No discoloration was present, however. The OVA level for soil collected at the sample depth of 4' was <10 ppm. No odor or notable discoloration was found in any of the other borings. A Gastech Model 1238 Organic Vapor Analyzer (OVA) screened all the above samples. The process involves placing soil into a ziplock type bag (about 1/4 to 1/3rd its volume), sealing the bag and allowing 10 to 15 minutes for the soil gasses to equilibrate. Then, the probe from the OVA is inserted into the bag. The subsequent reading, expressed in parts per million of total organics, can suggest if hydrocarbon contamination is present, especially when coupled with a petroleum odor of any kind.

Depths of sample collection were 10' at L3; soil had been excavated to a depth of 9+ feet during closure there. At L1 & L2 soil was from 3', and at the diesel pump (#PD) collection depth was 4'.

Decontamination of the hand auger used in sample collection was per tap water/phosphate-free soap wash followed by a methanol rinse and drying period. Disposable latex gloves were worn during sample collection to prevent cross-contamination. Soil was

packed tightly into the glass jars supplied by the lab, which had teflon seal, screw caps. Care was taken to avoid disturbing the soil excessively. Temperature was maintained under 40 degrees by ice chest with ice slurry and refrigeration in an ice slurry throughout our hold time.

Laboratory Results: Analyses were performed by Bioremediation Research, Inc., of Pinnacle, N.C., which operates under N.C. License #480. As the systems supplied kerosene and diesel fuel, analysis was per EPA 5030-8015 Modified, Purge & Trap Method, with EPA 3550 Sonication Process added. These are required under current regulatory guidelines. Field ID's are cross referenced with the lab ID's on the results, which are enclosed. The chain of sample custody is also furnished.

Results were the following, all expressed in parts per million (ppm = mg/kg), total petroleum hydrocarbons (TPH):

SAMPLE ID#	EPA 5030	EPA 3550
L3-10'	<10	<20
PD-4'	<10	<20
L2-3'	<10	<20
L1-3'	<10	<20

Current DWQ guidelines require additional investigation or remediation if results exceed 10 ppm TPH per the 5030 Method or 40 ppm TPH by the 3550 Process.

Warranty & Limitations: We, the undersigned, attest that our work was carried out with full respect to regulatory guidance and, where such guidance was not applicable, standard industry procedures. The data received from the independent lab is assumed to be accurately delineated and transposed. Should we find otherwise, we reserve the right to alter this report as necessary. Any assessment rendered by the consulting geologist applies to the time and place of sampling only; no other expressed or implied warranty is offered. This report is the exclusive property of Vernon Poole & Company, and it will not be released without prior approval.

Sincerely,

Harvey C. Danner, Jr.
Project Manager

Andrew M. Raring, Ph.D., P.G.
Consulting Geologist

NORTH CAROLINA LICENSED 1087 GEOLOGIST ANDREW M. RARING

econo64u.doc
cc: Mr Phillip Poole, Vernon Poole & Company

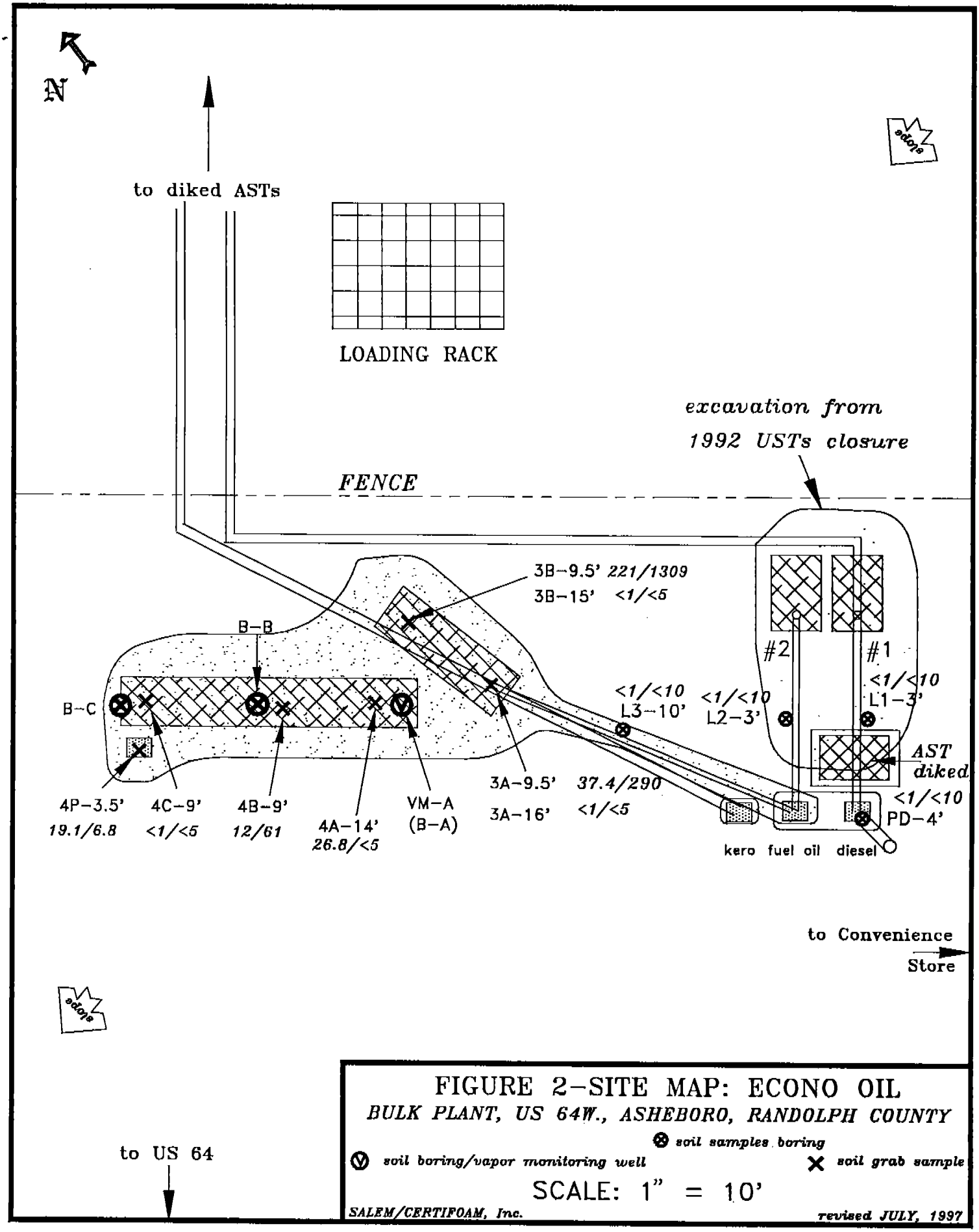


FIGURE 2–SITE MAP: ECONO OIL

BULK PLANT, US 64W., ASHEBORO, RANDOLPH COUNTY

⊗ *soil samples boring*

Ⓥ *soil boring/vapor monitoring well* × *soil grab sample*

SCALE: 1" = 10'

SALEM/CERTIFOAM, Inc. *revised JULY, 1997*

BIOREMEDIATION RESEARCH, LTD.
ROUTE 2, BOX 180-C
PINNACLE, NC 27043
PHONE (910) 325-2318

CERTIFICATE OF ANALYSIS

NC Cert. # 480

July 9, 1997

Client: Salem Environmental
Project: Econo Oil

EPA 5030/M8015;3550/M8015: California Method; Diesel Range

Client Sample	Lab Sample	TPH(5030)	TPH(3550)
L3-10'	9700838	< 10 ppm	< 20 ppm
PD-4'	9700839	< 10	< 20
L2-3'	9700840	< 10	< 20
L1-3'	9700841	< 10	< 20

Kenneth H. Goehle, Ph.D.

CHAIN OF CUSTODY RECORD

Use ballpoint pen only, press hard

Client Name: Salem Env. Co [redacted]

Project : Econo oil

Attention: H. Danner

Telephone: 759-9700

BIOREMEDIATION RESEARCH. LTD.
Route 2 Box 180-C
Pinnacle, NC 27043
Telephone (910) 325-2318

Sample ID	Yr. 97 Date	Time	Matrix	Please indicate the number of each size of sample container and any preservatives which were used. e.g., 2-HNO3 indicates 2 containers w/ nitric acid. 40 ml	120 ml	250 ml	500 ml	950 ml	other	Suspected Contaminant	Level 0	Low	Med	High	Analysis Requested	Lab use only Lab ID
L-3 10'	7-7	9:55	SOIL		✓						✓				5030/3550	838
PD-4'	7-7	9:25	SOIL		✓						✓				5030/3550	839
L2-3'	7-7	10:35	SOIL		✓						✓				5030/3550	840
L1-3'	7-7	10:20	SOIL		✓						✓				5030/3550	841
TRIP BLANK		9:50	H_2O												TRIP BLANK	602 842

Relinquished by: (Sig.)	Date	Time	Received by: (Sig.)	Date	Time
D. Eden Collector	7-7-97	3:10			
Relinquished by: (Sig.)	Date	Time	Received by: (Sig.)	Date	Time
Relinquished by: (Sig.)	Date	Time	Received by: (Sig.)	Date	Time
			K. Hoehle Lab	7/7/97	3:10

Remarks:

on ice slurry
trip blank is included

WHITE - ORIGINAL CANARY - REPORT PINK - CUSTOMER COPY

Salem Environmental/Certifoam Services
P.O. Box 5535
Winston-Salem, North Carolina 27113-5535
(800) 862-9231 (910) 759-9700
(910) 759-9704 Fax

August 22nd, 1997

Mr Cameron Weaver
NC-DEHNR
DWQ/Groundwater
585 Waughtown Street
Winston-Salem, North Carolina 27107-2241

Re: Econo Mart 64 West, Hwy 64, Asheboro, Randolph County

Dear Mr Weaver:

Enclosed is a bill for the soil disposed at the above referenced site. This includes contaminated soil from the excavation of the 2-550's and the 4000 and 2000, as well as some around the loading rack and AST farm area that was visibly stained. (Econo's bulk storage ASTs are behind a fence at this same location).

The weight of 55.17 tons equates to roughly 368 cubic yards (1.5 tons/cu.yd.). Of this some 190 is attributed to the 2000/400 excavation and 80 to the 2-550s. The size of both stockpiles was underestimated for both. The remainder is from the AST/loading rack area.

Please contact us with any questions; your consideration to this incident file is appreciated.

Sincerely yours,

Harvey C. Danner, Jr.
President/Project Manager

SOIL RECLAIMING, INC.
Associate of
LEE BRICK & TILE COMPANY, INC.
P.O. Box 1027
Sanford, N.C. 27331
Taxpayer ID # 56-1690834

INVOICE # 0971

JOB LOCATION Econo Oil Company
Highway 64 East
Asheboro, NC 27204

JOB NO.

P.O. #

DATE January 11, 1994

Ray Morton Construction Co., Inc.
Rt. #7, Box 554
Asheboro, NC 27203

Attention: Mr. Alan Morton

Accounts Net 15 over 30 days will be charged 1½% on monthly statements.

QTY.		DESCRIPTION	AMOUNT
551.720	Tons	Contaminated Soil Class #2 Disposal Cost @$16.00 per ton	$8,827.52
60		Weights on 30 reports @$4.00 each	240.00

RECEIVED
JAN 19 1994

SUB-TOTAL	$9,067.52
TAX	
MAILING CHARGES	
PHONE CHARGES	

THANK YOU FOR LETTING US SERVE YOU!!!

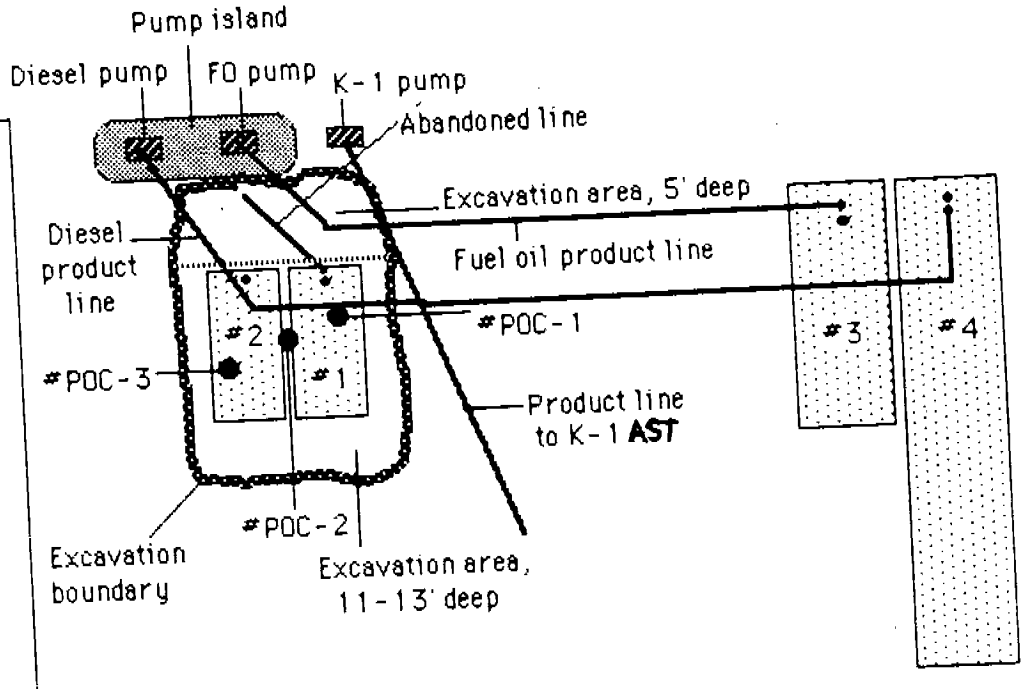
PAST DUE AMOUNTS			BALANCE DUE
90 DAYS	60 DAYS	30 DAYS	$9,067.52

PLEASE PAY THIS AMOUNT

12/3

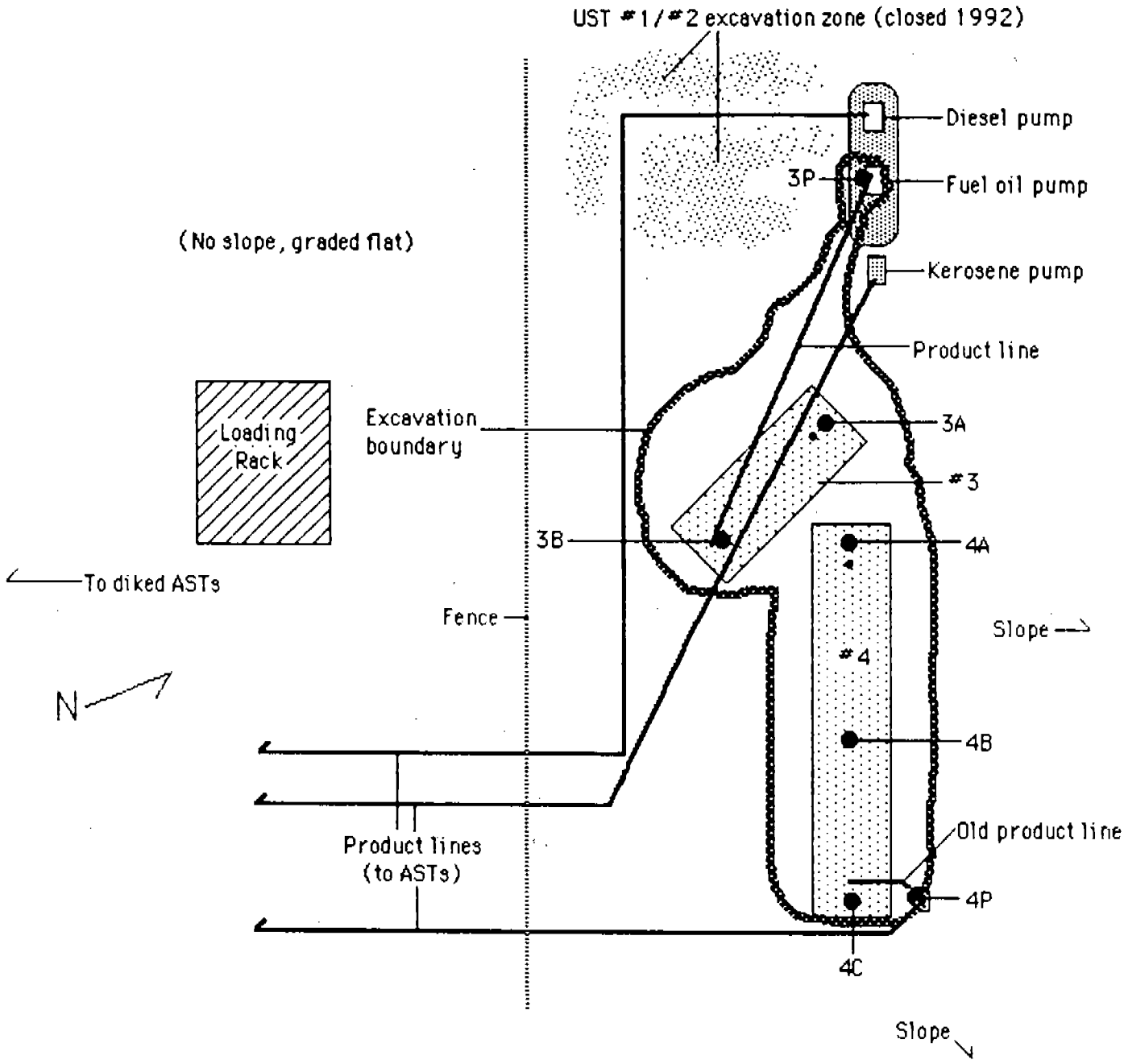
This site was broken into 2 files. The files do not match & some contradictions are present / updated MAP

N



Econo Oil Store/
Poole Oil Offices

Site: Econo Oil
US 64 West
Asheboro, NC
Scale: 1" = 10'
Key: #1/#2 = 550 USTs
#3 = 2000 UST
#4 = 4000 UST
● #POC= Sampling Points w/ ID's
= Boundary between excavation depths



Site: Econo Oil 64 West
Asheboro, NC
Scale: 1" = 10'
Key: #3 = 2000 UST/fuel oil
#4 = 4000 UST/diesel
●— 3P = Sample points with ID's

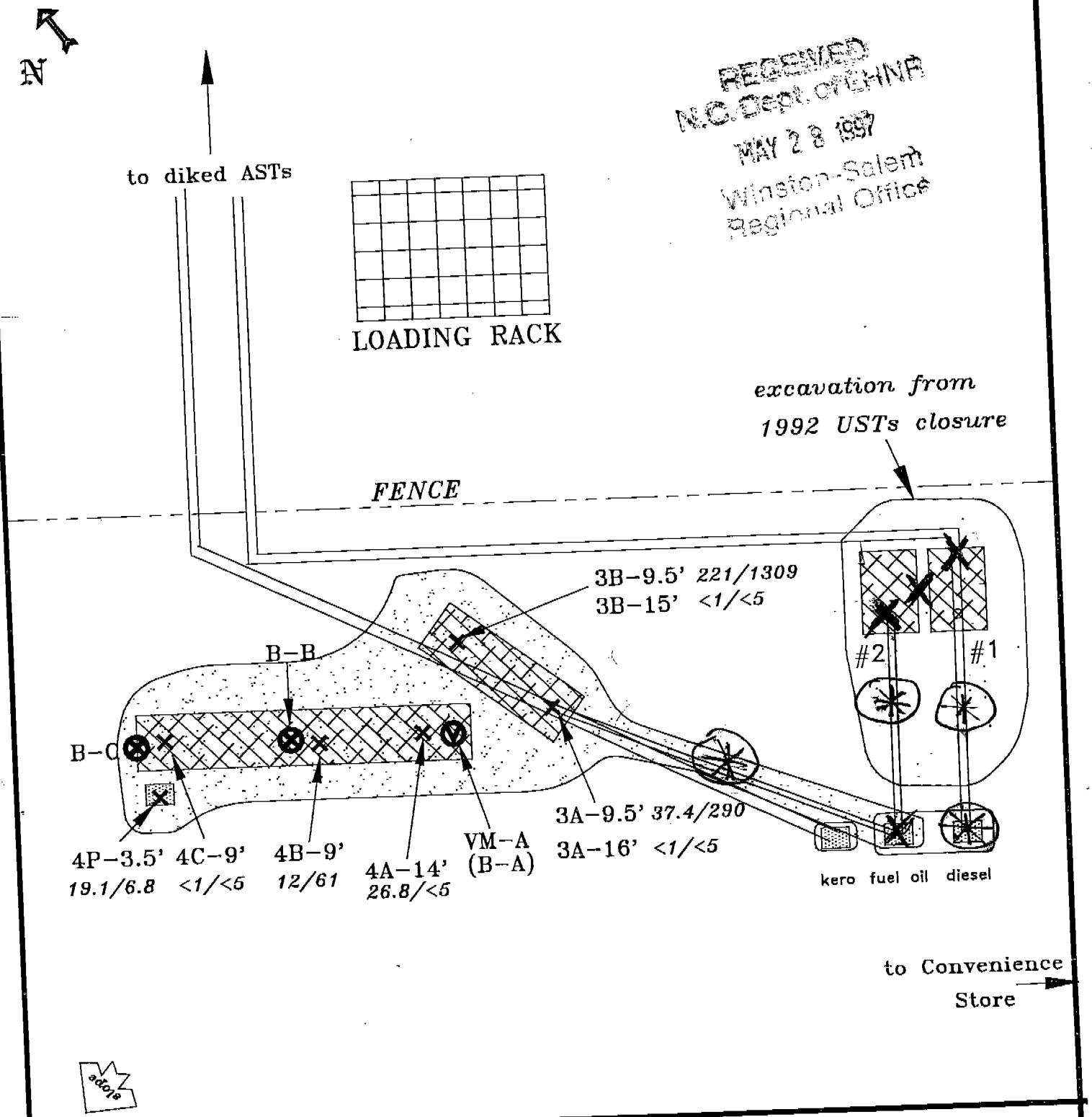


FIGURE 2–SITE MAP: ECONO OIL

BULK PLANT, US 64W., ASHEBORO, RANDOLPH COUNTY

⊗ *soil samples boring* × *soil grab sample* ⊗ – NRSCA samples

Ⓥ *soil boring/vapor monitoring well*

SCALE: 1" = 10'

SEPTEMBER, 1994

SALEM/CERTIFOAM, Inc.

State of North Carolina
Department of Environment, Health and Natural Resources
Winston-Salem Regional Office

James G. Martin, Governor
William W. Cobey, Jr., Secretary

DIVISION OF ENVIRONMENTAL MANAGEMENT
GROUNDWATER SECTION

Margaret Plemmons Foster
Regional Manager

Nov. 5, 1992

Phillip Poole
Vernon Poole & Co. Inc.
P.O Box 506
Asheboro NC 27203

Dear Mr. Poole:

This letter is to acknowledge your Notification of Tank Closure as received Oct. 30 1992 and filed as Econo Oil 64 West. All future correspondence must contain the file name as well as address and county in the subject to ensure its receipt into out filing system.

The results of the required assessment (NCAC Title 15A Subchapter 2N Section .0803 and 40 CFR Part 280.72) should be submitted to this office no later than thirty (30) days after the tank is closed. If there is evidence of a release or suspected release, it must be reported within twenty-four (24) hours.

Also, please remember that to permanently close a tank, owners and operators must empty and clean it by removing all liquids and accumulated sludges as required under 15A 2N .0802 and 40 CFR 280.71(b).

Groundwater Section staff will be conducting random site visits to ensure that underground storage tank closures are conducted as required in 15A 2N .0802 and .0803 and 40 CFR 280.71 and 280.72. Any violations documented may be submitted for enforcement action.

Enclosed is an attachment that is to be used for the information required for closure assessment. You may contact me at the letterhead address or telephone number between the hours of 9:00 - 10:00 a.m. and 1:30 - 2:30 p.m. if you have any questions concerning these requirements.

Sincerely,

W. Waddell Watters

W. Waddell Watters
Hydrogeologist II

WWW/ahl
Enclosure
cc: WSRO
Certified Mail Return Receipt Req.

8025 North Point Boulevard, Suite 100, Winston-Salem, N.C. 27106-3203 • Telephone 919-896-7007 • Fax 919-896-7005

State of North Carolina
Department of Environment,
Health and Natural Resources
Winston-Salem Regional Office

James B. Hunt, Jr., Governor
Jonathan B. Howes, Secretary
Leesha Fuller, Regional Manager

DIVISION OF ENVIRONMENTAL
MANAGEMENT
GROUNDWATER SECTION
November 3, 1993

Phillip Poole
Vernon Poole & Co., Inc.
P.O. Box 506
Asheboro, NC 27204

Dear Mr. Poole:

This letter is to acknowledge your Notification of Tank Closure as received October 28, 1993, and filed as **Econo Oil 64 West.** All future correspondence must contain the file name as well as address and county in the subject to ensure its receipt into our filing system.

Please be advised that work performed which involves site assessment or any work requiring detailed technical knowledge of site conditions, should be performed by persons, firms, or professional corporations who are duly licensed to offer geological or engineering services by the appropriate occupational licensing board. The results of the required assessment (NCAC Title 15A Subchapter 2N Section .0803) should be submitted to this office no later than thirty (30) days after the tank is closed. If there is evidence of a release or suspected release, it must be reported within twenty-four (24) hours.

Also, please remember that to permanently close a tank, owners and operators must empty and clean it by removing all liquids and accumulated sludges as required under 15A 2N .0802.

If a specific date for tank closure was not noted on the UST-3 form, then a specific date must be given 5 - 7 working days prior to tank closure. Groundwater Section staff will be conducting random site visits to ensure that underground storage tank closures are conducted as required in 15A 2N .0802 and .0803. Any violations documented may be submitted for enforcement action.

Enclosed is an attachment that is to be used for the information required for closure assessment. You may contact me at the letterhead address or telephone number if you have any questions concerning these requirements.

Sincerely,
W. Waddell Watters

Waddell Watters
Hydrogeologist II

Enclosure
cc: WSRO
Certifoam Services, Inc.

POLLUTION INCIDENT/U.S.T. LEAK REPORTING FORM

Department of Environment, Health, Natural Resources
Division of Environmental Management
GROUNDWATER SECTION

Confirm. GW Contamination (Y/N) ____
Major Soil Contamination (Y/N) ____
Minor Soil Contaminatin (Y/N) Y

Incident # 13629

Date Incident Occurred or Leak Detected ~~12/2/92~~ ① 12/8/93 ② 12/1/92

INCIDENT DESCRIPTION

Incident Location/Name ECONO OIL, 64 WEST

Address US 64 WEST

City/Town ASHEBORO | County RANDOLPH | Region WINSTON-SALEM

Briefly Describe Incident ① DURING TANK REMOVAL, DISCOVERED SOIL CONTAMINATION. SSE CONDUCTED AND SOIL CONTAMINATION WAS LEFT IN-SITU. CONSULTANT STATES THAT ~~SSE~~ SSE ALLOWS CONTAMINATION LEVELS TO BE LEFT IN-SITU (1993)
② 1992 INCIDENT: CONTAMINATED SOIL FOUND DURING TANK EXCANATION. SUBSEQUENT SOIL REMOVAL LOWERED IN-SITU LEVELS TO BELOW ACTION LEVELS.

POTENTIAL SOURCE OWNER-OPERATOR

Potential Source Owner-Operator PHILLIP V. POOLE | Telephone 910 629-3134

Company VERNON POOLE & COMPANY | Street Address PO BOX 506

City ASHEBORO | County RANDOLPH | State NC | Zip Code 27204-0506

OWNERSHIP
0. N/A 1. Municipal 2. Military 3. Unknown (4) Private 5. Federal 6. County 7. State

OPERATION TYPE
0. N/A 1. Public Service 2. Agricultrural 3. Residential 4. Educational/Relig. 5. Industrial (6) Commercial 7. Mining

POLLUTANTS INVOLVED

MATERIALS INVOLVED	AMOUNT LOST	AMOUNT RECOVERED
~~KEROSENE~~ FUEL OIL)	UNK	
DIESEL } ①	(UNK)	
KERO + FUEL OIL ⇒ (2)	UNK	

SOURCE OF POLLUTION

PRIMARY SOURCE OF POLLUTION (Select one)
1. Intentional dump
2. Pit, pond, lagoon
(3.) Leak-underground
4. Spray irrigation
5. Land application
6. Animal feedlot
7. Source unknown
8. Septic tank
9. Sewer line
10. Stockpile
11. Landfill
12. Spill-surface
13. Well
14. Dredge spoil
15. Nonpoint source

PRIMARY POLLUTANT TYPE (Select one)
1. Pesticide/herbicide
2. Radioactive waste
(3.) Gasoline/diesel
4. Heating oil
5. Other petroleum prod.
6. Sewage/septage
7. Fertilizers
8. Sludge
9. Solid waste leachate
10. Metals
11. Other inorganics
12. Other organics

LOCATION
(1.) Facility
2. Railroad
3. Waterway
4. Pipeline
5. Dumpsite
6. Highway
7. Residence
8. Other

SETTING
(1.) Residential
2. Industrial
(3.) Urban
4. Rural

DJJ 2/23/96
Site Priority Ranking 000/E

D.E.M. Regional Contact RICHARD L. SIEG | Signature Richard L. Sieg | Date 3/15/95

GW-61 Revised 3/92

Incident Name: ECONO OIL #4 WEST Region/County: WSRO / RA

Groundwater Incident File # 13629 Ranking Performed by: DJG

Date: 2/23/96

NORTH CAROLINA
GROUNDWATER CONTAMINATION INCIDENT MANAGEMENT
SITE PRIORITY RANKING SYSTEM

(To be completed by Regional Office)

		Points Awarded
I.	**IMMINENT HAZARD ASSESSMENT**	
A.	Explosion - free product in confined areas or vapor phase product detected at or above 20% of the lower explosive limit or at health concern levels; award 50 points total	—
B.	Fire - free product subject to ignition in exposed areas such as surface water impoundments, streams, excavations, etc.; award 50 points total	—
II.	**EXPOSURE ASSESSMENT**	
A.	Contaminated Drinking Water Supplies	
1.	Private, domestic water supply well containing substances in concentrations exceeding 15A NCAC 2L groundwater quality standards; award 10 points per well	—
2.	Public or institutional water supply well containing substances in concentrations exceeding 15A NCAC 2L groundwater quality standards; award 20 points per well	—
3.	Exceedances of Class WS-1 surface water quality standards as a result of groundwater discharge; award 20 points per surface water body impacted	—
4.	If a water supply well identified in items II. A. 1 and II. A. 2 cannot be replaced by an existing public water supply source requiring hook-up only; award additional 10 points per irreplaceable well	—
B.	Threat to Uncontaminated Drinking Water Supplies	
1.	Private, domestic water supply well located within 1500 feet down gradient of contaminant source; award 10 points per well	—
2.	Public or institutional water supply well located within 1500 feet downgradient of contaminant source; award 15 points per well	—
3.	Raw surface water intake for public water supply located within 1/2 mile downgradient of contaminant source; award 5 points per water supply system	—
4.	If any well identified in items II. B. 1 and II. B. 2 or an intake in item II. B. 3. are located within 250 feet of contaminant source; award additional 20 points total (not per well or intake)	—
C.	Vapor Phase Exposure	
1.	Product vapors detected in inhabitable building(s) below 20% of the lower explosive limit or health concern levels; award 30 points total	—

Points Awarded

2. Product vapors detected in other confined areas (uninhabitable buildings, sewer lines, utility vaults, etc.) below 20% of the lower explosive limit; award 10 points total ____

II. SOURCE ASSESSMENT

A. Uncontrolled or Unabated Primary Source (including dumpsites, stockpiles, lagoons, land applications, septic tanks, landfills, underground and above ground storage tanks, etc.)

1. Suspected or confirmed source remains in active use and continues to receive raw product, wastewater or solid waste; award 30 points per source ____

2. Active use of suspected or confirmed source has been discontinued or source was caused by a one-time release of product or waste, however, source continues to release product or contaminants into the environment; award 10 points per source ____

IV. ENVIRONMENTAL VULNERABILITY ASSESSMENT

A. Vertical Contaminant Migration - Literature or well logs indicate that no confining layer is present above bedrock or within twenty feet of land surface; award 10 points total ____

B. Horizontal Contaminant Migration - Data or observations indicate that no discharge points or aquifer discontinuities exist between the source and the nearest downgradient drinking water supply; award 10 points total ____

C. Existing Groundwater Quality - The worst case monitor or supply well contains contaminant levels:

1. At less than 10 times the 2L groundwater standards; award 5 points ____

2. Between 10 and 100 times the 2L groundwater standards; award 20 points ____

3. Greater than 100 times the 2L groundwater standards; award 40 points ____

V. REGIONAL OFFICE RESPONSE (LETTER RANK)

Priority A - (Site meets any one of the criteria)

1. Water supply well(s) contaminated and no alternate water supplies available.

2. Vapors present in confined areas at explosive or health concern levels.

3. Treated surface water supply in violation of the safe drinking standards.

Priority B - (Any One)

1. Water supply well(s) contaminated, but alternate water supplies available.

2. Water supply well(s) within 1500 feet of site, but not contaminated and no alternate water supplies available.

3. Vapors present in confined areas but not at explosive or health concern levels.

Priority C - (Both)

1. No water supply well(s) contaminted.

2. Water supply well(s) greater than 1500 feet from site, no alternate water supply available.

Priority D - (Both)

1. No water supply well(s) contaminted.

2. Water supply well(s) within 1500 feet of site but alternate water supplies available.

Priority E - (Both)

1. No water supply well(s) contaminated or within 1500 feet of site.

2. Area served by alternate water supply.

TOTAL POINTS AWARDED 000/E

#/Letter

3

State of North Carolina
Department of Environment,
Health and Natural Resources
Regional Health Office

James B. Hunt, Jr., Governor
Jonathan B. Howes, Secretary
Leesha L. Fuller, Regional Manager

GROUNDWATER SECTION

July 17, 1996

Dear Underground Storage Tank Owner/Operator:

The General Assembly of North Carolina introduced legislation during the 1995 Short Session to address the continued solvency of the Leaking Petroleum Underground Storage Tank Cleanup Funds. The Underground Storage Tank (UST) Senate Bill 1317 (SB 1317) was ratified on June 21, 1996. SB 1317 requires the Department of Environment, Health, and Natural Resources (Department) to rank all UST-related contamination incidents according to the Section's revised Site Priority Ranking System which classifies sites as: A, B (highest priority), C, D or E (lower priority). Further, SB 1317 requires the Department to notify the UST owner, operator and/or other responsible party (RP), as applicable, of the ranking of their site. Please find below a statement notifying you of the priority ranking the Department has assigned to your site.

Your Site has been assigned a priority ranking score of:

RA-5

INCIDENT #13629 COUNTY RA
SITE: ECONO OIL 64 WEST
PRIORITY RANKING: E 000
OWNER: PHILLIP V POOLE
COMPANY: VERNON POOLE & CO

SB 1317 temporarily suspends the requirement to cleanup a discharge or release from a petroleum UST for lower priority sites (i.e., those ranked C, D, or E). This legislation is effective July 21, 1996. Therefore, costs for site assessment or corrective actions at C, D or E sites which were incurred after July 21, 1996 will not be reimbursed from either the Commercial

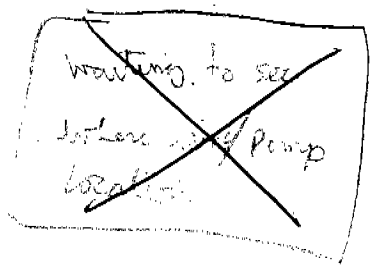
585 Waughtown Street, Winston-Salem, NC 27107-2241 Telephone 910-771-4600 FAX 910-771-4632

SITE Econo Oil 64 West REVIEW DATES 12/2/96

92 report

- ✓ USGS MAP
- ✓ BASE MAP
- ✓ ORIENTATION OF UST
- ✓ DIMENSIONS OF UST 42X92
- ✓ VOLUME OF UST2(S&O) 4000 /2000
- ✓ MATERIAL STORED Kerosene / Fuel oil
- ✓ APPROPRIATE SAMPLE LOCATIONS
- OK ✓ DEPTH OF SAMPLE 11
- ✓ SIDE OF FLOOR SAMPLE
- ✓ DEPTH OF TANK BURIAL 5'9"
- ✓ HOW SAMPLE WAS COLLECTED Hand Trowel
- ✓ SAMPLES PRESERVED & TRANSPORTED
- ✓ TOOLS DECONTAMINATED
- ✓ TIME/DATE SAMPLE COLLECTED
- ✓ TIME/DATE LAB RECEIVED
- ✓ LAB RESULTS
- ✓ CHAIN-OF-CUSTODY
- ✓ ANALYSIS METHOD 5030/3550
- ✓ REFERENCE TO SAMPLING POINT ON MAP
- ✓ CORRECT # OF TANK SAMPLES
- NA ✓ PUMP/LINE SAMPLES Take line samples from 2,000/4,000 tank/when observed
- ✓ WITHIN 14 DAY HOLDING TIME (or appropriate time)
- ✓ TANK DESTINATION Poole Oil Co. to be sold as scrap
- ✓ (1) DISPOSITION OF SOIL
- ✓ CLOSURE DATE Dec 1, 1992
- ✓ COMPLETE UN/UST-2 FORM
- ✓ CERTIFIED LABORATORY USED
- NA SEE ACCEPTABLE
- ✓ SEALED BY (2) OF PE (CLOSURES 1/1/94 AND AFTER)

Andrew Parling



SITE Econo Oil 64 West REVIEW DATES ______

ok Lines are conflicting for both maps

- ✓ USGS MAP
- ✓ BASE MAP
- ✓ ORIENTATION OF UST 11' 24'
- ✓ DIMENSIONS OF UST 64"x144" / 64 x 288
- ✓ VOLUME OF UST 2000 / 4000
- ✓ MATERIAL STORED fuel oil / diesel
- ___ APPROPRIATE SAMPLE LOCATIONS
- ✓ DEPTH OF SAMPLE 12' 8' / 25'
- ✓ SIDE OR ~~FLOOR SAMPLE~~
- ✓ DEPTH OF TANK BURIAL 8'3" / 7'11"
- ✓ HOW SAMPLE WAS COLLECTED
- ✓ SAMPLES PRESERVED & TRANSPORTED
- ✓ TOOLS DECONTAMINATED
- ✓ TIME/DATE SAMPLE COLLECTED
- ✓ TIME/DATE LAB RECEIVED
- ✓ LAB RESULTS
- ✓ CHAIN-OF-CUSTODY
- ✓ ANALYSIS METHOD 5030 / 3550
- ✓ REFERENCE TO SAMPLING POINT ON MAP
- ✓ CORRECT # OF TANK SAMPLES
- ✓ (X) PUMP/LINE SAMPLES need line samples / pump samples
- ✓ WITHIN 14 DAY HOLDING TIME (or appropriate time)
- ✓ (X) TANK DESTINATION Safeway Tank Disposal
- ✓ (X) DISPOSITION OF SOIL
- ✓ CLOSURE DATE Dec 8, 93
- ✓ COMPLETE GW/UST-2 FORM Safeway Tank disposal; Colfax, NC
- ✓ CERTIFIED LABORATORY USED
- ✓ SEE ACCEPTABLE
- ✓ SEALED BY (LG) OR PE (CLOSURES 1/1/94 AND AFTER)

30' no GW encountered sample collected at 25'

3B - 9.5' 221 ppm
3B - 15' 1309 ppm
<1.0 5030
<5.0 3550

Water was not encountered at 30'

- 2 maps are contradictory clarify
- questions about kerosene / need to sample where is tank

State of North Carolina
Department of Environment,
Health and Natural Resources
Winston-Salem Regional Office

James B. Hunt, Jr., Governor
Jonathan B. Howes, Secretary

DEHNR
DIVISION OF WATER QUALITY
GROUNDWATER SECTION

December 3, 1996

CERTIFIED MAIL: P-536 310 077
RETURN RECEIPT REQUESTED

Phillip Poole
Vernon Poole & Company
P.O. Box 506
Asheboro, NC 27204

SUBJECT: Underground Storage Tank (UST) Closure Assessment at Econo Oil 64 West, Us 64 West, Randolph County: Groundwater Incident Number 13629, Site Ranking E

Dear Mr. Poole:

The Groundwater Section of the Winston-Salem Regional Office is now reviewing the UST closure assessment for the subject location. Originally, submitted reports are reviewed based on requirements outlined in representative guidelines at the time of UST permanent closure. In order to determine whether or not the closure was performed in accordance with State or Federal regulations and/or guidelines, the Groundwater Section must be provided with the following information:

A. unless the tank excavation extended to all areas of the dispenser locations, samples are needed under associated dispensers -- one sample beneath each coupling joint location (swing joint, flexible connector) and one additional sample for every ten feet of island;

B. sample under all associated product lines with no less than one sample for lines 20 feet or shorter, and at least one sample for every 20 feet thereafter;

C. the disposal manifest and sludge manifest for the tank(s) OR the address of the person/company the tank(s) were transferred to, along with their letter of acceptance; and,

D. a base map (scale map) showing the orientation of the tanks, pumps, and product lines -- named roads, buildings, and underground utilities -- North arrow and identified sample locations. After reviewing the two maps sent in for the site, it can not be determined where everything is located. Several contradictions in the location of the tanks, pumps, and product lines is evident in the two base maps previously sent in. Please send in a map that combines all the tanks at the site and where samples were taken.

NA In addition please discuss the kerosene pump/tank location. Where is the kerosene tank now and was this tank system sampled?

Due to staffing constraints and excessive workloads, we did not have the opportunity to review your report until now. The above referenced items required by our regulations and/or guidelines, appear to be missing from the closure report. The item(s) should have been included in the initial closure report. Your cooperation in submittal of this required information is appreciated. Submission of these items will allow for a final review and consideration for closeout of the subject site. Please be advised that failure to submit the requested item(s) by the deadline specified in this letter will result in our inability to close your site, and may result in the recommendation for enforcement action for failure to submit a complete report.

Please submit the requested information listed above *30 days from receipt of this letter.*

If sampling was requested, it must be conducted according to current guidelines. All soil/groundwater sample analyses must be accompanied by a chain-of-custody and the sampling protocol. *Please note that all subsurface investigative work is now required to be supervised by a North Carolina Licensed Geologist or Professional Engineer, with all reports signed and sealed by that professional.* Please refer to the file name, **Econo Oil 64 West**, on the cover letter of your reply. This will help us speed up the review. If you have any questions, please contact me at the letterhead address and/or telephone number.

Sincerely,

Thomas Moore

Thomas Moore
Hydrogeological Technician

cc: Regional Office Files

P-536 310 077

RECEIPT FOR CERTIFIED MAIL
NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL
(See Reverse)

Sent to	
Street and No.	
P.O., State and ZIP Code	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt showing	

U.S.G.P.O. 1993-352-714

SENDER: UST Closure

- Complete items 1 and/or 2 for additional services.
- Complete items 3, 4a, and 4b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write *"Return Receipt Requested"* on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

Phillip Poole
Vernon Poole & Company
P.O. Box 506
Asheboro, N.C. 27204

4a. Article Number
P-536-310-077

4b. Service Type
☐ Registered ☒ Certified
☐ Express Mail ☐ Insured
☐ Return Receipt for Merchandise ☐ COD

7. Date of Delivery

5. Received By: *(Print Name)*

8. Addressee's Address *(Only if requested and fee is paid)*

6. Signature: *(Addressee or Agent)*
X P. V. Poole

PS Form **3811**, December 1994

Domestic Return Receipt

Is your RETURN ADDRESS completed on the reverse side?

Thank you for using Return Receipt Service.

State of North Carolina
Department of Environment,
Health and Natural Resources
Winston-Salem Regional Office

James B. Hunt, Jr., Governor
Jonathan B. Howes, Secretary

DEHNR
DIVISION OF WATER QUALITY
GROUNDWATER SECTION

January 29, 1997

CERTIFIED MAIL: P-536 310 086
RETURN RECEIPT REQUESTED

Phillip Poole
Vernon Poole & Company
P.O. Box 506
Asheboro, NC 27204

SUBJECT: Underground Storage Tank (UST) Closure Assessment at Econo ~~Mart #11~~ oil 64, 420 E. Salisbury Street, Asheboro, Randolph County: Groundwater Incident Number 13629, Site Ranking 000/E

Dear Mr. Poole:

The Groundwater Section of the Winston-Salem Regional Office is now reviewing the UST closure assessment for the subject location. Originally, submitted reports are reviewed based on requirements outlined in representative guidelines at the time of UST permanent closure. In order to determine whether or not the closure was performed in accordance with State or Federal regulations and/or guidelines, the Groundwater Section must be provided with the following information:

A. unless the tank excavation extended to all areas of the dispenser location, samples are needed under associated dispenser -- one sample beneath each coupling joint location (swing joint, flexible connector) and one additional sample for every ten feet of island.

B. sample under all associated product lines with no less than one sample for lines 20 feet or shorter, and at least one sample for every 20 feet thereafter.

C. the disposal manifest and sludge manifest for the tank(s) OR the address of the person/company the tank(s) were transferred to, along with their letter of acceptance; and

585 Waughtown Street
Winston-Salem, North Carolina 27107-2241
Voice 910-771-4600

NC Reduce Reuse Recycle

FAX 910-771-4632

D. a base map (scale map) showing the orientation of the tanks, pumps, and product lines -- named roads, buildings, and underground utilities -- North Arrow and Identified sample locations. After reviewing the two maps sent in for the site, it can not be determined where everything is located. Several contradictions in the location of the tanks, pumps, and product lines is evident in the two base maps previously sent in. Please send in a map that combines all the tanks at the site and where samples were taken.

DK NA ~~X~~ In addition please discuss the kerosene pump/tank location. Where is the kerosene tank now and was this tank system sampled?

Due to staffing constraints and excessive workloads, we did not have the opportunity to review your report until now. The above referenced items required by our regulations and/or guidelines, appear to be missing from the closure report. The item(s) should have been included in the initial closure report. Your cooperation in submittal of this required information is appreciated. Submission of these items will allow for a final review and consideration for closeout of the subject site. Please be advised that failure to submit the requested item(s) by the deadline specified in this letter will result in our inability to close your site, and may result in the recommendation for enforcement action for failure to submit a complete report.

Please submit the requested information listed above *30 days from receipt of this letter.*

If sampling was requested, it must be conducted according to current guidelines. All soil/groundwater sample analyses must be accompanied by a chain-of-custody and the sampling protocol. *Please note that all subsurface investigative work is now required to be supervised by a North Carolina Licensed Geologist or Professional Engineer, with all reports signed and sealed by that professional.* Please refer to the file name, **Econo Mart #11**, on the cover letter of your reply. This will help us speed up the review. If you have any questions, please contact me at the letterhead address ~~and/or~~ telephone number.

Sincerely,

Thomas Moore

Thomas Moore
Hydrogeological Technician

cc: Regional Office Files

P-536 310 086

RECEIPT FOR CERTIFIED MAIL
NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL
(See Reverse)

Sent to	
Street and No.	
P.O., State and ZIP Code	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing	

SENDER: Econo Mart #11

- Complete items 1 and/or 2 for additional services.
- Complete items 3, 4a, and 4b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write *"Return Receipt Requested"* on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

PHILLIP POOLE
VERNON POOLE & COMPANY
P.O. BOX 506
ASHEBORO, N.C. 27204

4a. Article Number
P-536-310-086

4b. Service Type
☐ Registered ☒ Certified
☐ Express Mail ☐ Insured
☐ Return Receipt for Merchandise ☐ COD

7. Date of Delivery 12-27-97

5. Received By: *(Print Name)*

6. Signature: *(Addressee or Agent)*
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8. Addressee's Address *(Only if requested and fee is paid)*

PS Form **3811**, December 1994

Domestic Return Receipt

Is your **RETURN ADDRESS** completed on the reverse side?

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State of North Carolina
Department of Environment,
Health and Natural Resources
Winston-Salem Regional Office

James B. Hunt, Jr., Governor
Jonathan B. Howes, Secretary

DEHNR
DIVISION OF WATER QUALITY
GROUNDWATER SECTION

April 7, 1997

CERTIFIED MAIL P-536 310 104
RETURN RECEIPT REQUIRED

Phillip Poole
Vernon Poole & Company
P.O. Box 506
Asheboro, NC 27204

SUBJECT: NOTICE OF VIOLATION of 15A NCAC 2N

Econo Oil 64 West
420 E. Salisbury Street
Randolph County, Asheboro, NC
Facility ID#: 0-018606

Dear Mr. Poole:

The Division of Water Quality (DWQ) has discovered that Econo Oil 64 West is not in compliance with North Carolina Underground Storage Tank (UST) Regulations (North Carolina Administrative Code (NCAC) Title 15A Subchapter 2N "*Criteria and Standards Applicable to Underground Storage Tanks.*") According to those rules (15A NCAC 2N .0203), you are identified as the owner and/or operator of the UST(s) at Econo Oil 64 West.

This Notice of Violation (Notice) includes references to parts of federal UST regulations (40 CFR 280 "Underground Storage Tanks; Technical Requirements".) These regulations were incorporated by reference in the state's UST regulations (15A NCAC 2N). Information pertaining to the following violations was obtained from file documentation.

VIOLATION 1:
Failure to notify the DWQ of compliance with permanent closure requirements within 30 days following closure (tank removal or abandonment) as required by 15A NCAC 2N .0405.

REQUIRED CORRECTIVE ACTION for Violation 1:
A tank closure report providing evidence of compliance with the requirements established in state regulation 15A NCAC 2N Sections .0802 and .0803 and the *Groundwater Section Guidelines for the Investigation and Remediation of Soils and Groundwater* must be submitted. Please immediately, submit the required information to complete the tank closure report (GW/UST-12 format is required as of February 1, 1995) to Mr. Moore at the address on the bottom of the letterhead page.

585 Waughtown Street
Winston-Salem, North Carolina 27107-2241
Voice 910-771-4600

NC Reduce Reuse Recycle

FAX 910-771-4632

Note: Engineering or geological work must be performed under the supervision of a Professional Engineer (P.E.) or Licensed Geologist (L.G.), and subsequent reports must be signed and sealed by the P.E. or L.G. For information concerning the requirements of engineering or geological work, you may contact the appropriate licensing board.

Penalties may be assessed for the violations described in this notice. To avoid the assessment of other possible penalties, you should comply with each of the aforementioned corrective action requirements and by completing the following task:

Unless another deadline has been specified in the applicable corrective actions for the violations identified above, all necessary information to verify compliance must be submitted to Thomas Moore, at the address on the bottom of the letterhead page, **within 30 days after receipt of this Notice.**

It is your responsibility to comply with state and federal regulations for underground storage tanks. Copies of state regulations 15A NCAC 2N are available at this office. Enclosed for your reference are the following documents: Letter dated December 3, 1996.

If you believe that the inspection findings are in error, or if you have any questions pertaining to this Notice, please contact Thomas Moore at the letterhead phone number.

Sincerely,

Larry D. Coble

Larry D. Coble
Regional Supervisor
Winston-Salem Regional Office

LDC/SVK/tkm

Enclosures

cc: UST Unit--Eddie Hales
Randolph County Health Department
Randolph County Fire Marshal
WSRO

P-536 310 104

NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL
(See Reverse)

Sent to	
Street and No.	
P.O., State and ZIP Code	
Postage	$
Certified Fee	
Special Delivery Fee	
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Return Receipt showing to whom and Date Delivered	
Return Receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	$
Postmark or Date	

PS Form 3800, June 1991

NOV

SENDER: ECONO Oct 64 west

- Complete items 1 and/or 2 for additional services.
- Complete items 3, 4a, and 4b.
- Print your name and address on the reverse of this form so that we can return th card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write *"Return Receipt Requested"* on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

3. Article Addressed to:

Phillip Poole
Vernon Poole & Company
P.O. Box 506
Asheboro, N.C. 27204

4a. Article Number
P-536-310-104

4b. Service Type
☐ Registered ☒ Certified
☐ Express Mail ☐ Insured
☐ Return Receipt for Merchandise ☐ COD

7. Date of Delivery
4-11-97

5. Received By: *(Print Name)*

6. Signature: *(Addressee or Agent)*
X

8. Addressee's Address *(Only if requested and fee is paid)*

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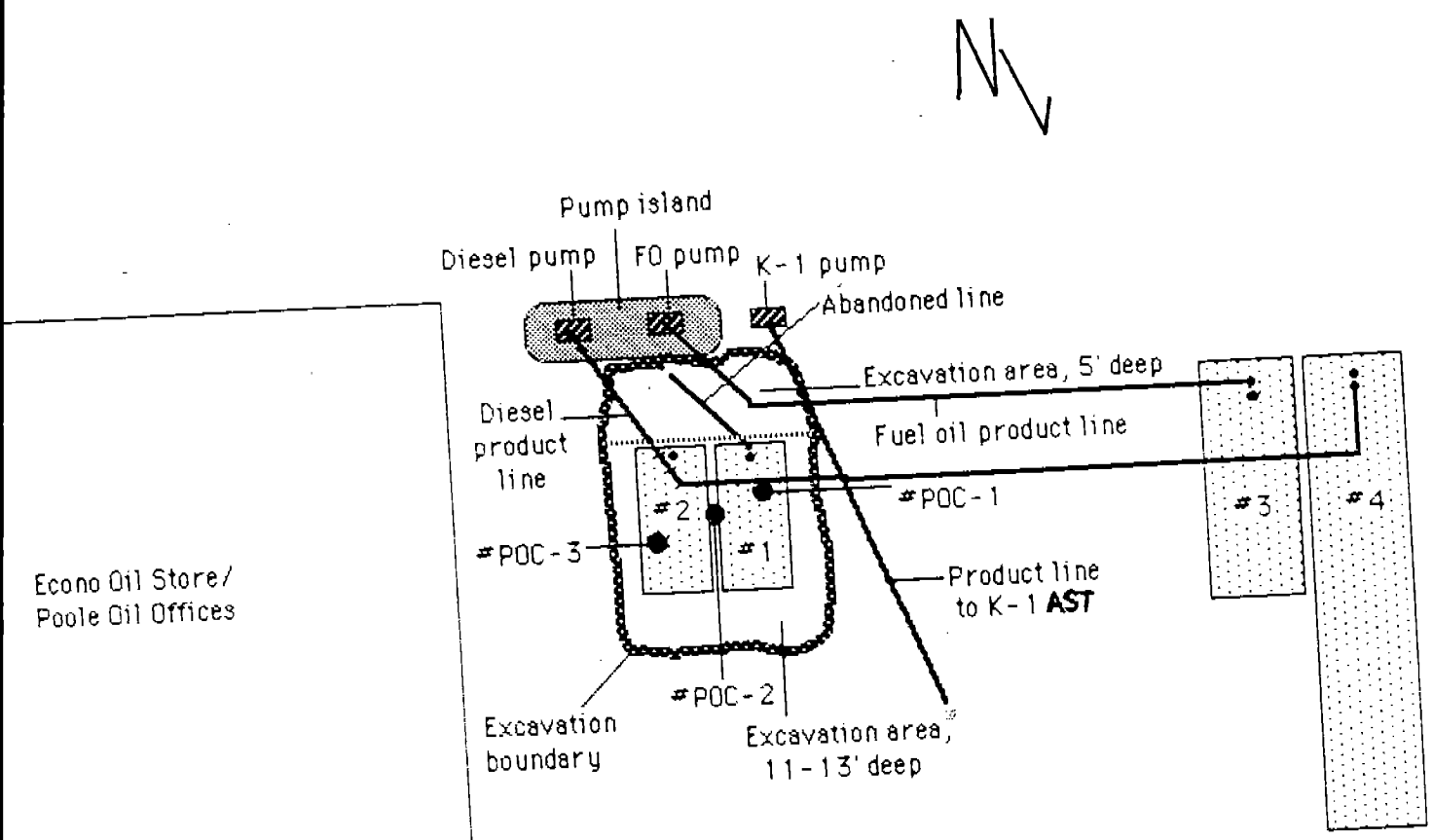
Thank you for using Return Rece

PS Form **3811**, December 1994

Domestic Return Receipt



Site: Econo Oil
US 64 West
Asheboro, NC
Scale: 1" = 10'
Key: #1/#2 = 550 USTs
#3 = 2000 UST
#4 = 4000 UST
● #POC= Sampling Points w/ ID's
= Boundary between excavation depths

State of North Carolina
Department of Environment,
Health and Natural Resources
Winston-Salem Regional Office

James B. Hunt, Jr., Governor
Jonathan B. Howes, Secretary

DEHNR

DIVISION OF WATER QUALITY
GROUNDWATER SECTION

May 12, 1997

CERTIFIED MAIL P-536 310 117
RETURN RECEIPT REQUESTED

Phillip Poole
Vernon Poole & Company
P.O. Box 506
Asheboro, NC 27204

Subject: Recommendation for Enforcement Action
Phillip Poole
Econo Oil 64 West
Randolph County

Dear Mr. Poole:

As you are aware, you have previously been cited in a Notice of Violation dated April 7, 1997, for violation of certain environmental regulations. This letter is to advise you that we are considering making this recommendation for the violations that were noted.

Prior to making such a recommendation we need to be sure that we have all relevant information. If you wish to present any additional explanation for the violations cited, or if you believe there are other factors which should be considered, please send such information to me in writing within ten (10) days following receipt of this letter. Any additional information will be reviewed, and, if an enforcement action is still deemed appropriate, this information along with other relevant information will be forwarded to the Director with the enforcement package for his consideration.

If you have any questions concerning this matter, please contact Thomas Moore at (910)771-4600.

Sincerely,

Larry D Coble

Larry D. Coble
Regional Supervisor

cc: Arthur Mouberry
Office of the Attorney General
✓WSRO

585 Waughtown Street
Winston-Salem, North Carolina 27107-2241
Voice 910-771-4600

Reduce Reuse Recycle

FAX 910-771-4632

P-536 310 117

(See Reverse)

Sent to	
Street and No.	
P.O., State and ZIP Code	
Postage	$
Certified Fee	
Special Delivery Fee	

ecommendation for Enforcement

ENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, 4a, and 4b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "*Return Receipt Requested*" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

E-Cons Ct 64 west

I also wish to receive the following services (for an extra fee):

1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

Phillip Poole
Vernon Poole & Company
P.O. Box 506
Asheboro,N. C. 27204

4a. Article Number
P 536-310-117

4b. Service Type
☐ Registered ☒ Certified
☐ Express Mail ☐ Insured
☐ Return Receipt for Merchandise ☐ COD

7. Date of Delivery
5-13-97

5. Received By: *(Print Name)*

8. Addressee's Address *(Only if requested and fee is paid)*

6. Signature: *(Addressee or Agent)*
X Vernon Poole

PS Form **3811**, December 1994

Domestic Return Receipt

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Thank you for using Return Receipt Service.

State of North Carolina
Department of Environment,
Health and Natural Resources
Winston-Salem Regional Office

James B. Hunt, Jr., Governor
Jonathan B. Howes, Secretary

DEHNR
DIVISION OF WATER QUALITY
GROUNDWATER SECTION

June 16, 1997

CERTIFIED MAIL: P-536 310 133
RETURN RECEIPT REQUESTED

Phillip Poole
Vernon Poole & Company
P.O. Box 506
Asheboro, NC 27204

SUBJECT: Underground Storage Tank (UST) Closure Assessment at Econo Oil 64 West, U.S. Hwy. 64 West, Asheboro, Randolph County: Groundwater Incident Number Unassigned, Site Ranking 10/C

Dear Mr. Poole:

The Groundwater Section of the Winston-Salem Regional Office is now reviewing the UST closure assessment for the subject location. Originally, submitted reports are reviewed based on requirements outlined in representative guidelines at the time of UST permanent closure. In order to determine whether or not the closure was performed in accordance with State or Federal regulations and/or guidelines, the Groundwater Section must be provided with the following information:

A. unless the tank excavation extended to all areas of the dispenser locations, samples are needed under associated dispensers -- one sample beneath each coupling joint location (swing joint, flexible connector) and one additional sample for every ten feet of island (**See Enclosed Map**); and,

B. sample under all associated product lines with no less than one sample for lines 20 feet or shorter, and at least one sample for every 20 feet thereafter (**See Enclosed Map**).

585 Waughtown Street
Winston-Salem, North Carolina 27107-2241
Voice 910-771-4600

NC Reduce Reuse Recycle

FAX 910-771-4632

Due to staffing constraints and excessive workloads, we did not have the opportunity to review your report until now. The above referenced items required by our regulations and/or guidelines, appear to be missing from the closure report. The item(s) should have been included in the initial closure report. Your cooperation in submittal of this required information is appreciated. Submission of these items will allow for a final review and consideration for closeout of the subject site. Please be advised that failure to submit the requested item(s) by the deadline specified in this letter will result in our inability to close your site, and may result in the recommendation for enforcement action for failure to submit a complete report.

Please submit the requested information listed above *30 days from receipt of this letter.*

If sampling was requested, it must be conducted according to current guidelines. All soil/groundwater sample analyses must be accompanied by a chain-of-custody and the sampling protocol. *Please note that all subsurface investigative work is now required to be supervised by a North Carolina Licensed Geologist or Professional Engineer, with all reports signed and sealed by that professional.* Please refer to the file name, **Econo Oil 64 West**, on the cover letter of your reply. This will help us speed up the review. If you have any questions, please contact me at the letterhead address and/or telephone number.

Sincerely,

Thomas Moore

Thomas Moore
Hydrogeological Technician

cc: Regional Office Files

P-536 310 133

(See Reverse)

U.S.G.P.O. 1993-352-714

Sent to

Street and No.

P.O., State and ZIP Code

Postage

Certified Fee

Special Delivery Fee

SENDER: US 64 East Randolph County

- Complete items 1 and/or 2 for additional services.
- Complete items 3, 4a, and 4b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write *"Return Receipt Requested"* on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

Phillip Poole
Vernon Poole & Company
P.O. Box 506
Asheboro, N.C. 27204

4a. Article Number
P-536-310-133

4b. Service Type
☐ Registered ☒ Certified
☐ Express Mail ☐ Insured
☐ Return Receipt for Merchandise ☐ COD

7. Date of Delivery 4-18-97

5. Received By: *(Print Name)*

8. Addressee's Address *(Only if requested and fee is paid)*

6. Signature: *(Addressee or Agent)*
X Vernon S Poole

PS Form **3811,** December 1994 102595-97-B-0179 **Domestic Return Receipt**

Is your RETURN ADDRESS completed on the reverse side?

Thank you for using Return Receipt Service.

State of North Carolina
Department of Environment,
Health and Natural Resources
Winston-Salem Regional Office

James B. Hunt, Jr., Governor
Jonathan B. Howes, Secretary

DEHNR
DIVISION OF WATER QUALITY
GROUNDWATER SECTION

August 25, 1997

Phillip Poole
Vernon Poole & Company
P.O. Box 506
Asheboro, NC 27204

SUBJECT: Underground Storage Tank (UST) Closure - Econo Oil 64 West, U.S. 64 West, Asheboro, Randolph County

Dear Mr. Poole:

On August 22, 1997, July 16, 1997, May 28, 1997, and December 21, 1992, we received the soil sample results and closure assessment from the underground storage tank closure at the subject location. As the implementing agency for the Federal Underground Storage Tank Program for the State of North Carolina, we have determined after careful review of your assessment that the UST system has been closed in accordance with NCAC Title 15A Subchapter 2N Sections .0802 and .0803. However, this does not absolve you of any responsibility for contamination that may not have been detected or noted during the site assessment.

If you have any questions, please feel free to contact Thomas Moore at the letterhead address and/or telephone number.

Sincerely,

Sherri V. Knight
Supervisor

SVK/tkm

cc: Regional Office Files

585 Waughtown Street
Winston-Salem, North Carolina 27107-2241
Voice 910-771-4600

Reduce Reuse Recycle

FAX 910-771-4632

State of North Carolina
Department of Environment, Health, and Natural Resources
Winston-Salem Regional Office

James B. Hunt, Jr., Governor — Jonathan B. Howes, Secretary

DIVISION OF ENVIRONMENTAL MANAGEMENT
GROUNDWATER SECTION

8/25/97

TO: Fay Sweat
Manager, Incident Management Database

FROM: Thomas Moore
Hydrogeological Tech.

SUBJECT: Incident Close-out

The following incident has been successfully remediated and is considered closed by this office.

Incident Name: Econo Oil 64 West

Street Address: US 64 West

City/County: Asheboro / Randolph

PIRF Number: 13629

8025 North Point Boulevard, Suite 100, Winston-Salem, NC 27106-3203 • Telephone 919-896-7007 • FAX 919-896-7005

APPENDIX C

PYRAMID ENVIRONMENTAL & ENGINEERING, P.C.

PYRAMID ENVIRONMENTAL & ENGINEERING
(PROJECT 2014-070)

GEOPHYSICAL SURVEY

PARCEL 10 (FORMER PARCEL 9) – VERNON POOLE & CO., INC. 1140 US HWY. 64 WEST, ASHEBORO, NC NCDOT PROJECT U-5305 (WBS 47025.1.1)

ASHEVILLE, RANDOLPH COUNTY, NC

APRIL 29, 2014

Report prepared for: **Mr. Craig Haden**
GeoEnvironmental Project Manager
Geotechnical Engineering Unit
1020 Birch Ridge Drive
Raleigh, NC 27610

Prepared by: _____

Eric C. Cross, P.G.
NC License #2181

Reviewed by: _____

Douglas A. Canavello, P.G.
NC License #1066

503 INDUSTRIAL AVENUE, GREENSBORO, NC 27406
P: 336.335.3174 F: 336.691.0648
C257: GEOLOGY C1251: ENGINEERING

GEOPHYSICAL INVESTIGATION REPORT
Parcel 10, 1140 US Hwy. 64 West
Asheboro, Randolph County, North Carolina

Table of Contents

Figures

Appendices

EXECUTIVE SUMMARY

Project Description: Pyramid Environmental conducted a geophysical investigation for the North Carolina Department of Transportation (NCDOT), at the Vernon Poole & Co., Inc. property, Parcel 10 (formerly Parcel 9), 1140 US Hwy. 64 West, Asheboro, Randolph County, NC. The survey was part of an NCDOT Right-of-Way (ROW) investigation (NCDOT Project U-5305). Pyramid originally performed a geophysical survey at this Parcel in June of 2013 between the existing edge of pavement and the proposed ROW and/or easements along the south and west portions of the property. The NCDOT is now proposing to acquire the entire parcel, and the limits of the geophysical survey were extended to include all accessible areas of Parcel 10. The geophysical investigation consisted of an electromagnetic (EM) induction-metal detection and ground penetrating radar (GPR) surveys.

Geophysical Results: Several of the EM61 anomalies detected could be attributed to visible objects at the ground surface such as signs, fences, and other cultural features. Large areas of reinforced concrete were recorded as anomalies by the EM, and verified by the GPR. No structures were observed beneath the reinforcement that were indicative of USTs. Former product lines were also verified by the GPR. No evidence of metallic USTs was recorded by the geophysical survey.

INTRODUCTION

Pyramid Environmental conducted a geophysical investigation for the North Carolina Department of Transportation (NCDOT), at the Vernon Poole & Co., Inc. property, Parcel 10 (formerly Parcel 9), 1140 US Hwy. 64 West, Asheboro, Randolph County, NC. The survey was part of an NCDOT Right-of-Way (ROW) investigation (NCDOT Project U-5305). Pyramid originally performed a geophysical survey at this Parcel in June of 2013 between the existing edge of pavement and the proposed ROW and/or easements along the south and west portions of the property. The NCDOT is now proposing to acquire the entire parcel, and the limits of the geophysical survey were extended to include all accessible areas of Parcel 10. The survey grid spanned approximately 400 feet from west to east and approximately 150 feet from north to south. Conducted on April 17 and 21, 2014, the geophysical investigation was performed to determine if unknown, metallic underground storage tanks (USTs) were present beneath the survey area.

The site contained an active service station and office building, including two covered pump islands, a large aboveground storage tank (AST) containment area, and two additional ASTs. Other small storage sheds were present on the north side of the service station building, and steep slopes were present on the north side of the large AST containment area. The geophysical survey was limited to the open asphalt and gravel areas. Geophysical testing was not performed within the AST containment area or in areas of steep slopes. Aerial photographs showing the survey area boundaries and ground-level photographs are shown in **Figure 1**.

FIELD METHODOLOGY

The geophysical investigation consisted of electromagnetic (EM) induction-metal detection and ground penetrating radar (GPR) surveys. The EM survey was performed on April 17, 2014, using a Geonics EM61 metal detection instrument integrated with a Trimble AG-114 GPS antennae. The integrated GPS system allows the location of the instrument to be recorded in real-time during data collection, resulting in an EM data set that geo-referenced and can be overlain on aerial photographs and CADD drawings. A boundary grid was established around the perimeter

of the site and at select interior locations with marks every 10 feet to maintain orientation of the instrument throughout the survey and assure complete coverage of the area.

According to the instrument specifications, the EM61 can detect a metal drum down to a maximum depth of approximately 8 feet. Smaller objects (1-foot or less in size) can be detected to a maximum depth of 4 to 5 feet. The EM61 data were digitally collected at approximately 0.8 foot intervals generally along north-south trending or east-west trending, parallel survey lines spaced five feet apart. The data were downloaded to a computer and reviewed in the field and office using the Geonics NAV61 and Surfer for Windows Version 11.0 software programs.

GPR data were acquired across select EM differential anomalies and areas of reinforced concrete on April 21, 2014, using a Geophysical Survey Systems, Inc. (GSSI) SIR-2000 unit equipped with a 400 MHz antenna. Data were collected generally from east to west and north to south across the property. The GPR data were viewed in real time using a vertical scan of 512 samples, at a rate of 48 scans per second. GPR data were viewed down to a maximum depth of approximately 8 feet, based on an estimated two-way travel time of 8 nanoseconds per foot. GPR Transects across specific anomalies were saved to the hard drive of the SIR unit for post-processing and figure generation. Reconnaissance GPR was also performed throughout the majority of the survey area and saved as a single file for reference.

DISCUSSION OF RESULTS

A contour plot of the EM61 differential results obtained across survey area at the property is presented in **Figure 2**. The differential results are obtained from the difference between the top and bottom coils of the EM61 instrument. The differential results focus on the larger metal objects such as drum and UST-size objects and ignore the smaller insignificant metal objects.

Discussion of EM Anomalies: Reinforced concrete created high amplitude EM responses across a large portion of the survey area. The reinforced concrete was present underneath both pump island canopies, and extended from the east pump island area to the south, west and southwest. The approximate limits of the area containing reinforced concrete are delineated on Figure 2 by a black line. The remaining EM differential anomalies were associated with above-ground cultural

features such as signs, metal poles, buildings, fences and the ASTs, as well as some known underground product lines connected to the pump and AST systems. Figure 2 provides a more detailed explanation of each differential anomaly. **Figure 3** provides an overlay of the EM61 contour map on the NCDOT engineering plans for the site to provide a reference of proposed ROW and construction features with the geophysical data.

A GPR survey was performed across all areas containing reinforced concrete to verify that no structures were present beneath the reinforcement, as well as across the north-south oriented EM feature directly south of the AST containment area that was suspected to be associated with former fuel product lines.

Discussion of GPR Survey: **Figure 4** presents the locations of the formal GPR transects performed at the property, as well as the track recorded during the general reconnaissance GPR survey. Figure 5 provides examples of select GPR transect images. **Appendix A** includes images of all GPR transects performed at the site. GPR Transects 1 and 2 were performed across the former UST basin, and did not record any reflections that would be characteristic of structures such as USTs. GPR Transects 3-11 were performed at various locations across the areas of reinforced concrete at the parcel. No evidence of subsurface structures was recorded underneath the areas of reinforcement. Lastly, GPR Transects 12 and 13 were performed across the suspected former product line or utility oriented from south to north near the large AST field. These transects verified the presence of former product lines at this location. General reconnaissance scans were performed throughout the property. No evidence of USTs was recorded during the GPR survey.

The geophysical investigation did not record evidence of any metallic USTs at the property within the survey area limits.

SUMMARY & CONCLUSIONS

Our evaluation of the EM61 and GPR data collected across Parcel 10 in Asheboro, North Carolina, provides the following summary and conclusions:

- The EM61 and GPR surveys provided reliable results for the detection of metallic USTs within the accessible portions of the geophysical survey area.
- The majority of the EM61 anomalies detected could be attributed to visible objects at the ground surface such as signs, fences, ASTs, and other cultural features.
- Large areas of reinforced concrete were recorded as anomalies by the EM, and verified by the GPR. No structures were observed beneath the reinforcement that were indicative of USTs.
- Former fuel product lines were also verified by the GPR.
- The geophysical investigation did not record evidence of any metallic USTs at the property.

LIMITATIONS

Geophysical surveys have been performed and this report prepared for the NCDOT in accordance with generally accepted guidelines for EM61 and GPR surveys. It is generally recognized that the results of the EM61 and GPR surveys are non-unique and may not represent actual subsurface conditions. The EM61 and GPR results obtained for this project have not conclusively determined the definitive presence or absence of metallic USTs, but that the evidence collected is sufficient to result in the conclusions made in this report. Additionally, it should be understood that areas containing extensive vegetation, reinforced concrete, or other restrictions to the accessibility of the geophysical instruments could not be fully investigated.

Red Line Indicates Path of EM61 Across Survey Area

View of Geophysical Survey Area
(Facing Approximately East)

View of North Portion of Survey Area & ASTs
(Facing Approximately Northwest)

TITLE	PARCEL 010: EM61 GEOPHYSICAL SURVEY PATH AND SITE PHOTOGRAPHS
PROJECT	NCDOT PROJECT U-5305 (47025.1.1) ASHEBORO, RANDOLPH COUNTY, NC
PYRAMID ENVIRONMENTAL & ENGINEERING, P.C.	503 INDUSTRIAL AVENUE GREENSBORO, NC 27460 (336) 335-3174 (p) (336) 691-0648 (f) License # C1251 Eng. / License # C257 Geology
DATE 4/24/2014	CLIENT NCDOT
PYRAMID PROJECT #: 2014-070	**FIGURE 1**

EM61 Differential Results

NO EVIDENCE OF METALLIC USTs OBSERVED

The contour plot shows the differential results of the EM61 instrument in millivolts (mV). The differential response focuses on larger, buried metallic objects such as drums and USTs and ignores smaller miscellaneous buried, metal debris.The EM61 data were collected on April 17, 2014, using a Geonics EM61 instrument. Ground penetrating radar (GPR) data were collected on April 21, 2014, using a GSSI SIR 2000 unit coupled to a 400 MHz antennae.

EM61 Metal Detection Response (millivolts)

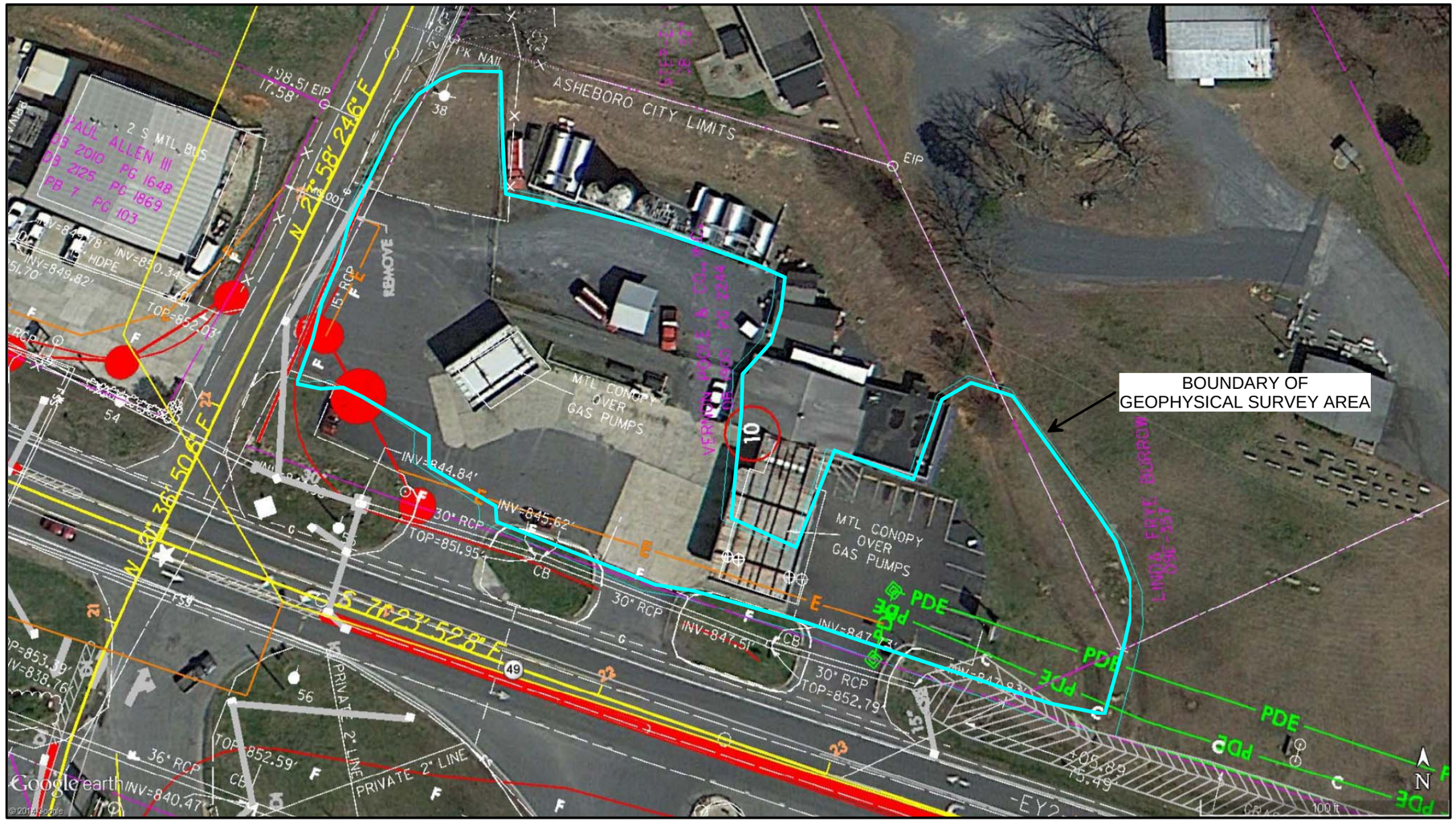
1000 750 500 400 300 200 150 100 75 60 50 40 30 -90 -100 -200 -400 -5000

50 FEET

TITLE	PARCEL 010: EM61 DIFFERENTIAL RESULTS CONTOUR MAP
PROJECT	NCDOT PROJECT U-5305 (47025.1.1) ASHEBORO, RANDOLPH COUNTY, NC

PYRAMID ENVIRONMENTAL & ENGINEERING, P.C.
503 INDUSTRIAL AVENUE
GREENSBORO, NC 27460
(336) 335-3174 (p) (336) 691-0648 (f)
License # C1251 Eng. / License # C257 Geology

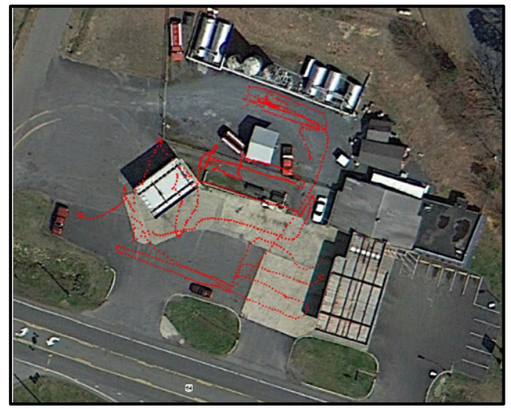
DATE	4/24/2014	CLIENT	NCDOT
PYRAMID PROJECT #:	2014-070		**FIGURE 2**



Overlay of Geophysical Survey Boundaries on NCDOT Engineering Plans

TITLE	PARCEL 010: OVERLAY OF GEOPHYSICAL SURVEY BOUNDARY ON NCDOT PLANS
PROJECT	NCDOT PROJECT U-5305 (47025.1.1) ASHEBORO, RANDOLPH COUNTY, NC
PYRAMID ENVIRONMENTAL & ENGINEERING, P.C.	503 INDUSTRIAL AVENUE GREENSBORO, NC 27460 (336) 335-3174 (p) (336) 691-0648 (f) License # C1251 Eng. / License # C257 Geology
DATE 4/24/2014	CLIENT NCDOT
PYRAMID PROJECT #: 2014-070	**FIGURE 3**

GPR Transect Locations

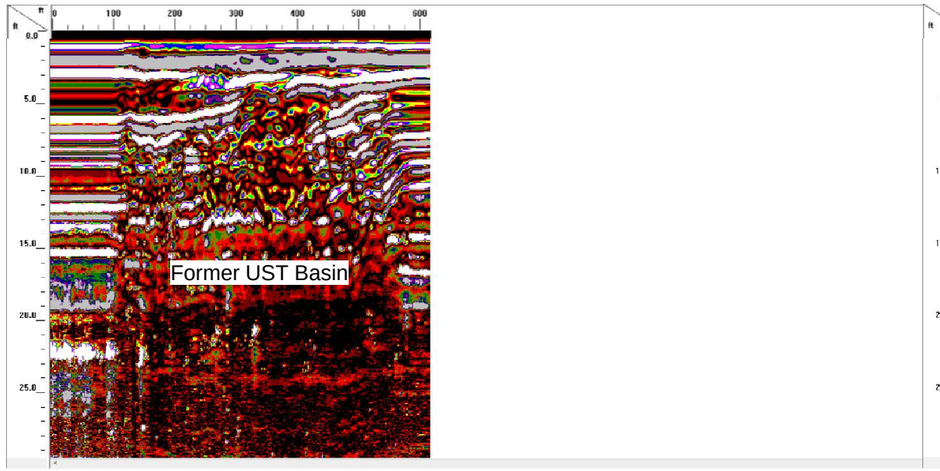


Track of Reconnaissance GPR Performed Throughout the Survey Area of Interest

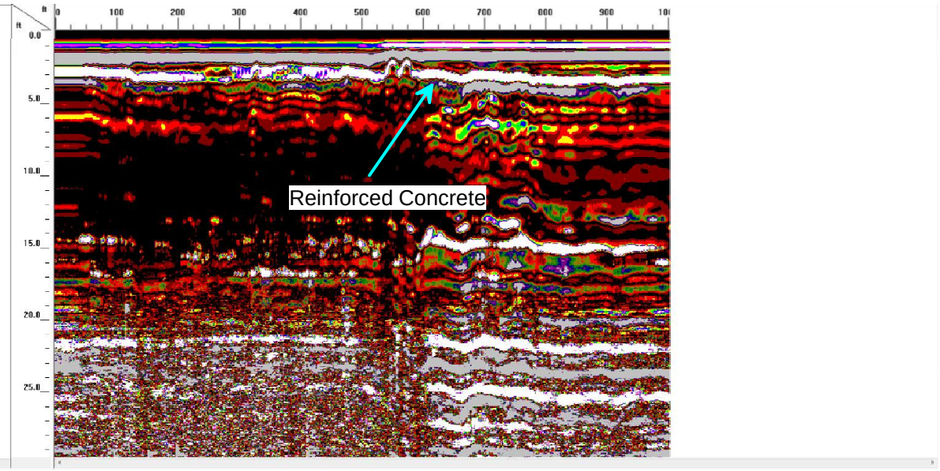
TITLE	PARCEL 010: GPR TRANSECT LOCATIONS AND RECONNAISSANCE TRACK
PROJECT	NCDOT PROJECT U-5305 (47025.1.1) ASHEBORO, RANDOLPH COUNTY, NC

PYRAMID ENVIRONMENTAL & ENGINEERING, P.C.
503 INDUSTRIAL AVENUE
GREENSBORO, NC 27460
(336) 335-3174 (p) (336) 691-0648 (f)
License # C1251 Eng. / License # C257 Geology

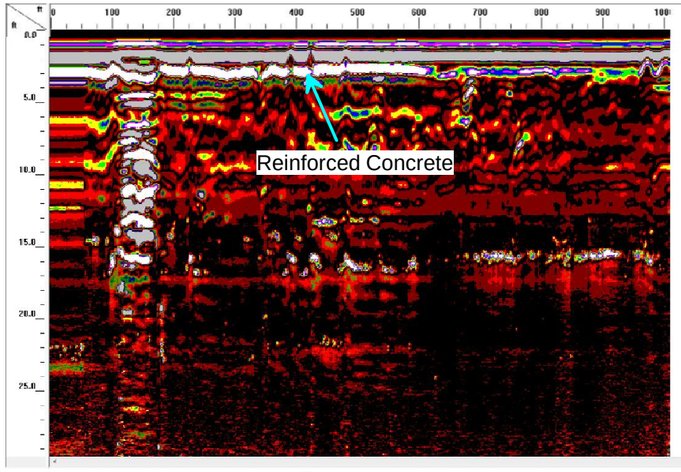
DATE	4/24/2014	CLIENT	NCDOT
PYRAMID PROJECT #:	2014-070		**FIGURE 4**



Transect 1



Transect 9



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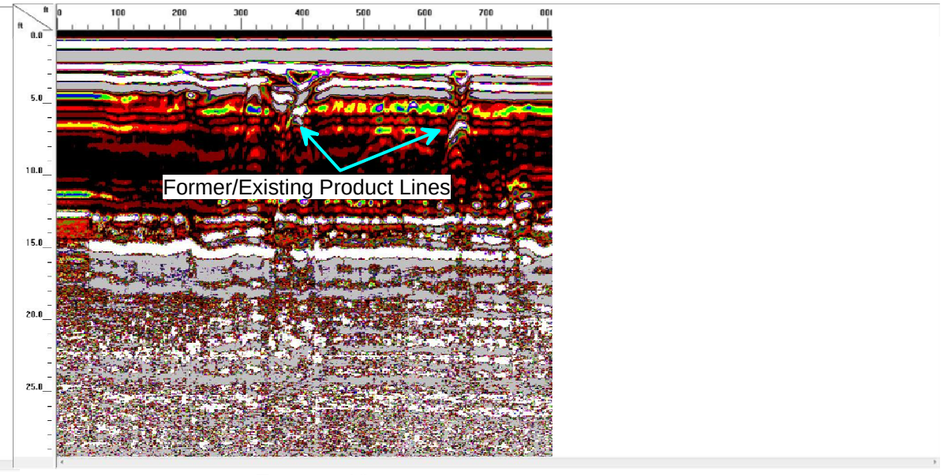

Transect 13

TITLE

PARCEL 010:
SELECT GPR TRANSECT IMAGES

PROJECT

NCDOT PROJECT U-5305 (47025.1.1)
ASHEBORO, RANDOLPH COUNTY, NC

PYRAMID ENVIRONMENTAL & ENGINEERING, P.C.
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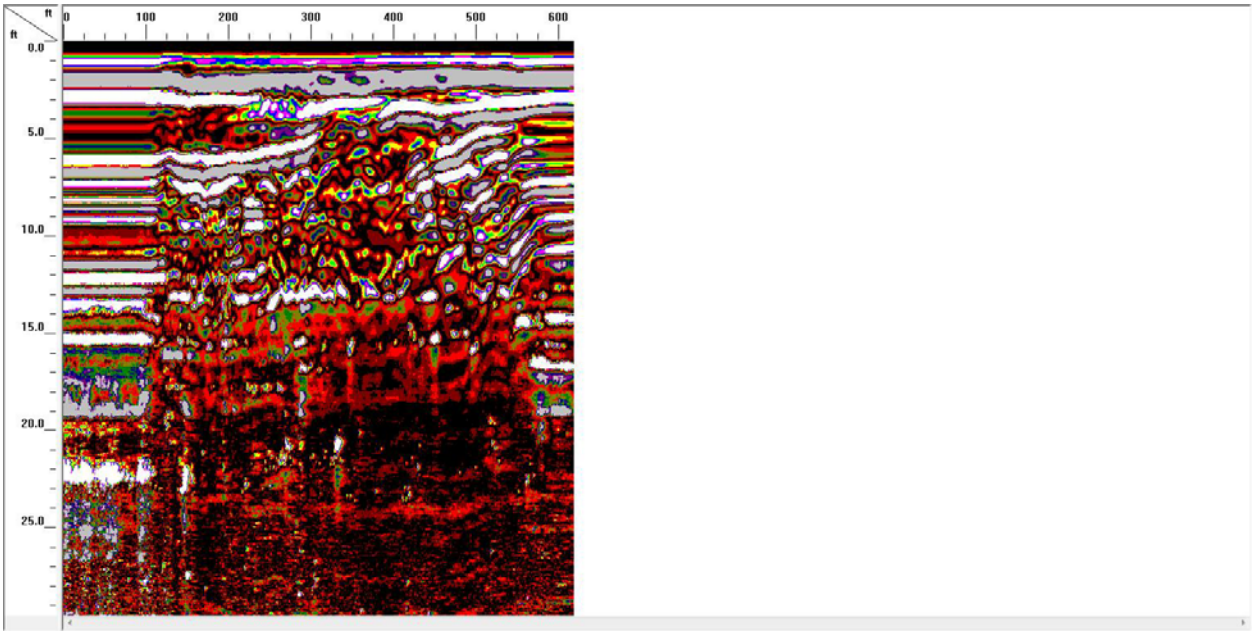
License # C1251 Eng. / License # C257 Geology

DATE	4/24/2014	CLIENT	NCDOT
PYRAMID PROJECT #:	2014-070	**FIGURE 5**	

Appendix A – GPR Transect Images



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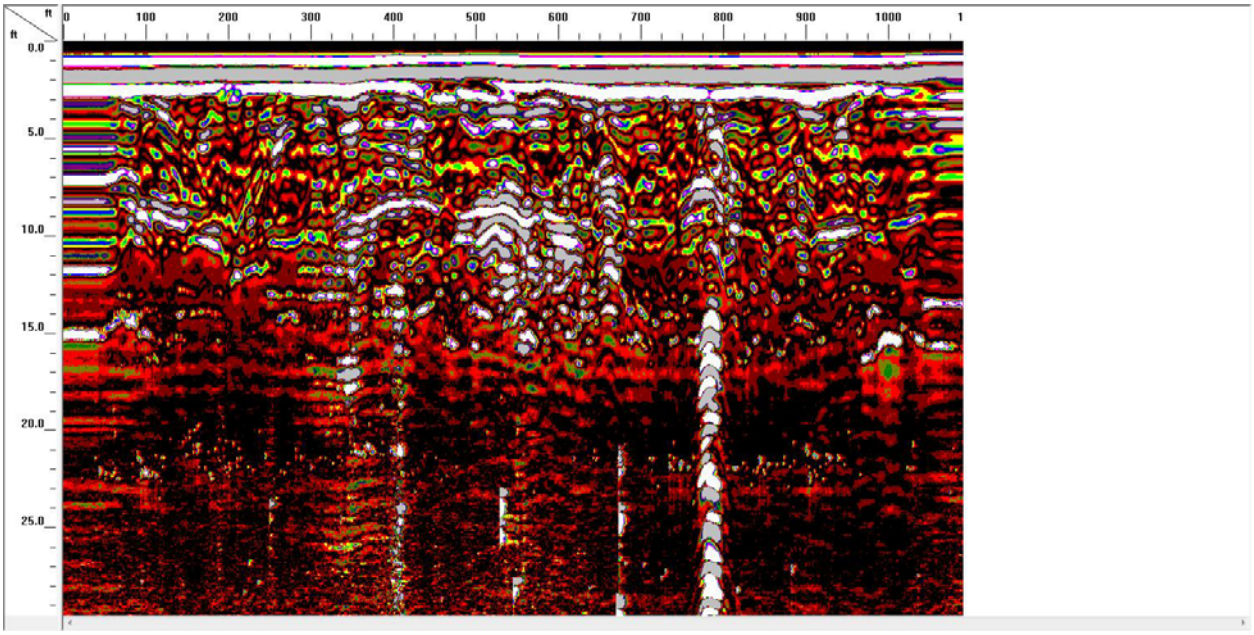

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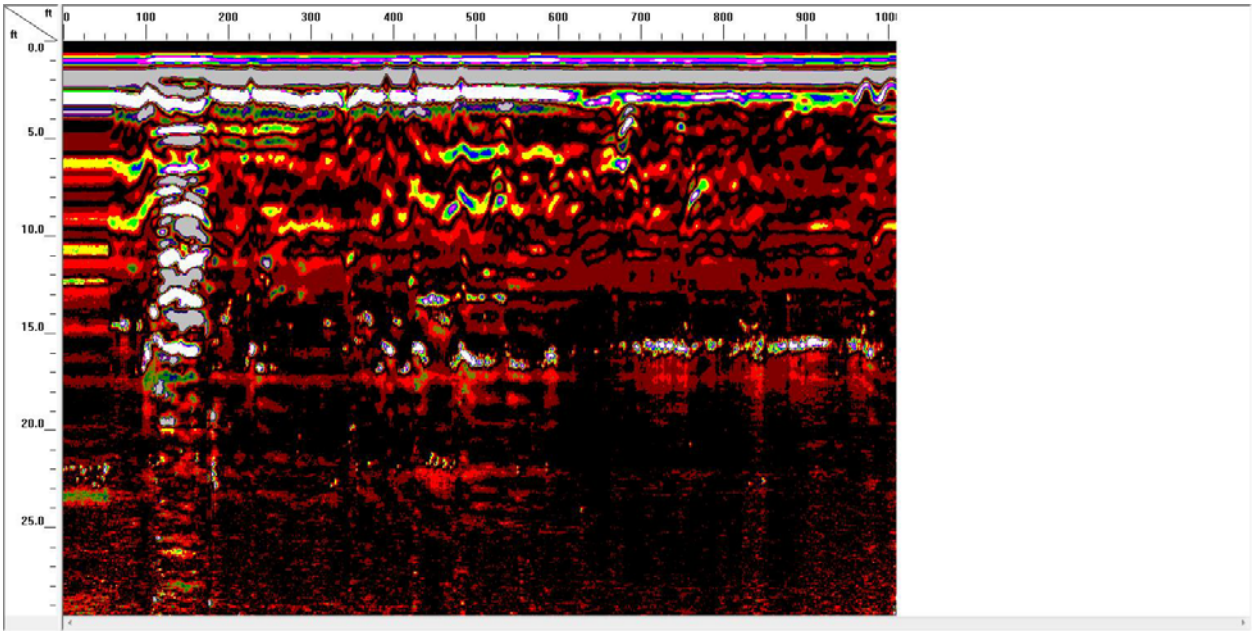

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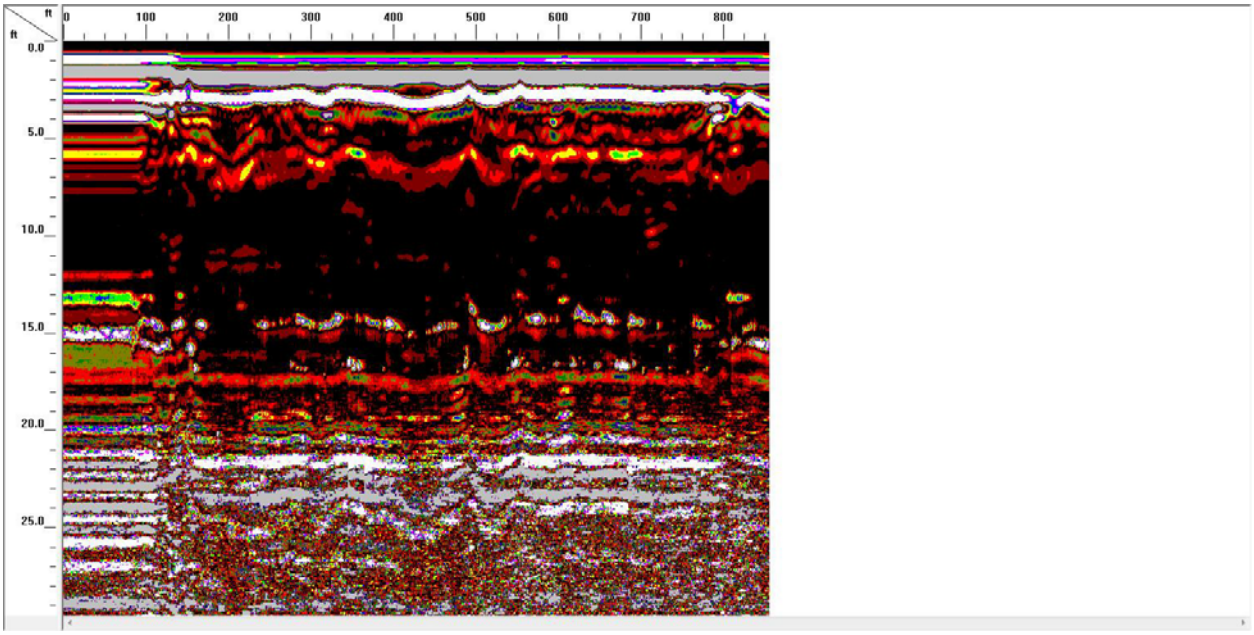
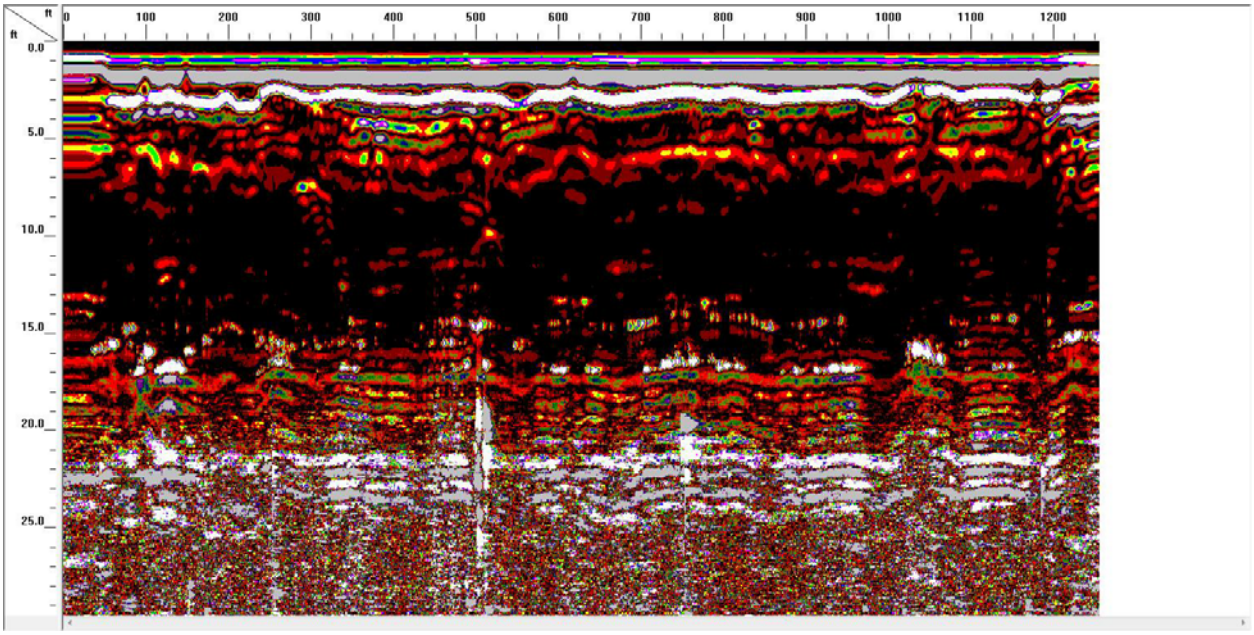
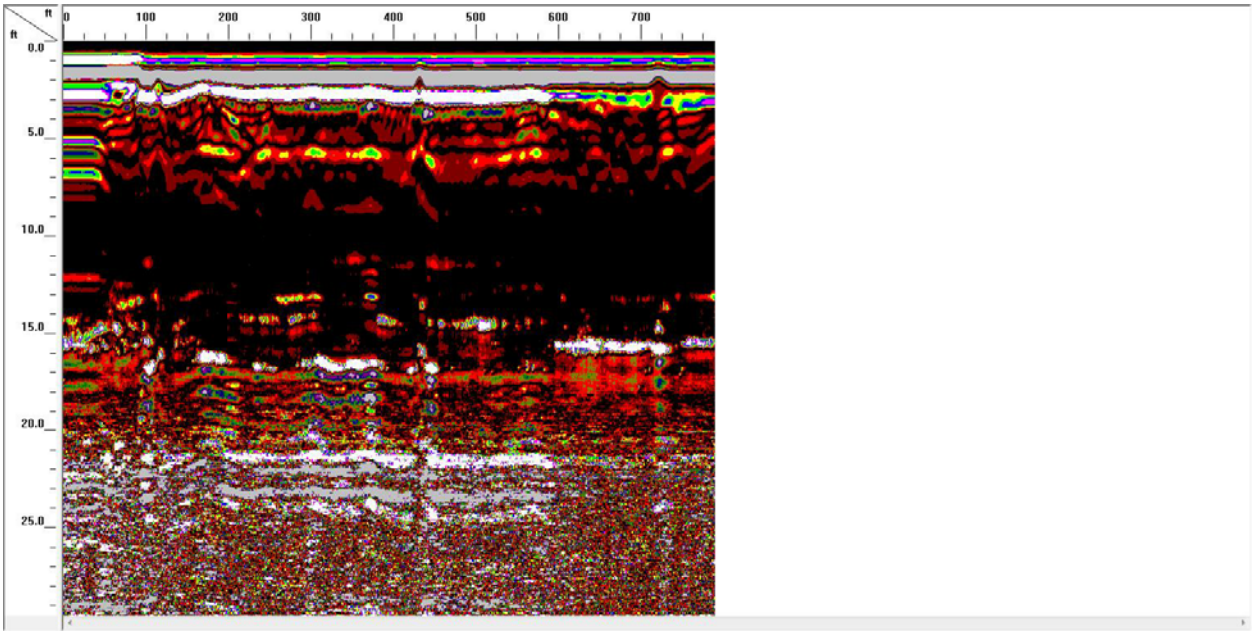


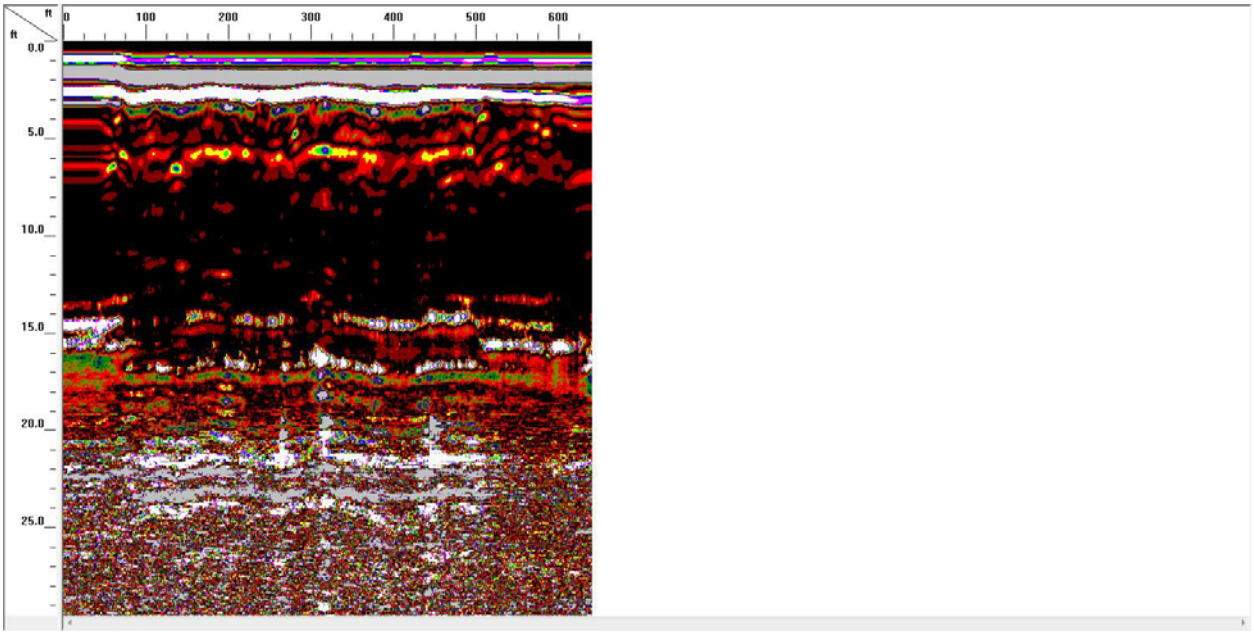
Transect 4



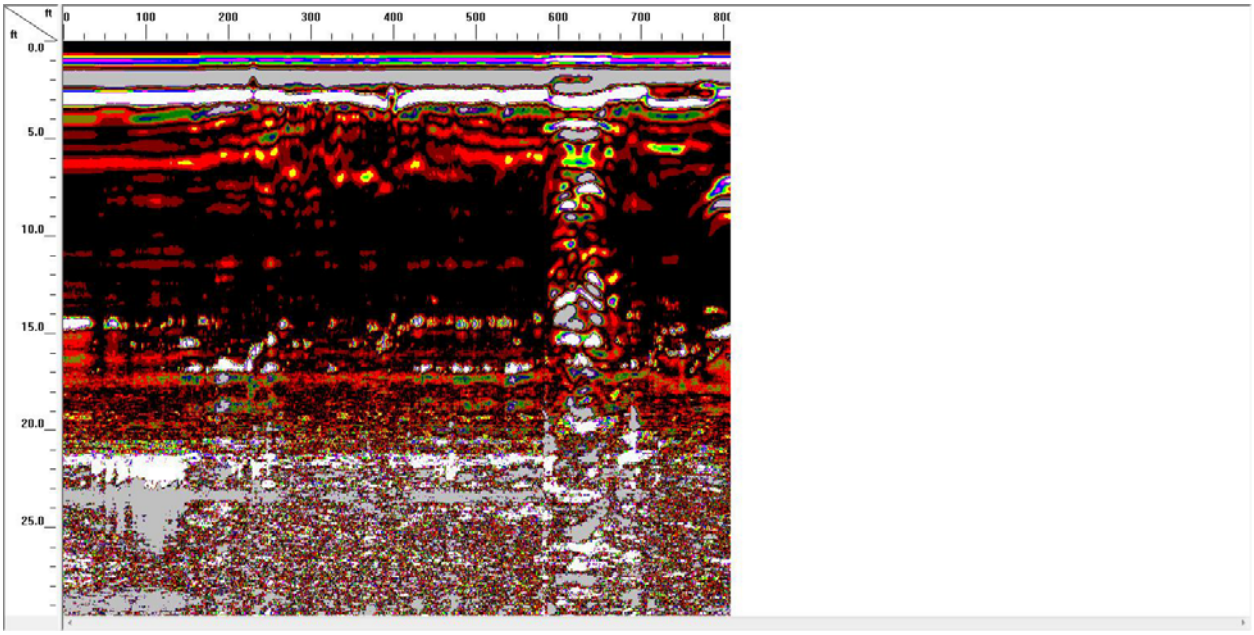
Transect 5



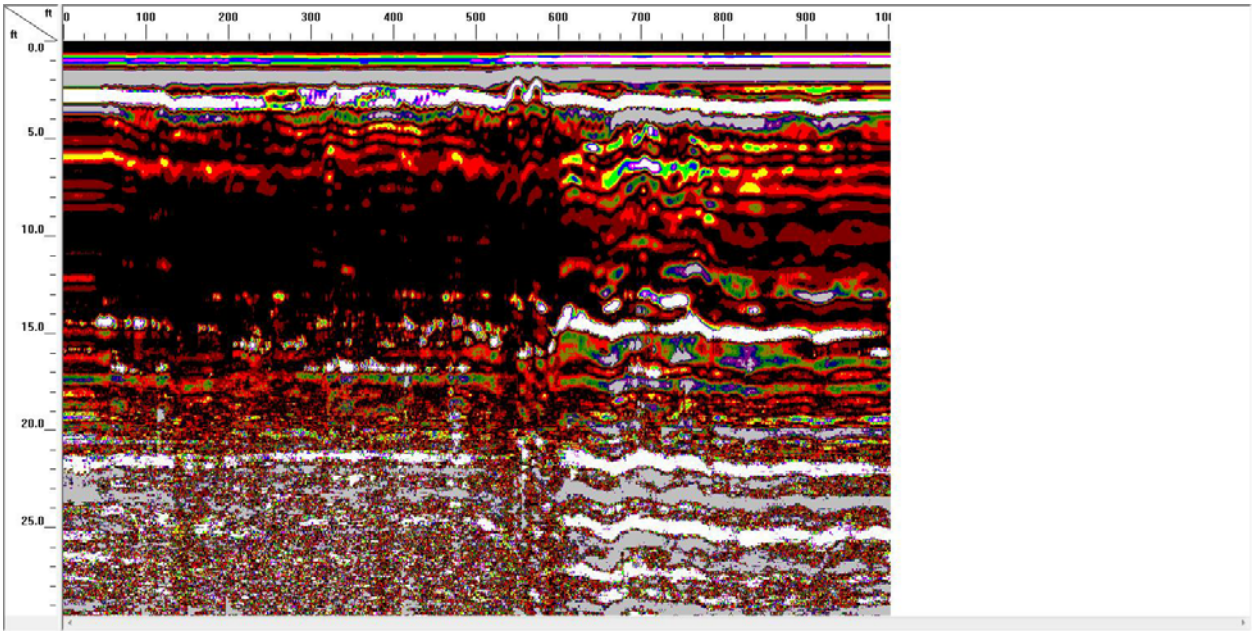
Transect 6



Transect 7



Transect 8



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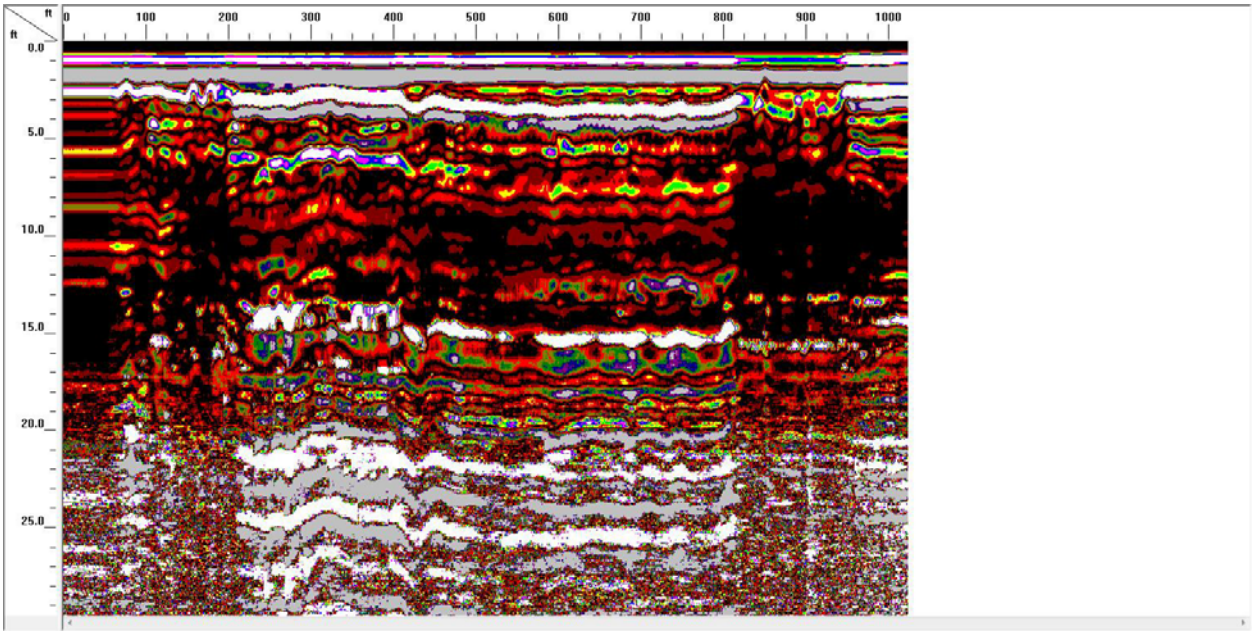

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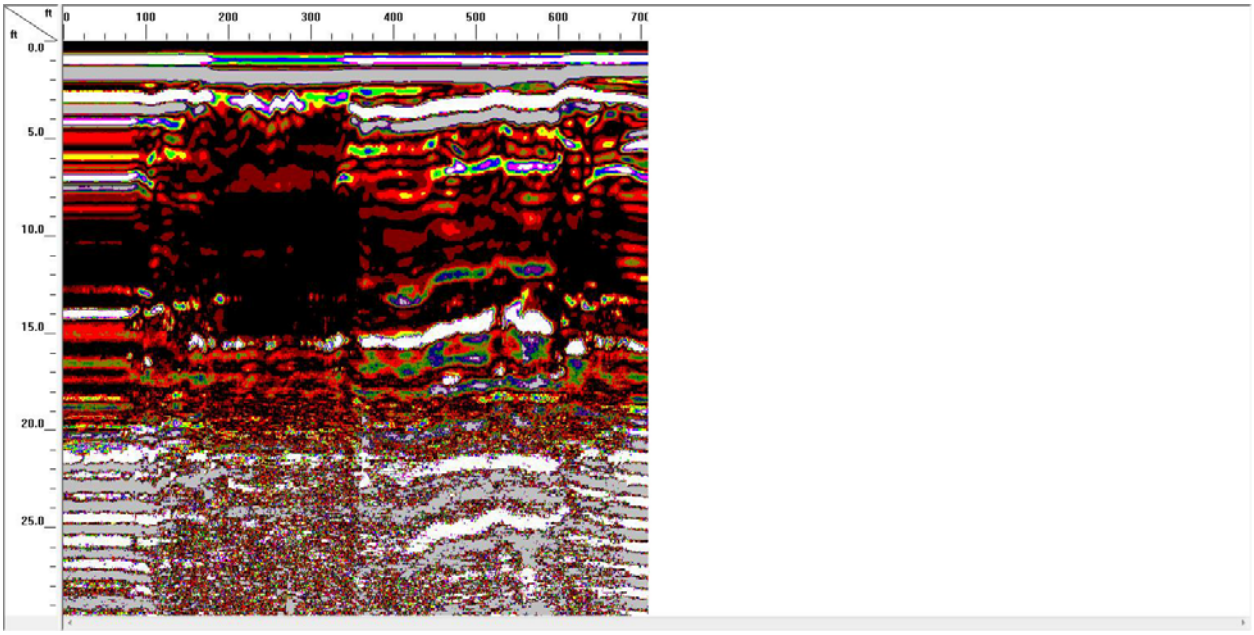
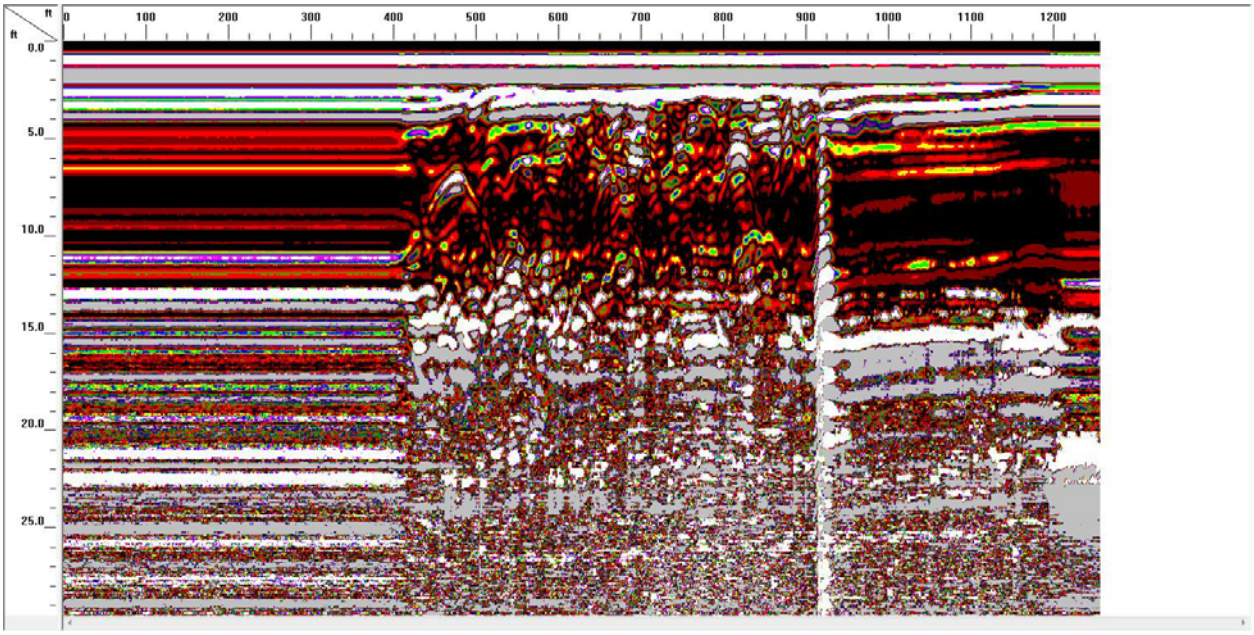


Transect 11



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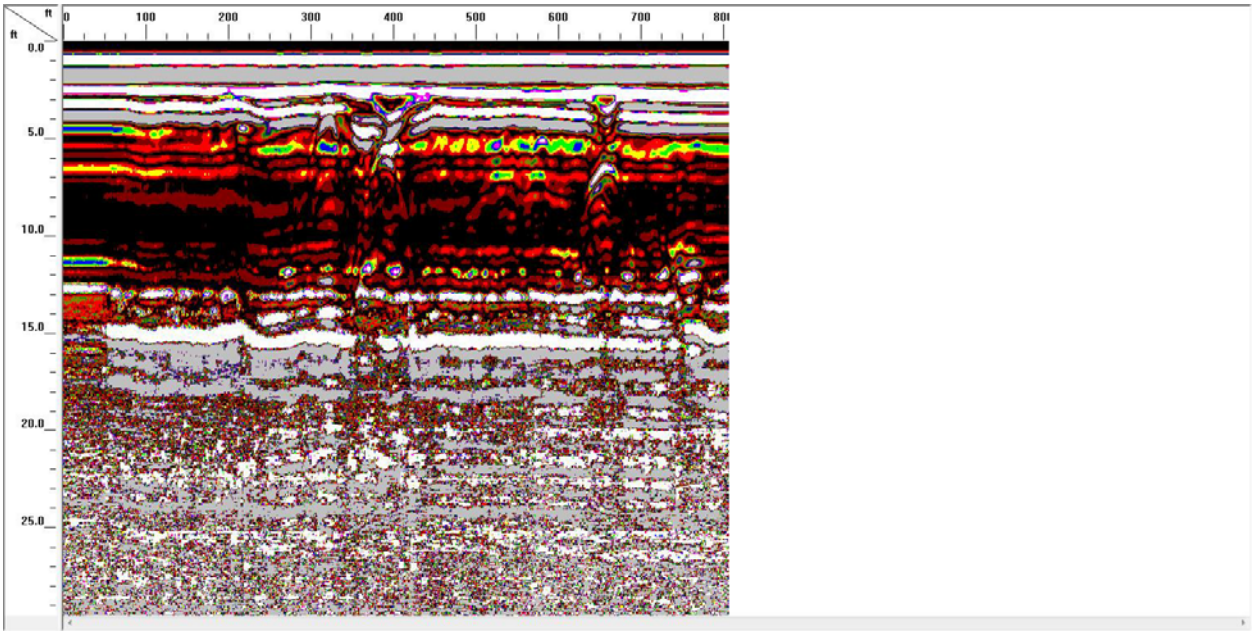


Transect 13

APPENDIX D

Pyramid Environmental & Engineering, P.C.

FIELD DRILLING RECORD

PROJECT NAME: **PROJECT NUMBER:**	NC DOT U-5305 Parcel 10 2014-070	**BORING/WELL NO:**	10-1
SITE LOCATION:	1140 US 64 West Randolph County, NC	**BORING/WELL LOCATION:**	SE
START DATE:	4/30/14	**COMPLETED:**	4/30/14
GEOLOGIST:	E. Cross	**DRILLER:**	Solutions, IES
DRILL METHOD:	Geoprobe	**SAMPLE METHOD:**	Macro-core
BORING DIA:	2-inch	**CASING DIA:**	None
TOTAL DEPTH:	7 feet	**CASING DEPTH:**	None

DEPTH (ft.)	**VISUAL MANUAL SOIL CLASSIFICATION COLOR, TEXTURE, STRUCTURE, CONSISTENCY, ODOR, ETC.**	**OVA RESULTS PERCENT RECOVERY BLOW COUNTS**
0-2'	sandy clay (CL); reddish brown, fine grained, no odor	PID=10-1(0-2): 20 PPM
2-4'	sandy clay (CL); reddish brown, fine grained, no odor	PID=10-1(2-4): 90 PPM
4-6'	clay (CL); brownish gray, fine grained, moist, no odor	PID=10-1(4-6): 95 PPM
6-7'	clayey sand (SC); consolidated, tan/gray, fine grained, refusal at 7'	PID=10-1(6-7): 0 PPM

MONITORING WELL INFORMATION (IF APPLICABLE)

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

Pyramid Environmental & Engineering, P.C.

FIELD DRILLING RECORD

PROJECT NAME: **PROJECT NUMBER:**	NC DOT U-5305 Parcel 10 2014-070	**BORING/WELL NO:**	10-2
SITE LOCATION:	1140 US 64 West Randolph County, NC	**BORING/WELL LOCATION:**	SE pump island
START DATE:	4/30/14	**COMPLETED:**	4/30/14
GEOLOGIST:	E. Cross	**DRILLER:**	Solutions, IES
DRILL METHOD:	Geoprobe	**SAMPLE METHOD:**	Macro-core
BORING DIA:	2-inch	**CASING DIA:**	None
TOTAL DEPTH:	8 feet	**CASING DEPTH:**	None

DEPTH (ft.)	VISUAL MANUAL SOIL CLASSIFICATION COLOR, TEXTURE, STRUCTURE, CONSISTENCY, ODOR, ETC.	OVA RESULTS PERCENT RECOVERY BLOW COUNTS
0-2'	silty sand (SM); gray, fine grained, strong petroleum odor	PID=(0-2): 1100 PPM
2-4'	silty sand (SM); gray to clay (CL); grayish brown, fine grained, strong odor	PID=(2-4): 7000 PPM
4-6'	silty sand (SM); light gray, fine grained, consolidated, strong odor	PID=(4-6): 7000 PPM
6-8'	silty sand (SM); light gray, fine grained, consolidated, strong odor	PID=(6-8): 6300 PPM

MONITORING WELL INFORMATION (IF APPLICABLE)

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

Pyramid Environmental & Engineering, P.C.

FIELD DRILLING RECORD

PROJECT NAME: **PROJECT NUMBER:**	NC DOT U-5305 Parcel 10 2014-070	**BORING/WELL NO:**	10-3
SITE LOCATION:	1140 US 64 West Randolph County, NC	**BORING/WELL LOCATION:**	E pump island
START DATE:	4/30/14	**COMPLETED:**	4/30/14
GEOLOGIST:	E. Cross	**DRILLER:**	Solutions, IES
DRILL METHOD:	Geoprobe	**SAMPLE METHOD:**	Macro-core
BORING DIA:	2-inch	**CASING DIA:**	None
TOTAL DEPTH:	8 feet	**CASING DEPTH:**	None

DEPTH (ft.)	**VISUAL MANUAL SOIL CLASSIFICATION COLOR, TEXTURE, STRUCTURE, CONSISTENCY, ODOR, ETC.**	**OVA RESULTS PERCENT RECOVERY BLOW COUNTS**
0-2'	4" asphalt, clay (CL) and sandy silt (ML); grayish brown, strong odor	PID=(0-2): 230 PPM
2-4'	silt (ML); white, fine grained, consolidated, strong odor	PID=(2-4): 50 PPM
4-6'	silt (ML); white/tan, fine grained, consolidated, moderate odor	PID=(4-6): 570 PPM
6-8'	silt (ML); white/tan, fine grained, consolidated, moderate odor	PID=(6-8): 90 PPM

MONITORING WELL INFORMATION (IF APPLICABLE)

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

Pyramid Environmental & Engineering, P.C.

FIELD DRILLING RECORD

PROJECT NAME: **PROJECT NUMBER:**	NC DOT U-5305 Parcel 10 2014-070	**BORING/WELL NO:**	10-4
SITE LOCATION:	1140 US 64 West Randolph County, NC	**BORING/WELL LOCATION:**	SW pump island
START DATE:	4/30/14	**COMPLETED:**	4/30/14
GEOLOGIST:	E. Cross	**DRILLER:**	Solutions, IES
DRILL METHOD:	Geoprobe	**SAMPLE METHOD:**	Macro-core
BORING DIA:	2-inch	**CASING DIA:**	None
TOTAL DEPTH:	8 feet	**CASING DEPTH:**	None

DEPTH (ft.)	**VISUAL MANUAL SOIL CLASSIFICATION COLOR, TEXTURE, STRUCTURE, CONSISTENCY, ODOR, ETC.**	**OVA RESULTS PERCENT RECOVERY BLOW COUNTS**
1-2'	concrete/gravel to silty clay (CL); gray/greenish gray, moderate odor, wet	PID=(1-2): 35 PPM
2-4'	silt (ML) to clay (CL); light gray/brown gray, wet, moderate odor	PID=(2-4): 540 PPM
4-6'	silt (ML); gray/tan, moist, moderate odor	PID=(4-6): 540 PPM
6-8'	silt (ML) and clay (CL); light gray and tan with dark brown staining,	PID=(6-8): 370 PPM
	moderate odor	

MONITORING WELL INFORMATION (IF APPLICABLE)

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

Pyramid Environmental & Engineering, P.C.

FIELD DRILLING RECORD

PROJECT NAME: **PROJECT NUMBER:**	NC DOT U-5305 Parcel 10 2014-070	**BORING/WELL NO:**	10-5
SITE LOCATION:	1140 US 64 West Randolph County, NC	**BORING/WELL LOCATION:**	NW diesel pump island
START DATE:	4/30/14	**COMPLETED:**	4/30/14
GEOLOGIST:	E. Cross	**DRILLER:**	Solutions, IES
DRILL METHOD:	Geoprobe	**SAMPLE METHOD:**	Macro-core
BORING DIA:	2-inch	**CASING DIA:**	None
TOTAL DEPTH:	8 feet	**CASING DEPTH:**	None

DEPTH (ft.)	**VISUAL MANUAL SOIL CLASSIFICATION COLOR, TEXTURE, STRUCTURE, CONSISTENCY, ODOR, ETC.**	**OVA RESULTS PERCENT RECOVERY BLOW COUNTS**
0-2'	4" asphalt, silty clay (CL); reddish orange, fine grained, slight odor	PID=(0-2): 0 PPM
2-4'	silty clay (CL); reddish orange, to brown, fine grained, slight odor	PID=(2-4): 0 PPM
4-6'	sandy silt (ML); greenish gray/orange brown, fine grain, slight odor	PID=(4-6): 10 PPM
6-8'	sandy silt (ML); greenish gray/orange brown, fine grain, possible odor	PID=(6-8): 15 PPM

MONITORING WELL INFORMATION (IF APPLICABLE)

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

Pyramid Environmental & Engineering, P.C.

FIELD DRILLING RECORD

PROJECT NAME: **PROJECT NUMBER:**	NC DOT U-5305 Parcel 10 2014-070	**BORING/WELL NO:**	10-6
SITE LOCATION:	1140 US 64 West Randolph County, NC	**BORING/WELL LOCATION:**	W diesel pump island
START DATE:	4/30/14	**COMPLETED:**	4/30/14
GEOLOGIST:	E. Cross	**DRILLER:**	Solutions, IES
DRILL METHOD:	Geoprobe	**SAMPLE METHOD:**	Macro-core
BORING DIA:	2-inch	**CASING DIA:**	None
TOTAL DEPTH:	8 feet	**CASING DEPTH:**	None

DEPTH (ft.)	**VISUAL MANUAL SOIL CLASSIFICATION COLOR, TEXTURE, STRUCTURE, CONSISTENCY, ODOR, ETC.**	**OVA RESULTS PERCENT RECOVERY BLOW COUNTS**
0-2'	sandy silt (ML); brown/orange brown, fine grained, slight odor	PID = (0-2): 110 PPM
2-4'	sandy silt (ML) to clay (CL); brown, slight odor, organics	PID = (2-4): 300 PPM
4-6'	silty clay (CL); greenish gray, fine grained, no odor	PID = (4-6): 80 PPM
6-8'	silt (ML) and clay (CL); reddish orange/tan, fine grained, no odor	PID = (6-8): 60 PPM

MONITORING WELL INFORMATION (IF APPLICABLE)

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

Pyramid Environmental & Engineering, P.C.

FIELD DRILLING RECORD

PROJECT NAME: **PROJECT NUMBER:**	NC DOT U-5305 Parcel 10 2014-070	**BORING/WELL NO:**	10-7
SITE LOCATION:	1140 US 64 West Randolph County, NC	**BORING/WELL LOCATION:**	NW AST field
START DATE:	4/30/14	**COMPLETED:**	4/30/14
GEOLOGIST:	E. Cross	**DRILLER:**	Solutions, IES
DRILL METHOD:	Geoprobe	**SAMPLE METHOD:**	Macro-core
BORING DIA:	2-inch	**CASING DIA:**	None
TOTAL DEPTH:	8 feet	**CASING DEPTH:**	None

DEPTH (ft.)	**VISUAL MANUAL SOIL CLASSIFICATION COLOR, TEXTURE, STRUCTURE, CONSISTENCY, ODOR, ETC.**	**OVA RESULTS PERCENT RECOVERY BLOW COUNTS**
0-2'	clayey sand (SC); reddish orange, fine grained, no odor	PID = (0-2): 10 PPM
2-4'	clayey sand (SC); reddish orange, fine grained, no odor	PID = (2-4): 15 PPM
4-6'	clayey sand (SC); reddish orange, fine grained, no odor	PID = (4-6): 130 PPM
6-8'	same for 1', then clay (CL); greenish gray with quartz gravel, strong odor	PID = (6-8): 140 PPM

MONITORING WELL INFORMATION (IF APPLICABLE)

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

Pyramid Environmental & Engineering, P.C.

FIELD DRILLING RECORD

PROJECT NAME: **PROJECT NUMBER:**	NC DOT U-5305 Parcel 10 2014-070	**BORING/WELL NO:**	10-8
SITE LOCATION:	1140 US 64 West Randolph County, NC	**BORING/WELL LOCATION:**	Center AST field
START DATE:	4/30/14	**COMPLETED:**	4/30/14
GEOLOGIST:	E. Cross	**DRILLER:**	Solutions, IES
DRILL METHOD:	Geoprobe	**SAMPLE METHOD:**	Macro-core
BORING DIA:	2-inch	**CASING DIA:**	None
TOTAL DEPTH:	8 feet	**CASING DEPTH:**	None

DEPTH (ft.)	**VISUAL MANUAL SOIL CLASSIFICATION COLOR, TEXTURE, STRUCTURE, CONSISTENCY, ODOR, ETC.**	**OVA RESULTS PERCENT RECOVERY BLOW COUNTS**
0-2'	6" gray sand/gravel, clayey sand (SC); orange brown, moderate odor	PID = (0-2): 85 PPM
2-4'	clayey sand (SC); orange brown, moderate odor	PID = (2-4): 385 PPM
4-6'	same to greenish gray silty clay (CL), strong odor	PID = (4-6): 970 PPM
6-8'	greenish gray silty clay (CL), strong odor	PID = (6-8): 985 PPM

MONITORING WELL INFORMATION (IF APPLICABLE)

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

Pyramid Environmental & Engineering, P.C.

FIELD DRILLING RECORD

PROJECT NAME: **PROJECT NUMBER:**	NC DOT U-5305 Parcel 10 2014-070	**BORING/WELL NO:**	10-9
SITE LOCATION:	1140 US 64 West Randolph County, NC	**BORING/WELL LOCATION:**	East AST field
START DATE:	4/30/14	**COMPLETED:**	4/30/14
GEOLOGIST:	E. Cross	**DRILLER:**	Solutions, IES
DRILL METHOD:	Geoprobe	**SAMPLE METHOD:**	Macro-core
BORING DIA:	2-inch	**CASING DIA:**	None
TOTAL DEPTH:	8 feet	**CASING DEPTH:**	None

DEPTH (ft.)	**VISUAL MANUAL SOIL CLASSIFICATION COLOR, TEXTURE, STRUCTURE, CONSISTENCY, ODOR, ETC.**	**OVA RESULTS PERCENT RECOVERY BLOW COUNTS**
0-2'	6" gray sand/gravel, clayey sand (SC); orange brown, strong odor	PID = (0-2): 50 PPM
2-4'	clayey sand (SC); tan/orange with quartz gravel, strong odor	PID = (2-4): 5 PPM
4-6'	clayey silt (ML); brown/gray/tan with quartz pebbles, moderate odor	PID = (4-6): 25 PPM
6-8'	clayey silt (ML); greenish gray/brown with trace organics, mod. odor	PID = (6-8): 290 PPM

MONITORING WELL INFORMATION (IF APPLICABLE)

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

Pyramid Environmental & Engineering, P.C.

FIELD DRILLING RECORD

PROJECT NAME: **PROJECT NUMBER:**	NC DOT U-5305 Parcel 10 2014-070	**BORING/WELL NO:**	10-10
SITE LOCATION:	1140 US 64 West Randolph County, NC	**BORING/WELL LOCATION:**	East AST product lines
START DATE:	4/30/14	**COMPLETED:**	4/30/14
GEOLOGIST:	E. Cross	**DRILLER:**	Solutions, IES
DRILL METHOD:	Geoprobe	**SAMPLE METHOD:**	Macro-core
BORING DIA:	2-inch	**CASING DIA:**	None
TOTAL DEPTH:	8 feet	**CASING DEPTH:**	None

DEPTH (ft.)	**VISUAL MANUAL SOIL CLASSIFICATION COLOR, TEXTURE, STRUCTURE, CONSISTENCY, ODOR, ETC.**	**OVA RESULTS PERCENT RECOVERY BLOW COUNTS**
0-2'	6" gray sand/gravel, silty clay (CL); tan/red, moderate odor	PID = (0-2): 10 PPM
2-4'	silty clay (CL); light tan/orange, strong odor	PID = (2-4): 340 PPM
4-6'	silty clay (CL); light tan/orange/gray, strong odor	PID = (4-6): 39250 PPM
6-8'	silty clay (CL); greenish gray/brown, strong odor	PID = (6-8): 11500 PPM

MONITORING WELL INFORMATION (IF APPLICABLE)

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

Pyramid Environmental & Engineering, P.C.

FIELD DRILLING RECORD

PROJECT NAME: **PROJECT NUMBER:**	NC DOT U-5305 Parcel 10 2014-070	**BORING/WELL NO:**	10-11
SITE LOCATION:	1140 US 64 West Randolph County, NC	**BORING/WELL LOCATION:**	East of former USTs
START DATE:	4/30/14	**COMPLETED:**	4/30/14
GEOLOGIST:	E. Cross	**DRILLER:**	Solutions, IES
DRILL METHOD:	Geoprobe	**SAMPLE METHOD:**	Macro-core
BORING DIA:	2-inch	**CASING DIA:**	None
TOTAL DEPTH:	8 feet	**CASING DEPTH:**	None

DEPTH (ft.)	**VISUAL MANUAL SOIL CLASSIFICATION COLOR, TEXTURE, STRUCTURE, CONSISTENCY, ODOR, ETC.**	**OVA RESULTS PERCENT RECOVERY BLOW COUNTS**
0-2'	6" gray sand/gravel, silty clay (CL); orange, slight odor	PID = (0-2): 15 PPM
2-4'	silty clay (CL); orange/brown/greenish gray, slight odor	PID = (2-4): 45 PPM
4-6'	silty clay (CL); orange/brown/greenish gray, slight odor	PID = (4-6): 160 PPM
6-8'	silty clay (CL); light greenish gray/orange, possible odor	PID = (6-8): 35 PPM

MONITORING WELL INFORMATION (IF APPLICABLE)

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

Pyramid Environmental & Engineering, P.C.

FIELD DRILLING RECORD

PROJECT NAME: **PROJECT NUMBER:**	NC DOT U-5305 Parcel 10 2014-070	**BORING/WELL NO:**	10-12
SITE LOCATION:	1140 US 64 West Randolph County, NC	**BORING/WELL LOCATION:**	SE of ASTs
START DATE:	4/30/14	**COMPLETED:**	4/30/14
GEOLOGIST:	E. Cross	**DRILLER:**	Solutions, IES
DRILL METHOD:	Geoprobe	**SAMPLE METHOD:**	Macro-core
BORING DIA:	2-inch	**CASING DIA:**	None
TOTAL DEPTH:	8 feet	**CASING DEPTH:**	None

DEPTH (ft.)	**VISUAL MANUAL SOIL CLASSIFICATION COLOR, TEXTURE, STRUCTURE, CONSISTENCY, ODOR, ETC.**	**OVA RESULTS PERCENT RECOVERY BLOW COUNTS**
0-2'	silty clay (CL); orange brown, slight odor	PID = (0-2): 5 PPM
2-4'	silty clay (CL); orange brown, no odor	PID = (2-4): 65 PPM
4-6'	silty sand (SM); orange brown, possible odor	PID = (4-6): 20 PPM
6-8'	silty sand (SM); orange brown, possible odor	PID = (6-8): 10 PPM

MONITORING WELL INFORMATION (IF APPLICABLE)

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

Pyramid Environmental & Engineering, P.C.

FIELD DRILLING RECORD

PROJECT NAME: **PROJECT NUMBER:**	NC DOT U-5305 Parcel 10 2014-070	**BORING/WELL NO:**	10-13
SITE LOCATION:	1140 US 64 West Randolph County, NC	**BORING/WELL LOCATION:**	central dispenser
START DATE:	4/30/14	**COMPLETED:**	4/30/14
GEOLOGIST:	E. Cross	**DRILLER:**	Solutions, IES
DRILL METHOD:	Geoprobe	**SAMPLE METHOD:**	Macro-core
BORING DIA:	2-inch	**CASING DIA:**	None
TOTAL DEPTH:	8 feet	**CASING DEPTH:**	None

DEPTH (ft.)	**VISUAL MANUAL SOIL CLASSIFICATION COLOR, TEXTURE, STRUCTURE, CONSISTENCY, ODOR, ETC.**	**OVA RESULTS PERCENT RECOVERY BLOW COUNTS**
0-2'	6" concrete, clayey sand (SC); greenish gray, strong odor	PID = (0-2): 120 PPM
2-4'	clay (CL) olive brown, moist, trace organics, strong odor	PID = (2-4): 585 PPM
4-6'	clay (CL) olive brown, moist, strong odor	PID = (4-6): 490 PPM
6-8'	silty clay (CL); orange/tan/gray, strong odor	PID = (6-8): 845 PPM

MONITORING WELL INFORMATION (IF APPLICABLE)

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

Pyramid Environmental & Engineering, P.C.

FIELD DRILLING RECORD

PROJECT NAME: **PROJECT NUMBER:**	NC DOT U-5305 Parcel 10 2014-070	**BORING/WELL NO:**	10-14
SITE LOCATION:	1140 US 64 West Randolph County, NC	**BORING/WELL LOCATION:**	SW property corner
START DATE:	4/30/14	**COMPLETED:**	4/30/14
GEOLOGIST:	E. Cross	**DRILLER:**	Solutions, IES
DRILL METHOD:	Geoprobe	**SAMPLE METHOD:**	Macro-core
BORING DIA:	2-inch	**CASING DIA:**	None
TOTAL DEPTH:	8 feet	**CASING DEPTH:**	None

DEPTH (ft.)	**VISUAL MANUAL SOIL CLASSIFICATION COLOR, TEXTURE, STRUCTURE, CONSISTENCY, ODOR, ETC.**	**OVA RESULTS PERCENT RECOVERY BLOW COUNTS**
0-2'	no recovery	
2-4'	sandy clay (CL); brown, few rocks, no odor	PID = (2-4): 0 PPM
4-6'	clay (CL); olive, wet, no odor	PID = (4-6): 65 PPM
6-8'	no recovery	

MONITORING WELL INFORMATION (IF APPLICABLE)

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

Pyramid Environmental & Engineering, P.C.

FIELD DRILLING RECORD

PROJECT NAME: **PROJECT NUMBER:**	NC DOT U-5305 Parcel 10 2014-070	**BORING/WELL NO:**	10-15
SITE LOCATION:	1140 US 64 West Randolph County, NC	**BORING/WELL LOCATION:**	W property boundary
START DATE:	4/30/14	**COMPLETED:**	5/1/14
GEOLOGIST:	E. Cross	**DRILLER:**	Solutions, IES
DRILL METHOD:	Geoprobe	**SAMPLE METHOD:**	Macro-core
BORING DIA:	2-inch	**CASING DIA:**	None
TOTAL DEPTH:	8 feet	**CASING DEPTH:**	None

DEPTH (ft.)	**VISUAL MANUAL SOIL CLASSIFICATION COLOR, TEXTURE, STRUCTURE, CONSISTENCY, ODOR, ETC.**	**OVA RESULTS PERCENT RECOVERY BLOW COUNTS**
0-2'	clayey silty sand (SM); gray/tan, moist, slight petroleum odor	PID = (0-2): 45 PPM
2-4'	silty clayey sand (SC); firm to hard, tan, no odor	PID = (2-4): 10 PPM
4-6'	clayey silty sand (SM); tan, firm, no odor	PID = (4-6): 5 PPM
6-8'	clayey silty sand (SM); tan, firm, no odor	PID = (6-8): 10 PPM

MONITORING WELL INFORMATION (IF APPLICABLE)

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

Pyramid Environmental & Engineering, P.C.

FIELD DRILLING RECORD

PROJECT NAME: **PROJECT NUMBER:**	NC DOT U-5305 Parcel 10 2014-070	**BORING/WELL NO:**	10-16
SITE LOCATION:	1140 US 64 West Randolph County, NC	**BORING/WELL LOCATION:**	SW of diesel pumps
START DATE:	4/30/14	**COMPLETED:**	5/1/14
GEOLOGIST:	E. Cross	**DRILLER:**	Solutions, IES
DRILL METHOD:	Geoprobe	**SAMPLE METHOD:**	Macro-core
BORING DIA:	2-inch	**CASING DIA:**	None
TOTAL DEPTH:	8 feet	**CASING DEPTH:**	None

DEPTH (ft.)	**VISUAL MANUAL SOIL CLASSIFICATION COLOR, TEXTURE, STRUCTURE, CONSISTENCY, ODOR, ETC.**	**OVA RESULTS PERCENT RECOVERY BLOW COUNTS**
0-2'	6" asphalt, silty clay (CL); orange/brown/gray, moderate odor	PID = (0-2): 85 PPM
2-4'	silty clay (CL); gray, moderate odor	PID = (2-4): 890 PPM
5-6'	silty clay (CL); brown/olive, slight odor	PID = (5-6): 490 PPM
6-8'	silty clay (CL) to clay (CL); brown/olive, quartz fragments, no odor	PID = (6-8): 640 PPM

MONITORING WELL INFORMATION (IF APPLICABLE)

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

Pyramid Environmental & Engineering, P.C.

FIELD DRILLING RECORD

PROJECT NAME: **PROJECT NUMBER:**	NC DOT U-5305 Parcel 10 2014-070	**BORING/WELL NO:**	10-17
SITE LOCATION:	1140 US 64 West Randolph County, NC	**BORING/WELL LOCATION:**	W of gasoline pumps
START DATE:	4/30/14	**COMPLETED:**	5/1/14
GEOLOGIST:	E. Cross	**DRILLER:**	Solutions, IES
DRILL METHOD:	Geoprobe	**SAMPLE METHOD:**	Macro-core
BORING DIA:	2-inch	**CASING DIA:**	None
TOTAL DEPTH:	8 feet	**CASING DEPTH:**	None

DEPTH (ft.)	**VISUAL MANUAL SOIL CLASSIFICATION COLOR, TEXTURE, STRUCTURE, CONSISTENCY, ODOR, ETC.**	**OVA RESULTS PERCENT RECOVERY BLOW COUNTS**
0-2'	4" asphalt, sandy clay (CL); gray/reddish brown, minor quartz, mod. odor	PID = (0-2): 205 PPM
2-4'	sandy clay and clay (CL); brown/gray/olive, minor organics, mod. odor	PID = (2-4): 440 PPM
4-6'	clay (CL); brown/olive, wet, slight odor	PID = (4-6): 105 PPM
6-8'	silty clay (CL); brown/light tan, no odor	PID = (6-8): 170 PPM

MONITORING WELL INFORMATION (IF APPLICABLE)

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

Pyramid Environmental & Engineering, P.C.

FIELD DRILLING RECORD

PROJECT NAME: **PROJECT NUMBER:**	NC DOT U-5305 Parcel 10 2014-070	**BORING/WELL NO:**	10-18
SITE LOCATION:	1140 US 64 West Randolph County, NC	**BORING/WELL LOCATION:**	E of central dispenser
START DATE:	4/30/14	**COMPLETED:**	5/1/14
GEOLOGIST:	E. Cross	**DRILLER:**	Solutions, IES
DRILL METHOD:	Geoprobe	**SAMPLE METHOD:**	Macro-core
BORING DIA:	2-inch	**CASING DIA:**	None
TOTAL DEPTH:	8 feet	**CASING DEPTH:**	None

DEPTH (ft.)	**VISUAL MANUAL SOIL CLASSIFICATION COLOR, TEXTURE, STRUCTURE, CONSISTENCY, ODOR, ETC.**	**OVA RESULTS PERCENT RECOVERY BLOW COUNTS**
0-2'	4" asphalt, silty clay (CL); brown, possible odor	PID = (0-2): 15 PPM
2-4'	silty clay (CL); tan/orange, minor rock fragments, no odor	PID = (2-4): 0 PPM
4-6'	silty sand (SM); tan, no odor	PID = (4-6): 110 PPM
6-8'	silty sand (SM) to silt (ML); tan, no odor	PID = (6-8): 10 PPM

MONITORING WELL INFORMATION (IF APPLICABLE)

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

Pyramid Environmental & Engineering, P.C.

FIELD DRILLING RECORD

PROJECT NAME: **PROJECT NUMBER:**	NC DOT U-5305 Parcel 10 2014-070	**BORING/WELL NO:**	10-19
SITE LOCATION:	1140 US 64 West Randolph County, NC	**BORING/WELL LOCATION:**	Former UST basin
START DATE:	4/30/14	**COMPLETED:**	5/1/14
GEOLOGIST:	E. Cross	**DRILLER:**	Solutions, IES
DRILL METHOD:	Geoprobe	**SAMPLE METHOD:**	Macro-core
BORING DIA:	2-inch	**CASING DIA:**	None
TOTAL DEPTH:	8 feet	**CASING DEPTH:**	None

DEPTH (ft.)	**VISUAL MANUAL SOIL CLASSIFICATION COLOR, TEXTURE, STRUCTURE, CONSISTENCY, ODOR, ETC.**	**OVA RESULTS PERCENT RECOVERY BLOW COUNTS**
1-2'	sand (SP) with gravel; gray, no odor	PID = (1-2): 15 PPM
2-4'	clayey sand (SC); brown, no odor	PID = (2-4): 0 PPM
4-6'	no recovery	
6-8'	clayey sand (SC); brown, abundant rock fragments, strong odor	PID = (6-8): 320 PPM

MONITORING WELL INFORMATION (IF APPLICABLE)

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

Pyramid Environmental & Engineering, P.C.

FIELD DRILLING RECORD

PROJECT NAME: **PROJECT NUMBER:**	NC DOT U-5305 Parcel 10 2014-070	**BORING/WELL NO:**	10-20
SITE LOCATION:	1140 US 64 West Randolph County, NC	**BORING/WELL LOCATION:**	S of gasoline pumps
START DATE:	4/30/14	**COMPLETED:**	5/1/14
GEOLOGIST:	E. Cross	**DRILLER:**	Solutions, IES
DRILL METHOD:	Geoprobe	**SAMPLE METHOD:**	Macro-core
BORING DIA:	2-inch	**CASING DIA:**	None
TOTAL DEPTH:	7 feet	**CASING DEPTH:**	None

DEPTH (ft.)	**VISUAL MANUAL SOIL CLASSIFICATION COLOR, TEXTURE, STRUCTURE, CONSISTENCY, ODOR, ETC.**	**OVA RESULTS PERCENT RECOVERY BLOW COUNTS**
1-2'	topsoil to silty clay (CL); orange/tan, possible odor	PID = (1-2): 0 PPM
2-4'	silty clay (CL); tan, moderate odor	PID = (2-4): 980 PPM
4-6'	sandy clay (CL); tan/gray, wet, strong odor	PID = (4-6): 8450 PPM
6-7'	sandy clay (CL) to silty clay (CL); gray, consolidated, strong odor, refusal	PID = (6-7): 21400 PPM

MONITORING WELL INFORMATION (IF APPLICABLE)

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

Pyramid Environmental & Engineering, P.C.

FIELD DRILLING RECORD

PROJECT NAME: **PROJECT NUMBER:**	NC DOT U-5305 Parcel 10 2014-070	**BORING/WELL NO:**	10-21
SITE LOCATION:	1140 US 64 West Randolph County, NC	**BORING/WELL LOCATION:**	SW of AST field
START DATE:	4/30/14	**COMPLETED:**	5/1/14
GEOLOGIST:	E. Cross	**DRILLER:**	Solutions, IES
DRILL METHOD:	Geoprobe	**SAMPLE METHOD:**	Macro-core
BORING DIA:	2-inch	**CASING DIA:**	None
TOTAL DEPTH:	8 feet	**CASING DEPTH:**	None

DEPTH (ft.)	**VISUAL MANUAL SOIL CLASSIFICATION COLOR, TEXTURE, STRUCTURE, CONSISTENCY, ODOR, ETC.**	**OVA RESULTS PERCENT RECOVERY BLOW COUNTS**
0-2'	4" asphalt, silty clay (CL); orange brown, moderate odor	PID = (0-2): 25 PPM
2-4'	4" asphalt, silty clay (CL); orange brown, possible odor	PID = (2-4): 5 PPM
4-6'	sandy clay (CL); orange brown, possible odor	PID = (4-6): 180 PPM
6-8'	sandy clay (CL); orange brown, possible odor	PID = (6-8): 0 PPM

MONITORING WELL INFORMATION (IF APPLICABLE)

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

APPENDIX E

QED

AQROS

Hydrocarbon Analysis Results

Client: NCDOT Randolph County U-53-5
Address: 1140 Hwy 64 West - Parcel 10
Asheboro, NC

Contact:

Project: NCDOT Randolph County U-5305 Parcel 10

Samples taken 10-1 through 10-5
Samples extracted 10-1 through 10-5
Samples analysed 10-1 through 10-5

Operator Tim Leatherman

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
										% light	% mid	% heavy	
s	10-1(2-4)	8.0	<0.4	0.27	<0.08	0.27	<0.08	<0.01	<0.008	94.9	5.1	0	Deg.Fuel (PFM) (P)
s	10-1(4-6)	8.0	1.02	1.02	0.7	1.72	<0.08	<0.01	<0.008	96.1	3.5	0.5	Deg.Gas (FCM) (P) 25%
s	10-4(2-4)	10.0	1.95	3.07	3.24	6.31	2.51	0.17	<0.01	83.6	11.9	4.5	V.Deg.PHC 85.1%
s	10-2(2-4)	90.0	68.38	112.5	253.3	365.8	17.34	0.6	<0.09	99.3	0.7	0.1	Deg.Gas (FCM) (P) 77.1%
s	10-2(4-6)	85.0	47.35	79.1	239.2	318.3	16.33	0.56	<0.085	99	0.9	0.1	Deg.Fuel (P) 71%
s	10-3(4-6)	22.0	<1.1	<1.1	4.51	4.51	0.76	0.04	<0.022	60.5	36	3.6	Deg.Fuel (FCM) (P) 80.9%
s	10-5(6-8)	8.0	<0.4	<0.4	10.63	10.63	3.76	0.16	<0.008	51.5	42.9	5.6	Deg.Fuel (FCM) 90.2%

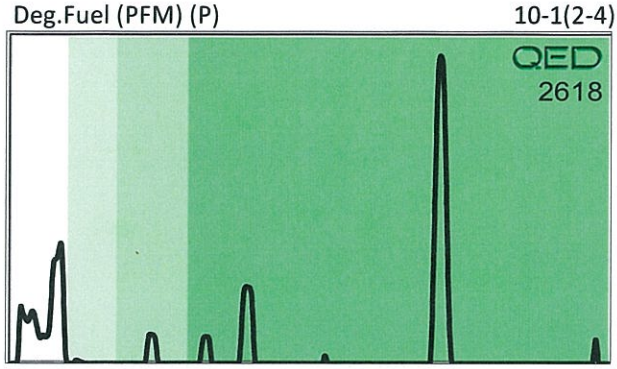
Initial Calibrator QC check OK

Results generated by a QED HC-1 analyser. Concentration values in mg/kg for soil samples and mg/L for water samples. Soil values are not corrected for moisture or stone content

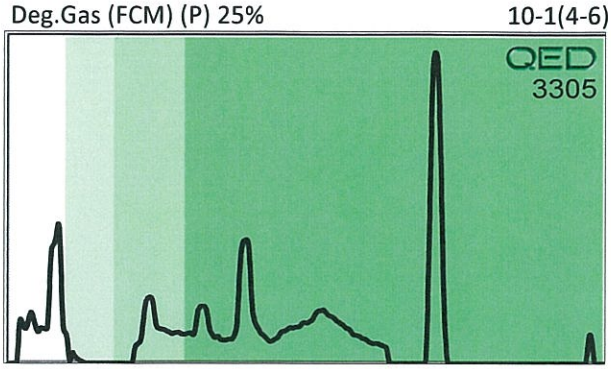
Fingerprints provide a tentative hydrocarbon identification. The abbreviations are:- FCM = Results calculated using Fundamental Calibration Mode : % = confidence for sample fingerprint match to library

(SBS) or (LBS) = Site Specific or Library Background Subtraction applied to result : (PFM) = Poor Fingerprint Match : (T) = Turbid : (P) = Particulate present

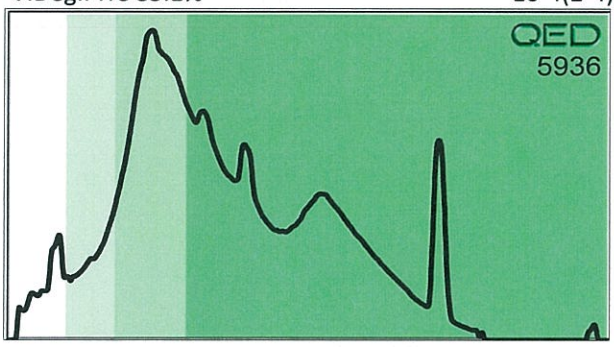
Deg.Fuel (PFM) (P) 10-1(2-4)



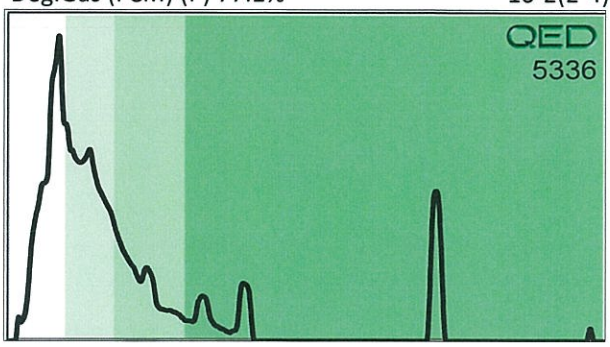
Deg.Gas (FCM) (P) 25% 10-1(4-6)



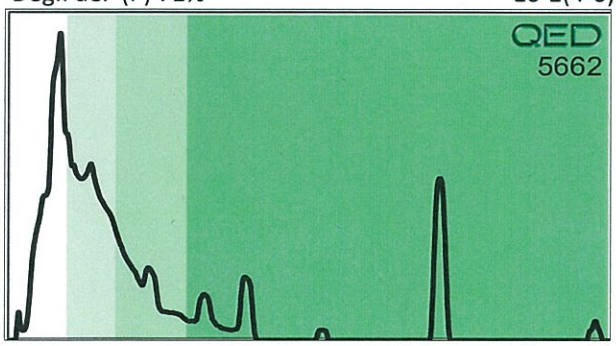
V.Deg.PHC 85.1% 10-4(2-4)



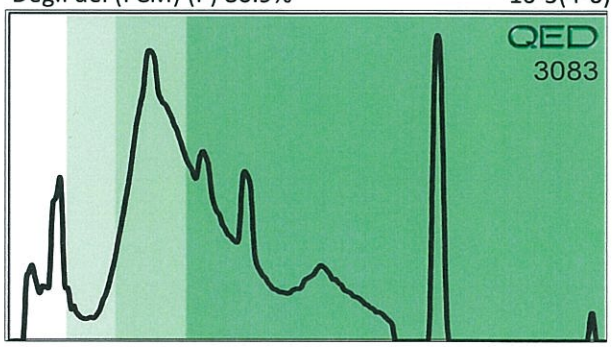
Deg.Gas (FCM) (P) 77.1% 10-2(2-4)



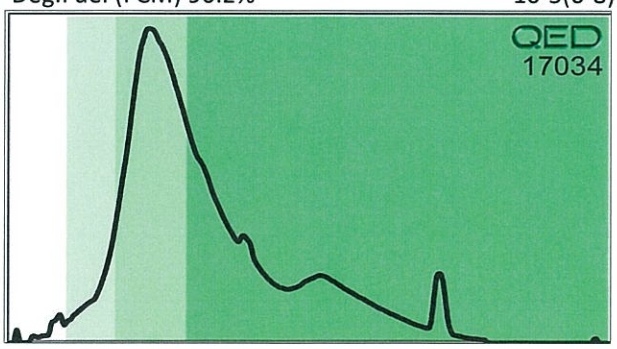
Deg.Fuel (P) 71% 10-2(4-6)



Deg.Fuel (FCM) (P) 80.9% 10-3(4-6)



Deg.Fuel (FCM) 90.2% 10-5(6-8)



QED

AQROS

Hydrocarbon Analysis Results

Client: NCDOT Randolph U-5305 Parcel 10
Address: 1140 Hwy 64 West - Parcel 10
Asheboro, NC

Samples taken
Samples extracted
Samples analysed

Contact:

Operator Tim Leatherman

Project: NCDOT Randolph U-5305
Parcel 10

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
										% light	% mid	% heavy	
s	10-6(2-4)	1941.0	<97.1	<97.1	100.7	100.7	94.04	<1.94	<1.941	62.1	29.1	8.8	PAH (PFM)
s	10-7(6-8)	30.0	<1.5	23.5	12.12	35.62	6.37	<0.03	<0.03	99.2	0.8	0	Deg.Fuel (P)
s	10-8(6-8)	62.0	50.05	100.3	589.2	689.5	52.68	1.63	<0.062	98.9	1.1	0.1	86.40%

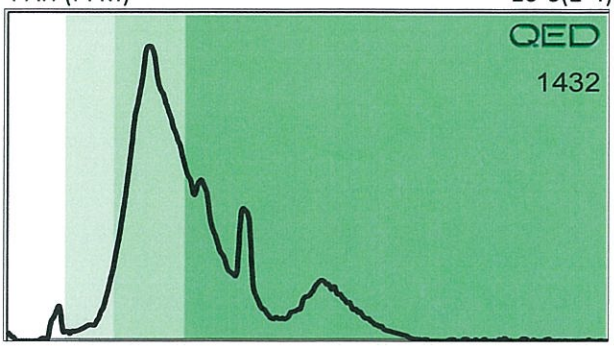
Initial Calibrator QC check OK

Results generated by a QED HC-1 analyser. Concentration values in mg/kg for soil samples and mg/L for water samples. Soil values are not corrected for moisture or stone content

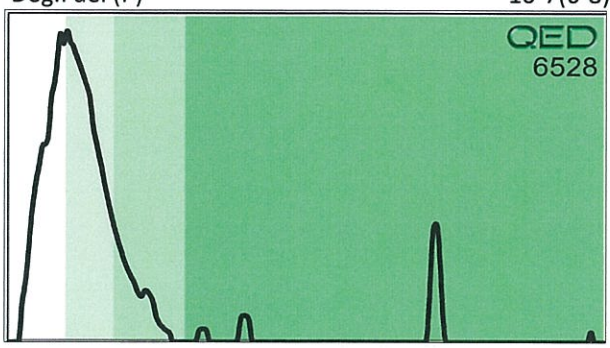
Fingerprints provide a tentative hydrocarbon identification. The abbreviations are:- FCM = Results calculated using Fundamental Calibration Mode : % = confidence for sample fingerprint match to library

(SBS) or (LBS) = Site Specific or Library Background Subtraction applied to result : (PFM) = Poor Fingerprint Match : (T) = Turbid : (P) = Particulate present

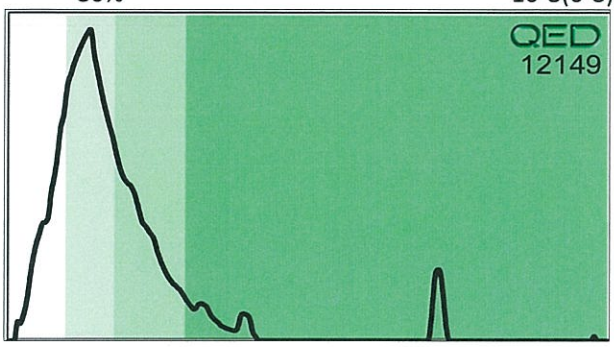
PAH (PFM) 10-6(2-4)



Deg.Fuel (P) 10-7(6-8)



86% 10-8(6-8)



QED

AQROS

Hydrocarbon Analysis Results

Client: NCDOT Randolph U-5305 Parcel 10
Address: 1140 Hwy 64 West - Parcel 10
Asheboro, NC

Samples taken
Samples extracted
Samples analysed

Contact:

Operator Tim Leatherman

Project: NCDOT Randolph U-5305 Parcel 10

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
										% light	% mid	% heavy	
s	10-9(0-2)	13586.0	<679.3	2000	83418	85418	41876	1838	<13.586	96.7	3.2	0.1	Deg.Diesel (FCM) 91%
s	10-8(4-6)	74.0	<3.7	30.67	408.1	438.77	227.8	10	<0.074	98	2	0	Deg.Fuel (PFM)
s	10-9(6-8)	120.0	<6	<6	<1.2	<6	<1.2	<0.12	<0.12	0	0	0	TPH not detected
s	10-9(6-8)Rep	198.0	<9.9	<9.9	<1.98	<1.98	<1.98	<0.2	<0.198	88.9	11.1	0	Deg.Fuel
s	10-10(4-6)	185.0	469.1	755.2	1489	2244.2	127.7	4.08	<0.185	99.5	0.4	0	Deg.Gas (FCM) 88.5%
s	10-11(4-6)	31.0	4.47	4.49	<0.31	4.49	<0.31	0.68	<0.031	98.5	1.5	0	Deg.Fuel (PFM) (P)

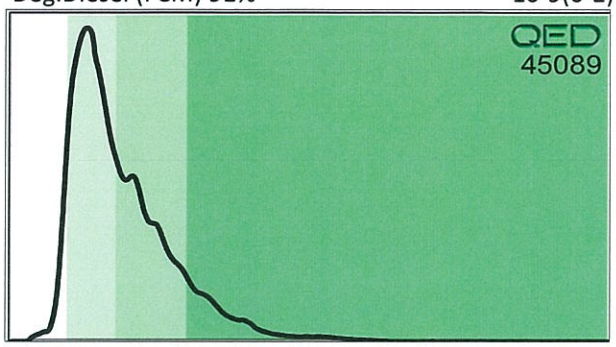
Initial Calibrator QC check OK

Results generated by a QED HC-1 analyser. Concentration values in mg/kg for soil samples and mg/L for water samples. Soil values are not corrected for moisture or stone content

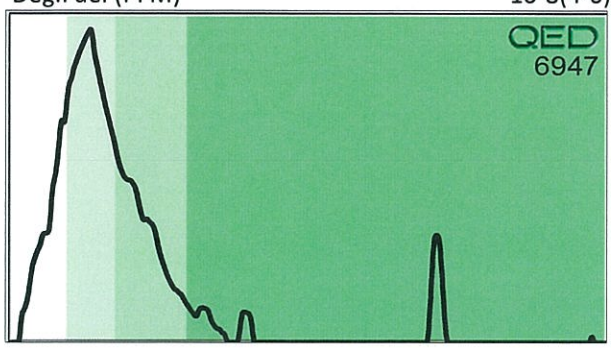
Fingerprints provide a tentative hydrocarbon identification. The abbreviations are:- FCM = Results calculated using Fundamental Calibration Mode : % = confidence for sample fingerprint match to library

(SBS) or (LBS) = Site Specific or Library Background Subtraction applied to result : (PFM) = Poor Fingerprint Match : (T) = Turbid : (P) = Particulate present

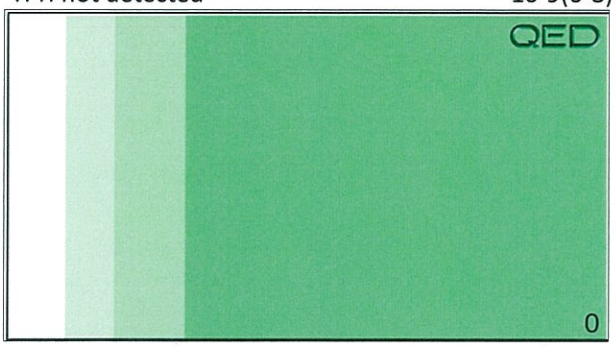
Deg.Diesel (FCM) 91% 10-9(0-2)



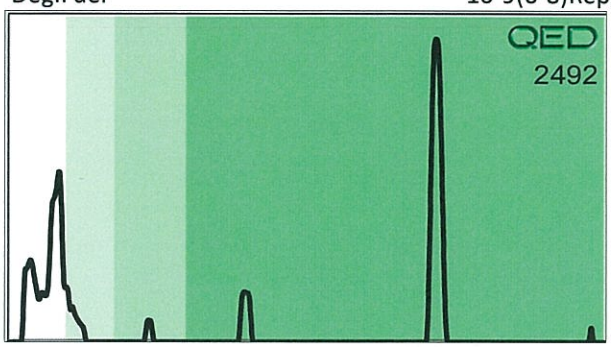
Deg.Fuel (PFM) 10-8(4-6)



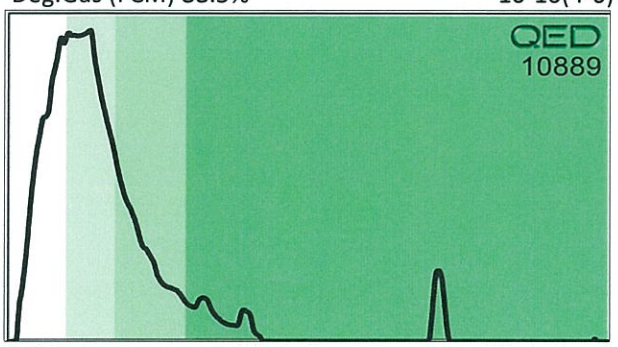
TPH not detected 10-9(6-8)



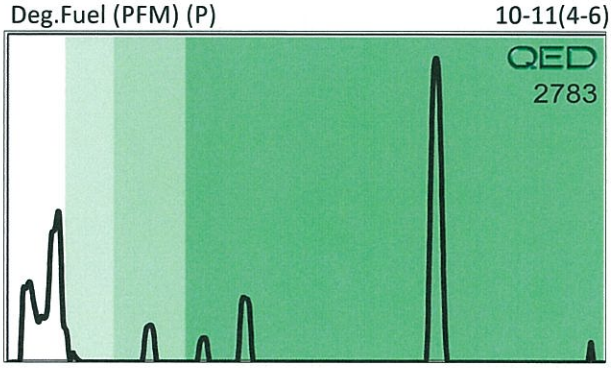
Deg.Fuel 10-9(6-8)Rep



Deg.Gas (FCM) 88.5% 10-10(4-6)



Deg.Fuel (PFM) (P) 10-11(4-6)



QED

AQROS

Hydrocarbon Analysis Results

Client: NCDOT Randolph U-5305 Parcel 10
Address: 1140 Hwy 64 West - Parcel 10
Asheboro, NC

Samples taken
Samples extracted
Samples analysed

Contact:

Operator Tim Leatherman

Project: NCDOT Randolph U-5305 Parcel 10

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
										% light	% mid	% heavy	
s	10.3	1540.0	767.8	1674	9579	11253	5027	269.3	2.74	95.6	4.2	0.3	Deg.Diesel + Coal Tar Traces (FCM) 90%
s	10-13(6-8)	2350.0	1131	2452	81842	84294	7671	221.4	<2.35	97.7	2.1	0.1	Deg.JP-5 (FCM) 76.6%
s	10-13(6-8)Rep	46.0	<2.3	26.76	261.2	287.96	123.9	6.08	0.066	97	2.9	0.1	Deg.Diesel + Coal Tar Traces (FCM) 92.6%
s	10-14(4-6)	128.0	<6.4	<6.4	6.64	6.64	<1.28	<0.13	<0.128	0	37	63	Deg.Fuel (FCM) (P) 55.6%
s	10-12(2-4)	8.0	<0.4	<0.4	<0.08	<0.4	<0.08	<0.01	<0.008	0	0	100	Background Organics (P)

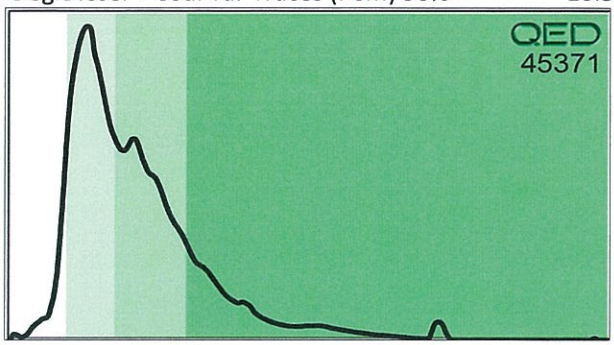
Initial Calibrator QC check OK

Results generated by a QED HC-1 analyser. Concentration values in mg/kg for soil samples and mg/L for water samples. Soil values are not corrected for moisture or stone content

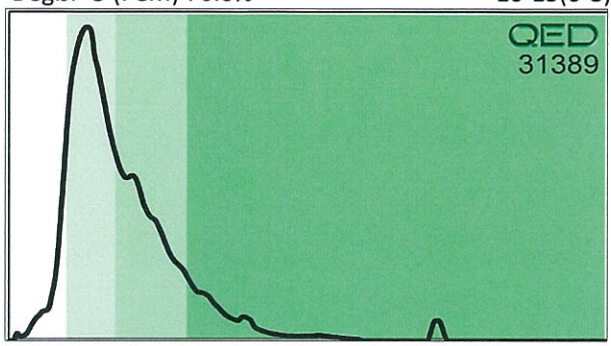
Fingerprints provide a tentative hydrocarbon identification. The abbreviations are:- FCM = Results calculated using Fundamental Calibration Mode : % = confidence for sample fingerprint match to library

(SBS) or (LBS) = Site Specific or Library Background Subtraction applied to result : (PFM) = Poor Fingerprint Match : (T) = Turbid : (P) = Particulate present

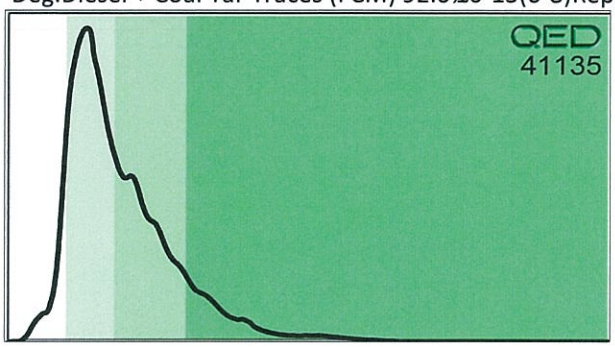
Deg.Diesel + Coal Tar Traces (FCM) 90% 10.3



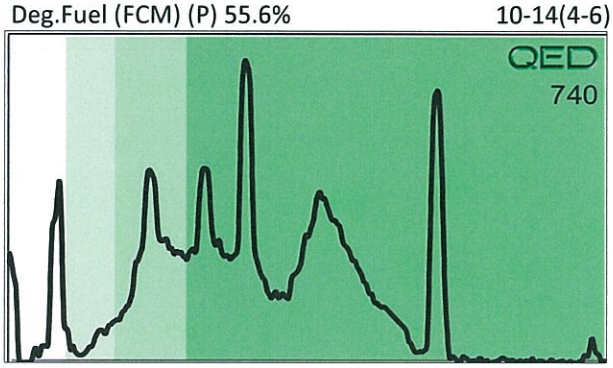
Deg.JP-5 (FCM) 76.6% 10-13(6-8)



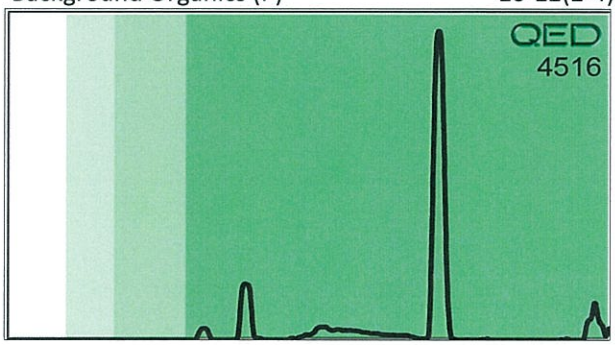
Deg.Diesel + Coal Tar Traces (FCM) 92.6% 10-13(6-8)Rep



Deg.Fuel (FCM) (P) 55.6% 10-14(4-6)



Background Organics (P) 10-12(2-4)



QED

AQROS

Hydrocarbon Analysis Results

Client: NCDOT Randolph U-5305 Parcel 10
Address: 1140 Hwy 64 West - Parcel 10
Asheboro, NC

Samples taken
Samples extracted
Samples analysed

Contact:

Operator Tim Leatherman

Project: NCDOT Randolph U-5305 Parcel 10

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
										% light	% mid	% heavy	
s	10-15(0-2)	13.0	<0.6	<0.6	29.67	29.67	10.56	0.5	<0.013	44.2	50.9	4.9	Deg.Fuel (FCM) 91.8%
s	10-16(2-4)	50.0	<2.5	<2.5	34.32	34.32	22.24	1.23	<0.05	39.3	52.4	8.4	V.Deg.PHC 83.2%
s	10-16(6-8)	67.0	<3.4	<3.4	<0.67	<0.67	<0.67	<0.07	<0.067	0	47.7	52.3	PAH (P)
s	10-17(2-4)	33.0	<1.7	<1.7	52.49	52.49	19.48	0.82	<0.033	51.1	44.1	4.8	Deg.Fuel (FCM) 90%
s	10-18(4-6)	19.0	<0.9	<0.9	3.57	3.57	0.79	0.04	<0.019	0	82.4	17.6	Deg.Fuel (FCM) 90.1%
s	10-19(6-8)	24.0	<1.2	10.14	19.24	29.38	3.26	0.16	<0.024	97.6	2.2	0.2	Deg.Gas (FCM) 71.4%
s	10-20(6-7)	115.0	104.3	167.2	291.4	458.6	18.6	0.63	<0.115	99.2	0.7	0.1	Deg.Gas (FCM) 75.6%
s	10-21(4-6)	25.0	<1.3	<1.3	3.83	3.83	2.87	0.1	<0.025	34.3	54.6	11.1	Road Tar 98.6%

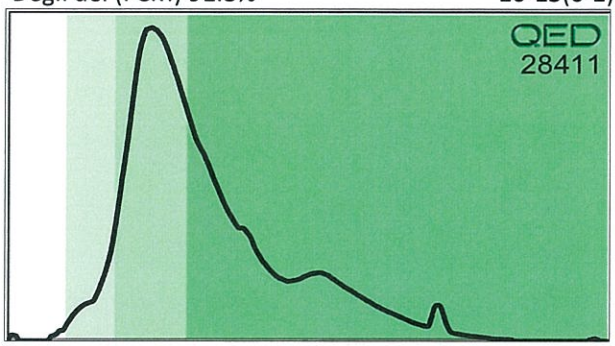
Initial Calibrator QC check OK

Results generated by a QED HC-1 analyser. Concentration values in mg/kg for soil samples and mg/L for water samples. Soil values are not corrected for moisture or stone content

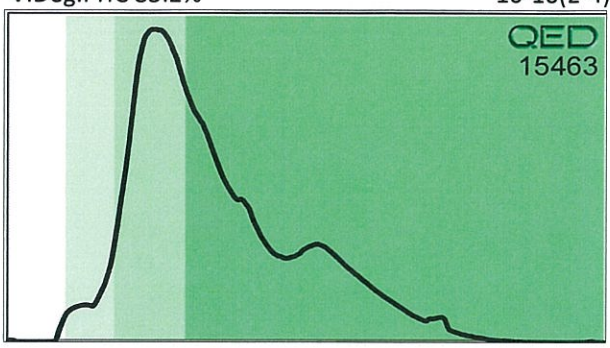
Fingerprints provide a tentative hydrocarbon identification. The abbreviations are:- FCM = Results calculated using Fundamental Calibration Mode : % = confidence for sample fingerprint match to library

(SBS) or (LBS) = Site Specific or Library Background Subtraction applied to result : (PFM) = Poor Fingerprint Match : (T) = Turbid : (P) = Particulate present

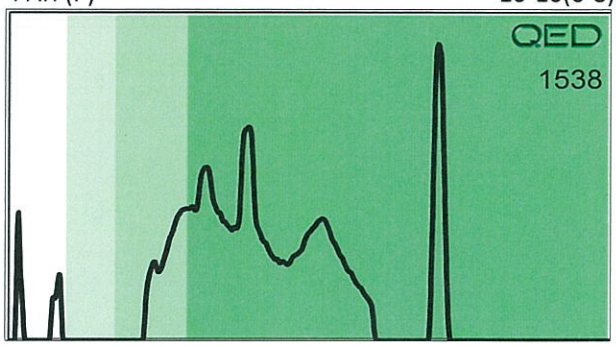
Deg.Fuel (FCM) 91.8% 10-15(0-2)



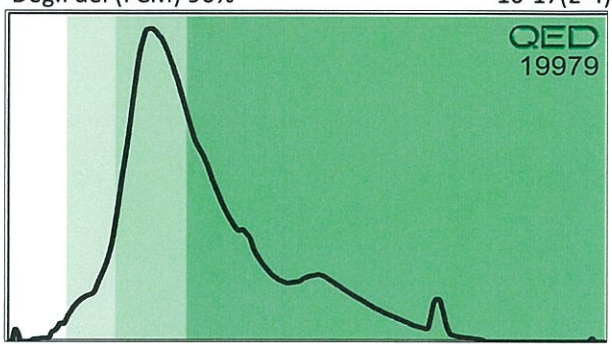
V.Deg.PHC 83.2% 10-16(2-4)



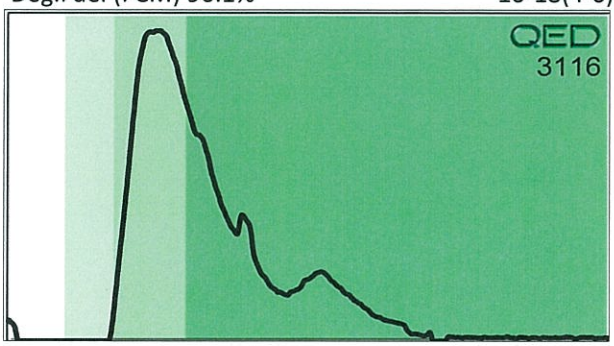
PAH (P) 10-16(6-8)



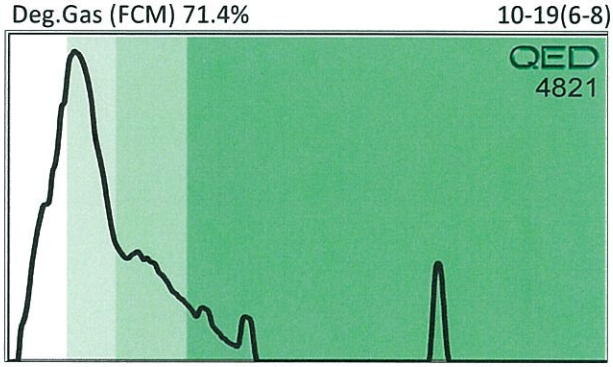
Deg.Fuel (FCM) 90% 10-17(2-4)



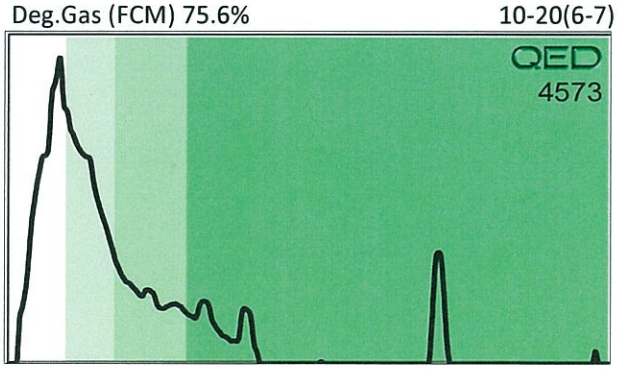
Deg.Fuel (FCM) 90.1% 10-18(4-6)



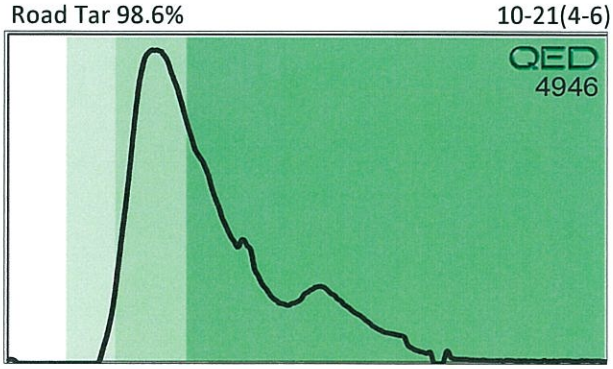
Deg.Gas (FCM) 71.4% 10-19(6-8)



Deg.Gas (FCM) 75.6% 10-20(6-7)



Road Tar 98.6% 10-21(4-6)



CHAIN-OF-CUSTODY / Analytical Request Document - QROS / QED

Page: 1 of 2

Pyramid Environmental & Engineering, P.C.

Company:
Pyramid Environmental & Engineering, P.C.
Address: 503 Industrial Ave.
Greensboro, NC 27406

Purchase Order No.:
Project Name: NCDOT Asheboro Parcel 10
Project Number:

Requested Analysis

ITEM	SAMPLE ID	Matrix	C=Comp. G=Grab	COLLECTED Date	COLLECTED Time	Containers	Un-preserved	Methanol	GRO	DRO	TPH
1	10-1(2-4)	Soil	G	4-30-14	8:40	1	13.2g	20ml	0.27	<0.08	0.27
2	10-1(4-6)	Soil	G		8:45	1	12.4g	20ml	1.02	0.7	1.72
3	10-2(2-4)	Soil	G		8:50	1	9.1g	20ml	112.5	253.3	365.8
4	10-2(4-6)	Soil	G		8:53	1	9.7g	20ml	79.1	239.2	318.3
5	10-3(4-6)	Soil	G		9:15	1	11.8g	20ml	<1.1	4.51	4.51
6	10-4(2-4)	Soil	G		9:30	1	13.9g		3.07	3.24	6.31
7	10-5(6-8)	Soil	G		10:07	1	12.1g		<0.4	10.63	10.63
8	10-6(2-4)	Soil	G		10:35	1	9.9g		<97.1	100.7	100.7
9	10-7(6-8)	Soil	G		11:15	1	10.6g		23.5	12.12	35.62
10	10-8(4-6)	Soil	G		11:35	1	11.1g		30.67	408.1	438.77
11	10-8(6-8)	Soil	G		11:40	1	10.0g		100.3	589.2	689.2
12	10-9(0-2)	Soil	G		12:50	1	11.3g		2000	83418	85418
13	10-9(6-8)	Soil	G		12:55	1	10.2g		<6	<1.7	<6
14	10-10(4-6)	Soil	G		13:03	1	10.9g		755.2	14.89	2244.2
15	10-11(4-6)	Soil	G		13:11	1	10.4g		4.49	<0.31	4.49
16	10-12(2-4)	Soil	G	↓	13:27	1	11.8g	↓	<0.4	<0.08	<0.4

Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
Timothy D. Leatherman Pyramid	4-30-14	16:00	Timothy D. Leatherman Pyramid	4-30-14	16:05

SAMPLER NAME AND SIGNATURE

Print Name of Sampler: Timothy D. Leatherman
Signature of Sampler: Timothy D. Leatherman
Date Signed: 4-30-14

CHAIN-OF-CUSTODY / Analytical Request Document - QROS / QED

Pyramid Environmental & Engineering, P.C.

Company:
Pyramid Environmental & Engineering, P.C.
Address: 503 Industrial Ave.
Greensboro, NC 27406

Purchase Order No.:
Project Name: NCDOT Asheboro Parcel 10
Project Number:

Requested Analysis

ITEM	SAMPLE ID	Matrix	C=Comp. G=Grab	COLLECTED Date	COLLECTED Time	Containers	Un-preserved	Methanol			
17	10-13(2-4)	Soil	G	4-30-14	13:55	1	10.3g	20ml	1674	9579	11253
18	10-13(6-8)	Soil	G	↓	14:00	1	10.9g	20ml	26.76	261.2	287.96
19	10-14(4-6)	Soil	G	↓	14:18	1	10.6g	20ml	6.64	6.64	6.64

Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time

SAMPLER NAME AND SIGNATURE

Print Name of Sampler: Timothy D. Leatherman
Signature of Sampler: Timothy D. Leatherman
Date Signed: 4-30-14

CHAIN-OF-CUSTODY / Analytical Request Document - QROS / QED

Page: of

Pyramid Environmental & Engineering, P.C.

Company:
Pyramid Environmental & Engineering, P.C.
Address: 503 Industrial Ave.
Greensboro, NC 27406

Purchase Order No.:
Project Name: NCDOT Parcel 10
Project Number:

Requested Analysis

ITEM	SAMPLE ID	Matrix	C=Comp. G=Grab	COLLECTED Date	COLLECTED Time	Containers	Un-preserved	Methanol	GRO	DRO	TPH
1	10-15(0-2)	Soil	G	5-1-14	8:35	1	10.8g	20ml	<0.6	39.67	39.67
2	10-16(2-4)	Soil	G	5-1-14	9:25	1	12.4g	20ml	<2.5	34.32	34.32
3	10-16(6-8)	Soil	G	5-1-14	9:30	1	9.2g	20ml	<3.4	<0.67	<0.67
4	10-17(2-4)	Soil	G	5-1-14	9:43	1	9.6g	20ml	<1.7	52.49	52.49
5	10-18(4-6)	Soil	G	5-1-14	10:08	1	11.7g	20ml	<0.9	3.57	3.57
6	10-19(6-8)	Soil	G	5-1-14	10:40	1	13.3g	20ml	10.14	19.24	29.38
7	10-20(6-7)	Soil	G	5-1-14	10:53	1	10.6g	20ml	167.2	291.4	458.6
8	10-21(4-6)	Soil	G	5-1-14	11:35	1	10.2g	20ml	<1.3	3.83	3.83

328 ppm
21,400
180

Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time

SAMPLER NAME AND SIGNATURE

Print Name of Sampler:
Signature of Sampler: Date Signed:

APPENDIX F

FIELD PERSONNEL LOG

PROJECT NAME: NCDOT Randolph County PSA PARCEL 10 **PROJECT NO.:** U-5305

Name: Eric Cross & Alan McFadden **Date:** 4/17/14 **Mon Tue Wed Th Fri Sat Sun**

TASKS PERFORMED:

E. Cross & A. McFadden:
Mobilize to site. Performed EM61 geophysical surveys.
Leave site: ~3:30PM

FIELD PERSONNEL LOG

PROJECT NAME: NCDOT Randolph County PSA PARCEL 10 **PROJECT NO.:** U-5305

Name: Eric Cross **Date:** 4/21/14 **Mon** **Tue Wed Th Fri Sat Sun**

TASKS PERFORMED:

E. Cross:
Mobilize to site. Performed GPR geophysical surveys.
Leave site: ~2:30PM

FIELD PERSONNEL LOG

PROJECT NAME: NCDOT Randolph County PSA PARCEL 10 **PROJECT NO.:** U-5305

Name: Eric Cross & Tim Leatherman **Date:** 4/30/14 **Mon Tue Wed Th Fri Sat Sun**

TASKS PERFORMED:

E. Cross & T. Leatherman:
Mobilize to site. Supervised soil borings, collected samples, performed QED analysis.

FIELD PERSONNEL LOG

PROJECT NAME: NCDOT Randolph County PSA PARCEL 10 **PROJECT NO.:** U-5305

Name: Eric Cross & Tim Leatherman **Date:** 5/1/14 **Mon Tue Wed Th Fri Sat Sun**

TASKS PERFORMED:

E. Cross & T. Leatherman:
Mobilize to site. Supervised soil borings, collected samples, performed QED analysis.