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**GeoScience &  
Technology, P. A.**  
"PRACTICAL ENVIRONMENTAL SOLUTIONS"

2050 Northpoint Drive • Suite A • Winston-Salem, NC 27106

(919) 896-1300 • FAX (919) 896-1020

April 20, 1993

Ms. Sabra Murphy  
NC DEHNR  
8025 Northpoint Blvd., Suite 100  
Winston-Salem, North Carolina 27106-3203

Dear Ms. Murphy:

Please be advised that Harrell Oil Company of Mount Airy has retained Geoscience and Technology, P.A. (GeoSci) to make recommendations concerning a near-surface release from a UST system (since removed) at the South Main Service Center at 802 S. Main Street in Mount Airy, North Carolina. It appears from the closure assessment report submitted by Harrell Oil and from sample results from a boring performed by Engineering Tectonics that only shallow soil contamination exists in the area of the former pump island and that this contamination is far removed (>20') from the water table, thereby posing no immediate threat to the groundwaters of the state.

Removal of the contaminated soils (secondary source) seems to be the most expedient course of action in this situation. Because the release is shallow and constricted to a small area (as evidenced by a clean soil sample at 10' and two clean soil samples nearby) we see no need for more extensive investigation assuming soil samples from the excavation are clean following removal. A report of procedures and results will be forwarded to your office within one week of receiving laboratory results. Should you have any questions or require additional information, please do not hesitate to call. Also, please copy GeoSci with future correspondence on this site.

Very Truly Yours,  
GEOSCIENCE AND TECHNOLOGY, P.A.



Steve E. Mason, P.G.  
Principal Hydrogeologist

(3)



**Steve E. Mason, P.G.**  
Principal Hydrogeologist  
and President

SEM/cm

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**PHASE II SITE ASSESSMENT  
ARVIL STANLEY EXXON  
SOUTH MAIN STREET  
MOUNT AIRY, NORTH CAROLINA**

**Prepared for**

**Harrell Oil Company**

**by**

**Engineering Tectonics, P.A.  
Winston-Salem, North Carolina**

**February 1993**



**ENGINEERING TECTONICS, P.A.**  
ENGINEERS • GEOLOGISTS • HYDROLOGISTS

P.O. Box I, Winston-Salem, NC 27108 (919) 724-6994

February 15, 1993

Mr. Joe Harrell  
Harrell Oil Company  
Mount Airy, North Carolina 27030

Subject: Phase II Environmental Assessment  
Arvil Stanley Exxon  
Mount Airy, North Carolina

Mr. Harrell:

Engineering Tectonics, P.A. (ET) is pleased to submit a Phase II Environmental Assessment for the Arvil Stanley Exxon property, located in Mount Airy, North Carolina. The following narrative outlines the procedures and results of our investigation.

### **SITE LOCATION AND DESCRIPTION**

Stanley Exxon is located on the 800 block of South Main Street in Mount Airy, North Carolina. A general site location map is presented as Figure 1. The site, approximately 8200 ft<sup>2</sup> in size, is paved with concrete. ET was directed by Mr. Joe Harrell to collect samples beneath the former location of a pump island, located approximately 25 ft northeast of the service station building. The pump island had been removed along with piping leading to the rear of the station. Figure 2 is a detailed site location map showing the service station, former location of the pump island, and location of the soil boring.

### **SCOPE AND METHODS**

ET conducted a Phase II investigation consisting of the collection and analysis of soil samples taken from a single boring. The soil boring was accomplished using a Mobile B-47, truck-mounted drill rig outfitted with hollow stem augers. Using split-spoons, soil samples were collected at 5 ft intervals between depths of 10 ft and 35 ft. The split-spoons were washed and rinsed between each sampling event to avoid cross-contamination. The collector wore disposable

vinyl gloves while handling the soil; the gloves were changed between each sampling event to avoid cross-contamination.

Soil samples were classified by a geologist in the field as to color, texture, structure, and conspicuous mineralogy. Other pertinent characteristics of the soil samples such as odor and contaminant discoloration were also noted. Although soil was not collected between the surface and initial sampling depth, cuttings removed from the bore holes were monitored for the characteristics noted above during the drilling process. Each soil sample was placed in a sealed container and labeled. The sealed containers were allowed to remain at ambient temperature for several minutes, after which they were screened for the presence of volatile organic vapors using a GasTech Model 1238 organic vapor analyzer (OVA). After OVA analysis, the containers were placed in an insulated cooler packed with ice.

All samples were inventoried and transported in an ice-packed cooler to Bioremediation Research Ltd. analytical laboratory in Winston-Salem, NC. The soil samples were analyzed by California GC Method with SW-846 Methods 5030 and 3550 for Total Petroleum Hydrocarbons (TPH).

## RESULTS

### Field Observations

One soil boring, as described above, was performed by ET on February 9, 1993. The location of the boring is noted in Figure 2. The uppermost 2 feet of soil penetrated by the auger consisted of a gray sand mixed with gravel fill (crusher run). The remainder of the soil column, to a depth of 35 feet, was classified as a gray to white/brown micaceous sandy silt or silty sand. A slight hydrocarbon odor was noted in several of the samples; however, no measurements of organic vapor concentration exceeding 75 parts per million (ppm) were observed for any of the samples. No discoloration of the soils was noted. Groundwater was encountered at a depth of 32 feet below surface grade. A field log for this bore hole is included as Appendix I of this report.

### Laboratory Results

One soil sample collected from beneath the pump island was analyzed by EPA methods 5030 and 3550. The soil sample contained concentrations of fuel hydrocarbons less than 10 parts per million (ppm) total petroleum hydrocarbons, the level above which the North Carolina Division of

Phase II Report  
Stanley Exxon; Mount Airy, NC  
February 1993

Environmental Management requires that action be taken to remediate a site. A copy of the chain-of-custody document and the certified laboratory results are included as Appendix II.

## SUMMARY

No field or laboratory evidence indicating the presence of petroleum hydrocarbon constituents above state mandated levels was found in soils collected in the vicinity of the former pump island at the Stanley Exxon.

## LIMITATIONS OF THE REPORT

This Phase II Environmental Assessment is based on observations made in the field, OVA screening of soil samples collected from the boreholes, and laboratory analysis of soil samples. Due to the limited nature of this investigation, we cannot warrant that all areas within the site are of the same quality as that inferred from the results of the investigation described in this report. In the event that additional subsurface sampling is performed, either by Engineering Tectonics, P.A. or by others, we reserve the right to revise our opinion as to the presence of subsurface contaminants at the site.

We are pleased to have the opportunity to provide this service to you and we look forward to working with you again in the future. Should you have any questions or desire additional information, please do not hesitate to contact us.

Sincerely,  
ENGINEERING TECTONICS, P.A.

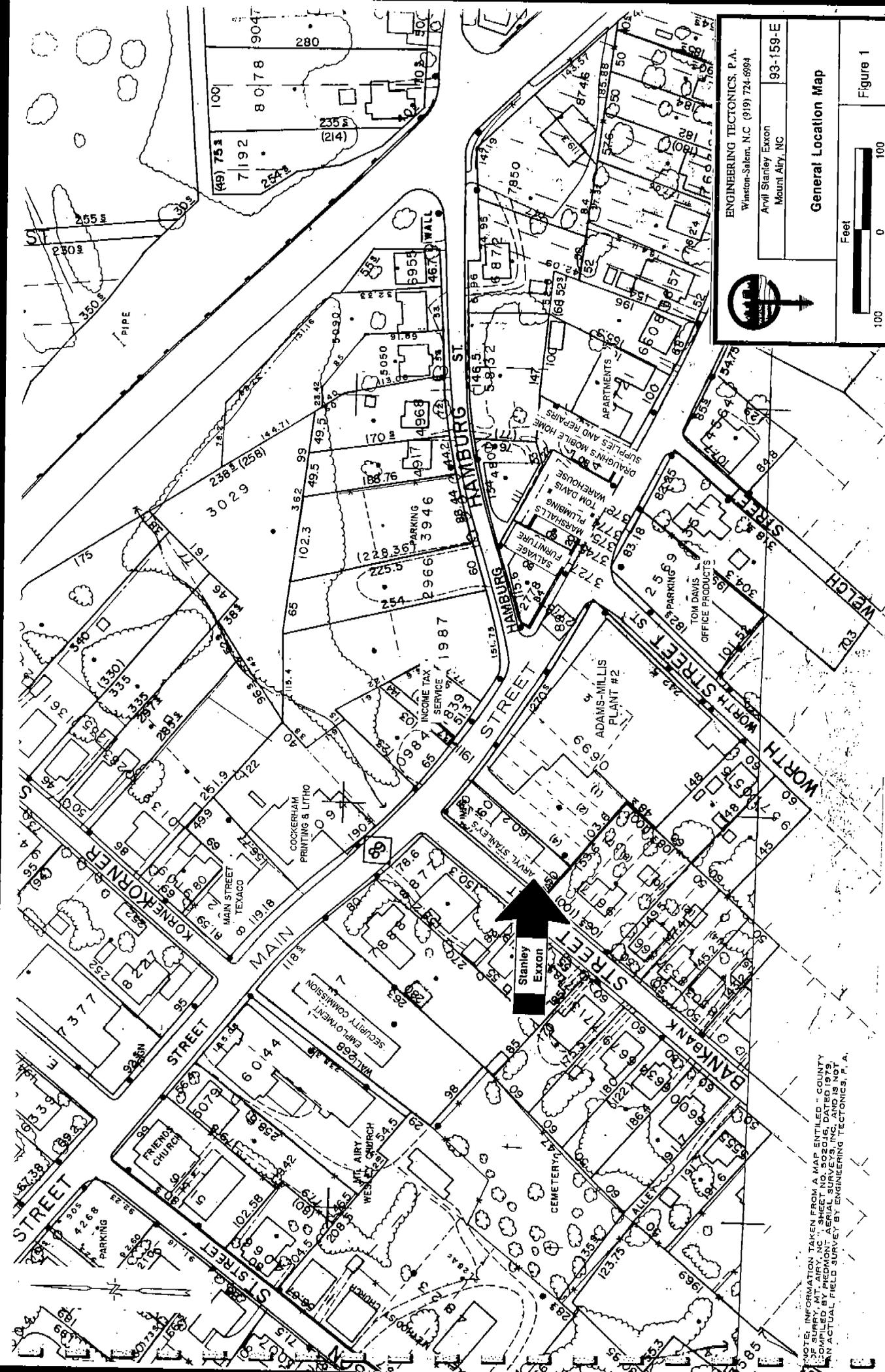


Thomas Cahill, P.G.  
Project Geologist



Steve E. Mason, P.G.  
Principal Hydrogeologist

**Figures**



ENGINEERING TECTONICS, P.A.  
 Winston-Salem, N.C. (919) 724-6994

Arvil Stanley Exxon  
 Mount Airy, NC 93-159-E

**General Location Map**

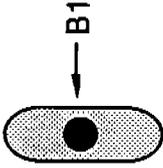
Feet  
 100 0 100

Figure 1

NOTE: INFORMATION TAKEN FROM A MAP ENTITLED "COUNTY OF SURRY, MT. AIRY, N.C. 1979" WHICH WAS COMPILED BY PIEDMONT AERIAL SURVEYING, INC. AND IS NOT AN ACTUAL FIELD SURVEY BY ENGINEERING TECTONICS, P.A.

South Main Street

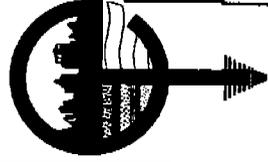
pump island excavation



Bank Street

Arvil  
Stanley  
Exxon

Adams-Millis Plant #2



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Arvil Stanley Exxon  
Mount Airy, NC

93-159-E

**Site Map with Boring Location**

no scale

Figure 2

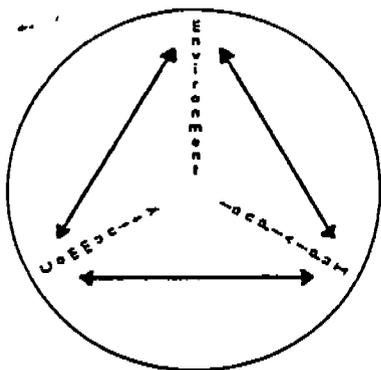
**Appendix I**  
**Boring Log**



**Appendix II**  
**Laboratory Results**

# BIOREMEDIATION RESEARCH, LTD.

RT. 2, BOX 180-C  
PINNACLE, NC 27043  
919-325-2318



## CERTIFICATE OF ANALYSIS

February 11, 1993

Client: Engineering Tectonics, P.A.  
Project: Arvil Stanlet: Mt. Airy  
ET Job#: 93-159-E

EPA 5030/8015;3550/8015: Volatiles/Semi-volatiles

Client Sample	Lab Sample	TPH(5030)	TPH(3550)
S1	9300107	< 10 ppm	< 10 ppm

  
Kenneth H. Goekle, Ph.D.

