

**UST CLOSURE, 20 DAY, AND INITIAL
ABATEMENT ACTION REPORT**

**POP SHOPPE #124
6980 MARKET STREET
WILMINGTON, NORTH CAROLINA
GROUNDWATER INCIDENT: PENDING
FACILITY ID: 0-002452**

NOVEMBER 3, 2015

UST OWNER/OPERATOR:

Mid-State Petroleum, Inc.
4192 Mendenhall Oaks Parkway
High Point, NC 27265-8034
Phone Number: (336) 841-3000

PROPERTY OWNER:

Mid-State Petroleum Realty, LLC
2516 Lakes Edge Point
High Point, NC 27265

CONSULTANT:

Paragon Environmental Consultants, Inc.
P. O. Box 157
Thomasville, NC 27361-0157
Phone Number: (336) 669-6037

RELEASE INFORMATION:

Date Discovered: 10/6/15
Estimated Quantity of Release: Unknown Cause of Release: Unknown
Source of Release: USTs and Diesel Product Piping and Dispensers
Size and Contents: Four (4) 8,000 Gallon Gasoline USTs, One (1) 6,000 Gallon
Diesel UST, and One (1) 4,000 Gallon Kerosene UST
Latitude: N 34.2637795° Longitude: W 77.8271511°

I, Brandon Moore, a Licensed Geologist for Paragon Environmental Consultants, Inc. do certify that the information contained in this report is correct and accurate to the best of my knowledge. Paragon Environmental Consultants, Inc. is licensed to practice geology in North Carolina. The certification number of the corporation is C-300.



Brandon Moore, L.G.
North Carolina License #1666



November 3, 2015

Tony Perez
Mid-State Petroleum, Inc.
4192 Mendenhall Oaks Parkway
High Point, NC 27265-8034

Reference: UST Closure, 20 Day, and Initial Abatement Action Report
Pop Shoppe #124
6980 Market Street
Wilmington, North Carolina
Groundwater Incident: Pending
Facility ID: 0-002452

Dear Mr. Perez:

Please find enclosed a report summarizing the Underground Storage Tank (UST) closure for four (4) 8,000 gallon gasoline USTs, one (1) 6,000 gallon gasoline UST, and one (1) 4,000 gallon kerosene UST formerly located at the above referenced facility. The UST closure consisted of tank removal, field sampling, and laboratory analyses of the soils and groundwater in the vicinity of the underground storage tanks. The soil remediation activities consisted of the removal of approximately 562 cubic yards of contaminated soil and confirmatory sampling. A summary of these activities and our recommendations and conclusions are contained herein.

In accordance with the North Carolina Administrative code, Title 15A, Chapter 2, Subchapter 2N, this report should be submitted to the Director of the Division of Environmental Management. This report is submitted in accordance with the outline provided in NCDENR form GW/UST-12.

Mr. Perez, if you have any questions regarding this report please contact our office.

Sincerely,

A handwritten signature in black ink, appearing to read 'Brandon Moore'.

Brandon Moore, L.G.
Paragon Environmental Consultants, Inc.

R15-1566

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**UST CLOSURE, 20 DAY, AND INITIAL
ABATEMENT ACTION REPORT**

**Pop Shoppe #124
6980 Market Street
Wilmington, North Carolina**

I. General Information

A. Ownership

Name: Mid-State Petroleum, Inc.
4192 Mendenhall Oaks Parkway
High Point, NC 27265-8034
(336) 841-3000

B. Facility Information

Facility: Pop Shoppe #124
6980 Market Street
Wilmington, NC 28411
New Hanover County
Facility ID # 0-002452

C. Contacts

1. Primary Contact: Tony Perez
Mid-State Petroleum, Inc.
4192 Mendenhall Oaks Parkway
High Point, NC 27265-8034
(336) 841-3000
2. Closure Contractor: Zebra Environmental and Industrial Services, Inc.
P. O. Box 357
High Point, NC 27261
(336) 841-5276
3. Consultant: Paragon Environmental Consultants, Inc.
P. O. Box 157
Thomasville, NC 27361-0157
(336) 669-6037
4. Laboratory: Meritech, Inc.
642 Tamco Road
Reidsville, NC 27320
(336) 342-4748
Lab. Cert.: NCDDEM #165

D. UST Information

| Tank No | Installation Date | Size (Gal) | Tank Dimensions | Last Contents | Previous Contents |
|---------|-------------------|------------|-----------------|---------------|-------------------|
| T1 | 1987 | 8,000 | 26' 1/2" x 8' | Gasoline | N/A |
| T2 | 1987 | 8,000 | 26' 1/2" x 8' | Gasoline | N/A |
| T3 | 1987 | 8,000 | 26' 1/2" x 8' | Gasoline | N/A |
| T4 | 1987 | 8,000 | 26' 1/2" x 8' | Gasoline | N/A |
| T5 | 1987 | 6,000 | 19' 6 1/2" x 8' | Diesel | N/A |
| T6 | 1987 | 4,000 | 15' 1/2" x 8' | Kerosene | N/A |

E. Site Characteristics

1. Past Releases: None known
2. Facility/UST Status: The facility was formerly used as a gas station and convenience store, but the store is not currently in operation. The date of last use for the six USTs was in August of 2015.
3. Surrounding Property Use: Commercial
4. Site Geology: Native soils consisted of fine-grained sand with varying amounts of silt. Appendix A contains the geologic logs of excavation for this project. Bedrock was not encountered; however, groundwater was observed at depths of approximately eight feet to nine feet below the surface grade in the two tank pits.

Other pertinent information is contained in the GW/UST-2 Site Investigation Form which is included as Appendix B.

II. Closure Procedures

A. Tank Preparation

NCDENR: Mid-State Petroleum, Inc. notified the Director of the Division of Waste Management (DWM) of their intent to permanently close by submitting a Notice of Intent: UST Permanent Closure Form GW/UST-3 on September 8, 2015. A copy of this form is included in Appendix C.

Tank Inerting: The gasoline tanks were inerted using dry ice and the diesel and kerosene tanks were inerted by ventilation. An oxygen / LEL meter was used to verify that the tanks were inerted. The New Hanover County Fire Marshall was present on-site during the removal operations and verified that the USTs were properly inerted.

B. Residuals

Approximately 895 gallons of water and petroleum product were removed from the six tanks by Zebra Environmental and Industrial Services, Inc. (Zebra) on September 21, 2015. A copy of the liquids disposal manifest for this material is contained as Appendix D.

C. Excavation

The UST closure project at the Pop-Shoppe # 124 was initiated on September 21, 2015. Zebra excavated the fill and vent pipes, cut and drained them to avoid release of product into the surrounding soils, then removed them from the tanks. The USTs were then exhumed from the ground. Figure 2 shows the site layout and the location of the USTs removed during this closure project. The tanks showed no surface corrosion, and no visible holes were noted in the USTs. After removal the four 8,000 gallon gasoline tanks, one 6,000 gallon gasoline tank, and one 4,000 gallon kerosene tank were transported according to API guidelines to Zebra's facility in High Point, NC for cleaning and disposal. Appendix E contains a copy of the tank disposal manifest for the six USTs removed during this closure project.

Following removal of the USTs, the excavations were visually inspected for the presence of free product and groundwater. Groundwater was encountered in the gasoline and diesel tank pit at approximately 9 feet below the land surface, and groundwater was observed in the kerosene tank pit at approximately 8 feet below surface grade. No free product was present during any phase of this tank closure project. Petroleum odors were noted in the immediate areas of all six of the USTs. The dimensions of the excavation created by the removal of the gasoline and diesel tanks were approximately 55 feet long by 32 feet wide by 12 feet deep. The dimensions of the excavation created by the removal of the kerosene tank were approximately 22 feet long by 15 feet wide by 12 feet deep.

Other pertinent information for this removal is summarized below:

| Tank No. | Depth to Top of Tank | QTY of Soil Re moved (yd3) | Avg. PID Reading (ppm) | Stockpile Soil Type | Excavation Backfill Type | Backfill Source |
|----------|----------------------|----------------------------|------------------------|---------------------|--------------------------|-----------------|
| T1 | 3' | 127 | N/A | Native Soil | Sandy Silt | Off-site |
| T2 | 3' | 127 | N/A | Native Soil | Sandy Silt | Off-site |
| T3 | 3' | 127 | N/A | Native Soil | Sandy Silt | Off-site |
| T4 | 3' | 127 | N/A | Native Soil | Sandy Silt | Off-site |
| T5 | 3' | 98 | N/A | Native Soil | Sandy Silt | Off-site |
| T6 | 3' | 82 | N/A | Native Soil | Sandy Silt | Off-site |

D. Contaminated Soil

Both of the tank pits exhibited contaminated soils beneath the former tank locations (also beneath the shallow groundwater table). The NCDENR recommended soil excavation of this material even though it was situated beneath the groundwater table in an effort to expedite site closure by removing the secondary source material. Contaminated soils were also present underneath both of the diesel dispenser islands and below the product piping trench between the two diesel dispensers.

Following the collection of the closure assessment samples, soil excavation was conducted in the petroleum impacted areas to attempt to remediate the soil contamination. Please refer to Section IV of this report for information regarding the soil remediation activities.

III. Site Investigation

A. Soil Sampling

To confirm site conditions Paragon collected samples from in-situ soils in the sidewalls around the former USTs due to the presence of groundwater, beneath the product piping, and underneath the product dispensers in accordance with the current NCDENR Guidelines for Tank Closure. Soil samples were taken from the sidewalls of the gasoline and diesel tank excavation at depths of approximately eight and one-half feet below surface grade. Soil samples were taken from the sidewalls of the kerosene tank excavation at depths of approximately seven and one-half feet below the land surface. Samples were obtained from underneath the product lines and dispensers at depths of two feet to three feet below surface grade. All of the closure samples were collected from the track-hoe bucket and were subsequently labeled with sample location, time, and date.

All of the soil samples were submitted to Meritech, Inc. for analysis according to EPA Method 5030. Method 5030 detects total petroleum hydrocarbons (TPH) from low boiling-point fuels such as gasoline, aviation fuel, and gasohol. The current action level for Method 5030 TPH is 10 milligrams per kilogram (mg/kg). The samples from the diesel and kerosene portions of the tank system were also analyzed according to EPA Method 3550. Method 3550 detects TPH from high boiling-point fuels such as diesel, kerosene, and fuel oil. The current action level for Method 3550 TPH is 10 mg/kg. Figure 3 illustrates the soil sample locations for this closure project.

B. Water Sampling

Two North Carolina Type II groundwater monitoring wells have been installed at the site in the two former tank pits due to the presence of groundwater in both areas. Figure 4 illustrates the site layout and the locations of the monitor wells, labeled as MW-1 and MW-2. The monitoring wells were constructed of 2-inch Schedule 40 PVC pipe with 10 feet of 0.010 inch slotted screen. Based on the assumption that the contaminants being addressed were primarily hydrocarbon constituents with specific gravities of less than 1.0, the groundwater monitoring wells were installed so that the screened interval intersected the shallow groundwater table at the time of installation.

C. Quality Control Measures

The soil samples were packed into new laboratory supplied glassware. The samples were labeled with sample location, analyses to be performed, time, date, and the sampler's name. They were then placed in a cooler and chilled with ice to approximately 4°C in preparation for transportation to the analytical laboratory utilizing EPA approved chain-of-custody procedures. The soil samples for this closure project were collected on September 22, 2015 between 9:00 AM and 5:00 PM and on September 23, 2015 between 9:10 AM and 2:30 PM. The soil samples were all delivered to the laboratory on September 24, 2015.

D. Investigation Results

According to the laboratory analytical report, the samples collected from beneath both the diesel dispensers were detected above the current action levels for Methods 3550 / 5030. The west diesel dispenser sample, labeled as DD-1, indicated the maximum TPH levels at this facility with concentrations of 20,500 milligrams per kilogram (mg/kg) by Method 3550 and 765 mg/kg by Method 5030. The east diesel dispenser sample, labeled as DD-2, showed TPH levels of 1,160 mg/kg by Method 3550 and 414 mg/kg by Method 5030. The soil samples from the diesel product piping between these two dispensers, which were labeled as P-37, P-38, and P-39, were reported with Method 3550 TPH levels of 154 mg/kg, 307 mg/kg, and 341 mg/kg, respectively. These three sample were below the laboratory detection limit for EPA Method 5030. Soil sample P-41 was detected at 219 mg/kg by Method 3550 and 746 mg/kg by Method 5030. All of the other soil samples from beneath the dispenser islands, below the product piping, and from the sidewalls of tank excavations were below the laboratory detection limits for the applicable TPH analytical methods. Figure 3 depicts the soil sample locations and the TPH analytical results, and Table 1 summarizes the analytical results for the TPH soil samples collected at the Pop Shoppe #124. Appendix F contains a copy of the laboratory analytical report for the soil samples, and Appendix G contains the chain-of-custody records.

Figure 4 illustrates the locations of the monitor wells installed in the two tank pits due to the presence of groundwater above the bottom of the former USTs. The groundwater sample from MW-1, which is located in the center of the former gasoline and diesel tank pit, was submitted to Prism Laboratories, Inc. for laboratory analyses according to EPA Methods 6200B plus MTBE and IPE and 625 plus 10 largest Tentatively Identified Compounds (TICs). The groundwater sample from MW-1 was also analyzed by MADEP methods for Volatile Petroleum Hydrocarbons (VPH) and Extractable Petroleum Hydrocarbons (EPH) as well as for Lead. The groundwater sample from MW-2, which is in the center of the former kerosene tank pit, was submitted to Prism Laboratories, Inc. for laboratory analyses according to EPA Methods 602 plus Xylenes and 625 plus TICs in addition to VPH and EPH. The laboratory analytical results for the groundwater sample collected from MW-1 showed five Method 6200B compounds, two Method 625 compounds, and three carbon fraction classes that were above the 2L Standards. Benzene was listed at a concentration of 750 micrograms per liter (ug/L) as compared to the 2L Standard of 1 ug/L. Toluene was detected at a level of 2,900 ug/L which exceeds the 2L Standard of 600 ug/L. Xylenes were reported at 1,200 ug/L, and 1-Methylnaphthalene was indicated at 5.9 ug/L. These two compounds have 2L Standards of 500 ug/L and 1 ug/L, respectively. Naphthalene, which has a 2L Standard of 6 ug/L, was shown at a level of 25 ug/L. C5-C8 Aliphatics was listed at a concentration of 13,000 ug/L as compared to the 2L Standard of 400 ug/L. C9-C18 Aliphatics was detected at 4,270 ug/L, and C9-C22 Aromatics was reported at 1,480 ug/L. These two carbon fractions have 2L Standards of 700 ug/L and 200 ug/L, respectively. TICs were reported at a total concentration of 1,956 ug/L in MW-1; however, no 2L Standard has been established for TICs. The groundwater sample collected from MW-2 was below the 2L Standards for all target compounds by EPA Methods 602 and 625 and for all carbon fraction classes. Table 3 summarizes the groundwater analytical results for the monitor well samples from the Pop Shoppe #124. Appendix F contains a copy of the laboratory analytical report, and Appendix G contains the chain-of-custody record for the groundwater samples.

IV. Soil Contamination Remedial Activities

A. Excavation and Soil Sampling

On September 22 and 23, 2015 personnel from Zebra and Paragon attempted to excavate the petroleum impacted soils which were identified during the UST closure activities. The impacted soils in the former UST pits were excavated from beneath the groundwater table, and the soil contamination from the diesel dispenser island was removed to a depth of approximately ten feet below surface grade. In order to verify site conditions, one "Risk-Based" soil sample was collected from the final vertical limit of the diesel dispenser remedial pit at a depth of ten feet below the land surface. No pit bottom samples were obtained from either of the remedial excavations in the former tank pits since these samples would have all been obtained below the groundwater table.

The soil sample collected from the diesel dispenser remedial excavation at the Pop Shoppe #124 was analyzed by EPA Methods 8260 and 8270 as well as by MADEP methods for VPH and EPH. The in-situ soil sample was collected with the excavator bucket and was immediately placed into laboratory supplied glassware and placed on ice for transportation to the analytical laboratory. According to the laboratory analytical results for this "Risk-Based" soil sample, two Method 8260 compounds, three Method 8270 compounds, and two carbon fraction classes were reported at concentrations in excess of the lowest Maximum Soil Contamination Concentrations (MSCCs). p-Isopropyltoluene was listed at a concentration of 1.36 mg/kg which exceeds the lowest MSCC of 0.12 mg/kg. Naphthalene, which has a lowest MSCC of 0.16 mg/kg, was reported above its lowest MSCC by both EPA Methods 8260 and 8270 with a maximum level of 4.19 mg/kg. 1-Methylnaphthalene was shown at 10.8 mg/kg, and 2-Methylnaphthalene was reported at a level of 7.27 mg/kg. These two compounds have lowest MSCCs of 0.004 mg/kg and 3.6 mg/kg, respectively. C9-C18 Aliphatics was reported at 3,293 mg/kg as compared to the lowest MSCC of 540 mg/kg. C9-C22 Aromatics was detected at 1,774 mg/kg which exceeds the lowest MSCC of 31 mg/kg. Figure 5 illustrates the areas of soil remediation and the locations of the in-situ soil sample collected at this facility. The analytical results for the "Risk-Based" soil analyses are summarized in Table 2. A copy of the laboratory analytical report for the "Risk-Based" soil sample is included in Appendix F, and the chain-of-custody record is contained in Appendix G.

B. Soil Disposal

A total of approximately 562 cubic yards (786.56 tons) of petroleum impacted soils were removed from this facility on September 22 and 23, 2015. Three composite stockpile samples, labeled as X-1 through X-3, were obtained from the contaminated material for analyses by EPA Methods 3550 and 5030. Composite sample X-1 indicated a TPH level of 2,710 mg/kg by Method 3550 and was below the laboratory detection limit according to Method 5030. Sample X-2 showed TPH concentrations of 2,900 mg/kg by Method 3550 and 185 mg/kg by Method 5030. Sample X-3 was reported at 2,530 mg/kg for Method 3550 TPH and 193 mg/kg for Method 5030 TPH. The excavated material was transported by Zebra to Carlisle Farms, Inc. in Autryville, NC for treatment and disposal. Copies of the Certificate of Soil Disposal and the soil disposal manifests for the contaminated soil from the Pop-Shoppe #124 are contained in Appendix H.

V. Conclusions and Recommendations

A. Conclusions

The UST Closure, 20 Day, and Initial Abatement Action Report activities for six regulated USTs have been completed at the Pop Shoppe #124. From a review of all information gathered during this removal project, Paragon Environmental Consultants, Inc. makes the following conclusions:

- o Four 8,000 gallon gasoline USTs, one 6,000 gallon diesel UST, and one 4,000 gallon kerosene UST have been properly closed by removal at 6980 Market Street in Wilmington, NC.
- o Analytical results for soil samples obtained during the UST closure activities showed maximum TPH levels of 20,500 mg/kg by Method 3550 and 765 mg/kg by Method 5030.
- o Approximately 562 cubic yards (786.56 tons) of petroleum impacted soils were removed from the project site on September 22 and 23, 2015 by Zebra Environmental and Industrial Services, Inc. This material was transported to Carlisle Farms, Inc. in Autryville, NC for treatment and disposal.
- o A "Risk-Based" soil sample collected from the final limits of the diesel island remedial excavation indicated that soil contamination in excess of the lowest MSCCs remains in place at the Pop Shoppe #124.
- o Groundwater analytical results for monitor well MW-1 showed five Method 6200B compounds, two Method 8270 compounds, and three carbon fraction classes at concentrations which exceed the 2L Standards.

B. Recommendations

Based upon a review of all information gathered during this project, Paragon recommends the following actions in regards to the associated UST system:

- o A Limited Site Assessment (LSA) should be conducted at this facility to detail site specific information and allow the site to be given a priority ranking and a land use classification by the NCDENR.
- o A copy of this report should be forwarded to the following address:

Wilmington Regional Office - UST Section
127 Cardinal Drive Extension
Wilmington, NC 28405

C. Limitations

This report has been prepared for the exclusive use of Mid-State Petroleum, Inc. for the specific application to the referenced site located in New Hanover County, North Carolina. The assessment was conducted based on the scope of work and level of effort desired by the client. Our findings have been developed in accordance with generally accepted standards in the practice of UST Closure, 20 Day, and Initial Abatement Action Reports in the State of North Carolina, available information, and our professional judgment. No other warranty is expressed or implied.

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

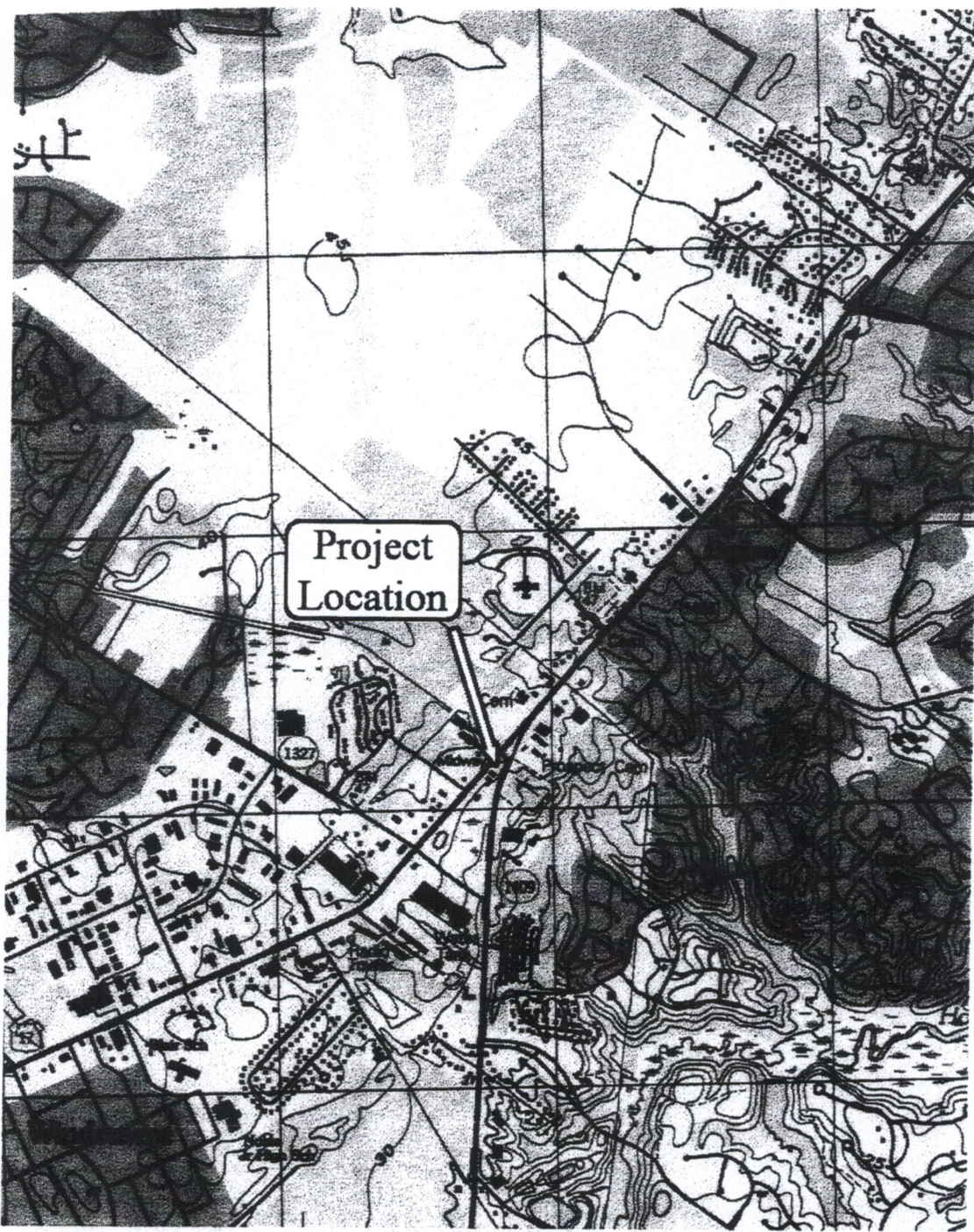
VI. Professional Certification

The UST Closure, 20 Day, and Initial Abatement Action Report for this site has been prepared by Paragon Environmental Consultants, Inc. under the direct supervision of a licensed geologist. All activities performed on this project were conducted under my direct supervision:



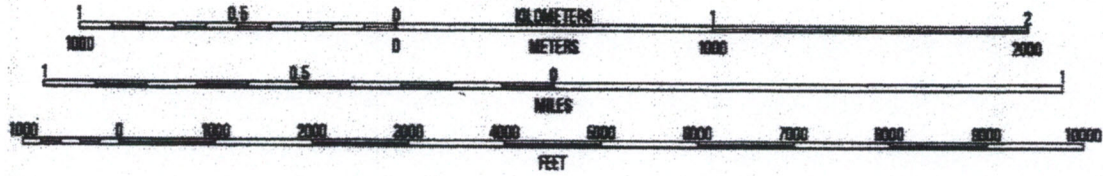
Brandon Moore, L.G.
North Carolina License #1666

FIGURES



Project Location

SCALE 1:24 000

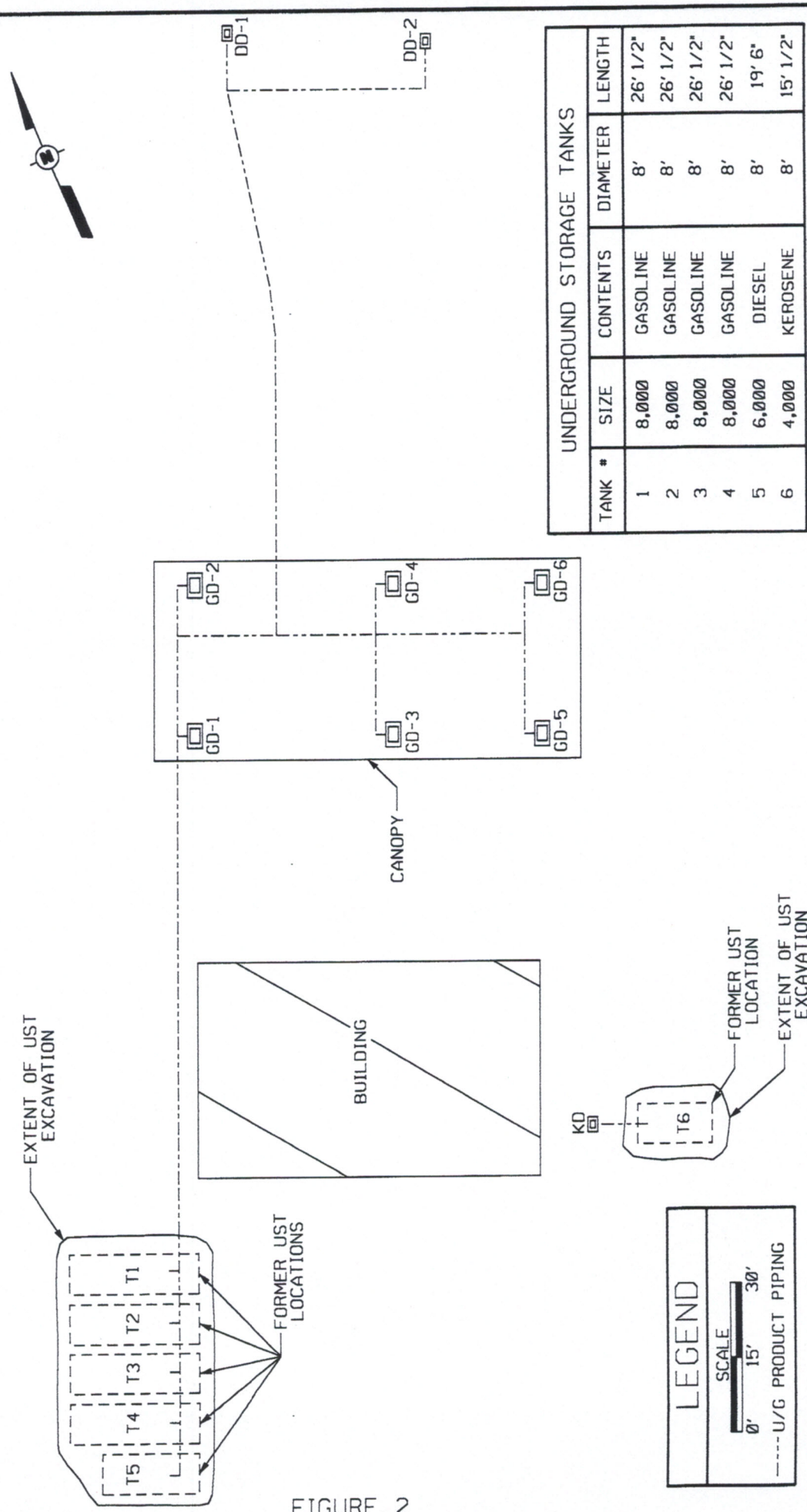


CONTOUR INTERVAL 5 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

| | | | | |
|--------------------|---|---|---|--|
| SCALE: 1"=2,000' | TITLE: PROJECT LOCATION U.S.G.S. TOPOGRAPHIC MAP SCOTTS HILL QUADRANGLE | PROJECT: UST CLOSURE POP SHOPPE #124 WILMINGTON, NC | CLIENT: MID-STATE PETROLEUM, INC. HIGH POINT, NC | PARAGON ENVIRONMENTAL CONSULTANTS, INC. THOMASVILLE, NORTH CAROLINA |
| DATE: 10/9/15 | | | | |
| DWN. BY: BWR | | | | |
| DWG. NO. L15-1566Z | | | | |

FIGURE 1

MARKET STREET



| UNDERGROUND STORAGE TANKS | | | | | |
|---------------------------|-------|----------|----------|----------|--|
| TANK # | SIZE | CONTENTS | DIAMETER | LENGTH | |
| 1 | 8,000 | GASOLINE | 8' | 26' 1/2" | |
| 2 | 8,000 | GASOLINE | 8' | 26' 1/2" | |
| 3 | 8,000 | GASOLINE | 8' | 26' 1/2" | |
| 4 | 8,000 | GASOLINE | 8' | 26' 1/2" | |
| 5 | 6,000 | DIESEL | 8' | 19' 6" | |
| 6 | 4,000 | KEROSENE | 8' | 15' 1/2" | |

FIGURE 2

LEGEND

SCALE
 0' 15' 30'

----- U/G PRODUCT PIPING

| | | | |
|-------------------|---|--|---|
| SCALE: 1"=30' | TITLE: SITE LAYOUT AND FORMER UST LOCATIONS | CLIENT: MID-STATE PETROLEUM, INC. HIGH POINT, NC | PROJECT: UST CLOSURE POP SHOPPE #124 WILMINGTON, NC |
| DATE: 10/15/15 | | | |
| DWN. BY: BWR | | | |
| DWG. NO. L15-1566 | | | |


PARAGON ENVIRONMENTAL CONSULTANTS, INC.
 THOMASVILLE, NORTH CAROLINA

MARKET STREET

NOTE: All TPH results not indicated on map were below laboratory detection limits.

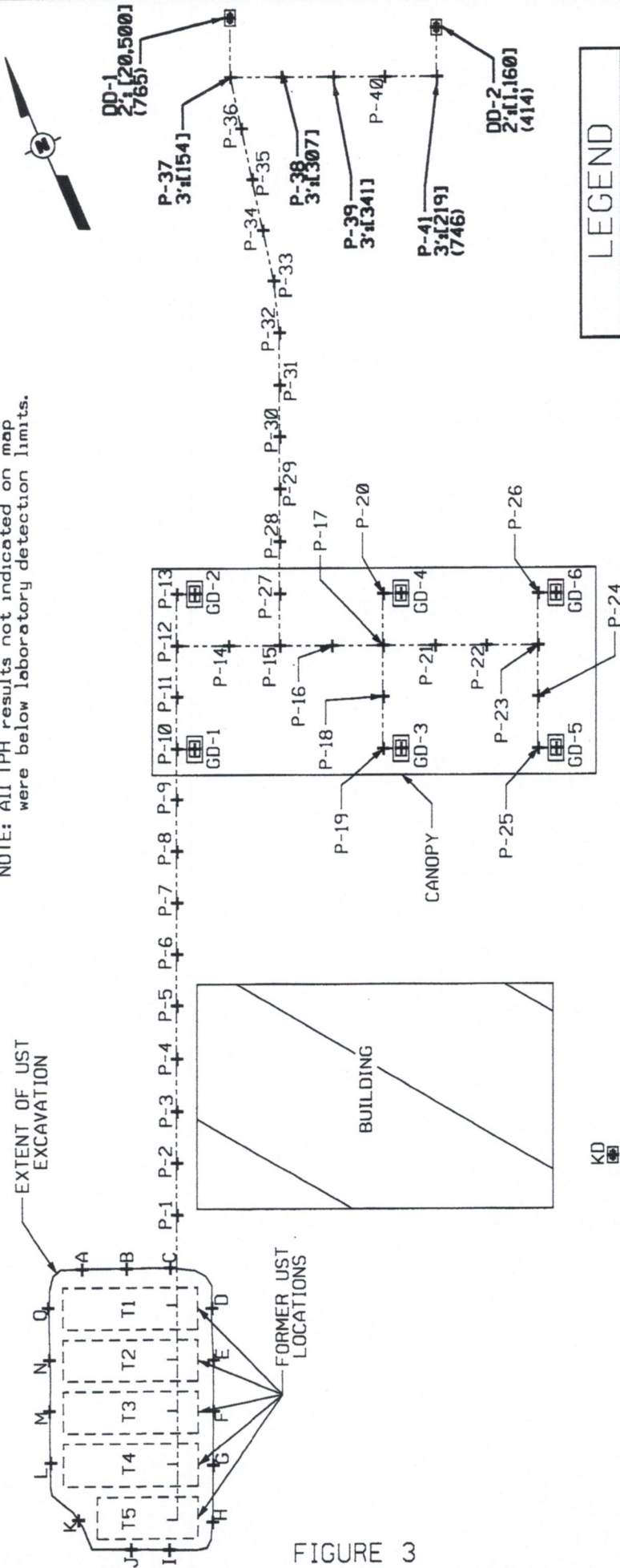


FIGURE 3

| | | | |
|--------------------|---|--|---|
| SCALE: 1"=30' | TITLE: SITE LAYOUT, SOIL SAMPLE LOCATIONS, AND SOIL TPH MAP | CLIENT: MID-STATE PETROLEUM, INC. HIGH POINT, NC | PARAGON ENVIRONMENTAL CONSULTANTS, INC. THOMASVILLE, NORTH CAROLINA |
| DATE: 10/15/15 | PROJECT: UST CLOSURE POP SHOPPE #124 WILMINGTON, NC | | |
| DWN. BY: BWR | | | |
| DWG. NO. L15-1566A | | | |

MARKET STREET

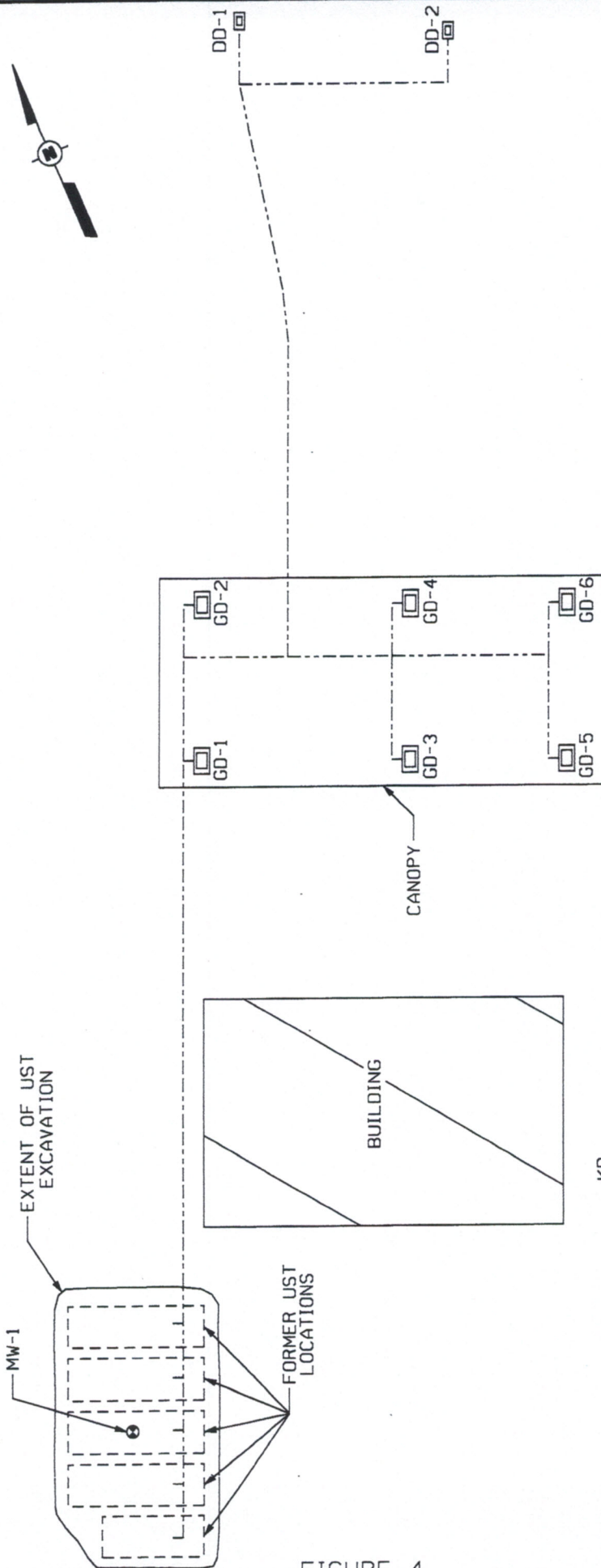



FIGURE 4

LEGEND

SCALE
 0' 15' 30'

● MONITOR WELL LOCATION

| | | | | |
|--------------------|---|---|--|--|
| SCALE: 1"=30' | TITLE: SITE LAYOUT AND MONITOR WELL LOCATIONS | PROJECT: UST CLOSURE POP SHOPPE #124 WILMINGTON, NC | CLIENT: MID-STATE PETROLEUM, INC. HIGH POINT, NC |  PARAGON ENVIRONMENTAL CONSULTANTS, INC. THOMASVILLE, NORTH CAROLINA |
| DATE: 10/20/15 | | | | |
| DWN. BY: BWR | | | | |
| DWG. NO. L15-1566C | | | | |

MARKET STREET

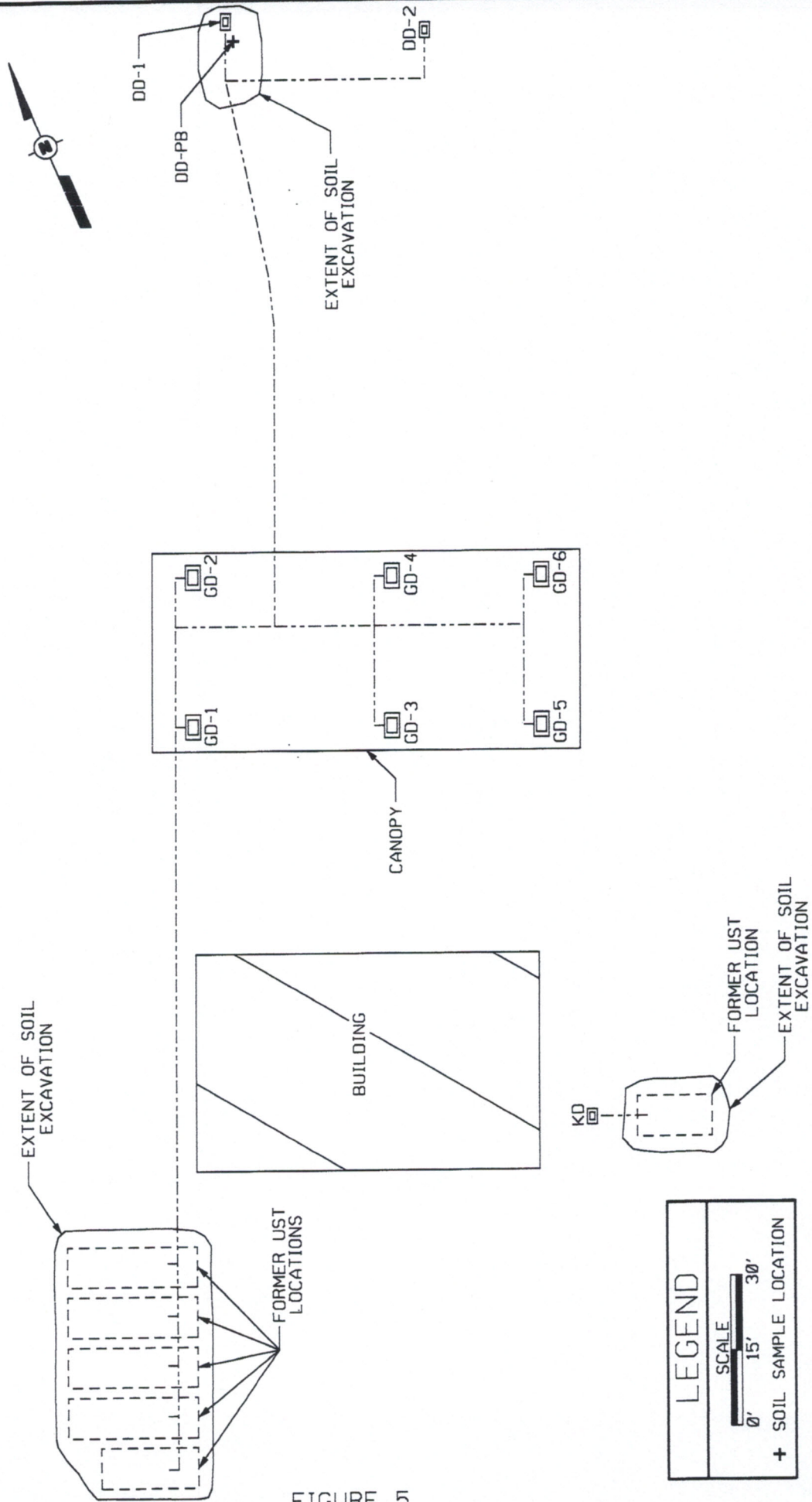


FIGURE 5

PARAGON ENVIRONMENTAL CONSULTANTS, INC. THOMASVILLE, NORTH CAROLINA



CLIENT: MID-STATE PETROLEUM, INC. HIGH POINT, NC

PROJECT: UST CLOSURE POP SHOPPE #124 WILMINGTON, NC

TITLE: REMEDIAL EXCAVATIONS AND SOIL SAMPLE LOCATION

SCALE: 1"=30'
 DATE: 10/20/15
 DWN. BY: BWR
 DWG. NO. L15-1566B

TABLES

TABLE 1
FIELD AND LABORATORY ANALYTICAL RESULTS -
SOIL SAMPLES

Pop Shoppe #124
Wilmington, North Carolina

| SAMPLE ID | LOCATION | DATE | DEPTH (FT) | TPH (3550)* | TPH (5030)* | OVA |
|-----------|------------------------------|---------|------------|-------------|-------------|-----|
| A | Tank Excavation - North Wall | 9/22/15 | 8.5' | N/A | <10 | N/A |
| B | Tank Excavation - North Wall | 9/22/15 | 8.5' | N/A | <10 | N/A |
| C | Tank Excavation - North Wall | 9/22/15 | 8.5' | N/A | <10 | N/A |
| D | Tank Excavation - East Wall | 9/22/15 | 8.5' | N/A | <10 | N/A |
| E | Tank Excavation - East Wall | 9/22/15 | 8.5' | N/A | <10 | N/A |
| F | Tank Excavation - East Wall | 9/22/15 | 8.5' | N/A | <10 | N/A |
| G | Tank Excavation - East Wall | 9/22/15 | 8.5' | N/A | <10 | N/A |
| H | Tank Excavation - East Wall | 9/22/15 | 8.5' | <10 | <10 | N/A |
| I | Tank Excavation - South Wall | 9/22/15 | 8.5' | <10 | <10 | N/A |
| J | Tank Excavation - South Wall | 9/22/15 | 8.5' | <10 | <10 | N/A |

* Results in milligrams per kilogram (mg/kg)

<10 = Below Detection Limits

N/A = Not Analyzed

TABLE 1 (CONT'D)
FIELD AND LABORATORY ANALYTICAL RESULTS -
SOIL SAMPLES (CONT'D)

Pop Shoppe #124
 Wilmington, North Carolina

| SAMPLE ID | LOCATION | DATE | DEPTH (FT) | TPH (3550)* | TPH (5030)* | OVA |
|-----------|----------------------------------|---------|------------|-------------|-------------|-----|
| K | Tank Excavation – West Wall | 9/22/15 | 8.5' | <10 | <10 | N/A |
| L | Tank Excavation – West Wall | 9/22/15 | 8.5' | N/A | <10 | N/A |
| M | Tank Excavation – West Wall | 9/22/15 | 8.5' | N/A | <10 | N/A |
| N | Tank Excavation – West Wall | 9/22/15 | 8.5' | N/A | <10 | N/A |
| O | Tank Excavation – West Wall | 9/22/15 | 8.5' | N/A | <10 | N/A |
| P | Kerosene Excavation – West Wall | 9/22/15 | 7.5' | <10 | <10 | N/A |
| Q | Kerosene Excavation – North Wall | 9/22/15 | 7.5' | <10 | <10 | N/A |
| R | Kerosene Excavation – North Wall | 9/22/15 | 7.5' | <10 | <10 | N/A |
| S | Kerosene Excavation – East Wall | 9/22/15 | 7.5' | <10 | <10 | N/A |
| T | Kerosene Excavation – South Wall | 9/22/15 | 7.5' | <10 | <10 | N/A |

* Results in milligrams per kilogram (mg/kg)

<10 = Below Detection Limits

N/A = Not Analyzed

TABLE 1 (CONT'D)
FIELD AND LABORATORY ANALYTICAL RESULTS -
SOIL SAMPLES (CONT'D)

Pop Shoppe #124
Wilmington, North Carolina

| SAMPLE ID | LOCATION | DATE | DEPTH (FT) | TPH (3550)* | TPH (5030)* | OVA |
|-----------|----------------------------------|---------|------------|-------------|-------------|-----|
| U | Kerosene Excavation - South Wall | 9/22/15 | 7.5' | <10 | <10 | N/A |
| KP | Kerosene Piping | 9/22/15 | 3' | <10 | <10 | N/A |
| KD | Kerosene Dispenser | 9/22/15 | 2' | <10 | <10 | N/A |
| P-1 | Piping #1 | 9/22/15 | 3' | <10 | <10 | N/A |
| P-2 | Piping #2 | 9/22/15 | 3' | <10 | <10 | N/A |
| P-3 | Piping #3 | 9/22/15 | 3' | <10 | <10 | N/A |
| P-4 | Piping #4 | 9/22/15 | 3' | <10 | <10 | N/A |
| P-5 | Piping #5 | 9/22/15 | 3' | <10 | <10 | N/A |
| P-6 | Piping #6 | 9/22/15 | 3' | <10 | <10 | N/A |
| P-7 | Piping #7 | 9/22/15 | 3' | <10 | <10 | N/A |

* Results in milligrams per kilogram (mg/kg)

<10 = Below Detection Limits

N/A = Not Analyzed

TABLE 1 (CONT'D)
FIELD AND LABORATORY ANALYTICAL RESULTS -
SOIL SAMPLES (CONT'D)

Pop Shoppe #124
Wilmington, North Carolina

| SAMPLE ID | LOCATION | DATE | DEPTH (FT) | TPH (3550)* | TPH (5030)* | OVA |
|-----------|------------|---------|------------|-------------|-------------|-----|
| P-8 | Piping #8 | 9/22/15 | 3' | <10 | <10 | N/A |
| P-9 | Piping #9 | 9/22/15 | 3' | <10 | <10 | N/A |
| P-10 | Piping #10 | 9/22/15 | 3' | <10 | <10 | N/A |
| P-11 | Piping #11 | 9/22/15 | 3' | <10 | <10 | N/A |
| P-12 | Piping #12 | 9/22/15 | 3' | <10 | <10 | N/A |
| P-13 | Piping #13 | 9/22/15 | 3' | N/A | <10 | N/A |
| P-14 | Piping #14 | 9/22/15 | 3' | <10 | <10 | N/A |
| P-15 | Piping #15 | 9/22/15 | 3' | <10 | <10 | N/A |
| P-16 | Piping #16 | 9/22/15 | 3' | N/A | <10 | N/A |
| P-17 | Piping #17 | 9/22/15 | 3' | N/A | <10 | N/A |

* Results in milligrams per kilogram (mg/kg)

<10 = Below Detection Limits

N/A = Not Analyzed

TABLE 1 (CONT'D)
FIELD AND LABORATORY ANALYTICAL RESULTS -
SOIL SAMPLES (CONT'D)

Pop Shoppe #124
 Wilmington, North Carolina

| SAMPLE ID | LOCATION | DATE | DEPTH (FT) | TPH (3550)* | TPH (5030)* | OVA |
|-----------|------------|---------|------------|-------------|-------------|-----|
| P-18 | Piping #18 | 9/22/15 | 3' | N/A | <10 | N/A |
| P-19 | Piping #19 | 9/22/15 | 3' | N/A | <10 | N/A |
| P-20 | Piping #20 | 9/22/15 | 3' | N/A | <10 | N/A |
| P-21 | Piping #21 | 9/22/15 | 3' | N/A | <10 | N/A |
| P-22 | Piping #22 | 9/22/15 | 3' | N/A | <10 | N/A |
| P-23 | Piping #23 | 9/22/15 | 3' | N/A | <10 | N/A |
| P-24 | Piping #24 | 9/22/15 | 3' | N/A | <10 | N/A |
| P-25 | Piping #25 | 9/22/15 | 3' | N/A | <10 | N/A |
| P-26 | Piping #26 | 9/22/15 | 3' | N/A | <10 | N/A |
| P-27 | Piping #27 | 9/23/15 | 3' | <10 | <10 | N/A |

* Results in milligrams per kilogram (mg/kg)

<10 = Below Detection Limits

N/A = Not Analyzed

TABLE 1 (CONT'D)
FIELD AND LABORATORY ANALYTICAL RESULTS -
SOIL SAMPLES (CONT'D)

Pop Shoppe #124
 Wilmington, North Carolina

| SAMPLE ID | LOCATION | DATE | DEPTH (FT) | TPH (3550)* | TPH (5030)* | OVA |
|-----------|------------|---------|------------|-------------|-------------|-----|
| P-28 | Piping #28 | 9/23/15 | 3' | <10 | <10 | N/A |
| P-29 | Piping #29 | 9/23/15 | 3' | <10 | <10 | N/A |
| P-30 | Piping #30 | 9/23/15 | 3' | <10 | <10 | N/A |
| P-31 | Piping #31 | 9/23/15 | 3' | <10 | <10 | N/A |
| P-32 | Piping #32 | 9/23/15 | 3' | <10 | <10 | N/A |
| P-33 | Piping #33 | 9/23/15 | 3' | <10 | <10 | N/A |
| P-34 | Piping #34 | 9/23/15 | 3' | <10 | <10 | N/A |
| P-35 | Piping #35 | 9/23/15 | 3' | <10 | <10 | N/A |
| P-36 | Piping #36 | 9/23/15 | 3' | <10 | <10 | N/A |
| P-37 | Piping #37 | 9/23/15 | 3' | 154 | <10 | N/A |

* Results in milligrams per kilogram (mg/kg)

<10 = Below Detection Limits

N/A = Not Analyzed

TABLE 1 (CONT'D)
FIELD AND LABORATORY ANALYTICAL RESULTS -
SOIL SAMPLES (CONT'D)

Pop Shoppe #124
 Wilmington, North Carolina

| SAMPLE ID | LOCATION | DATE | DEPTH (FT) | TPH (3550)* | TPH (5030)* | OVA |
|-----------|-----------------------|---------|------------|-------------|-------------|-----|
| P-38 | Piping #38 | 9/23/15 | 3' | 307 | <10 | N/A |
| P-39 | Piping #39 | 9/23/15 | 3' | 341 | <10 | N/A |
| P-40 | Piping #40 | 9/23/15 | 3' | <10 | <10 | N/A |
| P-41 | Piping #41 | 9/23/15 | 3' | 219 | 746 | N/A |
| DD-1 | Diesel Dispenser #1 | 9/23/15 | 2' | 20,500 | 765 | N/A |
| DD-2 | Diesel Dispenser #2 | 9/23/15 | 2' | 1,160 | 414 | N/A |
| GD-1 | Gasoline Dispenser #1 | 9/22/15 | 2' | N/A | <10 | N/A |
| GD-2 | Gasoline Dispenser #2 | 9/22/15 | 2' | N/A | <10 | N/A |
| GD-3 | Gasoline Dispenser #3 | 9/22/15 | 2' | N/A | <10 | N/A |
| GD-4 | Gasoline Dispenser #4 | 9/22/15 | 2' | N/A | <10 | N/A |
| GD-5 | Gasoline Dispenser #5 | 9/22/15 | 2' | N/A | <10 | N/A |
| GD-6 | Gasoline Dispenser #6 | 9/22/15 | 2' | N/A | <10 | N/A |

* Results in milligrams per kilogram (mg/kg)

<10 = Below Detection Limits

N/A = Not Analyzed

TABLE 2
Summary of Soil Laboratory Analytical Results
 Pop Shoppe #124
 Wilmington, North Carolina

| Constituent | DD-PB | Lowest MSCCs |
|---|--------------|--------------|
| Date | 9/23/2015 | |
| Method 8260 (mg/kg) | | |
| n-Butylbenzene | BDL | 4.3 |
| sec-Butylbenzene | 1.17 | 3.3 |
| tert-Butylbenzene | BDL | 3.4 |
| Ethylbenzene | BDL | 4.9 |
| Isopropylbenzene | BDL | 1.7 |
| p-Isopropyltoluene | 1.36 | 0.12 |
| Naphthalene | 1.97 | 0.16 |
| n-Propylbenzene | BDL | 1.7 |
| 1,2,4-Trimethylbenzene | BDL | 8.5 |
| 1,3,5-Trimethylbenzene | BDL | 8.3 |
| Toluene | BDL | 4.3 |
| Xylenes (total) | BDL | 4.6 |
| Method 8270 (mg/kg) | | |
| Fluorene | BDL | 47 |
| 1-Methylnaphthalene | 10.8 | 0.004 |
| 2-Methylnaphthalene | 7.27 | 3.6 |
| Naphthalene | 4.19 | 0.16 |
| Phenanthrene | 8.08 | 56 |
| Pyrene | BDL | 270 |
| Aliphatic Fraction Classes (mg/kg) | | |
| C5-C8 Volatile Aliphatics | BDL | 68 |
| C9-C12 Volatile Aliphatics | 913 | NSE |
| C9-C18 Extractable Aliphatics | 2,380 | NSE |
| C9-C18 Aliphatics (total) | 3,293 | 540 |
| C19-C36 Extractable Aliphatics | 646 | NSE |
| Aromatic Fraction Classes (mg/kg) | | |
| C9-C10 Volatile Aromatics | 244 | NSE |
| C11-C22 Extractable Aromatics | 1,530 | NSE |
| C9-C22 Aromatics (total) | 1,774 | 31 |

BDL= Below Detection Limits

NSE = No Standard Established

X15-1566

TABLE 3
Summary of Groundwater Analytical Results
Pop Shoppe #124
Wilmington, North Carolina

| Constituent | MW-1 | MW-2 | 2L Standard | GCL |
|--|------------|------------|-------------|-----------|
| Date | 10/22/2015 | 10/22/2015 | | |
| EPA Methods 602 / 6200B (ug/L) | | | | |
| Benzene | 750 | BDL | 1 | 5,000 |
| Toluene | 2,900 | BDL | 600 | 260,000 |
| Ethylbenzene | 250 | BDL | 600 | 84,500 |
| Xylenes (total) | 1,200 | 1.3 | 500 | 85,500 |
| BTEX (total) | 5,100 | 1.3 | NSE | NSE |
| Acetone | 97 | N/A | 6,000 | 6,000,000 |
| 2-Butanone (MEK) | 110 | N/A | 4,000 | 4,000,000 |
| n-Butylbenzene | 8.8 | N/A | 70 | 6,900 |
| Isopropylbenzene | 77 | N/A | 70 | 25,000 |
| Naphthalene | 38 | BDL | 6 | 6,000 |
| n-Propylbenzene | 28 | N/A | 70 | 30,000 |
| Styrene | 10 | N/A | 70 | 70,000 |
| 1,2,4-Trimethylbenzene | 250 | N/A | 400 | 28,500 |
| 1,3,5 Trimethylbenzene | 55 | N/A | 400 | 25,000 |
| EPA Method 625 (ug/L) | | | | |
| Benzoic Acid | 37 | BDL | 30,000 | 1,700,000 |
| 2,4-Dimethylphenol | 3.3 | BDL | 100 | 100,000 |
| 2-Methylnaphthalene | 9.7 | BDL | 30 | 12,500 |
| 1-Methylnaphthalene | 5.9 | BDL | 1 | 1,000 |
| 3/4-Methylphenol | 18 | BDL | NSE | NSE |
| Naphthalene | 25 | BDL | 6 | 6,000 |
| TICs (total) | 1,956 | 59 | NSE | NSE |
| EPA Method 6010 (ug/L) | | | | |
| Lead | BDL | N/A | 15 | 15,000 |
| Aliphatic Fraction Classes (ug/L) | | | | |
| C5-C8 Volatile Aliphatics | 13,000 | 3.3 | 400 | NSE |
| C9-C12 Volatile Aliphatics | 4,200 | 48 | NSE | NSE |
| C9-C18 Extractable Aliphatics | 70 | BDL | NSE | NSE |
| C9-C18 Aliphatics (total) | 4,270 | 48 | 700 | NSE |
| C19-C36 Extractable Aliphatics | BDL | BDL | 10,000 | NSE |
| Aromatic Fraction Classes (ug/L) | | | | |
| C9-C10 Volatile Aromatics | 1,300 | 36 | NSE | NSE |
| C11-C22 Extractable Aromatics | 180 | BDL | NSE | NSE |
| C9-C22 Aromatics (total) | 1,480 | 36 | 200 | NSE |

N/A = Not Analyzed

BDL = Below Detection Limits

NSE = No Standard Established

X15-1566A