GEL Engineering of NC INC

an affiliate of **The GEL Group** INC

PRELIMINARY SITE ASSESSMENT REPORT

1611 Prospect Street
Kennedy Oil Company Property
High Point, North Carolina
State Project B-5114
WBS Element #42252.1.1
Randolph County

North Carolina Department of Transportation
Geotechnical Engineering Unit
1589 Mail Service Center
Raleigh, North Carolina 27699-1589

August 5, 2014

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Signature Page

This document, entitled *Preliminary Site Assessment Report*, has been prepared for the Kennedy Oil Company Property located at 1611 Prospect Street in High Point, North Carolina (State Project B-5114, WBS Element #42252.1.1, Randolph County). It has been prepared by GEL Engineering of NC, Inc. in accordance with the Notice to Proceed provided by the North Carolina Department of Transportation-GeoEnvironmental Section, Geotechnical Engineering Unit for the exclusive use of the North Carolina Department of Transportation. It has been prepared in accordance with accepted quality control practices and has been reviewed by the undersigned.

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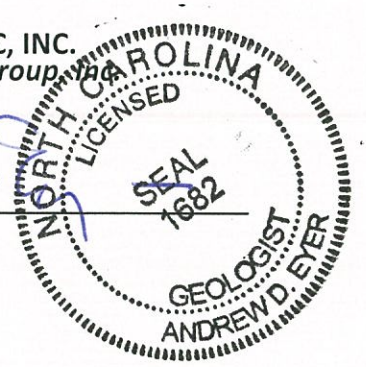


Andrew D. Eyer, L.G.
Senior Project Manager

08-05-14
Date

PRELIMINARY SITE ASSESSMENT REPORT

1611 Prospect Street
Kennedy Oil Company Property
High Point, North Carolina
State Project B-5114, WBS Element #42252.1.1
Randolph County

Executive Summary

The subject site is the Kennedy Oil Company property located at 1611 Prospect Street in High Point, Randolph County, North Carolina. The primary purpose of this investigation was to evaluate the presence or absence of underground storage tanks (USTs) and constituents of concern in soil within the proposed and existing North Carolina Department of Transportation (NCDOT) Rights-of-Way (ROWs) and easements adjacent to 1611 Prospect Street on the south side of Prospect Street and the north side of the access ramp for US 29-70/I-85 Business as a result of current and/or former operations.

The site is located at the intersection of Prospect Street (NC 1619) and Bethel Drive (NC 1621), and the access ramp for US 29-70/I-85 Business, which borders the site to the south. Prospect Street borders the site to the north. A convenience store and service station are located on the property. A review of historical aerial photographs dating back to the early 1990s indicates that the site has always been operated as a convenience store and service station.

The files reviewed at the Winston-Salem Regional Office of the North Carolina Department of Environment and Natural Resources (NCDENR) did not contain any information about 1611 Prospect Street. NCDENR representatives of the UST Section confirmed that the site has been assigned UST Facility ID No. 0-019513 for operation of the three petroleum USTs. They also confirmed that no UST Incident number has ever been assigned to the site. No groundwater monitoring wells were observed at the site.

GEL Engineering of NC, Inc. (GEL) performed a preliminary site assessment within the proposed and existing NCDOT ROWs and easements adjacent to 1611 Prospect Street that included a geophysical investigation, and the collection and analysis of soil samples. Three “Known USTs” were identified outside the investigation area. No subsurface

anomalies indicative of suspected or known USTs were identified within the investigation area. One EM-61 anomaly was identified within the investigation area during the geophysical investigation, but no USTs were encountered when the area was penetrated using direct push technology (DPT).

Soil samples were collected for analysis from seven borings constructed within the investigation area and analyzed for petroleum hydrocarbon constituents. Gasoline range organics (GRO) was detected in one of the samples at a level significantly below the NCDENR action level of 10 milligrams per kilogram (mg/kg) for GRO. Diesel range organics (DRO) was detected in four samples, and the DRO levels detected in two of the samples, S-1 and S-4, exceed the NCDENR action level of 10 mg/kg for DRO.

Based on the detection of elevated DRO concentration in the S-1 and S-4 soil samples, it is estimated that there is an approximate total volume of 185 cubic yards of impacted soil (DRO >10 mg/kg) in the vicinity of boring S-1 and 185 cubic yards of impacted soil (DRO >10 mg/kg) in the vicinity of boring S-4.

No additional environmental investigation of the soil at the site by NCDOT is recommended at this time. However, it is recommended that soils excavated in the vicinity of borings S-1 and S-4 as part of planned construction activities by NCDOT be handled appropriately and further characterized for petroleum constituents, as needed.

PRELIMINARY SITE ASSESSMENT REPORT

1611 Prospect Street
Kennedy Oil Company Property
High Point, North Carolina
State Project B-5114, WBS Element #42252.1.1
Randolph County

1.0 Introduction

This document presents the details of a geophysical survey and preliminary site assessment performed within the accessible portions of the existing and proposed North Carolina Department of Transportation (NCDOT) Rights-of-Way (ROWs) and easements fronting the Kennedy Oil Company property located at 1611 Prospect Street in High Point, North Carolina.

The site is located at the intersection of Prospect Street (NC 1619) and Bethel Drive (NC 1621), and the access ramp for US 29-70/I-85 Business, which borders the site to the south. Prospect Street borders the site to the north. A convenience store and service station are located on the property. The site location is shown in Figure 1, an excerpt from the United States Geological Survey (USGS) 7.5-minute quadrangle map of High Point West, North Carolina. The preliminary site assessment (PSA) was conducted by GEL Engineering of NC, Inc. (GEL) in accordance with the Notice to Proceed issued by NCDOT on April 10, 2014.

The primary purpose of this investigation was to evaluate the presence or absence of underground storage tanks (USTs) and/or constituents of concern in soil within accessible portions of the existing and proposed easements and NCDOT ROW fronting 1611 Prospect Street on the south side of Prospect Street and the north side of the access ramp for US 29-70/I-85 Business as a result of current and/or former operations.

2.0 Background

NCDOT is planning road improvements to the area in the vicinity of Prospect Street in Randolph County, North Carolina. NCDOT wanted to assess the area in the existing and proposed ROWs and easements on the south side of Prospect Street and north side of the access ramp for US 29-70/I-85 Business fronting 1611 Prospect Street to evaluate the presence or absence of USTs and soil contamination related to the current and

former on-site operations, and the impact (if any) of these operations on the proposed road improvements. Figures 2 through 4 show the general site layout for 1611 Prospect Street**.**

The site is located at the intersection of Prospect Street (NC 1619) and Bethel Drive (NC 1621), and the access ramp for US 29-70/I-85 Business, which borders the site to the south. Prospect Street borders the site to the north. A convenience store and service station are located on the property. Gasoline and diesel fuel are dispensed from three USTs located in the central portion of the site, west of the convenience store. Photograph 1 in Appendix I shows the layout of the site, including a pump island (with canopy), locations of the existing USTs, and an isolated diesel fuel pump located adjacent to the onsite diesel fuel UST. A review of historical aerial photographs dating back to the early 1990s indicate that the site has always been operated as a convenience store and service station.

The files reviewed at the Winston-Salem Regional Office of the North Carolina Department of Environment and Natural Resources (NCDENR) did not contain any information about 1611 Prospect Street. NCDENR representatives of the UST Section confirmed that the site has been assigned UST Facility ID No. 0-019513 for operation of the three petroleum USTs. They also confirmed that no UST Incident number has ever been assigned to the site. No groundwater monitoring wells were observed at the site.

3.0 Local Geology and Surroundings

The site is located in a developed area of Randolph County, North Carolina. Surrounding land uses are mostly commercial and industrial activities. It is located within the incorporated area of High Point, North Carolina.

This area is located in the Carolina Slate Belt within the Piedmont Physiographic Province of North Carolina. The land surface of the area is characterized by gently rolling hills terrain and long low ridges. The Carolina Slate Belt in the vicinity of the site is typified by a metamorphosed felsic intrusive complex that is Paleozoic in age.

The United States Department of Agriculture's *Web Soil Survey* (2014) (http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx) maps the native soil in the investigation area as "Mecklenburg-Urban Land Complex" (MkC), which is characterized as hillslopes on ridges consisting of loam and clay loam, with saprolite as a

parent material. The soils encountered at the site during the preliminary site assessment for 1611 Prospect Street consisted predominantly of red/brown/orange silt and clay with sand and clay.

Groundwater was not encountered in borings constructed as part of the preliminary site assessment, and is most likely at depths greater than 15 feet below ground surface in the vicinity of the site. Based on the USGS topographic map presented as Figure 1, the site is located approximately 950 feet above mean sea level. The topography in Figure 1 indicates that groundwater in the vicinity of 1611 Prospect Street most likely flows in a southeasterly direction towards unnamed tributaries of the Uwharrie River. Storm water from the site generally flows in a southerly direction to a drainage ditch located between the site and the access ramp for US 29-70/I-85 Business.

4.0 Subsurface Investigation

To evaluate the presence or absence of USTs and/or impact to subsurface soil within the accessible portions of the existing and proposed easements and NCDOT ROWs at 1611 Prospect Street, GEL performed a limited site assessment within the accessible portions of the highlighted area shown in Figure 2 that consisted of the following tasks:

- Performance of a geophysical investigation to identify the presence or absence of USTs and associated appurtenances within the accessible portions of the existing and proposed easements and ROWs.
- Soil vapor screening of soil samples collected from subsurface soil borings located within the accessible portions of the existing and proposed easements and ROWs to evaluate the potential presence or absence of soil impact from petroleum constituents of concern.
- Collection and laboratory analysis of soil samples from the subsurface borings.

The details of these tasks are discussed in the following sections.

4.1 Geophysical Survey

The geophysical survey included the deployment of ground penetrating radar (GPR) technology and time domain electromagnetic technology (TDEM) to the site. These technologies were used in concert with one another in order to identify subsurface metallic anomalies and, more specifically, to identify the potential presence of USTs within the investigation area. A brief description of each technology is presented in the

following paragraphs followed by a discussion of the results of the geophysical investigation.

4.1.1 Ground Penetrating Radar Methodology

A RAMAC digital radar control system configured with a 250 Megahertz (MHz) antenna array was used in this investigation. GPR is an electromagnetic geophysical method that detects interfaces between subsurface materials with differing dielectric constants. The GPR system consists of an antenna that houses the transmitter and receiver, a digital control unit that both generates and digitally records the GPR data, and a color video monitor to view data as they are collected in the field.

The transmitter radiates repetitive short-duration electromagnetic waves (at radar frequencies) into the earth from an antenna moving across the ground surface. These radar waves are reflected back to the receiver from the interface of materials with different dielectric constants. The intensity of the reflected signal is a function of the contrast in the dielectric constant between the materials, the conductivity of the material through which the wave is traveling, and the frequency of the signal. Subsurface features that commonly cause such reflections are: 1) natural geologic conditions, such as changes in sediment composition, bedding, and cementation horizons and voids; or 2) unnatural changes to the subsurface, such as disturbed soils, soil backfill, buried debris, tanks, pipelines, and utilities. The digital control unit processes the signal from the receiver and produces a continuous cross-section of the subsurface interface reflection events.

GPR data profiles are collected along transects, which are measured paths along which the GPR antenna is moved. During a survey, marks are placed in the data by the operator at designated points along the GPR transects or with a survey wheel odometer. These marks allow for a correlation between the GPR data and the position of the GPR antenna on the ground.

Depth of investigation of the GPR signal is highly site-specific and is limited by signal attenuation (absorption) in the subsurface materials. Signal attenuation is dependent on the electrical conductivity of the subsurface materials. Signal attenuation is greatest in materials with relatively high electrical conductivities, such as clays, brackish groundwater, or groundwater with a high dissolved solid content from natural or man-made sources. Signal attenuation is lowest in relatively low-conductivity materials, such

as dry sand or rock. Depth of investigation is also dependent on the antenna's transmitting frequency. Depth of investigation generally increases as transmitting frequency decreases; however, the ability to resolve smaller subsurface features is diminished as frequency is decreased.

The GPR antenna used at this site is internally shielded from aboveground interference sources. Accordingly, the GPR response is not affected by overhead power lines, metallic buildings, or nearby objects.

4.1.2 Time Domain Electromagnetic Methodology

The TDEM methods measure the electrical conductivity of subsurface materials. The conductivity is determined by inducing (from a transmitter) a time or frequency-varying magnetic field and measuring (with a receiver) the amplitude and phase shift of an induced secondary magnetic field. The secondary magnetic field is created by subsurface conductive materials behaving as an inductor as the primary magnetic field is passed through them.

The Geonics EM-61 system used in this investigation operates within these principles. However, the EM-61 TDEM system can discriminate between moderately conductive earth materials and very conductive metallic targets. The EM-61 consists of a portable coincident loop time domain transmitter and receiver with a 0.5-meter by 1.0-meter coil system. The EM-61 generates 150 pulses per second and measures the response from the ground after transmission or between pulses. The secondary EM responses from metallic targets are of longer duration than those created by conductive earth materials. By recording the later time EM arrivals, only the response from metallic targets is measured, rather than the field generated by the earth material.

4.1.3 Field Procedures

The GPR and TDEM field investigation was performed on April 17, 2014, within the accessible portions of the existing and proposed easements and ROWs at 1611 Prospect Street, as shown in Figure 3. A GPR system time range setting of 90 nanoseconds (ns) was used during the entire investigation. This range was determined after a series of test lines were conducted to evaluate the GPR response in the local geologic section. Interpretation of the GPR data was conducted in the field and any potential anomalies were marked in the field. GPR data processing typically included band pass filtering, background removal, horizontal smoothing, and gain adjustments. TDEM was also used

to scan the project site. Any electromagnetic anomalies indicative of buried metallic objects were marked in the field.

It should be noted that NC 811 underground utility locations had been performed within the investigation area at 1611 Prospect Street prior to the initiation of the preliminary site assessment field activities at the site and were marked with paint.

The TDEM and GPR data, as well as visual evidence, indicated the presence of three "Known USTs" in the subsurface outside the investigation area, as shown in Figures 3 and 4, and in Photographs 1 and 2 in Appendix 1.

As shown in Figure 3 and in Photograph 6 in Appendix I, an EM-61 subsurface anomaly was identified within the investigation area near soil boring location S-4. GPR data collected from this area did not indicate the presence of a UST or other structure. The center of the anomaly area was penetrated to a depth of 6 feet below ground surface (bgs) using direct push technology (DPT), but no USTs were encountered. Photograph 7 in Appendix I shows the soil core that was extracted from the uppermost 4 feet in the subsurface within the anomaly area. It was concluded that the small green EM-61 image shown in the anomaly area on Figure 3 is most likely the result of metallic debris in the subsurface. The red linear EM-61 imagery shown in Figure 3 north of the pump island canopy was in response to two metal posts, as shown in Photograph 5 in Appendix I. The small red images shown in the vicinity of the pump island canopy were interpreted as EM-61 responses resulting from steel reinforcement in the concrete paving.

Three unopened drums containing virgin petroleum products (motor oil, hydraulic fluid, and antifreeze) were observed at the edge of the investigation area near soil boring location S-6, as shown in Photograph 2 in Appendix I. The red EM-61 imagery shown in Figure 3 near boring location S-6 was a result of the presence these three drums.

4.2 Subsurface Soil Investigation

To evaluate the presence or absence of impact to subsurface soil by constituents of concern, GEL collected soil samples from seven subsurface soil borings at 1611 Prospect Street, S-1 through S-7, on May 1, 2014 for analysis of total petroleum hydrocarbon indicator parameters. The soil borings were constructed within accessible portions of the existing and proposed easements and NCDOT ROWs at 1611 Prospect Street, as

shown in Figures 2 and 4, and in Photographs 4, 5, 6, 8, and 9 in Appendix I. The northing and easting coordinates for the boring locations are listed in the table below.

Summary of Location Data and PID Measurements for Soil Samples Collected for Analysis at 1611 Prospect Street

Soil Boring	Depth Interval of Soil Sample Collected for Analysis (feet bgs)	PID Reading (ppm)	Northing	Easting
S-1	7-8	0.0	790459.531	1695329.616
S-2	3-4	0.0	790411.437	1695252.311
S-3	7-8	0.0	790380.942	1695204.392
S-4	7-8	0.0	790357.239	1695164.131
S-5	3-4	4.7	790296.379	1695157.055
S-6	7-8	0.0	790306.169	1695256.809
S-7	7-8	0.0	790272.215	1695212.846

Notes:
1) Northings and Eastings are based on the NC State Plane Coordinate System
2) bgs = below ground surface
3) PID = photoionization detector
4) ppm = parts per million

All borings were advanced to a total depth of 8 feet below ground surface (bgs) except boring S-2, which was terminated at 5.5 feet bgs due to refusal when weathered bedrock was encountered. Soil samples were collected at depths of 3-4 feet bgs from each borehole and from and 7-8 feet bgs in all borings except S-2. All soil samples were inspected for indications of impact by constituents of concern, including petroleum hydrocarbons, such as odors, discoloration, or visible sheen. This sampling was accomplished using DPT provided by Regional Probing Services. Soil boring lithologic logs are attached as Appendix II of this document. Groundwater was not encountered in any borings.

The soil samples were screened for the presence of organic vapors using a portable photoionization detector (PID). The PID measures the concentration of organic compounds in the vapor space above a soil sample resulting from volatilization of organic compounds contained in the soil. To screen the soils, each sample was placed in a clean, resealable polyethylene bag. The bag was sealed, and the sample was allowed to equilibrate for approximately 5 minutes, after which time a small opening was made

in the bag. The probe of the PID was then inserted into the bag, and the airspace above the soil was screened for organic vapors.

No organic vapor concentrations were measured in any of the soil screening samples collected from the seven borings except the sample collected from the 3 to 4-foot depth interval in boring S-5, in which a concentration of 4.7 parts per million (ppm) was measured. Therefore, to assess the subsurface soil quality, soil samples collected from the 7 to 8-foot depth interval from borings S-1 through S-4, S-6, and S-7, and from the 3 to 4-foot depth interval in boring S-5 were designated for analysis.

Following completion of the soil sampling activities, all borings were abandoned by filling the boreholes with soil cuttings and hydrated bentonite. The backfilled material in borings S-1 through S-4 was topped off with asphalt patch material. Soil samples collected from the borings were submitted to QROS' analytical laboratory in Wilmington, North Carolina for analysis of petroleum hydrocarbon constituents using Ultra-violet Fluorescence Spectrometry. The analytical results are included on the Certificates of Analysis provided in Appendix III, and a summary of the analytical results is presented in Table 1.

The analytical results indicate that gasoline range organics (GRO) was detected in one sample, S-2, at a concentration of 0.62 milligrams per kilogram (mg/kg), which is significantly below the NCDENR action level for GRO (10 mg/kg). Diesel range organics (DRO) was detected in samples S-1, S-2, S-4, and S-5. The DRO concentrations detected in S-1 and S-4 (23.17 mg/kg and 108.7 mg/kg, respectively) exceed the NCDENR action level for DRO (10 mg/kg).

It is estimated that there is an approximate total volume of 185 cubic yards of impacted soil (DRO >10 mg/kg) in the vicinity of boring S-1 and 185 cubic yards of impacted soil (DRO >10 mg/kg) in the vicinity of boring S-4 based on the following assumed areas within the investigation area (as shown on Figure 4) and assumed depths of impacted soil:

<u>Boring S-1 Area</u>

- 625 square feet x 8 feet = 185 cubic yards

<u>Boring S-4 Area</u>

- 625 square feet x 8 feet = 185 cubic yards

5.0 Conclusions and Recommendations

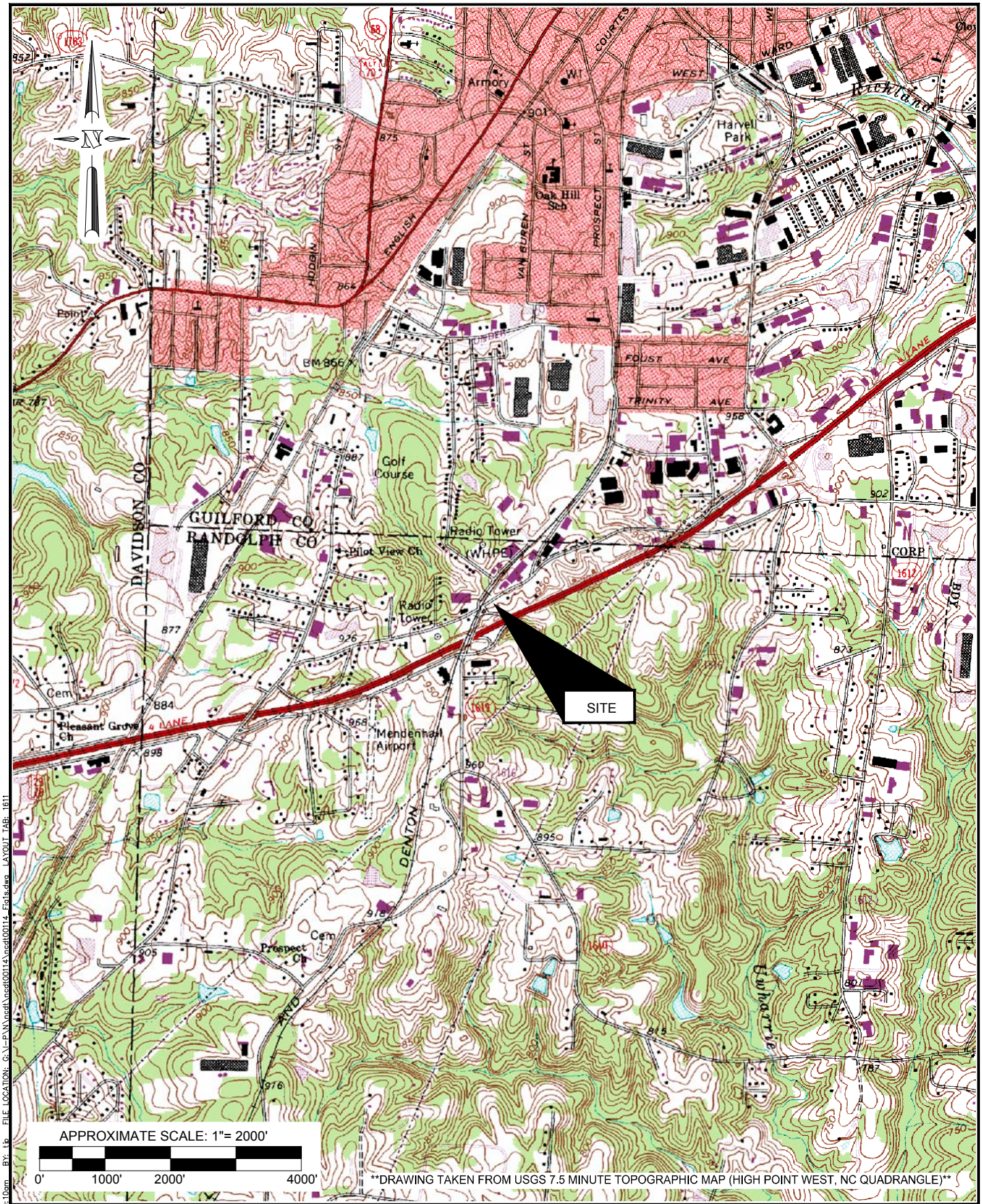
GEL performed a preliminary site assessment within the accessible portions of the existing and proposed easements and NCDOT ROWs at 1611 Prospect Street in High Point, North Carolina that included a geophysical investigation and the collection and analysis of soil samples. Three "Known USTs" were identified outside the investigation area. No subsurface anomalies indicative of suspected or known USTs were identified within the investigation area. One EM-61 anomaly was identified within the investigation area, but no USTs were encountered when the area was penetrated using DPT.

Soil samples were collected for analysis from seven borings constructed within the investigation area and analyzed for petroleum hydrocarbon constituents. GRO was detected in one of the samples at a level significantly below the NCDENR action level of 10 mg/kg for GRO. DRO was detected in four samples, and the DRO levels detected in two of the samples, S-1 and S-4, exceed the NCDENR action level of 10 mg/kg for DRO.

Based on the detection of elevated DRO concentration in the S-1 and S-4 soil samples, it is estimated that there is an approximate total volume of 185 cubic yards of impacted soil (DRO >10 mg/kg) in the vicinity of boring S-1 and 185 cubic yards of impacted soil (DRO >10 mg/kg) in the vicinity of boring S-4.

No additional environmental investigation of the soil at the site by NCDOT is recommended at this time. However, it is recommended that soils excavated in the vicinity of borings S-1 and S-4 as part of planned construction activities by NCDOT be handled appropriately and further characterized for petroleum constituents, as needed.

FIGURES



PLOTTED: Jul 09, 2014 – 9:10am BY: tjp FILE LOCATION: G:\--P\N\ncdt\ncdt00114\ncdt00114_Fig1s.dwg LAYOUT TAB: 1611

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problem solved

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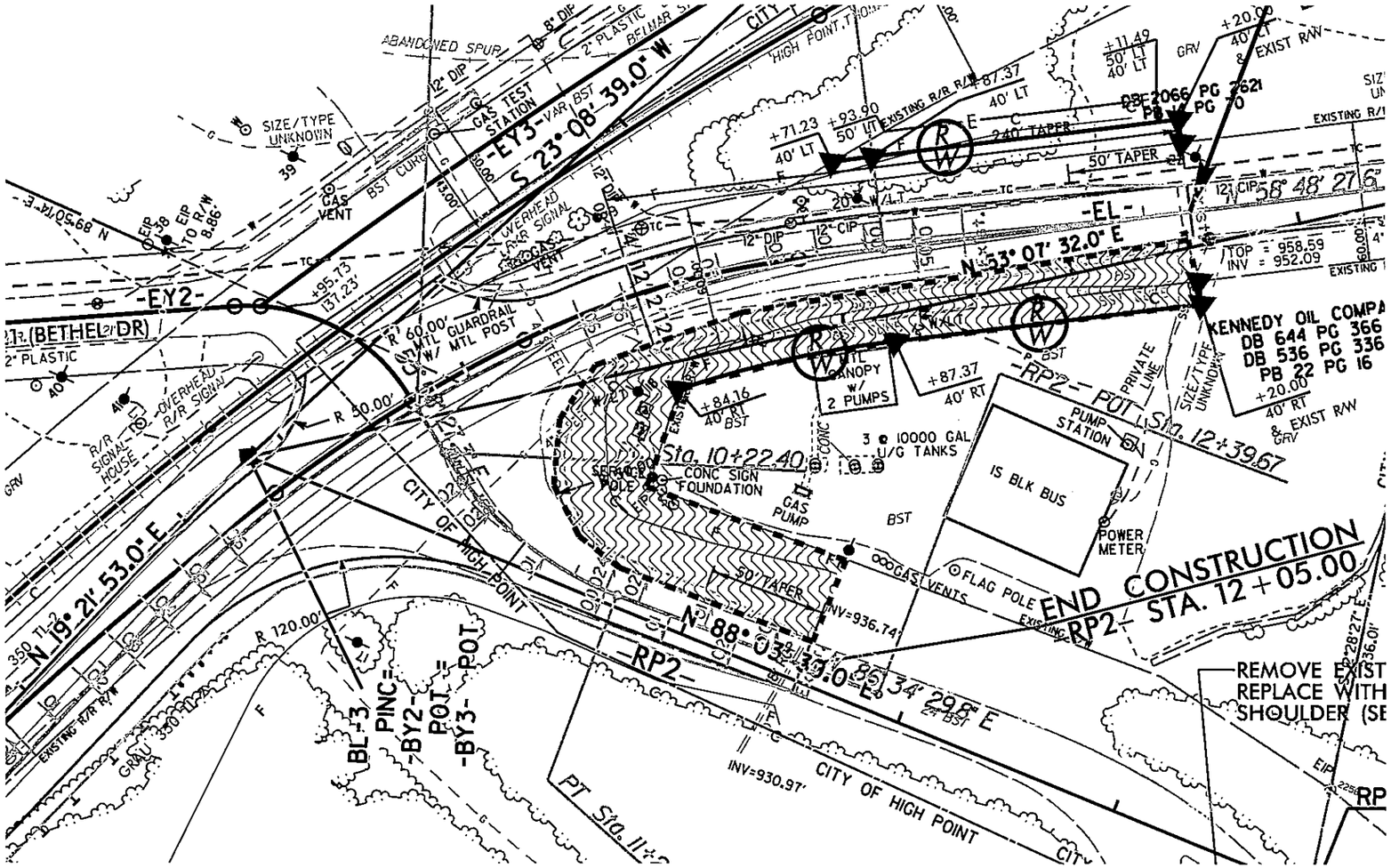
PROJECT: ncdt00114			
PRELIMINARY SITE ASSESSMENT 1611 PROSPECT STREET HIGH POINT, RANDOLPH COUNTY, NORTH CAROLINA TIP NO. B-5114, WBS ELEMENT NO. 42252.1.1	SITE LOCATION MAP		FIGURE 1
DATE: July 8, 2014	DRAWN BY: TJP	APPRV. BY: ADE	

SEE FIGURE 5 FOR SUPPLEMENTAL LEGEND FOR USE WITH FIGURE 2



NO SCALE

FIGURE IS AN EXCERPT FROM NCDOT B5114_RDY_DSN.DGN FILE

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PROJECT: ncdt00114			
PRELIMINARY SITE ASSESSMENT 1611 PROSPECT STREET HIGH POINT, RANDOLPH COUNTY, NORTH CAROLINA STATE PROJECT B-5114, WBS ELEMENT NO. 42252.1.1	SITE MAP SHOWING LOCATION OF INVESTIGATION AREA		FIGURE 2
DATE: March 28, 2014	DRAWN BY: ADE	APPRV. BY:	

SEE FIGURE 5 FOR SUPPLEMENTAL LEGEND FOR USE WITH FIGURE 3

NOTES:

1. UNDERGROUND FEATURES WERE LOCATED USING VISUAL EVIDENCE, GROUND PENETRATING RADAR (GPR), AND TIME DOMAIN ELECTROMAGNETIC (TDEM) METHODS. OTHER BURIED UTILITIES AND STRUCTURES MAY EXIST BUT WERE NOT DETECTED DUE TO LIMITATIONS OF THE GEOPHYSICAL METHODS, SITE ACCESS, AND/OR HIGH TARGET CONGESTION. THEREFORE, DUE CAUTION SHOULD BE USED WHEN PERFORMING SUBSURFACE EXCAVATION ACTIVITIES WHERE POTENTIAL CONFLICTS EXIST. GEL ENGINEERING OF NC, INC. IS NOT RESPONSIBLE FOR DAMAGES THAT MAY OCCUR. IDENTIFYING THE LOCATION OF SOME UTILITIES MAY ONLY BE POSSIBLE WITH VACUUM OR OTHER EXCAVATION METHODS.
2. FIELD SURVEY CONDUCTED ON 4.17.2014.
3. DATA FROM GEONICS, LTD. EM-61 MKII AND MALA GEOSCIENCE GROUND PENETRATING RADAR.
4. BASE MAP PROVIDED BY NCDOT. GEL ENGINEERING OF NC IS NOT LIABLE FOR ACCURACY.

EM-61 ANOMALY

KNOWN USTs

STAGED DRUMS

DONATION BOX AND TELEPHONE

SIGN

Northing

Easting

Response in mV Ch-1

6000
5750
5500
5250
5000
4750
4500
4250
4000
3750
3500
3250
3000
2750
2500
2250
2000
1750
1500
1250
1000
750
500
250
0
-250
-500

APPROXIMATE SCALE: 1"= 40'

0' 20' 40' 80'

PLOTTED: Jul 30, 2014 - 10:09am BY: tjp FILE LOCATION: G:\--PVN\ncdt\ncdt00114\NCDT00114.dwg LAYOUT TAB: Marathon_3

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PRELIMINARY SITE ASSESSMENT
1611 PROSPECT STREET
HIGHPOINT, RANDOLPH COUNTY, NORTH CAROLINA
TIP NO. B-5114, WBS ELEMENT NO. 42252.1.1

SITE MAP SHOWING RESULTS OF GEOPHYSICAL INVESTIGATION

FIGURE 3

DATE: July 29, 2014

DRAWN BY: TJP APPRV. BY: ADE

SEE FIGURE 5 FOR SUPPLEMENTAL LEGEND FOR USE WITH FIGURE 4

LEGEND

- S-1 — SOIL BORING LOCATION
- UST — KNOWN UST
- KNOWN SOIL CONTAMINATION

APPROXIMATE SCALE: 1"= 40'

0' 20' 40' 80'

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1611 PROSPECT STREET
HIGHPOINT, RANDOLPH COUNTY, NORTH CAROLINA
TIP NO. B-5114, WBS ELEMENT NO. 42252.1.1

SITE MAP SHOWING LOCATIONS OF SOIL BORINGS

FIGURE 4

DATE: July 29, 2014

DRAWN BY: TJP APPRV. BY: ADE

PLOTTED: Jul 30, 2014 – 1:59pm BY: tjp FILE LOCATION: G:\--PW\ncdt\ncdt00114\NCDT00114.dwg LAYOUT TAB: Marathon_4

Note: Not to Scale

**S.U.E. = Subsurface Utility Engineering*

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

- State Line
- County Line
- Township Line
- City Line
- Reservation Line
- Property Line
- Existing Iron Pin
- Property Corner
- Property Monument
- Parcel/Sequence Number
- Existing Fence Line
- Proposed Woven Wire Fence
- Proposed Chain Link Fence
- Proposed Barbed Wire Fence
- Existing Wetland Boundary
- Proposed Wetland Boundary
- Existing Endangered Animal Boundary
- Existing Endangered Plant Boundary
- Known Soil Contamination: Area or Site
- Potential Soil Contamination: Area or Site

BUILDINGS AND OTHER CULTURE:

- Gas Pump Vent or U/G Tank Cap
- Sign
- Well
- Small Mine
- Foundation
- Area Outline
- Cemetery
- Building
- School
- Church
- Dam

HYDROLOGY:

- Stream or Body of Water
- Hydro, Pool or Reservoir
- Jurisdictional Stream
- Buffer Zone 1
- Buffer Zone 2
- Flow Arrow
- Disappearing Stream
- Spring
- Wetland
- Proposed Lateral, Tail, Head Ditch
- False Sump

RAILROADS:

- Standard Gauge
- RR Signal Milepost
- Switch
- RR Abandoned
- RR Dismantled

RIGHT OF WAY:

- Baseline Control Point
- Existing Right of Way Marker
- Existing Right of Way Line
- Proposed Right of Way Line
- Proposed Right of Way Line with Iron Pin and Cap Marker
- Proposed Right of Way Line with Concrete or Granite R/W Marker
- Proposed Control of Access Line with Concrete C/A Marker
- Existing Control of Access
- Proposed Control of Access
- Existing Easement Line
- Proposed Temporary Construction Easement
- Proposed Temporary Drainage Easement
- Proposed Permanent Drainage Easement
- Proposed Permanent Drainage / Utility Easement
- Proposed Permanent Utility Easement
- Proposed Temporary Utility Easement
- Proposed Aerial Utility Easement
- Proposed Permanent Easement with Iron Pin and Cap Marker

ROADS AND RELATED FEATURES:

- Existing Edge of Pavement
- Existing Curb
- Proposed Slope Stakes Cut
- Proposed Slope Stakes Fill
- Proposed Curb Ramp
- Existing Metal Guardrail
- Proposed Guardrail
- Existing Cable Guiderail
- Proposed Cable Guiderail
- Equality Symbol
- Pavement Removal

VEGETATION:

- Single Tree
- Single Shrub
- Hedge
- Woods Line
- Orchard
- Vineyard

EXISTING STRUCTURES:

MAJOR:
- Bridge, Tunnel or Box Culvert
- Bridge Wing Wall, Head Wall and End Wall

MINOR:
- Head and End Wall
- Pipe Culvert
- Footbridge
- Drainage Box: Catch Basin, DI or JB
- Paved Ditch Gutter
- Storm Sewer Manhole
- Storm Sewer

UTILITIES:

POWER:
- Existing Power Pole
- Proposed Power Pole
- Existing Joint Use Pole
- Proposed Joint Use Pole
- Power Manhole
- Power Line Tower
- Power Transformer
- U/G Power Cable Hand Hole
- H-Frame Pole
- Recorded U/G Power Line
- Designated U/G Power Line (S.U.E.*)

TELEPHONE:
- Existing Telephone Pole
- Proposed Telephone Pole
- Telephone Manhole
- Telephone Booth
- Telephone Pedestal
- Telephone Cell Tower
- U/G Telephone Cable Hand Hole
- Recorded U/G Telephone Cable
- Designated U/G Telephone Cable (S.U.E.*)
- Recorded U/G Telephone Conduit
- Designated U/G Telephone Conduit (S.U.E.*)
- Recorded U/G Fiber Optics Cable
- Designated U/G Fiber Optics Cable (S.U.E.*)

WATER:
- Water Manhole
- Water Meter
- Water Valve
- Water Hydrant
- Recorded U/G Water Line
- Designated U/G Water Line (S.U.E.*)
- Above Ground Water Line

TV:
- TV Satellite Dish
- TV Pedestal
- TV Tower
- U/G TV Cable Hand Hole
- Recorded U/G TV Cable
- Designated U/G TV Cable (S.U.E.*)
- Recorded U/G Fiber Optic Cable
- Designated U/G Fiber Optic Cable (S.U.E.*)

GAS:
- Gas Valve
- Gas Meter
- Recorded U/G Gas Line
- Designated U/G Gas Line (S.U.E.*)
- Above Ground Gas Line

SANITARY SEWER:
- Sanitary Sewer Manhole
- Sanitary Sewer Cleanout
- U/G Sanitary Sewer Line
- Above Ground Sanitary Sewer
- Recorded SS Forced Main Line
- Designated SS Forced Main Line (S.U.E.*)

MISCELLANEOUS:
- Utility Pole
- Utility Pole with Base
- Utility Located Object
- Utility Traffic Signal Box
- Utility Unknown U/G Line
- U/G Tank; Water, Gas, Oil
- Underground Storage Tank, Approx. Loc.
- A/G Tank; Water, Gas, Oil
- Geoenvironmental Boring
- U/G Test Hole (S.U.E.*)
- Abandoned According to Utility Records — AATUR
- End of Information — E.O.I.

NOTE: LEGEND WAS PROVIDED BY NCDOT

GEL ENGINEERING of NC, Inc.
an Affiliate of THE GEL GROUP, Inc.

Post Office Box 14262
Research Triangle Park, NC 27709
(919) 544-1100

PROJECT: ncdt00114

PRELIMINARY SITE ASSESSMENT

1611 PROSPECT STREET
HIGH POINT, RANDOLPH COUNTY, NORTH CAROLINA
STATE PROJECT B-5114, WBS ELEMENT NO. 42252.1.1

SUPPLEMENTAL LEGEND FOR USE WITH FIGURES 2, 3, AND 4

FIGURE 5

DATE: July 10, 2014

DRAWN BY: ADE

TABLES

TABLE 1

SUMMARY OF ANALYTICAL RESULTS FOR COLLECTED SOIL SAMPLES

Preliminary Site Assessment
1611 Prospect Street, High Point, Randolph County, North Carolina
State Project No. B-5114, WBS Element #42252.1.1

	QROS Results						
Sample ID	**GRO**	**DRO**	**BTEX (C6-C9)**	**TPH (C5-C35)**	**Total Aromatics (C10-C35)**	**16 EPA PAHs**	**Benzo(a)pyrene**
S-1	<1.1	23.17	<1.1	23.17	22.99	1.39	<0.02
S-2	0.62	0.28	0.62	0.28	0.27	<0.02	<0.01
S-3	<0.6	<0.12	<0.6	<0.12	<0.12	<0.01	<0.01
S-4	<1	108.7	<1	108.7	60.83	2.8	<0.02
S-5	<0.6	5.35	<0.6	5.35	1.94	0.05	<0.01
S-6	<0.6	<0.13	<0.6	<0.13	<0.13	<0.01	<0.01
S-7	<0.9	<0.19	<0.9	<0.19	<0.19	<0.02	<0.01
NCDENR Action Level		***10***	***10***				
NCDENR MSCC							***0.088***

1) All reported values for soil are shown in milligrams per kilogram (mg/kg).

2) MSCC = NCDENR's Maximum Soil Contaminant Concnetration Levels (April 2012); MSCC shown is the lowest of established Residential Soil Cleanup Levels and Soil-to Groundwater Maximum Contaminant Concentration shown in the NCDENR MSCC Table for any given constituent.

3) Reported values exceeding corresponding NCDENR Action Levels or MSCCs are highlighted in yellow.

APPENDICES

APPENDIX I

PHOTOGRAPHS

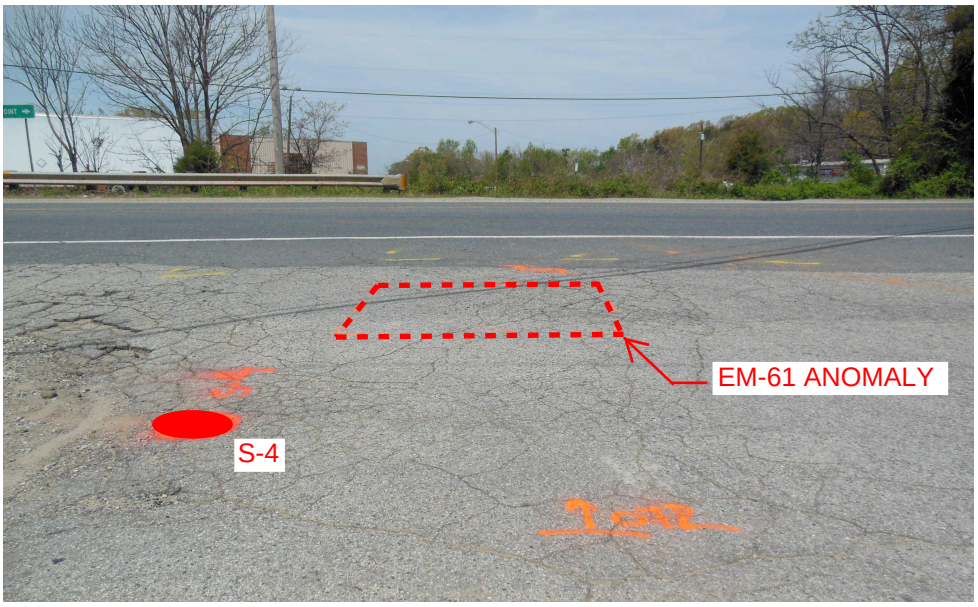
Photograph 1: Oblique aerial view of 1611 Prospect Street. North is at top of photo (from Google Maps, 2014 imagery).

Photograph 2: April 17, 2014 view looking east at three drums containing virgin automobile maintenance fluids near soil boring location S-6. Drums were not present during soil sampling activities on May 1, 2014, as shown in Photograph 8.

Photograph 3: View looking west at locations of three "Known USTs" outside of the investigation area.

Photograph 4: View looking west at locations of soil borings S-1 and S-2.

Photograph 5: View looking east at locations of soil borings S-3 and S-4. Metal posts that produced linear EM-61 image shown in Figure 3 are shown in background.



Photograph 6: View looking north at locations of soil boring S-4 and unidentified EM-61 anomaly.

Photograph 7: Photograph of core extracted from center of unidentified EM-61 anomaly.

Photograph 7: View looking north at locations of soil borings S-5 and S-7.

Photograph 8: View looking east at location of soil boring S-6.

APPENDIX II

SOIL BORING LITHOLOGIC LOGS

SOIL BORING LOG

Boring/Well No.: **S-1**
Date Started: 5/1/14
Date Completed: 5/1/14

No.	Depth Interval	Blow Counts	PID (ppm)	Soil Description	Soil Type
1	0.0' – 4.0'	--	0.0	Orange Red Clayey Silt, Damp	ML
2	4.0' – 8.0'	--	0.0	Orange Red, orange Tan Silt, Damp	ML
3					
4				Total depth = 8 feet below land surface	
5					
6					
7					
8					
9					
10					

Notes:

1) 4-foot continuous cores using DPT.

2) PID readings shown are for discrete samples collected at depth intervals of 3'– 4', and 7'– 8'

SOIL BORING LOG

Boring/Well No.: **S-2**
Date Started: 5/1/14
Date Completed: 5/1/14

No.	Depth Interval	Blow Counts	PID (ppm)	Soil Description	Soil Type
1	0.0' – 2.0'	--	--	Bluish Gray, Tan, mottled Clay, Moist	CL
2	2.0' – 5.0'	--	0.0	Orange Tan Sandy Silt with Clay, Damp	ML
3	5.0' – 5.5'	--	--	Weathered Rock, Refusal at 5.5 ft.	
4					
5				Total depth = 5.5 feet below land surface	
6					
7					
8					
9					
10					

Notes:

1) 4-foot continuous cores using DPT.

2) PID readings shown are for discrete samples collected at depth intervals of 3'– 4', and 7'– 8'

SOIL BORING LOG

Boring/Well No.: **S-3**
Date Started: 5/1/14
Date Completed: 5/1/14

No.	Depth Interval	Blow Counts	PID (ppm)	Soil Description	Soil Type
1	0.0' – 2.0'	--	--	Orange Brown Silty Clay, Moist	CL
2	2.0' – 4.0'	--	0.0	Red Orange Tan mottled Clayey Silt, Stiff, Moist	ML
3	4.0' – 8.0'	--	0.0	Red Orange Tan mottled Clayey Silt, Stiff, Moist	ML
4					
5				Total depth = 8.0 feet below land surface	
6					
7					
8					
9					
10					

Notes:

1) 4-foot continuous cores using DPT.

2) PID readings shown are for discrete samples collected at depth intervals of 3'– 4', and 7'– 8'

SOIL BORING LOG

Boring/Well No.: **S-4**
Date Started: 5/1/14
Date Completed: 5/1/14

No.	Depth Interval	Blow Counts	PID (ppm)	Soil Description	Soil Type
1	0.0' – 4.0'	--	0.0	Red Brown Clayey Silt, Very Stiff, Damp	ML
2	4.0' – 8.0'	--	0.0	Orange Red Clayey Silt, Very Stiff, Damp	ML
3					
4				Total depth = 8 feet below land surface	
5					
6					
7					
8					
9					
10					

Notes:

1) 4-foot continuous cores using DPT.

2) PID readings shown are for discrete samples collected at depth intervals of 3'– 4', and 7'– 8'

SOIL BORING LOG

Boring/Well No.: **S-5**
Date Started: 5/1/14
Date Completed: 5/1/14

No.	Depth Interval	Blow Counts	PID (ppm)	Soil Description	Soil Type
1	0.0' – 0.5'	--	--	Dark Brown Sandy Silt, Moist, Organics	ML
2	0.5' – 4.0'	--	4.7	Red Orange Tan mottled Sandy Clay with Gravel, Moist	CL
3	4.0' – 8.0'	--	0.0	Red Orange Gray Tan Clay with Sand, Moist	CL
4					
5				Total depth = 8.0 feet below land surface	
6					
7					
8					
9					
10					

Notes:

1) 4-foot continuous cores using DPT.

2) PID readings shown are for discrete samples collected at depth intervals of 3'– 4', and 7'– 8'

SOIL BORING LOG

Boring/Well No.: **S-6**
Date Started: 5/1/14
Date Completed: 5/1/14

No.	Depth Interval	Blow Counts	PID (ppm)	Soil Description	Soil Type
1	0.0' – 5.0'	--	0.0	Red Orange Tan mottled Clay, Moist	CL
2	5.0' – 8.0'	--	0.0	Orange Red Sandy Silt, Moist, Gravel at 7'-8'	ML
3					
4				Total depth = 8 feet below land surface	
5					
6					
7					
8					
9					
10					

Notes:

1) 4-foot continuous cores using DPT.

2) PID readings shown are for discrete samples collected at depth intervals of 3'– 4', and 7'– 8'

SOIL BORING LOG

Boring/Well No.: **S-7**
Date Started: 5/1/14
Date Completed: 5/1/14

No.	Depth Interval	Blow Counts	PID (ppm)	Soil Description	Soil Type
1	0.0' – 2.0'	--	--	Red Clay, Moist	CL
2	2.0' – 4.0'	--	0.0	Orange Brown Gray Gravelly Silt with Sand, Moist	ML
3	4.0' – 5.5'	--	--	Orange Gray Sandy Silt, Moist	ML
4	5.5' – 8.0'		0.0	Bluish Gray, Orange Tan mottled Clay, Moist	CL
5					
6				Total depth = 8.0 feet below land surface	
7					
8					
9					
10					

Notes:

1) 4-foot continuous cores using DPT.

2) PID readings shown are for discrete samples collected at depth intervals of 3'– 4', and 7'– 8'

APPENDIX III

CERTIFICATES OF ANALYSIS AND CHAIN OF CUSTODY RECORD FOR SOIL SAMPLES

QED

AQROS

Hydrocarbon Analysis Results

Client: GEL Engineering of NC
Address:

Samples taken Thursday, May 1, 2014
Samples extracted Thursday, May 1, 2014
Samples analysed Monday, May 5, 2014

Contact: Andrew Eyer

Operator Rachel Menoher

Project: NCDOT WBS#42252.1.1 NCDOT00114

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	S-5	13.0	<0.6	<0.6	5.35	5.35	1.94	0.05	<0.013	68.6	18.9	12.5	Deg.Fuel (PFM) (FCM) 56.9%
s	S-6	13.0	<0.6	<0.6	<0.13	<0.13	<0.13	<0.01	<0.013	0	18.7	81.3	Background Organics
s	S-7	19.0	<0.9	<0.9	<0.19	<0.19	<0.19	<0.02	<0.019	0	100	0	Particulate (PFM)
s	S-4	21.0	<1	<1	108.7	108.7	60.83	2.8	<0.021	39.8	54.9	5.4	Deg.Fuel (FCM) 95.4%
s	S-3	12.0	<0.6	<0.6	<0.12	<0.12	<0.12	<0.01	<0.012	0	16.7	83.3	Background Organics
s	S-2	19.0	<0.9	0.62	0.28	0.9	0.27	<0.02	<0.019	70	7.2	22.8	Deg.Fuel (P)
s	S-1	23.0	<1.1	<1.1	23.17	23.17	22.99	1.39	<0.023	43.7	43.4	12.9	V.Deg.PHC 87.1%
s	TRIP BLANK	13.0	<0.7	<0.7	<0.13	<0.7	<0.13	<0.01	<0.013	0	0	0	TPH not detected

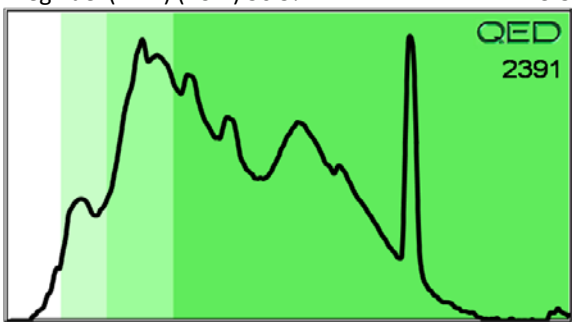
Initial Calibrator QC check OK

Final FCM QC Check OK 104.8%

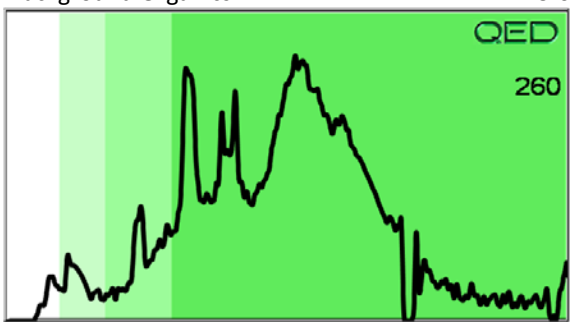
Results generated by a QED HC-1 analyser. Concentration values in mg/kg for soil samples and mg/L for water samples. Soil values are not corrected for moisture or stone content

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

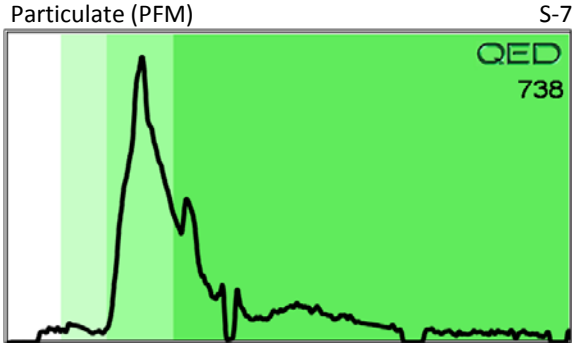
Deg.Fuel (PFM) (FCM) 56.9% S-5



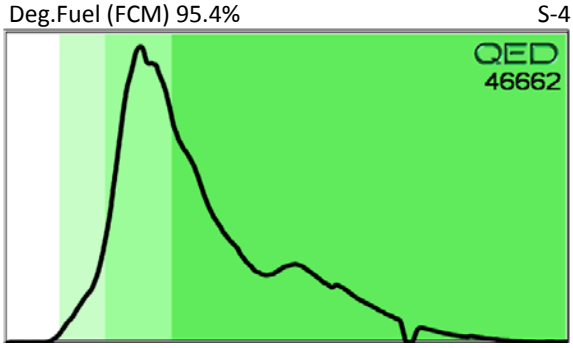
Background Organics S-6



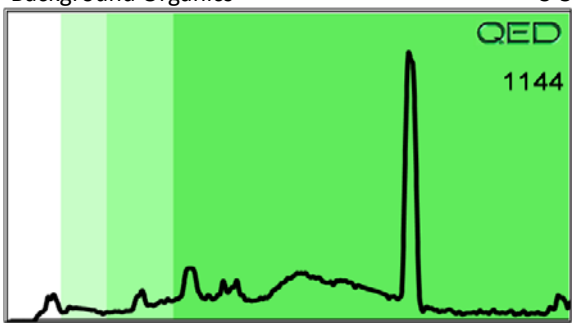
Particulate (PFM) S-7



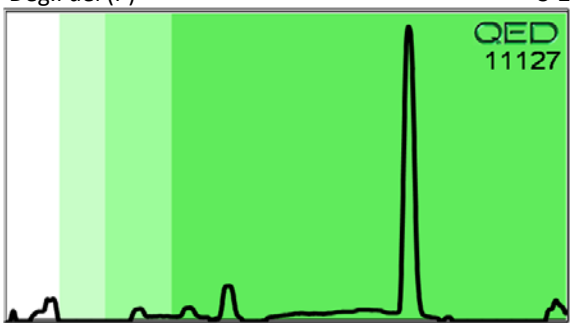
Deg.Fuel (FCM) 95.4% S-4



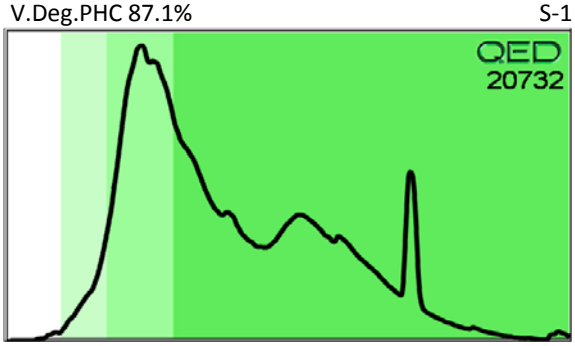
Background Organics S-3



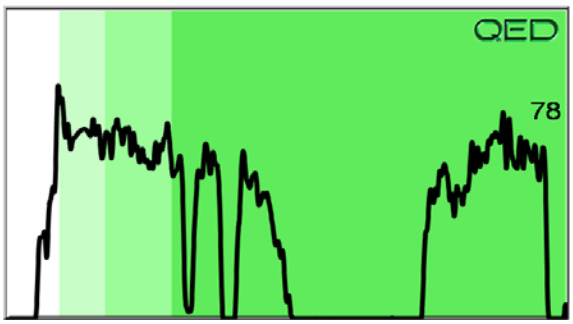
Deg.Fuel (P) S-2



V.Deg.PHC 87.1% S-1



TPH not detected TRIP BLANK



Chain of Custody Record and Analytical Request Form

Sample ID	Sample Collection			TAT Requested	
QED UVF	Date	Time	Initials	24 Hour	48 Hour
S-5	5-1-14	09:45	RSG		X
S-6		09:55			X
S-7		10:10			X
S-4		10:35			X
S-3		10:50			X
S-2		11:10			X
S-1		11:20			X
Trip Blank	—	—	—	—	—
SB-1	5-1-14	13:25	RSG		X
SB-2		13:35			X
SB-3		13:55			X
SB-7		14:10			X
SB-6		14:30			X
SB-5		14:45			X
SB-4		15:00			X

Client: GEL Eng of NC

Contact: Andrew Eyer

Phone: (919) 323-8828

Email: ade@gel.com

Project Reference: NCDOT WBS# 42252.1.1 NCDT00114

Each Sample will be analyzed for total

BTEX, GRO, DRO, TPH, and PAH

Each Sample will generate a fingerprint representative of the petroleum product within the sample. Electronic Data will be submitted to the email above.

Relinquished by	Date/time	Accepted by	Date/time
	5/2/14 1205		5/5/14 12:15
Relinquished by	Date/time	Accepted by	Date/time
Relinquished by	Date/time	Accepted by	Date/time

919-278-8926

SHIP TO: QROS

420 Raleigh Street Suite E

Wilmington, NC 28412