PRELIMINARY SITE ASSESSMENT

PARCEL 006 - EVERETT O. SMITH
1121 MEBANE OAKS ROAD
MEBANE, ALAMANCE COUNTY, NORTH CAROLINA
STATE PROJECT: I-5711
WBS ELEMENT: 50401.1.FS1
OCTOBER 20, 2018

Report prepared for:

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C-257 – Geology
C-1251 – Engineering

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Acronyms

BLS .....Below Land Surface
BTEX .....Benzene, Toluene, Ethylbenzene, & Xylenes
CADD .....Computer Aided Design and Drafting
COC .....Chain of Custody
CSA.....Comprehensive Site Assessment
DEQ .....Department of Environmental Quality
DRO .....Diesel Range Organics
DWM .....Division of Waste Management
EM.....Electromagnetic (as with EM-61)
EPA.....Environmental Protection Agency
GRO .....Gasoline Range Organics
GCLs .....Gross Contaminant Levels
GPR.....Ground Penetrating Radar
HASP .....Health & Safety Plan
MSCC .....Maximum Soil Contaminant Concentration
MTBE .....Methyl Tertiary Butyl Ether
µg/L.....Micrograms per Liter
mg/kg .....Milligrams per kilogram
NPDES.....National Pollutions Discharge Elimination System
NCAC .....North Carolina Administrative Code
NCDOT.....North Carolina Department of Transportation
OSHA.....Occupational Safety and Health Administration
OVA.....Organic Vapor Analyzer
PPM.....Parts Per Million
PID .....Photo-ionization Detector
PSA .....Preliminary Site Assessment
PVC.....Poly-vinyl Chloride
RFP .....Request for Proposal
ROW .....Right of Way
SVOCs .....Semi-Volatile Organic Compounds
TW .....Temporary Well
TPH.....Total Petroleum Hydrocarbons
UVF.....Ultraviolet Fluorescence (UVF) QED Analyzer
UST.....Underground Storage Tank
US EPA.....United States Environmental Protection Agency
VOCs.....Volatile Organic Compounds

PRELIMINARY SITE ASSESSMENT
PARCEL 006 - EVERETT O. SMITH
1121 MEBANE OAKS ROAD
MEBANE, ALAMANCE 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 006, owned by Everett O. Smith. The property currently contains an active service station including fuel pumps and auto service bays surrounded by asphalt and grass medians at 1121 Mebane Oaks Road, Mebane, NC. This PSA was conducted on behalf of the North Carolina Department of Transportation (NCDOT) in accordance with Pyramid's August 9, 2018, technical proposal. This PSA is a part of State Project I-5711.

The purpose of this assessment was to determine the presence or absence of underground storage tanks (USTs) and impacted soils between the existing edge of pavement and the proposed Right-Of-Way (ROW) and/or easements, whichever distance was greater. 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.

The following statements summarize the results of the PSA:

- **Site History:** Pyramid interviewed DEQ personnel, interviewed property owners, and reviewed aerial photographs to assess past uses of the property. Pyramid reviewed historical aerial photographs obtained from Google Earth dating back to 1993. Historical information reviewed as part of the PSA indicated that the property has operated as an active gas station since at least February of 1984. Visual observations and the NCDOT documents indicate that four known USTs are currently operating at the facility. Records review provided the following UST and Facility ID information for the property: UST Number WS-5745, Facility ID 00-0-0000024133.

  On August 31, 2018, Pyramid emailed the Alamance County parcel address (1121 Mebane Oaks Road, Mebane, NC) to Ms. Mindy Lepard, Hydrogeologist with the Department of Environmental Quality (DEQ), UST Section, with a request to investigate any environmental incidents associated with the parcel. Ms. Lepard responded to the email and verified that Groundwater Incident #20514 is associated with this site and has been closed out.

Pyramid reviewed the environmental incident documents associated with the above-referenced incident. The documents indicate that UST petroleum releases occurred at the property during the 1980s and 1990s. Groundwater monitoring was performed over a period of several years at the site, and an air sparge/soil vapor extraction (AS/SVE) remediation system was active from 2002 to 2010. A Site Closure Report was submitted to the DEQ in August 2016 and a Notice of Residual Petroleum (NORP) was submitted to the DEQ in November 2016. The DEQ reviewed the documents and granted a Notice of No Further Action (NNFA) for the site in December 2016. The NNFA letter indicates that groundwater contamination at the site exceeds quality standards established in Title 15A NCAC 2L .0202 and the area where the water is expected to migrate is not suitable for water supply. The letter also indicates that soil contamination exceeds the residential Maximum Soil Contaminant Concentrations (MSCCs) and that the property is suitable only for industrial/commercial use or restricted residential use. All of the monitoring wells on-site were properly abandoned in December 2016 and detailed in a Monitoring Well Abandonment Report in January 2017.

- On September 10, 2018, Pyramid Project Manager Eric Cross performed a site investigation at the property. Mr. Cross did not observe any significant environmental risks on the property at the time of the investigation. Mr. Cross did observe **two above-ground hydraulic lifts and one in-ground hydraulic lift on site** that were part of the auto service bays. The above-ground lifts were located in the rear (west) of the main structure and in the detached service structure at the northwest portion of the property. The in-ground lift was located in the front (east) garage of the main structure. The four known USTs were observed to be within or directly adjacent to the NCDOT proposed ROW and/or easements on the north side of the parcel.

- **Geophysical Survey**: The geophysical investigation consisted of electromagnetic (EM) induction-metal detection and ground penetrating radar (GPR) surveys. A total of ten EM anomalies were identified. The majority of the EM anomalies were directly attributed to visible cultural features at the ground surface. Two EM anomalies were associated with a vehicle, suspected reinforced concrete, and known USTs and were further investigated with GPR. Four known USTs were observed within the geophysical survey area. GPR verified the sizes and orientations of the four known USTs.

  The eastern UST (UST #1) was approximately 33 feet long by 9.5 feet wide. The east-central UST (UST #2) was approximately 36 feet long by 9.5 feet wide. The west-central UST (UST #3) was approximately 31.5 feet long by 9.5 feet wide. The western-most UST (UST #4) was approximately 9 feet long by 6.5 feet wide. GPR also verified the presence of metal reinforcement within the concrete on the

property. No other unknown buried structures were identified. Collectively, the geophysical data recorded evidence of four known USTs at Parcel 6.

- **Limited Soil Assessment:** A total of five soil borings were performed across the property. Soil samples were screened in the field using an organic vapor analyzer (OVA) and select soil samples were analyzed for Diesel Range Organics (DRO) and Gasoline Range Organics (GRO) using a QED Analyzer. The DEQ action level for TPH-GRO is 50 milligrams per kilogram (mg/kg) and the action level for TPH-DRO is 100 mg/kg. Soil samples were screened with an OVA and select soil samples were analyzed for DRO and GRO using a QED Analyzer. None of the soil samples analyzed exhibited DRO or GRO concentrations above DEQ action levels.

- **Limited Groundwater Assessment:** The water table was not encountered in the upper 8 feet of the soil column that was sampled during this PSA. Review of the NCDOT engineering plans for this parcel indicate that groundwater will not be encountered during construction activities, based on shallow excavations and a water table depth greater than 8 feet below the ground surface. Therefore, it was not necessary to collect a groundwater sample.

- **Contaminated Soil Volumes:** No evidence of petroleum-impacted soils (DRO/GRO > DEQ Action Levels) was observed during this investigation. Therefore, no recommendations for the treatment, handling, or disposal of such materials are warranted.

  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 DEQ Division of Waste Management (DWM) guidelines and disposed of at a permitted facility.

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 006, owned by Everett O. Smith. The Site is currently a full-service gas station and automotive maintenance shop located in a one-story office/garage building. A UST area, two dispenser islands, and additional garage and storage outbuildings are also present on-site. The site is located at 1121 Mebane Oaks Road, Mebane, NC. This PSA was conducted on behalf of the North Carolina Department of Transportation (NCDOT) in accordance with Pyramid's August 9, 2018, technical proposal. This PSA is a part of State Project I-5711.

The purpose of this assessment was to determine the presence or absence of underground storage tanks (USTs) and impacted soils between the existing edge of pavement and the proposed Right-Of-Way (ROW) and/or easements, whichever distance was greater. 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. The location of the subject site is shown on **Figure 1**.

1.1 Background Information

Based on the NCDOT's August 1, 2018, *Request for Technical and Cost Proposal (RFP),* the PSA was conducted between the existing edge of pavement and the proposed ROW and/or easement lines (whichever distance was greater), 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.
- If groundwater is likely to be encountered by subsequent excavation required by construction, then Pyramid will attempt to obtain a groundwater sample from the parcel.

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. Pyramid's geophysical staff provided additional private utility locating services to mark the on-site private, buried utilities.

2.0 SITE HISTORY

The NCDOT Pre-Scope comments for Parcel 006 in the RFP documents provided to Pyramid on August 1, 2018, provided the following background information related to the site:

> *"Currently a service station. Four tanks currently in use. Six tank closed in 1987. GWI #'s 13316, 20514 are associated with this site."*

Pyramid interviewed DEQ personnel, interviewed property owners, and reviewed aerial photographs to assess past uses of the property. Pyramid reviewed historical aerial photographs obtained from Google Earth dating back to 1993. Aerial photographs ranging from 1993 to 2017 are included in **Appendix A**. Historical information reviewed as part of the PSA indicated that the property has operated as an active gas station since at least February of 1984. Visual observations and the NCDOT documents indicate that four known USTs are currently operating at the facility. Records review provided the following UST and Facility ID information for the property: UST Number WS-5745, Facility ID 00-0-0000024133.

On August 31, 2018, Pyramid emailed the Alamance County parcel address (1121 Mebane Oaks Road, Mebane, NC) to Ms. Mindy Lepard, Hydrogeologist with the Department of Environmental Quality (DEQ), UST Section, with a request to investigate any environmental incidents associated with the parcel. Ms. Lepard responded to the email and verified that Groundwater Incident #20514 is associated with this site and has been closed out.

Pyramid reviewed the environmental incident documents associated with the above-referenced incident. The documents indicate that UST petroleum releases occurred at the property during the 1980s and 1990s. Groundwater monitoring was performed over a period of several years at the site, and an air sparge/soil vapor extraction (AS/SVE) remediation system was active from 2002 to 2010. A Site Closure Report was submitted to the DEQ in August 2016 and a Notice of Residual Petroleum (NORP) was submitted to the DEQ in November 2016. The DEQ reviewed the documents and granted a Notice of No Further Action (NNFA) for the site in December 2016. The NNFA letter indicates that groundwater contamination at the site exceeds quality standards established in Title 15A NCAC 2L .0202 and the area where the water is expected to migrate is not suitable for water supply. The letter also indicates that soil contamination exceeds the residential MSCCs and that the property is suitable only for industrial/commercial use or restricted residential use.

All of the monitoring wells on-site were properly abandoned in December 2016 and detailed in a Monitoring Well Abandonment Report, prepared by Arcadis in January

2017. Copies of the NNFA letter, the NORP letter, the Well Abandonment Report, and a Groundwater Monitoring Report submitted by URS Corporation (URS) in 2015 that provides detailed background information for the site are included as **Appendix B**.

On September 10, 2018, Pyramid Project Manager Eric Cross performed a site investigation at the property. Mr. Cross did not observe any significant environmental risks on the property at the time of the investigation. Mr. Cross did observe **two above-ground hydraulic lifts and one in-ground hydraulic lift on site** that were part of the auto service bays. The above-ground lifts were located in the rear (west) of the main structure and in the detached service structure at the northwest portion of the property. The in-ground lift was located in the front (east) garage of the main structure. The four known USTs were observed to be within or directly adjacent to the NCDOT proposed ROW and/or easements on the north side of the parcel.

3.0 GEOPHYSICAL INVESTIGATION

Pyramid's classifications of USTs for the purposes of this PSA report are based directly on the geophysical UST ratings provided to us by the NCDOT. These ratings are as follows:

Geophysical Surveys for Underground Storage Tanks
on NCDOT Projects

High Confidence	Intermediate Confidence	Low Confidence	No Confidence
Known UST Active tank - spatial location, orientation, and approximate depth determined by geophysics.	**Probable UST** Sufficient geophysical data from both magnetic and radar surveys that is characteristic of a tank. Interpretation may be supported by physical evidence such as fill/vent pipe, metal cover plate, asphalt/concrete patch, etc.	**Possible UST** Sufficient geophysical data from either magnetic or radar surveys that is characteristic of a tank. Additional data is not sufficient enough to confirm or deny the presence of a UST.	Anomaly noted but not characteristic of a UST. Should be noted in the text and may be called out in the figures at the geophysicist's discretion.

The geophysical investigation consisted of electromagnetic (EM) induction-metal detection and ground penetrating radar (GPR) surveys. A total of ten EM anomalies were identified. The majority of the EM anomalies were directly attributed to visible cultural features at the ground surface. Two EM anomalies were associated with a vehicle, suspected reinforced concrete, and known USTs and were further investigated with GPR. Four known USTs were observed within the geophysical survey area. GPR verified the sizes and orientations of the four known USTs.

The eastern UST (UST #1) was approximately 33 feet long by 9.5 feet wide. The east-central UST (UST #2) was approximately 36 feet long by 9.5 feet wide. The west-central UST (UST #3) was approximately 31.5 feet long by 9.5 feet wide. The western-most UST (UST #4) was approximately 9 feet long by 6.5 feet wide. GPR also verified the presence of metal reinforcement within the concrete on the property. No other unknown buried structures were identified. Collectively, the geophysical data recorded evidence of four known USTs at Parcel 6.

The full details of the geophysical investigation are documented in Pyramid's Geophysical Investigation Report, dated September 17, 2018, which is included as **Appendix C**.

4.0 SOIL SAMPLING ACTIVITIES & RESULTS

4.1 Soil Assessment Field Activities

On October 1, 2018, Pyramid mobilized to the site, drilled soil borings and collected the proposed soil samples for the PSA. Five (5) soil borings (6-1 through 6-5) were advanced on the subject property. The soil borings were completed using a truck-mounted Geoprobe drill rig. 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 ROW and/or easement, or within other areas of concern such as proposed drainage features and areas designated for soil removal as indicated by the NCDOT engineering plans. 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 an Organic Vapor Analyzer (OVA) approximately every 2 feet, depending on the soil recovery. In general, the soil sample with the highest OVA reading was selected from each boring for QED Ultra-Violet Fluorescence (UVF) laboratory analysis. If field screening detected multiple elevated readings, then additional soil samples from each boring were selectively chosen for UVF analysis. The soil boring logs with the soil descriptions, visual examination, and OVA screening results are included in **Appendix D**. The OVA 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. A slight petroleum odor was detected in all of the soil samples collected at Boring 6-4. Petroleum odor was not detected in any of the other boring samples 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 RED Lab. The DEQ & NCDOT now accept this instrument as an analytical method to provide total petroleum hydrocarbon (TPH) results for soil analysis for PSA projects. Pyramid preserved the samples for UVF analysis in methanol-filled containers provided by RED Lab, an approved laboratory for performing the UVF screening. The samples were analyzed in the field in real-time when possible by a Pyramid employee who has been certified by RED Lab to perform the QED 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).

4.2 Soil Sample Analytical Results

QED Results

The DEQ action level for TPH-GRO is 50 milligrams per kilogram (mg/kg) and the action level for TPH-DRO is 100 mg/kg. Soil samples were screened with an OVA and select soil samples were analyzed for DRO and GRO using a QED Analyzer. None of the soil samples analyzed exhibited DRO or GRO concentrations above DEQ action levels. 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 water table was not encountered in the upper 8 feet of the soil column that was sampled during this PSA. Review of the NCDOT engineering plans for this parcel indicate that groundwater will not be encountered during construction activities, based on shallow excavations and a water table depth greater than 8 feet below the ground surface. Therefore, it was not necessary to collect a groundwater sample.

5.0 CONCLUSIONS AND RECOMMENDATIONS

As requested by the NCDOT, Pyramid has completed a PSA at Parcel 006 (Everett O. Smith) located at 1121 Mebane Oaks Road, Mebane, NC. The following is a summary of the assessment activities and results.

5.1 Geophysical Investigation

The geophysical investigation consisted of electromagnetic (EM) induction-metal detection and ground penetrating radar (GPR) surveys. A total of ten EM anomalies were identified. The majority of the EM anomalies were directly attributed to visible cultural features at the ground surface. Two EM anomalies were associated with a vehicle, suspected reinforced concrete, and known USTs and were further investigated with GPR. Four known USTs were observed within the geophysical survey area. GPR verified the sizes and orientations of the four known USTs.

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5.2 Limited Soil Assessment

The DEQ action level for TPH-GRO is 50 milligrams per kilogram (mg/kg) and the action level for TPH-DRO is 100 mg/kg. Soil samples were screened with an OVA and select soil samples were analyzed for DRO and GRO using a QED Analyzer. None of the soil samples analyzed exhibited DRO or GRO concentrations above DEQ action levels.

5.3 Limited Groundwater Assessment

The water table was not encountered in the upper 8 feet of the soil column that was sampled during this PSA. Review of the NCDOT engineering plans for this parcel indicate that groundwater will not be encountered during construction activities, based on shallow excavations and a water table depth greater than 8 feet below the ground surface. Therefore, it was not necessary to collect a groundwater sample.

5.4 Recommendations

Petroleum-Impacted Soils

No evidence of petroleum-impacted soils (DRO/GRO > DEQ Action Levels) was observed during this investigation. Therefore, no recommendations for the treatment, handling, or disposal of such materials are warranted.

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 DEQ 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.

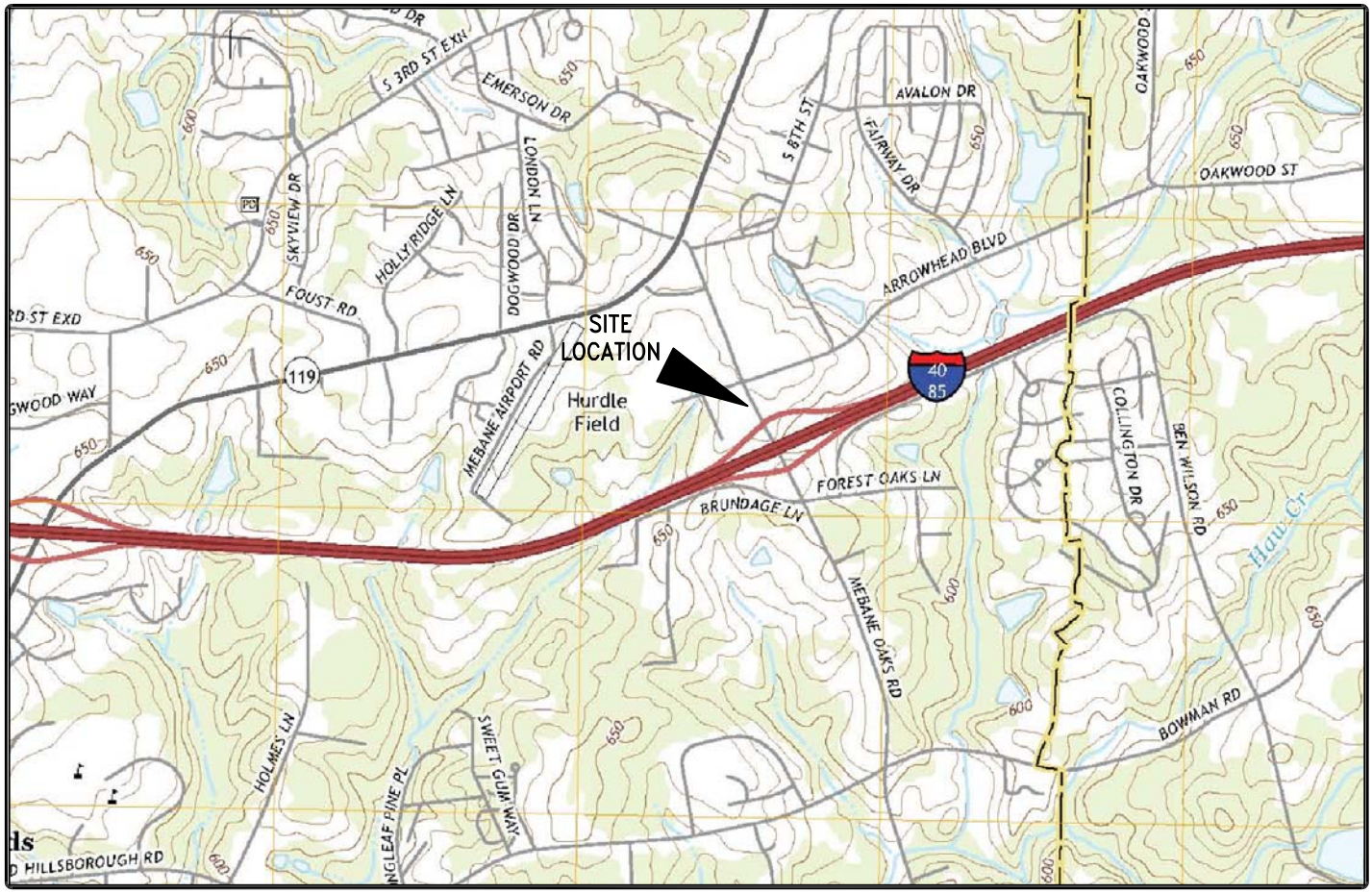
7.0 CLOSURE

This report was prepared for, and is available solely for use by, the 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: PARCEL 006 LOCATION: MEBANE, NORTH CAROLINA



USGS IDENTIFICATION

USGS 7.5 MINUTE MAP	MEBANE, N.C.
ORIGINAL DATE:	1969
PHOTOREVISION DATE:	2016
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

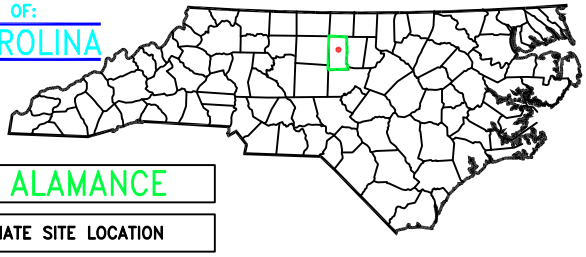
FEET: 1000 0 2000 4000 6000

1" = 2000'

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

MAGNETIC NORTH

COUNTY MAP OF: NORTH CAROLINA



COUNTY: ALAMANCE

APPROXIMATE SITE LOCATION

PYRAMID
ENVIRONMENTAL & ENGINEERING, P.C.

CLIENT: NCDOT I-5711
PROPERTY NAME: 1121 MEBANE OAKS RD.
CITY: MEBANE
STATE: NORTH CAROLINA
TITLE: TOPOGRAPHIC MAP

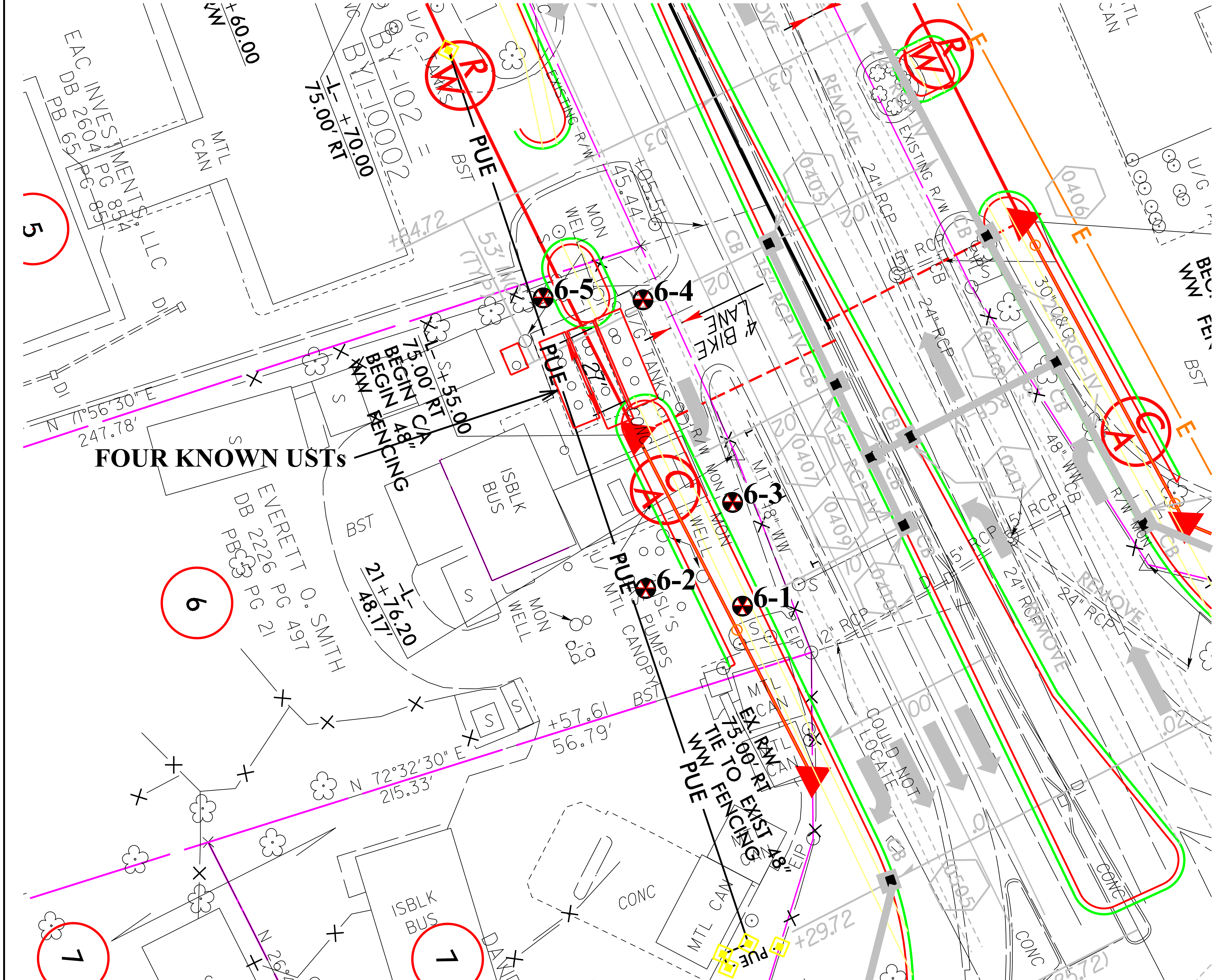
SCALE: 1"=2000'
DATE: 10/10/18
DRAWING NAME: USGSTOPO

DRAWN BY: KAM
CHECK BY: TDL
JOB NO.: 2018-242
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

- EXISTING ROW
- EXISTING PROPERTY BOUNDARY
- PROPOSED ROW LINE
- E — TEMPORARY CONSTRUCTION EASEMENT
- PDE — PROPOSED PERMANENT DRAINAGE
- PUE — PROPOSED PERMANENT UTILITY
- PROPOSED SS CUT LINE
- PROPOSED SS FILL LINE
- PROPOSED DRAINAGE PIPING
- SOIL BORING LOCATIONS
- KNOWN UST WITHIN SURVEY AREA

Analytical results are presented in Table 2 of PSA Report

0 25 50
FEET

N

TITLE

LOCATIONS OF SOIL BORINGS AND
FOUR KNOWN USTs

PROJECT

PARCEL 6
MEBANE, NORTH CAROLINA
NCDOT PROJECT I-5711

PYRAMID GEOPHYSICS
503 INDUSTRIAL AVENUE
GREENSBORO, NC 27406
336.335.3174 (p) 336.691.0648 (f)
License # C1251 Eng. / #C257 Geology

DATE: 10-10-2018	REVISION NO. 0
PYRAMID PROJECT NO. 2018-242	FIGURE NO. 2

TABLES

TABLE 1
Summary of Soil Field Screening Results
NCDOT Project I-5711
Parcel 006 - BP Station
1121 Mebane Oaks Road
Mebane, Alamance County, North Carolina

SOIL BORING 10/1/2018	SAMPLE ID	DEPTH (feet bgs)	PID READINGS (PPM)
6-1	6-1(1-2)	1 to 2	1.1
	6-1(2-4)	2 to 4	1.5
	6-1(4-6)	4 to 6	3.0
	6-1(6-8)	6 to 8	1.0
6-2	6-2(0-2)	0 to 2	3.5
	6-2(2-4)	2 to 4	3.1
	6-2(4-6)	4 to 6	3.1
	6-2(6-8)	6 to 8	3.3
6-3	6-3(0-2)	0 to 2	2.2
	6-3(2-4)	2 to 4	2.9
	6-3(4-6)	4 to 6	3.0
	6-3(6-8)	6 to 8	2.5
6-4	6-4(0-2)	0 to 2	11.8
	6-4(2-4)	2 to 4	20.7
	6-4(4-6)	4 to 6	9.1
	6-4(6-8)	6 to 8	40.0
6-5	6-5(0-2)	0 to 2	2.1
	6-5(2-4)	2 to 4	4.7
	6-5(4-6)	4 to 6	6.7
	6-5(6-8)	6 to 8	13.6

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 I-5711
Parcel 6 (BP Station) - 1121 Mebane Oaks Road
Mebane, Alamance 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)**
6-1(4-6)	10/1/2018	4-6	3.0	<0.56	15.7	15.7
6-2(0-2)	10/1/2018	0-2	3.5	2	0.8	2.8
6-3(4-6)	10/1/2018	4-6	3.0	<0.5	7.4	7.4
6-4(2-4)	10/1/2018	2-4	20.7	5.8	2.6	8.4
6-4(6-8)	10/1/2018	6-8	40.0	<0.66	0.66	0.66
6-5(4-6)	10/1/2018	4-6	6.7	<0.64	<0.64	<0.64
6-5(6-8)	10/1/2018	6-8	13.6	<0.59	3.5	3.5
NC Initial Action Level - UST Section for 5035/5030-GRO; 3550-DRO				50	100	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

* Bold values indicate concentrations above initial action levels

APPENDIX A

1993 Aerial Photograph

Parcel 6

1998 Aerial Photograph

Parcel 6

2005 Aerial Photograph

Parcel 6

2017 Aerial Photograph

Parcel 6

APPENDIX B

Waste Management
ENVIRONMENTAL QUALITY

PAT MCCRORY
Governor

DONALD R. VAN DER VAART
Secretary

MICHAEL SCOTT
Director

December 20, 2016

Mr. Greg Frisch
BP Products of North America, Inc.
1114 North Court #125, Suite 20. 107C
Medina, OH 44256

Re: Notice of No Further Action
15A NCAC 2L .0407(d)
Risk-based Assessment and Corrective Action
for Petroleum Underground Storage Tanks

BP Station #24208
1121 Mebane Oaks Drive, Mebane, NC
Alamance County
Incident Number: 13316
Risk Classification: Low
Ranking: N/A

Dear Mr. Frisch:

The Site Closure Request received by the UST Section, Division of Waste Management, Winston-Salem Regional Office on August 4, 2016 has been reviewed. The review indicates soil contamination exceeds the residential maximum soil contaminant concentrations (MSCCs) established in Title 15A NCAC 2L .0411 and groundwater contamination meets the cleanup requirements for a low-risk site but exceeds the groundwater quality standards established in Title 15A NCAC 2L .0202.

The UST Section determines that no further action is warranted for this incident. All required actions have been completed. On November 8, 2016, the UST Section received a certified copy of the Notice of Residual Petroleum which is filed with the Register of Deeds. On December 13, 2016, the UST Section was provided with proof of receipt of the conditional Notice of No Further Action letter or of refusal by the addressee to accept delivery of the letter or with a description of the manner in which the letter was posted.

This determination shall apply unless the UST Section later finds that the discharge or release poses an unacceptable risk or a potentially unacceptable risk to human health or the environment. Pursuant to Title 15A NCAC 2L .0407(a) you have a continuing obligation to notify the Department of Environmental Quality of any changes that might affect the risk or land use classifications that have been assigned.

Be advised that as groundwater contamination exceeds the groundwater quality standards established in Title 15A NCAC 2L .0202, groundwater within the area of contamination or within the area where groundwater contamination is expected to migrate is not suitable for use as a water supply. Be advised that as soil contamination exceeds the residential MSCCs, the property containing the contamination is suitable only for industrial/ commercial use or restricted residential use (The term "residential is inclusive of, but not limited to, private houses, apartment complexes, schools, nursing

homes, parks, recreation areas and day care centers), as stipulated in the Notice of Residual Petroleum (attached).

Interested parties may examine the Site Closure Request by contacting this regional office and may submit comments on the site to the regional office at the address or telephone number listed below.

This No Further Action determination applies only to the subject incident; for any other incidents at the subject site, the responsible party must continue to address contamination as required.

If you have any questions regarding this notice, please contact me at the address or telephone number listed below.

Sincerely,

Michael Rogers

Michael Rogers
Hydrogeologist
Winston-Salem Regional Office
UST Section, Division of Waste Management, NCDEQ

Attachments: Notice of Residual Petroleum

cc: Alamance County Health Department
Paul Goodell, Arcadis U.S., Inc.
WSRO files

NORTH CAROLINA - ALAMANCE COUNTY
This is to certify that the foregoing is a true copy of the original on file in this office.
Book 3603 Page 852
This 16 day of Nov, 2016
HUGH WEBSTER
Register of Deeds
By _____
Assistant Deputy

ARCADIS U.S. INC
PAUL GOODELL
801 CORPORATE CENTER DRIV
STE 300
RALEIGH, NC 27607

FILED
ALAMANCE COUNTY, NC
HUGH WEBSTER
REGISTER OF DEEDS

FILED	Nov 16, 2016
AT	10:52:04 am
BOOK	03603
START PAGE	0852
END PAGE	0856
INSTRUMENT #	20068
EXCISE TAX	(None)

DF

NOTICE OF RESIDUAL PETROLEUM

Former BP Station #24208, Alamance County, North Carolina UST Inc.* 13316 Deed Book 2226 Deed Page 497
(Site name)

The property that is the subject of this Notice (hereinafter referred to as the "Site") contains residual petroleum and is an Underground Storage Tank (UST) incident under North Carolina's Statutes and Regulations, which consist of N.C.G.S. 143-215.94 and regulations adopted thereunder. This Notice is part of a remedial action for the Site that has been approved by the Secretary (or his/her delegate) of the North Carolina Department of Environment Quality (or its successor in function), as authorized by N.C.G.S. Section 143B-279.9 and 143B-279.11. The North Carolina Department of Environment Quality shall hereinafter be referred to as "DEQ".

NOTICE

Petroleum product was released and/or discharged at the Site. **Petroleum constituents remain on the site, but are not a danger to public health and the environment, provided that the restrictions described herein, and any other measures required by DEQ pursuant to N.C.G.S. Sections 143B-279.9 and 143B-279.11, are strictly complied with.** This "Notice of Residual Petroleum" is composed of a description of the property, the location of the residual petroleum and the land use restrictions on the Site. The Notice has been approved and notarized by DEQ pursuant to N.C.G.S. Sections 143B-279.9 and 143B-279.11 and has/shall be recorded at the **Alamance County** Register of Deeds' office
(name of county)
Book ____, Page ____.

Any map or plat required by DEQ has been/shall be recorded at the **Alamance County** Register of Deeds' office Book ____, Page ____, and has been/shall be incorporated into the Notice by this reference.
(name of county)

Source Property

Everett Smith, of **Mebane, North Carolina** is the owner in fee simple of all or a portion of the Site, which is located in the County of **Alamance**, State of North Carolina, and is known and legally described as:
(owner's name) *(city & state of homeowner)*

5/26

Parcel #164698 as described below:

Former BP Station #24208

Street Address: 1121 Mebane Oaks Road

State of North Carolina, County of Alamance, Township of Melville, City of Mebane,

BEGINNING at an iron stake in the western margin of the 60 ft. right-of-way of Mebane Oaks Road, corner with James A. Nicholson; thence with the line of Nicholson S. 72°45'W. 390.64 ft. to an iron stake in the line of Thomas R. McPherson, corner with Nicholson; thence with McPherson's line N. 22°32'45" W. 149.62 ft. to an iron stake in the line of McPherson, corner with Lonnie R. Sykes; thence with the line of Sykes N. 72°51'10" E. 389.65 ft. to an iron stake in the western margin of the 60 ft. right-of-way of Mebane Oaks, corner with Sykes; thence with the western margin of the 60 ft. right-of-way of Mebane Oaks Road S. 23°20'40" E. 146.66 ft. to an iron stake in the western margin of said right-of-way; thence S. 00°37'50" W. 2.57 ft. to the beginning. This description was obtained from a survey by Southern Mapping & Engineering Company, Greensboro, North Carolina August 9, 1965. This is the property known as Lot 5, 6, and 7 of the N.H. Sykes Subdivision known as Broadwood Acres, as shown on drawing dated May 5, 1945 and recorded in Plat Book 5 at page 21, Alamance County Registry and conveyed to Jody McDaniel and wife, Ruby T. McDaniel by Harry Avent, et ux, N.H. Sykes et ux, and However W. Sykes et ux. LESS AND EXCEPT any portion of the property used for public right-of-way. And being the same property described in deed recorded in DB 898 PG 566 of the Alamance County Registry.

Additional Affected Property Also Subject to Restrictions

_____ of _____ is the owner in fee simple of a portion of
(owner's Name) *(city & state of owner)*
the Site, which is located in the County of **Alamance**, State of North Carolina. Petroleum contamination is located on this property at the time this Notice is approved. This property was also owned or controlled by the underground storage tank owner or operator or another party responsible for the petroleum discharge or release at the time the discharge or release was discovered or reported, or at any time thereafter. This property is known and legally described as:

(Insert Real Property Description Here for Additional Properties Owned or Controlled by Any Owner or Operator of the Underground Storage Tank or Other Responsible Party, if Applicable)

For protection of public health and the environment, the following land use restrictions required by N.C.G.S. Section 143B-279.9(b) shall apply to all of the above-described real property. These restrictions shall continue in effect as long as residual petroleum remains on the site in excess of unrestricted use standards and cannot be amended or cancelled unless and until the **Alamance** County Register of Deed receives and records the written concurrence of the Secretary (or his/her delegate) of DEQ (or its successor in function).

Additional Affected Property Not Subject to Restrictions

Additionally residual petroleum is also located on the following property. The following property is not subject to land use restrictions pursuant to N.C.G.S. Section 143B-279.9(b). The following property is known and legally described as:

Parcel #164700 as described below:

BEGINNING at an iron stake on the west side of Mebane Oaks Road in Gulf Oil Company's Line, iron stake being 38' from center of Mebane Oaks Road; thence with State Highway Commission's right of way line S. 3 deg. 58 min. E. 60' to an iron stake; thence again with the said right of way line S. 25 deg. 00 min. W. 122.55' to a hole cut in concrete; thence again with said right of way line S. 72 deg. 45 min. W. 56.40' to an iron stake; thence again with said right of way line S. 39 deg. 39 min. W. 156.84 feet to an iron stake, a corner with James A. Nicholson; thence with the said Nicholson's line N. 50 deg. 21 min. W. 30' to an iron stake; thence again with the said Nicholson's line N. 25 deg. 09 min. E. 150.14' to an iron stake; thence again with the said Nicholson's line N. 26 deg. 35 min. W. 100' to an iron stake in Gulf Oil Company's line; thence with Gulf Oil Company's line N. 72 deg. 45. E. 215. 52' to the Beginning, containing 31,417 square feet, more or less, and being part of the James A. Nicholson property.

PERPETUAL LAND USE RESTRICTIONS

Soil: *The Site shall be used for industrial/commercial use only. Industrial/commercial use means a use where exposure to soil contamination is limited in time and does not involve exposure to children or other sensitive populations such as the elderly or sick. The real property shall not be developed or utilized for residential purposes including but not limited to: primary or secondary residences (permanent or temporary), schools, daycare centers, nursing homes, playgrounds, parks, recreation areas and/or picnic areas.*

Groundwater: *Groundwater from the site is prohibited from use as a water supply. Water supply wells of any kind shall not be installed or operated on the site.*

ENFORCEMENT

The above land use restriction(s) shall be enforced by any owner, operator, or other party responsible for the Site. The above land use restriction(s) may also be enforced by DEQ through any of the remedies provided by law or by means of a civil action, and may also be enforced by any unit of local government having jurisdiction over any part of the Site. Any attempt to cancel this Notice without the approval of DEQ (or its successor in function) shall be subject to enforcement by DEQ to the full extent of the law. Failure by any party required or authorized to enforce any of the above restriction(s) shall in no event be deemed a waiver of the right to do so thereafter as to the same violation or as to one occurring prior or subsequent thereto.

IN WITNESS WHEREOF, **BP Products North America Inc.** has caused this Notice to be executed pursuant to N.C.G.S. Sections 143B-279.9 and 143B-279.11, this **7** day of **November**, **2016**.

BP Products North America Inc.
(name of responsible party if agent is signing)

By: Paul Goodell
(signature of responsible party, attorney or other agent if there is one)

Attorney-in-Fact
(Title of agent for responsible party if there is one)

Signatory's name typed or printed: **Paul M. Goodell**

NORTH CAROLINA
WAKE COUNTY
(Name of county in which acknowledgment was taken)

I certify that the following person personally appeared before me this day, acknowledging to me that he ~~or she~~ signed the foregoing document: PAUL GOODELL. NCOL 31044971

Date: 11-7-16

(Official Seal)

Carol Rickerby
NOTARY PUBLIC
HARNETT COUNTY, N.C.

Carol Rickerby
(signature of Notary Public)

CAROL RICKERBY
(printed or typed name of Notary Public)

Notary Public

My commission expires: NOV 30, 2019

Approved for the purposes of N.C.G.S. 143B-279.11

Carin Lee Kromm
(signature of Regional Supervisor)

CARIN LEE KROMM, Regional Supervisor
(printed name of Regional Supervisor)

Winston-Salem Regional Office
UST Section
Division of Waste Management
Department of Environment Quality

NORTH CAROLINA
Davidson COUNTY
(Name of county in which acknowledgment was taken)

I certify that the following person(s) personally appeared before me this day, each acknowledging to me that he or she signed the foregoing document: Carin Lee Kromm *(full printed name of Regional Supervisor)*

Date: 11-8-2016

(Official Seal)

Sheila M. McIntosh
Notary Public - North Carolina
Davidson County
My Commission Expires January 19, 2017

expires: 1-19-2017

Sheila M. McIntosh
(signature of Notary Public)

Sheila M. McIntosh
(printed or typed name of Notary Public)

Notary Public

My commission

URS

April 5, 2016

Mr. Waddell Watters
North Carolina Department of Environmental Quality
Division of Waste Management-Underground Storage Tank Section
Winston-Salem Regional Office
585 Waughtown Street
Winston-Salem, North Carolina 27107

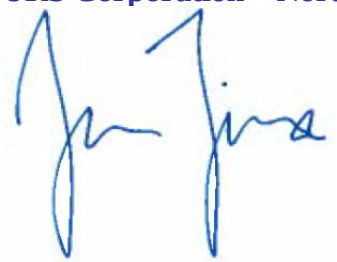
RE: Former BP Service Station No. 24208
Mebane, Alamance County, North Carolina
NCDEQ Incident No. 13316
Risk Ranking H205D
URS Project No. 60428026

Dear Mr. Watters:

On behalf of Atlantic Richfield Company, a BP Products North America, Inc. affiliated company, URS Corporation-North Carolina is pleased to submit one copy of the *Groundwater Monitoring Report, October 2015* for the former BP Service Station No. 24208 in Mebane, North Carolina.

If you have any questions regarding this submittal, please do not hesitate to contact the undersigned at (919) 461-1285.

Sincerely,
URS Corporation – North Carolina



Jasen Zinna, PE
Project Manager

Enclosure

cc: Arrowhead BP (electronic)
ENFOS (electronic)
Project File (electronic)

URS Corporation – North Carolina
1600 Perimeter Park Drive, Suite 400
Morrisville, NC 27560
Tel: 919-461-1100
Fax: 919-461-1415

R E P O R T

GROUNDWATER MONITORING REPORT
OCTOBER 2015

FORMER BP SERVICE STATION NO. 24208
1121 MEBANE OAKS ROAD
MEBANE, ALAMANCE COUNTY,
NORTH CAROLINA
INCIDENT NO. 13316
RISK RANKING: HIGH (H205D)
LAND USE: RESIDENTIAL

URS PROJECT NO. 60428026

Prepared for

Atlantic Richfield Company (ARCO)
a BP Products North America Inc. affiliated company
1114 North Court Street #125
Medina, Ohio 44256

April 5, 2016

URS Corporation – North Carolina
1600 Perimeter Park Drive, Suite 400
Morrisville, North Carolina 27560
Tel. (919) 461-1100
Fax. (919) 461-1415

INVESTIGATION REPORT

KINDER MORGAN RIVER ROAD TERMINAL
3340 RIVER ROAD
WILMINGTON, NORTH CAROLINA

Report Date:	March 4, 2016
Current Property Owner:	Kinder Morgan Terminals, LLC 1001 Louisiana Street Suite 1000, Room 888A Houston, Texas 77002 Attn: Mr. Paul LaWare
Report Prepared By:	URS Corporation - North Carolina 1600 Perimeter Park Drive, Suite 400 Morrisville, North Carolina 27560 Attn: Walt Plekan
Release Information:	Multiple releases of petroleum product from various tanks, pipes or valves over a period of 14 years between 1985 and 1999.
Release Location:	N 34.17772 / W 77.95311

This report was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my thorough inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete.

Walter D. Plekan, Jr. Project Manager URS Corporation-North Carolina	2061 NC License No.	3-4-16 Date

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TABLE OF CONTENTS

URS Corporation – North Carolina (URS) presents this report to summarize groundwater monitoring performed in October 2015 at the former BP Station No. 24208 in Mebane, North Carolina (the Site). The Site remediation strategy has included air sparge and soil vapor extraction (AS/SVE) which was activated in February 2002 and was manually shut down on December 22, 2010. Groundwater sample results following AS/SVE shutdown (March 2011) indicated stable or decreasing groundwater concentrations for most contaminants of concern (COC)(URS, 2011a). In a few instances, COC concentrations increased but not enough to indicate a post-treatment rebound effect. Continued annual groundwater monitoring has been recommended for the Site and as a result, a groundwater sampling event was performed on October 27, 2015.

The Site is under the jurisdiction of the North Carolina Department of Environmental Quality (NCDEQ); formerly North Carolina Department of Environment and Natural Resources (NCDENR), Division of Waste Management (DWM), Underground Storage Tank (UST) Section, in accordance with rules for releases from USTs under Title 15A NCAC 2L .0400. The Site land use classification is Residential, and due to the proximity of water supply wells to the release area, NCDEQ has assigned the Site a high risk classification (H205D).

2.1 SITE LOCATION AND DESCRIPTION

The Site is located at the northwestern corner of the Exit 154 interchange of Interstate 85 and Interstate 40 in Mebane, North Carolina (**Figure 1**). The Site property is approximately 1.3 acres and is surrounded by a Wilco Hess retail gasoline station to the north, residential and commercial properties to the south, Mebane Oaks Road to the east, and a vacant lot to the west.

The facility was operated as a BP service station from February 1985 to August 1994 when it was sold to an independent operator. From August 1994 to 2003, the facility was an independently owned and operated Amoco service station. From 2003 to the present, the facility has operated as an independently owned BP branded station, Arrowhead BP. The Site is currently a full service station and automotive maintenance shop located in a one-story office/garage building. A UST area, two dispenser islands, and additional garage and storage outbuildings are also present on-site. The current Site owner also owns an adjacent property south of the Site, which previously was occupied by a service station but currently operates as a tire shop.

In September 1987, one 6,000-gallon UST and three 10,000-gallon USTs were removed from the Site which were located along the south side of the service station building. Currently, there are three 10,000-gallon gasoline USTs north of the dispensers and one 550-gallon waste oil UST on-site. The former and current UST locations are depicted on **Figure 2**.

The groundwater monitoring network consists of twelve Type II monitoring wells (MW-1, MW-2, MW-3, MW-4, MW-5, MW-6R, MW-8, MW-9, MW-10, MW-11, MW-13, and MW-14) and two Type III monitoring wells (MW-7 and MW-12). The Type II monitoring wells are screened across the water table in the saprolitic overburden. Type III monitoring well MW-7 is double cased through the water table and is screened in a deeper portion of the saprolite. Type III monitoring well MW-12 is double cased through the saprolite and is screened in bedrock. The monitoring well construction details are summarized in **Table 1**.

Three water supply wells are located within a 1,000 foot radius of the Site. The nearest potable water supply well is located at the adjacent property south-southwest of the Site (Nicholson residence) at a distance of approximately 300 feet from the release area. A water supply well located 850 feet south of the Site, at 1231 Mebane Oaks Road, is assumed to have been removed and email correspondence on October 14, 2010, from Jimmy Jobe of the City of Mebane Public Works and Utilities Division indicated that the property is on city water. Consequently, only wells at the Coble and Nicholson residences located southwest of the Site remain within a 1,000-foot radius. Work is currently underway to annex the Coble and Nicholson properties into the city of Mebane to connect each property to city water. Once the city water is connected, the

potable wells will be properly abandoned. Additional information regarding the location of the water supply wells is documented in **Appendix A**.

2.2 SITE REMEDIATION

Under current rules for high risk sites, the Site is eligible for closure once groundwater contaminant concentrations are reduced below the groundwater standards set forth in Title 15A North Carolina Administrative Code (NCAC) 2L .0202 (NC 2L standards), and soil COC concentrations are reduced to the lower of either the Residential or Soil-to-Groundwater Maximum Soil Contaminant Concentration levels (MSCCs). The remediation strategy to achieve these standards was the operation of an AS/SVE system, which has been effective at reducing groundwater COC concentrations as evidenced by semi-annual groundwater sampling data from February 2002 to present. The remediation system was deactivated in December 2010.

Two source areas of soil/groundwater COCs were delineated through pre-Corrective Action Plan activities. The first source area is the former BP UST basin located directly south of the service station building and the second source area is the current Arrowhead BP UST area northeast of the service station building. A release in the current UST area was discovered in June 1998, when light non-aqueous phase liquid (LNAPL) was detected for the first time in monitoring well MW-1. LNAPL abatement measures were conducted by Arrowhead BP from 1998 to 1999, and LNAPL has not been observed in any Site well since June 2000. Dissolved COCs, including benzene, toluene, ethylbenzene, and xylenes (BTEX) and methyl tert-butyl ether (MTBE), were detected in groundwater samples collected from MW-1 in September 2000 at concentrations above NC 2L standards and the NCDEQ Gross Contamination Levels (GCLs). Prior to AS/SVE remediation system startup in 2002, groundwater COCs from both source areas formed a conjoining plume extending from the current Arrowhead BP UST area to the point south-southwest of the former BP UST area referenced above.

For Site closure, the primary drivers for groundwater are benzene (1 microgram per liter (µg/l)), MTBE (20 µg/l), and 1,2 dichloroethane (1,2-DCA) (0.4 µg/l). Since the February 2002 startup of the AS/SVE remediation system, the formerly conjoined groundwater plume has been split into discrete remaining portions, evidenced by groundwater sampling results.

In June 2011, URS proposed soil sampling to confirm SVE treatment of soil (URS, 2011b) and was approved by NCDENR in August 2011. Based on a review of historical soil data, exceedances of the Soil-to-Groundwater MSCCs or Residential MSCCs were detected at sample locations within or adjacent to the former BP UST area located south of the current service station building. Soil borings CS-101 and CS-104 were advanced on September 14, 2011, in the vicinity of the former BP UST basin in accordance with the proposed soil sampling plan. None

of the samples collected from the soil borings reported concentrations above the Residential MSCCs or Soil-to-Groundwater MSCCs (URS, 2011c).

Removal of unused AS/SVE equipment from the Site and the reduction of the groundwater sampling schedule from semi-annual to annual were approved by NCDENR in September 2012 via telephone communication. The agreed upon action items were documented in a letter dated September 26, 2012, and addressed to Mr. Waddell Watters of NCDENR (URS, 2012a). As agreed, the AS/SVE equipment was dismantled and removed from the on-site remediation shed on November 14 and 15, 2012. The empty remediation shed was subsequently sold to the current property owner, Everett Smith.

3.1 MONITORING WELL GAUGING AND SAMPLING

Depth-to-groundwater measurements were collected from monitoring wells MW-1, MW-2, MW-3, MW-4, MW-5, MW-6R, MW-7, MW-9, MW-10, MW-11, MW-12, and MW-13 utilizing a water level meter/interface probe on October 27, 2015.

After gauging water levels, monitoring wells MW-1, MW-2, MW-4, MW-5, MW-7 and MW-12 were purged of three well volumes utilizing new polyethylene bailers and nylon line, however, MW-1, MW-2, MW-4, and MW-5 purged dry. These monitoring wells were allowed sufficient time to recover following purging and prior to sample collection. Measurements of dissolved oxygen (DO), specific conductivity, pH, temperature, and oxidation-reduction potential (ORP) were collected at the monitoring wells utilizing a calibrated water quality meter. Groundwater samples from all wells were collected utilizing new, polyethylene bailers following purging. The groundwater was poured from the bailers into laboratory-provided containers which were promptly placed on ice in a cooler along with temperature and trip blanks. For quality assurance purposes, a laboratory-blind duplicate sample was collected from monitoring well MW-12 and was identified to the laboratory as "DUP-1."

3.2 SAMPLE HANDLING AND ANALYSES

The General Sampling Procedures outlined in the 2008 NCDENR UST Section *Guidelines for Sampling* were followed to ensure proper sample collection, health and safety, and sample transport (NCDENR, 2008). The groundwater samples were shipped under chain-of-custody via overnight courier to Accutest Laboratories Southeast (Accutest) in Orlando, Florida. The samples were analyzed for BTEX, MTBE, and 1,2-DCA utilizing EPA Method 6200B.

4.1 GROUNDWATER LEVEL MEASUREMENTS

Groundwater level measurement data from October 27, 2015, is presented in **Table 2**, and a groundwater contour map is included as **Figure 3**. Free product was not detected in any Site monitoring wells during the October sampling event. Groundwater flow gradients inferred from depth-to-water measurements depict a mounded area in the vicinity of MW-3 and MW-6R and radial flow away from this area, while groundwater flow appears to be predominately towards the northwest. This mounding and radial flow pattern is consistent with historical measurements.

4.2 MONITORING WELL RESULTS

A summary of groundwater quality field parameter measurements collected during the sampling event is provided in **Table 3**. The analytical results of the groundwater samples compared to the NC 2L standards are summarized in **Table 4** and illustrated on **Figure 4**. Benzene was detected above the NC 2L standard in the sample collected from MW-2 and MW-5. 1,2-DCA was detected above the NC 2L standard in both the MW-12 sample and duplicate sample (DUP-1) collected from MW-12. No other exceedances of the NC 2L standard were detected.

4.3 POTABLE WELL RESULTS

The analytical results of the water samples collected from the potable wells compared to the NC 2L standards are summarized in **Table 5**. All COC concentrations were reported either below the NC 2L standard or below laboratory method detection limits.

4.4 DATA QUALITY ASSURANCE/QUALITY CONTROL

URS Corporation validated analytical results from the October 2015 groundwater monitoring event at the Site. The data review was modeled after the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (EPA, June 2008). Qualitative and quantitative limitations associated with the analytical results were determined based on the results of specific quality control (QC) criteria. Accuracy was determined from the review of spike recoveries. Precision was based on the evaluation of field and laboratory duplicate results. Representativeness was evaluated from the review of holding times and blank data. Sample results were qualified due to the presence of toluene blank contamination in the trip blank. There were no data points rejected. The completeness check of the laboratory deliverables verified that results for all target analytes were reported by the laboratory. Overall, qualified data are valid and usable for their intended purpose. In performing the data validation, the URS data reviewer assumed that the data reported by the laboratory are complete, compliant, and an accurate representation of the raw data. Criteria for acceptability of data were based upon available site information, analytical method requirements, guidance documents, and professional judgment. A copy of the completed data validation checklist is provided as

Appendix B. Copies of the laboratory data and chain-of-custody forms are provided in **Appendix C**.

4.5 HISTORICAL TRENDS

Historic water level measurements in the shallow aquifer suggest varied groundwater flow directions, ranging from a southeasterly direction to a westerly direction, and yearly water table fluctuations of up to five feet. A summary of historical groundwater levels at the Site is provided as **Appendix D**. A summary of historical groundwater analytical results is provided as **Appendix E**.

5.1 CONCLUSIONS

Based on the data collected during this reporting period and a review of historical Site data, the following conclusions are offered:

- Groundwater flow gradients inferred from depth-to-water measurements depict a mounded area in the vicinity of MW-3 and MW-6R and radial flow away from this area, predominately towards the northwest. This mounding and radial flow pattern is consistent with historical measurements.
- During the October 2015 groundwater sampling event, 1,2-DCA was detected in monitoring well MW-12 above the NC 2L standard and benzene was detected in monitoring wells MW-2 and MW-5 above the NC 2L standard.
- The water samples collected from the potable wells had COC concentrations report either below the NC 2L standard or below laboratory method detection limits.
- The Site risk classification remains High due to the proximity of water supply wells to the release area and dissolved-phase COC concentrations in groundwater above the NC 2L standards.
- The RP has reached an agreement with the owners of the nearby potable wells to have the wells abandoned and the properties annexed into the city so that city water can be obtained. Following this, it is anticipated that the site risk ranking can be reduced and a site closure report can be prepared.

5.2 RECOMMENDATIONS

URS recommends to annex the Coble and Nicholson properties, connect city water to each property, and abandon the potable wells so that the risk ranking can be reduced.

NCDENR, 2008. *Guidelines for Sampling*, State of North Carolina Department of Environment and Natural Resources Division of Waste Management Underground Storage Tank Section, July 15, 2008.

URS, 2011a. *Groundwater Monitoring Report, March 2011*. URS Corporation – North Carolina. June 27, 2011.

URS, 2011b. *RE: Proposed Soil Sampling Plan*. Letter report from URS Corporation – North Carolina to the North Carolina Department of Natural Recourses Division of Waste Management UST Section. June 27, 2011.

URS, 2011c. *RE: Soil Sampling Results*. Letter report from URS Corporation – North Carolina to the North Carolina Department of Natural Recourses Division of Waste Management UST Section. November 21, 2011.

URS, 2012a. *RE: Proposed Site Activities and Sampling Plan*. Letter from URS Corporation – North Carolina to Mr. Waddell Watters. September 26, 2012.

USEPA, 2008. *USEPA Contract Laboratory Program (CLP) National Functional Guideline (NFG) for Superfund Organic Methods Data Review*. United States Environmental Protection Agency. June 2008.

TABLES

Table 1
Groundwater Monitoring and Remediation Well Construction Details
Former BP Service Station No. 24208
1121 Mebane Oaks Road
Mebane, North Carolina

MONITORING WELLS									
Well No.	Date Installed	Total Depth[1]	Well Screen/ Casing I.D. (in)	Well Screen/ Casing Material	Outer Casing I.D. (in)	Outer Casing Interval[1]	Screen Interval[1]	Screen Slot Size (in)	TOC Elev.[2]
MW-1	7/28/94	37.5	4	Sch 40 PVC	NA	NA	22.5-37.5	0.010	496.49
MW-2	3/30/91	37.5	4	Sch 40 PVC	NA	NA	17.5-37.5	0.010	497.52
MW-3	7/28/94	37.5	4	Sch 40 PVC	NA	NA	17.5-37.5	0.010	497.62
MW-4	7/27/94	37.5	4	Sch 40 PVC	NA	NA	27.5-37.5	0.010	496.70
MW-5	7/27/94	37.5	4	Sch 40 PVC	NA	NA	22.5-37.5	0.010	497.29
MW-6R	2/22/07	35	2	Sch 40 PVC	NA	NA	20-35	0.010	496.90
MW-7	4/3/96	62	2	Sch 40 PVC	6	0-62	57-62	unk	496.52
MW-8	4/5/96	41	2	Sch 40 PVC	NA	NA	unk	unk	495.73
MW-9	11/26/97	40	2	Sch 40 PVC	NA	NA	25-40	0.010	496.36
MW-10	11/25/97	40	2	Sch 40 PVC	NA	NA	25-40	0.010	495.89
MW-11	11/26/97	35	2	Sch 40 PVC	NA	NA	20-35	0.010	490.50
MW-12	12/1/97	80	2	Sch 40 PVC	6	0-65	75-80	0.010	495.65
MW-13	3/17/98	37.5	2	Sch 40 PVC	NA	NA	22.5-37.5	0.010	496.67
MW-14	3/17/98	37.5	2	Sch 40 PVC	NA	NA	22.5-37.5	0.010	497.03
AIR SPARGE/SOIL VAPOR EXTRACTION WELLS									
Well No.	Date Installed	Total Depth[1]	Well Screen/ Casing I.D. (in)	Well Screen/ Casing Material	Outer Casing I.D.	Outer Casing Interval[1]	Screen Interval[1]	Screen Slot Size (in)	TOC Elev.[2]
AS-1	11/9/2000	36	2	Sch 40 PVC	NA	NA	34-36	0.010	NS
AS-2	12/4/2001	45	2	Sch 40 PVC	NA	NA	40-45	0.010	NS
AS-3	1/20/2003	34	2	Sch 40 PVC	NA	NA	29-34	0.010	NS
AS-4	1/20/2003	40	2	Sch 40 PVC	NA	NA	35-40	0.010	NS
VE-1	11/9/2000	34	4	Sch 40 PVC	NA	NA	14-34	0.010	NS
VE-2	11/9/2000	14	4	Sch 40 PVC	NA	NA	3-14	0.010	NS
VE-3	12/4/2001	35	4	Sch 40 PVC	NA	NA	5-35	0.010	NS
VE-4	12/3/2001	35	4	Sch 40 PVC	NA	NA	5-35	0.010	NS
VE-5	12/5/2001	35	4	Sch 40 PVC	NA	NA	5-35	0.010	NS
VE-6	12/4/2002	35	4	Sch 40 PVC	NA	NA	5-35	0.010	NS
VE-7	12/4/2001	35	4	Sch 40 PVC	NA	NA	5-35	0.010	NS
VE-8	12/4/2001	35	4	Sch 40 PVC	NA	NA	5-35	0.010	NS

Notes

[1] Measured in feet below ground surface

[2] Measured in feet relative to site datum.

in = inches

Sch 40 PVC = Schedule 40 Polyvinyl chloride

TOC - Top Of Casing.

NA - Not Applicable

I.D. - Inner diameter

NS = Not Surveyed

unk = Unknown (well log not available)

URS Corporation is not responsible for data generated prior to November 2006. Data included in this table not generated by or on behalf of URS Corporation (URS) has been taken from documents prepared and submitted to the NC DENR by Others and is included only for ease of reference; URS does not assume or accept any responsibility or liability for the quality, accuracy, or completeness of the data included in this table that was not generated by or on behalf of URS.

Table 2
Groundwater Elevation Data
October 27, 2015
Former BP Service Station No. 24208
1121 Mebane Oaks Road
Mebane, North Carolina

Well	TOC	Depth to	Depth to	LNAPL	LNAPL	Groundwater
MW-1	496.49	ND	29.72	NA	NA	466.77
MW-2	497.52	ND	30.91	NA	NA	466.61
MW-3	497.62	ND	29.31	NA	NA	468.31
MW-4	496.70	ND	29.80	NA	NA	466.90
MW-5	497.29	ND	30.58	NA	NA	466.71
MW-6R	496.90	ND	28.30	NA	NA	468.60
MW-7	496.52	ND	29.27	NA	NA	467.25
MW-9	496.36	ND	29.46	NA	NA	466.90
MW-10	495.89	ND	29.88	NA	NA	466.01
MW-11	490.50	ND	21.63	NA	NA	468.87
MW-12	495.65	ND	29.81	NA	NA	465.84
MW-13	496.67	ND	30.48	NA	NA	466.19

Notes:

[1] Measured in feet relative to site datum.
TOC - top of casing
ft. BTOC - feet below top of casing
ND - not detected
NA - not applicable
MW-8 and MW-14 were not gauged during sample event

Table 3
Groundwater Field Measurements
October 27, 2015
Former BP Service Station No. 24208
1121 Mebane Oaks Road
Mebane, North Carolina

Well ID	pH	Temperature (°C)	Conductivity (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)
MW-1	4.85	17.89	0.086	1.26	75.1
MW-2	6.03	17.98	0.192	2.01	109.2
MW-4	5.41	18.36	0.040	1.35	45.7
MW-5	5.67	18.27	0.142	2.10	89.1
MW-7	6.22	17.36	0.138	1.39	102.6
MW-12	5.88	15.38	0.197	5.46	204.4

Notes:
pH measured in standard units on log scale
°C = degrees Celsius
mS/cm = milliSiemens per centimeter
mg/L = milligrams per liter
mV = millivolts
ORP = oxidation - reduction potential

Table 4
Groundwater Analytical Summary
Former BP Service Station No. 24208
1121 Mebane Oaks Road
Mebane, Alamance County, NC

Sample Identification:		MW-01	MW-02	MW-04	MW-05	MW-07	MW-12	MW-12
Collection Date:		10/27/2015	10/27/2015	10/27/2015	10/27/2015	10/27/2015	10/27/2015	10/27/2015
Parameters	**NC 2L**							**DUP (1)**
VOC (SM 6200B)								
Benzene	1	0.33 J	5.4	<0.17	74.6	<0.17	<0.17	<0.17
Toluene	600	<0.17	0.46 J	<0.17	0.76	<0.17	<0.17	<0.17
Ethylbenzene	600	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
Xylenes (Total)	500	<0.43	<0.43	<0.43	5.9	<0.43	<0.43	<0.43
1,2-Dichloroethane	0.4	<0.16	<0.16	0.20 J	<0.16	<0.16	1.1	1.1
Methyl tert-butyl ether	20	<0.16	1.4	1.9	15.1	3.5	0.23 J	0.21 J

Notes:
< - Not detected at the specified detection limit
µg/L - Micrograms per Liter
DUP (1) - Field duplicate sample ID is DUP-1
J - Estimated value
NC 2L - NC Groundwater Quality Standard
SM - *Standard Methods for the Examination of Water and Wastewater* (APHA-AWWA-WEF)
U - Not present above the associated level, blank contamination exists
VOC - Volatile organic compounds

This table presents the results for all analytes detected in groundwater during the October 2015 event. Sample results have been qualified by URS based on the results of the data review process, which is modeled after the *US EPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review* (EPA, June 2008). All results reported in micrograms per liter (µg/L).

NC Groundwater quality standards for the protection of the groundwater are specified in 15A NCAC 2L .0200. A bold border and highlighted cell indicates the concentration is greater than the standard.

Table 5
Potable Well Analytical Summary
Former BP Service Station No. 24208
1121 Mebane Oaks Road
Mebane, Alamance County, NC

Sample Identification:		Coble	Nicholson Garden
Collection Date:		10/27/2015	10/27/2015
Parameters	**NC 2L**		
VOC (SM 6200B)			
Benzene	1	<0.17	<0.17
Toluene	600	<0.17	<0.17
Ethylbenzene	600	<0.15	<0.15
Xylenes (Total)	500	<0.43	<0.43
1,2-Dichloroethane	0.4	0.16 J	0.27 J
Methyl tert-butyl ether	20	<0.16	<0.16

Notes:

< - Not detected at the specified detection limit

µg/L - Micrograms per Liter

J - Estimated value

NC 2L - NC Groundwater Quality Standard

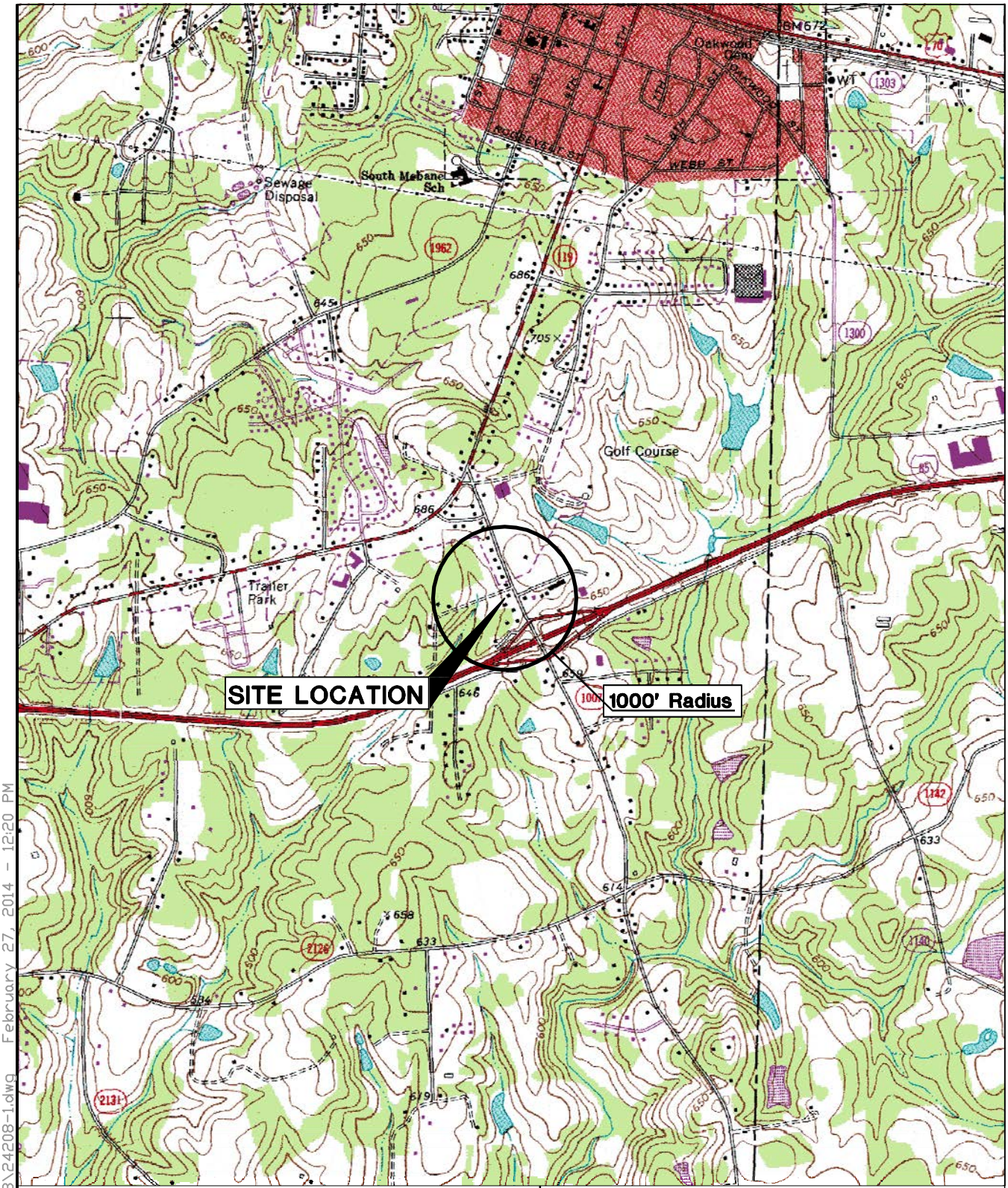
SM - *Standard Methods for the Examination of Water and Wastewater* (APHA-AWWA-WEF)

VOC - Volatile organic compounds

This table presents the results for all analytes detected in groundwater during the October 2015 event. Sample results have been qualified by URS based on the results of the data review process, which is modeled after the *US EPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review* (EPA, June 2008). All results reported in micrograms per liter (µg/L).

NC Groundwater quality standards for the protection of the groundwater are specified in 15A NCAC 2L .0200. A bold border and highlighted cell indicates the concentration is greater than the standard.

FIGURES



SOURCE: USGS 7.5' TOPOGRAPHIC QUADRANGLE
MEBANE, NC – DATED 1969, REVISED 1994

FIGURE 1. LOCATION MAP

FORMER BP STATION NO. 24208
MEBANE, NORTH CAROLINA

Prepared for: BP PRODUCTS	URS RDU, NORTH CAROLINA 27560
DRAWN BY: TSH	
DATE: 01/31/07	
PROJECT NO.	Fig. 1

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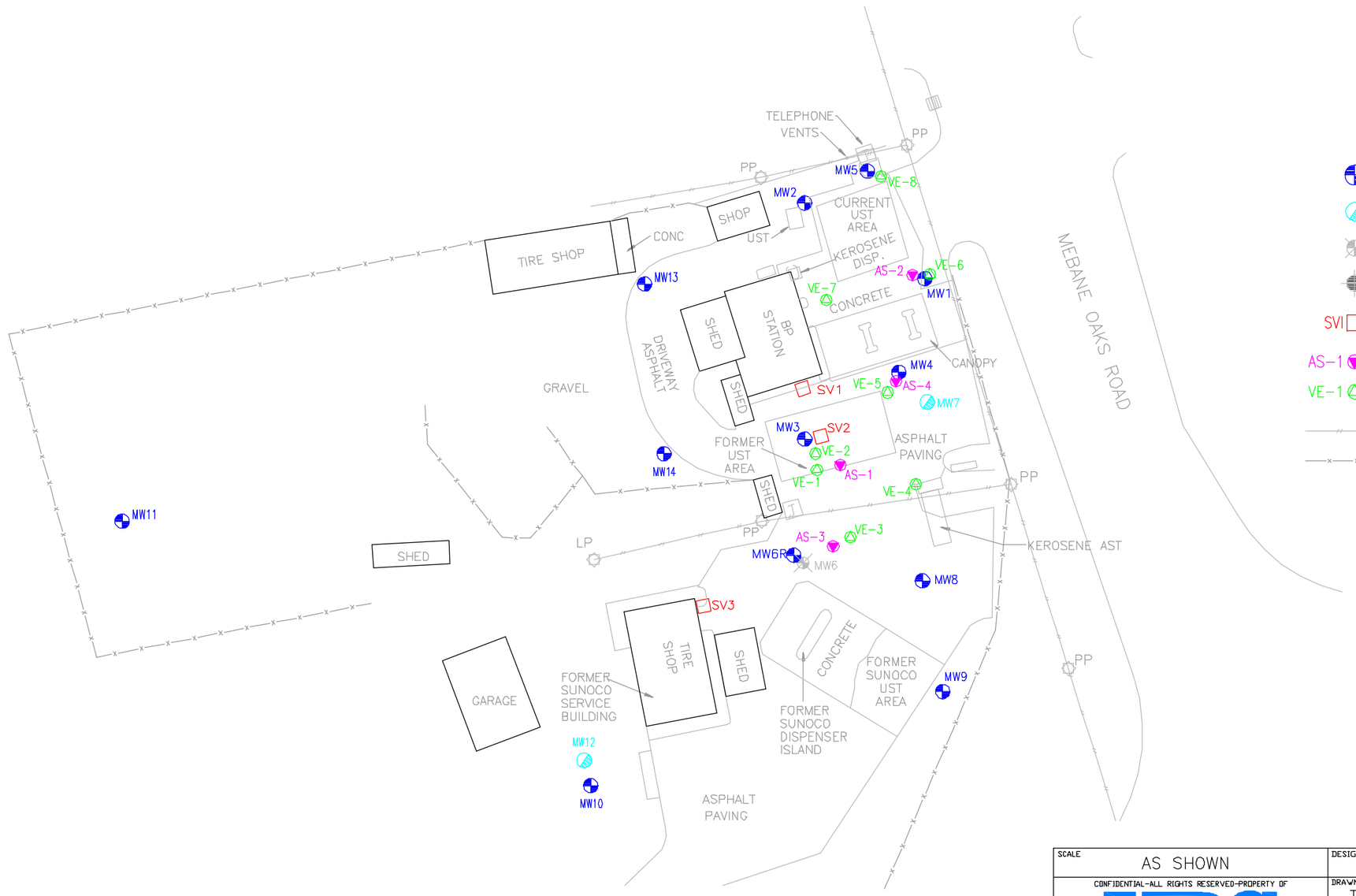


LEGEND

- TYPE II MONITORING WELL
- TYPE III MONITORING WELL
- ABANDONED MONITORING WELL
- WATER SUPPLY WELL
- SVI — SOIL VAPOR IMPLANT CLUSTER
- AS-1 — AIR SPARGE WELL
- VE-1 — SOIL VACUUM EXTRACTION WELL
- OVERHEAD POWER LINE
- CHAINLINK FENCE

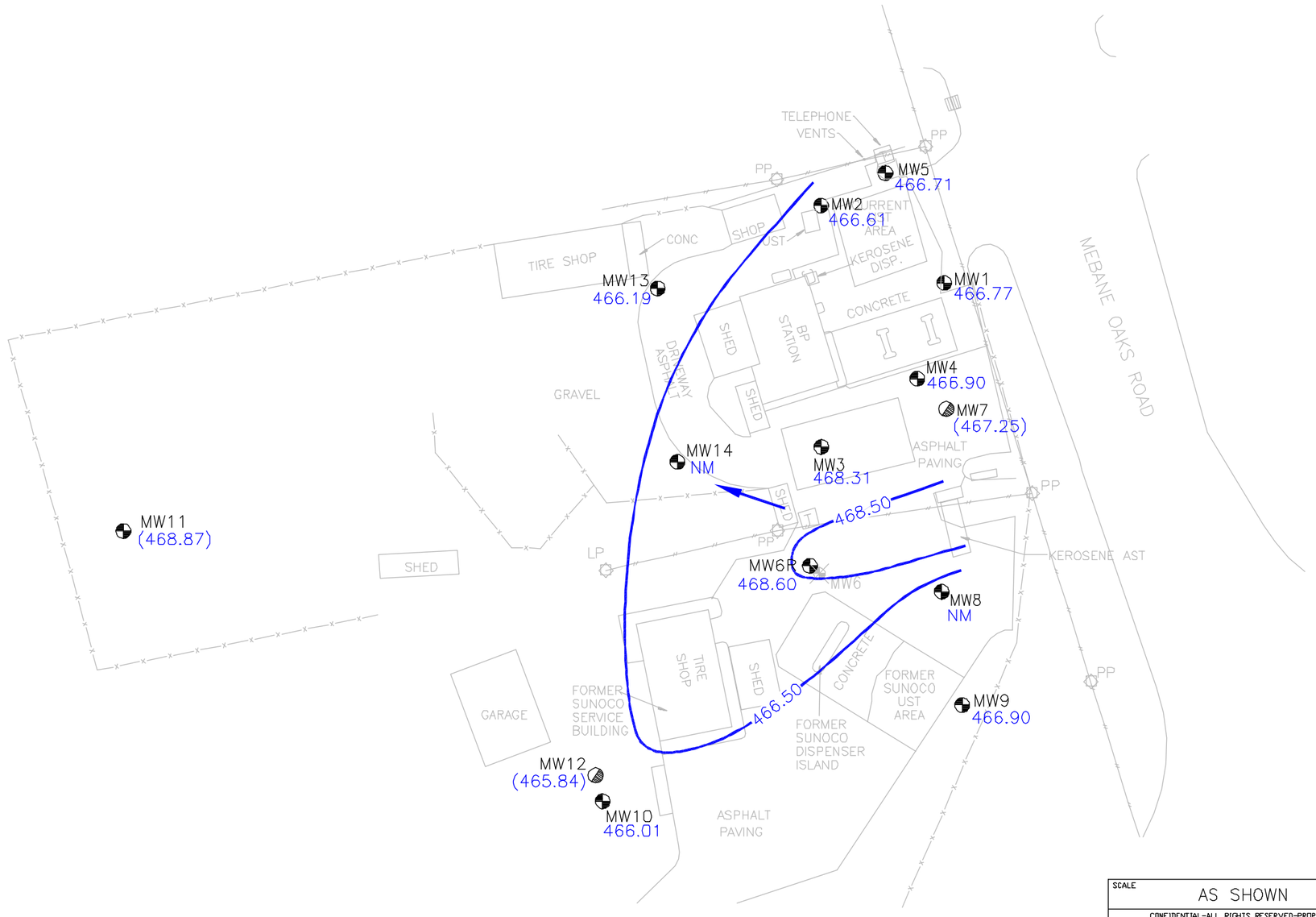
0 50

APPROX. SCALE, ft.

SOURCE: PIEDMONT GEOLOGIC, P.C., DATED: 1-19-01, DRAWING No.: 24208-2

SCALE: AS SHOWN	DESIGNED BY	DATE	DRAWING TITLE: Figure 2. Site Map Former BP Station No. 24208 Mebane, North Carolina
CONFIDENTIAL-ALL RIGHTS RESERVED-PROPERTY OF URS RDU, NORTH CAROLINA 27560	DRAWN BY: TSH	DATE: 18JAN07	
	CHECKED BY: AT	DATE: 18JAN07	
	APPROVED BY: MT	DATE: 18JAN07	CONTRACT NO.: J3-00024208.01 / DRAWING NO.: 24208-2 / REV.: 0

P:\BP\CADD URS\24208\October 2013\24208-2.dwg February 10, 2014 - 11:22 AM



LEGEND

- TYPE II MONITORING WELL
- TYPE III MONITORING WELL
- ABANDONED MONITORING WELL
- OVERHEAD POWER LINE
- CHAINLINK FENCE
- 466.77 GROUNDWATER ELEVATION (Relative to Site Datum)
- (467.25) GROUNDWATER ELEVATION (Not Used for Contouring)
- NM NOT MEASURED
- GROUNDWATER CONTOUR (Dashed where Inferred)
- GROUNDWATER FLOW DIRECTION

0 50
APPROX. SCALE, ft.

SOURCE: PIEDMONT GEOLOGIC, P.C., DATED: 1-19-01, DRAWING No.: 24208-2

SCALE: AS SHOWN	DESIGNED BY	DATE	Figure 3. Groundwater Contour Map, 10/27/15 Former BP Station No. 24208 Mebane, North Carolina
CONFIDENTIAL-ALL RIGHTS RESERVED-PROPERTY OF URS RDU, NORTH CAROLINA 27560	DRAWN BY: TSH	DATE: 18FEB16	
	CHECKED BY: JM	DATE: 18FEB16	
	APPROVED BY: JZ	DATE: 18FEB16	CONTRACT NO.: 60428026 / DRAWING NO.: 24208-3 / REV.: 0

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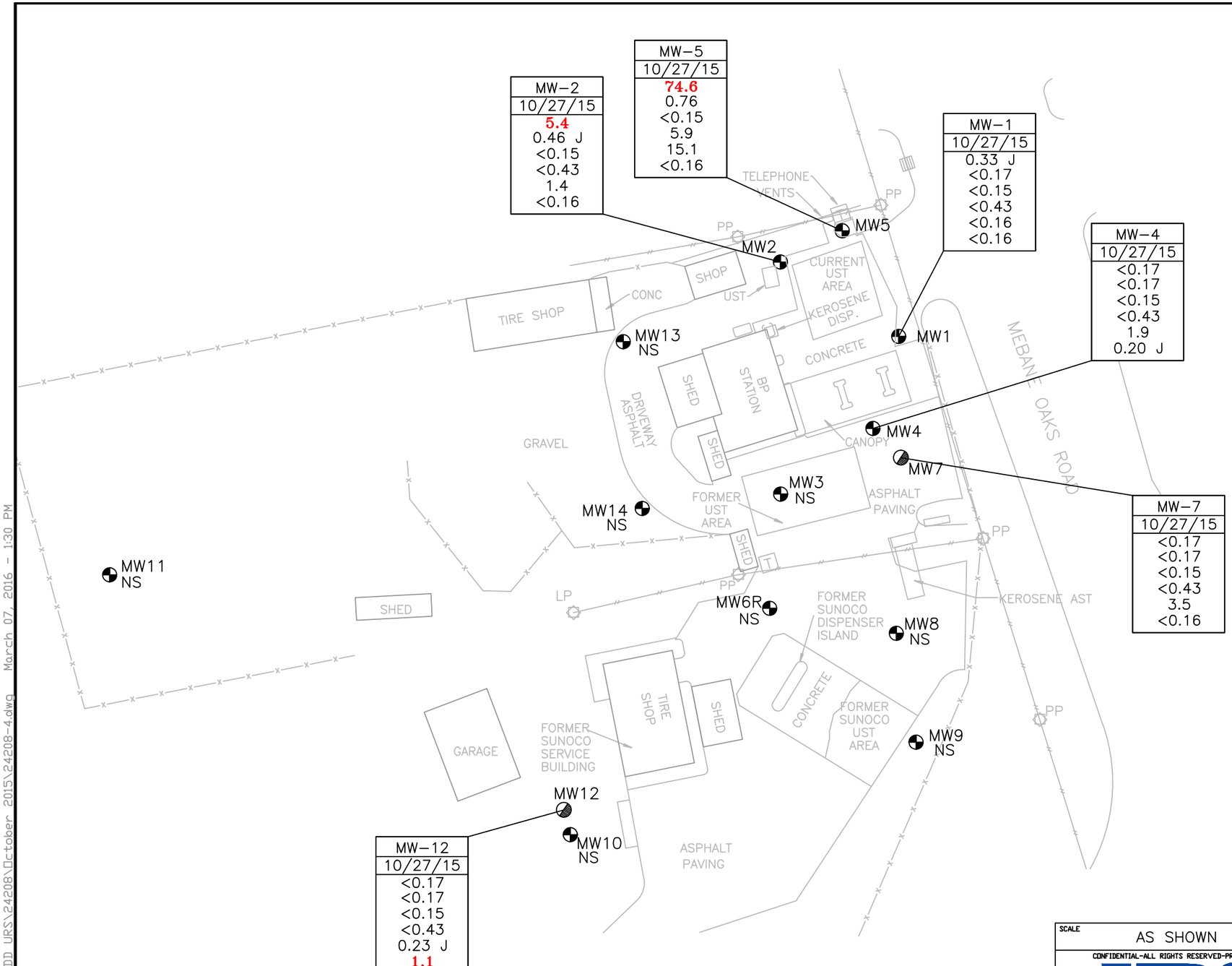

LEGEND

- TYPE II MONITORING WELL
- TYPE III MONITORING WELL
- OVERHEAD POWER LINE
- CHAINLINK FENCE
- NS NOT SAMPLED
- J ESTIMATED VALUE
- **BOLD** EXCEEDS NC2L STANDARD

NC 2L	
1.0	BENZENE
600	TOLUENE
600	ETHYLBENZENE
500	XYLENES (Total)
20	MTBE
0.4	1,2-DCA

ALL CONCENTRATIONS SHOWN ARE IN ug/L.

0 50

APPROX. SCALE, ft.

SOURCE: PIEDMONT GEOLOGIC, P.C., DATED: 1-19-01, DRAWING No.: 24208-2

P:\BP\CADD URS\24208\October 2015\24208-4.dwg March 07, 2016 - 1:30 PM

SCALE: AS SHOWN	DESIGNED BY	DATE	Figure 4. Groundwater COC Map, October 2015 Former BP Station No. 24208 Mebane, North Carolina
CONFIDENTIAL-ALL RIGHTS RESERVED-PROPERTY OF URS RDU, NORTH CAROLINA 27560	DRAWN BY: TSH	DATE: 18FEB16	
	CHECKED BY: JM	DATE: 18FEB16	
	APPROVED BY: JZ	DATE: 18FEB16	
	CONTRACT NO.: 60428026	DRAWING NO.: 24208-4	REV.: 0

APPENDIX A
WATER SUPPLY WELL INFORMATION

Water Supply Well Information
Former BP Service Station No. 24208
1121 Mebane Oaks Road
Mebane, North Carolina

Map ID Number	County Parcel ID	Property Address with Water Supply Well	Water Supply Well Owner Name & Address	Well Distance & Direction Relative to Source Area	Sample Frequency
4	9814951098	3822 I-85 Frontage Rd. Mebane, NC 27302	David Smith (Formerly Christine Nicholson) 3822 I-85 Frontage Rd. Mebane, NC 27302	(irrigation) 200' SW	Annually
				(drinking) 300' SW	Annually
5	9814940838	3802 I-85 Frontage Rd. Mebane, NC 27302	P. Calvin Coble 1931 Turner Road Mebane, NC 27302	(drinking) 450' SW	Annually
~~19~~	~~9814946479~~	~~1231 Mebane Oaks Rd. Mebane, NC 27302~~	~~Bessemer Group, Inc. PO Box 1111 Greensboro, NC 27402~~	~~(drinking) 850' S~~	~~Not sampled~~

Note: Well 19 is assumed to have been removed based on email correspondence on October 14, 2010 with Jimmy Jobe of the City of Mebane Public Works and Utilities Division who indicated that the property has been connected to City water.

APPENDIX B
LAB VALIDATION CHECKLIST

Data Evaluation Checklist
Organic and Inorganic Analyses

Project:	BP 24208	Project No:	60428026; 104080
Work Orders:	FA28850, FA28853, and FA28854	Method:	SM 6200B (BTEX, MTBE, and 1,2-DCA)
Laboratory:	Accutest Southeast – Orlando, FL	Associated Sample IDs:	Refer to **Attachment A** (Sample Summaries)
Matrix:	Water	Sample Date:	10/27/2015
Reviewer:	Kelly Brannigan, URS Corporation	Date:	11/20/2015
Concurrence:	Nicole Lancaster, URS Corporation	Date:	11/25/2015

Review Questions	Yes	No	N/A	Samples (Analytes) Affected/Comments	Flag
1. Were holding times met?	✓			≤14 days (preserved)	
2. Were sample storage and preservation requirements met?	✓			• The laboratory received samples at a temperature that was within EPA storage requirements of ≤6 °C. • The laboratory verified that all supplies were properly preserved in the field. • Zero headspace was found in all VOA vials upon sample receipt.	
3. Do sample prep dates occur before analytical dates?			✓		
4. Was a method blank analyzed with each batch?	✓				
5. Were target analytes reported in the method blank above the Detection Limit (DL)?		✓			
6. Were target analytes reported in field blank analyses (e.g., ~~trip~~, ~~ambient, field,~~ or equipment) above the DL?	✓			TRIP BLANK (FA28850-8): Toluene @ 0.58 µg/l (RL=0.50, MDL=0.17)	
7. Were contaminants detected in samples below the blank contamination action level?	✓			Toluene sample results that are less than the maximum amount detected in the trip blank were U-flagged and the MDL was elevated to the amount found in the sample.	U
8. Was a field duplicate analyzed?	✓			DUP-1 is a field duplicate of MW-12.	
9. Was precision deemed acceptable as defined by DV Guidelines?	✓			Refer to **Attachment B** (Field Duplicate Evaluation).	
10. Was a LCS analyzed with each batch?	✓				
11. Were LCS' recoveries within lab/project[1] specifications?	✓				
12. Were LCS/LCSD RPD within lab specifications?			✓	LCS Only	
13. Was a MS/MSD pair analyzed with each batch?	✓			• VA1814: FA28853-1 (COBLE POTABLE), MS/MSD • VE1399: FA28944-3 (Batch), MS/MSD	
14. Is the MS/MSD parent sample a project-specific sample?	✓				
15. Were MS/MSD recoveries within lab and project[2] specifications? *Only QC results for project samples are evaluated.*	✓				

[1] LCS or LCSD recovery must fall within 60 to 140% of the true value
[2] If lab control limit is <60 or >140%R, then MS or MSD recovery should fall within 60-140% of the true value

Data Evaluation Checklist (Continued)

Review Questions	Yes	No	N/A	Samples (Analytes) Affected/Comments	Flag
16. Were MS/MSD RPD within lab specifications? *Only QC results for project samples are evaluated.*	✓				
17. Was a serial dilution conducted on each inorganic batch?			✓		
18. Is the serial dilution parent sample a project-specific sample?			✓		
19. Is the percent difference between the serially diluted result and undiluted result less 10% (for those analytes with native concentrations greater than 50x the DL)?			✓		
20. Was a laboratory duplicate analyzed with each batch?		✓			
21. Is the laboratory duplicate sample a project-specific sample?			✓		
22. Does the laboratory duplicate results meet lab specifications? *Only QC results for project samples are evaluated.*			✓		
23. Were initial and continuing calibration standards analyzed at the lab/project-specified frequency for each instrument?			✓	Not evaluated, data not included in laboratory report.	
24. Were these results within lab/project specifications?			✓		
25. Were surrogate recoveries within lab specifications?	✓				
26. Were internal standard results within lab specifications?			✓	Not evaluated, data not included in laboratory report.	
27. Were TIC reported and were reported results qualified as estimated concentrations?			✓		
28. Were laboratory-generated Corrective Action Reports (i.e., QCER) issued? If yes, summarize contents or attach copy of the report.		✓			
29. Were lab comments included in report? If yes, summarize contents or attach a copy of the narrative.	✓			Refer to **Attachment C** (Case Narratives).	

Comments:

Sample results that are less than the reporting limit (RL), but greater than the method detection limit (MDL), are estimated (J).

The data review process was modeled after the *USEPA Contract Laboratory Program (CLP) National Functional Guidelines (NFG) for Superfund Organic Methods Data Review* (EPA, June 2008). Sample results have been qualified based on the results of the data review process (**Attachment D**). In performing the data evaluation, the URS' data reviewer assumed that the data reported by the laboratory are complete, compliant, and an accurate representation of the raw data. Criteria for acceptability of data were based upon available site information, analytical method requirements, guidance documents, and professional judgment.

DV Flag Definitions:

J Estimated value
UJ Not detected and the detection limit is estimated
U Not present above the associated level; blank contamination exists
R Unusable data

Data Evaluation Checklist (Continued)

Acronyms:
°C -Degrees Celsius
µg/L - Micrograms per liter
CLP - Contract Laboratory Program
DL - Detection limit
EPA - Environmental Protection Agency
LCS - Laboratory control sample
LCSD - Laboratory control sample duplicate
MDL - Method detection limit
MS - Matrix spike
MSD - Matrix spike duplicate
NFG - National Functional Guidelines
RL - Reporting limit
RPD - Relative percent difference
TIC – Tentatively identified compound
VOA - Volatile organic analysis
VOC - Volatile organic compound

ATTACHMENT A

SAMPLE SUMMARIES

Accutest LabLink@13:44 06-Nov-2015

Sample Summary

Atlantic Richfield Company

Job No: FA28850

URSNCM: S/S 24208, 1121 Mebane-Oaks Rd, Mebane, NC
Project No: 24208-60428026.104080

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
FA28850-1	10/27/15	10:50	JM	10/28/15	AQ	Ground Water	MW-1
FA28850-2	10/27/15	11:10	JM	10/28/15	AQ	Ground Water	MW-2
FA28850-3	10/27/15	11:30	JM	10/28/15	AQ	Ground Water	MW-4
FA28850-4	10/27/15	11:50	JM	10/28/15	AQ	Ground Water	MW-5
FA28850-5	10/27/15	12:15	JM	10/28/15	AQ	Ground Water	MW-7
FA28850-6	10/27/15	10:20	JM	10/28/15	AQ	Ground Water	MW-12
FA28850-7	10/27/15	10:30	JM	10/28/15	AQ	Ground Water	DUP-1
FA28850-8	10/27/15	00:00	JM	10/28/15	AQ	Trip Blank Water	TRIP BLANK

Sample Summary

Atlantic Richfield Company

Job No: FA28853

URSNCM: S/S 24208, 1121 Mebane-Oaks Rd, Mebane, NC
Project No: 24208-60428026.104080

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
FA28853-1	10/27/15	13:00	JM	10/28/15	AQ	Water	COBLE POTABLE

Sample Summary

Atlantic Richfield Company

Job No: FA28854

URSNCM: S/S 24208, 1121 Mebane-Oaks Rd, Mebane, NC
Project No: 24208-60428026.104080

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
FA28854-1	10/27/15	12:30	JM	10/28/15	AQ	Water	NICHOLSON GARDEN

ATTACHMENT B

FIELD DUPLICATE EVALUATION

Evaluation of Field Duplicate Results **Attachment B**

Analyte	MW-12 (FA28850-6)	RL	DUP-1 (FA28850-7)	RL	Unit	Avg. RLx5	RPD	Absolute difference	Avg RL	Action
Methyl tert butyl ether	0.23 J	0.50	0.21 J	0.50	µg/L	2.5	NA	0.02	0.50	None, absolute difference ≤ Avg RL
1,2-Dichloroethane	1.1	0.50	1.1	0.50	µg/L	2.5	NA	0	0.50	None, absolute difference ≤ Avg RL

Note: If the analyte was not detected, then the cell was left blank.

µg/L - micrograms per liter
J - Estimated value
NA - Not applicable
RL - Reporting limit
RPD - Relative percent difference

Precision is based on either the absolute difference between sample results or RPD. If the sample results are less than or equal to 5x's the RL, then precision is based on the absolute difference between duplicate results. If sample results >5x's RL, then precision is evaluated using RPD. J-Flag sample results whenever the absolute difference is greater than the RL (2x for soils) or the RPD >20% (35% for soil). Table above presents the results for detected analytes only.

ATTACHMENT C

CASE NARRATIVES

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Atlantic Richfield Company **Job No:** FA28850

Site: URSNCM: S/S 24208, 1121 Mebane-Oaks Rd, Mebane, NC **Report Date** 11/6/2015 1:32:26 PM

7 Samples and 1 Trip Blank were collected on 10/27/2015 and were received at Accutest SE on 10/28/2015 properly preserved, at 3.2 Deg. C and intact. These Samples received an Accutest job number of FA28850. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

Volatiles by GCMS By Method SM 6200B

Matrix: AQ **Batch ID:** VA1814

All samples were analyzed within the recommended method holding time.

All method blanks for this batch meet method specific criteria.

Sample(s) FA28853-1MS, FA28853-1MSD were used as the QC samples indicated.

Matrix: AQ **Batch ID:** VE1399

All samples were analyzed within the recommended method holding time.

All method blanks for this batch meet method specific criteria.

Sample(s) FA28944-3MS, FA28944-3MSD were used as the QC samples indicated.

Accutest Laboratories Southeast (ALSE) certifies that this report meets the project requirements for analytical data produced for the samples as received at ALSE and as stated on the COC. ALSE certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the ALSE Quality Manual except as noted above. This report is to be used in its entirety. ALSE is not responsible for any assumptions of data quality if partial data packages are used

Narrative prepared by:

Date: November 6, 2015

Lovelie Metzgar, QA Officer (signature on file)

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Atlantic Richfield Company **Job No:** FA28853

Site: URSNCM: S/S 24208, 1121 Mebane-Oaks Rd, Mebane, NC **Report Date** 11/3/2015 12:07:24

1 Sample was collected on 10/27/2015 and was received at Accutest SE on 10/28/2015 properly preserved, at 3.2 Deg. C and intact. This Sample received an Accutest job number of FA28853. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

Volatiles by GCMS By Method SM 6200B

Matrix: AQ **Batch ID:** VA1814

All samples were analyzed within the recommended method holding time.

All method blanks for this batch meet method specific criteria.

Sample(s) FA28853-1MS, FA28853-1MSD were used as the QC samples indicated.

Accutest Laboratories Southeast (ALSE) certifies that this report meets the project requirements for analytical data produced for the samples as received at ALSE and as stated on the COC. ALSE certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the ALSE Quality Manual except as noted above. This report is to be used in its entirety. ALSE is not responsible for any assumptions of data quality if partial data packages are used

Narrative prepared by:

Date: November 3, 2015

Lovelie Metzgar, QA Officer (signature on file)

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Atlantic Richfield Company **Job No:** FA28854

Site: URSNCM: S/S 24208, 1121 Mebane-Oaks Rd, Mebane, NC **Report Date** 11/3/2015 12:10:29

1 Sample was collected on 10/27/2015 and was received at Accutest SE on 10/28/2015 properly preserved, at 3.2 Deg. C and intact. This Sample received an Accutest job number of FA28854. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

Volatiles by GCMS By Method SM 6200B

Matrix: AQ **Batch ID:** VA1814

All samples were analyzed within the recommended method holding time.

All method blanks for this batch meet method specific criteria.

Sample(s) FA28853-1MS, FA28853-1MSD were used as the QC samples indicated.

Accutest Laboratories Southeast (ALSE) certifies that this report meets the project requirements for analytical data produced for the samples as received at ALSE and as stated on the COC. ALSE certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the ALSE Quality Manual except as noted above. This report is to be used in its entirety. ALSE is not responsible for any assumptions of data quality if partial data packages are used

Narrative prepared by:

Date: November 3, 2015

Lovelie Metzgar, QA Officer (signature on file)

ATTACHMENT D

QUALIFIED SAMPLE RESULTS

Report of Analysis

Client Sample ID:	MW-1		
Lab Sample ID:	FA28850-1	**Date Sampled:**	10/27/15
Matrix:	AQ - Ground Water	**Date Received:**	10/28/15
Method:	SM 6200B	**Percent Solids:**	n/a
Project:	URSNCM: S/S 24208, 1121 Mebane-Oaks Rd, Mebane, NC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	A0197539.D	1	10/30/15	TD	n/a	n/a	VA1814
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	0.33	0.50	0.17	ug/l	J
108-88-3	Toluene	ND	0.50	0.17	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.15	ug/l	
1330-20-7	Xylene (total)	ND	1.5	0.43	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	0.50	0.16	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.16	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		70-130%
17060-07-0	1,2-Dichloroethane-D4	102%		70-130%
2037-26-5	Toluene-D8	99%		70-130%
460-00-4	4-Bromofluorobenzene	102%		70-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-2		
Lab Sample ID:	FA28850-2	**Date Sampled:**	10/27/15
Matrix:	AQ - Ground Water	**Date Received:**	10/28/15
Method:	SM 6200B	**Percent Solids:**	n/a
Project:	URSNCM: S/S 24208, 1121 Mebane-Oaks Rd, Mebane, NC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	A0197540.D	1	10/30/15	TD	n/a	n/a	VA1814
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	5.4	0.50	0.17	ug/l	
108-88-3	Toluene	0.46	0.50	~~0.17~~ 0.16	ug/l	J
100-41-4	Ethylbenzene	ND	0.50	0.15	ug/l	
1330-20-7	Xylene (total)	ND	1.5	0.43	ug/l	
1634-04-4	Methyl Tert Butyl Ether	1.4	0.50	0.16	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.16	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		70-130%
17060-07-0	1,2-Dichloroethane-D4	102%		70-130%
2037-26-5	Toluene-D8	101%		70-130%
460-00-4	4-Bromofluorobenzene	102%		70-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-4		
Lab Sample ID:	FA28850-3	**Date Sampled:**	10/27/15
Matrix:	AQ - Ground Water	**Date Received:**	10/28/15
Method:	SM 6200B	**Percent Solids:**	n/a
Project:	URSNCM: S/S 24208, 1121 Mebane-Oaks Rd, Mebane, NC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	A0197541.D	1	10/30/15	TD	n/a	n/a	VA1814
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.50	0.17	ug/l	
108-88-3	Toluene	ND	0.50	0.17	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.15	ug/l	
1330-20-7	Xylene (total)	ND	1.5	0.43	ug/l	
1634-04-4	Methyl Tert Butyl Ether	1.9	0.50	0.16	ug/l	
107-06-2	1,2-Dichloroethane	0.20	0.50	0.16	ug/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		70-130%
17060-07-0	1,2-Dichloroethane-D4	103%		70-130%
2037-26-5	Toluene-D8	100%		70-130%
460-00-4	4-Bromofluorobenzene	101%		70-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-5		
Lab Sample ID:	FA28850-4	**Date Sampled:**	10/27/15
Matrix:	AQ - Ground Water	**Date Received:**	10/28/15
Method:	SM 6200B	**Percent Solids:**	n/a
Project:	URSNCM: S/S 24208, 1121 Mebane-Oaks Rd, Mebane, NC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	A0197542.D	1	10/30/15	TD	n/a	n/a	VA1814
Run #2	E042209.D	2	11/03/15	TD	n/a	n/a	VE1399

	Purge Volume
Run #1	10.0 ml
Run #2	10.0 ml

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	74.6 [a]	1.0	0.34	ug/l	
108-88-3	Toluene	0.76	0.50	0.17	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.15	ug/l	
1330-20-7	Xylene (total)	5.9	1.5	0.43	ug/l	
1634-04-4	Methyl Tert Butyl Ether	15.1	0.50	0.16	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.16	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%	93%	70-130%
17060-07-0	1,2-Dichloroethane-D4	102%	97%	70-130%
2037-26-5	Toluene-D8	102%	103%	70-130%
460-00-4	4-Bromofluorobenzene	103%	109%	70-130%

(a) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-7		
Lab Sample ID:	FA28850-5	**Date Sampled:**	10/27/15
Matrix:	AQ - Ground Water	**Date Received:**	10/28/15
Method:	SM 6200B	**Percent Solids:**	n/a
Project:	URSNCM: S/S 24208, 1121 Mebane-Oaks Rd, Mebane, NC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	A0197543.D	1	10/30/15	TD	n/a	n/a	VA1814
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.50	0.17	ug/l	
108-88-3	Toluene	ND	0.50	0.17	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.15	ug/l	
1330-20-7	Xylene (total)	ND	1.5	0.43	ug/l	
1634-04-4	Methyl Tert Butyl Ether	3.5	0.50	0.16	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.16	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		70-130%
17060-07-0	1,2-Dichloroethane-D4	104%		70-130%
2037-26-5	Toluene-D8	100%		70-130%
460-00-4	4-Bromofluorobenzene	101%		70-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-12		
Lab Sample ID:	FA28850-6	**Date Sampled:**	10/27/15
Matrix:	AQ - Ground Water	**Date Received:**	10/28/15
Method:	SM 6200B	**Percent Solids:**	n/a
Project:	URSNCM: S/S 24208, 1121 Mebane-Oaks Rd, Mebane, NC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	A0197544.D	1	10/30/15	TD	n/a	n/a	VA1814
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.50	0.17	ug/l	
108-88-3	Toluene	ND	0.50	0.17	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.15	ug/l	
1330-20-7	Xylene (total)	ND	1.5	0.43	ug/l	
1634-04-4	Methyl Tert Butyl Ether	0.23	0.50	0.16	ug/l	J
107-06-2	1,2-Dichloroethane	1.1	0.50	0.16	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		70-130%
17060-07-0	1,2-Dichloroethane-D4	106%		70-130%
2037-26-5	Toluene-D8	101%		70-130%
460-00-4	4-Bromofluorobenzene	102%		70-130%

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DUP-1		
Lab Sample ID:	FA28850-7	**Date Sampled:**	10/27/15
Matrix:	AQ - Ground Water	**Date Received:**	10/28/15
Method:	SM 6200B	**Percent Solids:**	n/a
Project:	URSNCM: S/S 24208, 1121 Mebane-Oaks Rd, Mebane, NC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	A0197545.D	1	10/30/15	TD	n/a	n/a	VA1814
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.50	0.17	ug/l	
108-88-3	Toluene	ND	0.50	0.17	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.15	ug/l	
1330-20-7	Xylene (total)	ND	1.5	0.43	ug/l	
1634-04-4	Methyl Tert Butyl Ether	0.21	0.50	0.16	ug/l	J
107-06-2	1,2-Dichloroethane	1.1	0.50	0.16	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	104%		70-130%
17060-07-0	1,2-Dichloroethane-D4	107%		70-130%
2037-26-5	Toluene-D8	100%		70-130%
460-00-4	4-Bromofluorobenzene	103%		70-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TRIP BLANK		
Lab Sample ID:	FA28850-8	**Date Sampled:**	10/27/15
Matrix:	AQ - Trip Blank Water	**Date Received:**	10/28/15
Method:	SM 6200B	**Percent Solids:**	n/a
Project:	URSNCM: S/S 24208, 1121 Mebane-Oaks Rd, Mebane, NC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	A0197546.D	1	10/30/15	TD	n/a	n/a	VA1814
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.50	0.17	ug/l	
108-88-3	Toluene	0.58	0.50	0.17	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.15	ug/l	
1330-20-7	Xylene (total)	ND	1.5	0.43	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	0.50	0.16	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.16	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	104%		70-130%
17060-07-0	1,2-Dichloroethane-D4	107%		70-130%
2037-26-5	Toluene-D8	102%		70-130%
460-00-4	4-Bromofluorobenzene	102%		70-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	COBLE POTABLE		
Lab Sample ID:	FA28853-1	**Date Sampled:**	10/27/15
Matrix:	AQ - Water	**Date Received:**	10/28/15
Method:	SM 6200B	**Percent Solids:**	n/a
Project:	URSNCM: S/S 24208, 1121 Mebane-Oaks Rd, Mebane, NC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	A0197534.D	1	10/30/15	TD	n/a	n/a	VA1814
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.50	0.17	ug/l	
108-88-3	Toluene	ND	0.50	0.17	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.15	ug/l	
1330-20-7	Xylene (total)	ND	1.5	0.43	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	0.50	0.16	ug/l	
107-06-2	1,2-Dichloroethane	0.16	0.50	0.16	ug/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		70-130%
17060-07-0	1,2-Dichloroethane-D4	100%		70-130%
2037-26-5	Toluene-D8	101%		70-130%
460-00-4	4-Bromofluorobenzene	101%		70-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	NICHOLSON GARDEN		
Lab Sample ID:	FA28854-1	**Date Sampled:**	10/27/15
Matrix:	AQ - Water	**Date Received:**	10/28/15
Method:	SM 6200B	**Percent Solids:**	n/a
Project:	URSNCM: S/S 24208, 1121 Mebane-Oaks Rd, Mebane, NC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	A0197550.D	1	10/30/15	TD	n/a	n/a	VA1814
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.50	0.17	ug/l	
108-88-3	Toluene	ND	0.50	0.17	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.15	ug/l	
1330-20-7	Xylene (total)	ND	1.5	0.43	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	0.50	0.16	ug/l	
107-06-2	1,2-Dichloroethane	0.27	0.50	0.16	ug/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	107%		70-130%
17060-07-0	1,2-Dichloroethane-D4	112%		70-130%
2037-26-5	Toluene-D8	102%		70-130%
460-00-4	4-Bromofluorobenzene	102%		70-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

APPENDIX C
LABORATORY REPORTS AND CHAINS-OF-CUSTODY

Southeast ACCUTEST LABORATORIES

11/03/15

Technical Report for

Atlantic Richfield Company

URSNCM: S/S 24208, 1121 Mebane-Oaks Rd, Mebane, NC

24208-60428026.104080

Accutest Job Number: FA28853

Sampling Date: 10/27/15

Report to:

AECOM, INC.
1600 Perimeter Park Drive Suite 400
Morrisville, NC 27560
ncchemists@urs.com

ATTN: Martha Meyers-Lee

Total number of pages in report: **17**

NELAP ACCREDITED TNI LABORATORY

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Norm Farmer
Technical Director

Client Service contact: Heather Wandrey 407-425-6700

Certifications: FL (E83510), LA (03051), KS (E-10327), IA (366), IL (200063), NC (573), NJ (FL002), SC (96038001) DoD ELAP (L-A-B L2229), CA (2937), TX (T104704404), PA (68-03573), VA (460177), AK, AR, GA, KY, MA, NV, OK, UT, WA

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Sample Summary

Atlantic Richfield Company

Job No: FA28853

URSNCM: S/S 24208, 1121 Mebane-Oaks Rd, Mebane, NC
Project No: 24208-60428026.104080

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
FA28853-1	10/27/15	13:00	JM	10/28/15	AQ	Water	COBLE POTABLE

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Atlantic Richfield Company **Job No:** FA28853

Site: URSNCM: S/S 24208, 1121 Mebane-Oaks Rd, Mebane, NC **Report Date** 11/3/2015 12:07:24

1 Sample was collected on 10/27/2015 and was received at Accutest SE on 10/28/2015 properly preserved, at 3.2 Deg. C and intact. This Sample received an Accutest job number of FA28853. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

Volatiles by GCMS By Method SM 6200B

Matrix: AQ **Batch ID:** VA1814

All samples were analyzed within the recommended method holding time.

All method blanks for this batch meet method specific criteria.

Sample(s) FA28853-1MS, FA28853-1MSD were used as the QC samples indicated.

Accutest Laboratories Southeast (ALSE) certifies that this report meets the project requirements for analytical data produced for the samples as received at ALSE and as stated on the COC. ALSE certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the ALSE Quality Manual except as noted above. This report is to be used in its entirety. ALSE is not responsible for any assumptions of data quality if partial data packages are used

Narrative prepared by:

Date: November 3, 2015

Lovelie Metzgar, QA Officer (signature on file)

Laboratory Report Glossary

Client Sample ID: Normally refers to a point of collection – a monitoring well, discharge outfall, treatment facility intake, soil core grid location and depth, or any other identification client assigns to a sample.
Lab Sample ID: Letter prefix identifies one of Accutest laboratories and the rest is a consecutive number of the job (or SDG) received. Number after dash is a sample number and it is unequivocally linked in the LIMS to the Client Sample ID (see above).
Matrix (Matrix Code):

- **AQ- Water Samples**
- **SO- Soil/Solid Samples**
- **LIQ- Non-Water Liquid Samples**
- **OIL- Oil Samples**

Matrix Type:

- **SW for Surface Water**
- **SO for Soil/Sediment**
- **GW for Ground Water**
- **DW for Drinking Water**

All available definitions are found on Chain of Custody form.

Deg. C: Degrees Celsius, measurement of temperature.
Method: Analytical and preparation methods used for the analysis, with the version or revision identified.
Date Sampled: This information is entered from Chain of Custody at the time of login for every sample.
Date Received: When the job was received by Accutest Laboratories.
Percent Solids: Applicable only to SO matrix. For other matrices this field defaults to "n/a".
Run #: Provides information how many attempts were made in the analysis of the sample. LIMS can merge information from several attempts and lists all of them, including dilution, confirmation, etc. #1 designation is assigned to the analytical run with majority of analytes reported from it, not necessarily in chronological order.
File ID: Actual instrument data acquisition file that produced the final result. Letter prefix identifies the instrument; the rest is a consecutive injection number for that instrument.
DF (Dilution Factor): Most common reasons are either to fit into the range of the calibration, or alleviate matrix interference. DF other than 1 are accompanied with a comment at the end of the sample report.
Analyzed: Date of analysis.
By: Field Technician or Analyst uniquely identified by initials.
Prep Date: Date of sample preparation. If hold time is 72 hours or less, time of preparation is also indicated.
Prep Batch: Letter prefix OP followed by a consecutive number. For VOC analysis preparation happens at the time of analysis, therefore analytical batch and preparation batch are the same. Size of prep batch is limited to 20 field samples of similar matrix and the entire batch should be completed within 12 hour time.
Analytical Batch: Letter prefix identifies the instrument and is followed by a consecutive number. Not limited by a number of samples.
Initial Weight or Initial Volume: Raw sample size used for preparation.
Final Volume: Final volume of extract. If different from method-prescribed volume, reasons are reflected in the comments at the end of the report form.
CAS Number: *Chemical Abstracts Service* (CAS), a division of the *American Chemical Society*.
Compound: Most commonly used names of chemical compounds.
Result: Depending on project requirements, this field could be set up as text, such as ND (for Non Detected) or a number. The number may be reported with a qualifier.
MDL (Method Detection Limit): This value is defined as 99% probability that analyte above this concentration is positively (qualitatively) identified.
RL (Reporting Limit): This value is supported by the low calibration standard and defines lowest point of quantitative identification of analyte.
DL (Detection Limit): The smallest analyte concentration that can be demonstrated to be different from zero or a blank concentration with 99% confidence. At the DL, the false positive rate (Type I error) is 1%.
LOD (Limit of Detection): The smallest concentration of a substance that must be present in a sample in order to be detected at the DL with 99% confidence. At the LOD, the false negative rate (Type II error) is 1%.
LOQ (Limit of Quantitation): The smallest concentration that produces a quantitative result with known and recorded precision and bias.

Units: ug/l (micrograms per liter) for aqueous samples and ug/kg (micrograms per kilogram) for solids (or ppb – parts per billion). The units could be set according to project or state-specific requirements, such as mg/l (milligrams per liter), or mg/kg (milligrams per kilogram).
Qualifiers (Q): Definitions of most often used qualifiers are found at the bottom of each result page. Applied depending on the program – state-specific (Florida A.C. 62-160), CLP-like, AFCEE, DOD QSM, etc.
Tentatively Identified Compound (TIC): Used when client requests a search for analytes that are not part of instrument calibration. Unknown peaks are compared with published spectral libraries and best match is reported as TIC.
Surrogate (S1, S2, S3 etc.): are positive controls that are used in most organics methods to ascertain preparation efficiency and matrix effect in individual samples. These chemicals mimic common method constituents but are unlikely to be found in real samples. Recoveries can be reported for every analytical run used in the analysis.
IS (Internal Standard IS1, IS2, IS3, etc): quantitative reference used to adjust for instrument performance fluctuations.
Area (of chromatographic peak): signal intensity directly related to compound concentration.
RT (Retention Time): time required for analyte to traverse the length of analytical column. Used for compound identification.
ICAL (Initial Calibration): Must pass calibration criteria established by method.
ICV (Independent Calibration Verification): Used to verify ICAL preparation and concentration of calibration points.
CCV (Continuing Calibration Verification): Used to assess calibration status of the instrument and must recover within established acceptance criteria.
MB (Method Blank): is a negative batch control. MB is an aliquot of matrix free of analyte of interest (either ASTM Type II water or appropriate solid substance) that is put through all the preparation and possible clean-up steps alongside investigative (field) samples. MB should be free of interferences above a set level.
BS (Blank Spike, Laboratory Fortified Blank - LFB, Laboratory Control Sample - LCS): is a positive control used to determine method accuracy - in clean matrix, i.e. matrix free of analytes of interest.
BSD (Blank Spike Duplicate): Used to assess recovery reproducibility - method precision – per analytical method requirement. %Recovery and Relative Percent Difference (%RPD) are compared with the established acceptance criteria.
MS and/or **MSD (Matrix Spike and Matrix Spike Duplicate):** positive batch controls which indicate matrix effect on the precision and accuracy of the method in given sample matrix. Results are expressed in %Recovery and Relative Percent Difference (%RPD), and compared with the established acceptance criteria.
DUP (Matrix Duplicate): Positive batch control, a way of assessing laboratory's precision; however, the composition of the samples is unknown and may not yield meaningful results.
REC (Recovery in Percent): expresses method accuracy.
RPD (Relative Percent Difference): expresses method precision.
Limits: Recovery limits for surrogates and spikes

Summary of Hits

Job Number: FA28853
Account: Atlantic Richfield Company
Project: URSNCM: S/S 24208, 1121 Mebane-Oaks Rd, Mebane, NC
Collected: 10/27/15

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
FA28853-1	**COBLE POTABLE**					
1,2-Dichloroethane		0.16 J	0.50	0.16	ug/l	SM 6200B

Southeast ACCUTEST LABORATORIES

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	COBLE POTABLE		
Lab Sample ID:	FA28853-1	**Date Sampled:**	10/27/15
Matrix:	AQ - Water	**Date Received:**	10/28/15
Method:	SM 6200B	**Percent Solids:**	n/a
Project:	URSNCM: S/S 24208, 1121 Mebane-Oaks Rd, Mebane, NC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	A0197534.D	1	10/30/15	TD	n/a	n/a	VA1814
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.50	0.17	ug/l	
108-88-3	Toluene	ND	0.50	0.17	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.15	ug/l	
1330-20-7	Xylene (total)	ND	1.5	0.43	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	0.50	0.16	ug/l	
107-06-2	1,2-Dichloroethane	0.16	0.50	0.16	ug/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		70-130%
17060-07-0	1,2-Dichloroethane-D4	100%		70-130%
2037-26-5	Toluene-D8	101%		70-130%
460-00-4	4-Bromofluorobenzene	101%		70-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Southeast ACCUTEST LABORATORIES

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

bp rm

Laboratory Management Program LaMP Chain of Custody Record FA28853 Page 1 of 1

BP Site Node Path: 24208 | Req Due Date (mm/dd/yy): 10-business days from receipt | Rush TAT: Yes ___ No X

BP Facility No: | Lab Work Order Number:

Lab Name:	Accutest-Southeast	Facility Address:	1121 Mebane Oaks Road	Consultant/Contractor:	URS Corporation - North Carolina
Lab Address:	4405 Vineland Road, Suite C-6, Orlando, FL 32811	City, State, ZIP Code:	Mebane, NC	Consultant/Contractor Project No:	24208 - 60428026.104080
Lab PM:	Heather Wandrey	Lead Regulatory Agency:	NCDENR DWM - UST Section	Address:	1600 Perimeter Park Road, Suite 400, Morrisville, NC 27560
Lab Phone:	407-425-6700	California Global ID No.:		Consultant/Contractor PM:	Jasen Zinna
Lab Shipping Acct:	Accutest: 1823-2015-3	Enfos Proposal No:	006FN-0011	Phone: 919-461-1285	Email: NCChemists@urs.com
Lab Bottle Order No:	KIT #85	Accounting Mode:	Provision X OOC-BU ___ OOC-RM ___	Email EDD To:	NCChemists@urs.com and to lab.enfosdoc@bp.com
Other Info:		Stage: 40	Activity: 80 - Operate / Project Spend	Invoice To:	BP ___ Contractor X

BP Project Mar Greg Frisch
BP PM Phone: 216 416-1232
BP PM Email: Greg.Frisch@bp.com

Lab No.	Sample Description	Date	Time	Matrix: Soil / Solid	Matrix: Water / Liquid	Matrix: Air / Vapor	Is this location a well?	No. Containers / Preservative: Total Number of Containers	Unpreserved	H_2SO_4	HNO_3	HCl	Methanol	Requested Analyses: 6200B: BTEX, MTBE, and 1,2-DCA
1	Cobble Potable	10-27-2015	1300		X			3				X		X

Report Type & QC Level: Standard X; Full Data Package ___

Comments: Note: If sample not collected, indicate "No Sample" in comments and single-strike out and initial any preprinted sample description.

Sampler's Name:	Jerry Maciejewski	Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
Sampler's Company:	URS Corporation - North Carolina	[illegible] / AECOM	10-27	1530	Postal Connections / FedEx	10-27	1530
Shipment Method:	FedEX Ship Date:	FED EX	10-28-15	10:00	[illegible]	10-28-15	10:00
Shipment Tracking No:	8079 4184 7870						

Special Instructions: Refer to attached Sample Kit Request for analytical scope of work. Trip Blank w/ Ground water sample 24208
Contact Martha Meyers-Lee (919-461-1519) regarding all sample receipt and analytical non-conformance issues.

THIS LINE - LAB USE ONLY: Custody Seals in Place: Yes / No | Temp Blank: Yes / No | Cooler Temp on Receipt: 3.2 °F/C | Trip Blank: Yes / No | MS/MSD Sample Submitted: Yes / No

Enfos Work Release WR288956

BP Remediation Management COC - Effective Dates: August 23, 2011- June 30, 2012

BP LaMP COC Rev. 7, Aug 23, 2011

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FA28853: Chain of Custody
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ACCUTEST LABORATORIES SAMPLE RECEIPT CONFIRMATION

ACCUTEST'S JOB NUMBER: FA28853 CLIENT: URS PROJECT: 24208-604280026.104080

DATE/TIME RECEIVED: 10-28-15 10:00 {MM/DD/YY 24:00} NUMBER OF COOLERS RECEIVED: 1

METHOD OF DELIVERY: (FEDEX) UPS ACCUTEST COURIER DELIVERY OTHER:

AIRBILL NUMBERS: 8079 4184 7870

COOLER INFORMATION

- [ ] CUSTODY SEAL NOT PRESENT OR NOT INTACT
- [ ] CHAIN OF CUSTODY NOT RECEIVED (COC)
- [ ] ANALYSIS REQUESTED IS UNCLEAR OR MISSING
- [ ] SAMPLE DATES OR TIMES UNCLEAR OR MISSING
- [ ] TEMPERATURE CRITERIA NOT MET

TEMPERATURE INFORMATION

- [ ] IR THERM ID 1 CORR. FACTOR -0.4
- [ ] OBSERVED TEMPS: 3.4
- [ ] CORRECTED TEMPS: 3.2

TRIP BLANK INFORMATION

- [ ] TRIP BLANK PROVIDED
- [X] TRIP BLANK NOT PROVIDED
- [X] TRIP BLANK NOT ON COC
- [ ] TRIP BLANK INTACT
- [ ] TRIP BLANK NOT INTACT
- [ ] RECEIVED WATER TRIP BLANK
- [ ] RECEIVED SOIL TRIP BLANK

SAMPLE INFORMATION

- [ ] INCORRECT NUMBER OF CONTAINERS USED
- [ ] SAMPLE RECEIVED IMPROPERLY PRESERVED
- [ ] INSUFFICIENT VOLUME FOR ANALYSIS
- [ ] DATES/TIMES ON COC DO NOT MATCH SAMPLE LABEL
- [ ] ID'S ON COC DO NOT MATCH LABEL
- [ ] VOC VIALS HAVE HEADSPACE (MACRO BUBBLES)
- [ ] BOTTLES RECEIVED BUT ANALYSIS NOT REQUESTED
- [ ] NO BOTTLES RECEIVED FOR ANALYSIS REQUESTED
- [ ] UNCLEAR FILTERING OR COMPOSITING INSTRUCTIONS
- [ ] SAMPLE CONTAINER(S) RECEIVED BROKEN
- [ ] 5035 FIELD KITS NOT RECEIVED WITHIN 48 HOURS
- [ ] BULK VOA SOIL JARS NOT RECEIVED WITHIN 48 HOURS
- [ ] % SOLIDS JAR NOT RECEIVED
- [ ] RESIDUAL CHLORINE PRESENT LOT#

{APPLICABLE TO EPA 600 SERIES OR NORTH CAROLINA ORGANICS}

MISC. INFORMATION

NUMBER OF ENCORES ? 25-GRAM 5-GRAM

NUMBER OF 5035 FIELD KITS ?

NUMBER OF LAB FILTERED METALS ?

pH PAPER LOT#s WIDHC131225 NARROW RANGE AO36133 OTHER (specify) 405-230010

SUMMARY OF COMMENTS:

TECHNICIAN SIGNATURE/DATE Michael Glass 10-28-15 REVIEWER SIGNATURE/DATE 10/29/15

NF 10/14 YELLOWSHEET110514.xls

5.1 5

FA28853: Chain of Custody
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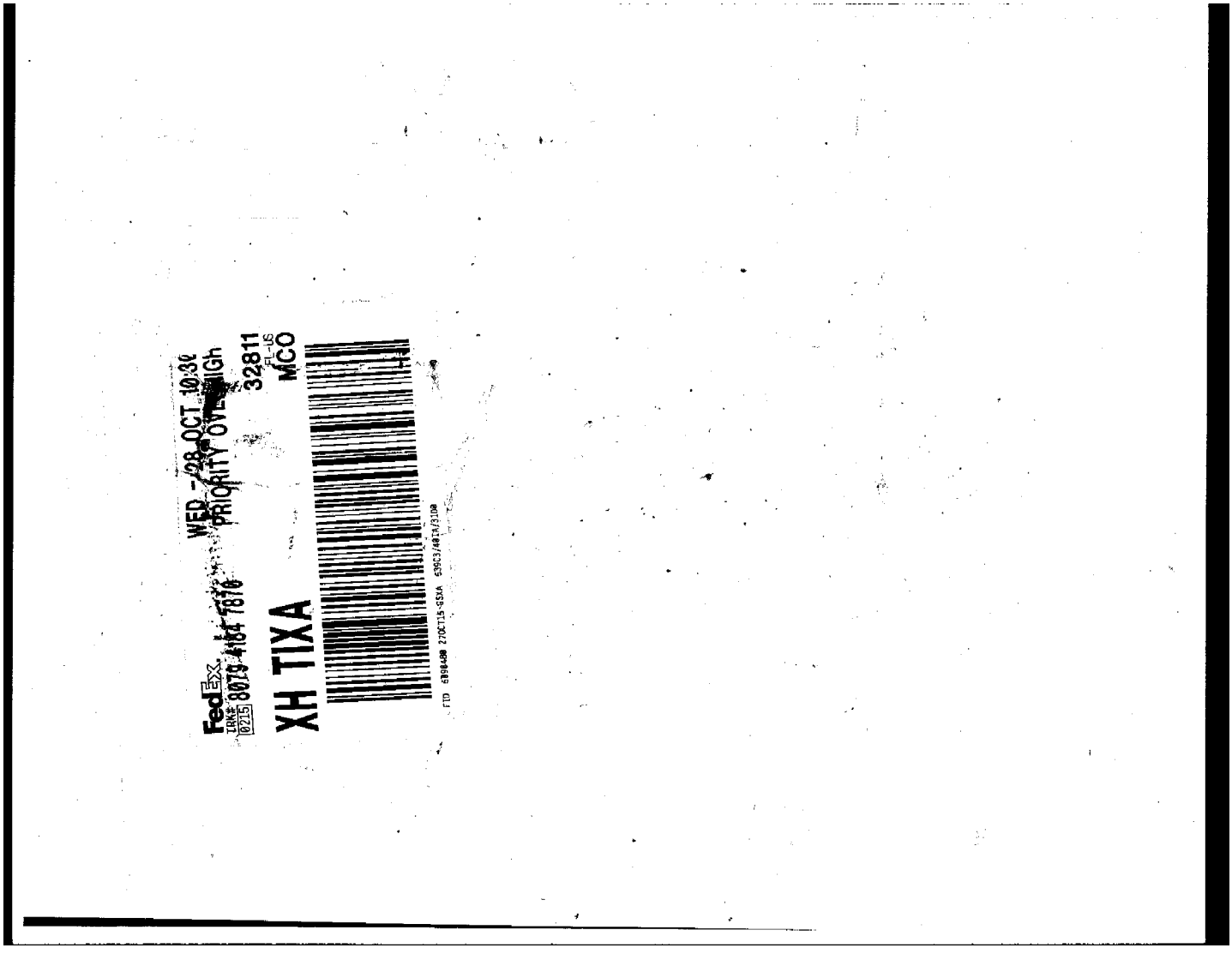

FA28853: Chain of Custody
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Southeast ACCUTEST LABORATORIES

GC/MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: FA28853
Account: BPAMSS Atlantic Richfield Company
Project: URSNCM: S/S 24208, 1121 Mebane-Oaks Rd, Mebane, NC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VA1814-MB	A0197533.D	1	10/30/15	TD	n/a	n/a	VA1814

The QC reported here applies to the following samples: **Method:** SM 6200B

FA28853-1

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.50	0.17	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.16	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.15	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	0.50	0.16	ug/l	
108-88-3	Toluene	ND	0.50	0.17	ug/l	
1330-20-7	Xylene (total)	ND	1.5	0.43	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	99%	70-130%
17060-07-0	1,2-Dichloroethane-D4	98%	70-130%
2037-26-5	Toluene-D8	101%	70-130%
460-00-4	4-Bromofluorobenzene	100%	70-130%

Blank Spike Summary

Job Number: FA28853
Account: BPAMSS Atlantic Richfield Company
Project: URSNCM: S/S 24208, 1121 Mebane-Oaks Rd, Mebane, NC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VA1814-BS	A0197538.D	1	10/30/15	TD	n/a	n/a	VA1814

The QC reported here applies to the following samples: **Method:** SM 6200B

FA28853-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	10	10.3	103	70-130
107-06-2	1,2-Dichloroethane	10	10.0	100	70-130
100-41-4	Ethylbenzene	10	10.4	104	70-130
1634-04-4	Methyl Tert Butyl Ether	10	10.4	104	70-130
108-88-3	Toluene	10	10.1	101	70-130
1330-20-7	Xylene (total)	30	32.5	108	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	103%	70-130%
17060-07-0	1,2-Dichloroethane-D4	103%	70-130%
2037-26-5	Toluene-D8	99%	70-130%
460-00-4	4-Bromofluorobenzene	100%	70-130%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA28853
Account: BPAMSS Atlantic Richfield Company
Project: URSNCM: S/S 24208, 1121 Mebane-Oaks Rd, Mebane, NC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
FA28853-1MS	A0197551.D	1	10/30/15	TD	n/a	n/a	VA1814
FA28853-1MSD	A0197552.D	1	10/31/15	TD	n/a	n/a	VA1814
FA28853-1	A0197534.D	1	10/30/15	TD	n/a	n/a	VA1814

The QC reported here applies to the following samples: **Method:** SM 6200B

FA28853-1

CAS No.	Compound	FA28853-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND		10	10	100	10	10.3	103	3	70-130/20
107-06-2	1,2-Dichloroethane	0.16	J	10	10.5	103	10	10.8	106	3	70-130/20
100-41-4	Ethylbenzene	ND		10	10.2	102	10	10.4	104	2	70-130/20
1634-04-4	Methyl Tert Butyl Ether	ND		10	10.4	104	10	11.0	110	6	70-130/20
108-88-3	Toluene	ND		10	9.8	98	10	10.1	101	3	70-130/20
1330-20-7	Xylene (total)	ND		30	31.6	105	30	32.6	109	3	70-130/20

CAS No.	Surrogate Recoveries	MS	MSD	FA28853-1	Limits
1868-53-7	Dibromofluoromethane	107%	106%	102%	70-130%
17060-07-0	1,2-Dichloroethane-D4	112%	107%	100%	70-130%
2037-26-5	Toluene-D8	97%	97%	101%	70-130%
460-00-4	4-Bromofluorobenzene	100%	99%	101%	70-130%

* = Outside of Control Limits.

Southeast ACCUTEST LABORATORIES

11/03/15

Technical Report for

Atlantic Richfield Company

URSNCM: S/S 24208, 1121 Mebane-Oaks Rd, Mebane, NC

24208-60428026.104080

Accutest Job Number: FA28854

Sampling Date: 10/27/15

Report to:

AECOM, INC.
1600 Perimeter Park Drive Suite 400
Morrisville, NC 27560
ncchemists@urs.com

ATTN: Martha Meyers-Lee

Total number of pages in report: **17**

NELAP ACCREDITED TNI LABORATORY

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Norm Farmer
Technical Director

Client Service contact: Heather Wandrey 407-425-6700

Certifications: FL (E83510), LA (03051), KS (E-10327), IA (366), IL (200063), NC (573), NJ (FL002), SC (96038001) DoD ELAP (L-A-B L2229), CA (2937), TX (T104704404), PA (68-03573), VA (460177), AK, AR, GA, KY, MA, NV, OK, UT, WA

Sections: 1 2 3 4 5 6

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Sample Summary

Atlantic Richfield Company

Job No: FA28854

URSNCM: S/S 24208, 1121 Mebane-Oaks Rd, Mebane, NC
Project No: 24208-60428026.104080

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
FA28854-1	10/27/15	12:30	JM	10/28/15	AQ	Water	NICHOLSON GARDEN

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Atlantic Richfield Company **Job No:** FA28854

Site: URSNCM: S/S 24208, 1121 Mebane-Oaks Rd, Mebane, NC **Report Date** 11/3/2015 12:10:29

1 Sample was collected on 10/27/2015 and was received at Accutest SE on 10/28/2015 properly preserved, at 3.2 Deg. C and intact. This Sample received an Accutest job number of FA28854. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

Volatiles by GCMS By Method SM 6200B

Matrix: AQ **Batch ID:** VA1814

All samples were analyzed within the recommended method holding time.

All method blanks for this batch meet method specific criteria.

Sample(s) FA28853-1MS, FA28853-1MSD were used as the QC samples indicated.

Accutest Laboratories Southeast (ALSE) certifies that this report meets the project requirements for analytical data produced for the samples as received at ALSE and as stated on the COC. ALSE certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the ALSE Quality Manual except as noted above. This report is to be used in its entirety. ALSE is not responsible for any assumptions of data quality if partial data packages are used

Narrative prepared by:

Date: November 3, 2015

Lovelie Metzgar, QA Officer (signature on file)

Laboratory Report Glossary

Client Sample ID: Normally refers to a point of collection – a monitoring well, discharge outfall, treatment facility intake, soil core grid location and depth, or any other identification client assigns to a sample.
Lab Sample ID: Letter prefix identifies one of Accutest laboratories and the rest is a consecutive number of the job (or SDG) received. Number after dash is a sample number and it is unequivocally linked in the LIMS to the Client Sample ID (see above).
Matrix (Matrix Code):

- **AQ- Water Samples**
- **SO- Soil/Solid Samples**
- **LIQ- Non-Water Liquid Samples**
- **OIL- Oil Samples**

Matrix Type:

- **SW for Surface Water**
- **SO for Soil/Sediment**
- **GW for Ground Water**
- **DW for Drinking Water**

All available definitions are found on Chain of Custody form.

Deg. C: Degrees Celsius, measurement of temperature.
Method: Analytical and preparation methods used for the analysis, with the version or revision identified.
Date Sampled: This information is entered from Chain of Custody at the time of login for every sample.
Date Received: When the job was received by Accutest Laboratories.
Percent Solids: Applicable only to SO matrix. For other matrices this field defaults to "n/a".
Run #: Provides information how many attempts were made in the analysis of the sample. LIMS can merge information from several attempts and lists all of them, including dilution, confirmation, etc. #1 designation is assigned to the analytical run with majority of analytes reported from it, not necessarily in chronological order.
File ID: Actual instrument data acquisition file that produced the final result. Letter prefix identifies the instrument; the rest is a consecutive injection number for that instrument.
DF (Dilution Factor): Most common reasons are either to fit into the range of the calibration, or alleviate matrix interference. DF other than 1 are accompanied with a comment at the end of the sample report.
Analyzed: Date of analysis.
By: Field Technician or Analyst uniquely identified by initials.
Prep Date: Date of sample preparation. If hold time is 72 hours or less, time of preparation is also indicated.
Prep Batch: Letter prefix OP followed by a consecutive number. For VOC analysis preparation happens at the time of analysis, therefore analytical batch and preparation batch are the same. Size of prep batch is limited to 20 field samples of similar matrix and the entire batch should be completed within 12 hour time.
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Initial Weight or Initial Volume: Raw sample size used for preparation.
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CAS Number: *Chemical Abstracts Service* (CAS), a division of the *American Chemical Society*.
Compound: Most commonly used names of chemical compounds.
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LOQ (Limit of Quantitation): The smallest concentration that produces a quantitative result with known and recorded precision and bias.

Units: ug/l (micrograms per liter) for aqueous samples and ug/kg (micrograms per kilogram) for solids (or ppb – parts per billion). The units could be set according to project or state-specific requirements, such as mg/l (milligrams per liter), or mg/kg (milligrams per kilogram).
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Surrogate (S1, S2, S3 etc.): are positive controls that are used in most organics methods to ascertain preparation efficiency and matrix effect in individual samples. These chemicals mimic common method constituents but are unlikely to be found in real samples. Recoveries can be reported for every analytical run used in the analysis.
IS (Internal Standard IS1, IS2, IS3, etc): quantitative reference used to adjust for instrument performance fluctuations.
Area (of chromatographic peak): signal intensity directly related to compound concentration.
RT (Retention Time): time required for analyte to traverse the length of analytical column. Used for compound identification.
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CCV (Continuing Calibration Verification): Used to assess calibration status of the instrument and must recover within established acceptance criteria.
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BSD (Blank Spike Duplicate): Used to assess recovery reproducibility - method precision – per analytical method requirement. %Recovery and Relative Percent Difference (%RPD) are compared with the established acceptance criteria.
MS and/or **MSD (Matrix Spike and Matrix Spike Duplicate):** positive batch controls which indicate matrix effect on the precision and accuracy of the method in given sample matrix. Results are expressed in %Recovery and Relative Percent Difference (%RPD), and compared with the established acceptance criteria.
DUP (Matrix Duplicate): Positive batch control, a way of assessing laboratory's precision; however, the composition of the samples is unknown and may not yield meaningful results.
REC (Recovery in Percent): expresses method accuracy.
RPD (Relative Percent Difference): expresses method precision.
Limits: Recovery limits for surrogates and spikes

Summary of Hits

Job Number: FA28854
Account: Atlantic Richfield Company
Project: URSNCM: S/S 24208, 1121 Mebane-Oaks Rd, Mebane, NC
Collected: 10/27/15

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
FA28854-1	**NICHOLSON GARDEN**					
1,2-Dichloroethane		0.27 J	0.50	0.16	ug/l	SM 6200B

Southeast ACCUTEST LABORATORIES

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Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	NICHOLSON GARDEN		
Lab Sample ID:	FA28854-1	**Date Sampled:**	10/27/15
Matrix:	AQ - Water	**Date Received:**	10/28/15
Method:	SM 6200B	**Percent Solids:**	n/a
Project:	URSNCM: S/S 24208, 1121 Mebane-Oaks Rd, Mebane, NC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	A0197550.D	1	10/30/15	TD	n/a	n/a	VA1814
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.50	0.17	ug/l	
108-88-3	Toluene	ND	0.50	0.17	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.15	ug/l	
1330-20-7	Xylene (total)	ND	1.5	0.43	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	0.50	0.16	ug/l	
107-06-2	1,2-Dichloroethane	0.27	0.50	0.16	ug/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	107%		70-130%
17060-07-0	1,2-Dichloroethane-D4	112%		70-130%
2037-26-5	Toluene-D8	102%		70-130%
460-00-4	4-Bromofluorobenzene	102%		70-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Southeast ACCUTEST LABORATORIES

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

bp rm

Laboratory Management Program LaMP Chain of Custody Record FA28854 Page 1 of 1

BP Site Node Path: 24208 **Req Due Date (mm/dd/yy):** 10-business days from receipt **Rush TAT:** Yes ___ No X

BP Facility No: ___ **Lab Work Order Number:** ___

Lab Name:	Accutest-Southeast	Facility Address:	1121 Mebane Oaks Road	Consultant/Contractor:	URS Corporation - North Carolina
Lab Address:	4405 Vineland Road, Suite C-5, Orlando, FL 32811	City, State, ZIP Code:	Mebane, NC	Consultant/Contractor Project No:	24208 - 60428026.104080
Lab PM:	Heather Wandrey	Lead Regulatory Agency:	NCDENR DWM - UST Section	Address:	1600 Perimeter Park Road, Suite 400, Morrisville, NC 27560
Lab Phone:	407-426-6700	California Global ID No.:		Consultant/Contractor PM:	Jasen Zinna
Lab Shipping Acct:	Accutest: 1823-2015-3	Enfos Proposal No:	006FN-0011	Phone:	919-461-1285 Email: NCChemists@urs.com
Lab Bottle Order No:	kit #85	Accounting Mode:	Provision X OOC-BU ___ OOC-RM ___	Email EDD To:	NCChemists@urs.com and to lab.enfosdoc@bp.com
Other Info:		Stage: 40	Activity: 80 - Operate / Project Spend	Invoice To:	BP ___ Contractor X
BP Project Mgr:	Greg Frisch				
BP PM Phone:	216 416-1232				
BP PM Email:	Greg.Frisch@bp.com				

Lab No.	Sample Description	Date	Time	Matrix: Soil / Solid	Matrix: Water / Liquid	Matrix: Air / Vapor	Matrix: Is this location a well?	No. Containers / Preservetive: Total Number of Containers	Unpreserved	H_2SO_4	HNO_3	HCl	Methanol	Requested Analyses: 6200B, BTEX, MTBE, and 1,2-DCA	Report Type & QC Level
															Standard X Full Data Package ___
1	Nichokan Garden	10-27-2015	1230		X			3				X		X	Comments: Note: If sample not collected, indicate "No Sample" in comments and single-strike out and initial any preprinted sample description.

Sampler's Name:	Jerry Maciejewski						
Sampler's Company:	URS Corporation - North Carolina	Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
Shipment Method:	FedEx Ship Date:	[signature] IRECOM	10-27	1530	Postal Connections / Fed Ex	10-27	1530
Shipment Tracking No:	8079 4184 7870	FED EX	10-28-15	10:00	[signature]	10-28-15	10:00

Special Instructions: Refer to attached Sample Kit Request for analytical scope of work. Trip Blank w/ Groundwater sample 24208 COC
Contact Martha Meyers-Lee (919-461-1519) regarding all sample receipt and analytical non-conformance issues.

THIS LINE - LAB USE ONLY: Custody Seals In Place: Yes / No | Temp Blank: Yes / No | Cooler Temp on Receipt: 3.2 °F/C | Trip Blank: Yes / No | MS/MSD Sample Submitted: Yes / No

Enfos Work Release WR288956

BP Remediation Management COC - Effective Dates: August 23, 2011- June 30, 2012

BP LaMP COC Rev. 7, Aug 23, 2011

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FA28854: Chain of Custody
Page 1 of 3

ACCUTEST LABORATORIES SAMPLE RECEIPT CONFIRMATION

ACCUTEST'S JOB NUMBER: FA28854 CLIENT: URS PROJECT: 24208-60428026.104080

DATE/TIME RECEIVED: 10-28-15 10:00 (MM/DD/YY 24:00) NUMBER OF COOLERS RECEIVED: 1

METHOD OF DELIVERY: (FEDEX) UPS ACCUTEST COURIER DELIVERY OTHER:

AIRBILL NUMBERS: 8079 4184 7870

COOLER INFORMATION

- [ ] CUSTODY SEAL NOT PRESENT OR NOT INTACT
- [ ] CHAIN OF CUSTODY NOT RECEIVED (COC)
- [ ] ANALYSIS REQUESTED IS UNCLEAR OR MISSING
- [ ] SAMPLE DATES OR TIMES UNCLEAR OR MISSING
- [ ] TEMPERATURE CRITERIA NOT MET

TRIP BLANK INFORMATION

- [ ] TRIP BLANK PROVIDED
- [X] TRIP BLANK NOT PROVIDED
- [X] TRIP BLANK NOT ON COC
- [ ] TRIP BLANK INTACT
- [ ] TRIP BLANK NOT INTACT
- [ ] RECEIVED WATER TRIP BLANK
- [ ] RECEIVED SOIL TRIP BLANK

MISC. INFORMATION

NUMBER OF ENCORES ? 25-GRAM_____ 5-GRAM_____

NUMBER OF 5035 FIELD KITS ? _____

NUMBER OF LAB FILTERED METALS ? _____

pH PAPER LOT#s WID1HC131225

TEMPERATURE INFORMATION

- [ ] IR THERM ID 1 CORR. FACTOR -0.4
- [ ] OBSERVED TEMPS: 3.4
- [ ] CORRECTED TEMPS: 3.2

SAMPLE INFORMATION

- [ ] INCORRECT NUMBER OF CONTAINERS USED
- [ ] SAMPLE RECEIVED IMPROPERLY PRESERVED
- [ ] INSUFFICIENT VOLUME FOR ANALYSIS
- [ ] DATES/TIMES ON COC DO NOT MATCH SAMPLE LABEL
- [ ] ID'S ON COC DO NOT MATCH LABEL
- [ ] VOC VIALS HAVE HEADSPACE (MACRO BUBBLES)
- [ ] BOTTLES RECEIVED BUT ANALYSIS NOT REQUESTED
- [ ] NO BOTTLES RECEIVED FOR ANALYSIS REQUESTED
- [ ] UNCLEAR FILTERING OR COMPOSITING INSTRUCTIONS
- [ ] SAMPLE CONTAINER(S) RECEIVED BROKEN
- [ ] 5035 FIELD KITS NOT RECEIVED WITHIN 48 HOURS
- [ ] BULK VOA SOIL JARS NOT RECEIVED WITHIN 48 HOURS
- [ ] % SOLIDS JAR NOT RECEIVED
- [ ] RESIDUAL CHLORINE PRESENT LOT#_____

(APPLICABLE TO EPA 600 SERIES OR NORTH CAROLINA ORGANICS)

NARROW RANGE ____AO36133____ OTHER (specify) 405-230010

SUMMARY OF COMMENTS:

TECHNICIAN SIGNATURE/DATE Michael Chlem 10-29-15 REVIEWER SIGNATURE/DATE 10/29/15

NF 10/14 YELLOWSHEET110514.xls

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FA28854: Chain of Custody

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FA28854: Chain of Custody
Page 3 of 3

Southeast ACCUTEST LABORATORIES

GC/MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: FA28854
Account: BPAMSS Atlantic Richfield Company
Project: URSNCM: S/S 24208, 1121 Mebane-Oaks Rd, Mebane, NC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VA1814-MB	A0197533.D	1	10/30/15	TD	n/a	n/a	VA1814

The QC reported here applies to the following samples: **Method:** SM 6200B

FA28854-1

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.50	0.17	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.16	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.15	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	0.50	0.16	ug/l	
108-88-3	Toluene	ND	0.50	0.17	ug/l	
1330-20-7	Xylene (total)	ND	1.5	0.43	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	99%	70-130%
17060-07-0	1,2-Dichloroethane-D4	98%	70-130%
2037-26-5	Toluene-D8	101%	70-130%
460-00-4	4-Bromofluorobenzene	100%	70-130%

Blank Spike Summary

Job Number: FA28854
Account: BPAMSS Atlantic Richfield Company
Project: URSNCM: S/S 24208, 1121 Mebane-Oaks Rd, Mebane, NC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VA1814-BS	A0197538.D	1	10/30/15	TD	n/a	n/a	VA1814

The QC reported here applies to the following samples: **Method:** SM 6200B

FA28854-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	10	10.3	103	70-130
107-06-2	1,2-Dichloroethane	10	10.0	100	70-130
100-41-4	Ethylbenzene	10	10.4	104	70-130
1634-04-4	Methyl Tert Butyl Ether	10	10.4	104	70-130
108-88-3	Toluene	10	10.1	101	70-130
1330-20-7	Xylene (total)	30	32.5	108	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	103%	70-130%
17060-07-0	1,2-Dichloroethane-D4	103%	70-130%
2037-26-5	Toluene-D8	99%	70-130%
460-00-4	4-Bromofluorobenzene	100%	70-130%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA28854
Account: BPAMSS Atlantic Richfield Company
Project: URSNCM: S/S 24208, 1121 Mebane-Oaks Rd, Mebane, NC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
FA28853-1MS	A0197551.D	1	10/30/15	TD	n/a	n/a	VA1814
FA28853-1MSD	A0197552.D	1	10/31/15	TD	n/a	n/a	VA1814
FA28853-1	A0197534.D	1	10/30/15	TD	n/a	n/a	VA1814

The QC reported here applies to the following samples: **Method:** SM 6200B

FA28854-1

CAS No.	Compound	FA28853-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND		10	10	100	10	10.3	103	3	70-130/20
107-06-2	1,2-Dichloroethane	0.16	J	10	10.5	103	10	10.8	106	3	70-130/20
100-41-4	Ethylbenzene	ND		10	10.2	102	10	10.4	104	2	70-130/20
1634-04-4	Methyl Tert Butyl Ether	ND		10	10.4	104	10	11.0	110	6	70-130/20
108-88-3	Toluene	ND		10	9.8	98	10	10.1	101	3	70-130/20
1330-20-7	Xylene (total)	ND		30	31.6	105	30	32.6	109	3	70-130/20

CAS No.	Surrogate Recoveries	MS	MSD	FA28853-1	Limits
1868-53-7	Dibromofluoromethane	107%	106%	102%	70-130%
17060-07-0	1,2-Dichloroethane-D4	112%	107%	100%	70-130%
2037-26-5	Toluene-D8	97%	97%	101%	70-130%
460-00-4	4-Bromofluorobenzene	100%	99%	101%	70-130%

* = Outside of Control Limits.

Southeast
ACCUTEST LABORATORIES

11/06/15

Technical Report for

Atlantic Richfield Company

URSNCM: S/S 24208, 1121 Mebane-Oaks Rd, Mebane, NC

24208-60428026.104080

Accutest Job Number: FA28850

Sampling Date: 10/27/15

Report to:

AECOM, INC.

NCChemists@urs.com

ATTN: Martha Meyers

Total number of pages in report: **27**

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Norm Farmer
Technical Director

Client Service contact: Heather Wandrey 407-425-6700

Certifications: FL (E83510), LA (03051), KS (E-10327), IA (366), IL (200063), NC (573), NJ (FL002), SC (96038001) DoD ELAP (L-A-B L2229), CA (2937), TX (T104704404), PA (68-03573), VA (460177), AK, AR, GA, KY, MA, NV, OK, UT, WA

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Accutest LabLink@13:44 06-Nov-2015

Sample Summary

Atlantic Richfield Company

Job No: FA28850

URSNCM: S/S 24208, 1121 Mebane-Oaks Rd, Mebane, NC
Project No: 24208-60428026.104080

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
FA28850-1	10/27/15	10:50	JM	10/28/15	AQ	Ground Water	MW-1
FA28850-2	10/27/15	11:10	JM	10/28/15	AQ	Ground Water	MW-2
FA28850-3	10/27/15	11:30	JM	10/28/15	AQ	Ground Water	MW-4
FA28850-4	10/27/15	11:50	JM	10/28/15	AQ	Ground Water	MW-5
FA28850-5	10/27/15	12:15	JM	10/28/15	AQ	Ground Water	MW-7
FA28850-6	10/27/15	10:20	JM	10/28/15	AQ	Ground Water	MW-12
FA28850-7	10/27/15	10:30	JM	10/28/15	AQ	Ground Water	DUP-1
FA28850-8	10/27/15	00:00	JM	10/28/15	AQ	Trip Blank Water	TRIP BLANK

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Atlantic Richfield Company **Job No:** FA28850

Site: URSNCM: S/S 24208, 1121 Mebane-Oaks Rd, Mebane, NC **Report Date** 11/6/2015 1:32:26 PM

7 Samples and 1 Trip Blank were collected on 10/27/2015 and were received at Accutest SE on 10/28/2015 properly preserved, at 3.2 Deg. C and intact. These Samples received an Accutest job number of FA28850. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

Volatiles by GCMS By Method SM 6200B

Matrix: AQ **Batch ID:** VA1814

All samples were analyzed within the recommended method holding time.

All method blanks for this batch meet method specific criteria.

Sample(s) FA28853-1MS, FA28853-1MSD were used as the QC samples indicated.

Matrix: AQ **Batch ID:** VE1399

All samples were analyzed within the recommended method holding time.

All method blanks for this batch meet method specific criteria.

Sample(s) FA28944-3MS, FA28944-3MSD were used as the QC samples indicated.

Accutest Laboratories Southeast (ALSE) certifies that this report meets the project requirements for analytical data produced for the samples as received at ALSE and as stated on the COC. ALSE certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the ALSE Quality Manual except as noted above. This report is to be used in its entirety. ALSE is not responsible for any assumptions of data quality if partial data packages are used

Narrative prepared by:

Date: November 6, 2015

Lovelie Metzgar, QA Officer (signature on file)

Laboratory Report Glossary

Client Sample ID: Normally refers to a point of collection – a monitoring well, discharge outfall, treatment facility intake, soil core grid location and depth, or any other identification client assigns to a sample.
Lab Sample ID: Letter prefix identifies one of Accutest laboratories and the rest is a consecutive number of the job (or SDG) received. Number after dash is a sample number and it is unequivocally linked in the LIMS to the Client Sample ID (see above).
Matrix (Matrix Code):

- **AQ- Water Samples**
- **SO- Soil/Solid Samples**
- **LIQ- Non-Water Liquid Samples**
- **OIL- Oil Samples**

Matrix Type:

- **SW for Surface Water**
- **SO for Soil/Sediment**
- **GW for Ground Water**
- **DW for Drinking Water**

All available definitions are found on Chain of Custody form.

Deg. C: Degrees Celsius, measurement of temperature.
Method: Analytical and preparation methods used for the analysis, with the version or revision identified.
Date Sampled: This information is entered from Chain of Custody at the time of login for every sample.
Date Received: When the job was received by Accutest Laboratories.
Percent Solids: Applicable only to SO matrix. For other matrices this field defaults to "n/a".
Run #: Provides information how many attempts were made in the analysis of the sample. LIMS can merge information from several attempts and lists all of them, including dilution, confirmation, etc. #1 designation is assigned to the analytical run with majority of analytes reported from it, not necessarily in chronological order.
File ID: Actual instrument data acquisition file that produced the final result. Letter prefix identifies the instrument; the rest is a consecutive injection number for that instrument.
DF (Dilution Factor): Most common reasons are either to fit into the range of the calibration, or alleviate matrix interference. DF other than 1 are accompanied with a comment at the end of the sample report.
Analyzed: Date of analysis.
By: Field Technician or Analyst uniquely identified by initials.
Prep Date: Date of sample preparation. If hold time is 72 hours or less, time of preparation is also indicated.
Prep Batch: Letter prefix OP followed by a consecutive number. For VOC analysis preparation happens at the time of analysis, therefore analytical batch and preparation batch are the same. Size of prep batch is limited to 20 field samples of similar matrix and the entire batch should be completed within 12 hour time.
Analytical Batch: Letter prefix identifies the instrument and is followed by a consecutive number. Not limited by a number of samples.
Initial Weight or Initial Volume: Raw sample size used for preparation.
Final Volume: Final volume of extract. If different from method-prescribed volume, reasons are reflected in the comments at the end of the report form.
CAS Number: *Chemical Abstracts Service* (CAS), a division of the *American Chemical Society*.
Compound: Most commonly used names of chemical compounds.
Result: Depending on project requirements, this field could be set up as text, such as ND (for Non Detected) or a number. The number may be reported with a qualifier.
MDL (Method Detection Limit): This value is defined as 99% probability that analyte above this concentration is positively (qualitatively) identified.
RL (Reporting Limit): This value is supported by the low calibration standard and defines lowest point of quantitative identification of analyte.
DL (Detection Limit): The smallest analyte concentration that can be demonstrated to be different from zero or a blank concentration with 99% confidence. At the DL, the false positive rate (Type I error) is 1%.
LOD (Limit of Detection): The smallest concentration of a substance that must be present in a sample in order to be detected at the DL with 99% confidence. At the LOD, the false negative rate (Type II error) is 1%.
LOQ (Limit of Quantitation): The smallest concentration that produces a quantitative result with known and recorded precision and bias.

Units: ug/l (micrograms per liter) for aqueous samples and ug/kg (micrograms per kilogram) for solids (or ppb – parts per billion). The units could be set according to project or state-specific requirements, such as mg/l (milligrams per liter), or mg/kg (milligrams per kilogram).
Qualifiers (Q): Definitions of most often used qualifiers are found at the bottom of each result page. Applied depending on the program – state-specific (Florida A.C. 62-160), CLP-like, AFCEE, DOD QSM, etc.
Tentatively Identified Compound (TIC): Used when client requests a search for analytes that are not part of instrument calibration. Unknown peaks are compared with published spectral libraries and best match is reported as TIC.
Surrogate (S1, S2, S3 etc.): are positive controls that are used in most organics methods to ascertain preparation efficiency and matrix effect in individual samples. These chemicals mimic common method constituents but are unlikely to be found in real samples. Recoveries can be reported for every analytical run used in the analysis.
IS (Internal Standard IS1, IS2, IS3, etc): quantitative reference used to adjust for instrument performance fluctuations.
Area (of chromatographic peak): signal intensity directly related to compound concentration.
RT (Retention Time): time required for analyte to traverse the length of analytical column. Used for compound identification.
ICAL (Initial Calibration): Must pass calibration criteria established by method.
ICV (Independent Calibration Verification): Used to verify ICAL preparation and concentration of calibration points.
CCV (Continuing Calibration Verification): Used to assess calibration status of the instrument and must recover within established acceptance criteria.
MB (Method Blank): is a negative batch control. MB is an aliquot of matrix free of analyte of interest (either ASTM Type II water or appropriate solid substance) that is put through all the preparation and possible clean-up steps alongside investigative (field) samples. MB should be free of interferences above a set level.
BS (Blank Spike, Laboratory Fortified Blank - LFB, Laboratory Control Sample - LCS): is a positive control used to determine method accuracy - in clean matrix, i.e. matrix free of analytes of interest.
BSD (Blank Spike Duplicate): Used to assess recovery reproducibility - method precision – per analytical method requirement. %Recovery and Relative Percent Difference (%RPD) are compared with the established acceptance criteria.
MS and/or **MSD (Matrix Spike and Matrix Spike Duplicate):** positive batch controls which indicate matrix effect on the precision and accuracy of the method in given sample matrix. Results are expressed in %Recovery and Relative Percent Difference (%RPD), and compared with the established acceptance criteria.
DUP (Matrix Duplicate): Positive batch control, a way of assessing laboratory's precision; however, the composition of the samples is unknown and may not yield meaningful results.
REC (Recovery in Percent): expresses method accuracy.
RPD (Relative Percent Difference): expresses method precision.
Limits: Recovery limits for surrogates and spikes

Summary of Hits

Job Number: FA28850
Account: Atlantic Richfield Company
Project: URSNCM: S/S 24208, 1121 Mebane-Oaks Rd, Mebane, NC
Collected: 10/27/15

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
FA28850-1	**MW-1**					
Benzene		0.33 J	0.50	0.17	ug/l	SM 6200B
FA28850-2	**MW-2**					
Benzene		5.4	0.50	0.17	ug/l	SM 6200B
Toluene		0.46 J	0.50	0.17	ug/l	SM 6200B
Methyl Tert Butyl Ether		1.4	0.50	0.16	ug/l	SM 6200B
FA28850-3	**MW-4**					
Methyl Tert Butyl Ether		1.9	0.50	0.16	ug/l	SM 6200B
1,2-Dichloroethane		0.20 J	0.50	0.16	ug/l	SM 6200B
FA28850-4	**MW-5**					
Benzene		74.6	1.0	0.34	ug/l	SM 6200B
Toluene		0.76	0.50	0.17	ug/l	SM 6200B
Xylene (total)		5.9	1.5	0.43	ug/l	SM 6200B
Methyl Tert Butyl Ether		15.1	0.50	0.16	ug/l	SM 6200B
FA28850-5	**MW-7**					
Methyl Tert Butyl Ether		3.5	0.50	0.16	ug/l	SM 6200B
FA28850-6	**MW-12**					
Methyl Tert Butyl Ether		0.23 J	0.50	0.16	ug/l	SM 6200B
1,2-Dichloroethane		1.1	0.50	0.16	ug/l	SM 6200B
FA28850-7	**DUP-1**					
Methyl Tert Butyl Ether		0.21 J	0.50	0.16	ug/l	SM 6200B
1,2-Dichloroethane		1.1	0.50	0.16	ug/l	SM 6200B
FA28850-8	**TRIP BLANK**					
Toluene		0.58	0.50	0.17	ug/l	SM 6200B

Southeast ACCUTEST LABORATORIES

4

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	MW-1		
Lab Sample ID:	FA28850-1	**Date Sampled:**	10/27/15
Matrix:	AQ - Ground Water	**Date Received:**	10/28/15
Method:	SM 6200B	**Percent Solids:**	n/a
Project:	URSNCM: S/S 24208, 1121 Mebane-Oaks Rd, Mebane, NC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	A0197539.D	1	10/30/15	TD	n/a	n/a	VA1814
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	0.33	0.50	0.17	ug/l	J
108-88-3	Toluene	ND	0.50	0.17	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.15	ug/l	
1330-20-7	Xylene (total)	ND	1.5	0.43	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	0.50	0.16	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.16	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		70-130%
17060-07-0	1,2-Dichloroethane-D4	102%		70-130%
2037-26-5	Toluene-D8	99%		70-130%
460-00-4	4-Bromofluorobenzene	102%		70-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-2		
Lab Sample ID:	FA28850-2	**Date Sampled:**	10/27/15
Matrix:	AQ - Ground Water	**Date Received:**	10/28/15
Method:	SM 6200B	**Percent Solids:**	n/a
Project:	URSNCM: S/S 24208, 1121 Mebane-Oaks Rd, Mebane, NC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	A0197540.D	1	10/30/15	TD	n/a	n/a	VA1814
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	5.4	0.50	0.17	ug/l	
108-88-3	Toluene	0.46	0.50	0.17	ug/l	J
100-41-4	Ethylbenzene	ND	0.50	0.15	ug/l	
1330-20-7	Xylene (total)	ND	1.5	0.43	ug/l	
1634-04-4	Methyl Tert Butyl Ether	1.4	0.50	0.16	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.16	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		70-130%
17060-07-0	1,2-Dichloroethane-D4	102%		70-130%
2037-26-5	Toluene-D8	101%		70-130%
460-00-4	4-Bromofluorobenzene	102%		70-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-4		
Lab Sample ID:	FA28850-3	**Date Sampled:**	10/27/15
Matrix:	AQ - Ground Water	**Date Received:**	10/28/15
Method:	SM 6200B	**Percent Solids:**	n/a
Project:	URSNCM: S/S 24208, 1121 Mebane-Oaks Rd, Mebane, NC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	A0197541.D	1	10/30/15	TD	n/a	n/a	VA1814
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.50	0.17	ug/l	
108-88-3	Toluene	ND	0.50	0.17	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.15	ug/l	
1330-20-7	Xylene (total)	ND	1.5	0.43	ug/l	
1634-04-4	Methyl Tert Butyl Ether	1.9	0.50	0.16	ug/l	
107-06-2	1,2-Dichloroethane	0.20	0.50	0.16	ug/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		70-130%
17060-07-0	1,2-Dichloroethane-D4	103%		70-130%
2037-26-5	Toluene-D8	100%		70-130%
460-00-4	4-Bromofluorobenzene	101%		70-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-5		
Lab Sample ID:	FA28850-4	**Date Sampled:**	10/27/15
Matrix:	AQ - Ground Water	**Date Received:**	10/28/15
Method:	SM 6200B	**Percent Solids:**	n/a
Project:	URSNCM: S/S 24208, 1121 Mebane-Oaks Rd, Mebane, NC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	A0197542.D	1	10/30/15	TD	n/a	n/a	VA1814
Run #2	E042209.D	2	11/03/15	TD	n/a	n/a	VE1399

	Purge Volume
Run #1	10.0 ml
Run #2	10.0 ml

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	74.6 [a]	1.0	0.34	ug/l	
108-88-3	Toluene	0.76	0.50	0.17	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.15	ug/l	
1330-20-7	Xylene (total)	5.9	1.5	0.43	ug/l	
1634-04-4	Methyl Tert Butyl Ether	15.1	0.50	0.16	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.16	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%	93%	70-130%
17060-07-0	1,2-Dichloroethane-D4	102%	97%	70-130%
2037-26-5	Toluene-D8	102%	103%	70-130%
460-00-4	4-Bromofluorobenzene	103%	109%	70-130%

(a) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-7		
Lab Sample ID:	FA28850-5	**Date Sampled:**	10/27/15
Matrix:	AQ - Ground Water	**Date Received:**	10/28/15
Method:	SM 6200B	**Percent Solids:**	n/a
Project:	URSNCM: S/S 24208, 1121 Mebane-Oaks Rd, Mebane, NC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	A0197543.D	1	10/30/15	TD	n/a	n/a	VA1814
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.50	0.17	ug/l	
108-88-3	Toluene	ND	0.50	0.17	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.15	ug/l	
1330-20-7	Xylene (total)	ND	1.5	0.43	ug/l	
1634-04-4	Methyl Tert Butyl Ether	3.5	0.50	0.16	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.16	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		70-130%
17060-07-0	1,2-Dichloroethane-D4	104%		70-130%
2037-26-5	Toluene-D8	100%		70-130%
460-00-4	4-Bromofluorobenzene	101%		70-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-12		
Lab Sample ID:	FA28850-6	**Date Sampled:**	10/27/15
Matrix:	AQ - Ground Water	**Date Received:**	10/28/15
Method:	SM 6200B	**Percent Solids:**	n/a
Project:	URSNCM: S/S 24208, 1121 Mebane-Oaks Rd, Mebane, NC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	A0197544.D	1	10/30/15	TD	n/a	n/a	VA1814
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.50	0.17	ug/l	
108-88-3	Toluene	ND	0.50	0.17	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.15	ug/l	
1330-20-7	Xylene (total)	ND	1.5	0.43	ug/l	
1634-04-4	Methyl Tert Butyl Ether	0.23	0.50	0.16	ug/l	J
107-06-2	1,2-Dichloroethane	1.1	0.50	0.16	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		70-130%
17060-07-0	1,2-Dichloroethane-D4	106%		70-130%
2037-26-5	Toluene-D8	101%		70-130%
460-00-4	4-Bromofluorobenzene	102%		70-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DUP-1		
Lab Sample ID:	FA28850-7	**Date Sampled:**	10/27/15
Matrix:	AQ - Ground Water	**Date Received:**	10/28/15
Method:	SM 6200B	**Percent Solids:**	n/a
Project:	URSNCM: S/S 24208, 1121 Mebane-Oaks Rd, Mebane, NC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	A0197545.D	1	10/30/15	TD	n/a	n/a	VA1814
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.50	0.17	ug/l	
108-88-3	Toluene	ND	0.50	0.17	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.15	ug/l	
1330-20-7	Xylene (total)	ND	1.5	0.43	ug/l	
1634-04-4	Methyl Tert Butyl Ether	0.21	0.50	0.16	ug/l	J
107-06-2	1,2-Dichloroethane	1.1	0.50	0.16	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	104%		70-130%
17060-07-0	1,2-Dichloroethane-D4	107%		70-130%
2037-26-5	Toluene-D8	100%		70-130%
460-00-4	4-Bromofluorobenzene	103%		70-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TRIP BLANK		
Lab Sample ID:	FA28850-8	**Date Sampled:**	10/27/15
Matrix:	AQ - Trip Blank Water	**Date Received:**	10/28/15
Method:	SM 6200B	**Percent Solids:**	n/a
Project:	URSNCM: S/S 24208, 1121 Mebane-Oaks Rd, Mebane, NC		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	A0197546.D	1	10/30/15	TD	n/a	n/a	VA1814
Run #2							

	Purge Volume
Run #1	10.0 ml
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.50	0.17	ug/l	
108-88-3	Toluene	0.58	0.50	0.17	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.15	ug/l	
1330-20-7	Xylene (total)	ND	1.5	0.43	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	0.50	0.16	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.16	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	104%		70-130%
17060-07-0	1,2-Dichloroethane-D4	107%		70-130%
2037-26-5	Toluene-D8	102%		70-130%
460-00-4	4-Bromofluorobenzene	102%		70-130%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Southeast ACCUTEST LABORATORIES

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

bp rm

Laboratory Management Program LaMP Chain of Custody Record FA28850 Page 1 of 1

BP Site Node Path: 24208 | Req Due Date (mm/dd/yy): 10-business days from receipt | Rush TAT: Yes ___ No X

BP Facility No: | Lab Work Order Number:

Lab Name: Accutest-Southeast	Facility Address: 1121 Mebane Oaks Road	Consultant/Contractor: URS Corporation - North Carolina
Lab Address: 4405 Vineland Road, Suite C-5, Orlando, FL 32811	City, State, ZIP Code: Mebane, NC	Consultant/Contractor Project No: 24208 - 60428026.104080
Lab PM: Heather Wandrey	Lead Regulatory Agency: NCDENR DWM - UST Section	Address: 1600 Perimeter Park Road, Suite 400, Morrisville, NC 27560
Lab Phone: 407-425-6700	California Global ID No.:	Consultant/Contractor PM: Jason Zinna
Lab Shipping Accnt: Accutest: 1823-2015-3	Enfos Proposal No: 006FN-0011	Phone: 919-461-1285 Email: NCChemists@urs.com
Lab Bottle Order No: Kit # 85	Accounting Mode: Provision X OOC-BU ___ OOC-RM ___	Email EDD To: NCChemists@urs.com and to lab.enfosdoc@bp.com
Other Info:	Stage: 40 Activity: 80 - Operate / Project Spend	Invoice To: BP ___ Contractor X
BP Project Mar Greg Frisch		
BP PM Phone: 216 416-1232		
BP PM Email: Greg.Frisch@bp.com		

Lab No.	Sample Description	Date 2015	Time	Soil / Solid	Water / Liquid	Air / Vapor	Is this location a well?	Total Number of Containers	Unpreserved	H_2SO_4	HNO_3	HCl	Methanol	6200B, BTEX, MTBE, and 1,2-DCA	Report Type & QC Level / Comments
1	MW-1	10-27	1050		X			3				X		X	
2	MW-2		1110		X			3				X		X	
3	MW-4		1130		X			3				X		X	
4	MW-5		1150		X			3				X		X	
5	MW-7		1215		X			3				X		X	
6	MW-12		1020		X			3				X		X	
7	DUP-1	↓	1030		X			3				X		X	
8	Trip Blank	Lab Supply			X			3				X		X	

Report Type & QC Level: Standard X; Full Data Package ___

Comments: Note: If sample not collected, indicate "No Sample" in comments and single-strike out and initial any preprinted sample description.

Sampler's Name: Jerry Maciejewski	Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
Sampler's Company: URS Corporation - North Carolina	[signature] / AECOM	10-27	1530	[signature] / Fed Ex	10-27	1530
Shipment Method: FedEX Ship Date:	FED EX	10-28-15	10:00	[signature]	10-28-15	10:00
Shipment Tracking No: 8079 4184 7870						

Special Instructions: Refer to attached Sample Kit Request for analytical scope of work. Contact Martha Meyers-Lee (919-461-1519) regarding all sample receipt and analytical non-conformance issues.

THIS LINE - LAB USE ONLY: Custody Seals In Place: Yes / No | Temp Blank: Yes / No | Cooler Temp on Receipt: 3.2 °F/C | Trip Blank: Yes / No | MS/MSD Sample Submitted: Yes / No

Enfos Work Release WR288956 | BP Remediation Management COC - Effective Dates: August 23, 2011- June 30, 2012 | BP LaMP COC Rev. 7, Aug 23, 2011

5.1 5

FA28850: Chain of Custody
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ACCUTEST LABORATORIES SAMPLE RECEIPT CONFIRMATION

ACCUTEST'S JOB NUMBER: FA28850 CLIENT: URS PROJECT: 24208-60428026.104080

DATE/TIME RECEIVED: 10-28-15 10:00 {MM/DD/YY 24:00} NUMBER OF COOLERS RECEIVED: 1

METHOD OF DELIVERY: (FEDEX) UPS ACCUTEST COURIER DELIVERY OTHER:

AIRBILL NUMBERS: 8079 4184 7870

COOLER INFORMATION

- [ ] CUSTODY SEAL NOT PRESENT OR NOT INTACT
- [ ] CHAIN OF CUSTODY NOT RECEIVED (COC)
- [ ] ANALYSIS REQUESTED IS UNCLEAR OR MISSING
- [ ] SAMPLE DATES OR TIMES UNCLEAR OR MISSING
- [ ] TEMPERATURE CRITERIA NOT MET

TRIP BLANK INFORMATION

- [x] TRIP BLANK PROVIDED
- [ ] TRIP BLANK NOT PROVIDED
- [ ] TRIP BLANK NOT ON COC
- [x] TRIP BLANK INTACT
- [ ] TRIP BLANK NOT INTACT
- [x] RECEIVED WATER TRIP BLANK
- [ ] RECEIVED SOIL TRIP BLANK

TEMPERATURE INFORMATION

- [ ] IR THERM ID 1 CORR. FACTOR -0.4
- [ ] OBSERVED TEMPS: 3.4
- [ ] CORRECTED TEMPS: 3.2

SAMPLE INFORMATION

- [ ] INCORRECT NUMBER OF CONTAINERS USED
- [ ] SAMPLE RECEIVED IMPROPERLY PRESERVED
- [ ] INSUFFICIENT VOLUME FOR ANALYSIS
- [ ] DATES/TIMES ON COC DO NOT MATCH SAMPLE LABEL
- [ ] ID'S ON COC DO NOT MATCH LABEL
- [ ] VOC VIALS HAVE HEADSPACE (MACRO BUBBLES)
- [ ] BOTTLES RECEIVED BUT ANALYSIS NOT REQUESTED
- [ ] NO BOTTLES RECEIVED FOR ANALYSIS REQUESTED
- [ ] UNCLEAR FILTERING OR COMPOSITING INSTRUCTIONS
- [ ] SAMPLE CONTAINER(S) RECEIVED BROKEN
- [ ] 5035 FIELD KITS NOT RECEIVED WITHIN 48 HOURS
- [ ] BULK VOA SOIL JARS NOT RECEIVED WITHIN 48 HOURS
- [ ] % SOLIDS JAR NOT RECEIVED
- [ ] RESIDUAL CHLORINE PRESENT LOT#

{APPLICABLE TO EPA 600 SERIES OR NORTH CAROLINA ORGANICS}

MISC. INFORMATION

NUMBER OF ENCORES ? 25-GRAM_____ 5-GRAM_____

NUMBER OF 5035 FIELD KITS ? _____

NUMBER OF LAB FILTERED METALS ? _____

pH PAPER LOT#s WIDHC131225 NARROW RANGE AO36133 OTHER (specify) 405-230010

SUMMARY OF COMMENTS:

TECHNICIAN SIGNATURE/DATE Michelle 10-29-15 REVIEWER SIGNATURE/DATE 10/29/15

NF 10/14 YELLOWSHEET110514.xls

5.1.5

FA28850: Chain of Custody
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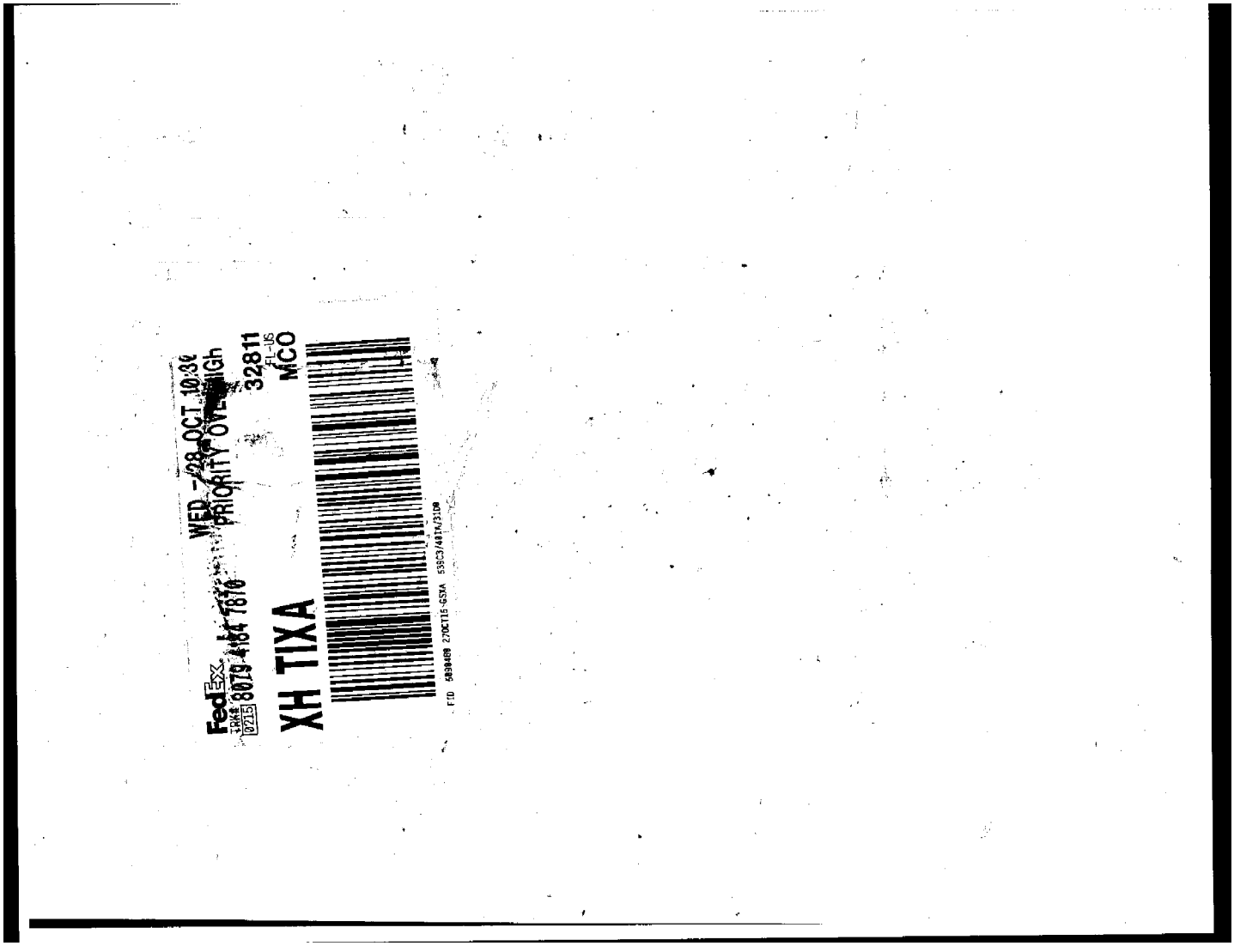

FA28850: Chain of Custody
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Southeast ACCUTEST LABORATORIES

GC/MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: FA28850
Account: BPAMSS Atlantic Richfield Company
Project: URSNCM: S/S 24208, 1121 Mebane-Oaks Rd, Mebane, NC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VA1814-MB	A0197533.D	1	10/30/15	TD	n/a	n/a	VA1814

The QC reported here applies to the following samples: **Method:** SM 6200B

FA28850-1, FA28850-2, FA28850-3, FA28850-4, FA28850-5, FA28850-6, FA28850-7, FA28850-8

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.50	0.17	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.16	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.15	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	0.50	0.16	ug/l	
108-88-3	Toluene	ND	0.50	0.17	ug/l	
1330-20-7	Xylene (total)	ND	1.5	0.43	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	99%	70-130%
17060-07-0	1,2-Dichloroethane-D4	98%	70-130%
2037-26-5	Toluene-D8	101%	70-130%
460-00-4	4-Bromofluorobenzene	100%	70-130%

Method Blank Summary

Job Number: FA28850
Account: BPAMSS Atlantic Richfield Company
Project: URSNCM: S/S 24208, 1121 Mebane-Oaks Rd, Mebane, NC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VE1399-MB	E042208.D	1	11/03/15	TD	n/a	n/a	VE1399

The QC reported here applies to the following samples: **Method:** SM 6200B

FA28850-4

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.50	0.17	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	95%	70-130%
17060-07-0	1,2-Dichloroethane-D4	98%	70-130%
2037-26-5	Toluene-D8	102%	70-130%
460-00-4	4-Bromofluorobenzene	109%	70-130%

Blank Spike Summary

Job Number: FA28850
Account: BPAMSS Atlantic Richfield Company
Project: URSNCM: S/S 24208, 1121 Mebane-Oaks Rd, Mebane, NC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VA1814-BS	A0197538.D	1	10/30/15	TD	n/a	n/a	VA1814

The QC reported here applies to the following samples: **Method:** SM 6200B

FA28850-1, FA28850-2, FA28850-3, FA28850-4, FA28850-5, FA28850-6, FA28850-7, FA28850-8

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	10	10.3	103	70-130
107-06-2	1,2-Dichloroethane	10	10.0	100	70-130
100-41-4	Ethylbenzene	10	10.4	104	70-130
1634-04-4	Methyl Tert Butyl Ether	10	10.4	104	70-130
108-88-3	Toluene	10	10.1	101	70-130
1330-20-7	Xylene (total)	30	32.5	108	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	103%	70-130%
17060-07-0	1,2-Dichloroethane-D4	103%	70-130%
2037-26-5	Toluene-D8	99%	70-130%
460-00-4	4-Bromofluorobenzene	100%	70-130%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA28850
Account: BPAMSS Atlantic Richfield Company
Project: URSNCM: S/S 24208, 1121 Mebane-Oaks Rd, Mebane, NC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VE1399-BS	E042207.D	1	11/03/15	TD	n/a	n/a	VE1399

The QC reported here applies to the following samples: **Method:** SM 6200B

FA28850-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	10	11.2	112	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	95%	70-130%
17060-07-0	1,2-Dichloroethane-D4	99%	70-130%
2037-26-5	Toluene-D8	99%	70-130%
460-00-4	4-Bromofluorobenzene	104%	70-130%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA28850
Account: BPAMSS Atlantic Richfield Company
Project: URSNCM: S/S 24208, 1121 Mebane-Oaks Rd, Mebane, NC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
FA28853-1MS	A0197551.D	1	10/30/15	TD	n/a	n/a	VA1814
FA28853-1MSD	A0197552.D	1	10/31/15	TD	n/a	n/a	VA1814
FA28853-1	A0197534.D	1	10/30/15	TD	n/a	n/a	VA1814

The QC reported here applies to the following samples: **Method:** SM 6200B

FA28850-1, FA28850-2, FA28850-3, FA28850-4, FA28850-5, FA28850-6, FA28850-7, FA28850-8

CAS No.	Compound	FA28853-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND		10	10	100	10	10.3	103	3	70-130/20
107-06-2	1,2-Dichloroethane	0.16	J	10	10.5	103	10	10.8	106	3	70-130/20
100-41-4	Ethylbenzene	ND		10	10.2	102	10	10.4	104	2	70-130/20
1634-04-4	Methyl Tert Butyl Ether	ND		10	10.4	104	10	11.0	110	6	70-130/20
108-88-3	Toluene	ND		10	9.8	98	10	10.1	101	3	70-130/20
1330-20-7	Xylene (total)	ND		30	31.6	105	30	32.6	109	3	70-130/20

CAS No.	Surrogate Recoveries	MS	MSD	FA28853-1	Limits
1868-53-7	Dibromofluoromethane	107%	106%	102%	70-130%
17060-07-0	1,2-Dichloroethane-D4	112%	107%	100%	70-130%
2037-26-5	Toluene-D8	97%	97%	101%	70-130%
460-00-4	4-Bromofluorobenzene	100%	99%	101%	70-130%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA28850
Account: BPAMSS Atlantic Richfield Company
Project: URSNCM: S/S 24208, 1121 Mebane-Oaks Rd, Mebane, NC

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
FA28944-3MS	E042231.D	25	11/03/15	TD	n/a	n/a	VE1399
FA28944-3MSD	E042232.D	25	11/03/15	TD	n/a	n/a	VE1399
FA28944-3 [a]	E042213.D	1	11/03/15	TD	n/a	n/a	VE1399
FA28944-3 [a]	E042230.D	25	11/03/15	TD	n/a	n/a	VE1399

The QC reported here applies to the following samples: **Method:** SM 6200B

FA28850-4

CAS No.	Compound	FA28944-3 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	110 [b]		250	382	109	250	384	110	1	70-130/20

CAS No.	Surrogate Recoveries	MS	MSD	FA28944-3	FA28944-3	Limits
1868-53-7	Dibromofluoromethane	92%	92%	75%	92%	70-130%
17060-07-0	1,2-Dichloroethane-D4	98%	99%	112%	98%	70-130%
2037-26-5	Toluene-D8	98%	98%	100%	99%	70-130%
460-00-4	4-Bromofluorobenzene	105%	105%	110%	108%	70-130%

(a) Sample was not preserved to a pH < 2.
(b) Result is from Run #2.

* = Outside of Control Limits.

APPENDIX D
HISTORICAL GROUNDWATER ELEVATION DATA

Appendix D
Historical Groundwater Elevation Data
Former BP Service Station No. 24208
1121 Mebane Oaks Road
Mebane, North Carolina

Well	Date	TOC Elevation[1]	Depth to LNAPL (ft. below TOC)	Depth to Groundwater (ft. below TOC)	Corrected Groundwater Elevation[1,2]
MW-1	8/3/94	100.00	ND	30.09	69.91
	4/5/95	100.00	ND	30.51	69.49
	9/27/96	100.00	ND	28.32	71.68
	3/20/97	496.49	ND	25.42	471.07
	6/25/97	496.49	ND	25.72	470.77
	9/4/97	496.49	ND	28.44	468.05
	12/4/97	496.49	ND	29.60	466.89
	12/29/97	496.49	ND	29.63	466.86
	3/23/98	496.49	ND	25.25	471.24
	6/8/98	496.49	24.55	25.33	471.78
	9/15/98	496.49	28.30	28.95	468.06
	12/14/98	496.49	30.64	31.23	465.73
	2/22/99	496.49	28.82	28.86	467.66
	6/1/99	496.49	28.01	28.03	468.48
	9/13/99	496.49	30.59	30.60	465.90
	12/20/99	496.49	28.16	28.17	468.33
	3/8/00	496.49	26.58	26.59	469.91
	6/5/00	496.49	25.61	25.62	470.88
	9/21/00	496.49	ND	27.77	468.72
	12/27/00	496.49	ND	29.30	467.19
	3/5/01	496.49	ND	27.66	468.83
	6/11/01	496.49	ND	29.71	466.78
	9/17/01	496.49	ND	31.60	464.89
	12/5/01	496.49	ND	29.66	466.83
	3/12/02	496.49	ND	31.95	464.54
	7/18/02	496.49	ND	31.84	464.65
	9/6/02	496.49	ND	32.32	464.17
	9/16/02	496.49	ND	29.83	466.66
	10/30/02	496.49	ND	30.51	465.98
	11/13/02	496.49	ND	29.23	467.26
	12/2/02	496.49	ND	29.23	467.26
	12/12/02	496.49	ND	28.74	467.75
	3/6/03	496.49	ND	24.71	471.78
	5/6/03	496.49	ND	21.76	474.73
	5/20/03	496.49	ND	21.28	475.21
	9/19/03	496.49	ND	19.78	476.71

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1121 Mebane Oaks Road
Mebane, North Carolina

Well	Date	TOC Elevation[1]	Depth to LNAPL (ft. below TOC)	Depth to Groundwater (ft. below TOC)	Corrected Groundwater Elevation[1,2]
MW-1	10/20/03	496.49	ND	22.23	474.26
	12/3/03	496.49	ND	22.27	474.22
	3/9/04	496.49	ND	21.95	474.54
	5/25/04	496.49	ND	22.72	473.77
	6/10/04	496.49	ND	24.44	472.05
	7/6/04	496.49	ND	24.75	471.74
	7/27/04	496.49	ND	24.38	472.11
	8/17/04	496.49	ND	24.64	471.85
	9/1/04	496.49	ND	21.10	475.39
	10/26/04	496.49	ND	24.14	472.35
	12/9/04	496.49	ND	24.30	472.19
	1/5/05	496.49	ND	24.00	472.49
	3/3/05	496.49	ND	22.24	474.25
	3/28/05	496.49	ND	22.53	473.96
	11/7/06	496.49	ND	27.67	468.82
	6/14/07	496.49	ND	26.25	470.24
	12/5/07	496.49	ND	DRY	DRY
	6/16/08	496.49	ND	29.10	467.39
	11/20/08	496.49	ND	30.25	466.24
	5/20/09	496.49	ND	27.21	469.28
	11/10/09	496.49	ND	30.70	465.79
	5/26/10	496.49	ND	25.72	470.77
	11/11/10	496.49	ND	28.90	467.59
	3/22/11	496.49	ND	28.76	467.73
	11/23/11	496.49	ND	30.90	465.59
	5/22/12	496.49	ND	28.71	467.78
	11/14/12	496.49	ND	29.06	467.43
	10/16/13	496.49	ND	26.39	470.10
	10/2/14	496.49	ND	28.58	467.91
	10/27/15	496.49	ND	29.72	466.77
MW-2	8/3/94	101.02	ND	30.65	70.37
	4/5/95	101.02	ND	30.85	70.17
	9/27/96	101.02	ND	28.70	72.32
	3/20/97	497.52	ND	25.56	471.96
	6/25/97	497.52	ND	25.99	471.53
	9/4/97	497.52	ND	28.97	468.55
	12/4/97	497.52	ND	30.25	467.27
	12/29/97	497.52	ND	30.22	467.30
	3/23/98	497.52	ND	25.44	472.08
	6/8/98	497.52	ND	25.01	472.51
	9/15/98	497.52	ND	29.23	468.29
	12/14/98	497.52	ND	31.53	465.99
	2/22/09	497.52	ND	28.35	469.17
	6/1/99	497.52	ND	28.51	469.01
	9/13/99	497.52	ND	31.49	466.03
	12/20/99	497.52	ND	29.94	467.58
	3/8/00	497.52	ND	27.13	470.39
	6/5/00	497.52	ND	26.17	471.35
	9/21/00	497.52	ND	28.63	468.89
	12/27/00	497.52	ND	30.64	466.88
	3/5/01	497.52	ND	29.99	467.53

Appendix D
Historical Groundwater Elevation Data
Former BP Service Station No. 24208
1121 Mebane Oaks Road
Mebane, North Carolina

Well	Date	TOC Elevation[1]	Depth to LNAPL (ft. below TOC)	Depth to Groundwater (ft. below TOC)	Corrected Groundwater Elevation[1,2]
MW-2	6/11/01	497.52	ND	28.34	469.18
	9/17/01	497.52	ND	30.60	466.92
	12/5/01	497.52	ND	32.45	465.07
	3/12/02	497.52	ND	30.85	466.67
	7/18/02	497.52	ND	32.82	464.70
	9/6/02	497.52	ND	32.09	465.43
	9/16/02	497.52	ND	33.18	464.34
	10/30/02	497.52	ND	31.80	465.72
	11/13/02	497.52	ND	31.02	466.50
	12/2/02	497.52	ND	30.01	467.51
	12/12/02	497.52	ND	29.52	468.00
	3/6/03	497.52	ND	26.17	471.35
	5/6/03	497.52	ND	24.20	473.32
	5/20/03	497.52	ND	24.09	473.43
	9/19/03	497.52	ND	22.60	474.92
	10/20/03	497.52	ND	22.85	474.67
	12/3/03	497.52	ND	23.83	473.69
	3/9/04	497.52	ND	21.83	475.69
	5/4/04	497.52	ND	23.45	474.07
	5/25/04	497.52	ND	23.98	473.54
	6/10/04	497.52	ND	24.52	473.00
	7/6/04	497.52	ND	25.16	472.36
	7/27/04	497.52	ND	25.69	471.83
	8/17/04	497.52	ND	25.75	471.77
	9/1/04	497.52	ND	25.54	471.98
	10/26/04	497.52	ND	24.92	472.60
	12/9/04	497.52	ND	25.03	472.49
	1/5/05	497.52	ND	24.85	472.67
	3/3/05	497.52	ND	24.39	473.13
	3/28/05	497.52	ND	23.38	474.14
	11/7/06	497.52	ND	28.74	468.78
	6/14/07	497.52	ND	27.30	470.22
	12/5/07	497.52	ND	31.44	466.08
	6/18/08	497.52	ND	30.02	467.50
	11/20/08	497.52	ND	31.48	466.04
	5/20/09	497.52	ND	27.95	469.57
	11/10/09	497.52	ND	31.79	465.73
	5/26/10	497.52	ND	26.49	471.03
	11/11/10	497.52	ND	30.15	467.37
	3/22/11	497.52	ND	29.56	467.96
	11/23/11	497.52	ND	32.02	465.50
	5/22/12	497.52	ND	29.57	467.95
	11/14/12	497.52	ND	30.09	467.43
	10/16/13	497.52	ND	27.51	470.01
	10/2/14	497.52	ND	29.78	467.74
	10/27/15	497.52	ND	30.91	466.61

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Well	Date	TOC Elevation[1]	Depth to LNAPL (ft. below TOC)	Depth to Groundwater (ft. below TOC)	Corrected Groundwater Elevation[1,2]
MW-3	8/3/94	101.05	ND	30.02	71.03
	4/5/95	101.05	ND	31.27	69.78
	9/27/96	101.05	ND	28.75	72.30
	3/20/97	497.62	ND	26.21	471.41
	6/25/97	497.62	ND	26.21	471.41
	9/4/97	497.62	ND	29.08	468.54
	12/4/97	497.62	ND	30.30	467.32
	12/29/97	497.62	ND	30.35	467.27
	3/23/98	497.62	ND	25.71	471.91
	6/8/98	497.62	ND	25.34	472.28
	9/15/98	497.62	ND	29.20	468.42
	12/14/98	497.62	ND	31.47	466.15
	2/22/99	497.62	ND	28.90	468.72
	6/1/99	497.62	ND	28.61	469.01
	9/13/99	497.62	ND	31.36	466.26
	12/20/99	497.62	ND	28.86	468.76
	3/8/00	497.62	ND	27.23	470.39
	6/5/00	497.62	ND	26.23	471.39
	9/21/00	497.62	ND	28.49	469.13
	12/27/00	497.62	ND	30.71	466.91
	3/5/01	497.62	ND	30.22	467.40
	6/11/01	497.62	ND	28.51	469.11
	9/17/01	497.62	ND	30.58	467.04
	12/5/01	497.62	ND	32.39	465.23
	3/12/02	497.62	ND	30.04	467.58
	7/18/02	497.62	ND	32.16	465.46
	9/6/02	497.62	ND	31.41	466.21
	9/16/02	497.62	ND	31.26	466.36
	10/30/02	497.62	ND	28.35	469.27
	11/13/02	497.62	ND	28.09	469.53
	12/2/02	497.62	ND	26.22	471.40
	12/12/02	497.62	ND	28.30	469.32
	3/6/03	497.62	ND	24.74	472.88
	5/6/03	497.62	ND	22.89	474.73
	5/20/03	497.62	ND	22.46	475.16
	9/19/03	497.62	ND	21.66	475.96
	10/20/03	497.62	ND	22.27	475.35
	12/3/03	497.62	ND	21.88	475.74
	3/9/04	497.62	ND	21.83	475.79
	5/4/04	497.62	ND	22.73	474.89

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Well	Date	TOC Elevation[1]	Depth to LNAPL (ft. below TOC)	Depth to Groundwater (ft. below TOC)	Corrected Groundwater Elevation[1,2]
MW-3	5/25/04	497.62	ND	22.49	475.13
	6/10/04	497.62	ND	23.00	474.62
	7/6/04	497.62	ND	21.95	475.67
	7/27/04	497.62	ND	24.17	473.45
	8/17/04	497.62	ND	22.90	474.72
	9/1/04	497.62	ND	24.14	473.48
	10/26/04	497.62	ND	24.30	473.32
	12/9/04	497.62	ND	24.47	473.15
	1/5/05	497.62	ND	23.48	474.14
	3/3/05	497.62	ND	24.09	473.53
	3/28/05	497.62	ND	22.66	474.96
	11/7/06	497.62	ND	28.01	469.61
	6/14/07	497.62	ND	25.65	471.97
	12/5/07	497.62	ND	DRY	DRY
	6/18/08	497.62	ND	23.85	473.77
	11/20/08	497.62	ND	24.61	473.01
	5/20/09	497.62	ND	22.56	475.06
	11/10/09	497.62	ND	DRY	DRY
	5/26/10	497.62	ND	21.47	476.15
	11/11/10	497.62	ND	22.68	474.94
	3/22/11	497.62	ND	27.98	469.64
	11/23/11	497.62	ND	30.20	467.42
	5/22/12	497.62	ND	28.07	469.55
	11/14/12	497.62	ND	28.98	468.64
	10/16/13	497.62	ND	26.58	471.04
	10/2/14	497.62	ND	28.90	468.72
	10/27/15	497.62	ND	29.31	468.31
MW-4	8/3/94	100.21	ND	30.20	70.01
	4/5/95	100.21	ND	30.68	69.53
	9/27/96	100.21	ND	28.42	71.79
	3/20/97	496.70	ND	25.97	470.73
	6/25/97	496.70	ND	25.68	471.02
	9/4/97	496.70	ND	28.56	468.14
	12/4/97	496.70	ND	29.72	466.98
	12/29/97	496.70	ND	29.77	466.93
	3/23/98	496.70	ND	25.81	470.89
	6/8/98	496.70	ND	24.84	471.86
	9/15/98	496.70	ND	28.58	468.12
	12/14/98	496.70	ND	30.80	465.90
	2/22/99	496.70	ND	28.53	468.17
	6/1/99	496.70	ND	28.12	468.58
	9/13/99	496.70	ND	30.73	465.97
	12/20/99	496.70	ND	28.41	468.29
	3/8/00	496.70	ND	26.79	469.91
	6/5/00	496.70	ND	25.74	470.96
	9/21/00	496.70	ND	27.70	469.00
	12/27/00	496.70	ND	29.94	466.76
	3/5/01	496.70	ND	29.47	467.23
	6/11/01	496.70	ND	27.83	468.87

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Well	Date	TOC Elevation[1]	Depth to LNAPL (ft. below TOC)	Depth to Groundwater (ft. below TOC)	Corrected Groundwater Elevation[1,2]
MW-4	9/17/01	496.70	ND	29.83	466.87
	12/5/01	496.70	ND	31.68	465.02
	3/12/02	496.70	ND	30.20	466.50
	7/18/02	496.70	ND	32.91	463.79
	9/6/02	496.70	ND	32.13	464.57
	9/16/02	496.70	ND	33.42	463.28
	10/30/02	496.70	ND	31.23	465.47
	11/13/02	496.70	ND	30.64	466.06
	12/2/02	496.70	ND	29.74	466.96
	12/12/02	496.70	ND	28.83	467.87
	3/6/03	496.70	ND	23.86	472.84
	5/6/03	496.70	ND	20.38	476.32
	5/20/03	496.70	ND	21.61	475.09
	9/19/03	496.70	ND	18.39	478.31
	10/20/03	496.70	ND	22.16	474.54
	12/3/03	496.70	ND	22.78	473.92
	3/9/04	496.70	ND	23.16	473.54
	5/4/04	496.70	ND	18.72	477.98
	5/25/04	496.70	ND	23.21	473.49
	6/10/04	496.70	ND	21.48	475.22
	7/6/04	496.70	ND	24.62	472.08
	8/17/04	496.70	ND	24.21	472.49
	10/26/04	496.70	ND	24.06	472.64
	12/9/04	496.70	ND	24.27	472.43
	1/5/05	496.70	ND	23.96	472.74
	3/3/05	496.70	ND	20.18	476.52
	3/28/05	496.70	ND	20.38	476.32
	11/7/06	496.70	ND	27.65	469.05
	6/14/07	496.70	ND	26.20	470.50
	12/5/07	496.70	ND	31.42	465.28
	6/16/08	496.70	ND	29.18	467.52
	11/20/08	496.70	ND	30.53	466.17
	5/20/09	496.70	ND	27.40	469.30
	11/10/09	496.70	ND	30.08	466.62
	5/26/10	496.70	ND	25.75	470.95
	11/11/10	496.70	ND	28.08	468.62
	3/22/11	496.70	ND	28.81	467.89
	11/23/11	496.70	ND	30.91	465.79
	5/22/12	496.70	ND	28.69	468.01
	11/14/12	496.70	ND	29.11	467.59
	10/16/13	496.70	ND	26.10	470.60
	10/2/14	496.70	ND	28.64	468.06
	10/27/15	496.70	ND	29.80	466.90

Appendix D
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Well	Date	TOC Elevation[1]	Depth to LNAPL (ft. below TOC)	Depth to Groundwater (ft. below TOC)	Corrected Groundwater Elevation[1,2]
MW-5	8/3/94	100.80	ND	30.46	70.34
	4/5/95	100.80	ND	30.69	70.11
	9/27/96	100.80	ND	28.50	72.30
	3/20/97	497.29	ND	25.54	471.75
	6/25/97	497.29	ND	25.87	471.42
	9/4/97	497.29	ND	28.81	468.48
	12/4/97	497.29	ND	30.00	467.29
	12/29/97	497.29	ND	30.02	467.27
	3/23/98	497.29	ND	25.43	471.86
	6/8/98	497.29	ND	24.94	472.35
	9/15/98	497.29	ND	28.94	468.35
	12/14/98	497.29	ND	31.30	465.99
	2/22/99	497.29	ND	28.20	469.09
	6/1/99	497.29	ND	28.36	468.93
	9/13/99	497.29	ND	31.21	466.08
	12/20/99	497.29	ND	28.73	468.56
	3/8/00	497.29	ND	26.98	470.31
	6/5/00	497.29	ND	26.02	471.27
	9/21/00	497.29	ND	28.38	468.91
	12/27/00	497.29	ND	30.41	466.88
	3/5/01	497.29	ND	29.81	467.48
	6/11/01	497.29	ND	28.15	469.14
	9/17/01	497.29	ND	30.36	466.93
	12/5/01	497.29	ND	32.21	465.08
	3/12/02	497.29	ND	30.06	467.23
	7/18/02	497.29	ND	32.55	464.74
	9/6/02	497.29	ND	32.84	464.45
	9/16/02	497.29	ND	32.91	464.38
	10/30/02	497.29	ND	31.49	465.80
	11/13/02	497.29	ND	30.69	466.60
	12/2/02	497.29	ND	29.80	467.49
	12/12/02	497.29	ND	29.22	468.07
	3/6/03	497.29	ND	26.44	470.85
	5/6/03	497.29	ND	24.09	473.20
	5/20/03	497.29	ND	23.94	473.35
	9/19/03	497.29	ND	22.41	474.88
	10/20/03	497.29	ND	22.40	474.89
	12/3/03	497.29	ND	23.62	473.67
	3/9/04	497.29	ND	22.08	475.21
	5/4/04	497.29	ND	23.26	474.03
	5/25/04	497.29	ND	23.82	473.47
	6/10/04	497.29	ND	24.43	472.86
	7/6/04	497.29	ND	24.92	472.37
	7/27/04	497.29	ND	25.41	471.88
	8/17/04	497.29	ND	24.46	472.83

Appendix D
Historical Groundwater Elevation Data
Former BP Service Station No. 24208
1121 Mebane Oaks Road
Mebane, North Carolina

Well	Date	TOC Elevation[1]	Depth to LNAPL (ft. below TOC)	Depth to Groundwater (ft. below TOC)	Corrected Groundwater Elevation[1,2]
MW-5	9/1/04	497.29	ND	25.22	472.07
	10/26/04	497.29	ND	24.72	472.57
	12/9/04	497.29	ND	24.89	472.40
	1/5/05	497.29	ND	24.68	472.61
	3/3/05	497.29	ND	24.35	472.94
	3/28/05	497.29	ND	23.17	474.12
	11/7/06	497.29	ND	28.49	468.80
	6/14/07	497.29	ND	26.82	470.47
	12/5/07	497.29	ND	32.15	465.14
	6/16/08	497.29	ND	29.79	467.50
	11/20/08	497.29	ND	31.24	466.05
	5/20/09	497.29	ND	27.79	469.50
	11/10/09	497.29	ND	31.51	465.78
	5/26/10	497.29	ND	26.32	470.97
	11/11/10	497.29	ND	29.85	467.44
	3/22/11	497.29	ND	29.37	467.92
	11/23/11	497.29	ND	31.71	465.58
	5/22/12	497.29	ND	29.37	467.92
	11/14/12	497.29	ND	29.82	467.47
	10/16/13	497.29	ND	27.21	470.08
	10/2/14	497.29	ND	29.44	467.85
	10/27/15	497.29	ND	30.58	466.71
MW-6	4/5/95	100.19	ND	32.79	67.40
	9/27/96	100.19	ND	27.90	72.29
	3/20/97	496.78	ND	26.38	470.40
	6/25/97	496.78	ND	25.30	471.48
	9/4/97	496.78	ND	29.30	467.48
	12/4/97	496.78	ND	29.56	467.22
	12/29/97	496.78	ND	29.78	467.00
	3/23/98	496.78	ND	26.46	470.32
	6/8/98	496.78	ND	25.63	471.15
	9/15/98	496.78	ND	29.01	467.77
	12/14/98	496.78	ND	30.73	466.05
	2/22/99	496.78	ND	31.62	465.16
	6/1/99	496.78	ND	29.41	467.37
	9/13/99	496.78	ND	30.79	465.99
	12/20/99	496.78	ND	28.39	468.39
	3/8/00	496.78	ND	26.64	470.14
	6/5/00	496.78	ND	26.55	470.23
	9/21/00	496.78	ND	32.65	464.13
	12/27/00	496.78	ND	29.60	467.18
	3/5/01	496.78	ND	29.38	467.40
	6/11/01	496.78	ND	27.31	469.47
	9/17/01	496.78	ND	29.46	467.32
	12/5/01	496.78	ND	31.43	465.35
	3/12/02	496.78	ND	29.69	467.09

Appendix D
Historical Groundwater Elevation Data
Former BP Service Station No. 24208
1121 Mebane Oaks Road
Mebane, North Carolina

Well	Date	TOC Elevation[1]	Depth to LNAPL (ft. below TOC)	Depth to Groundwater (ft. below TOC)	Corrected Groundwater Elevation[1,2]
MW-6	7/18/02	496.78	ND	31.63	465.15
	9/6/02	496.78	ND	31.62	465.16
	9/16/02	496.78	ND	30.91	465.87
	10/30/02	496.78	ND	29.39	467.39
	11/13/02	496.78	ND	28.67	468.11
	12/2/02	496.78	ND	28.38	468.40
	12/12/02	496.78	ND	26.58	470.20
	3/6/03	496.78	ND	27.16	469.62
	5/6/03	496.78	ND	22.45	474.33
	5/20/03	496.78	ND	22.51	474.27
	9/19/03	496.78	ND	21.14	475.64
	10/20/03	496.78	ND	31.43	465.35
	12/3/03	496.78	ND	26.01	470.77
	3/9/04	496.78	ND	21.84	474.94
	5/4/04	496.78	ND	33.03	463.75
	5/25/04	496.78	ND	26.53	470.25
	6/10/04	496.78	ND	24.43	472.35
	7/6/04	496.78	ND	23.15	473.63
	7/27/04	496.78	ND	23.69	473.09
	8/17/04	496.78	ND	23.57	473.21
	9/1/04	496.78	ND	23.19	473.59
	10/26/04	496.78	ND	22.17	474.61
	12/9/04	496.78	ND	23.24	473.54
	1/5/05	496.78	ND	23.96	472.82
	3/3/05	496.78	ND	23.33	473.45
	3/28/05	496.78	ND	23.04	473.74
	11/7/06	496.78	ND	25.75	471.03
MW-6R	6/14/07	496.90	ND	25.33	471.57
	12/5/07	496.90	ND	28.55	468.35
	6/16/08	496.90	ND	27.11	469.79
	11/20/08	496.90	ND	27.53	469.37
	5/20/09	496.90	ND	24.91	471.99
	11/10/09	496.90	ND	27.78	469.12
	5/26/10	496.90	ND	24.16	472.74
	11/11/10	496.90	ND	26.22	470.68
	3/22/11	496.90	ND	27.96	468.94
	11/23/11	496.90	ND	29.63	467.27
	5/22/12	496.90	ND	27.85	469.05
	11/14/12	496.90	ND	28.38	468.52
	10/16/13	496.90	ND	25.79	471.11
	10/2/14	496.90	ND	28.03	468.87
	10/27/15	496.90	ND	28.30	468.60

Appendix D
Historical Groundwater Elevation Data
Former BP Service Station No. 24208
1121 Mebane Oaks Road
Mebane, North Carolina

Well	Date	TOC Elevation[1]	Depth to LNAPL (ft. below TOC)	Depth to Groundwater (ft. below TOC)	Corrected Groundwater Elevation[1,2]
MW-7	4/5/95	100.36	ND	30.62	69.74
	9/27/96	100.36	ND	28.99	71.37
	3/20/97	496.52	ND	25.54	470.98
	6/25/97	496.52	ND	26.08	470.44
	9/4/97	496.52	ND	28.15	468.37
	12/4/97	496.52	ND	29.85	466.67
	12/29/97	496.52	ND	30.02	466.50
	3/23/98	496.52	ND	25.26	471.26
	6/8/98	496.52	ND	25.10	471.42
	9/15/98	496.52	ND	28.16	468.36
	12/14/98	496.52	ND	31.08	465.44
	2/22/99	496.52	ND	28.02	468.50
	6/1/99	496.52	ND	28.26	468.26
	9/13/99	496.52	ND	30.66	465.86
	12/20/99	496.52	ND	28.12	468.40
	3/8/00	496.52	ND	26.72	469.80
	6/5/00	496.52	ND	25.86	470.66
	9/21/00	496.52	ND	28.91	467.61
	12/27/00	496.52	ND	30.02	466.50
	3/5/01	496.52	ND	29.45	467.07
	6/11/01	496.52	ND	27.92	468.60
	9/17/01	496.52	ND	29.19	467.33
	12/5/01	496.52	ND	31.85	464.67
	3/12/02	496.52	ND	30.68	465.84
	7/18/02	496.52	ND	31.78	464.74
	9/6/02	496.52	ND	32.08	464.44
	9/16/02	496.52	ND	31.83	464.69
	10/30/02	496.52	ND	30.91	465.61
	11/13/02	496.52	ND	30.12	466.40
	12/2/02	496.52	ND	29.31	467.21
	12/12/02	496.52	ND	28.67	467.85
	3/6/03	496.52	ND	26.42	470.10
	5/6/03	496.52	ND	23.91	472.61
	5/20/03	496.52	ND	24.02	472.50
	9/19/03	496.52	ND	22.24	474.28
	10/20/03	496.52	ND	22.30	474.22
	12/3/03	496.52	ND	23.48	473.04
	3/9/04	496.52	ND	22.81	473.71
	5/4/04	496.52	ND	23.14	473.38
	5/25/04	496.52	ND	23.82	472.70
	6/10/04	496.52	ND	24.15	472.37
	7/6/04	496.52	ND	24.71	471.81
	7/27/04	496.52	ND	25.25	471.27
	8/17/04	496.52	ND	25.11	471.41
	9/1/04	496.52	ND	24.78	471.74
	10/26/04	496.52	ND	24.46	472.06
	12/9/04	496.52	ND	24.40	472.12
	1/5/05	496.52	ND	24.53	471.99
	3/3/05	496.52	ND	23.94	472.58
	3/28/05	496.52	ND	23.55	472.97
	11/7/06	496.52	ND	27.19	469.33
	6/14/07	496.52	ND	26.94	469.58
	12/5/07	496.52	ND	30.32	466.20
	6/16/08	496.52	ND	30.42	466.10
	11/20/08	496.52	ND	30.26	466.26
	5/20/09	496.52	ND	27.51	469.01
	11/10/09	496.52	ND	30.76	465.76
	5/26/10	496.52	ND	25.50	471.02
	11/11/10	496.52	ND	29.46	467.06
	3/22/11	496.52	ND	28.88	467.64
	11/23/11	496.52	ND	31.93	464.59
	5/22/12	496.52	ND	30.02	466.50
	11/14/12	496.52	ND	28.95	467.57
	10/16/13	496.52	ND	28.02	468.50
	10/2/14	496.52	ND	29.03	467.49

Appendix D
Historical Groundwater Elevation Data
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1121 Mebane Oaks Road
Mebane, North Carolina

Well	Date	TOC Elevation[1]	Depth to LNAPL (ft. below TOC)	Depth to Groundwater (ft. below TOC)	Corrected Groundwater Elevation[1,2]
	10/27/15	496.52	ND	29.27	467.25

Appendix D
Historical Groundwater Elevation Data
Former BP Service Station No. 24208
1121 Mebane Oaks Road
Mebane, North Carolina

Well	Date	TOC Elevation[1]	Depth to LNAPL (ft. below TOC)	Depth to Groundwater (ft. below TOC)	Corrected Groundwater Elevation[1,2]
MW-8	4/5/95	99.47	ND	30.82	68.65
	9/27/96	99.47	ND	28.12	71.35
	3/20/97	495.73	ND	24.45	471.28
	6/25/97	495.73	ND	24.20	471.53
	9/4/97	495.73	ND	27.49	468.24
	12/4/97	495.73	ND	27.94	467.79
	12/29/97	495.73	ND	28.15	467.58
	3/23/98	495.73	ND	22.16	473.57
	6/8/98	495.73	ND	23.43	472.30
	9/15/98	495.73	ND	27.55	468.18
	12/14/98	495.73	ND	29.95	465.78
	2/22/99	495.73	ND	26.45	469.28
	6/1/99	495.73	ND	26.75	468.98
	9/13/99	495.73	ND	28.64	467.09
	12/20/99	495.73	ND	27.03	468.70
	3/8/00	495.73	ND	24.72	471.01
	6/5/00	495.73	ND	24.30	471.43
	9/21/00	495.73	ND	26.52	469.21
	12/27/00	495.73	ND	28.99	466.74
	3/5/01	495.73	ND	28.15	467.58
	6/11/01	495.73	ND	26.43	469.30
	9/17/01	495.73	ND	28.74	466.99
	12/5/01	495.73	ND	30.80	464.93
	3/12/02	495.73	ND	28.99	466.74
	7/18/02	495.73	ND	31.12	464.61
	9/6/02	495.73	ND	31.71	464.02
	9/16/02	495.73	ND	30.81	464.92
	10/30/02	495.73	ND	27.32	468.41
	11/13/02	495.73	ND	26.24	469.49
	12/2/02	495.73	ND	26.71	469.02
	12/12/02	495.73	ND	25.36	470.37
	3/6/03	495.73	ND	24.93	470.80
	5/6/03	495.73	ND	21.61	474.12
	5/20/03	495.73	ND	22.45	473.28
	9/19/03	495.73	ND	20.11	475.62
	10/20/03	495.73	ND	20.74	474.99
	12/3/03	495.73	ND	21.64	474.09
	3/9/04	495.73	ND	20.72	475.01
	5/4/04	495.73	ND	21.41	474.32
	5/25/04	495.73	ND	22.13	473.60
	6/10/04	495.73	ND	22.56	473.17
	7/6/04	495.73	ND	22.51	473.22
	7/27/04	495.73	ND	23.31	472.42
	8/17/04	495.73	ND	22.29	473.44
	10/26/04	495.73	ND	22.32	473.41
	12/9/04	495.73	ND	21.33	474.40
	1/5/05	495.73	ND	22.39	473.34
	3/3/05	495.73	ND	22.31	473.42
	3/28/05	495.73	ND	21.38	474.35
	11/7/06	495.73	ND	25.67	470.06
	6/14/07	495.73	ND	24.88	470.85
	12/5/07	495.73	ND	30.67	465.06
	6/16/08	495.73	ND	27.67	468.06
	11/20/08	495.73	ND	29.08	466.65
	5/20/09	495.73	ND	25.91	469.82
	11/10/09	495.73	ND	27.96	467.77
	5/26/10	495.73	ND	23.18	472.55
	11/11/10	495.73	ND	27.43	468.30
	3/22/11	495.73	ND	28.79	466.94
	11/23/11	495.73	ND	28.06	467.67
	5/22/12	495.73	ND	25.91	469.82
	11/14/12	495.73	ND	27.66	468.07
	10/16/13	495.73	ND	24.22	471.51
	10/2/14	495.73	ND	26.97	468.76
	10/27/15	495.73	ND	NM	NA

Appendix D
Historical Groundwater Elevation Data
Former BP Service Station No. 24208
1121 Mebane Oaks Road
Mebane, North Carolina

Well	Date	TOC Elevation[1]	Depth to LNAPL (ft. below TOC)	Depth to Groundwater (ft. below TOC)	Corrected Groundwater Elevation[1,2]
MW-9	12/4/97	496.36	ND	29.09	467.27
	12/29/97	496.36	ND	29.12	467.24
	3/23/98	496.36	ND	24.07	472.29
	6/8/98	496.36	ND	24.53	471.83
	9/15/98	496.36	ND	28.59	467.77
	12/14/98	496.36	ND	30.90	465.46
	2/22/99	496.36	ND	28.35	468.01
	6/1/99	496.36	ND	27.75	468.61
	9/13/99	496.36	ND	29.99	466.37
	12/20/99	496.36	ND	28.00	468.36
	3/8/00	496.36	ND	25.90	470.46
	6/5/00	496.36	ND	25.40	470.96
	9/21/00	496.36	ND	27.71	468.65
	12/27/00	496.36	ND	29.90	466.46
	3/5/01	496.36	ND	28.84	467.52
	6/11/01	496.36	ND	27.48	468.88
	9/17/01	496.36	ND	29.74	466.62
	12/5/01	496.36	ND	31.81	464.55
	3/12/02	496.36	ND	29.89	466.47
	7/18/02	496.36	ND	32.11	464.25
	9/6/02	496.36	ND	29.46	466.90
	9/16/02	496.36	ND	32.16	464.20
	10/30/02	496.36	ND	30.09	466.27
	11/13/02	496.36	ND	29.13	467.23
	12/2/02	496.36	ND	28.68	467.68
	12/12/02	496.36	ND	27.59	468.77
	3/6/03	496.36	ND	24.81	471.55
	5/6/03	496.36	ND	23.27	473.09
	5/20/03	496.36	ND	23.10	473.26
	9/19/03	496.36	ND	21.77	474.59
	10/20/03	496.36	ND	22.32	474.04
	12/3/03	496.36	ND	23.13	473.23
	3/9/04	496.36	ND	22.08	474.28
	5/4/04	496.36	ND	22.81	473.55
	5/25/04	496.36	ND	23.47	472.89
	6/10/04	496.36	ND	23.93	472.43
	7/6/04	496.36	ND	24.23	472.13
	7/27/04	496.36	ND	25.02	471.34
	8/17/04	496.36	ND	24.42	471.94
	10/26/04	496.36	ND	24.01	472.35
	12/9/04	496.36	ND	23.82	472.54
	1/5/05	496.36	ND	23.83	472.53
	3/3/05	496.36	ND	23.32	473.04
	3/28/05	496.36	ND	22.21	474.15
	11/7/06	496.36	ND	27.50	468.86
	6/14/07	496.36	ND	26.33	470.03
	12/5/07	496.36	ND	31.77	464.59
	6/16/08	496.36	ND	29.02	467.34
	11/20/08	496.36	ND	30.35	466.01
	5/20/09	496.36	ND	26.73	469.63
	11/10/09	496.36	ND	30.35	466.01
	5/26/10	496.36	ND	25.20	471.16
	11/11/10	496.36	ND	28.95	467.41
	3/22/11	496.36	ND	28.79	467.57
	11/23/11	496.36	ND	30.31	466.05
	5/22/12	496.36	ND	27.94	468.42
	11/14/12	496.36	ND	29.01	467.35
	10/16/13	496.36	ND	26.06	470.30
	10/2/14	496.36	ND	28.49	467.87
	10/27/15	496.36	ND	29.46	466.90

Appendix D
Historical Groundwater Elevation Data
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1121 Mebane Oaks Road
Mebane, North Carolina

Well	Date	TOC Elevation[1]	Depth to LNAPL (ft. below TOC)	Depth to Groundwater (ft. below TOC)	Corrected Groundwater Elevation[1,2]
MW-10	12/4/97	495.89	ND	29.10	466.79
	12/29/97	495.89	ND	28.96	466.93
	3/23/98	495.89	ND	22.84	473.05
	6/8/98	495.89	ND	23.80	472.09
	9/15/98	495.89	ND	28.53	467.36
	12/14/98	495.89	ND	30.69	465.20
	2/22/99	495.89	ND	26.94	468.95
	6/1/99	495.89	ND	27.23	468.66
	9/13/99	495.89	ND	30.53	465.36
	12/20/99	495.89	ND	27.67	468.22
	3/8/00	495.89	ND	25.41	470.48
	6/5/00	495.89	ND	25.28	470.61
	9/21/00	495.89	ND	27.84	468.05
	12/27/00	495.89	ND	29.69	466.20
	3/5/01	495.89	ND	28.53	467.36
	6/11/01	495.89	ND	27.19	468.70
	9/17/01	495.89	ND	29.91	465.98
	12/5/01	495.89	ND	31.65	464.24
	3/12/02	495.89	ND	29.52	466.37
	7/18/02	495.89	ND	32.11	463.78
	9/6/02	495.89	ND	32.33	463.56
	9/16/02	495.89	ND	32.34	463.55
	10/30/02	495.89	ND	30.20	465.69
	11/13/02	495.89	ND	29.70	466.19
	12/2/02	495.89	ND	29.15	466.74
	12/12/02	495.89	ND	27.54	468.35
	3/6/03	495.89	ND	24.02	471.87
	5/6/03	495.89	ND	22.89	473.00
	5/20/03	495.89	ND	22.23	473.66
	9/19/03	495.89	ND	21.47	474.42
	10/20/03	495.89	ND	21.75	474.14
	12/3/03	495.89	ND	22.67	473.22
	3/9/04	495.89	ND	21.47	474.42
	5/4/04	495.89	ND	22.22	473.67
	5/25/04	495.89	ND	23.01	472.88
	6/10/04	495.89	ND	23.68	472.21
	7/6/04	495.89	ND	24.34	471.55
	7/27/04	495.89	ND	25.03	470.86
	8/17/04	495.89	ND	24.80	471.09
	10/26/04	495.89	ND	23.81	472.08
	12/9/04	495.89	ND	23.65	472.24
	1/5/05	495.89	ND	23.49	472.40
	3/3/05	495.89	ND	22.86	473.03
	3/28/05	495.89	ND	22.04	473.85
	11/7/06	495.89	ND	27.76	468.13
	6/14/07	495.89	ND	25.69	470.20
	12/5/07	495.89	ND	31.72	464.17
	6/16/08	495.89	ND	28.99	466.90
	11/20/08	495.89	ND	30.41	465.48
	5/20/09	495.89	ND	26.92	468.97
	11/10/09	495.89	ND	30.96	464.93
	5/26/10	495.89	ND	25.02	470.87
	11/11/10	495.89	ND	29.35	466.54
	3/22/11	495.89	ND	28.11	467.78
	11/23/11	495.89	ND	31.13	464.76
	5/22/12	495.89	ND	28.42	467.47
	11/14/12	495.89	ND	29.17	466.72
	10/16/13	495.89	ND	25.90	469.99
	10/2/14	495.89	ND	29.14	466.75
	10/27/15	495.89	ND	29.88	466.01

Appendix D
Historical Groundwater Elevation Data
Former BP Service Station No. 24208
1121 Mebane Oaks Road
Mebane, North Carolina

Well	Date	TOC Elevation[1]	Depth to LNAPL (ft. below TOC)	Depth to Groundwater (ft. below TOC)	Corrected Groundwater Elevation[1,2]
MW-11	12/4/97	490.50	ND	19.47	471.03
	12/29/97	490.50	ND	18.92	471.58
	3/23/98	490.50	ND	12.70	477.80
	6/8/98	490.50	ND	13.96	476.54
	9/15/98	490.50	ND	19.46	471.04
	12/14/98	490.50	ND	21.76	468.74
	2/22/99	490.50	ND	17.28	473.22
	6/1/99	490.50	ND	18.03	472.47
	9/13/99	490.50	ND	23.84	466.66
	12/20/99	490.50	ND	18.49	472.01
	3/8/00	490.50	ND	16.06	474.44
	6/5/00	490.50	ND	15.76	474.74
	9/21/00	490.50	ND	19.12	471.38
	12/27/00	490.50	ND	20.99	469.51
	3/5/01	490.50	ND	19.44	471.06
	6/11/01	490.50	ND	18.38	472.12
	9/17/01	490.50	ND	21.23	469.27
	12/5/01	490.50	ND	23.08	467.42
	3/12/02	490.50	ND	20.44	470.06
	7/18/02	490.50	ND	23.59	466.91
	9/6/02	490.50	ND	23.89	466.61
	9/16/02	490.50	ND	23.76	466.74
	10/30/02	490.50	ND	21.98	468.52
	12/2/02	490.50	ND	19.79	470.71
	3/6/03	490.50	ND	15.48	475.02
	5/6/03	490.50	ND	13.33	477.17
	5/20/03	490.50	ND	13.05	477.45
	9/19/03	490.50	ND	12.68	477.82
	10/20/03	490.50	ND	12.75	477.75
	12/3/03	490.50	ND	13.75	476.75
	3/9/04	490.50	ND	12.52	477.98
	5/4/04	490.50	ND	13.10	477.40
	5/25/04	490.50	ND	14.15	476.35
	6/10/04	490.50	ND	14.98	475.52
	7/6/04	490.50	ND	15.64	474.86
	7/27/04	490.50	ND	16.51	473.99
	8/17/04	490.50	ND	16.27	474.23
	10/26/04	490.50	ND	15.55	474.95
	12/9/04	490.50	ND	15.33	475.17
	6/16/08	490.50	ND	NM	NA
	11/20/08	490.50	ND	NM	NA
	5/20/09	490.50	ND	NM	NA
	11/10/09	490.50	ND	22.62	467.88
	5/26/10	490.50	ND	16.35	474.15
	11/11/10	490.50	ND	21.05	469.45
	3/22/11	490.50	ND	19.41	471.09
	11/23/11	490.50	ND	22.77	467.73
	5/22/12	490.50	ND	19.75	470.75
	11/14/12	490.50	ND	20.47	470.03
	10/16/13	490.50	ND	18.17	472.33
	10/2/14	490.50	ND	20.90	469.60
	10/27/15	490.50	ND	21.63	468.87

Appendix D
Historical Groundwater Elevation Data
Former BP Service Station No. 24208
1121 Mebane Oaks Road
Mebane, North Carolina

Well	Date	TOC Elevation[1]	Depth to LNAPL (ft. below TOC)	Depth to Groundwater (ft. below TOC)	Corrected Groundwater Elevation[1,2]
MW-12	12/4/97	495.65	ND	29.00	466.65
	12/29/97	495.65	ND	28.72	466.93
	3/23/98	495.65	ND	22.92	472.73
	6/8/98	495.65	ND	23.50	472.15
	9/15/98	495.65	ND	28.33	467.32
	12/14/98	495.65	ND	30.46	465.19
	2/22/99	495.65	ND	26.59	469.06
	6/1/99	495.65	ND	27.02	468.63
	9/13/99	495.65	ND	30.37	465.28
	12/20/99	495.65	ND	27.75	467.90
	3/8/00	495.65	ND	25.27	470.38
	6/5/00	495.65	ND	24.76	470.89
	9/21/00	495.65	ND	27.73	467.92
	12/27/00	495.65	ND	29.65	466.00
	3/5/01	495.65	ND	28.34	467.31
	6/11/01	495.65	ND	27.05	468.60
	9/17/01	495.65	ND	29.72	465.93
	12/5/01	495.65	ND	31.42	464.23
	3/12/02	495.65	ND	29.32	466.33
	7/18/02	495.65	ND	31.93	463.72
	9/6/02	495.65	ND	32.24	463.41
	9/16/02	495.65	ND	32.14	463.51
	10/30/02	495.65	ND	30.38	465.27
	11/13/02	495.65	ND	29.40	466.25
	12/2/02	495.65	ND	28.68	466.97
	12/12/02	495.65	ND	27.91	467.74
	3/6/03	495.65	ND	24.85	470.80
	5/6/03	495.65	ND	22.64	473.01
	5/20/03	495.65	ND	22.31	473.34
	9/19/03	495.65	ND	21.35	474.30
	10/20/03	495.65	ND	21.76	473.89
	12/3/03	495.65	ND	23.21	472.44
	3/9/04	495.65	ND	21.28	474.37
	5/4/04	495.65	ND	21.98	473.67
	5/25/04	495.65	ND	22.82	472.83
	6/10/04	495.65	ND	23.57	472.08
	7/6/04	495.65	ND	24.32	471.33
	7/27/04	495.65	ND	24.94	470.71
	8/17/04	495.65	ND	24.86	470.79
	10/26/04	495.65	ND	23.76	471.89
	12/9/04	495.65	ND	23.56	472.09
	1/5/05	495.65	ND	23.43	472.22
	3/3/05	495.65	ND	22.97	472.68
	3/28/05	495.65	ND	21.41	474.24
	11/7/06	495.65	ND	27.58	468.07
	6/14/07	495.65	ND	27.94	467.71
	12/5/07	495.65	ND	31.50	464.15
	6/16/08	495.65	ND	28.79	466.86
	11/20/08	495.65	ND	30.25	465.40
	5/20/09	495.65	ND	26.39	469.26
	11/10/09	495.65	ND	30.77	464.88
	5/26/10	495.65	ND	25.14	470.51
	11/11/10	495.65	ND	29.22	466.43
	3/22/11	495.65	ND	27.92	467.73
	11/23/11	495.65	ND	30.94	464.71
	5/22/12	495.65	ND	28.23	467.42
	11/14/12	495.65	ND	28.99	466.66
	10/16/13	495.65	ND	26.48	469.17
	10/2/14	495.65	ND	29.07	466.58
	10/27/15	495.65	ND	29.81	465.84

Appendix D
Historical Groundwater Elevation Data
Former BP Service Station No. 24208
1121 Mebane Oaks Road
Mebane, North Carolina

Well	Date	TOC Elevation[1]	Depth to LNAPL (ft. below TOC)	Depth to Groundwater (ft. below TOC)	Corrected Groundwater Elevation[1,2]
MW-13	3/23/98	496.67	ND	23.68	472.99
	6/8/98	496.67	ND	23.85	472.82
	9/15/98	496.67	ND	28.77	467.90
	12/14/98	496.67	ND	30.93	465.74
	2/22/99	496.67	ND	27.15	469.52
	6/1/99	496.67	ND	27.48	469.19
	9/13/99	496.67	ND	30.99	465.68
	12/20/99	496.67	ND	28.03	468.64
	3/8/00	496.67	ND	25.88	470.79
	6/5/00	496.67	ND	25.20	471.47
	9/21/00	496.67	ND	28.13	468.54
	12/27/00	496.67	ND	29.99	466.68
	3/5/01	496.67	ND	28.95	467.72
	6/11/01	496.67	ND	27.51	469.16
	9/17/01	496.67	ND	30.16	466.51
	12/5/01	496.67	ND	31.92	464.75
	3/12/02	496.67	ND	29.91	466.76
	7/18/02	496.67	ND	32.41	464.26
	9/6/02	496.67	ND	32.74	463.93
	9/16/02	496.67	ND	32.70	463.97
	10/30/02	496.67	ND	31.09	465.58
	11/13/02	496.67	ND	30.19	466.48
	12/2/02	496.67	ND	29.23	467.44
	12/12/02	496.67	ND	28.61	468.06
	3/6/03	496.67	ND	25.62	471.05
	5/6/03	496.67	ND	23.02	473.65
	5/20/03	496.67	ND	22.89	473.78
	9/19/03	496.67	ND	21.72	474.95
	10/20/03	496.67	ND	21.91	474.76
	12/3/03	496.67	ND	22.94	473.73
	3/9/04	496.67	ND	21.81	474.86
	5/4/04	496.67	ND	22.29	474.38
	5/25/04	496.67	ND	23.09	473.58
	6/10/04	496.67	ND	23.82	472.85
	7/6/04	496.67	ND	24.54	472.13
	7/27/04	496.67	ND	25.19	471.48
	8/17/04	496.67	ND	25.13	471.54
	9/1/04	496.67	ND	24.80	471.87
	10/26/04	496.67	ND	24.14	472.53
	12/9/04	496.67	ND	24.09	472.58
	1/5/05	496.67	ND	23.83	472.84
	3/3/05	496.67	ND	23.19	473.48
	3/28/05	496.67	ND	22.30	474.37
	11/7/06	496.67	ND	28.13	468.54
	6/14/07	496.67	ND	26.30	470.37
	12/5/07	496.67	ND	32.04	464.63
	6/16/08	496.67	ND	29.31	467.36
	11/20/08	496.67	ND	30.87	465.80
	5/20/09	496.67	ND	26.88	469.79
	11/10/09	496.67	ND	31.34	465.33
	5/26/10	496.67	ND	25.57	471.10
	11/11/10	496.67	ND	29.76	466.91
	3/22/11	496.67	ND	28.63	468.04
	11/23/11	496.67	ND	31.63	465.04
	5/22/12	496.67	ND	28.82	467.85
	11/14/12	496.67	ND	29.57	467.10
	10/16/13	496.67	ND	27.06	469.61
	10/2/14	496.67	ND	29.49	467.18
	10/27/15	496.67	ND	30.48	466.19

Appendix D
Historical Groundwater Elevation Data
Former BP Service Station No. 24208
1121 Mebane Oaks Road
Mebane, North Carolina

Well	Date	TOC Elevation[1]	Depth to LNAPL (ft. below TOC)	Depth to Groundwater (ft. below TOC)	Corrected Groundwater Elevation[1,2]
MW-14	3/23/98	497.03	ND	24.63	472.40
	6/8/98	497.03	ND	24.74	472.29
	9/15/98	497.03	ND	29.76	467.27
	12/14/98	497.03	ND	31.70	465.33
	2/22/99	497.03	ND	27.99	469.04
	6/1/99	497.03	ND	28.36	468.67
	9/13/99	497.03	ND	31.77	465.26
	12/20/99	497.03	ND	28.81	468.22
	3/8/00	497.03	ND	26.72	470.31
	6/5/00	497.03	ND	26.10	470.93
	9/21/00	497.03	ND	29.10	467.93
	12/27/00	497.03	ND	30.29	466.74
	3/5/01	497.03	ND	29.27	467.76
	6/11/01	497.03	ND	28.01	469.02
	9/17/01	497.03	ND	30.69	466.34
	12/5/01	497.03	ND	32.30	464.73
	3/12/02	497.03	ND	30.23	466.80
	7/18/02	497.03	ND	32.88	464.15
	9/6/02	497.03	ND	33.17	463.86
	9/16/02	497.03	ND	33.16	463.87
	10/30/02	497.03	ND	31.49	465.54
	11/13/02	497.03	ND	30.59	466.44
	12/2/02	497.03	ND	29.75	467.28
	12/12/02	497.03	ND	29.11	467.92
	3/6/03	497.03	ND	26.17	470.86
	5/6/03	497.03	ND	23.60	473.43
	5/20/03	497.03	ND	23.44	473.59
	9/19/03	497.03	ND	22.14	474.89
	10/20/03	497.03	ND	22.24	474.79
	12/3/03	497.03	ND	22.65	474.38
	3/9/04	497.03	ND	22.02	475.01
	5/4/04	497.03	ND	22.45	474.58
	5/25/04	497.03	ND	23.26	473.77
	6/10/04	497.03	ND	24.06	472.97
	7/6/04	497.03	ND	24.82	472.21
	7/27/04	497.03	ND	25.48	471.55
	8/17/04	497.03	ND	25.43	471.60
	9/1/04	497.03	ND	25.06	471.97
	10/26/04	497.03	ND	24.29	472.74
	12/9/04	497.03	ND	24.25	472.78
	1/5/05	497.03	ND	23.94	473.09
	3/3/05	497.03	ND	23.34	473.69
	3/28/05	497.03	ND	22.47	474.56
	11/7/06	497.03	ND	28.21	468.82

Appendix D
Historical Groundwater Elevation Data
Former BP Service Station No. 24208
1121 Mebane Oaks Road
Mebane, North Carolina

Well	Date	TOC Elevation[1]	Depth to LNAPL (ft. below TOC)	Depth to Groundwater (ft. below TOC)	Corrected Groundwater Elevation[1,2]
MW-14 (cont.)	6/14/07	497.03	ND	26.43	470.60
	12/5/07	497.03	ND	32.24	464.79
	6/16/08	497.03	ND	29.44	467.59
	11/20/08	497.03	ND	30.96	466.07
	5/20/09	497.03	ND	26.97	470.06
	11/10/09	497.03	ND	31.94	465.09
	5/26/10	497.03	ND	25.62	471.41
	11/11/10	497.03	ND	29.81	467.22
	3/22/11	497.03	ND	28.68	468.35
	11/23/11	497.03	ND	31.70	465.33
	5/22/12	497.03	ND	28.86	468.17
	11/14/12	497.03	ND	29.63	467.40
	10/16/13	497.03	ND	27.08	469.95
	10/2/14	497.03	ND	29.62	467.41
	10/27/15	497.03	ND	NM	NA

NOTES:

[1] Measured in feet relative to site datum.

[2] Corr.GW Elev.=(ref. point elevation)-(depth to groundwater)+(LNAPL thickness)(LNAPL specific gravity)

ft = feet

LNAPL = Light Non-Aqueous Phase Liquid

LNAPL specific gravity assumed to be 0.79.

NA = Not Applicable / Not Available

DRY = No water column in well

ND = Not Detected

TOC = Top of Casing

NM = Not Measured

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APPENDIX E

SUMMARY OF HISTORICAL GROUNDWATER ANALYTICAL RESULTS

Appendix E
Summary of Historical Groundwater Analytical Results
Former BP Service Station No. 24208
1121 Mebane Oaks Road
Mebane, North Carolina

Well	Date	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	1,2-DCA	Naphthalene
		(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
MW-1	8/5/1994	**10**	16	4	41	**350**	NA	<1
	4/5/1995	**2**	2	<0.36	5	**310**	NA	NA
	4/11/1995	NA	NA	NA	NA	NA	NA	<2.6
	9/27/1996	**1.1**	<1	<1	<1	**300**	**22**	<5
	3/20/1997	**1.4**	<1	<1	<1	**350**	**28**	<1
	6/26/1997	<1	<1	<1	<1	**400**	**36**	<1
	9/5/1997	**1.9**	<1	<1	<1	**330**	**32**	<1
	12/5/1997	**4.9**	<1	<1	<1	**1,000**	**41**	**31**
	3/24/1998	**1,100**	**1,300**	**98**	**540**	**430**	**39**	<1
	6/9/1998	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL
	9/16/1998	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL
	12/14/1998	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL
	2/23/1999	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL
	6/2/1999	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL
	9/14/1999	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL
	12/21/1999	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL
	3/9/2000	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL
	6/6/2000	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL
	9/22/2000	**2,260**	**2,680**	**317**	**1,680**	**1,080**	**57.2**	**192**
	12/27/2000	**4,520**	**7,830**	**1,370**	**6,540**	**920**	**54.3**	**537**
	3/6/2001	**1,590**	**1,700**	**125**	**957**	**1,130**	<25	NA
	6/12/2001	**6,000**	**12,000**	**1,600**	**7,600**	**2,000**	**95**	**200**
	9/18/2001	**5,100**	**13,000**	**1,400**	**8,200**	<1,000	<1,000	<2,000
	12/6/2001	**5,000**	**9,700**	**1,800**	**9,100**	**1,300**	<500	NA
	3/12/2002	**3,600**	**12,000**	**1,500**	**9,600**	**1,100**	NA	NA
	4/10/2002	<500	**5,300**	**1,600**	**17,100**	<500	NA	NA
	7/18/2002	**36**	<20	<20	470	53	NA	NA
	9/18/2002	<1	<5	<1	2.7	31	<1	<5
	12/12/2002	**18.6**	1.1	2.8	7.1	80.2	NA	NA
	3/7/2003	<1	<1	<1	<3	12	NA	NA
	5/20/2003	<1	<2	<2	<6	18.1	<2	<2
	9/22/2003	<1	<2	<2	<6	83.3	**1.0**	<2
	3/9/2004	<1	<2	<2	<6	3.9	<2	<2
	6/11/2004	<1	<1	<1	<3	2.7	<1	NA
	8/18/2004	<1	<2	<2	<6	62.5	**1.4**	<2
	12/9/2004	<1	<2	<2	<6	1	<2	<2
	3/28/2005	<1	<1	<1	<3	<1	<1	<2
	11/7/2006	<0.5	<0.5	<0.5	<1	0.7 J	<0.5	<1
	6/14/2007	<0.5	<0.5	<0.5	<1	9.50	**2.10**	<1
	6/16/2008	<0.9	<0.8	<0.8	<0.9	7.10	**1J**	<1
	11/20/2008	< 0.90	< 0.80	< 0.80	< 0.90	< 1.0	< 0.30	< 1.0

Appendix E
Summary of Historical Groundwater Analytical Results
Former BP Service Station No. 24208
1121 Mebane Oaks Road
Mebane, North Carolina

Well	Date	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	1,2-DCA	Naphthalene
		(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
MW-1	5/20/2009	< 0.06	< 0.06	< 0.05	< 0.14	3.7	0.38 J	NA
	11/10/2009	< 0.06	< 0.06	< 0.05	< 0.14	0.66	<0.07	NA
	5/26/2010	<0.11	<0.11	<0.11	<0.32	11	**1.1**	NA
	11/11/2010	<0.11 UJ	<0.11 UJ	<0.11 UJ	<0.32 UJ	0.12 UJ	0.14 UJ	NA
	3/22/2011	<0.13	<0.13	<0.15	<0.3	0.28 J	<0.16	NA
	11/23/2011	<0.13	<0.13	<0.15	<0.3	0.15 J	<0.16	NA
	5/22/2012	<0.13	<0.13	<0.15	<0.3	<0.13	<0.16	NA
	11/15/2012	< 0.10	< 0.10	< 0.10	< 0.22	< 0.10	< 0.10	NA
	10/16/2013	0.13 J	< 0.10	< 0.10	< 0.22	< 0.10	< 0.10	NA
	10/2/2014	< 0.10	< 0.10	< 0.10	< 0.2	< 0.10	< 0.10	NA
	10/27/2015	.33 J	< 0.17	< 0.15	< 0.43	< 0.16	< 0.16	NA
MW-2	3/31/1994	<1	<5	<1	2	NA	NA	<1
	8/5/1994	<1	<5	2	15	14	NA	<1
	4/5/1995	<0.16	<0.20	<0.36	<0.78	13	NA	<2.6
	9/27/1996	<1	<1	<1	<1	<8	<0.03	<5
	3/20/1997	<1	<1	<1	<1	<8	<0.03	<1
	6/26/1997	<1	<1	<1	<1	<8	<0.03	<1
	9/5/1997	<1	<1	<1	<1	<8	<0.25	<1
	12/5/1997	**9.5**	<1	<1	<1	120	**77**	<1
	3/24/1998	**10**	33	3	18	<5	<1	<10
	6/9/1998	**6**	<5	<1	2	<5	<1	<10
	9/16/1998	**6**	<5	<1	<2	<5	<1	<10
	12/15/1998	<1	<5	<1	<2	<5	<1	<10
	2/23/1999	<1	<5	<1	<2	<5	<1	<1
	6/2/1999	<1	<5	<1	<2	<5	<1	<5
	9/14/1999	<1	<5	<1	<2	<5	<1	NA
	12/21/1999	<1	<5	<1	<2	<5	<1	NA
	3/9/2000	<1.59	<1.59	<1.59	<1.59	<1.59	<1.59	NA
	6/6/2000	<0.5	<0.5	<0.5	<0.5	1.66	<0.5	NA
	9/22/2000	<0.5	<1	<0.5	<0.5	<0.5	<0.5	**52.5**
	12/27/2000	<0.5	1.6	<0.5	3.35	<0.5	<0.5	NA
	3/6/2001	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA
	6/12/2001	<1	<1	<1	<1	<1	<1	<2
	9/18/2001	**1.2**	2.4	2.7	13.9	<1	<1	<2
	12/6/2001	**1.9**	1.5	2.4	12.3	<1	<1	NA
	9/18/2002	<1	<5	<1	<2	<5	<1	<5
	9/22/2003	**1.2**	<2	<2	<6	**219**	<2	<2
	8/18/2004	<1	<2	<2	<6	0.89	<2	<2
	6/14/2007	<0.5	<0.5	<0.5	<1	2.9	<0.5	<1
	12/5/2007	<1	<1	<1	<3	1.2	<1	<2
	6/16/2008	<0.9	<0.8	<0.8	<0.9	<1	<0.3	<1
	11/20/2008	< 0.90	< 0.80	< 0.80	< 0.90	< 1.0	< 0.30	< 1.0
	5/20/2009	< 0.06	< 0.06	< 0.05	< 0.14	0.43 J	< 0.07	NA
	5/26/2010	<0.11	<0.11	<0.11	<0.32	1.4	<0.14	NA
	3/22/2011	<0.13	<0.13	<0.15	<0.3	1	<0.16	NA
	5/22/2012	**2.2**	<0.41 U	<0.15	0.81 J	0.93	<0.16	NA
	10/2/2014	**4.8**	< 0.10	< 0.10	< 0.2	1.5	< 0.10	NA
	10/27/2015	**5.4**	0.46 J	<0.15	<0.43	1.4	<0.16	NA
MW-3	8/5/1994	**750**	**1,800**	**600**	**6,300**	**1,600**	NA	**150**
	4/5/1995	**840**	46	**220**	**1,000**	**2,600**	NA	**150**
	9/27/1996	**2,200**	350	**520**	**2,800**	**4,100**	**150**	**170**
	3/21/1997	**1,800**	450	**510**	**3,100**	**4,800**	**170**	**190**
	6/26/1997	**1,800**	130	**220**	**2,300**	**7,200**	**120**	**140**
	9/5/1997	**2,600**	430	**550**	**3,400**	**5,300**	**160**	**130**
	12/5/1997	**1,900**	250	**390**	**2,400**	**4,300**	**220**	**54**
	3/24/1998	**1,600**	<500	**350**	**1,900**	**7,500**	**160**	**80**
	6/9/1998	**1,800**	<500	**350**	**1,800**	**6,000**	**110**	**78**
	9/16/1998	**2,700**	<500	**610**	**2,500**	**8,700**	**220**	**60**
	12/15/1998	**1,300**	220	**300**	**1,700**	**3,800**	**150**	**42**
	2/23/1999	**1,499**	120	**390**	**1,799**	**3,899**	**150**	**47**
	6/2/1999	**850**	180	**220**	**1,000**	**4,000**	**130**	**90**
	9/14/1999	**2,100**	790	**620**	**3,300**	**5,000**	**160**	NA

Appendix E
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Mebane, North Carolina

Well	Date	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	1,2-DCA	Naphthalene
		(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
MW-3	12/21/1999	**1,300**	<500	**350**	**1,800**	**5,200**	**150**	NA
	3/9/2000	**522**	33.4	**156**	<1.59	**2,700**	**118**	NA
	6/6/2000	**1,730**	231	**398**	**1,450**	**8,950**	**221**	NA
	9/22/2000	**1,350**	216	**274**	**1,290**	**4,820**	**157**	**207**
	12/27/2000	**297**	164	**75.9**	502	**5,030**	**103**	<2
	3/6/2001	**243**	52.6	**73.7**	376	**2,630**	**92**	NA
	6/12/2001	**170**	<100	<100	370	**5,700**	**68**	<200
	9/18/2001	**210**	200	**100**	**628**	**2,800**	**77**	5.3
	12/6/2001	**170**	120	**190**	**850**	**3,700**	<100	NA
	3/12/2002	**150**	380	<100	<200	**2,800**	NA	NA
	4/10/2002	**<2**	<2	<2	<4	62	NA	NA
	7/18/2002	<1	<1	<1	<1	120	NA	NA
	9/18/2002	<1	<5	<1	<2	<5	<1	<5
	12/12/2002	<1	<1	0.55	<3	88.1	NA	NA
	3/7/2003	0.62	<1	<1	<3	103	NA	NA
	5/20/2003	<1	<2	<2	<6	53.8	**1.5**	<2
	9/22/2003	<1	<2	<2	<6	58	**1.5**	<2
	3/9/2004	<1	<2	<2	<6	7.8	<2	<2
	6/11/2004	<1	<2	<2	<6	7	<2	NA
	8/19/2004	<1	<2	<2	<6	7	<2	<2
	12/9/2004	<1	<2	<2	<6	15.6	**0.82**	<2
	3/28/2005	<1	<1	<1	<3	20.1	**0.76**	<2
	11/7/2006	<0.5	<0.5	<0.5	<1	9.60	<0.5	<1
	6/14/2007	<0.5	<0.5	<0.5	<1	0.63 J	0.79 J	<1
	6/16/2008	<0.9	<0.8	<0.8	<0.9	<1	<0.3	<1
	11/20/2008	< 0.90	< 0.80	< 0.80	< 0.90	< 1.0	< 0.30	< 1.0
	5/20/2009	< 0.06	< 0.06	< 0.05	< 0.14	0.12 J	< 0.07	NA
	5/26/2010	<0.11 UJ	<0.11 UJ	<0.11 UJ	<0.32 UJ	<0.12 UJ	<0.14 UJ	NA
	3/23/2011	<0.13 UJ	<0.13 UJ	<0.15 UJ	<0.3 UJ	<0.13 UJ	<0.16 UJ	NA
	5/22/2012	<0.13	<0.13	<0.15	<0.3	<0.13	<0.16	NA
MW-4	8/5/1994	**380**	<50	**42**	260	**8,300**	NA	**45**
	4/5/1995	**66**	<2	<3.6	68	**7,200**	**190**	**31**
	9/27/1996	**90**	<1	14	100	**6,700**	**190**	15
	3/21/1997	**25**	<1	6.3	37	**8,500**	**230**	4
	6/26/1997	**57**	2.8	6.3	67	**8,600**	**190**	<1
	9/5/1997	**44**	<1	11	76	**4,000**	**210**	6
	12/5/1997	**42**	<1	8.9	75	**2,000**	**200**	8
	3/24/1998	**30**	<50	11	49	**12,000**	**330**	<10
	6/9/1998	**55**	<50	11	67	**8,200**	**240**	<10
	9/16/1998	**70**	<500	<100	<200	**7,600**	**230**	<10
	12/15/1998	**94**	<50	14	160	**6,700**	**180**	<10
	2/23/1999	**55**	<49	13	110	**6,599**	**300**	1
	6/2/1999	**34**	<50	<10	74	**9,500**	**170**	<50
	9/14/1999	**3**	<5	5	7	**6,700**	**190**	NA
	12/21/1999	**54**	<50	13	120	**12,000**	**220**	NA
	3/9/2000	**18.6**	<1.59	12.3	<1.59	**4,580**	**175**	NA
	6/6/2000	**29.1**	<0.5	12.6	69.8	**5,110**	**206**	NA
	9/22/2000	**53.7**	<40	<20	118	**6,710**	**117**	**38.8**
	12/27/2000	**36.2**	212	**50.1**	325	**3,580**	**109**	NA
	3/6/2001	**28.8**	1.3	11.3	57.1	**4,030**	**152**	NA
	6/12/2001	**17**	<1	<1	45	**5,800**	**160**	<2
	9/18/2001	**15**	<1	2.7	35	**3,000**	**130**	<2
	12/6/2001	<100	<100	<100	<100	**3,400**	<100	NA
	3/12/2002	<100	330	<100	<200	**2,300**	NA	NA
	7/18/2002	<25	<25	<25	<50	**1,400**	NA	NA
	9/18/2002	<1	<5	1.3	2.7	**2,000**	**69**	<5
	12/12/2002	<1	<1	3.7	<3	**1,130**	NA	NA

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Well	Date	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	1,2-DCA	Naphthalene
		(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
MW-4	3/7/2003	<10	<10	7.2	<30	**343**	NA	NA
	5/20/2003	<1	<2	<2	<6	71.6	**1.3**	<2
	9/22/2003	<1	<2	<2	<6	**1,520**	**21.5**	<2
	12/3/2003	<20	<20	<20	<60	**963**	NA	NA
	3/9/2004	<1	<2	<2	<6	**455**	**5.8**	<2
	6/11/2004	<1	<1	<1	<3	**476**	**5.8**	NA
	8/19/2004	<1	<2	<2	<6	**436**	**5.2**	<2
	12/9/2004	<1	<20	<20	<60	**548**	**11.7**	<2
	3/28/2005	<2	<2	<2	<6	187	**2.9**	<4
	11/7/2006	<0.5	<0.5	<0.5	<1	40.6	**1.8**	<1
	6/14/2007	<0.5	<0.5	<0.5	<1	**320 J**	**6.0**	<1
	12/5/2007	<5	<5	<5	<15	<5	<5	<10
	6/16/2008	<0.9	<0.8	<0.8	<0.9	23.0	1J	<1
	11/20/2008	< 0.90	< 0.80	< 0.80	< 0.90	11	**0.89 J**	< 1.0
	5/20/2009	< 0.06	< 0.06	< 0.05	< 0.14	51.5	**2.8**	NA
	11/10/2009	< 0.06	< 0.06	< 0.05	< 0.14	7.7	**0.49J**	NA
	5/26/2010	<0.11	<0.11	<0.11	<0.32	16.5	**0.84**	NA
	11/11/2010	<0.11 UJ	<0.11 UJ	<0.11 UJ	<0.32 UJ	<0.12 UJ	<0.14 UJ	NA
	3/22/2011	<0.13	<0.13	<0.15	<0.3	0.9	0.33 J	NA
	11/23/2011	<0.13 UJ	<0.13 UJ	<0.15 UJ	<0.3 UJ	9.4 J	**0.56 J**	NA
	5/22/2012	<0.13	<0.13	<0.15	<0.3	7.4	**0.48 J**	NA
	11/15/2012	< 0.10	< 0.10	< 0.10	< 0.22	3.6	0.32 J	NA
	10/16/2013	< 0.10	< 0.10	< 0.10	< 0.22	1.6	0.26 J	NA
	10/2/2014	< 0.10	< 0.10	< 0.10	< 0.2	1.5	0.16 J	NA
	10/27/2015	<0.17	<0.17	<0.15	<0.43	1.9	0.20 J	NA
MW-5	8/5/1994	**4**	12	5	40	**210**	NA	<1
	4/5/1995	1	<0.2	<0.36	1	**310**	<0.03	<2.6
	9/27/1996	<1	<1	<1	<1	10	<0.03	<5
	3/20/1997	<1	<1	<1	<1	22	<0.03	<1
	6/26/1997	<1	<1	<1	<1	19	<0.03	<1
	9/5/1997	<1	<1	<1	<1	15	<0.25	<1
	12/5/1997	**1.10**	<1	<1	<1	29	<0.25	<1
	3/24/1998	**6**	21	2	13	20	<1	<10
	6/9/1998	**7**	<5	<1	4	10	<1	<10
	9/16/1998	**6**	<5	<1	<2	6	<1	<10
	12/15/1998	**27**	9	<1	3	<5	<1	<10
	2/23/1999	**11**	<5	<1	<2	7	<1	<1
	6/2/1999	**4**	<5	<1	<2	10	<1	<5
	9/14/1999	**4**	<5	<1	<2	<5	<1	NA
	12/21/1999	**10**	<5	<1	<2	14	<1	NA
	3/9/2000	**4.6**	<1.59	<1.59	<1.59	5.9	<1.59	NA
	6/6/2000	**17.2**	0.98	<0.5	2.98	25.1	<0.5	NA
	9/22/2000	<0.5	<1	<0.5	1.64	<0.5	<0.5	<0.5
	12/27/2000	**17.3**	0.6	<0.5	2.22	23.5	<0.5	NA
	3/6/2001	**5.9**	0.7	<0.5	1.17	16.9	<0.5	NA
	6/12/2001	**11**	<1	<1	1.9	150	<1	<2
	9/18/2001	**6.4**	<1	<1	9.9	180	<1	<2
	12/6/2001	**8.8**	<5	<5	<5	97	<5	NA
	3/12/2002	**6.1**	<5	<5	<5	**260**	NA	NA
	4/10/2002	<10	<10	<10	<20	**230**	NA	NA
	7/18/2002	<10	<10	<10	<20	**330**	NA	NA

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Well	Date	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	1,2-DCA	Naphthalene
		(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
MW-5	9/18/2002	<10	<10	<10	<20	**260**	<1	<5
	12/12/2002	**8.4**	<1	<1	<3	**656**	NA	NA
	3/7/2003	<1	<1	<1	<3	93.1	NA	NA
	5/20/2003	**1.9**	<2	<2	<6	**417**	<2	<2
	9/22/2003	<1	<2	<2	<6	2.7	<2	<2
	12/3/2003	**2.1**	<1	<1	<3	**301**	NA	NA
	3/9/2004	0.76	<2	<2	<6	**302**	<2	<2
	6/11/2004	**1.9**	<1	<1	<3	**221**	<1	NA
	8/19/2004	0.69	<2	<2	<6	**212**	<2	<2
	12/9/2004	<5	<10	<10	<30	**216**	<10	<10
	3/28/2005	<2	<2	<2	<6	151	<2	<4
	11/7/2006	<2.5	<2.5	<2.5	<5	**214**	<2.5	<5
	6/14/2007	0.63 J	<0.5	<0.5	<1	104 J	<0.5	<1
	12/5/2007	<5	<5	<5	<15	**236**	<5	<10
	6/16/2008	<0.9	<0.8	<0.8	<0.9	140	<0.3	<1
	11/20/2008	< 0.90	< 0.80	< 0.80	< 0.90	**230**	< 0.30	< 1.0
	5/20/2009	< 0.3	< 0.3	< 0.25	< 0.7	136	< 0.35	NA
DUP	5/20/2009	0.28 J	<0.06	<0.05	<0.14	125	<0.07	NA
	11/10/2009	0.18 J	<0.06	<0.05	<0.14	137	<0.07	NA
	5/26/2010	<0.11	<0.11	<0.11	<0.32	**29.7**	<0.14	NA
	11/11/2010	<0.22	<0.22	<0.22	<0.64	**25.6**	<0.28	NA
	3/22/2011	<0.13	<0.13	<0.15	<0.3	**30.4**	<0.16	NA
DUP	3/22/2011	<0.13	<0.13	<0.15	<0.3	**32.3**	<0.16	NA
	11/23/2011	<0.13 UJ	<0.13 UJ	<0.15 UJ	<0.3 UJ	**39.8 J**	<0.16 UJ	NA
	5/22/2012	**2**	<0.13	<0.15	0.41 J	9.7	<0.16	NA
	11/15/2012	**13.3**	< 0.10	< 0.10	1.3 J	7.9	< 0.10	NA
	10/16/2013	**33.8**	< 0.10	0.12 J	3.0	3.6	< 0.10	NA
	10/2/2014	**45.1**	0.17 J	< 0.10	3.0	5.7	< 0.10	NA
	10/27/2015	**74.6**	0.76	<0.15	5.9	15.1	<0.16	NA
MW-6	4/5/1995	**1,500**	17	**30**	470	82	63	**31**
	9/27/1996	**1,400**	2.1	11	330	14	**97**	**40**
	3/21/1997	**750**	<1	1.2	63	10	**100**	**30**
	6/26/1997	**1,100**	1.8	7.7	210	<8	**100**	**41**
	9/5/1997	**1,100**	1.5	6.8	200	8.2	**130**	**39**
	12/5/1997	**1,200**	1.3	5	220	<8	**120**	**45**
	3/24/1998	**1,200**	<5	5	140	12	**150**	18
	6/9/1998	**2,300**	<50	10	150	<50	**140**	<10
	9/16/1998	**1,300**	<50	<10	57	<50	**150**	<10
	12/15/1998	**1,300**	<50	<10	34	<50	**120**	<10
	2/23/1999	**1,899**	<49	14	160	<49	**219**	NA
	6/2/1999	**960**	<5	6	77	8	**160**	**45**
	9/14/1999	**1,200**	<5	8	39	9	**160**	NA
	12/21/1999	**400**	<5	1.8	12	<5	**40**	NA
	3/9/2000	**1,320**	1.77	<1.59	<1.59	7.8	**126**	NA
	6/6/2000	**1,900**	<5	12.9	69.5	16.7	**123**	NA
	9/22/2000	**1,880**	<10	11.8	22.6	24.4	**89.9**	**105**
	12/27/2000	**1,300**	192	**40.2**	202	11	**118**	NA
	3/6/2001	**1,410**	2.6	8.6	90.4	17.6	**133**	NA
	6/12/2001	**1,800**	<100	<100	220	<100	**150**	<200
	9/18/2001	**1,100**	<1	5.7	93	16	**70**	**65**
	12/6/2001	**1,400**	<50	<50	<50	<50	**99**	NA
	3/12/2002	**1,300**	<100	<100	<200	<100	NA	NA
	4/10/2002	**920**	<50	<50	<100	<50	NA	NA

Appendix E
Summary of Historical Groundwater Analytical Results
Former BP Service Station No. 24208
1121 Mebane Oaks Road
Mebane, North Carolina

Well	Date	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	1,2-DCA	Naphthalene
		(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
MW-6	7/18/2002	**1,300**	<50	<50	<100	<50	NA	NA
	9/18/2002	**770**	<5	3.7	50	7.5	**41**	**59**
	12/12/2002	**84.4**	<1	0.63	6.4	<1	NA	NA
	3/7/2003	**3**	1.4	<1	<3	<1	NA	NA
	5/20/2003	**361**	1.3	0.8	11.2	2	**6.5**	15.9
	9/22/2003	**1,240**	<20	<20	<60	6.8	<20	**42.5**
	12/3/2003	**1,360**	<20	<20	<60	11.8	NA	NA
	3/9/2004	**151**	<4	<4	3.9	<4	**6.9**	10.3
	6/11/2004	**498**	<10	<10	<30	6.4	**49.5**	NA
	8/18/2004	**96.1**	0.59	<2	1.3	<2	**6.4**	7.4
	12/9/2004	**420**	0.53	<2	<6	3.8	**24.6**	16.4
	3/28/2005	**489**	<10	<10	<30	<10	**42.7**	<20
	11/7/2006	**425**	<5	<5	<10	12.7	<5	<10
MW-6R	6/14/2007	<0.5	<0.5	<0.5	<1	<0.5	**3.4**	<1
	12/5/2007	<1	<1	<1	<3	<1	1.10	<2
	6/16/2008	<0.9	<0.8	<0.8	<0.9	<1	<0.3	<1
	11/20/2008	< 0.90	< 0.80	< 0.80	< 0.90	< 1.0	< 0.30	< 1.0
	5/20/2009	< 0.06	< 0.06	< 0.05	< 0.14	< 0.06	< 0.07	NA
	11/10/2009	< 0.06	< 0.06	< 0.05	< 0.14	< 0.06	<0.11 J	NA
	5/26/2010	<0.11	<0.11	<0.11	<0.32	<0.12	<0.14	NA
DUP	5/26/2010	<0.11 UJ	<0.11 UJ	<0.11 UJ	<0.32 UJ	<0.12 UJ	<0.14 uj	NA
	11/11/2010	<0.11	<0.11	<0.11	<0.32	<0.12	<0.14	NA
	3/23/2011	<0.13	<0.13	<0.15	<0.3	<0.13	<0.16	NA
	5/22/2012	<0.13	<0.13	<0.15	<0.3	<0.13	<0.16	NA
MW-7	4/5/1995	**25**	6	2	17	78	NA	<2.6
	9/27/1996	**2.8**	1.5	<1	<1	100	0.3	<5
	3/20/1997	**2.1**	<1	<1	<1	160	**1.4**	<1
	6/26/1997	**2.4**	1.5	<1	<1	**240**	**1.4**	<1
	9/5/1997	**2**	<1	<1	<1	190	**1.3**	<1
	12/5/1997	<1	<1	<1	<1	180	**1.2**	<1
	3/24/1998	**9**	75	6	29	130	<1	<10
	6/9/1998	**4**	<5	<1	2.0	140	<1	<10
	9/16/1998	<1	<5	<1	<2	**220**	**1**	<10
	12/15/1998	<1	<5	<1	<2	180	**1**	<10
	2/23/1999	1	<5	<1	<2	109	<1	<1
	6/2/1999	<1	<5	<1	<2	150	<1	<5
	9/14/1999	1	<5	<1	<2	**250**	**2**	NA
	12/21/1999	<1	<5	<1	<2	180	**1.7**	NA
	3/9/2000	**1.6**	<1.59	<1.59	<1.59	69.9	<1.59	NA
	6/6/2000	**1.27**	<0.5	<0.5	<0.5	173	**1.03**	NA
	9/22/2000	**1.25**	1.05	<0.5	<0.5	152	<0.5	10.2
	12/27/2000	<0.5	<0.5	<0.5	<0.5	188	**1.2**	NA
	3/6/2001	<0.5	<0.5	<0.5	<0.5	182	**1.3**	NA
	6/12/2001	<1	<1	<1	<1	140	**1.5**	2.1
	9/18/2001	<1	2.9	<1	<1	35	<1	<2
	12/6/2001	<1	<1	<1	<1	7.2	<1	NA
	9/18/2002	<1	<5	1	2.2	83	<1	<5
	9/22/2003	<1	<2	<2	<6	101	**0.64**	<2
	8/18/2004	<1	<2	<2	<6	69.5	<2	<2
	6/14/2007	<1	<1	<1	<2	164	**1.4 J**	<2
	12/5/2007	<2	<2	<2	<6	145	**1.7 J**	<4

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Well	Date	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	1,2-DCA	Naphthalene
		(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
MW-7	6/16/2008	<0.9	<0.8	<0.8	<0.9	120	**1.2J**	<1
	11/20/2008	< 0.90	< 0.80	< 0.80	< 0.90	110	< 0.30	< 1.0
	5/20/2009	< 0.06	< 0.06	< 0.05	< 0.14	83.8	**0.75**	NA
	5/26/2010	<0.11	<0.11	<0.11	<0.32	**47.1 J**	**0.71**	NA
	3/22/2011	<0.13	<0.13	<0.15	<0.3	**34.4**	**0.44 J**	NA
	11/23/2011	<0.13 UJ	<0.13 UJ	<0.15 UJ	<0.3 UJ	7.6 J	0.22 J	NA
	5/22/2012	<0.13	<0.13	<0.15	<0.3	16.1	0.27 J	NA
	11/15/2012	< 0.10	< 0.10	< 0.10	< 0.22	13	0.19 J	NA
	10/16/2013	< 0.10	< 0.10	< 0.10	< 0.22	8.6	0.14 J	NA
	10/2/2014	< 0.10	< 0.10	< 0.10	<0.2	5.8	0.11 J	NA
	10/27/2015	< 0.17	< 0.17	< 0.15	<0.43	3.5	<0.16	NA
MW-8	4/5/1995	**85**	10	**32**	120	170	NA	<1.4
	9/27/1996	**32**	22	**160**	210	47	<0.03	**180**
	3/20/1997	**22**	12	**120**	100	48	**0.4**	**270**
	6/26/1997	**19**	5	**110**	48	33	0.08	**170**
	9/5/1997	**29**	6.8	**110**	51	50	**0.4**	**260**
	12/5/1997	**46**	15	**90**	170	99	**0.5**	**140**
	3/24/1998	**4**	22	**88**	130	<5	<1	**100**
	6/9/1998	**4**	<5	**42**	12	7	<1	**49**
	9/16/1998	**9**	6	**43**	16	23	<1	**34**
	12/15/1998	**9**	<5	21	17	22	**1**	**28**
	2/23/1999	**9**	17	**75**	230	19	<1	18
	6/2/1999	**3**	<5	7	8	13	<1	18
	9/14/1999	**7**	22	**100**	230	19	<1	NA
	12/21/1999	**4.9**	<5	18	19	31	<1	NA
	3/9/2000	**2.55**	4.55	28.6	<1.59	7.3	<1.59	NA
	6/6/2000	**2.77**	2.66	23.8	6.8	7.55	<0.5	NA
	9/22/2000	**2.8**	3.03	26.5	5.57	5.65	<0.5	**25.7**
	12/27/2000	**2.6**	1.8	13.9	6.18	20.8	<0.5	NA
	3/6/2001	**5.19**	2.11	**30.1**	19.9	42.8	<0.5	NA
	6/12/2001	**1.6**	2.10	13	7.9	15	<1	**39**
	9/18/2001	<1	<1	8.5	<1	30	<1	**34**
	12/6/2001	**1.6**	2	6.8	6.0	28	<1	NA
	9/18/2002	**2.7**	16	**97**	180	20	<1	**140**
	9/22/2003	<1	0.54	22.3	6.4	3.5	<2	**37.6**
	8/18/2004	0.89	<2	11	<6	2.5	<2	14.9
	6/14/2007	0.59 J	<0.5	<0.5	<1	5.6	<0.5	<1
	12/5/2007	0.45 J	<1	0.22 J	<3	5.8	<1	<2
	6/16/2008	<0.9	<0.8	9	1.3J	1.6J	<0.3	15
	11/20/2008	< 0.90	< 0.80	0.80 J	< 0.90	5.4	< 0.30	< 1.0
	5/20/2009	< 0.06	< 0.06	0.92	< 0.14	3.2	< 0.07	NA
	5/26/2010	0.16 J	0.12 J	1.6	0.33 J	3.4	0.16 J	NA
	3/23/2011	<0.13	0.23 J	5.5	0.95 J	1.2	<0.16	NA
	5/22/2012	<0.13	<0.13 U	1.2	<0.3	0.97	<0.16	NA
DUP	5/22/2012	<0.13	<0.13	1.2	<0.3	0.93	<0.16	NA

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Well	Date	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	1,2-DCA	Naphthalene
		(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
MW-9	12/5/1997	**1.9**	<1	<1	<1	10	**0.7**	1
	3/24/1998	<1	<5	<1	<2	<5	<1	<10
	6/9/1998	<1	<5	<1	<2	<5	<1	<10
	9/16/1998	**2**	<5	<1	<2	<5	<1	<10
	12/15/1998	<1	<5	<1	<2	<5	<1	<10
	2/23/1999	<1	<5	<1	<2	<5	<1	<1
	6/2/1999	<1	<5	<1	<2	<5	<1	<5
	9/14/1999	<1	<5	<1	<2	<5	<1	NA
	12/21/1999	<1	<5	<1	<2	<5	<1	NA
	3/9/2000	<1.59	<1.59	<1.59	<1.59	<1.59	<1.59	NA
	6/6/2000	0.6	<0.5	<0.5	<0.5	1.6	<0.5	NA
	9/22/2000	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5
	12/27/2000	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA
	3/6/2001	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA
	6/12/2001	<1	<1	<1	<1	<1	<1	<2
	9/18/2001	<1	<1	<1	<1	<1	<1	<2
	12/6/2001	<1	<1	<1	<1	2.9	<1	NA
	9/18/2002	<1	<5	<1	<2	<5	<1	<5
	9/22/2003	<1	<2	<2	<6	<2	<2	<2
	8/18/2004	<1	<2	<2	<6	<2	<2	<2
	6/14/2007	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<1
	12/5/2007	<1	<1	<1	<3	<1	<1	<2
	6/16/2008	<0.9	<0.8	<0.8	<0.9	<1	<0.3	<1
	11/20/2008	< 0.90	< 0.80	< 0.80	< 0.90	< 1.0	< 0.30	< 1.0
	5/20/2009	< 0.06	< 0.06	< 0.05	< 0.14	< 0.06	< 0.07	NA
	5/26/2010	<0.11 UJ	<0.11 UJ	<0.11 UJ	<0.32 UJ	<0.12 UJ	<0.14 UJ	NA
	3/22/2011	<0.13	<0.13	<0.15	<0.3	<0.13	<0.16	NA
	5/22/2012	<0.13	<0.13	<0.15	<0.3	<0.13	<0.16	NA
MW-10	12/5/1997	<1	<1	<1	<1	<8	<0.25	<1
	3/24/1998	<1	<5	<1	<2	<5	<1	<10
	6/9/1998	<1	<5	<1	<2	<5	<1	<10
	9/16/1998	<1	<5	<1	<2	<5	<1	<10
	12/15/1998	<1	<5	<1	<2	<5	<1	<10
	2/23/1999	<1	<5	<1	<2	<5	<1	<1
	6/2/1999	<1	<5	<1	<2	<5	<1	<5
	9/14/1999	<1	<5	<1	<2	<5	<1	NA
	12/21/1999	<1	<5	<1	<2	<5	<1	NA
	3/9/2000	<1.59	<1.59	<1.59	<1.59	<1.59	<1.59	NA
	6/6/2000	<0.5	<0.5	<0.5	<0.5	3.0	<0.5	NA
	9/22/2000	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5
	12/27/2000	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA
	3/6/2001	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA
	6/12/2001	<1	<1	<1	<1	1.0	<1	<2
	9/18/2001	<1	1.2	<1	<1	1.0	<1	<2
	12/6/2001	<1	<1	<1	<1	1.3	<1	NA
	9/18/2002	<1	<5	<1	<2	<5	<1	<5
	9/22/2003	<1	<2	<2	<6	0.8	<2	<2
	8/18/2004	<1	<2	<2	<6	<2	<2	<2
	6/14/2007	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<1
	12/5/2007	<1	<1	<1	<3	<1	<1	<2
	6/16/2008	<0.9	<0.8	<0.8	<0.9	<1	<0.3	<1
	11/20/2008	< 0.90	< 0.80	< 0.80	< 0.90	< 1.0	< 0.30	< 1.0
	5/20/2009	< 0.06	< 0.06	< 0.05	< 0.14	0.21 J	< 0.07	NA
	5/26/2010	<0.11 UJ	<0.11 UJ	<0.11 UJ	<0.32 UJ	0.22 J	<0.14 UJ	NA
	3/22/2011	<0.13	<0.13	<0.15	<0.3	<0.13	<0.16	NA
	5/22/2012	<0.13	<0.13	<0.15	<0.3	<0.13	<0.16	NA

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Well	Date	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	1,2-DCA	Naphthalene
		(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
MW-11	12/5/1997	<1	<1	<1	<1	<8	<0.25	<1
	3/24/1998	<1	6	3	6	<5	<1	<10
	6/9/1998	<1	<5	<1	<2	<5	<1	<10
	9/16/1998	<1	<5	<1	<2	<5	<1	<10
	12/15/1998	<1	<5	<1	<2	<5	<1	<10
	2/23/1999	<1	<5	<1	<2	<5	<1	<1
	6/2/1999	<1	<5	<1	<2	<5	<1	<5
	9/14/1999	<1	<5	<1	<2	<5	<1	NA
	12/21/1999	<1	<5	<1	<2	<5	<1	NA
	3/9/2000	<1.59	<1.59	<1.59	<1.59	<1.59	<1.59	NA
	6/6/2000	0.5	<0.5	<0.5	<0.5	2.5	<0.5	NA
	9/22/2000	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5
	12/27/2000	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA
	3/6/2001	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA
	6/12/2001	<1	<1	<1	<1	1.4	<1	<2
	9/18/2001	<1	<1	<1	<1	<1	<1	<2
	12/5/2001	<1	<1	<1	<1	<1	<1	NA
	9/18/2002	<1	<5	<1	<2	<5	<1	<5
	9/22/2003	<1	<2	<2	<6	3	<2	<2
	8/18/2004	<1	<2	<2	<6	0.76	<2	<2
	5/26/2010	<0.11 UJ	<0.11 UJ	<0.11 UJ	<0.32 UJ	0.23 J	<0.14 UJ	NA
	3/22/2011	<0.13	<0.13	<0.15	<0.3	0.23 J	<0.16	NA
	5/22/2012	<0.13	<0.13	<0.15	<0.3	0.21 J	<0.16	NA
MW-12	12/5/1997	<1	<1	<1	<1	<8	<0.25	<1
	3/24/1998	<1	8	<1	<2	<5	<1	<10
	6/9/1998	<1	<5	<1	<2	<5	<1	<10
	9/16/1998	<1	<5	<1	<2	<5	<1	<10
	12/15/1998	<1	<5	<1	<2	<5	<1	<10
	2/23/1999	<1	<5	<1	<2	9	<1	<1
	6/2/1999	<1	<5	<1	<2	10	<1	<5
	9/14/1999	<1	<5	<1	<2	9	<1	NA
	12/21/1999	<1	<5	<1	<2	7.8	<1	NA
	3/9/2000	<1.59	<1.59	<1.59	<1.59	5.4	<1.59	NA
	6/6/2000	<0.5	<0.5	<0.5	<0.5	7.4	<0.5	NA
	9/22/2000	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5
	12/27/2000	<0.5	<0.5	<0.5	<0.5	11.2	<0.5	NA
	3/6/2001	<0.5	<0.5	<0.5	<0.5	15.6	<0.5	NA
	6/12/2001	**2.8**	13	2.2	12.9	21	<1	2.8
	9/18/2001	<1	2.5	<1	<1	13	<1	<2
	12/5/2001	<1	<1	<1	<1	14	<1	NA
	9/18/2002	<1	<5	<1	<2	17	<1	<5
	9/22/2003	<1	<2	<2	<6	5.5	<2	<2
	8/18/2004	<1	<2	<2	<6	0.51	<2	<2
	6/14/2007	<0.5	<0.5	<0.5	<1	0.55 J	<0.5	<1
	12/5/2007	<1	<1	<1	<3	0.49 J	0.30 J	<2
	6/16/2008	<0.9	<0.8	<0.8	<0.9	<1	<0.3	<1
	11/20/2008	< 0.90	< 0.80	< 0.80	< 0.90	< 1.0	0.37 J	< 1.0
	5/20/2009	< 0.06	< 0.06	< 0.05	< 0.14	0.41 J	**0.39 J**	NA
	11/10/2009	< 0.06	< 0.06	< 0.05	< 0.14	0.32 J	**0.40 J**	NA
DUP	11/10/2009	< 0.06	< 0.06	< 0.05	< 0.14	0.32 J	**0.43 J**	NA
	5/26/2010	<0.11 UJ	<0.11 UJ	<0.11 UJ	<0.32 UJ	0.26 J	<0.14 UJ	NA
	11/11/2010	<0.11	<0.11	<0.11	<0.32	<0.14	0.16 J	NA
DUP	11/11/2010	<0.11	<0.11	<0.11	<0.32	<0.14	0.15 J	NA
	3/22/2011	<0.13	<0.13	<0.15	<0.3	0.28 J	**0.48 J**	NA
	11/23/2011	<0.13 UJ	<0.13 UJ	<0.15 UJ	<0.3 UJ	0.20 J	**0.59 J**	NA
DUP	11/23/2011	<0.13 UJ	<0.13 UJ	<0.15 UJ	<0.3 UJ	0.21 J	**0.66 J**	NA
	5/22/2012	<0.13	<0.13	<0.15	<0.3	0.25 J	**0.68**	NA
	11/15/2012	< 0.10	< 0.10	< 0.10	< 0.22	0.22 J	0.37 J	NA
DUP	11/15/2012	< 0.10	< 0.10	< 0.10	< 0.22	0.24 J	**0.47 J**	NA
	10/16/2013	< 0.10	< 0.10	< 0.10	< 0.22	0.23 J	**0.73**	NA
DUP	10/16/2013	< 0.10	< 0.10	< 0.10	< 0.22	0.25 J	**0.83**	NA
	10/2/2014	< 0.10	< 0.10	< 0.10	<0.2	0.22 J	**0.86**	NA
DUP	10/2/2014	< 0.10	< 0.10	< 0.10	<0.2	0.19 J	**0.63**	NA
	10/27/2015	< 0.17	< 0.17	< 0.15	<0.43	0.23 J	**1.1**	NA

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Well	Date	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	1,2-DCA	Naphthalene
		(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
MW-13	3/24/1998	<1	8	<1	<2	<5	<1	<10
	6/9/1998	<1	<5	<1	<2	<5	<1	<10
	9/16/1998	<1	<5	<1	<2	<5	<1	<10
	12/15/1998	<1	<5	<1	<2	<5	<1	<10
	2/23/1999	<1	<5	<1	<2	<5	<1	<1
	6/2/1999	<1	<5	<1	<2	<5	<1	<5
	9/14/1999	<1	<5	<1	<2	<5	<1	NA
	12/21/1999	<1	<5	<1	<2	<5	<1	NA
	3/9/2000	<1.59	<1.59	<1.59	<1.59	<1.59	<1.59	NA
	6/6/2000	0.8	<0.5	<0.5	<0.5	1.4	<0.5	NA
	9/22/2000	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5
	12/27/2000	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA
	3/6/2001	<0.5	<0.5	<0.5	<0.5	0.7	<0.5	NA
	6/12/2001	<1	<1	<1	<1	<1	<1	<2
	9/18/2001	<1	<1	<1	<1	<1	<1	<2
	12/6/2001	<1	<1	<1	<1	1.3	<1	NA
	9/18/2002	<1	<5	<1	<2	<5	<1	<5
	9/22/2003	<1	<2	<2	<6	2	<2	<2
	8/18/2004	<1	<2	<2	<6	<2	<2	<2
	6/14/2007	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<1
	12/5/2007	<1	<1	<1	<3	0.46 J	<1	<1
	6/16/2008	<0.9	<0.8	<0.8	<0.9	<1	<0.3	<1
	11/20/2008	< 0.90	< 0.80	< 0.80	< 0.90	< 1.0	< 0.30	< 1.0
	5/20/2009	< 0.06	< 0.06	< 0.05	< 0.14	0.55	< 0.07	NA
	5/26/2010	<0.11 UJ	<0.11 UJ	<0.11 UJ	<0.32 UJ	0.63 J	<0.14 UJ	NA
	3/23/2011	<0.13	<0.13	<0.15	<0.3	<0.33 J	<0.16	NA
	5/22/2012	<0.13	<0.13	<0.15	<0.3	0.29 J	<0.16	NA
MW-14	3/24/1998	<1	9	<1	<2	<8	<1	<10
	6/9/1998	<1	<5	<1	<2	<5	<1	<10
	9/16/1998	<1	<5	<1	<2	<5	<1	<10
	12/15/1998	<1	<5	<1	<2	<5	<1	<10
	2/23/1999	<1	<5	<1	<2	<5	<1	<1
	6/2/1999	<1	<5	<1	<2	<5	<1	<5
	9/14/1999	<1	<5	<1	<2	<5	<1	NA
	12/21/1999	<1	<5	<1	<2	<5	<1	NA
	3/9/2000	<1.59	<1.59	<1.59	<1.59	<1.59	<1.59	NA
	6/6/2000	0.5	<0.5	<0.5	<0.5	1.7	<0.5	NA
	9/22/2000	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5
	12/27/2000	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA
	3/6/2001	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA
	6/12/2001	<1	<1	<1	1.8	43	<1	<2
	9/18/2001	<1	<1	<1	<1	<1	<1	<2
	12/5/2001	<1	<1	<1	<1	1.8	<1	NA
	9/18/2002	<1	<5	<1	<2	<5	<1	<5
	9/22/2003	<1	<2	<2	<6	1.1	<2	<2
	8/18/2004	<1	<2	<2	<6	<2	<2	<2
	6/14/2007	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<1
	12/5/2007	<1	<1	<1	<3	0.39 J	<1	<2
	6/16/2008	<0.9	<0.8	<0.8	<0.9	<1	<0.3	<1
	11/20/2008	< 0.90	< 0.80	< 0.80	< 0.90	< 1.0	< 0.30	< 1.0
	5/20/2009	< 0.06	< 0.06	< 0.05	< 0.14	0.16 J	< 0.07	NA
	5/26/2010	<0.11 UJ	<0.11 UJ	<0.11 UJ	<0.32 UJ	0.23 J	<0.14 UJ	NA
	3/23/2011	<0.13	<0.13	<0.15	<0.3	0.18 J	<0.16	NA
	5/22/2012	<0.13	<0.13	<0.15	<0.3	0.16 J	<0.16	NA

NOTES:
ug/L = micrograms per liter
MTBE = Methyl Tert-Butyl Ether
1,2-DCA = 1,2-Dichloroethane
LNAPL = Light Non-Aqueous Phase Liquid
NA = Not Analyzed
DUP = Duplicate Sample
U = Not present above the associated level; blank contamination exists
J = Estimated value
UJ = Not detected and the detection limit is estimated
Bold indicates that the concentration exceeded the NC 2L standard at the time of sampling.
URS Corporation is not responsible for data generated prior to November 2006. Data included in this table not generated by or on behalf of URS Corporation (URS) has been taken from documents prepared and submitted to the NC DENR by Others and is included only for ease of reference; URS does not assume or accept any responsibility or liability for the quality, accuracy, or completeness of the data included in this table that was not generated by or on behalf of URS.

DOCUMENT TRACKING FORM

REPORT NAME: 2016 MW Abandonment Report SITE NUMBER: Former BP Facility #24208

TODAY'S DATE: 1.12.17 PROJ. NUMBER: GP16BPNA.NC15

SAMPLED DATE: TASK NUMBER: 6B000

DATE ANALY REC: PROJ MANAGER: Paul Goodell

1ST DRAFT DUE DATE: FINAL DUE DATE:

G-DRIVE LOCATION: proj/BP/NC/24208 Reports/2016 STRATA/SHAREPOINT UPLOAD DATE: FG4 1/12/17

Report Production:

Personnel	Assigned	Assigned Date	Budget	1st Draft Comp	2nd Draft Comp
Author(s):	AMS/PG/CSB				
Tables:					
Figures:	GS				
Tech Edit:					
Admin:	JPA				
Modeler:					
Engineering:					
PM Review:	Paul Goodell				
PE/PG Review:	CSB				

Comments/Delays:

Document Production:

Date and Time Submitted: 1.11.17

DUE DATE "OUT THE DOOR": 1.12.17

A- Clip B- Staple C- Three Ring D- Spiral Bound E- CD Other:

Copies	Color or BW	Deliver To:	Delivery Carrier by	Date Sent	Tracking Number
Original	Color +CD	Michael Rogers, NCDEQ	UPS 2nd Day Air	1.12.17	1Z W3X25202
Copy 1	Color	David Smith, Arcadis BP Project Driver	UPS Ground	"	03
Copy 2	CD	Files #24208			
Copy 3	pdf	Site #24208			
Copy 4	pdf	FG4 Sharepoint			

Special Instructions:

Final Submittal Review:

Name:

Work Date:

Signature/Date:

Must have manager signature prior to any documents being sent out.

ARCADIS Design & Consultancy for natural and built assets

ARCADIS G&M of North Carolina, Inc.
801 Corporate Center Drive
Suite 300
Raleigh
North Carolina 27607
Tel 919 854 1282
Fax 919 854 5448

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ENVIRONMENT

Mr. Michael Rogers
North Carolina Department of Environmental Quality
Division of Waste Management, Underground Storage Tank Section
Winston-Salem Regional Office
585 Waughtown Street
Winston-Salem, North Carolina 27107

Subject:
Monitoring Well Abandonment Report - 2016
Former BP Facility #24208
1121 Mebane Oaks Road
Mebane, Alamance County, North Carolina
NCDEQ Incident #13316
Risk Ranking: Low

Date:
January 11, 2017

Contact:
Paul Goodell

Phone:
919.415.2327

Email:
Paul.Goodell@Arcadis.com

Our ref:
GP16BPNA.NC15

Dear Mr. Rogers:

On behalf of Atlantic Richfield Company (ARCO), a BP Products North America, Inc. (BP) affiliated company, Arcadis G&M of North Carolina is submitting the attached Monitoring Well Abandonment Report – 2016 dated January 10, 2017 for the above referenced site. An electronic copy of this report including the NCDEQ correspondence, monitoring well abandonment records, and photographic log is included with the attached CD.

Please contact me at (919) 415-2327 with any questions or concerns related to the Report or this incident number.

ARCADIS G&M of North Carolina, Inc.

Paul Goodell

Paul Goodell, E.I.
AFS Project Manager 5

Attachments:
Attachment A – Monitoring Well Abandonment Report – 2016

ARCADIS Design & Consultancy for natural and built assets

Atlantic Richfield Company
c/o BP Products North America, Inc.

MONITORING WELL AB ANDONMENT REPORT - 2016

Former BP Facility #24208
1121 Mebane Oaks Road
Mebane, Alamance County, North Carolina

Groundwater Incident #13316

January 2017

,

MONITORING WELL ABANDONMENT REPORT – 2016

Prepared for:

Atlantic Richfield Company
c/o BP Products North America, Inc.
Mr. Greg Frisch – Project Manager
4850 E. 49th Street
MBC-3 Room 155C
Cuyahoga Heights, Ohio 44125
Tel 216.416.1232

Alexandra M. Simpson
AFS Task Leader 3

Paul Goodell, E.I.
AFS Project Manager 5

C. Scott Bostian, P.E.
Senior Engineer

NORTH CAROLINA PROFESSIONAL SEAL 025659 ENGINEER CURTIS S. BOSTIAN
1/10/2017

Prepared by:
Arcadis G&M of North Carolina, Inc.
801 Corporate Center Drive
Suite 300
Raleigh, North Carolina 27607
Tel 919.854.1282
Fax 919.854.5448
www.arcadis.com
Environmental

Our Ref.:

GP16BPNA.NC15

Date:

January 10, 2017

Monitoring Well Abandonment Report – 2016
Former BP Facility #24208
1121 Mebane Oaks Road
Mebane, Alamance County, North Carolina

Latitude 36° 4' 17"N Longitude 79° 16' 22"W

(Reference **Figure 1**)

Groundwater Incident #:	13316
Risk Classification:	Low
Reason for Risk Classification:	Dissolved-phase COCs exceed 2L Standards
Land Use Category:	Residential
Source of Release:	Former gasoline UST system(s)
Date of Release Discovery:	1994
Estimated Quantity of Release:	Unknown
Cause of Release:	Subsurface gasoline release from former UST system in 1994
Responsible Party:	Atlantic Richfield Company c/o BP Products North America, Inc. Attn: Greg Frisch 4850 East 49th Street MBC-3 Room 155C Cuyahoga Heights, Ohio 44125 (216) 416-1232
Property Owner:	Arrowhead BP 1121 Mebane Oaks Road Mebane, North Carolina 27302

I, _____, a Professional Engineer for Arcadis G&M of North Carolina, Inc., do certify that the information contained in this report is correct and accurate to the best of my knowledge. Arcadis G&M of North Carolina, Inc. is licensed to practice geology and engineering in North Carolina. The certification numbers of the company are C-155 (geology) and C-1869 (engineering).

NORTH CAROLINA PROFESSIONAL SEAL 025005 ENGINEER CHRIS S. BOSTIC

PE 25659 1/10/2017

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FIGURES

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EXECUTIVE SUMMARY

On behalf of Atlantic Richfield Company (ARCO), a BP Products North America, Inc. (BP) affiliated company, Arcadis G&M of North Carolina, Inc. (Arcadis) personnel oversaw the abandonment of all groundwater monitoring wells and remediation system wells associated with Former BP facility #24208 located at 1121 Mebane Oaks Road, in Mebane, Alamance County, North Carolina (the Site) on December 20-21, 2016. All well abandonment activities were conducted in response to the Notice of No Further Action (NFA) status letter dated December 20, 2016 from the North Carolina Department of Environmental Quality (NCDEQ).

1.0 INTRODUCTION

On December 20 – 21, 2016, on behalf Atlantic Richfield Company (ARCO), a BP Products North America, Inc. (BP) affiliated company, Arcadis G&M of North Carolina, Inc. (Arcadis) subcontracted Geologic Exploration (GEX) to properly abandon all groundwater monitoring wells and remediation system wells associated with Former BP Facility #24208 (the site) located at 1121 Mebane Oaks Road in Mebane, Alamance County, North Carolina. A site location map and site map are included as **Figure 1** and **2**, respectively.

The well abandonment activities were conducted in response to the Notice of No Further Action (NFA) status letter correspondence dated December 20, 2016 from the North Carolina Department of Environmental Quality (NCDEQ). A copy for the December 20, 2016 NFA letter is provided in **Appendix A.**

2.0 WELL ABANDONMENT ACTIVITIES

Fourteen (14) groundwater monitoring wells (MW-1, MW-2, MW-3, MW-4, MW-5, MW-6R, MW-7, MW-8, MW-9, MW-10, MW-11, MW-12, MW-13, and MW-14), twelve (12) air sparge/soil vapor extraction wells (AS-1, AS-2, AS-3, AS-4, VE-1, VE-2, VE-3, VE-4, VE-5, VE-6, and VE-7) and three (3) soil vapor implants (SV-1, SV-2, and SV3) were properly abandoned by GEX, a North Carolina licensed Well Driller (Cert. #A-4163) on December 20-21, 2016. The groundwater monitoring wells, air sparge wells, and soil vapor implants were housed in 8-inch diameter round manholes and the vapor extraction wells were housed in 2' x 2' vaults.

Abandonment of the groundwater monitoring wells, air sparge/soil vapor extraction wells, and soil vapor implants were performed in accordance with 15A NCAC 2C Well Construction Standards as follows:

- All of the groundwater monitoring wells, air sparge/soil vapor extraction wells, and soil vapor implants were abandoned in-place via tremie-grout methods. All locations were filled from the bottom up with a cement grout mixture consisting of Portland cement and powdered bentonite.

- Following tremie-grouting of the groundwater monitoring wells, air sparge/soil vapor extraction wells, and soil vapor implants, the manhole and vault voids were returned to grade using a concrete cap to ground surface. Before, during, and after photographs of monitoring well abandonment are included in **Appendix B**.

The locations of the former groundwater monitoring wells air sparge/soil vapor extraction wells, and soil vapor implants are illustrated in **Figure 2**. The Well Abandonment Records are included in **Appendix C**. Monitoring well, air sparge, and soil vapor extraction well construction information is presented in **Table 1**. Soil vapor implant construction details are presented in **Table 2**.

TABLES

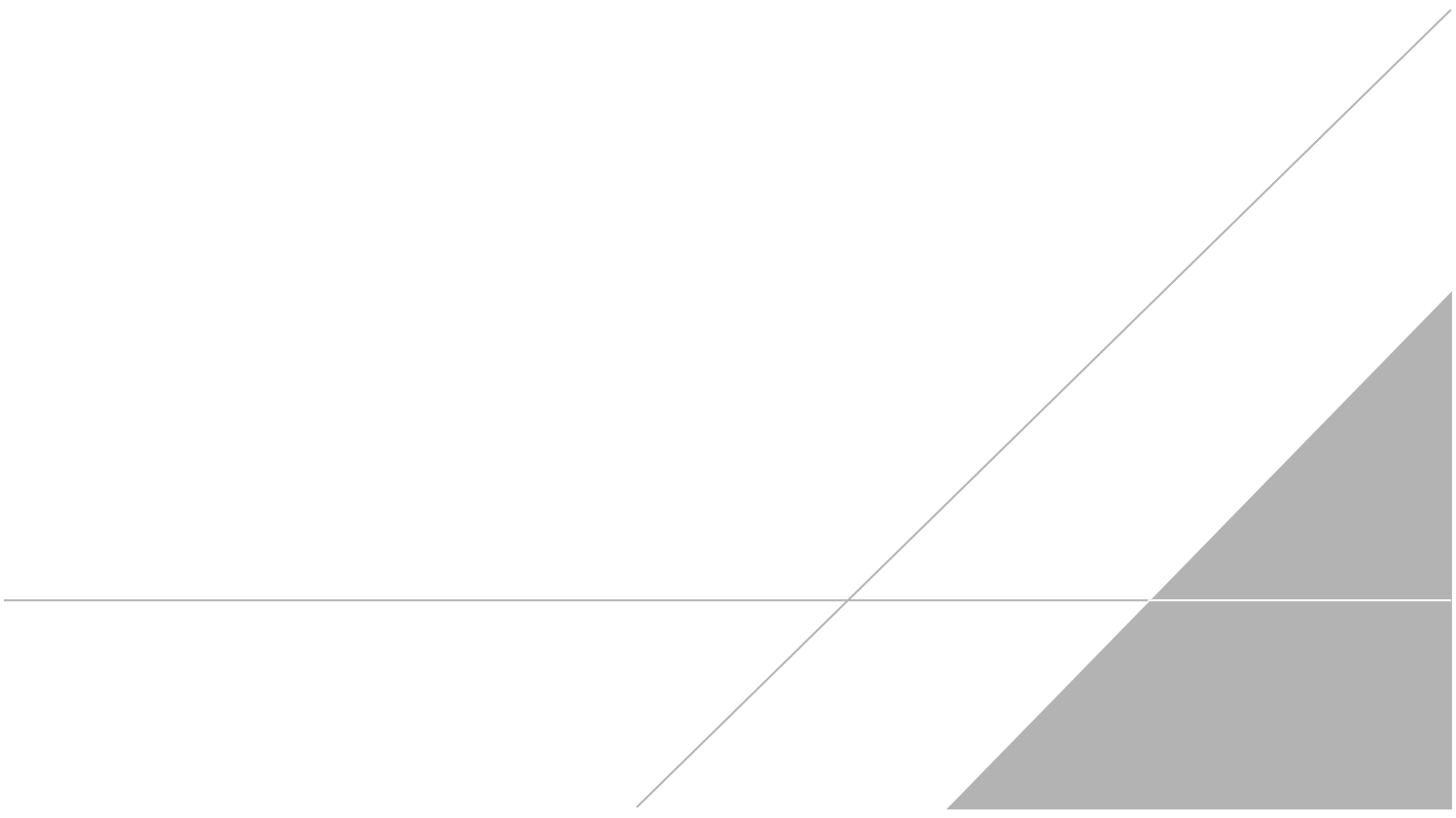

Table 1
Groundwater Monitoring and Remediation Well Construction Details
Well Abandonment Report - 2016
Former BP Service Station No. 24208
1121 Mebane Oaks Road
Mebane, North Carolina
NCDEQ Incident No. 13316

MONITORING WELLS								
Well No.	Date Installed	Date Abandoned	Total Depth[1]	Well Screen/ Casing I.D. (in)	Screen Interval[1]	Screen Slot Size (in)	TOC Elev.[2]	Current Status
MW-1	7/28/94	12/21 - 12/22/2016	37.5	4	22.5-37.5	0.010	496.49	Abandoned
MW-2	3/30/91	12/21 - 12/22/2016	37.5	4	17.5-37.5	0.010	497.52	Abandoned
MW-3	7/28/94	12/21 - 12/22/2016	37.5	4	17.5-37.5	0.010	497.62	Abandoned
MW-4	7/27/94	12/21 - 12/22/2016	37.5	4	27.5-37.5	0.010	496.70	Abandoned
MW-5	7/27/94	12/21 - 12/22/2016	37.5	4	22.5-37.5	0.010	497.29	Abandoned
MW-6R	2/22/07	12/21 - 12/22/2016	35	2	20-35	0.010	496.90	Abandoned
MW-7	4/3/96	12/21 - 12/22/2016	62	2	57-62	unk	496.52	Abandoned
MW-8	4/5/96	12/21 - 12/22/2016	41	2	unk	unk	495.73	Abandoned
MW-9	11/26/97	12/21 - 12/22/2016	40	2	25-40	0.010	496.36	Abandoned
MW-10	11/25/97	12/21 - 12/22/2016	40	2	25-40	0.010	495.89	Abandoned
MW-11	11/26/97	12/21 - 12/22/2016	35	2	20-35	0.010	490.50	Abandoned
MW-12	12/1/97	12/21 - 12/22/2016	80	2	75-80	0.010	495.65	Abandoned
MW-13	3/17/98	12/21 - 12/22/2016	37.5	2	22.5-37.5	0.010	496.67	Abandoned
MW-14	3/17/98	12/21 - 12/22/2016	37.5	2	22.5-37.5	0.010	497.03	Abandoned
AIR SPARGE/SOIL VAPOR EXTRACTION WELLS								
Well No.	Date Installed	Date Abandoned	Total Depth[1]	Well Screen/ Casing I.D. (in)	Screen Interval[1]	Screen Slot Size (in)	TOC Elev.[2]	Current Status
AS-1	11/9/2000	12/21 - 12/22/2016	36	2	34-36	0.010	NS	Abandoned
AS-2	12/4/2001	12/21 - 12/22/2016	45	2	40-45	0.010	NS	Abandoned
AS-3	1/20/2003	12/21 - 12/22/2016	34	2	29-34	0.010	NS	Abandoned
AS-4	1/20/2003	12/21 - 12/22/2016	40	2	35-40	0.010	NS	Abandoned
VE-1	11/9/2000	12/21 - 12/22/2016	34	4	14-34	0.010	NS	Abandoned
VE-2	11/9/2000	12/21 - 12/22/2016	14	4	3-14	0.010	NS	Abandoned
VE-3	12/4/2001	12/21 - 12/22/2016	35	4	5-35	0.010	NS	Abandoned
VE-4	12/3/2001	12/21 - 12/22/2016	35	4	5-35	0.010	NS	Abandoned
VE-5	12/5/2001	12/21 - 12/22/2016	35	4	5-35	0.010	NS	Abandoned
VE-6	12/4/2002	12/21 - 12/22/2016	35	4	5-35	0.010	NS	Abandoned
VE-7	12/4/2001	12/21 - 12/22/2016	35	4	5-35	0.010	NS	Abandoned
VE-8	12/4/2001	12/21 - 12/22/2016	35	4	5-35	0.010	NS	Abandoned

Notes
[1] Measured in feet below ground surface
[2] Measured in feet relative to site datum.
in = inches
TOC - Top Of Casing.
NS = Not Surveyed
unk = Unknown (well log not available)

Table 2
Soil Vapor Implant Construction Details

Former BP Service Station No. 24208
1121 Mebane-Oaks Road
Mebane, North Carolina

Implant Cluster	Implant No.	Total Depth[1]	Tubing/Screen I.D. (in)	Screen Depth Interval[1]	Tubing/Screen Length[1]	Tubing/Screen Volume[2]
SV1	1	3	0.25	2.5-3	7.0	0.07
	2	8	0.25	7.5-8	10.3	0.1
	3	18	0.25	17.5-18	21.6	0.22
SV2	1	3	0.25	2.5-3	7.0	0.07
	2	8	0.25	7.5-8	11.9	0.12
	3	20	0.25	19.5-20	24.6	0.24
SV3	1	3	0.25	2.5-3	7.0	0.07
	2	8	0.25	7.5-8	12.2	0.12
	3	20	0.25	19.5-20	23.1	0.23

Notes

[1] Measured in feet below ground surface

[2] Measured in Liters

in = inches

I.D. - Inner diameter

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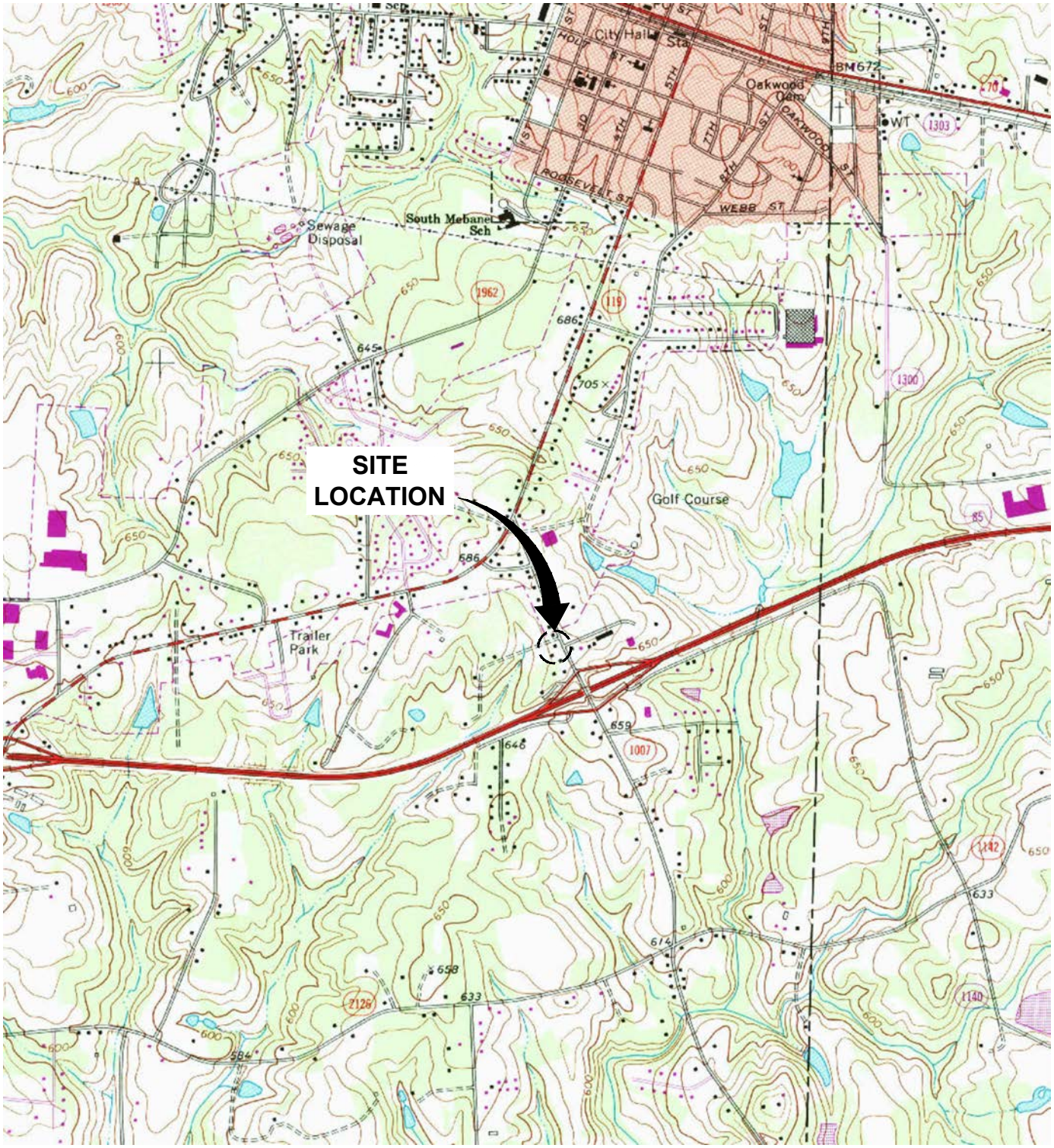
FIGURES



REFERENCE: BASE MAP USGS 7.5 MINUTE QUADRANGLE., MEBANE, NC, 1969, REVISED 1994

LOCATION MAP

0 1000' 2000'

GRAPHIC SCALE

AREA LOCATION

NORTH CAROLINA

ATLANTIC RICHFIELD COMPANY
C/O BP PRODUCTS NORTH AMERICA, INC.
FORMER BP STATION 24208
MEBANE OAKS ROAD, MEBANE, NORTH CAROLINA
WELL ABANDONMENT REPORT

SITE LOCATION MAP

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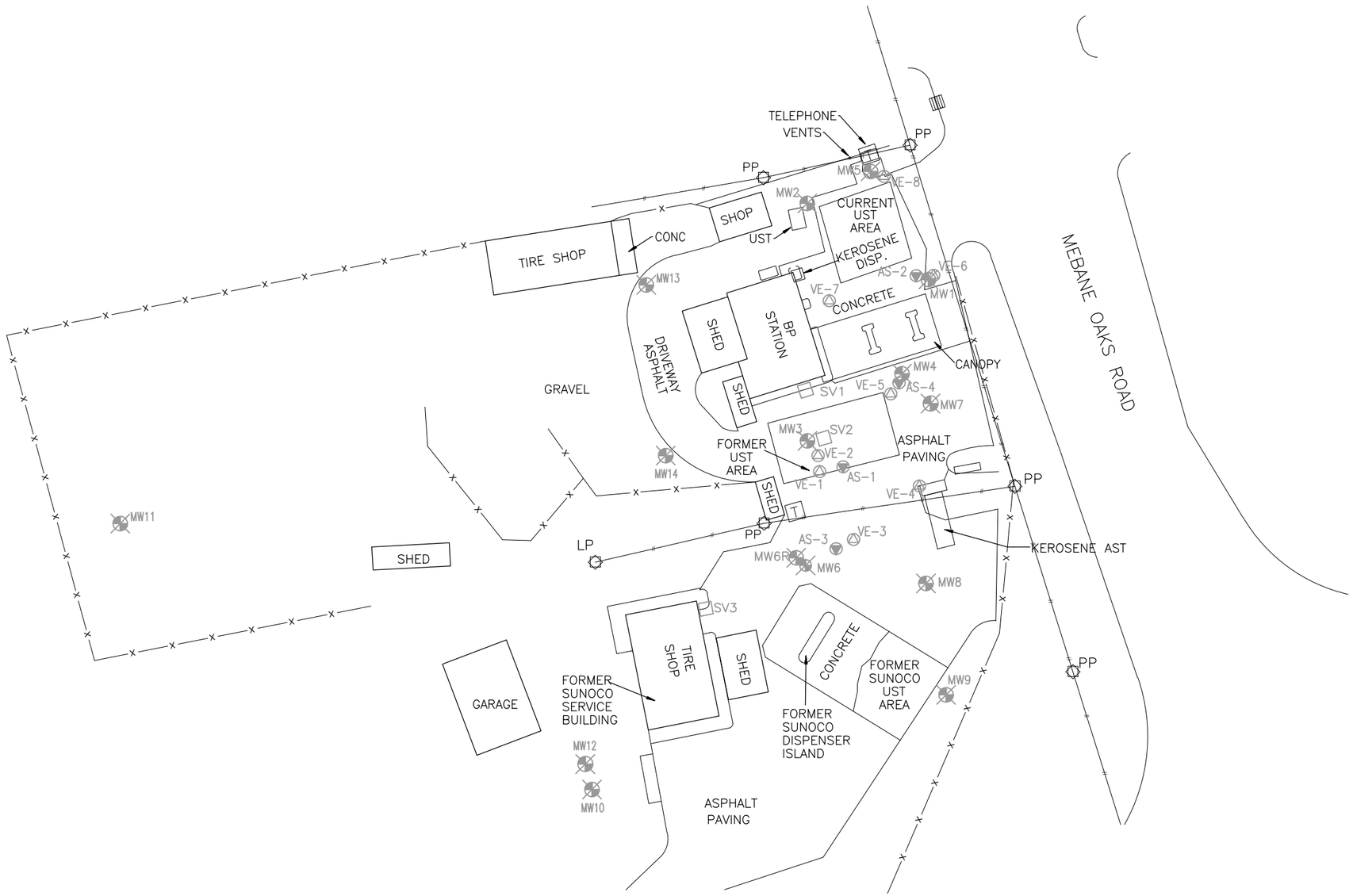
FIGURE
1

CITY:SYRACUSE-NY DIV/GROUP:ENVCAD DB:G.STEINBERGER LD: PIC: PM:P.GOODELL TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
C:\ENVCAD\SYRACUSE\ACT\GP16BPNA\NC156B000\DWG\NC15N01.dwg LAYOUT: 1 SAVED: 12/13/2016 1:54 PM ACADVER: 19.1S (LMS TECH) PAGESETUP: --- PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 12/13/2016 1:55 PM BY: STEINBERGER, GEORGE
XREFS: IMAGES: PROJECTNAME: ---
NC15X01.jpg



LEGEND

- WATER SUPPLY WELL
- ABANDONED MONITORING WELL
- SVI — ABANDONED SOIL VAPOR IMPLANT CLUSTEI
- AS-1 — ABANDONED AIR SPARGE WELL
- VE-1 — ABANDONED SOIL VACUUM EXTRACTION WE
- OVERHEAD POWER LINE
- CHAINLINK FENCE

NOTES:

1. BASE MAP INFORMATION FROM URS, AUTOCAD FILE 24208-2.dwg, DATED 1/18/2007, AT A SCALE OF 1" = 50'.
2. BASEMAP IS NOT ORIENTED TO ANY KNOWN COORDINATE SYSTEM.

ATLANTIC RICHFIELD COMPANY
C/O BP PRODUCTS NORTH AMERICA, INC.
FORMER BP STATION 24208
MEBANE OAKS ROAD, MEBANE, NORTH CAROLINA
WELL ABANDONMENT REPORT

SITE MAP

ARCADIS Design & Consultancy for natural and built assets

FIGURE **2**

APPENDIX A

Notice of No Further Action – December 20, 2016

Waste Management
ENVIRONMENTAL QUALITY

PAT MCCRORY
Governor

DONALD R. VAN DER VAART
Secretary

MICHAEL SCOTT
Director

December 20, 2016

Mr. Greg Frisch
BP Products of North America, Inc.
1114 North Court #125, Suite 20. 107C
Medina, OH 44256

Re: Notice of No Further Action
15A NCAC 2L .0407(d)
Risk-based Assessment and Corrective Action
for Petroleum Underground Storage Tanks

BP Station #24208
1121 Mebane Oaks Drive, Mebane, NC
Alamance County
Incident Number: 13316
Risk Classification: Low
Ranking: N/A

Dear Mr. Frisch:

The Site Closure Request received by the UST Section, Division of Waste Management, Winston-Salem Regional Office on August 4, 2016 has been reviewed. The review indicates soil contamination exceeds the residential maximum soil contaminant concentrations (MSCCs) established in Title 15A NCAC 2L .0411 and groundwater contamination meets the cleanup requirements for a low-risk site but exceeds the groundwater quality standards established in Title 15A NCAC 2L .0202.

The UST Section determines that no further action is warranted for this incident. All required actions have been completed. On November 8, 2016, the UST Section received a certified copy of the Notice of Residual Petroleum which is filed with the Register of Deeds. On December 13, 2016, the UST Section was provided with proof of receipt of the conditional Notice of No Further Action letter or of refusal by the addressee to accept delivery of the letter or with a description of the manner in which the letter was posted.

This determination shall apply unless the UST Section later finds that the discharge or release poses an unacceptable risk or a potentially unacceptable risk to human health or the environment. Pursuant to Title 15A NCAC 2L .0407(a) you have a continuing obligation to notify the Department of Environmental Quality of any changes that might affect the risk or land use classifications that have been assigned.

Be advised that as groundwater contamination exceeds the groundwater quality standards established in Title 15A NCAC 2L .0202, groundwater within the area of contamination or within the area where groundwater contamination is expected to migrate is not suitable for use as a water supply. Be advised that as soil contamination exceeds the residential MSCCs, the property containing the contamination is suitable only for industrial/ commercial use or restricted residential use (The term "residential is inclusive of, but not limited to, private houses, apartment complexes, schools, nursing

homes, parks, recreation areas and day care centers), as stipulated in the Notice of Residual Petroleum (attached).

Interested parties may examine the Site Closure Request by contacting this regional office and may submit comments on the site to the regional office at the address or telephone number listed below.

This No Further Action determination applies only to the subject incident; for any other incidents at the subject site, the responsible party must continue to address contamination as required.

If you have any questions regarding this notice, please contact me at the address or telephone number listed below.

Sincerely,

Michael Rogers

Michael Rogers
Hydrogeologist
Winston-Salem Regional Office
UST Section, Division of Waste Management, NCDEQ

Attachments: Notice of Residual Petroleum

cc: Alamance County Health Department
Paul Goodell, Arcadis U.S., Inc.
WSRO files

NORTH CAROLINA - ALAMANCE COUNTY
This is to certify that the foregoing is a true copy of the original on file in this office.
Book 3603 Page 852
This 16 day of Nov, 2016
HUGH WEBSTER
Register of Deeds
By _____
Assistant Deputy

ARCADIS U.S. INC
PAUL GOODELL
801 CORPORATE CENTER DRIV
STE 300
RALEIGH, NC 27607

FILED
ALAMANCE COUNTY, NC
HUGH WEBSTER
REGISTER OF DEEDS

FILED	Nov 16, 2016
AT	10:52:04 am
BOOK	03603
START PAGE	0852
END PAGE	0856
INSTRUMENT #	20068
EXCISE TAX	(None)

DF

NOTICE OF RESIDUAL PETROLEUM

Former BP Station #24208, Alamance County, North Carolina UST Inc.* 13316 Deed Book 2226 Deed Page 497
(Site name)

The property that is the subject of this Notice (hereinafter referred to as the "Site") contains residual petroleum and is an Underground Storage Tank (UST) incident under North Carolina's Statutes and Regulations, which consist of N.C.G.S. 143-215.94 and regulations adopted thereunder. This Notice is part of a remedial action for the Site that has been approved by the Secretary (or his/her delegate) of the North Carolina Department of Environment Quality (or its successor in function), as authorized by N.C.G.S. Section 143B-279.9 and 143B-279.11. The North Carolina Department of Environment Quality shall hereinafter be referred to as "DEQ".

NOTICE

Petroleum product was released and/or discharged at the Site. **Petroleum constituents remain on the site, but are not a danger to public health and the environment, provided that the restrictions described herein, and any other measures required by DEQ pursuant to N.C.G.S. Sections 143B-279.9 and 143B-279.11, are strictly complied with.** This "Notice of Residual Petroleum" is composed of a description of the property, the location of the residual petroleum and the land use restrictions on the Site. The Notice has been approved and notarized by DEQ pursuant to N.C.G.S. Sections 143B-279.9 and 143B-279.11 and has/shall be recorded at the **Alamance County** Register of Deeds' office
(name of county)
Book ____, Page ____.

Any map or plat required by DEQ has been/shall be recorded at the **Alamance County** Register of Deeds' office Book ____, Page ____, and has been/shall be incorporated into the Notice by this reference.
(name of county)

Source Property

Everett Smith, of **Mebane, North Carolina** is the owner in fee simple of all or a portion of the Site, which is located in the County of **Alamance**, State of North Carolina, and is known and legally described as:
(owner's name) *(city & state of homeowner)*

5/26

Parcel #164698 as described below:

Former BP Station #24208

Street Address: 1121 Mebane Oaks Road

State of North Carolina, County of Alamance, Township of Melville, City of Mebane,

BEGINNING at an iron stake in the western margin of the 60 ft. right-of-way of Mebane Oaks Road, corner with James A. Nicholson; thence with the line of Nicholson S. 72°45'W. 390.64 ft. to an iron stake in the line of Thomas R. McPherson, corner with Nicholson; thence with McPherson's line N. 22°32'45" W. 149.62 ft. to an iron stake in the line of McPherson, corner with Lonnie R. Sykes; thence with the line of Sykes N. 72°51'10" E. 389.65 ft. to an iron stake in the western margin of the 60 ft. right-of-way of Mebane Oaks, corner with Sykes; thence with the western margin of the 60 ft. right-of-way of Mebane Oaks Road S. 23°20'40" E. 146.66 ft. to an iron stake in the western margin of said right-of-way; thence S. 00°37'50" W. 2.57 ft. to the beginning. This description was obtained from a survey by Southern Mapping & Engineering Company, Greensboro, North Carolina August 9, 1965. This is the property known as Lot 5, 6, and 7 of the N.H. Sykes Subdivision known as Broadwood Acres, as shown on drawing dated May 5, 1945 and recorded in Plat Book 5 at page 21, Alamance County Registry and conveyed to Jody McDaniel and wife, Ruby T. McDaniel by Harry Avent, et ux, N.H. Sykes et ux, and However W. Sykes et ux. LESS AND EXCEPT any portion of the property used for public right-of-way. And being the same property described in deed recorded in DB 898 PG 566 of the Alamance County Registry.

Additional Affected Property Also Subject to Restrictions

_____ of _____ is the owner in fee simple of a portion of
(owner's Name) *(city & state of owner)*
the Site, which is located in the County of **Alamance**, State of North Carolina. Petroleum contamination is located on this property at the time this Notice is approved. This property was also owned or controlled by the underground storage tank owner or operator or another party responsible for the petroleum discharge or release at the time the discharge or release was discovered or reported, or at any time thereafter. This property is known and legally described as:

(Insert Real Property Description Here for Additional Properties Owned or Controlled by Any Owner or Operator of the Underground Storage Tank or Other Responsible Party, if Applicable)

For protection of public health and the environment, the following land use restrictions required by N.C.G.S. Section 143B-279.9(b) shall apply to all of the above-described real property. These restrictions shall continue in effect as long as residual petroleum remains on the site in excess of unrestricted use standards and cannot be amended or cancelled unless and until the **Alamance** County Register of Deed receives and records the written concurrence of the Secretary (or his/her delegate) of DEQ (or its successor in function).

Additional Affected Property Not Subject to Restrictions

Additionally residual petroleum is also located on the following property. The following property is not subject to land use restrictions pursuant to N.C.G.S. Section 143B-279.9(b). The following property is known and legally described as:

Parcel #164700 as described below:

BEGINNING at an iron stake on the west side of Mebane Oaks Road in Gulf Oil Company's Line, iron stake being 38' from center of Mebane Oaks Road; thence with State Highway Commission's right of way line S. 3 deg. 58 min. E. 60' to an iron stake; thence again with the said right of way line S. 25 deg. 00 min. W. 122.55' to a hole cut in concrete; thence again with said right of way line S. 72 deg. 45 min. W. 56.40' to an iron stake; thence again with said right of way line S. 39 deg. 39 min. W. 156.84 feet to an iron stake, a corner with James A. Nicholson; thence with the said Nicholson's line N. 50 deg. 21 min. W. 30' to an iron stake; thence again with the said Nicholson's line N. 25 deg. 09 min. E. 150.14' to an iron stake; thence again with the said Nicholson's line N. 26 deg. 35 min. W. 100' to an iron stake in Gulf Oil Company's line; thence with Gulf Oil Company's line N. 72 deg. 45. E. 215. 52' to the Beginning, containing 31,417 square feet, more or less, and being part of the James A. Nicholson property.

PERPETUAL LAND USE RESTRICTIONS

Soil: *The Site shall be used for industrial/commercial use only. Industrial/commercial use means a use where exposure to soil contamination is limited in time and does not involve exposure to children or other sensitive populations such as the elderly or sick. The real property shall not be developed or utilized for residential purposes including but not limited to: primary or secondary residences (permanent or temporary), schools, daycare centers, nursing homes, playgrounds, parks, recreation areas and/or picnic areas.*

Groundwater: *Groundwater from the site is prohibited from use as a water supply. Water supply wells of any kind shall not be installed or operated on the site.*

ENFORCEMENT

The above land use restriction(s) shall be enforced by any owner, operator, or other party responsible for the Site. The above land use restriction(s) may also be enforced by DEQ through any of the remedies provided by law or by means of a civil action, and may also be enforced by any unit of local government having jurisdiction over any part of the Site. Any attempt to cancel this Notice without the approval of DEQ (or its successor in function) shall be subject to enforcement by DEQ to the full extent of the law. Failure by any party required or authorized to enforce any of the above restriction(s) shall in no event be deemed a waiver of the right to do so thereafter as to the same violation or as to one occurring prior or subsequent thereto.

IN WITNESS WHEREOF, **BP Products North America Inc.** has caused this Notice to be executed pursuant to N.C.G.S. Sections 143B-279.9 and 143B-279.11, this **7** day of **November**, **2016**.

BP Products North America Inc.
(name of responsible party if agent is signing)

By: Paul Goodell
(signature of responsible party, attorney or other agent if there is one)

Attorney-in-Fact
(Title of agent for responsible party if there is one)

Signatory's name typed or printed: **Paul M. Goodell**

NORTH CAROLINA
WAKE COUNTY
(Name of county in which acknowledgment was taken)

I certify that the following person personally appeared before me this day, acknowledging to me that he ~~or she~~ signed the foregoing document: PAUL GOODELL. NCOL 31044971

Date: 11-7-16

(Official Seal)

Carol Rickerby
NOTARY PUBLIC
HARNETT COUNTY, N.C.

Carol Rickerby
(signature of Notary Public)

CAROL RICKERBY
(printed or typed name of Notary Public)

Notary Public

My commission expires: NOV 30, 2019

Approved for the purposes of N.C.G.S. 143B-279.11

Carin Lee Kromm
(signature of Regional Supervisor)

CARIN LEE KROMM, Regional Supervisor
(printed name of Regional Supervisor)

Winston-Salem Regional Office
UST Section
Division of Waste Management
Department of Environment Quality

NORTH CAROLINA
Davidson COUNTY
(Name of county in which acknowledgment was taken)

I certify that the following person(s) personally appeared before me this day, each acknowledging to me that he or she signed the foregoing document: Carin Lee Kromm *(full printed name of Regional Supervisor)*

Date: 11-8-2016

(Official Seal)

Sheila M. McIntosh
Notary Public - North Carolina
Davidson County
My Commission Expires January 19, 2017

expires: 1-19-2017

Sheila M. McIntosh
(signature of Notary Public)

Sheila M. McIntosh
(printed or typed name of Notary Public)

Notary Public

My commission

APPENDIX B

Photographic Log (Well Abandonment) – December 20-21, 2016

Project Photographs

Former BP Facility #24208
NCDEQ Incident #13316
1121 Mebane Oaks Road, Mebane, North Carolina

Photo: 1

Description:
Monitoring well MW-9 prior to well abandonment activities.

Photo: 2

Description:
Monitoring well MW-9 during well abandonment activities.

Project Photographs

Former BP Facility #24208
NCDEQ Incident #13316
1121 Mebane Oaks Road, Mebane, North Carolina

Photo: 3

Description:
Monitoring well MW-9 following completion of MW abandonment activities.

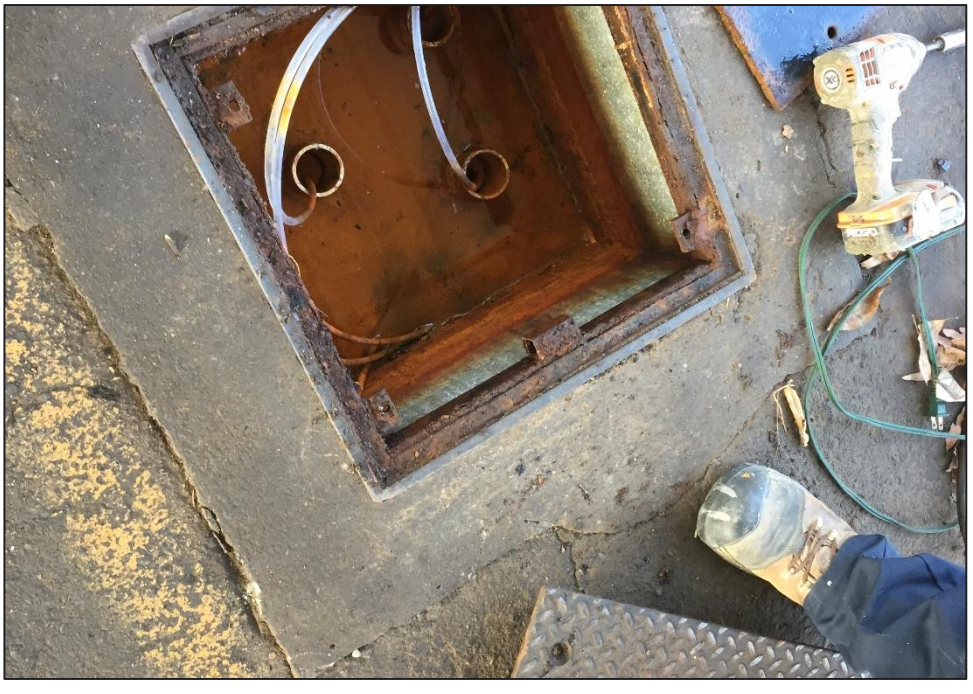


Photo: 4

Description:
Soil vapor implant SV-3 prior to well abandonment activities.

Project Photographs

Former BP Facility #24208
NCDEQ Incident #13316
1121 Mebane Oaks Road, Mebane, North Carolina

Photo: 5

Description:

Soil vapor implant SV-3 during well abandonment activities.

Photo: 6

Description:

Soil vapor implant SV-3 following completion of well abandonment activities.

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Project Photographs

Former BP Facility #24208
NCDEQ Incident #13316
1121 Mebane Oaks Road, Mebane, North Carolina

Photo: 7

Description:
Air sparge well AS-3 prior to well abandonment activities.

Photo: 8

Description:
Air sparge well AS-3 during well abandonment activities.

Project Photographs

Former BP Facility #24208
NCDEQ Incident #13316
1121 Mebane Oaks Road, Mebane, North Carolina

Photo: 9

Description:
Air sparge well AS-3 following completion of well abandonment activities.

Photo: 10

Description:
Vapor extraction well VE-3 prior to well abandonment activities.

Project Photographs

Former BP Facility #24208
NCDEQ Incident #13316
1121 Mebane Oaks Road, Mebane, North Carolina

Photo: 11

Description:

Vapor extraction well VE-3 during well abandonment activities.

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Photo: 12

Description:

Vapor extraction well VE-3 following well abandonment activities.

APPENDIX C

Well Abandonment Records – December 20-21, 2016

WELL ABANDONMENT RECORD

This form can be used for single or multiple wells

1. Well Contractor Information:

MARK IRELAND

Well Contractor Name (or well owner personally abandoning well on his/her property)

A - 4163

NC Well Contractor Certification Number

GEOLOGIC EXPLORATION, INC

Company Name

2. Well Construction Permit #: _____

List all applicable well construction permits (i.e. County, State, Variance, etc.) if known

3. Well use (check well use):

Water Supply Well:

- ☐ Agricultural
- ☐ Municipal/Public
- ☐ Geothermal (Heating/Cooling Supply)
- ☐ Residential Water Supply (single)
- ☐ Industrial/Commercial
- ☐ Residential Water Supply (shared)
- ☐ Irrigation

Non-Water Supply Well:

- ☑ Monitoring
- ☐ Recovery

Injection Well:

- ☐ Aquifer Recharge
- ☐ Groundwater Remediation
- ☐ Aquifer Storage and Recovery
- ☐ Salinity Barrier
- ☐ Aquifer Test
- ☐ Stormwater Drainage
- ☐ Experimental Technology
- ☐ Subsidence Control
- ☐ Geothermal (Closed Loop)
- ☐ Tracer
- ☐ Geothermal (Heating/Cooling Return)
- ☐ Other (explain under 7g)

4. Date well(s) abandoned: 12/20/16

5a. Well location:

BP - 24208

Facility/Owner Name

Facility ID# (if applicable)

1121 MEBANE OAKS ROAD MEBANE 27302

Physical Address, City, and Zip

ALAMANCE

County

Parcel Identification No. (PIN)

5b. Latitude and longitude in degrees/minutes/seconds or decimal degrees:
(if well field, one lat/long is sufficient)

36° 04' 20.77" N 79° 16' 21.68" W

CONSTRUCTION DETAILS OF WELL(S) BEING ABANDONED

Attach well construction record(s) if available. For multiple injection or non-water supply wells ONLY with the same construction abandonment, you can submit one form.

6a. Well ID#: MW-1

6b. Total well depth: 37.5 (ft.)

6c. Borehole diameter: 4.0 (in.)

6d. Water level below ground surface: 29.02 (ft.)

6e. Outer casing length (if known): _____ (ft.)

6f. Inner casing/tubing length (if known): _____ (ft.)

6g. Screen length (if known): _____ (ft.)

For Internal Use ONLY:

WELL ABANDONMENT DETAILS

7a. Number of wells being abandoned: 1

For multiple injection or non-water supply wells ONLY with the same construction abandonment, you can submit one form.

7b. Approximate volume of water remaining in well(s): 5.5 (gal.)

FOR WATER SUPPLY WELLS ONLY:

7c. Type of disinfectant used: _____

7d. Amount of disinfectant used: _____

7e. Sealing materials used (check all that apply):

- ☑ Neat Cement Grout
- ☐ Bentonite Chips or Pellets
- ☐ Sand Cement Grout
- ☐ Dry Clay
- ☐ Concrete Grout
- ☐ Drill Cuttings
- ☐ Specialty Grout
- ☐ Gravel
- ☐ Bentonite Slurry
- ☐ Other (explain under 7g)

7f. For each material selected above, provide amount of materials used:

24.5 GALLONS

7g. Provide a brief description of the abandonment procedure:

WELL ABANDONED VIA TREMIE PIPE WITH PORTLAND BENTONITE SLURRY

8. Certification:

Mark Ireland

Signature of Certified Well Contractor or Well Owner

12/26/16

Date

By signing this form, I hereby certify that the well(s) was (were) abandoned in accordance with 15A NCAC 02C .0100 or 2C .0200 Well Construction Standards and that a copy of this record has been provided to the well owner.

9. Site diagram or additional well details:
You may use the back of this page to provide additional well site details or well abandonment details. You may also attach additional pages if necessary.

SUBMITTAL INSTRUCTIONS

10a. For All Wells: Submit this form within 30 days of completion of well abandonment to the following:

Division of Water Quality, Information Processing Unit,
1617 Mail Service Center, Raleigh, NC 27699-1617

10b. For Injection Wells: In addition to sending the form to the address in 10a above, also submit one copy of this form within 30 days of completion of well abandonment to the following:

Division of Water Quality, Underground Injection Control Program,
1636 Mail Service Center, Raleigh, NC 27699-1636

10c. For Water Supply & Injection Wells: In addition to sending the form to the address(es) above, also submit one copy of this form within 30 days of completion of well abandonment to the county health department of the county where abandoned.

WELL ABANDONMENT RECORD

This form can be used for single or multiple wells

1. Well Contractor Information:

MARK IRELAND

Well Contractor Name (or well owner personally abandoning well on his/her property)

A - 4163

NC Well Contractor Certification Number

GEOLOGIC EXPLORATION, INC

Company Name

2. Well Construction Permit #: _____

List all applicable well construction permits (i.e. County, State, Variance, etc.) if known

3. Well use (check well use):

Water Supply Well:	
☐Agricultural	☐Municipal/Public
☐Geothermal (Heating/Cooling Supply)	☐Residential Water Supply (single)
☐Industrial/Commercial	☐Residential Water Supply (shared)
☐Irrigation	
Non-Water Supply Well:	
☑Monitoring	☐Recovery
Injection Well:	
☐Aquifer Recharge	☐Groundwater Remediation
☐Aquifer Storage and Recovery	☐Salinity Barrier
☐Aquifer Test	☐Stormwater Drainage
☐Experimental Technology	☐Subsidence Control
☐Geothermal (Closed Loop)	☐Tracer
☐Geothermal (Heating/Cooling Return)	☐Other (explain under 7g)

4. Date well(s) abandoned: 12/20/16

5a. Well location:

BP - 24208

Facility/Owner Name

Facility ID# (if applicable)

1121 MEBANE OAKS ROAD MEBANE 27302

Physical Address, City, and Zip

ALAMANCE

County

Parcel Identification No. (PIN)

5b. Latitude and longitude in degrees/minutes/seconds or decimal degrees:
(if well field, one lat/long is sufficient)

36° 04' 20.97" N 79° 16' 22.48" W

CONSTRUCTION DETAILS OF WELL(S) BEING ABANDONED

Attach well construction record(s) if available. For multiple injection or non-water supply wells ONLY with the same construction abandonment, you can submit one form.

6a. Well ID#: MW-2

6b. Total well depth: 37.5 (ft.)

6c. Borehole diameter: 4.0 (in.)

6d. Water level below ground surface: 30.14 (ft.)

6e. Outer casing length (if known): _____ (ft.)

6f. Inner casing/tubing length (if known): _____ (ft.)

6g. Screen length (if known): _____ (ft.)

For Internal Use ONLY:

WELL ABANDONMENT DETAILS

7a. Number of wells being abandoned: 1

For multiple injection or non-water supply wells ONLY with the same construction abandonment, you can submit one form.

7b. Approximate volume of water remaining in well(s): 5.5 (gal.)

FOR WATER SUPPLY WELLS ONLY:

7c. Type of disinfectant used: _____

7d. Amount of disinfectant used: _____

7e. Sealing materials used (check all that apply):

☑ Neat Cement Grout	☐ Bentonite Chips or Pellets
☐ Sand Cement Grout	☐ Dry Clay
☐ Concrete Grout	☐ Drill Cuttings
☐ Specialty Grout	☐ Gravel
☐ Bentonite Slurry	☐ Other (explain under 7g)

7f. For each material selected above, provide amount of materials used:

24.5 GALLONS

7g. Provide a brief description of the abandonment procedure:

WELL ABANDONED VIA TREMIE PIPE WITH PORTLAND BENTONITE SLURRY

8. Certification:

Mark Ireland

Signature of Certified Well Contractor or Well Owner

12/26/16

Date

By signing this form, I hereby certify that the well(s) was (were) abandoned in accordance with 15A NCAC 02C .0100 or 2C .0200 Well Construction Standards and that a copy of this record has been provided to the well owner.

9. Site diagram or additional well details:

You may use the back of this page to provide additional well site details or well abandonment details. You may also attach additional pages if necessary.

SUBMITTAL INSTRUCTIONS

10a. For All Wells: Submit this form within 30 days of completion of well abandonment to the following:

Division of Water Quality, Information Processing Unit,
1617 Mail Service Center, Raleigh, NC 27699-1617

10b. For Injection Wells: In addition to sending the form to the address in 10a above, also submit one copy of this form within 30 days of completion of well abandonment to the following:

Division of Water Quality, Underground Injection Control Program,
1636 Mail Service Center, Raleigh, NC 27699-1636

10c. For Water Supply & Injection Wells: In addition to sending the form to the address(es) above, also submit one copy of this form within 30 days of completion of well abandonment to the county health department of the county where abandoned.

WELL ABANDONMENT RECORD

This form can be used for single or multiple wells

1. Well Contractor Information:

MARK IRELAND

Well Contractor Name (or well owner personally abandoning well on his/her property)

A - 4163

NC Well Contractor Certification Number

GEOLOGIC EXPLORATION, INC

Company Name

2. Well Construction Permit #: _____

List all applicable well construction permits (i.e. County, State, Variance, etc.) if known

3. Well use (check well use):

Water Supply Well:	
☐Agricultural	☐Municipal/Public
☐Geothermal (Heating/Cooling Supply)	☐Residential Water Supply (single)
☐Industrial/Commercial	☐Residential Water Supply (shared)
☐Irrigation	
Non-Water Supply Well:	
☑Monitoring	☐Recovery
Injection Well:	
☐Aquifer Recharge	☐Groundwater Remediation
☐Aquifer Storage and Recovery	☐Salinity Barrier
☐Aquifer Test	☐Stormwater Drainage
☐Experimental Technology	☐Subsidence Control
☐Geothermal (Closed Loop)	☐Tracer
☐Geothermal (Heating/Cooling Return)	☐Other (explain under 7g)

4. Date well(s) abandoned: 12/20/16

5a. Well location:

BP - 24208

Facility/Owner Name

Facility ID# (if applicable)

1121 MEBANE OAKS ROAD MEBANE 27302

Physical Address, City, and Zip

ALAMANCE

County

Parcel Identification No. (PIN)

5b. Latitude and longitude in degrees/minutes/seconds or decimal degrees:
(if well field, one lat/long is sufficient)

36° 04' 20.35" N 79° 16' 22.16" W

CONSTRUCTION DETAILS OF WELL(S) BEING ABANDONED

Attach well construction record(s) if available. For multiple injection or non-water supply wells ONLY with the same construction abandonment, you can submit one form.

6a. Well ID#: MW-3

6b. Total well depth: 37.5 (ft.)

6c. Borehole diameter: 4.0 (in.)

6d. Water level below ground surface: 29.43 (ft.)

6e. Outer casing length (if known): _____ (ft.)

6f. Inner casing/tubing length (if known): _____ (ft.)

6g. Screen length (if known): _____ (ft.)

For Internal Use ONLY:

WELL ABANDONMENT DETAILS

7a. Number of wells being abandoned: 1

For multiple injection or non-water supply wells ONLY with the same construction abandonment, you can submit one form.

7b. Approximate volume of water remaining in well(s): 5.5 (gal.)

FOR WATER SUPPLY WELLS ONLY:

7c. Type of disinfectant used: _____

7d. Amount of disinfectant used: _____

7e. Sealing materials used (check all that apply):

☑ Neat Cement Grout	☐ Bentonite Chips or Pellets
☐ Sand Cement Grout	☐ Dry Clay
☐ Concrete Grout	☐ Drill Cuttings
☐ Specialty Grout	☐ Gravel
☐ Bentonite Slurry	☐ Other (explain under 7g)

7f. For each material selected above, provide amount of materials used:

24.5 GALLONS

7g. Provide a brief description of the abandonment procedure:

WELL ABANDONED VIA TREMIE PIPE WITH PORTLAND BENTONITE SLURRY

8. Certification:

Mark Ireland 12/26/16

Signature of Certified Well Contractor or Well Owner Date

By signing this form, I hereby certify that the well(s) was (were) abandoned in accordance with 15A NCAC 02C .0100 or 2C .0200 Well Construction Standards and that a copy of this record has been provided to the well owner.

9. Site diagram or additional well details:
You may use the back of this page to provide additional well site details or well abandonment details. You may also attach additional pages if necessary.

SUBMITTAL INSTRUCTIONS

10a. For All Wells: Submit this form within 30 days of completion of well abandonment to the following:

Division of Water Quality, Information Processing Unit,
1617 Mail Service Center, Raleigh, NC 27699-1617

10b. For Injection Wells: In addition to sending the form to the address in 10a above, also submit one copy of this form within 30 days of completion of well abandonment to the following:

Division of Water Quality, Underground Injection Control Program,
1636 Mail Service Center, Raleigh, NC 27699-1636

10c. For Water Supply & Injection Wells: In addition to sending the form to the address(es) above, also submit one copy of this form within 30 days of completion of well abandonment to the county health department of the county where abandoned.

WELL ABANDONMENT RECORD

This form can be used for single or multiple wells

1. Well Contractor Information:

MARK IRELAND

Well Contractor Name (or well owner personally abandoning well on his/her property)

A - 4163

NC Well Contractor Certification Number

GEOLOGIC EXPLORATION, INC

Company Name

2. Well Construction Permit #: _____

List all applicable well construction permits (i.e. County, State, Variance, etc.) if known

3. Well use (check well use):

Water Supply Well:	
☐Agricultural	☐Municipal/Public
☐Geothermal (Heating/Cooling Supply)	☐Residential Water Supply (single)
☐Industrial/Commercial	☐Residential Water Supply (shared)
☐Irrigation	
Non-Water Supply Well:	
☑Monitoring	☐Recovery
Injection Well:	
☐Aquifer Recharge	☐Groundwater Remediation
☐Aquifer Storage and Recovery	☐Salinity Barrier
☐Aquifer Test	☐Stormwater Drainage
☐Experimental Technology	☐Subsidence Control
☐Geothermal (Closed Loop)	☐Tracer
☐Geothermal (Heating/Cooling Return)	☐Other (explain under 7g)

4. Date well(s) abandoned: 12/20/16

5a. Well location:

BP - 24208

Facility/Owner Name

Facility ID# (if applicable)

1121 MEBANE OAKS ROAD MEBANE 27302

Physical Address, City, and Zip

ALAMANCE

County

Parcel Identification No. (PIN)

5b. Latitude and longitude in degrees/minutes/seconds or decimal degrees:
(if well field, one lat/long is sufficient)

36° 04' 20.35" N 79° 16' 21.82" W

CONSTRUCTION DETAILS OF WELL(S) BEING ABANDONED

Attach well construction record(s) if available. For multiple injection or non-water supply wells ONLY with the same construction abandonment, you can submit one form.

6a. Well ID#: MW-4

6b. Total well depth: 37.5 (ft.)

6c. Borehole diameter: 4.0 (in.)

6d. Water level below ground surface: 29.15 (ft.)

6e. Outer casing length (if known): _____ (ft.)

6f. Inner casing/tubing length (if known): _____ (ft.)

6g. Screen length (if known): _____ (ft.)

For Internal Use ONLY:

WELL ABANDONMENT DETAILS

7a. Number of wells being abandoned: 1

For multiple injection or non-water supply wells ONLY with the same construction abandonment, you can submit one form.

7b. Approximate volume of water remaining in well(s): 5.5 (gal.)

FOR WATER SUPPLY WELLS ONLY:

7c. Type of disinfectant used: _____

7d. Amount of disinfectant used: _____

7e. Sealing materials used (check all that apply):

☑ Neat Cement Grout	☐ Bentonite Chips or Pellets
☐ Sand Cement Grout	☐ Dry Clay
☐ Concrete Grout	☐ Drill Cuttings
☐ Specialty Grout	☐ Gravel
☐ Bentonite Slurry	☐ Other (explain under 7g)

7f. For each material selected above, provide amount of materials used:

24.5 GALLONS

7g. Provide a brief description of the abandonment procedure:

WELL ABANDONED VIA TREMIE PIPE WITH PORTLAND BENTONITE SLURRY

8. Certification:

Mark Ireland 12/26/16

Signature of Certified Well Contractor or Well Owner Date

By signing this form, I hereby certify that the well(s) was (were) abandoned in accordance with 15A NCAC 02C .0100 or 2C .0200 Well Construction Standards and that a copy of this record has been provided to the well owner.

9. Site diagram or additional well details:
You may use the back of this page to provide additional well site details or well abandonment details. You may also attach additional pages if necessary.

SUBMITTAL INSTRUCTIONS

10a. For All Wells: Submit this form within 30 days of completion of well abandonment to the following:

Division of Water Quality, Information Processing Unit,
1617 Mail Service Center, Raleigh, NC 27699-1617

10b. For Injection Wells: In addition to sending the form to the address in 10a above, also submit one copy of this form within 30 days of completion of well abandonment to the following:

Division of Water Quality, Underground Injection Control Program,
1636 Mail Service Center, Raleigh, NC 27699-1636

10c. For Water Supply & Injection Wells: In addition to sending the form to the address(es) above, also submit one copy of this form within 30 days of completion of well abandonment to the county health department of the county where abandoned.

WELL ABANDONMENT RECORD

This form can be used for single or multiple wells

1. Well Contractor Information:

MARK IRELAND

Well Contractor Name (or well owner personally abandoning well on his/her property)

A - 4163

NC Well Contractor Certification Number

GEOLOGIC EXPLORATION, INC

Company Name

2. Well Construction Permit #: _____

List all applicable well construction permits (i.e. County, State, Variance, etc.) if known

3. Well use (check well use):

Water Supply Well:	
☐Agricultural	☐Municipal/Public
☐Geothermal (Heating/Cooling Supply)	☐Residential Water Supply (single)
☐Industrial/Commercial	☐Residential Water Supply (shared)
☐Irrigation	
Non-Water Supply Well:	
☑Monitoring	☐Recovery
Injection Well:	
☐Aquifer Recharge	☐Groundwater Remediation
☐Aquifer Storage and Recovery	☐Salinity Barrier
☐Aquifer Test	☐Stormwater Drainage
☐Experimental Technology	☐Subsidence Control
☐Geothermal (Closed Loop)	☐Tracer
☐Geothermal (Heating/Cooling Return)	☐Other (explain under 7g)

4. Date well(s) abandoned: 12/20/16

5a. Well location:

BP - 24208

Facility/Owner Name

Facility ID# (if applicable)

1121 MEBANE OAKS ROAD MEBANE 27302

Physical Address, City, and Zip

ALAMANCE

County

Parcel Identification No. (PIN)

5b. Latitude and longitude in degrees/minutes/seconds or decimal degrees:
(if well field, one lat/long is sufficient)

36° 04' 21.13" N 79° 16' 22.04" W

CONSTRUCTION DETAILS OF WELL(S) BEING ABANDONED

Attach well construction record(s) if available. For multiple injection or non-water supply wells ONLY with the same construction abandonment, you can submit one form.

6a. Well ID#: MW-5

6b. Total well depth: 37.5 (ft.)

6c. Borehole diameter: 4.0 (in.)

6d. Water level below ground surface: 29.89 (ft.)

6e. Outer casing length (if known): _____ (ft.)

6f. Inner casing/tubing length (if known): _____ (ft.)

6g. Screen length (if known): _____ (ft.)

For Internal Use ONLY:

WELL ABANDONMENT DETAILS

7a. Number of wells being abandoned: 1

For multiple injection or non-water supply wells ONLY with the same construction abandonment, you can submit one form.

7b. Approximate volume of water remaining in well(s): 5.5 (gal.)

FOR WATER SUPPLY WELLS ONLY:

7c. Type of disinfectant used: _____

7d. Amount of disinfectant used: _____

7e. Sealing materials used (check all that apply):

☑ Neat Cement Grout	☐ Bentonite Chips or Pellets
☐ Sand Cement Grout	☐ Dry Clay
☐ Concrete Grout	☐ Drill Cuttings
☐ Specialty Grout	☐ Gravel
☐ Bentonite Slurry	☐ Other (explain under 7g)

7f. For each material selected above, provide amount of materials used:

24.5 GALLONS

7g. Provide a brief description of the abandonment procedure:

WELL ABANDONED VIA TREMIE PIPE WITH PORTLAND BENTONITE SLURRY

8. Certification:

Mark Ireland

Signature of Certified Well Contractor or Well Owner

12/26/16

Date

By signing this form, I hereby certify that the well(s) was (were) abandoned in accordance with 15A NCAC 02C .0100 or 2C .0200 Well Construction Standards and that a copy of this record has been provided to the well owner.

9. Site diagram or additional well details:
You may use the back of this page to provide additional well site details or well abandonment details. You may also attach additional pages if necessary.

SUBMITTAL INSTRUCTIONS

10a. For All Wells: Submit this form within 30 days of completion of well abandonment to the following:

Division of Water Quality, Information Processing Unit,
1617 Mail Service Center, Raleigh, NC 27699-1617

10b. For Injection Wells: In addition to sending the form to the address in 10a above, also submit one copy of this form within 30 days of completion of well abandonment to the following:

Division of Water Quality, Underground Injection Control Program,
1636 Mail Service Center, Raleigh, NC 27699-1636

10c. For Water Supply & Injection Wells: In addition to sending the form to the address(es) above, also submit one copy of this form within 30 days of completion of well abandonment to the county health department of the county where abandoned.

WELL ABANDONMENT RECORD

This form can be used for single or multiple wells

1. Well Contractor Information:

MARK IRELAND

Well Contractor Name (or well owner personally abandoning well on his/her property)

A - 4163

NC Well Contractor Certification Number

GEOLOGIC EXPLORATION, INC

Company Name

2. Well Construction Permit #: _____

List all applicable well construction permits (i.e. County, State, Variance, etc.) if known

3. Well use (check well use):

Water Supply Well:	
☐Agricultural	☐Municipal/Public
☐Geothermal (Heating/Cooling Supply)	☐Residential Water Supply (single)
☐Industrial/Commercial	☐Residential Water Supply (shared)
☐Irrigation	
Non-Water Supply Well:	
☑Monitoring	☐Recovery
Injection Well:	
☐Aquifer Recharge	☐Groundwater Remediation
☐Aquifer Storage and Recovery	☐Salinity Barrier
☐Aquifer Test	☐Stormwater Drainage
☐Experimental Technology	☐Subsidence Control
☐Geothermal (Closed Loop)	☐Tracer
☐Geothermal (Heating/Cooling Return)	☐Other (explain under 7g)

4. Date well(s) abandoned: 12/20/16

5a. Well location:

BP - 24208

Facility/Owner Name

Facility ID# (if applicable)

1121 MEBANE OAKS ROAD MEBANE 27302

Physical Address, City, and Zip

ALAMANCE

County

Parcel Identification No. (PIN)

5b. Latitude and longitude in degrees/minutes/seconds or decimal degrees:
(if well field, one lat/long is sufficient)

36° 04' 20.55" N 79° 16' 21.28" W

CONSTRUCTION DETAILS OF WELL(S) BEING ABANDONED

Attach well construction record(s) if available. For multiple injection or non-water supply wells ONLY with the same construction abandonment, you can submit one form.

6a. Well ID#: MW-6R

6b. Total well depth: 35.0 (ft.)

6c. Borehole diameter: 2.0 (in.)

6d. Water level below ground surface: 28.49 (ft.)

6e. Outer casing length (if known): _____ (ft.)

6f. Inner casing/tubing length (if known): _____ (ft.)

6g. Screen length (if known): _____ (ft.)

For Internal Use ONLY:

WELL ABANDONMENT DETAILS

7a. Number of wells being abandoned: 1

For multiple injection or non-water supply wells ONLY with the same construction abandonment, you can submit one form.

7b. Approximate volume of water remaining in well(s): 1.0 (gal.)

FOR WATER SUPPLY WELLS ONLY:

7c. Type of disinfectant used: _____

7d. Amount of disinfectant used: _____

7e. Sealing materials used (check all that apply):

☑ Neat Cement Grout	☐ Bentonite Chips or Pellets
☐ Sand Cement Grout	☐ Dry Clay
☐ Concrete Grout	☐ Drill Cuttings
☐ Specialty Grout	☐ Gravel
☐ Bentonite Slurry	☐ Other (explain under 7g)

7f. For each material selected above, provide amount of materials used:

5.75 GALLONS

7g. Provide a brief description of the abandonment procedure:

WELL ABANDONED VIA TREMIE PIPE WITH PORTLAND BENTONITE SLURRY

8. Certification:

Mark Ireland

Signature of Certified Well Contractor or Well Owner

12/26/16

Date

By signing this form, I hereby certify that the well(s) was (were) abandoned in accordance with 15A NCAC 02C .0100 or 2C .0200 Well Construction Standards and that a copy of this record has been provided to the well owner.

9. Site diagram or additional well details:
You may use the back of this page to provide additional well site details or well abandonment details. You may also attach additional pages if necessary.

SUBMITTAL INSTRUCTIONS

10a. For All Wells: Submit this form within 30 days of completion of well abandonment to the following:

Division of Water Quality, Information Processing Unit,
1617 Mail Service Center, Raleigh, NC 27699-1617

10b. For Injection Wells: In addition to sending the form to the address in 10a above, also submit one copy of this form within 30 days of completion of well abandonment to the following:

Division of Water Quality, Underground Injection Control Program,
1636 Mail Service Center, Raleigh, NC 27699-1636

10c. For Water Supply & Injection Wells: In addition to sending the form to the address(es) above, also submit one copy of this form within 30 days of completion of well abandonment to the county health department of the county where abandoned.

WELL ABANDONMENT RECORD

This form can be used for single or multiple wells

1. Well Contractor Information:

MARK IRELAND

Well Contractor Name (or well owner personally abandoning well on his/her property)

A - 4163

NC Well Contractor Certification Number

GEOLOGIC EXPLORATION, INC

Company Name

2. Well Construction Permit #: _____

List all applicable well construction permits (i.e. County, State, Variance, etc.) if known

3. Well use (check well use):

Water Supply Well:

- ☐ Agricultural
- ☐ Municipal/Public
- ☐ Geothermal (Heating/Cooling Supply)
- ☐ Residential Water Supply (single)
- ☐ Industrial/Commercial
- ☐ Residential Water Supply (shared)
- ☐ Irrigation

Non-Water Supply Well:

- ☑ Monitoring
- ☐ Recovery

Injection Well:

- ☐ Aquifer Recharge
- ☐ Groundwater Remediation
- ☐ Aquifer Storage and Recovery
- ☐ Salinity Barrier
- ☐ Aquifer Test
- ☐ Stormwater Drainage
- ☐ Experimental Technology
- ☐ Subsidence Control
- ☐ Geothermal (Closed Loop)
- ☐ Tracer
- ☐ Geothermal (Heating/Cooling Return)
- ☐ Other (explain under 7g)

4. Date well(s) abandoned: 12/20/16

5a. Well location:

BP - 24208

Facility/Owner Name

Facility ID# (if applicable)

1121 MEBANE OAKS ROAD MEBANE 27302

Physical Address, City, and Zip

ALAMANCE

County

Parcel Identification No. (PIN)

5b. Latitude and longitude in degrees/minutes/seconds or decimal degrees:
(if well field, one lat/long is sufficient)

36° 04' 20.55" N 79° 16' 21.28" W

CONSTRUCTION DETAILS OF WELL(S) BEING ABANDONED

Attach well construction record(s) if available. For multiple injection or non-water supply wells ONLY with the same construction abandonment, you can submit one form.

6a. Well ID#: MW-7

6b. Total well depth: 62.0 (ft.)

6c. Borehole diameter: 2.0 (in.)

6d. Water level below ground surface: 28.96 (ft.)

6e. Outer casing length (if known): _____ (ft.)

6f. Inner casing/tubing length (if known): _____ (ft.)

6g. Screen length (if known): _____ (ft.)

For Internal Use ONLY:

WELL ABANDONMENT DETAILS

7a. Number of wells being abandoned: 1

For multiple injection or non-water supply wells ONLY with the same construction abandonment, you can submit one form.

7b. Approximate volume of water remaining in well(s): 5.25 (gal.)

FOR WATER SUPPLY WELLS ONLY:

7c. Type of disinfectant used: _____

7d. Amount of disinfectant used: _____

7e. Sealing materials used (check all that apply):

- ☑ Neat Cement Grout
- ☐ Sand Cement Grout
- ☐ Concrete Grout
- ☐ Specialty Grout
- ☐ Bentonite Slurry
- ☐ Bentonite Chips or Pellets
- ☐ Dry Clay
- ☐ Drill Cuttings
- ☐ Gravel
- ☐ Other (explain under 7g)

7f. For each material selected above, provide amount of materials used:

10.0 GALLONS

7g. Provide a brief description of the abandonment procedure:

WELL ABANDONED VIA TREMIE PIPE WITH PORTLAND BENTONITE SLURRY

8. Certification:

Mark Ireland

Signature of Certified Well Contractor or Well Owner

12/26/16

Date

By signing this form, I hereby certify that the well(s) was (were) abandoned in accordance with 15A NCAC 02C .0100 or 2C .0200 Well Construction Standards and that a copy of this record has been provided to the well owner.

9. Site diagram or additional well details:
You may use the back of this page to provide additional well site details or well abandonment details. You may also attach additional pages if necessary.

SUBMITTAL INSTRUCTIONS

10a. For All Wells: Submit this form within 30 days of completion of well abandonment to the following:

**Division of Water Quality, Information Processing Unit,
1617 Mail Service Center, Raleigh, NC 27699-1617**

10b. For Injection Wells: In addition to sending the form to the address in 10a above, also submit one copy of this form within 30 days of completion of well abandonment to the following:

**Division of Water Quality, Underground Injection Control Program,
1636 Mail Service Center, Raleigh, NC 27699-1636**

10c. For Water Supply & Injection Wells: In addition to sending the form to the address(es) above, also submit one copy of this form within 30 days of completion of well abandonment to the county health department of the county where abandoned.

WELL ABANDONMENT RECORD

This form can be used for single or multiple wells

1. Well Contractor Information:

MARK IRELAND

Well Contractor Name (or well owner personally abandoning well on his/her property)

A - 4163

NC Well Contractor Certification Number

GEOLOGIC EXPLORATION, INC

Company Name

2. Well Construction Permit #: _____

List all applicable well construction permits (i.e. County, State, Variance, etc.) if known

3. Well use (check well use):

Water Supply Well:

- ☐ Agricultural
- ☐ Municipal/Public
- ☐ Geothermal (Heating/Cooling Supply)
- ☐ Residential Water Supply (single)
- ☐ Industrial/Commercial
- ☐ Residential Water Supply (shared)
- ☐ Irrigation

Non-Water Supply Well:

- ☑ Monitoring
- ☐ Recovery

Injection Well:

- ☐ Aquifer Recharge
- ☐ Groundwater Remediation
- ☐ Aquifer Storage and Recovery
- ☐ Salinity Barrier
- ☐ Aquifer Test
- ☐ Stormwater Drainage
- ☐ Experimental Technology
- ☐ Subsidence Control
- ☐ Geothermal (Closed Loop)
- ☐ Tracer
- ☐ Geothermal (Heating/Cooling Return)
- ☐ Other (explain under 7g)

4. Date well(s) abandoned: 12/20/16

5a. Well location:

BP - 24208

Facility/Owner Name

Facility ID# (if applicable)

1121 MEBANE OAKS ROAD MEBANE 27302

Physical Address, City, and Zip

ALAMANCE

County

Parcel Identification No. (PIN)

5b. Latitude and longitude in degrees/minutes/seconds or decimal degrees:
(if well field, one lat/long is sufficient)

36° 04' 20.55" N 79° 16' 21.28" W

CONSTRUCTION DETAILS OF WELL(S) BEING ABANDONED

Attach well construction record(s) if available. For multiple injection or non-water supply wells ONLY with the same construction abandonment, you can submit one form.

6a. Well ID#: MW-8

6b. Total well depth: 41.0 (ft.)

6c. Borehole diameter: 2.0 (in.)

6d. Water level below ground surface: 27.9 (ft.)

6e. Outer casing length (if known): _____ (ft.)

6f. Inner casing/tubing length (if known): _____ (ft.)

6g. Screen length (if known): _____ (ft.)

For Internal Use ONLY:

WELL ABANDONMENT DETAILS

7a. Number of wells being abandoned: 1

For multiple injection or non-water supply wells ONLY with the same construction abandonment, you can submit one form.

7b. Approximate volume of water remaining in well(s): 2.0 (gal.)

FOR WATER SUPPLY WELLS ONLY:

7c. Type of disinfectant used: _____

7d. Amount of disinfectant used: _____

7e. Sealing materials used (check all that apply):

- ☑ Neat Cement Grout
- ☐ Sand Cement Grout
- ☐ Concrete Grout
- ☐ Specialty Grout
- ☐ Bentonite Slurry
- ☐ Bentonite Chips or Pellets
- ☐ Dry Clay
- ☐ Drill Cuttings
- ☐ Gravel
- ☐ Other (explain under 7g)

7f. For each material selected above, provide amount of materials used:

6.75 GALLONS

7g. Provide a brief description of the abandonment procedure:

WELL ABANDONED VIA TREMIE PIPE WITH PORTLAND BENTONITE SLURRY

8. Certification:

Mark Ireland

Signature of Certified Well Contractor or Well Owner

12/26/16

Date

By signing this form, I hereby certify that the well(s) was (were) abandoned in accordance with 15A NCAC 02C .0100 or 2C .0200 Well Construction Standards and that a copy of this record has been provided to the well owner.

9. Site diagram or additional well details:
You may use the back of this page to provide additional well site details or well abandonment details. You may also attach additional pages if necessary.

SUBMITTAL INSTRUCTIONS

10a. For All Wells: Submit this form within 30 days of completion of well abandonment to the following:

**Division of Water Quality, Information Processing Unit,
1617 Mail Service Center, Raleigh, NC 27699-1617**

10b. For Injection Wells: In addition to sending the form to the address in 10a above, also submit one copy of this form within 30 days of completion of well abandonment to the following:

**Division of Water Quality, Underground Injection Control Program,
1636 Mail Service Center, Raleigh, NC 27699-1636**

10c. For Water Supply & Injection Wells: In addition to sending the form to the address(es) above, also submit one copy of this form within 30 days of completion of well abandonment to the county health department of the county where abandoned.

WELL ABANDONMENT RECORD

This form can be used for single or multiple wells

1. Well Contractor Information:

MARK IRELAND

Well Contractor Name (or well owner personally abandoning well on his/her property)

A - 4163

NC Well Contractor Certification Number

GEOLOGIC EXPLORATION, INC

Company Name

2. Well Construction Permit #: _____

List all applicable well construction permits (i.e. County, State, Variance, etc.) if known

3. Well use (check well use):

Water Supply Well:	
☐Agricultural	☐Municipal/Public
☐Geothermal (Heating/Cooling Supply)	☐Residential Water Supply (single)
☐Industrial/Commercial	☐Residential Water Supply (shared)
☐Irrigation	
Non-Water Supply Well:	
☑Monitoring	☐Recovery
Injection Well:	
☐Aquifer Recharge	☐Groundwater Remediation
☐Aquifer Storage and Recovery	☐Salinity Barrier
☐Aquifer Test	☐Stormwater Drainage
☐Experimental Technology	☐Subsidence Control
☐Geothermal (Closed Loop)	☐Tracer
☐Geothermal (Heating/Cooling Return)	☐Other (explain under 7g)

4. Date well(s) abandoned: 12/20/16

5a. Well location:

BP - 24208

Facility/Owner Name

Facility ID# (if applicable)

1121 MEBANE OAKS ROAD MEBANE 27302

Physical Address, City, and Zip

ALAMANCE

County

Parcel Identification No. (PIN)

5b. Latitude and longitude in degrees/minutes/seconds or decimal degrees:
(if well field, one lat/long is sufficient)

36° 04' 20.55" N 79° 16' 21.28" W

CONSTRUCTION DETAILS OF WELL(S) BEING ABANDONED

Attach well construction record(s) if available. For multiple injection or non-water supply wells ONLY with the same construction abandonment, you can submit one form.

6a. Well ID#: MW-9

6b. Total well depth: 40.0 (ft.)

6c. Borehole diameter: 2.0 (in.)

6d. Water level below ground surface: 29.11 (ft.)

6e. Outer casing length (if known): _____ (ft.)

6f. Inner casing/tubing length (if known): _____ (ft.)

6g. Screen length (if known): _____ (ft.)

For Internal Use ONLY:

WELL ABANDONMENT DETAILS

7a. Number of wells being abandoned: 1

For multiple injection or non-water supply wells ONLY with the same construction abandonment, you can submit one form.

7b. Approximate volume of water remaining in well(s): 1.75 (gal.)

FOR WATER SUPPLY WELLS ONLY:

7c. Type of disinfectant used: _____

7d. Amount of disinfectant used: _____

7e. Sealing materials used (check all that apply):

☑ Neat Cement Grout	☐ Bentonite Chips or Pellets
☐ Sand Cement Grout	☐ Dry Clay
☐ Concrete Grout	☐ Drill Cuttings
☐ Specialty Grout	☐ Gravel
☐ Bentonite Slurry	☐ Other (explain under 7g)

7f. For each material selected above, provide amount of materials used:

6.5 GALLONS

7g. Provide a brief description of the abandonment procedure:

WELL ABANDONED VIA TREMIE PIPE WITH PORTLAND BENTONITE SLURRY

8. Certification:

Mark Ireland

Signature of Certified Well Contractor or Well Owner

12/26/16

Date

By signing this form, I hereby certify that the well(s) was (were) abandoned in accordance with 15A NCAC 02C .0100 or 2C .0200 Well Construction Standards and that a copy of this record has been provided to the well owner.

9. Site diagram or additional well details:
You may use the back of this page to provide additional well site details or well abandonment details. You may also attach additional pages if necessary.

SUBMITTAL INSTRUCTIONS

10a. For All Wells: Submit this form within 30 days of completion of well abandonment to the following:

Division of Water Quality, Information Processing Unit,
1617 Mail Service Center, Raleigh, NC 27699-1617

10b. For Injection Wells: In addition to sending the form to the address in 10a above, also submit one copy of this form within 30 days of completion of well abandonment to the following:

Division of Water Quality, Underground Injection Control Program,
1636 Mail Service Center, Raleigh, NC 27699-1636

10c. For Water Supply & Injection Wells: In addition to sending the form to the address(es) above, also submit one copy of this form within 30 days of completion of well abandonment to the county health department of the county where abandoned.

WELL ABANDONMENT RECORD

This form can be used for single or multiple wells

1. Well Contractor Information:

MARK IRELAND

Well Contractor Name (or well owner personally abandoning well on his/her property)

A - 4163

NC Well Contractor Certification Number

GEOLOGIC EXPLORATION, INC

Company Name

2. Well Construction Permit #: _____

List all applicable well construction permits (i.e. County, State, Variance, etc.) if known

3. Well use (check well use):

Water Supply Well:

- ☐ Agricultural
- ☐ Municipal/Public
- ☐ Geothermal (Heating/Cooling Supply)
- ☐ Residential Water Supply (single)
- ☐ Industrial/Commercial
- ☐ Residential Water Supply (shared)
- ☐ Irrigation

Non-Water Supply Well:

- ☑ Monitoring
- ☐ Recovery

Injection Well:

- ☐ Aquifer Recharge
- ☐ Groundwater Remediation
- ☐ Aquifer Storage and Recovery
- ☐ Salinity Barrier
- ☐ Aquifer Test
- ☐ Stormwater Drainage
- ☐ Experimental Technology
- ☐ Subsidence Control
- ☐ Geothermal (Closed Loop)
- ☐ Tracer
- ☐ Geothermal (Heating/Cooling Return)
- ☐ Other (explain under 7g)

4. Date well(s) abandoned: 12/20/16

5a. Well location:

BP - 24208

Facility/Owner Name

Facility ID# (if applicable)

1121 MEBANE OAKS ROAD MEBANE 27302

Physical Address, City, and Zip

ALAMANCE

County

Parcel Identification No. (PIN)

5b. Latitude and longitude in degrees/minutes/seconds or decimal degrees:
(if well field, one lat/long is sufficient)

36° 04' 20.55" N 79° 16' 21.28" W

CONSTRUCTION DETAILS OF WELL(S) BEING ABANDONED

Attach well construction record(s) if available. For multiple injection or non-water supply wells ONLY with the same construction abandonment, you can submit one form.

6a. Well ID#: MW-10

6b. Total well depth: 40.0 (ft.)

6c. Borehole diameter: 2.0 (in.)

6d. Water level below ground surface: 29.18 (ft.)

6e. Outer casing length (if known): _____ (ft.)

6f. Inner casing/tubing length (if known): _____ (ft.)

6g. Screen length (if known): _____ (ft.)

For Internal Use ONLY:

WELL ABANDONMENT DETAILS

7a. Number of wells being abandoned: 1

For multiple injection or non-water supply wells ONLY with the same construction abandonment, you can submit one form.

7b. Approximate volume of water remaining in well(s): 1.75 (gal.)

FOR WATER SUPPLY WELLS ONLY:

7c. Type of disinfectant used: _____

7d. Amount of disinfectant used: _____

7e. Sealing materials used (check all that apply):

- ☑ Neat Cement Grout
- ☐ Sand Cement Grout
- ☐ Concrete Grout
- ☐ Specialty Grout
- ☐ Bentonite Slurry
- ☐ Bentonite Chips or Pellets
- ☐ Dry Clay
- ☐ Drill Cuttings
- ☐ Gravel
- ☐ Other (explain under 7g)

7f. For each material selected above, provide amount of materials used:

6.5 GALLONS

7g. Provide a brief description of the abandonment procedure:

WELL ABANDONED VIA TREMIE PIPE WITH PORTLAND BENTONITE SLURRY

8. Certification:

Mark Ireland

Signature of Certified Well Contractor or Well Owner

12/26/16

Date

By signing this form, I hereby certify that the well(s) was (were) abandoned in accordance with 15A NCAC 02C .0100 or 2C .0200 Well Construction Standards and that a copy of this record has been provided to the well owner.

9. Site diagram or additional well details:

You may use the back of this page to provide additional well site details or well abandonment details. You may also attach additional pages if necessary.

SUBMITTAL INSTRUCTIONS

10a. For All Wells: Submit this form within 30 days of completion of well abandonment to the following:

**Division of Water Quality, Information Processing Unit,
1617 Mail Service Center, Raleigh, NC 27699-1617**

10b. For Injection Wells: In addition to sending the form to the address in 10a above, also submit one copy of this form within 30 days of completion of well abandonment to the following:

**Division of Water Quality, Underground Injection Control Program,
1636 Mail Service Center, Raleigh, NC 27699-1636**

10c. For Water Supply & Injection Wells: In addition to sending the form to the address(es) above, also submit one copy of this form within 30 days of completion of well abandonment to the county health department of the county where abandoned.

WELL ABANDONMENT RECORD

This form can be used for single or multiple wells

1. Well Contractor Information:

MARK IRELAND

Well Contractor Name (or well owner personally abandoning well on his/her property)

A - 4163

NC Well Contractor Certification Number

GEOLOGIC EXPLORATION, INC

Company Name

2. Well Construction Permit #: _____

List all applicable well construction permits (i.e. County, State, Variance, etc.) if known

3. Well use (check well use):

Water Supply Well:	
☐Agricultural	☐Municipal/Public
☐Geothermal (Heating/Cooling Supply)	☐Residential Water Supply (single)
☐Industrial/Commercial	☐Residential Water Supply (shared)
☐Irrigation	
Non-Water Supply Well:	
☑Monitoring	☐Recovery
Injection Well:	
☐Aquifer Recharge	☐Groundwater Remediation
☐Aquifer Storage and Recovery	☐Salinity Barrier
☐Aquifer Test	☐Stormwater Drainage
☐Experimental Technology	☐Subsidence Control
☐Geothermal (Closed Loop)	☐Tracer
☐Geothermal (Heating/Cooling Return)	☐Other (explain under 7g)

4. Date well(s) abandoned: 12/20/16

5a. Well location:

BP - 24208

Facility/Owner Name

Facility ID# (if applicable)

1121 MEBANE OAKS ROAD MEBANE 27302

Physical Address, City, and Zip

ALAMANCE

County

Parcel Identification No. (PIN)

5b. Latitude and longitude in degrees/minutes/seconds or decimal degrees:
(if well field, one lat/long is sufficient)

36° 04' 20.55" N 79° 16' 21.28" W

CONSTRUCTION DETAILS OF WELL(S) BEING ABANDONED

Attach well construction record(s) if available. For multiple injection or non-water supply wells ONLY with the same construction abandonment, you can submit one form.

6a. Well ID#: MW-11

6b. Total well depth: 35.0 (ft.)

6c. Borehole diameter: 2.0 (in.)

6d. Water level below ground surface: 28.18 (ft.)

6e. Outer casing length (if known): _____ (ft.)

6f. Inner casing/tubing length (if known): _____ (ft.)

6g. Screen length (if known): _____ (ft.)

For Internal Use ONLY:

WELL ABANDONMENT DETAILS

7a. Number of wells being abandoned: 1

For multiple injection or non-water supply wells ONLY with the same construction abandonment, you can submit one form.

7b. Approximate volume of water remaining in well(s): 1.0 (gal.)

FOR WATER SUPPLY WELLS ONLY:

7c. Type of disinfectant used: _____

7d. Amount of disinfectant used: _____

7e. Sealing materials used (check all that apply):

☑ Neat Cement Grout	☐ Bentonite Chips or Pellets
☐ Sand Cement Grout	☐ Dry Clay
☐ Concrete Grout	☐ Drill Cuttings
☐ Specialty Grout	☐ Gravel
☐ Bentonite Slurry	☐ Other (explain under 7g)

7f. For each material selected above, provide amount of materials used:

5.75 GALLONS

7g. Provide a brief description of the abandonment procedure:

WELL ABANDONED VIA TREMIE PIPE WITH PORTLAND BENTONITE SLURRY

8. Certification:

Mark Ireland

Signature of Certified Well Contractor or Well Owner

12/26/16

Date

By signing this form, I hereby certify that the well(s) was (were) abandoned in accordance with 15A NCAC 02C .0100 or 2C .0200 Well Construction Standards and that a copy of this record has been provided to the well owner.

9. Site diagram or additional well details:
You may use the back of this page to provide additional well site details or well abandonment details. You may also attach additional pages if necessary.

SUBMITTAL INSTRUCTIONS

10a. For All Wells: Submit this form within 30 days of completion of well abandonment to the following:

**Division of Water Quality, Information Processing Unit,
1617 Mail Service Center, Raleigh, NC 27699-1617**

10b. For Injection Wells: In addition to sending the form to the address in 10a above, also submit one copy of this form within 30 days of completion of well abandonment to the following:

**Division of Water Quality, Underground Injection Control Program,
1636 Mail Service Center, Raleigh, NC 27699-1636**

10c. For Water Supply & Injection Wells: In addition to sending the form to the address(es) above, also submit one copy of this form within 30 days of completion of well abandonment to the county health department of the county where abandoned.

WELL ABANDONMENT RECORD

This form can be used for single or multiple wells

1. Well Contractor Information:

MARK IRELAND

Well Contractor Name (or well owner personally abandoning well on his/her property)

A - 4163

NC Well Contractor Certification Number

GEOLOGIC EXPLORATION, INC

Company Name

2. Well Construction Permit #: _____

List all applicable well construction permits (i.e. County, State, Variance, etc.) if known

3. Well use (check well use):

Water Supply Well:	
☐Agricultural	☐Municipal/Public
☐Geothermal (Heating/Cooling Supply)	☐Residential Water Supply (single)
☐Industrial/Commercial	☐Residential Water Supply (shared)
☐Irrigation	
Non-Water Supply Well:	
☑Monitoring	☐Recovery
Injection Well:	
☐Aquifer Recharge	☐Groundwater Remediation
☐Aquifer Storage and Recovery	☐Salinity Barrier
☐Aquifer Test	☐Stormwater Drainage
☐Experimental Technology	☐Subsidence Control
☐Geothermal (Closed Loop)	☐Tracer
☐Geothermal (Heating/Cooling Return)	☐Other (explain under 7g)

4. Date well(s) abandoned: 12/20/16

5a. Well location:

BP - 24208

Facility/Owner Name

Facility ID# (if applicable)

1121 MEBANE OAKS ROAD MEBANE 27302

Physical Address, City, and Zip

ALAMANCE

County

Parcel Identification No. (PIN)

5b. Latitude and longitude in degrees/minutes/seconds or decimal degrees:
(if well field, one lat/long is sufficient)

36° 04' 20.55" N 79° 16' 21.28" W

CONSTRUCTION DETAILS OF WELL(S) BEING ABANDONED

Attach well construction record(s) if available. For multiple injection or non-water supply wells ONLY with the same construction abandonment, you can submit one form.

6a. Well ID#: MW-12

6b. Total well depth: 80.0 (ft.)

6c. Borehole diameter: 2.0 (in.)

6d. Water level below ground surface: 28.02 (ft.)

6e. Outer casing length (if known): _____ (ft.)

6f. Inner casing/tubing length (if known): _____ (ft.)

6g. Screen length (if known): _____ (ft.)

For Internal Use ONLY:

WELL ABANDONMENT DETAILS

7a. Number of wells being abandoned: 1

For multiple injection or non-water supply wells ONLY with the same construction abandonment, you can submit one form.

7b. Approximate volume of water remaining in well(s): 8.5 (gal.)

FOR WATER SUPPLY WELLS ONLY:

7c. Type of disinfectant used: _____

7d. Amount of disinfectant used: _____

7e. Sealing materials used (check all that apply):

☑ Neat Cement Grout	☐ Bentonite Chips or Pellets
☐ Sand Cement Grout	☐ Dry Clay
☐ Concrete Grout	☐ Drill Cuttings
☐ Specialty Grout	☐ Gravel
☐ Bentonite Slurry	☐ Other (explain under 7g)

7f. For each material selected above, provide amount of materials used:

13.0 GALLONS

7g. Provide a brief description of the abandonment procedure:

WELL ABANDONED VIA TREMIE PIPE WITH PORTLAND BENTONITE SLURRY

8. Certification:

Mark Ireland

Signature of Certified Well Contractor or Well Owner

12/26/16

Date

By signing this form, I hereby certify that the well(s) was (were) abandoned in accordance with 15A NCAC 02C .0100 or 2C .0200 Well Construction Standards and that a copy of this record has been provided to the well owner.

9. Site diagram or additional well details:
You may use the back of this page to provide additional well site details or well abandonment details. You may also attach additional pages if necessary.

SUBMITTAL INSTRUCTIONS

10a. For All Wells: Submit this form within 30 days of completion of well abandonment to the following:

Division of Water Quality, Information Processing Unit,
1617 Mail Service Center, Raleigh, NC 27699-1617

10b. For Injection Wells: In addition to sending the form to the address in 10a above, also submit one copy of this form within 30 days of completion of well abandonment to the following:

Division of Water Quality, Underground Injection Control Program,
1636 Mail Service Center, Raleigh, NC 27699-1636

10c. For Water Supply & Injection Wells: In addition to sending the form to the address(es) above, also submit one copy of this form within 30 days of completion of well abandonment to the county health department of the county where abandoned.

WELL ABANDONMENT RECORD

This form can be used for single or multiple wells

1. Well Contractor Information:

MARK IRELAND

Well Contractor Name (or well owner personally abandoning well on his/her property)

A - 4163

NC Well Contractor Certification Number

GEOLOGIC EXPLORATION, INC

Company Name

2. Well Construction Permit #: _____

List all applicable well construction permits (i.e. County, State, Variance, etc.) if known

3. Well use (check well use):

Water Supply Well:

- ☐ Agricultural
- ☐ Municipal/Public
- ☐ Geothermal (Heating/Cooling Supply)
- ☐ Residential Water Supply (single)
- ☐ Industrial/Commercial
- ☐ Residential Water Supply (shared)
- ☐ Irrigation

Non-Water Supply Well:

- ☑ Monitoring
- ☐ Recovery

Injection Well:

- ☐ Aquifer Recharge
- ☐ Groundwater Remediation
- ☐ Aquifer Storage and Recovery
- ☐ Salinity Barrier
- ☐ Aquifer Test
- ☐ Stormwater Drainage
- ☐ Experimental Technology
- ☐ Subsidence Control
- ☐ Geothermal (Closed Loop)
- ☐ Tracer
- ☐ Geothermal (Heating/Cooling Return)
- ☐ Other (explain under 7g)

4. Date well(s) abandoned: 12/20/16

5a. Well location:

BP - 24208

Facility/Owner Name

Facility ID# (if applicable)

1121 MEBANE OAKS ROAD MEBANE 27302

Physical Address, City, and Zip

ALAMANCE

County

Parcel Identification No. (PIN)

5b. Latitude and longitude in degrees/minutes/seconds or decimal degrees:
(if well field, one lat/long is sufficient)

36° 04' 20.55" N 79° 16' 21.28" W

CONSTRUCTION DETAILS OF WELL(S) BEING ABANDONED

Attach well construction record(s) if available. For multiple injection or non-water supply wells ONLY with the same construction/abandonment, you can submit one form.

6a. Well ID#: MW-13

6b. Total well depth: 37.5 (ft.)

6c. Borehole diameter: 2.0 (in.)

6d. Water level below ground surface: 29.03 (ft.)

6e. Outer casing length (if known): _____ (ft.)

6f. Inner casing/tubing length (if known): _____ (ft.)

6g. Screen length (if known): _____ (ft.)

For Internal Use ONLY:

WELL ABANDONMENT DETAILS

7a. Number of wells being abandoned: 1

For multiple injection or non-water supply wells ONLY with the same construction abandonment, you can submit one form.

7b. Approximate volume of water remaining in well(s): 1.25 (gal.)

FOR WATER SUPPLY WELLS ONLY:

7c. Type of disinfectant used: _____

7d. Amount of disinfectant used: _____

7e. Sealing materials used (check all that apply):

- ☑ Neat Cement Grout
- ☐ Sand Cement Grout
- ☐ Concrete Grout
- ☐ Specialty Grout
- ☐ Bentonite Slurry
- ☐ Bentonite Chips or Pellets
- ☐ Dry Clay
- ☐ Drill Cuttings
- ☐ Gravel
- ☐ Other (explain under 7g)

7f. For each material selected above, provide amount of materials used:

6.0 GALLONS

7g. Provide a brief description of the abandonment procedure:

WELL ABANDONED VIA TREMIE PIPE WITH PORTLAND BENTONITE SLURRY

8. Certification:

Mark Ireland

Signature of Certified Well Contractor or Well Owner

12/26/16

Date

By signing this form, I hereby certify that the well(s) was (were) abandoned in accordance with 15A NCAC 02C .0100 or 2C .0200 Well Construction Standards and that a copy of this record has been provided to the well owner.

9. Site diagram or additional well details:
You may use the back of this page to provide additional well site details or well abandonment details. You may also attach additional pages if necessary.

SUBMITTAL INSTRUCTIONS

10a. For All Wells: Submit this form within 30 days of completion of well abandonment to the following:

**Division of Water Quality, Information Processing Unit,
1617 Mail Service Center, Raleigh, NC 27699-1617**

10b. For Injection Wells: In addition to sending the form to the address in 10a above, also submit one copy of this form within 30 days of completion of well abandonment to the following:

**Division of Water Quality, Underground Injection Control Program,
1636 Mail Service Center, Raleigh, NC 27699-1636**

10c. For Water Supply & Injection Wells: In addition to sending the form to the address(es) above, also submit one copy of this form within 30 days of completion of well abandonment to the county health department of the county where abandoned.

WELL ABANDONMENT RECORD

This form can be used for single or multiple wells

1. Well Contractor Information:

MARK IRELAND

Well Contractor Name (or well owner personally abandoning well on his/her property)

A - 4163

NC Well Contractor Certification Number

GEOLOGIC EXPLORATION, INC

Company Name

2. Well Construction Permit #: _____

List all applicable well construction permits (i.e. County, State, Variance, etc.) if known

3. Well use (check well use):

Water Supply Well:	
☐Agricultural	☐Municipal/Public
☐Geothermal (Heating/Cooling Supply)	☐Residential Water Supply (single)
☐Industrial/Commercial	☐Residential Water Supply (shared)
☐Irrigation	
Non-Water Supply Well:	
☑Monitoring	☐Recovery
Injection Well:	
☐Aquifer Recharge	☐Groundwater Remediation
☐Aquifer Storage and Recovery	☐Salinity Barrier
☐Aquifer Test	☐Stormwater Drainage
☐Experimental Technology	☐Subsidence Control
☐Geothermal (Closed Loop)	☐Tracer
☐Geothermal (Heating/Cooling Return)	☐Other (explain under 7g)

4. Date well(s) abandoned: 12/20/16

5a. Well location:

BP - 24208

Facility/Owner Name

Facility ID# (if applicable)

1121 MEBANE OAKS ROAD MEBANE 27302

Physical Address, City, and Zip

ALAMANCE

County

Parcel Identification No. (PIN)

5b. Latitude and longitude in degrees/minutes/seconds or decimal degrees:
(if well field, one lat/long is sufficient)

36° 04' 20.77" N 79° 16' 21.73" W

CONSTRUCTION DETAILS OF WELL(S) BEING ABANDONED

Attach well construction record(s) if available. For multiple injection or non-water supply wells ONLY with the same construction abandonment, you can submit one form.

6a. Well ID#: MW-14

6b. Total well depth: 37.5 (ft.)

6c. Borehole diameter: 2.0 (in.)

6d. Water level below ground surface: 29.12 (ft.)

6e. Outer casing length (if known): _____ (ft.)

6f. Inner casing/tubing length (if known): _____ (ft.)

6g. Screen length (if known): _____ (ft.)

For Internal Use ONLY:

WELL ABANDONMENT DETAILS

7a. Number of wells being abandoned: 1

For multiple injection or non-water supply wells ONLY with the same construction abandonment, you can submit one form.

7b. Approximate volume of water remaining in well(s): 1.25 (gal.)

FOR WATER SUPPLY WELLS ONLY:

7c. Type of disinfectant used: _____

7d. Amount of disinfectant used: _____

7e. Sealing materials used (check all that apply):

☑ Neat Cement Grout	☐ Bentonite Chips or Pellets
☐ Sand Cement Grout	☐ Dry Clay
☐ Concrete Grout	☐ Drill Cuttings
☐ Specialty Grout	☐ Gravel
☐ Bentonite Slurry	☐ Other (explain under 7g)

7f. For each material selected above, provide amount of materials used:

6.0 GALLONS

7g. Provide a brief description of the abandonment procedure:

WELL ABANDONED VIA TREMIE PIPE WITH PORTLAND BENTONITE SLURRY

8. Certification:

Mark Ireland

Signature of Certified Well Contractor or Well Owner

12/26/16

Date

By signing this form, I hereby certify that the well(s) was (were) abandoned in accordance with 15A NCAC 02C .0100 or 2C .0200 Well Construction Standards and that a copy of this record has been provided to the well owner.

9. Site diagram or additional well details:
You may use the back of this page to provide additional well site details or well abandonment details. You may also attach additional pages if necessary.

SUBMITTAL INSTRUCTIONS

10a. For All Wells: Submit this form within 30 days of completion of well abandonment to the following:

**Division of Water Quality, Information Processing Unit,
1617 Mail Service Center, Raleigh, NC 27699-1617**

10b. For Injection Wells: In addition to sending the form to the address in 10a above, also submit one copy of this form within 30 days of completion of well abandonment to the following:

**Division of Water Quality, Underground Injection Control Program,
1636 Mail Service Center, Raleigh, NC 27699-1636**

10c. For Water Supply & Injection Wells: In addition to sending the form to the address(es) above, also submit one copy of this form within 30 days of completion of well abandonment to the county health department of the county where abandoned.

WELL ABANDONMENT RECORD

This form can be used for single or multiple wells

1. Well Contractor Information:

MARK IRELAND

Well Contractor Name (or well owner personally abandoning well on his/her property)

A - 4163

NC Well Contractor Certification Number

GEOLOGIC EXPLORATION, INC

Company Name

2. Well Construction Permit #: _____

List all applicable well construction permits (i.e. County, State, Variance, etc.) if known

3. Well use (check well use):

Water Supply Well:

- ☐ Agricultural
- ☐ Municipal/Public
- ☐ Geothermal (Heating/Cooling Supply)
- ☐ Residential Water Supply (single)
- ☐ Industrial/Commercial
- ☐ Residential Water Supply (shared)
- ☐ Irrigation

Non-Water Supply Well:

- ☐ Monitoring
- ☐ Recovery

Injection Well:

- ☐ Aquifer Recharge
- ☐ Groundwater Remediation
- ☐ Aquifer Storage and Recovery
- ☐ Salinity Barrier
- ☐ Aquifer Test
- ☐ Stormwater Drainage
- ☐ Experimental Technology
- ☐ Subsidence Control
- ☐ Geothermal (Closed Loop)
- ☐ Tracer
- ☐ Geothermal (Heating/Cooling Return)
- ☑ Other (explain under 7g)

4. Date well(s) abandoned: 12/20/16

5a. Well location:

BP - 24208

Facility/Owner Name

Facility ID# (if applicable)

1121 MEBANE OAKS ROAD MEBANE 27302

Physical Address, City, and Zip

ALAMANCE

County

Parcel Identification No. (PIN)

5b. Latitude and longitude in degrees/minutes/seconds or decimal degrees:
(if well field, one lat/long is sufficient)

36° 04' 20.79" N 79° 16' 21.76" W

CONSTRUCTION DETAILS OF WELL(S) BEING ABANDONED

Attach well construction record(s) if available. For multiple injection or non-water supply wells ONLY with the same construction abandonment, you can submit one form.

6a. Well ID#: AS-1

6b. Total well depth: 36.0 (ft.)

6c. Borehole diameter: 2.0 (in.)

6d. Water level below ground surface: 28.35 (ft.)

6e. Outer casing length (if known): _____ (ft.)

6f. Inner casing/tubing length (if known): _____ (ft.)

6g. Screen length (if known): _____ (ft.)

For Internal Use ONLY:

WELL ABANDONMENT DETAILS

7a. Number of wells being abandoned: 1

For multiple injection or non-water supply wells ONLY with the same construction abandonment, you can submit one form.

7b. Approximate volume of water remaining in well(s): 1.25 (gal.)

FOR WATER SUPPLY WELLS ONLY:

7c. Type of disinfectant used: _____

7d. Amount of disinfectant used: _____

7e. Sealing materials used (check all that apply):

- ☑ Neat Cement Grout
- ☐ Sand Cement Grout
- ☐ Concrete Grout
- ☐ Specialty Grout
- ☐ Bentonite Slurry
- ☐ Bentonite Chips or Pellets
- ☐ Dry Clay
- ☐ Drill Cuttings
- ☐ Gravel
- ☐ Other (explain under 7g)

7f. For each material selected above, provide amount of materials used:

5.75 GALLONS

7g. Provide a brief description of the abandonment procedure:

WELL ABANDONED VIA TREMIE PIPE WITH PORTLAND BENTONITE SLURRY

AIR SPARGE

8. Certification:

Mark Ireland

Signature of Certified Well Contractor or Well Owner

12/26/16

Date

By signing this form, I hereby certify that the well(s) was (were) abandoned in accordance with 15A NCAC 02C .0100 or 2C .0200 Well Construction Standards and that a copy of this record has been provided to the well owner.

9. Site diagram or additional well details:
You may use the back of this page to provide additional well site details or well abandonment details. You may also attach additional pages if necessary.

SUBMITTAL INSTRUCTIONS

10a. For All Wells: Submit this form within 30 days of completion of well abandonment to the following:

Division of Water Quality, Information Processing Unit,
1617 Mail Service Center, Raleigh, NC 27699-1617

10b. For Injection Wells: In addition to sending the form to the address in 10a above, also submit one copy of this form within 30 days of completion of well abandonment to the following:

Division of Water Quality, Underground Injection Control Program,
1636 Mail Service Center, Raleigh, NC 27699-1636

10c. For Water Supply & Injection Wells: In addition to sending the form to the address(es) above, also submit one copy of this form within 30 days of completion of well abandonment to the county health department of the county where abandoned.

WELL ABANDONMENT RECORD

This form can be used for single or multiple wells

1. Well Contractor Information:

MARK IRELAND

Well Contractor Name (or well owner personally abandoning well on his/her property)

A - 4163

NC Well Contractor Certification Number

GEOLOGIC EXPLORATION, INC

Company Name

2. Well Construction Permit #: _____

List all applicable well construction permits (i.e. County, State, Variance, etc.) if known

3. Well use (check well use):

Water Supply Well:

- ☐ Agricultural
- ☐ Municipal/Public
- ☐ Geothermal (Heating/Cooling Supply)
- ☐ Residential Water Supply (single)
- ☐ Industrial/Commercial
- ☐ Residential Water Supply (shared)
- ☐ Irrigation

Non-Water Supply Well:

- ☐ Monitoring
- ☐ Recovery

Injection Well:

- ☐ Aquifer Recharge
- ☐ Groundwater Remediation
- ☐ Aquifer Storage and Recovery
- ☐ Salinity Barrier
- ☐ Aquifer Test
- ☐ Stormwater Drainage
- ☐ Experimental Technology
- ☐ Subsidence Control
- ☐ Geothermal (Closed Loop)
- ☐ Tracer
- ☐ Geothermal (Heating/Cooling Return)
- ☑ Other (explain under 7g)

4. Date well(s) abandoned: 12/21/16

5a. Well location:

BP - 24208

Facility/Owner Name

Facility ID# (if applicable)

1121 MEBANE OAKS ROAD MEBANE 27302

Physical Address, City, and Zip

ALAMANCE

County

Parcel Identification No. (PIN)

5b. Latitude and longitude in degrees/minutes/seconds or decimal degrees:
(if well field, one lat/long is sufficient)

36° 04' 20.79" N 79° 16' 21.76" W

CONSTRUCTION DETAILS OF WELL(S) BEING ABANDONED

Attach well construction record(s) if available. For multiple injection or non-water supply wells ONLY with the same construction abandonment, you can submit one form.

6a. Well ID#: AS-2

6b. Total well depth: 45.0 (ft.)

6c. Borehole diameter: 2.0 (in.)

6d. Water level below ground surface: 28.94 (ft.)

6e. Outer casing length (if known): _____ (ft.)

6f. Inner casing/tubing length (if known): _____ (ft.)

6g. Screen length (if known): _____ (ft.)

For Internal Use ONLY:

WELL ABANDONMENT DETAILS

7a. Number of wells being abandoned: 1

For multiple injection or non-water supply wells ONLY with the same construction abandonment, you can submit one form.

7b. Approximate volume of water remaining in well(s): 2.5 (gal.)

FOR WATER SUPPLY WELLS ONLY:

7c. Type of disinfectant used: _____

7d. Amount of disinfectant used: _____

7e. Sealing materials used (check all that apply):

- ☑ Neat Cement Grout
- ☐ Bentonite Chips or Pellets
- ☐ Sand Cement Grout
- ☐ Dry Clay
- ☐ Concrete Grout
- ☐ Drill Cuttings
- ☐ Specialty Grout
- ☐ Gravel
- ☐ Bentonite Slurry
- ☐ Other (explain under 7g)

7f. For each material selected above, provide amount of materials used:

7.25 GALLONS

7g. Provide a brief description of the abandonment procedure:

WELL ABANDONED VIA TREMIE PIPE WITH PORTLAND BENTONITE SLURRY

AIR SPARGE

8. Certification:

Mark Ireland

Signature of Certified Well Contractor or Well Owner

12/26/16

Date

By signing this form, I hereby certify that the well(s) was (were) abandoned in accordance with 15A NCAC 02C .0100 or 2C .0200 Well Construction Standards and that a copy of this record has been provided to the well owner.

9. Site diagram or additional well details:
You may use the back of this page to provide additional well site details or well abandonment details. You may also attach additional pages if necessary.

SUBMITTAL INSTRUCTIONS

10a. For All Wells: Submit this form within 30 days of completion of well abandonment to the following:

**Division of Water Quality, Information Processing Unit,
1617 Mail Service Center, Raleigh, NC 27699-1617**

10b. For Injection Wells: In addition to sending the form to the address in 10a above, also submit one copy of this form within 30 days of completion of well abandonment to the following:

**Division of Water Quality, Underground Injection Control Program,
1636 Mail Service Center, Raleigh, NC 27699-1636**

10c. For Water Supply & Injection Wells: In addition to sending the form to the address(es) above, also submit one copy of this form within 30 days of completion of well abandonment to the county health department of the county where abandoned.

WELL ABANDONMENT RECORD

This form can be used for single or multiple wells

1. Well Contractor Information:

MARK IRELAND

Well Contractor Name (or well owner personally abandoning well on his/her property)

A - 4163

NC Well Contractor Certification Number

GEOLOGIC EXPLORATION, INC

Company Name

2. Well Construction Permit #: _____

List all applicable well construction permits (i.e. County, State, Variance, etc.) if known

3. Well use (check well use):

Water Supply Well:	
☐Agricultural	☐Municipal/Public
☐Geothermal (Heating/Cooling Supply)	☐Residential Water Supply (single)
☐Industrial/Commercial	☐Residential Water Supply (shared)
☐Irrigation	
Non-Water Supply Well:	
☐Monitoring	☐Recovery
Injection Well:	
☐Aquifer Recharge	☐Groundwater Remediation
☐Aquifer Storage and Recovery	☐Salinity Barrier
☐Aquifer Test	☐Stormwater Drainage
☐Experimental Technology	☐Subsidence Control
☐Geothermal (Closed Loop)	☐Tracer
☐Geothermal (Heating/Cooling Return)	☑Other (explain under 7g)

4. Date well(s) abandoned: 12/21/16

5a. Well location:

BP - 24208

Facility/Owner Name

Facility ID# (if applicable)

1121 MEBANE OAKS ROAD MEBANE 27302

Physical Address, City, and Zip

ALAMANCE

County

Parcel Identification No. (PIN)

5b. Latitude and longitude in degrees/minutes/seconds or decimal degrees:
(if well field, one lat/long is sufficient)

36° 04' 20.65" N 79° 16' 22.18" W

CONSTRUCTION DETAILS OF WELL(S) BEING ABANDONED

Attach well construction record(s) if available. For multiple injection or non-water supply wells ONLY with the same construction/abandonment, you can submit one form.

6a. Well ID#: AS-3

6b. Total well depth: 34.0 (ft.)

6c. Borehole diameter: 2.0 (in.)

6d. Water level below ground surface: 28.06 (ft.)

6e. Outer casing length (if known): _____ (ft.)

6f. Inner casing/tubing length (if known): _____ (ft.)

6g. Screen length (if known): _____ (ft.)

For Internal Use ONLY:

WELL ABANDONMENT DETAILS

7a. Number of wells being abandoned: 1

For multiple injection or non-water supply wells ONLY with the same construction abandonment, you can submit one form.

7b. Approximate volume of water remaining in well(s): 1.0 (gal.)

FOR WATER SUPPLY WELLS ONLY:

7c. Type of disinfectant used: _____

7d. Amount of disinfectant used: _____

7e. Sealing materials used (check all that apply):

☑ Neat Cement Grout	☐ Bentonite Chips or Pellets
☐ Sand Cement Grout	☐ Dry Clay
☐ Concrete Grout	☐ Drill Cuttings
☐ Specialty Grout	☐ Gravel
☐ Bentonite Slurry	☐ Other (explain under 7g)

7f. For each material selected above, provide amount of materials used:

5.5 GALLONS

7g. Provide a brief description of the abandonment procedure:

WELL ABANDONED VIA TREMIE PIPE WITH PORTLAND BENTONITE SLURRY

AIR SPARGE

8. Certification:

Mark Ireland

Signature of Certified Well Contractor or Well Owner

12/26/16

Date

By signing this form, I hereby certify that the well(s) was (were) abandoned in accordance with 15A NCAC 02C .0100 or 2C .0200 Well Construction Standards and that a copy of this record has been provided to the well owner.

9. Site diagram or additional well details:
You may use the back of this page to provide additional well site details or well abandonment details. You may also attach additional pages if necessary.

SUBMITTAL INSTRUCTIONS

10a. For All Wells: Submit this form within 30 days of completion of well abandonment to the following:

Division of Water Quality, Information Processing Unit,
1617 Mail Service Center, Raleigh, NC 27699-1617

10b. For Injection Wells: In addition to sending the form to the address in 10a above, also submit one copy of this form within 30 days of completion of well abandonment to the following:

Division of Water Quality, Underground Injection Control Program,
1636 Mail Service Center, Raleigh, NC 27699-1636

10c. For Water Supply & Injection Wells: In addition to sending the form to the address(es) above, also submit one copy of this form within 30 days of completion of well abandonment to the county health department of the county where abandoned.

WELL ABANDONMENT RECORD

This form can be used for single or multiple wells

1. Well Contractor Information:

MARK IRELAND

Well Contractor Name (or well owner personally abandoning well on his/her property)

A - 4163

NC Well Contractor Certification Number

GEOLOGIC EXPLORATION, INC

Company Name

2. Well Construction Permit #: _____

List all applicable well construction permits (i.e. County, State, Variance, etc.) if known

3. Well use (check well use):

Water Supply Well:

- ☐ Agricultural
- ☐ Municipal/Public
- ☐ Geothermal (Heating/Cooling Supply)
- ☐ Residential Water Supply (single)
- ☐ Industrial/Commercial
- ☐ Residential Water Supply (shared)
- ☐ Irrigation

Non-Water Supply Well:

- ☐ Monitoring
- ☐ Recovery

Injection Well:

- ☐ Aquifer Recharge
- ☐ Groundwater Remediation
- ☐ Aquifer Storage and Recovery
- ☐ Salinity Barrier
- ☐ Aquifer Test
- ☐ Stormwater Drainage
- ☐ Experimental Technology
- ☐ Subsidence Control
- ☐ Geothermal (Closed Loop)
- ☐ Tracer
- ☐ Geothermal (Heating/Cooling Return)
- ☑ Other (explain under 7g)

4. Date well(s) abandoned: 12/21/16

5a. Well location:

BP - 24208

Facility/Owner Name

Facility ID# (if applicable)

1121 MEBANE OAKS ROAD MEBANE 27302

Physical Address, City, and Zip

ALAMANCE

County

Parcel Identification No. (PIN)

5b. Latitude and longitude in degrees/minutes/seconds or decimal degrees:
(if well field, one lat/long is sufficient)

36° 04' 20.35" N 79° 16' 21.84" W

CONSTRUCTION DETAILS OF WELL(S) BEING ABANDONED

Attach well construction record(s) if available. For multiple injection or non-water supply wells ONLY with the same construction abandonment, you can submit one form.

6a. Well ID#: AS-4

6b. Total well depth: 40.0 (ft.)

6c. Borehole diameter: 2.0 (in.)

6d. Water level below ground surface: 29.21 (ft.)

6e. Outer casing length (if known): _____ (ft.)

6f. Inner casing/tubing length (if known): _____ (ft.)

6g. Screen length (if known): _____ (ft.)

For Internal Use ONLY:

WELL ABANDONMENT DETAILS

7a. Number of wells being abandoned: 1

For multiple injection or non-water supply wells ONLY with the same construction abandonment, you can submit one form.

7b. Approximate volume of water remaining in well(s): 1.75 (gal.)

FOR WATER SUPPLY WELLS ONLY:

7c. Type of disinfectant used: _____

7d. Amount of disinfectant used: _____

7e. Sealing materials used (check all that apply):

- ☑ Neat Cement Grout
- ☐ Sand Cement Grout
- ☐ Concrete Grout
- ☐ Specialty Grout
- ☐ Bentonite Slurry
- ☐ Bentonite Chips or Pellets
- ☐ Dry Clay
- ☐ Drill Cuttings
- ☐ Gravel
- ☐ Other (explain under 7g)

7f. For each material selected above, provide amount of materials used:

6.5 GALLONS

7g. Provide a brief description of the abandonment procedure:

WELL ABANDONED VIA TREMIE PIPE WITH PORTLAND BENTONITE SLURRY

AIR SPARGE

8. Certification:

Mark Ireland

Signature of Certified Well Contractor or Well Owner

12/26/16

Date

By signing this form, I hereby certify that the well(s) was (were) abandoned in accordance with 15A NCAC 02C .0100 or 2C .0200 Well Construction Standards and that a copy of this record has been provided to the well owner.

9. Site diagram or additional well details:
You may use the back of this page to provide additional well site details or well abandonment details. You may also attach additional pages if necessary.

SUBMITTAL INSTRUCTIONS

10a. For All Wells: Submit this form within 30 days of completion of well abandonment to the following:

**Division of Water Quality, Information Processing Unit,
1617 Mail Service Center, Raleigh, NC 27699-1617**

10b. For Injection Wells: In addition to sending the form to the address in 10a above, also submit one copy of this form within 30 days of completion of well abandonment to the following:

**Division of Water Quality, Underground Injection Control Program,
1636 Mail Service Center, Raleigh, NC 27699-1636**

10c. For Water Supply & Injection Wells: In addition to sending the form to the address(es) above, also submit one copy of this form within 30 days of completion of well abandonment to the county health department of the county where abandoned.

WELL ABANDONMENT RECORD

This form can be used for single or multiple wells

1. Well Contractor Information:

MARK IRELAND

Well Contractor Name (or well owner personally abandoning well on his/her property)

A - 4163

NC Well Contractor Certification Number

GEOLOGIC EXPLORATION, INC

Company Name

2. Well Construction Permit #: _____

List all applicable well construction permits (i.e. County, State, Variance, etc.) if known

3. Well use (check well use):

Water Supply Well:	
☐Agricultural	☐Municipal/Public
☐Geothermal (Heating/Cooling Supply)	☐Residential Water Supply (single)
☐Industrial/Commercial	☐Residential Water Supply (shared)
☐Irrigation	
Non-Water Supply Well:	
☐Monitoring	☐Recovery
Injection Well:	
☐Aquifer Recharge	☐Groundwater Remediation
☐Aquifer Storage and Recovery	☐Salinity Barrier
☐Aquifer Test	☐Stormwater Drainage
☐Experimental Technology	☐Subsidence Control
☐Geothermal (Closed Loop)	☐Tracer
☐Geothermal (Heating/Cooling Return)	☑Other (explain under 7g)

4. Date well(s) abandoned: 12/21/16

5a. Well location:

BP - 24208

Facility/Owner Name — Facility ID# (if applicable)

1121 MEBANE OAKS ROAD MEBANE 27302

Physical Address, City, and Zip

ALAMANCE

County — Parcel Identification No. (PIN)

5b. Latitude and longitude in degrees/minutes/seconds or decimal degrees:
(if well field, one lat/long is sufficient)

36° 04' 20.88" N 79° 16' 22.18" W

CONSTRUCTION DETAILS OF WELL(S) BEING ABANDONED

Attach well construction record(s) if available. For multiple injection or non-water supply wells ONLY with the same construction/abandonment, you can submit one form.

6a. Well ID#: VE-1

6b. Total well depth: 34.0 (ft.)

6c. Borehole diameter: 4.0 (in.)

6d. Water level below ground surface: 29.14 (ft.)

6e. Outer casing length (if known): _____ (ft.)

6f. Inner casing/tubing length (if known): _____ (ft.)

6g. Screen length (if known): _____ (ft.)

For Internal Use ONLY:

WELL ABANDONMENT DETAILS

7a. Number of wells being abandoned: 1

For multiple injection or non-water supply wells ONLY with the same construction/abandonment, you can submit one form.

7b. Approximate volume of water remaining in well(s): 3.0 (gal.)

FOR WATER SUPPLY WELLS ONLY:

7c. Type of disinfectant used: _____

7d. Amount of disinfectant used: _____

7e. Sealing materials used (check all that apply):

☑ Neat Cement Grout	☐ Bentonite Chips or Pellets
☐ Sand Cement Grout	☐ Dry Clay
☐ Concrete Grout	☐ Drill Cuttings
☐ Specialty Grout	☐ Gravel
☐ Bentonite Slurry	☐ Other (explain under 7g)

7f. For each material selected above, provide amount of materials used:

22.25 GALLONS

7g. Provide a brief description of the abandonment procedure:

WELL ABANDONED VIA TREMIE PIPE WITH PORTLAND BENTONITE SLURRY

VAPOR EXTRACTION

8. Certification:

Mark Ireland — 12/26/16

Signature of Certified Well Contractor or Well Owner — Date

By signing this form, I hereby certify that the well(s) was (were) abandoned in accordance with 15A NCAC 02C .0100 or 2C .0200 Well Construction Standards and that a copy of this record has been provided to the well owner.

9. Site diagram or additional well details:
You may use the back of this page to provide additional well site details or well abandonment details. You may also attach additional pages if necessary.

SUBMITTAL INSTRUCTIONS

10a. For All Wells: Submit this form within 30 days of completion of well abandonment to the following:

**Division of Water Quality, Information Processing Unit,
1617 Mail Service Center, Raleigh, NC 27699-1617**

10b. For Injection Wells: In addition to sending the form to the address in 10a above, also submit one copy of this form within 30 days of completion of well abandonment to the following:

**Division of Water Quality, Underground Injection Control Program,
1636 Mail Service Center, Raleigh, NC 27699-1636**

10c. For Water Supply & Injection Wells: In addition to sending the form to the address(es) above, also submit one copy of this form within 30 days of completion of well abandonment to the county health department of the county where abandoned.

WELL ABANDONMENT RECORD

This form can be used for single or multiple wells

1. Well Contractor Information:

MARK IRELAND

Well Contractor Name (or well owner personally abandoning well on his/her property)

A - 4163

NC Well Contractor Certification Number

GEOLOGIC EXPLORATION, INC

Company Name

2. Well Construction Permit #: _____

List all applicable well construction permits (i.e. County, State, Variance, etc.) if known

3. Well use (check well use):

Water Supply Well:	
☐Agricultural	☐Municipal/Public
☐Geothermal (Heating/Cooling Supply)	☐Residential Water Supply (single)
☐Industrial/Commercial	☐Residential Water Supply (shared)
☐Irrigation	
Non-Water Supply Well:	
☐Monitoring	☐Recovery
Injection Well:	
☐Aquifer Recharge	☐Groundwater Remediation
☐Aquifer Storage and Recovery	☐Salinity Barrier
☐Aquifer Test	☐Stormwater Drainage
☐Experimental Technology	☐Subsidence Control
☐Geothermal (Closed Loop)	☐Tracer
☐Geothermal (Heating/Cooling Return)	☑Other (explain under 7g)

4. Date well(s) abandoned: 12/21/16

5a. Well location:

BP - 24208

Facility/Owner Name

Facility ID# (if applicable)

1121 MEBANE OAKS ROAD MEBANE 27302

Physical Address, City, and Zip

ALAMANCE

County

Parcel Identification No. (PIN)

5b. Latitude and longitude in degrees/minutes/seconds or decimal degrees:
(if well field, one lat/long is sufficient)

36° 04' 20.88" N 79° 16' 22.18" W

CONSTRUCTION DETAILS OF WELL(S) BEING ABANDONED

Attach well construction record(s) if available. For multiple injection or non-water supply wells ONLY with the same construction abandonment, you can submit one form.

6a. Well ID#: VE-2

6b. Total well depth: 14.0 (ft.)

6c. Borehole diameter: 4.0 (in.)

6d. Water level below ground surface: DRY (ft.)

6e. Outer casing length (if known): _____ (ft.)

6f. Inner casing/tubing length (if known): _____ (ft.)

6g. Screen length (if known): _____ (ft.)

For Internal Use ONLY:

WELL ABANDONMENT DETAILS

7a. Number of wells being abandoned: 1

For multiple injection or non-water supply wells ONLY with the same construction abandonment, you can submit one form.

7b. Approximate volume of water remaining in well(s): _____ (gal.)

FOR WATER SUPPLY WELLS ONLY:

7c. Type of disinfectant used: _____

7d. Amount of disinfectant used: _____

7e. Sealing materials used (check all that apply):

☑ Neat Cement Grout	☐ Bentonite Chips or Pellets
☐ Sand Cement Grout	☐ Dry Clay
☐ Concrete Grout	☐ Drill Cuttings
☐ Specialty Grout	☐ Gravel
☐ Bentonite Slurry	☐ Other (explain under 7g)

7f. For each material selected above, provide amount of materials used:

9.0 GALLONS

7g. Provide a brief description of the abandonment procedure:

WELL ABANDONED VIA TREMIE PIPE WITH

PORTLAND BENTONITE SLURRY

VAPOR EXTRACTION

8. Certification:

Mark Ireland

Signature of Certified Well Contractor or Well Owner

12/26/16

Date

By signing this form, I hereby certify that the well(s) was (were) abandoned in accordance with 15A NCAC 02C .0100 or 2C .0200 Well Construction Standards and that a copy of this record has been provided to the well owner.

9. Site diagram or additional well details:
You may use the back of this page to provide additional well site details or well abandonment details. You may also attach additional pages if necessary.

SUBMITTAL INSTRUCTIONS

10a. For All Wells: Submit this form within 30 days of completion of well abandonment to the following:

Division of Water Quality, Information Processing Unit,
1617 Mail Service Center, Raleigh, NC 27699-1617

10b. For Injection Wells: In addition to sending the form to the address in 10a above, also submit one copy of this form within 30 days of completion of well abandonment to the following:

Division of Water Quality, Underground Injection Control Program,
1636 Mail Service Center, Raleigh, NC 27699-1636

10c. For Water Supply & Injection Wells: In addition to sending the form to the address(es) above, also submit one copy of this form within 30 days of completion of well abandonment to the county health department of the county where abandoned.

WELL ABANDONMENT RECORD

This form can be used for single or multiple wells

1. Well Contractor Information:

MARK IRELAND

Well Contractor Name (or well owner personally abandoning well on his/her property)

A - 4163

NC Well Contractor Certification Number

GEOLOGIC EXPLORATION, INC

Company Name

2. Well Construction Permit #: _____

List all applicable well construction permits (i.e. County, State, Variance, etc.) if known

3. Well use (check well use):

Water Supply Well:

- ☐ Agricultural
- ☐ Municipal/Public
- ☐ Geothermal (Heating/Cooling Supply)
- ☐ Residential Water Supply (single)
- ☐ Industrial/Commercial
- ☐ Residential Water Supply (shared)
- ☐ Irrigation

Non-Water Supply Well:

- ☐ Monitoring
- ☐ Recovery

Injection Well:

- ☐ Aquifer Recharge
- ☐ Groundwater Remediation
- ☐ Aquifer Storage and Recovery
- ☐ Salinity Barrier
- ☐ Aquifer Test
- ☐ Stormwater Drainage
- ☐ Experimental Technology
- ☐ Subsidence Control
- ☐ Geothermal (Closed Loop)
- ☐ Tracer
- ☐ Geothermal (Heating/Cooling Return)
- ☑ Other (explain under 7g)

4. Date well(s) abandoned: 12/21/16

5a. Well location:

BP - 24208

Facility/Owner Name

Facility ID# (if applicable)

1121 MEBANE OAKS ROAD MEBANE 27302

Physical Address, City, and Zip

ALAMANCE

County

Parcel Identification No. (PIN)

5b. Latitude and longitude in degrees/minutes/seconds or decimal degrees:
(if well field, one lat/long is sufficient)

36° 04' 20.03" N 79° 16' 21.72" W

CONSTRUCTION DETAILS OF WELL(S) BEING ABANDONED

Attach well construction record(s) if available. For multiple injection or non-water supply wells ONLY with the same construction abandonment, you can submit one form.

6a. Well ID#: VE-3

6b. Total well depth: 35.0 (ft.)

6c. Borehole diameter: 4.0 (in.)

6d. Water level below ground surface: 27.05 (ft.)

6e. Outer casing length (if known): _____ (ft.)

6f. Inner casing/tubing length (if known): _____ (ft.)

6g. Screen length (if known): _____ (ft.)

For Internal Use ONLY:

WELL ABANDONMENT DETAILS

7a. Number of wells being abandoned: 1

For multiple injection or non-water supply wells ONLY with the same construction abandonment, you can submit one form.

7b. Approximate volume of water remaining in well(s): 4.0 (gal.)

FOR WATER SUPPLY WELLS ONLY:

7c. Type of disinfectant used: _____

7d. Amount of disinfectant used: _____

7e. Sealing materials used (check all that apply):

- ☑ Neat Cement Grout
- ☐ Bentonite Chips or Pellets
- ☐ Sand Cement Grout
- ☐ Dry Clay
- ☐ Concrete Grout
- ☐ Drill Cuttings
- ☐ Specialty Grout
- ☐ Gravel
- ☐ Bentonite Slurry
- ☐ Other (explain under 7g)

7f. For each material selected above, provide amount of materials used:

23.0 GALLONS

7g. Provide a brief description of the abandonment procedure:

WELL ABANDONED VIA TREMIE PIPE WITH PORTLAND BENTONITE SLURRY

VAPOR EXTRACTION

8. Certification:

Mark Ireland

Signature of Certified Well Contractor or Well Owner

12/26/16

Date

By signing this form, I hereby certify that the well(s) was (were) abandoned in accordance with 15A NCAC 02C .0100 or 2C .0200 Well Construction Standards and that a copy of this record has been provided to the well owner.

9. Site diagram or additional well details:
You may use the back of this page to provide additional well site details or well abandonment details. You may also attach additional pages if necessary.

SUBMITTAL INSTRUCTIONS

10a. For All Wells: Submit this form within 30 days of completion of well abandonment to the following:

**Division of Water Quality, Information Processing Unit,
1617 Mail Service Center, Raleigh, NC 27699-1617**

10b. For Injection Wells: In addition to sending the form to the address in 10a above, also submit one copy of this form within 30 days of completion of well abandonment to the following:

**Division of Water Quality, Underground Injection Control Program,
1636 Mail Service Center, Raleigh, NC 27699-1636**

10c. For Water Supply & Injection Wells: In addition to sending the form to the address(es) above, also submit one copy of this form within 30 days of completion of well abandonment to the county health department of the county where abandoned.

WELL ABANDONMENT RECORD

This form can be used for single or multiple wells

1. Well Contractor Information:

MARK IRELAND

Well Contractor Name (or well owner personally abandoning well on his/her property)

A - 4163

NC Well Contractor Certification Number

GEOLOGIC EXPLORATION, INC

Company Name

2. Well Construction Permit #: _____

List all applicable well construction permits (i.e. County, State, Variance, etc.) if known

3. Well use (check well use):

Water Supply Well:	
☐Agricultural	☐Municipal/Public
☐Geothermal (Heating/Cooling Supply)	☐Residential Water Supply (single)
☐Industrial/Commercial	☐Residential Water Supply (shared)
☐Irrigation	
Non-Water Supply Well:	
☐Monitoring	☐Recovery
Injection Well:	
☐Aquifer Recharge	☐Groundwater Remediation
☐Aquifer Storage and Recovery	☐Salinity Barrier
☐Aquifer Test	☐Stormwater Drainage
☐Experimental Technology	☐Subsidence Control
☐Geothermal (Closed Loop)	☐Tracer
☐Geothermal (Heating/Cooling Return)	☑Other (explain under 7g)

4. Date well(s) abandoned: 12/21/16

5a. Well location:

BP - 24208

Facility/Owner Name — Facility ID# (if applicable)

1121 MEBANE OAKS ROAD MEBANE 27302

Physical Address, City, and Zip

ALAMANCE

County — Parcel Identification No. (PIN)

5b. Latitude and longitude in degrees/minutes/seconds or decimal degrees:
(if well field, one lat/long is sufficient)

36° 04' 20.03" N 79° 16' 21.72" W

CONSTRUCTION DETAILS OF WELL(S) BEING ABANDONED

Attach well construction record(s) if available. For multiple injection or non-water supply wells ONLY with the same construction abandonment, you can submit one form.

6a. Well ID#: VE-4

6b. Total well depth: 35.0 (ft.)

6c. Borehole diameter: 4.0 (in.)

6d. Water level below ground surface: 28.9 (ft.)

6e. Outer casing length (if known): _____ (ft.)

6f. Inner casing/tubing length (if known): _____ (ft.)

6g. Screen length (if known): _____ (ft.)

For Internal Use ONLY:

WELL ABANDONMENT DETAILS

7a. Number of wells being abandoned: 1

For multiple injection or non-water supply wells ONLY with the same construction abandonment, you can submit one form.

7b. Approximate volume of water remaining in well(s): 4.0 (gal.)

FOR WATER SUPPLY WELLS ONLY:

7c. Type of disinfectant used: _____

7d. Amount of disinfectant used: _____

7e. Sealing materials used (check all that apply):

☑ Neat Cement Grout	☐ Bentonite Chips or Pellets
☐ Sand Cement Grout	☐ Dry Clay
☐ Concrete Grout	☐ Drill Cuttings
☐ Specialty Grout	☐ Gravel
☐ Bentonite Slurry	☐ Other (explain under 7g)

7f. For each material selected above, provide amount of materials used:

23.0 GALLONS

7g. Provide a brief description of the abandonment procedure:

WELL ABANDONED VIA TREMIE PIPE WITH PORTLAND BENTONITE SLURRY

VAPOR EXTRACTION

8. Certification:

Mark Ireland — 12/26/16

Signature of Certified Well Contractor or Well Owner — Date

By signing this form, I hereby certify that the well(s) was (were) abandoned in accordance with 15A NCAC 02C .0100 or 2C .0200 Well Construction Standards and that a copy of this record has been provided to the well owner.

9. Site diagram or additional well details:
You may use the back of this page to provide additional well site details or well abandonment details. You may also attach additional pages if necessary.

SUBMITTAL INSTRUCTIONS

10a. For All Wells: Submit this form within 30 days of completion of well abandonment to the following:

Division of Water Quality, Information Processing Unit,
1617 Mail Service Center, Raleigh, NC 27699-1617

10b. For Injection Wells: In addition to sending the form to the address in 10a above, also submit one copy of this form within 30 days of completion of well abandonment to the following:

Division of Water Quality, Underground Injection Control Program,
1636 Mail Service Center, Raleigh, NC 27699-1636

10c. For Water Supply & Injection Wells: In addition to sending the form to the address(es) above, also submit one copy of this form within 30 days of completion of well abandonment to the county health department of the county where abandoned.

WELL ABANDONMENT RECORD

This form can be used for single or multiple wells

1. Well Contractor Information:

MARK IRELAND

Well Contractor Name (or well owner personally abandoning well on his/her property)

A - 4163

NC Well Contractor Certification Number

GEOLOGIC EXPLORATION, INC

Company Name

2. Well Construction Permit #: _____

List all applicable well construction permits (i.e. County, State, Variance, etc.) if known

3. Well use (check well use):

Water Supply Well:

- ☐ Agricultural
- ☐ Municipal/Public
- ☐ Geothermal (Heating/Cooling Supply)
- ☐ Residential Water Supply (single)
- ☐ Industrial/Commercial
- ☐ Residential Water Supply (shared)
- ☐ Irrigation

Non-Water Supply Well:

- ☐ Monitoring
- ☐ Recovery

Injection Well:

- ☐ Aquifer Recharge
- ☐ Groundwater Remediation
- ☐ Aquifer Storage and Recovery
- ☐ Salinity Barrier
- ☐ Aquifer Test
- ☐ Stormwater Drainage
- ☐ Experimental Technology
- ☐ Subsidence Control
- ☐ Geothermal (Closed Loop)
- ☐ Tracer
- ☐ Geothermal (Heating/Cooling Return)
- ☑ Other (explain under 7g)

4. Date well(s) abandoned: 12/21/16

5a. Well location:

BP - 24208

Facility/Owner Name

Facility ID# (if applicable)

1121 MEBANE OAKS ROAD MEBANE 27302

Physical Address, City, and Zip

ALAMANCE

County

Parcel Identification No. (PIN)

5b. Latitude and longitude in degrees/minutes/seconds or decimal degrees:
(if well field, one lat/long is sufficient)

36° 04' 20.35" N 79° 16' 21.84" W

CONSTRUCTION DETAILS OF WELL(S) BEING ABANDONED

Attach well construction record(s) if available. For multiple injection or non-water supply wells ONLY with the same construction abandonment, you can submit one form.

6a. Well ID#: VE-5

6b. Total well depth: 35.0 (ft.)

6c. Borehole diameter: 4.0 (in.)

6d. Water level below ground surface: 28.87 (ft.)

6e. Outer casing length (if known): _____ (ft.)

6f. Inner casing/tubing length (if known): _____ (ft.)

6g. Screen length (if known): _____ (ft.)

For Internal Use ONLY:

WELL ABANDONMENT DETAILS

7a. Number of wells being abandoned: 1

For multiple injection or non-water supply wells ONLY with the same construction abandonment, you can submit one form.

7b. Approximate volume of water remaining in well(s): 4.0 (gal.)

FOR WATER SUPPLY WELLS ONLY:

7c. Type of disinfectant used: _____

7d. Amount of disinfectant used: _____

7e. Sealing materials used (check all that apply):

- ☑ Neat Cement Grout
- ☐ Bentonite Chips or Pellets
- ☐ Sand Cement Grout
- ☐ Dry Clay
- ☐ Concrete Grout
- ☐ Drill Cuttings
- ☐ Specialty Grout
- ☐ Gravel
- ☐ Bentonite Slurry
- ☐ Other (explain under 7g)

7f. For each material selected above, provide amount of materials used:

23.0 GALLONS

7g. Provide a brief description of the abandonment procedure:

WELL ABANDONED VIA TREMIE PIPE WITH PORTLAND BENTONITE SLURRY

VAPOR EXTRACTION

8. Certification:

Mark Ireland

Signature of Certified Well Contractor or Well Owner

12/26/16

Date

By signing this form, I hereby certify that the well(s) was (were) abandoned in accordance with 15A NCAC 02C .0100 or 2C .0200 Well Construction Standards and that a copy of this record has been provided to the well owner.

9. Site diagram or additional well details:
You may use the back of this page to provide additional well site details or well abandonment details. You may also attach additional pages if necessary.

SUBMITTAL INSTRUCTIONS

10a. For All Wells: Submit this form within 30 days of completion of well abandonment to the following:

**Division of Water Quality, Information Processing Unit,
1617 Mail Service Center, Raleigh, NC 27699-1617**

10b. For Injection Wells: In addition to sending the form to the address in 10a above, also submit one copy of this form within 30 days of completion of well abandonment to the following:

**Division of Water Quality, Underground Injection Control Program,
1636 Mail Service Center, Raleigh, NC 27699-1636**

10c. For Water Supply & Injection Wells: In addition to sending the form to the address(es) above, also submit one copy of this form within 30 days of completion of well abandonment to the county health department of the county where abandoned.

WELL ABANDONMENT RECORD

This form can be used for single or multiple wells

1. Well Contractor Information:

MARK IRELAND

Well Contractor Name (or well owner personally abandoning well on his/her property)

A - 4163

NC Well Contractor Certification Number

GEOLOGIC EXPLORATION, INC

Company Name

2. Well Construction Permit #: _____

List all applicable well construction permits (i.e. County, State, Variance, etc.) if known

3. Well use (check well use):

Water Supply Well:

- ☐ Agricultural
- ☐ Municipal/Public
- ☐ Geothermal (Heating/Cooling Supply)
- ☐ Residential Water Supply (single)
- ☐ Industrial/Commercial
- ☐ Residential Water Supply (shared)
- ☐ Irrigation

Non-Water Supply Well:

- ☐ Monitoring
- ☐ Recovery

Injection Well:

- ☐ Aquifer Recharge
- ☐ Groundwater Remediation
- ☐ Aquifer Storage and Recovery
- ☐ Salinity Barrier
- ☐ Aquifer Test
- ☐ Stormwater Drainage
- ☐ Experimental Technology
- ☐ Subsidence Control
- ☐ Geothermal (Closed Loop)
- ☐ Tracer
- ☐ Geothermal (Heating/Cooling Return)
- ☑ Other (explain under 7g)

4. Date well(s) abandoned: 12/21/16

5a. Well location:

BP - 24208

Facility/Owner Name

Facility ID# (if applicable)

1121 MEBANE OAKS ROAD MEBANE 27302

Physical Address, City, and Zip

ALAMANCE

County

Parcel Identification No. (PIN)

5b. Latitude and longitude in degrees/minutes/seconds or decimal degrees:
(if well field, one lat/long is sufficient)

36° 04' 20.82" N 79° 16' 21.74" W

CONSTRUCTION DETAILS OF WELL(S) BEING ABANDONED

Attach well construction record(s) if available. For multiple injection or non-water supply wells ONLY with the same construction abandonment, you can submit one form.

6a. Well ID#: VE-6

6b. Total well depth: 35.0 (ft.)

6c. Borehole diameter: 4.0 (in.)

6d. Water level below ground surface: DRY (ft.)

6e. Outer casing length (if known): _____ (ft.)

6f. Inner casing/tubing length (if known): _____ (ft.)

6g. Screen length (if known): _____ (ft.)

For Internal Use ONLY:

WELL ABANDONMENT DETAILS

7a. Number of wells being abandoned: 1

For multiple injection or non-water supply wells ONLY with the same construction abandonment, you can submit one form.

7b. Approximate volume of water remaining in well(s): _____ (gal.)

FOR WATER SUPPLY WELLS ONLY:

7c. Type of disinfectant used: _____

7d. Amount of disinfectant used: _____

7e. Sealing materials used (check all that apply):

- ☑ Neat Cement Grout
- ☐ Bentonite Chips or Pellets
- ☐ Sand Cement Grout
- ☐ Dry Clay
- ☐ Concrete Grout
- ☐ Drill Cuttings
- ☐ Specialty Grout
- ☐ Gravel
- ☐ Bentonite Slurry
- ☐ Other (explain under 7g)

7f. For each material selected above, provide amount of materials used:

23.0 GALLONS

7g. Provide a brief description of the abandonment procedure:

WELL ABANDONED VIA TREMIE PIPE WITH PORTLAND BENTONITE SLURRY

VAPOR EXTRACTION

8. Certification:

Mark Ireland

Signature of Certified Well Contractor or Well Owner

12/26/16

Date

By signing this form, I hereby certify that the well(s) was (were) abandoned in accordance with 15A NCAC 02C .0100 or 2C .0200 Well Construction Standards and that a copy of this record has been provided to the well owner.

9. Site diagram or additional well details:
You may use the back of this page to provide additional well site details or well abandonment details. You may also attach additional pages if necessary.

SUBMITTAL INSTRUCTIONS

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**Division of Water Quality, Information Processing Unit,
1617 Mail Service Center, Raleigh, NC 27699-1617**

10b. For Injection Wells: In addition to sending the form to the address in 10a above, also submit one copy of this form within 30 days of completion of well abandonment to the following:

**Division of Water Quality, Underground Injection Control Program,
1636 Mail Service Center, Raleigh, NC 27699-1636**

10c. For Water Supply & Injection Wells: In addition to sending the form to the address(es) above, also submit one copy of this form within 30 days of completion of well abandonment to the county health department of the county where abandoned.

WELL ABANDONMENT RECORD

This form can be used for single or multiple wells

1. Well Contractor Information:

MARK IRELAND

Well Contractor Name (or well owner personally abandoning well on his/her property)

A - 4163

NC Well Contractor Certification Number

GEOLOGIC EXPLORATION, INC

Company Name

2. Well Construction Permit #: _____

List all applicable well construction permits (i.e. County, State, Variance, etc.) if known

3. Well use (check well use):

Water Supply Well:

☐Agricultural ☐Municipal/Public

☐Geothermal (Heating/Cooling Supply) ☐Residential Water Supply (single)

☐Industrial/Commercial ☐Residential Water Supply (shared)

☐Irrigation

Non-Water Supply Well:

☐Monitoring ☐Recovery

Injection Well:

☐Aquifer Recharge ☐Groundwater Remediation

☐Aquifer Storage and Recovery ☐Salinity Barrier

☐Aquifer Test ☐Stormwater Drainage

☐Experimental Technology ☐Subsidence Control

☐Geothermal (Closed Loop) ☐Tracer

☐Geothermal (Heating/Cooling Return) ☑Other (explain under 7g)

4. Date well(s) abandoned: 12/21/16

5a. Well location:

BP - 24208

Facility/Owner Name | Facility ID# (if applicable)

1121 MEBANE OAKS ROAD MEBANE 27302

Physical Address, City, and Zip

ALAMANCE

County | Parcel Identification No. (PIN)

5b. Latitude and longitude in degrees/minutes/seconds or decimal degrees:
(if well field, one lat/long is sufficient)

36° 04' 20.44" N 79° 16' 22.62" W

CONSTRUCTION DETAILS OF WELL(S) BEING ABANDONED

Attach well construction record(s) if available. For multiple injection or non-water supply wells ONLY with the same construction abandonment, you can submit one form.

6a. Well ID#: VE-7

6b. Total well depth: 35.0 (ft.)

6c. Borehole diameter: 4.0 (in.)

6d. Water level below ground surface: DRY (ft.)

6e. Outer casing length (if known): _____ (ft.)

6f. Inner casing/tubing length (if known): _____ (ft.)

6g. Screen length (if known): _____ (ft.)

For Internal Use ONLY:

WELL ABANDONMENT DETAILS

7a. Number of wells being abandoned: 1

For multiple injection or non-water supply wells ONLY with the same construction abandonment, you can submit one form.

7b. Approximate volume of water remaining in well(s): _____ (gal.)

FOR WATER SUPPLY WELLS ONLY:

7c. Type of disinfectant used: _____

7d. Amount of disinfectant used: _____

7e. Sealing materials used (check all that apply):

☑ Neat Cement Grout ☐ Bentonite Chips or Pellets

☐ Sand Cement Grout ☐ Dry Clay

☐ Concrete Grout ☐ Drill Cuttings

☐ Specialty Grout ☐ Gravel

☐ Bentonite Slurry ☐ Other (explain under 7g)

7f. For each material selected above, provide amount of materials used:

23.0 GALLONS

7g. Provide a brief description of the abandonment procedure:

WELL ABANDONED VIA TREMIE PIPE WITH PORTLAND BENTONITE SLURRY

VAPOR EXTRACTION

8. Certification:

Mark Ireland 12/26/16

Signature of Certified Well Contractor or Well Owner | Date

By signing this form, I hereby certify that the well(s) was (were) abandoned in accordance with 15A NCAC 02C .0100 or 2C .0200 Well Construction Standards and that a copy of this record has been provided to the well owner.

9. Site diagram or additional well details:
You may use the back of this page to provide additional well site details or well abandonment details. You may also attach additional pages if necessary.

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1617 Mail Service Center, Raleigh, NC 27699-1617

10b. For Injection Wells: In addition to sending the form to the address in 10a above, also submit one copy of this form within 30 days of completion of well abandonment to the following:

Division of Water Quality, Underground Injection Control Program,
1636 Mail Service Center, Raleigh, NC 27699-1636

10c. For Water Supply & Injection Wells: In addition to sending the form to the address(es) above, also submit one copy of this form within 30 days of completion of well abandonment to the county health department of the county where abandoned.

WELL ABANDONMENT RECORD

This form can be used for single or multiple wells

1. Well Contractor Information:

MARK IRELAND

Well Contractor Name (or well owner personally abandoning well on his/her property)

A - 4163

NC Well Contractor Certification Number

GEOLOGIC EXPLORATION, INC

Company Name

2. Well Construction Permit #: _____

List all applicable well construction permits (i.e. County, State, Variance, etc.) if known

3. Well use (check well use):

Water Supply Well:

- ☐ Agricultural
- ☐ Municipal/Public
- ☐ Geothermal (Heating/Cooling Supply)
- ☐ Residential Water Supply (single)
- ☐ Industrial/Commercial
- ☐ Residential Water Supply (shared)
- ☐ Irrigation

Non-Water Supply Well:

- ☐ Monitoring
- ☐ Recovery

Injection Well:

- ☐ Aquifer Recharge
- ☐ Groundwater Remediation
- ☐ Aquifer Storage and Recovery
- ☐ Salinity Barrier
- ☐ Aquifer Test
- ☐ Stormwater Drainage
- ☐ Experimental Technology
- ☐ Subsidence Control
- ☐ Geothermal (Closed Loop)
- ☐ Tracer
- ☐ Geothermal (Heating/Cooling Return)
- ☑ Other (explain under 7g)

4. Date well(s) abandoned: 12/21/16

5a. Well location:

BP - 24208

Facility/Owner Name

Facility ID# (if applicable)

1121 MEBANE OAKS ROAD MEBANE 27302

Physical Address, City, and Zip

ALAMANCE

County

Parcel Identification No. (PIN)

5b. Latitude and longitude in degrees/minutes/seconds or decimal degrees:
(if well field, one lat/long is sufficient)

36° 04' 21.16" N 79° 16' 21.98" W

CONSTRUCTION DETAILS OF WELL(S) BEING ABANDONED

Attach well construction record(s) if available. For multiple injection or non-water supply wells ONLY with the same construction abandonment, you can submit one form.

6a. Well ID#: VE-8

6b. Total well depth: 35.0 (ft.)

6c. Borehole diameter: 4.0 (in.)

6d. Water level below ground surface: 29.14 (ft.)

6e. Outer casing length (if known): _____ (ft.)

6f. Inner casing/tubing length (if known): _____ (ft.)

6g. Screen length (if known): _____ (ft.)

For Internal Use ONLY:

WELL ABANDONMENT DETAILS

7a. Number of wells being abandoned: 1

For multiple injection or non-water supply wells ONLY with the same construction/abandonment, you can submit one form.

7b. Approximate volume of water remaining in well(s): 4.0 (gal.)

FOR WATER SUPPLY WELLS ONLY:

7c. Type of disinfectant used: _____

7d. Amount of disinfectant used: _____

7e. Sealing materials used (check all that apply):

- ☑ Neat Cement Grout
- ☐ Sand Cement Grout
- ☐ Concrete Grout
- ☐ Specialty Grout
- ☐ Bentonite Slurry
- ☐ Bentonite Chips or Pellets
- ☐ Dry Clay
- ☐ Drill Cuttings
- ☐ Gravel
- ☐ Other (explain under 7g)

7f. For each material selected above, provide amount of materials used:

23.0 GALLONS

7g. Provide a brief description of the abandonment procedure:

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1636 Mail Service Center, Raleigh, NC 27699-1636

10c. For Water Supply & Injection Wells: In addition to sending the form to the address(es) above, also submit one copy of this form within 30 days of completion of well abandonment to the county health department of the county where abandoned.

Arcadis U.S., Inc.

111-D Sanders Lane

Bluefield, Virginia 24605

Tel 276 322 3879

Fax 276 322 3946

www.arcadis.com

APPENDIX C

PYRAMID GEOPHYSICAL SERVICES
(PROJECT 2018-242)

GEOPHYSICAL SURVEY

METALLIC UST INVESTIGATION:
PARCEL 6
NCDOT PROJECT I-5711 (50401.1.FS1)

1121 MEBANE OAKS ROAD, MEBANE, NC

SEPTEMBER 17, 2018

Report prepared for: **Gordon Box**
NCDOT 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 6 – 1121 Mebane Oaks Road
Mebane, Alamance County, North Carolina

Table of Contents

Figures

Appendices

LIST OF ACRONYMS

CADD .....Computer Assisted Drafting and Design
DF .....Dual Frequency
EM.....Electromagnetic
GPR.....Ground Penetrating Radar
GPS .....Global Positioning System
NCDOT.....North Carolina Department of Transportation
ROW .....Right-of-Way
UST .....Underground Storage Tank

EXECUTIVE SUMMARY

Project Description: Pyramid Environmental conducted a geophysical investigation for the North Carolina Department of Transportation (NCDOT) at Parcel 6, located at 1121 Mebane Oaks Road, in Mebane, NC. The survey was part of an NCDOT Right-of-Way (ROW) investigation (NCDOT Project I-5711). The survey was designed to extend from the existing edge of pavement into the proposed ROW and/or easements, whichever distance was greater. Conducted on September 11, 2018, the geophysical investigation was performed to determine if unknown, metallic underground storage tanks (USTs) were present beneath the survey area. It should be noted that this site contains an inactive remediation system consisting of several interconnected remediation assessment wells across the survey area.

Geophysical Results: The geophysical investigation consisted of electromagnetic (EM) induction-metal detection and ground penetrating radar (GPR) surveys. A total of ten EM anomalies were identified. The majority of the EM anomalies were directly attributed to visible cultural features at the ground surface. Two EM anomalies were associated with a vehicle, suspected reinforced concrete, and known USTs and were further investigated with GPR. Four known USTs were observed within the geophysical survey area. GPR verified the sizes and orientations of the four known USTs.

The eastern UST (UST #1) was approximately 33 feet long by 9.5 feet wide. The east-central UST (UST #2) was approximately 36 feet long by 9.5 feet wide. The west-central UST (UST #3) was approximately 31.5 feet long by 9.5 feet wide. The western-most UST (UST #4) was approximately 9 feet long by 6.5 feet wide. GPR also verified the presence of metal reinforcement within the concrete on the property. No other unknown buried structures were identified. Collectively, the geophysical data recorded evidence of four known USTs at Parcel 6.

INTRODUCTION

Pyramid Environmental conducted a geophysical investigation for the North Carolina Department of Transportation (NCDOT) at Parcel 6, located at 1121 Mebane Oaks Road, in Mebane, NC. The survey was part of an NCDOT Right-of-Way (ROW) investigation (NCDOT Project I-5711). The survey was designed to extend from the existing edge of pavement into the proposed ROW and/or easements, whichever distance was greater. Conducted on September 11, 2018, the geophysical investigation was performed to determine if unknown, metallic underground storage tanks (USTs) were present beneath the survey area.

The site included an active gas station surrounded by concrete, asphalt, and grass surfaces. Four known USTs were observed within the geophysical survey area. It should be noted that this site contains an inactive remediation system consisting of several interconnected remediation assessment wells across the survey area (refer to the Site History section of Pyramid's 2018 Preliminary Site Assessment report). An aerial photograph 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. Pyramid collected the EM data using a Geonics EM61-MK2 (EM61) metal detector integrated with a Geode External GPS/GLONASS receiver. 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 is geo-referenced and can be overlain on aerial photographs and CADD drawings. A boundary grid was established around the perimeter of the site 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 along north-south trending or east-west trending, generally 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 15.0 software programs.

GPR data were acquired across select EM anomalies on September 11, 2018, using a Geophysical Survey Systems, Inc. (GSSI) UtilityScan DF unit equipped with a dual frequency 300/800 MHz antenna. Data were collected both in reconnaissance fashion as well as along formal transect lines across EM features. 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 6 feet, based on dielectric constants calculated by the DF unit in the field during the reconnaissance scans. GPR transects across specific anomalies were saved to the hard drive of the DF unit for post-processing and figure generation.

Pyramid's classifications of USTs for the purposes of this report are based directly on the geophysical UST ratings provided by the NCDOT. These ratings are as follows:

Geophysical Surveys for Underground Storage Tanks
on NCDOT Projects

High Confidence	Intermediate Confidence	Low Confidence	No Confidence
Known UST Active tank - spatial location, orientation, and approximate depth determined by geophysics.	**Probable UST** Sufficient geophysical data from both magnetic and radar surveys that is characteristic of a tank. Interpretation may be supported by physical evidence such as fill/vent pipe, metal cover plate, asphalt/concrete patch, etc.	**Possible UST** Sufficient geophysical data from either magnetic or radar surveys that is characteristic of a tank. Additional data is not sufficient enough to confirm or deny the presence of a UST.	Anomaly noted but not characteristic of a UST. Should be noted in the text and may be called out in the figures at the geophysicist's discretion.

DISCUSSION OF RESULTS

Discussion of EM Results

A contour plot of the EM61 results obtained across the survey area at the property is presented in **Figure 2**. Each EM anomaly is numbered for reference in the figure. The following table presents the list of EM anomalies and the cause of the metallic response, if known:

LIST OF METALLIC ANOMALIES IDENTIFIED BY EM SURVEY

Metallic Anomaly #	Cause of Anomaly	Investigated with GPR
1	Vent Pipes	
2	Fence/Vault	
3	Vehicle/**One Known UST**	☑
4	Fence	
5	Reinforced Concrete/**Three Known USTs**	☑
6	Guard Rail	
7	Sign Pole	
8	Vaults	
9	Propane AST	
10	Vehicle	

The majority of the EM anomalies were directly attributed to visible cultural features at the ground surface, including the known USTs, vent pipes, fencing, vaults from a remediation system, reinforced concrete, a guard rail, a sign pole, a vehicle, and a propane aboveground storage tank (AST). Anomaly 3 was associated with a vehicle and a known UST and was further investigated with GPR.

GPR scans were performed in a grid-like fashion across the suspected reinforced concrete and the three known USTs associated with Anomaly 5. These scans were performed to verify the sizes and orientations of the known USTs and to verify the presence of metal reinforcement, as well as to confirm that no other unknown metal structures were present beneath the reinforcement.

Discussion of GPR Results

Figure 3 presents the locations of the formal GPR transects performed at the property, as well as select transect images. A total of eleven GPR transects were performed at the site. All of the transect images are included in **Appendix A**. GPR Transects 1, 2 and 4-11 were performed across the three known USTs and reinforced concrete associated with EM Anomaly 5. These transects verified the presence of metal reinforcement in the concrete. Transect 4 verified the widths of the three known USTs, and additional reconnaissance GPR verified the lengths of the tanks. The eastern UST (UST #1) was approximately 33 feet long by 9.5 feet wide. The east-central UST (UST #2) was approximately 36 feet long by 9.5 feet wide. The west-central UST (UST #3) was approximately 31.5 feet long by 9.5 feet wide.

GPR Transect 3 was performed across the width of the known UST associated with EM Anomaly 3. This transect and additional reconnaissance GPR verified that this western-most UST (UST #4) was approximately 9 feet long by 6.5 feet wide. No other unknown buried structures were observed in this area.

Collectively, the geophysical data recorded evidence of four known USTs at Parcel 6. **Figure 5** provides an overlay of the geophysical survey area and the locations of the known USTs onto the NCDOT MicroStation engineering plans for reference.

SUMMARY & CONCLUSIONS

Pyramid's evaluation of the EM61 and GPR data collected at Parcel 6 in Mebane, 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 EM anomalies were directly attributed to visible cultural features at the ground surface.
- Two EM anomalies were associated with a vehicle, suspected reinforced concrete, and known USTs and were further investigated with GPR.

- Four known USTs were observed within the geophysical survey area.
- GPR verified the sizes and orientations of the four known USTs.
- The eastern UST (UST #1) was approximately 33 feet long by 9.5 feet wide. The east-central UST (UST #2) was approximately 36 feet long by 9.5 feet wide. The west-central UST (UST #3) was approximately 31.5 feet long by 9.5 feet wide. The western-most UST (UST #4) was approximately 9 feet long by 6.5 feet wide.
- GPR also verified the presence of metal reinforcement within the concrete on the property. No other unknown buried structures were identified.
- Collectively, the geophysical data recorded evidence of four known USTs at Parcel 6.

LIMITATIONS

Geophysical surveys have been performed and this report was 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 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.

APPROXIMATE BOUNDARIES OF GEOPHYSICAL SURVEY AREA

View of Survey Area
(Facing Approximately South)

View of Survey Area
(Facing Approximately East)

N

PYRAMID GEOPHYSICS 503 INDUSTRIAL AVENUE GREENSBORO, NC 27460 (336) 335-3174 (p) (336) 691-0648 (f) License # C1251 Eng. / License # C257 Geology	PROJECT PARCEL 6 MEBANE, NORTH CAROLINA NCDOT PROJECT I-5711	TITLE PARCEL 6 - GEOPHYSICAL SURVEY BOUNDARIES AND SITE PHOTOGRAPHS	DATE 9/11/2018 PYRAMID PROJECT #: 2018-242	CLIENT NCDOT **FIGURE 1**

EM61 METAL DETECTION RESULTS

EVIDENCE OF FOUR KNOWN USTs OBSERVED.

The contour plot shows the differential results of the EM61 instrument in millivolts (mV). The differential results focus on larger metallic objects such as USTs and drums. The EM61 data were collected on September 11, 2018, using a Geonics EM61 instrument. Verification GPR data were collected using a GSSI UtilityScan DF instrument with a dual frequency 300/800 MHz antenna on September 11, 2018.

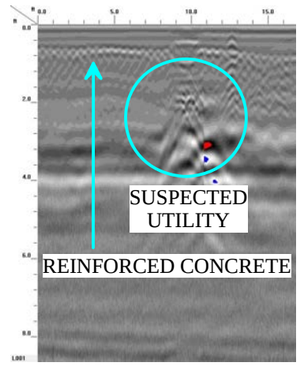
EM61 Metal Detection Response (millivolts)

N

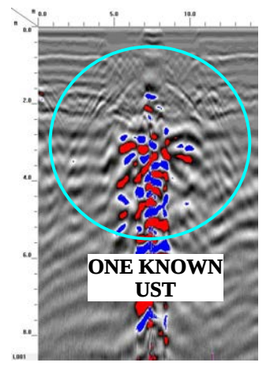
PYRAMID GEOPHYSICS
503 INDUSTRIAL AVENUE
GREENSBORO, NC 27460
(336) 335-3174 (p) (336) 691-0648 (f)
License # C1251 Eng. / License # C257 Geology

PROJECT	PARCEL 6 MEBANE, NORTH CAROLINA NCDOT PROJECT I-5711
TITLE	PARCEL 6 - EM61 METAL DETECTION CONTOUR MAP
DATE	9/11/2018
PYRAMID PROJECT #:	2018-242
CLIENT	NCDOT
	FIGURE 2

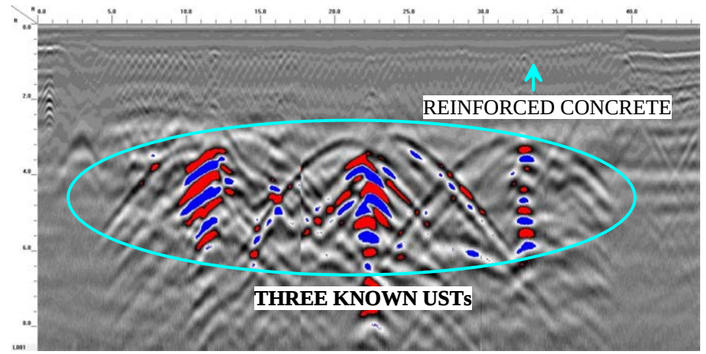
LOCATIONS OF GPR TRANSECTS



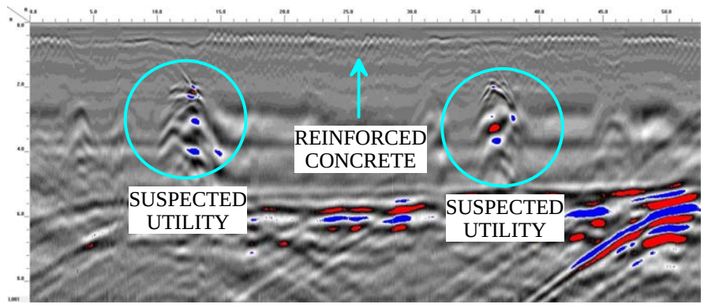
GPR TRANSECT 1 (T1)



GPR TRANSECT 3 (T3)



GPR TRANSECT 4 (T4)



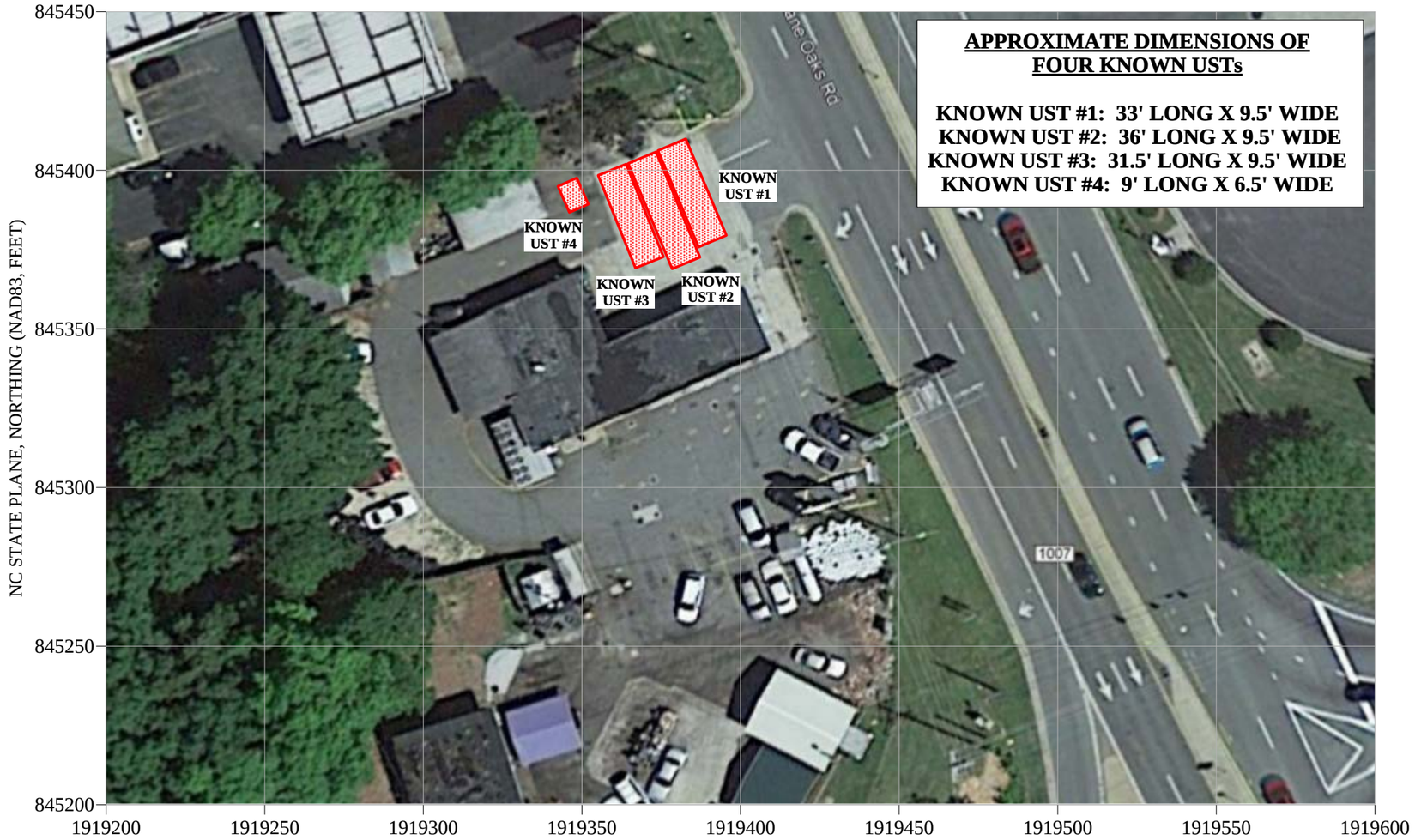
GPR TRANSECT 10 (T10)

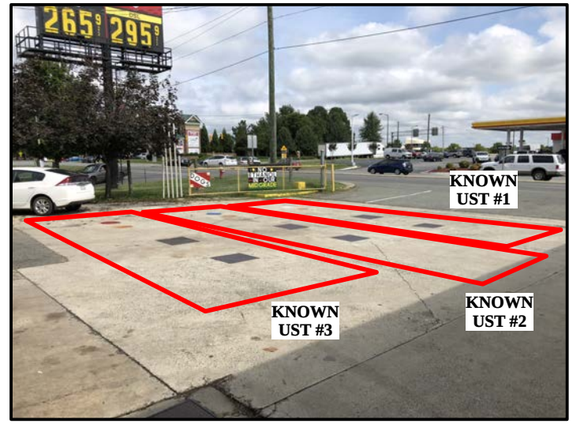
N

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

PROJECT: PARCEL 6 MEBANE, NORTH CAROLINA NCDOT PROJECT I-5711	TITLE: PARCEL 6 - GPR TRANSECT LOCATIONS AND SELECT IMAGES	DATE: 9/11/2018	CLIENT: NCDOT
		PYRAMID PROJECT #: 2018-242	**FIGURE 3**

LOCATIONS OF FOUR KNOWN USTs



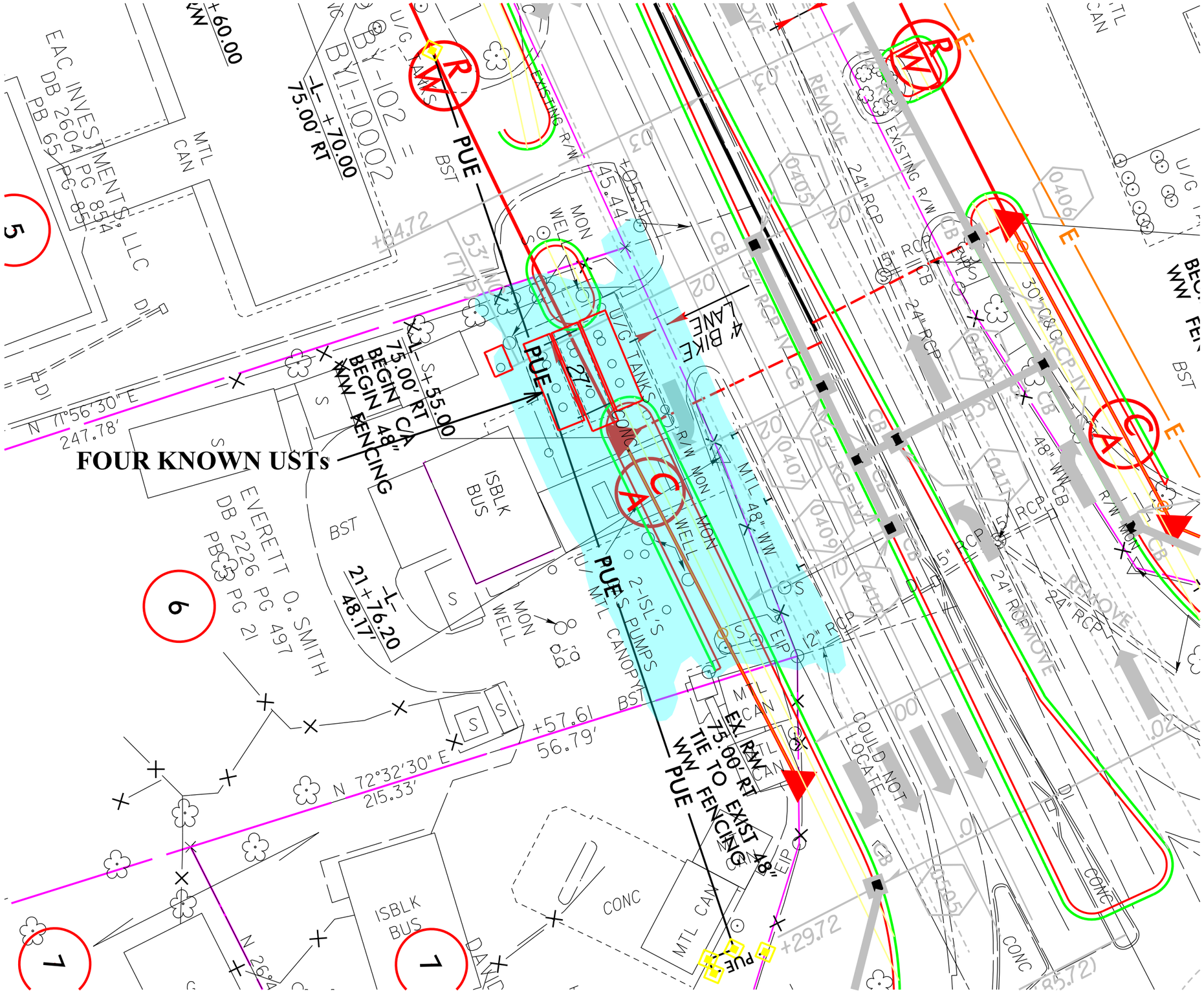


View of Three Known USTs Facing Approximately North

View of One Known UST Facing Approximately North

N

PYRAMID GEOPHYSICS 503 INDUSTRIAL AVENUE GREENSBORO, NC 27460 (336) 335-3174 (p) (336) 691-0648 (f) License # C1251 Eng. / License # C257 Geology	PROJECT PARCEL 6 MEBANE, NORTH CAROLINA NCDOT PROJECT I-5711	TITLE PARCEL 6 - LOCATIONS AND SIZES OF FOUR KNOWN USTs	DATE 9/11/2018 PYRAMID PROJECT #: 2018-242	CLIENT NCDOT **FIGURE 4**



LEGEND

- EXISTING ROW
- EXISTING PROPERTY BOUNDARY
- PROPOSED ROW LINE
- E — TEMPORARY CONSTRUCTION EASEMENT
- PDE — PROPOSED PERMANENT DRAINAGE
- PUE — PROPOSED PERMANENT UTILITY
- PROPOSED SS CUT LINE
- PROPOSED SS FILL LINE
- PROPOSED DRAINAGE PIPING
- GEOPHYSICAL SURVEY AREA
- KNOWN UST WITHIN SURVEY AREA

N

0 25 50
FEET

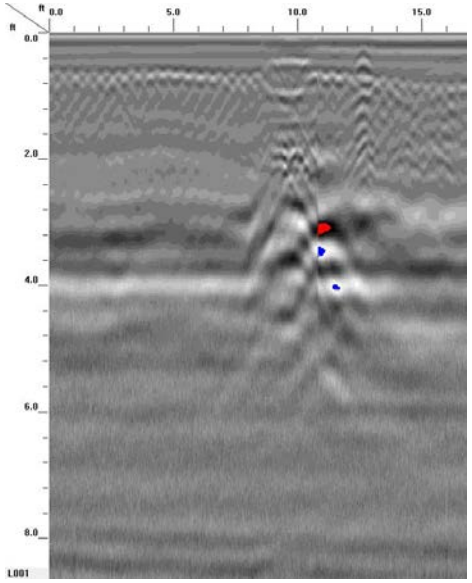
TITLE: OVERLAY OF GEOPHYSICAL SURVEY BOUNDARIES AND 4 KNOWN USTs ON NCDOT ENGINEERING PLANS

PROJECT: PARCEL 6
MEBANE, NORTH CAROLINA
NCDOT PROJECT I-5711

PYRAMID GEOPHYSICS
503 INDUSTRIAL AVENUE
GREENSBORO, NC 27406
336.335.3174 (p) 336.691.0648 (f)
License # C1251 Eng. / #C257 Geology

DATE: 09-18-2018	REVISION NO. 0
PYRAMID PROJECT NO. 2018-242	FIGURE NO. 5

Appendix A – GPR Transect Images



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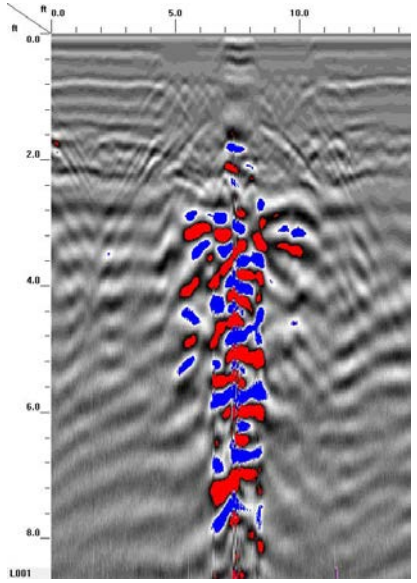
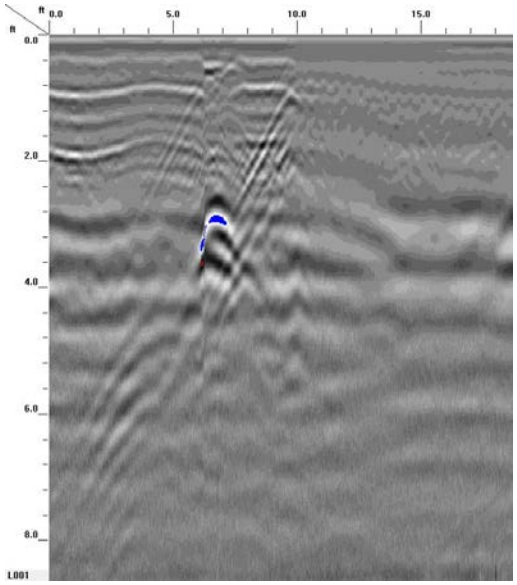


Transect 3



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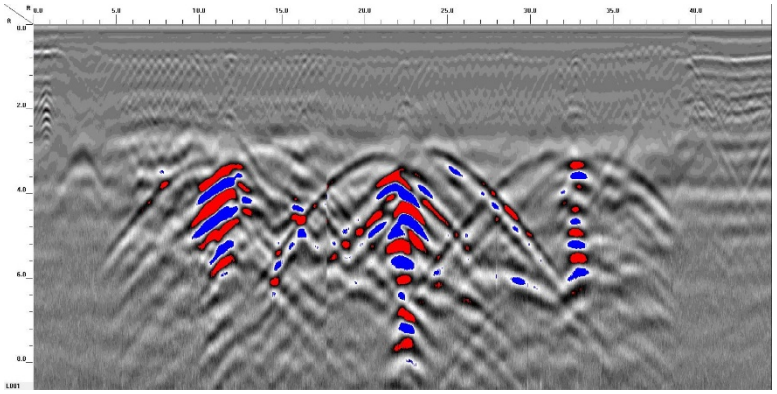
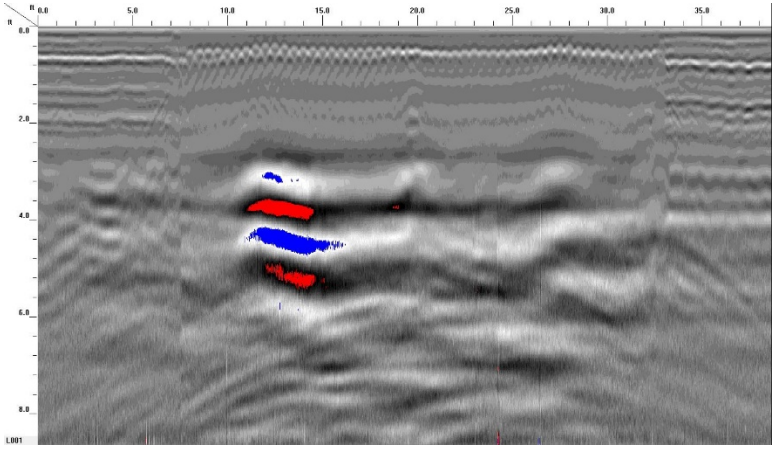
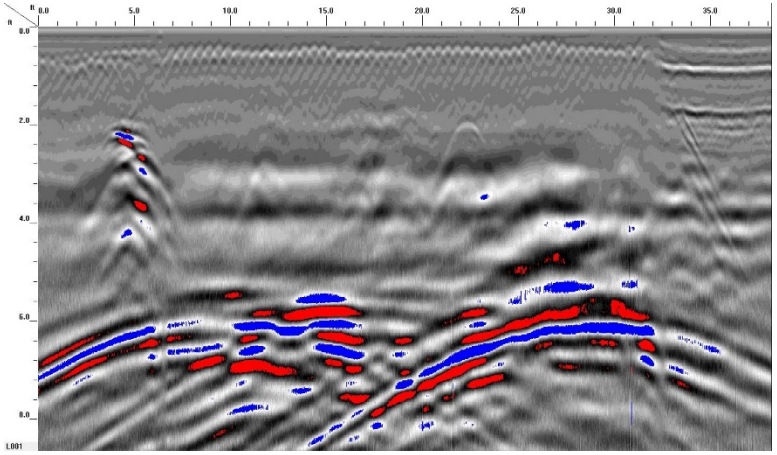


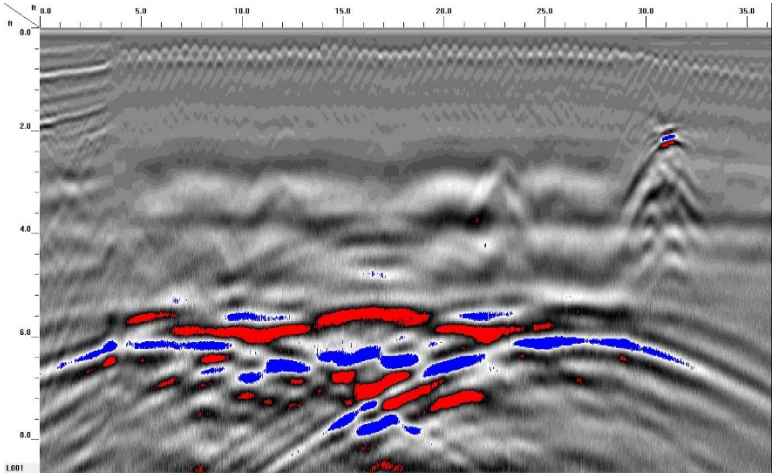
Transect 4



Transect 5



Transect 7



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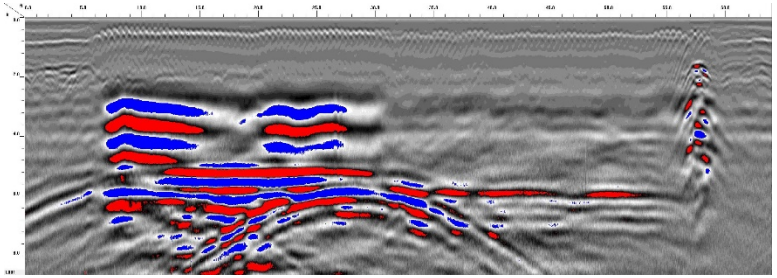

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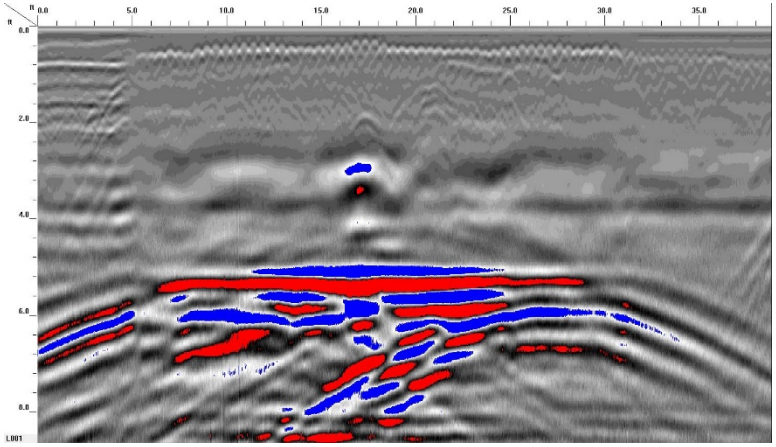

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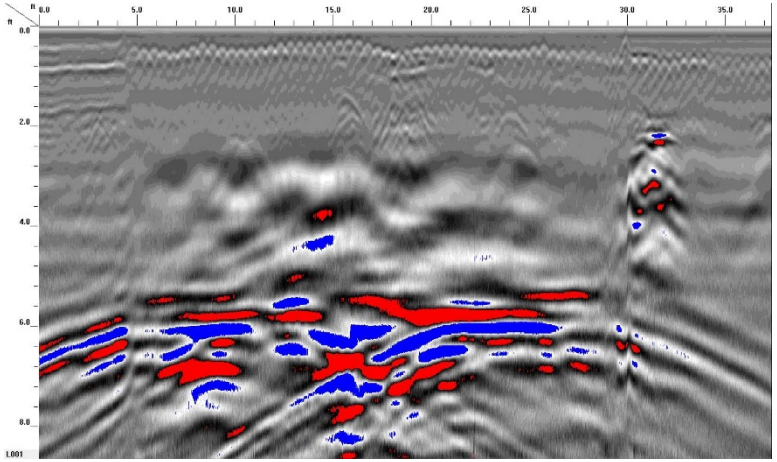

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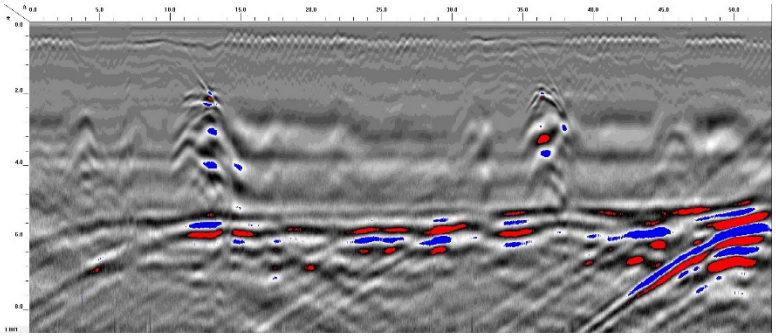

Transect 10

APPENDIX D

Pyramid Environmental & Engineering, P.C.

FIELD DRILLING RECORD

PROJECT NAME: PROJECT NUMBER:	NC DOT I-5711, Parcel 006, Mebane, NC (2018-242)	**BORING/WELL NO:**	6-1
SITE LOCATION:	Alamance County, NC	**BORING/WELL LOCATION:**	Parcel 006, SE portion
START DATE:	10/01/18	**COMPLETED:**	10/01/18
GEOLOGIST:	M. Trifunovic / T. Leatherman	**DRILLER:**	Solutions-IES
DRILL METHOD:	Geoprobe	**SAMPLE METHOD:**	Macro-core
BORING DIA:	2-inch	**CASING DIA:**	N/A
TOTAL DEPTH:	8 feet	**CASING DEPTH:**	N/A

DEPTH (ft.)	**VISUAL MANUAL SOIL CLASSIFICATION COLOR, TEXTURE, STRUCTURE, CONSISTENCY, ODOR, ETC.**	**OVA RESULTS PERCENT RECOVERY BLOW COUNTS**
		Core Sample Depths
0-1	Asphalt and Concrete	NA
1-2	Light brown, clayey-silt (ML), moist, no odor	PID= 1.1 PPM
2-4	Light brown, clayey-silt (ML), moist, no odor	PID= 1.5 PPM
4-6	Reddish-brown, silty-clay (ML), moist, no odor	PID= 3.0 PPM
6-8	Reddish-brown, silty-clay (ML), moist, no odor	PID= 1.0 PPM
	Water table not encountered	

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 0___.

Pyramid Environmental & Engineering, P.C.

FIELD DRILLING RECORD

PROJECT NAME: PROJECT NUMBER:	NC DOT I-5711, Parcel 006, Mebane, NC (2018-242)	**BORING/WELL NO:**	6-2
SITE LOCATION:	Alamance County, NC	**BORING/WELL LOCATION:**	Parcel 006, SE portion
START DATE:	10/01/18	**COMPLETED:**	10/01/18
GEOLOGIST:	M. Trifunovic / T. Leatherman	**DRILLER:**	Solutions-IES
DRILL METHOD:	Geoprobe	**SAMPLE METHOD:**	Macro-core
BORING DIA:	2-inch	**CASING DIA:**	N/A
TOTAL DEPTH:	8 feet	**CASING DEPTH:**	N/A

DEPTH (ft.)	**VISUAL MANUAL SOIL CLASSIFICATION COLOR, TEXTURE, STRUCTURE, CONSISTENCY, ODOR, ETC.**	**OVA RESULTS PERCENT RECOVERY BLOW COUNTS**
		Core Sample Depths
	Asphalt surface	NA
0-2	Reddish-brown, silty-clay (ML), moist, no odor	PID= 3.5 PPM
2-4	Reddish-brown, silty-clay (ML), moist, no odor	PID= 3.1 PPM
4-6	Reddish-brown, silty-clay (ML), moist, no odor	PID= 3.1 PPM
6-8	Reddish-brown, silty-clay (ML), moist, no odor	PID= 3.3 PPM
	Water table not encountered	

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 0___.

Pyramid Environmental & Engineering, P.C.

FIELD DRILLING RECORD

PROJECT NAME: PROJECT NUMBER:	NC DOT I-5711, Parcel 006, Mebane, NC (2018-242)	**BORING/WELL NO:**	6-3
SITE LOCATION:	Alamance County, NC	**BORING/WELL LOCATION:**	Parcel 006, East portion
START DATE:	10/01/18	**COMPLETED:**	10/01/18
GEOLOGIST:	M. Trifunovic / T. Leatherman	**DRILLER:**	Solutions-IES
DRILL METHOD:	Geoprobe	**SAMPLE METHOD:**	Macro-core
BORING DIA:	2-inch	**CASING DIA:**	N/A
TOTAL DEPTH:	8 feet	**CASING DEPTH:**	N/A

DEPTH (ft.)	**VISUAL MANUAL SOIL CLASSIFICATION COLOR, TEXTURE, STRUCTURE, CONSISTENCY, ODOR, ETC.**	**OVA RESULTS PERCENT RECOVERY BLOW COUNTS**
		Core Sample Depths
	Asphalt surface	NA
0-2	Reddish-brown, silty-clay (ML), moist, no odor	PID= 2.2 PPM
2-4	Reddish-brown, silty-clay (ML), moist, no odor	PID= 2.9 PPM
4-6	Reddish-brown, silty-clay (ML), moist, no odor	PID= 3.0 PPM
6-8	Reddish-brown, silty-clay (ML), moist, no odor	PID= 2.5 PPM
	Water table not encountered	

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 0___.

Pyramid Environmental & Engineering, P.C.

FIELD DRILLING RECORD

PROJECT NAME: PROJECT NUMBER:	NC DOT I-5711, Parcel 006, Mebane, NC (2018-242)	**BORING/WELL NO:**	6-4
SITE LOCATION:	Alamance County, NC	**BORING/WELL LOCATION:**	Parcel 006, NE portion
START DATE:	10/01/18	**COMPLETED:**	10/01/18
GEOLOGIST:	M. Trifunovic / T. Leatherman	**DRILLER:**	Solutions-IES
DRILL METHOD:	Geoprobe	**SAMPLE METHOD:**	Macro-core
BORING DIA:	2-inch	**CASING DIA:**	N/A
TOTAL DEPTH:	8 feet	**CASING DEPTH:**	N/A

DEPTH (ft.)	**VISUAL MANUAL SOIL CLASSIFICATION COLOR, TEXTURE, STRUCTURE, CONSISTENCY, ODOR, ETC.**	**OVA RESULTS PERCENT RECOVERY BLOW COUNTS**
		Core Sample Depths
	Asphalt surface	NA
0-2	Reddish-brown, silty-clay (ML), moist, slight odor	PID= 11.8 PPM
2-4	Reddish-brown, silty-clay (ML), moist, slight odor	PID= 20.7 PPM
4-6	Reddish-brown, silty-clay (ML), moist, slight odor	PID= 9.1 PPM
6-8	Reddish-brown, silty-clay (ML), moist, slight odor	PID= 40.0 PPM
	Water table not encountered	

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 0___.

Pyramid Environmental & Engineering, P.C.

FIELD DRILLING RECORD

PROJECT NAME: PROJECT NUMBER:	NC DOT I-5711, Parcel 006, Mebane, NC (2018-242)	**BORING/WELL NO:**	6-5
SITE LOCATION:	Alamance County, NC	**BORING/WELL LOCATION:**	Parcel 006, North portion
START DATE:	10/01/18	**COMPLETED:**	10/01/18
GEOLOGIST:	M. Trifunovic / T. Leatherman	**DRILLER:**	Solutions-IES
DRILL METHOD:	Geoprobe	**SAMPLE METHOD:**	Macro-core
BORING DIA:	2-inch	**CASING DIA:**	N/A
TOTAL DEPTH:	8 feet	**CASING DEPTH:**	N/A

DEPTH (ft.)	**VISUAL MANUAL SOIL CLASSIFICATION COLOR, TEXTURE, STRUCTURE, CONSISTENCY, ODOR, ETC.**	**OVA RESULTS PERCENT RECOVERY BLOW COUNTS**
		Core Sample Depths
	Asphalt surface	NA
0-2	Reddish-brown, silty-clay (ML), moist, no odor	PID= 2.1 PPM
2-4	Reddish-brown, silty-clay (ML), moist, no odor	PID= 4.7 PPM
4-6	Reddish-brown, silty-clay (ML), moist, no odor	PID= 6.7 PPM
6-8	Reddish-brown, silty-clay (ML), moist, no odor	PID= 13.6 PPM
	Water table not encountered	

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 0___.

APPENDIX E

QED

REDLAB RAPID ENVIRONMENTAL DIAGNOSTICS

QROS

Hydrocarbon Analysis Results

Client: NCDOT Alamance Mebane Parcels 3 & 6
Address: Parcels 3 and 6

Samples taken
Samples extracted
Samples analysed

Contact:

Operator Tim Leatherman

Project: NCDOT Alamance Mebane Parcels 3 & 6

H09382

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
										C5 - C10	C10 - C18	C18	
s	3-11(2-3)	14.6	#DIV/0!	<0.36	<0.36	<0.36	<0.07	<0.12	<0.015	0	0	0	,(FCM),(BO),(P)
s	6-1(4-6)	22.4	<0.56	<0.56	15.7	15.7	7.6	0.85	<0.022	0	79.9	20.1	Road Tar 91.5%,(FCM)
s	6-3(4-6)	20.2	<0.5	<0.5	7.4	7.4	3.6	0.41	<0.02	0	79.2	20.8	Road Tar 92%,(FCM)
s	6-2(0-2)	25.7	<0.64	2	0.8	2.8	0.55	<0.21	<0.026	80.1	14.5	5.4	V.Deg.PHC 81.4%,(FCM)
s	6-4(2-4)	25.0	<0.63	5.8	2.6	8.4	1.5	<0.2	<0.025	82.1	12.5	5.4	Deg.PHC 88.7%,(FCM),(BO)
s	6-4(6-8)	26.5	<0.66	<0.66	0.66	0.66	0.36	<0.21	<0.027	0	76.8	23.2	Road Tar 89.7%,(FCM)
s	6-5(4-6)	25.5	<0.64	<0.64	<0.64	<0.64	<0.13	<0.2	<0.025	0	100	0	PHC not detected
s	6-5(6-8)	23.6	<0.59	<0.59	3.5	3.5	1.7	<0.19	<0.024	0	76.3	23.7	Road Tar 76.1%,(FCM)

Initial Calibrator QC check OK

Final FCM QC Check OK 105.5 %

Concentration values in mg/kg for soil samples and mg/L for water samples. Soil values uncorrected for moisture or stone content. Fingerprints provide a tentative hydrocarbon identification.

Abbreviations :- FCM = Results calculated using Fundamental Calibration Mode : % = confidence of hydrocarbon identification : (PFM) = Poor Fingerprint Match : (T) = Turbid : (P) = Particulate detected

B = Blank Drift : (SBS)/(LBS) = Site Specific or Library Background Subtraction applied to result : (BO) = Background Organics detected : (OCR) = Outside cal range : (M) = Modifed Result.

% Ratios estimated aromatic carbon number proportions : HC = Hydrocarbon : PHC = Petroleum HC : FP = Fingerprint only. **Data generated by HC-1 Analyser**

QED Hydrocarbon Fingerprints

Project: NCDOT Alamance Mebane Parcels 3 & 6