



April 29, 2014

Mr. Clark Wipfield, LG  
UST Section – Project Manager  
NC DENR - Raleigh Regional Office  
1628 Mail Service Center  
Raleigh, NC 27699

**RE: MMPE & Active Remediation Monitoring Report for the  
Former Don Christian Property  
206 East Main Street, Carrboro, NC 27510  
DENR Incident # 26797**

Mr. Wipfield,

As requested by Main Street Properties of Chapel Hill, LLC (MSP), Pyramid Environmental & Engineering, PC (Pyramid) has completed report for the MMPE event and subsequent groundwater sampling events. The attached report presents details of work and results.

The work was pre-approved as directed by the DENR, and we originally discussed the work with Ms. Brenda Hafshejani. The November 2013 groundwater samples from MW-1A were above the GCLs for the site, and the MMPE was targeted to reduce concentrations in the source area. The project results are included in the attached report and look favorable for regulatory incident closure.

Please review this information and contact Michael Jones at (336) 335-3174 extension 124 if you have any questions or need additional information.

Sincerely,

A handwritten signature in blue ink that reads "Michael Jones". The signature is fluid and cursive, with the first and last names clearly legible.

Michael G. Jones, LG  
Operations Manager

Copy : Kevin Benedict, Main Street Properties of Chapel Hill, LLC  
Tony Duque, NC Brownfields Program

Pyramid Environmental & Engineering, P.C.  
Pyramid Project # 2014-039

## ACTIVE REMEDIATION MONITORING REPORT

April 29, 2014

FORMER DON CHRISTIAN PROPERTY  
206 E. MAIN STREET  
CARRBORO, ORANGE COUNTY, NC

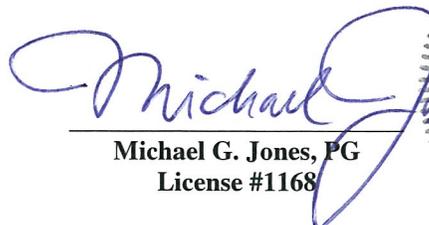
Site Priority Rank: I-157 ( Site needs to be re-ranked )  
UST Facility ID: 026870  
Groundwater Incident #: 26797  
Sampling Period: February and March 2014  
UST Owner/Operator: Main Street Properties of Chapel Hill, LLC  
Quantity of release: Unknown  
Source: ( 9 ) USTs; ( 14 ) ASTs  
UST Removal Date: 1989 and 2013  
Latitude/Longitude: N 35.91048° / W -79.067287°

Report prepared for: Mr. Kevin Benedict  
Main Street Properties of Chapel Hill, LLC  
PO Box 2152  
Chapel Hill, NC 27515

Report prepared by:

  
Ryan Kramer  
Project Manager

Report reviewed by:

  
Michael G. Jones, PG  
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PYRAMID ENVIRONMENTAL & ENGINEERING, P.C.  
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- A. Well Abandonment Records (MW-1 & MW-5)
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**ACTIVE REMEDIATION MONITORING REPORT**  
**Former Don Christian Property – Carrboro, NC**  
**NCDENR Incident # 26797**

## 1.0 INTRODUCTION

### 1.1 Site Information

SITE NAME: Former Don Christian Property  
 ADDRESS: 206 E. Main Street, Carrboro, NC 27510

The property was a former gasoline station and petroleum bulk plant facility, and has undergone significant soil and groundwater cleanup. The property is currently in the construction phase of a new three building for office, retail, and restaurant use.

NCDENR INCIDENT NO.: 26797  
 SITE RISK CLASSIFICATION: Intermediate Risk (I-157)  
 Former DENR UST FACILITY ID: 0-26870  
 SOURCE OF RELEASE: Former Gas Station USTs  
 QUANTITY OF RELEASE: Unknown  
 CURRENT PROPERTY OWNER: Main Street Properties of Chapel Hill, LLC

FIGURES: **Figure 1:** Topographic Map  
**Figure 2:** Site Detail Map

**Table 1**  
**UNDERGROUND STORAGE TANKS (USTs)**

UST ID	SIZE (gallons)	CONTENTS	Material of Construction	Dates of Operation (Approx.)	Removal Dates (Approx.)
UST-1	3,000	Diesel	SW Steel	1980-1989	11/18/1989
UST-2	3,000	Kerosene	SW Steel	1970-1989	11/18/1989
UST-3	3,000	Diesel	SW Steel	1980-1989	11/18/1989
UST-4	3,000	Diesel	SW Steel	1980-1989	11/18/1989
UST-5	3,000	Gasoline	SW Steel	1970-1989	11/18/1989
UST-6	3,000	Diesel	SW Steel	1970-1989	11/18/1989
UST-7	550	Waste oil	SW Steel	Unknown	7/30/2013
UST-8 (Lift#1)	65	Hydraulic Oil	SW Steel	Unknown	7/30/2013
UST-9 (Lift #2)	65	Hydraulic Oil	SW Steel	Unknown	7/30/2013

**Table 2**

**ABOVEGROUND STORAGE TANKS (ASTs)**

<b>AST ID</b>	<b>SIZE (gallons)</b>	<b>CONTENTS</b>	<b>Material of Construction</b>	<b>Dates of Operation (Approx.)</b>	<b>Removal Dates (Approx.)</b>
AST-1	650	waste oil	SW Steel	Unknown	7/15/2013
AST-2	275	heating oil	SW Steel	Unknown	7/15/2013
AST-3	275	heating oil	SW Steel	Unknown	7/15/2013
AST-4	275	heating oil	SW Steel	Unknown	7/15/2013
AST-5	16,000	heating oil	SW Steel	Unknown	2003
AST-6	16,000	heating oil	SW Steel	Unknown	2003
AST-7	16,000	kerosene	SW Steel	Unknown	2003
AST-8	16,000	kerosene	SW Steel	Unknown	2003
AST-9	20,000	gasoline	SW Steel	Unknown	2003
AST-10	20,000	diesel	SW Steel	Unknown	2003
AST-11	6,000	gasoline	SW Steel	Unknown	2003
AST-12	6,000	Empty	SW Steel	Unknown	2003
AST-13	~ 8,000	Unknown	SW Steel	~ 1940's - 1970	Before 1970
AST-14	~ 8,000	Unknown	SW Steel	~ 1940's - 1970	Before 1970

The locations of the current ASTs and USTs are shown on **Figure 2**. All the ASTs and USTs have been removed, and the new building is under construction.

**1.2 Adjoining Properties and Potential Receptors**

The surrounding properties are used for commercial use and municipal water is available to the entire area surrounding the site. In 2004, a receptor survey was completed for the site and showed no active water supply wells within 1,000 feet, and no irrigation wells within 250 feet of the site. The current site ranking is Intermediate I-157. The property use will continue to be commercial/industrial in this downtown area of Carrboro.

ADJOINING PROPERTY USE:	Commercial
WATER SUPPLY WELLS IN AREA:	None
WATER SUPPLY WELLS IMPACTED:	None
NEAREST SURFACE WATERS:	The nearest surface water is a tributary for Morgan Creek located half a mile southwest.
BASEMENTS:	No basements within the groundwater plume
SUBSURFACE UTILITIES:	Water, sewer, gas, and storm drains are located along E. Main Street and the eastern property line.

### 1.3 Site Hydrology & Geology

GEOLOGIC PROVINCE: Carolina Slate Belt  
 BEDROCK TYPE: Metamorphic granites of the Chapel Hill Pluton  
 DEPTH TO BEDROCK: 18 to 20 feet Below Ground Surface (BGS)  
 DEPTH TO WATER TABLE: 4 feet to 14 feet BGS  
 POTENTIOMETRIC GRADIENT: Southeast (see **Figure 3** the Potentiometric Surface Map from July 2013)

Surface water runoff from the site generally flows to the North for the northern 1/3 of the property and to the south for the southern 2/3 of the property. With the construction of the new building, the storm-water runoff will be directed to the storm drain system which is located on the eastern side and the southern portion of the property.

### 1.4 Previous Reports

REPORT TITLE	CONSULTANT	DATE OF REPORT	COMMENTS
Site Assessment Report	Terra Quest	June 25, 2004	Assessment found soil and groundwater contamination on site.
Pre-Demolition Asbestos Survey	Pyramid Env. & Eng., P.C.	June 20, 2013	Several samples contained asbestos greater than 1 percent.
Soil Management Plan – Brownfields Project	Pyramid Env. & Eng., P.C.	July 16, 2013	Proposed soil cleanup activities
20-Day / Initial Abatement Action Report (IAAR)	Pyramid Env. & Eng., P.C.	September 19, 2013	Received by DENR
Phase I ESA	Pyramid Env. & Eng., P.C.	September 20, 2013	Recommended monitoring the GCLs in MW-1A
Additional Initial Abatement Action Report	Pyramid Env. & Eng., P.C.	February 28, 2014	Recommended a MMPE Event
Active Remediation Monitoring Report	Pyramid Env. & Eng., P.C.	Current Report	Current Report

The following section summarizes the environmental site history and the recent of historical assessment for the site.

## 2.0 SITE HISTORY

The location of the former Don Christian property is at 206 E. Main Street in Carrboro, NC as shown on the topographic map presented as **Figure 1**. The Don Christian Property has been used for commercial purposes since at least 1925. The initial information concerning the property was gleaned from Sanborn Maps and historical aerials. The property was used as a bulk oil facility as early as the mid 1920's and a gasoline station was added to the operations in the early 1930's. The initial bulk fuel operations at the site were conducted by Standard Oil Company of New Jersey, the predecessor of the Exxon Corporation, who constructed the bulk oil facility on the southern portion of the property between 1925 and 1932. The aboveground storage tanks (ASTs) consisted of eight bulk fuel tanks ranging in size from 6,000-gallons to 20,000-gallons in size. These tanks were reportedly used by Exxon until the property was sold to Lloyd Oil Company in the late 1970's. The bulk fuel facility was active until the 1980's and the ASTs were removed by Don Christian in June 2003. The property continued the use of three 270 gallon heating oil ASTs until early 2013. These small ASTs were removed from the site in July 2013.

Exxon also built a gasoline station on the northern portion of the property. The station had six underground storage tanks (USTs) which stored both gasoline and diesel products and were reportedly removed in 1989. Between 1989 and 2003, the gas station building was intermittently used as an auto garage. More recently (2012), the gas station buildings were used as a retail pottery outlet, and office space.

In 2005 the Brownfields Agreement (BFA) was signed between the State and the Prospective Developer (PD), Main Street Properties of Chapel Hill, LLC. The BFA was recorded on February 4, 2005 at the Register of Deeds in Orange County, NC. The Brownfields property consists of 23,091 square feet of land located at 206 East Main Street in Carrboro, Orange County, NC.

The environmental investigations conducted to support the BFA showed soil and groundwater contamination from petroleum products. During the investigations, many soil borings were completed on the property and six groundwater monitoring wells were installed. The redevelopment plan was to build a three-story commercial building on the property. To accommodate the new development, the existing buildings were demolished, and soil excavations were completed. A summary of each area of environmental cleanup is presented in the following paragraphs,

### **UST AREA**

In July 2013 Main Street Properties of Chapel Hill, LLC (MSP)/Pyramid completed a soil excavation for the Underground Storage Tank (UST) area of the site. This area included the former dispenser island, and the excavation of petroleum contaminated soils to a depth of 18 feet below land surface (BLS). The excavation showed that the two former dispenser islands were significantly contaminated, as well as the petroleum piping and former UST areas. The excavation of the UST area removed 931.85 tons of petroleum contaminated soils. The risk-based soil samples collected from the limits of the excavation showed no soil contaminants above the residential standards.

To help boost the biological activity and remediate groundwater contamination. Pyramid/MSP purchased and spread 660 pounds of an oxygen release compound in the UST excavation. The addition of oxygen in the excavations below the water table was to help encourage biological

degradation of any remaining petroleum compounds in the subsurface. Approximately 660 pounds of TersOx™ calcium peroxide granules was placed in the excavation below the gravel layer. The backfill above the gravel layer was separated from the gravel with a geotextile fabric to reduce soil infiltration into the gravel.

### **Waste Oil UST Area**

After completing the backfilling of the UST area excavation, the service station was demolished and the area behind the former garage building was excavated. An orphaned waste oil UST was found during the excavations which is identified as UST-7. Excavation of petroleum contaminated soils in the waste oil area was completed on July 30, 2013 and the risk based soil samples were collected and shipped for laboratory analysis. The excavation of soil in the waste oil area removed 265.57 tons of petroleum contaminated soils. The analytical results from the post excavation soil samples collected in the former waste oil UST area showed risk-based analyses below residential and commercial UST levels for all samples. Based on the post-excavation soil analytical results, the excavations were successful in addressing the on-site soil contamination in the waste oil UST area. No further soil excavations are necessary in this area.

### **Hydraulic Lift UST Area**

On July 30, the two hydraulic lifts identified as Lift #1 (UST-8) and Lift # 2 (UST-9) were removed. The field screening readings in the excavations ranged from 250 ppm in most areas to > 1000 on a Foxboro FID/OVA. Based on continuous high OVA readings, a 10-12 foot radius surrounding each lift was removed to a depth of 12 to 14 feet. The color of the oily soils was green near each lift cylinder location, the soil felt slippery to the touch, and a hydraulic oil odor was also observed. Based on certified weight tickets, the soil excavation in the area around the two hydraulic lifts removed 309.97 tons of petroleum contaminated soil. Based on these post-excavation risk-based soil analytical results, the excavations were successful in removing soil contamination in the hydraulic lift UST area. No further soil excavations are necessary in this area.

### **AST AREA**

In early August 2013, MSP /Pyramid began work to address concerns in the Aboveground Storage Tank (AST) areas with test pit investigations. Initially five test pits were completed in the areas to the south of the ASTs and south and east of MW-2. One of the test pits encountered an 11 foot diameter 2 foot thick concrete foundation for AST-8 which was buried about 4 inches below the ground. Pyramid investigated the AST area further with test pits and found three more AST foundations. This concrete foundations could not be lifted by the track hoe in one piece, and a concrete breaker attachment was used to break-up the concrete before it could be removed.

Pyramid also investigated the area along the Cat's Cradle building and at the former loading rack. These areas were targeted for soil cleanup. On August 9th, Pyramid and the contractor began excavating soils in the loading rack area, AST area, and the proposed electrical duct bank area. Based on certified weight tickets, a total of 217.96 tons of petroleum contaminated soil was removed from the two excavations in the former AST area. Soil samples were collected from the margins of these excavations. Based on these analytical results, the soil cleanup activities in the AST area were effective in removing petroleum contaminated soils from the two known areas of soil contamination.

## Groundwater Sampling

Prior to the soil excavation at the site, Pyramid collected groundwater samples from MW-1 and MW-5 in May 2013. These initial groundwater samples were analyzed for volatile organics using EPA Method 6200B. These analytical results reported very high concentrations of petroleum contaminants and the benzene concentration was 29,400 micrograms per liter (ug/L) in MW-1.

The next groundwater samples were collected on July 15, 2013 when the demolition and excavation project began. The groundwater samples were collected from MW-3, MW-4, and MW-6, and showed very little petroleum contamination in these perimeter wells. Investigations in the area of MW-2 found only a piece of 2" threaded PVC that looked like the top of a well, and MW-2 was not found.

During the UST soil excavations, little groundwater was observed entering the open excavations and groundwater pumping was not required. After the UST area excavation was completed and backfilled, on July 29, 2013 new monitoring wells MW-1A and MW-5A were installed in the previous locations of MW-1 and MW-5.

On July 30, 2013, the groundwater samples were collected from MW-1A and MW-5A in accordance with the DENR sampling procedures. The groundwater results in MW-5A showed that concentrations after the soil excavation are greatly reduced and benzene and other petroleum concentrations were well below the GCLs. In addition, the perimeter monitoring wells (MW-3, MW-4, and MW-6) show very low levels of petroleum compounds. The only remaining area of groundwater contamination above GCLs was the dispenser island area at MW-1A.

In August and November 2013, MW-1A still showed petroleum in groundwater above the GCLs. The soils in the right-of-way which could not be excavated (northern wall of the excavation) was probably acting as a continuing source of groundwater contamination. Pyramid spread oxygen release compounds in this area in July 2013, and the slow release oxygen was working throughout the past 8 months. In November 2013, the concentration of benzene and EDB remained above the GCLs in MW-1A, so pre-approval for a Mobile Multi-Phase Extraction (MMPE) event was sent to the DENR.

In early November 2013 when the new building construction started two more monitoring wells were abandoned with cement grout. Driller Tim Leatherman found that MW-3 had been destroyed by the utility contractor, and properly abandoned MW-5A and MW-6 (**Appendix A** well abandonment logs). Two other monitoring wells (MW-2 and MW-4) previously destroyed. The only remaining well at the site is MW-1A which was the only monitoring well with concentrations above NCAC 2L standards.

Pyramid pre-approved and then completed one week long MMPE on January 13-17, 2014. Additional groundwater samples were collected on February 18, 2014, and on March 13, 2014 at MW-1A following the MMPE events. The results of these activates are summarized in the following sections.

### 3.0 MMPE EVENT

On January 13-17, 2014, Pyramid performed an MMPE event with Hill Equipment at the Former Don Christian Property. During the event, a total of 4,436 gallons of petroleum contaminated groundwater was recovered from monitoring well MW-1A. The monitoring well is located in the former dispenser island where groundwater concentrations were the highest. No free-phase petroleum product has been identified at the site to date. During the 96 hour event, the total amount of gasoline recovered as vapors was estimated to be 17.46 gallons. The MMPE event is an effective remediation technique to quickly and economically remove petroleum hydrocarbons from soil and groundwater. The MMPE report dated 2/3/2014 is included as **Appendix B**.

### 4.0 GROUNDWATER SAMPLING & ANALYSES

#### 4.1 Monitoring Well Sampling

SAMPLING DATE: 02/18/14 & 03/13/14  
DEPTH TO WATER: 4 to 10 feet BGS  
WELL SAMPLED: MW-1A  
FREE PRODUCT: No Free-Product was measured in 2014 or at any other time.  
TABLES & FIGURES: **Table 3:** Historical Monitoring Well Analytical Data  
**Table 4:** Current Groundwater Analytical Data (MW-1A)  
**Figure 3:** Potentiometric Surface Map (July 2013)  
FIELD PROCEDURES: **Appendix C**

#### 4.2 Monitoring Well Analyses

LAB ANALYSES: EPA Method 6200B  
LAB REPORTING UNITS: Micrograms per liter ( $\mu\text{g/L}$ )

CURRENT MAXIMUM BENZENE: 1.8  $\mu\text{g/L}$  (MW-1A: 3/13/2014)  
PREVIOUS MAXIMUM BENZENE: 298  $\mu\text{g/L}$  (MW-1A: 2/18/2013)  
HISTORIC MAXIMUM BENZENE: 29,400  $\mu\text{g/L}$  (MW-1: 5/8/2013)

TABLES: **Table 4:** Current Groundwater Analytical Results (2/18/2014 & 3/13/14)  
FIGURES: **Figure 4:** Benzene Isoconcentration Map

LABORATORY REPORTS & CHAINS-OF-CUSTODY: **Appendix D**

Based on these groundwater analyses, the benzene and other concentrations in groundwater have declined rapidly with soil and groundwater remediation. The soil excavation addressed the source, and the oxygen release compounds increased biological breakdown of petroleum contaminants. The concentrations have declined from 29,400  $\mu\text{g/L}$  in May 2013 to 1.8  $\mu\text{g/L}$  in March 2014. The MMPE event was successful in further reducing localized petroleum contaminants in groundwater. The petroleum concentrations in MW-1A were well below the Gross Contamination Levels (GCLs).

## 5.0 CONCLUSIONS

### 5.1 Recent Assessment Results

As requested by Main Street Properties of Chapel Hill, LLC and DENR, Pyramid has completed the Active Remediation Monitoring Report for the referenced site. The analysis of the activities and data are presented below.

- In July 2013, Pyramid/MSP removed 931.85 tons of petroleum contaminated soil from the former UST and dispenser island areas at the site. This soil removal greatly reduced soil and groundwater contamination in this area.
- In July 2013, before the main UST excavation was backfilled, Pyramid applied 660 pounds of TersOx™ calcium peroxide compound. This compound slowly released oxygen over the subsequent 8 months and boosted the biological breakdown of petroleum hydrocarbons.
- Additional soil excavations were completed in the former gas station building at the waste oil UST and two hydraulic lifts. The contaminated soil removed from these areas totaled 575 tons of petroleum contaminated soil.
- In August 2013, the AST area cleanup led to the removal of 217.96 tons of petroleum contaminated soils from the southern area of the property.
- In November 2014, the new building was started on the property. The former wells MW-5A and MW-6 were properly abandoned with cement grout on 11-8-2013.
- On January 13-17, 2014, Pyramid conducted an MMPE event to reduce groundwater concentrations. The event significantly lowered petroleum hydrocarbons in the source area.
- One month after the MMPE Event, on 02/18/14, Pyramid sampled MW-1A. The results of the analyses indicate a significant reduction from the previous sampling in November 2013. The petroleum concentrations in groundwater were well below the Gross Contamination Levels (GCLs) for all parameters.
- Two months after the MMPE event, on 03/13/14, Pyramid sampled groundwater in MW-1A again for 6200B analyses. The groundwater results showed an additional decrease in the dissolved-phase concentrations in MW-1A since the February 18, 2014 sampling event. The benzene concentrations not only remained below the GCLs, the concentrations dropped from 298 µg/L from 1.8 µg/L in one month's time.
- Based on the current groundwater analytical data and the concentration trend showing much lower concentrations of all target compounds, Pyramid requests that the DENR consider Regulatory Incident Closure for incident # 26797.

## **6.0 RECOMMENDATIONS**

Significant soil and groundwater cleanup activities have been completed by MSP/Pyramid at the former Don Christian property. These cleanup activities have significantly lowered petroleum concentrations in soil and groundwater at the site to levels appropriate for regulatory closure.

Based on the most recent groundwater and soil analytical results, Pyramid recommends that the DENR RRO consider re-ranking the site as a low-risk incident and prepare the site for regulatory incident closure activities.

Pyramid has pre-approved the deed recordation, MW abandonment and Public notification for incident closure. Based on the low risk this incident poses to the surrounding downtown population and the proposed deed restrictions for groundwater, Pyramid requests that the DENR consider the site for regulatory incident closure.

## **7.0 CLOSURE**

This report is prepared for, and made available solely for the use of Main Street Properties of Chapel Hill, LLC and the NCDENR. 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, PC. 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**

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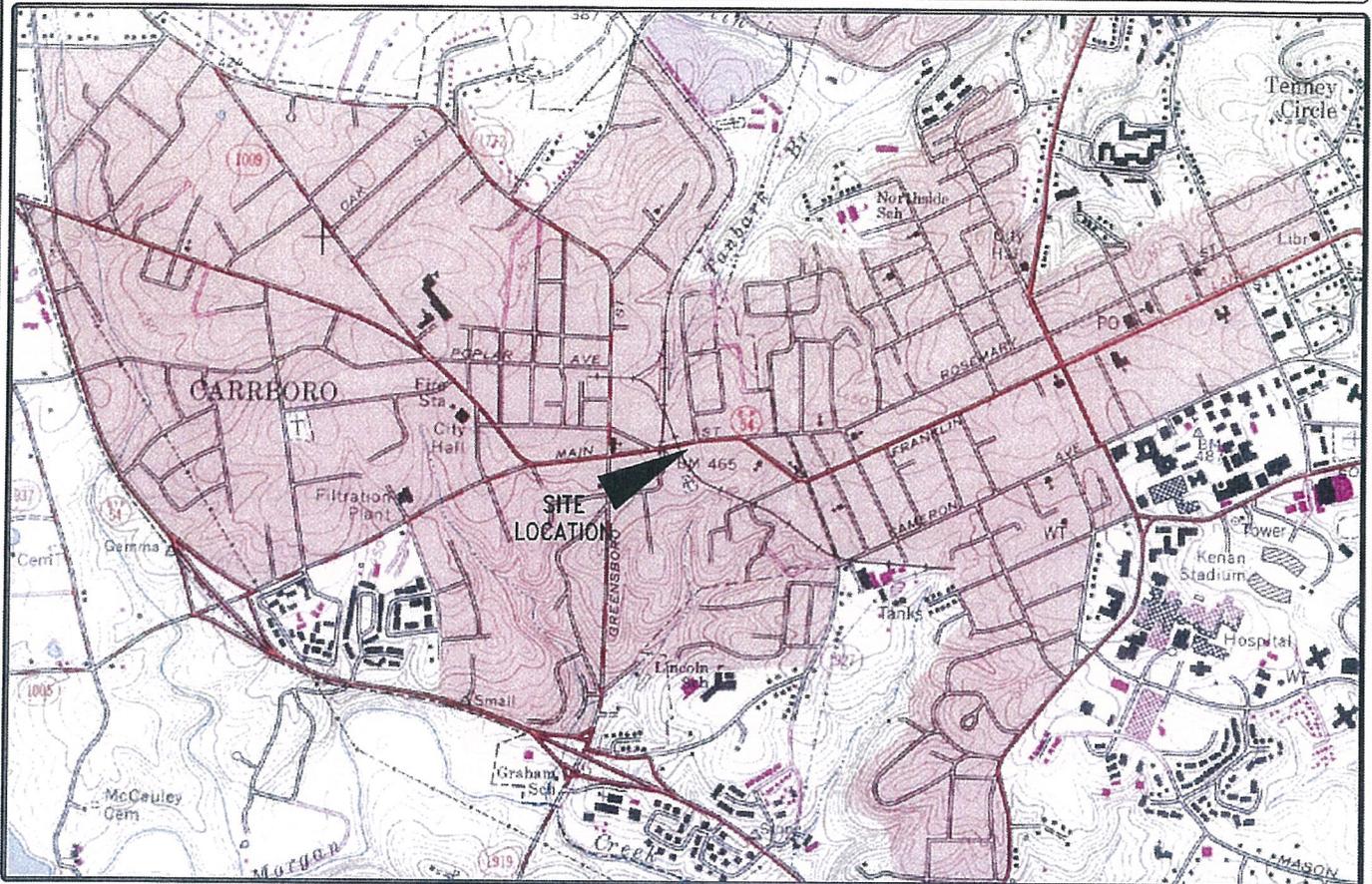
# USGS TOPOGRAPHIC MAP

SITE:

206 E. MAIN ST.

LOCATION:

CARRBORO, NORTH CAROLINA



## USGS IDENTIFICATION

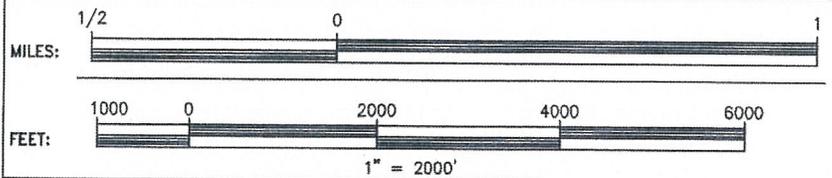
USGS 7.5  
MINUTE MAP  
ORIGINAL DATE:  
PHOTOREVISION  
DATE:

CHAPEL HILL, N.C.

1978

1981

## SCALES

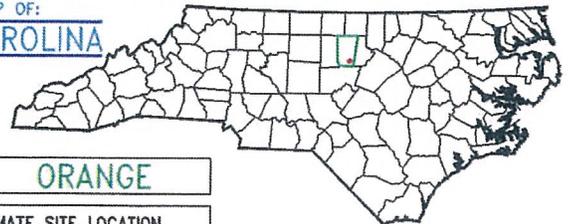


NOTES: ► TOPOGRAPHICAL CONTOUR INTERVAL = 10 FEET  
► PHOTOREVISIONS DENOTED IN PURPLE

MAGNETIC  
NORTH



COUNTY MAP OF:  
**NORTH CAROLINA**



COUNTY: **ORANGE**

APPROXIMATE SITE LOCATION



CLIENT: MAIN ST. PROP. OF CHAPEL HILL

PROPERTY  
NAME: 206 E. MAIN ST.

CITY: CARRBORO

STATE: NORTH CAROLINA

TITLE: TOPOGRAPHIC MAP

SCALE:  
1"=2000'

DATE:  
9/4/13

DRAWING NAME:  
USGSTOPO

DRAWN BY: KAM

CHECK BY: MGJ

JOB NO.: 2013-161

TYPE: UST CLOSURE

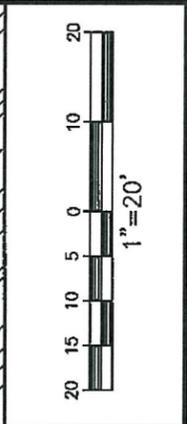
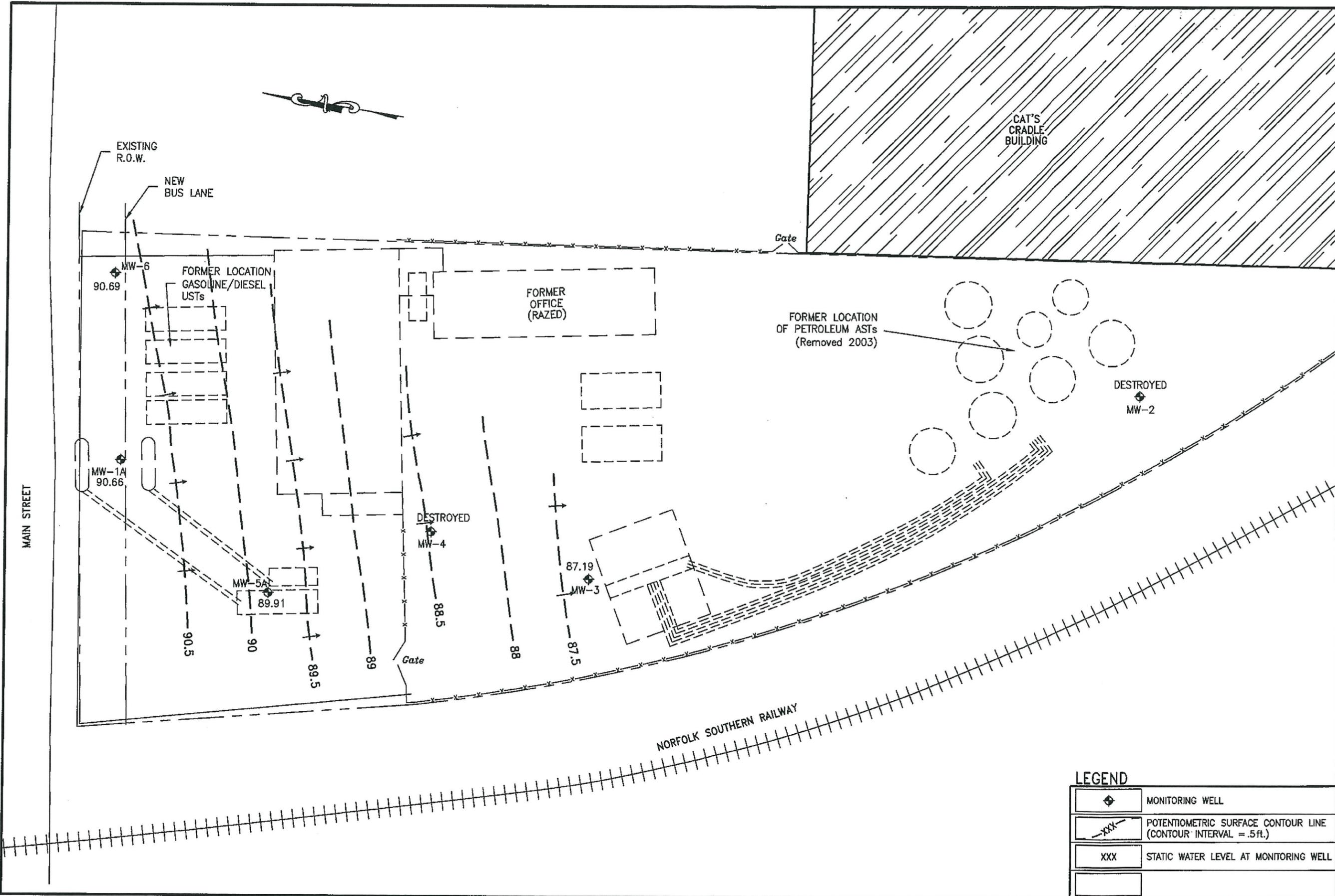
FIGURE NUMBER:  
1

## 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.



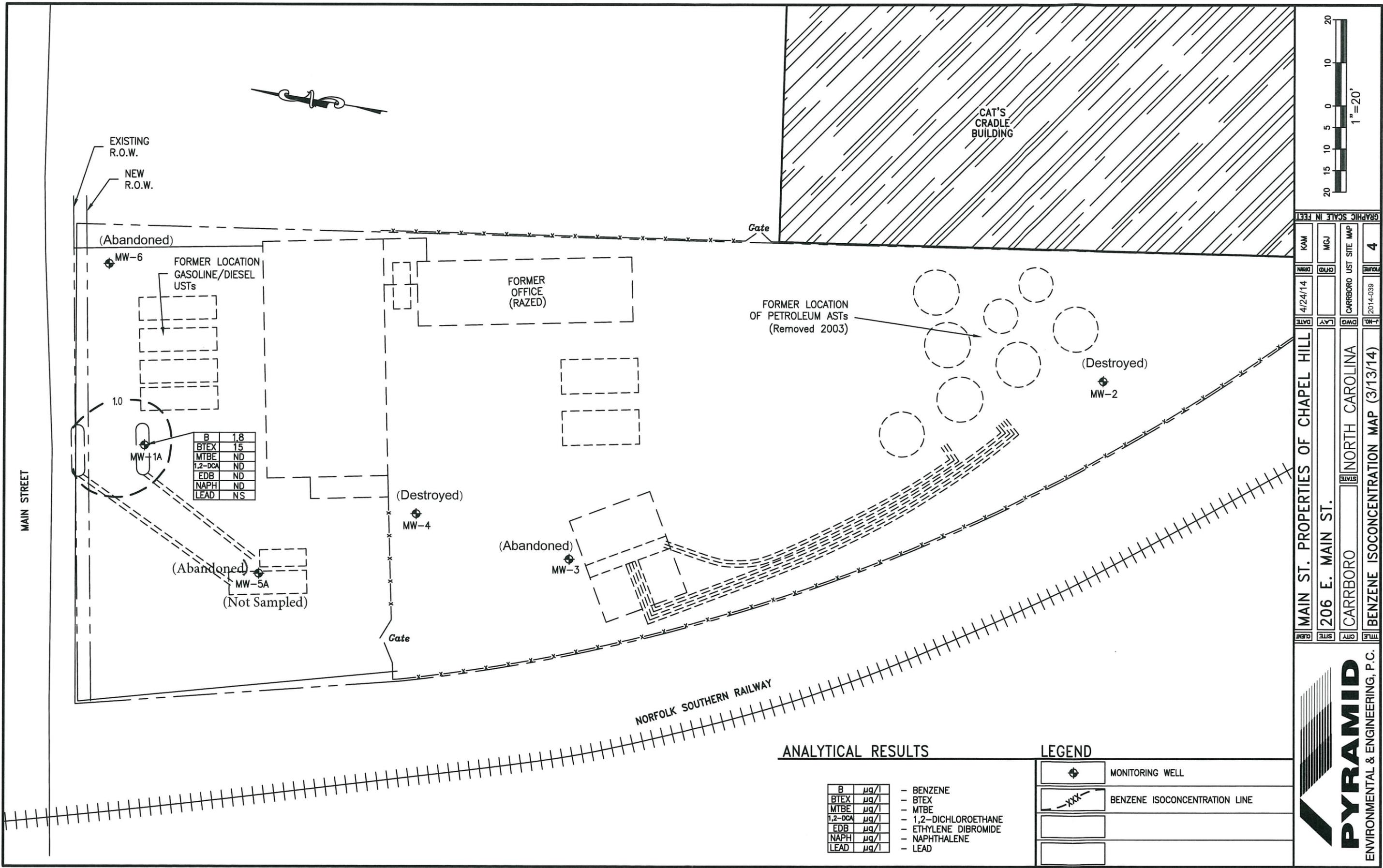


DATE	4/24/14
BY	KAM
CHECKED	MGJ
DATE	04/15
PROJECT	CARRBORO UST SITE MAP
SCALE	2014-039
FILE	3

MAIN ST. PROPERTIES OF CHAPEL HILL  
 206 E. MAIN ST.  
 CARRBORO NORTH CAROLINA  
 POTENTIOMETRIC SURFACE MAP (7/30/13)

**PYRAMID**  
ENVIRONMENTAL & ENGINEERING, P.C.

	MONITORING WELL
	POTENTIOMETRIC SURFACE CONTOUR LINE (CONTOUR INTERVAL = .5ft.)
	STATIC WATER LEVEL AT MONITORING WELL



B	1.8
BTEX	15
MTBE	ND
1,2-DCA	ND
EDB	ND
NAPH	ND
LEAD	NS

**ANALYTICAL RESULTS**

B	µg/l	- BENZENE
BTEX	µg/l	- BTEX
MTBE	µg/l	- MTBE
1,2-DCA	µg/l	- 1,2-DICHLOROETHANE
EDB	µg/l	- ETHYLENE DIBROMIDE
NAPH	µg/l	- NAPHTHALENE
LEAD	µg/l	- LEAD

**LEGEND**

	MONITORING WELL
	BENZENE ISOCONCENTRATION LINE

DATE	4/24/14
BY	[Signature]
SCALE	1"=20'
PROJECT	MAIN ST. PROPERTIES OF CHAPEL HILL
SITE	206 E. MAIN ST.
STATE	CARRBORO
CITY	NORTH CAROLINA
MAP	BENZENE ISOCONCENTRATION MAP (3/13/14)
REV	4
DATE	2014-039
BY	[Signature]
SCALE	1"=20'
PROJECT	MAIN ST. PROPERTIES OF CHAPEL HILL
SITE	206 E. MAIN ST.
STATE	CARRBORO
CITY	NORTH CAROLINA
MAP	BENZENE ISOCONCENTRATION MAP (3/13/14)
REV	4
DATE	2014-039
BY	[Signature]



## **TABLES**

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**Table 3**

**Historical Monitoring Well Analytical Data  
Don Christian Property - 206 E. Main Street, Carrboro, NC**

			Monitoring Wells						2L Ground-Water Standards ug/l	Gross Contaminant Levels ug/l
Laboratory Parameters	Units	Date Sampled	*MW-1 & MW-1A	MW-2	MW-3	MW-4	MW-5 & 5A	MW-6		
<b>Method 6200B</b>										
Benzene	ug/l	4/16/2004	11,000	3.6	4	NI	NI	NI	1	5,000
		11/15/2004	NS	NS	NS	2.8	7,100	1		
		5/8/2013	29400	Dest.	NS	NS	2500	NS		
		7/15/2013	NS	Dest.	ND	ND	NS	ND		
		7/30/2013	8440	Dest.	NS	Dest.	616	NS		
		8/13/2013	5650	Dest.	NS	Dest.	387	NS		
		8/23/2013	4170	Dest.	NS	Dest.	320	NS		
		8/29/2013	8790	Dest.	ND	Dest.	NS	ND		
		*11/8/2013	7,840	Dest.	Dest.	Dest.	NS	NS		
		*2/18/2014	298	Dest.	Dest.	Dest.	Abandoned	Abandoned		
		*3/13/2014	1.8	Dest.	Dest.	Dest.	Abandoned	Abandoned		
Toluene	ug/l	4/16/2004	6,000	< 5	< 5	NI	NI	NI	600	260,000
		11/15/2004	NS	NS	NS	<5.0	8,000	< 5.0		
		5/8/2013	22600	Dest.	NS	NS	3190	NS		
		7/15/2013	NS	Dest.	ND	ND	NS	ND		
		7/30/2013	6290	Dest.	NS	Dest.	212	NS		
		8/13/2013	2660	Dest.	NS	Dest.	202	NS		
		8/23/2013	3080	Dest.	NS	Dest.	302	NS		
		8/29/2013	7880	Dest.	ND	Dest.	492	ND		
		*11/8/2013	10,500	Dest.	Dest.	Dest.	NS	NS		
		*2/18/2014	602	Dest.	Dest.	Dest.	Abandoned	Abandoned		
		*3/13/2014	3.3	Dest.	Dest.	Dest.	Abandoned	Abandoned		
Ethylbenzene	ug/l	4/16/2004	760	1.1	< 1	NI	NI	NI	600	84,500
		11/15/2004	NS	NS	NS	1.1	1,200	<1		
		5/8/2013	1920	Dest.	NS	NS	4670	NS		
		7/15/2013	NS	Dest.	ND	ND	NS	ND		
		7/30/2013	926	Dest.	NS	Dest.	108	NS		
		8/13/2013	248	Dest.	NS	Dest.	103	NS		
		8/23/2013	442	Dest.	NS	Dest.	71.4	NS		
		8/29/2013	998	Dest.	ND	Dest.	91.4	ND		
		*11/8/2013	1,380	Dest.	Dest.	Dest.	NS	NS		
		*2/18/2014	75	Dest.	Dest.	Dest.	Abandoned	Abandoned		
		*3/13/2014	0.56	Dest.	Dest.	Dest.	Abandoned	Abandoned		
Total Xylenes	ug/l	4/16/2004	3,600	< 3.0	< 3.0	NI	NI	NI	500	85,500
		11/15/2004	NS	NS	NS	4.8	4,900	< 3		
		5/8/2013	14100	Dest.	NS	NS	16450	NS		
		7/15/2013	NS	Dest.	ND	ND	NS	ND		
		7/30/2013	4210	Dest.	NS	Dest.	291.1	NS		
		8/13/2013	964	Dest.	NS	Dest.	238.7	NS		
		8/23/2013	2054	Dest.	NS	Dest.	318	NS		
		8/29/2013	4970	Dest.	ND	Dest.	464	ND		
		*11/8/2013	8,320	Dest.	Dest.	Dest.	NS	NS		
		*2/18/2014	563	Dest.	Dest.	Dest.	Abandoned	Abandoned		
		*3/13/2014	9.7	Dest.	Dest.	Dest.	Abandoned	Abandoned		
Total BTEX	ug/l	4/16/2004	21,360	5	4	NI	NI	NI	NA	NA
		11/15/2004	NS	NS	NS	9	21,200	< 10		
		5/8/2013	68,020	Dest.	NS	NS	26,810	NS		
		7/15/2013	NS	Dest.	< 10	< 10	NS	< 10		
		7/30/2013	19,866	Dest.	NS	Dest.	1,227	NS		
		8/13/2013	9,522	Dest.	NS	Dest.	931	NS		
		8/23/2013	14,016	Dest.	NS	Dest.	1,307	NS		
		8/29/2013	19,498	Dest.	< 10	Dest.	1,434	< 10		
		*11/8/2013	28,040	Dest.	Dest.	Dest.	NS	NS		
		*2/18/2014	1,538	Dest.	Dest.	Dest.	Abandoned	Abandoned		
		*3/13/2014	15	Dest.	Dest.	Dest.	Abandoned	Abandoned		

**Table 3**

**Historical Monitoring Well Analytical Data  
Don Christian Property - 206 E. Main Street, Carrboro, NC**

Laboratory Parameters	Units	Date Sampled	Monitoring Wells						2L Ground-Water Standards ug/l	Gross Contaminant Levels ug/l
			*MW-1 & MW-1A	MW-2	MW-3	MW-4	MW-5 & 5A	MW-6		
<b>Method 6200B</b>										
MTBE	ug/l	4/16/2004	< 5.0	10	15	NI	NI	NI	20	20,000
		11/15/2004	NS	NS	NS	1.3	< 500	< 1		
		5/8/2013	ND	Dest.	NS	NS	ND	NS		
		7/15/2013	NS	Dest.	<b>34.2</b>	ND	NS	ND		
		7/30/2013	15.6	Dest.	NS	Dest	13	NS		
		8/23/2013	ND	Dest.	NS	Dest	13.1	NS		
		8/29/2013	ND	Dest.	<b>40.5</b>	Dest	14.8	ND		
		*11/8/2013	ND	Dest.	Dest.	Dest.	NS	NS		
		*2/18/2014	ND	Dest.	Dest.	Dest.	Abandoned	Abandoned		
		*3/13/2014	ND	Dest.	Dest.	Dest.	Abandoned	Abandoned		
IPE (Di-isopropyl ether)	ug/l	4/16/2004	<b>12,000</b>	5	60	NI	NI	NI	70	70,000
		11/15/2004	NS	NS	NS	14	<b>4,200</b>	250		
		5/8/2013	<b>6350</b>	Dest.	NS	NS	<b>128</b>	NS		
		7/15/2013	NS	Dest.	8.3	ND	NS	80		
		7/30/2013	<b>4720</b>	Dest.	NS	Dest.	<b>2940</b>	NS		
		8/13/2013	<b>2570</b>	Dest.	NS	Dest.	<b>423</b>	NS		
		8/23/2013	<b>1530</b>	Dest.	NS	Dest.	<b>3660</b>	NS		
		8/29/2013	<b>2800</b>	Dest.	14.1	Dest.	<b>2920</b>	49.5		
		*11/8/2013	<b>1830</b>	Dest.	Dest.	Dest.	NS	NS		
		*2/18/2014	<b>99.3</b>	Dest.	Dest.	Dest.	Abandoned	Abandoned		
*3/13/2014	0.91	Dest.	Dest.	Dest.	Abandoned	Abandoned				
1,2-Dichloroethane	ug/l	4/16/2004	<b>1,200</b>	< 1	5.1	NI	NI	NI	0.4	400
		11/15/2004	NS	NS	NS	<1	< 500	16		
		5/8/2013	111	Dest.	NS	NS	ND	NS		
		7/15/2013	NS	Dest.	ND	ND	NS	ND		
		7/30/2013	<b>48.2</b>	Dest.	NS	Dest.	<b>4.8</b>	NS		
		8/13/2013	<b>54.1</b>	Dest.	NS	Dest.	<b>13.2</b>	NS		
		8/23/2013	<b>32</b>	Dest.	NS	Dest.	<b>6.7</b>	NS		
		8/29/2013	<b>82.4</b>	Dest.	0.88	Dest.	ND	ND		
		*11/8/2013	<b>103</b>	Dest.	Dest.	Dest.	NS	NS		
		*2/18/2014	ND	Dest.	Dest.	Dest.	Abandoned	Abandoned		
*3/13/2014	ND	Dest.	Dest.	Dest.	Abandoned	Abandoned				
1,2-Dibromoethane (EDB)	ug/l	4/16/2004	<b>30</b>	< 1	< 1	NI	NI	NI	0.02	50
		11/15/2004	NS	NS	NS	< 1	< 5	< 1		
		5/8/2013	ND	Dest.	NS	NS	ND	NS		
		7/15/2013	NS	Dest.	ND	ND	NS	< 0.5		
		7/30/2013	<b>9.8</b>	Dest.	NS	Dest.	ND	NS		
		8/13/2013	ND	Dest.	NS	Dest.	ND	NS		
		8/23/2013	ND	Dest.	NS	Dest.	ND	NS		
		8/29/2013	<b>59.6</b>	Dest.	ND	Dest.	<b>1.7</b>	ND		
		*11/8/2013	<b>55.2</b>	Dest.	Dest.	Dest.	NS	NS		
		*2/18/2014	<b>3.7</b>	Dest.	Dest.	Dest.	Abandoned	Abandoned		
*3/13/2014	ND	Dest.	Dest.	Dest.	Abandoned	Abandoned				
Naphthalene	ug/l	4/16/2004	<b>230</b>	< 10	< 10	NI	NI	NI	6	6000
		11/15/2004	<b>595</b>	<b>86</b>	BDL	< 10	<b>410</b>	< 10		
		5/8/2013	<b>810</b>	Dest.	NS	NS	<b>1480</b>	NS		
		7/15/2013	<b>NS</b>	Dest.	ND	ND	NS	ND		
		7/30/2013	<b>340</b>	Dest.	NS	Dest.	<b>44.4</b>	NS		
		8/13/2013	<b>ND</b>	Dest.	NS	Dest.	ND	NS		
		8/23/2013	<b>151</b>	Dest.	NS	Dest.	<b>28</b>	NS		
		8/29/2013	<b>345</b>	Dest.	ND	Dest.	ND	ND		
		*11/8/2013	ND	Dest.	Dest.	Dest.	NS	NS		
		*2/18/2014	<b>48.7</b>	Dest.	Dest.	Dest.	Abandoned	Abandoned		
*3/13/2014	ND	Dest.	Dest.	Dest.	Abandoned	Abandoned				
Lead ( Pb )	ug/l	4/16/2004	<b>41</b>	< 5.0	6	NI	NI	NI	15	15000
		11/15/2004	NS	NS	NS	9.8	22	13		
		8/29/2013	<b>33.6</b>	Dest.	<b>21.7</b>	Dest.	ND	NS		
		*11/8/2013	NS	Dest.	Dest.	Dest.	NS	NS		
		*2/18/2014	NS	Dest.	Dest.	Dest.	Abandoned	Abandoned		
*3/13/2014	NS	Dest.	Dest.	Dest.	Abandoned	Abandoned				

BDL = Below Detection Limit      NS=Not Sampled      NI = Well Not Installed  
 Sample Results Bolded Are Above the NCAC 2L Groundwater Standards.      Dest. = Well Destroyed by Construction activities  
 Samples Shaded in Yellow are above Gross Contaminant Levels      Abandoned = Well Abandoned with Grout

**TABLE 4**  
**Current Groundwater Analytical Results (02/18/2014 & 03/13/2014)**  
**MW-1A**  
**Former Don Christian Property**  
**206 E. Main Street, Carrboro, Orange County, NC**

	UNITS	MONITORING WELL			GCLs Groundwater
		DATE	*MW-1A	NCAC 2L Groundwater Standard	
<b>Volatiles by 6200B</b>					
<i>Benzene</i>	ug/l	02-18-14	298	1	5,000
		03-13-14	1.8		
<i>Toluene</i>	ug/l	02-18-14	602	600	260,000
		03-13-14	3.3		
<i>Ethylbenzene</i>	ug/l	02-18-14	75	600	84,500
		03-13-14	0.56		
<i>Total Xylenes</i>	ug/l	02-18-14	563	500	85,500
		03-13-14	9.7		
<b>TOTAL BTEX</b>	ug/l	02-18-14	1,538	No Standard	No Standard
		03-13-14	ND		
<i>MTBE</i>	ug/l	02-18-14	ND	20	20,000
		03-13-14	ND		
<i>IPE</i>	ug/l	02-18-14	99.3	70	70,000
		03-13-14	0.91		
<i>EDB</i>	ug/l	02-18-14	3.7	0.02	50
		03-13-14	ND		
<i>1,1-Dichloroethane</i>	ug/l	02-18-14	ND	6	6,000
		03-13-14	ND		
<i>1,2-Dichloroethane</i>	ug/l	02-18-14	ND	0.40	400
		03-13-14	ND		
<i>n-Propylbenzene</i>	ug/l	02-18-14	7.1	70	30,000
		03-13-14	ND		
<i>1,4 Dichlorobenzene</i>	ug/l	02-18-14	ND	400	6
		03-13-14	ND		
<i>1,2,4-trimethylbenzene</i>	ug/l	02-18-14	104	400	28,500
		03-13-14	0.88		
<i>1,3,5-trimethylbenzene</i>	ug/l	02-18-14	44.7	400	25,000
		03-13-14	2.3		
<i>Isopropylbenzene</i>	ug/l	02-18-14	4.4	70	25,000
		03-13-14	ND		
<i>Chloromethane</i>	ug/l	02-18-14	ND	3	3,000
		03-13-14	ND		
<i>Naphthalene</i>	ug/l	02-18-14	48.7	6	6,000
		03-13-14	ND		

ND=Not Detected    **Bold** = Exceeds 2L Standards    **Bold and Shaded** = Exceeds GCLs    \*= MW-1A is in exact location of abandoned W

## **APPENDIX A**

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# WELL ABANDONMENT RECORD

North Carolina Department of Environment and Natural Resources- Division of Water Quality

## WELL CONTRACTOR CERTIFICATION # 2888-A

### 1. WELL CONTRACTOR:

Timothy D. Leatherman  
Well Contractor (Individual) Name

Pyramid Environmental & Engineering, P.C.  
Well Contractor Company Name

STREET ADDRESS P.O. Box 16265

Greensboro, NC 27416-0265  
City or Town State Zip Code

(336) - 335 - 3174  
Area code - Phone number

### 2. WELL INFORMATION:

SITE WELL ID # (if applicable) MW-1

STATE WELL PERMIT # (if applicable) N/A

COUNTY WELL PERMIT # (if applicable) N/A

DWQ or OTHER PERMIT # (if applicable) N/A

WELL USE (Check applicable use):  Monitoring  Residential

Municipal/Public  Industrial/Commercial  Agricultural

Recovery  Injection  Irrigation

Other (list use) \_\_\_\_\_

### 3. WELL LOCATION:

COUNTY Orange QUADRANGLE NAME \_\_\_\_\_

NEAREST TOWN: Carrboro, North Carolina

(Street/Road Name, Number, Community, Subdivision, Lot No., Parcel, Zip Code)

### TOPOGRAPHIC / LAND SETTING:

Slope  Valley  Flat  Ridge  Other

(Check appropriate setting)

LATITUDE N 35 54' 37.94"

LONGITUDE W 79 04' 09.68"

May be in degrees, minutes, seconds, or in a decimal format

Latitude/longitude source:  GPS  Topographic map

(Location of well must be shown on a USGS topo map and attached to this form if not using GPS.)

4a. FACILITY- The name of the business where the well is located. Complete 4a and 4b. (If a residential well, skip 4a; complete 4b, well owner information only.)

FACILITY ID #(if applicable) 0-026870

NAME OF FACILITY Former Don C. Christian Property

STREET ADDRESS 206 E. Main Street

Carrboro NC  
City or Town State Zip Code

### 4b. CONTACT PERSON/WELL OWNER:

NAME Main Street Properties of Chapel Hill, LLC

STREET ADDRESS PO Box 2152 Chapel Hill, NC 27515

### 5. WELL DETAILS:

a. Total Depth: 29.5 ft. Diameter: 2 in.

b. Water Level (Below Measuring Point): 6.95 ft.  
Measuring point is 0 ft. above land surface.

### 6. CASING:

a. Casing Depth (if known): 29.5 ft. 2 in.

b. Casing Removed: 0 ft. \_\_\_\_\_ in.

### 7. DISINFECTION: 0.1 pounds

(Amount of 65%-75% calcium hypochlorite used)

### 8. SEALING MATERIAL:

#### Neat Cement

#### Sand Cement

Cement 23 lb.  
Water 1.5 gal.

Cement \_\_\_\_\_ lb.  
Water \_\_\_\_\_ gal.

#### Bentonite

Bentonite 30 lb.

Type:  Slurry  Pellets

Water \_\_\_\_\_ gal.

#### Other

Type material \_\_\_\_\_

Amount \_\_\_\_\_

### 9. EXPLAIN METHOD OF EMPLACEMENT OF MATERIAL:

Slow Pour bentonite - tremmie pipe neat cement

10. WELL DIAGRAM: Draw a detailed sketch of the well on the back of this form showing total depth, depth and diameter of screens (if any) remaining in the well, gravel interval, intervals of casing perforations, and depths and types of fill materials used.

### 11. DATE WELL ABANDONED 7/17/13

I DO HEREBY CERTIFY THAT THIS WELL WAS ABANDONED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

Timothy D. Leatherman  
SIGNATURE OF CERTIFIED WELL CONTRACTOR

8/16/13  
DATE

SIGNATURE OF PRIVATE WELL OWNER ABANDONING THE WELL DATE  
(The private well owner must be an individual who personally abandons his/her residential well in accordance with 15A NCAC 2C .0113.)

Timothy D. Leatherman  
PRINTED NAME OF PERSON ABANDONING THE WELL



# WELL ABANDONMENT RECORD

North Carolina Department of Environment and Natural Resources- Division of Water Quality

## WELL CONTRACTOR CERTIFICATION # 2888-A

### 1. WELL CONTRACTOR:

Timothy D. Leatherman  
Well Contractor (Individual) Name

Pyramid Environmental & Engineering, P.C.  
Well Contractor Company Name

STREET ADDRESS P.O. Box 16265

Greensboro, NC 27416-0265  
City or Town State Zip Code

(336) - 335 - 3174  
Area code - Phone number

### 2. WELL INFORMATION:

SITE WELL ID # (if applicable) MW-5

STATE WELL PERMIT # (if applicable) N/A

COUNTY WELL PERMIT # (if applicable) N/A

DWQ or OTHER PERMIT # (if applicable) N/A

WELL USE (Check applicable use):  Monitoring  Residential  
 Municipal/Public  Industrial/Commercial  Agricultural  
 Recovery  Injection  Irrigation  
 Other (list use) \_\_\_\_\_

### 3. WELL LOCATION:

COUNTY Orange QUADRANGLE NAME \_\_\_\_\_

NEAREST TOWN: Carrboro, North Carolina

\_\_\_\_\_  
(Street/Road Name, Number, Community, Subdivision, Lot No., Parcel, Zip Code)

### TOPOGRAPHIC / LAND SETTING:

Slope  Valley  Flat  Ridge  Other \_\_\_\_\_  
(Check appropriate setting)

LATITUDE N 35 54' 37.67" May be in degrees, minutes, seconds, or in a decimal format

LONGITUDE W 79 04' 10.00"

Latitude/longitude source:  GPS  Topographic map  
(Location of well must be shown on a USGS topo map and attached to this form if not using GPS.)

### 4a. FACILITY- The name of the business where the well is located. Complete 4a and 4b. (If a residential well, skip 4a; complete 4b, well owner information only.)

FACILITY ID # (if applicable) 0-026870

NAME OF FACILITY Former Don C. Christian Property

STREET ADDRESS 206 E. Main Street

Carrboro NC  
City or Town State Zip Code

### 4b. CONTACT PERSON/WELL OWNER:

NAME Main Street Properties of Chapel Hill, LLC

STREET ADDRESS PO Box 2152 Chapel Hill, NC 27515

### 5. WELL DETAILS:

a. Total Depth: 22.5 ft. Diameter: 2 in.

b. Water Level (Below Measuring Point): 5.70 ft.  
Measuring point is 0 ft. above land surface.

### 6. CASING:

	Length	Diameter
a. Casing Depth (if known):	<u>22.5</u> ft.	<u>2</u> in.
b. Casing Removed:	<u>0</u> ft.	_____ in.

### 7. DISINFECTION: 0.1 pounds

(Amount of 65%-75% calcium hypochlorite used)

### 8. SEALING MATERIAL:

Neat Cement		Sand Cement	
Cement	<u>23</u> lb.	Cement	_____ lb.
Water	<u>1.5</u> gal.	Water	_____ gal.

### Bentonite

Bentonite 25 lb.

Type:  Slurry  Pellets

Water \_\_\_\_\_ gal.

### Other

Type material \_\_\_\_\_

Amount \_\_\_\_\_

### 9. EXPLAIN METHOD OF EMPLACEMENT OF MATERIAL:

Slow Pour bentonite - tremmie pipe neat cement

### 10. WELL DIAGRAM: Draw a detailed sketch of the well on the back of this form showing total depth, depth and diameter of screens (if any) remaining in the well, gravel interval, intervals of casing perforations, and depths and types of fill materials used.

### 11. DATE WELL ABANDONED 7/17/13

I DO HEREBY CERTIFY THAT THIS WELL WAS ABANDONED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

Timothy D. Leatherman  
SIGNATURE OF CERTIFIED WELL CONTRACTOR

8/16/13  
DATE

SIGNATURE OF PRIVATE WELL OWNER ABANDONING THE WELL DATE  
(The private well owner must be an individual who personally abandons his/her residential well in accordance with 15A NCAC 2C .0113.)

Timothy D. Leatherman  
PRINTED NAME OF PERSON ABANDONING THE WELL



# WELL ABANDONMENT RECORD

North Carolina Department of Environment and Natural Resources- Division of Water Quality

WELL CONTRACTOR CERTIFICATION # 2888-A

### 1. WELL CONTRACTOR:

Timothy D. Leatherman  
Well Contractor (Individual) Name

Pyramid Environmental & Engineering, P.C.  
Well Contractor Company Name

STREET ADDRESS P.O. Box 16265

Greensboro, NC 27416-0265  
City or Town State Zip Code

(336) - 335 - 3174  
Area code - Phone number

### 2. WELL INFORMATION:

SITE WELL ID # (if applicable) MW-5A

STATE WELL PERMIT # (if applicable) N/A

COUNTY WELL PERMIT # (if applicable) N/A

DWQ or OTHER PERMIT # (if applicable) N/A

WELL USE (Check applicable use):  Monitoring  Residential

Municipal/Public  Industrial/Commercial  Agricultural

Recovery  Injection  Irrigation

Other (list use) \_\_\_\_\_

### 3. WELL LOCATION:

COUNTY Orange QUADRANGLE NAME \_\_\_\_\_

NEAREST TOWN: Carrboro, North Carolina

206 East Main Street

(Street/Road Name, Number, Community, Subdivision, Lot No., Parcel, Zip Code)

#### TOPOGRAPHIC / LAND SETTING:

Slope  Valley  Flat  Ridge  Other \_\_\_\_\_

(Check appropriate setting)

LATITUDE N 35 54' 37.81"

LONGITUDE W 79 04' 10.02"

May be in degrees, minutes, seconds, or in a decimal format

Latitude/longitude source:  GPS  Topographic map

(Location of well must be shown on a USGS topo map and attached to this form if not using GPS.)

4a. FACILITY- The name of the business where the well is located. Complete 4a and 4b. (If a residential well, skip 4a; complete 4b, well owner information only.)

FACILITY ID #(if applicable) \_\_\_\_\_

NAME OF FACILITY Don C. Christian, Former Property

STREET ADDRESS 206 E. Main Street

Carrboro NC  
City or Town State Zip Code

### 4b. CONTACT PERSON/WELL OWNER:

NAME Main Street Properties of Chapel Hill, LLC

STREET ADDRESS PO Box 2152, Chapel Hill, NC 27515

### 5. WELL DETAILS:

a. Total Depth: 19 ft. Diameter: 2 in.

b. Water Level (Below Measuring Point): 8.75 ft.

Measuring point is 0 ft. above land surface.

### 6. CASING:

Length Diameter

a. Casing Depth (if known): 19 ft. 2 in.

b. Casing Removed: 0 ft. \_\_\_\_\_ in.

### 7. DISINFECTION: 0.1 pounds

(Amount of 65%-75% calcium hypochlorite used)

### 8. SEALING MATERIAL:

#### Neat Cement

#### Sand Cement

Cement 12 lb.  
Water 1.0 gal.

Cement \_\_\_\_\_ lb.  
Water \_\_\_\_\_ gal.

#### Bentonite

Bentonite \_\_\_\_\_ lb.

Type:  Slurry  Pellets

Water \_\_\_\_\_ gal.

#### Other

Type material \_\_\_\_\_

Amount \_\_\_\_\_

### 9. EXPLAIN METHOD OF EMPLACEMENT OF MATERIAL:

Slow Pour bentonite - tremmie pipe neat cement

10. WELL DIAGRAM: Draw a detailed sketch of the well on the back of this form showing total depth, depth and diameter of screens (if any) remaining in the well, gravel interval, intervals of casing perforations, and depths and types of fill materials used.

11. DATE WELL ABANDONED 11/8/13

I DO HEREBY CERTIFY THAT THIS WELL WAS ABANDONED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

SIGNATURE OF CERTIFIED WELL CONTRACTOR \_\_\_\_\_

DATE

SIGNATURE OF PRIVATE WELL OWNER ABANDONING THE WELL DATE

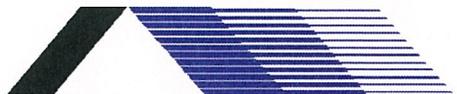
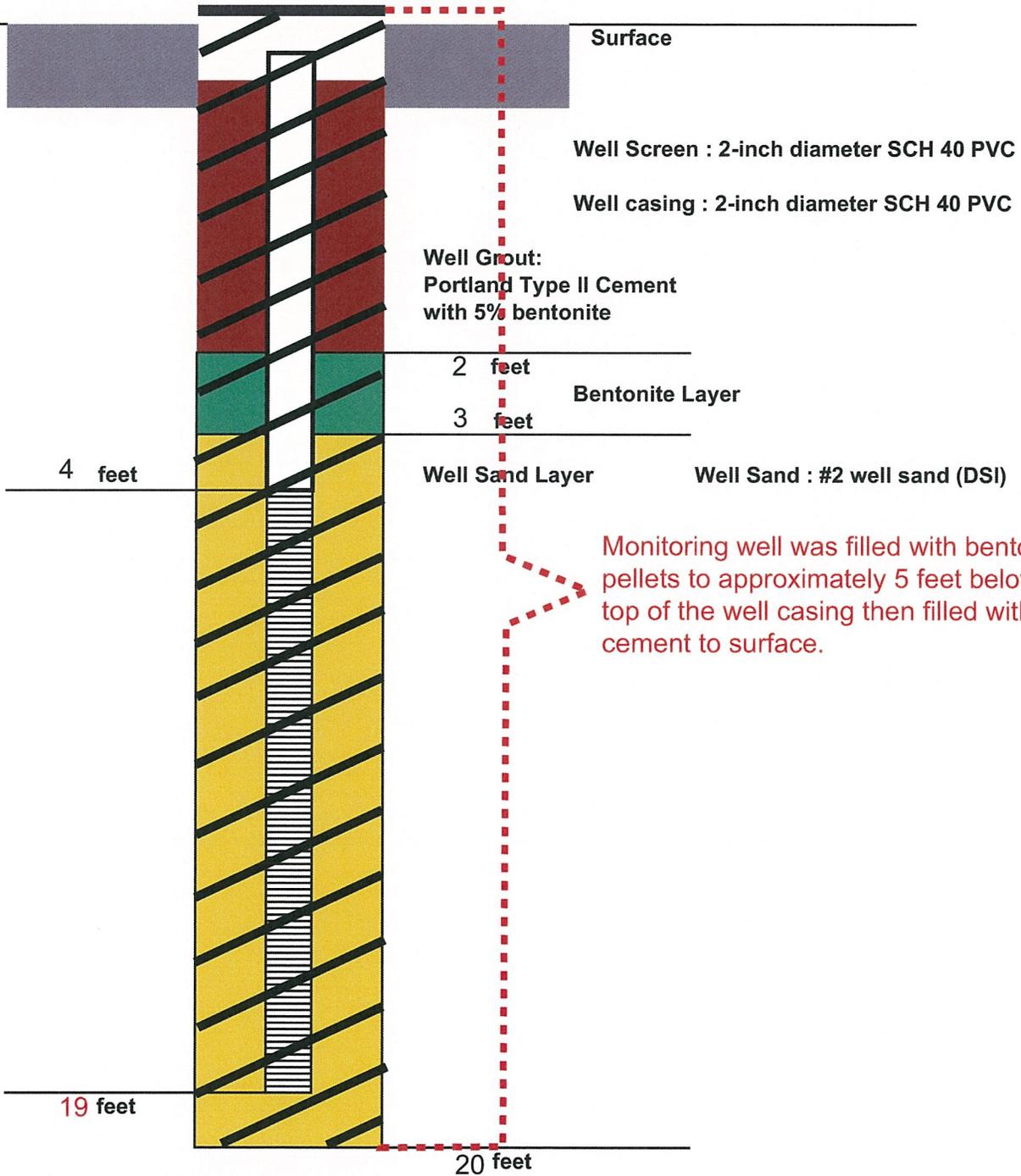
(The private well owner must be an individual who personally abandons his/her residential well in accordance with 15A NCAC 2C .0113.)

Timothy D. Leatherman

PRINTED NAME OF PERSON ABANDONING THE WELL

# Monitoring Well Abandonment Detail for monitoring well MW-5A

8-inch Steel Manhole  
Set in 2 foot square pad (8 inches thick)



**PYRAMID**  
ENVIRONMENTAL & ENGINEERING, P.C.

## Monitoring Well Abandonment Record

Site Name: Main St. Properties of Chapel Hill, LLC  
Address: 206 E. Main St., Carrboro, NC  
Facility ID # NA  
NCDENR Incident#: 26797



# WELL ABANDONMENT RECORD

North Carolina Department of Environment and Natural Resources- Division of Water Quality

WELL CONTRACTOR CERTIFICATION # 2888-A

### 1. WELL CONTRACTOR:

Timothy D. Leatherman  
Well Contractor (Individual) Name

Pyramid Environmental & Engineering, P.C.  
Well Contractor Company Name

STREET ADDRESS P.O. Box 16265

Greensboro, NC 27416-0265  
City or Town State Zip Code

(336) - 335 - 3174  
Area code - Phone number

### 2. WELL INFORMATION:

SITE WELL ID # (if applicable) MW-6

STATE WELL PERMIT # (if applicable) N/A

COUNTY WELL PERMIT # (if applicable) N/A

DWQ or OTHER PERMIT # (if applicable) N/A

WELL USE (Check applicable use):  Monitoring  Residential

Municipal/Public  Industrial/Commercial  Agricultural

Recovery  Injection  Irrigation

Other (list use) \_\_\_\_\_

### 3. WELL LOCATION:

COUNTY Orange QUADRANGLE NAME \_\_\_\_\_

NEAREST TOWN: Carrboro, North Carolina

206 East Main Street

(Street/Road Name, Number, Community, Subdivision, Lot No., Parcel, Zip Code)

#### TOPOGRAPHIC / LAND SETTING:

Slope  Valley  Flat  Ridge  Other \_\_\_\_\_

(Check appropriate setting)

LATITUDE N 35 54' 38.13"

LONGITUDE W 79 04' 09.10"

May be in degrees, minutes, seconds, or in a decimal format

Latitude/longitude source:  GPS  Topographic map

(Location of well must be shown on a USGS topo map and attached to this form if not using GPS.)

4a. FACILITY- The name of the business where the well is located. Complete 4a and 4b. (If a residential well, skip 4a; complete 4b, well owner information only.)

FACILITY ID #(if applicable) \_\_\_\_\_

NAME OF FACILITY Don C. Christian, Former Property

STREET ADDRESS 206 E. Main Street

Carrboro NC  
City or Town State Zip Code

### 4b. CONTACT PERSON/WELL OWNER:

NAME Main Street Properties of Chapel Hill, LLC

STREET ADDRESS PO Box 2152, Chapel Hill, NC 27515

### 5. WELL DETAILS:

a. Total Depth: 41 ft. Diameter: 2 in.

b. Water Level (Below Measuring Point): 10.80 ft.

Measuring point is 0 ft. above land surface.

### 6. CASING:

a. Casing Depth (if known): 41 ft. 2 in.

b. Casing Removed: 0 ft. \_\_\_\_\_ in.

### 7. DISINFECTION: 0.2 pounds

(Amount of 65%-75% calcium hypochlorite used)

### 8. SEALING MATERIAL:

#### Neat Cement

Cement 12 lb.  
Water 1.0 gal.

#### Sand Cement

Cement \_\_\_\_\_ lb.  
Water \_\_\_\_\_ gal.

#### Bentonite

Bentonite \_\_\_\_\_ lb.

Type:  Slurry  Pellets

Water \_\_\_\_\_ gal.

#### Other

Type material \_\_\_\_\_

Amount \_\_\_\_\_

### 9. EXPLAIN METHOD OF EMPLACEMENT OF MATERIAL:

Slow Pour bentonite - tremmie pipe neat cement

10. WELL DIAGRAM: Draw a detailed sketch of the well on the back of this form showing total depth, depth and diameter of screens (if any) remaining in the well, gravel interval, intervals of casing perforations, and depths and types of fill materials used.

11. DATE WELL ABANDONED 11/8/13

I DO HEREBY CERTIFY THAT THIS WELL WAS ABANDONED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

SIGNATURE OF CERTIFIED WELL CONTRACTOR \_\_\_\_\_

DATE

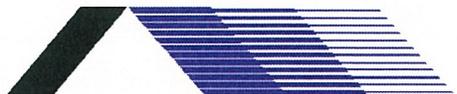
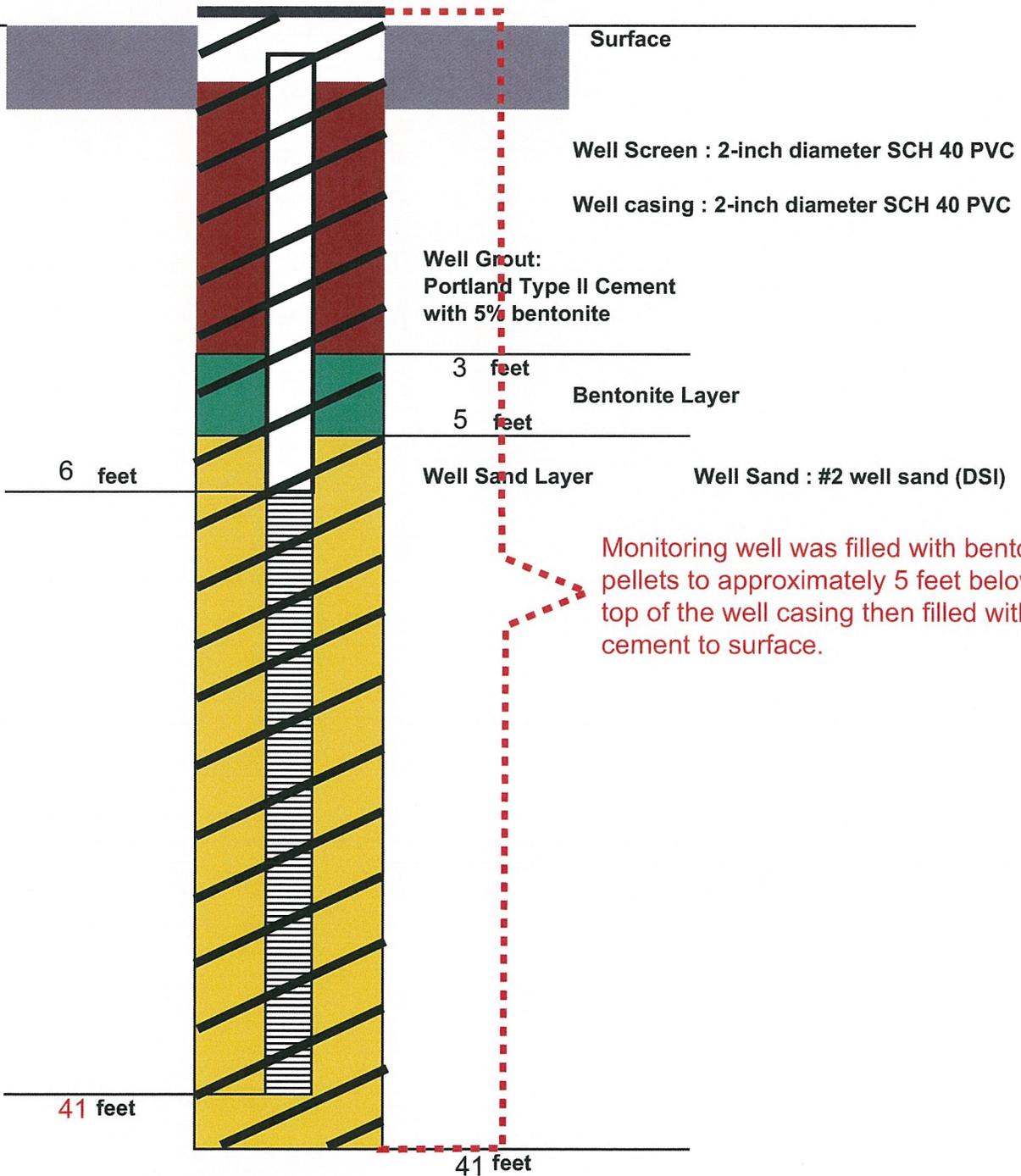
SIGNATURE OF PRIVATE WELL OWNER ABANDONING THE WELL \_\_\_\_\_ DATE  
(The private well owner must be an individual who personally abandons his/her residential well in accordance with 15A NCAC 2C .0113.)

Timothy D. Leatherman

PRINTED NAME OF PERSON ABANDONING THE WELL

# Monitoring Well Abandonment Detail for monitoring well MW-6

8-inch Steel Manhole  
Set in 2 foot square pad (8 inches thick)



**PYRAMID**  
ENVIRONMENTAL & ENGINEERING, P.C.

## Monitoring Well Abandonment Record

Site Name: Main St. Properties of Chapel Hill, LLC  
Address: 206 E. Main St., Carrboro, NC  
Facility ID # NA  
NCDENR Incident#: 26797

## **APPENDIX B**

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**MOBILE  
MULTI-PHASE  
EXTRACTION REPORT**

**SITE LOCATION**

Main Street Properties (EPA ID # 26797)  
206 E. Main Street  
Carrboro, NC 27510

**Prepared For:**

Pyramid Environmental & Engineering PC  
PO Box 16265  
Greensboro, NC 27416  
Phone: (336) 335-3174

**February 3, 2014**

# TABLE OF CONTENTS

- EVENT SUMMARY
- FIELD NOTES
- DISPOSAL MANIFESTS

**MOBILE MULTI-PHASE EXTRACTION**  
**EVENT SUMMARY**

**February 3, 2014**

**Location:** Main Street Properties (EPA # 26797)  
206 E. Main Street  
Carrboro, NC 27510

**Client:** Pyramid Environmental & Engineering PC  
Greensboro, NC  
Hill Job Number # 14-102

**Event Date:** January 13, 2014 – January 17, 2014

**Personnel:** Hubert McAvinney & Danny Oldham

**MMPE System:** 300 CFM MMPE System

**Extraction Wells:** MW-1A

Well	Initial FP	Final FP	Stinger Depth	Run Time
MW-1A	0	0	N/A	96 hrs

**Description of Events:**

The MMPE event ran from 11:30 a.m. January 13, 2014 through 11:30 a.m. January 17, 2014. The MMPE system was active for approximately 96 hours. During the event, vacuum at the recovery pump ranged from 22 - 26 inches of mercury (hg). Effective vacuum was achieved while connected to a single well, MW-1A. Temperature ranged from 80 - 150 degrees F and humidity ranged from 95 - 100 percent. Total field gauged volatile organic compounds decreased from 1,450 - 1,000 parts per-million (PPM) throughout the event.

**Groundwater / Product Mix Recovered:**

During the event a total of **4,436 gallons of product/water mix** were recovered from the site and properly disposed at a certified North Carolina disposal facility. Total fluids recovered, was measured based on stick readings conducted during and following the event. Based on 96 hours of operation and a total 4,436 gallons recovered during the event, the average groundwater recovery rate from the well calculated to be approximately **46.21 gallons per hour**.

**Event Results:**

There was 0 gallons of free product recovered as liquid. During the event a total of 4,436 gallons of product/water mix was recovered and properly disposed of at a North Carolina disposal facility. The total hydrocarbons removed during this event in pounds were 109.13 pounds. Total vapors recovered were calculated to be 17.46 gallons. The total amount of gasoline recovered as vapors and free product was estimated to be 17.46 gallons (i.e. 17.46 vapors plus 0 gallon of free product recovered).



**MMPE FIELD NOTES**  
**JANUARY 2014**  
**14-102 Main Street Properties (EPA ID# 26797)**  
**206 E. Main Street, Carrboro, NC 27510**

**MONDAY JAN 13**                    **Hubert arrives at 10:30. Garco tanker arrives at 10:15. Flow meter initial reading 216415. Generator hour meter initial reading 843.1. Connect to single well MW-1A; 20' deep 2".**

**TUESDAY JAN 14**                **Hubert on site at 13:00. Approximately 2,000 gallons in tanker, throughput since start of event. Generator hour meter reading 868.5 Flow meter reading 218169. Approximately 70 g.p.h. flow rate. Fueled generator.**

**WEDNESDAY JAN 15**            **Hubert on site at 11:00. Approximately 3,000 gallons throughput since start of event. Generator hour meter reading 891.9. Flow meter reading 219103. Approximately 60 g.p.h. flow rate. Fueled generator.**

**THURSDAY JAN 16**              **Hubert on site at 11:30. Approximately 4,000 gallons throughput since start of event. Generator hour meter reading 915.1. Flow meter reading 220034. Approximately 50 g.p.h. flowrate. Fueled generator.**

**FRIDAY JAN 17**                 **Hubert on site 10:00. Generator hour meter final reading 939.1. Final flow meter reading 220918. Breakdown site. Garco pick up manifest 4,436 gallons.**

## MMPE Field Data Sheet

**Client:** Pyramid Environmental  
**Job Name:** Main Street Properties (EPA ID # 26797)  
**Location:** 206 E. Main Street, Carrboro, NC 27510  
**MMPE Event Dates:** 01/13/2014 -01/17/2014  
**Job #:** 14-102

Date	Time	Exhaust Velocity (cfm)	Exhaust Diameter (in.)	Humidity %	Temp (f)	OVA/OVM (ppm)	K*	System Vac (Hg")	Tank Stick (in.)	Flow Meter
1/13/2014	11:30	80	3	95	80	1,450	6	26		216415
1/13/2014	11:45	100	3	95	110	1,850	6	26		
1/13/2014	12:00	100	3	95	122	2,150	6	26		
1/13/2014	12:15	100	3	95	136	1,200	6	26		216535
1/13/2014	13:15	100	3	95	150	900	6	26		216720
1/13/2014	14:15	110	3	95	150	600	6	26		216853
1/14/2014	13:00	130	3	100	141	370	6	22		218169
1/14/2014	14:00	130	3	97	144	430	6	22	24	218243
1/14/2014	15:00	130	3	95	147	310	6	23		218281
1/15/2014	11:15	130	3	95	144	770	6	22		219103
1/15/2014	12:15	130	3	95	135	840	6	22		219177
1/15/2014	13:45	130	3	95	140	570	6	22		219216
1/16/2014	11:30	130	3	95	141	910	6	22	38	220034
1/16/2014	12:30	150	3	95	139	1,000	6	22		220071
1/16/2014	13:30	140	3	95	140	820	6	22		220108
1/17/2014	7:00	140	3	95	140	980	6	22		220740
1/17/2014	8:00	140	3	95	140	950	6	22		220812
1/17/2014	9:00	140	3	95	138	910	6	22		
1/17/2014	10:00	140	3	95	141	990	6	22		
1/17/2014	11:30	140	3	95	134	1,000	6	22	46	220918

Notes: For OVA calibrated with methane, K=1  
 For OVM calibrated with hexane, K=6

# MMPE Field Data Sheet

## EXTRACTION POINTS

**Client:** Pyramid Environmental  
**Job Name:** Main Street Properties (EPA ID # 26797)  
**Location:** 206 E. Main Street, Carrboro, NC 27510  
**MMPE Event Dates:** 01/13/2014 - 01/17/2014  
**Job #:** 14-102

Date	Time	Extraction Points		Stinger Depths (Feet)
		MW-1A	Vacuum (in-Hg)	
1/13/2014	12:00	27		MW-1A
1/14/2014	13:00	23		N/A
1/15/2014	12:00	23		N/A
1/16/2014	11:30	22		N/A
1/17/2014	10:00	23		N/A

Well #	PRE			POST		
	Free Product	Water Level	Stingers	Free Product	Water Level	Stingers
MW-1A		3.67	N/A			N/A

# GARCO, Inc.

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Environmental, Industrial & Recycling Services

## *Certificate of Disposal*

**GENERATOR:** Main Street Properties  
206 East Main Street  
Carrboro, NC

**MANIFEST #:** 14001

**MATERIAL ACCEPTED:**

1 - TT(s) - (4436 - gal.) - Non-Hazardous Material -  
Petroleum Contaminated Water

**DISPOSAL METHOD:**

Waste Water Treatment

GARCO, Inc accepted the above listed materials on 1/17/2014.

GARCO, Inc has accepted custody of the above referenced non-hazardous material. This material has been determined to be non-hazardous by a material profile, generator knowledge, and/or analytical data provided to GARCO, Inc.

  
\_\_\_\_\_  
Greg Russell  
President

# GARCO, Inc.

## NON-HAZARDOUS WASTE MANIFEST

Please print or type

<b>NON-HAZARDOUS WASTE MANIFEST</b>		Manifest Document No. 14001	Page 1 of
3. Generator's Name and Mailing Address Main Street Properties 206 East Main Street Carrboro, NC		1. Generator's US EPA ID No.	
		4. Generator's Phone	
5. Transporter 1 Company Name GARCO, Inc.	8. US EPA ID No. NCR000135384	B. Transporter 1 Phone (336) 683-0911	
7. Transporter 2 Company Name	8. US EPA ID No.	D. Transporter 2 Phone	
9. Designated Facility Name and Site Address GARCO, Inc 2503 N. Fayetteville St. Asheboro, NC 27203		10. US EPA ID Number NCR000135384	
		F. Facility's Phone (336) 683-0911	
11. Waste Description	12. Containers No.	Type	13. Total Quantity
A) Non-Hazardous Material		TT	4436
B)			G
C)			
D)			
G. Additional Descriptions for Materials Listed Above			
A) Petroleum Contaminated Water		C)	
B)		D)	
15. Special Handling Instructions and Additional Information 24 Hour ER# 800-814-1204			
16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.			
Printed/Typed Name <i>ROBERT M SAVINNEK</i>		Signature <i>Robert M Savinnek</i>	Date Month Day Year 01 17 14
17. Transporter 1 Acknowledgement of Receipt of Materials			
Printed/Typed Name <i>Philip Cauthen</i>		Signature <i>Philip Cauthen</i>	Date Month Day Year 1 17 14
18. Transporter 2 Acknowledgement of Receipt of Materials			
Printed/Typed Name		Signature	Date Month Day Year
19. Discrepancy Indication Space			
20. Facility Owner or Operator; Certification of receipt for waste materials covered by this manifest, except as noted above.			
Printed/Typed Name <i>Dennis Crowder</i>		Signature <i>Dennis Crowder</i>	Date Month Day Year 1 17 14

# GARCO, Inc.

Environmental, Industrial & Recycling Services  
Post Office Box 1907 / Asheboro, NC 27204-1907

## Invoice

Date	Invoice #
1/22/2014	30576

Bill To
Hill Equipment Inc. P. O. Box 16043 Greensboro, NC 27416

OK TO PAY  
2-3-14

P.O. No.	Terms	Due Date	Rep	Project	Contact
14-102	Net 30	2/21/2014	AK	Carrboro, NC	Hubert McAvinney

Qty	Description	Rate	Amount
	Main Street Properties		
1	Tanker mobilization on 1/13/14 and demobilization on 1/17/14	1,200.00	1,200.00
4,436	Gallons of non-hazardous groundwater disposed on 1/17/14	0.15	665.40
	Manifest No. 14001		
	0 gallons of product recovered		
Thank you for your business!		<b>Total</b>	\$1,865.40

PLEASE REMIT PAYMENT TO:

Post Office Box 1907 / Asheboro, NC 27204-1907 / 336-683-0911 / Fax 336-683-0811

## **APPENDIX C**

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# **Standard Field Procedures**

## **Pyramid Environmental & Engineering, P.C.**

### **1.0 Equipment Decontamination:**

Equipment decontamination is essential to assure representative environmental samples are collected and to eliminate the potential for cross contamination between sample points. Pyramid strives to clean all field equipment prior to leaving the office; however, field decontamination is still required on most projects. The procedures for decontamination of water level probes, hand augers, sampling probes and trowels, and other field equipment are listed below.

#### **1.1 EPA Region IV Decontamination Procedures:**

Drilling and soil sampling equipment is decontaminated prior to use using a pressure washer or steam cleaner. Reusable sampling equipment, hand augers, sampling probes and trowels, split spoon samplers, water sampling equipment are decontaminated using the general procedure described below.

1. Wash with non-phosphate detergent and water, brush to remove particulate matter.
2. Rinse with tap water.
3. Rinse with 10 percent nitric acid solution (only if sampling for metals)
4. Rinse with deionized water.
5. Rinse with pesticide-grade isopropyl alcohol.
6. Rinse with deionized water.
7. Air-dry as long as possible.

The level of decontamination used is appropriate to the analytical parameters selected and the material being used for sampling. For example, if metals analyses are required, then the 10 % nitric acid solution is used for decontamination of stainless steel equipment. Pyramid obtains laboratory grade deionized water in gallon jugs from the analytical laboratory for use in decontamination. Equipment that is not used immediately after decontamination is wrapped in aluminum foil prior to storage.

### **2.0 Soil Boring Installation & Sampling:**

Soil borings are used by Pyramid to characterize the subsurface at many sites. The borings provide information concerning soil types and density, depth to refusal, depth to bedrock, organic vapors that may be present, and can be used to obtain samples for laboratory analysis. Pyramid conducts borings in many different ways, using hand augers, Direct Push equipment (Geoprobe), sample probes, split-spoon samplers (ASTM D 1586-84), auger drilling, air drilling, and Virbo-Core. The following procedures are used by Pyramid Environmental when performing soil borings:

1. Soil boring locations are chosen, and the utility locating service is called to mark all utilities. If private utilities at the site need to be located in addition to the public utility locating service, then these utilities are located and marked by a private utility locator service.

2. Down hole drilling equipment is cleaned prior to use and between borings using pressure washing. Additional decontamination procedures are used for quality assurance for sampling tools such as split spoons or Direct-Push Points.
3. Soil borings are advanced using direct-push, drilling rigs, hand augers, or other appropriate means.
4. Soil samples are normally collected at a minimum of 5-foot intervals. Each sample is divided into two parts. Soil samples for laboratory analyses are jarred from the initial sample volume. The remaining soil is stored in a sealed container for headspace analysis with an organic vapor analyzer (OVA). After screening the soil with the field instruments, each soil sample is described by the field geologist and a geologic description is recorded in the field notes.
5. Soil samples selected for laboratory analysis are placed in properly prepared, laboratory supplied containers and immediately packed in a cooler on ice. Sample custody is maintained using standard chain-of-custody procedures through delivery to the analytical laboratory.
6. Soil borings, which are not completed as monitor wells are grouted using a Portland cement, bentonite, or backfilled with soil cuttings.
7. Soils are typically described in the field by the project geologist or soil scientist and are classified according to the Unified Soil Classification System (ASTM D 2488-84).

## **2.1 Headspace Screening:**

Soil samples are routinely screened for volatile organic compounds (VOCs) which may be an indication of organic or petroleum hydrocarbon contamination. The typical screening procedure includes immediately transferring the soil from the sampling devices to a sealed container (sealed plastic bag). The soil container is filled approximately halfway with soil and sealed. This creates headspace above the soil in which VOCs may accumulate. The container is allowed to stand for 5 to 15 minutes for the VOCs to equilibrate in the headspace of the container. The headspace of the container is then screened using a calibrated organic vapor analyzer (PID or FID). The screening is conducted by cracking the seal only enough to allow insertion of the probe into the headspace so as not to dilute the sample. In most cases where the contaminant of concern includes volatile organics, the soil samples showing the highest OVA readings from each boring are selected for laboratory analysis.

## **2.2 Soil Sample Collection for Laboratory Analysis:**

After the soil sampling depth has been reached, soil samples are collected using a variety of sampling devices. The soil sample methods include sampling from split-spoons, stainless steel hand augers, stainless steel sampling scoops, and directly from the center of the excavator bucket. The sample technician uses appropriate disposable sampling gloves, which are changed between samples to avoid cross-contamination of samples. Each sampling device is decontaminated prior to use. Only laboratory provided containers are used for sample collection. Samples are collected in accordance with the preservation methods required by the requested analytical method. Samples are handled as little as possible and preserved in the field as specified for the analytical method. The samples are stored and transported to the laboratory in an insulated cooler chilled to approximately 4 degrees C. The samples are labeled with a minimum of the following information: project name or number, sampler name, date collected, sample number, and analysis requested. Sample custody is maintained using standard chain-of-custody procedures through delivery to the analytical laboratory. Notes of the sampling events are recorded in bound field notebooks.

### **3.0 Direct Push Sampling Procedures**

Direct Push sampling techniques has been used at many sites to collect soil and groundwater samples rapidly and inexpensively. Track mounted direct push rigs can access hard to reach areas and allow borings and small diameter monitoring wells to be installed. Pyramid has used this technology to the benefit of our clients at many sites.

For soil sampling, typically, the direct push steel drive tube is decontaminated using a water pressure, and a new plastic liner is inserted in the steel drive tube to collect the sample. If necessary, the stainless-steel sampling tube is decontaminated using Region IV decontamination procedures. The soil samples are collected in new polyethylene liner tubes within the steel drive tube. The soil sample is then extracted from the polyethylene liner and preserved as required for the appropriate laboratory analysis.

The steel tubing and screen are driven to depth and the screened section is opened to allow groundwater to enter the tubing. The water samples are withdrawn using new polyethylene tubing with either a decontaminated stainless-steel check ball, or peristaltic pump. The groundwater sample is placed directly into the appropriate laboratory containers and sealed immediately. To prevent cross contamination of samples, new disposable tubing is used for each groundwater sample point. Disposable nitrile gloves are worn by field personnel during sampling, and gloves are changed between samples. Groundwater sampling procedures are detailed more in section 5.0., and are changed as appropriate for each analytical method.

### **4.0 Monitoring Well Installation**

Monitoring wells are installed in many subsurface environments; sedimentary, Piedmont saprolite, and mountain terrains to list a few. Formations encountered include unconsolidated and consolidated sediments, saprolitic formations, weathered bedrock, and bedrock. Groundwater monitoring wells provide a stable sampling point at discrete intervals within the confined or unconfined aquifers. Monitoring wells are installed for a number of reasons, and are typically installed as 1-inch, 2-inch, 4-inch, or 6-inch diameter wells. Construction may be of PVC or other appropriate materials. The following procedures are used by Pyramid when performing borings and monitoring well installations :

1. If required, monitoring well permits are obtained from the State, County, or City agency.
2. Boring and monitoring well locations are chosen, and utilities are marked by the public utility locating company. In some cases the drill locations are also checked using a private utility locator.
3. In selecting a drill site, care is given to avoid overhead power lines, and subsurface utilities whenever possible.
4. Down hole drilling equipment is washed prior to use and between borings.
5. Borings are advanced using direct-push, drilling rigs, hand augers, or other appropriate means. Monitoring well drilling usually includes using hand auger, solid-stem augers, hollow-stem augers, air rotary drilling, or air hammer drilling.
6. Soil samples are normally collected at a minimum of 5-foot intervals. Each sample is divided into two parts. Soil samples for laboratory analyses are jarred from the initial sample volume. The

remaining soil is stored in a sealed container for headspace analysis with an organic vapor analyzer (OVA). After screening the soil with the field instruments, each soil sample is described by the field geologist and a geologic description is recorded in the field notes.

7. Type II monitoring wells are usually installed using 2-inch diameter schedule 40 PVC riser and 2-inch, 0.010-inch slotted well screen. The screened interval varies with the purpose, and well details are presented with the boring logs.
8. Type III wells are usually installed as double cased wells to monitor the deeper portions of the aquifer. The first casing is usually a 6-inch diameter casing drilled to bedrock or an appropriate depth within the saprolite. The 6-inch diameter casing is then set and grouted in the borehole. After the cement grout has set for 24-hours, the borehole is completed to the desired depth using air rotary drilling or an air hammer. The Type III monitor well is usually constructed of 2-inch diameter sch 40 PVC casing and 2-inch diameter 0.010-inch slotted well screen.
9. In most applications, a sand filter pack of #2 well sand (or appropriate well sand) is typically installed to a level of 2 feet above the top of the screen in each well. A minimum 2-foot thick bentonite seal is usually placed on top of the filter pack and hydrated with deionized or distilled water. The remaining annular space of a typical well is backfilled to grade with a Portland cement/bentonite grout. In monitoring wells where the water table is close to surface, the amount of sand above the screen and bentonite will be reduced to allow for a minimum of 2 –3 feet of cement grout.
10. At the surface, each well is usually secured with a locking cap and a steel well protector set in a 2 by 2 foot concrete pad. In some cases, stick-up well protectors are used to secure the well and allow the well to more easily be located in wooded or open areas.
11. Each monitoring well is developed by surging, pumping, or bailing to obtain clear water samples. All water removed during development was managed according to State specific standards.

## **5.0 Water Sampling Procedures**

Pyramid relies on water sampling as a primary method for assessment of subsurface conditions. Water sampling typically includes sampling groundwater from monitoring wells, supply wells, surface water bodies, waste pits, sumps, etc.... The following provides typical sampling procedures for the major sample types.

### **5.1 Monitoring Wells**

1. Prior to sampling each monitor well, depth to product/groundwater and total well depth are measured using a properly decontaminated electric interface probe. This information is recorded in the field record and the volume of the water in the well casing is calculated.
2. To purge stagnant water from each monitor well, five well casing volumes of water are removed from each well, or until the field parameters pH, Conductivity, D.O., and Temperature have stabilized. If the water in the monitoring well is removed until the well is dry, then the well is

sampled thereafter. Water removed from wells during purging is managed according to the DENR Guidelines.

3. Depending on project requirements, temperature, pH, specific conductance, dissolved oxygen, and other parameters may be measured prior to sampling.
4. Groundwater samples are typically collected using a new disposable polyethylene bailer and a new length of nylon cord. To prevent cross contamination of samples between wells, a new disposable bailer is used for each well. A new pair of disposable gloves is worn by field personnel during purging and sampling, and is changed between wells.
5. In the case of small diameter monitoring wells or direct-push water samples, water samples may be collected using a peristaltic pump and new polyethylene tubing. Another method is to use a segment of new polyethylene tubing and a stainless-steel check ball to create a "Tube Bailer".
6. Groundwater samples selected for laboratory analysis are placed in properly prepared, laboratory supplied containers and immediately packed in a cooler on ice. Samples are maintained under strict control using standard chain-of-custody procedures through laboratory analysis.

## **5.2 Water Supply Well Sampling Procedures**

1. Prior to sampling each water supply well, the well owner is contacted to provide access to the well. The well owner is interviewed to find the faucet closest to the well for sampling. If there are no faucets located on the well, then an outside faucet is used. If there are no outside faucets available, then an inside tap is used. The information regarding the location of the faucet is recorded in the field book.
2. The owner is interviewed to see if there is a chlorination system on the well, or if the well has been recently chlorinated. Recent chlorination could affect the laboratory detection limits. In most cases, the samples are preserved using sodium thiasulfate or ascorbic acid to remove the interactions of chlorine, which may be present in the samples.
3. To purge stagnant water from the water supply well system, the faucet is allowed to run on full stream for a minimum of 15 minutes. The aerator is removed from the tap if one is present. Water removed from wells during purging is managed according to State Standards.
4. Supply well samples are collected using appropriate laboratory prepared containers for each analysis. The analytical methods selected will vary with the contaminant of interest.
5. To prevent cross contamination of samples between wells, disposable latex gloves are worn by field personnel during purging and sampling and are changed between wells.
6. It is possible that samples may be required at several places within the water supply system. The samples will be collected accordingly and labeled to show the source and location sampled.
7. Supply well samples selected for laboratory analysis are placed in properly prepared, laboratory supplied containers and immediately packed in a cooler on wet ice, and chilled to approximately 4 degrees Celsius. Samples are maintained under strict control using standard chain-of-custody procedures through laboratory analysis.

### **5.3 Surface Water Sampling**

Surface water samples are obtained using several techniques including use of sample bailers, scoops, from boats, bridges, or actually wading into a stream. Caution should always be used when sampling surface water to insure that the water collected is representative of the conditions. Since stream or open water sampling is transient, careful documentation of the conditions is required. In many studies, additional samples from upstream and downstream of the desired sample point are required. Surface water sampling must be planned to reflect the desired conditions during sampling. The general procedures are similar to the supply well sampling procedures detailed above.

1. Prepare the appropriate laboratory prepared containers for each analysis. The analytical methods selected will vary with the contaminant of interest.
2. To prevent cross contamination of samples between samples, disposable latex gloves are worn by field personnel during purging and sampling and are changed between samples.
3. It is possible that samples may be required at several places along the stream to check for influences of up-stream facilities. The samples will be collected accordingly and labeled to show the source and location sampled.
4. Sample will always be collected upstream of the area disturbed by the sampler.
5. Surface water samples selected for laboratory analysis are placed in properly prepared, laboratory supplied containers and immediately packed in a cooler on ice. Samples are maintained under strict control using standard chain-of-custody procedures through laboratory analysis.

## 6.0 Quality Assurance / Quality Control

The decontamination procedures listed above have been implemented on many sites with excellent results. The procedures are often verified by an appropriate use of the following environmental sample “Blanks”.

**Trip Blanks** are used to verify that the sample containers are not impacted during shipping, and verify that the source of the glassware is not the source of contamination. The Trip Blanks are preserved de-ionized water, collected in the laboratory, and shipped with the sample containers to the site. The trip blank remains in the cooler and is shipped back to the laboratory with the environmental samples. The Trip Blank is usually analyzed for volatile organics, which correspond to the target analyses.

**Field Blanks** are quality assurance samples which are collected in the field to represent the conditions present at the time the samples are collected. For water samples, the laboratory containers are opened and filled in the field using de-ionized (or distilled) water from a known source. The samples then travel to the laboratory with the other samples for analysis.

**Equipment Blanks** are used to verify whether the decontamination procedures used were effective in removing the contaminants from the sampling device. If a non-disposable sampling device is used (such as a sampling treir, scoop, hand auger, Teflon bailer, etc..., then the decontamination of the sampling device is usually verified using an equipment blank. The equipment blank is collected using de-ionized (or distilled) water from a known source. The equipment is cleaned, and allowed to dry, the water is poured over or through the equipment, and collected in the appropriate sample containers. The equipment blank samples are preserved with the other environmental samples, and shipped for analyses for the target parameters.

**Duplicate Samples** are used to verify the sampling procedures and laboratory analysis variability. The duplicate samples may be collected from waste streams, soil, or groundwater. These samples are collected and sent to the laboratory as a blind sample to have maximum effectiveness. Samples are generally analyzed for the same analytical methods as the actual environmental sample for direct comparison.

## **APPENDIX D**

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February 27, 2014

Mr. Mike Jones  
Pyramid Environmental  
P.O. Box 16265  
503 Industrial Avenue  
Greensboro, NC 27416

RE: Project: Don Christian Property  
Pace Project No.: 92190297

Dear Mr. Jones:

Enclosed are the analytical results for sample(s) received by the laboratory on February 19, 2014. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Analyses were performed at the Pace Analytical Services location indicated on the sample analyte page for analysis unless otherwise footnoted.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jon D Bradley  
jon.bradley@pacelabs.com  
Project Manager

Enclosures



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: Don Christian Property

Pace Project No.: 92190297

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### Charlotte Certification IDs

9800 Kincey Ave. Ste 100, Huntersville, NC 28078  
North Carolina Drinking Water Certification #: 37706  
North Carolina Field Services Certification #: 5342  
North Carolina Wastewater Certification #: 12  
South Carolina Certification #: 99006001

Florida/NELAP Certification #: E87627  
Kentucky UST Certification #: 84  
West Virginia Certification #: 357  
Virginia/VELAP Certification #: 460221

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### SAMPLE ANALYTE COUNT

Project: Don Christian Property

Pace Project No.: 92190297

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<b>Lab ID</b>	<b>Sample ID</b>	<b>Method</b>	<b>Analysts</b>	<b>Analytes Reported</b>	<b>Laboratory</b>
92190297001	MW-1A	SM 6200B	CAH	63	PASI-C

### REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Don Christian Property

Pace Project No.: 92190297

Sample: MW-1A	Lab ID: 92190297001	Collected: 02/18/14 15:00	Received: 02/19/14 17:45	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>6200B MSV</b>		Analytical Method: SM 6200B						
Benzene	298 ug/L		2.5	5		02/25/14 21:49	71-43-2	
Bromobenzene	ND ug/L		2.5	5		02/25/14 21:49	108-86-1	
Bromochloromethane	ND ug/L		2.5	5		02/25/14 21:49	74-97-5	
Bromodichloromethane	ND ug/L		2.5	5		02/25/14 21:49	75-27-4	
Bromoform	ND ug/L		2.5	5		02/25/14 21:49	75-25-2	
Bromomethane	ND ug/L		25.0	5		02/25/14 21:49	74-83-9	
n-Butylbenzene	ND ug/L		2.5	5		02/25/14 21:49	104-51-8	
sec-Butylbenzene	ND ug/L		2.5	5		02/25/14 21:49	135-98-8	
tert-Butylbenzene	ND ug/L		2.5	5		02/25/14 21:49	98-06-6	
Carbon tetrachloride	ND ug/L		2.5	5		02/25/14 21:49	56-23-5	
Chlorobenzene	ND ug/L		2.5	5		02/25/14 21:49	108-90-7	
Chloroethane	ND ug/L		5.0	5		02/25/14 21:49	75-00-3	
Chloroform	ND ug/L		2.5	5		02/25/14 21:49	67-66-3	
Chloromethane	ND ug/L		5.0	5		02/25/14 21:49	74-87-3	
2-Chlorotoluene	ND ug/L		2.5	5		02/25/14 21:49	95-49-8	
4-Chlorotoluene	ND ug/L		2.5	5		02/25/14 21:49	106-43-4	
1,2-Dibromo-3-chloropropane	ND ug/L		5.0	5		02/25/14 21:49	96-12-8	
Dibromochloromethane	ND ug/L		2.5	5		02/25/14 21:49	124-48-1	
1,2-Dibromoethane (EDB)	3.7 ug/L		2.5	5		02/25/14 21:49	106-93-4	
Dibromomethane	ND ug/L		2.5	5		02/25/14 21:49	74-95-3	
1,2-Dichlorobenzene	ND ug/L		2.5	5		02/25/14 21:49	95-50-1	
1,3-Dichlorobenzene	ND ug/L		2.5	5		02/25/14 21:49	541-73-1	
1,4-Dichlorobenzene	ND ug/L		2.5	5		02/25/14 21:49	106-46-7	
Dichlorodifluoromethane	ND ug/L		2.5	5		02/25/14 21:49	75-71-8	
1,1-Dichloroethane	ND ug/L		2.5	5		02/25/14 21:49	75-34-3	
1,2-Dichloroethane	ND ug/L		2.5	5		02/25/14 21:49	107-06-2	
1,1-Dichloroethene	ND ug/L		2.5	5		02/25/14 21:49	75-35-4	
cis-1,2-Dichloroethene	ND ug/L		2.5	5		02/25/14 21:49	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		2.5	5		02/25/14 21:49	156-60-5	
1,2-Dichloropropane	ND ug/L		2.5	5		02/25/14 21:49	78-87-5	
1,3-Dichloropropane	ND ug/L		2.5	5		02/25/14 21:49	142-28-9	
2,2-Dichloropropane	ND ug/L		2.5	5		02/25/14 21:49	594-20-7	
1,1-Dichloropropene	ND ug/L		2.5	5		02/25/14 21:49	563-58-6	
cis-1,3-Dichloropropene	ND ug/L		2.5	5		02/25/14 21:49	10061-01-5	
trans-1,3-Dichloropropene	ND ug/L		2.5	5		02/25/14 21:49	10061-02-6	
Diisopropyl ether	99.3 ug/L		2.5	5		02/25/14 21:49	108-20-3	
Ethylbenzene	74.7 ug/L		2.5	5		02/25/14 21:49	100-41-4	
Hexachloro-1,3-butadiene	ND ug/L		10.0	5		02/25/14 21:49	87-68-3	
Isopropylbenzene (Cumene)	4.4 ug/L		2.5	5		02/25/14 21:49	98-82-8	
Methylene Chloride	ND ug/L		10.0	5		02/25/14 21:49	75-09-2	
Methyl-tert-butyl ether	ND ug/L		2.5	5		02/25/14 21:49	1634-04-4	
Naphthalene	48.7 ug/L		10.0	5		02/25/14 21:49	91-20-3	
n-Propylbenzene	7.1 ug/L		2.5	5		02/25/14 21:49	103-65-1	
Styrene	7.7 ug/L		2.5	5		02/25/14 21:49	100-42-5	
1,1,1,2-Tetrachloroethane	ND ug/L		2.5	5		02/25/14 21:49	630-20-6	
1,1,2,2-Tetrachloroethane	ND ug/L		2.5	5		02/25/14 21:49	79-34-5	
Tetrachloroethene	ND ug/L		2.5	5		02/25/14 21:49	127-18-4	

### REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Don Christian Property

Pace Project No.: 92190297

Sample: MW-1A		Lab ID: 92190297001	Collected: 02/18/14 15:00	Received: 02/19/14 17:45	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>6200B MSV</b>		Analytical Method: SM 6200B						
Toluene	<b>602</b>	ug/L	2.5	5		02/25/14 21:49	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	10.0	5		02/25/14 21:49	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	10.0	5		02/25/14 21:49	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	2.5	5		02/25/14 21:49	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	2.5	5		02/25/14 21:49	79-00-5	
Trichloroethene	ND	ug/L	2.5	5		02/25/14 21:49	79-01-6	
Trichlorofluoromethane	ND	ug/L	5.0	5		02/25/14 21:49	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	2.5	5		02/25/14 21:49	96-18-4	
1,2,4-Trimethylbenzene	<b>104</b>	ug/L	2.5	5		02/25/14 21:49	95-63-6	
1,3,5-Trimethylbenzene	<b>44.7</b>	ug/L	2.5	5		02/25/14 21:49	108-67-8	
Vinyl chloride	ND	ug/L	5.0	5		02/25/14 21:49	75-01-4	
m&p-Xylene	<b>329</b>	ug/L	5.0	5		02/25/14 21:49	179601-23-1	
o-Xylene	<b>234</b>	ug/L	2.5	5		02/25/14 21:49	95-47-6	
<b>Surrogates</b>								
1,2-Dichloroethane-d4 (S)	101 %		70-130	5		02/25/14 21:49	17060-07-0	
4-Bromofluorobenzene (S)	99 %		70-130	5		02/25/14 21:49	460-00-4	
Toluene-d8 (S)	100 %		70-130	5		02/25/14 21:49	2037-26-5	

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: Don Christian Property  
Pace Project No.: 92190297

QC Batch: MSV/25883      Analysis Method: SM 6200B  
QC Batch Method: SM 6200B      Analysis Description: 6200B MSV  
Associated Lab Samples: 92190297001

METHOD BLANK: 1143957      Matrix: Water  
Associated Lab Samples: 92190297001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	0.50	02/25/14 19:04	
1,1,1-Trichloroethane	ug/L	ND	0.50	02/25/14 19:04	
1,1,2,2-Tetrachloroethane	ug/L	ND	0.50	02/25/14 19:04	
1,1,2-Trichloroethane	ug/L	ND	0.50	02/25/14 19:04	
1,1-Dichloroethane	ug/L	ND	0.50	02/25/14 19:04	
1,1-Dichloroethene	ug/L	ND	0.50	02/25/14 19:04	
1,1-Dichloropropene	ug/L	ND	0.50	02/25/14 19:04	
1,2,3-Trichlorobenzene	ug/L	ND	2.0	02/25/14 19:04	
1,2,3-Trichloropropane	ug/L	ND	0.50	02/25/14 19:04	
1,2,4-Trichlorobenzene	ug/L	ND	2.0	02/25/14 19:04	
1,2,4-Trimethylbenzene	ug/L	ND	0.50	02/25/14 19:04	
1,2-Dibromo-3-chloropropane	ug/L	ND	1.0	02/25/14 19:04	
1,2-Dibromoethane (EDB)	ug/L	ND	0.50	02/25/14 19:04	
1,2-Dichlorobenzene	ug/L	ND	0.50	02/25/14 19:04	
1,2-Dichloroethane	ug/L	ND	0.50	02/25/14 19:04	
1,2-Dichloropropane	ug/L	ND	0.50	02/25/14 19:04	
1,3,5-Trimethylbenzene	ug/L	ND	0.50	02/25/14 19:04	
1,3-Dichlorobenzene	ug/L	ND	0.50	02/25/14 19:04	
1,3-Dichloropropane	ug/L	ND	0.50	02/25/14 19:04	
1,4-Dichlorobenzene	ug/L	ND	0.50	02/25/14 19:04	
2,2-Dichloropropane	ug/L	ND	0.50	02/25/14 19:04	
2-Chlorotoluene	ug/L	ND	0.50	02/25/14 19:04	
4-Chlorotoluene	ug/L	ND	0.50	02/25/14 19:04	
Benzene	ug/L	ND	0.50	02/25/14 19:04	
Bromobenzene	ug/L	ND	0.50	02/25/14 19:04	
Bromochloromethane	ug/L	ND	0.50	02/25/14 19:04	
Bromodichloromethane	ug/L	ND	0.50	02/25/14 19:04	
Bromoform	ug/L	ND	0.50	02/25/14 19:04	
Bromomethane	ug/L	ND	5.0	02/25/14 19:04	
Carbon tetrachloride	ug/L	ND	0.50	02/25/14 19:04	
Chlorobenzene	ug/L	ND	0.50	02/25/14 19:04	
Chloroethane	ug/L	ND	1.0	02/25/14 19:04	
Chloroform	ug/L	ND	0.50	02/25/14 19:04	
Chloromethane	ug/L	ND	1.0	02/25/14 19:04	
cis-1,2-Dichloroethene	ug/L	ND	0.50	02/25/14 19:04	
cis-1,3-Dichloropropene	ug/L	ND	0.50	02/25/14 19:04	
Dibromochloromethane	ug/L	ND	0.50	02/25/14 19:04	
Dibromomethane	ug/L	ND	0.50	02/25/14 19:04	
Dichlorodifluoromethane	ug/L	ND	0.50	02/25/14 19:04	
Diisopropyl ether	ug/L	ND	0.50	02/25/14 19:04	
Ethylbenzene	ug/L	ND	0.50	02/25/14 19:04	
Hexachloro-1,3-butadiene	ug/L	ND	2.0	02/25/14 19:04	
Isopropylbenzene (Cumene)	ug/L	ND	0.50	02/25/14 19:04	

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: Don Christian Property  
Pace Project No.: 92190297

METHOD BLANK: 1143957 Matrix: Water  
Associated Lab Samples: 92190297001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
m&p-Xylene	ug/L	ND	1.0	02/25/14 19:04	
Methyl-tert-butyl ether	ug/L	ND	0.50	02/25/14 19:04	
Methylene Chloride	ug/L	ND	2.0	02/25/14 19:04	
n-Butylbenzene	ug/L	ND	0.50	02/25/14 19:04	
n-Propylbenzene	ug/L	ND	0.50	02/25/14 19:04	
Naphthalene	ug/L	ND	2.0	02/25/14 19:04	
o-Xylene	ug/L	ND	0.50	02/25/14 19:04	
sec-Butylbenzene	ug/L	ND	0.50	02/25/14 19:04	
Styrene	ug/L	ND	0.50	02/25/14 19:04	
tert-Butylbenzene	ug/L	ND	0.50	02/25/14 19:04	
Tetrachloroethene	ug/L	ND	0.50	02/25/14 19:04	
Toluene	ug/L	ND	0.50	02/25/14 19:04	
trans-1,2-Dichloroethene	ug/L	ND	0.50	02/25/14 19:04	
trans-1,3-Dichloropropene	ug/L	ND	0.50	02/25/14 19:04	
Trichloroethene	ug/L	ND	0.50	02/25/14 19:04	
Trichlorofluoromethane	ug/L	ND	1.0	02/25/14 19:04	
Vinyl chloride	ug/L	ND	1.0	02/25/14 19:04	
1,2-Dichloroethane-d4 (S)	%	103	70-130	02/25/14 19:04	
4-Bromofluorobenzene (S)	%	98	70-130	02/25/14 19:04	
Toluene-d8 (S)	%	102	70-130	02/25/14 19:04	

LABORATORY CONTROL SAMPLE: 1143958

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	50	47.9	96	60-140	
1,1,1-Trichloroethane	ug/L	50	53.5	107	60-140	
1,1,2,2-Tetrachloroethane	ug/L	50	50.2	100	60-140	
1,1,2-Trichloroethane	ug/L	50	51.8	104	60-140	
1,1-Dichloroethane	ug/L	50	49.0	98	60-140	
1,1-Dichloroethene	ug/L	50	46.8	94	60-140	
1,1-Dichloropropene	ug/L	50	50.9	102	60-140	
1,2,3-Trichlorobenzene	ug/L	50	49.3	99	60-140	
1,2,3-Trichloropropane	ug/L	50	49.8	100	60-140	
1,2,4-Trichlorobenzene	ug/L	50	48.5	97	60-140	
1,2,4-Trimethylbenzene	ug/L	50	49.4	99	60-140	
1,2-Dibromo-3-chloropropane	ug/L	50	66.1	132	60-140	
1,2-Dibromoethane (EDB)	ug/L	50	52.6	105	60-140	
1,2-Dichlorobenzene	ug/L	50	47.0	94	60-140	
1,2-Dichloroethane	ug/L	50	47.8	96	60-140	
1,2-Dichloropropane	ug/L	50	49.9	100	60-140	
1,3,5-Trimethylbenzene	ug/L	50	50.7	101	60-140	
1,3-Dichlorobenzene	ug/L	50	46.1	92	60-140	
1,3-Dichloropropane	ug/L	50	51.3	103	60-140	
1,4-Dichlorobenzene	ug/L	50	46.2	92	60-140	
2,2-Dichloropropane	ug/L	50	53.7	107	60-140	

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### QUALITY CONTROL DATA

Project: Don Christian Property

Pace Project No.: 92190297

LABORATORY CONTROL SAMPLE: 1143958

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Chlorotoluene	ug/L	50	46.6	93	60-140	
4-Chlorotoluene	ug/L	50	48.3	97	60-140	
Benzene	ug/L	50	50.6	101	60-140	
Bromobenzene	ug/L	50	48.6	97	60-140	
Bromochloromethane	ug/L	50	48.2	96	60-140	
Bromodichloromethane	ug/L	50	55.1	110	60-140	
Bromoform	ug/L	50	44.6	89	60-140	
Bromomethane	ug/L	50	35.5	71	60-140	
Carbon tetrachloride	ug/L	50	45.4	91	60-140	
Chlorobenzene	ug/L	50	49.4	99	60-140	
Chloroethane	ug/L	50	40.6	81	60-140	
Chloroform	ug/L	50	49.1	98	60-140	
Chloromethane	ug/L	50	47.3	95	60-140	
cis-1,2-Dichloroethene	ug/L	50	47.6	95	60-140	
cis-1,3-Dichloropropene	ug/L	50	47.4	95	60-140	
Dibromochloromethane	ug/L	50	47.4	95	60-140	
Dibromomethane	ug/L	50	49.8	100	60-140	
Dichlorodifluoromethane	ug/L	50	49.1	98	60-140	
Diisopropyl ether	ug/L	50	50.8	102	60-140	
Ethylbenzene	ug/L	50	50.1	100	60-140	
Hexachloro-1,3-butadiene	ug/L	50	49.9	100	60-140	
Isopropylbenzene (Cumene)	ug/L	50	52.4	105	60-140	
m&p-Xylene	ug/L	100	103	103	60-140	
Methyl-tert-butyl ether	ug/L	50	51.5	103	60-140	
Methylene Chloride	ug/L	50	52.0	104	60-140	
n-Butylbenzene	ug/L	50	48.0	96	60-140	
n-Propylbenzene	ug/L	50	50.6	101	60-140	
Naphthalene	ug/L	50	49.4	99	60-140	
o-Xylene	ug/L	50	51.1	102	60-140	
sec-Butylbenzene	ug/L	50	50.0	100	60-140	
Styrene	ug/L	50	53.9	108	60-140	
tert-Butylbenzene	ug/L	50	49.7	99	60-140	
Tetrachloroethene	ug/L	50	50.7	101	60-140	
Toluene	ug/L	50	48.5	97	60-140	
trans-1,2-Dichloroethene	ug/L	50	46.7	93	60-140	
trans-1,3-Dichloropropene	ug/L	50	47.0	94	60-140	
Trichloroethene	ug/L	50	48.4	97	60-140	
Trichlorofluoromethane	ug/L	50	46.3	93	60-140	
Vinyl chloride	ug/L	50	50.9	102	60-140	
1,2-Dichloroethane-d4 (S)	%			100	70-130	
4-Bromofluorobenzene (S)	%			101	70-130	
Toluene-d8 (S)	%			100	70-130	

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: Don Christian Property

Pace Project No.: 92190297

Parameter	92189817005		MS	MSD	1145704		1145705		% Rec	Limits	RPD	Qual
	Units	Result	Spike Conc.	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec				
1,1,1,2-Tetrachloroethane	ug/L	ND	20	20	21.6	19.1	108	95	60-140	12		
1,1,1-Trichloroethane	ug/L	ND	20	20	25.2	23.0	126	115	60-140	9		
1,1,2,2-Tetrachloroethane	ug/L	ND	20	20	22.9	19.9	114	100	60-140	14		
1,1,2-Trichloroethane	ug/L	ND	20	20	23.8	20.9	119	104	60-140	13		
1,1-Dichloroethane	ug/L	ND	20	20	23.2	21.2	116	106	60-140	9		
1,1-Dichloroethene	ug/L	ND	20	20	23.2	21.3	116	107	60-140	9		
1,1-Dichloropropene	ug/L	ND	20	20	24.1	22.2	121	111	60-140	8		
1,2,3-Trichlorobenzene	ug/L	ND	20	20	21.2	18.8	105	93	60-140	12		
1,2,3-Trichloropropane	ug/L	ND	20	20	22.5	19.2	113	96	60-140	16		
1,2,4-Trichlorobenzene	ug/L	ND	20	20	21.2	18.9	105	94	60-140	11		
1,2,4-Trimethylbenzene	ug/L	ND	20	20	23.3	20.9	114	102	60-140	11		
1,2-Dibromo-3-chloropropane	ug/L	ND	20	20	28.0	23.6	140	118	60-140	17		
1,2-Dibromoethane (EDB)	ug/L	ND	20	20	23.8	21.0	119	105	60-140	12		
1,2-Dichlorobenzene	ug/L	ND	20	20	21.5	19.4	107	97	60-140	10		
1,2-Dichloroethane	ug/L	ND	20	20	22.3	20.0	111	100	60-140	11		
1,2-Dichloropropane	ug/L	ND	20	20	22.8	20.5	114	103	60-140	10		
1,3,5-Trimethylbenzene	ug/L	ND	20	20	23.6	21.4	117	106	60-140	10		
1,3-Dichlorobenzene	ug/L	ND	20	20	20.8	18.8	104	94	60-140	10		
1,3-Dichloropropane	ug/L	ND	20	20	23.2	20.6	116	103	60-140	12		
1,4-Dichlorobenzene	ug/L	ND	20	20	20.9	18.8	104	94	60-140	11		
2,2-Dichloropropane	ug/L	ND	20	20	24.5	22.0	122	110	60-140	11		
2-Chlorotoluene	ug/L	ND	20	20	21.5	19.8	108	99	60-140	9		
4-Chlorotoluene	ug/L	ND	20	20	22.2	20.2	111	101	60-140	9		
Benzene	ug/L	0.95	20	20	24.5	22.0	118	105	60-140	11		
Bromobenzene	ug/L	ND	20	20	22.2	20.1	111	100	60-140	10		
Bromochloromethane	ug/L	ND	20	20	24.5	22.2	123	111	60-140	10		
Bromodichloromethane	ug/L	ND	20	20	23.9	20.9	119	105	60-140	13		
Bromoform	ug/L	ND	20	20	19.5	17.1	97	86	60-140	13		
Bromomethane	ug/L	ND	20	20	24.7	23.4	124	117	60-140	6		
Carbon tetrachloride	ug/L	ND	20	20	22.6	20.2	113	101	60-140	11		
Chlorobenzene	ug/L	ND	20	20	22.8	20.4	114	102	60-140	11		
Chloroethane	ug/L	ND	20	20	25.2	23.2	126	116	60-140	8		
Chloroform	ug/L	ND	20	20	23.4	21.2	117	106	60-140	10		
Chloromethane	ug/L	ND	20	20	22.5	20.6	113	103	60-140	9		
cis-1,2-Dichloroethene	ug/L	ND	20	20	22.5	20.5	112	102	60-140	9		
cis-1,3-Dichloropropene	ug/L	ND	20	20	20.3	18.4	101	92	60-140	10		
Dibromochloromethane	ug/L	ND	20	20	21.0	18.7	105	94	60-140	11		
Dibromomethane	ug/L	ND	20	20	21.8	19.6	109	98	60-140	11		
Dichlorodifluoromethane	ug/L	ND	20	20	20.4	18.9	102	95	60-140	7		
Diisopropyl ether	ug/L	ND	20	20	23.6	21.2	118	106	60-140	10		
Ethylbenzene	ug/L	1.4	20	20	24.3	22.0	115	103	60-140	10		
Hexachloro-1,3-butadiene	ug/L	ND	20	20	22.0	19.7	110	99	60-140	11		
Isopropylbenzene (Cumene)	ug/L	ND	20	20	24.3	21.8	120	108	60-140	11		
m&p-Xylene	ug/L	ND	40	40	46.7	42.1	115	104	60-140	10		
Methyl-tert-butyl ether	ug/L	0.78	20	20	24.0	21.8	116	105	60-140	10		
Methylene Chloride	ug/L	ND	20	20	22.8	21.1	114	106	60-140	8		
n-Butylbenzene	ug/L	ND	20	20	22.1	19.9	110	99	60-140	10		

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: Don Christian Property

Pace Project No.: 92190297

Parameter	Units	1145704		1145705		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
		92189817005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result							
n-Propylbenzene	ug/L	0.52	20	20	24.0	22.0	118	107	60-140	9		
Naphthalene	ug/L	ND	20	20	22.5	20.0	109	96	60-140	12		
o-Xylene	ug/L	ND	20	20	23.1	20.9	114	103	60-140	10		
sec-Butylbenzene	ug/L	ND	20	20	23.8	21.4	119	107	60-140	11		
Styrene	ug/L	ND	20	20	23.7	21.2	118	106	60-140	11		
tert-Butylbenzene	ug/L	ND	20	20	23.2	21.2	116	106	60-140	9		
Tetrachloroethene	ug/L	ND	20	20	23.1	21.1	116	106	60-140	9		
Toluene	ug/L	ND	20	20	22.5	20.3	112	101	60-140	10		
trans-1,2-Dichloroethene	ug/L	ND	20	20	22.0	20.0	110	100	60-140	10		
trans-1,3-Dichloropropene	ug/L	ND	20	20	20.3	17.9	102	90	60-140	12		
Trichloroethene	ug/L	ND	20	20	22.3	20.1	111	101	60-140	10		
Trichlorofluoromethane	ug/L	ND	20	20	25.2	22.8	126	114	60-140	10		
Vinyl chloride	ug/L	ND	20	20	24.5	22.5	123	112	60-140	9		
1,2-Dichloroethane-d4 (S)	%						99	99	70-130			
4-Bromofluorobenzene (S)	%						100	100	70-130			
Toluene-d8 (S)	%						99	100	70-130			

### REPORT OF LABORATORY ANALYSIS

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## QUALIFIERS

Project: Don Christian Property  
Pace Project No.: 92190297

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### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Acid preservation may not be appropriate for 2-Chloroethylvinyl ether, Styrene, and Vinyl chloride.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### LABORATORIES

PASI-C Pace Analytical Services - Charlotte

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Don Christian Property

Pace Project No.: 92190297

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<b>Lab ID</b>	<b>Sample ID</b>	<b>QC Batch Method</b>	<b>QC Batch</b>	<b>Analytical Method</b>	<b>Analytical Batch</b>
92190297001	MW-1A	SM 6200B	MSV/25883		

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### REPORT OF LABORATORY ANALYSIS

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Document Name: **Sample Condition Upon Receipt (SCUR)**

Document Number: **Page 1 of 2**

Document Number:  
**F-CHR-CS-03-rev.13**

Issuing Authority:  
**Pace Huntersville Quality Office**

Client Name: Pyramid Env.

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

Custody Seal on Cooler/Box Present:  yes  no    Seals intact:  yes  no

Packing Material:  Bubble Wrap  Bubble Bags  None  Other \_\_\_\_\_

Thermometer Used: IR Gun T1102 T1301    Type of Ice: Wet Blue None  Samples on ice, cooling process has begun

Temp Correction Factor    T1102: No Correction    T1301: No Correction

Corrected Cooler Temp.: 2.8 °C    Biological Tissue is Frozen: Yes No  N/A

Date and Initials of person examining contents: EW 2/19/14

Temp should be above freezing to 6°C

Comments:

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sufficient Volume:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Pace Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
-Includes date/time/ID/Analysis    Matrix: _____		
All containers needing preservation have been checked.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	15.
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased): _____		

Client Notification/ Resolution:

Field Data Required?    Y / N

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_

SCURF Review: <u>SDB</u>	Date: <u>2/19/14</u>
SRF Review: <u>JL</u>	Date: <u>2/20/14</u>

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office ( i.e out of hold, incorrect preservative, out of temp, incorrect containers)

WO# : 92190297

92190297



March 27, 2014

Mr. Mike Jones  
Pyramid Environmental  
P.O. Box 16265  
503 Industrial Avenue  
Greensboro, NC 27416

RE: Project: Don Christian 2014-093  
Pace Project No.: 92193443

Dear Mr. Jones:

Enclosed are the analytical results for sample(s) received by the laboratory on March 14, 2014. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Analyses were performed at the Pace Analytical Services location indicated on the sample analyte page for analysis unless otherwise footnoted.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jon D Bradley  
jon.bradley@pacelabs.com  
Project Manager

Enclosures



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: Don Christian 2014-093

Pace Project No.: 92193443

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### Charlotte Certification IDs

9800 Kincey Ave. Ste 100, Huntersville, NC 28078  
North Carolina Drinking Water Certification #: 37706  
North Carolina Field Services Certification #: 5342  
North Carolina Wastewater Certification #: 12  
South Carolina Certification #: 99006001

Florida/NELAP Certification #: E87627  
Kentucky UST Certification #: 84  
West Virginia Certification #: 357  
Virginia/VELAP Certification #: 460221

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### Asheville Certification IDs

2225 Riverside Dr., Asheville, NC 28804  
Florida/NELAP Certification #: E87648  
Massachusetts Certification #: M-NC030  
North Carolina Drinking Water Certification #: 37712

North Carolina Wastewater Certification #: 40  
South Carolina Certification #: 99030001  
West Virginia Certification #: 356  
Virginia/VELAP Certification #: 460222

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## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: Don Christian 2014-093

Pace Project No.: 92193443

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92193443001	MW-1A	EPA 504.1	EJK	4	PASI-C
		EPA 6010	SH1	1	PASI-A
		SM 6200B	CAH	63	PASI-C

### REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Don Christian 2014-093

Pace Project No.: 92193443

Sample: MW-1A	Lab ID: 92193443001	Collected: 03/13/14 13:00	Received: 03/14/14 14:04	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>504 GCS EDB and DBCP</b>								
Analytical Method: EPA 504.1 Preparation Method: EPA 504.1								
1,2-Dibromo-3-chloropropane	ND ug/L		0.049	1	03/17/14 14:30	03/18/14 21:59	96-12-8	
1,2-Dibromoethane (EDB)	<b>0.067</b> ug/L		0.020	1	03/17/14 14:30	03/18/14 21:59	106-93-4	
1,2,3-Trichloropropane	ND ug/L		0.049	1	03/17/14 14:30	03/18/14 21:59	96-18-4	
<b>Surrogates</b>								
1-Chloro-2-bromopropane (S)	100 %		70-130	1	03/17/14 14:30	03/18/14 21:59	301-79-56	
<b>6010 MET ICP</b>								
Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Lead	ND ug/L		5.0	1	03/15/14 10:15	03/18/14 18:08	7439-92-1	
<b>6200B MSV</b>								
Analytical Method: SM 6200B								
Benzene	<b>1.8</b> ug/L		0.50	1		03/26/14 19:59	71-43-2	
Bromobenzene	ND ug/L		0.50	1		03/26/14 19:59	108-86-1	
Bromochloromethane	ND ug/L		0.50	1		03/26/14 19:59	74-97-5	
Bromodichloromethane	ND ug/L		0.50	1		03/26/14 19:59	75-27-4	
Bromoform	ND ug/L		0.50	1		03/26/14 19:59	75-25-2	
Bromomethane	ND ug/L		5.0	1		03/26/14 19:59	74-83-9	
n-Butylbenzene	ND ug/L		0.50	1		03/26/14 19:59	104-51-8	
sec-Butylbenzene	ND ug/L		0.50	1		03/26/14 19:59	135-98-8	
tert-Butylbenzene	ND ug/L		0.50	1		03/26/14 19:59	98-06-6	
Carbon tetrachloride	ND ug/L		0.50	1		03/26/14 19:59	56-23-5	
Chlorobenzene	ND ug/L		0.50	1		03/26/14 19:59	108-90-7	
Chloroethane	ND ug/L		1.0	1		03/26/14 19:59	75-00-3	
Chloroform	ND ug/L		0.50	1		03/26/14 19:59	67-66-3	
Chloromethane	ND ug/L		1.0	1		03/26/14 19:59	74-87-3	
2-Chlorotoluene	ND ug/L		0.50	1		03/26/14 19:59	95-49-8	
4-Chlorotoluene	ND ug/L		0.50	1		03/26/14 19:59	106-43-4	
1,2-Dibromo-3-chloropropane	ND ug/L		1.0	1		03/26/14 19:59	96-12-8	
Dibromochloromethane	ND ug/L		0.50	1		03/26/14 19:59	124-48-1	
1,2-Dibromoethane (EDB)	ND ug/L		0.50	1		03/26/14 19:59	106-93-4	
Dibromomethane	ND ug/L		0.50	1		03/26/14 19:59	74-95-3	
1,2-Dichlorobenzene	ND ug/L		0.50	1		03/26/14 19:59	95-50-1	
1,3-Dichlorobenzene	ND ug/L		0.50	1		03/26/14 19:59	541-73-1	
1,4-Dichlorobenzene	ND ug/L		0.50	1		03/26/14 19:59	106-46-7	
Dichlorodifluoromethane	ND ug/L		0.50	1		03/26/14 19:59	75-71-8	
1,1-Dichloroethane	ND ug/L		0.50	1		03/26/14 19:59	75-34-3	
1,2-Dichloroethane	ND ug/L		0.50	1		03/26/14 19:59	107-06-2	
1,1-Dichloroethene	ND ug/L		0.50	1		03/26/14 19:59	75-35-4	
cis-1,2-Dichloroethene	ND ug/L		0.50	1		03/26/14 19:59	156-59-2	
trans-1,2-Dichloroethene	ND ug/L		0.50	1		03/26/14 19:59	156-60-5	
1,2-Dichloropropane	ND ug/L		0.50	1		03/26/14 19:59	78-87-5	
1,3-Dichloropropane	ND ug/L		0.50	1		03/26/14 19:59	142-28-9	
2,2-Dichloropropane	ND ug/L		0.50	1		03/26/14 19:59	594-20-7	
1,1-Dichloropropene	ND ug/L		0.50	1		03/26/14 19:59	563-58-6	
cis-1,3-Dichloropropene	ND ug/L		0.50	1		03/26/14 19:59	10061-01-5	
trans-1,3-Dichloropropene	ND ug/L		0.50	1		03/26/14 19:59	10061-02-6	
Diisopropyl ether	<b>0.91</b> ug/L		0.50	1		03/26/14 19:59	108-20-3	

### REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Don Christian 2014-093

Pace Project No.: 92193443

Sample: MW-1A		Lab ID: 92193443001	Collected: 03/13/14 13:00	Received: 03/14/14 14:04	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>6200B MSV</b>		Analytical Method: SM 6200B						
Ethylbenzene	0.56	ug/L	0.50	1		03/26/14 19:59	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	2.0	1		03/26/14 19:59	87-68-3	
Isopropylbenzene (Cumene)	ND	ug/L	0.50	1		03/26/14 19:59	98-82-8	
Methylene Chloride	ND	ug/L	2.0	1		03/26/14 19:59	75-09-2	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		03/26/14 19:59	1634-04-4	
Naphthalene	ND	ug/L	2.0	1		03/26/14 19:59	91-20-3	
n-Propylbenzene	ND	ug/L	0.50	1		03/26/14 19:59	103-65-1	
Styrene	ND	ug/L	0.50	1		03/26/14 19:59	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	0.50	1		03/26/14 19:59	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		03/26/14 19:59	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		03/26/14 19:59	127-18-4	
Toluene	3.3	ug/L	0.50	1		03/26/14 19:59	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	2.0	1		03/26/14 19:59	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	2.0	1		03/26/14 19:59	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		03/26/14 19:59	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		03/26/14 19:59	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		03/26/14 19:59	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		03/26/14 19:59	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	0.50	1		03/26/14 19:59	96-18-4	
1,2,4-Trimethylbenzene	0.88	ug/L	0.50	1		03/26/14 19:59	95-63-6	
1,3,5-Trimethylbenzene	2.3	ug/L	0.50	1		03/26/14 19:59	108-67-8	
Vinyl chloride	ND	ug/L	1.0	1		03/26/14 19:59	75-01-4	
m&p-Xylene	2.7	ug/L	1.0	1		03/26/14 19:59	179601-23-1	
o-Xylene	7.0	ug/L	0.50	1		03/26/14 19:59	95-47-6	
<b>Surrogates</b>								
1,2-Dichloroethane-d4 (S)	101 %		70-130	1		03/26/14 19:59	17060-07-0	
4-Bromofluorobenzene (S)	98 %		70-130	1		03/26/14 19:59	460-00-4	
Toluene-d8 (S)	99 %		70-130	1		03/26/14 19:59	2037-26-5	

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: Don Christian 2014-093

Pace Project No.: 92193443

QC Batch:	MPRP/15455	Analysis Method:	EPA 6010
QC Batch Method:	EPA 3010	Analysis Description:	6010 MET
Associated Lab Samples:	92193443001		

METHOD BLANK: 1158331 Matrix: Water  
Associated Lab Samples: 92193443001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Lead	ug/L	ND	5.0	03/18/14 16:45	

LABORATORY CONTROL SAMPLE: 1158332

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Lead	ug/L	500	513	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1158333 1158334

Parameter	Units	92193386010		MS		MSD		MS		MSD		% Rec Limits	RPD	Qual
		Result	Conc.	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec					
Lead	ug/L	ND	500	500	506	506	101	101	75-125	0				

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: Don Christian 2014-093  
Pace Project No.: 92193443

QC Batch: MSV/26234      Analysis Method: SM 6200B  
QC Batch Method: SM 6200B      Analysis Description: 6200B MSV  
Associated Lab Samples: 92193443001

METHOD BLANK: 1165294      Matrix: Water  
Associated Lab Samples: 92193443001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	0.50	03/26/14 18:36	
1,1,1-Trichloroethane	ug/L	ND	0.50	03/26/14 18:36	
1,1,2,2-Tetrachloroethane	ug/L	ND	0.50	03/26/14 18:36	
1,1,2-Trichloroethane	ug/L	ND	0.50	03/26/14 18:36	
1,1-Dichloroethane	ug/L	ND	0.50	03/26/14 18:36	
1,1-Dichloroethene	ug/L	ND	0.50	03/26/14 18:36	
1,1-Dichloropropene	ug/L	ND	0.50	03/26/14 18:36	
1,2,3-Trichlorobenzene	ug/L	ND	2.0	03/26/14 18:36	
1,2,3-Trichloropropane	ug/L	ND	0.50	03/26/14 18:36	
1,2,4-Trichlorobenzene	ug/L	ND	2.0	03/26/14 18:36	
1,2,4-Trimethylbenzene	ug/L	ND	0.50	03/26/14 18:36	
1,2-Dibromo-3-chloropropane	ug/L	ND	1.0	03/26/14 18:36	
1,2-Dibromoethane (EDB)	ug/L	ND	0.50	03/26/14 18:36	
1,2-Dichlorobenzene	ug/L	ND	0.50	03/26/14 18:36	
1,2-Dichloroethane	ug/L	ND	0.50	03/26/14 18:36	
1,2-Dichloropropane	ug/L	ND	0.50	03/26/14 18:36	
1,3,5-Trimethylbenzene	ug/L	ND	0.50	03/26/14 18:36	
1,3-Dichlorobenzene	ug/L	ND	0.50	03/26/14 18:36	
1,3-Dichloropropane	ug/L	ND	0.50	03/26/14 18:36	
1,4-Dichlorobenzene	ug/L	ND	0.50	03/26/14 18:36	
2,2-Dichloropropane	ug/L	ND	0.50	03/26/14 18:36	
2-Chlorotoluene	ug/L	ND	0.50	03/26/14 18:36	
4-Chlorotoluene	ug/L	ND	0.50	03/26/14 18:36	
Benzene	ug/L	ND	0.50	03/26/14 18:36	
Bromobenzene	ug/L	ND	0.50	03/26/14 18:36	
Bromochloromethane	ug/L	ND	0.50	03/26/14 18:36	
Bromodichloromethane	ug/L	ND	0.50	03/26/14 18:36	
Bromoform	ug/L	ND	0.50	03/26/14 18:36	
Bromomethane	ug/L	ND	5.0	03/26/14 18:36	
Carbon tetrachloride	ug/L	ND	0.50	03/26/14 18:36	
Chlorobenzene	ug/L	ND	0.50	03/26/14 18:36	
Chloroethane	ug/L	ND	1.0	03/26/14 18:36	
Chloroform	ug/L	ND	0.50	03/26/14 18:36	
Chloromethane	ug/L	ND	1.0	03/26/14 18:36	
cis-1,2-Dichloroethene	ug/L	ND	0.50	03/26/14 18:36	
cis-1,3-Dichloropropene	ug/L	ND	0.50	03/26/14 18:36	
Dibromochloromethane	ug/L	ND	0.50	03/26/14 18:36	
Dibromomethane	ug/L	ND	0.50	03/26/14 18:36	
Dichlorodifluoromethane	ug/L	ND	0.50	03/26/14 18:36	
Diisopropyl ether	ug/L	ND	0.50	03/26/14 18:36	
Ethylbenzene	ug/L	ND	0.50	03/26/14 18:36	
Hexachloro-1,3-butadiene	ug/L	ND	2.0	03/26/14 18:36	
Isopropylbenzene (Cumene)	ug/L	ND	0.50	03/26/14 18:36	

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: Don Christian 2014-093

Pace Project No.: 92193443

METHOD BLANK: 1165294

Matrix: Water

Associated Lab Samples: 92193443001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
m&p-Xylene	ug/L	ND	1.0	03/26/14 18:36	
Methyl-tert-butyl ether	ug/L	ND	0.50	03/26/14 18:36	
Methylene Chloride	ug/L	ND	2.0	03/26/14 18:36	
n-Butylbenzene	ug/L	ND	0.50	03/26/14 18:36	
n-Propylbenzene	ug/L	ND	0.50	03/26/14 18:36	
Naphthalene	ug/L	ND	2.0	03/26/14 18:36	
o-Xylene	ug/L	ND	0.50	03/26/14 18:36	
sec-Butylbenzene	ug/L	ND	0.50	03/26/14 18:36	
Styrene	ug/L	ND	0.50	03/26/14 18:36	
tert-Butylbenzene	ug/L	ND	0.50	03/26/14 18:36	
Tetrachloroethene	ug/L	ND	0.50	03/26/14 18:36	
Toluene	ug/L	ND	0.50	03/26/14 18:36	
trans-1,2-Dichloroethene	ug/L	ND	0.50	03/26/14 18:36	
trans-1,3-Dichloropropene	ug/L	ND	0.50	03/26/14 18:36	
Trichloroethene	ug/L	ND	0.50	03/26/14 18:36	
Trichlorofluoromethane	ug/L	ND	1.0	03/26/14 18:36	
Vinyl chloride	ug/L	ND	1.0	03/26/14 18:36	
1,2-Dichloroethane-d4 (S)	%	102	70-130	03/26/14 18:36	
4-Bromofluorobenzene (S)	%	98	70-130	03/26/14 18:36	
Toluene-d8 (S)	%	99	70-130	03/26/14 18:36	

LABORATORY CONTROL SAMPLE: 1165295

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	50	53.5	107	60-140	
1,1,1-Trichloroethane	ug/L	50	52.3	105	60-140	
1,1,2,2-Tetrachloroethane	ug/L	50	50.2	100	60-140	
1,1,2-Trichloroethane	ug/L	50	51.2	102	60-140	
1,1-Dichloroethane	ug/L	50	48.1	96	60-140	
1,1-Dichloroethene	ug/L	50	49.3	99	60-140	
1,1-Dichloropropene	ug/L	50	51.7	103	60-140	
1,2,3-Trichlorobenzene	ug/L	50	51.0	102	60-140	
1,2,3-Trichloropropane	ug/L	50	49.5	99	60-140	
1,2,4-Trichlorobenzene	ug/L	50	49.4	99	60-140	
1,2,4-Trimethylbenzene	ug/L	50	49.4	99	60-140	
1,2-Dibromo-3-chloropropane	ug/L	50	72.4	145	60-140	CU,L3
1,2-Dibromoethane (EDB)	ug/L	50	51.5	103	60-140	
1,2-Dichlorobenzene	ug/L	50	47.9	96	60-140	
1,2-Dichloroethane	ug/L	50	47.7	95	60-140	
1,2-Dichloropropane	ug/L	50	49.9	100	60-140	
1,3,5-Trimethylbenzene	ug/L	50	49.3	99	60-140	
1,3-Dichlorobenzene	ug/L	50	46.4	93	60-140	
1,3-Dichloropropane	ug/L	50	49.8	100	60-140	
1,4-Dichlorobenzene	ug/L	50	46.8	94	60-140	
2,2-Dichloropropane	ug/L	50	53.6	107	60-140	

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: Don Christian 2014-093

Pace Project No.: 92193443

LABORATORY CONTROL SAMPLE: 1165295

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Chlorotoluene	ug/L	50	46.3	93	60-140	
4-Chlorotoluene	ug/L	50	48.5	97	60-140	
Benzene	ug/L	50	50.2	100	60-140	
Bromobenzene	ug/L	50	49.1	98	60-140	
Bromochloromethane	ug/L	50	45.1	90	60-140	
Bromodichloromethane	ug/L	50	54.5	109	60-140	
Bromoform	ug/L	50	46.9	94	60-140	
Bromomethane	ug/L	50	55.3	111	60-140	
Carbon tetrachloride	ug/L	50	53.0	106	60-140	
Chlorobenzene	ug/L	50	47.8	96	60-140	
Chloroethane	ug/L	50	38.4	77	60-140	
Chloroform	ug/L	50	48.1	96	60-140	
Chloromethane	ug/L	50	46.3	93	60-140	
cis-1,2-Dichloroethene	ug/L	50	47.9	96	60-140	
cis-1,3-Dichloropropene	ug/L	50	49.5	99	60-140	
Dibromochloromethane	ug/L	50	47.2	94	60-140	
Dibromomethane	ug/L	50	49.0	98	60-140	
Dichlorodifluoromethane	ug/L	50	51.5	103	60-140	
Diisopropyl ether	ug/L	50	48.9	98	60-140	
Ethylbenzene	ug/L	50	48.8	98	60-140	
Hexachloro-1,3-butadiene	ug/L	50	49.2	98	60-140	
Isopropylbenzene (Cumene)	ug/L	50	50.7	101	60-140	
m&p-Xylene	ug/L	100	96.6	97	60-140	
Methyl-tert-butyl ether	ug/L	50	51.2	102	60-140	
Methylene Chloride	ug/L	50	50.3	101	60-140	
n-Butylbenzene	ug/L	50	49.7	99	60-140	
n-Propylbenzene	ug/L	50	50.0	100	60-140	
Naphthalene	ug/L	50	53.4	107	60-140	
o-Xylene	ug/L	50	50.2	100	60-140	
sec-Butylbenzene	ug/L	50	50.0	100	60-140	
Styrene	ug/L	50	53.3	107	60-140	
tert-Butylbenzene	ug/L	50	49.5	99	60-140	
Tetrachloroethene	ug/L	50	48.8	98	60-140	
Toluene	ug/L	50	49.1	98	60-140	
trans-1,2-Dichloroethene	ug/L	50	47.9	96	60-140	
trans-1,3-Dichloropropene	ug/L	50	49.3	99	60-140	
Trichloroethene	ug/L	50	48.1	96	60-140	
Trichlorofluoromethane	ug/L	50	46.2	92	60-140	
Vinyl chloride	ug/L	50	52.5	105	60-140	
1,2-Dichloroethane-d4 (S)	%			100	70-130	
4-Bromofluorobenzene (S)	%			102	70-130	
Toluene-d8 (S)	%			102	70-130	

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: Don Christian 2014-093  
Pace Project No.: 92193443

QC Batch: OEXT/26530 Analysis Method: EPA 504.1  
QC Batch Method: EPA 504.1 Analysis Description: GCS 504 EDB DBCP  
Associated Lab Samples: 92193443001

METHOD BLANK: 1158697 Matrix: Water  
Associated Lab Samples: 92193443001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,3-Trichloropropane	ug/L	ND	0.050	03/18/14 16:38	
1,2-Dibromo-3-chloropropane	ug/L	ND	0.050	03/18/14 16:38	
1,2-Dibromoethane (EDB)	ug/L	ND	0.020	03/18/14 16:38	
1-Chloro-2-bromopropane (S)	%	99	70-130	03/18/14 16:38	

LABORATORY CONTROL SAMPLE & LCSD: 1158698

Parameter	Units	1158699		LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
		Spike Conc.	LCS Result						
1,2,3-Trichloropropane	ug/L	.29	0.29	100	94	70-130	7	20	
1,2-Dibromo-3-chloropropane	ug/L	.29	0.25	88	84	70-130	5	20	
1,2-Dibromoethane (EDB)	ug/L	.29	0.27	92	90	70-130	3	20	
1-Chloro-2-bromopropane (S)	%			99	99	70-130			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1158700

Parameter	Units	92193437017		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
		Result	Conc.	Spike Conc.	Spike Conc.							
1,2,3-Trichloropropane	ug/L	0.10	.28	.28	0.091	0.079	-4	-8	65-135	13	M0	
1,2-Dibromo-3-chloropropane	ug/L	ND	.28	.28	3.8	3.6	1344	1278	65-135	5	M3	
1,2-Dibromoethane (EDB)	ug/L	ND	.28	.28	0.25	0.25	90	88	65-135	2		
1-Chloro-2-bromopropane (S)	%						111	101	70-130			

SAMPLE DUPLICATE: 1158702

Parameter	Units	92193437018 Result	Dup Result	RPD	Qualifiers
1,2,3-Trichloropropane	ug/L	0.051	ND		
1,2-Dibromo-3-chloropropane	ug/L	ND	ND		
1,2-Dibromoethane (EDB)	ug/L	ND	ND		
1-Chloro-2-bromopropane (S)	%	103	97	8	

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## QUALIFIERS

Project: Don Christian 2014-093

Pace Project No.: 92193443

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### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Acid preservation may not be appropriate for 2-Chloroethylvinyl ether, Styrene, and Vinyl chloride.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### LABORATORIES

PASI-A Pace Analytical Services - Asheville

PASI-C Pace Analytical Services - Charlotte

### ANALYTE QUALIFIERS

CU The continuing calibration for this compound is outside of Pace Analytical acceptance limits. Analyte presence below reporting limits in associated samples. Results unaffected by high bias.

L3 Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples. Results unaffected by high bias.

M0 Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

M3 Matrix spike recovery was outside laboratory control limits due to matrix interferences.

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Don Christian 2014-093

Pace Project No.: 92193443

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92193443001	MW-1A	EPA 504.1	OEXT/26530	EPA 504.1	GCSV/16977
92193443001	MW-1A	EPA 3010	MPRP/15455	EPA 6010	ICP/14015
92193443001	MW-1A	SM 6200B	MSV/26234		

### REPORT OF LABORATORY ANALYSIS

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Document Name:  
**Sample Condition Upon Receipt (SCUR)**  
 Document Number:  
**F-CHR-CS-03-rev.13**

Document Revised: December 16, 2013  
 Page 1 of 2  
 Issuing Authority:  
 Pace Huntersville Quality Office

Client Name: Pyramid Environmental

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

Custody Seal on Cooler/Box Present:  yes  no Seals intact:  yes  no

Optional  
 Proj. Due Date:  
 Proj. Name:

Packing Material:  Bubble Wrap  Bubble Bags  None  Other \_\_\_\_\_

Thermometer Used: IR Gun T1102 T1301 Type of Ice: Wet Blue None  Samples on ice, cooling process has begun

Temp Correction Factor T1102: No Correction T1301: No Correction

Corrected Cooler Temp.: 3.5 °C Biological Tissue is Frozen: Yes No N/A

Date and Initials of person examining contents: 203/14/14

Temp should be above freezing to 6°C

Comments:

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Pace Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
-Includes date/time/ID/Analysis Matrix:		
All containers needing preservation have been checked.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	15.
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution: \_\_\_\_\_ Field Data Required? Y / N  
 Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
 Comments/ Resolution: \_\_\_\_\_

SCURF Review: JDB Date: 3-14-14  
 SRF Review: JDB Date: 3/14/14

**WO# : 92193443**  
  
 92193443

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office ( i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Handwrite project number  
 (if no label available)

# CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.



Page: 1 of 1  
**1731926**

**Section A**  
 Required Client Information:  
 Company: Pyramid Environmental  
 Address: PO Box 16265  
Greensboro, NC 27416  
 Email To: \_\_\_\_\_  
 Phone: 336-335-3171 Fax: \_\_\_\_\_  
 Requested Due Date (TAT): \_\_\_\_\_

**Section B**  
 Required Project Information:  
 Report To: Mike Jones  
 Copy To: \_\_\_\_\_  
 Purchase Order No.: \_\_\_\_\_  
 Project Name: Don Christian  
 Project Number: 2014-039

**Section C**  
 Invoice Information:  
 Attention: \_\_\_\_\_  
 Company Name: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 Pace Quote Reference: \_\_\_\_\_  
 Pace Project Manager: Jon Bradley  
 Pace Profile #: 2182-2

**REGULATORY AGENCY**  
 NPDES  GROUND WATER  DRINKING WATER  
 UST  RCRA  OTHER \_\_\_\_\_  
 Site Location STATE: NC

ITEM #	Section D Required Client Information	Matrix Codes MATRIX / CODE	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives	Requested Analysis Filtered (Y/N)	Pace Project No./ Lab I.D.
				COMPOSITE START	COMPOSITE END/GRAB					
1	SAMPLE ID (A-Z, 0-9 / -) Sample IDs MUST BE UNIQUE <u>MW-1A</u>	DW Drinking Water WT Waste Water WW Waste Water Product P Soil/Solid SL Oil OL Wipe WP Air AR Tissue TS Other OT	<u>WTG</u>	DATE <u>3/13/14</u>	TIME <u>1300</u>		<u>8</u>	<u>Analysis Test</u> <u>62008</u> <u>507.1 for EDR</u> <u>6010 Lead</u>	<u>92193443001</u>	
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION		ACCEPTED BY / AFFILIATION		SAMPLE CONDITIONS			
	DATE	TIME	DATE	TIME	Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
<u>Alan McFadden</u> <u>3/13/14</u> <u>1600</u>	<u>3/13/14</u>	<u>1600</u>	<u>Alan McFadden</u> <u>3/13/14</u> <u>1404</u>	<u>3/13/14</u> <u>1404</u>	<u>3/13/14</u> <u>1404</u>	<u>3/13/14</u> <u>1404</u>	<u>3/13/14</u> <u>1404</u>	<u>3/13/14</u> <u>1404</u>

**ORIGINAL**

SAMPLER NAME AND SIGNATURE  
 PRINT Name of SAMPLER: Alan McFadden  
 SIGNATURE of SAMPLER: Alan McFadden  
 DATE Signed (MM/DD/YY): 3/13/14