

**Wellhead Protection Plan
Town of Edenton, NC
PWS ID # 04-21-010**



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Background

In 1986, Safe Water Drinking Act (SWDA) amendments added Section 1428, “State Programs to Establish Wellhead Protection Areas”, which requires each state to develop a program to “protect wellhead areas within their jurisdiction from contaminants which may have any adverse effects on the health of persons.” The term wellhead protection area is defined in the law as “the surface and subsurface area surrounding a water well or wellfield, supplying a public water system, through which contaminants are reasonably likely to move toward and reach such water well or wellfield.” North Carolina’s Environmental Protection Agency (EPA) approved Wellhead Protection Program (WHPP) provides technical support to local governments and public water supply systems in their endeavors to develop and implement their own Wellhead Protection Plans.

North Carolina’s objective in developing a protection plan is to provide a process for public water system operators to learn more about their groundwater systems and how to protect them. Wellhead Protection Plans allow communities to take charge of protecting the quality of their drinking water by identifying and carefully managing areas that supply groundwater to their public wells.

Division of Water Resources (DWR), under the Department of Environment and Natural Resources regulations, require any public water supply wells that is to be used as a community or non-transient, non-community water system to meet the following wellhead protection requirements:

- (1) The well shall be located on a lot so that the area within 100 feet of the well shall be owned or controlled by the person supplying the water. The supplier of water shall be able to protect the well lot from potential sources of pollution and to construct landscape features for drainage and diversion of pollution.
- (2) The minimum horizontal separation between the well and known potential sources of pollution shall be as follows:
 - (a) 100 feet from any sanitary sewage disposal system, sewer, or a sewer pipe unless the sewer is constructed of water main materials and joints, in which case the sewer pipe shall be at least 50 feet from the well;
 - (b) 200 feet from a subsurface sanitary sewage treatment and disposal system designed for 3000 or more gallons of wastewater a day flows, unless it is determined that the well water source utilizes a confined aquifer;
 - (c) 500 feet from a septage disposal site;
 - (d) 100 feet from buildings, mobile homes, permanent structures, animal houses or lots, or cultivated areas to which chemicals are applied;
 - (e) 100 feet from surface water;
 - (f) 100 feet from a chemical or petroleum fuel underground storage tank with secondary containment;
 - (g) 500 feet from a chemical or petroleum fuel underground storage tank without secondary containment;
 - (h) 500 feet from the boundary of a ground water contamination area;
 - (i) 500 feet from a sanitary landfill or non-permitted non-hazardous solid waste disposal site;

- (j) 1000 feet from a hazardous waste disposal site or in any location which conflicts with the North Carolina Hazardous Waste Management Rules cited as 15A NCAC 13A;
 - (k) 300 feet from a cemetery or burial ground; and
 - (l) 100 feet from any other potential source of pollution.
- (3) The Department may require greater separation distances or impose other protective measures then necessary to protect the well from pollution; the Department shall consider as follows:
- (a) The hazard or health risk associated with the source of pollution;
 - (b) The proximity of the potential source to the well;
 - (c) The type of material, facility or circumstance that poses the source or potential source of pollution;
 - (d) The volume or size of the source or potential source of pollution;
 - (e) Hydrogeological features of the site which could affect the movement of contaminants to the source water;
 - (f) The effect which well operation might have on the movement of contamination;
 - (g) The feasibility of providing additional separation distances or protective measures.
- (4) The lot shall be graded or sloped so that surface water is diverted away from the wellhead. The lot shall not be subject to flooding.
- (5) When the supplier of water is unable to locate water from any other approved source and when an existing well can no longer provide water that meets the requirement of this Subchapter, a representative of the Division may approve a smaller well lot and reduced separation distances for temporary use.

In addition to this delineation, communities are encouraged to establish wellhead protection plans, which include the following:

- 1) The formation of a wellhead protection committee to establish and implement the wellhead protection plan and whose role it is to conduct a potential contaminant source inventory, provide options for the management of the WHP area, seek public input into the creation of the WHP plan, seek approval of the WHP plan and to implement the WHP plan;
- 2) Delineation of the contributing areas of the water sources;
- 3) Identification of potential contamination sources within the wellhead protection area;
- 4) Develop and implement wellhead protection area management actions to protect the water sources;
- 5) Develop an emergency contingency plan for alternative water supply sources in the event the groundwater supply becomes contaminated and emergency response planning for incidents that may impact water quality;
- 6) Development of a public education program;

- 7) Conduct new water source planning to insure the protection of new water source locations and to augment current supplies.

Wellhead protection for public water supply wells is a voluntary program, but water systems across the state are encouraged to take the above steps in protecting all groundwater sources.

The PWSS will grant the final approval for WHP Plans. The NC Wellhead Protection Program Coordinator is:

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Public Water Supply Section
1634 Mail Service Center
Raleigh, North Carolina 27699-1634
gale.johnson@ncdenr.gov
Phone 919-707-9083
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Introduction

The Town of Edenton (PWS ID 04-21-010), is located in Chowan County in northeast North Carolina as shown in **Figure 1**. The Town operates a total of four water supply wells that provide water to a population of about 4,900 people via approximately 2,069 connections. The wells are located around the Town of Edenton as can be seen in **Figure 2**, with locations provided in **Figure 3**. Treatment of the water includes chlorine for microbial disinfection. The Town uses an average of 492,641 gallons of water per day and has the capacity to store 800,000 gallons in two elevated storage tanks. For additional information about the tanks see **Figure 4**.



Figure 1. Chowan County within North Carolina.



Figure 2. Edenton and wells within Town of Edenton

Well	Address
Well # 1A Fremason	West Freemason Street
Well # 2 Virginia Road	Virginia Road
Well # 3 Beaver Hill	Behind Beaver Hill Cemetery
Well # 4 Boswell Street	Boswell Street

Figure 3. Well Locations

Storage Tank	Capacity (gal.)
Park Avenue	300,000
Twiddy Avenue	500,000

Figure 4. Storage Tank Locations

System Name	EDENTON, TOWN OF
City	EDENTON
PWS ID	04-21-010
Source Name	BOSWELL ST WELL
Source Name	VIRGINIA RD WELL
Source Name	FREEMASON ST WELL
Source Name	BEAVER HILL WELL

Figure 5. Well information from 2015 SWAP

A Source Water Assessment Program (SWAP) Report has been made available for the Town of Edenton by the NC Public Water Supply Section. Water sources can be threatened by many potential contaminant sources, including permitted wastewater discharges, underground storage tanks, urban storm water runoff, or other types of non-point source contamination such as runoff produced by agricultural activities and land clearing for development. A source water assessment is a qualitative evaluation of the potential of a drinking water source to become contaminated by the identified potential contaminant sources (PCSs) within the delineated area. A SWAP Report consists of an assessment area delineation, a potential contaminant source inventory and map, a susceptibility rating, maps, tables and a detailed description of North Carolina's SWAP approach. The Town's water source is four groundwater wells, all of which have been assigned a qualitative susceptibility rating of Moderate, based on a contaminant rating of Moderate and Higher and an inherent vulnerability rating of Lower as seen in the **Figure 5**. The rating process is described in detail in Sections 3 and 6 of the SWAP Report. The Town of Edenton's entire SWAP Report along with a wealth of other information about water sources in North Carolina can be found on the PWS website, http://www.ncwater.org/pws/SWAP_susceptibility_results.HTM.

Source Name	Inherent Vulnerability Rating	Contaminant Rating	Susceptibility Rating
BOSWELL ST WELL	Lower	Moderate	Moderate
VIRGINIA RD WELL	Lower	Higher	Moderate
FREEMASON ST WELL	Lower	Higher	Moderate
BEAVER HILL WELL	Lower	Higher	Moderate

Figure 6. Town of Edenton SWAP Results Summary

The WHP Committee

The following people have been designated or volunteered to serve as Town of Edenton's Wellhead Protection Committee (WPC):

<u>Name</u>	<u>Position</u>
Mr. William Davidson	Interim Public Works Director
Mr. Kermit Owens	Water Treatment Plant Operator
Mr. Brad Arnold	Water and Sewer Distribution Supervisor
Mr. Sam Barrow	Planner
Mr. Cord Palmer	Chowan County Emergency Management Coordinator
Ms. Anne-Marie Knighton	Town Manager
Mr. Roy Alons	Former Water Operations Specialist

Ms. Debbie Maner, Source Water Protection Specialist with the NC Rural Water Association provided technical assistance in completing Town of Edenton's Wellhead Protection Plan. The positions responsible for implementing the plan are the Edenton Town Council. They have accepted the recommendations made in the plan by the WPC. The Council has granted the Edenton Town Manager the authority to implement the Plan and to approve any revisions that may be necessary to obtain approval from the Public Water Supply Section (PWSS). Implementation of the Plan will begin immediately following its approval by the PWSS of the North Carolina Department of Environmental Quality (DEQ) and will be completed within ninety (90) days.

Upon completion of the implementation phase of the WHP Plan, the individual responsible for implementation will submit notification to the Public Water Supply Section in accordance with the schedule set forth in the approved WHP Plan.

Delineation of the Wellhead Protection Area

There are several methods that are used to delineate Wellhead Protection Areas (WHPAs). The one that is most appropriate for each well system depends upon many factors including its location within the state and the characteristics of the subsurface geology. The Aquifer Source Volume Method or ASV was used delineate the Town of Edenton's WPHAs.

Aquifer Source Volume (ASV)

In North Carolina, the WHPA for wells withdrawing water from certain confined aquifers encompasses the area surrounding the well for which the time of travel from the outer edge of the area to the well is 10 years. A 10-year period was selected to provide time to assess the potential impact of any ground-water contamination discovered within the WHPA and for developing appropriate remediation and ground-water protection strategies for the water supply. A WHPA based on a longer time of travel may provide a greater degree of protection to the well and allow more advance warning to respond to a contamination incident within the WHPA, but it will also expand the area to manage under the WHP Plan.

WHPAs based on a 10 year time of travel from their outer edge to the pumping well can be estimated by using the ground-water velocity or by estimating the volume of the aquifer required to supply 10 years of withdrawals (i.e., the ASV method). Due to the lack of site-specific information necessary to calculate the ground-water velocity, Town of Edenton chose the ASV method to delineate the WHPA for its water supply wells.

The volume of the aquifer that supplies withdrawals for a specified period of time can be estimated with the following equation:

$$V_p = Q \left(\frac{\text{gal}}{\text{min}} \right) \times t_d \left(\frac{\text{min}}{\text{day}} \right) \times \left(\frac{\text{ft}^3}{7.48 \text{ gal}} \right) \times \left(\frac{365.25 \text{ days}}{\text{year}} \right) \times \frac{P (\text{years})}{n}$$

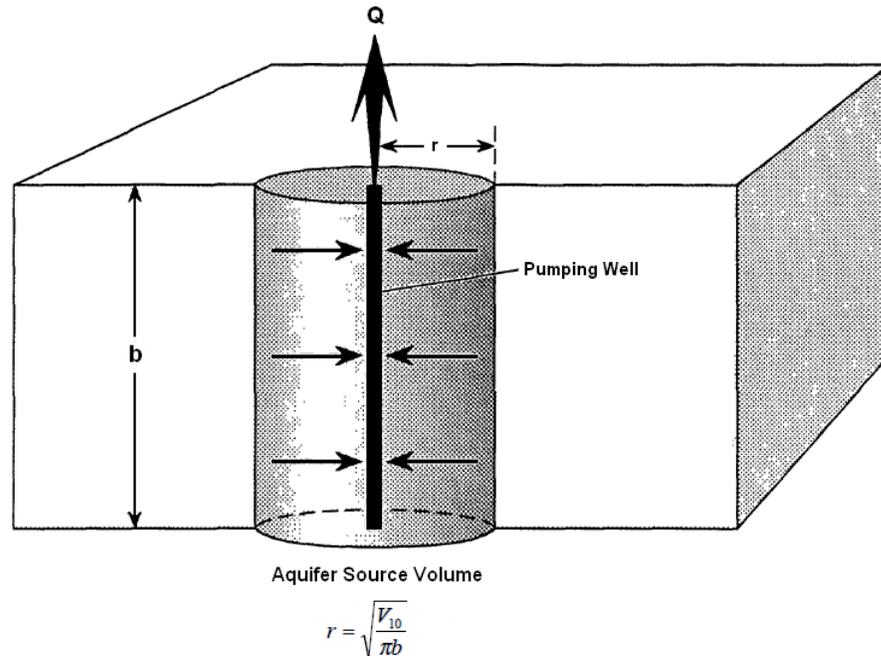
- Where:
- V_p = the volume of aquifer in ft^3 that supplies withdrawals for period P,
 - Q = the well yield in gallons per minute,
 - t_d = the daily pumping period in minutes per day,
 - P = the period of withdrawals in years, and
 - N = the estimated porosity, dimensionless.

The well yield is the maximum sustained pumping rate possible for the well (not the daily pumping rate) as determined from a 24-hour drawdown test pursuant to North Carolina Administrative Code 15A NCAC 18C.0402(g). If well yield information is unavailable, the maximum capacity of the pump installed on the well may be substituted. The daily pumping period t_p is the number of minutes per day that the well is pumped and should equal 720 (the number of minutes in 12 hours). This value is used because State regulations require that the yield of a public water supply well provide the average daily demand in 12 hours. If the actual pumping period exceeds 12 hours, then the actual pumping period in minutes per day should be used. Using a daily pumping period t_p of 720 minutes per day, a period of withdrawal P of 10 years and an estimated porosity of 0.2, the above equation, rounded, reduces to:

$$V_{10} = 1,800,000 \times Q$$

Where: V_{10} = the volume of aquifer in ft^3 that supplies 10 years of withdrawals.

For ease (convenience) in applying the ASV method, it is assumed that the volume is contained in a cylinder centered on the well.



Before the radius of the cylinder, and therefore the WHPA, can be determined, it is first necessary to determine or to estimate the thickness (b) of the aquifer (or the thickness of the part of the aquifer) that supplies water to the well. Because information on well yield and aquifer thickness was available from well construction records for each well judged to be withdrawing water from the Upper Cape Fear aquifer, Town of Edenton Water System calculated the WHPA radii for the Upper Cape Fear wells by substituting the aquifer thickness, along with the calculated volume (V_{10}) into the following equation for each of these wells:

$$r = \sqrt{\frac{V_{10}}{\pi b}}$$

Where: r = the radius in feet,
 V_{10} = the volume of the aquifer, in ft^3 , that supplies 10 years of
 withdrawals,
 π = 3.1416, and
 b = the aquifer thickness or the length of screened or open-hole
 section, in feet.

Well	Q (gpm)	t (min/day)	P (yrs)	porosity (n)	V(ft3)	B (length of screened interval)	WHPA (sq. ft.)	WHPA (sq. mi.)	WHPA radius (ft)
1A Freemason	500	720	10	0.2	878943850.3	58	15146486	0.54	2196
2 Virginia Road	460	720	10	0.2	808628342.2	58	13934767	0.50	2107
3 Beaver Hill	533	720	10	0.2	936954144.4	58	16146154	0.58	2268
4 Boswell Street	396	720	10	0.2	696123529.4	58	11996017	0.43	1955
							Total	2.05	

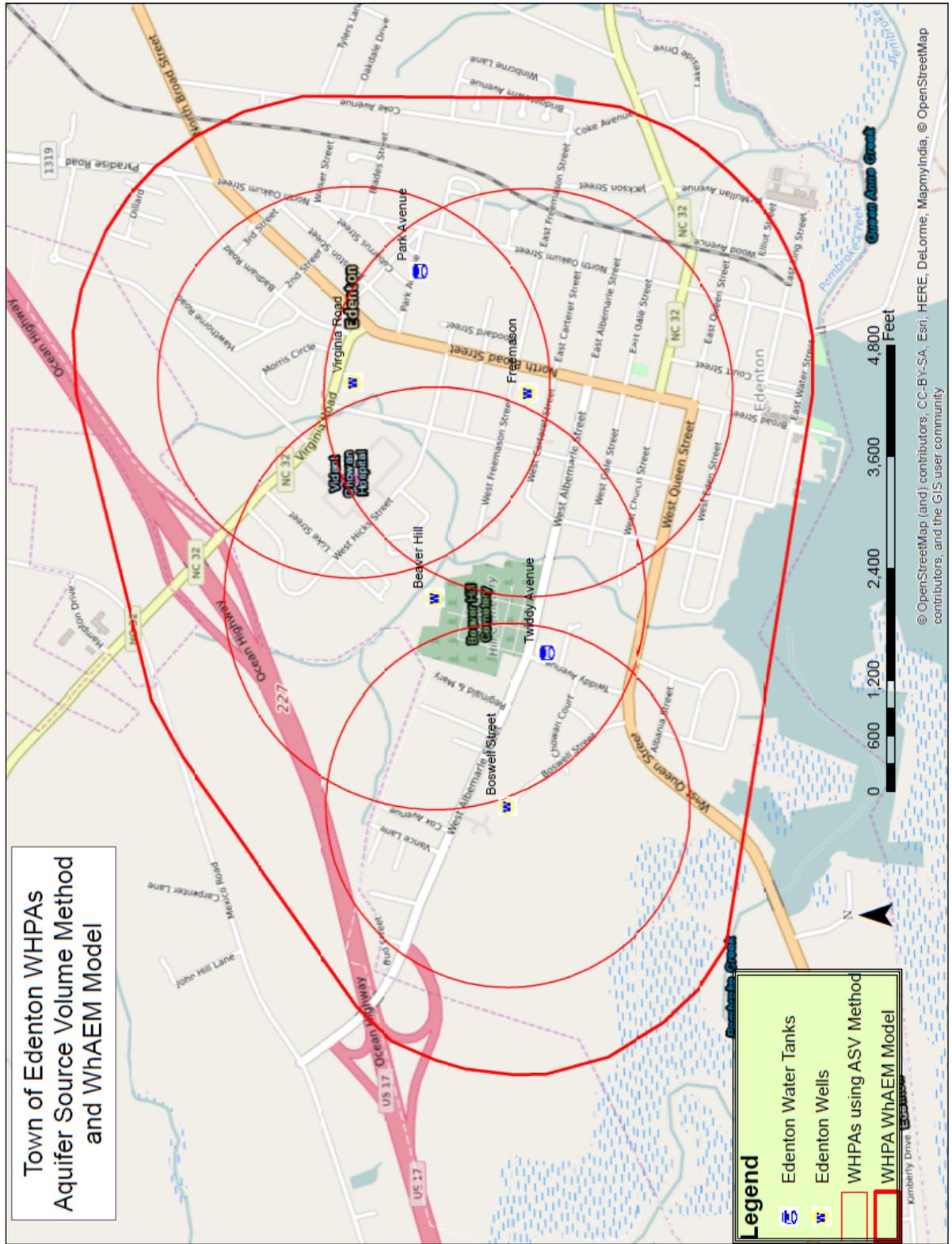
Figure 7. Town of Edenton’s Delineation Calculations

Using the Aquifer Source Volume Method, **Figure 7.** shows the calculated radii used to delineate Edenton’s WHPAs. However, the wells are close enough in proximity that there is significant overlap of the areas when using the formula, so it is likely the wells are influencing each other during pumping. To analyze the influence and further delineate the areas the WhAEM2000, EPA groundwater flow model described below was also used.

WhAEM2000

The U.S. EPA's Wellhead Analytic Element Model, WhAEM2000 for Windows (98/NT/2K/XP/7/8), is a groundwater geohydrology computer program. WhAEM2000 is a public domain, ground-water flow model designed to facilitate capture zone delineation and protection area mapping in support of the State's Wellhead Protection Programs (WHPP) and Source Water Assessment Planning (SWAP) for public water supplies in the United States. WhAEM2000 provides an interactive computer environment for design of protection areas based on radius methods, well in uniform flow solutions, and geohydrologic modeling methods. Geohydrologic modeling for steady pumping wells, including the influence of hydrological boundaries, such as rivers, recharge, and no-flow contacts, is accomplished using the analytic element method.





Potential Contaminant Source (PCS) Inventory

The inventory process begins by looking at the Source Water Assessment Program (SWAP) Report (SWAP) for Town of Edenton. Information from sixteen State and Federal Databases is combined into that report, and the information is used as a starting point to research files at the various agencies. All relevant information is in the PCS tables and in the summaries that follow. Additional information about the SWAP Report information can be found in the Appendix.

Windshield Survey

The WPC conducted a windshield survey of the WHPAs and identified each potential contamination source (PCS) facility or activity that might exist within the WHPAs. Onsite visits were made and additional information was obtained regarding quantity and types of contaminants kept on site. The PCS list shows the sources identified during the inventory along with quantities and types of contaminants found at the site.

Septic Tank Systems and Abandoned Wells

The Town operates a municipal wastewater system that serves 1,928 connections. The waste is pumped to a spray field located at 614 Macedonia Road which is well outside the WHPA.

The Town has a requirement that new customers connect to the municipal water, and permission must be given for anyone to have a private well. Currently there is one private well within the WHPA. The Town also requires that any wells that are no longer being used be abandoned according to state regulations.

Underground Storage Tank Section

When the Underground Storage Tank Section recommends a contaminated site for **State Lead** it means that the state is not able to determine what party is responsible for the contamination, or that the responsible party is unable to clean up the site, it is put on a list of sites that the state will use the State Trust Fund monies that exist to clean up the contamination.

No Further Action (NFA): For certain petroleum UST releases, a determination that no further action is required to assess or remediate soil and/or groundwater. For all releases, the responsible party is required to restore soil and groundwater quality to concentration levels that are equal to or less than the standards established by State groundwater classification and water quality standards (15A NCAC 2L) before being granted No Further Action status. For the majority of releases, the groundwater contamination must be remediated, using one or more technologies, to these standard levels. However, for some releases, if stringent requirements are met, the contamination may be allowed to naturally attenuate to the standard levels or to be remediated actively to alternate concentration levels and then allowed to attenuate to the standard levels.

NCDENR State Trust Fund Risk Assessment – In order to address the issue of depleting State Trust Fund monies for the cleanup of UST releases, North Carolina General Statute (NCGS) 43 - 215.94(e4) directed the Department to establish the degree of risk to human health and the environment posed by a discharge or release of petroleum from a commercial or noncommercial underground storage tank and determine a schedule for further assessment and cleanup that is based on the degree of risk to human health and the environment posed by the discharge or release that gives priority. At that time a large number of groundwater contamination sites were

to told that “At this time your release does not meet the requirements for further assessment or corrective action, and, therefore, you are not directed to proceed.” An example of the letter that was sent to sites that did not meet the requirements is included in the Appendix. The letter goes on to say that “if you elect to continue with non-directed work, please submit a “Non-directed Tasks” preapproval claim authorization form for completion of additional assessment.”

Edenton Shell – Incident # 13667 – 801 North Broad Street, High Risk 150D, This incident was discovered in March of 1995 and is the result of a leak from an underground storage tank. Past monitoring indicates that groundwater flow direction is to the west, towards the well. An Active Remediation or Groundwater Monitoring Report was submitted in June of 2015. Contamination at the site seems to be decreasing. Concentrations are below their target cleanup concentrations, but still above 2L standards. Sampling from monitoring well 10 shows a benzene concentration of 38.3 ppb when the 2L standard for groundwater is 1 ppb. The WaRO recommends continued annual monitoring and the use of Oxygen BioChem (OBC) or another approved sock to oxygenate the water at select recovery and monitoring wells. They also want to see water levels measured in all of the wells and a potentiometric map created to further define groundwater flow direction. Additional modeling to determine attenuation rates was also recommended.

Broad Street Texaco – Incident # 12169 – 711 North Broad Street, High Risk 150D, This incident was discovered in April of 1994, and is the result of a leak from an underground storage tank system that included gasoline, kerosene, and diesel fuels. There has been a history of free product at the site, but during a monitoring event conducted in May of 2016, no free product was detected. Water level measurements indicate that groundwater flow at the site is to the west. Between March 4th and 5th of 2013, a total of almost 1,062 tons of soil and 2,556 gallons of water were removed from an excavation at the site. Three monitoring wells were abandoned on the site. Sampling conducted during the May 2016 event showed contamination of benzene in MW3 to be 4.1 ppb. The WaRO requested semi-annual monitoring of six wells at the site.

Chowan County Administrative Building – Incident # 38560 – 113 East King Street, Low Risk 115D One 6,000 gallon heating oil UST and associated piping were removed from the site on May 19, 2015. Sampling of groundwater from a temporary monitoring well installed at the time indicate that contamination exceeded the NCAC 2L.0202 standards for benzene at 29.4 ppb, when the 2L standard is 1ppb. On October 19, 2015, the WaRO sent a Notice of Regulatory Requirements requesting that the responsible party submit a Notice of Residual Petroleum be filed with the Chowan County Register of Deeds that the release had not been remediated to below “unrestricted use standards,” before the property can be conveyed or issued a Notice of No Further Action Required.

Town of Edenton/ Street Department – Incident # 12716 – Issued a Notice of No Further Action Required June 24, 2016.

Belks Department Store – Incident # 15472 – 216 South Broad Street, Low Risk, On April 14, 1996, a 2,000 gallon UST was removed from the site and evidence of groundwater contamination was noted. Approximately 20 cubic yards of soil was removed from the sight and samples collected at the time show slight groundwater contamination of 23.0 ppb benzene when the 2L standard is 1 ppb. On July 16, 2014, the WaRO sent a Notice of Regulatory Requirements requesting that the responsible party submit a Notice of Residual Petroleum be filed with the Chowan County Register of Deeds that the release had not been remediated to below “unrestricted use standards,” before the property can be conveyed or issued a Notice of No Further Action Required. At that time the Notice was returned and the owner of the property could not be located.

Snyder Property – Incident # 31104 – 200 West Church Street, Low Risk, Issued a Notice of No Further Action Required June 17, 2016.

Chowan Hospital – Incident # 26389 – 211 Virginia Road – A Closure Report regarding the removal of a 550 gallon UST was submitted March 28, 2006. A Notice of No Further Action Required was issued on April 24, 2006.

Etna Self Service – Incident # 24861 – 200 North Broad Street – Three 4,000 gallon gasoline tanks were removed for the site December 20, 1991. No other information was available.

Robert Pearson Residence – Incident # 31751 – 104 West Albemarle Street – A leak was discovered at this site as the result of the removal of a deteriorated 550 gallon underground heating oil tank in April of 2007. A Phase I Limited Site Assessment shows slight groundwater contamination at 4.1 ppb benzene. A letter from the WaRO indicates that the release does not meet the requirements for further assessment or corrective action, and, therefore, they are not directed to proceed, as described previously.

JH Conger and Son – Incident #s 86672 and 93082 - South of 119 West Water Street - Colonial Waterfront Park. A Comprehensive Site Assessment was submitted to the WaRO in 2006, and they were instructed to continue monitoring. In 2014, it was determined that the responsible party could not be identified. Notice of No Further Action issued on

Hazardous Waste Section – Brownfields Agreement

The DEQ will enter into an agreement with the developer that is in effect a covenant not-to-sue contingent on the developer making the site suitable for the reuse proposed. The brownfields agreement provides both the site-specific actions necessary to make the site suitable for reuse and the covenant not-to-sue once these actions are complete. A brownfields agreement is designed to break environmental liability barriers that hinder a developer's ability to obtain project financing. The agreement specifies actions to be conducted by the developer that are based on making the site suitable for the use intended. These actions can be costed, and then a business decision can be made by the developer and lenders without uncertain liability.

Leary Brothers Storage (Former) – NCN000407197 – Virginia & Broad Streets, 101 Virginia Road, Sampling at the site indicated that arsenic concentrations exceeded the 2L standard of 50 ppb. In 1996 the contamination in MW3 was 262 ppb. The site was accepted into the Brownfields Program and had a finalized agreement in 2016.

Chowan Veneer – Incident # 87571 – 259 and 262 Coke Avenue – Studies conducted at the site indicated that there were contamination concentrations were just slightly above 2L concentrations. The site was turned over to the Brownfields Program in 2006 and that the responsible party filed for bankruptcy. The site was accepted and had a finalized Brownfields agreement in 2016.

Tier II Sites

There are two sites listed as Tier II sites in the SWAP Report. They are Wilco # 185 and Edenton Shell. They are both for petroleum products. Their Tier II Forms are included in the Appendix.

PCB Site

Edenton Utilities was reported as a PCB generator site in 1990. PCBs are generally not water soluble and there has been no evidence of a spill at this location. The Town has taken the required action to properly dispose of any transformers that may have contained PCBs.

Potential Contamination Sources

The list below shows the potential contaminant source (PCS) types identified during the inventory of the WHPA of each of the wells and map of the WHPA follows showing the location of each PCS.

Edenton PCS Inventory			
PCS Site	Owner Contact	Potential Contaminant	Quantity
Broad Street Texaco 711 N. Broad Street	Leary Oil Co. 121 W. Water St. Edenton, NC 27932	UST Permit 00-0000031730-0- 0000011434 GW Incident # 12169	2<3,5000 gal.
Vine Oak Cemetery	North Granville St.	Cemetery	
Trade Wilco 301 Virginia Road	Speedway Wilco Hess 5446 University Parkway Winston Salem, NC 27105	00-0000031730 Tier II Site 4055091	
James & Son Body Shop 1100 North Broad St. 252-482-6543		Auto Repair Just outside WHPA	
Crimp, Inc. Commercial Ready Mix 302 Hicks St. 252-482-3298		NPDES 17475 NCG14011	
Byrum Hardware 314 South Broad St. 252-482-2131	Jean B. Brown	Hardware Store	
St. Pauls Episcopal Church Broad St.		Cemetery	
Edenton Baptist Church North Granville St.		Cemetery	
DaVita Edenton Dialysis 312 Medical Arts Dr.		Medical Waste	
Vidant Health 203A Dale Earnhardt Dr.		Medical Waste	
Eastern Dermatology & Pathology		Medical Waste	

204 Claire Dr.			
Beaver Hill Cemetery West Albemarle St.		Cemetery	
Edenton Public Works Building 118 W. Hicks Street	Town of Edenton	ASTs Diesel Gasoline	2 - 6,000 gallon 2 - 10,000 gallon
Belks Department Store # 278 216 South Broad St.	Owner cannot be located	PIRF # 15472	

Figure 8. PCS Inventory Information All Wells Edenton

Figure 9. The following tables were taken directly from the SWAP

**Table 4. Potential Contaminant Source Attributes
EDENTON, TOWN OF
PWS ID: 04-21-010, BOSWELL ST WELL**

Common Attributes

PCS Name	PCS ID	PCS Type	PCS Risk Rating	Street Address	City	Zip	County
Foreman Lumber Yard Bulkhead	SW7021204	NPDES Permits	H	409 W Queen St	Edenton	27932	CHOWAN
Edenton Medical Park - Express	SW7060521	NPDES Permits	H	Claire Dr	Edenton	27932	CHOWAN
Ana Boat DOC Incorporated	NCG190053	NPDES Permits	H	621 W Queen St	Edenton	27932	CHOWAN
Freemason WTP	NC0007552	NPDES Permits	H	W Freemason St	Edenton	27932	CHOWAN
Beaver Hill WTP	NC0086291	NPDES Permits	H	Albemarle Rd	Edenton	27932	CHOWAN

**Table 4. (Cont.) Potential Contaminant Source Attributes
EDENTON, TOWN OF
PWS ID: 04-21-010, BOSWELL ST WELL**

Unique Attributes

PCS Name	PCS ID	Attribute	Value
Foreman Lumber Yard Bulkhead	SW7021204	Permit Type	State Stormwater
Foreman Lumber Yard Bulkhead	SW7021204	Permit Issued Date	1/13/2003
Edenton Medical Park - Express	SW7060521	Permit Type	State Stormwater
Edenton Medical Park - Express	SW7060521	Permit Issued Date	9/21/2006
Edenton Medical Park - Express	SW7060521	Permit Expiration Date	9/21/2020
Ana Boat DOC Incorporated	NCG190053	Permit Type	Ship and Boat Building Stormwater Discharge COC
Ana Boat DOC Incorporated	NCG190053	Permit Issued Date	10/1/2009
Ana Boat DOC Incorporated	NCG190053	Permit Expiration Date	9/30/2014
Ana Boat DOC Incorporated	NCG190053	Receiving Stream	Pembroke Creek
Freemason WTP	NC0007552	Permit Type	Water Plants and Water Conditioning Discharge
Freemason WTP	NC0007552	Permit Issued Date	10/15/2014
Freemason WTP	NC0007552	Permit Expiration Date	11/30/2017
Freemason WTP	NC0007552	Receiving Stream	Edenton Bay
Beaver Hill WTP	NC0086291	Permit Type	Water Plants and Water Conditioning Discharge
Beaver Hill WTP	NC0086291	Permit Issued Date	10/15/2014
Beaver Hill WTP	NC0086291	Permit Expiration Date	11/30/2017

PCS Name	PCS ID	Attribute	Value
Beaver Hill WTP	NC0086291	Receiving Stream	Edenton Bay

**Table 4. Potential Contaminant Source Attributes
EDENTON, TOWN OF
PWS ID: 04-21-010, VIRGINIA RD WELL**

Common Attributes

PCS Name	PCS ID	PCS Type	PCS Risk Rating	Street Address	City	Zip	County
LEARY BROTHERS STORAGE (FORMER)	NCN000407197	CERCLIS Sites	H	VIRGINIA & BROAD STREET	EDENTON	Unknown	CHOWAN
EDENTON UTILITIES DEPT	NCD156053613	PCB Sites	H	105 W FREEMASON ST	EDENTON	27932	CHOWAN
EDENTON SHELL	13667	Pollution Incidents	H	801 N. BROAD ST.	EDENTON		CHOWAN
BROAD STREET TEXACO	12169	Pollution Incidents	H	711 NORTH BROAD STREET	EDENTON		CHOWAN
Edenton Shell	4013522	Tier II Sites	H	801 N. Broad St.	Edenton	27932	Chowan
Wilco #185	4055091	Tier II Sites	H	301 Virginia Road	Edenton	27932	Chowan
Prime Time Retirement Center	SW7090721	NPDES Permits	H	106 Mark Dr	Edenton	27932	CHOWAN
Walgreens Pharmacy - Edenton	SW7091102	NPDES Permits	H	SW Corner Of N Broad St And Virginia Rd	Edenton	27932	CHOWAN
Town Of Edenton	SW7920911	NPDES Permits	H			0	CHOWAN
Edenton Town Of	SW7961106	NPDES Permits	H			0	CHOWAN

PCS Name	PCS ID	PCS Type	PCS Risk Rating	Street Address	City	Zip	County
Edenton Eye Care Center	SW7120208	NPDES Permits	H	111 Virginia Rd	Edenton	27932	CHOWAN
Edenton United Methodist Church	SW7030810	NPDES Permits	H	Luke St	Edenton	27932	CHOWAN
Chancellor Health Services Assisted Living Facility - Chowan - Express	SW7070204	NPDES Permits	H	Lot 10 On Claire Dr	Edenton	27932	CHOWAN
McDonald's - Edenton, NC / Express	SW7080802	NPDES Permits	H	310 Virginia Rd	Edenton	27932	CHOWAN
CHOWAN HOSPITAL	00-0-0000011917	UST Sites	H	211 VIRGINIA ROAD	EDENTON	Unkown	CHOWAN
DUCK THRU FOOD STORE 11	00-0-0000034603	UST Sites	H	218 VIRGINIA ROAD - HWY 32	EDENTON	Unkown	CHOWAN
BROAD STREET TEXACO	00-0-0000011434	UST Sites	H	711 NORTH BROAD STREET	EDENTON	Unkown	CHOWAN
Commercial Ready Mix Products	NCG140110	NPDES Permits	H	302 Hicks St	Edenton	27932	CHOWAN
United Parcel Service-Edenton	NCG080369	NPDES Permits	H	1208 N Oakum St	Edenton	27932	CHOWAN

**Table 4. (Cont.) Potential Contaminant Source Attributes
EDENTON, TOWN OF
PWS ID: 04-21-010, VIRGINIA RD WELL**

Unique Attributes

PCS Name	PCS ID	Attribute	Value
EDENTON SHELL	13667	Pollutant Type	GASOLINE/DIESEL/KEROSENE
EDENTON SHELL	13667	Site Risk	H
EDENTON SHELL	13667	Site Priority Code	115B
BROAD STREET TEXACO	12169	Pollutant Type	GASOLINE/DIESEL/KEROSENE
BROAD STREET TEXACO	12169	Site Risk	H
BROAD STREET TEXACO	12169	Site Priority Code	140B
Prime Time Retirement Center	SW7090721	Permit Type	State Stormwater
Prime Time Retirement Center	SW7090721	Permit Issued Date	8/21/2009
Walgreens Pharmacy - Edenton	SW7091102	Permit Type	State Stormwater
Walgreens Pharmacy - Edenton	SW7091102	Permit Issued Date	11/18/2009
Walgreens Pharmacy - Edenton	SW7091102	Permit Expiration Date	12/30/2021
Town Of Edenton	SW7920911	Permit Type	State Stormwater
Town Of Edenton	SW7920911	Permit Issued Date	11/4/1992
Edenton Town Of	SW7961106	Permit Type	State Stormwater
Edenton Town Of	SW7961106	Permit Issued Date	1/9/1997
Edenton Eye Care Center	SW7120208	Permit Type	State Stormwater
Edenton Eye Care Center	SW7120208	Permit Issued Date	5/16/2014
Edenton Eye Care Center	SW7120208	Permit Expiration Date	2/28/2020

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PCS Name	PCS ID	Attribute	Value
Edenton United Methodist Church	SW7030810	Permit Type	State Stormwater
Edenton United Methodist Church	SW7030810	Permit Issued Date	12/9/2003
Edenton United Methodist Church	SW7030810	Permit Expiration Date	12/9/2017
Chancellor Health Services Assisted Living Facility - Chowan - Express	SW7070204	Permit Type	State Stormwater
Chancellor Health Services Assisted Living Facility - Chowan - Express	SW7070204	Permit Issued Date	6/18/2009
Chancellor Health Services Assisted Living Facility - Chowan - Express	SW7070204	Permit Expiration Date	6/18/2023
McDonald's - Edenton, NC / Express	SW7080802	Permit Type	State Stormwater
McDonald's - Edenton, NC / Express	SW7080802	Permit Issued Date	8/8/2008
Commercial Ready Mix Products	NCG140110	Permit Type	Ready Mix Concrete Stormwater/Wastewater Discharge COC
Commercial Ready Mix Products	NCG140110	Permit Issued Date	7/1/2011
Commercial Ready Mix Products	NCG140110	Permit Expiration Date	6/30/2016
Commercial Ready Mix Products	NCG140110	Receiving Stream	Queen Anne Creek
United Parcel Service-Edenton	NCG080369	Permit Type	Transportation w/Vehicle Maintenance/Petroleum Bulk/Oil Water Separator Stormwater Dischar
United Parcel Service-Edenton	NCG080369	Permit Issued Date	11/1/2012
United Parcel Service-Edenton	NCG080369	Permit Expiration Date	10/31/2017
United Parcel Service-Edenton	NCG080369	Receiving Stream	Queen Anne Creek

**Table 4. Potential Contaminant Source Attributes
EDENTON, TOWN OF
PWS ID: 04-21-010, FREEMASON ST WELL**

Common Attributes

PCS Name	PCS ID	PCS Type	PCS Risk Rating	Street Address	City	Zip	County
LEARY BROTHERS STORAGE (FORMER)	NCN000407197	CERCLIS Sites	H	VIRGINIA & BROAD STREET	EDENTON	Unknown	CHOWAN
EDENTON UTILITIES DEPT	NCD156053613	PCB Sites	H	105 W FREEMASON ST	EDENTON	27932	CHOWAN
Edenton Shell	4013522	Tier II Sites	H	801 N. Broad St.	Edenton	27932	Chowan
Edenton Medical Park - Express	SW7060521	NPDES Permits	H	Claire Dr	Edenton	27932	CHOWAN
Chowan Adult Day Health Center	SW7000707	NPDES Permits	H	305 W Freemason St	Edenton	27932	CHOWAN
Prime Time Retirement Center	SW7090721	NPDES Permits	H	106 Mark Dr	Edenton	27932	CHOWAN
Walgreens Pharmacy - Edenton	SW7091102	NPDES Permits	H	SW Corner Of N Broad St And Virginia Rd	Edenton	27932	CHOWAN
Town Of Edenton	SW7920911	NPDES Permits	H			0	CHOWAN
Edenton Town Of	SW7961106	NPDES Permits	H			0	CHOWAN

PCS Name	PCS ID	PCS Type	PCS Risk Rating	Street Address	City	Zip	County
Edenton Eye Care Center	SW7120208	NPDES Permits	H	111 Virginia Rd	Edenton	27932	CHOWAN
BRIDGE TURN EXXON	00-0-0000026481	UST Sites	H	108 S BROAD ST	EDENTON	Unkown	CHOWAN
PANTRY DBA KANGAROO EXPRESS 3164	00-0-0000012413	UST Sites	H	200 NORTH BROAD STREET	EDENTON	Unkown	CHOWAN
ALBEMARLE CLEANERS	00-0-0000012393	UST Sites	H	209 WEST CHURCH STREET	EDENTON	Unkown	CHOWAN
LIBRARY	00-0-0000009639	UST Sites	H	210 EAST CHURCH STREET	AHOSKIE	Unkown	CHOWAN
OAKUM ST BP	00-0-0000012055	UST Sites	H	405 OAKUM ST	EDENTON	Unkown	CHOWAN
BROAD STREET TEXACO	00-0-0000011434	UST Sites	H	711 NORTH BROAD STREET	EDENTON	Unkown	CHOWAN
Freemason WTP	NC0007552	NPDES Permits	H	W Freemason St	Edenton	27932	CHOWAN
Commercial Ready Mix Products	NCG140110	NPDES Permits	H	302 Hicks St	Edenton	27932	CHOWAN

**Table 4. (Cont.) Potential Contaminant Source Attributes
EDENTON, TOWN OF
PWS ID: 04-21-010, FREEMASON ST WELL**

Unique Attributes

PCS Name	PCS ID	Attribute	Value
Edenton Medical Park - Express	SW7060521	Permit Type	State Stormwater
Edenton Medical Park - Express	SW7060521	Permit Issued Date	9/21/2006
Edenton Medical Park - Express	SW7060521	Permit Expiration Date	9/21/2020
Chowan Adult Day Health Center	SW7000707	Permit Type	State Stormwater
Chowan Adult Day Health Center	SW7000707	Permit Issued Date	3/17/2014
Chowan Adult Day Health Center	SW7000707	Permit Expiration Date	3/17/2022
Prime Time Retirement Center	SW7090721	Permit Type	State Stormwater
Prime Time Retirement Center	SW7090721	Permit Issued Date	8/21/2009
Walgreens Pharmacy - Edenton	SW7091102	Permit Type	State Stormwater
Walgreens Pharmacy - Edenton	SW7091102	Permit Issued Date	11/18/2009
Walgreens Pharmacy - Edenton	SW7091102	Permit Expiration Date	12/30/2021
Town Of Edenton	SW7920911	Permit Type	State Stormwater
Town Of Edenton	SW7920911	Permit Issued Date	11/4/1992
Edenton Town Of	SW7961106	Permit Type	State Stormwater
Edenton Town Of	SW7961106	Permit Issued Date	1/9/1997
Edenton Eye Care Center	SW7120208	Permit Type	State Stormwater

PCS Name	PCS ID	Attribute	Value
Edenton Eye Care Center	SW7120208	Permit Issued Date	5/16/2014
Edenton Eye Care Center	SW7120208	Permit Expiration Date	2/28/2020
Freemason WTP	NC0007552	Permit Type	Water Plants and Water Conditioning Discharge
Freemason WTP	NC0007552	Permit Issued Date	10/15/2014
Freemason WTP	NC0007552	Permit Expiration Date	11/30/2017
Freemason WTP	NC0007552	Receiving Stream	Edenton Bay
Commercial Ready Mix Products	NCG140110	Permit Type	Ready Mix Concrete Stormwater/Wastewater Discharge COC
Commercial Ready Mix Products	NCG140110	Permit Issued Date	7/1/2011
Commercial Ready Mix Products	NCG140110	Permit Expiration Date	6/30/2016
Commercial Ready Mix Products	NCG140110	Receiving Stream	Queen Anne Creek

**Table 4. Potential Contaminant Source Attributes
EDENTON, TOWN OF
PWS ID: 04-21-010, BEAVER HILL WELL**

Common Attributes

PCS Name	PCS ID	PCS Type	PCS Risk Rating	Street Address	City	Zip	County
LEARY BROTHERS STORAGE (FORMER)	NCN000407197	CERCLIS Sites	H	VIRGINIA & BROAD STREET	EDENTON	Unkown	CHOWAN
EDENTON UTILITIES DEPT	NCD156053613	PCB Sites	H	105 W FREEMASON ST	EDENTON	27932	CHOWAN
Wilco #185	4055091	Tier II Sites	H	301 Virginia Road	Edenton	27932	Chowan
Foreman Lumber Yard Bulkhead	SW7021204	NPDES Permits	H	409 W Queen St	Edenton	27932	CHOWAN
Edenton Medical Park - Express	SW7060521	NPDES Permits	H	Claire Dr	Edenton	27932	CHOWAN
Chowan Adult Day Health Center	SW7000707	NPDES Permits	H	305 W Freemason St	Edenton	27932	CHOWAN
Prime Time Retirement Center	SW7090721	NPDES Permits	H	106 Mark Dr	Edenton	27932	CHOWAN
Edenton Eye Care Center	SW7120208	NPDES Permits	H	111 Virginia Rd	Edenton	27932	CHOWAN

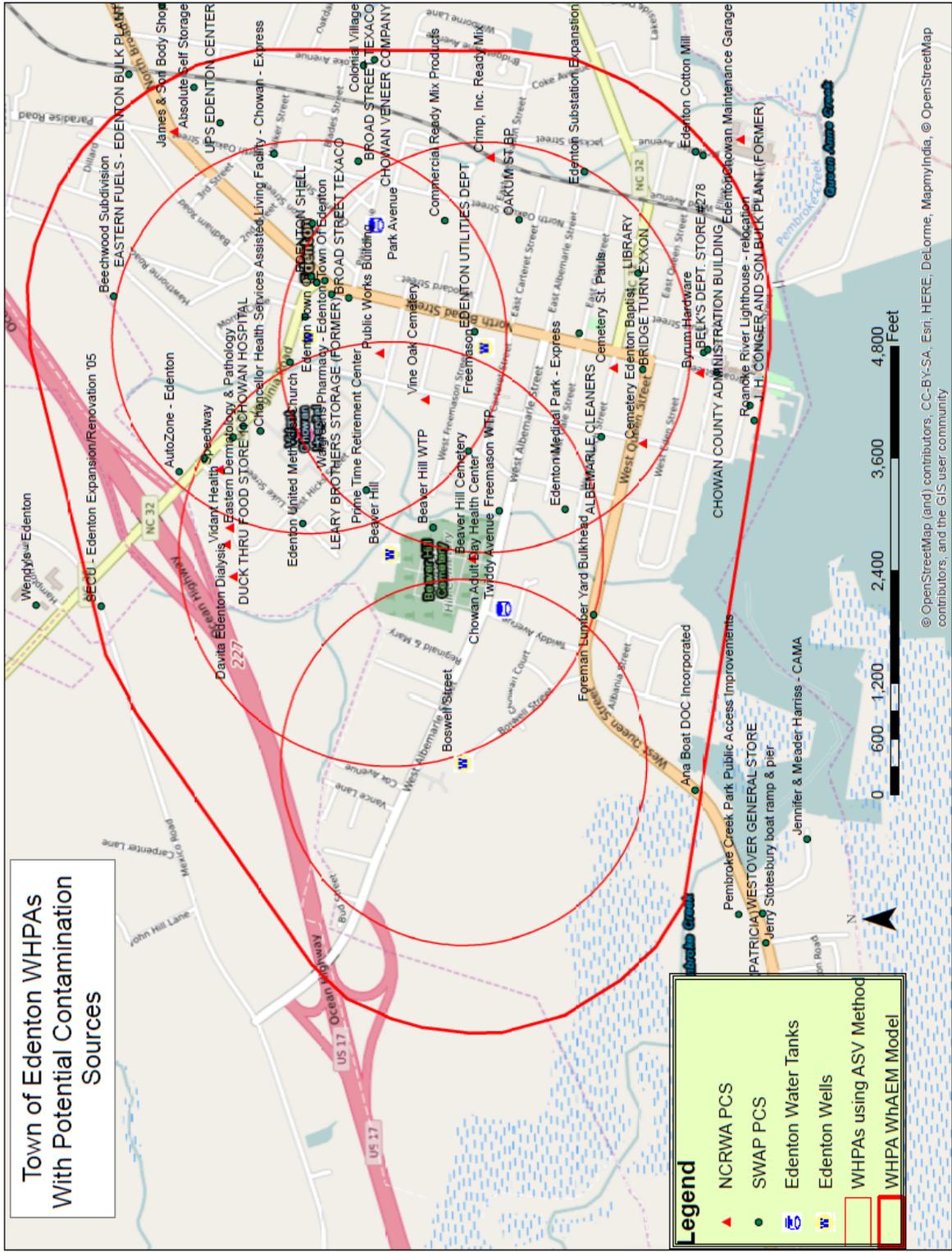
PCS Name	PCS ID	PCS Type	PCS Risk Rating	Street Address	City	Zip	County
Edenton United Methodist Church	SW7030810	NPDES Permits	H	Luke St	Edenton	27932	CHOWAN
Chancellor Health Services Assisted Living Facility - Chowan - Express	SW7070204	NPDES Permits	H	Lot 10 On Claire Dr	Edenton	27932	CHOWAN
McDonald's - Edenton, NC / Express	SW7080802	NPDES Permits	H	310 Virginia Rd	Edenton	27932	CHOWAN
AutoZone - Edenton	SW7130413	NPDES Permits	H	318 Virginia Rd	Edenton	27932	CHOWAN
ALBEMARLE CLEANERS	00-0-0000012393	UST Sites	H	209 WEST CHURCH STREET	EDENTON	Unkown	CHOWAN
CHOWAN HOSPITAL	00-0-0000011917	UST Sites	H	211 VIRGINIA ROAD	EDENTON	Unkown	CHOWAN
DUCK THRU FOOD STORE 11	00-0-0000034603	UST Sites	H	218 VIRGINIA ROAD - HWY 32	EDENTON	Unkown	CHOWAN
BROAD STREET TEXACO	00-0-0000011434	UST Sites	H	711 NORTH BROAD STREET	EDENTON	Unkown	CHOWAN
Freemason WTP	NC0007552	NPDES Permits	H	W Freemason St	Edenton	27932	CHOWAN
Beaver Hill WTP	NC0086291	NPDES Permits	H	Albemarle Rd	Edenton	27932	CHOWAN

**Table 4. (Cont.) Potential Contaminant Source Attributes
EDENTON, TOWN OF
PWS ID: 04-21-010, BEAVER HILL WELL**

Unique Attributes

PCS Name	PCS ID	Attribute	Value
Foreman Lumber Yard Bulkhead	SW7021204	Permit Type	State Stormwater
Foreman Lumber Yard Bulkhead	SW7021204	Permit Issued Date	1/13/2003
Edenton Medical Park - Express	SW7060521	Permit Type	State Stormwater
Edenton Medical Park - Express	SW7060521	Permit Issued Date	9/21/2006
Edenton Medical Park - Express	SW7060521	Permit Expiration Date	9/21/2020
Chowan Adult Day Health Center	SW7000707	Permit Type	State Stormwater
Chowan Adult Day Health Center	SW7000707	Permit Issued Date	3/17/2014
Chowan Adult Day Health Center	SW7000707	Permit Expiration Date	3/17/2022
Prime Time Retirement Center	SW7090721	Permit Type	State Stormwater
Prime Time Retirement Center	SW7090721	Permit Issued Date	8/21/2009
Edenton Eye Care Center	SW7120208	Permit Type	State Stormwater
Edenton Eye Care Center	SW7120208	Permit Issued Date	5/16/2014
Edenton Eye Care Center	SW7120208	Permit Expiration Date	2/28/2020
Edenton United Methodist Church	SW7030810	Permit Type	State Stormwater
Edenton United Methodist Church	SW7030810	Permit Issued Date	12/9/2003

PCS Name	PCS ID	Attribute	Value
Edenton United Methodist Church	SW7030810	Permit Expiration Date	12/9/2017
Chancellor Health Services Assisted Living Facility - Chowan - Express	SW7070204	Permit Type	State Stormwater
Chancellor Health Services Assisted Living Facility - Chowan - Express	SW7070204	Permit Issued Date	6/18/2009
Chancellor Health Services Assisted Living Facility - Chowan - Express	SW7070204	Permit Expiration Date	6/18/2023
McDonald's - Edenton, NC / Express	SW7080802	Permit Type	State Stormwater
McDonald's - Edenton, NC / Express	SW7080802	Permit Issued Date	8/8/2008
AutoZone - Edenton	SW7130413	Permit Type	State Stormwater
AutoZone - Edenton	SW7130413	Permit Issued Date	5/17/2013
Freemason WTP	NC0007552	Permit Type	Water Plants and Water Conditioning Discharge
Freemason WTP	NC0007552	Permit Issued Date	10/15/2014
Freemason WTP	NC0007552	Permit Expiration Date	11/30/2017
Freemason WTP	NC0007552	Receiving Stream	Edenton Bay
Beaver Hill WTP	NC0086291	Permit Type	Water Plants and Water Conditioning Discharge
Beaver Hill WTP	NC0086291	Permit Issued Date	10/15/2014
Beaver Hill WTP	NC0086291	Permit Expiration Date	11/30/2017
Beaver Hill WTP	NC0086291	Receiving Stream	Edenton Bay



**Town of Edenton WHPAs
With Potential Contamination
Sources**

- Legend**
- ▲ NCRWA PCS
 - SWAP PCS
 - Edenton Water Tanks
 - Edenton Wells
 - WHPAs using ASV Method
 - WHPA WhaEM Model

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Risk Assessment

Risk Assessment Method

For each WHPA, the PCSs must be ranked according to the threat each poses to the water supply well or wells. A simplified ranking scheme that assigns each PCS to a risk category of higher, moderate, or lower risk based on published information may be employed. (See Classification Chart in Appendix) However, this risk categorization must be used in conjunction with other information in order to complete the final PCS ranking for the WHPA. For example, a moderate risk PCS may be of more concern than a higher risk PCS located at a greater distance from the water supply well.

A Risk Assessment for the Town of Edenton was conducted using the following approach. A numerical score was assigned to each risk category (e.g., higher – 3, moderate – 2, and lower – 1). For each PCS, this “category” score was then multiplied by a “proximity” score to produce a risk score for the PCS. For a given WHPA, a proximity score could be assigned to each PCS with the following equation:

$$\text{proximity score} = 1 - (\text{distance from the well/radius of the WHPA})$$

The result is a relative ranking of each PCS within a given WHPA according to the threat it poses to the water supply well. Assessing the relative risk of contamination within each WHPA from the PCSs it contains allows for a determination of (1) which water supply wells are at greatest risk of contamination, and (2) which PCSs should be considered first with respect to wellhead protection. Once the risk assessment is carried out, priorities can be set to more effectively manage the PCSs.

PCS Site	Risk Category	Radius	Distance Well 1A Freemason (ft.)	Proximity Score Freemason1A	Overall Score Well Freemason1A
Vine Oak Cemetery	1	2196	850	0.61	0.6
Edenton Public Works Bldg.	2	2196	1132	0.48	1.0
Edenton Utilities	3	2196	202	0.91	2.7
Chowan Adult Day Health Center	1	2196	1118	0.49	0.5
Freemason WTP	2	2196	1750	0.20	0.4
Oakum St. BP	3	2196	1420	0.35	1.1
Crimp, Inc. Concrete	3	2196	2036	0.07	0.2
Edenton Substation	3	2196	2162	0.02	0.0
Kangaroo Express	3	2196	1024	0.53	1.6
St. Pauls Cemetery	3	2196	1352	0.38	1.2
Bridge Turn Exxon	3	2196	1708	0.22	0.7
Byrum Hardware	2	2196	2302	-0.05	L
Chowan County Admin. Bldg.	3	2196	2384	-0.09	L
Belks Dept. Store	3	2196	2338	-0.06	L
Beaver Hill WTP	2	2196	2000	0.09	0.2
Broad St. Texaco	3	2196	2413	-0.10	L
Prime Time Retirement Center	1	2196	1982	0.10	0.1
Former Leary Brothers Storage	3	2196	1732	0.21	0.6
Walgreens Pharmacy	1	2196	1928	0.12	0.1
Edenton Shell	3	2196	2008	0.09	0.3
Edenton Eye Care Center	1	2196	1948	0.11	0.1
Virginia Road	2	2196	2090	0.05	0.0
Edenton Baptist Cemetery	1	2196	1969	0.10	0.1
North Broad Street	2	2196	317	0.86	1.7
Roanoke River Lighthouse Relocation	1	2196	2985	-0.36	L
the Fund for Sandy Point - Small MS4	1	2196	3115	-0.42	L
Edenton Cotton Mill	1	2196	3149	-0.43	L
Chowan Veneer	3	2196	3303	-0.50	L
JH Conger and Son	3	2196	2903	-0.32	L
			Total		13.2

PCS Site	Risk Category	Radius	Distance Well 2 Virginia Road (ft.)	Proximity Score 2 Virginia Road	Overall Score Well 2 Virginia Road
Edenton Eye Care Center	1	2107	225	0.89	0.9
Walgreen's Pharmacy	1	2107	597	0.72	0.7
Leary Brothers Storage	3	2107	521	0.75	2.3
Broad Street Texaco	3	2107	600	0.72	2.1
Edenton Shell	3	2107	651	0.69	2.1
Chancellor Health Services	1	2107	1131	0.46	0.5
Public Works Building	2	2107	768	0.64	1.3
Vine Oak Cemetery	1	2107	1405	0.33	0.3
Chowan Hospital	1	2107	1162	0.45	0.4
Duck Thru Food Store 11	3	2107	1342	0.36	1.1
Speedway	3	2107	1704	0.19	0.6
McDonalds Edenton	1	2107	1710	0.19	0.2
Autozone Edenton	2	2107	1997	0.05	0.1
Edenton United Methodist Church Cemetery	1	2107	1990	0.06	0.1
Prime Time Retirement Center	1	2107	1748	0.17	0.2
Chowan Adult Day Health Center	1	2107	2093	0.01	0.0
Edenton Utilities Dept.	3	2107	1771	0.16	0.5
Broad Street	2	2107	654	0.69	1.4
Beechwood Subdivision	2	2107	2132	-0.01	L
Beechwood Lift Station	3	2107	2124	-0.01	L
Virginia Road	2	2107	212	0.90	1.8
Hospital Lift Station	3	2107	1515	0.28	0.8
United Parcel Service Edenton	1	2107	2487	-0.18	L
James & Son Body Shop	3	2107	2635	-0.25	L
Absolute Self Storage	1	2107	2944	-0.40	L
US 17	2	2107	2478	-0.18	L
				Total	17.3

PCS Site	Risk Category	Radius	Distance Well 3 Beaver Hill (ft.)	Proximity Score 3 Beaver Hill	Overall Score Well 3 Beaver Hill
Beaver Hill Cemetery	1	2268	283	0.88	0.9
Foreman Lumberyard Bulkhead	1	2268	2261	0.00	0.0
Valentine Ave. Lift Station	3	2268	966	0.57	1.7
Edenton Medical Park	1	2268	1924	0.15	0.2
Chowan Adult Day Health Center	1	2268	1381	0.39	0.4
Prime Time Retirement Center	1	2268	731	0.68	0.7
Vine Oak Cemetery	1	2268	1691	0.25	0.3
Chowan Hospital	1	2268	1492	0.34	0.3
Duck Thru Food Store 11	3	2268	2100	0.07	0.2
Eastern Dermatology and Pathology	1	2268	1755	0.23	0.2
Davita Edenton Dialysis	1	2268	2120	0.07	0.1
Vidant Health	1	2268	2199	0.03	0.0
Speedway	3	2268	2151	0.05	0.2
Autozone Edenton	2	2268	2427	-0.07	L
McDonald's	1	2268	2240	0.01	0.0
US 17	2	2268	1989	0.12	0.2
Virginia Road	2	2268	2108	0.07	0.1
Public Works Building	2	2268	2149	0.05	0.1
Edenton SECU Expansion/Renovation	1	2268	3145	-0.39	L
				Total	5.6

PCS Site	Risk Category	Radius	Distance Well 4 Boswell Street (ft.)	Proximity Score 4 Boswell Street	Overall Score Well 4 Boswell Street
Highway 17	2	1955	1955	0.00	L
Valentine Ave. Lift Station	3	1955	1310	0.33	1.0
West Queen Street	2	1955	1586	0.19	0.4
Ana Boat DOC Incorporated	1	1955	2486	-0.27	L
				Total	1.4

Figure 10. Risk Assessment for each of the Town of Edenton Wells – As mentioned in the delineation section, an initial circular WHPA was delineated, and then the EPA Model WhAEM was used to further refine the WHPA delineation. The Risk Assessment was calculated using the circular WHPAs and if a PCS location fell outside the circle, but still inside the WhAEM WHPA, it was given a negative number and classified as Low priority. It is of concern, but is far enough away from the Wells to be classified as Low Risk.

Risk Assessment Summary

The well that would appear to be at the highest risk to potential contamination of all of Town of Edenton's wells would be the Well # 2, Virginia Road. It is in a more highly populated area and in an area where more commercial facilities exist. It received the highest score in the risk assessment. Risk assessment of all of the wells according to their score is as follows with number 1 being highest.

1. Well # 2, Virginia Road - 17.3
2. Well # 1A, Freemason – 13.2
3. Well # 3 Beaver Hill – 5.6
4. Well # 4 Boswell Street – 1.4

Management of the Wellhead Protection Area

There are two methods of managing a Wellhead Protection Area. They are regulatory and non-regulatory. Town of Edenton has chosen a non-regulatory approach to manage its wellhead protection areas, which will include the following:

A Wellhead Protection Brochure and/or newsletter will be delivered to each resident, business, agricultural operation and industry within the Wellhead Protection Areas. Copies of this brochure will be made available at Town offices, the public library, and other locations deemed necessary for public education on Wellhead Protection. Distribution of a brochure to all Town residents will be considered, possibly by mailing a copy in each water bill. In general, the brochure and/or newsletter will convey to each citizen/business the following information:

- An explanation of what ground water is and the number of wells in their particular system
- An explanation of the Wellhead Protection Program.
- Sources of ground-water pollution
- Tips on protecting their water supply
- Information on proper disposal of household hazardous wastes and oils (i.e., not disposed of through septic systems, pouring on ground, or through regular garbage collection)
- Information on proper use of fertilizers, herbicides, and pesticides
- Information on household hazardous waste collection opportunities
- Information on proper maintenance of heating oil tanks and septic systems
- Phone numbers to contact for more information

Town of Edenton will provide information to each business, industry, and farm located within the WHPAs on waste handling practices, best management practices, standard operating procedures, and waste oil disposal methods which could be employed to reduce the potential for ground water contamination. The Town will also provide information regarding the North Carolina Division of Environmental Assistance and Customer Service (DEACS) to each business, industry, and farm located within the WHPA. Owners/operators of potential contamination sources will be encouraged to contact the DEACS. The DEACS provides free technical and other non-regulatory assistance to reduce the amount of waste released into the air and water and on the land. The DEACS serves as a central repository for waste reduction and pollution prevention information. The DEACS emphasizes waste reduction through pollution prevention, encourages companies and government agencies to go beyond compliance, and provides information about the environmental permitting process. This information is provided at no charge to North Carolina businesses, industries, government agencies, and the general public upon request. For additional information, the DEACS may be contacted at 1-877-623-6748 or to report an environmental emergency, call 1-800-858-0368. Their website is <http://portal.ncdenr.org/web/deao/>.

Town personnel will be educated on Wellhead Protection and steps they can take to reduce the potential for contamination (e.g., information about best management practices, standard operating procedures, waste handling practices, etc.). Town of Edenton will also contact the North Carolina Division of Environmental Assistance and Customer Service (DEACS) to investigate steps that the Town can take to reduce the amount of waste released into the air and water and on the land at Town owned and/or managed facilities.

Owners of improperly constructed/abandoned wells identified within the WHPAs will be provided information regarding the threat posed to the water supply by these wells. Owners of improperly constructed/abandoned wells will be encouraged to have these wells properly abandoned in accordance with N.C.'s well construction standards found at 15A NCAC 2C.0100, "Criteria and Standards Applicable to Water Supply and Certain Other Wells". If information exists that a well is improperly constructed or is contributing to the contamination of groundwater, The Town will notify the Water Quality Regional Operations Section of the Division of Water Resources.

All owners/operators of regulated underground storage tanks (USTs) and other facilities subject to federal and/or state regulations located within the WHPAs will be requested to supply documentation that their facility is in compliance with said regulations. Operators of UST's will be asked to supply the Town with a copy of their UST permit. If any UST sites are found to be non-compliant, the Underground Storage Tank Section of the State Division of Waste Management will be notified.

If an abandoned UST site is found, the Town will contact the North Carolina Division of Waste Management, UST Section, to determine if a closure report was submitted demonstrating that no soil or groundwater contamination was identified during the removal of UST's. If a closure report was not submitted, the Town will notify the UST Section of the location of the facility within the WHPAs and its proximity to a public water supply well.

For soil or ground-water contamination incidents occurring within the WHPA, the Town will contact the State agencies with oversight responsibilities for remediation to determine if remediation efforts are proceeding in a timely fashion and in accordance with any schedules established by these agencies. Through this process, the Town will bring to the attention of the State agencies with oversight responsibilities for remediation any failures by the responsible parties to comply with required monitoring and corrective action. The Town will also notify the State agencies with oversight responsibilities for remediation of the location of the facilities within the WHPAs and their proximity to a public water supply well. The Town will also contact the State agencies with oversight responsibilities for the contamination incidents and notify them of the locations of any sites issued notices of "No-Further Action" occurring within the WHPAs and will request a review of this assessment.

The NC Solid Waste Program regulates safe management of solid waste through guidance, technical assistance, regulations, permitting, environmental monitoring, compliance evaluation and enforcement. Information about landfill regulations can be found on their website. <http://portal.ncdenr.org/web/wm/sw>

The NC Division of Environmental Assistance and Customer Service (DEACS) website also provides information about items that are banned from landfills. <http://portal.ncdenr.org/web/deao/recycling/banned-materials>

There is a list of Chowan County's waste collection sites on their website http://www.chowancounty-nc.gov/index.asp?Type=B_BASIC&SEC={FEC26088-5CBF-44A9-826E-37A38EB9FB82}. Individual municipalities must be contacted for waste disposal information.

All farms, residents, businesses, and industries in the WHPA with septic tanks and home heating oil tanks will be distributed a copy of the Wellhead Protection Brochure and any other

information the Town can obtain from Town and/or State agencies on proper septic tank and heating oil tank maintenance.

Any automotive repair shops in the Wellhead protection area currently, and any new businesses that move into the Wellhead Protection Area that produce auto wastes (oils, acids, anti-freeze, etc.) will be provided information on waste handling practices, best management practices, standard operating procedures, and waste oil disposal methods which could be employed to reduce the potential for ground water contamination. They will also be provided with information regarding the North Carolina Division of Environmental Assistance and Customer Service (DEACS) Owners/operators of these facilities will be encouraged to contact the DEACS.

The Town will contact all facilities or agricultural operations within the WHPAs with pesticide storage or otherwise involved with the application of pesticides to ensure that they are pesticide operators licensed by the State of North Carolina and that proper records are maintained to ensure that all NC Pesticide Laws are adhered to. The Town will provide information to these facilities or agricultural operations on waste handling practices, best management practices, standard operating procedures, and proper waste disposal methods which could be employed to reduce the potential for ground water contamination. These facilities will also be provided with information regarding the North Carolina Division of Environmental Assistance and Customer Service (DEACS).

The Town will notify any individual, industry, business, or government agency installing or planning to install a regulated underground storage tank within the Town's wellhead protection area of the following regulation:

North Carolina Underground Storage Tank (UST) Regulation 15A NCAC 2N .0301 stipulates specific siting and secondary containment requirements for UST systems installed after January 1, 1991. The rule is summarized as follows:

(1) No UST system may be installed within 100 feet of a public water supply well or within 50 feet of any other well used for human consumption.

(2) Secondary containment is required for UST systems within 500 feet of a well serving a public water supply or within 100 feet of any other well used for human consumption.

Violations of this regulation will be reported to the Division of Waste Management, Underground Storage Tank Section. The UST Section will also be notified of the location of the facility within the WHPAs and its proximity to a public water supply well or any other well used for human consumption.

A regulated UST system is any underground storage tank and associated piping that contains petroleum (including gasoline, diesel and used oil) or a hazardous substance as defined by the State rules (15A NCAC 2N). Tanks containing heating oil for use on the premises where stored are not regulated.

Owners of above ground storage tanks (ASTs) containing oil with a volume greater than 660 gallons or a combination of ASTs with an aggregate volume greater than 1320 gallons are subject to the Oil Pollution Prevention regulations contained in Federal Regulations found at 40 CFR 112. In most cases, these facilities must prepare and implement a Spill Prevention Control and Countermeasures (SPCC) Plan. The Town will verify the compliance status with regard to this regulation of each subject AST located within the WHPAs. Facilities with subject ASTs found not to be in compliance with this regulation will be notified of their regulatory responsibility under this regulation.

The Town will contact the Division of Water Resources regarding facilities permitted to discharge wastewater to the land surface (Non-NPDES Permitted Facilities) to determine if any such operations located within the WHPAs are in compliance with applicable regulatory and permit requirements pertaining to environmental protection such as routine monitoring and reporting requirements. Notification will be made to the Division of Water Resources if it is determined that the facility has failed to maintain compliance with any regulatory and/or permit requirements pertaining to environmental protection such as routine monitoring and reporting requirements.

The Town will contact the Division of Water Resources regarding facilities with NPDES permits to determine if all such NPDES discharges are in compliance with applicable regulatory and permit requirements pertaining to environmental protection such as routine monitoring and reporting requirements. Notification will be made to the Division of Water Resources if it is determined that the facility has failed to maintain compliance with any regulatory and/or permit requirements pertaining to environmental protection such as routine monitoring and reporting requirements.

The Town of Edenton inspects its wastewater lift stations daily. The wastewater collection system is inspected daily.

The Town will contact the Division of Water Resources (DWR) regarding any lagoon or hog farm located within its WHPAs. The Town will inform the DWR of the lagoon or hog farm's location within a WHPA and its proximity to a public water supply well. It will also determine if the facility is in compliance with any regulatory and permit requirements pertaining to environmental protection such as routine monitoring and reporting requirements. Notification will be made to the DWR if it is determined that the facility has failed to maintain compliance with any regulatory and/or permit requirements pertaining to environmental protection such as routine monitoring and reporting requirements.

Emergency Contingency Plan

The primary person responsible for implementing the emergency contingency plan is the Interim Public Works Director. The back-up person responsible for implementation is the Water Treatment Plant Operator.

Should a major oil or chemical spill occur within the Wellhead Protection Area, appropriate emergency agencies would be notified. The first of these would include the Town of Edenton Fire Department and the Chowan County Emergency Coordinator.

Town of Edenton Fire Department

911

Chowan County Emergency Coordinator

252-482-4365

If power is lost to the Town of Edenton's wells, two of the Town's four wells have stationary generators installed on site. Two of the remaining four wells are pre-wired to be connected to mobile generators. The Town owns 3 mobile units and each unit is rated to provide 30 KW. The mobile generators are stored at the Freemason well site.

If evidence exists that indicates that a well is contaminated, it will immediately be taken off line and not returned to service until it is determined that water quality from the impacted well is in compliance with standards governing public water supplies. If one of Town of Edenton's wells were to become contaminated, residents would be notified by radio, television, newspaper, door-to-door and by telephone not to drink the water until further notice. The regional office of the Public Water Supply Section would be notified immediately of the situation and asked for assistance. Sampling (i.e. bacteriological, VOCs, SOCs, etc.) would begin to determine the contaminant involved and the extent of contamination. A systematic flushing of the distribution system would begin with follow-up sampling conducted as needed until the system was determined to be free of contamination and in compliance with standards governing public water supplies. After consultation with the Public Water Supply Section, residents would be notified that Town of Edenton's water was once again safe for consumption.

Short and long term contingency plan – The Town has the capacity to store 800,000 gallons of water in its two elevated storage tanks. It uses an average of 492,641 gallons per day so if the tanks were filled to capacity, the Town would have water for almost two days should an emergency occur where they could not use their wells. In the long term, the Town has an interconnection with the Chowan County and can purchase water from them in the event of an emergency.

Figure 11. Emergency Contact Numbers and Additional Resources:

Name	Resource
Primary person responsible for implementing emergency contingency plan: William Davidson Interim Public Works Director Cell – 252-333-0622 Office – 252-485-4111	Emergency Response
Secondary Person Kermit Owens Water Treatment Plant Operator Office – 252-482-4111	Emergency Response
Local Resources: Chowan County Emergency Coordinator 252-482-4365	Emergency Response
Public Water Supply Section 1634 Mail Service Center Raleigh, NC 27699-1634 919-715-2853	Technical Assistance Regulatory guidance
NC Department of Environment & Natural Resources, Washington Regional Office 943 Washington Square Mall Washington, NC 27889 Tel: 252-946-6481	Water Quality Regional Operations Section, Public Water Supply Section, UST Section, Hazardous Waste Section Spills, Regulatory information and technical assistance
Department of Transportation District Traffic Engineer Mr. Michael Poe 1561 Mail Service Center Raleigh, North Carolina 27699-1561 Local Office –828-265-5380	Emergency spill notification
National Guard 119 US Highway 13 And 17 S Windsor, NC 27983-9117 (252) 794-2371	Emergencies, as available: Generators, 400-gallon water trailers, bottled water, transportation
NC Rural Water Association Post Office Box 590 Welcome, NC 27374 336-731-6963	Technical assistance Education
North Carolina Cooperative Extension Service Campus Box 7602 North Carolina State University Raleigh, NC 27695-7602 919-515-2811 www..bae.ncsu.edu	Educational brochures, publications

Name	Resource
US EPA Regional Office AST/SPCC Program Region IV 61 Forsyth Street Atlanta, GA 30365-3415 404-562-8761 www.epa.gov/oilspill	Above ground storage tank information
US EPA Regional Office GW & UIC Section Region IV Atlanta Federal Center 61 Forsythe St. Atlanta, GA 30303-8960 www.epa.gov	Educational brochures, publications
Division of Environmental Assistance and Customer Service (DEACS) 1639 Mail Service Center Raleigh, NC 27699-1639 1 877-623-6748 Emergency 1-800-858-0368 http://portal.ncdenr.org/web/deao/	Technical and non-regulatory assistance to reduce waste
National Small Flows Clearinghouse West Virginia University Post Office Box 6064 Morgantown, WV 26506-6064 800-624-8301 http://www.nesc.wvu.edu/sitemap.cfm	Pamphlets, brochures, training aids

Public Participation

Town of Edenton has posted an article in the local newspaper notifying the public about the update of their Wellhead Protection Plan (WHPP). The public was invited to review a draft copy of the plan and make comments. Any comments received and considered beneficial will be incorporated into the final copy of the WHPP. Documentation is included.

New Public Water Supply Wells

Town of Edenton will amend its Wellhead Protection Plan to include any new well(s) added to its water system. The following steps will be taken to address any new wells added to the water system.

1. Develop a preliminary WHPA for the proposed well in order to determine the area of vulnerability.
2. Develop a contaminant source inventory for the preliminary WHPA.
3. Submit the information obtained in items 1 and 2 above to the WPC committee identified in Section 1. Any information required by the Public Water Supply Section (PWSS) relating to the development and construction of new public water supply (PWS) wells must also be submitted.
4. If the WPC committee grants provisional approval of the proposed WHP Plan and the PWSS grants approval to construct or expand the PWS well or well system, then work may proceed with well construction.
5. Finalize the WHPA delineation for the new well.
6. Finalize the contaminant source inventory for the WHPA.
7. Submit finalized WHPA and contaminant source inventory to the WPC committee.
8. Once approval is received, implement any necessary regulatory and or non-regulatory potential source management practices.
9. Submit the amended WHP Plan and all necessary supporting information to the PWSS for review and approval.

Future Wellhead Protection

Town of Edenton is aware that an effective local Wellhead Protection (WHP) Program is an ongoing process requiring monitoring of the Wellhead Protection Area (WHPA) and periodic review and updating of an approved WHP Plan. Therefore, the Town's WHP Committee will monitor the WHPA for any new or previously unidentified potential contaminant sources (PCSs) and activities occurring within the approved WHPAs. The Town will amend the PCS inventory and other Plan components (e.g. the management strategies, emergency contingency plan, etc.) as necessary to incorporate any new threats to the Town's groundwater source of drinking water. Additionally, the PCS inventory will be updated annually using the same procedures used to develop the original PCS inventory. The Town will also fully update the WHP Plan every five years or at any time a new well is constructed for use with the Town's water supply system or a major land use change occurs within a WHPA. The individual responsible for implementation of the WHP Plan will submit notification to the Public Water Supply Section annually upon completion of the PCS inventory update or immediately following the completion of a major revision. Any amended or revised sections of the approved WHP Plan resulting from an update or revision will also be submitted upon completion.

Appendix

Potential Contamination Sources by Risk Category

Higher Risk Potential Contamination Sources for Ground Water PWS Systems

COMMERCIAL/INDUSTRIAL

- Automobile Body shops
 - Gas stations
 - Repair shops
- Chemical /petroleum processing/storage
- *Sewer lines
- Utility right-of-way/pesticide use
- Chemical/petroleum pipelines
- Wood/pulp/paper processing and mills
- Dry cleaners
- Electrical/electronic manufacturing
- Fleet/trucking/bus terminals
- Furniture repair/manufacturing
- Home manufacturing
- Junk/scrap/salvage yards
- Machine shops
- Metal plating/finishing/fabricating
- Mines/sand or gravel excavations
- Parking lots/malls (>50 spaces)
- Photo processing/printing
- Plastics/synthetics producers
- Research laboratories

OTHER

- Road salt storage areas
- Military installations
(for classified risks not otherwise listed)

AGRICULTURAL/RURAL

- Farm machinery repair
- Rural machine shops
- *Intensive livestock operations; Lagoons, spray fields
- Fertilizer, pesticide, and petroleum storage, distribution, handling, mixing, and cleaning areas
- *Sewage sludge (biosolids) storage, handling, mixing and cleaning areas
- *Sewage sludge (biosolids) land application
- Unauthorized/illegal disposal of wastes/chemicals

RESIDENTIAL/MUNICIPAL

- Airports - maintenance/fueling areas
- Railroad yards/maintenance/fueling areas
- Landfills/dumps
- Utility stations - maintenance areas
- *Septic systems - high density (>1/acre)
- *Sewer lines
- *Stormwater drains/discharges
- Fertilizer, pesticide, sewage sludge

- Notes:*
1. This is a list of potential sources of contamination not a list of known databases of contaminants.
 2. Higher risk potential contaminant sources are considered to have a higher potential for drinking water contamination than those designated moderate risk or lower risk Facility-specific management practices are not taken into account in estimating risks and assigning these categories.
 3. An asterisk [*] indicates activities that may be associated with microbiological contamination.

Potential Contamination Sources by Risk Category (Con't)

Moderate Risk PCSs

COMMERCIAL/INDUSTRIAL

- Car washes
- Cement/concrete plants
- Food processing
- Hardware/lumber/parts stores

AGRICULTURAL/RURAL

- *Auction lots
- *Boarding stables
- Crops, irrigated (berries, Christmas trees, hops, mint, orchards, vineyards, nurseries, greenhouses, vegetables, sod)

NOTE: Drip-irrigated crops are considered lower risks.

- Drinking water treatment plant residuals/sludge application

RESIDENTIAL/MUNICIPAL

- Drinking water treatment plants
- Golf courses
- Housing - high density (>1 house/.5 acres)
- Motor pools
- Parks
- Waste transfer/recycling stations
- Wastewater treatment plants
- collection stations

OTHER

- Above ground storage tanks
- Construction/demolition areas
- Hospitals
- Transportation corridors
 - Freeways/state highways
 - Railroads
 - Right-of-way maintenance (herbicide use areas)
- Irrigation, water supply, or monitoring wells

SOURCE: Adapted from EPA (1993), and from the Oregon Wellhead Protection Program

Lower Risk PCSs

COMMERCIAL/INDUSTRIAL

- Office buildings/complexes
- RV/mini storage

AGRICULTURAL/RURAL

- Crops, non-irrigated (grains, grass seeds, hay)
- *Rangeland
- Managed forests/silviculture

RESIDENTIAL/MUNICIPAL

- Apartments and condominiums
- Campgrounds/RV parks
- Fire stations
- Schools
- Housing – low density (< 1 house/.5 acres)

OTHER

- Medical/dental offices/clinics
- Veterinary offices/clinics

	Freemason - Well#1A	Current Pumping Rate = 425 gpm	
	Location	West Freemason Street (N36°03'53.2", W76°36'29.0")	
	Date Installed	Replaced original well in 1973	
	Land Elevation (est.)	12' (from USGS 1:24,000 Topographic Map)	
	Original Depth	272'	
	Aquifer Depths from Logs (feet below surface) no geophysical log available (aquifer/confining layer depths are based on driller's log and cross section interpretations)	0 to 50	Surficial Aquifer
		50 to 84	Yorktown Confining Layer
		84 to 160	Yorktown Aquifer
		160 to 210	Castle Hayne Confining Layer
		210 to 289	Castle Hayne Aquifer System
	Original Screen Depths and Aquifers (feet below surface)	213 - 243	Castle Hayne Aquifer System 30 + 10 = 40
		258 - 268	Castle Hayne Aquifer System
	Well Rehab/Modifications	Pump maintenance and flow meter calibration in 2003. Acid treatment in 1991, 1998, and 2003. Video inspection by Pearson verified screen depths.	
	Aquifer Currently Used	Castle Hayne Aquifer System	
	Pump Type	Vertical Turbine (50 HP Motor)	
	Pump Intake Depth	177' reported by Jerry Pearson in 2003	
	Original Static Water Level	30.5' (1973) Obtained from Layne Atlantic records.	
	Current Static Water Level	32.84' (Direct Water Level Measurement on 8/1/06)	
	Current Pumping Level	162.1' (Direct Water Level Measurement on 8/1/06 after 3 hours of pumping)	
	Current Pumping Rate	425 gpm by totalizer (410 gpm by stopwatch and dial meter)	
	Static Water Level Decline Rate	0.07 feet/year	
	Water Quality Issues	Water is clear with no sediment or obvious odor. Operator reports no known water quality problems with the exception of increasing chloride, sodium, and TDS.	
	Original Yield	500 gpm (1973)	
	Current Specific Capacity/Yield	3.28 gpm/ft of drawdown at 3 hours at 425 gpm (8/1/06).	
	Problems Reported/Found	1.	Airline is inoperable; however, water level port for direct water level measurement is in good working condition
		2.	Chloride concentrations have been rising through time and there is a correlation between increasing chloride concentrations and increased usage.
		3.	Although a historical specific capacity was not available in the data GMA collected, the large amount of drawdown and low specific capacity of this well compared to other wells in the wellfield indicates this well has an efficiency problem. The transmissivity estimated from GMA's well test suggests that the specific capacity should be almost 14 gpm/ft-drawdown. Therefore, GMA believes that the well is inefficient and may benefit from rehabilitation.

Virginia Road - Well #2		Current Pumping Rate = 460 gpm
Location	Virginia Road (N36°04'11.5", W76°36'26.9")	
Date Installed	Original well from 1936 with casing modifications	
Land Elevation (est.)	13' (from USGS 1:24,000 Topographic Map)	
Original Depth	358'	
Aquifer Depths from Logs (feet below surface)		No geophysical log available (driller's log is not detailed enough for the interpretation of aquifer/confining layer depths)
Original Screen Depths and Aquifers (feet below surface)	219 - 239	Castle Hayne Aquifer System $20 + 5 + 20 = 45$
	259 - 264	Castle Hayne Confining Layer
	335 - 355	Beaufort Aquifer or Lower Castle Hayne (includes deeper zone not used at other wells in the Edenton wellfield)
Well Rehab/Modifications	The well was slip-lined with 5-inch diameter screens in 1991-1992 due to holes in casing that were allowing sand pumpage. The well is now 10-inch diameter down to 87 feet depth, then 5-inch diameter down to 358 feet depth. Recent well rehabilitation and pump installed in April of 2006. This work included air burst treatment for 8 hours. The reported specific capacity after rehabilitation was 15.7 gpm/ft-drawdown.	
Aquifer Currently Used	Castle Hayne Aquifer System (and Beaufort in the lower screen?)	
Pump Type	Vertical Turbine (marking plate is unreadable but turbine motor appears to be 50 HP)	
Pump Intake Depth	85' based on depth to the top of pump bowls reported by Pearson in 2006	
Original Static Water Level	32' (1991) Obtained from Jerry Pearson's records	
Current Static Water Level	31.40' (Direct Water Level Measurement on 7/27/06)	
Current Pumping Level	63.20' (Direct Water Level Measurement on 7/27/06 after 3 hours of pumping)	
Current Pumping Rate	450 gpm by totalizer (460 gpm by stopwatch and dial meter)	
Static Water Level Decline Rate	No evidence from available historic water level data.	
Water Quality Issues	Water is clear with no sediment and very slight hydrogen sulfide odor. Operator reports no known water quality problems with the exception of increasing chloride, sodium, and total dissolved solid concentrations.	
Oldest Historical Yield	400 gpm (1991)	
Current Specific Capacity/Yield	14.47 gpm/sf of drawdown at 3 hours at 460 gpm (7/27/06)	
Problems Reported/Found	<ol style="list-style-type: none"> 1. Chloride concentrations have been rising through time; however, there is no obvious correlation between increasing chloride concentrations and increased usage. 2. This well has a deeper screened interval than the other wells in the wellfield; however, it has higher transmissivity/specific capacity than other wells. This deeper screened interval may account for water quality problems identified in this well. 	

Beaver Hill - Well #3		Current Pumping Rate = 525+ gpm
Location	Behind Beaver Hill Cemetery (N36°04'03.4", W76°36'55.5")	
Date Installed	1971	
Land Elevation (est.)	13' (from USGS 1:24,000 Topographic Map)	
Original Depth	260'	
Aquifer Depths from Logs (feet below surface) no geophysical log available (aquifer/confining layer depths are based on driller's log and cross section interpretations)	0 to 24	Surficial Aquifer
	24 to 90	Yorktown Confining Layer
	90 to 150	Yorktown Aquifer
	150 to 200	Castle Hayne Confining Layer
	200 to 285	Castle Hayne Aquifer System
	285 to 298	Beaufort Confining Layer
	298 to 427	Beaufort Aquifer
Original Screen Depths and Aquifers (feet below surface)	211 - 241	Castle Hayne Aquifer System 30 + 14 = 44
	246 - 260	Castle Hayne Aquifer System
Well Rehab/Modifications	New pump installation, pump maintenance, and well rehabilitation in 2005. Well was filled with sediment to 255 feet in 2005. Well was cleared to full depth and was treated by air burst.	
Aquifer Currently Used	Castle Hayne Aquifer System	
Pump Type	New Vertical Turbine (20 HP Motor), installed Novemebr 2005	
Pump Intake Depth	155' According to Pearson.	
Original Static Water Level	26' (9/1971) Obtained from Layne Atlantic records. Pearson reported 34.5' in 2005.	
Current Static Water Level	35.5' (Direct Water Level Measurement on 7/27/06)	
Current Pumping Level	103.2' (Direct Water Level Measurement on 7/27/06 after 3 hours of pumping)	
Current Pumping Rate	533 gpm by totalizer	
Static Water Level Decline Rate	0.27 feet/year	
Water Quality Issues	Water is clear with no sediment and slight hydrogen sulfide odor. Operator reports no known water quality problems.	
Original Specific Capacity/Yield	7.6 gpm/ft of drawdown after 24 hours of pumping at 525 gpm (9/1971)	
	6.78 gpm/ft after 6 hours of air burst treatment in 2005	
Current Specific Capacity/Yield	7.8 gpm/ft of drawdown after 3 hours of pumping at 533 gpm (7/27/06)	
Problems Reported/Found	<ol style="list-style-type: none"> 1. Well only equipped with totalizer that reads to nearest 1,000 gallons. 2. Chloride concentrations are still well below 250 mg/L; however, there is a correlation between increasing chloride concentrations and increased usage. 	

Boswell Street - Well #4		Current Pumping Rate = 380 gpm
Location	Boswell Street (N36°03'53.9", W76°37'23.6")	
Date Installed	Jul-93	
Land Elevation (est.)	12' (from USGS 1:24,000 Topographic Map)	
Original Depth	269' (Sealed with cement to 245' depth in 2001)	
Aquifer Depths from Logs (feet below surface) no geophysical log available (aquifer/confining layer depths are based on driller's log and cross section interpretations)	0 to 58	Surficial Aquifer
	58 to 79	Yorktown Confining Layer
	79 to 150	Yorktown Aquifer
	150 to 200	Castle Hayne Confining Layer
	200 to 285	Castle Hayne Aquifer System
	285 to 300+	Beaufort Confining Layer
Original Screen Depths and Aquifers (feet below surface)	210 - 225	Castle Hayne Aquifer System
	234 - 259	Castle Hayne Aquifer System
Well Rehab/Modifications	Pearson performed jetting work in 2001 due to production of excessive fine sand. During jetting, the lower screen collapsed. Pearson had to seal lower half of well with cement to about 245 feet depth to stabilize lower screen and prevent further collapse of screen	
Aquifer Currently Used	Castle Hayne Aquifer System	
Pump Type	Vertical Turbine	
Pump Intake Depth	198 feet (per Local Water Supply Plan and Per Pearson)	
Original Static Water Level	34.42' (8/4/1993)	
Current Static Water Level	34.66' (Direct Water Level Measurement on 8/1/06)	
Current Pumping Level	>75 feet (Drop tube is blocked below 75 feet depth)	
Current Pumping Rate	380 gpm (note original pumping test was at 500 gpm. Pearson reports that yield in 2001 after lower screen sealing was 396 gpm. Specific capacity at 15 minutes of pumping at 396 gpm was about 3.3 gpm/ft).	
Static Water Level Decline Rate	0.02 feet/year	
Water Quality Issues	Water is clear with no sediment and slight hydrogen sulfide odor. Operator reports no known water quality problems.	
Original Specific Capacity/Yield	3.98 gpm/ft-drawdown (24-hours pumping at 500 gpm)	
Current Specific Capacity/Yield	Unknown. Pearson reported a 15-minute specific capacity of 3.3 gpm/ft after well work in 2001	
Problems Reported/Found	<ol style="list-style-type: none"> 1. Port for the direct measurement of water levels would not allow the passage of the water level probe past ~75 feet so only a static water level was obtained. 2. Chloride concentrations are somewhat elevated and should be closely monitored. 	

Michael F. Easley, Governor
William G. Ross Jr., Secretary

North Carolina Department of Environment and Natural Resources



Division of Waste Management
Underground Storage Tank Section

Dexter R. Matthews, Director

September 13, 2007

Mr. Robert Pearson
104 West Albemarle Street
Edenton, NC 27932

Re: Acknowledgement of Report Receipt
Pearson Residence (Robert)
104 West Albemarle Street,
Edenton, Chowan County, NC
Incident Number: 31751
Risk Classification: High
Ranking: H 92 D

Dear Mr. Pearson:

The Underground Storage Tank (UST) Section is in receipt of the report dated June 21, 2007. The report has been reviewed and will be maintained in the Washington Regional Office.

In accordance with North Carolina General Statute (NCGS) 143-215.94E(e4), the Department shall establish the degree of risk to human health and the environment posed by a discharge or release of petroleum from a commercial or noncommercial underground storage tank and shall determine a schedule for further assessment and cleanup that is based on the degree of risk to human health and the environment posed by the discharge or release and that gives priority to the assessment and cleanup of discharges and releases that pose the greatest risk. At this time your release does not meet the requirements for further assessment or corrective action, and, therefore, you are not directed to proceed.

It should be noted that NCGS 143-215.94E(e4) does not relieve you of your requirements for further assessment and cleanup. The Department will notify you, through a Notice of Regulatory Requirements, when additional assessment or corrective action is required.

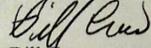
NCGS 143-215.94E(e4) does not prohibit you from conducting assessment or cleanup activities. However, State Trust Fund preapproval is required for non-directed work, and you must agree in writing on the "Non Directed Tasks" preapproval/claim authorization forms designated by the Department that any claims for payment or reimbursement of costs for the non-directed tasks will not be paid until after the Department has paid all claims for payment or reimbursement of costs for directed tasks.

If you elect to proceed with non directed corrective action please submit a Comprehensive Site Assessment.

An Equal Opportunity / Affirmative Action Employer - 50 % Recycled \ 10 % Post Consumer Paper

If you have questions regarding the information contained in this letter, please contact me at the address or telephone number listed below.

Sincerely,



Bill Crew
Hydrogeologist
Washington Regional Office

Cc: GMA, Inc
WaRO

UST Regional Offices

Asheville (ARO) – 2090 US Highway 70, Swannanoa, NC 28778 (828) 296-4500

Fayetteville (FAY) – 225 Green Street, Suite 714, Systel Building, Fayetteville, NC 28301 (910) 433-3300

Mooreville (MOR) – 610 East Center Avenue, Suite 301, Mooreville, NC 28115 (704) 663-1699

Raleigh (RRO) – 1628 Mail Service Center, Raleigh, NC 27699 (919) 791-4200

Washington (WaRO) – 943 Washington Square Mall, Washington, NC 27889 (252) 946-6481

Wilmington (WIL) – 127 Cardinal Drive Extension, Wilmington, NC 28405 (910) 796-7215

Winston-Salem (WS) – 585 Waughtown Street, Winston-Salem, NC 27107 (336) 771-5000

Guilford County Environmental Health, 1203 Maple Street, Greensboro, NC 27405, (336) 641-3771

Tier 2 Online Submission Report
E-Plan - University of Texas at Dallas
January 1, 2015 - December 31, 2015

Facility Name	Edenton Shell	Facility ID	5374107
Company Name	Quality Oil Company	Facility Email	
Department Name		Mail Address	1540 Silas Creek Pkwy , Winston Salem , NC - 27127
Physical Address	801 N. Broad St. , Edenton, Chowan county , NC - 27932 , USA	Latitude / Longitude	36.069399 / -76.605394
Max. No. of Occupants	0 [] Manned [X] Unmanned	Facility Phone Number	
HAICS	447110 - Gasoline Stations with Convenience Stores	Dun & Bradstreet	177045960 - Service Station
TRI Facility ID		RMP Facility ID	
Subject to Emergency Planning under Section 302 of EPCRA (40 CFR part 355)?			[] Yes [X] No
Subject to Chemical Accident Prevention under Section 112(r) of CAA (40 CFR part 68, Risk Management Program)?			[] Yes [X] No
Facility Note			

Contact Information	Name (Title)	Phone	Email	Mail address
Emergency Contact	Andy Sayles (Vice President)	336-413-8517 (24-hour) 336-722-3441 (Work)	asayles@qocnc.com	1540 Silas Creek Pkwy, Winston Salem, Forsyth COUNTY, NC - 27127, USA
Owner / Operator	Graham Bennett	336-722-3441 (Work)	gbennett@qocnc.com	1540 Silas Creek Pkwy, Winston Salem, Forsyth COUNTY, NC - 27127, USA
Tier II Information Contact	Andy Sayles (Vice President)	336-722-3441 (Work) 336-413-8517 (24-hour)	asayles@qocnc.com	1540 Silas Creek Parkway, Winston-Salem, COUNTY, NC - 27127, USA

Chemical Inventory Information

Chemical Description	Physical & Health Hazards	Inventory	Mixture components	Storage locations and codes (Non- Confidential)
CAS <u>8006619</u> Trade Secret [] Chem. Name <u>Gasoline</u> Pure [] Mixture [X] Solid [] Liquid [X] Gas [] EHS [] Below Reporting Thresholds [] Chemical Exemption Information No Exemption information	Fire [X] Pressure [] Reactive [] Acute [X] Chronic []	<u>999.999</u> Max. Daily Amount <u>999.999</u> Avg. Daily Amount <u>365</u> No. of Days On-site		1) under ground tank: Type <u>Below ground tank</u> , Pressure <u>Ambient pressure</u> , Temperature <u>Ambient temperature</u>
CAS <u>8008206</u> Trade Secret [] Chem. Name <u>Kerosene</u> Facility Name: Edenton Shell Facility ID: 5374107	Fire [X] Pressure []	<u>9.999</u> Max. Daily Amount <u>9.999</u> Avg. Daily Amount		1) Tank above ground: Type <u>Above ground tank</u> , Pressure <u>Ambient pressure</u> , Temperature <u>Ambient temperature</u> Managed by The University of Texas at Dallas

Tier 2 Online Submission Report
E-Plan - University of Texas at Dallas
January 1, 2015 - December 31, 2015

Chemical Description	Physical & Health Hazards	Inventory	Mixture components	Storage locations and codes (Non-Confidential)
Pure <input type="checkbox"/> Mixture <input checked="" type="checkbox"/> Solid <input type="checkbox"/> Liquid <input checked="" type="checkbox"/> Gas <input type="checkbox"/> EHS <input type="checkbox"/> Below Reporting Thresholds <input checked="" type="checkbox"/> Chemical Exemption Information No Exemption information	Reactive <input type="checkbox"/> Acute <input checked="" type="checkbox"/> Chronic <input type="checkbox"/>	365 No. of Days On-site		

State Specific Information

No State specific information

Certification

I certify under penalty of law that I have personally examined and am familiar with the information submitted in pages one through 2, and that based on my inquiry of those individuals responsible for obtaining the information, I believe that the submitted information is true, accurate and complete.

Danny Brown

 Name and official title of owner/operator OR owner/operator's authorized representative

 Signature

 Date signed

Facility Name: Edenton Shell Facility ID: 5374107

Managed by The University of Texas at Dallas

Tier 2 Online Submission Report
E-Plan - University of Texas at Dallas
January 1, 2014 - December 31, 2014

Facility Name	Wilco #185	Facility ID	4989681	
Company Name	WILCOHESS LLC	Facility Email		
Department Name		Mail Address	5446 University Parkway , Winston Salem , NC - 27105	
Physical Address	301 Virginia Road , Edenton, Chowan county , NC - 27932 , USA		Latitude / Longitude	36.070473 / -76.608328
Max. No. of Occupants	6	<input checked="" type="checkbox"/> Manned <input type="checkbox"/> Unmanned	Facility Phone Number	
NAICS	447110 - Convenience Store with Gasoline		Dun & Bradstreet	015281822 -
TRI Facility ID		RMP Facility ID		
Subject to Emergency Planning under Section 302 of EPCRA (40 CFR part 355)?			<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Subject to Chemical Accident Prevention under Section 112(r) of CAA (40 CFR part 68, Risk Management Program)?			<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Facility Note				

Contact Information	Name (Title)	Phone	Email	Mail address
Emergency Contact	Archie Wood (Vice President)	3365754901 (Mobile - Cell) 3367676280 (24-hour)	rutledgeb@wilcousa.com	5446 University Parkway, Winston Salem, Forsyth COUNTY, NC - 27105, USA
Owner / Operator	Sherry Polonsky (Senior Vice President/ CFO)	3367676280 (Work)	rutledgeb@wilcousa.com	5446 University Parkway, Winston Salem, COUNTY, NC - 27105, USA
Tier II Information Contact	Beth Rutledge	3367676280 (Work)	rutledgeb@wilcousa.com	5446 University Parkway, Winston Salem, Forsyth COUNTY, NC - 27105, USA

Chemical Inventory Information

Chemical Description	Physical & Health Hazards	Inventory	Mixture components	Storage locations and codes (Non - Confidential)
CAS <u>68476346</u> Trade Secret <input type="checkbox"/> Chem. Name <u>Diesel #2 Fuel Oil</u> Pure <input checked="" type="checkbox"/> Mixture <input type="checkbox"/> Solid <input type="checkbox"/> Liquid <input checked="" type="checkbox"/> Gas <input type="checkbox"/> EHS <input type="checkbox"/> Below Reporting Thresholds <input type="checkbox"/>	Fire <input checked="" type="checkbox"/> Pressure <input type="checkbox"/> Reactive <input type="checkbox"/> Acute <input checked="" type="checkbox"/> Chronic <input type="checkbox"/>	<u>12,000</u> Max. Daily Amount <u>12,000</u> Avg. Daily Amount <u>12,000</u> Max. Amount in largest Container <u>365</u> No. of Days On-site		1) Underground Tank Onsite: Type <u>Below ground tank</u> , Pressure <u>Ambient pressure</u> , Temperature <u>Ambient temperature</u>
Chemical Exemption Information				

Facility Name: Wilco #185 Facility ID: 4989681

Managed by The University of Texas at Dallas

Tier 2 Online Submission Report
E-Plan - University of Texas at Dallas
January 1, 2014 - December 31, 2014

Chemical Description	Physical & Health Hazards	Inventory	Mixture components	Storage locations and codes (Non- Confidential)
Any motor fuel offered for retail sale at a commercial gas station. <input checked="" type="checkbox"/>				
CAS <u>8008619</u> Trade Secret <input type="checkbox"/> Chem. Name <u>Gasoline</u> Pure <input checked="" type="checkbox"/> Mixture <input type="checkbox"/> Solid <input type="checkbox"/> Liquid <input checked="" type="checkbox"/> Gas <input type="checkbox"/> EHS <input type="checkbox"/> Below Reporting Thresholds <input type="checkbox"/> Chemical Exemption Information Any motor fuel offered for retail sale at a commercial gas station. <input checked="" type="checkbox"/>	Fire <input checked="" type="checkbox"/> Pressure <input type="checkbox"/> Reactive <input type="checkbox"/> Acute <input checked="" type="checkbox"/> Chronic <input type="checkbox"/>	<u>10,000</u> Max. Daily Amount <u>10,000</u> Avg. Daily Amount <u>10,000</u> Max. Amount in largest Container <u>365</u> No. of Days On-site		1) Underground Tank Onsite: Type <u>Below ground tank</u> , Pressure <u>Ambient pressure</u> , Temperature <u>Ambient temperature</u>
CAS <u>8008206</u> Trade Secret <input type="checkbox"/> Chem. Name <u>Kerosene</u> Pure <input checked="" type="checkbox"/> Mixture <input type="checkbox"/> Solid <input type="checkbox"/> Liquid <input checked="" type="checkbox"/> Gas <input type="checkbox"/> EHS <input type="checkbox"/> Below Reporting Thresholds <input type="checkbox"/> Chemical Exemption Information	Fire <input checked="" type="checkbox"/> Pressure <input type="checkbox"/> Reactive <input type="checkbox"/> Acute <input checked="" type="checkbox"/> Chronic <input type="checkbox"/>	<u>27,240</u> Max. Daily Amount <u>27,240</u> Avg. Daily Amount <u>27,240</u> Max. Amount in largest Container <u>365</u> No. of Days On-site		1) Underground Tank Onsite: Type <u>Below ground tank</u> , Pressure <u>Ambient pressure</u> , Temperature <u>Ambient temperature</u>

State Specific Information

No State specific information

Certification

I certify under penalty of law that I have personally examined and am familiar with the information submitted in pages one through 2, and that based on my inquiry of those individuals responsible for obtaining the information, I believe that the submitted information is true, accurate and complete.

Sherry Polonsky

Name and official title of owner/operator OR owner/operator's authorized representative

Signature

Date signed

Facility Name: Wilco #185 Facility ID: 4989681

Managed by The University of Texas at Dallas

PCB National Report

US Environmental Protection agency
Office of Solid Waste

Report Selection Criteria

Location: NORTH CAROLINA

Handler ID: NCD156053613

Handler Name:

PCB Activity: All Activities

Date Run: Wednesday August 17 2016 2:14 PM

No. of Facilities Returned: 1

PCB Waste Handlers Database

Wednesday August 17 2016 2:14 PM
Page 2 of 2

EPA ID: NCD156053613	State: NORTH CAROLINA	Region: 04
Name: EDENTON UTILITIES DEPT		
Facility Mailing Address:		
Street: PO BOX 300		
City: EDENTON	State: NC	Zip: 27932
Country: UNITED STATES		
Facility Location Address:		
Street: 105 W FREEMASON ST		
City: EDENTON	State: NC	Zip: 27932
Country: UNITED STATES		
Date Signed: 03/20/1990	Name of Owner Facility:	
Installation Contact:	EDENTON TOWN OF	
CRUMMEY WILLIAM A		
(919)482-4414		
Type of PCB Activity:		
Generator		

*** End of Report ***

Potential Contaminant Source Data

To maintain a common basis for assessing sources of public drinking water in North Carolina, only regulatory agency databases with state-wide coverage were used to develop the inventory of Potential Contaminant Sources (PCSs). Within these databases, only those PCSs with available location data could be used. It is recognized that some problems exist with respect to the accuracy, reliability, quality and completeness of the data obtained from regulatory agency databases.

Considering fiscal and schedule constraints, the North Carolina Public Water Supply Section and the TAC Advisory Committee determined that the assessments for approximately 6,000 sources of drinking water must be based on established statewide data. Also, it was determined that analysis of the data and creation of the assessment reports would need to be an automated process utilizing a Geographic Information System (GIS). Therefore, it must be recognized that the assessment results are based on limited data and analysis techniques.

Potential Contamination Source Information

All PCS datasets are provided to Public Water Supply "as is." Therefore the accuracy of the location data is unverified. The Public Water Supply Section makes no claim or guarantee of data quality, correctness, completeness or validity and does not warranty or assure this data in any way. Unless otherwise noted, all data containing latitude and longitude in decimal degrees was included in the assessments. Records that do not have location information are not used. A GIS shapefile is created using the latitude and longitude in decimal degrees. Each record is checked to determine if the plotted location of the record matched with the value given in the county field for the record. Any record that does not have a matching county location is not included in the assessments.

Animal Operations

This database contains permitted facilities for animal operations consisting of swine, cattle, poultry and horse farms that are required to have Certified Animal Waste Management Plans (CAWMP). Animal operations are defined by General Statute 143-215.10B as feedlots involving more than 250 swine, 100 confined cattle, 75 horses, 1,000 sheep, or 30,000 poultry with a liquid waste management system.

Division of Water Resources (DWR) rules mandate that all facilities in operation prior to January 1, 1994 register with the division. Since January 1, 1994 any new facilities were required to obtain a CAWMP before starting their animal operation. In addition, any facilities in operation prior to January 1, 1994 were required to obtain a CAWMP by December 31, 1997. As of January 1, 1997 all new facilities were required to obtain a permit from DWR prior to construction and be certified prior to startup, and all existing facilities were to be permitted by DWR over the next 5 years.

Data was obtained from the Division of Water Resources, Regional Operations Section, Animal Feeding Operations Branch in January of 2015. For additional information about this data, contact the Animal Feeding Operations staff by phone at 919-807-6464 or click here <http://deq.nc.gov/about/divisions/water-resources/water-resources-permits/wastewater-branch/animal-feeding-operation-permits/afo-program-summary> to visit their web site.

CERCLIS Sites

The Superfund program was created by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), and amended by the Superfund Amendments and Reauthorization Act. The acts established authority for the government to respond to the release/threat of release of hazardous wastes, including cleanup and enforcement actions. The Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) is a database used by the U.S. Environmental Protection Agency to track activities conducted under its Superfund program. CERCLIS contains data on potentially hazardous waste sites that have been reported to the EPA. Sites investigated because of a potential for releasing hazardous substances into the environment are added to the CERCLIS inventory. EPA learns of these sites through notification by the owner, citizen complaints, state and local government identification, and investigations by EPA programs other than Superfund.

Data was obtained from the Division of Waste Management, Superfund Section in December of 2013. For additional information about this data, contact the Superfund Section by phone at 919-707-8329 or click here <https://deq.nc.gov/about/divisions/waste-management/superfund-section/federal-remediation-branch> to visit their web site.

National Priority List Sites

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), amended by the Superfund Amendments and Reauthorization Act, created the Superfund program. The acts established authority for the government to respond to the release/threat of release of hazardous wastes, including cleanup and enforcement actions. Long-term cleanups at National Priority List (NPL) sites last more than a year while short term /emergency cleanups are usually completed in less than a year. Sites are listed on the NPL upon completion of a Hazard Ranking System (HRS) screening, public solicitation of comments about the proposed site, and after all comments have been addressed. Section 105(a)(8)(B) of CERCLA, as amended, requires that the statutory criteria provided by the HRS be used to prepare a list of national priorities among the known releases or threatened releases of hazardous substances, pollutants, or contaminants throughout the United States. This list, which is Appendix B of the National Contingency Plan, is the NPL.

The identification of a site for the NPL is intended to guide EPA in determining which sites warrant further investigation to assess the nature and extent of the human health and environmental risks associated with a site, identifying what CERCLA-financed remedial actions may be appropriate, notifying the public of sites EPA believes warrant further investigation; and serving notice to potentially responsible parties that EPA may initiate CERCLA-financed remedial action. Inclusion of a site on the NPL does not in itself reflect a judgment of the activities of its owner or operator, it does not require those persons to undertake any action, nor does it assign liability to any person. The NPL serves primarily informational purposes, identifying for the States and the public those sites or other releases that appear to warrant remedial actions.

Data was obtained from the U.S. EPA, Region 4 Superfund Program in January of 2015. For additional information about this data, contact the program by phone at 404-562-9634 or click here <https://www.epa.gov/superfund/search-superfund-sites-where-you-live> to visit their web site.

Non-Discharge Permits

The non-discharge database identifies industrial and municipal facilities that are permitted to operate any sewer system, treatment works, disposal system, petroleum contaminated soil treatment system, animal waste management system, storm water management system or residual disposal/utilization system which does not discharge to surface waters of the state, including systems which discharge waste onto or below land surface.

Data was obtained from the Division of Water Resources, Water Quality Permitting Section, Non-Discharge Permitting Unit in January of 2015. For additional information about this data, contact the unit staff by phone at 919-807-6453 or click

here <http://deq.nc.gov/about/divisions/water-resources/water-resources-permits/wastewater-branch/non-discharge-permitting> to visit their web site.

NPDES Permits

The National Pollutant Discharge Elimination System (NPDES) database identifies facilities permitted for the operation of point source discharges to surface waters in accordance with the requirements of Section 402 of the Federal Water Pollution Control Act. Point sources are discrete conveyances such as pipes or man-made ditches. Industrial, municipal, and other facilities must obtain permits if their discharges go directly to surface waters. The NPDES permit program controls water pollution by regulating point sources that discharge pollutants into public waters.

Data was obtained from the Division of Water Resources, Water Quality Permitting Section, NPDES Wastewater Permitting and Compliance Program in June of 2015. For additional information about this data, contact the program staff by phone at 919-807-6300 or click here

<http://deq.nc.gov/about/divisions/water-resources/water-resources-permits/wastewater-branch/npdes-wastewater-permits> to visit their web site.

Old Landfill Sites

Locations of non-permitted landfills that closed prior to January 1, 1983, when waste disposal permitting regulations commenced. These sites are not currently in operation.

Data was obtained from the Division of Waste Management, Superfund Section, Inactive Hazardous Sites Branch (IHSB) in January of 2015. For additional information about this data, contact the Division of Waste Management staff by phone at 919-707-8200 or click here <http://portal.ncdenr.org/web/wm/sf/ihs/ihsoldlf> to visit their web site. Since 2000 the IHSB has conducted a geographic inventory of the old landfills in 46 counties throughout North Carolina. Although they are working to inventory the old landfill sites statewide, the geographic locations of these sites in the remaining counties are much less reliable. You may contact the IHSB for a list of the 46 counties.

PCB Sites

This database identifies generators, transporters, commercial storers and/or brokers and disposers of Polychlorinated Biphenyls (PCBs). Concern over the toxicity and persistence in the environment of PCBs resulted in the Toxic Substances Control Act (TSCA) that prohibited the manufacture, processing, and distribution in commerce of PCBs. Thus, TSCA legislated true "cradle to grave" (i.e., from manufacture to disposal) management of PCBs in the United States. PCBs are mixtures of synthetic organic chemicals with the same basic chemical structure and similar physical properties ranging from oily liquids to waxy solids. Due to their non-

flammability, chemical stability, high boiling point and electrical insulating properties, PCBs were used in hundreds of industrial and commercial applications including electrical, heat transfer, and hydraulic equipment, plastics and rubber and many other applications. Data was obtained from the Environmental Protection Agency, Office of Pollution Prevention and Toxics in March of 2015. For additional information about this data, contact the PCB staff at 404-562-8512 or click here: <https://www.epa.gov/pcbs/learn-about-polychlorinated-biphenyls-pcbs> to visit their web site.

This data was processed additionally in the following manner: Each record that contained a physical address that could be address matched using the Geographic Data Technology address database was included in the assessments. Public Water Supply Section staff performed the address matching.

Pollution Incidents

This database contains information regarding the release of pollutants into the environment that have or are likely to have, impact on the ground water resources of the State. The initial information regarding these releases is usually obtained from concerned citizens or responsible parties, who report a release to the Department of Environmental Quality. After an incident is reported, regional office staff investigate the reported incident and enter the results of their investigation into a statewide database. This database contains an inventory of reported incidents from leaking underground storage tanks and sites contaminated with dry cleaning solvents. Substances released into the environment include gasoline and solvents used in the dry cleaning process.

There are two main sources for this data. The Division of Waste Management, Underground Storage Tank Section provided information on the pollution incidents that resulted from a leaking underground storage tank. The Division of Waste Management, Dry-cleaning Solvent Cleanup Act Program provided information on their sites. In January 2015, data was obtained from the Underground Storage Tank Section. For additional information about this data, contact the UST section staff by phone at 919-707-8171 or click here <http://portal.ncdenr.org/web/wm/ust> to visit their web site. In January of 2015, data was obtained from the Division of Waste Management, Dry-cleaning Solvent Cleanup Act Program. For Additional information contact the staff by phone at 919-707-8369 or visit their web site at <http://portal.ncdenr.org/web/wm/dsca>

RCRA Hazardous Waste Generators/Transporters

This database has records for all hazardous waste generators and transporters as defined by the Resource Conservation Recovery Act (RCRA). Hazardous waste as defined by RCRA is waste material that exhibits ignitability, corrosivity, reactivity, or toxicity. Chemical, metal, and furniture manufacturing are some examples of processes that create hazardous waste. RCRA tightly regulates all hazardous waste from "cradle to grave" (i.e., from manufacture to disposal). Data was obtained from the Division of Waste Management, Hazardous Waste Section in January of 2015. For additional information about this data, contact the Hazardous Waste Section staff by phone at 919-707-8200 or click here <http://deq.nc.gov/about/divisions/waste-management/waste-management-rules/hazardous-waste-rules> to visit the web site.

RCRA TSD Sites

Treatment/Storage/Disposal (TSD) sites are facilities that are engaged in the activities of the treatment, storage, or disposal of hazardous waste. Under the RCRA, TSD activity can occur only at facilities that received or stored hazardous waste after November 19, 1980, the effective date of the RCRA regulations.

Data was obtained from the Division of Waste Management in January of 2015. For additional information about this data, contact Hazardous Waste Section staff by phone at 919-707-8202 or click here <http://deq.nc.gov/about/divisions/waste-management/waste-management-permits/hazardous-waste-section-permits> to visit their web site.

Septage Disposal Sites

This database contains information on permitted, dedicated sites where septage is land applied. The Septage Management Program assures that septage (a fluid mixture of untreated and partially treated sewage solids, liquids and sludge of human or domestic origin that is removed from a septic tank system) is managed in a responsible, safe and consistent manner across the state.

Data was obtained from the Division of Waste Management, Solid Waste Section in January of 2015. For additional information about this data, contact the Septage Management Program staff by phone at 919-707-8280 or click here <https://deq.nc.gov/about/divisions/waste-management/waste-management-rules/septage> to visit their website.

Soil Remediation Sites

This database contains information on permitted, dedicated sites where soil contaminated by leaking petroleum or chemical storage tanks can be taken for bioremediation. Bioremediation is a treatment process that uses naturally occurring microorganisms (yeast, fungi, or bacteria) to break down, or degrade, hazardous substances. These microorganisms break down organic compounds such as petroleum products that are hazardous to humans into harmless products, mainly carbon dioxide and water.

Data was obtained from the Division of Waste Management, Underground Storage Tank Section, Corrective Action Branch in January of 2015. For additional information about this data, contact the Corrective Action Branch staff by phone at 919-707-8171 or click here <http://deq.nc.gov/about/divisions/waste-management/underground-storage-tanks-section/corrective-action-branch> to visit their web site.

Solid Waste Facilities

Solid waste includes garbage, construction debris, commercial refuse, sludge from water supply or waste treatment plants, or air pollution control facilities, and other discarded materials. The database contains an inventory of closed, unlined landfills that were primarily operated by municipalities.

How to manage solid waste has been a problem for decades. In the early 1960s, cities and towns across the country practiced open air burning of trash. In response, Congress passed the Solid Waste Disposal Act in 1965 as part of the amendments to the Clean Air Act. This was the first federal law that required environmentally sound methods for disposal of household, municipal, commercial, and industrial waste. However, the initial design of the "sanitary" landfill fouled ground water, soil, surface water, and air because of improper disposal methods. Engineers have since designed new liners and leachate treatment systems to prevent environmental degradation.

Data was obtained from the North Carolina Division of Waste Management, Solid Waste Section in January of 2015. For additional information about this data, contact the Solid Waste Section

staff by phone at 919-707-8200 or click here <http://deq.nc.gov/about/divisions/waste-management/solid-waste-section> to visit their website.

Tier II Sites

This database contains an inventory of facilities that store types and amounts of hazardous materials and are subject to the reporting requirements of SARA Title III Section 312, Emergency Planning and Community Right to Know Act. Tier II forms require basic facility identification information, employee contact information for both emergencies and non-emergencies, and information about chemicals stored or used at the facility including:

- The chemical name or the common name as indicated on the MSDS;
- An estimate of the maximum amount of the chemical present at any time during the preceding calendar year and the average daily amount;
- A brief description of the manner of storage of the chemical;
- The location of the chemical at the facility; and
- An indication of whether the owner of the facility elects to withhold location information from disclosure to the public.

Data was obtained from the Department of Public Safety, Division of Emergency Management in November of 2013. For additional information about this data contact the Division of Emergency Management staff at 919-436-2746 or click here <http://www.ncdps.gov/Emergency-Management/Hazardous-Materials/EPCRA-Tier-2> to visit their website.

UIC Permits

The Underground Injection Control (UIC) Program protects groundwater quality by preventing illegal waste disposal and by regulating the construction and operation of wells used for injecting [approved substances](#), aquifer recharge, and other activities. The most common types of injection wells in North Carolina are used for:

- [Aquifer Storage and Recovery \(ASR\)](#)
- [Geothermal Heating and Cooling](#)
- [In-Situ Groundwater Remediation](#)
- [Stormwater infiltration](#) - effective May 1, 2012

Data was obtained from the Division of Water Resources, Water Quality Regional Operations Section in January of 2015. For additional information about this data, contact the UIC Program staff by phone at 919-807-6496 or click here <https://deq.nc.gov/about/divisions/water-resources/water-resources-permits/wastewater-branch/ground-water-protection/injection-wells> to visit their web site.

UST Permits

An underground storage tank system (UST) is a tank and any underground piping connected to the tank that has at least 10 percent of its combined volume underground. The federal UST regulations apply only to underground tanks and piping storing either petroleum or certain hazardous substances. These facilities are regulated under Subtitle I of RCRA and must be registered with the state and receive an operating permit annually. Until the mid-1980s, most

USTs were made of bare steel, which is likely to corrode over time and allow UST contents to leak into the environment. Faulty installation or inadequate operating and maintenance procedures also can cause USTs to release their contents into the environment. The greatest potential hazard from a leaking UST is that the petroleum or other hazardous substance can seep into the soil and contaminate ground water. A leaking UST can also present other health and environmental risks, including the potential for fire and explosion. The facilities shown in this database have tanks registered with the UST Section.

Data was obtained from the Division of Waste Management, Underground Storage Tank Section in March of 2015. For additional information about this data, contact the Underground Storage Tank Section staff by phone at 919-707-8171 or click here <http://deq.nc.gov/about/divisions/waste-management/underground-storage-tanks-section> to visit their web site.

References

North Carolina Department of Environment and Natural Resources, Division of Water Resources, UST Section, Water Quality Regional Operations, Washington Regional Office Files, Washington Regional Office, 943 Washington Square Mall, Washington, NC 27889, Tel: 252-946-6481

EPA Envirofacts Warehouse <http://www.epa.gov/enviro/>

North Carolina Department of Environment and Natural Resources, Division of Environmental Health, Public Water Supply Section, The North Carolina Wellhead Protection Guidebook, Developing a Local Wellhead Protection Program, 2003

Chowan County's website <http://www.chowancounty-nc.gov/>

Town of Edenton's website <http://www.townofedenton.com/>

Glossary of acronyms and abbreviations

EPA-Environmental Protection Agency
WaRO – Washington Regional Office of DEQ
DWR-Division of Water Resources
UST-Underground Storage Tank
AST-Above ground Storage Tank
VOC-Volatile Organic Compound
SOC-Semi-volatile Organic Compound
NCDEH-North Carolina Department of Environmental Health
PWS-Public Water Supply
PWSS-Public Water Supply Section
NCDEQ-North Carolina Department of Environmental Quality
WPC-Wellhead Protection Committee
WHPP-Wellhead Protection Program or Plan
WHPA-Wellhead Protection Area
Gpm-gallons per minute
GPD-gallons per day
Ppm-parts per million
Ppb-parts per billion
CAP-Corrective Action Plan
NOV-Notice of Violation
PCS-Potential Contamination Source
DWM-Division of Waste Management
NPDES-National Pollutant Discharge Elimination System
SPCC-Spill Prevention Control and Countermeasures
UIC-Underground Injection Control
DEAO-Division of Environmental Assistance and Outreach