2015 Annual Drinking Water Quality Report

Beaufort County Northside

Water System Number: 04-07-035

We are pleased to present to you this year's Annual Drinking Water Quality Report. This report is a snapshot of last year's water quality. Included are details about your source(s) of water, what it contains, and how it compares to standards set by regulatory agencies. Our constant goal is to provide you with a safe and dependable supply of drinking water. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources. We are committed to ensuring the quality of your water and to providing you with this information because informed customers are our best allies. **If you have any questions about this report or concerning your water, please contact The Beaufort County Water Department at 252-975-0720. This number should also be used for water related emergencies. We want our valued customers to be informed about their water utility.**

When You Turn on Your Tap, Consider the Source

The water for Districts I-V and Whichards Beach Road is purchased by the Beaufort County Northside Water System from the City of Washington and the Beaufort County Southside Water System. The water purchased from the City of Washington comes from eight ground wells that have been installed into the Castle Hayne Aquifer. These wells, located 5 to 10 miles east of Washington, pump raw water to the City of Washington's Water Treatment Plant, which is located near the Douglas Cross Road Area. The water is then treated to remove odor, iron, manganese, and hardness by the City of Washington Public Works Department. It is then pumped by the Beaufort County Water Department to the various elevates storage tanks across the Northside Water System. During the pumping process, the Beaufort County Water Department adds ammonia. This ammonia combines with the chlorine, added by the City of Washington, to make chloramines. Chloramines are a type of disinfectant which prevents bacteria growth. The water purchased from the Beaufort County Southside Water System comes from six ground wells that have been installed into the Castle Hayne and Pee Dee Aquifers. These wells are located along Hwy 33 East 5 to 10 miles east of Chocowinity and along Old Sandhill Road. These wells pump raw water to two water treatment plants, which are also located along Hwy 33 East and Old Sandhill Road. At the treatment plants, the water is treated to remove odor, iron, manganese, and hardness. Chlorine and Ammonia (Chloramines) are added as disinfectant to prevent bacteria growth. The treated water is then pumped into the Beaufort County Northside Water System.

Source Water Assessment Program (SWAP) Results

The North Carolina Department of Environment and Natural Resources (DENR), Public Water Supply (PWS) Section, Source Water Assessment Program (SWAP) conducted assessments for all drinking water sources across North Carolina. The purpose of the assessments was to determine the susceptibility of each drinking water source (well or surface water intake) to Potential Contaminant Sources (PCSs). The results of the assessment are available in SWAP Assessment Reports that include maps, background information and a relative susceptibility rating of Higher, Moderate or Lower.

The relative susceptibility rating of each source for The City of Washington and the Beaufort County Southside Water System was determined by combining the contaminant rating (number and location of PCSs within the assessment area) and the inherent vulnerability rating (i.e., characteristics or existing conditions of the well or watershed and its delineated assessment area). The assessment findings are summarized in the table below:

Susceptibility of Sources to Potential Contaminant Sources (PCSs)

Source Name		Susceptibility Rating	SWAP Report Date
(City of Washington)	Well # 1	Lower	July 2015
(City of Washington)	Well #2	Lower	July 2015
(City of Washington)	Well #3	Lower	July 2015
(City of Washington)	Well #4	Lower	July 2015
(City of Washington)	Well #5	Lower	July 2015
(City of Washington)	Well # 6	Lower	July 2015
(City of Washington)	Well # 7	Lower	July 2015
(City of Washington)	Well # 8	Lower	July 2015
(Beaufort County Southside)	Well # 1	Lower	July 2015
(Beaufort County Southside)	Well #2	Lower	July 2015
(Beaufort County Southside)	Castle Hayne 62	Moderate	July 2015
(Beaufort County Southside)	Castle Hayne 64	Lower	July 2015
(Beaufort County Southside)	Pee Dee 62	Moderate	July 2015
(Beaufort County Southside)	Pee Dee 64	Lower	July 2015

The complete SWAP Assessment reports for the City of Washington and the Beaufort County Southside Water System may be viewed on the Web at: www.ncwater.org/pws/swap. Note that because SWAP results and reports are periodically updated by the PWS Section, the results available on this web site may differ from the results that were available at the time this CCR was prepared. If you are unable to access your SWAP report on the web, you may mail a written request for a printed copy to: Source Water Assessment Program – Report Request, 1634 Mail Service Center, Raleigh, NC 27699-1634, or email requests to swap@ncdenr.gov. Please indicate your system name, number, and provide your name, mailing address and phone number. If you have any questions about the SWAP report please contact the Source Water Assessment staff by phone at 919-707-9098.

It is important to understand that a susceptibility rating of "higher" does not imply poor water quality, only the system's potential to become contaminated by PCSs in the assessment area.

What EPA Wants You to Know

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline (800-426-4791).

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

What is *Cryptosporidium?* Cryptosporidium is a microscopic parasite that can be found in surface water (river, lakes, and streams) that has received much national attention; however, since Beaufort County's water supply comes from ground water, the threat of Cryptosporidium being found in our water supply is greatly diminished. Cryptosporidium can be transmitted in a variety of ways including ingestion of contaminated food and drinking water or through the direct contact with fecal matter of an infected human or animal. Cryptosporidium usually only affects people for about two weeks when exposed. However, persons with a compromised immune system would be at much greater risk of complications.

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The Beaufort County Water Department is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at http://www.epa.gov/safewater/lead.

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity. Contaminants that may be present in source water include microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife; inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming; pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses; organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems; and radioactive contaminants, which can be naturally-occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

Water Quality Data Tables of Detected Contaminants

We routinely monitor for over 150 contaminants in your drinking water according to Federal and State laws. The tables below lists all the drinking water contaminants that we detected in the last round of sampling for each particular contaminant group. The presence of contaminants does not necessarily indicate that water poses a health risk. **Unless otherwise noted, the data presented in these tables are from testing done January 1 through December 31, 2015.** The EPA and the State allow us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Some of the data, though representative of the water quality, is more than one year old.

Extra Note: MCLs are set at very stringent levels. To understand the possible health effects described for many regulated constituents, a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.

Important Drinking Water Definitions:

Environmental Protection Agency (EPA) **–** A federal government agency.

Food and Drug Administration (FDA) **–** A federal government agency.

Not-Applicable (N/A) – Information not applicable/not required for that particular water system or for that particular rule.

Non-Detects (ND) - Laboratory analysis indicates that the contaminant is not present at the level of detection set for the particular methodology used.

Parts per million (ppm) or Milligrams per liter (mg/L) - One part per million corresponds to one minute in two years or a single penny in $10,000.

Parts per billion (ppb) or Micrograms per liter (ug/L) - One part per billion corresponds to one minute in 2,000 years, or a single penny in $10,000,000.

Nephelometric Turbidity Unit (NTU) - Nephelometric turbidity unit is a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

Action Level (AL) - The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

Treatment Technique (TT) **-** A required process intended to reduce the level of a contaminant in drinking water.

Maximum Residual Disinfection Level Goal (MRDLG) – The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

Maximum Residual Disinfection Level (MRDL) – The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

Maximum Contaminant Level (MCL) - The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

Maximum Contaminant Level Goal (MCLG) - The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

Running Annual Average (RAA)

Locational Running Annual Average (LRAA) **-** The average of sample analytical results for samples taken at a particular monitoring location during the previous four calendar quarters under the Stage 2 Disinfectants and Disinfection Byproducts Rule.

Tables of Detected Contaminants

Microbiological Contaminants in the Distribution System - For systems that collect ***less than 40*** samples per month

Contaminant (units)	MCL Violation Y/N	Your Water	MCLG	MCL	Likely Source of Contamination
Total Coliform Bacteria (presence or absence)	N	1	0	1 positive sample / month*	Naturally present in the environment
Fecal Coliform or *E. coli* (presence or absence)	N	0	0	Note: If either an original routine sample and/or its repeat samples(s) are fecal coliform or *E. coli* positive, a Tier 1 violation exists.	Human and animal fecal waste

* If a system collecting fewer than 40 samples per month has two or more positive samples in one month, the system has a MCL violation.

Lead and Copper Contaminants

Contaminant (units)	Sample Date	Your Water	# of sites found above the AL	MCLG	AL	Likely Source of Contamination
Copper (ppm) (90th percentile)	09/22/15	0.4356	0	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits
Lead (ppb) (90th percentile)	09/22/15	2.4	1	0	AL=15	Corrosion of household plumbing systems, erosion of natural deposits

Testing for Lead and Copper is required every 3 years. The data presented in this report are from the most recent testing done in accordance with the regulations.

Disinfectant Residuals Summary

	Year Sampled	MRDL Violation Y/N	Your Water (highest RAA)	Range Low High	MRDLG	MRDL	Likely Source of Contamination
Chlorine (ppm)	2015	N	2.22	0.6 – 2.8	4	4.0	Water additive used to control microbes
Chloramines (ppm)	2015	N	2.32	1 – 3.6	4	4.0	Water additive used to control microbes

Stage 2 Disinfection Byproduct Compliance - Based upon Locational Running Annual Average (LRAA)

Disinfection Byproduct	Year Sampled	MCL Violation Y/N	Your Water (highest LRAA)	Range Low High	MCLG	MCL	Likely Source of Contamination
TTHM (ppb)							
B01	2015	N	23	23 - 23	N/A	80	Byproduct of drinking water disinfection
B02	2015	N	22	22 - 22	N/A	80	
HAA5 (ppb)							
B01	2015	N	6.8	6.8 - 6.8	N/A	60	Byproduct of drinking water disinfection
B02	2015	N	10.5	10.5 – 10.5	N/A	60	

For TTHM: Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer.

For HAA5: Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer.

Turbidity*

Contaminant (units)	Treatment Technique (TT) Violation Y/N	City of Washington	MCLG	Treatment Technique (TT) Violation if:	Likely Source of Contamination
Turbidity (NTU) - Highest single turbidity measurement	N	0.126 NTU	N/A	Turbidity > 1 NTU	Soil runoff
Turbidity (NTU) - Lowest monthly percentage (%) of samples meeting turbidity limits	N	100%	N/A	Less than 95% of monthly turbidity measurements are ≤ 0.3 NTU	

***** Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system. The turbidity rule requires that 95% or more of the monthly samples must be less than or equal to 0.3 NTU.

Inorganic Contaminants

Contaminant (units)	Sample Date	MCL Violation Y/N	City Of Washington	Range Low High	MCLG	MCL	Likely Source of Contamination
Fluoride (ppm)	08/28/14	N	0.86	N/A	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories

Contaminant (units)	Sample Date	MCL Violation Y/N	Beaufort County Southside	Range Low High	MCLG	MCL	Likely Source of Contamination
Fluoride (ppm)	03/06/14	N	0.68	N/A	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories

Testing for Inorganic Contaminants is required every 3 years. The data presented in this report are from the most recent testing done in accordance with the regulations.

The PWS Section requires monitoring for other miscellaneous contaminants, some for which the EPA has set national secondary drinking water standards (SMCLs) because they may cause cosmetic effects or aesthetic effects (such as taste, odor, and/or color) in drinking water. The contaminants with SMCLs normally do not have any health effects and normally do not affect the safety of your water**.**

Other Miscellaneous Water Characteristics Contaminants

Contaminant (units)	Sample Date	City of Washington	Range Low High	SMCL
Iron (ppm)	Yearly Average	0.05	0.01 - 0.21	0.3 mg/L
Manganese (ppm)	Yearly Average	0.008	0.001 - 0.037	0.05 mg/L
Sodium (ppm)	08/28/14	84.86	N/A	N/A
pH	Yearly Average	7.61	7.23 - 7.89	6.5 to 8.5
Hardness (ppm)	Yearly Average	66	43 - 100	N/A
Chlorides (ppm)	Yearly Average	12.7	5.1 – 31.8	N/A

Contaminant (units)	Sample Date	Beaufort County Southside	Range Low/High	SMCL
Iron (ppm)	Yearly Average	0.03	0 – 0.15	0.3 mg/L
Sodium (ppm)	03/06/14	125.34	N/A	N/A
pH	Yearly Average	7.8	7.0 – 8.2	6.5 to 8.5
Hardness (ppm)	Yearly Average	57	34 - 86	N/A
Chlorides (ppm)	09/02/15	17.8	6 - 45	N/A

Water Conservation Tips

The North Carolina Department of Environment and Natural Resources Division of Water Resources wants you to be educated about water conservation. Saving water is good for the earth, your community and your wallet. You can save hundreds of dollars a year by being more efficient with the water you use. Saving water is not hard. Here are a few tips: **Check for leaky faucets**; It seems like an insignificant drip, but that leaky faucet could waste 15 to 20 gallons a day. **Check your toilet for silent leaks**; Add a few drops of food coloring in the tank and wait for 30 minutes (Do not use the toilet during this time). If after 30 minutes the color shows up in the bowl, then the toilet is leaking. It is not unusual to lose up to 100 gallons a day from an invisible toilet leak. **Examine and modify your habits**; Turn off the faucet while brushing your teeth or shaving. Don't run your washing machine or dishwasher until it is fully loaded. Don't take long showers or baths. Water your plants during the coolest part of the day to avoid unnecessary evaporation. Making these small changes can save a lot of water and money.

Important Information for New Customers

When new Customers tie their household plumbing into the Beaufort County's water distribution system, they are hooking up to a closed system. As a result, customers may experience periods of high pressure from their hot water heaters. These periods of high pressure may cause a hot water heater to discharge water through the pressure relief valve. Customers can install a small expansion tank on their cold water line as a possible remedy to this problem.