

Water Quality Report 2016: Drinking Water Analysis

Harnett County Regional WTP (PWS ID# 03-43-045)

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 from where your water comes, 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 questions about this report or concerning your water, please contact Tracy Tant, 910-893-7575 ext. 3245. We want our valued customers to be informed about their water utility. If you want to learn more, please attend any of the regularly scheduled Harnett County Board of Commissioners' meetings. They are held on the first and third Monday of each month at the Harnett County Administration Building located on 102 East Front Street in Lillington, NC. The first meeting of the month is normally at 9:00 AM and the midmonth meeting normally begins at 7:00 PM.

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. Immunocompromised 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 microbiological contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

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. Harnett County 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 our 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 storm water 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 storm water 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 storm water 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.

When You Turn on Your Tap, Consider the Source

The Water that is used by this system comes from the Cape Fear River which is formed by the confluence of the Deep and Haw River along the border between Chatham and Lee counties. We are a surface water treatment plant located at 310 West Duncan St. in Lillington NC.

Source Water Assessment Program (SWAP) Results

The North Carolina Department of Environment and Natural Resources (DENR), Public Water Supply (PWSS) Section, Source Water Assessment Program (SWAP) conducted assessments for all drinking water sources across North Carolina. The purpose of the assessment was to determine the susceptibility of each drinking water source (well or surface water intake) to Potential Contaminant Sources (PCSs).

The relative susceptibility rating for Harnett County Dept of Public Utilities (HCDPU) was determined by combining the contaminant rating (number and locations of PCSs within the assessment area) and the inherent vulnerability rating (i.e., characteristics or existing conditions of watershed and its delineated assessment area.) The assessment findings are summarized in the table below.

SWAP Result Summary			
Source Name	Inherent Vulnerability Rating	Contaminant Rating	Susceptibility rating
CAPE FEAR RIVER	Higher	Moderate	Higher



The Complete SWAP Assessment report for Harnett Co Dept of Public Utilities may be viewed on the website: <http://www.ncwater.org/pws/swap/>. Note that because SWAP results and reports are periodically updated by the PWS section, the results may differ from the results on the CCR. To obtain a printed copy of this report, please mail a written request to: Source Water Assessment Program - Report Request, 1634 Mail Service Center, Raleigh NC 27699-1634, or email request to swap@ncdenr.gov. Please indicate System Name (Harnett Co Dept of Public Utilities) PWSID (03-43-045), 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 systems' potential to become contaminated by PCS's in the assessment area.

Director's Corner

2016 was another year of unprecedented growth for the Harnett County Department of Public Utilities. Harnett County continues to be one of the fastest growing counties in North Carolina. HCDPU continues to make needed infrastructure improvements to meet the demands of our growing customer base while maintaining affordable rates for our customers. In response to these demands, HCDPU completed a major upgrade to the Harnett County Regional Water Treatment Plant in 2016. The plant was expanded and is now able to treat 42 Million Gallons per Day (MGD). This is an increase of 18 MGD over our previous treatment capability. Contact us by email or phone to get your water treatment questions answered. We are very proud of our record of environmental compliance as evidenced by this water quality report. We did not have any water quality violations and produced excellent water for our customers as always. Harnett County is very fortunate to have such a fine group of water treatment professionals who strive daily to provide only the best drinking water to all of our citizens. HCDPU will continue to serve the citizens of Harnett County and the surrounding region by supplying only the best of the most important commodity in the world, water.

Additional Information

The Harnett County Regional Water Treatment Plant monitors its source water for cryptosporidium. Cryptosporidium is a microbial parasite which is found in surface water throughout the United States. Our Monitoring for 2016 had zero detects. Cryptosporidium must be ingested for it to cause disease and may be spread through means other than drinking water. Contact the Safe/Drinking Water Hotline at 1-800-426-4791 for more information.

We routinely monitor for over 150 contaminants in your drinking water according to Federal and State laws. The following tables list the contaminants detected in the last round of sampling. 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 2016. In these tables you will find many terms and abbreviations you might not be familiar with. To help you better understand these terms we've provided the following definitions:

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.

- PPM – Parts Per Million
- PPB – Parts per Billion
- MCLG – Maximum Contaminant Level Goal
- MCL – Maximum Contaminant Level
- SMCL – Secondary Maximum Contaminant Level
- TT – Treatment Technique
- AL – Action Level
- NTU – Nephelometric Turbidity Unit
- ND – Non-Detect
- NA – Not Applicable

Turbidity (NTU)	Treatment Technique (TT) Violation Y/N	Your Water	Treatment Technique (TT) Violation if :	Likely Source
Highest single measurement	N	.09	Turbidity > 1 NTU	Soil runoff
Lowest monthly percentage of samples meeting turbidity limits	N	100%	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

CONTAMINANT TEST RESULTS

Contaminant [code] (units)	MCL	MCLG	Your Water	Range	Date of Sample	Violation	Likely Source of Contamination
Microbiological Contaminants							
<u>Total Coliform Bacteria (presence or absence)</u>	> 5 % triggers level 1 assessment	0	5.6%	N/A	N/A	N	Naturally present in the environment
<u>Fecal Coliform or E. coli (presence or absence)</u>	0	0	0%	N/A	N/A	N	Human and Animal Fecal Waste

Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system. We found coliforms indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct assessment(s) to identify problems and to correct any problems that were found during these assessments. During the past year we were required to conduct one Level 1 assessment. One Level 1 assessment was completed. In addition, we were required to take corrective actions. Samplers were not wearing gloves at the time of sampling. Since that time, gloves are worn when taking all bacteriological samples.

Contaminant [code] (units)	MCL	MCLG	Your Water	Range	Date of Sample	Violation	Likely Source of Contamination
Regulated Inorganic Contaminants							
<u>Fluoride (ppm)</u>	4	4	0.60	N/A	1/5/16	N	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories

Lead and Copper Contaminants

<u>Copper (ppm) 90th Percentile</u>	AL=1.3	1.3	0.155	N/A	8/2016	N	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
<u>Lead (ppb) 90th Percentile</u>	AL=15	0	N/D	N/A	8/2016	N	Corrosion of household plumbing systems, erosion of natural deposits

Asbestos Contaminants

<u>Total Asbestos (MFL)</u>	7	7	N/D	N/A	1/13/11	N	Decay of Asbestos cement water mains: Erosion of natural deposits
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Disinfection By-Product Contaminants

Contaminant	YEAR	MCL	MCLG	Your Water LRAA	Range Individual Results	Violation	Likely Source of Contamination
<u>TTHM (ppb)</u>	2016	80	N/A	35.0		N	By-product of chlorination
<u>TTHM (ppb) B01</u>	2016	80	N/A		22-52	N	
<u>TTHM (ppb) B02</u>	2016	80	N/A		18-52	N	By-product of chlorination
<u>TTHM (ppb) B03</u>	2016	80	N/A		12-46	N	By-product of chlorination
<u>TTHM (ppb) B04</u>	2016	80	N/A		18-49	N	By-product of chlorination
<u>TTHM (ppb) B05</u>	2016	80	N/A		18-49	N	By-product of chlorination
<u>TTHM (ppb) B06</u>	2016	80	N/A		18-45	N	By-product of chlorination
<u>TTHM (ppb) B07</u>	2016	80	N/A		11-47	N	By-product of chlorination
<u>TTHM (ppb) B08</u>	2016	80	N/A		19-49	N	By-product of chlorination
<u>HAA5 (ppb)</u>	2016	60	N/A	29.0		N	By-product of chlorination
<u>HAA5 (ppb) B01</u>	2016	60	N/A		10.8-22.3	N	
<u>HAA5 (ppb) B02</u>	2016	60	N/A		8.7-22.8	N	By-product of chlorination
<u>HAA5 (ppb) B03</u>	2016	60	N/A		8.5-18.3	N	By-product of chlorination
<u>HAA5 (ppb) B04</u>	2016	60	N/A		10.2-21.0	N	By-product of chlorination
<u>HAA5 (ppb) B05</u>	2016	60	N/A		10.9-21.8	N	By-product of chlorination
<u>HAA5 (ppb) B06</u>	2016	60	N/A		9.9-24.6	N	By-product of chlorination
<u>HAA5 (ppb) B07</u>	2016	60	N/A		9.8-18.4	N	By-product of chlorination
<u>HAA5 (ppb) B08</u>	2016	60	N/A		11.3-21.1	N	By-product of chlorination
<u>Chlorite (ppm) (Distribution)</u>	2016	1	0.8	0.240	0.140-0.350	N	By-product of chlorine dioxide
<u>Chlorine Dioxide (ppb)</u>	2016	800	800	76	0-488	N	Water additive used to control microbes
<u>Chloramines (ppm)</u>	2016	4	4	3.04	1.08-3.98	N	Water additive used to control microbes
<u>Chlorine (only month of March)(ppm)</u>	2016	4	4	2.43	0.71-3.80	N	Water additive used to control microbes

Disinfection By-Product Precursors Contaminants							
Contaminant (units)	TT Violation Y/N	Your Water Ratio	Range Ratio	MCLG	MCL	Likely Source of Contamination	Compliance Method
Total Organic Carbon (Ratio)	N	1.45	1.33-1.56	N/A	TT	Naturally present in the environment	Step 1

Step 1 TOC Removal Requirements			
Source Water TOC (Mg/L)	Source Water Alkalinity Mg/L as CaCO3 (in Percentages)		
	0-60	>60-120	>120
>2.0 – 4.0	35.0	25.0	15.0
>4.0 – 8.0	45.0	35.0	25.0
> 8.0	50.0	40.0	30.0

Misc. Water Characteristics Contaminants			
Contaminant (units)	Sample Date	Your Water	Secondary MCL
pH	1-5-16	6.9	6.5 to 8.5
Sulfate (ppm)	1-5-16	46.6	250
Sodium (ppm)	1-5-16	25.09	NA

Additional Terms and Abbreviations

MCLG – Maximum Contaminant Level Goal – The level of a contaminant in drinking water below which there is no known or expected health risk. MCLGs allow for a margin of safety.
MCL – Maximum Contaminant Level – The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to MCLGs as feasible using the best available Treatment technology.
TT – Treatment Technique – is a required process intended to reduce the level of contaminant in drinking water.
AL – Action Level – The concentration of a contaminant which, if exceeded triggers treatment or other requirements which a water system must follow.
MFL-Million Fibers per Liter- A measurement of the presence of asbestos fibers that are longer than 10 micrometers
LRAA – Locational Running Annual Average – 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.

Some pictures of the Water Plant modifications and additions made during the just finished upgrade



Water Plant Main Building with new signage



New lime tank and its chemical feed facilities



1.5 million gallon backwash storage tank



Powder Activated Carbon storage tower and feeder