

2017 Annual Drinking Water Quality Report

Hoke County Regional Water System – PWS ID# 03-47-025

Hoke County/Rockfish Water System – PWS ID# 03-47-030

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 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 Randy Wright, Hoke County Water Treatment ORC at 910-875-6704. We want our valued customers to be informed about their water utility.**

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).

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. Hoke County Regional Water System 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 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 (Eastern & Southern Hoke County)

The water that is used by this system is groundwater from wells located throughout Hoke County. We have wells on Twin Creeks Drive, Noble Drive, Doc Brown Road, Adcox Road, Carolina Drive, Goose Pond Road, MacKay Court, McDougald Drive, Brock Road, Johnson Mill Road, Scull Road and Golf Course Road.

Each well has a 100-foot protected area from potential sources of contamination. Our treatment process includes disinfection, pH adjustment and corrosion control at each entry point. We have iron filtration treatment at Goose Pond Road and Golf Course Road. Some of the water used in our system (Rockfish area) is purchased from the Fayetteville Works Commission (PWC). PWC’s water comes from the Cape Fear River, Little Cross Creek Watershed and Big Cross Creek.

When You Turn on Your Tap, Consider the Source (Western Hoke County)

The water serving your home or business may have been pumped from a deep well located on Neill Sinclair road which draws from the Black Creek aquifer or purchased from McCain Correctional Hospital owned by the State of North Carolina Department of Corrections. McCain has four deep wells that draw from the Black Creek aquifer. All are located in the McCain Community, east of NC #211 near the Fort Bragg military reservation boundary.

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 Hoke County Regional 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
Wells #1 & #2, Antioch (EP1)	Moderate	April 20, 2017
Wells #3 & #10, Airport (EP2)	Moderate	April 20, 2017
Wells #4, #5A** & #9**, Wayside (EP3)	Higher	April 20, 2017
Wells #6 #14, Doc Brown Road (EP4)	Moderate	April 20, 2017
Wells #7 & #17, Arabia (EP5)	Moderate	April 20, 2017
Wells #13 & #18, Neill Sinclair (EP9)	Moderate	April 20, 2017
Wells #15** & #16, Adcox Road (E10)	Lower	April 20, 2017
Well #19 (E19)	Moderate	April 20, 2017
Well #20 (E20)	Moderate	April 20, 2017
Well #21 (E21)	Moderate	April 20, 2017
Wells #22, 23 & #24, Brock (E23)	Moderate	April 20, 2017
Wells #25, #26, #27, #28, Brock (E26)	Moderate	April 20, 2017

**Wells 5A, 9 and 15 rated as Moderate

In addition to the sources listed above, this water system has interconnections to allow for the purchase of water from the following water system(s) or seller system(s): Fayetteville PWC A and B, Hillcrest-Scurlock Water, McCain Hospital A and B, and Robeson Co. Water Systems A, B, C. 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.

The complete SWAP Assessment report for this facility 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 systems’ potential to become contaminated by PCS’s in the assessment area

Help Protect Your Source Water

Protection of drinking water is everyone’s responsibility. You can help protect your community’s drinking water sources in several ways: disposing of chemicals properly; taking used motor oil to a recycling center, volunteering in your community to participate in group efforts to protect your source are a few examples.

Violations that Your Water System Received for the Report Year

During 2017, we are pleased to announce we had no violations.

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 table 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 this table is from testing done January 1 through December 31, 2017.** 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.

Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulations are warranted.

Important Drinking Water Definitions:

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.

Picocuries per liter (pCi/L) - Picocuries per liter is a measure of the radioactivity in water.

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 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.

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.

Locational Running Annual Average (LRAA) – Average of sample analytical results for samples taken at a particular monitoring location during the previous 4 calendar quarters under the Stage 2 Disinfectants / Disinfection Byproducts Rule.

Level 1 Assessment - A Level 1 assessment is a study of the water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in our water system.

Level 2 Assessment - A Level 2 assessment is a very detailed study of the water system to identify potential problems and determine (if possible) why an E. coli MCL violation has occurred and/or why total coliform bacteria have been found in water on multiple occasions.

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.

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.

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

Contaminant (units)	MCL Violation Y/N	Your Water	MCLG	MCL	Likely Source of Contamination
Total Coliform Bacteria (presence or absence)	N/A	N/A	N/A	TT*	Naturally present in the environment
<i>E. coli</i> (presence or absence)	0	0	0	Routine and repeat samples are total coliform-positive and either is <i>E. coli</i> -positive or system fails to take repeat samples following <i>E. coli</i> -positive routine sample or system fails to analyze total coliform-positive repeat sample for <i>E. coli</i> Note: If either an original routine sample and/or its repeat samples(s) are <i>E. coli</i> positive, a Tier 1 violation exists.	Human and animal fecal waste

* If a system collecting 40 or more samples per month finds greater than 5% of monthly samples are positive in one month, an assessment is required.

Nitrate/Nitrite Contaminants

Contaminant (units)	MCL Violation Y/N	Your Water	Range		MCLG	MCL	Likely Source of Contamination
			Low	High			
Nitrate (as Nitrogen) ppm							
EP1	N	0.28					Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
EP2	N	1.62					
EP3	N	3.08					
EP4	N	0.32					
EP5	N	<0.05					
EP9	N	1.52	N/A	10	10		
E10	N	0.39					
E19	N	1.06					
E21	N	0.53					
E23	N	2.65					
E26	N	1.85					
E29	N	0.32					

Stage 2 Disinfection Byproduct Compliance - Based upon Locational Running Annual Average (LRAA) (03-47-025)

Disinfection Byproduct	Sample Date	MCL Violation Y/N	Your Water (highest LRAA) (ppb)	Range		MCLG	MCL	Likely Source of Contamination
				Low	High			
TTHM - Site B01	2017	N	4.0	0	8	N/A	80	Byproduct of drinking water disinfection
TTHM - Site B02	2017	N	<1.0			N/A	80	
TTHM - Site B03	2017	N	<1.0			N/A	80	
TTHM - Site B04	2017	N	6.0	0	6	N/A	80	
HAA5 - Site B01	2017	N	1.0	0	2	N/A	60	
HAA5 - Site B02	2017	N	<2.0			N/A	60	
HAA5 - Site B03	2017	N	<2.0			N/A	60	
HAA5 - Site B04	2017	N	<2.0			N/A	60	

Stage 2 Disinfection Byproduct Compliance - Based upon Locational Running Annual Average (LRAA) (03-47-030)

Disinfection Byproduct	Sample Date	MCL Violation Y/N	Your Water (highest LRAA) (ppb)	Range		MCLG	MCL	Likely Source of Contamination
				Low	High			
TTHM - Site B01	2017	N	53.3	35	70	N/A	80	Byproduct of drinking water disinfection
TTHM - Site B02	2017	N	53.5	34	72	N/A	80	
HAA5 – Site B01	2017	N	25.5	21	31	N/A	60	
HAA5 – Site B02	2017	N	24.8	18	34	N/A	60	

Inorganic Contaminants

Contaminant (ppm)	Sample Date	MCL Violation Y/N	Your Water	Range		MCLG	MCL	Likely Source of Contamination
				Low	High			
Fluoride – EP1	11/2016	N	0.451	0.451		4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Fluoride – EP4	11/2016	N	0.114	0.114		4	4	
Fluoride – EP5	11/2016	N	0.364	0.364		4	4	
Fluoride – E10	11/2016	N	0.133	0.133		4	4	
Fluoride – E23	11/2016	N	0.451	0.451		4	4	

Other Miscellaneous Water Characteristics Contaminants

Contaminant (mg/L)	Sample Date	Well	Your Water (mg/L)	Range		Secondary MCL
				Low	High	
Iron	11/2016	EP1	0.212	0.212		0.3 mg/L
Iron	11/2016	EP5	0.825	0.825		0.3 mg/L
Iron	11/2016	E10	0.389	0.389		0.3 mg/L
Manganese	11/2016	EP1	0.02	0.02		0.05 mg/L
Manganese	11/2016	EP3	0.03	0.03		0.05 mg/L
Manganese	11/2016	E10	0.014	0.014		0.05 mg/L
Manganese	11/2016	E23	0.014	0.014		0.05 mg/L
Sodium	11/2016	EP1	15.0	15.0		N/A
Sodium	11/2016	EP2	5.83	5.83		N/A
Sodium	11/2016	EP3	21.1	21.1		N/A
Sodium	11/2016	EP4	11.4	11.4		N/A
Sodium	11/2016	EP5	12.7	12.7		N/A
Sodium	11/2016	EP9	8.62	8.62		N/A
Sodium	11/2016	E10	23.8	23.8		N/A
Sodium	11/2016	E19	5.98	5.98		N/A
Sodium	11/2016	E21	6.0	6.0		N/A
Sodium	11/2016	E23	21.4	21.4		N/A
Sodium	11/2016	E26	3.18	3.18		N/A
Sulfate	11/2016	EP1	0.77	0.77		250 mg/L
Sulfate	11/2016	EP2	0.80	0.80		250 mg/L
Sulfate	11/2016	EP4	0.47	0.47		250 mg/L
Sulfate	11/2016	EP5	7.17	7.17		250 mg/L
Sulfate	11/2016	EP9	0.57	0.57		250 mg/L
Sulfate	11/2016	E10	11.82	11.82		250 mg/L
Sulfate	11/2016	E21	0.61	0.61		250 mg/L
Sulfate	11/2016	E23	1.04	1.04		250 mg/L
Sulfate	11/2016	E26	3.99	3.99		250 mg/L

The PWS Section requires monitoring for other misc. 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.

Lead and Copper Contaminants (03-47-025)

Contaminant (units)	Sample Date	Your Water	# of sites found above the AL	MCLG	AL	Likely Source of Contamination
Copper (ppm) (90 th percentile)	09-2017	<0.05	0	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits
Lead (ppb) (90 th percentile)	09-2017	<3	0	0	AL=15	Corrosion of household plumbing systems, erosion of natural deposits

Lead and Copper Contaminants (03-47-030)

Contaminant (units)	Sample Date	Your Water	# of sites found above the AL	MCLG	AL	Likely Source of Contamination
Copper (ppm) (90 th percentile)	08-2016	<0.05	0	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits
Lead (ppb) (90 th percentile)	08-2016	<3	0	0	AL=15	Corrosion of household plumbing systems, erosion of natural deposits

Radioactive Contaminants

Contaminant (units)	Sample Date	MCL Violation Y/N	Your Water (average)	MCLG	MCL	Likely Source of Contamination
Alpha emitters (pCi/L)						
EP4	4/2016	N	3.9			Erosion of natural deposits
EP9	2/2016, 12/2015, 6/2015, 3/2015	N	2.1			
E10	9/2009	N	3.0	0	15	
E19	3/2014	N	5.0			
E23	2 & 4/2016	N	3.6			
E26	2/2016	N	3.8			
Beta photon emitters (pCi/L)						
EP9	3/2015	N	4.2	0	50*	Decay of natural and manmade deposits
E10	9/2009, 6/2009, 3/2009, 12/2008	N	4.5			
Combined radium (pCi/L)						
EP3	4/2016	N	1.5			Erosion of natural deposits
EP4	4/2016	N	2.4			
EP5	2/2016	N	1.4			
EP9	2/2016, 12/2015, 6/2015, 3/2015	N	2.6			
E10	9/2009, 6/2009, 3/2009, 12/2008	N	1.4	0	5	
E19	3/2014, 12/2013, 9/2013, 6/2013	N	1.2			
E21	3/2014, 12/2013, 9/2013, 6/2013	N	1.6			
E23	2 & 4/2016	N	1.6			
E26	2016	N	2.8			
Uranium (pCi/L)						
E10	9/2009, 6/2009, 3/2009, 12/2008	N	0.5	0	20.1	Erosion of natural deposits

* Note: The MCL for beta/photon emitters is 4 mrem/year. EPA considers 50 pCi/L to be the level of concern for beta particles.

UCMR3 - Metals Testing

Location	Sample Date	Analysis					
		Cobalt (EPA 200.8)	Vanadium (EPA 200.8)	Chromium (EPA 200.8)	Strontium (EPA 200.8)	Chlorate (EPA 300.1)	Cr+6 (EPA218.7)
EP1 Wells 1 &2	1/30/2013	1.4 ug/l			3.4 ug/l	350 ug/l	
EP2 Wells 3 & 10	1/30/2013				6.4 ug/l	181 ug/l	0.059 ug/l
EP 3 Wells 4,5A&9	1/30/2013			0.20 ug/l	16 ug/l	101 ug/l	0.11 ug/l
EP4 Wells 6 &14	1/30/2013				2.7 ug/l	211 ug/l	
EP4 Wells 6 &14	3/10/2014				2.7 ug/l		
EP 5 Well 7	1/30/2013	1.4 ug/l			14 ug/l	219 ug/l	
EP 7 Well 11	1/30/2013				3.4 ug/l	501 ug/l	0.068 ug/l
EP 8 Well 12	1/30/2013				15 ug/l	110 ug/l	0.11 ug/l
EP 9 Well 13	1/30/2013				12 ug/l	293 ug/l	
MR001 Wells 1&2	1/30/2013				11 ug/l	206 ug/l	
MR002 Wells 3 & 10	1/30/2013				14 ug/l	116 ug/l	0.11 ug/l
MR003 Wells 4, 5 &9	1/30/2013				15 ug/l	107 ug/l	0.12 ug/l
MR004 Wells 6 & 14	1/30/2013				3.0 ug/l	213 ug/l	
MR005 Well 7	1/30/2013	1.8 ug/l			14 ug/l	19.2 ug/l	
MR006 Well 11	1/30/2013				3.4 ug/l	487 ug/l	0.075 ug/l
MR007 Well 12	1/30/2013				15 ug/l	99.5 ug/l	0.12 ug/l
MR008 Well 13	1/30/2013				13 ug/l	274 ug/l	
EP1 Wells 1 &2	7/16/2013	1.9 ug/l			4.3 ug/l	540 ug/l	
EP2 Wells 3 & 10	7/16/2013				6.8 ug/l		0.059 ug/l
EP 3 Wells 4,5A&9	7/16/2013				170 ug/l	260 ug/l	
EP4 Wells 6 &14	7/16/2013				3.0 ug/l	740 ug/l	0.050 ug/l
EP 5 Well 7	7/16/2013	2.1 ug/l			21 ug/l	280 ug/l	
EP 7 Well 11	7/16/2013				3.1 ug/l	200 ug/l	0.044 ug/l
EP 8 Well 12	7/16/2013		0.58 ug/l		5.7 ug/l		0.098 ug/l
EP 9 Well 13	7/16/2013				9.6 ug/l	290 ug/l	0.040 ug/l
MR001 Wells 1&2	7/16/2013				3.0 ug/l	170 ug/l	0.037 ug/l
MR002 Wells 3 & 10	7/16/2013				6.4 ug/l	51.0 ug/l	0.062 ug/l
MR003 Wells 4, 5 &9	7/16/2013		0.72 ug/l	0.22 ug/l	3.2 ug/l	810 ug/l	0.22 ug/l
MR004 Wells 6 & 14	7/16/2013				3.5 ug/l	570 ug/l	0.036 ug/l
MR005 Well 7	7/16/2013				14 ug/l	260 ug/l	0.038 ug/l
MR006 Well 11	7/16/2013				3.5 ug/l	570 ug/l	0.031 ug/l
MR007 Well 12	7/16/2013		0.68 ug/l	0.20 ug/l	3.1 ug/l	820 ug/l	0.23 ug/l
MR008 Well 13	7/16/2013				9.5 ug/l	290 ug/l	0.058 ug/l

Unregulated contaminants are those for which EPA has not established drinking water standards.

The purpose of unregulated contaminant monitoring is to assist EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulations are warranted.