

**Note:** Use of social media or automated phone calls DO NOT meet existing CCR distribution methods under the Rule.

**“2017” Annual Drinking Water Quality Report**  
**“Bell Arthur Water Corp.”**  
Water System Number **04-74-045”**

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 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 Ed House at 252-752-6252. We want our valued customers to be informed about their water utility. If you want to learn more, please attend any of our regularly scheduled meetings. They are held at Bell Arthur water office 4<sup>th</sup> Monday each month 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. 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. Bell Arthur Water 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 number 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 is ground water from wells and purchases 75% of their water from Neuse Regional Water and Sewer District.

## 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 Bell Arthur Water 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
Well # 3	Lower	2017
Well #4	Lower	2017
Well #5	Lower	2017
Well #6	Lower	2017
Well #7	Moderate	2017

The complete SWAP Assessment report for Bell Arthur Water may be viewed on the Web at: [www.ncwater.org/pws/swap](http://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](mailto: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.

## Help Protect Your Source Water

Protection of drinking water is everyone’s responsibility. We have implemented the following source water protection actions: You can help protect your community’s drinking water source(s) in several ways: (examples: dispose of chemicals properly; take used motor oil to a recycling center, volunteer in your community to participate in group efforts to protect your source, etc.).

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## 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 list 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:

**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 (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 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.

**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.

**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 our water system 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.

**Tables of Detected Contaminants**

**REVISED TOTAL COLIFORM RULE (Samples taken January 1 through December 31, 2017):**

**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/A	N/A	N/A	TT*	Naturally present in the environment
<i>E. coli</i> (presence or absence)	N	Absence	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

**CCR Health Effects Language for the RTCR: Level 1 or 2 Assessment Not Due to *E. coli* MCL Violation**

CCR Language	Citation
Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterborne pathogen 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.	40 CFR 141.153(h)(7)(i)(A)
During the past year we were required to conduct 60 per year. (60) Level 1 assessments were completed. In addition, we were required to take (0) corrective actions and we completed (0) of these actions.	40 CFR 141.153(h)(7)(i)(B)

During the past year [120] Level 2 assessments were required to be completed for our water system. [60] Level 2 assessments were completed. In addition, we were required to take [0] corrective actions and we completed [0] of these actions.	40 CFR 141.153(h)(7)(i)(C)
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**CCR Health Effects Language for the RTCR: Level 2 Assessment Due to an *E. coli* MCL Violation**

CCR Language	Citation
<i>E. coli</i> are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Human pathogens in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a greater health risk for infants, young children, the elderly, and people with severely compromised immune systems. We found <i>E. coli</i> bacteria, 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.	40 CFR 141.153(h)(7)(ii)(A)
We were required to complete a Level 2 assessment because we found <i>E. coli</i> in our water system. In addition, we were required to take [0] corrective actions and we completed [0] of these actions.	40 CFR 141.153(h)(7)(ii)(B)

**Inorganic Contaminants**

Contaminant (units)	Sample Date	MCL Violation Y/N	Your Water	Range		MCLG	MCL	Likely Source of Contamination
				Low	High			
Fluoride (ppm)	6/26/17	N	0.62	0.37	0.89	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories

**Unregulated Inorganic Contaminants**

Contaminant (units)	Sample Date	Your Water (average)	Range	
			Low	High
Chloride	9/23/17	21.6	10	42

**Volatile Organic Chemical (VOC) Contaminants**

Contaminant (units)	Sample Date	MCL Violation Y/N	Your Water	Range		MCLG	MCL	Likely Source of Contamination
				Low	High			
Dichloromethane (ppb)	11/27/17	N	0.000225	0.0	0.0009	0	5	Discharge from pharmaceutical and chemical factories

**Lead and Copper Contaminants**

Contaminant (units)	Sample Date	Your Water	Number of sites found above the AL	MCLG	AL	Likely Source of Contamination
Copper (ppm) (90 <sup>th</sup> percentile)	8/11/15	0.273	0	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits
Lead (ppb) (90 <sup>th</sup> percentile)	8/11/15	0.008	0	0	AL=15	Corrosion of household plumbing systems; erosion of natural deposits

**Radiological Contaminants**

Contaminant (units)	Sample Date	MCL Violation Y/N	Your Water	Range		MCLG	MCL	Likely Source of Contamination
				Low	High			
Combined radium (pCi/L)		N	0.57	0.3	1.0	0	5	Erosion of natural deposits

### Disinfectant Residuals Summary

	Year Sampled	MRDL Violation Y/N	Your Water (highest RAA)	Range		MRDLG	MRDL	Likely Source of Contamination
				Low	High			
Chloramine (ppm)	2017	N	02.18	1.1	3.3	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		MCLG	MCL	Likely Source of Contamination
				Low	High			
TTHM (ppb)						N/A	80	Byproduct of drinking water disinfection
Location B01	2017	N	33.15	29.7	35.8			
Location B02	2017	N	12.4	0.0	27.7			
Location B03	2017	N	33.1	27.6	34.8			
Location B04	2017	N	27.43	18.2	34.3			
HAA5 (ppb)						N/A	60	Byproduct of drinking water disinfection
Location B01	2017	N	27.53	21.4	32.7			
Location B02	2017	N	11.60	0.0	25.6			
Location B03	2017	N	27.40	21.3	34.4			
Location B04	2017	N	21.4	7.4	31.3			

**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.*

### Other Miscellaneous Water Characteristics Contaminants

Contaminant (units)	Sample Date	Your Water	Range		SMCL
			Low	High	
Iron (ppm)	6/26/17	0.0208	0.0	0.104	0.3 mg/L
Sodium (ppm)	6/26/17	88.899	76.9	96.97	N/A
Sulfate (ppm)	6/26/17	11.76	0.0	36.0	250 mg/L
pH	6/26/17	7.94	7.3	8.3	6.5 to 8.5

## Neuse Regional Water and Sewer Authority

### 2017 Detected Contaminants

Substances ( Measuring Units)	Highest Level Allowed [MCL]	Highest Level Detected	Range Detected	Description and Origin of Substance
Sodium (ppm)	n/a	27.3	27.3	Naturally occurring mineral; also a byproduct of disinfection processes.
Fluoride (ppm)	4.0	0.82	0.69 - 0.82	Natural occurring mineral; also added to water to promote dental health.
Sulfate (ppm)	n/a	24	24	Natural occurring mineral; also a byproduct of conventional water treatment.
Combined Radium (pCi/L)	5	1.2	1.2	Naturally occurring radioactive isotope; decays into radon gas, a known carcinogen.
Total Organic Carbon Raw (ppm)	TT*	10.39	4.51 - 10.39	Organic matter naturally present in the environment.
Total Organic Carbon Treated (ppm)	TT*	3.06	1.99 - 3.06	Organic matter naturally present in the environment.
Turbidity (NTU)	1.0 and 95% of samples below 0.3 (Treatment Technique)	0.20 and 100% of samples below 0.3	n/a	Measure of cloudiness in water, may be caused by inorganic soil particles or fragments of organic matter that can interfere with treatment.
pH (units)	9.0	8.2	7.4 - 8.2	Measure of the acidity of water, with acidity decreasing with increasing pH value; pH scale ranges 0-14.

TT = Treatment Technique

### Surface Plant Filtration Efficiency

Total Organic Carbon Treated	RR*	1.07	1.07 - 1.66	Ratio of organic matter removed from treated water as a measure of process efficiency; must meet a minimum 1.0 ratio.
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RR = Removal Ratio

Source Name	Suceptibility Rating	SWAP Report Date
Neuse River	Higher	September 2017