

STATE OF NORTH CAROLINA  
UTILITIES COMMISSION  
RALEIGH

DOCKET NO. W-354, SUB 360

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

In the Matter of

Application by Carolina Water Service, )  
Inc. of North Carolina, 4944 Parkway )  
Plaza Boulevard, Suite 375, Charlotte, )  
North Carolina 28217, for Authority to )  
Adjust and Increase Rates for Water )  
and Sewer Utility Service in All of Its )  
Service Areas in North Carolina )

**REPORT ON CUSTOMER  
COMMENTS FROM SEPTEMBER  
25, 2018 PUBLIC HEARING IN  
BOONE, NORTH CAROLINA,**

**NOW COMES Carolina Water Service, Inc. of North Carolina** (“CWSNC” or “Company”) and files this report in response to customer concerns raised at the Boone public hearing.

The hearing was convened by the North Carolina Utilities Commission (“NCUC” or “Commission”) at 7:00 p.m. on September 25, 2018 in the Watauga County Courthouse in Boone, North Carolina. Chairman Edward Finley presided, joined by Commissioners ToNola Brown-Bland, Jerry C. Dockham, Daniel Clodfelter, Charlotte Mitchell, and Lyons Gray.

Staff Attorney Gina Holt appeared for the Public Staff on behalf of the using and consuming public, accompanied by Public Staff Water Engineer Gina Casselberry. Matthew Klein, President of CWSNC, was joined by other Company personnel who were available to assist customers with questions or requests.

They included: Tony Konsul, Regional Manager; Neal Reece, Area Manager; Renee Guay, Health, Safety and Environmental Compliance Manager; and Deborah Clark, Communications Coordinator. Jo Anne Sanford of the Sanford Law Office, PLLC appeared as counsel for CWSNC.

### **GENERAL RESPONSES TO CUSTOMER ISSUES**

CWSNC believes it is important to explain some principles and facts that impact both the Company's service obligation and the rules that apply to the rate-setting process for public utilities such as CWSNC, assuring protections to customers. The Company appreciates this opportunity to speak to concerned customers across its service areas and to its regulators. These general principles were set forth in the Company's Response to Customer Concerns from the New Bern and Wilmington Public Hearing, filed in this docket on September 18, 2018. They are attached hereto as Appendix A and are referred to throughout as "General Responses."

### **OVERVIEW OF THE BOONE PUBLIC HEARING**

Four (4) witnesses testified, including one (1) witnesses from the Ski Mountain Acres community, two (2) from the Elk River community, and one (1) from the Hound Ears community. Generally, customers who testified expressed concern about: (1) the proposed percentage increase in rates; and, to a lesser extent, (2) water quality.

## SPECIFIC RESPONSES TO CUSTOMER TESTIMONY FROM BOONE

### 1. Harvey Bauman, 102 Tower Lane, Blowing Rock, North Carolina, 28605, Ski Mountain Acres POA *Tr. Vol. 4, pp. 10-15.*

Mr. Bauman testified that water quality and level of service were good, though it was a “bit more convenient” for the customers when the local staff was in Banner Elk. He commented on the “boil water” notices, indicating there were more than ever before and some lasted 3 days. His primary reason for appearing was to object to additional rate increases, noting the significance of the accumulated impacts of repeated rate increases. Mr. Bauman presented an exhibit entitled “Analysis of Carolina Water Services Rates—2007 to Present.” The exhibit detailed how Mr. Bauman’s rates have increased during that time frame.

**Company’s Response:** The Company appreciates and understands Mr. Bauman’s concerns about rate increases. As explained in the “General Response,” (Appendix A), this is a capital-intensive industry and significant ongoing investment is required to achieve and maintain compliance with environmental and drinking water standards, to maintain the infrastructure, and to provide for service to customers. Additionally, much of this investment is underground, or otherwise out of the view of customers, so it can understandably come as a surprise to customers to realize how much it takes to maintain and operate water and sewer systems. In the Ski

Mountain community, CWSNC's recent investments in the water system included: (1) fire hydrant replacements and repairs; (2) meter installations; (3) pump replacements; (4) pressure reduction valve installations; (5) daily required chemical treatments; and (6) multiple water main repairs, including the associated paving of roads, required tests, and inspections.

CWSNC issued several boil water notices to the Ski Mountain community in 2018, chiefly due to repairs on the water mains serving the community. For example: (1) a boil water notice was sent to approximately 108 customers on Alpine Drive, Wildwood Lane, Galax Circle, and Ski Mountain Road on June 29, 2018, due to an emergency repair on the water distribution system; (2) a boil water notice was sent to customers on July 7, 2018, due to an unexpected drop in the system's water pressure; (3) a boil water notice was issued to all 252 customers on July 9, 2018, due to a repair on a water main; and (4) a boil water notice was issued to approximately 59 customers on July 12, 2018, due to an emergency repair on the water distribution system.

The Sugar Mountain area experiences extreme cold and ice during the winter months, which results in occasional water line leaks or breaks. CWSNC addresses these emergency situations quickly and efficiently to return service to the impacted customers. However, the water distribution system is an old and aging asset that will need to be repaired, rehabilitated or replaced in the future.

According to the Company's records, Mr. Bauman has not contacted the Company to raise concerns about either the quality of the water or the level of service received from CWSNC.

**2. Sid Eibl Von Rospeunt (listed as The Meadows One, LLC) at 395 Equestrian Drive, Banner Elk, North Carolina 28604 Tr. Vol. 4, pp. 15-21.**

Mr. Von Rospeunt testified that he was a long-time resident of Elk River and he observed that the flat rate (over an extensive period of time) had been \$29.92. He objected to the installation of new meters, which he believed was not in the customers' interest. The frequency and amount of rate increases is objectionable to him and he called for a Commission investigation.

Regarding level of service issues, he noted outages, but reflected an understanding that they happen from time to time. However, he described the water quality as "disgusting," complaining of "red algae" that forms in the water bowls of his dogs.

**Company's Response:** In the Elk River community, the recent investments to the water system have included: (1) fire hydrant replacements and repairs; (2) Automated Meter Reading ("AMR") installations; (3) pump replacements; (4) pressure reduction valve installations; (5) daily required chemical treatments; and (6) water main

repairs, including associated paving of roads, required tests, and inspections. The wastewater system investments within the Elk River community included: (1) pump installations; (2) valve replacements; (3) maintenance of the collection system; and (4) required testing and inspections. Much of the sewer capital investment is attributed to new blowers, motors, variable frequency drives (“VFDs”), and a generator and transfer switches that were installed at the wastewater treatment plant. In addition to the blowers, a new air header and air diffusers were also installed to replace the aging equipment.

Second, the “red algae” is likely *Serratia marcescens* which occurs naturally in the environment. *Serratia marcescens* is a species of bacteria which grows in areas that are frequently moist and where phosphorous-containing materials or fatty substances accumulate. Soap scum on shower curtains or food debris in a dog’s water bowl provide a suitable environment for the growth of this “red algae.” Standing water that has lost its chlorine content also provides a good growing medium. Previously, on April 20, 2017, a Company operator checked the water at Mr. Von Rospeunt’s house and found no problem. The Company operator also conducted a test of the water. The chlorine level was 0.7 ppm, pH 8.0, and the iron level was zero (0.0) ppm—each within acceptable limits.

The operator talked to Mr. Von Rospeunt after he and his family returned from their winter home in Florida. The operator advised that the

“red algae” may have occurred because the water may have remained in his service line over the winter.

According to Company’s records, no complaints have been recorded in CWSNC’s customer service database for the customer.

**3. George Hall, 490 Clubhouse Drive, Elk River, Banner Elk. Tr. Vol. 4, pp. 21 – 27.**

Mr. Hall noted that CWSNC provides reliable and responsible service, but he believes there is very little information on the drivers of the rate increase request. The only investment of which he knew was the installation of meters. He dislikes metered rates; in his view, the old flat rate system worked fine. He asked what could drive a proposed rate increase of 72.2% in water and 85% in sewer. He believes it is excessive and not based on infrastructure improvements.

**Company’s Response:** As indicated above, in the Elk River community, the investments to the water system have included: (1) fire hydrant replacements and repairs; (2) Automated Meter Reading (“AMR”) installations; (3) pump replacements; (4) pressure reduction valve installations; (5) daily required chemical treatments; and (6) water main repairs, including associated paving of roads, required tests, and inspections. The wastewater system investments within the Elk River community included: (1) pump installations; (2) valve replacements; (3) maintenance of the collection system; (4) required testing and inspections;

and (5) blowers, motors, and VFDs installed at the wastewater treatment plant. In addition to the blowers, new air headers, air diffusers, and an emergency generator with an automatic transfer switch were also installed.

**4. Tim Presnell, Director of Property Services, Hound Ears Club and Fox Club.** *Tr. Vol. 4, pp. 27 – 29.*

Mr. Presnell appeared to speak on behalf of the 493 residents of the Hound Ears Club and Fox Club community. He noted that Hound Ears is one of the oldest developments in the area and, thus, the utility system is aged as well and there are a number of mains breaks. The population of Hound Ears is comprised of older, retired individuals and a number are on a fixed income. Mr. Presnell cites to a great relationship with the Company and to good service. His primary issue is the impact of continuing significant rate increases.

**Company's Response:** The Company is completing an 8-inch water main replacement project associated with the Shulls Mill Road bridge replacement work. The purpose of the capital project is to replace the existing 6-inch PVC water main that is over 40 years old.

Additionally, in the Hound Ears community, the investments to the water system have included: (1) fire hydrant replacements and repairs; (2) pump replacements; (3) pressure reduction valve installations; (4) daily required chemical treatments; and (5) water main repairs, including



associated paving of roads, required tests, and inspections. The wastewater system investments within the Hound Ears community included: (1) pump installations; (2) valve replacements; (3) maintenance of the collection system; and (4) required testing and inspections. Much of the sewer capital investment is attributed to sewer gravity replacements, lift station pump replacements, blower motors, electrical controls, new effluent weir flow basin, and new generator.

CWSNC appreciates its customers' willingness to participate in the public hearing part of the ratemaking process. The Company values its customers and understands the objections to rate increases. That said, it is important to understand that this is a capital-intensive industry. If the Company's investments are made reasonably and of necessity, and if its management of the systems is—essentially—good and appropriately exercised, then it should be allowed to both recover its investment and have an opportunity to earn a reasonable return.

Respectfully submitted, this the 17<sup>th</sup> day of October 2018.

SANFORD LAW OFFICE, PLLC

**Electronically Submitted**

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**ATTORNEYS FOR CAROLINA WATER SERVICE, INC.  
OF NORTH CAROLINA**

**APPENDIX A**  
**CWSNC RESPONSE TO CUSTOMER CONCERNS-**  
**BOONE PUBLIC HEARING: W-354 SUB 360**

**GENERAL RESPONSES TO CUSTOMER ISSUES**

1. Proposed Rates – The legal principles that govern ratemaking are set forth in North Carolina General Statutes, Chapter 62, and in rules promulgated by the North Carolina Utilities Commission under those statutes. By law, CWSNC receives a rate increase only if it proves, in the face of an investigation by the Public Staff (and any Intervenor opposition), that such an increase is authorized under the law, based on the actual cost and level of prudent and reasonable investment in plant and operation. Further, investment in plant is *only* recoverable after it has been made, placed into service, and audited by the Public Staff. This principle—referred to as the “used and useful” requirement—applies whether costs are recovered in a general rate case or under a system improvement charge.
2. Rate Comparisons – An attempt to make meaningful comparisons between statewide average costs for all water and wastewater service providers and the costs of a provider like CWSNC often results in an “apples to oranges” assessment. The core distinction is found in the concept of “economies of scale.” The costs of serving an individual customer in Raleigh or Charlotte, by a governmental utility enterprise, will likely on average be less than the

cost of serving the typical CWSNC customer. The urban areas are densely populated, they generally source water from large surface impoundments or rivers, they treat waste in large central treatment facilities, governmental entities tax their citizens, and they are often not required to utilize “cost-of-service” ratemaking, as are the utilities regulated under Chapter 62 of the General Statutes. Contrast this to the areas served by CWSNC and others like it: often rural, far less densely populated, and frequently served by smaller waste treatment plants and by hundreds of wells, drawing water up from rock and dispersed across the state. The difference in cost attributes are obvious and should inform any conversation about comparisons in respective average costs.

3. Legal Compliance Regarding Notice – In a general rate case, the Public Notice to customers is prescribed by the requirements of statute and is issued by the Commission, based upon the input of CWSNC and the Public Staff. It is a joint effort to provide specific information to all customers about current and proposed rates. In a general rate case like this, the length and complexity of the Public Notice serves the purpose of detail and transparency yet is likely daunting to many customers who attempt to understand all its contents and the personal impact.
4. Level of Service Inquiries – The Company notes that three of the four witnesses spoke positively about CWSNC’s level of service.

5. Investment in Replacing Aging Infrastructure – As documented by the U.S. Environmental Protection Agency (“EPA”) and the American Water Works Association (“AWWA”), significant investment is needed throughout North Carolina—more than \$20 billion—to replace aging water and wastewater infrastructure, including drinking water pipes, wastewater collection pipes, lift stations, and wastewater treatment facilities.
6. Water Quality – Water quality can be impacted by, among other things, unplanned water main breaks, unexpected malfunctioning of equipment, and challenges when implementing capital projects. CWSNC’s primary focus is on providing the highest level of service related to compliance with primary drinking water quality standards. The Company’s latest Annual Water Quality Reports for Ski Mountain, Elk River, and Hound Ears reflect “no violations.”
7. Secondary Water Quality – The Company is also committed to a high level of service regarding secondary water quality standards. Secondary water quality standards address substances that may impact the taste, odor, or color (i.e., the “aesthetics”) of a customer’s drinking water.
  - a. Iron – As reflected within the referenced Company’s latest Annual Water Quality Reports, the Company’s latest testing for Iron reveals levels below the Maximum Contaminant Level (“MCL”) of 0.3 parts per million (“ppm”).

- b. Hardness – Hardness reflects the relative amounts of calcium and magnesium ions within drinking water. Generally, “hard water” can be found throughout North Carolina, including the coastal areas served by groundwater. It is not uncommon for homeowners served by public and private drinking water systems to own and deploy drinking water softeners. However, hardness is not regulated by the North Carolina Department of Environmental Quality (“DEQ”). The Company’s experience is that many drinking water customers possess their own drinking water softeners. Historically, the Company has heard from customers with in-home drinking water softeners that they do not wish to pay for—i.e., subsidize—an expensive system-wide water softener to support other customers within the community who do not have an in-home water softening system. In summary, traditionally, the Company leaves drinking water hardness solutions to the individual preferences of its customers, unless a clear and substantial demand for such a capital investment is made by a community.
- c. The Company’s On-Going Commitment to Water Quality – The Company is committed to providing the highest level of service to customers, especially regarding water quality.



# Carolina Water Service of North Carolina™

## Ski Mountain Water System

PWS ID# 01-95-119

### Annual Water Quality Report 2017

quality of water we delivered to you over the past year. As the President of your water utility, I fully appreciate our role in the local community. We want you to understand the investments and other efforts we undertake to continually improve the water treatment process and protect our water resources.

Our team is committed to providing safe, reliable, and cost-effective service to you. All of our employees share in our commitment to act with integrity, protect the environment, and enhance the local community.

**We are proud to share this report which is based on water quality testing through December 2017. We continually strive to supply water that meets or exceeds all federal and state water quality regulations.**

Our local dedicated team of water quality experts is working within your community every day ensuring that you, our customer, are our top priority and that we are providing the highest quality service - now and in the years to come.

Best regards,

Sign up for e-billing now at  
[www.carolinawaterservicenc.com](http://www.carolinawaterservicenc.com)

Este informe contiene información muy importante sobre su agua beber. Tradúzcalo ó hable con alguien que lo entienda bien.

### The Safe Drinking Water Act

**The Safe Drinking Water Act** was passed in 1974 due to congressional concerns about organic chemical contaminants in drinking water and the inefficient manner by which states supervised and monitored drinking water supplies. Congress' aim was to assure that all citizens served by public water systems would be provided high quality water. As a result, the EPA set enforceable standards for health-related drinking water contaminants. The Act also established programs to protect underground sources of drinking water from contamination.

### Source of Drinking Water

Your water comes from several wells located in Watauga County which draw water from a fractured bedrock aquifer. An aquifer is a geological formation that contains water.

### Water Conservation

Please be reminded that our water systems in North Carolina are always in some stage of either voluntary or mandatory water conservation restriction. These restrictions may vary weekly due to drought conditions and are dictated by a system established by the North Carolina Utilities Commission in an order dated May 23, 2008. The customers are encouraged to keep informed of current restrictions by checking the CWSNC web page at [www.carolinawaterservicenc.com](http://www.carolinawaterservicenc.com) and clicking on the "Community Drought Status" link on the front page. CWSNC posts drought conditions on our Twitter account at [@CarolinaWaterNC](https://twitter.com/CarolinaWaterNC) and on Facebook at [@CarolinaWaterNC](https://www.facebook.com/CarolinaWaterNC). If you do not have access to a computer, call our customer service at (800) 525-7990.

### Help Protect our Resources

Help put a stop to the more than **1 trillion gallons of water lost annually** nationwide due to household leaks. These easy to fix leaks waste the average family the amount of water used to fill a backyard swimming pool each year. Plumbing leaks can run up your family's water bill an extra 10 percent or more, but chasing down these water and money wasting culprits is as easy as 1—2—3. Simply check, twist, and replace your way to fewer leaks and more water savings:

- ⇒ **Check** for silent leaks in the toilet with a few drops of food coloring in the tank, and check your sprinkler system for winter damage.
- ⇒ **Twist** faucet valves; tighten pipe connections; and secure your hose to the spigot. For additional savings, twist a WaterSense labeled aerator onto each bathroom faucet to save water without noticing a difference in flow. They can save a household more than 500 gallons each year—equivalent to the amount water used to shower 180 times!
- ⇒ **Replace** old plumbing fixtures and irrigation controllers that are wasting water with WaterSense labeled models that are independently certified to use 20 percent less water and perform well.

**We ask that all our customers help us protect our water sources which are the heart of our community, our way of life and our children's future.**

## EPA Wants You To Know

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 may pick up substances resulting from the presence of animals or from human activity.

**Contaminants that may be present in source water include:**

- A. **Microbial contaminants**, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- B. **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.
- C. **Pesticides and herbicides**, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.
- D. **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.
- E. **Radioactive contaminants**, which can be naturally occurring or be the result of oil and gas production and mining activities.

## What measures are in place to ensure water is safe to drink?

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

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 may be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at 800-426-4791 .

## Special notice from EPA for the elderly, infants, cancer patients and people with HIV/AIDS or other immune system problems

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).

## Information Concerning Lead in Water

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. Carolina Water Service, Inc. of NC 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>.

Water that remains stationary within your home plumbing for extended periods of time can leach lead out of pipes joined with lead-containing solder as well as brass fixtures or galvanized pipes. Flushing fixtures has been found to be an effective means of reducing lead levels. The flushing process could take from 30 seconds to 2 minutes or longer until it becomes cold or reaches a steady temperature. Faucets, fittings, and valves, including those advertised as "lead-free," may contribute lead to drinking water. Consumers should be aware of this when choosing fixtures and take appropriate precautions. Visit the NSF Web site at [www.nsf.org](http://www.nsf.org) to learn more about lead-containing plumbing fixtures.

## If You Have Questions Or Want To Get Involved

Carolina Water Service, Inc. of NC does not hold regular public meetings. If you have any questions about this report or would like a company representative to attend an upcoming homeowners association meeting, please contact Customer Service at 1-800-525-7990.

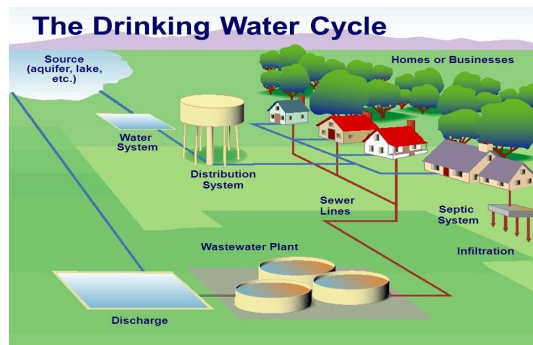
## Drain Disposal Information

Sewer overflows and backups can cause health hazards, damage home interiors, and threaten the environment. A common cause is sewer pipes blocked by grease, which gets into the sewer from household drains. Grease sticks to the insides of pipes. Over time, the grease can build up and block the entire pipe. Help solve the grease problem by keeping this material out of the sewer system in the first place:

- Never pour grease down sink drains or into toilets. Scrape grease into a can or trash.
- Put strainers in sink drains to catch food scraps/solids for disposal.

## Prescription Medication and Hazardous Waste

Household products such as paints, cleaners, oils, and pesticides, are considered to be household hazardous waste. Prescription and over-the-counter drugs poured down the sink or flushed down the toilet can pass through the wastewater treatment system and enter rivers and lakes (or leach into the ground and seep into groundwater in a septic system). Follow the directions for proper disposal procedures. **Do not flush hazardous waste or prescription and over-the-counter drugs down the toilet or drain.** They may flow downstream to serve as sources for community drinking water supplies. Many communities offer a variety of options for conveniently and safely managing these items. For more information, visit the EPA website at: [www.epa.gov/hw/household-hazardous-waste-hhw](http://www.epa.gov/hw/household-hazardous-waste-hhw).





## Key to Water Quality Terms

In order to help you understand this report, we want you to understand a few terms and abbreviations that are contained in it.

- **Action level (AL)** - action level is the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
- **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.
- **Maximum contaminant level (MCL)** - The maximum contaminant level is the highest level of a contaminant that is allowed in drinking water. MCL's are set as close to the MCLG's as feasible using the best available treatment technology.
- **Maximum contaminant level goal (MCLG)** - The "goal" is the level of a contaminant in drinking water below which there is no known or expected health risk. MCLG's allow for a margin of safety.
- **Maximum Residual Disinfectant Level (MRDL)** - The highest level of disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
- **Maximum Residual Disinfectant 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 contamination.
- **mrem/year** - millirems per year (a measure of radiation absorbed by the body).
- **Non-Detects (ND)** - laboratory analysis indicates that the constituent is not present.
- **Not-Applicable (N/A)** - Information not applicable/not required for that particular water system or for that particular Rule.
- **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.
- **Parts per trillion (ppt) or Nanograms per liter (nanograms/L)** - One part per trillion corresponds to one minute in 2,000,000 years, or a single penny in \$10,000,000,000.
- **Picocuries per liter (pCi/L)** - picocuries per liter is a measure of the radioactivity in water.
- **Running Annual Average (RAA)** - Average of four consecutive quarters of sample analytical results used to determine compliance.
- **Treatment Technique (TT)** - A treatment technique is a required process intended to reduce the level of a contaminant in drinking water.
- **Avg** - Regulatory compliance with some MCLs is based on running annual average of monthly samples.

## Source Water Assessment Program (SWAP)

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 Ski Mountain was determined by combining the contaminant rating (number and location of PCS's 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)

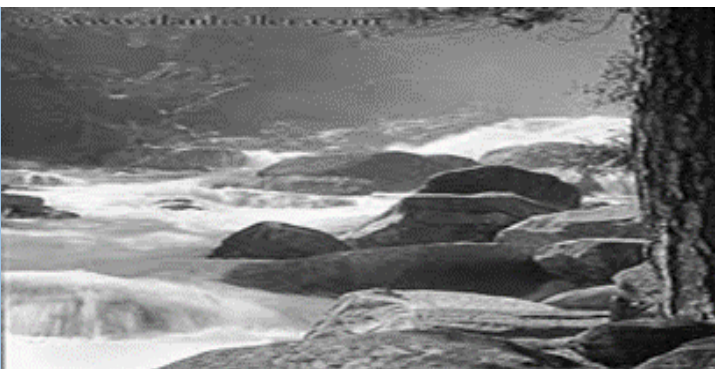
Source Name	Susceptibility Rating	SWAP Report Date
Well #1	Moderate	04/28/2017
Well #2	Moderate	04/28/2017

The complete SWAP Assessment report for Ski Mountain may be viewed on the Web at: <https://deq.nc.gov/swap-nextgen>. Please 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.

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 27699-1634, or email request to [swap@ncdenr.gov](mailto:swap@ncdenr.gov). Please indicate your system name, PWSID, 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.*

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 the 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 or the State requires 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.



Note: The Environmental Protection Agency (EPA) requires monitoring of over 80 drinking water contaminants. Those contaminants listed in the table below are the only contaminants detected in your drinking water.

### Water Quality Test Results

#### Disinfectant Residuals Summary \*Based upon Running Annual Average (RAA)

Contaminant (units)	Year Sampled	MRDL Violation Y/N	Your Water	Range Low High	MRDLG	MRDL	Likely Source of Contamination
Chlorine (ppm)	2017	N	*1.82	1.3-2.2	4	4	Water additive used to control microbes.

#### Nitrate/Nitrite Contaminants

Contaminant (units)	Year Sampled	MCL Violation Y/N	Your Water	Range Low High	MCLG	MCL	Likely Source of Contamination
Nitrate (as Nitrogen) (ppm)	2017	N	2.17	2.12-2.17	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits.

#### 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)	2016	0.277	0	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits.

### Violations

In 2017, Carolina Water Service, Inc. of North Carolina performed all required monitoring for contaminants. In addition, no violations from the North Carolina Department of Environmental Quality were received and we were in compliance with applicable testing and reporting requirements.





# Carolina Water Service of North Carolina™

## Elk River Water System

PWS ID# 01-06-118

### Annual Water Quality Report 2017

quality of water we delivered to you over the past year. As the President of your water utility, I fully appreciate our role in the local community. We want you to understand the investments and other efforts we undertake to continually improve the water treatment process and protect our water resources.

Our team is committed to providing safe, reliable, and cost-effective service to you. All of our employees share in our commitment to act with integrity, protect the environment, and enhance the local community.

**We are proud to share this report which is based on water quality testing through December 2017. We continually strive to supply water that meets or exceeds all federal and state water quality regulations.**

Our local dedicated team of water quality experts is working within your community every day ensuring that you, our customer, are our top priority and that we are providing the highest quality service - now and in the years to come.

Best regards,

Sign up for e-billing now at  
[www.carolinawaterservicenc.com](http://www.carolinawaterservicenc.com)

Este informe contiene información muy importante sobre su agua beber. Tradúzcalo ó hable con alguien que lo entienda bien.

### The Safe Drinking Water Act

**The Safe Drinking Water Act** was passed in 1974 due to congressional concerns about organic chemical contaminants in drinking water and the inefficient manner by which states supervised and monitored drinking water supplies. Congress' aim was to assure that all citizens served by public water systems would be provided high quality water. As a result, the EPA set enforceable standards for health-related drinking water contaminants. The Act also established programs to protect underground sources of drinking water from contamination.

### Source of Drinking Water

Your water comes from several wells located in Avery County which draw water from a fractured bedrock aquifer. An aquifer is a geological formation that contains water.

### Water Conservation

Please be reminded that our water systems in North Carolina are always in some stage of either voluntary or mandatory water conservation restriction. These restrictions may vary weekly due to drought conditions and are dictated by a system established by the North Carolina Utilities Commission in an order dated May 23, 2008. The customers are encouraged to keep informed of current restrictions by checking the CWSNC web page at [www.carolinawaterservicenc.com](http://www.carolinawaterservicenc.com) and clicking on the "Community Drought Status" link on the front page. CWSNC posts drought conditions on our Twitter account at [@CarolinaWaterNC](https://twitter.com/CarolinaWaterNC) and on Facebook at [@CarolinaWaterNC](https://www.facebook.com/CarolinaWaterNC). If you do not have access to a computer, call our customer service at (800) 525-7990.

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Help put a stop to the more than **1 trillion gallons of water lost annually** nationwide due to household leaks. These easy to fix leaks waste the average family the amount of water used to fill a backyard swimming pool each year. Plumbing leaks can run up your family's water bill an extra 10 percent or more, but chasing down these water and money wasting culprits is as easy as 1—2—3. Simply check, twist, and replace your way to fewer leaks and more water savings:

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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 may pick up substances resulting from the presence of animals or from human activity.

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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>.

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## If You Have Questions Or Want To Get Involved

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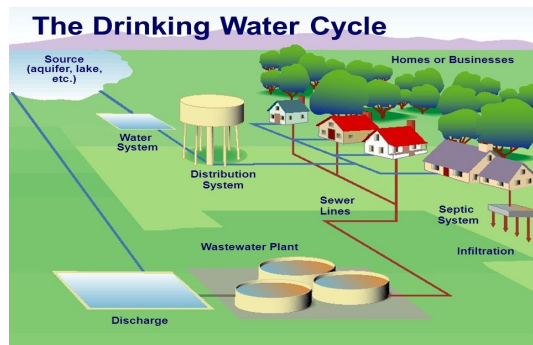
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Household products such as paints, cleaners, oils, and pesticides, are considered to be household hazardous waste. Prescription and over-the-counter drugs poured down the sink or flushed down the toilet can pass through the wastewater treatment system and enter rivers and lakes (or leach into the ground and seep into groundwater in a septic system). Follow the directions for proper disposal procedures. **Do not flush hazardous waste or prescription and over-the-counter drugs down the toilet or drain.** They may flow downstream to serve as sources for community drinking water supplies. Many communities offer a variety of options for conveniently and safely managing these items. For more information, visit the EPA website at: [www.epa.gov/hw/household-hazardous-waste-hhw](http://www.epa.gov/hw/household-hazardous-waste-hhw).



## Key to Water Quality Terms

In order to help you understand this report, we want you to understand a few terms and abbreviations that are contained in it.

- **Action level (AL)** - action level is the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
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- **Maximum contaminant level (MCL)** - The maximum contaminant level is the highest level of a contaminant that is allowed in drinking water. MCL's are set as close to the MCLG's as feasible using the best available treatment technology.
- **Maximum contaminant level goal (MCLG)** - The "goal" is the level of a contaminant in drinking water below which there is no known or expected health risk. MCLG's allow for a margin of safety.
- **Maximum Residual Disinfectant Level (MRDL)** - The highest level of disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
- **Maximum Residual Disinfectant 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 contamination.
- **mrem/year** - millirems per year (a measure of radiation absorbed by the body).
- **Non-Detects (ND)** - laboratory analysis indicates that the constituent is not present.
- **Not-Applicable (N/A)** - Information not applicable/not required for that particular water system or for that particular Rule.
- **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.
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- **Picocuries per liter (pCi/L)** - picocuries per liter is a measure of the radioactivity in water.
- **Running Annual Average (RAA)** - Average of four consecutive quarters of sample analytical results used to determine compliance.
- **Treatment Technique (TT)** - A treatment technique is a required process intended to reduce the level of a contaminant in drinking water.
- **Avg** - Regulatory compliance with some MCLs is based on running annual average of monthly samples.

## Source Water Assessment Program (SWAP)

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 Elk River was determined by combining the contaminant rating (number and location of PCS's 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)

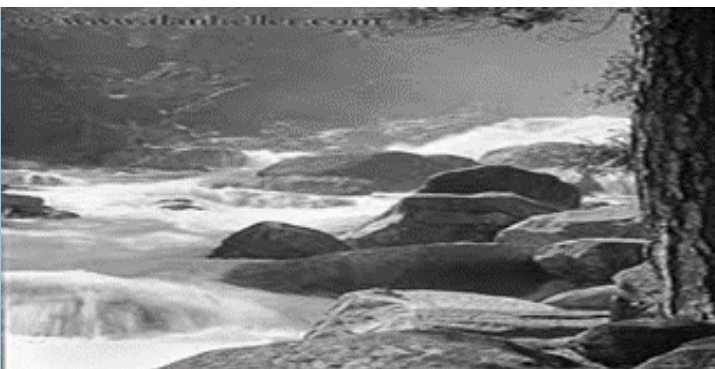
Source Name	Susceptibility Rating	SWAP Report Date
Well #6	Lower	04/13/2017
Well #7	Lower	04/13/2017
Well #8	Lower	04/13/2017

The complete SWAP Assessment report for Elk River may be viewed on the Web at: <https://deq.nc.gov/swap-nextgen>. Please 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.

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 27699-1634, or email request to [swap@ncdenr.gov](mailto:swap@ncdenr.gov). Please indicate your system name, PWSID, 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.*

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 the 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 or the State requires 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.



Note: The Environmental Protection Agency (EPA) requires monitoring of over 80 drinking water contaminants. Those contaminants listed in the table below are the only contaminants detected in your drinking water.

### Water Quality Test Results

Contaminant (units)	Sample Date	MCL Violation Y/N	Your Water	Range Low High	MCLG	MCL	Likely Source of Contamination
<b>Nitrate/Nitrite Contaminants</b>							
Nitrate (as Nitrogen) (ppm)	2017	N	1.45	ND-1.45	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits.
<b>Radioactive Contaminants</b>							
Combined radium (pCi/L)	2013/ 2015	N	5	ND - 5	0	5	Erosion of natural deposits.
<b>Disinfectants and Disinfection Byproducts Contaminants</b>							
Chlorine (ppm)	2017	N	1.16	0.6-2.2	MRDLG = 4	MRDL = 4	Water additive used to control microbes.
<b>Stage 2 Disinfection Byproduct Compliance - Based upon Locational Running Annual Average (LRAA)</b>							
Contaminant (units)	Year Sampled	MCL Violation Y/N	Your Water (highest RAA)	Range Low High	MCLG	MCL	Likely Source of Contamination
TTHM (ppb)	2016	N	1	N/A	N/A	80	Byproduct of drinking water disinfection..
<b>Lead and Copper Contaminants</b>							
Contaminant (units)	Action Level Exceedance Y/N	Sample Date	Your Water	# of sites found above the AL	MCLG	MCL	Likely Source of Contamination
Copper (ppm) (90 <sup>th</sup> percentile)	N	June 2015	0.239	0	1.3	AL= 1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives.

### Violations

In 2017, Carolina Water Service, Inc. of North Carolina performed all required monitoring for contaminants. In addition, no violations from the North Carolina Department of Environmental Quality were received and we were in compliance with applicable testing and reporting requirements.





# Carolina Water Service of North Carolina™

## Hound Ears Water System

PWS ID# 01-95-112

### Annual Water Quality Report 2017

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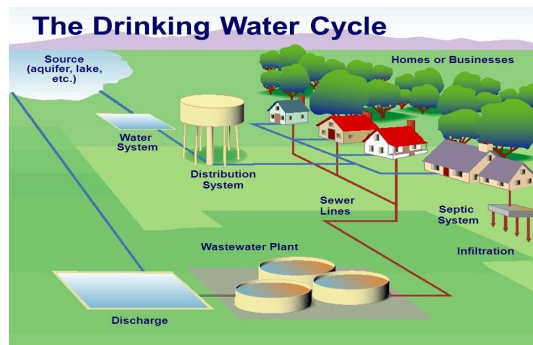
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The relative susceptibility rating of each source for Hound Ears was determined by combining the contaminant rating (number and location of PCS's within the assessment area) and the inherent vulnerability rating (i.e., characteristics or existing conditions 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)

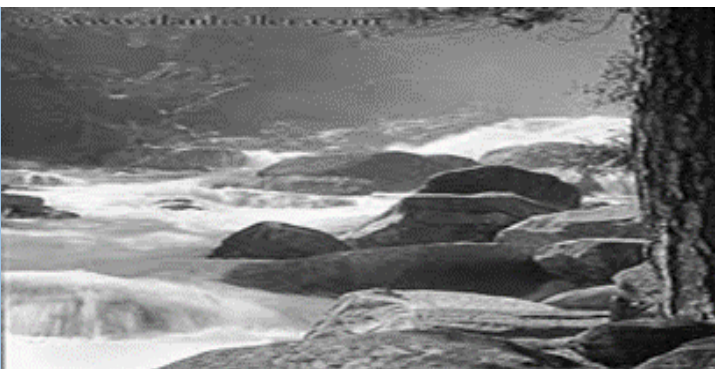
Source Name	Susceptibility Rating	SWAP Report Date
Well #1A	Lower	04/28/2017
Well #3	Moderate	04/28/2017
Well #4	Moderate	04/28/2017
Well #5	Moderate	04/28/2017
Well #6	Moderate	04/28/2017
Well #7	Lower	04/28/2017
Well #8	Lower	04/28/2017
Well #10	Lower	04/28/2017
Well #11	Lower	04/28/2017
Well #12	Moderate	04/28/2017

The complete SWAP Assessment report for Hound Ears may be viewed on the Web at: <https://deq.nc.gov/swap-nextgen>. Please 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.

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 27699-1634, or email request to [swap@ncdenr.gov](mailto:swap@ncdenr.gov). Please indicate your system name, PWSID, 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.*

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 the 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 or the State requires 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.



Note: The Environmental Protection Agency (EPA) requires monitoring of over 80 drinking water contaminants. Those contaminants listed in the table below are the only contaminants detected in your drinking water.

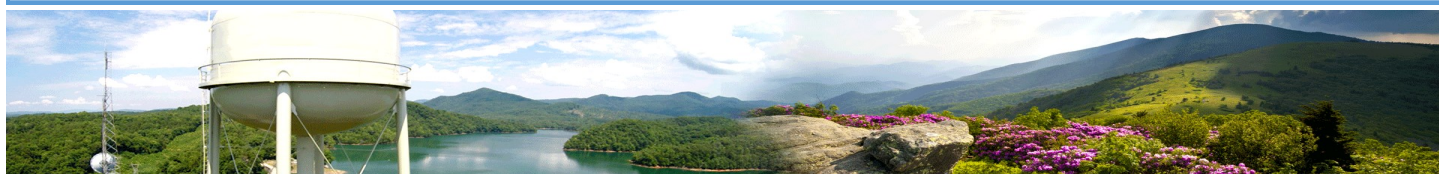
### Water Quality Test Results

Contaminant (units)	Sample Date	MCL Violation Y/N	Your Water	Range Low High	MCLG	MCL	Likely Source of Contamination
<b>Radioactive Contaminants</b>							
Uranium (pCi/L)	2015	N	0.77	N/A	0	20.1	Erosion of natural deposits.
<b>Disinfectants Residuals (highest RAA)</b>							
Chlorine (ppm)	2017	N	1	0.6-1.2	MRDLG = 4	MRDL = 4	Water additive used to control microbes.
<b>Stage 2 Disinfection Byproduct Compliance</b>							
TTHM	2017	N	1.5	N/A	N/A	80	Byproduct of drinking water disinfection
HAA5	2017	N	1.1	N/A	N/A	60	Byproduct of drinking water disinfection
<b>Volatile Organic Chemical (VOC) Contaminants</b>							
Toluene (ppm)	10/23/17	N	0.0041	ND-.0041	1	1	Discharge from petroleum factories.
<b>Lead and Copper Contaminants</b>							
Contaminant (units)	Action Level Exceedance Y/N	Sample Date	Your Water	# of sites found above the AL	MCLG	MCL	Likely Source of Contamination
Copper (ppm) (90 <sup>th</sup> percentile)	N	Sept 2016	0.431	1	1.3	AL= 1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives.

*Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctor.*

### Violations

In 2017, Carolina Water Service, Inc. of North Carolina performed all required monitoring for contaminants. In addition, no violations from the North Carolina Department of Environmental Quality were received and we were in compliance with applicable testing and reporting requirements.



VERIFICATION

Deborah Clark, being duly sworn, deposes and says:

That she is the Communications Coordinator for Carolina Water Service, Inc. of North Carolina; that she is familiar with the facts set out in this **REPORT ON CUSTOMER COMMENTS FROM NCUC PUBLIC HEARING IN BOONE, NORTH CAROLINA**, filed in Docket No. W-354, Sub 360; that he has read the foregoing Report and knows the contents thereof; and that the same is true of her knowledge except as to those matters stated therein on information and belief, and as to those he believes them to be true.

*Deborah Clark*  
Deborah Clark

Sworn to and subscribed before me this  
the 17 day of October 2018.

*Alexa Bird*  
*Alexa Bird*  
Notary Public



My commission expires: September 9<sup>th</sup> 2023

## CERTIFICATE OF SERVICE

I hereby certify that on this the 17th day of October 2018, a copy of the foregoing **REPORT ON CUSTOMER COMMENTS** has been duly served upon all parties of record by electronic service, as follows:

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