

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 PUBLIC
HEARING IN RALEIGH, NORTH
CAROLINA, HELD ON OCTOBER
8, 2018**

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

The hearing was convened at 7:00 p.m. on October 8, 2018 at the Dobbs Building, 430 North Salisbury Street, Raleigh, North Carolina. Chairman Edward Finley presided on behalf of the North Carolina Utilities Commission (“NCUC” or “Commission”), joined by Commissioners ToNola Brown-Bland, James G. Patterson, Jerry C. Dockham, Daniel Clodfelter, Charlotte A. Mitchell, and Lyons Gray.

John Little appeared for the Public Staff on behalf of the using and consuming public, accompanied by Public Staff Water Engineer Gina Casselberry. Margaret Force appeared on behalf of the Attorney General. Matthew Klein,

President of CWSNC, was accompanied by other Company personnel who were available to assist customers with questions or requests. They included: J. Bryce Mendenhall, Vice-President of Operations; Deborah Clark, Communications Coordinator; and Steve Harrell, Area Manager. Jo Anne Sanford, 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 its 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 RALEIGH PUBLIC HEARING

Five (5) witnesses testified, including two (2) witnesses from Carolina Trace; two (2) from Amber Acres; and one (1) from Jordan Woods. The witnesses principally objected to the rate increase.

SPECIFIC RESPONSES TO CUSTOMER TESTIMONY FROM RALEIGH

William Stanley Glance, 49 Indian Trail, Sanford, North Carolina, 27332, Carolina Trace *Tr. Vol. 6, pp. 10-11.*

Mr. Glance objected to the rate increase, indicating that: he has been receiving them on a yearly basis; it does not seem fair; and he is asking the Company to “hold off” on another rate increase.

Company Response:

The Company understands the opposition to rate increases but notes that the increases—when they are granted—are based upon proof of investment and expenditure, as necessarily made in order to provide adequate service and to have an opportunity to earn a reasonable return. The water and wastewater sector is a very capital-intensive industry.

Vincent Roy, Carolina Trace, 237 Lakeview Drive, Sanford, North Carolina, 27332 *Tr. Vol. 6, pp. 11-20.*

Mr. Roy is the Utilities Representative for Carolina Trace, has been in contact with the 18 different Property Owners Associations’ (“POA”) presidents, represents the communities, and has combined the input from the various POAs into his statement. On behalf of his communities, Mr. Roy:

- noted the good working relationship with CWSNC’s local employees, praising the positive responses to requests for assistance;
- expressed concern about the communications with “headquarters,” particularly with respect to Boil Water Notices, which he complained are often wrong;

- criticized the Company's practice of adjusting charges for wastewater with respect to commercial pools, but not for residential pool owners;
- expressed eagerness for the GPS mapping project to be completed so that all manholes are located;
- criticized the "uniform rate system" and recommended that the uniform rate communities be reorganized into smaller, more similar groups;
- noted an inability to understand the Company's consumption adjustment proposal;
- criticized higher base rates as a component of rate design, indicating that this "guarantees" the Company a net profit regardless of performance; and requested the Commission reject the request, noting it is the second request within a year.

Company's Response:

- With respect to the Boil Water Notices, the Company makes every attempt possible to minimize disturbances related to operational issues that would necessitate the need for a 'Boil Water Advisory.' CWSNC operators identify the geographical areas affected and provide that information to Company staff to push out the advisories in a timely fashion. Mr. Roy testified that a subject customer indicated that she received a rescind notice but had never received the original boil water advisory. The "call-out" file that is built (based upon the operators' defined affected area) does not change from initial call to rescind

- notice. The customer may have only received one call notification, but the same call-out file was used to place both calls. Many issues can affect receipt of calls, including, but not limited to, working phone line, signal (cell phone), Call Waiting/Caller ID, willingness to answer an unknown number, etc.
- Mr. Mendenhall spoke previously with Mr. Roy on two separate occasions regarding the residential pool credit issue. CWSNC is not opposed to the idea of a sewer credit for pool filling, and the Company allows this practice with commercial customers. Mr. Mendenhall's recommendation was for the specific customer to provide a certified statement of the pool's total volume so that volume could be removed from the accompanying sewer charge upon pool filling. This proposal is inadequate for Mr. Roy, in that he would prefer that a CWSNC staff member visit the individual home site two times (for a beginning read and ending read) during the time of pool filling. The Company opposes this proposal as it obviously places a burden and a cost on the individual operator to accommodate the specific customer's schedule, potentially neglecting other duties to make the necessary reads to facilitate the credits. Additionally, the sewer credit should only apply for entire pool filling and not for ongoing annual maintenance/refilling associated with evaporation, pool use, etc.
 - CWSNC continues to work on mapping the system components. Challenges have been encountered on a regular basis that have required closed-circuit

television (“CCTV”) inspection to locate manholes that are otherwise unseen above ground. Staff is in the process of reviewing the CCTV footage that has been received to date to pinpoint areas that were not accessible during initial inspection. Additionally, CWSNC has acquired GPS equipment that staff will utilize to record real-time locations of facilities that will subsequently be incorporated into the Company’s master asset registry.

- The move to consolidated rates facilitates efficiencies in the administration of the Company, allowing for spreading of the overhead costs across systems. The cost of an inevitable major investment, which could overwhelm a smaller system, is shared across the customer base.
- The proposed Consumption Adjustment Mechanism is an effort to protect both customers and shareholders from extremes of consumption, in either direction.
- Whether a rate design has a higher or a lower base facilities charge, it is designed to allow for the revenue recovery that is authorized by the Commission. Further, some customers prefer a higher fixed charge and a lower volumetric charge, while others favor the opposite.

Judith Bassett, 5721 Woof Place, Amber Acres, Knightdale, North Carolina, 27545. *Tr. Vol. 6, pp. 22-24.*

Ms. Bassett opposed the rate increase, noting that the federal and state tax decreases should create cost savings for the Company. She also stated she has

seen no improvements in service and that the Company could be more efficient. She opposes the flat rate charges for sewer service.

Company Response:

Mr. Mendenhall met with Ms. Bassett the night of the Raleigh hearing to discuss her comments regarding efficiencies and/or improved practices. Ms. Bassett indicated that she receives separate bill mailings for her water and sewer service and she suggested that the Company could realize a savings by combining the two bills. Company research indicated that, prior to the consolidation of all CWSNC companies, Ms. Bassett received service from two separate entities and, thus, received separate bills. Mr. Mendenhall and CWSNC's billing department are investigating the potential of consolidating the bills, and preliminary work has been performed to separate out these systems with their own unique "identification number." Mr. Mendenhall will follow up with Ms. Bassett regarding any potential changes to the billing issue or timeline for continued investigation.

Ms. Vickie Smith, 5717 Woof Place, 27545 Knightdale, North Carolina, (Amber Acres Subdivision), Tr. Vol 6, pp. 24-25.

Ms. Smith complained of the annual rate increases, noting that many of her neighbors were on fixed and/or low incomes. She also objects to the high base rate.

Company Response:

First, CWSNC's rates require approval from the Commission, which are set after a contested rate hearing and full examination by intervenor(s) and the Commission. The base rates for each customer support the maintenance and operational costs associated with the water or wastewater facilities, respectively, across the CWSNC systems. Customers from each community pay the base rate according to the Commission-approved rate structure.

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

Ben Farmer, 6113 Jordan Woods Drive, Raleigh (Jordan Woods Subdivision),

Tr. Vol. 6, p.25-28

Mr. Farmer testified to his objection to the frequency and amount of rate increases, indicating that his water bill was 70% higher after the 2017 rate case and that he is facing the prospect of a 15% increase in this case. He challenges the rationale for the increase and asks the Commission to reject the request.

Company Response:

In 2017, the Commission allowed CWSNC to move towards a consolidated rate structure. The essential support for this kind of rate structure is found in the fact that virtually every system will sooner or later require significant investment,

and a consolidated rate structure evens the financial result of that fact and mitigates the impact—potentially catastrophic—on any one system at any given time.

CWSNC's records indicate that Mr. Farmer's monthly base charge for water service for 2017 was \$11.44 and, after the Commission's Order in the Company's 2017 rate case, \$24.44 per month for 2018. In addition, according to Company records, Mr. Farmer's average monthly consumption increased from 2,798 gallons in 2017 to 3,011 in 2018.

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

CONCLUSION

CWSNC appreciates the willingness of its customers to participate in this process, and the Company understands customers' opposition to rate increases. However, this is a capital-intensive industry and, since the last rate case, CWSNC has spent \$18,235,630 in North Carolina. Therefore, if the investments made by CWSNC are proved to be necessary and prudent, recovery of those costs is required for the Company to continue to provide good service. The public's

assurance of fairness is found in the strict, highly skilled oversight of the Public Staff and the Commission and its staff.

Respectfully submitted, this the 25th 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
RALEIGH 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. 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.

5. 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 Carolina Trace, Amber Acres, and Jordan Woods reflect “no violations.”
6. 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. 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.

- b. 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™

Carolina Trace Water System

PWS ID# 03-53-101

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

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 Lee County which draw groundwater from a fractured bedrock aquifer. An aquifer is a geological formation that contains water. Your water is also purchased from the City of Sanford, which draws surface water from the Cape Fear River.

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 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. Immunocompromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other 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 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.



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)** - is a required process intended to reduce the level of a contaminant in drinking water.

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 Carolina Trace 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
Cape Fear River - City of Sanford	Higher	08/31/2017

The complete SWAP Assessment report for Carolina Trace 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. 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 - Carolina Water Service, Inc. of NC

Contaminant (units)	Sample Date	MCL Violation Y/N	Your Water	Range Low High	MCLG	MCL	Likely Source of Contamination
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Disinfectants and Disinfection Byproducts Contaminants

Chloramines (ppm)	2017	N	1.67	1.0 – 2.1	MRDLG = 4	MRDL = 4	Water additive used to control microbes.
Chlorine (ppm)	2017	N	1.3	1.2 – 1.4	MRDLG = 4	MRDL = 4	Water additive used to control microbes.

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

TTHM (ppb)	B01	2017	N	73.25	36.60 – 107.20*	N/A	80	Byproduct of drinking water disinfection.
TTHM (ppb)	B02	2017	N	71.18	37.40 – 106.70*	N/A	80	Byproduct of drinking water disinfection.
HAA5 (ppb)	B01	2017	N	31.08	22.10 – 34.40	N/A	60	Byproduct of drinking water disinfection.
HAA5 (ppb)	B02	2017	N	28.75	13.50 – 29.60	N/A	60	Byproduct of drinking water disinfection.

*Compliance is based on a four quarter average; therefore, our system was not in violation. For additional information, please see the following standard health effects language: 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.

Lead and Copper Contaminants

Contaminant (units)	Sample Date	Action Level Exceedance Y/N	Your Water	# of sites found above the AL	MCLG	MCL	Likely Source of Contamination
Copper (ppm) (90 th percentile)	June – Sept 2017	N	0.135	0	1.3	AL= 1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives.
Lead	June- Sept 2017	Y	0	1*	15	15	Corrosion of household plumbing systems; erosion of natural deposits.

*Lead, if present, in elevated levels can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from minerals and components associated with service lines and home plumbing. Carolina Water Service 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>.

The Following is required EPA Language - Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.

Water Quality Test Results - City of Sanford

Total Organic Carbon (TOC)

Contaminant (units)	Compliance Method	Your Water (RAA Removal Ratio)	MCLG	TT	Range Monthly Removal Ratio Low - High	TT Violation Y/N	Likely Source of Contamination
Total Organic Carbon (removal ratio) (TOC)-TREATED	Step 1	1.38	N/A	TT	1.16 – 1.56	No	Naturally present in the environment.

Depending on the TOC in the source water, the system MUST have a certain percent removal of TOC or must achieve alternative compliance criteria. If Sanford does not achieve that percent removal, there is an alternative percent removal. If Sanford fails to meet the alternative percent removal, they are in violation of a Treatment Technique.

Turbidity

Substance (Unit of Measure)	Year Sampled	MCL [MRDL]	MCLG [MRDLG]	Your Water	Range Low - High	Treatment Technique (TT) Violation if:	TT Violation (Y/N)	Typical Source
Turbidity (NTU) - Highest single turbidity measurement	2016	TT = 1	N/A	0.09	NA	Turbidity > 1 NTU	No	Soil runoff
Turbidity (NTU) - Lowest monthly percentage (%) of samples meeting turbidity limits	2016	TT=95% of samples ≤0.3	N/A	100%	NA	Less than 95% of monthly turbidity measurements are ≤ 0.3 NTU	No	Soil runoff

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

Inorganic

Substance (Unit of Measure)	Year Sampled	MCL [MRDL]	MCLG [MRDLG]	Amount Detected	Range Low - High	Violation	Typical Source
Fluoride (ppm)	2016	4	4	0.55	N/A	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories.

Synthetic Organic Chemical (SOC) Contaminants Including Pesticides and Herbicides

Atrazine (ppb)	2013	0.13	N/A	3	3	No	Runoff from herbicide used on row crops.
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STEP 1 TOC Removal Requirements

Source Water TOC (mg/L)	Source Water Alkalinity mg/L as CaCO3 (in percentages)		
	0 - 60	> 60-120	> 120
> 2.0 - 4.0	35.0	25.0	15.0
> 4.0 - 8.0	45.0	35.0	25.0
> 8.0	50.0	40.0	30.0

Definitions:

- * LRAA (Locational Running Annual Average): Compliance based on a running locational average of quarterly samples.
- * TT (Treatment Technique): A required process intended to reduce the level of a contaminant in drinking water.
- * Extra Note: Turbidity is a measure of the cloudiness of water. We monitor it because it is a good indicator of the effectiveness of our filtration system. The turbidity rule requires that 95% or more of the monthly samples must be less than or equal to 0.3 NTU.

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™

Amber Acres Water System

PWS ID# 03-92-236

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.

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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

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 Wake County which draw water from a fractured bedrock aquifer. An aquifer is a geological formation that contains water.

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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 and clicking on the "[Community Drought Status](#)" link on the front page. CWSNC posts drought conditions on our Twitter account at [@CarolinaWaterNC](#) and on Facebook at [@CarolinaWaterNC](#). If you do not have access to a computer, call our customer service at (800) 525-7990.

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

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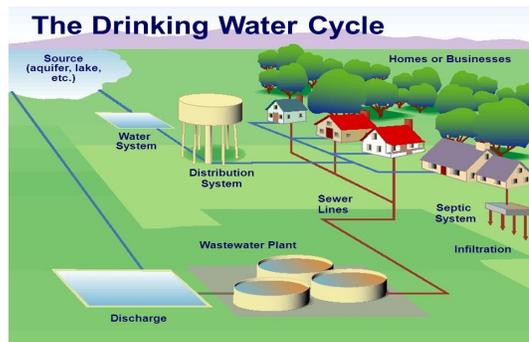
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Household products such as paints, cleaners, oils, and pesticides, are considered to be household hazardous waste. Prescription and over-the-counter drugs poured down the sink or flushed down the toilet can pass through the wastewater treatment system 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.



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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 Amber Acres 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	4/27/2017
Well #2	Moderate	4/27/2017

The complete SWAP Assessment report for Amber Acres 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. 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
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Nitrate/Nitrite Contaminants

Nitrate (as Nitrogen) (ppm)	2017	N	5.16	2.22-5.44	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits.
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Nitrate in drinking water at levels above 10 ppm is a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant you should ask advice from your health care provider.

Radioactive Contaminants

Combined radium (pCi/L)	3/12/13	N	1.5	N/A	0	5	Erosion of natural deposits.
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Synthetic Organic Chemical Contaminants including pesticides and herbicides

Heptachlor epoxide (ppt)	2016/ 2017	N	40	ND - 40	0	200	Breakdown of heptachlor.
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Disinfectants and Disinfection Byproducts Contaminants

Contaminant (units)	Year Sampled	MRDL Violation Y/N	Your Water (highest RAA)	Range Low High	MRDLG	MRDL	Likely Source of Contamination
Chlorine (ppm)	2017	N	0.97	0.5 – 1.4	4	4	Water additive used to control microbes.

Lead and Copper Contaminants

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 th percentile)	N	2016	0.9235	0	1.3	AL= 1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives.
Lead (ppb) (90 th percentile)	N	2016	5.5	0	0	AL= 15	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™

Jordan Woods Water System

PWS ID# 03-92-099

Annual Water Quality Report 2017

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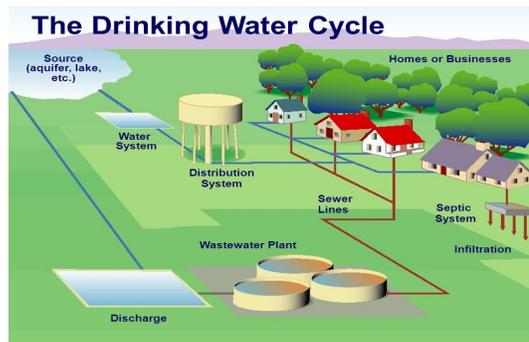
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- **Parts per million (ppm) or milligrams per liter (mg/l)** - one part per million corresponds to one minute in two years or a single penny in \$10,000.
- **Parts per billion (ppb) or micrograms per liter (ug/l)** - one part per billion corresponds 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 Jordan Woods 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*	06/20/2014

*A Susceptibility Rating was not conducted for Well #2 in 2017.

The complete SWAP Assessment report for Jordan Woods 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. 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

Volatile Organic Chemical (VOC) Contaminants

Contaminant (units)	Sample Date	MCL Violation Y/N	Your Water	Range Low High	MCLG	MCL	Likely Source of Contamination
Xylenes (Total) (ppm)	2017	N	0.0053	ND – 0.0053	10	10	Discharge from petroleum factories; discharge from chemical factories.
Ethylbenzene (ppb)	2017	N	0.7	ND -0.7	700	700	Discharge from petroleum refineries.

Disinfectants and Disinfection Byproducts Contaminants

Contaminant (units)	Year Sampled	MCL/MRDL Violation Y/N	Your Water (highest RAA)	Range Low High	MCLG	MCL	Likely Source of Contamination
TTHM (ppb) Total Trihalomethanes]	2017	N	12	N/A	N/A	80	By-product of drinking water chlorination.
HAA5 (ppb) [Total Haloacetic Acids]	2017	N	5.5	N/A	N/A	60	By-product of drinking water disinfection.

Disinfectant Residuals Summary

Contaminant (units)	Year Sampled	MRDL Violation Y/N	Your Water (highest RAA)	Range Low High	MRDLG	MRDL	Likely Source of Contamination
Chlorine (ppm)	2017	N	1.0	0.6 – 1.4	4	4.0	Water additive used to control microbes.

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 HEARINGS IN RALEIGH, NORTH CAROLINA**, filed in Docket No. W-354, Sub 360; that she 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 she believes them to be true.

Deborah J Clark

Deborah Clark

Sworn to and subscribed before me this the 25 day of October 2018.

Alexa Bird
Alexa Bird

Notary Public



My commission expires: 11. 9. 2023

CERTIFICATE OF SERVICE

CERTIFICATE OF SERVICE

I hereby certify that on this the 25th 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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