

2024

# WATER QUALITY REPORT

Water System Number (04-74-030)

This report contains information about the high-quality water Greenville Utilities treats and delivers to our customers.

#### Atención

Este folleto tiene información importante acerca de la calidad del agua que provee la Ciudad de Greenville. Si tiene preguntas acerca de la calidad del agua, llame al Departamento de Water Resources al Greenville Utilities durante las horas de trabajo.



*Our goal is to provide you with a safe and dependable supply of drinking water.*

The highly-trained, state-certified staff at our Water Treatment Plant (WTP) continuously monitors the treatment process to ensure our water quality meets regulatory requirements. More than 100,000 tests are performed on hundreds of substances each year to ensure that your drinking water is safe. The WTP currently has the capacity to treat 32.0 million gallons per day (mgd). During 2023, GUC treated an average of (15.1) million gallons of water a day.

GUC met or surpassed all federal and state drinking water standards. GUC is committed to providing

the highest quality drinking water to our customers. GUC was awarded its 8th consecutive Area Wide Optimization Award and the Partnership for Safe Water Directors Award in 2023. Both programs set water quality goals that are more stringent than EPA drinking water regulations.

We welcome questions and feedback, or any general inquiries you may have. Please contact us at (252) 551-1551.

## Connected To You

*We Treat More Than 15.1 Million Gallons Of Water Each Day Serving More Than 140,000 People.*

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline (800-426-4791).

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants

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

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. Greenville Utilities 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>.



## Where Your Water Comes From

*GUC's Water Treatment Plant receives its water from the Tar River, which is classified as a surface water supply. Additionally, three area deep wells supplement the surface water supply.*

## The Treatment Process

Water from the Tar River is pumped into a 63-million-gallon pre-settling reservoir where large, heavy dirt particles begin to settle out as the water slowly moves to the outlet of the reservoir. From there, the water flows to the plant in one of two paths. The first is the original section of the Plant where a coagulant (chemical to help smaller dirt particles come together to form larger particles called floc) is added. The water then passes through a series of mixers, called flocculators, designed to facilitate the formation of floc. After the mixers, the water slows to a snail's pace as it enters the sedimentation basins. As it passes through the basins, about 95% of the floc settles to the bottom. The cleaner water from the top of the basin is then combined with water from the new superpulsator.

The second path is to the new superpulsator. The superpulsator, which is a high-rate sludge blanket clarifier combining inclined plate settling, pulsing sludge blanket, and solids contact to achieve maximum efficiency. This expansion project was completed in 2023 and is able to treat up to 10 million gallons each day. The superpulsator clarifier combines basic chemical principles and proven clarification technology in a high-rate, solids contact clarifier that offers

maximum efficiency. The unique design combines flocculation and clarification functions in one basin for optimal use of space. Vacuum generated flow pulsations create a homogeneous sludge blanket that results in excellent effluent quality at minimal operating costs. Once water is through the superpulsator, it is then combined with water from the older basins and channeled to ozone tanks where it is ozonated. This part of the process is called primary disinfection. Harmful bacteria, germs, viruses and microorganisms are killed or inactivated by this process.

Next, the water is filtered where a majority of the remaining particles are removed. Additional chemical treatment happens next. Fluoride is added to help prevent tooth decay, sodium hydroxide (caustic) is added to increase pH, phosphate is added for corrosion control and chlorine and ammonia are added to form chloramines, which function as the secondary disinfection in the distribution system.

Finished water is then pumped into three, 3,000,000-gallon ground storage tanks and into the distribution system, which includes two elevated tanks as well as our customers' homes and businesses.

# Our Findings

Listed are substances detected in GUC's treated water during 2023, unless otherwise noted. Not listed are other substances that were tested for (i.e., MTBE, Mercury, Petroleum products, etc.), but were not detected.

Substances	Highest Level Allowed [MCL]	Highest Level Detected	Range Detected	Description and Origin of Substance	Ideal Goals [MCLG]
<b>Asbestos</b> (MFL)	7.0	<0.16	n/a	Decay of abestos cement water mains; erosion of natural deposits	0.0
<b>Bromate</b> (ppb)	10.0 (Running Annual Average)	<1.0 (Running Annual Average)	2.0 - <1.0 (Highest and lowest site value)	By-product of drinking water disinfection.	0.0
<b>Chloramines</b> (ppm)	4.0 (Running Annual Average)	2.34 (System Average)	3.2 - 1.7 (Highest and lowest site value)	Water additive used to control microbes	4.0
<b>Chlorine</b> (ppm)	4.0 (Running Annual Average)	2.2 (System Average)	2.3 - 2.1 (Highest and lowest site value)	Water additive used to control microbes	4.0
<b>Fluoride</b> (ppm)	4.0	0.82	0.82 - 0.58	Natural occurring mineral; also added to water to promote dental health.	4.0
<b>Haloacetic Acid</b> (ppb)	60.0 (Locational Running Annual Average)	24.0 (Highest Locational Running Annual Average)	25 - 21 (Highest and lowest site value)	By-product of drinking water chlorination	n/a
<b>Total Coliform</b>	Presence of coliform bacteria in >5% of monthly samples	n/a	n/a	Naturally present in the environment.	0.0
<b>Total Organic Carbon Treated</b> (ppm)	TT no violation	3.8	3.8 - 2.3 (Highest and lowest site value)	Naturally present in the environment.	n/a
<b>Trihalomethanes</b> (ppb)	80.0 (Locational Running Annual Average)	26 (Highest Locational Running Annual Average)	43 - 14 (Highest and lowest site value)	By-product of drinking water chlorination	n/a
<b>Turbidity</b> (NTU)	1.0 and 95% of samples below 0.3 (Treatment Technique)	0.15 and 100 % of samples below 0.3	n/a	Turbidity is a measure of cloudiness in water. It may be caused by inorganic soil particles or fragments of organic matter that can interfere with treatment.	0.3

Substances	Highest Level Allowed [MCL]	Highest Level Detected	Range Detected	Description and Origin of Substance	Ideal Goals [MCLG]
<b>Lead</b> (ppb) No sample site exceeded the action level (2021)	15.0 (Action Level)	5.0 (90th percentile)	104 - <3 (Highest and Lowest Site Value)	Lead occurs naturally in the environment, but can be present in drinking water due corrosion of private household plumbing.	0
<b>Copper</b> (ppm) No sample site exceeded the action level (2021)	1.3 (Action Level)	0.278 (90th percentile)	1.49 - <.05 (Highest and Lowest Site Value)	Copper occurs naturally in the environment, but can be present in drinking water due corrosion of private household plumbing.	0

## Greenville Utilities System Data

Substances	Highest Level Allowed [MCL]	Highest Level Detected	Range Detected	Description and Origin of Substance	Ideal Goals [MCLG]
<b>Chloramines</b> (ppm)	4.0 (Running Annual Average)	2.78 (System Average)	4.5 - 1.1 (Highest and lowest site value)	Water additive used to control microbes	4.0
<b>Chlorine</b> (ppm)	4.0 (Running Annual Average)	2.15 (System Average)	3.8 - 1.0 (Highest and lowest site value)	Water additive used to control microbes	4.0
<b>Haloacetic Acid</b> (ppb)	60.0 (Locational Running Annual Average)	24.0 (Highest Locational Running Annual Average)	30 - 17 (Highest and lowest site value)	By-product of drinking water chlorination	n/a
<b>Trihalomethanes</b> (ppb)	80.0 (Locational Running Annual Average)	28 (Highest Locational Running Annual Average)	43 - 11 (Highest and lowest site value)	By-product of drinking water chlorination	n/a
<b>Lead</b> (ppb) No sample site exceeded the action level (2021)	15.0 (Action Level)	<3.0 (90th percentile)	n/a	Lead occurs naturally in the environment, but can be present in drinking water due corrosion of private household plumbing.	0
<b>Copper</b> (ppm) No sample site exceeded the action level (2021)	1.3 (Action Level)	0.119 (90th percentile)	n/a	Copper occurs naturally in the environment, but can be present in drinking water due corrosion of private household plumbing.	0

## Note From Chart

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. GUC provides high quality drinking

water, but cannot control the variety of materials used in home plumbing components. Minimize the potential for lead exposure by flushing the tap for 30 seconds to two minutes before using water for drinking or cooking. Information on lead in drinking water, testing

methods, and steps to take to minimize exposure are available from the Safe Drinking Water Hotline at (800) 426-4791 or at [water.epa.gov/drink/info/lead/index.cfm](http://water.epa.gov/drink/info/lead/index.cfm).

## Glossary Of Terms

**Action Level** – The concentration of a contaminant which, if exceeded, triggers additional treatment measures by the public water system.

**HAL (Health Advisory Level)** – The reference level of chemical traces (usually in ppm) in drinking water at which there are no adverse health risks when ingested over various periods of time.

**Locational Running Annual Average** – The average of sample analytical results for samples taken at a particular monitoring location during the previous four calendar quarters under the Stage 2 Disinfectants and Disinfection Byproducts Rule.

**Maximum Contaminant Level (MCL)** – The highest level of a contaminant allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technique.

**Maximum Contaminant Level Goal (MCLG)** – The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

**Maximum Residual Disinfectant Level (MRDL)** – The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

**Maximum Residual Disinfection Level Goal (MRDLG)** – The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

**Nephelometric Turbidity Units (NTU)** – Turbidity is a measure of cloudiness in water.

**Ninetieth Percentile** – The concentration value exceeding the lower ninety percent of samples analyzed and exceeded by the upper ten percent.

**Parts Per Billion (ppb)** – One part per billion is comparable to one minute in two thousand years or one penny in \$10,000,000.

**Parts Per Million (ppm)** – Equivalent to milligrams per liter. One part per million is comparable to one minute in two years, or one penny out of \$10,000.

**Picocuries Per Liter (pCi/L)** – A measurement of radioactivity per liter.

**Treatment Techniques (TT)** – A required process intended to reduce the level of contaminants.

> – is greater than; < – is less than.



# Unregulated Contaminant Monitoring Rule (UCMR)

Every five years, the EPA issues the UCMR, a list of unregulated contaminants to be monitored by public water systems. The first UCMR was issued in September 1999.

Through the UCMR, public water systems provide the EPA data about the presence of these unregulated contaminants in drinking water. The data allows the EPA to determine if the population is being exposed,

quantify the level of exposure, and assess the impact of these unregulated contaminants on the environment and public health. This is the first step in the EPA's process to determine what new contaminants may need to be regulated.

For more information, visit the EPA Web site at [water.epa.gov](http://water.epa.gov).

Substances	Highest Level Detected	Range Detected	Description and Origin Substance
Lithium (ppb)	<9	<9	Metal, pharmaceutical. Used as anode in electrochemical cells and batteries; as chemical intermediate in organic syntheses
Perfluorooctanoic Acid (PFOA) (ppt)	7.6	<4 - 7.6	Per- and Polyfluoroalkyl Substances (PFAS) are a class of man-made chemicals used for consumer product applications such as waterproof and stainproof fabrics, nonstick cookware, some food packaging materials, and fire suppression foams.
Perfluorooctanesulfonic Acid (PFOS) (ppt)	6.3	<4 - 6.3	
Perfluorononanoic Acid (PFNA) (ppt)	<4	<4	
Perfluorohexanesulfonic Acid (PFHxS) (ppt)	<4	<4	
Perfluorobutanesulfonic Acid (PFBS) (ppt)	6.1	<4 - 6.1	
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA) (GEN X) (ppt)	<4	<4	
Perfluorobutanoic Acid (PFBA) (ppt)	6.9	<4 - 6.9	
Perfluoropentanoic Acid (PFPeA) (ppt)	5.1	<4 - 5.1	
Perfluorohexanoic Acid (PFHxA) (ppt)	5.1	<4 - 5.1	

HAL 70 ppt

# What You Should Know About PFAS

Per- and polyfluoroalkyl substances (PFAS) are a group of more than 12,000 human-made substances that are not naturally-occurring and are resistant to heat, water, and oil. These include PFOA, PFOS, GenX, and many other chemicals. PFAS have been manufactured and used in a variety of industries around the globe, including in the United States since the 1940s. Products using PFAS include everything from carpet to clothing, from food packaging to cookware, from chrome plating to firefighting foam.

In typical conditions, PFAS are resistant to degradation and do not break down in the environment. These substances can accumulate within the human body and are toxic at relatively low concentrations.

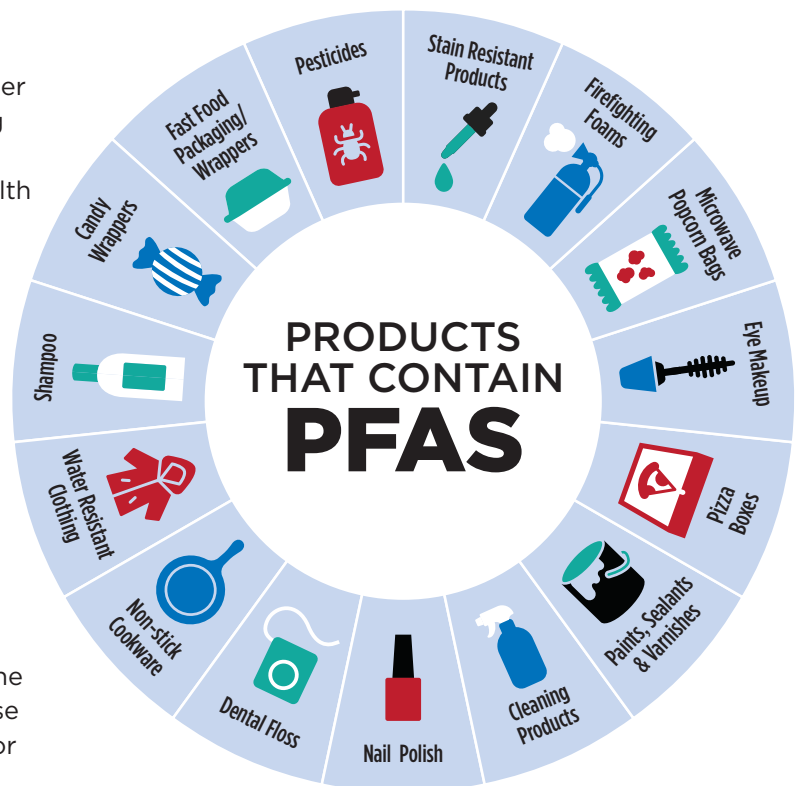
Two types of PFAS are no longer manufactured or imported into the US, though there could be some imported goods that contain these substances. Other PFAS-containing goods and materials are still being produced and used in the US. Exposure to unsafe levels of PFOA and PFOS may result in adverse health effects including developmental effects to fetuses during pregnancy, cancer, liver effects, immune effects, thyroid effects, and other effects (such as cholesterol changes). PFOA and PFOS have been found in the blood of nearly all people tested across several national studies. According to the Centers for Disease Control and Prevention (CDC), levels of both PFOA and PFOS have steadily decreased in the US since 1999-2000.

In 2016, the EPA issued Health Advisory Levels (HALs) for PFAS compounds as the first step in developing new drinking water standards. The EPA established a level of 70 parts per trillion (ppt) as the HAL level. GUC has been voluntarily testing for these substances since 2018. Each time GUC has tested for

these substances, all levels were well below the EPA's advisory level.

In 2023, the EPA proposed, and then confirmed in April of 2024, a new regulation of PFAS and PFOA with maximum contaminant levels set at 4 ppt, which is drastically lower than the HAL of 70 ppt and is the equivalent of 4 drops of water in 10 million gallons (or 20 Olympic-size swimming pools).

GUC will continue testing and monitoring both river and treated water for a variety of substances to ensure we provide safe, award-winning drinking water for the Greenville Region and will comply with all regulations the State and Federal governments adopt.



## System Improvements

Greenville Utilities embarked on both a water treatment plant and a distribution system expansion in 2020. We began with the construction of a three-million-gallon ground storage tank at the plant, which holds finished drinking water until it is ready to be pumped into the distribution system. This increased our storage resiliency by 50% and gives the water treatment plant a storage capacity of nine million gallons.

Construction of the plant expansion began in 2021. It was completed last year and increased our plant's treatment capacity by nearly 10 million gallons per day (MGD), going from 22.5 to 32 MGD. The plant expansion includes the addition of a 10 MGD superpulsator, four additional filters, a new clearwell pump station, and a new bulk chemical storage facility.



# Source Water Assessment Program

The NC Department of Environmental Quality (DEQ), Public Water Supply (PWS) section's 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 the 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 Greenville Utilities was determined by combining the contaminant rating (number and location of PCSs within the assessment area) and the inherent vulnerability rating (i.e., characteristics or existing conditions of the well or watershed and its delineated

assessment area). The assessment findings are summarized in the table below.

The report for GUC may be viewed on the web at: <https://www.ncwater.org/?page=600>. To obtain a printed copy of this report, please mail a written request to: Source Water Assessment Program, Report Request, 1634 Mail Service Center, Raleigh NC 27699-1634, or email a request to [swap@ncmail.net](mailto:swap@ncmail.net). If you have any questions about the SWAP report, please contact the Source Water Assessment Program by phone at (919) 715-2633.

A susceptibility rating of "higher" does not imply poor water quality, only the system's potential to become contaminated by PCSs in the assessment area.

## Source Water Assessment Program Findings

Greenville Utilities has four water sources from which to draw: the Tar River (Water Treatment Plant) and three wells located throughout GUC's system. Susceptibility ratings are as follows:

Susceptibility	Water Resources
Higher	Water Treatment Plant
Moderate	WSW Well, SSW Well, EPW Well



GUC was awarded its 8th consecutive Area Wide Optimization Award and the Partnership for Safe Water Directors Award in 2023.

## What You Should Know About Chloramines

The WTP uses chloramines as its secondary disinfectant. Chloramines are intended to form fewer chemicals (by-products) in water, improve the taste and odor of water (compared to chlorine), and last longer in the distribution system to prevent bacterial growth.

Chloraminated water is safe for bathing, drinking, cooking and all uses we have for water every day. However, there are two groups of

people who need to take special care with chloraminated water: kidney dialysis patients and fish owners. Just like chlorine, chloramines must be removed from water used in kidney dialysis machines. If you are a dialysis patient or have questions, please call your physician or dialysis center.

Like chlorine, chloramines are toxic to fish. Fish owners need to remove chlorine, ammonia and

chloramines from the water before use with tropical fish. Local pet stores carry water conditioners that remove chloramines. If you have questions, contact your pet store for information and detailed instructions. For further information about chloramines and chlorine, please call (252) 551-1551.

---

## What You Should Know About Cryptosporidium

Cryptosporidium is a microscopic organism that can cause diarrhea, fever and other gastrointestinal symptoms if ingested. The organism occurs in human and animal wastes

and may be present in local streams and lakes.

State and Federal regulations do not require Greenville Utilities to

test for cryptosporidium, however GUC's treatment process utilizes ozonation providing 4-Log disinfection, effectively inactivating any cryptosporidium present

---

## Information For At-Risk Customers

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as those undergoing chemotherapy, organ transplant patients, people with HIV/AIDS or

other immune system disorders, some elderly, and infants can be particularly at risk for infections. These people should seek advice about drinking water from their healthcare providers. EPA/Center for Disease Control guidelines on

appropriate means to lessen the risk of infection by cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline, 1-800-426-4791.

---

## Learn More About Water And Get Involved

We provide tours of the WTP and make presentations to groups, including civic organizations and schools. We also have a variety of educational brochures available

upon request. Please contact us at (252) 551-1562 for more information. Our Board of Commissioners meets on the third Thursday of every month at noon, except in June.

Meetings are typically held in the Board Room on the second floor of our Main Office, 401 South Greene Street. The public is welcome to attend.

# Backflow Prevention

All customers expect their water to be clean and safe. That is why GUC makes sure the water delivered to each customer is of the highest quality. When water leaves the WTP, it is at its freshest and purest. One of the ways GUC safeguards the water delivered to customers is through the cross-connection control program. This program is designed to prevent contamination of the public water system through an unprotected cross-connection. Whether these connections are permanent or temporary, they can be dangerous and could contaminate or pollute the public water system through backflow. Protective measures must be taken to prevent this potential backflow hazard.

Federal law requires GUC to protect the water supply from potential contamination or pollution. To do

this, all industrial, most commercial and all irrigation customers are required to install backflow prevention assemblies. These assemblies must be installed before any branching of the customer's plumbing can occur. Different types of backflow preventers are required depending on the hazard. Severe hazards exist when there is potential that backflow could create a health threat. Lawn irrigation systems, hospitals, medical offices and manufacturing plants using chemicals are some examples of a severe hazard. Moderate hazards exist from a backflow occurrence that causes discolored or aesthetically objectionable water, but is not a health threat. Restaurants and convenience stores are examples of moderate hazards.

Facilities on GUC's public water system are evaluated to determine

which hazard(s), if any, may potentially exist and the type of backflow prevention assembly that is required. After an approved backflow prevention assembly has been installed and tested, it must be re-tested annually. Only individuals who have been certified through a GUC-approved testing school can test backflow assemblies.

Greenville Utilities constructed a backflow testing lab to ensure contractors and plumbers have the knowledge and skills needed to install and test backflow assemblies. Opened in March 2008, the Lab is housed in its own building on the grounds of the WTP and provides a site for quarterly recertification classes and bi-annual training classes. For more information on the Cross-Connection Control Program, call (252) 551-1551.

---

# Water Conservation & Protection

## Save Water and Money—Use Water Wisely:

- Repair all leaks and drips. At one drop per second, a leaky faucet wastes nearly 2,500 gallons/year—enough water for 160 full dishwasher cycles.
- Limit showers to five minutes or less.
- Catch water in an empty tuna can to measure sprinkler output. 3/4 to 1 inch of water is enough to apply each time you irrigate.
- Ensure sprinklers water only the landscape, not driveways/streets.

## To Properly Dispose of Hazardous Products:

- Motor Oil/Batteries: Take to the Pitt County Landfill on Allen Road, (252) 902-3350.
- Paint: Remove container lid and let paint harden completely. Containers with lids removed will be collected curbside.

- Pesticides/Herbicides: Contact North Carolina Cooperative Extension Service at (252) 902-1700.
- You can prevent sanitary sewer overflows by disposing of cooking oils and grease as solid waste in your home garbage collection.

## For More Information:

### Environmental Protection Agency

**Ariel Rios Building**  
1200 Pennsylvania Avenue NW  
Mail Code 3213A  
Washington, DC 20460  
(202) 260-2090 (fax)  
[www.epa.gov](http://www.epa.gov)

### Safe Drinking Water Hotline

(800) 426-4791

**NC Department of Environmental Quality**  
1601 Mail Service Center  
Raleigh, NC 27699-1601  
(919) 733-4984  
[deq.nc.gov](http://deq.nc.gov)

### American Water Works Association

6666 West Quincy Avenue  
Denver, CO 80235  
(800) 926-7337  
[www.awwa.org](http://www.awwa.org)

### [www.waterwiser.org](http://www.waterwiser.org)

**Greenville Utilities**  
PO Box 1847  
Greenville, NC 27835-1847  
(252) 551-1551  
[www.guc.com](http://www.guc.com)