



HILLSBOROUGH  
UTILITIES

# ANNUAL WATER QUALITY REPORT

2023

572 MILLION GALLONS  
TREATED

100% COMPLIANCE

Water Treatment Plant  
Public Water System Identification Number: 03-68-015  
711 Dimmocks Mill Road, PO Box 429  
Hillsborough, NC 27278  
919-732-3621

# ABOUT THIS YEAR'S ANNUAL DRINKING WATER QUALITY REPORT

The following pages report 2023 water quality results among other pertinent information. Included are details about your source of water, what it contains, and how it compares to standards set by regulatory agencies. Our goal is always to provide you with a safe and dependable supply of drinking water, and we are pleased to report 100% regulatory compliance in 2023.

If you have any questions about this report or concerning your water, please contact Operator in Responsible Charge Samuel Dunevant, at 919-732-9631 or via email at sam.dunevant@hillsboroughnc.gov. We hope you find the report informative and helpful to understand the water operation.

*Este informe contiene información muy importante sobre su agua potable. Si desea una traducción, comuníquese con nuestra oficina o hable con alguien que la entienda bien.*

In good health,

K. Marie Strandwitz,  
Utilities Director

 PE

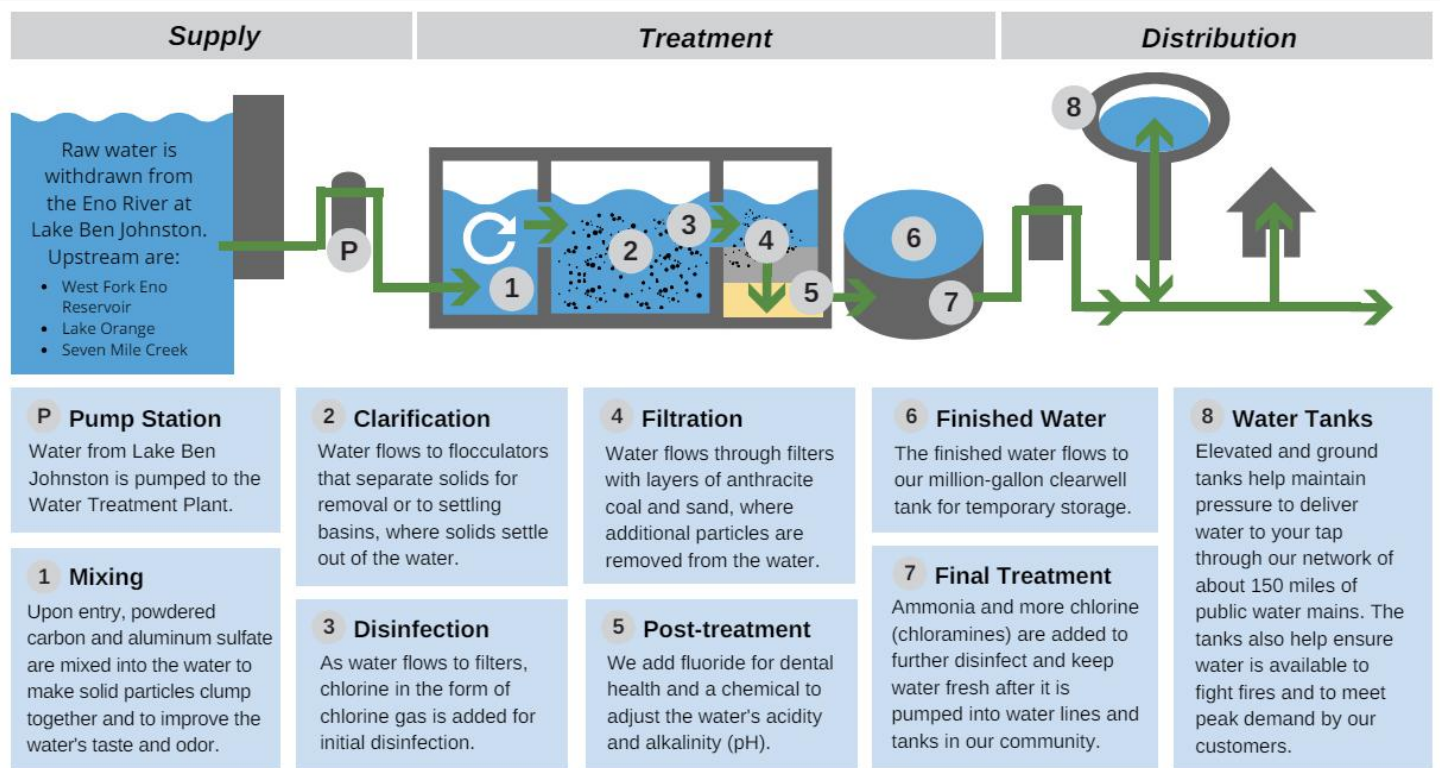
## SOURCE WATER AND TREATMENT PROCESS

The Eno River is the water source for the Hillsborough community, along with the streams that feed into the river and the two dams on the river's east and west fork. The Orange-Alamance Water System also withdraws water from the Eno above the town. We are part of the Neuse River Basin.

**Lake Ben Johnston** — This lake on the Eno River is our intake location for water from the Eno. Seven Mile Creek enters upstream of this area, along with water released from Lake Orange and the West Fork Eno Reservoir.

**Lake Orange** — This lake, or dam, is on the east fork of the Eno River. Orange County owns and operates this reservoir and coordinates with the town on releases to ensure adequate supply and flow in the Eno River.

**West Fork Eno Reservoir** — This reservoir, or dam, is on the west fork of the Eno River in Cedar Grove. The town owns and expanded it recently to double its capacity. The reservoir is pictured on the cover of this year's report.



## DRINKING WATER QUALITY: BASIC INFORMATION

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.

### Sources of Contaminants

Sources of drinking water for tap and bottled water include rivers, lakes, streams, ponds, reservoirs, springs and wells. As water travels over land or through the ground, it dissolves naturally occurring minerals and radioactive material in some cases. It also can pick up substances from the presence of animals or from human activity.

Contaminants that may be present in source water include:

- Microbial contaminants, such as viruses and bacteria, which may come from agricultural livestock operations, wildlife, and domestic wastewater discharges.
- Inorganic contaminants, such as salts and metals, which can be naturally occurring or can result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.
- Organic chemical contaminants, including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production and can also come from gas stations, urban stormwater runoff, and septic systems.
- Radioactive contaminants, which can be naturally occurring or can be the result of oil and gas production and mining activities.

To ensure tap water is safe to drink, the Environmental Protection Agency prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. The U.S. Food and Drug Administration also has established limits for contaminants in bottled water, which must provide the same protection for public health.

### People with Special Risk

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.

Guidelines from the Environmental Protection Agency and Centers for Disease Control 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).

### Lead and Your Health

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. The Town of Hillsborough 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 [www.epa.gov/safewater/lead](http://www.epa.gov/safewater/lead).

The town has no lead pipes in its distribution system, but it adds a blended phosphate corrosion inhibitor to its water since some buildings in the community may have lead supply lines connecting them to the town's distribution system. See the About Water page on the town's website, [hillsboroughnc.gov](http://hillsboroughnc.gov).

# DRINKING WATER QUALITY

## Our Processes and Ingredients

The town is committed to providing great water quality and is successful in doing so. Just like the food and beverage you buy at the store, the raw water taken from the Eno River must have processes and ingredients applied to make it desirable. These address cleanliness and compliance first and foremost and then taste, odor and appearance. The ingredients are various chemicals added to help remove particles and harmful bacteria and to provide longevity in freshness. The processes involve physical removal of particles, which involves mixing, sedimentation and filtration (see Page 2 for the overall process).

## Testing

Raw and finished water at the water plant is tested every two hours (more than the state mandate), and chemical adjustments are made for consistency.

Various points in the water system are checked:

- Every month for bacteria at the plant and 30 locations throughout the water system.
- Quarterly for disinfection byproducts at four locations.
- Annually at the water plant for inorganics, pesticides, synthetic organic chemicals, nitrate, volatile organic compounds and secondary contaminants.
- Every five years at the water plant for a list of unregulated contaminants that the Environmental Protection Agency establishes.



Staff at the Water Treatment Plant take raw water from the Eno River (left) and process it into finished water (right) that's ready to send to your tap.

## Training, Competence and High Standards

The water system is operated by seasoned, highly certified and compassionate staff, with employees working around the clock daily to ensure water is clean and available when you need it.

The water plant is the processing plant for your water — similar to a food plant that processes whole foods which you buy in a can or a carton at the grocery. Water plants process water for drinking from rivers, lakes, streams, ponds, reservoirs, springs and wells (the same sources for bottled water). These treatment plants are held to very high standards and oversight internally and by the government.

The operators at the water plant and throughout the Utilities Department go through training, state certification to the highest levels, and continuing education to do what they do. To that, we say they are Grade A!



## Water Plant Tours

Schedule a walking tour of Hillsborough's water treatment plant, which can process 3 million gallons of water a day. The tour takes about 1.5 to 2 hours and is open to ages 10 years old and older in groups of up to 10 people. Tours for specialty groups can be arranged as well. Click on the link below or contact [nathan.cates@hillsboroughnc.gov](mailto:nathan.cates@hillsboroughnc.gov).

[TOUR REQUEST FORM](#)

## WORDS AND PHRASES IN THE WATER QUALITY DATA TABLES

**Action Level (AL)** — The concentration of a contaminant that triggers treatment or other requirements of a water system if exceeded.

**Disinfection Byproducts (DBPs)** — Substances, such as haloacetic acids and trihalomethanes, that are formed when chlorine or chloramines used to disinfect drinking water react with organic compounds naturally present in lake water. Federal standards require public water systems to limit the levels of haloacetic acids and trihalomethanes because they could be harmful at high levels over a lifetime of exposure.

**Disinfection Byproduct Precursors** — Organic carbon compounds that can combine with disinfectants, such as chlorine and chloramines, to form haloacetic acids and trihalomethanes.

**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 highest level of a contaminant that is allowed in drinking water. These are set at very stringent levels and as close to the maximum contaminant level goals as feasible using the best available treatment technology. A person would have to drink 2 liters of water every day at the maximum contaminant level for a lifetime to have a one-in-a-million chance of having adverse health effects from many regulated contaminants.

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

**Maximum Residual Disinfectant Level (MRDL)** — The highest level of a disinfectant allowed in drinking water. Disinfection is necessary to control microbial contaminants in drinking water.

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

**Millirem (mrem)** — One thousandth of a rem. A rem is a large dose of radiation.

**Nephelometric Turbidity Unit (NTU)** — Nephelometric turbidity unit is a measure of the clarity of water. Turbidity in excess of 5 NTU is barely noticeable to the average person.

**Non-detects (ND)** — Laboratory analysis indicates that the contaminant is not present at the level of detection set for the particular methodology used.

**Not Applicable (N/A)** — Information not applicable or required for our water system or for the particular rule.

**Parts per Billion (ppb)** — One part per billion corresponds to one minute in 2,000 years or a single penny in \$10 million. It is equivalent to 1 microgram per liter (mu/L).

**Parts per Million (ppm)** — One part per million corresponds to one minute in two years or a single penny in \$10,000. It is equivalent to 1 milligram per liter (mg/L).

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

**Running Annual Average (RAA)** — This the average of a monitoring period for a year.

**Secondary Maximum Contaminant Level (SMCL)** — This is a guideline for aesthetic purposes, such as taste and odor, rather than health purposes.

**Treatment Technique (TT)** — A treatment technique is a required process intended to reduce the level of a contaminant in drinking water.

### DID YOU KNOW?

Your water and sewer rates pay for the water and sewer operation.

Your taxes do not.



## 2023 WATER QUALITY DATA TABLES

We routinely monitor for over 150 substances in your drinking water according to federal and state laws. Below is what we detected in the last round of sampling for particular substances. The presence of these substances does not necessarily indicate a health risk.

Unless otherwise noted, the data is from testing conducted in 2023. Certain substances are required by the Environmental Protection Agency or the state to be monitored less than once per year because the concentrations are not expected to vary significantly from year to year. Although representative of the town's water quality, some data is more than a year old. Results over 5 years old are not reported.

### TURBIDITY

Turbidity is a measure of the cloudiness of the water. We monitor it hourly in house during treatment because it is a good indicator of the effectiveness of our filtration system. The turbidity rule requires that 95% or more of our monthly samples must be less than or equal to 0.3 nephelometric turbidity units (NTU).

Contaminant (units)	Treatment Technique Violation (Yes/No)	Your Water	MCLG	Treatment Technique Violation if:	Likely Source
Turbidity (NTU) — Highest single turbidity measurement	No	0.09 NTU	N/A	Turbidity > 1 NTU	Soil runoff
Turbidity (NTU) — Lowest monthly percentage of samples meeting turbidity limits	No	100%	N/A	Less than 95% of monthly turbidity measurements are < 0.3 NTU	

### INORGANIC CONTAMINANTS

The following inorganic contaminants are required to be tested each year: antimony, arsenic, barium, beryllium, cadmium, chromium, cyanide, mercury, selenium and thallium. Also included in the inorganic sampling panel by an outside lab is fluoride, iron, manganese, nickel, sodium, sulfate, and pH (potential of hydrogen).

Fluoride occurs naturally in water. It is also added to drinking water to reduce tooth decay. The fluoride level in our water was well below the maximum amount allowed (4 parts per million). The U.S. Public Health Service's recommended fluoride level is 0.7 parts per million.

Contaminant (units)	Sample Date	MCL Violation (Yes/No)	Your Water	Range Low/High	MCLG	MCL	Likely Source
Fluoride (ppm)	2/15/23	No	0.64	N/A	4	4	Erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizer and aluminum

### SYNTHETIC ORGANIC CHEMICAL CONTAMINANTS (includes pesticides/herbicides)

No samples of synthetic organic chemicals tested had a detectable limit. These are sampled annually.

### RADIOLOGICAL SUBSTANCES

Radium is a naturally occurring radioactive metal. It occurs at trace levels in rock, soil, water, plants and animals. The maximum contaminant level for beta/photon emitters is 4 millirem per year. The Environmental Protection Agency considers 50 picocuries per liter to be the level of concern for beta particles. The town samples every nine years. The next samples are due by 2031. No laboratory detectable radiological substances were in the town's water at the last sampling event in December 2022. Sampling includes that for combined radium (226 and 228), combined uranium, and gross alpha, including and excluding radon and uranium, radium-226 and radium-228.

## OTHER MISCELLANEOUS CONTAMINANT WATER CHARACTERISTICS

The Public Water Supply Section of the North Carolina Department of Environmental Quality requires monitoring for other miscellaneous contaminants, some for which the U.S. Environmental Protection Agency has set national secondary drinking water standards (secondary maximum contaminant levels or SMCLs) because they may cause cosmetic effects or aesthetic effects (such as taste, odor and/or color) in drinking water. The contaminants with secondary maximum levels normally do not have any health effects and normally do not affect the safety of your water.

Iron and sulfate are inorganic contaminants with a secondary maximum contaminant level. These mainly relate to aesthetics. A low pH reading also indicates inorganic contaminants with a secondary maximum contaminant level. Sodium has no SMCL, yet drinking water consists of a small amount of sodium intake compared to our diets.

Contaminant (units)	Sample Date	Your Water	Range: Low/High	SMCL
Iron (ppm)		Not detectable		0.3
pH	2/15/2023	7.62	N/A	6.5-8.5
Sodium (ppm)		18.6		N/A
Sulfate (ppm)		30.2		250

## LEAD AND COPPER

Lead is not typically found in raw water sources, such as lakes, but can enter drinking water from corrosion of plumbing materials that contain lead. The town adds the corrosion inhibitor orthophosphate into drinking water to prevent corrosion in plumbing materials. The town also has been replacing galvanized water mains — a common water main material several decades ago — with newer standard materials.

The federal limit on lead in drinking water is 15 parts per billion in at least 90% of water samples tested. In accordance with federal and state standards, the town tests every three years for lead in tap water at 30 homes built between 1983 and 1985. Sampling is required every three years and will occur again by the end of 2025.

The federal government recently enhanced the lead and copper rule, which will require more sampling, analysis of any lead service lines, and plans to remediate those lines. Read more about the rule revisions on Page 11.

Contaminant (units)	Sample Date	Your Water	Number of Sites Above Action Limit	MCLG	Action Level	Likely Source
Copper (ppm) (90th percentile)	8/30/22	0.21	0	1.3	1.3	Corrosion of household plumbing systems; erosion of natural deposits
Lead (ppb) (90th percentile)	to 9/21/22	0	1	0	15	

## UNREGULATED CONTAMINANTS

Unregulated contaminants are those for which the Environmental Protection Agency has not established drinking water standards. Monitoring assists the agency in determining the occurrence of these contaminants in drinking water and whether future regulations are warranted. The contaminants were non-detectable in your water for the Unregulated Contaminant Monitoring Rule 4 cycle, which runs on a five-year period. Unregulated Contaminant Monitoring Rule 5, published Dec. 27, 2021, requires sampling for 30 chemical contaminants between 2023 and 2025. Read more about Rule 5 at [www.epa.gov/system/files/documents/2022-02/ucmr5-factsheet.pdf](http://www.epa.gov/system/files/documents/2022-02/ucmr5-factsheet.pdf). See Page 10 for more information.

## MICROBIOLOGICAL CONTAMINANTS

The U.S. Environmental Protection Agency has determined that the presence of microbiological contaminants is a health concern at certain levels of exposure. If water is inadequately treated, microbiological contaminants in that water may cause disease. Disease symptoms may include diarrhea, cramps, nausea and possibly jaundice and associated headaches and fatigue. These symptoms are not just associated with disease-causing organisms in drinking water but also may be caused by a number of factors other than your drinking water.

Treatment such as filtering and disinfecting water removes or destroys microbiological contaminants. Drinking water treated to meet requirements of the Environmental Protection Agency is associated with little to none of these risks and should be considered safe. We sample the water at the treatment plant and in the distribution system for contaminants. The filtered and finished water is tested daily, and the distribution system is sampled monthly at 15 sites. There was no presence of bacteria in the water in 2023.

Contaminant (units)	MCL Violation (Yes/No)	Your Water	MCLG	MCL	Likely Source
Total coliform bacteria (presence or absence)	N/A	absence	N/A	If two or more samples are positive in one month, an assessment is required.	Naturally present in the environment
E. coli (presence or absence)	No	absence	0	Level is reached if routine and repeat samples are total coliform-positive and are E. coli-positive or the system fails to take repeat samples following E. coli-positive routine sample or to analyze total coliform-positive repeat sample for E. coli.  Note: If an original routine sample and/or its repeat sample are E. coli positive, a Tier 1 violation exists.	Human and animal fecal waste

## TOTAL ORGANIC CARBON (TOC)

Natural organic matter (usually measured as total organic carbon) are disinfection byproduct precursors. All commonly used chemical disinfectants (such as chlorine, chlorine dioxide, chloramines and ozone) react with organic matter to varying degrees to form different disinfection byproducts, which are suggested to present health effects with long-term exposure. The treatment plant process requires removal of a certain amount of total organic carbon based on the amount in raw and finished water and on alkalinity in the raw water. STEP 1 compliance method means the running annual average removal ratios will be above 1.

Contaminant (units)	Treatment Technique Violation (Yes/No)	Your Water (RAA Removal Ratio)	Range Low/High	MCLG	MCL	Likely Source	Compliance Method
Total Organic Carbon Treated (removal ratio)	No	2.5	1.00 1.43	0	15	Erosion of natural deposits	STEP 1



We use the Orange County alert system, OC Alerts, for widespread town water system notifications like planned outages or contamination. Otherwise, we use door hangers, yard signs and social media. Sign up at [orangecountync.gov/ocalerts](https://orangecountync.gov/ocalerts) for notifications via phone, email and/or text.

Keep your contact information updated also on water billing accounts. Contact 919-296-9450 or [customerservice@hillsboroughnc.gov](mailto:customerservice@hillsboroughnc.gov) to ensure your information is correct.



## DISINFECTANT AND DISINFECTION BYPRODUCTS

Drinking water is disinfected to reduce or eliminate illnesses potentially acquired through drinking water. Disinfection byproducts can form when disinfectants combine with naturally occurring materials found in source water. The town's distribution system is sampled quarterly in four places for disinfection byproducts. These regulations limit public exposure to such byproducts.

### DISINFECTANT RESIDUALS SUMMARY

Chloramine, a compound of chlorine and ammonia, is used to disinfect drinking water throughout the year except in March when we switch to chlorine only. This change ensures a high level of disinfection annually. Chloramines and chlorine are toxic to fish and amphibians, such as frogs. If you have an aquarium, please contact a pet supply store on how to neutralize chloramines and chlorine. Please also use rubber materials in your plumbing that are chloramine-resistant. For example, use rubber materials for toilet flappers, flexible hoses, and connectors.

Disinfectant	MRDL Violation (Yes/No)	Your Water (Highest RAA)	Range Low/High	MRDLG	MRDL	Likely Source
Chlorine (ppm)	No	0.38	0 2.84	4	4.0	Water additive used to control microbes
Chloramines	No	2.04	.02 3.25			

### STAGE 2 DISINFECTANT BYPRODUCT COMPLIANCE

The town samples quarterly at four sites in the distribution system for disinfectant byproducts. Some people who drink water containing trihalomethanes in excess of the maximum contaminant level over many years may experience problems with their liver, kidneys or central nervous systems and may have an increased cancer risk.

Disinfection Byproduct	MCL Violation (Yes/No)	Your Water (Highest LRAA)	Range Low/High	MCLG	MCL	Likely Source	
<i>Total trihalomethanes</i>							
<i>TTHM (ppb)</i>							
Site B01	No	59	39 71	N/A	80	Byproduct of drinking water disinfection	
Site B02		74	49 95				
Site B03		61	46 73				
Site B04		62	42 69				
<i>Haloacetic acids</i>							
<i>HAA5 (ppb)</i>							
Site B01	No	49	31 54	N/A	60		
Site B02		31	42 58				
Site B03		31	17 57				
Site B04		48	40 52				

## DID YOU KNOW?

**You can view our sampling schedules, reporting and compliance through the N.C. Drinking Water Watch website.**

Visit [www.pwss.enr.state.nc.us/NCDWW](http://www.pwss.enr.state.nc.us/NCDWW).  
Search for Hillsborough under water systems.

# UNREGULATED AND EMERGING CONTAMINANTS

On April 10, 2024, the EPA finalized National Primary Drinking Water Regulations for six PFAS compounds, replacing the previous health advisory levels of 70 parts per trillion with enforceable maximum contaminant levels for two PFAS and a hazard index calculation for the remaining four. The new maximum contaminant level for PFOA and PFOS is 4 ppt, aiming to reduce health risks associated with prolonged exposure. The hazard index for the others should not exceed 1 (unitless).

Hillsborough is fortunate to be at the upper reaches of the Eno River with largely rural residential and agricultural land uses. The stringent regulations for protecting source water and the nutrient-sensitive Eno River have helped protect the river and our water supply. Additionally, the town does not have any heavy industrial users in its customer base. Because of this, the town is not required to implement a pretreatment program. As such, we are hopeful our levels will remain below the new and very stringent limits for these contaminants of concern.

## Per and Polyfluoroalkyl Substances (PFAS)

These substances (together, PFAS) are a class of manmade chemicals sometimes called perfluorinated compounds or PFCs. Continued exposure above specific levels to certain PFAS may lead to adverse health effects.

The compounds are found in a wide array of consumer and industrial products. These include aqueous firefighting foams used at airfields and in industrial processes. The products also include those resistant to water, grease or stains, such as carpet, clothing, upholstery, paper packaging for food and other materials. Thus, PFAS are commonly found in household dust and wastewater. PFAS can enter lakes, rivers, or groundwater through industrial releases, wastewater treatment plant discharges, and the use of aqueous firefighting foam.


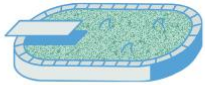


Maximum contaminant level goals (MCLGs) have been established for these substances. A lifetime of drinking water with compounds above the health advisory increases the risk of adverse health effects, including cancer and effects on the immune system, cardiovascular system, and development, such as decreased birth weight, according to the Environmental Protection Agency. Most exposures occur by consuming food or water containing PFAS.

The new regulations put pressure on water utilities to make necessary improvements, potentially affecting customer rates. Some professional water organizations have legally challenged these regulations, citing concerns over fiscal impacts and data evaluation. Meanwhile, North Carolina legislators are considering bills to have those generating PFAS contribute to remediation costs, easing the financial burden on utilities.

In 2022 and September 2023 sampling:

- The two main PFAS contaminants, PFOA and PFOS, were undetectable in our drinking water.
- PFBA (unregulated) was detected at 2.5 parts per trillion.
- PFBS (part of the new hazard index maximum contaminant level) was 2.7 ppt. The calculated hazard index is .00125, well below the 1 MCL established.

Public water systems have five years to meet the new maximum contaminant levels. See [www.deq.nc.gov/news/key-issues/emerging-compounds/understanding-pfas](http://www.deq.nc.gov/news/key-issues/emerging-compounds/understanding-pfas).

<h3>HOW MUCH IS ONE PART PER TRILLION?</h3>	
Analytical results are presented in parts per billion and trillion and in micrograms and nanograms per liter. What are those amounts?	
 <b>\$1.20</b> OF ALL US CURRENCY IN CIRCULATION	 <b>1 DROP</b> OF WATER IN <b>20</b> OLYMPIC-SIZED SWIMMING POOLS
 <b>1 INCH</b> IN <b>643</b> TRIPS AROUND THE EARTH	
<b>1 SECOND</b> IN <b>32,000</b> YEARS	
<b>1,000,000,000,000</b> IS ONE TRILLION	

## NEW FEDERAL LEAD AND COPPER RULE REVISIONS

The U.S. Environmental Protection Agency released revisions to the Lead and Copper Rule in December 2021, setting new standards aimed at removing harmful levels of lead from drinking water. The revisions will require utilities, homeowners and other water customers to take different levels of action in the coming years.

### Action on lead service lines

By Oct. 16, 2024, all water systems must develop a publicly available inventory of all public and private water service lines.

Water service lines are small pipes that connect water mains to a water customer's property. Water mains are large pipes that typically run under or parallel to the street.

Service lines commonly were made from lead pipe from the late 1800s, throughout much of the 20th century and in some cities as late as the mid-1980s. Installation of new lead service lines was prohibited in 1986, and the ban became effective in 1988.



### Are lead service lines in our water system?

Maybe. The town has records dating to the mid-1930s that call for copper or plastic water service lines and not lead. In working throughout the system and hearing from local plumbers familiar with the area, lead service lines have not been noted. Some galvanized lines have been seen. These are not considered lead; but older galvanized steel pipes can corrode, and lead leaching from lead service lines can gather in the corroded areas. The town will conduct further research to narrow potential locations of lead service lines and then will perform some surveys and field investigations.

### How do you determine if a service line is lead?

If your home is older than 1986, gently scratch the surface of the pipe with a coin if you know where the water line enters your home from the outside and if the pipe is reachable. The pipe is likely lead if it is soft, easily scraped, and silver in color and if a magnet doesn't stick to it.

### What is the town doing?

By October 2024, the town must comply with the revised rule to identify lead service lines. We will develop an inventory of all water service line materials in our community. We also will develop a plan to sample for lead at our schools and licensed childcare centers and a program to educate our customers about lead in drinking water.

Historically, the public and private portions of the water service have been clearly separated. The revised rule requires public utilities to report lead service lines from both the private side (behind the water meter to the home foundation) and public side (the water main to the meter). This presents challenges of accessibility and replacement that we are evaluating. You can find more information about the [revised rule](#) on the Environmental Protection Agency's website.



## Concerned about lead service lines?

Send your name and address to Civil Engineering Technician Tyler Freeman at [tyler.freeman@hillsboroughnc.gov](mailto:tyler.freeman@hillsboroughnc.gov) to be added to a list of places to verify.

US  
about



It takes a team of qualified staff to process raw water into clean water, to deliver it to your tap, to take the dirty water away and to safely return it to the Eno River. The Utilities Department manages water and wastewater treatment, distribution, wastewater collection, and administration with 30 positions (plus about 4 in financial services) funded by customer billing, not your taxes. The system spans over 150 miles of water pipes and 100 miles of sewer pipes. Serving around 7,000 connections in and out of town, some pipes date to the 1920s. The town also has a significant number of wastewater pumping stations, which are expensive to maintain. These date to the 1980s. Upgrading underground infrastructure requires costly replacements. Maintaining the system takes workers, facilities, equipment and vehicles. The table below relates to the photos on the previous page.

1	Wastewater Treatment Plant	The plant processes up to 3 million gallons of used water daily and safely returns it to the Eno River. It is staffed by six certified employees operating pumps, motors, electrical systems, controls, and chemicals, with support from an on-site certified laboratory. The plant consumes the most electricity of town facilities to power blowers and the solids removal processes.
2	Water Treatment Plant	The plant at Lake Ben Johnston dam processes up to 3 million gallons of raw water daily from the Eno River. It distributes clean water to about 7,000 customer connections inside and outside of town. The plant is operated hourly each day with seven certified employees and a certified laboratory for ongoing water testing.
3	Adron F. Thompson Water/Sewer Facility	The original 1936 water plant building now houses 15 employees who maintain the town's water and sewer infrastructure for water distribution and wastewater collection. The infrastructure includes pipes, pumps, fire hydrants, sewer manholes, pumping stations, and water tanks. The distribution system delivers clean water to homes, while the wastewater collection system transports dirty water to the treatment plant. Certified operators are available 24/7 to handle issues like main breaks and sewer clogs. Staff also conduct regular water testing throughout the town to ensure quality.
4	West Fork Eno Reservoir	The reservoir in Cedar Grove was built in 2000 and expanded recently to now hold a two-year water supply for the town. The expansion required raising and installing new bridges and drainage culverts on three nearby state roads. To comply with permitting, the town created a conservation buffer and placed the surrounding land under restrictive deed, prohibiting recreation. The town's water is supplied from water released from this reservoir, along with releases from the Lake Orange dam and natural flows from the Eno River and Seven Mile Creek. The award-winning spillway design, a piano key weir, is one of two in the nation.
5	Sewer Pumping Station	This is one of 25 sewage pumping stations in the utilities service area that moves wastewater to the treatment plant. Maintaining these stations requires manual labor and knowledge of pumps, motors, electrical, and control equipment. Staff remotely monitor the stations and visit each one weekly or more often as needed.
6	Water Tower	This is one of the town's five water storage tanks. Built in 2018, it is also the newest. The oldest dates to 1936. The tanks store and distribute clean water from the treatment plant, ensuring water is available when you turn on your tap. The water tanks require annual inspections, routine cleaning, painting, and valve and control adjustments.
7	Sewer Manhole	This is a view inside a sewer manhole. Manholes provide access to the underground pipe network and accommodate changes in direction. The town has over 2,000 sewer manholes that connect 80 miles of gravity sewer piping to the wastewater treatment plant.
8	Town Hall Annex	Administration staff of the Utilities Department (director, engineers and inspector) have offices here along with the Financial Services Department. This is where your bill can be paid. The town upgraded this building in 2018 to house these employees.
9	Town Truck and Camera Trailer	Utilities staff use heavy-duty work trucks and various equipment to maintain the water and sewer systems, including backhoes, excavators, jetting machines, dump trucks, traffic control equipment, and crane trucks. The trailer shown houses camera equipment, allowing crews to insert a waterproof camera into the sewer pipes via manholes to inspect the condition of the pipes.

# SOURCE WATER ASSESSMENT PROGRAM (SWAP) RESULTS

Assessments of all drinking water sources across North Carolina are conducted by the Source Water Assessment Program of the North Carolina Department of Environmental Quality's Public Water Supply Section. The assessments determine the susceptibility of each drinking water source (well or surface water intake) to potential contaminant sources.

Results are available in Source Water Assessment Program reports, which include maps, background information and a relative susceptibility rating of higher, moderate or lower. A susceptibility rating of "higher" does not imply poor water quality but the system's potential to become contaminated by potential contaminant sources in the assessment area. The relative susceptibility rating of each Hillsborough source was determined by combining the contaminant and inherent vulnerability ratings. The contaminant rating is the number and location of potential contaminant sources within the assessment area. The inherent vulnerability rating includes characteristics or existing conditions of the well or watershed and its delineated assessment area.

The complete report for Hillsborough is available online at: [www.ncwater.org/SWAP\\_Reports/NC0368015\\_SWAP\\_Report-20200909.pdf](http://www.ncwater.org/SWAP_Reports/NC0368015_SWAP_Report-20200909.pdf). For a printed copy, send a written request to Source Water Assessment Program — Report Request, 1634 Mail Service Center, Raleigh, NC 27699-1634 or send an email to [swap@ncmail.net](mailto:swap@ncmail.net). Provide your name, mailing address and phone number with Hillsborough's system name and ID number: Hillsborough, Town of and 03-068-015.

The Public Water Supply Section periodically updates results and reports. Online results may differ from those available when this report was prepared. Questions? Contact the state's program staff at 919-707-9098.

## SUSCEPTIBILITY OF HILLSBOROUGH'S WATER SOURCES TO POTENTIAL CONTAMINANT SOURCES

Water Source	Susceptibility Rating	Report Date
Eno River	Moderate	Sept. 10, 2020

## RATES FAQs

As of July 2024, the town provides an allowance of up to 2,000 gallons of water with the minimum fee.

Fixed costs are associated with making water and sewer service available to a customer regardless of whether the water is used. All utility systems charge a base or a minimum usage fee.

The town charges a different fee (a differential) for customers outside the town limits for various reasons. Across the state, a differential is used by 57% of water systems and 63% of sewer systems.

Water and sewer service is expensive to provide. Hillsborough's rates reflect the true cost of service.

The town does not make a profit from providing the service nor does it use water and sewer revenue for purposes other than the operation, maintenance and improvement of the town's water and sewer system.

## FOR MORE INFORMATION

If you have questions about this report or your water, please contact the Water Treatment Plant at 919-732-3621 or through the town website.

Printed copies of the report are available at the Town Hall Annex, 105 E. Corbin St. For a copy by mail, call 919-296-9630.

Lead staff at the Water Treatment Plant are Operator in Responsible Charge Alton (Sam) Dunevant and Superintendent Nathan Cates.

We would love to address your questions about our operation and your water. We would also love to provide a tour if you wish!

### Connect with us!



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