

2019

Annual Drinking Water Quality Report



Cape Fear
Public Utility Authority

Stewardship. Sustainability. Service.

Message from the Executive Director



Each year, Cape Fear Public Utility Authority staff collect, analyze, and compile a significant amount of data for our Annual Water Quality Report. This document provides you, our customers, important information about the quality of your drinking water. Consider this our official 2019 report card, detailing how we are meeting or exceeding the many drinking water standards established by State of North Carolina and the U.S. Environmental Protection Agency. I am proud to share these results with you.

In 2019, construction began on treatment enhancements at the Sweeney Water Treatment Plant, which supplies 80 percent of the drinking water CFPUA distributes to customers. This \$43 million investment by CFPUA will add eight granular activated carbon filters to Sweeney's treatment infrastructure, significantly increasing our ability to remove GenX and other PFAS from water sourced from the Cape Fear River. These filters should be operating by early 2022.

This is just one of a number of the improvements underway or recently completed to enhance and expand our community's drinking water systems. Construction is underway on the new Kings Bluff raw water main project, which will increase CFPUA's water intake from the Cape Fear River by 15 million gallons per day (MGD). We also completed the installation of new filter membranes at the Richardson Nanofiltration Plant, which provides water to our customers in Northern New Hanover County and sources groundwater from the PeeDee and Castle Hayne aquifers.

These efforts to enhance treatment and expand supply of drinking water, along with the extensive analysis that goes into this report, exemplify CFPUA's ongoing commitment to provide the highest level of service at the lowest practical cost to our customers.

A handwritten signature in blue ink, reading "Jim R. Flechtner", enclosed within a white oval shape with a blue border.

James R. Flechtner, P.E.
Executive Director
Cape Fear Public Utility Authority

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Share this Report

This report contains information on drinking water that may be of interest to your family, friends, and others you know in our community. To share a digital copy of this report, use the following link:
cfpua.org/2019WaterQuality

To receive a printed copy of this report, please email:
communications@cfpua.org. You may also contact us on our social media accounts to ask for a copy of this report.



En Español

Para obtener una copia del informe en Español sobre los resultados más recientes de la calidad del agua publicado por el Cape Fear Public Utility Authority, llame al 910-332-6565.



Your Water Service Area

Results from this testing period found that our drinking water continues to meet or exceed federal and state regulatory standards. These standards are designed to protect public health and the taste and appearance of drinking water.

Cape Fear Public Utility Authority is required by the Environmental Protection Agency to produce an Annual Water Quality Report for its customers. However, this report goes beyond basic requirements and provides you with interesting information on the water systems that serve your home, workplace, and the places you visit for entertainment and community services. We hope you find it informative and educational.

If you have any questions about this report

or concerning your water, please contact **CFPUA's Water Treatment Division at 910-332-6739**. We want our valued customers to be informed about their water utility. If you want to learn more, consider attending an Authority Board Meeting on the second Wednesday of each month at 9:00 a.m. in Room 601 of the New Hanover County Government Center Complex.



This report includes drinking water quality results for CFPUA's three water distribution systems:

Sweeney Water System (CFPUA/ Wilmington system PWS ID# 04-65-010): CFPUA's largest system, which distributes water within the City of Wilmington, parts of the Ogden area, Monkey Junction/ Independence Boulevard (including Pine Valley, Echo Farms, Barclay, Crosswinds, and Lake Brewster), Kings Grant, Tarin Woods, River Lights, U.S. 421, and Wrightsboro. Water is provided via the Sweeney Water Treatment Plant using source water from the Cape Fear River.

Richardson Nanofiltration System (CFPUA/ NHC system PWS ID# 04-65-232): CFPUA's second-largest system, which distributes water in northern New Hanover County in areas including Murrayville, Northchase, Porters Neck, and parts of Castle Hayne and Ogden. Water is provided via the Richardson Nanofiltration Water Treatment Plant using groundwater sourced from the Castle Hayne and PeeDee aquifers.

Monterey Heights Water System (CFPUA/Monterey Heights system PWS ID# 04-65-137): CFPUA's smallest system, which distributes water in southern New Hanover County in areas including Monterey Heights, Woodlake, Laurel Ridge, Sentry Oaks, and Veterans Park. Groundwater is sourced from the Castle Hayne aquifer and distributed by a series of wells. This system differs from our two other drinking water systems in that it does not rely on a water treatment plant.



Safeguarding Your Water

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 people such as people with cancer undergoing chemotherapy, people 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 from their health care providers about drinking water. 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. Cape Fear Public Utility Authority is responsible for providing high quality drinking water, but cannot control the variety of materials used in private 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.



Across the nation, rivers, lakes, streams, ponds, reservoirs, springs, and wells are sources of drinking water (both tap and bottled). As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up contaminants resulting from animal or human activity. Contaminants that may be present in source water include:

Microbial Contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, or wildlife.

Inorganic Contaminants, such as salts and metals, which can be naturally occurring or may 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 may also come from gas stations, urban stormwater runoff, and septic systems.

Radioactive Contaminants, which can be naturally occurring or may be the result of oil and gas production and mining activities.

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

Lead and Home Plumbing

Lead in drinking water has been a concern in the water and wastewater industries for decades. The primary sources of lead in drinking water are corrosion in drinking water systems and internal plumbing appliances maintained by homeowners.

In 1991, the EPA introduced the Lead and Copper Rule (LCR) to ensure public water suppliers manage lead and copper in drinking water. Public water suppliers have several tools to make sure they are meeting the requirements of this rule.

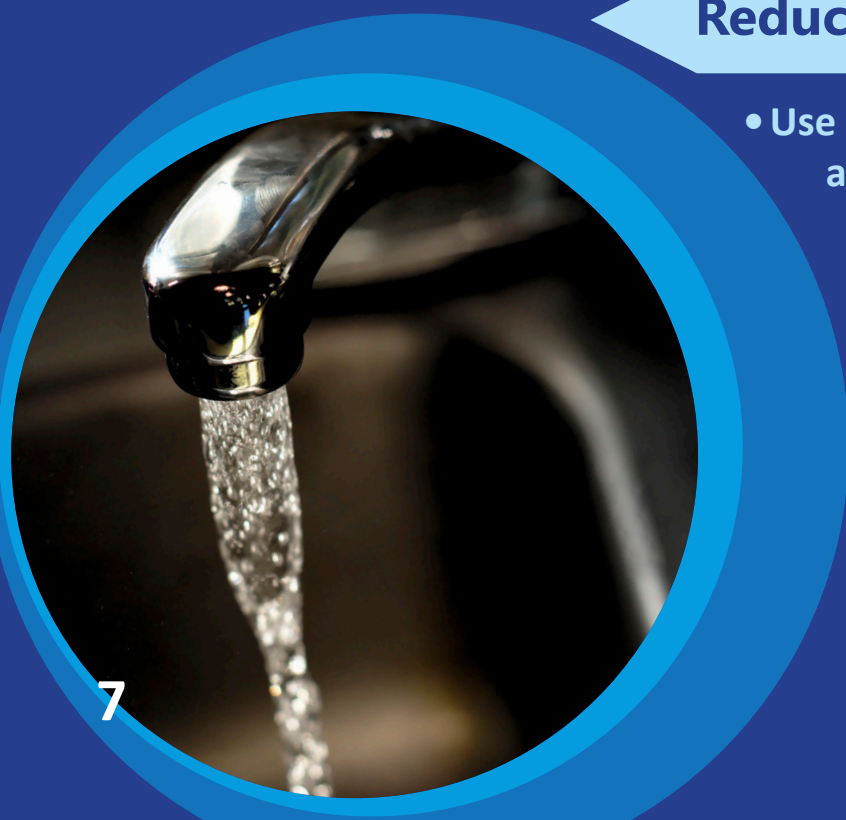
To effectively monitor and manage lead and copper in drinking water, public water suppliers often implement corrosion-control measures. CFPUA staff regularly test lead and copper levels in homes and businesses across the service area, and operators introduce orthophosphate into the water systems to line pipes and add more protection.

CFPUA's corrosion-control program has successfully managed the threat of lead in our drinking water. However, we cannot control the variety of materials used in internal plumbing components—the private parts of water systems that are owned and maintained by home and business owners.

In older areas of New Hanover County, homes may rely on aging plumbing systems that haven't been updated to meet newer standards. When internal plumbing components contain lead, residents and customers are more likely to be exposed to these metals as they leach into drinking water from faucets and other plumbing materials.

Reducing Lead Exposure at Home

- **Use only cold water for drinking, cooking, and making baby formula (boiling water does not remove lead from water)**
- **Regularly clean your faucet's screen (also known as an aerator).**
- **Before use, flush your pipes by running your tap.**
- **Contact your water system to learn more about sources of lead and removing lead service lines.**



Water Disinfection & Health Effects

Disinfecting source water is a critical part of any water treatment process. Chlorine and other disinfectants eliminate water-borne pathogens such as Giardia, Cryptosporidium, E. Coli, bacteria, and viruses. These microbial pathogens are known to cause gastrointestinal illnesses and other health issues. Because these pathogens are found in the Cape Fear River, the water source for the Sweeney Water Treatment Plant, CFPUA uses chlorine to treat our water prior to its distribution. The Richardson and Monterey Heights water systems also undergo disinfection.

Chlorine treatment has proven to be a transformative achievement in public health. Introduced as the solution to the 1850 cholera epidemic in London, chlorine became a widely used water disinfectant by the 1900s. Unfortunately, chlorine and other disinfectants may cause problems once in the distribution system. They can react with naturally occurring compounds in water to form byproducts such as Trihalomethanes (THM), Haloacetic acids (HAA), Chlorite, and Bromate. According to the EPA, some disinfection byproducts are “suspected to cause bladder cancer and reproductive effects in humans.” To ensure that public water suppliers such as CFPUA provide clean drinking water, the U.S. Environmental Protection Agency (EPA) developed the Stage 2 Disinfection Byproduct rule.

CFPUA developed a plan to not only meet but surpass state and federal regulations. As part of the plan, 17 aeration systems have been installed at the Sweeney plant and within the system’s elevated storage tanks. These systems reduce formation of disinfection byproducts by spraying fine, uniform particles of water into the air. This process allows volatile compounds to escape into the atmosphere. Without this escape mechanism, these volatile compounds would continue to react with chlorine and other disinfectants, creating disinfection byproducts. The effectiveness of the aeration systems in reducing disinfection byproducts is evident in CFPUA’s consistent compliance with the EPA Stage 2 Rule. Sweeney’s treatment process also includes ozone, biofiltration, and ultraviolet light disinfection.

CFPUA also practices routine water system flushing. This helps maintain water quality and pipe integrity and minimizes the formation of disinfection byproducts. During flushing, water is forced through pipes and out of fire hydrants at a high velocity, removing accumulated mineral sediment until the water is clear. Because disinfection byproducts are more easily formed at high temperatures, CFPUA conducts flushing during the summer months. CFPUA conducts sampling to confirm that these protocols effectively reduce disinfection byproducts and ensure compliance with state and federal requirements.

Glossary of Drinking Water Terms

Action Level (AL) - The concentration of a contaminant that, if exceeded, triggers treatment or other requirements that 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 highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

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

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

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

Million Fibers per Liter (MFL) - Million fibers per liter is a measure of the presence of asbestos fibers that are longer than 10 micrometers.

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

Not-Applicable (N/A) - Information not applicable/not required for that particular water system or for that particular rule.

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

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 (ng/L) - One part per trillion corresponds to one minute in 2,000,000 years, or a single penny in \$10,000,000,000.

Parts per quadrillion (ppq) or Picograms per liter (picograms/L) - One part per quadrillion corresponds to one minute in 2,000,000,000 years or one penny in \$10,000,000,000,000.

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

Secondary Maximum Contaminant Level (SMCL) - The highest level of a contaminant that is allowed in drinking water under the EPA's National Secondary Drinking Water Regulations. These non-mandatory regulations provide standards for aesthetic considerations in water, such as taste, color, and odor. These contaminants are not considered to present a risk to human health.

Treatment Technique (TT) - A required process intended to reduce the level of a contaminant in drinking water.

NOTICE TO THE PUBLIC

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER

CFPUA-WILMINGTON HAS NOT MET MONITORING REQUIREMENTS

We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not our drinking water meets health standards. During the compliance period specified in the table below, we did not complete all monitoring or testing for the contaminant listed and therefore cannot be sure of the quality of your drinking water during that time.

CONTAMINANT GROUP**	FACILITY ID NO./ SAMPLE POINT ID	COMPLIANCE PERIOD BEGIN DATE	NUMBER OF SAMPLES/ SAMPLING FREQUENCY	WHEN SAMPLES WERE OR WILL BE TAKEN (Water System to Complete)
TURBIDITY (INDIVIDUAL FILTER EFFLUENT)	P01/007	JUNE 2019	CONTINUOUS MONITORING	INSTRUMENT FAILURE OCCURRED JUNE 15 th , 2019 AT 11:15 PM. FILTER REMOVED FROM OPERATION JUNE 16 th , 2019 AT 10:00 AM. INSTRUMENT AND FILTER RETURNED TO NORMAL OPERATION JUNE 18 th , 2019.

** See back of this notice for further information on contaminants.

What should I do? There is nothing you need to do at this time.

What is being done? EQUIPMENT FAILURE RESULTED IN CONTINUOUS MONITORING OF ONE FILTER EFFLUENT TURBIDITY TO BE INTERRUPTED FOR AN EXTENDED DURATION WHILE FILTER WAS IN SERVICE. WHILE ATTEMPTING TO DIAGNOSE AND CORRECT FAILURE, STAFF EXCEEDED TIME DURATION REQUIRED FOR COLLECTING GRAB SAMPLES UNDER THE INDIVIDUAL FILTER EFFLUENT MONITORING RULE RESULTING IN THIS VIOLATION. IN ORDER TO PREVENT FUTURE OCCURRENCES OF THIS TYPE, SEVERAL CORRECTIVE AND PREVENTATIVE ACTIONS WERE COMPLETED INCLUDING: UPDATES TO DAILY MONITORING SHEETS, RETRAINING OF STAFF ON INDIVIDUAL FILTER EFFLUENT MONITORING RULE, AND CREATION OF A STANDARD OPERATING PROCEDURE (SOP) SPECIFICALLY FOR THIS TYPE OF EVENT. THE SOP HAS BEEN TESTED UNDER ACTUAL EVENT CONDITIONS AND PERFORMED AS INTENDED RESULTING IN STAFF MAINTAINING COMPLIANCE WHILE CORRECTING A SIMILAR EQUIPMENT FAILURE.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

For more information, please contact:

Responsible Person Ben Kearns	System Name CFPUA-WILMINGTON	System Address (Street) 235 GOVERNMENT CENTER DRIVE
Phone Number 910-332-6577	System Number NC0465010	System Address (City/State/Zip) WILMINGTON, NC 28403

Violation Awareness Date: JULY 16, 2019

Date Notice Distributed: MAY 29, 2020 Method of Distribution: Insert in 2019 Water Quality Report (CCR)

Public Notification Certification:

The public water system named above hereby affirms that public notification has been provided to its consumers in accordance with all delivery, content, format, and deadline requirements specified in 15A NCAC 18C .1523.

Owner/Operator: _____

(Signature)

John Malone

(Print Name)

MAY 29, 2020

(Date)

Contaminant Group List

(AS) Asbestos - includes testing for Chrysotile, Amphibole and Total Asbestos.

(BA) Total Coliform Bacteria - includes testing for Total Coliform bacteria and Fecal/*E.coli* bacteria. Testing for Fecal/*E.coli* bacteria is required if total coliform is present in the sample.

(BB) Bromate/Bromide - includes testing for Bromate and/or Bromide.

(CD) Chlorine Dioxide/Chlorite - includes testing for Chlorine Dioxide and/or Chlorite.

(DI) Disinfectant Residual must be tested with the collection of each compliance bacteriological sample, at the same time and site.

Fecal Indicators - includes *E.coli*, enterococci or coliphage.

(HAA5)- Haloacetic Acids - include Monochloroacetic Acid, Dichloroacetic Acid, Trichloroacetic Acid, Monobromoacetic Acid, Dibromoacetic Acid.

(IOC) Inorganic chemicals - include Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cyanide, Fluoride, Iron, Manganese, Mercury, Nickel, pH, Selenium, Sodium, Sulfate, and Thallium.

(LC) Lead and Copper are tested by collecting the required number of samples and testing each of the samples for both lead and copper.

(NT) Nitrate/ (NI) Nitrite - includes testing for nitrate and/or nitrite.

(RA) Radionuclides - includes Gross Alpha, Radon, Uranium, Combined Radium, Radium 226, Radium 228, Potassium 40 (Total), Gross Beta, Tritium, Strontium 89, Strontium 90, Iodine 131, and Cesium 134.

(SOC) - Synthetic Organic Chemicals/Pesticides - include 2,4-D, 2,4,5-TP (Silvex), Alachlor, Atrazine, Benzo(a)pyrene, Carbofuran, Chlordane, Dalapon, Di(2-ethylhexyl)adipate, Di(2-ethylhexyl)phthalate, Dibromochloropropane (DBCP), Dinoseb, Endrin, Ethylene dibromide (EDB), Heptachlor, Heptachlor Epoxide, Hexachlorobenzene, Hexachlorocyclopentadiene, Lindane, Methoxychlor, Oxamyl(vydate), PCBs, Pentachlorophenol, Picloram, Simazine, Toxaphene.

(TOC) - Total Organic Carbon - includes testing for Alkalinity, Dissolved Organic Carbon (DOC), Total Organic Carbon (TOC) and Ultraviolet Absorption 254 (UV254). Source water samples must be tested for both TOC and Alkalinity. Treated water samples must be tested for TOC. Source water samples and treated water samples must be collected on the same day.

(TTHM) - Total Trihalomethanes - include Chloroform, Bromoform, Bromodichloromethane, and Dibromochloromethane.

(VOC) - Volatile Organic Chemicals - include 1,2,4-Trichlorobenzene, Cis-1,2-Dichloroethylene, Xylenes (Total), Dichloromethane, o-Dichlorobenzene, p-Dichlorobenzene, Vinyl Chloride, 1,1,-Dichloroethylene, Trans-1,2,-Dichloroethylene, 1,2-Dichloroethane, 1,1,1-Trichloroethane, Carbon Tetrachloride, 1,2-Dichloropropane, Trichloroethylene, 1,1,2-Trichloroethane, Tetrachloroethylene, Chlorobenzene, Benzene, Toluene, Ethylbenzene, and Styrene.

(WQP) Water Quality Parameters (for Lead and Copper Rule) - includes Calcium, Orthophosphate (as PO₄), Silica, Conductivity, pH, Alkalinity and Water Temperature.

2019 Drinking Water Quality Results – PWS ID# 04-65-010, Sweeney Water System

We routinely monitor for over 150 contaminants in your drinking water according to Federal and State laws. The tables below list all the drinking water contaminants that we detected in the last round of sampling for each particular contaminant group. The presence of contaminants does not necessarily indicate that water poses a health risk. Unless otherwise noted, the data presented in this table is from testing done January 1 through December 31, 2019. The EPA and the State allow us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Some of the data, though representative of the water quality, is more than one year old.

Microbiological | Turbidity | Inorganic Contaminants | Other Disinfection By-Products | Disinfection Residuals Summary

E.coli - Fecal coliforms and E.coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and people with severely-compromised immune systems.

Fecal Indicators (enterococci or coliphage) - Fecal indicators are microbes whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term health effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and people with severely compromised immune systems.

Contaminant (units)	Contaminant Type	Reporting Basis	Your Water	Sample Date	TT Violation	MCL/MRDL Violation	Range Low - High	MCLG/MRDL	MCL	Likely Source of Contamination
Total coliform bacteria	Microbiological Contaminants in the Distribution System	Highest Monthly Percent of Positive Samples	2.46%	2019	N/A	N/A	N/A	N/A	TT*	Naturally present in the environment
E. Coli	Microbiological Contaminants in the Distribution System	Highest Monthly Percent of Positive Samples	0%	2019	N/A	NO	N/A	0	See Note 3	Human and animal fecal waste
Turbidity (NTU)**	Turbidity – Systems with population > 10,000	Highest single turbidity measurement	0.211	2019	NO ¹	N/A	N/A	N/A	N/A	Soil Runoff
Turbidity (NTU) **	Turbidity – Systems with population > 10,000	Lowest monthly percent of sample meeting limits	100%	2019	NO ²	N/A	N/A	N/A	N/A	Soil Runoff
Fluoride (ppm)	Inorganic Contaminants	Highest Compliance Result	0.7	2017 2018 2019	N/A	NO	ND – 0.7	4	4	Erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizers and aluminum factories
Bromate (ppb)	Other Disinfection Byproducts	Highest Compliance Result	2.5	2019	N/A	NO	ND – 2.5	0	10	Byproduct of drinking water disinfection
Chlorine (ppm)	Disinfectant Residuals Summary	Highest Running Annual Average	1.46	2019	N/A	N/A	0.21 – 2.6	4	4	Water additive used to control microbes

*TT: If a system collecting 40 or more samples per month finds greater than 5% of monthly samples are positive in one month, an assessment is required.

** Turbidity is a measure of the cloudiness of the 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.

¹ TT Violation if: Turbidity > 1 NTU.

² TT Violation if: Less than 95% of monthly turbidity measurements are < 0.3 NTU.

³ Routine and repeat samples are total coliform-positive and either is E. coli-positive or system fails to take repeat samples following E. coli-positive routine sample or system fails to analyze total coliform-positive repeat sample for E. coli. If either an original routine sample and/or its repeat sample(s) are E. coli positive, a Tier 1 violation exists.

Water Characteristics Contaminants

Secondary Substances, required by the NC Public Water Supply Section, are substances that affect the taste, odor, and/or color of drinking water. These aesthetic substances normally do not have any health effects and normally do not affect the safety of your water.

Contaminant (units)	Reporting Basis	Your Water	Sample Date	Range Low - High	SMCL	Likely Source of Contamination
Iron (ppm)	Highest Compliance Result	1.6	2017 2018 2019	ND – 1.6	0.3 mg/L	N/A
Manganese (ppm)	Highest Compliance Result	0.023	2017 2018 2019	ND – 0.023	0.05 mg/L	N/A
pH (standard units)	Highest Compliance Result	7.8	2017 2018 2019	7.0 – 7.8	6.5 to 8.5	N/A
Sodium (ppm)	Highest Compliance Result	35	2017 2018 2019	11 – 35	N/A	N/A
Sulfate (ppm)	Highest Compliance Result	30	2017 2018 2019	ND – 30	250 mg/L	N/A

Lead & Copper

Contaminant (units)	Reporting Basis	Your Water	Sample Date	# Sites Above AL	MCLG	Action Level	Likely Source of Contamination
Copper (ppm)	90th percentile	0.210	2017	0	1.3	1.3	Corrosion of household plumbing systems; erosion of natural deposits
Lead (ppb)	90th percentile	< 3.0	2017	1	0	15	Corrosion of household plumbing systems; erosion of natural deposits

Total Organic Carbon

Contaminant (units)	Contaminant Type	Reporting Basis	Your Water	Sample Date	TT Violation	Range Low - High	Compliance Method	Likely Source of Contamination
Total Organic Carbon [TOC Treated] (removal ratio)	Disinfection Byproduct Precursors - TOC	RAA Removal Ratio	1.93	2019	NO	75% – >89%	Step 1	Naturally present in environment

Disinfection Byproduct Compliance

Some people who drink water containing trihalomethanes (TTHM) 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. Some people who drink water containing haloacetic acids (HAA5) in excess of the MCL over many years may have an increased risk of getting cancer.

Disinfection Byproduct	Your Water (LRAA)	Date Sampled	MCL Violation	Range Low - High	MCL	Likely Source of Contamination
TTHM (ppb)	46.9	2019	NO	N/A	80	Byproduct of drinking water disinfection
B01	35.3	2019	NO	10.3 – 40.0	80	
B02	31.2	2019	NO	9.6 – 38.2	80	
B03	46.0	2019	NO	10.8 – 47.8	80	
B04	35.0	2019	NO	10.1 – 44.8	80	
B05	34.4	2019	NO	10.4 – 45.3	80	
B06	42.3	2019	NO	14.8 – 50.1	80	
B07	46.9	2019	NO	16.2 – 60.4	80	
B08	36.4	2019	NO	11.5 – 45.5	80	
HAA5 (ppb)	25.6	2019	NO	N/A	60	Byproduct of drinking water disinfection
B01	20.9	2019	NO	5.6 – 11.3	60	
B02	23.3	2019	NO	6.7 – 15.0	60	
B03	24.5	2019	NO	5.7 – 22.3	60	
B04	22.0	2019	NO	6.6 – 17.1	60	
B05	13.7	2019	NO	5.7 – 16.7	60	
B06	25.6	2019	NO	7.9 – 18.3	60	
B07	24.9	2019	NO	9.2 – 27.2	60	
B08	22.3	2019	NO	6.3 – 19.4	60	

Unregulated Contaminants

The purpose of unregulated contaminant monitoring is to assist EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulations are warranted.

1,4-Dioxane

1,4-Dioxane is a likely human carcinogen, according to the U.S. EPA, and has been found in groundwater at sites throughout the United States. The physical and chemical properties and behavior of 1,4-dioxane create challenges for its characterization and treatment. It is highly mobile and does not readily biodegrade in the environment.

Contaminant (units)	Sample Date	Your Water Average	Range Low - High	Health Information
1,4-Dioxane (ppb)	2019	0.54	0.18– 1.30	EPA established a 1-day health advisory of 4000 ppb and a 10-day health advisory of 400 ppb for a 10-kg child and a lifetime health advisory of 200 ppb in drinking water

Per- and Polyfluoroalkyl Substances (PFAS)

PFAS are found in a wide range of consumer products that people use daily such as cookware, pizza boxes, and stain repellants. Most people have been exposed to PFAS. Certain PFAS can accumulate and stay in the human body for long periods of time. There is evidence that exposure to PFAS can lead to adverse health outcomes in humans. The most-studied PFAS chemicals are PFOA and PFOS. Studies indicate that PFOA and PFOS can cause reproductive and developmental, liver and kidney, and immunological effects in laboratory animals. Both chemicals have caused tumors in animals.

Contaminant (units)	Sample Date	Your Water Average	Range Low - High	Health Information
GenX (ppt)	2019	11.0	2.87 – 36.3	NC DHHS health goal is 140 ppt for GenX
PFOS (ppt)	2019	2.87	0.708 – 7.98	70 ppt EPA Health Advisory for Total Combined Concentration of PFOA and PFOS
PFOA (ppt)	2019	2.75	1.09 – 5.92	70 ppt EPA Health Advisory for Total Combined Concentration of PFOA and PFOS
PFBS (ppt)	2019	1.89	ND – 6.52	None
PFBA (ppt)	2019	5.59	ND – 7.57	None
PFDA (ppt)	2019	0.032	ND – 0.698	None
PFDS (ppt)	2019	0.029	ND – 1.20	None
PFHpA (ppt)	2019	4.48	ND – 19.5	None
PFHxS (ppt)	2019	1.35	ND – 3.45	None
PFHxA (ppt)	2019	8.99	2.22 – 33.4	None
PFNA (ppt)	2019	0.131	ND – 0.962	None
PFPeS (ppt)	2019	0.075	ND – 1.04	None
PFPeA (ppt)	2019	10.3	2.30 – 41.6	None
Nafion By-product 2* (ppt)	2019	0.616	ND – 2.34	None
PFO4DA* (ppt)	2019	2.93	ND – 10.1	None
PFO3OA* (ppt)	2019	9.84	1.27 – 22.8	None
PFO2HxA* (ppt)	2019	23.4	4.83 – 65.1	None
PFMOAA* (ppt)	2019	25.0	4.79 – 65.7	None
PFMOPrA* (ppt)	2019	9.89	3.17 – 28.6	None
PFOMBA* (ppt)	2019	3.48	ND – 11.4	None

* Results obtained using an analytical standard provided by Chemours; not a certified standard.

Fourth Unregulated Contaminant Monitoring Rule (UCMR4) Contaminants

The 1996 Safe Drinking Water Act (SDWA) amendments require that once every five years EPA issue a new list of no more than 30 unregulated contaminants to be monitored by public water systems.

The fourth Unregulated Contaminant Monitoring Rule (UCMR 4) was published in the Federal Register on December 20, 2016. UCMR 4 requires monitoring for 30 chemical contaminants between 2018 and 2020 using analytical methods developed by EPA and consensus organizations. This monitoring provides a basis for future regulatory actions to protect public health.

Contaminant (units)	Sample Date	Your Water Average	Range Low - High
Bromochloroacetic acid (ppb)	2019	3.50	2.60 – 5.47
Bromodichloroacetic acid (ppb)	2019	3.10	1.69 – 5.16
Chlorodibromoacetic acid (ppb)	2019	1.52	0.738 – 2.93
Dibromoacetic acid [HAA5] (ppb)	2019	2.75	1.11 – 6.08
Dichloroacetic acid [HAA5] (ppb)	2019	3.88	2.17 – 20.3
Monobromoacetic acid [HAA5] (ppb)	2019	0.500	ND – 1.29
Monochloroacetic acid [HAA5] (ppb)	2019	ND	ND
Tribromoacetic acid (ppb)	2019	0.440	ND – 2.25
Trichloroacetic acid [HAA5] (ppb)	2019	1.53	0.630 – 3.23
Manganese (ppm)	2019	0.010	0.008 – 0.012

Physical and Mineral Characteristics

Contaminant (units)	Sample Date	Your Water Average	Range Low - High
Hardness (ppm)	2019	23	18 – 28
Alkalinity (ppm)	2019	18	13 - 39
Conductivity (umhos/cm)	2019	156	123 - 203
Total Dissolved Solids (ppm)	2019	103	81 - 134
Chloride (ppm)	2019	21	14 - 28
Ortho Phosphate (ppm)	2019	0.85	0.61 - 1.38
Total Phosphate (ppm)	2019	1.47	1.22 - 2.14
Chlorate (ppb)	2019	68	60 – 75
Perchlorate (ppb)	2019	0.05	ND – 0.10

Source Water Assessment Program (SWAP)

As part of the Source Water Assessment Program (SWAP), the North Carolina Department of Environmental Quality's Public Water Supply Section 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 the Sweeney Water System 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:

Source Name	Susceptibility Rating	SWAP Report Date
Cape Fear River Kings Bluff	Moderate	September 2017
Lower Cape Fear Water/Sewer Authority Kings Bluff	Moderate	September 2017
Beacon Woods	Lower	September 2017
Foxcroft Well	Moderate	September 2017
Masonboro Forest Well #43	Lower	September 2017
Sea Pines Well #44	Lower	September 2017
Sea Spray Well #34	Moderate	September 2017

The complete SWAP Assessment report for the Sweeney Water System may be viewed on the Web at: www.ncwater.org/?page=600. 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 report was prepared. If you are unable to access your SWAP report on the web, you may mail a written request for a printed copy to: Source Water Assessment Program – Report Request, 1634 Mail Service Center, Raleigh, NC 27699-1634, or email requests to swap@ncdenr.gov. Please indicate the system name and number (Sweeney Water System, PWS ID# 04-65-010) 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 at 919-707-9098.

It is important to understand that a susceptibility rating of “higher” does not imply poor water quality, only the system’s potential to become contaminated by PCSs in the assessment area.

2019 Drinking Water Quality Results – PWS ID# 04-65-232, Richardson Nanofiltration System

We routinely monitor for over 150 contaminants in your drinking water according to Federal and State laws. The tables below list all the drinking water contaminants that we detected in the last round of sampling for each particular contaminant group. The presence of contaminants does not necessarily indicate that water poses a health risk. Unless otherwise noted, the data presented in this table is from testing done January 1 through December 31, 2019. The EPA and the State allow us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Some of the data, though representative of the water quality, is more than one year old.

Microbiological | Inorganic Contaminants | Disinfection Residuals Summary

E.coli - Fecal coliforms and E.coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and people with severely-compromised immune systems.

Fecal Indicators (enterococci or coliphage) - Fecal indicators are microbes whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term health effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and people with severely compromised immune systems.

Contaminant (units)	Contaminant Type	Reporting Basis	Your Water	Sample Date	TT Violation	MCL/MRDL Violation	Range Low - High	MCLG/MRDL	MCL	Likely Source of Contamination
Total coliform bacteria	Microbiological Contaminants in the Distribution System	Highest Monthly Percent of Positive Samples	0%	2019	N/A	N/A	N/A	N/A	TT*	Naturally present in the environment
E. Coli	Microbiological Contaminants in the Distribution System	Highest Monthly Percent of Positive Samples	0%	2019	N/A	NO	N/A	0	**	Human and animal fecal waste
Fluoride (ppm)	Inorganic Contaminants	Highest Compliance Result	0.18	2017 2018 2019	N/A	NO	ND – 0.18	4	4	Erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizers and aluminum factories
Chlorine (ppm)	Disinfectant Residuals Summary	Highest Running Annual Average	1.32	2019	N/A	N/A	0.32 – 2.6	4	4	Water additive used to control microbes

*TT: If a system collecting 40 or more samples per month finds greater than 5% of monthly samples are positive in one month, an assessment is required.

**Routine and repeat samples are total coliform-positive and either is E. coli-positive or system fails to take repeat samples following E. coli-positive routine sample or system fails to analyze total coliform-positive repeat sample for E. coli. If either an original routine sample and/or its repeat sample(s) are E. coli positive, a Tier 1 violation exists.

Water Characteristics Contaminants

Secondary Substances, required by the NC Public Water Supply Section, are substances that affect the taste, odor, and/or color of drinking water. These aesthetic substances normally do not have any health effects and normally do not affect the safety of your water.

Contaminant (units)	Reporting Basis	Your Water	Sample Date	Range Low - High	SMCL	Likely Source of Contamination
Iron (ppm)	Highest Compliance Result	0.655	2017 2018 2019	ND – 0.655	0.3 mg/L	N/A
Manganese (ppm)	Highest Compliance Result	0.032	2017 2018 2019	ND – 0.032	0.05 mg/L	N/A
pH (standard units)	Highest Compliance Result	7.7	2017 2018 2019	7.1 – 7.7	6.5 to 8.5	N/A
Sodium (ppm)	Highest Compliance Result	20	2017 2018 2019	13 – 20	N/A	N/A
Sulfate (ppm)	Highest Compliance Result	20	2017 2018 2019	ND – 20	250 mg/L	N/A

Radiological Contaminants

Contaminant (units)	Contaminant Type	Your Water	Sample Date	Range Low - High	MCLG	MCL	Likely Source of Contamination
Alpha Emitters (pCi/L)	Radiological Contaminants	2.5	2014 2017 2019	ND – 2.5	0	15	Erosion of natural deposits
Combined Radium (pCi/L)	Radiological Contaminants	1.1	2014 2017 2019	ND – 1.1	0	5	Erosion of natural deposits

Lead & Copper

Contaminant (units)	Reporting Basis	Your Water	Sample Date	# Sites Above AL	MCLG	Action Level	Likely Source of Contamination
Copper (ppm)	90th percentile	0.41	2019	0	1.3	1.3	Corrosion of household plumbing systems; erosion of natural deposits
Lead (ppb)	90th percentile	6	2019	1	0	15	Corrosion of household plumbing systems; erosion of natural deposits

Disinfection Byproduct Compliance

Some people who drink water containing trihalomethanes (TTHM) 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.

Some people who drink water containing haloacetic acids (HAA5) in excess of the MCL over many years may have an increased risk of getting cancer.

Disinfection Byproduct	Your Water (LRAA)	Date Sampled	MCL Violation	Range Low - High	MCL	Likely Source of Contamination
TTHM (ppb)	53.6	2019	NO	51.8 – 53.6	80	Byproduct of drinking water disinfection
B01	53.6	2019	NO	N/A	80	
B02	51.8	2019	NO	N/A	80	
HAA5 (ppb)	35	2019	NO	34 – 35	60	Byproduct of drinking water disinfection
B01	34	2019	NO	N/A	60	
B02	35	2019	NO	N/A	60	

Physical and Mineral Characteristics

Contaminant (units)	Sample Date	Your Water Average	Range Low - High
Hardness (ppm)	2019	81	44 - 136
Alkalinity (ppm)	2019	64	48 - 88
Conductivity (umhos/cm)	2019	233	152 - 349
Total Dissolved Solids (ppm)	2019	154	100 - 230
Chloride (ppm)	2019	16	12 - 20
Ortho Phosphate (ppm)	2019	1.76	0.24 - 8.87
Total Phosphate (ppm)	2019	3.21	0.46 - 14.84
Calcium (ppm)	2019	34	N/A
Magnesium (ppm)	2019	2.6	N/A
Total Organic Carbon (ppm)	2019	0.84	ND – 6.60
Turbidity (NTU)	2019	0.83	0.24 – 1.60

Unregulated Contaminants

The purpose of unregulated contaminant monitoring is to assist EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulations are warranted.

Per- and Polyfluoroalkyl Substances (PFAS)

Contaminant (units)	Sample Date	Your Water Average	Range Low - High	Health Information
GenX (ppt)	2019	ND	ND	NC DHHS health goal is 140 ppt for GenX
PFOS (ppt)	2019	ND	ND	70 ppt EPA Health Advisory for Total Combined Concentration of PFOA and PFOS
PFOA (ppt)	2019	ND	ND	70 ppt EPA Health Advisory for Total Combined Concentration of PFOA and PFOS
PFBS (ppt)	2019	0.216	ND – 0.648	None
PFO2HxA* (ppt)	2019	0.747	ND – 2.24	None
PFMOAA* (ppt)	2019	1.04	ND – 3.11	None

* Results obtained using an analytical standard provided by Chemours; not a certified standard.

Fourth Unregulated Contaminant Monitoring Rule (UCMR4) Contaminants

The 1996 Safe Drinking Water Act (SDWA) amendments require that once every five years EPA issue a new list of no more than 30 unregulated contaminants to be monitored by public water systems.

The fourth Unregulated Contaminant Monitoring Rule (UCMR 4) was published in the Federal Register on December 20, 2016. UCMR 4 requires monitoring for 30 chemical contaminants between 2018 and 2020 using analytical methods developed by EPA and consensus organizations. This monitoring provides a basis for future regulatory actions to protect public health.

Contaminant (units)	Sample Date	Your Water Average	Range Low - High
Bromochloroacetic acid (ppb)	2019	3.50	1.30 - 3.50
Bromodichloroacetic acid (ppb)	2019	8.29	3.20 - 8.37
Chlorodibromoacetic acid (ppb)	2019	0.899	0.898 - 0.899
Dibromoacetic acid [HAA5] (ppb)	2019	0.412	0.410 - 0.413
Dichloroacetic acid [HAA5] (ppb)	2019	9.25	2.50 - 10.1
Monobromoacetic acid [HAA5] (ppb)	2019	ND	ND
Monochloroacetic acid [HAA5] (ppb)	2019	ND	ND
Tribromoacetic acid (ppb)	2019	ND	ND
Trichloroacetic acid [HAA5] (ppb)	2019	20.9	4.50 - 21.0
Manganese (ppm)	2019	0.0539	N/A

Source Water Assessment Program (SWAP)

As part of the Source Water Assessment Program (SWAP), the North Carolina Department of Environmental Quality's Public Water Supply Section 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 the Richardson Nanofiltration System 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 to the right:

The complete SWAP Assessment report for the Richardson Nanofiltration System may be viewed on the Web at: www.ncwater.org/?page=600. 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 report was prepared. If you are unable to access your SWAP report on the web, you may mail a written request for a printed copy to: Source Water Assessment Program – Report Request, 1634 Mail Service Center, Raleigh, NC 27699-1634, or email requests to swap@ncdenr.gov. Please indicate the system

Source Name	Susceptibility Rating	SWAP Report Date
Well J – Castle Hayne	Lower	June 2017
Well J – Pee Dee	Lower	June 2017
Well K – Castle Hayne	Moderate	June 2017
Well K – Pee Dee	Moderate	June 2017
Well L – Castle Hayne	Moderate	June 2017
Well L – Pee Dee	Moderate	June 2017
Well #15 Elkmont	Moderate	June 2017
Well Q – Pee Dee	Higher	June 2017
Well #20 Old Marsh Oaks#2	Moderate	June 2017
Well #4 White Rd	Moderate	June 2017
Well P – Pee Dee	Moderate	June 2017
Well B – Pee Dee	Higher	June 2017
Well A – Pee Dee	Higher	June 2017
Well #28 M	Higher	June 2017
Well #29 N	Higher	June 2017
Well #30 O	Moderate	June 2017
Well A – Castle Hayne	Moderate	June 2017
Well B – Castle Hayne	Higher	June 2017
Well C – Castle Hayne	Moderate	June 2017
Well C – Pee Dee	Moderate	June 2017
Well F – Castle Hayne	Lower	June 2017
Well F – Pee Dee	Lower	June 2017
Well G – Castle Hayne	Moderate	June 2017
Well G – Pee Dee	Moderate	June 2017
Well H – Castle Hayne	Moderate	June 2017
Well H – Pee Dee	Moderate	June 2017
Well I – Castle Hayne	Lower	June 2017
Well I – Pee Dee	Lower	June 2017

name and number (Richardson Nanofiltration System, PWS ID# 04-65-232) 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 at 919-707-9098.

It is important to understand that a susceptibility rating of “higher” does not imply poor water quality, only the system’s potential to become contaminated by PCSs in the assessment area.



2019 Drinking Water Quality Results – PWS ID# 04-65-137, Monterey Heights Water System

We routinely monitor for over 150 contaminants in your drinking water according to Federal and State laws. The tables below list all the drinking water contaminants that we detected in the last round of sampling for each particular contaminant group. The presence of contaminants does not necessarily indicate that water poses a health risk. Unless otherwise noted, the data presented in this table is from testing done January 1 through December 31, 2019. The EPA and the State allow us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Some of the data, though representative of the water quality, is more than one year old.

Microbiological | Inorganic Contaminants | Disinfection Residuals Summary

E.coli - Fecal coliforms and E.coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and people with severely-compromised immune systems.

Fecal Indicators (enterococci or coliphage) - Fecal indicators are microbes whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term health effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and people with severely compromised immune systems.

Contaminant (units)	Contaminant Type	Reporting Basis	Your Water	Sample Date	TT Violation	MCL/MRDL Violation	Range Low - High	MCLG/MRDL	MCL	Likely Source of Contamination
Total coliform bacteria	Microbiological Contaminants in the Distribution System	Highest Monthly Percent of Positive Samples	0%	2019	N/A	N/A	N/A	N/A	TT*	Naturally present in the environment
E. Coli	Microbiological Contaminants in the Distribution System	Highest Monthly Percent of Positive Samples	0%	2019	N/A	NO	N/A	0	**	Human and animal fecal waste
Fluoride (ppm)	Inorganic Contaminants	Highest Compliance Result	0.2	2017 2019	N/A	NO	0.1 – 0.2	4	4	Erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizers and aluminum factories
Chlorine (ppm)	Disinfectant Residuals Summary	Highest Running Annual Average	1.11	2019	N/A	NO	0.28 – 1.92	4	4	Water additive used to control microbes

*TT: If a system collecting 40 or more samples per month finds greater than 5% of monthly samples are positive in one month, an assessment is required.

**Routine and repeat samples are total coliform-positive and either is E. coli-positive or system fails to take repeat samples following E. coli-positive routine sample or system fails to analyze total coliform-positive repeat sample for E. coli. If either an original routine sample and/or its repeat sample(s) are E. coli positive, a Tier 1 violation exists.

Lead & Copper

Contaminant (units)	Reporting Basis	Your Water	Sample Date	# Sites Above AL	MCLG	Action Level	Likely Source of Contamination
Copper (ppm)	90th percentile	0.330	2019	0	1.3	1.3	Corrosion of household plumbing systems; erosion of natural deposits
Lead (ppb)	90th percentile	5	2019	0	0	15	Corrosion of household plumbing systems; erosion of natural deposits

Water Characteristics Contaminants

Secondary Substances, required by the NC Public Water Supply Section, are substances that affect the taste, odor, and/or color of drinking water. These aesthetic substances normally do not have any health effects and normally do not affect the safety of your water.

Contaminant (units)	Reporting Basis	Your Water	Sample Date	Range Low - High	# Sites Above AL	MCLG	SMCL	Likely Source of Contamination
Iron (ppm)	Highest Compliance Result	0.156	2017 2019	ND – 0.156	N/A	N/A	0.3 mg/L	N/A
Manganese (ppm)	Highest Compliance Result	0.027	2017 2019	ND – 0.027	N/A	N/A	0.05 mg/L	N/A
pH (standard units)	Highest Compliance Result	8.1	2017 2019	7.5 – 8.1	N/A	N/A	6.5 to 8.5	N/A
Sodium (ppm)	Highest Compliance Result	21	2017 2019	6.7 – 21	N/A	N/A	N/A	N/A

Disinfection Byproduct Compliance

Some people who drink water containing trihalomethanes (TTHM) 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. Some people who drink water containing haloacetic acids (HAA5) in excess of the MCL over many years may have an increased risk of getting cancer.

Disinfection Byproduct	Your Water (LRAA)	Date Sampled	MCL Violation	Range Low - High	MCL	Likely Source of Contamination
TTHM (ppb)	43.9	2019	NO	29.0 – 43.9	80	Byproduct of drinking water disinfection
B01	43.9	2019	NO	N/A	80	
B02	29.0	2019	NO	N/A	80	
HAA5 (ppb)	30	2019	NO	22.6 – 30	60	Byproduct of drinking water disinfection
B01	30	2019	NO	N/A	60	
B02	22.6	2019	NO	N/A	60	

Unregulated Contaminants

The purpose of unregulated contaminant monitoring is to assist EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulations are warranted.

Per- and Polyfluoroalkyl Substances (PFAS)

PFAS are found in a wide range of consumer products that people use daily such as cookware, pizza boxes, and stain repellants. Most people have been exposed to PFAS. Certain PFAS can accumulate and stay in the human body for long periods of time. There is evidence that exposure to PFAS can lead to adverse health outcomes in humans. The most-studied PFAS chemicals are PFOA and PFOS. Studies indicate that PFOA and PFOS can cause reproductive and developmental, liver and kidney, and immunological effects in laboratory animals. Both chemicals have caused tumors in animals.

Contaminant (units)	Sample Date	Your Water Average	Range Low - High	Health Information
GenX (ppt)	2019	ND	ND	NC DHHS health goal is 140 ppt for GenX
PFOS (ppt)	2019	0.295	ND – 1.60	70 ppt EPA Health Advisory for Total Combined Concentration of PFOA and PFOS
PFOA (ppt)	2019	0.175	ND – 0.937	70 ppt EPA Health Advisory for Total Combined Concentration of PFOA and PFOS
PFBS (ppt)	2019	0.919	ND – 3.11	None
PFBA (ppt)	2019	0.385	ND – 1.40	None
PFHxS (ppt)	2019	1.05	ND – 4.10	None
PFHxA (ppt)	2019	0.107	ND – 0.777	None
PFPeS (ppt)	2019	0.330	ND – 1.37	None
PFPeA (ppt)	2019	0.212	ND – 0.861	None
PFO2HxA* (ppt)	2019	0.183	ND – 1.32	None
PFM0AA* (ppt)	2019	0.126	ND – 1.77	None

* Results obtained using an analytical standard provided by Chemours; not a certified standard.

Source Water Assessment Program (SWAP)

As part of the Source Water Assessment Program (SWAP), the North Carolina Department of Environmental Quality's Public Water Supply Section 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 the Monterey Heights Water System 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:

Source Name	Susceptibility Rating	SWAP Report Date
Well #1	Higher	April 2017
Well #2	Moderate	April 2017
Well #3	Moderate	April 2017
Lords Creek	Lower	April 2017

The complete SWAP Assessment report for Monterey Heights Water System may be viewed on the Web at: www.ncwater.org/?page=600. Note that because SWAP results and reports are periodically updated by the PWS Section, the results available on this web site may differ from the results that were available at the time this CCR was prepared. If you are unable to access your SWAP report on the web, you may mail a written request for a printed copy to: Source Water Assessment Program – Report Request, 1634 Mail Service Center, Raleigh, NC 27699-1634, or email requests to swap@ncdenr.gov. Please indicate the system name and number (Monterey Heights Water System, PWS ID# 04-65-137) 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 at 919-707-9098.

It is important to understand that a susceptibility rating of “higher” does not imply poor water quality, only the system’s potential to become contaminated by PCSs in the assessment area.

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