

# Brunswick County Public Utilities

## WATER QUALITY REPORT 2024



250 Grey Water Road, Supply, NC 28462  
Phone: (910) 253-2657, Option 1  
Email: [utilityadmin@brunswickcountync.gov](mailto:utilityadmin@brunswickcountync.gov)

## Helpful Contact Information

### *Billing Questions*

(910) 253-2655, Option 2

### *Water Emergencies*

8:00 AM to 4:30 PM

(910) 253-2657, Option 1

### *After Hours Emergencies*

4:30 PM – 8:00 AM

(910) 755-7921

(910) 371-3490

(910) 454-0512

### *Northwest Water Treatment Plant*

(910) 371-3490

### *211 Water Treatment Plant*

(910) 454-0512

### *Backflow Prevention Questions*

(910) 253-2457

### *Lead and Copper Questions*

(910) 253-1997

### *EPA Safe Drinking Water Hotline*

(800) 426-4791

## BRUNSWICK COUNTY PUBLIC UTILITIES

is pleased to share its 2024 annual water quality report. Our water system continues to see unprecedented growth and we are proud to serve the wonderful community that we work and live in. Brunswick County Public Utilities (BCPU) has been diligently working to keep water rates stable; in fact, water rates are not increasing this year and have been stable since January of 2022.

During the 2024 calendar year, B C P U staff were recognized for several awards, from water treatment goals to working safely in the distribution system, our staff has worked to make the best water system possible, see the awards section on page 17.

BCPU continues construction of the Low-pressure Reverse Osmosis (LPRO) water treatment addition at the Northwest Water Treatment Plant which, when completed, will be able to meet and/or exceed the requirements of current and future PFAS regulations. LPRO is the most advanced treatment technology available to remove GenX and other contaminants from the water supply. Visit <https://www.brunswickcountync.gov/nwtp> for more information on the LPRO plant addition currently under construction. To sign up for water system updates visit

On the left of this page, please take note of the helpful contact information such as the billing and emergency after-hour phone numbers.

To receive notices on water outages and other County items visit <https://www.brunswickcountync.gov/list.aspx> and select the tabs you prefer.

As always, we are here to serve so please do not hesitate to reach out if you have questions or comments.

Regards,

John Nichols  
Public Utilities Director

Glenn Walker  
Water Resources Manager

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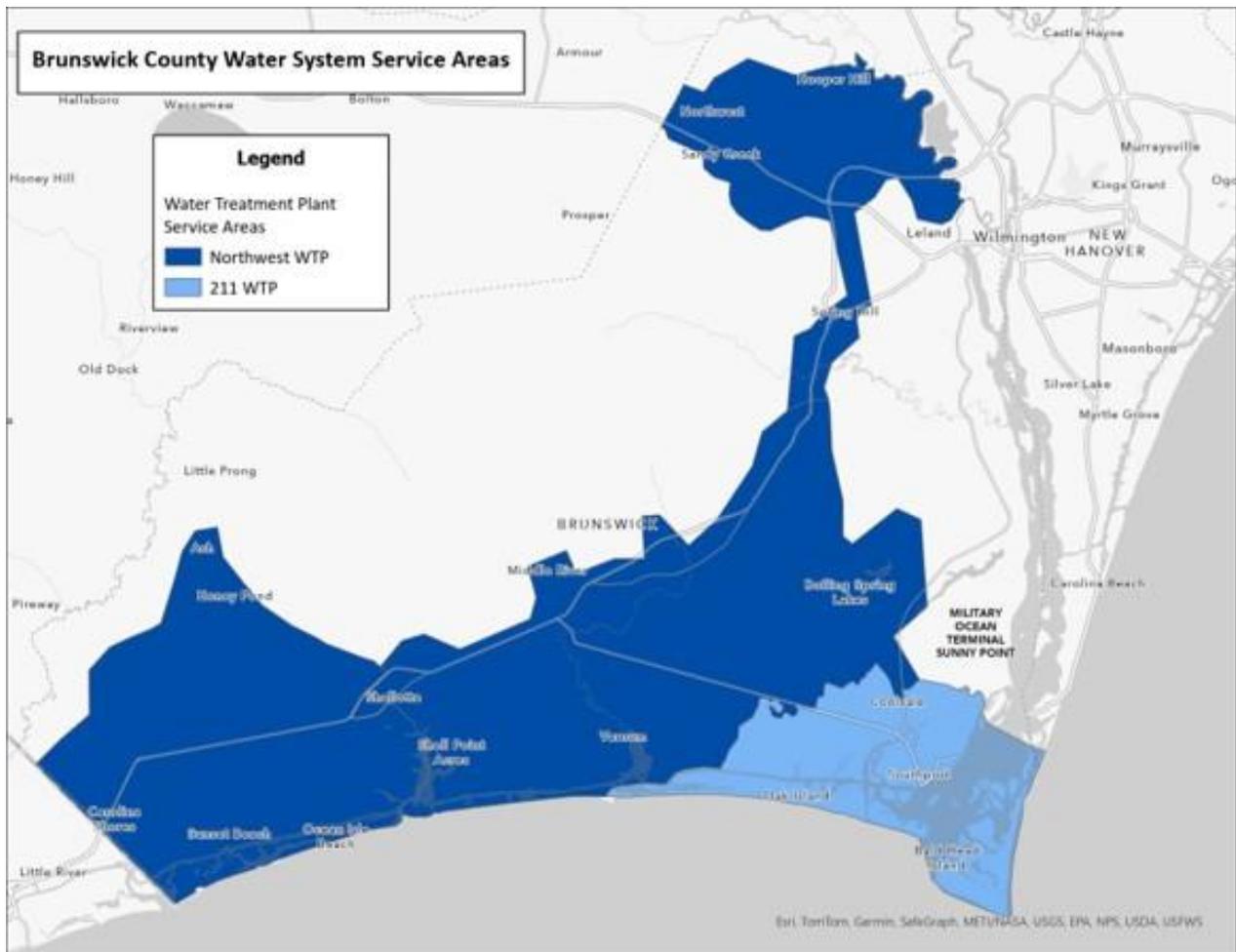
Brunswick County Public Utilities is here to serve you twenty-four (24) hours a day. If you plan to dig, please call 811 or visit [www.NC811.org](http://www.NC811.org) to request utility locates. If you have billing questions, please call Customer Service at 910-253-2655, Option 2. For water quality concerns or questions about the function of your meter, please contact our office at (910) 253-2657, Option 1; we will be glad to work with you to solve any water issues. If you have questions about your backflow device or need it inspected, please call (910) 253-2457.

## FIND YOUR SERVICE AREA

Brunswick County operates two water treatment plants (WTP); the Northwest WTP and the Highway 211 WTP, commonly referred to as the 211 WTP. The Northwest WTP is a 24 million gallon per day (MGD) surface water treatment plant that treats raw water from the Cape Fear River. The 211 WTP is a 6 MGD groundwater water treatment plant that sources its water from groundwater wells.

The data tables on pages 12 through 19 provide water quality data for the two water treatment plants. Water customers\* receive either all or part of their drinking water from the Northwest WTP. Within the Southport, St. James, Oak Island, and Caswell Beach areas, drinking water is a blend from the Northwest WTP and the 211 WTP to serve customers. Bald Head Island has its own treatment plant, but supplementary water is supplied by the Utility. All other customers in the County receive their water solely from the Northwest WTP.

\*As of December 2024, Brunswick County's current wholesale customers include Bald Head Island, Holden Beach, Oak Island, and Ocean Isle Beach.



### QUICK FACTS!

The total Brunswick County water system capacity is 30 MGD  
The greatest one-day system demand in 2024 was 27.42 MGD on May 13th

# NORTHWEST WATER TREATMENT PLANT

The Northwest WTP takes water from the Cape Fear River above Lock and Dam #1 in Bladen County through a contract with Lower Cape Fear Water and Sewer Authority (LCFWASA). Brunswick County Public Utilities, Cape Fear Public Utility Authority, and Pender County Public Utilities are all customers of LCFWASA. Brunswick County Public Utilities is the contract operator of the raw water pump station at LCFWASA.

Area Wide Optimization Program (AWOP): The Northwest WTP participates in this program designed to optimize water system operations and water quality by closely monitoring filter effluent turbidity and microbial results in the WTP. NCDEQ and the EPA have established a turbidity goal of <0.10 ntu, this is one third of the mandated 0.3 ntu required by the Safe Drinking Water Act. The water treatment plant has met this goal six out of the last nine years.

Northwest WTP Expansion Update: Brunswick County Public Utilities continues to work with CDM Smith to advance the construction of needed water treatment plant improvements for the removal of PFAS contaminants. Oscar Renda Contracting company is currently working on upgrades and plant construction. Major elements include expansion of the existing treatment process from 24 MGD to 48 MGD and the addition of 36 MGD minimum of LPRO plus the necessary ancillary equipment to ensure it all works together. More detailed information about the LPRO design, water quality results, and steps we are taking to secure our water future can be found on the Brunswick County website at: <https://www.brunswickcountync.gov/583/Gen-X-PFAS-Information>. Pictured below is an updated overhead shot of the construction site.



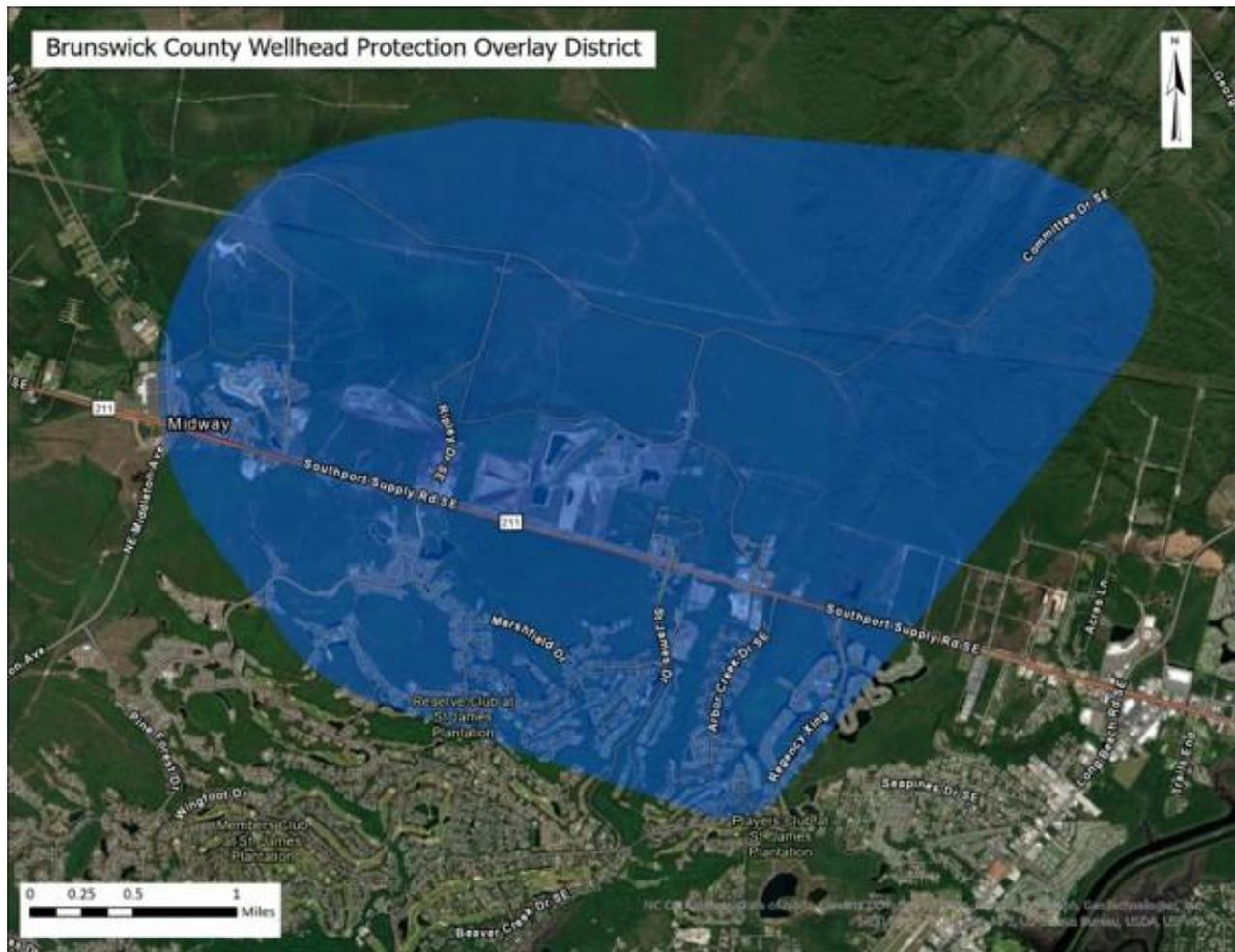
Brunswick County was recognized nationally as a 2024 honoree by the Water Environment Federation as being a Water Resources Utility of the Future Today for its success at Partnering and Engagement.

## 211 WATER TREATMENT PLANT

The 211 Water Treatment Plant is a 6 MGD groundwater treatment plant. The raw water is sourced from 14 water supply wells drilled to approximately 175 feet into the Castle Hayne Aquifer. The facility utilizes a lime softening process to remove excess calcium and iron from the well water.

The Brunswick County Planning Department and County Utilities Staff have developed a Wellhead Protection Area (WPA) Overlay Zoning District. This district can be seen on the map below. The purpose of the WPA overlay district is to protect public water supply wells in the area by minimizing man-made impacts to the soils above the aquifer. For more information on Wellhead Protection please visit

<https://www.deq.nc.gov/about/divisions/water-resources/drinking-water/drinking-water-protection-program>.



### STAFF UPDATES!

Congratulations to Tracy Flack for attaining his B-Well Water Treatment certification, Kenny Revels and Jason Ashcroft for attaining their A-Surface Water Treatment certification, and Billy Benton and Phil McCulloch for attaining their RO Specialist certification.

# WATER SYSTEM AWARDS

**BCPU has been very active in 2024, and the state water quality associations have taken notice!**



## **Utility of the Future Today Award**

Presented by Water Environment Federation “ the water quality people”



## **Source Water Protection Award of Excellence**

The N.C. Source Water Collaborative presents a Groundwater Planning to Brunswick County

*In recognition of initiatives to protect North Carolina’s drinking water and the watersheds that support it through their **Brunswick County Wellhead Protection Ordinance** project.*



## **Water Distribution System of the Year\***

*In recognition of protecting health and the environment through pro-active practices of management, operations, and maintenance beyond minimum standards.*



## **Water Distribution Operator of the Year: Cody Knox**

*In recognition of outstanding contributions to the successful operation and maintenance of water distribution systems.*



## **Disaster Preparedness Award**

*In acknowledgement of outstanding achievements in advancing disaster preparedness initiatives and thereby strengthening our preparedness.*

\*Brunswick County Public Utilities has won WATER DISTRIBUTION SYSTEM OF THE YEAR six times!

## WATER QUALITY IN THE HOME

Remove and flush faucet aerators regularly: This helps to keep debris such as pipe solder and sediment from clogging aerator screens, as well as provide the best quality water possible.

What about Home Filtration Systems? Brunswick County Public Utilities does *not* recommend whole house filtration systems when connected to public water as systems like whole-house filtration can remove the disinfectant levels in water and may lead to significant water waste. The removal of disinfection chemicals in turn will allow bacteria to grow in your household plumbing. If you must use a filtration system purchase one that goes “under the counter”, attaches to the kitchen faucet, or is a part of your refrigerator. This allows the disinfected water to remain in the plumbing system, preventing bacterial growth.

## WAYS YOU CAN CONSERVE WATER

### **Brunswick County Public Utilities asks that you use water wisely.**

By following the recommendations outlined below, you may be able to reduce the amount of water you use and save money on your water bill.

Irrigate during off-peak hours: Peak demand for water is between 5:00 a.m. to 10:00 a.m. and 4:00 p.m. to 7:00 p.m. If irrigation is necessary, irrigate during off peak times. This will help to ensure proper water pressure for more efficient irrigation.

Reduce irrigation frequency: For established lawns, daily irrigation is not required. Irrigate every other day and only when there is no moisture in the root zone.

Irrigate on days based on your address: Brunswick County Public Utilities has established irrigation policies that affect everyone during times of drought, water shortages and emergencies. It is recommended that you set your irrigation system now to match the County’s water shortage response requirements. You will more than likely save money on your water bill and lessen the chance of over-irrigating your lawn.

- If your home has an **odd** numbered address: You should irrigate on Tuesday-Thursday-Saturday
- If your home has an **even** numbered address: You should irrigate on Wednesday-Friday-Sunday
- Please, no irrigation on **Mondays**: This is a high demand day, and your irrigation system may not function properly due to low available water pressure.

When purchasing new or replacement appliances and faucets: Look for the Energy Star compliant symbol and the EPA’s Water Sense symbol. These ensure the appliances are both energy and water efficient.



# ***2024 Annual Drinking Water Quality Report*** ***Brunswick County Water System***

Water System Number: NC-04-10045

We are pleased to present to you this year's Annual Drinking Water Quality Report. This report is a snapshot of last year's water quality. Included are details about your source(s) of water, what it contains, and how it compares to standards set by regulatory agencies. Our constant goal is to provide you with a safe and dependable supply of drinking water. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources. We are committed to ensuring the quality of your water and to providing you with this information because informed customers are our best allies. **If you have any questions about this report or concerning your water, please contact [Glenn Walker](#) at [\(910\) 371-3490](#). We want our valued customers to be informed about their water utility.**

## **What EPA Wants You to Know**

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

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material, and can pick up substances resulting 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 sewage treatment plants, septic systems, agricultural livestock operations, and wildlife; inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming; 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 by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems; and radioactive contaminants, which can be naturally-occurring or be the result of oil and gas production and mining activities.

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

## **When You Turn on Your Tap, Consider the Source**

The water that is used by this system is obtained from two sources. The majority (80%) is surface water from the Cape Fear River, above Lock and Dam #1 in Bladen County. The remaining (20%) is groundwater obtained from the Castle Hayne Aquifer, from a well field along the Hwy 211 corridor near Southport.

## **Source Water Assessment Program (SWAP) Results**

The North Carolina Department of Environmental Quality (DEQ), Public Water Supply (PWS) Section, Source Water Assessment Program (SWAP) conducted assessments for all drinking water sources across North Carolina. The purpose of the assessments was to determine the susceptibility of each drinking water source (well or surface water intake) to Potential Contaminant Sources (PCSs).

The results of the assessment are available in SWAP Assessment Reports that include maps, background information and a relative susceptibility rating of Higher, Moderate or Lower.

The relative susceptibility rating of each source for Brunswick County 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:

<b>Source Name</b>	<b>Susceptibility Rating</b>	<b>SWAP Report Date</b>
Cape Fear River	Moderate	Sept. 10, 2020
Well #1, 2, 15, 16, 17	Lower	Sept. 10, 2020
Well #3, 8, 11, 12, 12A, 18, 19	Moderate	Sept. 10, 2020
Well # 5, 6A	Higher	Sept. 10, 2020

The complete SWAP Assessment report for the Brunswick County Water System may be viewed on the Web at: <https://www.ncwater.org/?page=600> Note that because SWAP results and reports are periodically updated by the PWS Section, the results available on this website 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@deq.nc.gov](mailto:swap@deq.nc.gov). Please indicate your system name, number, and provide your name, mailing address and phone number. If you have any questions about the SWAP report, please contact the Source Water Assessment staff by phone at (919) 707-9098.

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

## **Help Protect Your Source Water**

Protection of drinking water is everyone’s responsibility. Why does source water need protection? The converging of the Haw and Deep Rivers form the Cape Fear. Our water starts its journey above Greensboro. This means any discharge or spill upstream could significantly impact our drinking water downstream. We have implemented the following source water protection actions:

On October 21, 2024, Brunswick County Public Utilities participates in collaborative efforts with the Lower Cape Fear Water and Sewer Authority (LCFWSA), Cape Fear Public Utility Authority (CFPUA), and Pender County Utilities (PCU) completed the Lower Cape Fear Regional Source Water Protection Plan (PLAN). The primary objective of the PLAN is to identify potential contamination threats to the source water intake area and develop strategies to diminish each threat found. The members of the group meet generally on a quarterly frequency to continue planning and report on accomplishments of action items and outreach efforts. These coordinated actions serve to accomplish the primary mission of providing safe drinking water for the Lower Cape Fear Region users.

You can help protect your community’s drinking water sources in several ways: dispose of chemicals properly; take used motor oil to a recycling center, volunteer in your community to participate in group efforts to protect your source.

## Violations that Your Water System Received for the Report Year

During 2024, or during any compliance period that ended in 2024, we received a monitoring violation that covered the time period of January through June 2024. We collected the missed samples after recognizing the mistake and have adopted additional oversight measures to prevent this from happen again. Refer to the following section for additional information about these monitoring violations.

**Public Water Systems 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 contaminants 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 TAKEN (Returned to Compliance)
(WQP) ALKALINITY, TOTAL	SO1	JAN. 1, 2024	1- MONTHLY	Feb 2024
(TOC) CARBON, TOTAL	SO1 – EO1	JAN. 1, 2024	1- MONTHLY	Feb 2024
(CD) CDS FOR DBP	BO1 - BO8	JAN. 1, 2024	8 - QUARTERLY	June 2024

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

**(TOC) - Total Organic Carbon** - includes testing for Alkalinity, Dissolved Organic Carbon (DOC), Total Organic Carbon (TOC) and Ultraviolet

**(WQP) Water Quality Parameters** (for Lead and Copper Rule) - includes Calcium, Orthophosphate (as PO<sub>4</sub>), Silica, Conductivity, pH, Alkalinity and Water Temperature.

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

**What is being done?** A TOC sample was collected in the month following the missed sample event (February 2024) to bring the water treatment plant into compliance. The disinfection byproduct sample was collected in February 2024 and the next required month of June 2024. **These monitoring violations were also reported in Brunswick County’s 2023 CCR, satisfying the public notice requirement.** Since the violations occurred within the 2024 calendar year, regulations require them to be posted within the 2024 CCR also.

For more information about this violation, please contact the person responsible listed in the first paragraph of this report.

### **Important Drinking Water Definitions:**

- **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 (nanograms/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.
  - **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.
  - **Variances and Exceptions** – State or EPA permission not to meet an MCL or Treatment Technique under certain conditions.
  - **Action Level (AL)** - The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
  - **Treatment Technique (TT)** - A required process intended to reduce the level of a contaminant in drinking water.
  - **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.
  - **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.
  - **Running Annual Average (RAA)** – The average of sample analytical results for samples taken during the previous four calendar quarters.
  - **Level 1 Assessment** - *A Level 1 assessment is a study of the water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in our water system.*
  - **Level 2 Assessment** - *A Level 2 assessment is a very detailed study of the water system to identify potential problems and determine (if possible) why an E. coli MCL violation has occurred and/or why total coliform bacteria have been found in our water system on multiple occasions.*
  - **Maximum Contaminant Level (MCL)** - The highest level of 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.
- 

## Water Quality Data Tables of Detected Contaminants

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, 2024.** 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.

### Lead and Copper Contaminants

Contaminant (units)	Sample Date	Your Water (90th Percentile)	Number of sites found above the AL	Range Low High	MCLG	AL	Likely Source of Contamination
Copper (ppm) (90th percentile)	6/1/2023 to 9/30/23	0.1872	0	0.05 - 0.296	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits
Lead (ppb) (90th percentile)	6/1/2023 to 9/30/23	N/D	1	N/D - 68.0	0	AL=15	Corrosion of household plumbing systems; erosion of natural deposits

The table above summarizes our most recent lead and copper tap sampling data. If you would like to review the complete lead tap sampling data, please email us at [lead.copper@brunswickcountync.gov](mailto:lead.copper@brunswickcountync.gov) or contact Allyssa Olmstead with Brunswick County Public Utilities, 910-253-1997.

We have been working to identify service line materials throughout the water system and prepared an inventory of all service lines in our water system. To access this inventory, <https://www.brunswickcountync.gov/589/Lead-Copper>. As of October 2024, BCPU was designated as a **NON-LEAD** system, meaning that there have been no lead lines found in physical inspections, and it is statistically unlikely that any yet unverified line would be made of lead material.

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. Brunswick County Public Utilities is responsible for providing high quality drinking water and removing lead pipes, but cannot control the variety of materials used in plumbing components in your home. You share the responsibility for protecting yourself and your family from the lead in your home plumbing. You can take responsibility by identifying and removing lead materials within your home plumbing and taking steps to reduce your family's risk. Before drinking tap water, flush your pipes for several minutes by running your tap, taking a shower, doing laundry or a load of dishes. You can also use a filter certified by an American National Standards Institute accredited certifier to reduce lead in drinking water. If you are concerned about lead in your water and wish to have your water tested, contact Allyssa Olmstead, Brunswick County Public Utilities, 910-253-1997. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available at <http://www.epa.gov/safewater/lead>.

### Total Trihalomethanes (TTHM) and Haloacetic Acids (five) (HAA5)

Disinfection Byproduct	Year Sampled	MCL Violation Y/N	Your Water	Range Low High	MCLG	MCL	Likely Source of Contamination
TTHM (ppb)	2024	N	50	23-50	N/A	80	Byproduct of drinking water disinfection
HAA5 (ppb)	2024	N	34	25-34	N/A	60	Byproduct of drinking water disinfection

### Other Disinfection Byproducts Contaminants

Contaminant (units)	MCL Violation Y/N	Your Water	Range Low High	MCLG	MCL	Likely Source of Contamination
Bromate (ppb)	N/A	N/A	N/A	0	10	Byproduct of drinking water disinfection
Chlorite (ppm)	N	0.51	0.31- 0.55	0.8	1	Byproduct of drinking water chlorination

### Disinfectant Residuals Summary

	MRDL Violation Y/N	Your Water (RAA)	Range Low High	MRDLG	MRDL	Likely Source of Contamination
Chlorine (ppm)	N	2.24	0 - 3.43	4	4	Water additive used to control microbes
Chloramines (ppm)	N	2.21	0.03 - 3.29	4	4	Water additive used to control microbes
Chlorine dioxide (ppb)	N	N/A	420 - 510	800	800	Water additive used to control microbes

### Inorganic Contaminants

Contaminant (units)	Sample Date	MCL Violation Y/N	Your Water	Range Low High	MCLG	MCL	Likely Source of Contamination
Fluoride (ppm)	9/23/2024	N	0.63	N/A	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories

*Fluoride was the only target Inorganic contaminant identified concentrations above the Lab Method detection limit.*

### Nitrate/Nitrite Contaminants

Contaminant (units)	Sample Date	MCL Violation Y/N	Your Water	Range Low High	MCLG	MCL	Likely Source of Contamination
Nitrate (as Nitrogen) (ppm)	11/4/24	N	1.6	N/A	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits

### Synthetic Organic Chemical (SOC) Contaminants Including Pesticides and Herbicides

Contaminant (units)	Sample Date	MCL Violation Y/N	Your Water	Range		MCLG	MCL	Likely Source of Contamination
				Low	High			
All contaminants tested	6/18/24	N	ND					Industrial and agricultural chemicals

*There were no target SOC contaminants identified at concentrations above the Lab Method detection limit.*

### Volatile Organic Chemical (VOC) Contaminants

Contaminant (units)	Sample Date	MCL Violation Y/N	Your Water	Range		MCLG	MCL	Likely Source of Contamination
				Low	High			
All contaminants tested	9/3/24	N	ND					Industrial and petroleum chemicals

*There were no target VOC contaminants identified at concentrations above the Lab Method detection limit.*

### Turbidity

Contaminant (units)	Treatment Technique (TT) Violation Y/N	Your Water	MCLG	Treatment Technique (TT) Violation if:	Likely Source of Contamination
Turbidity (NTU) - Highest single turbidity measurement	N	0.21 NTU	N/A	Turbidity > 1 NTU	Soil runoff
Turbidity (%) - Lowest monthly percentage (%) of samples meeting turbidity limits	N	100%	N/A	Less than 95% of monthly turbidity measurements are $\leq$ 0.3 NTU	

\* 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.

### Total Organic Carbon (TOC)

Contaminant (units)	TT Violation Y/N	Your Water (lowest RAA)	Range Monthly Removal Ratio Low - High	MCLG	Treatment Technique (TT) violation if:	Likely Source of Contamination
Total Organic Carbon (TOC) Removal Ratio (no units)	N	1.12	1.12-1.49	N/A	Removal Ratio RAA <1.00 and alternative compliance criteria was not met	Naturally present in the environment

### Microbiological Contaminants in the Distribution System

Contaminant (units)	MCL Violation Y/N	Number of Positive/Present Samples	MCLG	MCL	Likely Source of Contamination
<i>E. coli</i> (presence or absence)	N	0	0	Routine and repeat samples are total coliform-positive and either is <i>E. coli</i> -positive or system fails to take repeat samples following <i>E. coli</i> -positive routine sample or system fails to analyze total coliform-positive repeat sample for <i>E. coli</i>  <u>Note:</u> If either an original routine sample and/or its repeat samples(s) are <i>E. coli</i> positive, a Tier 1 violation exists.	Human and animal fecal waste

***There were no E.Coli-Positive sample results for 2024.***

### Unregulated Contaminants

Contaminant (units)	Sample Date	Your Water (average)	Range	
			Low	High
1,4 Dioxane (ppb)	12/19/24	0.69	0.12	8.39

Our water system has sampled for a series of unregulated contaminants. Unregulated contaminants are those for which EPA has not established drinking water standards. 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. If you are interested in examining the results, please contact us at [kenny.revels@brunswickcountync.gov](mailto:kenny.revels@brunswickcountync.gov).

The PWS Section requires monitoring for other misc. contaminants, some for which the EPA has set national secondary drinking water standards (SMCLs) because they may cause cosmetic effects or aesthetic effects (such as taste, odor, and/or color) in drinking water. The contaminants with SMCLs normally do not have any health effects and normally do not affect the safety of your water.

### Other Miscellaneous Water Characteristics Contaminants

Contaminant (units)	Sample Date	Your Water	Range		SMCL
			Low	High	
Iron (ppm)	9/23/24	0.01	0.0	0.07	0.3
Hardness	9/23/24	28.07	26.0	43.0	N/A
Manganese (ppm)	9/23/24	0.02	0.01	0.13	0.05
Sodium (ppm)	9/23/24	19.4	N/A		N/A
pH	9/23/24	7.67	7.0	8.8	6.5 to 8.5

## Additional Monitoring of Other Contaminants

Unregulated contaminants are those which the EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist the EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulations are warranted. The EPA website (<https://www.epa.gov/sdwa>) may provide additional information.

Unregulated Contaminant Monitoring Rule 5 (UCMR 5) sampling at Northwest WTP and 211 WTP was completed in calendar year 2023. For more information on UCMR 5 please visit: [https:// www.epa.gov/dwucmr/fifth-unregulated-contaminant-monitoring-rule](https://www.epa.gov/dwucmr/fifth-unregulated-contaminant-monitoring-rule).

### Voluntary Sampling - PFAS RESULTS FOR 2024

All Results in Parts Per Trillion (ppt)

52 Samples (weekly intervals) for 2024

PFAS Substances	EPA MCL	EPA MCLG	Brunswick Co. Average	Low	High	Violation Y/N	Likely Source of Contamination
PFPrA	Non-Regulated	N/A	2.518	0	10.1	N	By-Product of Chemical Manufacturer
PFBA	Non-Regulated	N/A	2.358	0	19.9	N	By-Product of Chemical Manufacturer
PFPeA	Non-Regulated	N/A	5.697	2.31	12.2	N	By-Product of Chemical Manufacturer
PFHxA	Non-Regulated	N/A	5.4	2.27	10.6	N	By-Product of Chemical Manufacturer
PFHpA	Non-Regulated	N/A	2.404	1.11	3.9	N	By-Product of Chemical Manufacturer
PFOA	Non-Regulated	N/A	4.936	2.1	8.32	N	By-Product of Chemical Manufacturer
PFNA	Non-Regulated	N/A	0.599	0	0.989	N	By-Product of Chemical Manufacturer
PFDA	Non-Regulated	N/A	0.046	0	0.569	N	By-Product of Chemical Manufacturer
PFUnDA	Non-Regulated	N/A	0.026	0	0.163	N	By-Product of Chemical Manufacturer
PFDoDA	Non-Regulated	N/A	0	0	0	N	By-Product of Chemical Manufacturer
PFTTrDA	Non-Regulated	N/A	0.011	0	0.583	N	By-Product of Chemical Manufacturer
PFTeDA	Non-Regulated	N/A	0	0	0	N	By-Product of Chemical Manufacturer
PFHxDA	Non-Regulated	N/A	0.001	0	0.0313	N	By-Product of Chemical Manufacturer
PFBS	Non-Regulated	N/A	3.719	1.62	7.52	N	By-Product of Chemical Manufacturer
PFPeS	Non-Regulated	N/A	0.528	0.22	1.15	N	By-Product of Chemical Manufacturer
PFHxS	Non-Regulated	N/A	3.231	0.979	6.05	N	By-Product of Chemical Manufacturer
PFHpS	Non-Regulated	N/A	0.123	0	0.277	N	By-Product of Chemical Manufacturer
PFOS	Non-Regulated	N/A	9.696	3.7	16.4	N	By-Product of Chemical Manufacturer
PFNS	Non-Regulated	N/A	0.003	0	0.163	N	By-Product of Chemical Manufacturer
PFDS	Non-Regulated	N/A	0.003	0	0.163	N	By-Product of Chemical Manufacturer

<b>PFAS Substances</b>	<b>EPA MCL</b>	<b>EPA MCLG</b>	<b>Brunswick Co. Average</b>	<b>Low</b>	<b>High</b>	<b>Violation Y/N</b>	<b>Likely Source of Contamination</b>
4:2 FTS	Non-Regulated	N/A	0.003	0	0.163	N	By-Product of Chemical Manufacturer
6:2FTS	Non-Regulated	N/A	0.164	0	0.75	N	By-Product of Chemical Manufacturer
8:2 FST	Non-Regulated	N/A	0.003	0	0.163	N	By-Product of Chemical Manufacturer
10:2FTS	Non-Regulated	N/A	0.003	0	0.163	N	By-Product of Chemical Manufacturer
PFOSA	Non-Regulated	N/A	0.011	0	0.163	N	By-Product of Chemical Manufacturer
N-MeFOSAA	Non-Regulated	N/A	0.004	0	0.163	N	By-Product of Chemical Manufacturer
N-EtFOSAA	Non-Regulated	N/A	0.003	0	0.163	N	By-Product of Chemical Manufacturer
HFPO-DA	Non-Regulated	N/A	2.878	0	6.81	N	By-Product of Chemical Manufacturer
PFMOAA	Non-Regulated	N/A	15.41	0	36.1	N	By-Product of Chemical Manufacturer
PFMOPrA	Non-Regulated	N/A	0.004	0	0.272	N	By-Product of Chemical Manufacturer
PFO2HxA	Non-Regulated	N/A	2.599	0	8.17	N	By-Product of Chemical Manufacturer
PFO3OA	Non-Regulated	N/A	0.2788	0	1.59	N	By-Product of Chemical Manufacturer
PFO4DA	Non-Regulated	N/A	0.1086	0	2.78	N	By-Product of Chemical Manufacturer
Nafion Byproduct 1	Non-Regulated	N/A	0.01	0	0.195	N	By-Product of Chemical Manufacturer
9Cl-PF3ONS	Non-Regulated	N/A	0.0031	0	0.163	N	By-Product of Chemical Manufacturer
11Cl-PF3OUdS	Non-Regulated	N/A	0.0031	0	0.163	N	By-Product of Chemical Manufacturer
EVE Acid	Non-Regulated	N/A	0.0032	0	0.163	N	By-Product of Chemical Manufacturer
FBSA	Non-Regulated	N/A	0.3573	0.0292	1.12	N	By-Product of Chemical Manufacturer
HFPO-DA	Non-Regulated	N/A	3.695	0.644	15.3	N	By-Product of Chemical Manufacturer
Hydro-EVE Acid	Non-Regulated	N/A	0.0662	0	0.631	N	By-Product of Chemical Manufacturer
Hydrolyzed PSDA	Non-Regulated	N/A	1.689	0	8.34	N	By-Product of Chemical Manufacturer
Nafion Byproduct 2	Non-Regulated	N/A	0.2192	0	0.601	N	By-Product of Chemical Manufacturer
N-EtFOSA	Non-Regulated	N/A	0.00319	0	0.163	N	By-Product of Chemical Manufacturer
N-EtFOSE	Non-Regulated	N/A	0.00319	0	0.163	N	By-Product of Chemical Manufacturer
NFDHA	Non-Regulated	N/A	0.0031	0	0.163	N	By-Product of Chemical Manufacturer
N-MeFOSA	Non-Regulated	N/A	0.00319	0	0.163	N	By-Product of Chemical Manufacturer
NVHOS	Non-Regulated	N/A	0.0123	0	0.467	N	By-Product of Chemical Manufacturer

<b>PFAS Substances</b>	<b>EPA MCL</b>	<b>EPA MCLG</b>	<b>Brunswick Co. Average</b>	<b>Low</b>	<b>High</b>	<b>Violation Y/N</b>	<b>Likely Source of Contamination</b>
PEPA	Non-Regulated	N/A	1.79	0.163	6.24	N	By-Product of Chemical Manufacturer
PFECA-G	Non-Regulated	N/A	0.0031	0	0.163	N	By-Product of Chemical Manufacturer
PFEESA	Non-Regulated	N/A	0.0031	0	0.163	N	By-Product of Chemical Manufacturer
PFMOBA	Non-Regulated	N/A	0.0109	0	0.396	N	By-Product of Chemical Manufacturer
PFO5DA	Non-Regulated	N/A	0.1671	0	6.3	N	By-Product of Chemical Manufacturer
PMPA	Non-Regulated	N/A	5.486	0	13	N	By-Product of Chemical Manufacturer
R-EVE Acid	Non-Regulated	N/A	5.276	0	48.1	N	By-Product of Chemical Manufacturer
R-PSDA	Non-Regulated	N/A	3.745	0	40.1	N	By-Product of Chemical Manufacturer
R-PSDCA	Non-Regulated	N/A	0.0031	0	0.163	N	By-Product of Chemical Manufacturer