



# County of Brunswick Water Quality Report–2021

## IMPORTANT PHONE NUMBERS

**BILLING QUESTIONS**  
(910) 253-2655 Option 2

**WATER EMERGENCIES**  
8:00 a.m. to 4:30 p.m.  
(910) 253-2657 Option 1

**AFTER HOURS**  
4:30 p.m. to 8:00 a.m.

**Northwest WTP**  
(910) 371-3490  
**211 WTP**  
(910) 454-0512  
**Alternate**  
(910) 755-7921

**EPA SAFE DRINKING WATER HOTLINE**  
1-800-426-4791

**SOURCE WATER ASSESSMENT**  
Page 3

**Water Treatment Plant Updates**  
Pages 4 – 5

**Water Quality**  
Pages 6-9

**LEAD in Drinking Water**  
Page 9

Brunswick County Public Utilities is pleased to share its 2021 annual water quality report. Our water system has enjoyed unprecedented growth over the past several years and we are proud to serve the wonderful community that we work and live in. Brunswick County Public Utilities has met and/or exceeded all water quality standards. Our dedicated staff continually tests water from the source to your tap to ensure its quality. During the 2021 calendar year staff sampled for over 200 constituents in the water supply. Some of the constituents tested for are considered “emerging contaminants” and are not regulated by the EPA or the state. These newly discovered compounds, such as GENX and other Perfluoroalkyl Substances (PFAS), are garnering more attention by regulators and our citizens. The EPA is working towards promulgating regulations for PFAS, but experts continue to indicate that it may take years before enforceable standards are available. However, Brunswick County Public Utilities continues to move forward and oversee the construction of a Low-Pressure Reverse Osmosis (LPRO) water treatment addition to the Northwest Water Treatment Plant. Thank you to our Board of Commissioners and our citizens for standing up and speaking out to protect our drinking water. LPRO is the most advanced treatment technology available to remove GENX and other unregulated contaminants from our water supply. See the link below for more information on the LPRO plant addition currently under construction. <https://www.brunswickcountync.gov/nwtp/> Information on PFAS, 1,4 Dioxane, and other contaminants are available on EPA’s Web site at: <https://www.epa.gov/pfas> and at <https://www.epa.gov/dwucmr/learn-about-unregulated-contaminant-monitoring-rule>.

So, moving forward throughout our report this year please take note of our billing phone number and emergency after hours phone numbers, and on pages 6 through 9 has our water quality data compiled for all of 2021. Page 10 &11 has water-saving tips and the best times to irrigate your lawn.

As always, we are here to serve so please reach out if you have questions, or comments.

Regards,

John Nichols, Director of Public Utilities

Glenn Walker, Water Resources Manager



# Brunswick County Water Quality Report 2021 Continued:

**COVID-19 Utility Response-** Our water treatment plants are designed to destroy and remove bacteria and viruses from the water supply. The EPA’s surface water treatment rule mandated that all community surface water treatment systems demonstrate at least a 4-log removal for viruses, that equals 99.99% removal. Brunswick County Utilities had instituted several staffing changes to lessen our potential to exposure to COVID-19. Field crews met directly at the jobsites while only their foremen were obtaining parts at the warehouse, and rigorous cleaning with disinfectants at all facilities took place daily. We are now monitoring CDC guidance and information from our local health department for future protocols.

The Brunswick County Public Utilities Department would like to let you know that we are here to serve you 24 hours a day. If you plan to dig, then call 811 or log on to <[www.NC811.org](http://www.NC811.org)> to request utility locates. If you have billing questions, call Customer Service at 910-253-2655 Option 2. If you have 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, we can help – please call (910) 253-2683.

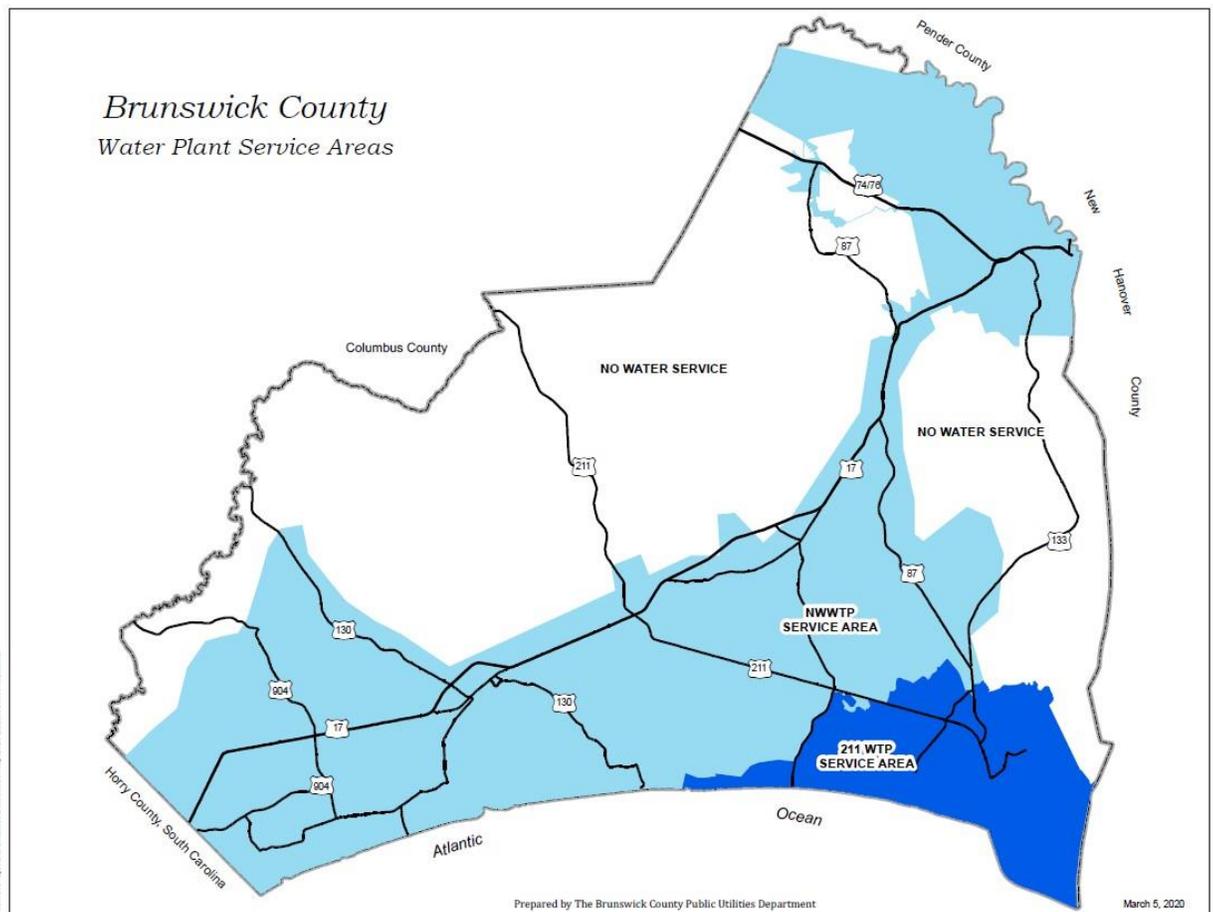
**Interesting Facts:**

Total Brunswick County Water System Capacity: 30 MGD

The Greatest One Day System Demand of the Year for 2021 was 28.598 million gallons (MGD) on May 28, 2021

## Find Your Service Area

Brunswick County operates two water treatment plants; the 24 million gallon per day Northwest WTP that treats raw water from the Cape Fear River and the 6 million gallon per day groundwater 211 WTP. The three data tables on pages 6,7,8, & 9 provide water quality data for the two water treatment plants and the distribution system. Customers in the area of HWY 211 near the towns of St. James, Southport, and Oak Island primarily receive water from the 211 WTP or, at times, blended water from both plants. Bald Head Island has its own treatment plant, but supplementary water is supplied by the 211 WTP, or blended water. All other customers receive water from the Northwest WTP.





# Brunswick County Water Quality Report 2021 Continued:

## Sources of Drinking Water

**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, *radioactive material*, and can pick up substances resulting from the presence of animals or from human activity. Contaminants are anything in the water other than the water molecule. Contaminants that may be present in source water include *microbial contaminants*, such as viruses and bacteria, which may come from wildlife, sewage treatment plants, septic systems, and agricultural livestock operations; *inorganic contaminants*, such as salts and metals, which can be naturally occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, *radioactive material* from oil and gas production, mining, or farming; *pesticides and herbicides*, which typically come from agricultural operations; and *chemicals*, which are often by-products of industrial processes.

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.

## The NC Source Water Assessment Program (SWAP)

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 most recent assessment findings (September 2020) are summarized in the table below.

**Susceptibility of Sources to Potential Contaminant Sources (PCSs)**

Source Name	Susceptibility Rating	SWAP Report Date
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 by typing the following address into your browser <<https://www.ncwater.org/?page=600>> then enter 0410045. To obtain a printed copy of this report please contact the Source Water Assessment Staff by phone at (919) 707-9098.

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



## Brunswick County Water Quality Report 2021 Continued:

### 211 Water Treatment Plant



Recently Completed Laboratory and Office Space

The 211 Water Treatment Plant is a six (6) million gallon a day groundwater treatment plant. The raw water is sourced from fourteen (14) production 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. Recently the plant has completed an upgrade to the filtration system and rehabilitated several production wells. We would like to Congratulate operators Jesse Burgess and Bryan Morris for attaining their B-Well Water Treatment Certification. The facility would like to welcome Kenny Revels as Chief Water Plant Operator, Cliff Horn and Joshua Lopez as new water treatment operators.

### 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). LCFWASA is expanding capacity in order to meet the area's demand for surface water. Brunswick County Public Utilities, Cape Fear Public Utilities and Pender County Public Utilities are all customers of LCFWASA. Brunswick County Public Utilities is the contract operator of the raw water pump station for LCFWASA.

**Area Wide Optimization Program (AWOP):** The Northwest WTP participates in this program designed to maximize water system operations and water quality by closely monitoring filter effluent turbidity and microbial results in the WTP. NC-DEQ and the EPA has established a turbidity goal of <math><0.10</math> ntu, this is one third of the mandated 0.3 ntu required by the Safe Drinking Water Act.

**Staff Certifications:** Congratulations to Cas Bowen and Nicholas Woolford for attaining the B-Surface Water Treatment certification, Phillip McCulloch for receiving his grade 1 Physical/Chemical certification, and to Kywan Wilkins and D'Anthony Ross on receiving AWWA Maintenance Technician certifications.

**Northwest WTP Expansion Update:** Brunswick County Public Utilities continues to work with CDM Smith and Oscar Renda Contracting to advance the construction of needed water treatment plant improvements for the removal of PFAS contaminants. Oscar Renda Contracting is currently building rapidmix, filter, equalization tank, and LPRO structures. The rapid mix and filter structures will give the facility more treatment capacity in the near term while the LPRO will give us better water quality for the long term. Major elements are: expansion of the existing treatment process from 24 million gallons a day (MGD) to 48 MGD and the addition of 36 MGD Low Pressure Reverse Osmosis (LPRO) plus the necessary ancillary equipment to ensure it all works together. The project will be capable of producing water treated by the Low Pressure Reverse Osmosis System in the Fall of 2023 and the entire project is scheduled for completion by January 2024. 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 Web site: <<http://www.brunswickcountync.gov/genx/>>.



## Brunswick County Water Quality Report 2021 Continued:



To our left, overhead picture of new construction at NWTP

Pictured below is overhead shot of the reverse osmosis construction .





# Brunswick County Water Quality Report 2021 Continued:

## Water Quality Results for 2021

### Terms & abbreviations used in the tables below:

- ❖ **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 and are non-enforceable public health goals.
- ❖ **Maximum Contaminant Level (MCL):** the highest level of a contaminant that is allowed in drinking water as set by the EPA. MCLs are set as close to the MCLGs as feasible using the best available treatment technology and taking cost into consideration. MCLs are enforceable standards.
- ❖ **Action Level (AL):** the concentration of a contaminant which, when exceeded, triggers treatment or other requirements which a water system must follow.
- ❖ **Locational Running Annual Average (LRAA) –** The average of sample analytical results for samples taken at a particular monitoring location during the previous four calendar quarters under the Stage 2 Disinfectants and Disinfection Byproducts Rule.

**N/A:** not applicable

**ppm-mg/L:** parts per million or milligrams per liter

**ppt-ng/L:** parts per trillion or nanograms per liter

**MGD:** million gallons a day

**ntu:** nephelometric turbidity unit (cloudiness)

**ppb-ug/L:** parts per billion or micrograms per liter

**pCi/l:** Picocuries per liter (a measure of radiation)

**Y/N:** Yes No

Northwest Water Treatment Plant Analysis						
Listed below are the results of water quality sampling performed from January 1, 2021, to December 31, 2021.						
Questions and Comments: Contact Thaddeus Hill, Water Resources Superintendent, 910-371-3490 or Thad.Hill@brunswickcountync.gov						
REGULATED ORGANIC CHEMICALS	EPA's MCL	EPA's MCLG	Brunswick County Amount Detected	Range Low High	Violation Y/N	Source of Contaminant
Turbidity	Treatment Technique Limit of 10 ntu	N/A	Average 0.05 ntu	% of samples ≤ 0.3 ntu	N	Soil Runoff
			Maximum 0.23 ntu	100.0%		
Raw Water TOC	Treatment Technique Removal Ratio ≥1 (Step 1)	N/A	Average Removal Ratio 1.119	.538 1.34	N	Naturally Present in the Environment
Finish Water TOC		N/A				
Total Organic Carbon (TOC)		N/A				
pH	6.8 - 8.5	N/A	7.4	7.3 9.0	N	By-Product of Caustic Addition
REGULATED INORGANIC CHEMICALS	EPA's MCL	EPA's MCLG	Brunswick County Amount Detected	Range Low High	Violation Y/N	Source of Contaminant
Chlorite	1.0 ppm	0.8 ppm	Average 0.61 ppm	0.49 0.82	N	By-Product of Disinfection
Chlorine Dioxide	0.8 ppm	0.8 ppm	Average 0.17 ppm	0.15 0.72	N	Water Additive Used to Control Microbes
Fluoride	4 ppm	4 ppm	Average 0.65 ppm	0.0 0.96	N	Water Additive which Promotes Strong Teeth
Orthophosphate	17 ppm	N/A	Average 1.41 ppm	1.37 2.0	N	Water Additive Used to Control Corrosion
Total Chlorine	4 ppm	4 ppm	Average Minimum 2.95 ppm	2.85 3.09	N	Water Additive Used to Control Microbes
Monochloramine Disinfectant Residual	4 ppm	4 ppm	2.89 ppm	0.0 3.02	N	Water Additive Used to Control Microbes
UNREGULATED SUBSTANCES	EPA's MCL	EPA's MCLG	Brunswick County Amount Detected	Range Low High	Violation Y/N	Source of Contaminant
1,4 Dioxane	Non Regulated	N/A	Average 1.42ppb	0.41 5.2	N	Purifying Agent in Pharmaceuticals and By-Product of PET Plastic Production
Hardness	Non Regulated	N/A	Average 22.9 ppm	21 36	N	Part of the Treatment Process, Erosion of Natural Deposits
Iron	Secondary MCL 0.3 ppm	N/A	Average 0.0159ppm	.012 0.18	N	Part of the Treatment Process, Erosion of Natural Deposits
Manganese	Secondary MCL 0.05 ppm	N/A	0.014 ppm	.008 0.09	N	Part of the Treatment Process, Erosion of Natural Deposits
Free Ammonia	Non Regulated	N/A	0.108 ppm	0.00 0.136	N	Water Additive Used to Control Microbes
Sodium	Non Regulated	N/A	21.58	N/A	N	Part of the Treatment Process, Erosion of Natural Deposits
<b>CRYPTOSPORIDIUM - Cape Fear River 2017</b>	Non Regulated	N/A	0.0 oocyst	0	N	Naturally Present in the Environment



# Brunswick County Water Quality Report 2021 Continued:

## PFAS Results for 2021

PFAS SUBSTANCES UNREGULATED *	EPA's MCL	EPA's MCLG	Brunswick County Samples (Avg)	Low	High	Violation Y/N	Source of Contaminant
PFBA	Non Regulated	N/A	5.432	1.27	25.4	N	By-Product of Chemical Manufacturer
PFPeA	Non Regulated	N/A	9.300	3.08	25	N	By-Product of Chemical Manufacturer
PFHxA	Non Regulated	N/A	7.459	3.07	17.3	N	By-Product of Chemical Manufacturer
PFHpA	Non Regulated	N/A	3.324	1.54	5.62	N	By-Product of Chemical Manufacturer
PFOA	Non Regulated	N/A	6.103	2.7	16.4	N	By-Product of Chemical Manufacturer
PFNA	Non Regulated	N/A	0.799	0.512	1.26	N	By-Product of Chemical Manufacturer
PFDA	Non Regulated	N/A	0.454	0.13	0.899	N	By-Product of Chemical Manufacturer
PFUnDA	Non Regulated	N/A	0.139	0.024	0.869	N	By-Product of Chemical Manufacturer
PFDODA	Non Regulated	N/A	0.040	0.002	0.197	N	By-Product of Chemical Manufacturer
PFTrDA	Non Regulated	N/A	0.073	0.006	0.212	N	By-Product of Chemical Manufacturer
PFTeDA	Non Regulated	N/A	0.100	0.014	0.245	N	By-Product of Chemical Manufacturer
PFBS	Non Regulated	N/A	5.102	1.94	11.6	N	By-Product of Chemical Manufacturer
PFPeS	Non Regulated	N/A	0.724	0.248	1.36	N	By-Product of Chemical Manufacturer
PFHxS	Non Regulated	N/A	4.245	2.06	7.29	N	By-Product of Chemical Manufacturer
PFHpS	Non Regulated	N/A	0.279	0.052	0.619	N	By-Product of Chemical Manufacturer
PFOS	Non Regulated	N/A	9.991	5.54	14.2	N	By-Product of Chemical Manufacturer
PFNS	Non Regulated	N/A	0.031	0.001	0.047	N	By-Product of Chemical Manufacturer
PFDS	Non Regulated	N/A	0.062	0.043	0.077	N	By-Product of Chemical Manufacturer
4:2 FTS	Non Regulated	N/A	0.046	0.002	0.134	N	By-Product of Chemical Manufacturer
6:2FTS	Non Regulated	N/A	0.263	0.024	1.89	N	By-Product of Chemical Manufacturer
8:2 FTS	Non Regulated	N/A	0.146	0.017	0.275	N	By-Product of Chemical Manufacturer
PFOSA	Non Regulated	N/A	0.048	0.011	0.11	N	By-Product of Chemical Manufacturer
N-MeFOSAA	Non Regulated	N/A	0.198	0	2.56	N	By-Product of Chemical Manufacturer
N-EtFOSAA	Non Regulated	N/A	0.122	0.02	0.757	N	By-Product of Chemical Manufacturer
HFPO-DA	Non Regulated	N/A	9.551	2.33	25.3	N	By-Product of Chemical Manufacturer
PFMOA	Non Regulated	N/A	51.860	14.3	97.7	N	By-Product of Chemical Manufacturer
PFMOPrA	Non Regulated	N/A	0.136	0.023	0.368	N	By-Product of Chemical Manufacturer
PFO2HxA	Non Regulated	N/A	8.276	1.33	17.9	N	By-Product of Chemical Manufacturer
PFO3OA	Non Regulated	N/A	4.101	0.686	13.9	N	By-Product of Chemical Manufacturer
PFO4DA	Non Regulated	N/A	1.898	0.18	12.9	N	By-Product of Chemical Manufacturer
Nafion Byproduct 1	Non Regulated	N/A	0.143	0.015	0.63	N	By-Product of Chemical Manufacturer
ADONA	Non Regulated	N/A	0.022	0.012	0.041	N	By-Product of Chemical Manufacturer
9Cl-PF3ONS	Non Regulated	N/A	0.05	0.016	0.089	N	By-Product of Chemical Manufacturer
11Cl-PF3OUdS	Non Regulated	N/A	0.075	0.007	0.277	N	By-Product of Chemical Manufacturer
10:2FTS	Non Regulated	N/A	0	0	0	N	By-Product of Chemical Manufacturer
EVE Acid	Non Regulated	N/A	1.417	0.022	17.3	N	By-Product of Chemical Manufacturer
FBSA	Non Regulated	N/A	1.598	0.116	20.1	N	By-Product of Chemical Manufacturer
Hydro-EVE Acid	Non Regulated	N/A	0.484	0.034	1.35	N	By-Product of Chemical Manufacturer
Hydrolyzed PSDA	Non Regulated	N/A	17.438	0.068	57	N	By-Product of Chemical Manufacturer
Nafion Byproduct 2	Non Regulated	N/A	0.491	0.115	1.01	N	By-Product of Chemical Manufacturer
N-EtFOSA	Non Regulated	N/A	0.521	0.521	0.521	N	By-Product of Chemical Manufacturer
N-EtFOSE	Non Regulated	N/A	0	0	0	N	By-Product of Chemical Manufacturer
NFDHA	Non Regulated	N/A	0.296	0.138	0.454	N	By-Product of Chemical Manufacturer
N-MeFOSA	Non Regulated	N/A	0.135	0.058	0.211	N	By-Product of Chemical Manufacturer
N-MeFOSE	Non Regulated	N/A	0	0	0	N	By-Product of Chemical Manufacturer
NVHOS	Non Regulated	N/A	5.66	0.493	13.5	N	By-Product of Chemical Manufacturer
PEPA	Non Regulated	N/A	8.146	4.2	20.5	N	By-Product of Chemical Manufacturer
PFECA-G	Non Regulated	N/A	0.568	0.03	2.11	N	By-Product of Chemical Manufacturer
PFEESA	Non Regulated	N/A	2.889	0.068	11	N	By-Product of Chemical Manufacturer
PFHxDA	Non Regulated	N/A	0.328	0.136	0.703	N	By-Product of Chemical Manufacturer
PFMOBA	Non Regulated	N/A	0	0	0	N	By-Product of Chemical Manufacturer
PFO5DA	Non Regulated	N/A	1.039	0.085	2.92	N	By-Product of Chemical Manufacturer
PMPA	Non Regulated	N/A	11.003	4.37	29.9	N	By-Product of Chemical Manufacturer
R-EVE Acid	Non Regulated	N/A	11.113	3.06	25	N	By-Product of Chemical Manufacturer
R-PSDA	Non Regulated	N/A	29.861	9.02	96.9	N	By-Product of Chemical Manufacturer
R-PSDCA	Non Regulated	N/A	0.418	0.025	12.1	N	By-Product of Chemical Manufacturer



# Brunswick County Water Quality Report 2021 Continued:

HWY 211 Groundwater Treatment Plant Analysis							
Questions and Comments: Contact Jeremy Sexton, Water Treatment Plant Superintendent, 910-454-0512 or jeremy.sexton@brunswickcountync.gov							
	EPA's MCL	EPA's MCLG	Brunswick County Amount Detected	Range Low	Range High	Violation Y/N	Source of Contaminant
<b>UNREGULATED SUBSTANCES</b>							
			Average				
Turbidity	Non Regulated	N/A	0.39 ntu	0.04	4.6	N	Part of the Treatment Process, Erosion of Natural Deposits
pH	Non Regulated	N/A	-----	7.0	9.4	N	Part of the Treatment Process
CO2	Non Regulated	N/A	8.2	3.0	27	N	Part of the Treatment Process
Alkalinity	Non Regulated	N/A	51	27	254	N	Part of the Treatment Process, Erosion of Natural Deposits
Hardness	Non Regulated	N/A	136	74	352	N	Part of the Treatment Process, Erosion of Natural Deposits
Iron	Non Regulated	N/A	0.05	0	.80	N	Part of the Treatment Process, Erosion of Natural Deposits
Chloride	Non Regulated	N/A	22	18	27	N	Part of the Treatment Process, Erosion of Natural Deposits
Free Ammonia	Non Regulated	N/A	0.08	0	0.25	N	Water Additive Used to Control Microbes
<b>REGULATED INORGANIC CHEMICALS</b>							
			Brunswick County Amount Detected	Range Low	Range High	Violation Y/N	Source of Contaminant
Flouride	4ppm	4ppm	0.83	0.11	2.5	N	Water Additive Used to Promote Strong Teeth
Orthophosphate	17ppm	N/A	15	0.53	3.5	N	Water Additive Used to Control Corrosion
Total Chlorine	4ppm	4ppm	2.3	0.1	4.0	N	Water Additive Used to Control Microbes
Monochloramine	4ppm	4ppm	2.4	1.6	3.6	N	Water Additive Used to Control Microbes
<b>UNREGULATED CONTAMINANT MONITORING RULE (UCMR) 4</b> These Unregulated Contaminants were selected by the EPA to attain their prevalence in Community Water Systems							
Germanium (tested in 2019)	Non Regulated	N/A	0.33 ppb	NA		N	Naturally-occurring element; commercially available in combination with other elements and minerals

\* Unregulated contaminants are those 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.



# Brunswick County Water Quality Report 2021 Continued:

## Distribution System Analysis

Questions and Comments: Contact Mickey Thompson, Water Distribution Superintendent, 910-253-2404 or mickey.thompson@brunswickcountync.gov

LEAD AND COPPER							Action Level (AL)	MCLG	Brunswick County Amount Detected	# of Samples above the AL	Exceedence of the Action Level? Y/N	
Copper 90th percentile 6/1/20 - 9/30/20							1.3 ppm	1.3 ppm	0.1311 ppm	0	N	Corrosion of Household Plumbing
Lead 90th percentile 6/1/20 - 9/30/20							0.015 ppm	0 ppm	.003 ppm	0	N	Corrosion of Household Plumbing
ORGANIC CHEMICALS TTHM and HAA							EPA's MCL	EPA's MCLG	Brunswick County Amount Detected	Range Low High	Violation Y/N	Source of Contaminant
Location BO1 TTHM							LLRA 80 ppb	N/A	38 ppb	25 - 64	N	By-product of Disinfection
Location BO2 TTHM							LLRA 80 ppb	N/A	41.8 ppb	27 - 54	N	By-product of Disinfection
Location BO3 TTHM							LLRA 80 ppb	N/A	40 ppb	23 - 53	N	By-product of Disinfection
Location BO4 TTHM							LLRA 80 ppb	N/A	39.5 ppb	23 - 54	N	By-product of Disinfection
Location BO5 TTHM							LLRA 80 ppb	N/A	38.8 ppb	23 - 50	N	By-product of Disinfection
Location BO6 TTHM							LLRA 80 ppb	N/A	38.5 ppb	22 - 50	N	By-product of Disinfection
Location BO7 TTHM							LLRA 80 ppb	N/A	34.8 ppb	15 - 46	N	By-product of Disinfection
Location BO8 TTHM							LLRA 80 ppb	N/A	37.5 ppb	22 - 49	N	By-product of Disinfection
Location BO1 HAA							LLRA 60 ppb	N/A	24.8 ppb	14 - 30	N	By-product of Disinfection
Location BO2 HAA							LLRA 60 ppb	N/A	20.5 ppb	12 - 25	N	By-product of Disinfection
Location BO3 HAA							LLRA 60 ppb	N/A	21.3 ppb	10 - 26	N	By-product of Disinfection
Location BO4 HAA							LLRA 60 ppb	N/A	22.5 ppb	14 - 26	N	By-product of Disinfection
Location BO5 HAA							LLRA 60 ppb	N/A	21.5 ppb	12 - 28	N	By-product of Disinfection
Location BO6 HAA							LLRA 60 ppb	N/A	20.5 ppb	11 - 26	N	By-product of Disinfection
Location BO7 HAA							LLRA 60 ppb	N/A	20 ppb	11 - 24	N	By-product of Disinfection
Location BO8 HAA							LLRA 60 ppb	N/A	20.5 ppb	13 - 25	N	By-product of Disinfection
REGULATED INORGANIC CHEMICALS							EPA's MCL	EPA's MCLG	Brunswick County Amount Detected	Range Low High	Violation Y/N	Source of Contaminant
Chlorite							1.0 ppm	0.8 ppm	Average 0.475 ppm	0.18 0.72	N	By-product of Disinfection
Nitrate							10 ppm	10 ppm	1.06 ppm	N/A	N	By-product of Disinfection
PESTICIDES, VOLATILE, & SYNTHETIC ORGANIC CHEMICALS							There Were No Regulated Pesticides, Volatile or Synthetic Organic Chemicals Detected in the Distribution System (Beyond those listed above) for the 2021 Sample Period					

### Did You Know?

#### The EPA and Brunswick County Want You to Know About Potential Household Lead Contamination

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. Brunswick County Public Utilities provides high-quality drinking water but cannot control the variety of materials used in plumbing components. When your tap 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 (800-426-4791) or at <http://www.epa.gov/safewater/lead>.

- **How Does Brunswick County prevent and monitor for LEAD in our drinking water?**
  - We don't use lead service lines between the distribution pipes and our water meters.
  - We have an active corrosion control and prevention plan that requires us to feed a corrosion inhibitor (orthophosphate) and to monitor the residual daily at the water plants and weekly in the distribution system.
  - Brunswick County building codes have required plumbing materials to be low or free of lead since 1987.
  - We monitor for lead and copper in homes that were built before 1987 and may be at higher risk for exposure due to susceptible plumbing materials (copper pipe with lead solder joints) at least every three years.



## Brunswick County Water Quality Report 2021 Continued:

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

### 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 because these systems tend to remove the disinfection properties of the water and may waste a significant amount of water. 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.



# Brunswick County Water Quality Report 2021 Continued:

## 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 irrigating.

- **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 effect everyone during times of drought, water shortages and emergencies, so go ahead and match our irrigation plan and 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.

