



County of Brunswick Water Quality Report–2020

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 6-8

LEAD in Drinking Water
Page 9

Brunswick County Public Utilities is pleased to share its 2020 annual water quality report. 2020 brought many challenges to our utility and our community. Of top concern was ensuring that water service remained uninterrupted during the Covid-19 pandemic while maintaining the safety of our staff. By adjusting schedules at critical facilities, following Covid-19 protocols, and taking swift action to reduce exposure to staff, the county’s available water supply and water quality did not waiver and has remained available to meet the needs of Brunswick County customers and to support the critical care facilities and workers on the front-line fighting the spread of Covid-19.

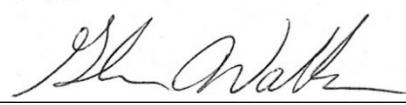
After considerable planning, the construction of upgrades to the Northwest Water Treatment Plant and the addition of a low-pressure reverse osmosis (LPRO) process began June 5, 2020. New clarification processes and filtration basins are taking shape (see the photos on page 6). This upgrade and the addition of LPRO will aid in the removal of GENX and other PFAS (perfluroalkyl and polyfluoroalkyl substances) that have been detected in the Cape Fear River. While EPA continues to study and consider regulatory guidelines for these emerging contaminants, Brunswick County is acting now to provide the infrastructure necessary to remove the contaminants. Brunswick County is also seeking reimbursement for the cost of installing these necessary treatment processes from the parties responsible for introducing PFAS into the environment. However, the cost of these improvements is reflected in the fiscal year 2022 recommended utility rates and fees which are available at: <https://www.brunswickcountync.gov/utilities/rates/>. These rate increases may go into effect as soon as July 1, 2021. The 54” parallel raw water line is another project that Brunswick County and its partners have undertaken to enhance potable water service to the region. Information on this project can be found at: <<https://www.lcfwasa.org/kings-bluff>>.

Brunswick County Public Utilities’ dedication to continuous improvement illustrates its commitment to the community and customers. Follow our Web site link at <<http://www.brunswickcountync.gov/genx/>> for updates on the design and construction of our full-scale Low-Pressure Reverse Osmosis water treatment facility. Information on PFAS 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>>.

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 2020 Continued:

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> 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.

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 which equals 99.99% removal. In addition to virus removal, Brunswick County Utilities has instituted several staffing changes to lessen our potential for exposure to COVID-19. Field crews are meeting directly at the jobsites while only their foremen are obtaining parts at the warehouse, all staff are required to always wear masks and work at least 6 feet apart when possible, and rigorous cleaning with disinfectants at all facilities is taking place daily. Additionally, we have had a positive response by our team to get vaccinated.

Interesting Facts:

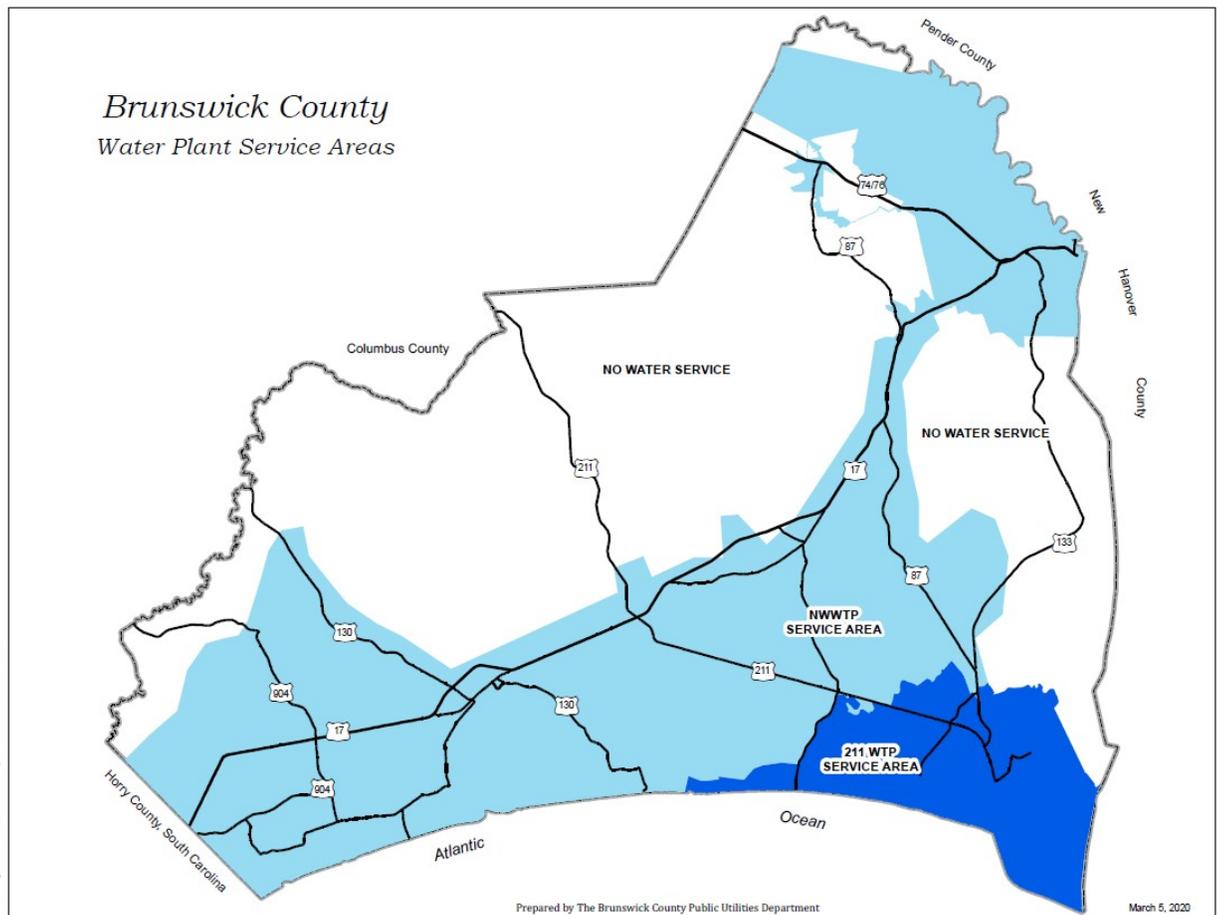
Total Brunswick County Water System Capacity: 30 MGD

The greatest one day system demand of the year for 2020 was 26.442. million gallons (MGD) on July 23, 2020.

Find Your Service Area

Brunswick County operates two water treatment plants; the 24 million gallons per day Northwest WTP that treats raw water from the Cape Fear River and the 6 million gallons per day groundwater 211 WTP. The three data tables on pages 6-8 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 2020 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 assessments 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 2020 Continued:

211 Water Treatment Plant



The 211 Water Treatment Plant has fourteen (14) different groundwater wells that are tapped into the Castle Hayne Aquifer approximately 175 ft. below the ground's surface. They use a lime softening process to remove excess calcium from the water. In 2020, the facility renewed the filtration system and started construction of a new operations and laboratory building. Facility staff continue to provide quality water service to the areas of Southport, Oak Island, and St. James Plantation. The facility would



New OPS and Laboratory Construction

like to welcome Kenny Revels chief operator and Bryan Morris, Derek Harrelson, and Jesse Burgess 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 Blake Foster for attaining the B-Surface Water Treatment certification and to Cas Bowen for receiving the C-Surface Water Treatment certification. Also, congratulations to Teresa Farley, Justin Loiacono, and Thaddeus Hill on becoming certified as Reverse Osmosis Specialist 1.

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 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 summer of 2023 and the entire project is scheduled for completion by September 2023. 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/>>.

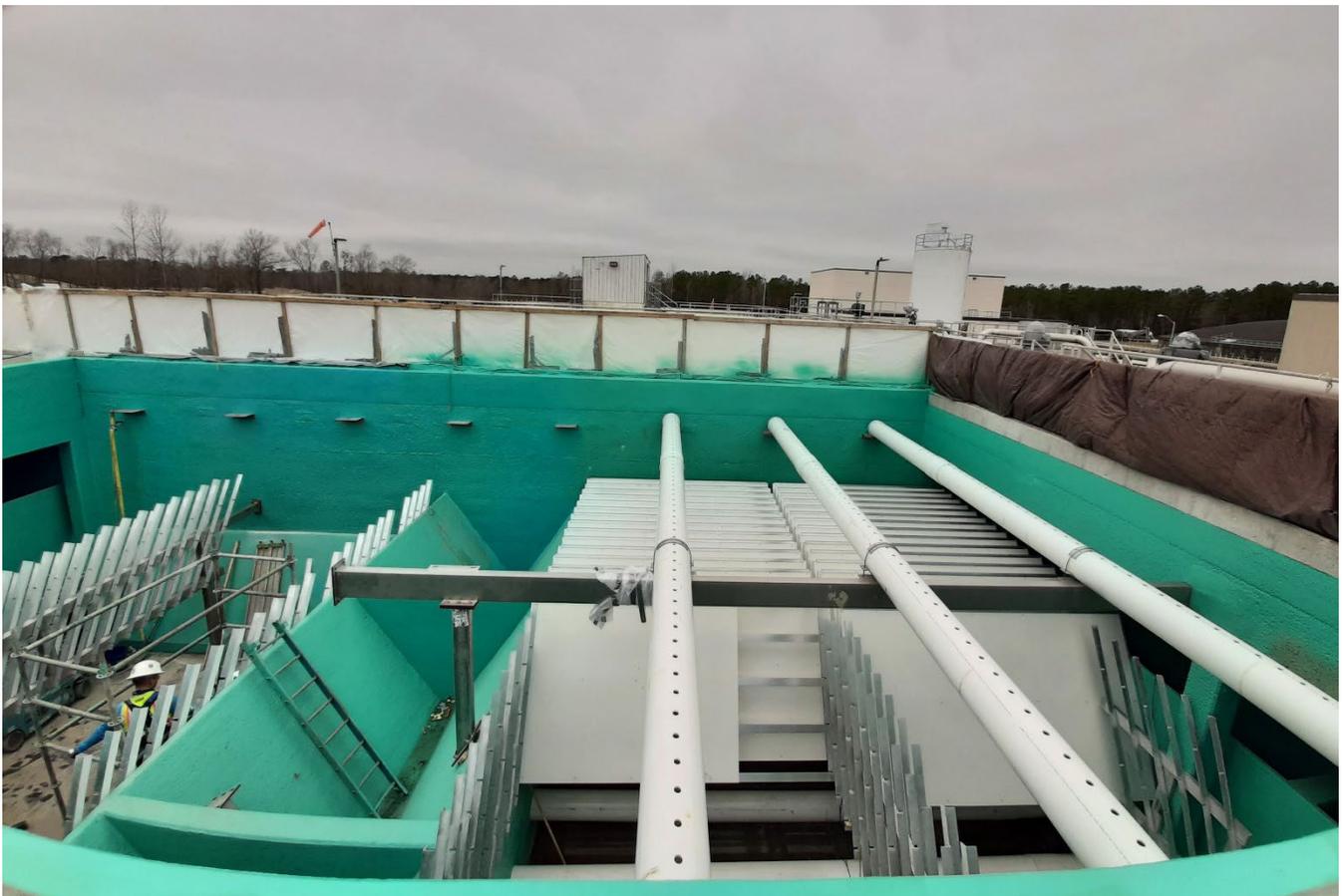


Brunswick County Water Quality Report 2020 Continued:



To the left is the construction of the new filter gallery.

Pictured below is one of the clarifier basins being converted to a super pulsator which will produce double the water it is able to produce now.





Brunswick County Water Quality Report 2020 Continued:

Water Quality Results for 2020

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.
- **Units**
 - **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, 2020, to December 31, 2020.						
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 1.0 ntu	N/A	Average 0.05 ntu Maximum 0.33 ntu	% of samples ≤ 0.3 ntu 99.7%	N	Soil Runoff
Raw Water TOC	Treatment Technique Removal Ratio ≥1 (Step 1)	N/A	Average Removal Ratio 1.215	1.09 1.311	N	Naturally Present in the Environment
Finish Water TOC		N/A				
Total Organic Carbon (TOC)		N/A				
pH	6.8 - 8.5	N/A	7.6	7.0 8.9	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 0.57 ppm	0.14 0.70	N	By-Product of Disinfection
Chlorine Dioxide	0.8 ppm	0.8 ppm	Average 0.02 ppm	0.0 0.60	N	Water Additive Used to Control Microbes
Fluoride	4 ppm	4 ppm	Average 0.63 ppm	0.0 0.96	N	Water Additive which Promotes Strong Teeth
Orthophosphate	17 ppm	N/A	Average 1.76 ppm	1.10 2.8	N	Water Additive Used to Control Corrosion
Total Chlorine	4 ppm	4 ppm	Average Minimum 2.96 ppm	2.2 3.3	N	Water Additive Used to Control Microbes
Monochloramine Disinfectant Residual	4 ppm	4 ppm	2.73 ppm	0.0 3.3	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 0.80ppb	0.12 10.4	N	Purifying Agent in Pharmaceuticals and By-Product of PET Plastic Production
Hardness	Non Regulated	N/A	Average 22.5 ppm	12 30	N	Part of the Treatment Process, Erosion of Natural Deposits
Iron	Secondary MCL 0.3 ppm	N/A	Average 0.013ppm	0 0.09	N	Part of the Treatment Process, Erosion of Natural Deposits
Manganese	Secondary MCL 0.05 ppm	N/A	0.014 ppm	0 0.18	N	Part of the Treatment Process, Erosion of Natural Deposits
Free Ammonia	Non Regulated	N/A	0.109 ppm	0.02 0.21	N	Water Additive Used to Control Microbes
Sodium	Non Regulated	N/A	20.749 ppm	N/A	N	Part of the Treatment Process, Erosion of Natural Deposits
CRYPTOSPORIDIUM - Cape Fear River 2017	Non Regulated	N/A	0.0 oocyst	0	N	Naturally Present in the Environment



Brunswick County Water Quality Report 2020 Continued:

Cryptosporidium Monitoring: The Northwest WTP monitored for Cryptosporidium in 2017 and did not detect any oocysts in 12 samples from our raw water supply. Cryptosporidium is a microbial parasite which is found in surface water throughout the United States. Although Cryptosporidium can be removed by filtration, the most commonly used filtration methods cannot guarantee 100 percent removal. Our previous monitoring of the source water has indicated the presence of these organisms. Current test methods do not enable us to determine if the organisms are dead or if they are capable of causing disease. The Northwest WTP takes precautions to kill and remove Cryptosporidium oocyst by using chlorine dioxide as a pre-oxidant disinfectant in our raw water supply line and again just before filtration. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals overcome the disease within a few weeks. However, immunocompromised people have more difficulty and are at greater risk of developing severe, life-threatening illness. Immunocompromised individuals are encouraged to consult their doctor regarding appropriate precautions to take to prevent infection. Cryptosporidium must be ingested for it to cause disease, and it may be spread through means other than drinking water.

PFAS SAMPLING RESULTS 2020

UNREGULATED PFAS SUBSTANCES	EPA's MCL	EPA's MCLG	Brunswick County	Range		Violation Y/N	Source of Contaminant
			Amount Detected (Average)	Low	High		
Perfluorobutanoic acid	Non Regulated	N/A	4.28ppt	0.71	7.48	N	By-Product of Chemical Manufacturer
Perfluoropentanoic acid	Non Regulated	N/A	8.28 ppt	5.18	13.7	N	By-Product of Chemical Manufacturer
Perfluorohexanoic acid	Non Regulated	N/A	6.48 ppt	1.90	15.3	N	By-Product of Chemical Manufacturer
Perfluoroheptanoic acid	Non Regulated	N/A	3.73 ppt	1.13	10	N	By-Product of Chemical Manufacturer
Perfluorooctanoic acid	Non Regulated	N/A	4.87 ppt	1.84	8.58	N	By-Product of Chemical Manufacturer
Perfluorononanoic acid	Non Regulated	N/A	0.72 ppt	0.42	0.986	N	By-Product of Chemical Manufacturer
Perfluorodecanoic acid	Non Regulated	N/A	0.38 ppt	0.15	0.699	N	By-Product of Chemical Manufacturer
Perfluoroundecanoic acid	Non Regulated	N/A	0.11 ppt	0.04	0.209	N	By-Product of Chemical Manufacturer
Perfluorododecanoic acid	Non Regulated	N/A	0.03 ppt	0.01	0.06	N	By-Product of Chemical Manufacturer
Perfluorotridecanoic acid	Non Regulated	N/A	0.06 ppt	0.02	0.105	N	By-Product of Chemical Manufacturer
Perfluorotetradecanoic acid	Non Regulated	N/A	0.14 ppt	0.09	0.283	N	By-Product of Chemical Manufacturer
Perfluorobutane sulfonic acid	Non Regulated	N/A	3.53 ppt	1.69	5.59	N	By-Product of Chemical Manufacturer
Perfluoropentane sulfonic acid	Non Regulated	N/A	0.60 ppt	0.22	0.911	N	By-Product of Chemical Manufacturer
Perfluorohexane sulfonic acid	Non Regulated	N/A	3.17 ppt	1.24	5.06	N	By-Product of Chemical Manufacturer
Perfluoroheptane sulfonic acid	Non Regulated	N/A	0.22 ppt	0.06	0.432	N	By-Product of Chemical Manufacturer
Perfluorooctane sulfonic acid	Non Regulated	N/A	8.35 ppt	2.93	14.2	N	By-Product of Chemical Manufacturer
Perfluorononane sulfonic acid	Non Regulated	N/A	0.04 ppt	0.04	0.0437	N	By-Product of Chemical Manufacturer
Perfluorodecane sulfonic acid	Non Regulated	N/A	0 ppt	0	0	N	By-Product of Chemical Manufacturer
4:2 fluorotelomer sulfonic acid	Non Regulated	N/A	0 ppt	0	0	N	By-Product of Chemical Manufacturer
6:2 fluorotelomer sulfonic acid	Non Regulated	N/A	0.37 ppt	0.02	1.25	N	By-Product of Chemical Manufacturer
8:2 fluorotelomer sulfonic acid	Non Regulated	N/A	0 ppt	0	0	N	By-Product of Chemical Manufacturer
Perfluorooctane sulfonamide	Non Regulated	N/A	0.06 ppt	0.06	0.0651	N	By-Product of Chemical Manufacturer
N-methyl perfluorooctane sulfonamido acetic acid	Non Regulated	N/A	0.15 ppt	0.02	0.673	N	By-Product of Chemical Manufacturer
N-ethyl perfluorooctane sulfonamido acetic acid	Non Regulated	N/A	0.09 ppt	0.05	0.187	N	By-Product of Chemical Manufacturer
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)-propanoic acid (Gen-X)	Non Regulated	N/A	7.96 ppt	2.11	24.9	N	By-Product of Chemical Manufacturer
Perfluoro-2-methoxyacetic acid	Non Regulated	N/A	32.2 ppt	1.90	114	N	By-Product of Chemical Manufacturer
Perfluoro-3-methoxypropanoic acid	Non Regulated	N/A	0 ppt	0	0	N	By-Product of Chemical Manufacturer
Perfluoro(3,5-dioxahexanoic) acid	Non Regulated	N/A	4.86 ppt	0.81	14.2	N	By-Product of Chemical Manufacturer
Perfluoro(3,5,7-trioxaoctanoic) acid	Non Regulated	N/A	7.77 ppt	0.02	21.2	N	By-Product of Chemical Manufacturer
Perfluoro(3,5,7,9-tetraoxadecanoic) acid	Non Regulated	N/A	3.19 ppt	0.86	5.83	N	By-Product of Chemical Manufacturer
Perfluoro(3,5,7,9,11-pentaoxadodecanoic acid	Non Regulated	N/A	2.49 ppt	2.27	2.71	N	By-Product of Chemical Manufacturer
Nafion Byproduct 1	Non Regulated	N/A	0.34 ppt	0.04	0.741	N	By-Product of Chemical Manufacturer
Nafion Byproduct 2	Non Regulated	N/A	1.06 ppt	0.07	5.48	N	By-Product of Chemical Manufacturer
Perfluoro(2-ethoxyethane)sulphonic acid	Non Regulated	N/A	0.08 ppt	0.08	0.083	N	By-Product of Chemical Manufacturer
Perfluoro-2-methoxypropanoic acid	Non Regulated	N/A	16.51 ppt	8.78	22.3	N	By-Product of Chemical Manufacturer
Fluorotelomer sulfonate 10:2	Non Regulated	N/A	0.67 ppt	0.41	1.23	N	By-Product of Chemical Manufacturer
Perfluorobutane Sulfonamide	Non Regulated	N/A	0.47 ppt	0.16	1.12	N	By-Product of Chemical Manufacturer
N-ethylperfluoro-1-octanesulfonamide	Non Regulated	N/A	2.55 ppt	0.04	4.88	N	By-Product of Chemical Manufacturer
Perfluoro-2-methoxypropanoic acid	Non Regulated	N/A	20.45 ppt	12.60	29.9	N	By-Product of Chemical Manufacturer



Brunswick County Water Quality Report 2020 Continued:

Water Quality Results for 2020 Continued:

HWY 211 Groundwater Treatment Plant Analysis							
Questions and Comments: Contact Jeremy Sexton, Water Treatment Plant Superintendent, 910-253-2488 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
UNREGULATED SUBSTANCES							
Turbidity	Non Regulated	N/A	Average 0.37 ntu	0.04	7.3	N	Part of the Treatment Process, Erosion of Natural Deposits
pH	Non Regulated	N/A	-----	7.0	9.1	N	Part of the Treatment Process
CO2	Non Regulated	N/A	7.9 ppm	4.0	32	N	Part of the Treatment Process
Alkalinity	Non Regulated	N/A	50.5 ppm	19	236	N	Part of the Treatment Process, Erosion of Natural Deposits
Hardness	Non Regulated	N/A	136 ppm	45	281	N	Part of the Treatment Process, Erosion of Natural Deposits
Iron	Non Regulated	N/A	0.09 ppm	0	0.90	N	Part of the Treatment Process, Erosion of Natural Deposits
Chloride	Non Regulated	N/A	21 ppm	10	28	N	Part of the Treatment Process, Erosion of Natural Deposits
Free Ammonia	Non Regulated	N/A	0.13 ppm	0	1.3	N	Water Additive Used to Control Microbes
REGULATED INORGANIC CHEMICALS			Brunswick County Amount Detected	Range Low	Range High	Violation Y/N	Source of Contaminant
Flouride	4ppm	4ppm	0.78 ppm	0.32	0.78	N	Water Additive Used to Promote Strong Teeth
Orthophosphate	17ppm	N/A	1.2 ppm	0	3.2	N	Water Additive Used to Control Corrosion
Total Chlorine	4ppm	4ppm	2.3 ppm	0.1	3.4	N	Water Additive Used to Control Microbes
Monochloroime	4ppm	4ppm	2.8 ppm	0.5	3.9	N	Water Additive Used to Control Microbes
UNREGULATED CONTAMINANT MONITORING RULE (UCMR) 4 These Unregulated Contaminants were selected by the EPA to attain their prevalence in Community Water Systems							
Germanium	Non Regulated	N/A	0.33 ppb	NA		N	Naturally-occurring element; commercially available in combination with other elements and minerals

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 6/11/20 -9/30/20	1.3 ppm	1.3 ppm	0.1311 ppm	0	N	Corrosion of Household Plumbing	
Lead 90th percentile 6/11/20 -9/30/20	0.015 ppm	0 ppm	0.003 ppm	0	N	Corrosion of Household Plumbing	
ORGANIC CHEMICALS TTHM and HAA	EPA's MCL	EPA's MCLG	Brunswick County Amount Detected	Range Low	Range High	Violation Y/N	Source of Contaminant
Location BO1 TTHM	LLRA 80 ppb	N/A	32.3 ppb	20	45	N	By-product of Disinfection
Location BO2 TTHM	LLRA 80 ppb	N/A	32.5 PPb	22	43	N	By-product of Disinfection
Location BO3 TTHM	LLRA 80 ppb	N/A	32.0 ppb	23	41	N	By-product of Disinfection
Location BO4 TTHM	LLRA 80 ppb	N/A	33.0 ppb	24	42	N	By-product of Disinfection
Location BO5 TTHM	LLRA 80 ppb	N/A	34.5 ppb	23	47	N	By-product of Disinfection
Location BO6 TTHM	LLRA 80 ppb	N/A	32.0 ppb	22	42	N	By-product of Disinfection
Location BO7 TTHM	LLRA 80 ppb	N/A	29.0 ppb	15	41	N	By-product of Disinfection
Location BO8 TTHM	LLRA 80 ppb	N/A	32.5 ppb	22	42	N	By-product of Disinfection
Location BO1 HAA	LLRA 60 ppb	N/A	22.0 ppb	8	42	N	By-product of Disinfection
Location BO2 HAA	LLRA 60 ppb	N/A	29.0 ppb	20	43	N	By-product of Disinfection
Location BO3 HAA	LLRA 60 ppb	N/A	29.0 ppb	24	37	N	By-product of Disinfection
Location BO4 HAA	LLRA 60 ppb	N/A	24.3 ppb	13	44	N	By-product of Disinfection
Location BO5 HAA	LLRA 60 ppb	N/A	28.0 ppb	22	39	N	By-product of Disinfection
Location BO6 HAA	LLRA 60 ppb	N/A	28.0 ppb	22	40	N	By-product of Disinfection
Location BO7 HAA	LLRA 60 ppb	N/A	26.0 ppb	21	33	N	By-product of Disinfection
Location BO8 HAA	LLRA 60 ppb	N/A	26.0 ppb	21	32	N	By-product of Disinfection
REGULATED INORGANIC CHEMICALS	EPA's MCL	EPA's MCLG	Brunswick County Amount Detected	Range Low	Range High	Violation Y/N	Source of Contaminant
Chlorite	1.0 ppm	0.8 ppm	Average 0.57ppm	0.14	0.70	N	By-product of Disinfection
Nitrate	10 ppm	10 ppm	1.14 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 2020 Sample Period				



Brunswick County Water Quality Report 2020 Continued:

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.

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.

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 2020 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 affect 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.

