

2022 Annual Drinking Water Quality Report

Town of Biltmore Forest

Water System ID Number: 01-11-030

The Town of Biltmore Forest is 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 being made to continually improve drinking water quality and to 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 Town of Biltmore Forest Public Works Department Director of Public Works, Harry B. Buckner, PE, at 828-274-3919. 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.

Lead Awareness

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The Town of Biltmore Forest and the City of Asheville are responsible for providing high quality drinking water but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at <http://www.epa.gov/safewater/lead>.

To minimize corrosion in service lines and customer home plumbing, the City of Asheville has effectively implemented a system-wide corrosion control treatment process. Homes and businesses at risk for lead in the water are those that have lead or galvanized service lines and that have lead solder in copper pipes. Many homes built before 1987 were built with plumbing systems that contained lead solder in the copper pipes. The new Lead and Copper Rule Revisions require the Town of Biltmore Forest to build a service line inventory including the customer side of the meter. We are asking customers to call 828-274-3919 to set up an appointment for a Town representative to check the service line coming into your residence. If residents are interested, they are encouraged to have their own drinking water tested for lead.

When You Turn on Your Tap, Consider the Source

The Town of Biltmore Forest purchases all its water treated from the City of Asheville and re-sells it to its residents. We operate and maintain the distribution system in Town, but the source of your water is managed and operated by the City of Asheville. The Town does not provide any additional treatment of the water; but we do provide some additional water quality monitoring. A full copy of the City of Asheville's Annual Drinking Water Quality Report can be found at the following website and clicking "Annual Water Quality Report": <https://www.ashevilenc.gov/department/water/water-forms-reports-fees-charges-and-policies/>

The City of Asheville's primary sources of water are in eastern Buncombe County where the water flows from pure mountain springs and streams into lakes known as the North Fork and Bee Tree Reservoirs. They are in Black Mountain and Swannanoa, respectively. These pristine lakes are surrounded by 20,000 acres of highly protected mountain forests owned by the City of Asheville.

The City of Asheville's secondary source of water is the Mills River. The Mills River Water Treatment Plant was put into operation in late 1999. The Mills River Watershed is very different from our watershed in the east; however, it still provides an excellent source of water. The watershed covers 47,440 acres in Henderson and Transylvania Counties, with approximately 75 percent of the watershed being in the Pisgah National Forest. It is a mixture of forest, farmland, and low-density development. Although the Mills River is not pristine, it has the advantage of providing our region with a natural resource that has multiple uses, including being an invaluable drinking water source, trout fishery, fish and wildlife habitat, and recreational resource. During extreme drought conditions, water may be taken from the French Broad River.

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 the City of Asheville is 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:

Susceptibility of Sources to Potential Contaminant Sources (PCSs)			
Source Name	Susceptibility Rating	Source Name	Susceptibility Rating
North Fork Reservoir	Higher	Bee Tree Reservoir	Moderate
Mills River	Moderate	French Broad River*	Higher

(Found in SWAP Report Table 2, dated September 9, 2020)

**French Broad River Intake is only used during extreme drought conditions*

It is important to understand that a susceptibility rating of Moderate or Higher does not imply poor water quality, only the systems' potential to become contaminated by PCS's in the assessment area. The complete SWAP Assessment report for the City of Asheville's Water Resources Department may be viewed on the Web at: www.ncwater.org. To obtain a printed copy of this report, please mail a written request to: Source Water Assessment Program – Report Request, 1634 Mail Center, Raleigh NC 27699-1634, or email request to swap@ncdenr.gov. Please indicate the system name (City of Asheville), PWSID (01-11-010), and provide your name, mailing address and phone number. If you have any questions about the SWAP report, please contact the Source Water Assessment staff by phone at 919-707-9098.

Water Quality Data Tables of Detected Contaminants

The City of Asheville routinely monitors 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 contaminant group. The presence of contaminants does not necessarily indicate that water poses a health risk. Some of the data, though representative of the water quality, is more than one year old.

2022 Physical and Mineral Characteristics

The following constituents analyzed in your water are indicators of the appearance, taste, and mineral content of your drinking water.

Constituent	Annual Average	Constituent	Annual Average
pH, standard units	7.63	Hardness, mg/l	5.21
Alkalinity, mg/l	24.18	Sodium, mg/l	12.1

Our Water Quality Surpasses All Requirements

Out of 150 possible substances tested only 8 were detected - making our drinking water one of the best sources of water in the country. The following regulated substances were detected (within very safe limits) in our "finished" drinking water as analyzed between January 1 and December 31, 2022. "Finished" water is the water that leaves the City of Asheville treatment plant and is distributed throughout the system.

Substance and Unit of Measurement	Ideal Goal MCLG	Highest Level Allowed – MCL	Sample Date	EPA Definition of Potential Source(s) of Substance	Results	Individual Plant Results
REGULATED AT THE TREATMENT PLANT (City of Asheville Testing)						
Fluoride, ppm	4	4	1/3/22 7/18/22	Water additive which promotes strong teeth; erosion of natural deposits; discharge from fertilizer	High 0.68 Range: (ND-0.68)	Mills River (MR) = 0.68 North Fork (NF) = ND William DeBruhl (WD) = 0.64
Turbidity, NTU	N/A	TT = 1 NTU Maximum limit for any measurement	N/A	The likely source is soil runoff. Monitoring turbidity (cloudiness of water) ensures the effectiveness of our filtration system.	High 0.29	MR = 0.26 NF = 0.29 WD = 0.16
	N/A	TT = 95% of samples <0.3 NTU	N/A		100% of samples < 0.3 NTU	MR = 100% NF = 100% WD = 100%
Total Organic Carbon (Source), ppm	N/A	TT	NF, WD, MR Quarterly	Naturally present in the environment.	Average = 0.31 Range:(ND - 1.7)	MR = ND - 1.7 NF = ND - 1.0 WD = ND - 1.2 Compliance Method Alt #2
Total Organic Carbon (Treated), ppm	N/A	TT	NF, WD, MR Quarterly	Naturally present in the environment.	Average = ND Range:(ND - ND)	MR = ND NF = ND WD = ND Compliance Method Alt #2
REGULATED AT THE CUSTOMER'S TAP (Town of Biltmore Forest Testing)						
Copper, ppm	1.3	AL = 1.3	Sept 13, 2021	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives.	8 Sites <0.050 1 Site at 0.053 1 Site at 0.055	None of the 10 targeted sampling sites exceeded the Action Level.
Lead, ppb	0	AL = 15	Sept 13, 2021	Corrosion of household plumbing systems; erosion of natural deposits.	All Sites <0.003	None of the 10 targeted sampling sites exceeded the Action Level. All homes tested were below the detection limit of 3 ppb.
REGULATED IN THE DISTRIBUTION SYSTEM (City of Asheville Testing)						
Total Coliform Bacteria (presence or absence)	0	N/A	06/07/22, 07/12/22 08/15/22 09/19/22	Naturally occurring in the environment.	4	Four positive samples for 2022
Fecal Coliform or E. Coli (presence or absence)	0	0*	N/A	Human or animal fecal waste	0	No positive samples for 2022
Note: The MCL is exceeded if a routine sample and repeat sample are total coliform positive, and one of those repeats are also E. coli positive						Individual Site Ranges
Total Trihalomethanes, ppb	0	80	02/08/22, 05/18/22, 08/02/22, 11/01/22	By-product of drinking water chlorination.	Highest LRAA: 57 Range: (15-71)	B01 - (35 - 71) B02 - (32 - 71) B03 - (15 - 45) B04 - (28 - 61) B05 - (40 - 62) B06 - (26 - 44) B07 - (29 - 40) B08 - (33 - 66)
Total Haloacetic Acid HAA5, ppb	0	60	2/2/21, 5/11/21, 8/3/21, 11/2/21	Total Haloacetic Acid - By-product of drinking water chlorination.	Highest LRAA: 48 Range: (24 - 60)	B01 - (36 - 46) B02 - (38 - 45) B03 - (24 - 60) B04 - (24 - 42) B05 - (38 - 39) B06 - (37 - 48) B07 - (37 - 45) B08 - (36 - 41)
Chlorine, ppm	MRDLG = 4	MRDL = 4	Daily	Water additive used to control microbes.	System Average 1.16 Range (0.30 – 1.88)	Sampled in Distribution

SOURCE WATER MONITORING

The City of Asheville system monitored for Cryptosporidium in our source water at all three water treatment plants. North Fork and William DeBruhl did not detect any Cryptosporidium. Mills River detected some Cryptosporidium in ranges from 0.0 - 0.200 oocysts/L.

Cryptosporidium is a microbiological pathogen found in surface water throughout the U.S. Although filtration removes Cryptosporidium, the most commonly-used filtration methods cannot guarantee 100 percent removal. Our monitoring indicates the presence of these organisms in our source water and/or finished water. Current test methods do not allow us to determine if the organisms are dead or if they are capable of causing disease. Ingestion of Cryptosporidium may cause cryptosporidiosis, an abdominal infection. Symptoms of infection include nausea, diarrhea, and abdominal cramps.

Most healthy individuals can overcome the disease within a few weeks. However, immuno-compromised people, infants and small children, and the elderly are at greater risk of developing life-threatening illness. We encourage immuno-compromised individuals to consult their doctor regarding appropriate precautions to take to avoid infection. Cryptosporidium must be ingested to cause disease, and it may be spread through other means than drinking water.

This table summarizes results for calendar year 2022

Site ID	Location	Site ID	Location	Site ID	Location	Site ID	Location
B01	Pisgah Elementary	B03	Bee Tree Junction	B05	CTS Exxon Mills Gap Rd	B07	Town Mountain Rd
B02	Fairview Downs	B04	Crowning Way	B06	Challedon Subdivision	B08	Fairview Fire Dept

Disinfectant Residuals Summary and Stage 2 Disinfection Byproduct Compliance (Measured by the Town of Biltmore Forest)

Substance and Unit of Measurement	Year Sampled	MRDL Violation (Y/N)	Your Water (highest RAA)	Range Low to High	MRDLG	MRDL	Likely Source of Contamination
Chlorine (ppm)	2022	No	1.23	0.8 to 1.8	4	4.0	Water additive used to control microbes
Disinfection Byproduct Substance and Unit of Measurement	Date Sampled	MCL Violation Y/N	Your Water (highest LRAA)	Individual Site Ranges Low to High	MCLG	MCL	Likely Source of Contamination
TTHM (ppb)	2/15/2022 5/5/2022 8/2/2022	Yes	59	Site B01 28-88 Site B02 33-64	N/A	80	Byproduct of drinking water disinfection
HAA5 (ppb)	2/15/2022 5/5/2022 8/2/2022	No	48	Site B01: 34-41 Site B02: 20-39	N/A	60	Byproduct of drinking water disinfection

Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer.

Important Drinking Water Definitions:

Action Level (AL) - The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

Maximum Contaminant Level (MCL) - The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

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

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

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

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.

Not Regulated (NR) - Not controlled by regulation.

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.

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.

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.

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

< - Less than