

TOWN OF BOILING SPRINGS

2020 Annual Water Quality Report



Town of Boiling Springs
2020 Annual Drinking Water Quality Report
Water System ID Number: 01-23-025

2020 Annual Water Quality Report

TOWN OF BOILING SPRINGS 2020 ANNUAL DRINKING WATER QUALITY REPORT WATER SYSTEM ID NUMBER: 01-23-025

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 Mike Gibert at (704) 434-2357. We want our valued customers to be informed about their water utility.

Our drinking water once again meets and exceeds all state and federal drinking water standards.

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. Immune-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).

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 Boiling Springs is 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>.

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

Shelby's water comes from the surface water source of the First Broad River that flows along the west side of town. An emergency backup water supply at the Broad River is also available. The City of Shelby is permitted to withdraw up to 18 million gallons per day (MGD) from the First Broad River. The city is capable of utilizing the Broad River for up to 9 MGD for secondary backup water supply. The Town of Boiling Springs tap water is purchased from the City of Shelby, which falls under the regulation of the Environmental Protection Agency.

Source Water Assessment Program (SWAP) Results

The North Carolina Department of Environment and Natural Resources (DENR), 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 Shelby 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:

| 2020 Susceptibility of Sources to Potential Contaminant Sources (PCSs) | |
|--|-------------------------------|
| <u>SOURCE NAME:</u> | <u>SUSCEPTIBILITY RATING:</u> |
| First Broad River | Moderate |
| Broad River | Higher |

The complete SWAP Assessment report for the City of Shelby may be viewed and printed on the Web at: <http://www.ncwater.org/pws/swap>. If you have questions about the program or the report, please contact SWAP staff at (919) 707-9098 or email the program at swap@ncdenr.gov. 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.

Help Protect Your Source Water

Protection of drinking water is everyone’s responsibility. You can help protect your community’s drinking water source(s) 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.

Water Quality Table Information

The City of Shelby and Town of Boiling Springs routinely monitors for over 150 contaminants in your drinking water according to Federal and State laws. The table located below shows the contaminants which were detected during January – December 2019. Both regulated and unregulated contaminants are listed and the table below contains the name of each substance, the highest level allowed by regulation (MCL), the ideal goals for public health, the amount detected, the likely sources of such contamination, footnotes explaining our findings, and a key to units of measurement. Unregulated contaminants are those for which the EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring to assist the EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted.

The presence of contaminants does not necessarily indicate that water poses a health risk. EPA or the State requires us to monitor for certain contaminants less than once per year because the concentrations are not expected to vary significantly from year to year. Some of the data, though representative of the water quality, is more than a year old.

For your information, the definitions of MCL and MCLG are listed below:

- Maximum contaminant Level or MCL: The highest level of a contaminant that is allowed in drinking water.
- Maximum Contaminant Level Goal or MCLG: The level of the contaminant in drinking water below which there is no known or expected risk to health.

MCLs are set as close to the MCLGs as feasible by the EPA and the City of Shelby and the Town of Boiling Springs are using the best available treatment technology. MCLGs allow for a margin of safety.

Key to Table

| | | |
|---|---|---|
| •AL = Action Level | •N/A = Not Applicable | •SMCL = Secondary Maximum Contaminant Level |
| •LRAA = Locational Running Annual Average | •NR = Not Regulated | •SS = Secondary Standards (non-enforced guidelines) |
| •MCL = Maximum Containment Level | •NTU = Nephelometric Turbidity Units | •SU = Standard Units |
| •MCLG = Maximum Containment Level Goal | •ppb = parts per billions, or Micrograms per liter (ug/L) | •TT = Treatment Technique |
| •MFL = Million Fibers per Liter | •ppm = part per million | |
| •mg/L = Milligrams per liter | •ppq = parts per quadrillion, or Picograms per liter | |
| •MRDL = Maximum Residual Disinfectant Level | •ppt = parts per trillion, or nanograms per liter | |
| •MRDLG = Maximum Residual Disinfectant Level Goal | | |

Important Drinking Water Definitions:

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

Non-Defects (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.

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 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.

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.

Locational Running Annual Average (LRAA) – The average of sample analytical results for samples taken at a particular monitoring location during the previous four calendar quarters under the Stage 2 Disinfectants and Disinfection Byproducts Rule.

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

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

Town of Boiling Springs Contaminates

Microbiological Contaminants

| <u>Contaminants (units)</u> | <u>Sample Date</u> <u>2020</u> | <u>MCL Violation</u> | <u>Your Water</u> | <u>MCLG</u> | <u>Likely Source of Contamination</u> |
|--|-----------------------------------|----------------------|-------------------|-------------|---------------------------------------|
| Total Coliform Bacteria (present or absent) | 5/month | No | 0 | 0 | Naturally present in the environment |
| E. Coli (present or absent) (Samples with total coliform present must be analyzed further for e. coli contamination) | | No | 0 | 0 | Human and animal fecal waste |

Disinfection By-Product Contaminants

| <u>Contaminants (units)</u> | <u>Year Sampled</u> | <u>MCL Violation</u> | <u>Your Water LRAA</u> | <u>Range Low / High</u> | <u>MCLG</u> | <u>MCL</u> | <u>Likely Source of Contamination</u> |
|---|---------------------|----------------------|------------------------|-------------------------|-------------|------------|---|
| Stage 2 DBP | | | | | | | |
| TTHM (mg/L) (Total Trihalomethanes) | 2020 | No | | | N/A | 0.08 | By-product of drinking water chlorination |
| Location (B01) | Quarterly | | 0.051 | 0.033 0.081 | | | |
| Location (B02) | Quarterly | | 0.037 | 0.024 0.046 | | | |
| HAA5 (mg/L) (Total Haloacetic Acids) | 2020 | No | | | N/A | 0.06 | By-product of drinking water chlorination |
| Location (B01) | Quarterly | | 0.015 | 0.013 0.017 | | | |
| Location (B02) | Quarterly | | 0.018 | 0.015 0.021 | | | |
| Chlorine(ppm) | 2020 | No | 0.64 | 0.21 1.38 | MRDLG=4 | MRDL=4 | Water additive used to control microbes |

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.

Lead and Copper Contaminants

| <u>Contaminants (units)</u> | <u>Sample Date</u> | <u>MCL Violation</u> | <u>Your Water</u> | <u># of sites above the Action Level</u> | <u>MCLG</u> | <u>MCL</u> | <u>Likely Source of Contamination</u> |
|-----------------------------------|--------------------|----------------------|-------------------|--|-------------|------------|---|
| Copper (ppm) (90th percentile) | September 2019 | No | <0.050 | 0 | 1.3 | AL=1.3 | Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives. |
| Lead (ppm) (90th percentile) | September 2019 | No | <0.004 | 0 | 0 | AL-0.015 | Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives. |

*Most recent monitoring performed in accordance with the regulations.

| <u>Contaminants (units)</u> | <u>Sample Date</u> | <u>Our Water (AVG)</u> | <u>Range</u> | |
|-----------------------------|--------------------|------------------------|--------------|-------------|
| | 2020 | | <u>Low</u> | <u>High</u> |
| Chloroform (mg/L) | Quarterly | 0.037 | 0.02 | 0.069 |
| Bromoform (mg/L) | Quarterly | <0.001 | <0.001 | <0.001 |
| Bromodichloromethane (mg/L) | Quarterly | 0.006 | 0.003 | 0.009 |
| Dibromochloromethane (mg/L) | Quarterly | 0.001 | <0.001 | 0.001 |
| Dichloroacetic Acid (mg/L) | Quarterly | 0.008 | 0.006 | 0.012 |
| Trichloroacetic Acid (mg/L) | Quarterly | 0.007 | 0.005 | 0.009 |

Asbestos Contaminant

| <u>Contaminants (units)</u> | <u>Sample Date</u> | <u>MCL Violation</u> | <u>Your Water</u> | <u>Allowable Limit</u> | <u>Likely Source of Contamination</u> |
|-----------------------------|--------------------|----------------------|-------------------|------------------------|--|
| Total Asbestos, MFL | *9/4/2013 | No | 0 | 7.0 MFL | Decay of asbestos cement water mains; erosion of natural deposits. |

*Most recent monitoring performed in accordance with the regulations.

City of Shelby Contaminants

| <u>Contaminants (units)</u> | <u>MCL Violation Y/N</u> | <u>Your Water</u> | <u>MCLG</u> | <u>MCL TT*</u> | <u>Likely Source of Contamination</u> |
|---|--------------------------|-------------------|-------------|----------------|---|
| Total Coliform Bacteria (presence or absence) | N/A | N/A | N/A | | Naturally present in the environment |
| E. Coli (presence or absence) | N | N | 0 | | Routine and repeat samples are total coliform-positive and either is E. Coli positive or system fails to take routine samples or system fails to analyze total coliform-positive repeat sample for E. Coli. Note: if either an original routine sample and/or its repeat samples are E. Coli positive, a Tier 1 violation exists. |
| | | | | | Human and animal fecal waste |

*If a system collecting fewer than 40 samples per month has two or more positive samples in one month, an assessment is required.

Level 1 Assessment – A Level 1 assessment is a study of the water system to identify problems and determine (if possible) why total coliform bacteria have been found in our water system. In the month of May, the city had two positive coliform samples triggering an assessment. Problems: 1, Operators not wearing gloves, 2 Sample top not disinfected. Corrective actions: 1, sampling procedure revised to include wearing gloves, 2 change disinfectant to a bleach solution.

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. In the month of August, the city had a second tier level 1 trigger in a 12 month period triggering a level 2 assessment. Problems: 1 flushing time not long enough, 2 disinfectant not adequate. Corrective actions: 1 incrustated the flushing times in the sampling procedure 2 change the disinfectant to a 70% Alcohol solution.

CCR Health Effects Language for the RTCR: Level 1 or 2 Assessment Not Due to E. coli MCL Violation

| <u>CCR Language</u> | <u>Citation</u> |
|---|----------------------------|
| Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system. We found coliforms indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct assessment(s) to identify problems and to correct any problems that were found during these assessments. | 40 CRF 141.153(h)(7)(i)(A) |
| During the past year, we were required to conduct one Level 1 assessment. One Level 1 assessment was Completed. In addition, we were required to take two corrective actions and we completed two of these actions. | 40 CRF 141.153(h)(7)(i)(B) |
| During the past year, one Level 2 assessment was required to be completed for our water system. One Level 2 assessment was completed. In additions, we were required to take two corrective actions and we completed two of these actions. | 40 CRF 141.153(h)(7)(i)(C) |

Nitrate/Nitrite Contaminants

| <u>Contaminants (units)</u> | <u>Sample Date</u> | <u>MCL Violation Y/N</u> | <u>Your Water</u> | <u>Range Low – High</u> | <u>MCLG</u> | <u>MCL</u> | <u>Likely Source of Contamination</u> |
|-----------------------------|--------------------|--------------------------|-------------------|-------------------------|-------------|------------|--|
| Nitrate (as Nitrogen) (ppm) | 1/8/2020 | N | 0.55 | N/A | 10 | 10 | Runoff from fertilizer use; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories |

Turbidity*

| <u>Contaminant (units)</u> | <u>Treatment Technique (TT) Violation Y/N</u> | <u>Your Water</u> | <u>MCLG</u> | <u>Treatment Technique (TT) Violation if:</u> | <u>Likely Source of Contamination</u> |
|--|---|-------------------|-------------|---|---------------------------------------|
| Turbidity (NTU) - Highest single turbidity measurement | N | 0.27 NTU | N/A | Turbidity > 1 NTU | Soil run-off |

Turbidity (NTU) - Lowest monthly percentage (%) of samples meeting turbidity limits

N

100%

N/A

Less than 95% of monthly turbidity measurements are \leq 0.3 NTU

Soil run-off

*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.

Inorganic Contaminants

| <u>Contaminant (units)</u> | <u>Sample Date</u> | <u>MCL Violation Y/N</u> | <u>Your Water</u> | <u>Range Low-High</u> | <u>MCLG</u> | <u>MCL</u> | <u>Likely Source of Contamination</u> |
|----------------------------|--------------------|--------------------------|-------------------|-----------------------|-------------|------------|--|
| Fluoride (ppm) | 2/4/2020 | N | 1.22 | N/A | 4 | 4 | Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories. Discharge of drilling waste discharge from metals, refineries; erosion of natural deposits |
| Barium (ppm) | 1/8/2020 | N | 0.015 | N/A | 2 | 2 | |

Volatile Organic Chemical (VOC) Contaminants

| <u>Contaminant (units)</u> | <u>Sample Date</u> | <u>MCL Violation Y/N</u> | <u>Your Water</u> | <u>Range Low-High</u> | <u>MCGL</u> | <u>MCL</u> | <u>Likely Source of Contamination</u> |
|----------------------------|--------------------|--------------------------|-------------------|-----------------------|-------------|------------|---|
| Xylenes (Total)(ppm) | 7/8/2020 | N | 1.3 | 0.0-1.3 | 10 | 10 | Discharge from petroleum factories; discharge from chemical factories |

Total Organic Carbon (TOC)

| <u>Contaminant (units)</u> | <u>TT Violation Y/N</u> | <u>Your Water (RAA Removal Ratio)</u> | <u>Range Monthly Removal Ratio Low-High</u> | <u>MCLG</u> | <u>TT</u> | <u>Likely Source of Contamination</u> | <u>Compliance Method (Step 1 or ACC#)</u> |
|---|-------------------------|---------------------------------------|---|-------------|-----------|---------------------------------------|---|
| Total Organic Carbon (removal ratio)(TOC)-TREATED | N | 0.42 | 0.0-0.46 | N/A | TT | Naturally present in the environment | ACC2 |

Disinfectants Residuals Summary and Stage 2 Byproduct Compliance

| <u>Contaminant (units)</u> | <u>Year Sampled</u> | <u>MCL/MRDL Violation Y/N</u> | <u>Your Water (highest RAA/LRAA)</u> | <u>Range Low - High</u> | <u>MCLG/MCL</u> | <u>MRDLG/MRDL</u> | <u>Likely Source of Contamination</u> |
|----------------------------|---------------------|-------------------------------|--------------------------------------|-------------------------|-----------------|-------------------|---|
| Chlorine (ppm) | 2020 | N | 1.02 RAA | 0.64-1.38 | | 4 / 4.0 | Water additive used to control microbes. |
| TTHM (ppb) | | | | | | | |
| B01-040 | | N | 47 LRAA | 26-68 | | | |
| B02-055 | 2020 | N | 24 LRAA | 11-32 | N/A / 80 | | By-product of drinking water chlorination |
| B03-200 | | N | 26 LRAA | 15-27 | | | |
| B04-023 | | N | 48 LRAA | 23-79 | | | |
| HAA5 (mg/L) | | | | | | | |
| B01-040 | | N | 12 LRAA | 9-17 | | | |
| B02-055 | | N | 14 LRAA | 6-17 | | | |
| B03-200 | 2020 | N | 12 LRAA | 7-17 | N/A /60 | | By-product of drinking water chlorination |
| B04-023 | | N | 17 LRAA | 13-20 | | | |

Lead and Copper Contaminates

| <u>Contaminates (units)</u> | <u>Sample Date</u> | <u>Your Water</u> | <u># of Sites Found Above the AL</u> | <u>MCLG</u> | <u>MCL</u> | <u>Likely Source of Contamination</u> |
|------------------------------------|--------------------|-------------------|--------------------------------------|-------------|------------|---|
| Copper (mg/L) (90th percentile) | 7/13/2019 | 0.082 | 0 | 1.3 | AL=1.3 | Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives. |
| Lead (mg/L) (90th percentile) | 7/3/2019 | <3 | 0 | 0 | AL=15 | Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives. |

UCMR4 Testing conducted in 2020. Results available upon request.

Other Miscellaneous Water Characteristics Contaminants

| <u>Contaminate (units)</u> | <u>Sample Date</u> | <u>Your Water</u> | <u>Range Low-High</u> | <u>SMCL</u> |
|----------------------------|--------------------|-------------------|-----------------------|-------------|
| Sodium (ppm) | 1/8/2020 | 10.2 | N/A | N/A |
| Sulfate (ppm) | 1/8/2020 | 18.5 | N/A | 250 mg/L |

Additional Lead Information

If present, elevated levels of lead can cause health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with services lines and home plumbing. The City of Shelby is responsible for providing high quality drinking water, but cannot control the variety of materials used in home 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 two 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 <https://water.epa.gov/ground-water-and-drinking-water/basic-information-about-lead-drinking-water>.

