

Consumer Confidence Report

The Quality of Your Drinking Water



Volume 25

PWSID No. 2165045

June 2023

Quality of Your Drinking Water: Water Quality Test Results for 2022

Your drinking water is routinely monitored according to federal and state regulations for a variety of contaminants. The tables that follow in this report show the results of our monitoring for the period of January 1 through December 31, 2022.

The results in most of these tables are from testing done in 2022. The state allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. As a result, some of our data, though accurate, is more than one year old and only those contaminants that had some level of detection are listed. Many other contaminants have been analyzed but were not present or were below the detection limits of the lab equipment and therefore, not listed.

Maximum Contaminant Levels (MCLs) are set by the U.S. Environmental Protection Agency (EPA). In developing the standards, the EPA assumes that the average adult drinks 2 liters of water each day throughout a 70-year life span. The EPA generally sets MCLs at levels that will result in no adverse health effects for some contaminants or a one-in-ten-thousand to one-in-a-million chance of having the described health effect for other contaminants.

Bridgewater Water Treatment Plant: 12-Time Gold Medal Winner

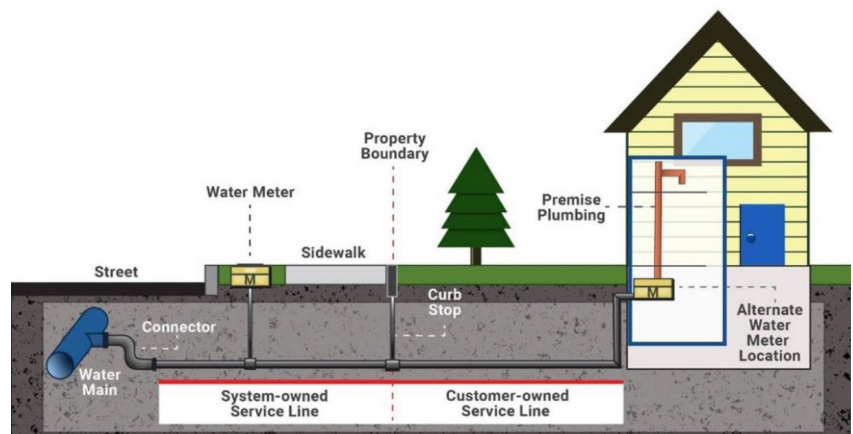
For the 12th year in a row, Bridgewater has received the Virginia Department of Health's highest honor in water treatment—the "Office of Drinking Water Gold Treatment Award." This award is a reflection of the experience and dedication of our Water Treatment Plant employees Anna King, Bryan Davis, Bruce Richards, Wayne Roberts, and Byron Slagell.

In addition to the "Gold Medal," the Virginia Department of Health noted that our staff has maintained optimal levels in some key components of finished water for **18** straight years. We are pleased that our Water Treatment Plant has been so honored and congratulate our staff on this accomplishment.

EPA Guidance on Service Line Inventory

The EPA has released guidance for localities to develop and maintain a service line inventory. This inventory helps water systems work toward compliance with the revisions to the Lead and Copper Rule. This service line inventory is due to the EPA on October 16, 2024.

So, you may be wondering what a service line inventory is? Our staff will be gathering historical data and compiling current information to develop an inventory of all the water service lines within the town. We will determine the materials used for the entire service line that extends from the water main to the house (as pictured). The most common materials used for service lines include lead, copper, plastic, and galvanized pipes. This inventory will help guide our future prioritization of service line replacements based on the installation dates and the materials used. This information will also be used to provide public education on the Lead and Copper Rule and how your individual home or business may be impacted.



EPA guidelines require us to develop an inventory of all water service lines—and the materials used for those lines—by October 2024

In the coming months, more information will be provided on our methods for data collection and the results of our findings. The *Current* and Bridgewater Buzz are the primary sources for updates on this project and other Town news.

Quality of Your Drinking Water: Water Quality Test Results for 2022

Lead and Copper (Most recent monitoring period)

| Contaminant/Unit of Measurement | MCLG | MCL | Level Found/Range | Exceedance | Date of Sample | Typical Source of Contamination |
|---------------------------------|------|----------|--|------------|----------------|---|
| Copper ppm | 1.3 | AL = 1.3 | 0.102 (90th percentile) None of the 20 samples collected exceeded the AL. | No | September 2020 | Corrosion of household plumbing; erosion of natural deposits; leaching from wood preservatives. |
| Lead ppb | 0 | AL = 15 | 2.00 (90th percentile) None of the 20 samples collected exceeded the AL. | No | September 2020 | Corrosion of household plumbing systems; Erosion of natural deposits. |

Lead: 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 Bridgewater 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 the 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 (1-800-426-4791) or at <http://www.epa.gov/safewater/lead>.

Radiological Contaminants (Most recent monitoring period)

| Contaminant/Unit of Measurement | MCLG | MCL | Level Found/Range | Violation | Date of Sample | Typical Source of Contamination |
|---------------------------------|------|-----|-------------------|-----------|----------------|-------------------------------------|
| Combined Radium - pCi/L | 0 | 5 | 1.62 | No | October 2020 | Erosion of natural deposits |
| Alpha emitters - pCi/L | 0 | 15 | 2.80 | No | October 2020 | Erosion of natural deposits |
| Gross Beta - pCi/L | 0 | 50 | 3.00 | No | October 2020 | Decay of natural & manmade deposits |

Radiological Contaminants: Certain minerals are radioactive and may emit various forms of radiation. They become a part of the water supply through erosion of the mineral deposits. Some people who drink water containing radiation in excess of the maximum contaminant limit may have an increased risk of getting cancer. Our water shows trace amounts of alpha and beta radiation. Please note that our readings are far less than the MCL.

Inorganic Contaminants

| Contaminant/Unit of Measurement | MCLG | MCL | Level Found/Range | Violation | Date of Sample | Typical Source of Contamination |
|---------------------------------|------|-----|---------------------|-----------|----------------|---|
| Fluoride ppm | 4 | 4 | Range: 0.47 to 0.78 | No | Monthly 2022 | Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer & aluminium factories. |
| Barium ppm | 2 | 2 | 0.045 | No | Nov. 2022 | Discharge of drilling waste; discharge from metal refineries; erosion of natural deposits. |
| Nitrate ppm | 10 | 10 | 1.47 | No | Nov. 2022 | Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits. |

Inorganic Contaminants: The Department of Health tests for 15 different inorganic contaminants including arsenic, asbestos, mercury, & nitrate. Lead is also classified as "inorganic" but it is listed separately in this report since it is of particular concern for all water systems. We show small amounts of fluoride and nitrate in our test results. Fluoride is added at the water filtration plant as a preventative for tooth decay. Nitrates occur in our system and were a concern in the past. However, we now blend river & well water, greatly reducing our nitrate levels. In this report we show slightly more than one part per million, a small fraction of the MCL.

Microbiological Contaminants

| Contaminant/Unit of Measurement | MCLG | MCL | Level Found/Range | Violation | Date of Sample | Typical Source of Contamination |
|---------------------------------|------|---|---|-----------|----------------|---------------------------------|
| Turbidity NTU | NA | TT=0.3 NTU (95% of monthly samples must be <0.3 NTU) | 0.09 Max (Maximum & all monthly samples <0.3 NTUs 100% of the time) | No | Daily | Soil runoff |

Turbidity: All water contains a certain amount of suspended solids, some of which could be microbiological contaminants that can cause sickness if ingested. Drinking water turbidity is measured in nephelometric turbidity units (NTUs) and a reading of .3 or less is considered safe by the Health Department. For comparison, 5 NTU turbidity is barely noticeable to the naked eye. The Town's drinking water falls well below the standard for safe drinking water.

Disinfection By-Products

| Contaminant/Unit of Measurement | MCLG | MCL | Level Found | Violation | Date of Sample | Typical Source of Contamination |
|------------------------------------|------|-----|--------------------------------------|-----------|----------------|--|
| TTHMs (Total Trihalomethanes) mg/l | 0 | 80 | Average: 9.10 Range: 2.00 to 23.0 | No | Quarterly 2022 | By-product of drinking water chlorination. |
| Haloacetic acids (HAAs) mg/l | NA | 60 | Average: 16.5 Range: 4.00 to 34.0 | No | Quarterly 2022 | By-product of drinking water chlorination. |

Disinfection By-Products: Disinfection by-products are formed by the reaction of the disinfectant with natural organic matter in the water. Bridgewater samples are significantly lower than the maximum allowable limit in both TTHMs and HAAs.

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Disinfection By-Products Precursors

| Contaminant/ Unit of Measurement | MCLG | MCL | Level Found/ Range | Violation | Date of Sample | Typical Source of Contamination |
|-------------------------------------|------|-----|-----------------------|-----------|-------------------|---------------------------------------|
| (TOCs) Total Organic Carbon mg/l | NA | TT | ND to 0.57 | No | Quarterly 2022 | Naturally present in the environment. |

Disinfection By-Products Precursors: A precursor is a substance from which another substance is formed. For Carbon, it can combine with Chlorine to form organic compounds. In greater concentrations, some are harmful to human health. Our level of TOC is low and poses no health risk.

Disinfectant Residual Contaminants

| Contaminant/ Unit of Measurement | MCLG | MCL | Level Found/ Range | Violation | Date of Sample | Typical Source of Contamination |
|-------------------------------------|------|-----|-----------------------|-----------|-------------------|--|
| Chlorine mg/L | 4 | 4 | Range: 1.28 to 1.65 | No | Daily 2022 | By-product of drinking water chlorination. |

Metals

| Contaminant/ Unit of Measurement | MCLG | MCL | Level Found/ Range | Violation | Date of Sample | Typical Source of Contamination |
|-------------------------------------|------|-----|-----------------------|-----------|-------------------|---|
| Sodium | NA | NA | 5.41 ppm | No | Nov. 2022 | Erosion of natural deposits, water softeners, de-icing salt runoff. |

Four Groups of Contaminants

1. Microbial Pathogens. Pathogens in drinking water are serious health risks. Pathogens are disease-producing micro-organisms, which include bacteria, viruses, and parasites (such as *giardia lamblia*). They get into drinking water when the water source is contaminated by sewage and animal waste, or when wells are improperly sealed and constructed. They can cause gastroenteritis, salmonella infection, dysentery, shigellosis, hepatitis, and giardiasis (a gastrointestinal infection causing diarrhea, abdominal cramps, and gas). The presence of coliform bacteria, which is generally a harmless bacteria, may indicate other contamination to the drinking water system.

2. Organics. Some chemical compounds are known as “organics.” These contain carbon and are often found in nature. Most organics would be considered harmless, but some are regulated, such as:

- Trihalomethanes (THMs), formed when chlorine in treated drinking water combines with naturally occurring organic matter;
- Pesticides, including herbicides, insecticides, and fungicides; and
- Volatile organic chemicals (VOCs), which include solvents, degreasers, adhesives, gasoline additives, and fuel additives. Some of the common VOCs are benzene, trichloroethylene (TCE), styrene, toluene, and vinyl chloride. Possible chronic health effects include cancer, central nervous system disorders, liver and kidney damage, reproductive disorders, and birth defects.

3. Inorganics. These contaminants include toxic metals like arsenic, barium, chromium, lead, mercury, and silver. These metals can get into your drinking water from natural sources, industrial processes, and the materials used in your plumbing system. Toxic metals are regulated in public water supplies because they can cause acute poisoning, cancer, and other health effects.

Nitrates are another inorganic contaminant. The nitrates in mineral deposits, fertilizers, sewage, and animal wastes can contaminate water.

4. Radioactive Elements. Radon is a radioactive contaminant that results from the decay of uranium in soils & rocks. It is usually more of a health concern when it enters a home as a soil gas than when it occurs in water supplies. Radon in air is associated with lung cancer.

Definitions

Throughout this report there may be unfamiliar terms and abbreviations. The following definitions are provided to help you better understand these terms:

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): Highest level of a contaminant 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.

Nephelometric Turbidity Unit (NTU): A measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

Non-detects (ND): Lab analysis indicates that the contaminant is not present.

Parts per million (ppm) or milligrams per liter (mg/l): One part per million corresponds to one minute in 2 years, or a single penny in \$10,000.

Parts per billion (ppb) or micrograms per liter: 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.

Picocuries per liter (pCi/l): A measure of the radioactivity in water.

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

Variations and exemptions: State or EPA permission not to meet an MCL or a treatment technique under certain conditions.

Town of Bridgewater
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Annual Drinking Water Quality Report Town of Bridgewater (PWSID No. 2165045)



Source Water Assessment

The Virginia Department of Health (VDH) completed a source water assessment on March 27, 2002. This assessment determined that our source may be susceptible to contamination because it is located in an area that promotes migration of contaminants from land use activities of concern. More specific information may be obtained by contacting **Anna King** at **(540) 828-6183**.

What does that mean? The language used to describe the "Source Water Assessment" was written by the Virginia Department of Health. What this really means is that North River runs through an agricultural area that is subject to contamination from fields. In addition, Pilgrim's Pride and a few small industries are upstream from our intake. This also poses a risk. However, it should be noted that no contamination of North River has occurred over the past twenty years. In fact, the last contamination we can remember came from a farm upstream and happened over thirty-five years ago.

An Open Letter to the Citizens of Bridgewater:

Each year about this time you receive a report on the quality of your drinking water. While this is mandated by the Environmental Protection Agency and the Virginia Department of Health, we welcome the opportunity to explain our water treatment system to you and share the results of recent testing for contaminants.

First and foremost, please realize that your drinking water meets all state and federal requirements administered by the Office of Drinking Water for the Virginia Department of Health. We are committed to providing you with a safe and dependable supply both now and in the future. I hope you enjoy reading this report and that it gives you a better understanding of the issues surrounding water and public health.

Sincerely,

A. Fontaine Canada, Chairman
Public Works Committee

