

# ANNUAL WATER QUALITY REPORT

Reporting Year 2023



Este informe contiene información muy importante sobre su agua potable. Tradúzcalo o hable con alguien que lo entienda bien.

Cé rapport contient des information importantes concernant votre eau potable. Veuillez traduire, ou parlez avec quelqu' un qui peut le comprendre.

Este relatório contém a informação importante sobre sua água bebendo. Tenha-o por favor traduzido por um amigo ou por alguém que o compreende e o pode o traduzir para você.

*Presented By*  
**Brockton Water Department**



PWS ID#: 4044000



## Our Commitment

We are pleased to present to you this year's annual water quality report. This report is a snapshot of last year's water quality covering all testing performed between January 1 and December 31, 2023. Included are details about your sources 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 providing you with this information because informed customers are our best allies.

## Additional Information

- The city is proud to offer the Sensus Customer Portal, which allows residents to view their water usage and set up alerts if a water or dollar amount is exceeded. It can be found at [brockton.ma.us/news/sensus-customer-portal/](http://brockton.ma.us/news/sensus-customer-portal/). To register, you will need your account number, which can be found on your water bill.
- Water use restrictions (water bans) can be found at [www.brockton.ma.us](http://www.brockton.ma.us) and must be followed by properties with irrigation meters.
- The city's leak detection program regularly inspects 303 miles of water main in the distribution system. This program has helped maintain our annual water consumption, which was approximately nine million gpd in 2023.
- Capital improvement projects to the city's water system in 2023 included completing the Water Transmission Main Valve Replacement Phase 2 Project (replacement of 20- and 24-inch-diameter valves from East Bridgewater to the city limits) and commencing the North Main Street Water Transmission Main Replacement Project (replacing approximately 12,000 feet of new 6- to 30-inch Class 52 ductile iron piping), the Downtown Water Main Replacement Project (replacing approximately 5,000 feet of new 6- to 20-inch Class 52 ductile iron piping), and the Silver Lake Water Treatment Plant Filter Rehabilitation Project (filter rehabilitation and replacement of granular activated carbon for all six filters).

## Important Health Information

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 may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The U.S. Environmental Protection Agency (EPA)/Centers for Disease Control and Prevention (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 at (800) 426-4791 or <http://water.epa.gov/drink/hotline>.

## Source Water Assessment

The Brockton water system was evaluated in April 2003 by the Massachusetts Department of Environmental Protection (DEP) and has remained relatively unchanged since then. This evaluation is part of the Source Water Assessment and Protection (SWAP) program. The SWAP found that the watersheds for the Brockton water system are primarily a mix of underdeveloped forest (42 percent for Silver Lake and 38 percent for Brockton Reservoir), residential development (23 percent for Silver Lake and 14 percent for Brockton Reservoir), agriculture, industry, commercial uses, and protected open space. The Hubbard Avenue Well, an emergency source that has not been active since 1985, has an interim wellhead protection area that contains predominantly residential (35 percent), commercial (21 percent), and industrial (8 percent) uses, with some forest.

Silver Lake, Brockton Reservoir, and the inactive Hubbard Avenue Well were given a high susceptibility rating. Known vulnerabilities to source water contamination include spills, leaks, or improper storage or handling of fertilizers, pesticides, chemicals, and industrial/hazardous waste and microbial contaminants. The Brockton SWAP report is available at <https://www.mass.gov/doc/brockton-water-system-swap-report/download>. Further information on SWAP is available at [www.mass.gov/service-details/the-source-water-assessment-protection-swap-program](http://www.mass.gov/service-details/the-source-water-assessment-protection-swap-program).

## Lead in Home Plumbing

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. We are responsible for providing high-quality drinking water, but we 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 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 at (800) 426-4791 or [www.epa.gov/safewater/lead](http://www.epa.gov/safewater/lead).

## QUESTIONS?

For more information about this report, or for any questions relating to your drinking water, please contact the Commissioner of Public Works at (508) 580-7865.

## Substances That Could Be in Water

To ensure that tap water is safe to drink, the Department of Environmental Protection (DEP) and the U.S. EPA prescribe regulations limiting the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) and Massachusetts Department of Public Health (DPH) regulations establish limits for contaminants in bottled water, which must provide the same protection for public health. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of these contaminants does not necessarily indicate that the water poses a health risk.

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. Substances 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, or wildlife;

Inorganic Contaminants, such as salts and metals, which can be naturally occurring or may 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 which may also come from gas stations, urban stormwater runoff, and septic systems;

Radioactive Contaminants, which can be naturally occurring or may be the result of oil and gas production and mining activities.

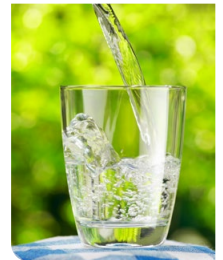
More information about contaminants and potential health effects can be obtained by calling the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

## Where Does My Water Come From?

The city's primary supply reservoir is Silver Lake, located in the towns of Pembroke, Kingston, Plympton, and Halifax, Massachusetts. Since the early 1900s, Brockton has been served by this water supply. Since the 1960s, withdrawals from both Furnace Pond in Pembroke and Monponsett Pond in Hanson and Halifax have been diverted by gravity to Silver Lake between October and May. The Silver Lake system has a watershed area of 11.07 miles. The Silver Lake Water Treatment Facility has a capacity of 24 million gallons per day (gpd) and pumps drinking water from Silver Lake to the city's water distribution system.

The city receives supplemental water from the Aquaria Desalination Plant in Dighton, Massachusetts. GS Inima Environment owns and operates the desalination plant, which treats water from the Taunton River. Water treated at this facility is piped from the treatment plant to a meter vault on Pearl Street, where it connects to the city's water distribution system. The Aquaria Desalination Plant typically provides drinking water to the city during the summer months, when demand is highest, at an average rate of one to two million gpd.

The city has historically obtained a small supply of water (approximately 500,000 gpd) from the Brockton Reservoir in Avon, Massachusetts. The reservoir, built in 1880, became a water supply for Brockton when the nearby Woodland Avenue Water Treatment Plant became operational in 1994. Brockton Reservoir is located within D. W. Field Park and is one of a small chain of ponds. It has a watershed of 2.64 miles. The Woodland Avenue Water Treatment Plant has been inactive since spring 2021 due to the presence of six per- and polyfluoroalkyl substances (PFAS6) found in the Brockton Reservoir. On March 19, 2021, the city provided mailings to all residents summarizing the elevated levels of PFAS6 at the Brockton Reservoir and Woodland Avenue Water Treatment Plant.





## Test Results

Our water is monitored for many different kinds of substances on a very strict sampling schedule, and the water we deliver must meet specific health standards. Here, we only show those substances that were detected in our water (a complete list of all our analytical results is available upon request). Remember that detecting a substance does not mean the water is unsafe to drink; our goal is to keep all detects below their respective maximum allowed levels.

The state recommends monitoring for certain substances less than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

We participated in the fifth stage of the U.S. EPA's Unregulated Contaminant Monitoring Rule (UCMR5) program by performing additional tests on our drinking water. UCMR5 sampling benefits the environment and public health by providing the U.S. EPA with data on the occurrence of contaminants suspected to be in drinking water to determine if it needs to introduce new regulatory standards to improve drinking water quality. Unregulated contaminant monitoring data are available to the public, so please feel free to contact us if you are interested in obtaining that information. If you would like more information on the U.S. EPA's Unregulated Contaminant Monitoring Rule, please call the Safe Drinking Water Hotline at (800) 426-4791.

### REGULATED SUBSTANCES

| SUBSTANCE<br>(UNIT OF MEASURE)                                     | YEAR<br>SAMPLED | MCL<br>[MRDL]                      | MCLG<br>[MRDLG] | AMOUNT<br>DETECTED | RANGE<br>LOW-HIGH | VIOLATION | TYPICAL SOURCE  |
|--|-----------------|------------------------------------|-----------------|--------------------|-------------------|-----------|---|
| <b>Barium</b> (ppm)  | 2023            | 2                                  | 2               | 0.023              | NA                | No        | Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits  |
| <b>Chlorine</b> (ppm)  | 2023            | [4]                                | [4]             | 1.84               | 1.15–2.08         | No        | Water additive used to control microbes   |
| <b>Haloacetic Acids [HAAs]–Stage 2</b> (ppb)                       | 2023            | 60                                 | NA              | 27                 | ND–35             | No        | By-product of drinking water disinfection   |
| <b>Nitrate</b> (ppm)   | 2023            | 10                                 | 10              | 0.23               | NA                | No        | Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits   |
| <b>Perchlorate</b> (ppb)   | 2023            | 2                                  | NA              | 0.082              | NA                | No        | Inorganic chemicals used as oxidizers in solid propellants for rockets, missiles, fireworks, and explosives   |
| <b>PFAS6</b> (ppt)   | 2023            | 20                                 | NA              | 2.48               | NA                | No        | Discharges and emissions from industrial and manufacturing sources associated with the production or use of moisture- and oil-resistant coatings on fabrics and other materials; Use and disposal of products containing these PFAS, such as firefighting foams |
| <b>Total Organic Carbon [TOC]</b> (removal ratio)                  | 2023            | TT <sup>1</sup>                    | NA              | 1.49               | 1.29–1.7          | No        | Naturally present in the environment  |
| <b>TTHMs [total trihalomethanes]–Stage 2</b> (ppb)                 | 2023            | 80                                 | NA              | 51                 | 1.3–72            | No        | By-product of drinking water disinfection   |
| <b>Turbidity<sup>2</sup></b> (NTU)                                 | 2023            | TT                                 | NA              | 0.09               | NA                | No        | Soil runoff   |
| <b>Turbidity</b> (lowest monthly percent of samples meeting limit) | 2023            | TT = 95% of samples meet the limit | NA              | 100                | NA                | No        | Soil runoff   |

### Tap water samples were collected for lead and copper analyses from sample sites throughout the community

| SUBSTANCE<br>(UNIT OF MEASURE) | YEAR<br>SAMPLED | AL  | MCLG | AMOUNT<br>DETECTED (90TH<br>%ILE) | SITES ABOVE<br>AL/TOTAL<br>SITES | VIOLATION | TYPICAL SOURCE  |
|--------------------------------|-----------------|-----|------|-----------------------------------|----------------------------------|-----------|---|
| <b>Copper</b> (ppm)            | 2023            | 1.3 | 1.3  | 0.045                             | 0/51                             | No        | Corrosion of household plumbing systems; Erosion of natural deposits  |
| <b>Lead</b> (ppb)              | 2023            | 15  | 0    | 4                                 | 2/51                             | No        | Lead service lines; Corrosion of household plumbing systems, including fittings and fixtures; Erosion of natural deposits |

## SECONDARY SUBSTANCES

| SUBSTANCE (UNIT OF MEASURE) | YEAR SAMPLED | SMCL            | MCLG | AMOUNT DETECTED | RANGE LOW-HIGH | EXCEEDANCE | TYPICAL SOURCE                                    |
|-----------------------------|--------------|-----------------|------|-----------------|----------------|------------|---|
| Color (units)               | 2023         | 15              | NA   | 7               | NA             | No         | Naturally occurring organic materials             |
| Iron (ppb)                  | 2023         | 300             | NA   | 30              | NA             | No         | Leaching from natural deposits; Industrial wastes |
| Manganese (ppb)             | 2023         | 50 <sup>3</sup> | NA   | 103             | NA             | Yes        | Leaching from natural deposits                    |
| pH (units)                  | 2023         | 6.5-8.5         | NA   | 7.52            | 7.30-7.66      | No         | Naturally occurring                               |

## UNREGULATED SUBSTANCES<sup>4</sup>

| SUBSTANCE (UNIT OF MEASURE) | YEAR SAMPLED | AMOUNT DETECTED | RANGE LOW-HIGH | TYPICAL SOURCE |
|-----------------------------|--------------|-----------------|----------------|----------------|
| Bromodichloromethane (ppb)  | 2023         | 4.1             | NA             | NA             |
| Chlorodibromomethane (ppb)  | 2023         | 1.3             | NA             | NA             |
| Chloroform (ppb)            | 2023         | 11              | NA             | NA             |
| Sodium (ppm)                | 03/01/2023   | 26              | NA             | NA             |

## About Our Violation

The 2022 Consumer Confidence Report (CCR) was delivered to consumers, the DEP, the local Board of Health, and Massachusetts DPH after the July 1, 2023, deadline. This 2023 CCR will be delivered to all parties ahead of the July 1, 2024, deadline.

<sup>1</sup>The value reported under Amount Detected for TOC is the lowest ratio between percentage of TOC actually removed and percentage of TOC required to be removed. A value of greater than 1 indicates that the water system is in compliance with TOC removal requirements. A value of less than 1 indicates a violation of the TOC removal requirements.

<sup>2</sup>Turbidity is a measure of the cloudiness of the water. It is monitored because it is a good indicator of the effectiveness of the filtration system.

<sup>3</sup>Manganese is a naturally occurring mineral found in rocks, soil, groundwater, and surface water. It is necessary for proper nutrition and part of a healthy diet, but it can have undesirable effects on certain sensitive populations at elevated concentrations. U.S. EPA and DEP have established public health advisory levels for manganese to protect against concerns of potential neurological effects.

<sup>4</sup>Unregulated contaminants are those for which the U.S. EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist U.S. EPA in determining their occurrence in drinking water and whether future regulation is warranted.

## Definitions

**90th %ile:** Out of every 10 homes sampled, 9 were at or below this level. This number is compared to the Action Level to determine lead and copper compliance.

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

**MCL (Maximum Contaminant Level):** 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.

**MCLG (Maximum Contaminant Level Goal):** 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.

**MRDL (Maximum Residual Disinfectant Level):** 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.

**MRDLG (Maximum Residual Disinfectant Level Goal):** 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.

**NA:** Not applicable.

**ND (Not detected):** Indicates that the substance was not found by laboratory analysis.

**NTU (Nephelometric Turbidity Units):** Measurement of the clarity, or turbidity, of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

**ppb (parts per billion):** One part substance per billion parts water (or micrograms per liter).

**ppm (parts per million):** One part substance per million parts water (or milligrams per liter).

**ppt (parts per trillion):** One part substance per trillion parts water (or nanograms per liter).

**SMCL (Secondary Maximum Contaminant Level):** These standards are developed to protect aesthetic qualities of drinking water and are not health based.

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