

# BRIDGEWATER WATER DEPARTMENT

## ANNUAL WATER QUALITY REPORT

### (JANUARY 2018 – DECEMBER 2018)

#### PWS ID Number: 4042000

The Bridgewater Water Department is committed to providing our customers with water that meets and exceeds all drinking water standards. To ensure that we continue to deliver this quality product, the Water Department has made significant investments over the years in new well sites, water quality monitoring, water source protection, water mains and water treatment.

We are extremely pleased to present our water quality report covering testing performed in 2018. This is indicative of our ability to consistently provide high quality water to our customers year after year. As regulations and drinking water standards change, our commitment to you will be to make appropriate changes in an economical manner. We will remain vigilant in meeting the challenges of source water protection, water conservation and community education while continuing to serve the needs of our water users.

The Safe Drinking Water Act (SDWA) passed by Congress in 1974 requires water suppliers to report annually to their customers on the quality of their drinking water. This Annual “**Water Quality Report**” is designed to provide you with information you need to make educated decisions for yourself, your family, and your town.

This Report will be delivered to you annually by July 1st. Included are details about your water source, what we are doing to protect it, what it contains, how it is treated and how it compares to standards set by regulatory agencies. Informed consumers are our best allies in maintaining safe drinking water. Please take the time to review this report and save it as a reference.

#### ***What Other Sources of Information Are Available?***

Mass. DEP Web Site: [www.mass.gov/dep](http://www.mass.gov/dep); American Water Works Association Web Site: [www.awwa.org](http://www.awwa.org); U. S. Environmental Protection Agency Web Site: [www.epa.gov/safewater](http://www.epa.gov/safewater). [EPA Drinking Water Hotline: 1-800-426-4791.](tel:18004264791)

#### ***Where Does Your Water Come From?***

Your water supply is from groundwater sources that are located in 3 aquifers. We are within the Taunton River basin. The first consists of 4 wells located on High Street near the Matfield River. The second aquifer supports 5 wells located in the vicinity of Carvers Pond. The third source is 2 wells located on Plymouth Street. The wells range in depth from 40-60 feet and are constructed in the sand and gravel deposits that overlie bedrock. The water is delivered to customers through approximately 130 miles of water mains ranging in size from 2 inches to 16 inches. The service pipe into your house is 3/4" or 1" and is tapped into the main in the street.

All the wells have sodium hydroxide added to the water to reduce its natural acidity and minimize the corrosion of household plumbing. The wells at Carvers Pond are treated to remove iron and manganese. We are designing a new water treatment plant to remove iron and manganese from the wells at High Street. Chlorine is added as a precaution against any bacteria that may be present. We carefully monitor the amount of chlorine adding the minimum necessary to protect the safety of our water without compromising taste.

The Water Department owns over 50 acres at Carvers Pond and over 18 acres at High Street to protect our water sources. In addition, the Water Department has about 20 acres on Plymouth Street. The Water Department has 2 storage tanks with a total capacity of 4.7 million gallons. This storage capacity helps maintain system-wide pressure while at the same time providing water to help meet peak demands and fire emergencies.

#### **2018 H<sub>2</sub>O Facts**

**Total Water Pumped:  
564 Million Gal.**

**Maximum Day Usage:  
2.43 Million Gal.**

**Average Per Capita  
Usage:  
44 GAL/DAY**

### ***Important Health Information***

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 the water poses a health risk.

In order to ensure that tap water is safe to drink, the Massachusetts Department of Environmental Protection (DEP) and EPA prescribe regulations, which limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) and the Massachusetts Department of Public Health (DPH) regulations establish limits for contaminants in bottled water that must provide the same protection for public health.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as people with cancer undergoing chemotherapy, those 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.

More information about contaminants and potential health effects along with the EPA/CDC (Environmental Protection Agency/Center for Disease Control) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available by calling the EPA's *Safe Drinking Water Hotline at 1-800-426-4791*.

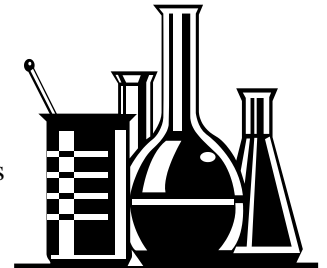
If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The Bridgewater Water Department is responsible for providing high 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>.

### ***Explanation of Expected Contaminants***

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, brooks, 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 contaminants resulting from the presence of animals or human activity.

Contaminants that **may** be present in **untreated** source water include:

- *Microbial contaminants*, such as viruses and bacteria which may come from septic systems, wastewater treatment plants, agricultural livestock operations, and wildlife.
- *Inorganic contaminants*, such as salts and metals, which can be naturally occurring or result from urban storm runoff, industrial or domestic wastewater discharges, oil or gas production, mining, or farming.
- *Pesticides and herbicides*, which may come from a variety of sources such as agriculture, urban storm water 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 storm water runoff, and septic systems.
- *Radioactive contaminants*, which can be naturally occurring or be the result of oil and gas production and mining activities.



Even though we tested for over **100** of the contaminants mentioned above, the included table shows only the substances that **were detected** in our water. The presence of these contaminants in the water does not necessarily indicate that the water presents a health hazard. All other contaminants were non-detected. The state requires us to monitor 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.

These substances had detection at either the required level or well below the highest level of a contaminant allowed in drinking water, which is the Maximum Contaminant Level (MCL) column.

The next column is the Highest Level that we detected in our samples all year followed by the Range of values. The Major Sources in Drinking Water column explains where these contaminants might come from and thus why they are a concern to us.

**Water Quality Data Table  
Regulated Substances**

<u>Substance</u>	<u>Action Level</u>	<u>MCLG</u>	<u>90<sup>th</sup> Percentile</u>	<u># Sites Tested</u>	<u># Sites Above Action Level</u>	<u>Sources in Drinking Water</u>	<u>Violation</u>
Lead (2018)	15 PPB	0	6 PPB	30	2	Corrosion of household plumbing	No
Copper (2018)	1.3 PPM	1.3	0.73 PPM	30	0	Corrosion of household plumbing	No

<u>Substance</u>	<u>MCL (MRDL)</u>	<u>Highest Level or Average</u>	<u>Range</u>	<u>Major Sources in Drinking Water</u>	<u>MCLG (MRDLG)</u>	<u>Violation</u>
TTHM	80 PPB	49.0 PPB	17.0 – 49.0	Byproduct of drinking water chlorination	0	No
HAA	60 PPB	13.0 PPB	1.7 – 13.0	Byproduct of drinking water chlorination	0	No
Chlorine	4 PPM	0.23 (AVG)	0.02 – 1.54	Water Disinfection	4	No
Gross Alpha (2016)	15 pCi/l	0.6 pCi/l	ND – 0.6	Erosion of Natural Deposits	0	No
Combined Radium (2016)	5 pCi/l	0.75 pCi/l	ND – 0.75	Erosion of Natural Deposits	0	No
Perchlorate	2 PPB	0.20 PPB	0.15 - 0.20	Rocket propellants, fireworks, flares, blasting agents	NA	No
Tetrachloroethylene (PCE)	5 PPB	0.7 PPB	ND – 0.7	Leaching from PVC pipes; discharge from factories; dry cleaners	0	No
Nitrate	10 PPM	5.13 PPM	1.00 – 5.13	Runoff from fertilizer, leaching from septic tanks, sewage, erosion of natural deposits	10	No

*Nitrate in drinking water at levels above 10 PPM is a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant, you should ask for advice from your health care provider.*

**Secondary and Unregulated Substances**

<u>Substance</u>	<u>Health Advisory</u>	<u>SMCL</u>	<u>Range</u>	<u>Major Source in Drinking Water</u>
Iron		0.3 PPM	ND – 1.96 PPM	Erosion of natural deposits
Sodium		NA	77.4 – 87.8 PPM	Road Salt; natural occurring
Manganese (5/7/2018)	300 PPB*	50 PPB	ND – 225 PPB	Erosion of natural deposits
Zinc		5	ND – 0.047 PPM	Erosion of natural/industrial deposits
Chloride		250 PPM	66.7 – 131 PPM	Erosion of natural deposits
Chloroform		NA	ND – 0.8 PPB	Byproduct of drinking water chlorination
Bromodichloromethane		NA	ND – 0.7 PPB	Byproduct of drinking water chlorination
Chlorodibromomethane		NA	ND – 0.5 PPB	Byproduct of drinking water chlorination
Chlorate		NA	100 – 680 PPB	Agricultural defoliant or desiccant disinfection byproduct

*\*US EPA and Mass. DEP have established advisory levels for manganese to protect against concerns of potential neurological effects.*

*Table Key: HAA = Haloacetic Acids*

*TTHM = Total Trihalomethanes*

*PPM = Parts per million or milligrams per liter (mg/l). This corresponds to 1 penny in \$10,000*

*PPB = Parts per billion or micrograms per liter (µg/l). This corresponds to 1 penny in \$10,000,000*

*pCi/l = Picocuries per liter. A unit of radiation.*

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

*90<sup>th</sup> Percentile = Out of every 10 homes sampled, 9 were at or below this level.*

*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. SMCL refers to MCL for secondary substances.*

*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.*

*ND = Not detected*

*NA = Not applicable*

*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.*

*SMCL = Secondary Maximum Contaminant Level. These are standards to protect the aesthetic quality of drinking water and are not health based.*

## ***Protecting Your Water***

In 2016 the U.S. EPA passed a new regulation called the Revised Total Coliform Rule, which requires additional steps that water systems must take in order to ensure the integrity of the drinking water distribution system by monitoring for the presence of bacteria like total coliform and *E. coli*. The rule requires more stringent standards than the previous regulation, and it requires water systems that may be vulnerable to contamination to have procedures in place that will minimize the incidence of contamination. Water Systems that exceed a specified frequency of total coliform occurrences are required to conduct an assessment of their system and correct any problems quickly. The U.S. EPA anticipates greater public health protection under the new regulation due to its more preventive approach to identifying and fixing problems that may affect public health. Our goal is to eliminate all potential pathways of contamination into our distribution system and this new rule helps us to accomplish that goal.

## ***Level 1 Assessment Update***

A Level 1 Assessment is a study of the water system to identify potential problems and determine (if possible) why coliform bacteria have been found in our water system.

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 during our testing, 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. During the past year, we were required to conduct one Level 1 Assessment. One Level 1 Assessment was completed. We were required to take one corrective action and we completed this action.

## ***Treatment Plant Violation***

On August 12, 2018, the chemical feed treatment systems failed at the Carver Pond Water Treatment Plant. This resulted in unchlorinated and low pH water being delivered into our water system. The water pumps did not shut down as they should have upon a treatment failure. Disinfectant residual and pH were returned to required levels by 4:42 PM on August 13. A public notice was distributed on August 16, 2018 per DEP requirements. Upgrades to software have been made to prevent a reoccurrence.

## ***Cross Connection Control and You***

Cross-connections that contaminate drinking water distribution lines are a major concern. A cross-connection is formed at any point where a drinking water line connects to equipment (boilers), systems containing chemicals (air conditioning systems, fire sprinkler systems, irrigation systems), or water sources of questionable quality. Cross-connection contamination can occur when the pressure in the equipment or system is greater than the pressure inside the drinking water line (back pressure). Contamination can also occur when the pressure in the drinking water line drops due to fairly routine occurrences (main breaks, heavy water demand), causing contaminants to be sucked out from the equipment and into the drinking water line (back siphonage).

Outside water taps and garden hoses tend to be the most common source of cross-connection contaminations at home. The garden hose creates a hazard when submerged in a swimming pool or when attached to a chemical sprayer for weed killing. Garden hoses that are left lying on the ground may be contaminated by fertilizers, cesspools, or garden chemicals. Homeowners can limit this potential by installing vacuum breakers on outside faucets. Improperly installed valves in your toilet could also be a source of cross-connection contamination.

Community water supplies are continuously jeopardized by cross-connections unless appropriate valves, known as backflow prevention devices, are installed and maintained. We have surveyed industrial, commercial, and institutional facilities in the service area to make sure that potential cross-connections are identified and eliminated or protected by a backflow preventer. We also inspect and test backflow preventers to make sure that they provide maximum protection. For more information on backflow prevention, contact the Safe Drinking Water Hotline at (800) 426-4791.

## ***Source Water Protection***

The Massachusetts Department of Environmental Protection has completed a Source Water Assessment and Protection (SWAP) Report for our system. The SWAP report assesses the susceptibility of public water supplies to potential contamination by microbiological pathogens and chemicals. A susceptibility ranking of high was assigned to our system using information collected during the assessment by the DEP. A source's susceptibility to contamination does not imply poor water quality. Among the SWAP Report recommendations are public education; partnering with local businesses to ensure proper storage, handling and disposal of hazardous wastes; monitoring progress on any remedial action at known contamination sites; and developing a wellhead protection plan. Source protection is a key element in providing good quality water. Protecting our precious water resources is everyone's responsibility. If you observe any activity that could contaminate our drinking water supply, please contact us immediately. The complete SWAP Report is available at the Water Department Office and at the DEP website:

[www.mass.gov/dep/water/drinking/swapreps.htm](http://www.mass.gov/dep/water/drinking/swapreps.htm). For more information call Jonas Kazlauskas, Superintendent at (508) 697-0910.

### **Water Conservation Tips**

Here's how you can do your part to conserve water at home:

1. Fix leaking faucets, pipes, toilets, etc.
2. Install water-saving devices.
3. Wash only full loads of laundry.
4. Don't use the toilet for trash disposal.
5. Take shorter showers. Do not let the water run while shaving, washing, or brushing teeth.
6. Run the dishwasher only when full.
7. Water the lawn as little as possible.
8. Choose plants that don't need much water.
9. Obey water bans or regulations.

Homeowners are reminded that only hand-held hoses can be used for outside watering and that underground irrigation systems cannot be connected to the town's water system.

### ***What If I Have Questions About My Water?***

Please call the office at 697-0910. **Contact Person: Jonas Kazlauskas, Supt.**



**Water Department**  
**90 Cottage Street**  
**Bridgewater, MA 02324**