TOWN OF HOLLISTON DEPARTMENT OF PUBLIC WORKS – WATER DIVISION

703 WASHINGTON STREET, HOLLISTON, MA 01746

Sean M. Reese, Director of Public Works

508-429-0603

Public Water Supply ID # 2136000

2020 ANNUAL DRINKING WATER QUALITY REPORT

WATER SYSTEM

Your water system is routinely inspected and continuously monitored by the Massachusetts Department of Environmental Protection (MassDEP) to ensure that we provide the highest quality of water available, your system is operated by Massachusetts Certified Operators who oversee the routine operations of the system.

OPPORTUNITIES FOR PUBLIC PARTICIPATION

Water supply topics and concerns are addressed at Select Board meetings, which are held weekly at 7:00 PM in the Town Hall. If you would like to participate in discussions regarding your water quality, you may attend these meetings. Agendas are posted at the Town Hall, 703 Washington Street. Please contact the Water Department for information on meetings that contain water supply related agenda topics.

YOUR DRINKING WATER SOURCES

Where Does My Drinking Water Come From?

Holliston's water is drawn from five (5) groundwater supply wells located on properties owned and/or managed by the Holliston Water Department. The following is a list of the water supply sources, locations, and their total pumpage in 2020.

Source Name	DEP Source ID#	Gallons Pumped 2020	Location of Source
Well #4	2136000-04G	28,959,000	Washington Street
Well #5	2136000-05G	122,121,000	Central Street
Well #6	2136000-06G	41,450,000	Brook Street
Well #7	2136000-07G	83,085,000	Mohawk Path
Well #8	2136000-08G	82,966,000	Maple Street

Over 354 million gallons of water was pumped from the Town's water supply sources in 2020. Holliston Water Department currently has five water storage tanks that have a total holding capacity of 5.6 million gallons.

How Are These Sources Protected?

MassDEP has prepared a Source Water Assessment and Protection (SWAP) Report for the water supply sources serving this water system. The SWAP Report assesses the susceptibility of public water supplies.

What is My System's Ranking?

A susceptibility ranking of moderate for Well 8 and high for Wells 4, 5, and 6 were assigned using the information collected during the assessment by MassDEP.

Where Can I See The SWAP Report?

The complete SWAP report is available at the Water Department, Board of Health and online at https://www.mass.gov/service-details/the-source-water-assessment-protection-swap-program Contact Sean M. Reese, Holliston Director of Public Works 508-429-0603 or Email reeses@holliston.k12.ma.us for additional information.

The Holliston Water System has emergency interconnections with both the Milford and the Ashland water systems. The interconnection with the Milford system is via an 8-inch water main in Route 16. The connection with Ashland is through an 8-inch water main in Cedar Street. In case of an emergency and with authorization, the Holliston Water Department can activate one or both of these interconnections.

How Is My Water Treated?

The Water Department makes every effort to provide you with safe drinking water. To improve the quality of the water delivered to you, we treat your drinking water in a number of different ways, depending on the source water quality. How we treat water from the different sources is described below. The water quality of our system is constantly monitored by us and MassDEP to determine the effectiveness of existing water treatment and to determine if any additional treatment is required. All chemicals used for the various treatment processes described above are approved for water treatment by one of the following organizations: National Sanitation Foundation (known as NSF International), or UL, both accredited by the American National Standards Institute (ANSI). Chemicals also have to meet performance standards established by the American Water Works Association.

Iron & Manganese Filtration Iron and manganese are often present in groundwater at levels that can discolor the water or cause it to have unpleasant odors and tastes. Even though the water may be safe to drink, it is preferable that the iron and manganese be treated. Well's #4, #6 and #7 are sources that receive filtration. The water pumped from these wells is filtered at water treatment plants to remove the iron and manganese. Removal generally requires a two-step process of oxidation and filtration. Oxidation is accomplished by adding an oxidant such as chlorine or potassium permanganate to the water. This causes the iron and manganese to form tiny particles. Once this happens, the water passes through special filters consisting of material (greensand) that is specifically designed to capture iron and manganese particles. Over time, filters clog and are cleaned using a high-flow backwash process. Chlorine is added for disinfection during the filtration process to provide a chlorine residual throughout the distribution system.

Disinfection Some ground water sources contain numerous microorganisms. Some of the microorganisms can cause people to become sick. To eliminate disease-carrying organisms, it is necessary to disinfect the water. Disinfection does not sterilize the water; it destroys the harmful organisms. Sterilization is too costly and kills all organisms, even though most are not harmful. The Town uses sodium hypochlorite as a disinfectant. Disinfection ensures the water is free of harmful organisms and is safe to drink.

Corrosion Control Many New England water sources are naturally corrosive. The water from these sources tends to corrode and dissolve the metal pipes it flows through. This not only damages pipes, but it can also add metals such as lead and copper to the drinking water. For this reason, it is beneficial to add chemicals to the water to make the water noncorrosive. The Town adds controlled amounts of zinc orthophosphate to its water for corrosion control. Testing throughout the Town's water system has shown this treatment has been effective in reducing lead and copper in the drinking water.

SUBSTANCES FOUND IN TAP WATER

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, domestic animal wastes 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, and 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.

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, the Department of Environmental Protection (MassDEP) and U.S. Environmental Protection Agency (EPA) prescribe regulations that limit 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 that must provide the same protection for public health. All 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 EPA'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 some infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/Centers for Disease Control and Prevention (CDC) guidelines on lowering the risk of infection by cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (800)-426-4791.

IMPORTANT DEFINITIONS

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 Disinfectant Level (MRDL) -- The highest level of a disinfectant (chlorine, chloramines, chlorine dioxide) allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

Maximum Residual Disinfectant Level Goal (MRDLG) -- The level of a drinking water disinfectant (chlorine, chloramines, chlorine dioxide) below which there is no known of expected risk to health.
MRDLG's do not reflect the benefits of the use of disinfectants to control microbial contaminants.

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

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

90th Percentile -- Out of every 10 homes sampled, 9 were at or below this level.

ppm = parts per million, or milligrams per liter (mg/l) **ppb** = parts per billion, or micrograms per liter (ug/l)
pCi/l = picocuries per liter (a measure of radioactivity) **NTU**=Nephelometric Turbidity Units
ND – Not detected; the contaminant value measured was not above the detection level of the test method.

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

Massachusetts Office of Research and Standards Guideline (ORSG) -- This is the concentration of a chemical in drinking water, at or below which, adverse health effects are unlikely to occur after chronic (lifetime) exposure. If exceeded, it serves as an indicator of the potential need for further action.

WATER QUALITY TESTING RESULTS

WHAT DOES THIS DATA REPRESENT?

The water quality information presented in the tables below is from the most recent round of testing done in accordance with regulations. This data represents the quality of the water provided from Holliston's sources during 2020 unless noted. Reports of laboratory analysis for these samples were submitted to MassDEP as required. Only the detected contaminants are shown.

Each month the Holliston Water Supply collects treated water samples to monitor for the presence of bacteria within our distribution system. We are also required to sample untreated water from our sources so we can identify potential issues early. The first table below shows the results of our routine distribution sampling.

Bacteria	Highest % Positive in a month	Total # Positive	MCL	MCLG	Violation (Y/N)	Possible Source of Contamination
Total Coliform	**2%**	1	<5%	0	**N**	Naturally present in the environment
E. coli	0	0	*	0	N	Human and animal fecal waste

The Town of Holliston is on a reduced Lead and Copper sampling schedule and samples every 3 years, 2019 was a sampling year and the next round of samples taken for lead and copper will be in September of 2022.

	Date Collected	90TH percentile	Action Level	MCLG	# of sites sampled	# of sites above Action Level	Possible Source of Contamination
Lead (ppb)	09/25/19	2.9	15	0	33	2	Corrosion of household plumbing systems
Copper (ppm)	09/25/19	0.283	1.3	1.3	33	0	Corrosion of household plumbing systems

Regulated Contaminant	Date(s) Collected	Highest Detect	Range Detected	MCL	MCLG	Violation (Y/N)	Possible Source(s) of Contamination
Inorganic Contaminants							
Barium (ppm)	5/2017	0.04	0.01 – 0.04	2	2	N	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Perchlorate (ppm)	9/30/2020	ND	ND	2	N/A	N	Rocket propellants, fireworks, munitions, flares, blasting agents
Fluoride (ppm) *	Monthly	.632	.24 – .632	4	4	N	Water additive that promotes strong teeth
Nitrate (ppm)	5/12/2020	3.59	ND – 3.59	10	10	N	Runoff from fertilizers; leaching from septic tanks; sewage; erosion of natural deposits
Radioactive Contaminants							
Radium- 226 and -228 combined (pCi/L)*	Quarterly 2014, Quarter 2, 2015	0.96	-0.01 – 0.96	5	0	N	Erosion of natural deposits

Gross Alpha (pCi/l)*	Quarter 2, 2015	1.67	1.67	15	0	N	Erosion of natural deposits

* Fluoride also has a secondary contaminant level (SMCL) of 2 ppm. Fluoride is added in an effort to help prevent tooth decay / cavities.
* Next sampling for Radium 226, 228 and Gross Alpha Particle Activity is 2023.

Regulated Contaminant	Date(s) Collected	Highest RAA* Detected	Range Detected	MCL or MRDL	MCLG or MRDLG	Violation (Y/N)	Possible Source(s) of Contamination
Disinfectants and Disinfection By-Products							
Total Trihalomethanes (TTHMs) (ppb)	Quarterly in 2020	57	20 - 110	80	----	N	By-product of drinking water chlorination
Haloacetic Acids (HAA5) (ppb)	Quarterly in 2020	39	5.7 - 68	60	----	N	By-product of drinking water disinfection
Chlorine (ppm) (total)	Monthly in 2020	1.14	.68– 1.14	4	4	N	Water additive used to control microbes

* Highest running annual average (RAA) is the highest average of four consecutive quarters.

Unregulated contaminants are those for which there are no established drinking water standards. The purpose of unregulated contaminant monitoring is to assist regulatory agencies in determining their occurrence in drinking water and whether future regulation is warranted.

Unregulated and Secondary Contaminants	Date(s) Collected	Result or Range	Average	SMCL	ORSG	Possible Source
Manganese (ppb)	Quarterly 2020	ND – 14.2	4.9	50	300**	Erosion of natural deposits
Iron (ppb)	Quarterly 2020	ND -6.68	4.6	300	----	Naturally occurring, corrosion of cast iron pipes
Nickel (ppm)	5/2017	.001-.011	.0167	----	0.1	Discharge from industrial processes
Sodium (ppm)	5/2017	11 - 63	43	--	20	Natural sources; runoff from road salt
Other Organic Contaminants – When detected as treatment plant VOC residuals, not TTHM compliance						
Bromodichloromethane	2nd Quarter	ND – 5.06	2.17	----	----	By-product of drinking water chlorination
Chloroform (ppb)	2nd Quarter	ND - 17	5.60	----	----	By-product of drinking water chlorination
Chlorodibromomethane	2nd Quarter	ND – 1.10	0.41	----	----	By-product of drinking water chlorination

** EPA and MassDEP have established public health advisory levels for manganese to protect against potential neurological effects.

COMPLIANCE WITH DRINKING WATER REGULATIONS IN 2020

Does My Drinking Water Meet Current Health Standards?

We are committed to providing you with the best water quality available and meet all applicable health standards regulated by the state and federal government.

Health Effects Statements

Total Coliform: Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other potentially harmful bacteria may be present. Coliforms were found in more samples than allowed and this was a warning of potential problems.

Nitrate: Nitrate in drinking water at levels above 10 ppm is a health risk for infants less than six months old. 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.

Sodium: Sensitive individuals, such as those experiencing hypertension, kidney failure, or congestive heart failure, should be aware of the sodium levels where exposures are being carefully controlled.

EDUCATIONAL INFORMATION

Do I Need To Be Concerned About Certain Contaminants Detected In My Water?

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 Holliston 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. Sampling results from September 2019 resulted in the Holliston water system meeting the regulations for lead and copper.

Manganese - EPA has established a lifetime health advisory (HA) value of 0.3 ppm for manganese to protect against concerns of potential neurological effects, and a One-day and 10-day HA of 1 ppm for acute exposure. However, it is advised that for infants younger than 6 months, the lifetime HA of 0.3 ppm be used even for an acute exposure of 10 days.

ADDITIONAL INFORMATION

There is an outdoor water use restriction in place for the summer of 2021. See the Town's website (townofholliston.us) for these water use restrictions.

Protecting our water sources is just as important as conserving drinking water. You play an important role in protecting your water resources. To help us protect your water sources:

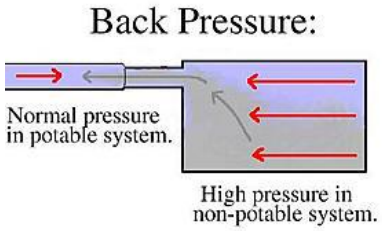
- Use fertilizers, insecticides, and herbicides sparingly and follow the manufacturers' instructions.
- Never pour harsh chemicals or cleaners down your toilet or sink. Instead, dispose of them and other materials such as paints and thinners during household hazardous waste collection programs.
- If you have a septic system, have it pumped out every two years and do not use septic system cleaners.
- Immediately notify the DPW (or Police outside 8:00AM to 4:30PM M-F) if you notice anyone - trespassing or riding motorized vehicles near the wells, storage tanks or vandalizing any water supply facilities.

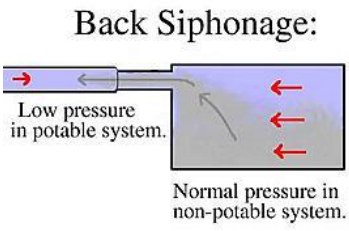
Cross-Connection Control and Backflow Prevention

The Holliston Water Department makes every effort to ensure that the water delivered to your home and business is clean, safe and free of contamination. Our staff works very hard to protect the quality of the water delivered to our customers from the time the water is extracted via wells from underground aquifers throughout the entire treatment and distribution system. But what happens when the water reaches your home or business? Is there still a need to protect the water quality from contamination caused by a cross-connection? If so, how?

What is a cross-connection?
A cross-connection occurs whenever the drinking water supply is or could be in contact with potential sources of pollution or contamination. Cross-connections exist in piping arrangements or equipment that allows the drinking water to come in contact with non-potable liquids, solids, or gases (hazardous to humans) in event of a backflow.

What is a backflow?
Backflow is the undesired reverse of the water flow in the drinking water distribution lines. This backward flow of water can occur when the pressure created by equipment or a system such as a boiler or air-conditioning is higher than the water pressure inside the water distribution line (back pressure), or when the pressure in the distribution line drops due to routine occurrences such as water main breaks (back siphonage). Backflow is a problem that many water consumers are unaware of, a problem that each and every water customer has a responsibility to help prevent.





What can I do to help prevent a cross-connection?
Without the proper protection something as simple as a garden hose has the potential to contaminate or pollute the drinking water lines in your house. In fact over half of the country's cross-connection incidents involve unprotected garden hoses. There are very simple steps that you as a drinking water user can take to prevent such hazards, they are:

- NEVER submerge a hose in soapy water buckets, pet watering containers, pool, tubs, sinks, drains, or chemicals.
- NEVER attached a hose to a garden sprayer without the proper backflow preventer.
- Buy and install a hose bibb vacuum breaker. The installation can be as easy as attaching a garden hose to a spigot. This inexpensive device is available at most hardware stores and home-improvement centers.
- Identify and be aware of potential cross-connections to your water line.
- Buy appliances and equipment with backflow preventers.
- Buy and install backflow prevention devices or assemblies for all high and moderate hazard connections.