ANNUAL WATER QUALITY REPORT

REPORTING YEAR 2020

Presented By

Canton Public Works
Water Sewer Division

PWS ID#: 4050000

Quality First

Once again, we are pleased to present our annual water quality report covering all testing performed between January 1 and December 31, 2020. As in years past, we are committed to delivering the best-quality drinking water possible. To that end, we remain vigilant in meeting the challenges of new regulations, source water protection, water conservation, and community outreach and education, while continuing to serve the needs of all our water users. Thank you for allowing us the opportunity to serve you and your family.

We encourage you to share your thoughts with us on the information contained in this report. After all, well-informed customers are our best allies.

Count on Us

Delivering high-quality drinking water to our customers involves far more than just pushing water through pipes. Water treatment is a complex, time-consuming process. Because tap water is highly regulated by state and federal laws, water treatment plant and system operators must be licensed and are required to commit to long-term, on-the-job training before becoming fully qualified. Our licensed water professionals have a basic understanding of a wide range of subjects, including mathematics, biology, chemistry, and physics. Some of the tasks they complete on a regular basis include:

> "We remain vigilant in delivering the best-quality drinking water"

- Operating and maintaining equipment to purify and clarify water;
- Monitoring and inspecting machinery, meters, gauges, and operating conditions;
- Conducting tests and inspections on water and evaluating the results;
- Maintaining optimal water chemistry;
- Applying data to formulas that determine treatment requirements, flow levels, and concentration levels;
- Documenting and reporting test results and system operations to regulatory agencies; and
- Serving our community through customer support, education, and outreach.

So, the next time you turn on your faucet, think of the skilled professionals who stand behind each drop.

Community Participation

The Canton Board of Selectmen (BOS) meets as the Water Commissioners at one of their meetings in April and/or May of each year to determine water sewer rates and review water system operations. Agenda notices are posted in Memorial Hall or online at www.town.canton.ma.us.

Public Works submits the Water Sewer Division capital requests to the BOS, Capital Planning Committee, and Finance Committee, along with its operating budget request to the BOS and Finance Committee, in December for review and discussion. Both the capital requests and the operating budget are discussed and voted on at the Annual Town Meeting.

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 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 at (800) 426-4791 or at www.epa.gov/safewater/lead.

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. EPA/CDC (Centers for Disease Control and Prevention) 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.

Questions?

For any questions about the quantity or quality of Canton's drinking water please contact:

Christopher Sykes, Water Sewer Supervisor: (781) 821-5017

Renee Ruane, Water Treatment Plant Foreman: (781) 828-4930

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. Environmental Protection Agency (U.S. EPA) prescribes 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 storm-water 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 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 which may also come from gas stations, urban storm-water 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.

Safeguard Your Drinking Water

Protection of drinking water is everyone's responsibility. You can help protect your community's drinking water source in several ways:

- Eliminate excess use of lawn and garden fertilizers and pesticides – they contain hazardous chemicals that can reach your drinking water source.
- Pick up after your pets.
- If you have your own septic system, properly maintain your system to reduce leaching to water sources or consider connecting to a public water system.
- Dispose of chemicals properly; take used motor oil to a recycling center.
- Volunteer in your community. Find a watershed or wellhead protection organization in your community and volunteer to help. If there are no active groups, consider starting one. Use U.S. EPA's Adopt Your Watershed to locate groups in your community.

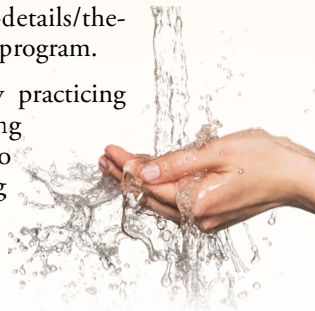
- Organize a storm drain stenciling project with others in your neighborhood. Stencil a message next to the street drain reminding people "Dump No Waste – Drains to River" or "Protect Your Water". Produce and distribute a flyer for households to remind residents that storm drains dump directly into your local water body.

Source Water Assessment

Canton Water Sewer Division worked with MA DEP to prepare the Source Water Assessment Program (SWAP) report for water supply sources serving Canton. The purpose of the assessment is to determine the susceptibility of each drinking water source to potential contaminant sources. A susceptibility ranking of "high" was assigned to our system. It is important to understand a susceptibility rating is not a measure of water quality; only the potential for source contamination in the assessment area. The SWAP commends the town on existing source protection measures.

The complete SWAP is available on line at the town's webpage, www.town.canton.ma.us, under Public Works Water Sewer Division; or at www.mass.gov/service-details/the-source-water-assessment-protection-swap-program.

Consumers can help protect sources by practicing good septic system maintenance, taking hazardous household chemicals to hazardous collection days, and limiting pesticide and fertilizer use.



Water Treatment

Canton Water Sewer Division makes every effort to provide safe and pure drinking water. To improve the quality of the water delivered, we aerate and filter the water to remove contaminants, we use chloramination as a disinfectant to protect against microbial contaminants, we adjust pH to reduce lead and copper levels, we add coagulant and filter to reduce iron and manganese levels, and add fluoride to aid dental health and hygiene. All components of the water treatment process are monitored by state-certified operators through a computerized Supervisory Control and Data Acquisition System (SCADA).

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 4th stage of the U.S. EPA's Unregulated Contaminant Monitoring Rule (UCMR4) program by performing additional tests on our drinking water. UCMR4 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, in order to determine if U.S. EPA 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 Contaminants Monitoring Rule, please call the Safe Drinking Water Hotline at (800) 426-4791.

REGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Alpha Emitters (pCi/L)	2020	15	0	1.8	0–1.8	No	Erosion of natural deposits
Chlorine (ppm)	2020	[4]	[4]	2.9	0.03–2.9	No	Water additive used to control microbes
Chlorite (ppm)	2020	1	0.8	0.26	0.01–0.26	No	By-product of drinking water disinfection
Combined Radium (pCi/L)	2020	5	0	1.65	0.54–1.65	No	Erosion of natural deposits
Fluoride (ppm)	2020	4	4	0.75	0.53–0.75	No	Water additive, which promotes strong teeth
Haloacetic Acids (HAAs) (ppb)	2020	60	NA	14	3.9–14	No	By-product of drinking water disinfection
Nitrate (ppm)	2020	10	10	2.0	0.56–2.0	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Perchlorate (ppb)	2020	2	NA	0.26	0.05–0.26	No	Inorganic chemicals used as oxidizers in solid propellants for rockets, missiles, fireworks, and explosives
TTHMs [Total Trihalomethanes] (ppb)	2020	80	NA	18	9.5–18	No	By-product of drinking water disinfection
Total Coliform Bacteria (positive samples)	2020	TT	NA	1	NA	No	Naturally present in the environment

Tap Water Samples Collected for Copper and Lead Analyses from Sample Sites throughout the Community

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AL	MCLG	AMOUNT DETECTED (90TH %ILE)	SITES ABOVE AL/TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2020	1.3	1.3	0.11	0/64	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead (ppb)	2020	15	0	4	0/64	No	Lead services 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	VIOLATION	TYPICAL SOURCE
Aluminum (ppb)	2020	200	NA	50	10–50	No	Erosion of natural deposits; Residual from some surface water treatment processes
Chloride (ppm)	2020	250	NA	121	115–121	No	Runoff/leaching from natural deposits
Copper (ppm)	2019	1.0	NA	0.02	0–0.02	No	Corrosion of household plumbing systems; Erosion of natural deposits
Iron (ppb)	2019	300	NA	100	100–100	No	Leaching from natural deposits; Industrial wastes
Manganese (ppb)	2018	50	NA	26	0–26	No	Leaching from natural deposits
pH (Units)	2020	6.5–8.5	NA	9.0	8.8–9.0	No	Naturally occurring
Sulfate (ppm)	2020	250	NA	14.6	12.3–14.6	No	Runoff/leaching from natural deposits; Industrial wastes
Total Dissolved Solids [TDS] (ppm)	2020	500	NA	350	310–350	No	Runoff/leaching from natural deposits
Zinc (ppm)	2020	5	NA	0.023	0.005–0.023	No	Runoff/leaching from natural deposits; Industrial wastes

UNREGULATED SUBSTANCES [1]

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE
Bromodichloromethane (ppm)	2020	7.1	1.2–7.1	By-product of drinking water chlorination
Bromoform (ppm)	2020	2.3	0–2.3	By-product of drinking water chlorination
Chlorodibromomethane (ppm)	2020	9.5	0–9.5	By-product of drinking water chlorination
Chloroform (ppm)	2020	7.9	1.2–7.9	By-product of drinking water chlorination
Sodium[2] (ppm)	2020	62.6	0–62.6	Natural resources; Runoff from use as salt on roadways; By-product of treatment process

UNREGULATED AND OTHER SUBSTANCES [1]

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE
Calcium (ppm)	02/12/2020	25	22.4–25	Erosion of natural deposits
Magnesium (ppm)	02/12/2020	8.23	5.99–8.23	Erosion of natural deposits
Perflourohexanoic Acid [PFHxA] (ppt)	2020	3.4	0-3.4	A large group of human-made chemicals that are found in nonstick pans, cleaning products, paints, food packaging, firefighting foam, and other products that have been used in industry and consumer products worldwide since the 1950s
Perfluorobutanesulfonic Acid [PFBS] (ppt)	2020	2.1	0-2.1	A large group of human-made chemicals that are found in nonstick pans, cleaning products, paints, food packaging, firefighting foam, and other products that have been used in industry and consumer products worldwide since the 1950s
Perfluoroheptanoic Acid [PFHpA] (ppt)	2020	1.5	0-1.5	A large group of human-made chemicals that are found in nonstick pans, cleaning products, paints, food packaging, firefighting foam, and other products that have been used in industry and consumer products worldwide since the 1950s
Perfluorohexanesulfonic Acid [PFHxS] (ppt)	2020	3.0	0-3.0	A large group of human-made chemicals that are found in nonstick pans, cleaning products, paints, food packaging, firefighting foam, and other products that have been used in industry and consumer products worldwide since the 1950s
Perfluorooctanesulfonate Acid [PFOS] (ppt)	2020	3.2	0-3.2	A large group of human-made chemicals that are found in nonstick pans, cleaning products, paints, food packaging, firefighting foam, and other products that have been used in industry and consumer products worldwide since the 1950s
Perfluorooctanoic Acid [PFOA] (ppt)	2020	3.9	0-3.9	A large group of human-made chemicals that are found in non-stick pans,cleaning products,paints, food packaging, firefighting foam and other products that have been used in industry and consumer products worldwide since the 1950s.
Total Alkalinity (ppm)	02/12/2020	84	35–84	Erosion of natural deposits
Total Hardness (ppm)	02/12/2020	96.3	80.6–96.3	Erosion of natural deposits
Potassium (ppm)	02/12/2020	47	7.84–47	NA

[1] 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 the U.S. EPA in determining their occurrence in drinking water and whether future regulation is warranted.

[2] The Massachusetts Department of Environmental Protection maintains a guideline level of 20 ppm for sodium.

What's a Cross-Connection?

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 (backpressure). 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 (backsiphonage).

Outside water taps and garden hoses tend to be the most common sources of cross-connection contamination 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. 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.

Table Talk

Get the most out of the Testing Results data table with this simple suggestion. In less than a minute, you will know all there is to know about your water:

> For each substance listed, compare the value in the Amount Detected column against the value in the MCL (or AL, SMCL) column. If the Amount Detected value is smaller, your water meets the health and safety standards set for the substance.

Other Table Information Worth Noting

Verify that there were no violations of the state and/or federal standards in the Violation column. If there was a violation, you will see a detailed description of the event in this report.

If there is an ND or a less-than symbol (<), that means that the substance was not detected (i.e., below the detectable limits of the testing equipment).

The Range column displays the lowest and highest sample readings. If there is an NA showing, that means only a single sample was taken to test for the substance (assuming there is a reported value in the Amount Detected column).

If there is sufficient evidence to indicate from where the substance originates, it will be listed under Typical Source.

The Benefits of Fluoridation

Fluoride is a naturally occurring element in many water supplies in trace amounts. In our system, the fluoride level is adjusted to an optimal level averaging 0.7 parts per million (ppm) to improve oral health in children. At this level, it is safe, odorless, colorless, and tasteless. There are over 3.9 million people in 140 Massachusetts water systems and 184 million people in the U.S. who receive the health and economic benefits of fluoridation.

Where Does My Water Come From?

Canton draws its drinking water from two sources, our own local groundwater wells and the Massachusetts Water Resources Authority (MWRA). The MA Department of Environmental Protection (DEP) limits the amount of water the town can use. We use MWRA when there is a high demand for water, as in the summer and/or for firefighting situations. Canton used an average of 2.34 million gallons per day in 2020: 40 percent supplied by MWRA and 60% from our seven groundwater wells.

Our groundwater sources include:

GROUND WATER SOURCE	WELL ID NUMBER	WELLS TREATED AT	PLANT ID NUMBER
Well 7	4050000-9G	Sullivan WTP (Neponset St.)	4050000-011T
Well 9	4050000-15G	Sullivan WTP (Neponset St.)	4050000-011T
Well 9A	4050000-17G	Sullivan WTP (Neponset St.)	4050000-011T
Well 13	4050000-13G	Sullivan WTP (Neponset St.)	4050000-011T
Well 16	4050000-16G	Sullivan WTP (Neponset St.)	4050000-011T
Well 11	4050000-11G	Moran WTP (Pecunit St.)	4050000-06T
Well 12	4050000-12G	Moran WTP (Pecunit St.)	4050000-06T
Well 14	4050000-14G	Moran WTP (Pecunit St.)	4050000-06T

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.

pCi/L (picocuries per liter): A measure of radioactivity.

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.