

2024 Annual Drinking Water Quality Report

For

HAMILTON DEPARTMENT OF PUBLIC WORKS

MASSDEP PUBLIC WATER SYSTEM IDENTIFICATION NUMBER 3119000

This report is a snapshot of drinking water quality that we provided to you last year. Included are details about where your water comes from, what it contains, and how it compares to state and federal standards. We are committed to providing you with information because informed customers are our best allies

1. PUBLIC WATER SYSTEM INFORMATION

The public water supply for the Town of Hamilton is managed by the Department of Public Works located at: Town Hall, 2nd floor, 577 Bay Road, Hamilton, MA 01936. Phone number: (978) 626-5226, Fax number: (978) 468-5582, (Emergency only: (978) 468-1212. Office hours: Monday, Wednesday, Thursday 8:00 am to 4:30 pm, Tuesday 8:00am to 6:30 pm, and Friday 8:00 am to 12:30 pm. The Town's website is: www.hamiltonma.gov

Water System Operations and Oversight

The Massachusetts Department of Environmental Protection (MassDEP) routinely inspects our water system. MassDEP inspects our system for technical, financial, and managerial capacity to provide safe drinking water to you. To ensure that we provide the highest quality of water available, a Massachusetts certified operator oversees the routine operation of your water system. In December 2024, DEP performed a Sanitary Survey on our system and no violations were determined.

Governing Body:

- Town Manager – Joseph J. Domelowicz, Jr.
- Board of Selectmen: Chairman – Bill Olson, Vice Chair – Bill Wilson, Rosemary Kennedy, Thomas Myers, and Ben Galuza.
- Director of Public Works & CCR Contact Person: Timothy J. Olson, 978-626-5226
- Personnel: Water Operations Supervisor - David Dolan, Secondary Operator – Brad Isbell, Water Laborer – Ben Mastrangelo, and Office Administrator - Gail Hannable.

Important Phone Numbers:

- Massachusetts Department of Public Health 617-292-5500 Department of Environmental Protection 24 Hours Emergency Line 1-888-304-1133

Town of Hamilton Website: <http://www.hamiltonma.gov/government/water-department>

2. YOUR DRINKING WATER SOURCES

Our drinking water sources include:

- **School St. Well (SSW)**, source number 3119000-02G, located behind the School St. Park. This is an active, year round source. This source is currently offline due to elevated PFAS.
- **Gordon “Tiny” Thompson Water Filtration Plant (WTP)**, source number 3119000-10, located at the end of Pine Tree Drive. This source is an active, year round source and consists of Idlewood I Wells, Idlewood II Well, Caisson Satellite Well and Plateau Well. Iron and Manganese are filtered out of the water at this location.

How are these sources protected? In 2001 the Mass DEP prepared a Source Water Assessment Program (SWAP) report for the water supply sources serving the Town. The SWAP report assesses the susceptibility of contamination of a public water source. In the SWAP report, the DEP has given the town a susceptibility rating of “high” based upon the information collected during the assessment by the Mass DEP. Some of the key issues identified are: (1) Inappropriate activities in Zone I, (2) Residential land use, (3) Manure storage or spreading and (4) Storm water catch basins within the Zone II. The full SWAP report can be found online at <https://www.mass.gov/source-water-protection#7>

Although our Zone I and Zone II areas (the areas that contribute water to our wells) are fairly well protected by bylaws and regulations, we continue to monitor land use activities such as paddocks, farming and construction storage areas to assure that our groundwater is protected. We also encourage those living in these areas not to dispose of toxins, cleaners or chemicals down their plumbing drains and to minimize the use of pesticides and fertilizers. Even organic fertilizers have nitrates in them which can affect water quality. You should also monitor fuel and heating oil storage tanks carefully to assure they are not leaking.

Our water system makes every effort to provide you with safe and pure drinking water. To improve the quality of water delivered to you all sources are treated with chlorine for disinfection, fluoride for dental health and hygiene, and phosphates as a metal sequestering agent to assure water quality leaving the stations. Our water is also chemically treated to remove iron and manganese. The water quality of our system is constantly monitored by the Town and MassDEP to determine the effectiveness of existing water quality and to determine if any additional treatment is required.

We also have interconnections with the Towns of Ipswich at Waldingfield Road, Essex at Essex Street, Wenham at Woodbury Street and at Highland Street, in the event of an emergency situation.

3. SUBSTANCES FOUND IN TAP WATER

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. 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, 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.

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 at 1-800-426-4791

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. The EPA and the 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 at 1-800-426-4791.

Lead can cause serious health effects in people of all ages, especially pregnant people, infants (both formula-fed and breastfed), and young children. Lead in drinking water is primarily from materials and parts used in service lines and home plumbing. The Hamilton Water Department is responsible for providing high quality drinking water and removing lead pipes but cannot control the variety of materials used in the plumbing in your home. Because lead levels may vary over time, lead exposure is possible even

when your tap sampling results do not detect lead at one point in time. You can help protect yourself and your family by identifying and removing lead materials within your home plumbing and taking steps to reduce your family's risk. Using a filter, certified by an American National Standards Institute accredited certifier to reduce lead, is effective in reducing lead exposures. Follow the instructions provided with the filter to ensure the filter is used properly. Use only cold water for drinking, cooking, and making baby formula. Boiling water does not remove lead from water. Before using tap water for drinking, cooking, or making baby formula, flush your pipes for several minutes. You can do this by running your tap, taking a shower, doing laundry or a load of dishes. If you have a lead service line or galvanized requiring replacement service line, you may need to flush your pipes for a longer period. If you are concerned about lead in your water, and wish to have your water tested, contact the Hamilton Water Department at 978-626-5226, Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available at <https://www.epa.gov/safewater/lead>

4. 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

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.

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

Unregulated Contaminants – Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated monitoring is to assist EPA in determining their occurrence in drinking water and whether future regulation is warranted.

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

Locational Running Annual Average (LRAA) – The average of four consecutive quarters of data.

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 expected risk to health. MRDLG's do not reflect the benefits of the use of disinfectants to control microbial contaminants.

Variances and Exceptions – State or EPA permission not to meet a MCL or a treatment technique under certain conditions.

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.

5. WATER QUALITY TESTING RESULTS

DEFINITIONS OF UNITS OF MEASURE

ppm = parts per million, or milligrams per liter (mg/L)

ND = Not Detected

ppb = parts per billion, or micrograms per liter (ug/L)

N/A = Not Applicable

ppt = parts per trillion, or nonograms per liter (ng/L)

pCi/L = picocuries per liter (a measure of radioactivity)

NTU = Nephelometric Turbidity Units

What does this data represent?

The water quality information presented in the table(s) is from the most recent round of testing done in accordance with the regulations. All results shown were from samples collected during the last calendar year unless otherwise noted in the tables. Only the detected contaminants are shown.

Water Quality Summary: Listed below are contaminants detected in Hamilton's drinking water in 2024. *The presence of contaminants does not necessarily indicate that the water poses a health risk.* Not listed are contaminants for which we tested but were not detected.

SAMPLES COLLECTED FROM HAMILTON'S WATER SYSTEM

INORGANIC CONTAMINANTS

Substance	Collection	Highest Level Detected	Range Detected	MCL or MRDL	MCLG or MRDLG	Violation (Y/N)	Possible Sources of Contamination
Fluoride (ppm)	Daily	0.8	0-0.8	4	4	N	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories. Fluoride has a secondary contaminant level (SMCL) of 2 ppm to better protect human health.
Barium (ppm)	Every 3 Years	0.161	0.03-0.161	2	2	N	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Nitrate (ppm)	Quarterly	7.58	0.41-7.58	10	10	N	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Nitrite (ppm)	Annual	0	0	1	1	N	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Perchlorate (ppb)	Annual	0.16	0-0.16	2	-	N	Rocket propellants, fireworks, munitions, flares, blasting agents
Arsenic (ppb)	1/23/2024	2	0-2	10	N/A	N	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes

VOLATILE ORGANIC CONTAMINANTS

Tetrachloroethylene PCE (ppb)	Annual	0.77	0.69-0.77	5	0	N	Discharge from factories, dry cleaners, AC pipe
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DISINFECTION BY-PRODUCTS

	Collection	Highest LRAA ¹	Range	MCL	MCLG	Violation (Y/N)	Possible Sources of Contamination
Haloacetic Acids (ppb) Goodhue Street	Quarterly	27	0-4.2	60	N/A	N	By-product of drinking water disinfection
Haloacetic Acids (ppb) Air Force Property	Quarterly	0.325	0-1.3	60	N/A	N	By-product of drinking water disinfection
Total THM (ppb) Goodhue Street	Quarterly	54	2.1-35.2	80	N/A	N	By-product of drinking water disinfection
Total THM (ppb) Air Force Property	Quarterly	59	5.19-64	80	N/A	N	By-product of drinking water disinfection

¹ Reported LRAA for Q1-3 are based on results from previous quarters in 2023 and not reported on this table

DISINFECTANTS

Substance	Units	Highest Monthly Average	Range Detected	MRDL	MRDLG	Violation (Y/N)	Possible Sources of Contamination
Free Chlorine (ppm)	Daily	0.34	0.13-0.34	4	4	N	Water additive to inactivate harmful organisms

PFAS

Substance	Collection	Detect Result or Range	Highest Level Detected	MCL	Violation (Y/N)	Possible Sources of Contamination
PFAS6 (ppt) Water Treatment Plant	Annually	0	0	20	N	Discharges and emissions from industrial and manufacturing sources associated with the production or use of these PFAS, including production of moisture and oil resistant coatings on fabrics and other materials. Additional sources include the use and disposal of products containing these PFAS, such as fire-fighting foams.
PFAS6 (ppt) School Street Well (OFFLINE)	Quarterly/ Monthly	22.8-35.3	35.3	20	Y ²	

² School Street Well has been off-line since October 2021

UNREGULATED CONTAMINANTS							
Substance	Collection	Highest Level Detected	Range	Avg. Detected	SMCL	ORSG	Possible Sources of Contamination
Manganese (ppb)	Daily	126	10-126	30	50	300	Erosion of natural deposits
Sodium (ppm)	Every 3 Years	78.5	38.3-78.5	58.4	N/A	20	Discharge from the use and improper storage of sodium-containing de-icing compounds or in water- softening agents
Nickel (ppm)	Every 3 Years	4	1-4	2.5	N/A	100	Discharge from domestic wastewater, landfills, and mining and smelting operations
Iron (ppb)	Daily	80	0-80	10	300	-	Natural sources and corroding distribution and household pipes
Bromodichloromethane (ppb)	Quarterly	1.2	0-1.2	N/A	N/A	N/A	By-product of drinking water chlorination
Chloroform (ppb)	Quarterly	3.4	0-3.4	N/A	70	N/A	By-product of drinking water chlorination
pH	Daily	8.7	7.0-8.7	7.38	6.5-8.5	N/A	Runoff and leaching from natural deposits; seawater influence

SAMPLES COLLECTED FROM YOUR FAUCETS

BACTERIA AND MICROBIOLOGY							
Substance	Collection	Highest Level Detected	Range Detected	Highest Level	Ideal Goals MCLG	Violation (Y/N)	Possible Sources of Contamination
Total Coliform Bacteria	Monthly	3 ³	3	1	0	Y	Naturally present in the environment
Fecal Coliform or E.coli	Monthly	0	0	0	0	N	Human and animal fecal waste
³ WTP RAW (3 Samples), Please review the Violations & Exceedances Section for details							

LEAD AND COPPER							
Substance	Collection	90th Percentile	Action Level	MCLG	# of sites sampled	# of sites above the	Possible Sources of Contamination
Copper (ppm)	Annual	0.942	1.3	1.3	20	0	Corrosion of household plumbing systems; erosion of natural deposits
Lead (ppm)	Annual	0.0021	0.015	0	20	1	Corrosion of household plumbing systems

6. COMPLIANCE WITH DRINKING WATER REGULATIONS

Does My Drinking Water Meet Current Health Standards?

During the Calendar Year 2024, there was three (3) exceedances, which did not trigger necessary public notification and the Hamilton Water Department was able to control and rectify within 24 hours after receiving the test results from the laboratory. The exceedances are detailed below in the Violations & Exceedances Section.

Monitoring Waivers

MassDEP has reduced the monitoring requirements for inorganic contaminants at the School Street Well because the source is not at risk of contamination. The last sample collected for these contaminants was during the second quarter of calendar year 2015 and found to meet all applicable US EPA and MassDEP standards.

Violations & Exceedances

Exceedance #1 – There was one exceedance during the August 2024 lead and copper testing. After receiving the lead exceedance test result, the Hamilton Water Department investigated the source and performed a confirmation test. This test result was under the Action Level. The Hamilton Water Department also reviewed the history of lead and copper results at that the specific address and all prior results were below the Action Level and the result presented may have been a clerical error.

Exceedance #2 – The School Street Well had elevated levels of Perfluorocarbons (PFAS) in late 2021 and the Town decided to take the well offline. In following the procedures issued MassDEP testing schedule, the Hamilton Water Department has continued to sample School Street Well monthly for PFAS and a result was over the 20 ppt MCL. Monthly testing results have been identified over the MCL and for this reason the Hamilton Water Department has made the decision to keep the well **offline** until PFAS levels decrease or proper treatment is installed.

Exceedance #3 – Coliform Bacteria – There were four (3) positive tests from the **WTP RAW** source water. The Hamilton Water Department has certified Log 4 disinfection treatment at the Water Treatment Facility, eliminating any chance of bacteria present in the RAW water to enter the distribution system.

HEALTH EFFECTS STATEMENTS

- **Lead:** Lead: Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.
- **Sodium:** Is a naturally occurring common element found in soil and water. It is necessary for the normal functioning of regulating fluids in human systems. Some people, however, have difficulty regulating fluid volume as a result of several diseases, including congestive heart failure, kidney failure and hypertension. The guideline of 20 mg/L for sodium represents a level in water that physicians and sodium sensitive individuals should be aware of in cases where sodium exposures are being carefully controlled. For additional information, contact your health care provider, your local board of health or the Massachusetts Department of Public Health, Bureau of Environmental Health Assessment at 617-624-5757.
- **PFAS:** Some people who drink water containing these PFAS in excess of the MCL may experience certain adverse effects. These could include effects on the liver, blood, immune system, thyroid, and fetal development. These PFAS may also elevate the risk of certain cancers.

7. 2024 WATER SYSTEM PROJECTS.

Water Treatment Plant (WTP) GAC Filtration Project

The construction of the new GAC Facility at the Town's existing water treatment plant which was awarded back in January 2022 was completed in December 2023 and was granted approval by MassDEP in January 2024 to place the new facility into service. On January 23rd, 2024, the new GAC facility was placed into service and has been operating since that time. From facility monitoring and distribution sampling, the new GAC facility has been confirmed to be performing as intended by reducing TOCs and TTHMs at the existing plant to maintain compliance with the Stage 2 Disinfection Byproducts Rule (DBPR). Since being placed into service, TTHMs within the distribution system have been consistently observed to be below the MCL of 80 parts per million (ppm).

Future Supply Connection w/ the SBWSB

In January 2024, the Town applied for a grant under MassDEP's 2024 WMA Ipswich River Basin Water Supply and PFAS grant program to evaluate and design a new interim interconnection with the Town of Wenham to obtain SBWSB supply on an emergency basis. In March 2024, Hamilton was awarded a full grant to complete the proposed project. Based on the findings of the analyses completed, a new booster pump station and appurtenances was recommended to be installed at the existing Woodbury Road/Ruby Road interconnection between Hamilton and Wenham. The new booster pump station will include a duplex pumping system having a rated capacity of up to 350 gallons per minute (gpm) to be housed within a pre-cast concrete modular building. The final design documents were completed in July 2024 as part of the grant study which had an estimated construction cost of \$575,000 including the new booster pump station, new building, new interior and exterior piping and system connections. The Town is currently in the process of preparing an application to obtain funding under MassDEP's upcoming 2025 WMA Ipswich River Basin Water Supply and PFAS grant program to construct the new interim interconnection which will be submitted in January 2025.

GIS/Asset Management System

The Town completed the first phase of upgrading its ArcGIS and asset management capabilities to a more comprehensive and accessible system that staff can use for future data collection, planning, maintenance, and design purposes. A new GIS-based spatial plan incorporating its water system infrastructure along with available roadway and parcel data was first developed from available records back in September 2023. Upon completing this spatial plan, several months of field reconnaissance work with GPS equipment was completed to verify the actual location of every hydrant, valve and water service that was visible. The spatial plan was then updated as needed based on the field reconnaissance work to reflect existing conditions. This first phase was completed in March 2024. The Town has received a proposal to continue with completing the next phase of upgrading its GIS/Asset Management system including the development of a WorkForce application program which will work within the newly created ArcGIS spatial plan. This new program will allow DPW staff to generate, monitor and complete work orders for maintaining Town infrastructure including the water system, roadways, and storm water more effectively. This next phase of work is expected to commence in early 2025.

Miscellaneous Improvements

The Town completed contract documents for replacing the proprietary filter media at its existing water treatment plant December 2023. In January 2024, the Town applied for a grant under MassDEP's 2024 WMA Ipswich River Basin Water Supply and PFAS grant program to fund the filter media replacement project. In March 2024, Hamilton was awarded a full grant to complete the proposed filter media replacement project. The project was bid in April with the construction contract awarded in early May. The replacement of the filter media within all four existing pressure filters was completed by the end of June. The existing filters have been performing well since the media replacement. From observations made during the completion of this work, the Town will need to perform periodic cleaning of the filter media every 1 to 2 years with full replacement at about every 5 years for the plant to effectively treat the raw water from its wells.

Phase 5 – Water System Improvements

Town and Stantec have progressed through preliminary design on a water system improvements project in the vicinity of Walnut Road and the Pine Street and Chestnut Street neighborhood. In total, up to 11,000 linear feet of old asbestos cement and cast iron water main and appurtenances may be included in the final design package depending on funding availability, with the goal of replacing and upgrading old infrastructure that has a history of breaks.

Lead Service Assessment and Inventory Project

In 2024, significant efforts were undertaken to continue building Hamilton's water service line inventory and maintain compliance with MassDEP and EPA's stringent new Lead and Copper Rule Revisions (LCRR) and Lead and Copper Rule Improvements (LCRI). These requirements mandated an initial water service line inventory be submitted to MassDEP by October 16, 2024 with customer notifications to any service line of unknown, lead or galvanized requiring replacement material status by November 15, 2024. With the help of Stantec Consulting Services (Stantec), this initial inventory was submitted and all affected customers notified by these deadlines. The work also included a field verification program and the option for customer sourced self-identifications through MassDEP's WebApp. Between 2022 and the end of 2024, the Town and Stantec have successfully secured 100% grant money for all of the work to date for this inventory development and MassDEP compliance

Idlewood Wellfield Redevelopments – Caisson Well, Plateau Well, Idlewood 2, and Idlewood 1 Satellite

The Town of Hamilton engaged contractor services for the redevelopments of the Idlewood Wellfield source wells. With the increasing presence of iron and manganese all wells have displayed production loss, negatively affecting the pumping and withdrawal. Following the redevelopments, the well operations returned to normal. Evidence shows that more frequent redevelopment of Hamilton wells will be necessary to maintain successful operation and optimum withdrawal.

8. CONSERVATION INFORMATION

Annual Seasonal Conservation

The Hamilton Department of Public Works would like to remind residents that we have a **mandatory annual** Seasonal Outdoor Water Use By-Law that does not allow mechanical watering of lawns between the hours of 8:00 a.m. and 8:00 p.m. from May 1st to September 30th of each year. The most wasteful act of water use is over watering your lawn at night or watering during the heat of the day. Up to 80% of the water used during the day is evaporated which means 80 cents on every dollar you spend watering is wasted along with the same outcome with over-watering at night.

MassDEP WMA Registration Drought Management

In April 2023 Hamilton's Water Management Act (WMA) Registration received drought conditions. Hamilton had to implement restrictions on non-essential use based on Regional Drought status. Restrictions increase based on drought severity as follows.

Level 1 (Mild Drought)- Watering before 9 am and after 5 pm allowed no more than 1 day per week. Drip irrigation or hand watering allowed

Level 2 (Significant Drought)- Drip irrigation or hand watering only

Level 3- (Critical Drought) or Level 4 (Drought Emergency); all nonessential outdoor uses are banned

With the Seasonal Conservation requirements already instituted and regulated by MassDEP, Hamilton residents will be required to adhere to Level 1 requirements between May 1st through September 30th each year regardless of the regional drought status. If there is a level increase in the regional status Hamilton will be required to follow additional conservation restrictions.

9. CROSS CONNECTION CONTROL PLAN

Cross-Connection Control 2024 Performance

Community water supplies are continuously jeopardized by cross-connections unless appropriate valves, known as backflow prevention devices, are installed and maintained. We have surveyed all industrial, commercial, and institutional facilities in the service area to make sure that all potential cross-connections are identified and eliminated or protected by a backflow preventer. We also inspect and test each backflow preventer twice per year to make sure that it is providing maximum protection.

In 2024 Hamilton surveyed 18 facilities and will continue to survey new businesses and properties to continue to ensure the safety of the community. Hamilton has 122 backflow devices as of 2024 and all were tested withing the regulations issued by Mass DEP.

Why is it Important to Have a Cross-Connection Control and Backflow Prevention Program?

Controlling cross-connections and preventing backflow is critical to ensuring the safety of your drinking water because:

- Cross-connections are ever-present dangers that exist in most water systems and can result in serious chemical or microbiological contamination events in drinking water systems.
- Cross-connections should be protected in order to prevent backflow, which can be hard to detect.
- In any distribution system, potential cross-connections and therefore sources of contamination can be numerous, varied, and unpredictable.
- Having these programs in place can help you avoid the costs of responding to a contamination incident.

Where Can Cross-Connections Occur?

- Cross-connections can occur at many points throughout a distribution system and a community's plumbing infrastructure. Cross-connections can be identified by looking for physical interconnections (or arrangements) between a customer's plumbing and the water system. Some specific examples of backflow incidents that can occur are:
- Lawn chemicals backflowing (backsiphoning) through a garden hose into indoor plumbing and potentially into the distribution system.
- Backsiphonage of "blue water" from a toilet into a building's water supply.
- Carbonated water from a restaurant's soda dispenser entering a water system due to backpressure.
- Backsiphonage of chemicals from industrial buildings into distribution system mains.
- Backflow of boiler corrosion control chemicals into an office building's water supply.

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 attach a hose to a garden sprayer without the proper backflow preventer.
- Buy and install a hose bibb vacuum breaker in any threaded water fixture. 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.

The Hamilton Water Department is responsible for the protection of the public potable water distribution system from contamination or pollution due to the backflow or back-siphoning of contaminants or pollutants. If you are the owner or manager of a property that is being used as a commercial, industrial, or institutional facility you must have your property's plumbing system surveyed for cross-connection by your water purveyor. If your property has NOT been surveyed for cross-connection, contact Hamilton Water Department at 978-626-5226 to schedule a cross-connection survey.

Following the survey of the premises, if the Hamilton Water Department determines there is a potential cross contamination hazard and an approved backflow prevention device is required, the Hamilton Water Department, or its designated agent, shall issue a cross-connection violation letter to said customer to install approved backflow prevention devices. The customer shall within a regulated timeframe, install such approved device or devices. Failure, refusal, or inability on the part of the customer to install said device or devices within the specified timeframe shall constitute grounds for discontinuing water service to the premises until such device(s) are installed and inspected by the Hamilton Water Department or designee.

This authority is provided for in the Federal Safe Drinking Water Act of 1974, (Public Law 93-523); the Commonwealth of Massachusetts Drinking Water regulation, 310 CMR 22.22; the Acts of 1916, Chapter 309, Section 15, the Acts of 1979, Chapter 443, Section 2, and the Town of Hamilton Policy #2009-001. For more information, visit the website of the [American Backflow Prevention Association](#) for a discussion on current issues.

10. ADDITIONAL INFORMATION

Corrosion Control Through pH Adjustment

Many drinking water sources in New England are naturally corrosive (i.e. they have a pH of less than 7.0). So, the water they supply has a tendency to corrode and dissolve the metal piping it flows through. This not only damages pipes but can also add harmful

metals, such as lead and copper, to the water. For this reason, it is beneficial to add chemicals that make the water neutral or slightly alkaline. This is done by adding any one, or a combination of several, approved chemicals. The Hamilton Water Department adds Shannon 5230 a blended Poly-Orthophosphate to the water. This adjusts the water to a non-corrosive pH. Testing throughout the water system has shown that this treatment has been effective at reducing lead and copper concentrations.

All chemicals used are approved for water treatment by one of the following organizations: National Sanitation Foundation (now known as NSF International) or UL, both accredited by the American National Standards Institute (ANSI). Chemicals must also meet performance standards established by the American Water Works Association.