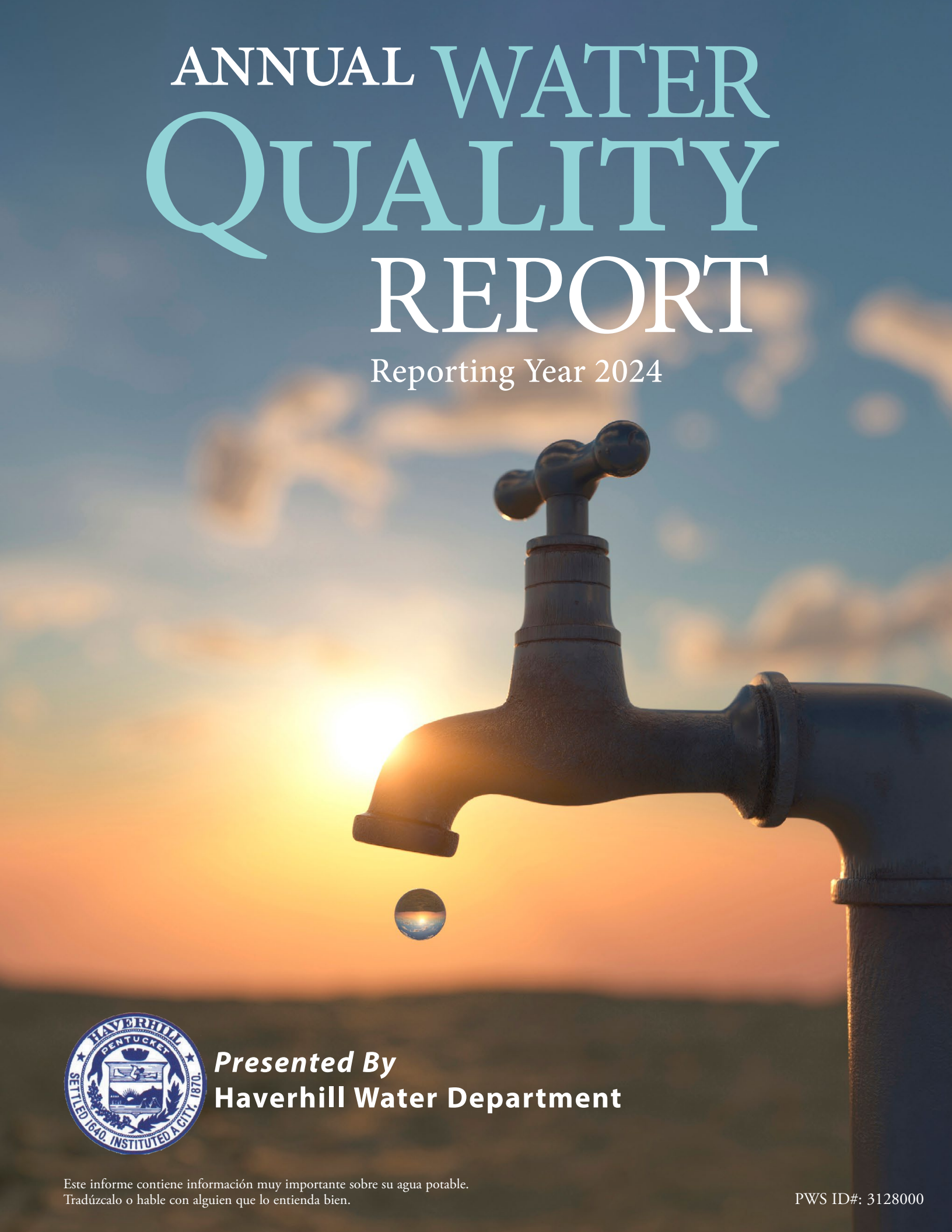
ANNUAL WATER QUALITY REPORT

Reporting Year 2024



Presented By
Haverhill Water Department

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

PWS ID#: 3128000

Our Commitment

We are pleased to present to you this year's annual water quality report. This report is a snapshot of last year's water quality covering all testing performed between January 1 and December 31, 2024. Included are details about your sources of water, what it contains, and how it compares to standards set by regulatory agencies. Our constant goal is to provide you with a safe and dependable supply of drinking water. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources. We are committed to ensuring the quality of your water and providing you with this information because informed customers are our best allies.

Our Water Supply System

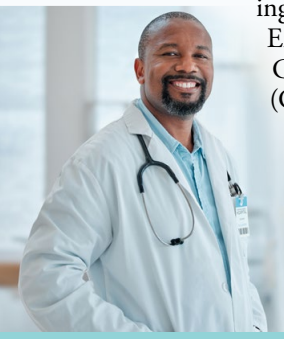
Our drinking water comes from combined sources, all of which are surface water. Surface water means that all our water comes from aboveground supplies, not wells. In Haverhill our sources are lakes, ponds, and a human-made reservoir. Water is pumped as needed from Millvale Reservoir and Crystal Lake into Kenoza Lake, where the Haverhill water treatment plant is located. Water from Round Pond and Winnekenni Basin overflows into Kenoza Lake and is also part of our drinking water system. These combined waters are pumped from Kenoza Lake into the water treatment plant.

About the Water Treatment Process

The Haverhill water treatment plant is a conventional filtration plant, which includes coagulation, flocculation, clarification, filtration, and disinfection. The clarified, treated water goes through a two-stage (sand, then granular activated carbon) filtration process. After filtration, it is fluoridated, then disinfected with sodium hypochlorite and treated with zinc orthophosphate to control lead and copper corrosion before it is pumped into the distribution system. Last year, the water treatment plant processed 2.0 billion gallons of water. The distribution system is made up of three storage tanks with a capacity of 17 million gallons, 13 pumping stations, and approximately 278 miles of water main.

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, can be particularly at risk from infections. These people should seek advice about drinking water from their health-care providers. U.S. Environmental Protection Agency (U.S. EPA)/ Centers for Disease Control and Prevention (CDC) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline at (800) 426-4791 or epa.gov/safewater.



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 (back-siphonage).

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 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.

Questions?

For more information about this report, or for any questions relating to your drinking water, please contact Steven Quaglietta, Water Treatment Plant Chemist, at (978) 374-2385 or squaglietta@haverhillma.gov.

Substances That Could Be in Water

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

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material and can pick up substances resulting from the presence of animals or from human activity. Substances that may be present in source water include:

Microbial Contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, or wildlife.

Inorganic Contaminants, such as salts and metals, which can be naturally occurring or may result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.

Pesticides and Herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.

Organic Chemical Contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production and which may also come from gas stations, urban stormwater runoff, and septic systems.

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

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. 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.

Fluoridation in Haverhill

Fluoride naturally occurs in many water supplies in trace amounts. On August 13, 1969, the new fluoridation law was read into the record in a meeting of the Haverhill Board of Health. This began discussion of adjusting the natural fluoridation level of Haverhill's water supply. The Board of Health unanimously approved the upward adjustment of the fluoride content of Haverhill's domestic water supply on July 8, 1969. Currently, Haverhill's fluoride level is adjusted to an optimal level averaging 0.7 part per million (ppm) to improve oral health and prevent tooth decay. At this level, it is safe, odorless, colorless, and tasteless. There are over 4 million people in Massachusetts water systems and 184 million people in the U.S. who receive the health and economic benefits of fluoridation.

Year in Review

Haverhill has been affected by the drought conditions that began in June 2024 and extended through the fall and winter into 2025. The drought resulted in the lowest water supply levels Haverhill has seen in 35 years. Although conditions began improving in spring 2025, a deficit of approximately 400 million gallons still exists in the water supply. We ask that all customers be mindful of their water use and visit the city drought page at bit.ly/wtr-supply-status.

The Haverhill Water Department completed the initial phase of building a database of all known water service lines. The initiative was required as part of the Revised Lead and Copper Rule with the intent to quantify how many lead and galvanized water services remain in use. The work now focuses on identifying all the water services that have been categorized with an unknown material type. To do so requires physical inspection by either the property owner, water department, or the water department's approved contractor. You may have received an informational mailing regarding this; we ask for your cooperation in helping us verify the unknown service types.

Low-flow showerheads and kitchen faucet aerators are available while supplies last through the Water/Wastewater billing office, located in City Hall, room 300.

Important Phone Numbers

Backflow/Cross-Connection Program	(978) 374-2375
Water/Wastewater Billing Office	(978) 374-2370
Water Maintenance	(978) 374-2368
Water Meters	(978) 373-8487
Water Treatment Plant	(978) 374-2385

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 is included, along with the year in which the sample was taken.

The Haverhill Water Department participated in the fifth stage of the U.S. EPA's Unregulated Contaminant Monitoring Rule (UCMR5) program by performing additional tests on our drinking water in 2024. The results of all analytes were below the minimum reporting limit.

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

REGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Barium (ppm)	2024	2	2	0.006	NA	No	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Chlorine (ppm)	2024	[4]	[4]	0.80	0.63–1.76	No	Water additive used to control microbes
Fluoride (ppm)	2024	4[1]	4	1.2	0.1–1.2	No	Water additive which promotes strong teeth
Haloacetic Acids [HAAs] (ppb)	2024	60	NA	26	ND–33	No	By-product of drinking water disinfection
Perchlorate (ppb)	2024	2	NA	0.63	NA	No	Inorganic chemicals used as oxidizers in solid propellants for rockets, missiles, fireworks, and explosives
PFAS6 (ppt)	2024	20	NA	2.43	1.85–2.82	No	Discharges and emissions from industrial and manufacturing sources associated with the production or use of moisture- and oil-resistant coatings on fabrics and other materials; use and disposal of products containing these PFAS, such as firefighting foams
Total Organic Carbon [TOC] (removal ratio)	2024	TT[2]	NA	1.5	1.3–1.7	No	Naturally present in the environment
TTHMs [total trihalomethanes] (ppb)	2024	80	NA	70	29–75	No	By-product of drinking water disinfection
Turbidity[3] (NTU)	2024	TT	NA	0.21	NA	No	Soil runoff
Turbidity (lowest monthly percent of samples meeting limit)	2024	TT = 95% of samples meet the limit	NA	100	NA	No	Soil runoff

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

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AL	MCLG	AMOUNT DETECTED (90TH %ILE)	RANGE LOW-HIGH	SITES ABOVE AL/ TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2023	1.3	1.3	0.018	NA	0/30	No	Corrosion of household plumbing systems; erosion of natural deposits
Lead (ppb)	2023	15	0	ND	NA	0/30	No	Lead service lines; corrosion of household plumbing systems, including fittings and fixtures; erosion of natural deposits

[1] Fluoride has an SMCL of 2.0 ppm.

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

[3] Turbidity is a measure of the cloudiness of the water. It is monitored because it is a good indicator of the effectiveness of the filtration system.

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

SECONDARY SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	SMCL	MCLG	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Manganese (ppb)	2024	50	NA	6	NA	No	Leaching from natural deposits
pH (units)	2024	6.5-8.5	NA	7.6	7.2–8.2	No	Naturally occurring
Sulfate (ppm)	2024	250	NA	19.7	NA	No	Runoff/leaching from natural deposits; industrial wastes
Total Dissolved Solids [TDS] (ppm)	2024	500	NA	112	NA	No	Runoff/leaching from natural deposits
Zinc (ppm)	2024	5	NA	0.819	NA	No	Runoff/leaching from natural deposits; industrial wastes

UNREGULATED SUBSTANCES [4]

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE
Alkalinity (ppm)	2024	24	21–40	Leaching from natural deposits; treatment chemical addition
Sodium (ppm)	2024	34	NA	Leaching from natural deposits; treatment chemical addition

Source Water Assessment

A Source Water Assessment Plan (SWAP) is available at the water treatment plant. You can access the latest version of Haverhill's SWAP report on the city's website at bit.ly/Hav-SWAP. This plan is an assessment of the delineated area around our listed sources through which contaminants, if present, could migrate and reach our source water. It also includes an inventory of potential sources of contamination within the delineated area and a determination of the water supply's susceptibility to contamination by the identified potential sources.

This report assesses activities on our watershed and identifies potential pollution hazards. These potential hazards, if handled properly, would not pose a threat to our water supplies. These hazards fall in the following categories: fertilizer storage, livestock operations, manure storage/spreading, nurseries, pesticide storage/use, auto repair and body shops, bus and truck terminals, cemeteries, golf courses, junk/salvage yards, nursing homes, repair shops, sand and gravel mining/washing, fuel oil storage, lawn care/gardening, septic systems, aquatic wildlife, combined sewer overflows, composting facilities, fishing/boating, land application of sewage sludge, schools, colleges/universities, snow dump, stormwater drains/retention basins, and underground storage tanks. One or all of these hazards can be found near all of Haverhill's water sources. A water department employee checks these areas weekly to identify any violations.

Lead in Home Plumbing

There is no safe level of lead in drinking water. Exposure to lead in drinking water can cause serious health effects in all age groups, especially pregnant people, infants (both formula-fed and breastfed), and young children. Some of the health effects to infants and children include decreases in IQ and attention span. Lead exposure can also result in new or worsened learning and behavior problems. The children of persons who are exposed to lead before or during pregnancy may be at increased risk of these harmful health effects. Adults have increased risks of heart disease, high blood pressure, and kidney or nervous system problems. Contact your health-care provider for more information about your risks.

If you have a lead or galvanized service line requiring replacement, you may need to flush your pipes for a longer period. If you are concerned about lead and wish to have your water tested, contact the Haverhill Water Department Chemist Steven Quaglietta at (978) 374-2385 or squaglietta@haverhillma.gov. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available at epa.gov/safewater/lead.

To address lead in drinking water, public water systems were required to develop and maintain an inventory of service line materials by October 16, 2024. Developing an inventory and identifying the location of lead service lines (LSL) is the first step for beginning LSL replacement and protecting public health. The lead service inventory may be accessed at https://haverhill-service-line-inventory-haverhillma.hub.arcgis.com/. Please contact us if you would like more information about the inventory or any lead sampling that has been done.

Definitions

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

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

MCL (Maximum Contaminant Level): The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

MCLG (Maximum Contaminant Level Goal): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

MRDL (Maximum Residual Disinfectant Level): The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

MRDLG (Maximum Residual Disinfectant Level Goal): The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

NA: Not applicable.

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

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

ppb (µg/L) (parts per billion): One part substance per billion parts water (or micrograms per liter).

ppm (mg/L) (parts per million): One part substance per million parts water (or milligrams per liter).

ppt (ng/L) (parts per trillion): One part substance per trillion parts water (or nanograms per liter).

Removal Ratio: A ratio between the percentage of a substance actually removed to the percentage of the substance required to be removed.

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.