

ANNUAL WATER
QUALITY
REPORT

WATER TESTING PERFORMED IN 2016



Presented By
Natick Water Division

We've Come a Long Way

Once again we are proud to present our annual water quality report covering the period between January 1 and December 31, 2016. In a matter of only a few decades, drinking water has become exponentially safer and more reliable than at any other point in human history. Our exceptional staff continues to work hard every day—at any hour—to deliver the highest quality drinking water without interruption. We feel that by relentlessly investing in education, system upgrades, and training, the payoff will be reliable, high-quality tap water delivered to you and your family.



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 at <http://water.epa.gov/drink/hotline>.

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 zero point seven (0.7) parts per million (ppm) to improve oral health in children. At this level, it is safe, odorless, colorless, and tasteless. Our water system has been providing this treatment since 1995. There are over 4 million people throughout 140 Massachusetts water systems who receive the health and economic benefits of fluoridation.

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.

Water Conservation

You can play a role in conserving water and saving yourself money in the process by becoming conscious of the amount of water your household is using and by looking for ways to use less whenever you can. It is not hard to conserve water. Here are a few tips:



- Automatic dishwashers use 15 gallons for every cycle, regardless of how many dishes are loaded. So, get a run for your money and load it to capacity.
- Turn off the tap when brushing your teeth.
- Check every faucet in your home for leaks. Just a slow drip can waste 15 to 20 gallons a day. Fix it and you can save almost 6,000 gallons per year.
- Check your toilets for leaks by putting a few drops of food coloring in the tank. Watch for a few minutes to see if the color shows up in the bowl. It is not uncommon to lose up to 100 gallons a day from an invisible toilet leak. Fix it and you can save more than 30,000 gallons a year.
- Use your water meter to detect hidden leaks. Simply turn off all taps and water using appliances. Then check the meter after 15 minutes. If it moved, you have a leak.

Where Does My Water Come From?

The Town of Natick obtains its water from ten ground water wells at five locations. Eight of the sources, located in Natick are known as the Springvale, Evergreen, Pine Oaks, and Morse Pond wells. The Elm Bank wells are located in Dover, Massachusetts. The Springvale, Evergreen, and Elm Bank wells are the primary sources. The Morse Pond and Pine Oaks wells serve as backup wells and are used to supplement water supplies during high-demand conditions. The Springvale water treatment facility, located off of Route 9, provides treatment for the Springvale and Evergreen wells. The water distribution system also includes approximately 196 miles of water mains and two water storage facilities that have a combined capacity of 9 million gallons.

To find more information about drinking water on the Internet, go to the U.S. EPA's website at <http://water.epa.gov/drink/info/>.

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 (back-pressure). Contamination can also occur when the pressure in the drinking water line drops due to fairly routine occurrences (main breaks, heavy water demand), causing contaminants to be sucked out from the equipment and into the drinking water line (back-siphonage).

Outside water taps and garden hoses tend to be the most common 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.



Water Hardness Guide

This information is provided so that residents can adjust their appliances (measured as CaCO_3):

AMOUNT (PPM)	RATING
<75	soft
75-100	moderately hard
150-300	hard
>300	very hard

QUESTIONS?

For more information about this report, or for any questions relating to your drinking water, please call Anthony Comeau, Water & Sewer Supervisor, at (508) 647-6557.

Source Water Assessment Program

The Department of Environmental Protection (DEP) has prepared a Source Water Assessment Program (SWAP) report for the water supply sources serving this water system. The SWAP report notes the key issues of activities in Zone 1: hazardous material storage and use, residential land use, transportation corridors, oil or hazardous material contamination sites, and wellhead protection planning in the water supply protection area for all sources. The report commends the water system on existing source protection measures.

What Can Be Done to Improve Protection?

The SWAP report recommends that the town:

- develop and implement a wellhead protection plan,
- expand on the scope of the emergency response teams to ensure that they are aware of the storm-water drainage in Zone II.

Natick Water & Sewer Division plans to address the protection recommendations by:

- continuing to develop and implement a wellhead protection plan,
- continuing to locate and map the storm-water drainage systems within Zone II,
- review pending NPDES (National Pollutant Discharge Elimination System) Permit.

Residents can help protect sources by:

- practicing good septic system maintenance,
- supporting water supply protection initiatives at future town meetings,
- taking hazardous household chemicals to hazardous materials collection centers on specified days,
- limiting pesticide and fertilizer use, etc.,
- taking waste motor oil to the Natick Recycling Center.

What Is My System's Ranking?

A susceptibility ranking of moderate to high was assigned to this system using the information collected during the assessment by MassDEP.

Where Can I See the SWAP Report?

The complete SWAP report is available at the Town of Natick Department of Public Works and online at <http://www.mass.gov/eea/docs/dep/water/drinking/swap/nero/3198000.pdf>. For more information, call the Natick Water & Sewer Division Supervisor, Anthony Comeau, at (508) 647-6557.

Water Main Flushing

Distribution mains (pipes) convey water to homes, businesses, and hydrants in your neighborhood. The water entering distribution mains is of very high quality; however, water quality can deteriorate in areas of the distribution mains over time. Water main flushing is the process of cleaning the interior of water distribution mains by sending a rapid flow of water through the mains.

Flushing maintains water quality in several ways. For example, flushing removes sediments like iron and manganese. Although iron and manganese do not pose health concerns, they can affect the taste, clarity, and color of the water. Additionally, sediments can shield microorganisms from the disinfecting power of chlorine, contributing to the growth of microorganisms within distribution mains. Flushing helps remove stale water and ensures the presence of fresh water with sufficient dissolved oxygen, disinfectant levels, and an acceptable taste and smell.

During flushing operations in your neighborhood, some short-term deterioration of water quality, though uncommon, is possible. You should avoid tap water for household uses at that time. If you do use the tap, allow your cold water to run for a few minutes at full velocity before use, and avoid using hot water to prevent sediment accumulation in your hot water tank.

Please contact us if you have any questions or if you would like more information on our water main flushing schedule.

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 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 www.epa.gov/lead.



Test Results

Our water is monitored for many different kinds of contaminants on a very strict sampling schedule. The information below represents only those substances that were detected; 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 3rd stage of the EPA's Unregulated Contaminant Monitoring Rule (UCMR3) program by performing additional tests on our drinking water. UCMR3 benefits the environment and public health by providing the EPA with data on the occurrence of contaminants suspected to be in drinking water, in order to determine if EPA needs to introduce new regulatory standards to improve drinking water quality. Contact us for more information on this program.

REGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Arsenic (ppb)	2016	10	0	0.25	0–1	No	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes
Barium (ppm)	2016	2	2	0.033	0.025–0.048	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Chlorine (ppm)	2016	[4]	[4]	0.48	0.00–1.03	No	Water additive used to control microbes
Fluoride (ppm)	2016	4	4	0.65	0.39–0.92	No	Water additive which promotes strong teeth
Haloacetic Acids [HAA] (ppb)	2016	60	NA	5.6	2.70–9.20	No	By-product of drinking water disinfection
Nitrate (ppm)	2016	10	10	1.15	0.59–1.60	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Perchlorate (ppb)	2016	2	NA	0.145	0.08–0.21	No	Inorganic chemicals used as oxidizers in solid propellants for rockets, missiles, fireworks and explosives
Selenium (ppb)	2016	50	50	0.5	0–2	No	Discharge from petroleum and metal refineries; Erosion of natural deposits; Discharge from mines
TTHMs [Total Trihalomethanes] (ppb)	2016	80	NA	25.8	<1.00–47.60	No	By-product of drinking water disinfection

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

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AL	MCLG	AMOUNT DETECTED (90TH%TILE)	SITES ABOVE AL/ TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2014	1.3	1.3	0.19	0/30	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead (ppb)	2014	15	0	0	0/30	No	Corrosion of household plumbing systems; Erosion of natural deposits

SECONDARY SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	SMCL	MCLG	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Chloride (ppm)	2016	250	NA	171	93–220	No	Runoff/leaching from natural deposits
Sulfate (ppm)	2016	250	NA	16.5	13–21	No	Runoff/leaching from natural deposits;

UNREGULATED AND OTHER SUBSTANCES ¹

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE
Hardness (ppm)	2016	129.5	100–153	Naturally occurring
Sodium (ppm)	2016	79	44–120	Natural sources; Runoff from use of salt on roadways

UNREGULATED CONTAMINANT MONITORING RULE - PART 3 (UCMR3) ¹

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH
1,4-Dioxane (ppb)	2013	0.013	ND–0.13
Chlorate (ppb)	2013	62.5	ND–380
Chromium, Total (ppb)	2013	0.171	ND–2.0
Chromium 6+ (ppb)	2013	0.068	ND–0.26
Strontium, Total (ppb)	2013	170	140–210
Vanadium, Total (ppb)	2013	0.115	ND–0.34

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

Definitions

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

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

LRAA (Locational Running Annual Average): The average of sample analytical results for samples taken at a particular monitoring location during the previous four calendar quarters. Amount Detected values for TTHMs and HAAs are reported as LRAAs.

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.

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).

SMCL (Secondary Maximum Contaminant Level): SMCLs are established to regulate the aesthetics of drinking water like appearance, taste and odor.