2015 Drinking Water Consumer Confidence Report

Town of Needham • Needham Water and Sewer Division PWS #3199000.

2015 report on your drinking water

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Needham Water Division PWS #3199000.

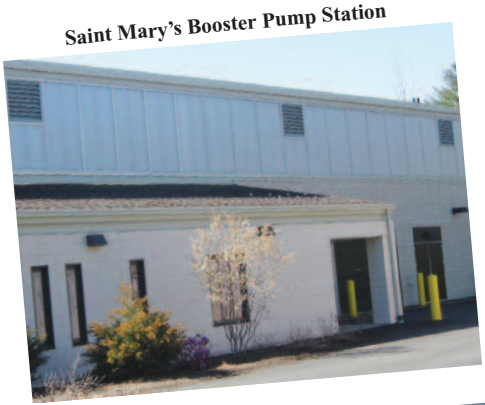
Dear Resident,

The Needham Water & Sewer Division is pleased to share with you the results of its annual water quality report. Needham takes hundreds of tests each year and for 2015 we again met every Federal and State drinking water standard. The Town is dedicated to the planning, operations and maintenance needed for producing and delivering high quality drinking water. Needham strives to serve the community in a courteous, efficient and environmentally sustainable manner.

One of the major projects that Needham oversaw was the construction of the new St.Mary's booster pump station (MWRA secondary source). It was placed on line in July 2015. While maintaining water quality is critical, other issues such as service reliability, adequacy of supply, preparing for future growth, protecting the water supply and conservation are also very important.

This report describes where the Town's water comes from, how it is treated and delivered, and the steps taken to ensure its quality. We want you to have the same confidence we have in the water we deliver. If you have any questions or comments about water quality please contact Chris Seariac, Water & Sewer Superintendent at (781) 455-7550 or Stephen Cusick, Water Treatment Plant Manager at (781) 416-4071.

Saint Mary's Booster Pump Station



Department of Public Works
500 Dedham Ave
Needham, MA

This is a right-to know report required to be sent to you in accordance with the Federal Safe Drinking Water Act Public Law 104-182, Section 141(c)(4).

Information on your source water

Where does the town's water come from?

Needham draws potable water from two separate sources. The primary source is the Charles River Wellfield, which has been the major source of water since the 1930's. Water is drawn from three ground water wells and treated at the adjacent Charles River Water Treatment Facility. The Town's secondary source comes from the Massachusetts Water Resources Authority (MWRA) which is used primarily in the summer. The MWRA supply is conveyed through a 36" diameter pipe from the MWRA's Metro West Tunnel in Weston to a booster station on St. Mary's Street. In addition, Needham has emergency connections to provide and receive water from the neighboring towns of Wellesley and Dedham. Water is pumped directly to the two water storage tanks (Dunster & Birds Hill) that have a combined capacity of 4 million gallons. Needham averaged 3.443 million gallons per day. Seventy-six percent was produced from its primary source and 24% from its secondary source.

Understanding our water treatment process

In order to maintain compliance with Federal and State Drinking water standards, Needham well water must be treated before it reaches consumers' taps. The Charles River Water Treatment Facility utilizes processes which include the removal of manganese by oxidation and filtration. Sodium hydroxide is used to raise the natural pH and alkalinity of water to reduce the corrosion of lead and copper from household plumbing systems. Chlorine, a highly efficient disinfectant, is added to kill disease-causing bacteria that water or its transport pipes might contain. Adding chlorine precipitates (oxidizes) the manganese prior to removal by greensand filtration. Chlorine levels are continuously monitored and controlled to ensure that disinfection residuals are maintained at the Facility and throughout the distribution system. Ortho-polyphosphate, a food based additive that is then added to minimize calcium precipitating in hot water systems. Finally, fluoride is added to prevent tooth decay. 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. All components of the water distribution and treatment systems are closely monitored by State certified operators through a computerized Supervisory Control and Data Acquisition (SCADA) system.

Source Water Protection

To ensure the highest quality of drinking water for residents, the Town has adopted by-laws and health regulations designed to preserve and protect existing and potential sources of drinking water supplies and conserve natural resources. The Department of Environmental Protection (DEP) approved the Town's water source protection strategy based on land use and operational restrictions in areas of influence to the Town's drinking water wells. The information collected was incorporated into the Source Water Assessment Protection (SWAP) report. The report is a planning tool to support local and state efforts to improve water supply protection. The assessment helps focus protection efforts on appropriate best management practices and drinking water source protection measures. Residents can help protect sources by taking hazardous household chemicals to hazardous collection days and by limiting the use of pesticides and fertilizers. The Town of Needham three drinking water wells are located within one water supply protection area. The complete SWAP report is available on-line at **http://www.mass.gov/eea/docs/dep/water/drinking/swap/nero/31999000.pdf**

EPA and State regulations require water quality testing after treatment. In 2015, the Town collected more than 500 samples and tested for over 100 contaminants. For your information the table below contains only the contaminants that were detected in Needham's water supply. Although the substances are well below the Maximum Contaminant Level (MCL) set by EPA, we feel it is important for you to know what was detected and the amount present in the water.

Tested After Treatment

Substance	Units	MCL Highest Level Allowed	Needham Detected Level	Range of Detections	MCLG	Major Sources
Chlorine	ppm	4 MRDL	0.75 avg	0.70-0.85	4 MRDLG	Water additive for disinfection
Fluoride*	ppm	4 MRDL	0.85	0.65-1.10	4	Water additive which promotes strong teeth
Manganese	ppm	0.05	0.01 avg	0.005-0.015	0	Naturally found mineral in the earth
Nitrate	ppm	10	041	0.41	10	Runoff from fertilizer use, leaching from septic tanks
Perchlorate	ppb	2	0.08	0.08	2	Rocket propellants, fireworks, flares, blasting agents

*Mass Department of Public Health on May 1st lowered the optimal fluoride level to 0.7 ppm.

In the Distribution System

Disinfection By-products	Frequency Collected	MCL Highest Level Allowed	Highest results or RAA*	Range of Detections	MCLG	Major Sources
(TTHM) Total Trihalomethanes	Quarterly	80 ppb	30.4	9.4-49.5	0	Byproducts of water chlorination
Haloacetic Acids	Quarterly	60 ppb	8.9	4.3-14.9	0	Byproducts of water chlorination

*RAA= Highest running annual average of four consecutive quarters.

Microbiological Contaminant	(MCL)	Highest # of Positive Samples	Major Sources
Total Coliform	No more than 5% of samples positive in a given month	2*	Naturally present in the environment

*Follow up testing confirmed negative coliform at positive test sites.

Inorganic Contaminants	Date Collected	90th Percentile	Action Level	MCLG	# of Sites Sampled	# of Sites Above Action Level	Major Sources
Lead* (ppb)	2015	7	15	0	30	0	Corrosion of household plumbing
Copper* (ppm)	2015	0.04	1.3	0	30	0	Corrosion of household plumbing

*The next round of sampling will be in the summer of 2018.

Unregulated Contaminants	Range Detected (ppb)	Average (ppb)	UCMR (Unregulated Contaminant Monitoring Rule)
Chromium (total)	0.21-0.32	0.265	All public water suppliers are required to report unregulated contaminant monitoring results whenever they are detected, that is, any detect above the minimum reporting level (MRL). Unregulated contaminants are those that don't yet have a drinking water standard set by the US Environmental Protection Agency (EPA)
Chromium -6	0.095-0.134	0.115	
Strontium	35.3-142	88.6	
Chlorate	36-187	111.5	

Definitions & Acronyms

ppm = parts per million, **ppb** = parts per billion (1 ppm = 1000 ppb), **ND** = not detected

Safe Drinking Water Act (SDWA) - The Federal Law that governs the regulation of public water supplies.

Maximum Contaminant Level (MCL) - The highest allowable level of a contaminant in drinking water. MCL's are set as close to the MCLG's 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 not known, or expected, risk to health.

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

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

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

Environmental Protection Agency (EPA) - The federal agency responsible for the development of SDWA regulations.

Department of Environmental Protection (DEP) - The Massachusetts state regulatory agency responsible for the implementation of the SDWA.

Drinking Water & Public Health

The Safe Drinking Water Act (SDWA) is the primary Federal law that ensures the quality of Americans' drinking water. Under SDWA, EPA sets standards for drinking water quality and oversees the states, municipalities, and other water suppliers who implement those standards. SDWA authorizes the EPA to set national health-based standards for drinking water to protect against both naturally-occurring and man-made contaminants that may be found in drinking water. The EPA, MassDEP, and Needham DPW then work together to make sure that these standards are met. The Food and Drug Administration (FDA) and the Massachusetts Department of Public Health have established regulations that limit contaminants in bottled water which must provide the same protection for public health.

Contaminants that may be present in source water include:

Microbiological contaminants: such as viruses and bacteria that may come from sewage septic systems, agricultural livestock and wildlife.

Pesticides and herbicides: that may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.

Inorganic contaminants: such as salts and metals that can be naturally-occurring or result from urban storm water runoff, industrial, or domestic wastewater discharges, oil and gas production, mining or farming.

Organic contaminants: synthetic and volatile organic chemicals that are by-products of industrial processes and petroleum production, also urban storm water run off, and septic systems.

Radioactive contaminants: can be naturally occurring or result from oil and gas production, and mining activities.

Contaminants in Bottled and Tap Water

Drinking water, including bottled water, may reasonably be expected to contain small amounts of some contamination. 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 (1-800-426-4791) In order to ensure that tap water is safe to drink, the Massachusetts DEP and EPA prescribe regulations which limit the amount of certain contaminants in water provided by public water systems.

Drinking Water and People With Weakened Immune Systems

Some people may be more vulnerable than others 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 infants can be particularly at risk from infections. These people should seek advice from their health care providers.

Your drinking water is routinely tested for these substances in accordance with Federal and State drinking water regulations. These substances have not been detected or are significantly below the (MCL) allowed.

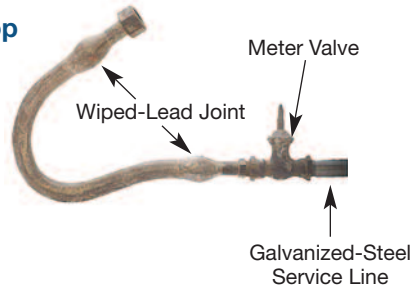
What can I do to reduce exposure to lead in drinking water?

Never use hot water from the faucet for drinking or cooking, especially when making baby formula or other food for infants.

Ask your local water department if there are lead service lines leading to your home.

Check your plumbing fixtures to see if they are lead-free. Be careful of places you may find lead in or near your home. Paint, soil, dust and some pottery may contain lead.

Lead Pipe Loop



What you need to know about lead in tap water?

Under EPA regulations, Needham must test tap water in homes that are likely to have high lead levels. These are usually homes with lead service lines. The EPA requires that 90% of the sampled homes must have lead levels below the action level of 15 parts per billion (ppb). To further decrease your potential exposure, you should always use cold water for drinking and cooking.

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 old service lines and home plumbing. Needham is responsible for providing high quality 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 and cooking. If you are concerned about lead in your water, you may wish to have your water tested. You may also contact the DPW for information pertaining to your water service pipe. Additional information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at: **http//www.epa.gov/safewater/lead**.

Needham's Cross Connection Control Program

What is a cross connection?

A cross-connection is an ACTUAL or POTENTIAL link between the potable water supply and a source of contamination (sewage, chemicals, gas, etc.). This has the potential of becoming a hazardous situation if the contaminant source were to enter (backflow) into the potable water. Backflow occurs when the water flow is reversed, due to a change in pressure, and water flows back into the system. Contamination can also occur when the pressure in the drinking water system drops due to occurrences such as water main breaks and heavy water demand causing contaminants to be drawn (back-siphonage) into the potable water system.

Where do I find cross connections?

Garden hoses connected to an outside water tap are the most common sources of cross connections in the home. The garden hose creates a hazard when submerged in non-potable water such as a swimming pool or when attached to a chemical sprayer for weed control.

Who protects public drinking water from cross connections?

Your public water supplier is required to survey all industrial, commercial and municipal facilities to ensure that all cross connections are eliminated or protected by an appropriate backflow device. The water supplier is also responsible for inspecting and testing each backflow prevention device to ensure it is providing maximum protection.

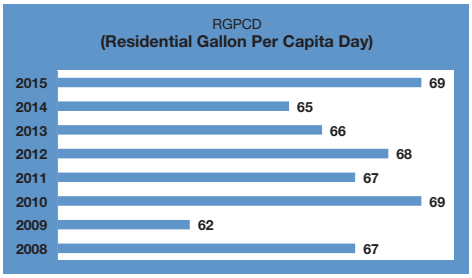
What can I do to prevent backflow?

You can prevent backflow in your home plumbing system by installing an inexpensive hose-bib vacuum breaker on each of your outside water spigots.

Water Conservation

The Massachusetts Department of Environmental Protection Agency (MassDEP) mandated that the Town of Needham implement restrictions on outdoor water use. The purpose of the restrictions set by the Commonwealth is to reduce residential water use to under 65 gallons per person per day to ensure a sustainable drinking water supply and to protect natural resources and stream flow for aquatic life. Needham has been unable to consistently meet this requirement and residential use in Needham increased to 69 gallons per person, per day in 2015.

Summer is an especially important time to save water. Needham's water supply is usually sufficient to meet normal water demands. However during the summer, residential water usage tends to increase. If we conserve just a few gallons per day, millions of gallons of water can be saved over the course of a year.



Be WATER SMART - Conserve

- Water your lawn only as needed. Too frequent watering can actually weaken a lawn by encouraging shallow roots. The general rule of thumb is one inch per week including rain.
- Timing is critical for lawn watering. Water your lawn in the early morning or late evening to avoid excess evaporation.
- Install Mulch to keep roots cool and moist. Mulch serves as a ground cover that reduces water evaporation from the soil.
- Keep your blades sharp and high. Raising your lawn mower blade prevents tearing of the grass. Longer grass provides shade for the roots and helps reduce water loss.
- Use shut off-nozzles on hoses and automatic shut-off devices on irrigation systems. Unattended hoses can use 10 gallons or more per minute.
- Install a soil moisture sensor complimented with a rain sensor that turns automatic sprinkler systems off when the soil contains sufficient moisture and when it is raining.

Improvements to the water system

Each part of the water system needs routine maintenance in order to maintain a safe and dependable water supply. Listed are some of the projects undertaken by the Water Division in 2015.

- Replaced 8 older fire hydrants to ensure water supply for fire protection.
- Upgraded 1,152 older water meters.
- Replaced 257 (lead or iron pipe) water service connections.
- Replaced 993 feet of 12 inch water main on School St.
- Replaced 1126 feet of 8 inch water main on Pleasant St.
- Replaced 1225 feet of 8 inch water main on Norfolk St.
- Repaired 7 water main breaks and 10 service leaks.
- Upgraded the remaining two filters with new media at the Charles Water Treatment Facility.
- Conducted Dunster Rd and Birds Hill storage tank security and sanitary inspections.
- Construction completed for the St.Mary's St Pump Station (MWRA). Placed on-line in July 2015.

Future Projects for 2016

- On-going water main and water service replacement programs.
- Well #3 Replacement/ Construction due to be operational by 2017.
- Upgrade Supervisory Control and Data Acquisition system (SCADA) at the Charles River Water Treatment Facility.
- Integrate Water and Sewer Operations into the Town's GIS system.

During 2015, Needham Water Division delivered over 1.2 billion gallons of water to its customers.

WHERE TO GO FOR MORE INFORMATION

Massachusetts Dept. of Environmental Protection
www.mass.gov/dep
617-292-5500

Massachusetts Dept. of Public Health
www.mass.gov/dph
617-624-6000

Massachusetts Water Resource Authority
www.mwra.com
617-242-5323

Department of Conservation and Recreation
www.mass.gov/dcr/watersupply.htm
617-626-1250

US Center for Disease Control and Prevention (CDC)
www.cdc.gov
800-232-4636

U.S Environmental Protection Agency
www.epa.gov
800-311-3435

State Certified Water Quality Testing Labs
www.mwra.com/04water/html/testinglabs.html

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Water!

2015 Water Quality Report

Drinking water test results and other important information from the Town of Needham