Accomplishments

Throughout the years we are continually making improvements to our water system to ensure the delivery of the highest level of drinking water possible that meets and surpasses state and federal standards for quality and safety. One of the town's accomplishments this past year included completing the town's water main replacement program. The town has virtually eliminated all unlined cast iron pipe with the exception of the pipes under two railroad crossings. Cast iron pipe was installed throughout Town from 1898 to 1945. The problem with cast iron is that it becomes extremely corroded and over time, the minerals build up on the interior of the pipe which is detrimental to water quality and flow rates. The solution was to utilize a cement lining, which prevents the problem entirely as the water is no longer in contact with the metal pipe.

Another accomplishment this year was that we received a grant from the state to purchase the conservation rights to the Rolling Ridge property so that it may never be further developed. This was a great achievement for protecting our drinking water source as the size of the property and its location so close to the treatment plant intake would have been extremely detrimental to our drinking water if it had been allowed to be developed. Thank you to all who helped in this endeavor!

Information on the Internet

The U.S. EPA Office of Water (www.epa.gov/watrhome) and the Centers for Disease Control and Prevention (www.cdc.gov) Web sites provide a substantial amount of information on many issues relating to water resources, water conservation and public health. Also, the Massachusetts Department of Environmental Protection (MADEP) has a web site (www.mass.gov/dep) that provides complete and current information on water issues in Massachusetts, including valuable information about our watershed.

Need Answers?

We encourage you to share your thoughts with us on the information contained in this report. Should you ever have any questions about this report or relating to your drinking water please call Linda Hmurciak, Assistant Superintendent, or Matt O'Boyle, Senior Water Analyst, at the WTP at (978) 688-9574, or you can email us at: watertreatment@townofnorthandover.com. Any questions regarding your water bills please call the DPW at (978) 685-0950.

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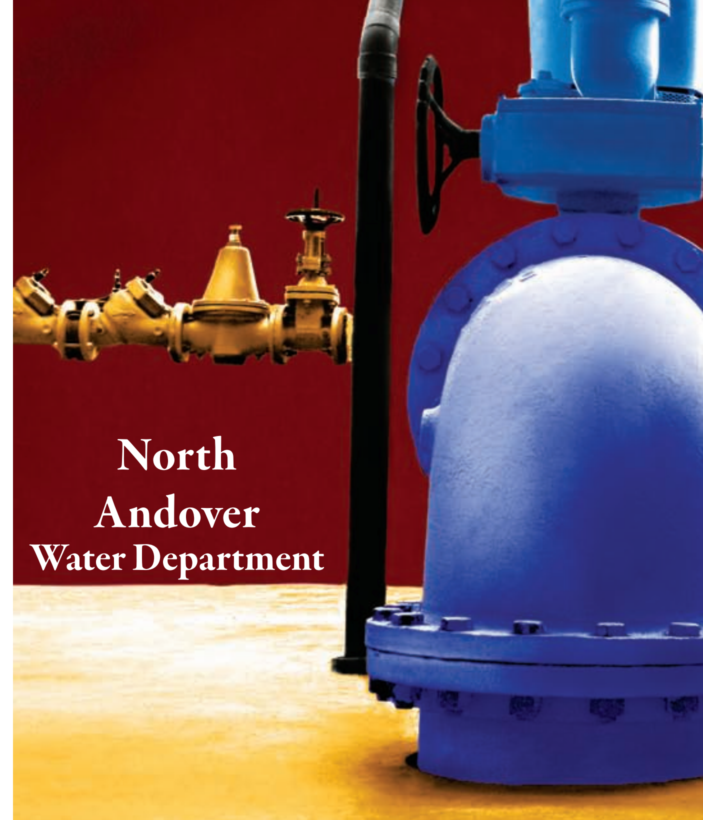


North Andover Water Department

Water Quality Report

for tests performed in 2010

Public Water Supply ID: 3210000

Drinking Water Regulations (How We Protect Your Drinking Water)

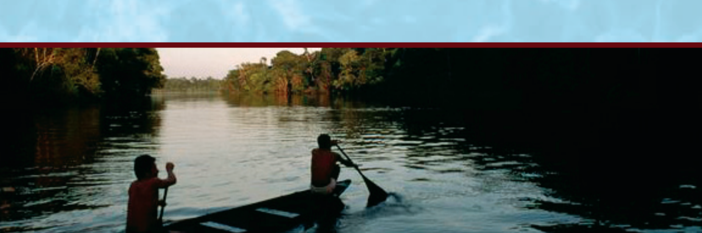
The federal Safe Drinking Water Act (SDWA) and the Massachusetts Drinking Water Regulations apply to all public water systems (PWS) in the Commonwealth. The primary purpose of these regulations is to ensure that the public is provided with a sufficient supply of water that is safe to drink along with adequate pressure for fire protection.

Although the Water Department is responsible for treatment, testing and transmission of the drinking water, other municipal departments provide significant support in helping us reduce the risk of contamination through regulations, bylaws, and actions. Some examples: the Planning Board has a Zoning Bylaw and issues permits for land use development, the Fire Departments respond to spills of hazardous materials and monitors in-ground fuel storage tanks, the Board of Health regulates septic systems and sodium levels, and the Board of Selectmen recommends budget expenditures for the upkeep of our treatment facilities, booster stations, and distribution system at town meetings. You can participate in issues concerning our drinking water by attending the Planning Board, Board of Health and Board of Selectmen meetings. Times, dates and locations are posted on the town website at: www.townofnorthandover.com. We would also ask that you report any suspicious activity to the police department at (978) 683-3168.

Lake Cochichewick

The residents of North Andover are fortunate because of a very precious resource, our own drinking water supply, Lake Cochichewick. The lake is a surface source which holds approximately 4.3 billion gallons and is replenished from various tributaries springs and run-off, draining from the surrounding 2,732 acres of watershed area. The average depth of the lake is 23 feet with one spot as deep as 45 feet. The shore length is over 7 miles.

The lake supplies the town with approximately 1.1 billion gallons of drinking water per year with an average day of pumping at 3.2 million gallons. But in the summer months we have pumped almost as much as 7 million gallons mostly due to "non-essential" water use such as lawn irrigation. This year was extremely tough on the lake. Even though we had record rainfall in the spring, we had an extremely dry summer and fall bringing the lake into near drought conditions.



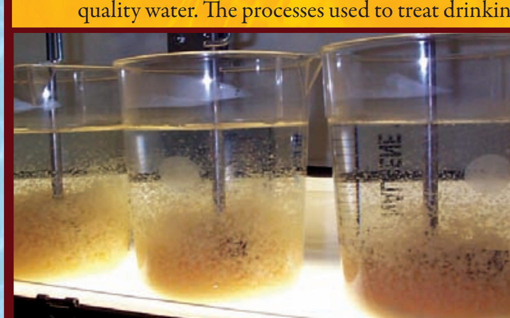
Source Water Assessment and Protection Plan

The delivery of high quality drinking water starts with a protected source. In our case, Lake Cochichewick is our sole source of drinking water. In 2003 the state did an assessment on our lake and created a Source Water Assessment Protection (SWAP) Report to establish the pollution susceptibility of our source. Susceptibility is a measure of a water supply's potential to become contaminated due to land uses and activities within its recharge area. According to the North Andover SWAP, our water system has a susceptibility rating of "high" based on potential sources of contamination in and around our lake. An example of potential contamination to the lake is discussed below in the article about storm water drain systems.

Protecting sources of drinking water is essential for maintaining and improving the quality of human health and the environment, thus this report should be viewed as a planning tool to focus efforts on minimizing risks to our water supply. If you would like to review the SWAP, the entire report can be found online at www.townofnorthandover.com/water "Lake & Watershed Information". If you have any questions regarding the SWAP report please call Linda Hmurciak, Assistant Superintendent WTP at (978) 688-9574.

Our Water System

The Water Department delivers drinking water to your community using a network of pump stations, storage tanks and underground pipes. Regular maintenance and replacement of these assets by licensed operators ensures that the system remains reliable and delivers high-quality water. The processes used to treat drinking water vary and depend on the compounds that need to be removed. The more compounds (whether naturally occurring or man-made), the more complex the treatment system required. The Water Department must also use licensed operators to run the treatment plant and distribution system. The number of operators and the skills they must have depends on the size of the system and the types of treatment.

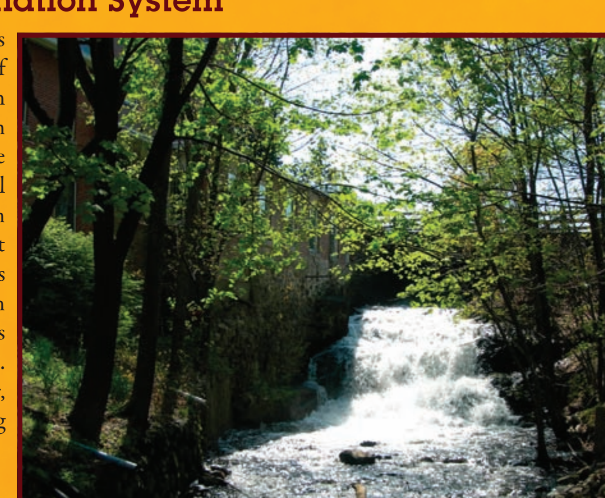


In the process of water treatment we use a multi-barrier concept. This theory consists of a series of steps beginning with the lake water flowing through screens to remove large objects such as tree limbs, fish, turtles and eels. It is then pumped to a tank where ozone gas is added which helps remove color, taste and odor particles along with harmful organisms. The water then flows to a rapid mixing tank where a chemical called "polyaluminum chloride" is added which causes small particles, called "floc", to form. As the floc becomes heavy, the particles drop out of the water column into a settling basin. The clearer water on the top of the basin then flows onto eight mixed media filter beds of carbon and sand where still smaller particles, organisms and/or chemicals are removed. The filters also help remove any remaining taste and odor organisms.

From the filters the water is then sent to a holding tank where "chlorine" is then added for disinfection as a precaution against any bacteria that may still be present. "Sodium hydroxide" (used to adjust the final pH and alkalinity), "fluoride" (used to prevent tooth decay) and "zinc orthophosphate" (a corrosion inhibitor used to protect distribution system pipes) are also added before the water is pumped to sanitized, underground reservoirs, a water tower and into your homes or businesses. The North Andover Water Treatment Plant is located on the shores of Lake Cochichewick at 420 Great Pond Road.

NPDES: National Pollutant Discharge Elimination System

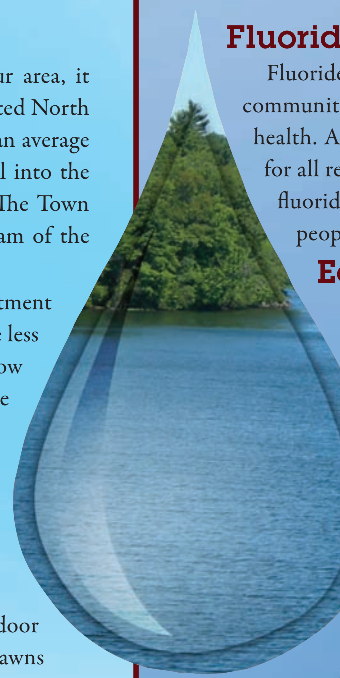
Municipal storm drain systems are a major source of pollutants to the waters of the Commonwealth. Cities and towns are responsible for the quality of the discharges that enter the inland and coastal waters from the storm drain systems. As stormwater travels, it picks up debris and contaminants from streets, lawns, parking lots and construction sites. Pollutants can also enter the storm drain system from illicit connections or dumpings. Common potential contaminants include lawn chemicals, pet wastes, and contaminants from automotive leaks, maintenance, car washing and/or accidents. To ensure that discharges from storm drain systems do not cause or contribute to violations of the state water quality standards, environmentally sensitive site design that reduces impervious surfaces, minimizes stormwater runoff, and manages stormwater in a manner that mimics natural conditions should be encouraged. When planning for future growth, municipalities should analyze stormwater, wastewater, and water supply issues conjunctively. It's as simple as practicing "Good Housekeeping" behavior.



The Drought of 2010

Even though the spring of 2010 brought record rainfall to our area, it wasn't long before the unusually dry summer and fall weather affected North Andover and the whole Northeast region. Because of the lower than average amount of precipitation, the town issued a "Drought Watch" well into the fall. This was voluntary water-use restrictions to conserve water. The Town did its part by postponing the annual water main flushing program of the distribution system and by ceasing the watering of all Town fields.

To further help the homeowners conserve water, the Water Department sold Water Conservation Kits. Each kit contains a toilet dam to use less water in each flush, dye tablets to check for toilet leaks, a low flow swivel kitchen aerator, and two low flow bathroom aerators. These kits are still available at the DPW at 384 Osgood Street and at the Water Treatment Plant at 420 Great Pond Road. For more information on these kits and similar devices plus more ideas to conserve water please refer to the Town of North Andover Web site www.townofnorthandover.com/water and click on the link: Water Conservation.



There are several ways you can help us through a drought. For outdoor water use: Don't water your lawn during drought conditions. Most lawns survive extended dry periods without watering and will revive once the rain returns. If you feel you really need to water, give established lawns and shrubs a maximum of one inch of water per week (this includes rainfall) and only in the early AM or PM. If you have an automatic lawn irrigation system, install rain sensors and make sure the sprinkler heads are positioned so they don't waste water on the street or sidewalk. In the kitchen: Use a rubber spatula to scrape dishes to limit pre-rinse. Let really dirty pans or dishes soak to speed washing. Automatic dishwashers use 15 gallons for every cycle regardless of how many dishes are loaded, so only turn it on for full loads. Not only will you save water but you'll also save energy. Same for laundry. In the bathroom: Check and repair faucets and toilets for leaks; just a slow drip can waste 15 to 20 gallons a day and it's not uncommon to lose up to 100 gallons a day from an invisible toilet leak. Consider installing low-flow faucet aerators and shower heads along with reduce-flow toilets.

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.

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

Fluoride

Fluoride occurs naturally in all water supplies but in Massachusetts it only occurs in trace amounts. Thus, many communities adjust the fluoride level to about one part per million (ppm or mg/l) so that it is optimal for better oral health. At this level, it is safe, odorless, colorless and tasteless and cost-effective for the prevention of dental disease for all residents of a fluoridated community regardless of age. In 1951, the first Massachusetts communities became fluoridated. There are now approximately 4 million people in 141 Massachusetts communities and 195 million people in the United States who receive the health and economic benefit of fluoridation.

Educational Statement for Lead

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. The North Andover Water Department is 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/safewater/lead.

Information about Potential Soures of Contaminants

In order to ensure that tap water is safe to drink, the Department (MADEP) and the EPA prescribes 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 these contaminants does not necessarily indicate that the water poses a health risk.

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. More information about contaminants and potential health effects can also be obtained by calling the EPA's Safe Drinking Water Hotline at (800) 426-4791.

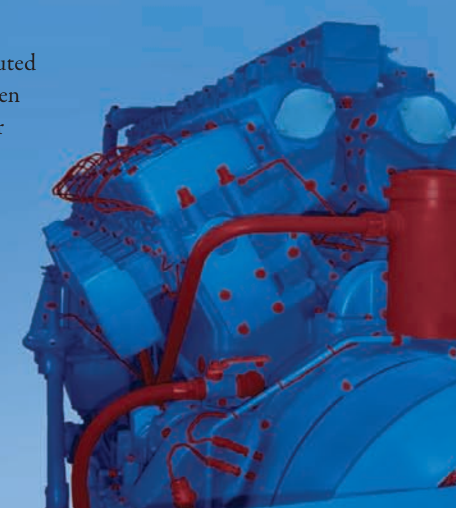
Contaminants that may be present in source water include: Microbial Contaminants, such as viruses and bacteria, may come from wastewater treatment plants, septic systems, agricultural livestock operations, and wildlife. Inorganic Contaminants, such as salts and metals, can be naturally-occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming. Pesticides and Herbicides may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses. Organic Chemical Contaminants include synthetic and volatile organic chemicals that are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems. Radioactive Contaminants can be naturally occurring or 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.

What is a Cross-Connection?

A cross connection is a connection is between a drinking water pipe and a polluted source. The pollution source can even come from your own home. For instance, when you spray fertilizer on your lawn using a connection to your garden hose, if the water pressure drops due to a fire hydrant use, the fertilizer can actually be sucked into your water line and into your home. Using an attachment on your hose called a backflow-prevention device can prevent this from happening.

We recommend the installation of these devices, such as a low cost hose vacuum breaker, for all inside and outside hose connections. You can purchase these devices at a hardware or plumbing supply store. This is a great way for you to help protect the water in your home as well as the drinking water throughout our town.

For more information, go to the U.S. EPA's web site at www.epa.gov/safewater/crossconnection.html. You can also call the Safe Drinking Water Hotline at (800) 426-4791.



SAMPLING RESULTS

Water suppliers protect drinking water by monitoring for more than 100 possible contaminants by disinfecting, filtering and treating water supplies, and by using source monitoring protection measures to ensure that safe water is delivered to your tap.

As in past years, we have continued to monitor the water to determine the presence of any radioactive, biological, inorganic, volatile organic or synthetic organic contaminants. The table below shows only those contaminants that were detected in the water. The state allows us to monitor for certain substances less than once per year because the source is not at risk of contamination. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

REGULATED SUBSTANCES

Substance (Unit of Measure)	Year Sampled	MCL [MRDL]	MCLG [MRDLG]	Amount Detected	Range Low-High	Violation	Typical Source
Free Chlorine (ppm)	2010	[4]	[4]	0.96	0.64 - 1.20	No	Water additive used to control microbes
Fluoride (ppm)	2010	4	4	1.05	0.89 - 1.23	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Haloacetic Acids (HAA) (ppb)	2010	60	NA	6.2	2.3 – 11.0	No	By-product of drinking water disinfection
Nitrate (ppm)	2010	10	10	0.07	NA	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Total Trihalomethanes (TTHMs) (ppb)	2010	80	NA	23.44	11 - 36	No	By-product of drinking water disinfection
Total Organic Carbon (% removal)	2010	TT	NA	47%	40% - 55%	No	Naturally present in the environment
Turbidity[1] (NTU)	2010	TT	NA	0.06	0.05 - 0.18	No	Soil runoff
Turbidity[1] (Lowest monthly percentage of samples meeting limit)	2010	TT	NA	98%	NA	No	Soil runoff

Tap water samples were collected for lead and copper analyses from sample sites throughout the community. Lead and copper samples are scheduled to be collected again in the summer of 2011.

Substance (Unit of Measure)	Year Sampled	AL	MCLG	Amount Detected (90th%tile)	Sites Above AL/ # Sites Tested	Violation	Typical Source
Copper (ppm)	2008	1.3	1.3	0.079	0/30	No	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives
Lead (ppb)	2008	15	0	4	1/30	No	Corrosion of household plumbing systems; Erosion of natural deposits

TABLE DEFINITIONS

AL (Action Level): The concentration of a contaminant that, 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.

ppm (parts per million): One part substance per million parts of water (milligrams per liter).

ppb (parts per billion): One part substance per billion parts of water (micrograms per liter).

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

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

Common Parameters	Averages
pH	7.39
Sodium	27 ppm
Hardness	33.5 ppm
Hardness (North Andover has soft water!)	2 grains/gal
Iron	0.00 ppm
Manganese	0.01 ppm
Bacteria	Negative

[1]Turbidity Footnote: 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 and is regulated as a treatment technique.