
2010 ANNUAL DRINKING WATER QUALITY REPORT
Town of Andover, MA Department of Public Works Water Division
MassDEP Public Water Supply ID # 3009000

This consumer confidence report (CCR) is the thirteenth publication to be issued under the Environmental Protection Agency (EPA) regulations requiring annual notification to all consumers about local drinking water sources and water quality information. It is being delivered to all customers, the Andover Board of Health, the Massachusetts Department of Public Health (DPH), and the Massachusetts Department of Environmental Protection (DEP). Per regulatory requirements, a copy of this report is mailed to every home. Additional copies are available at the main Library, Town Hall, and the Water Treatment Plant. You may also obtain an electronic copy on the town’s website at www.andoverma.gov/dpw/. If you have any questions or comments about this report, you may contact Jim McSurdy at (978) 623-8350, or by email at dpw-treatment@andoverma.gov. We welcome your interest in the Andover water system.

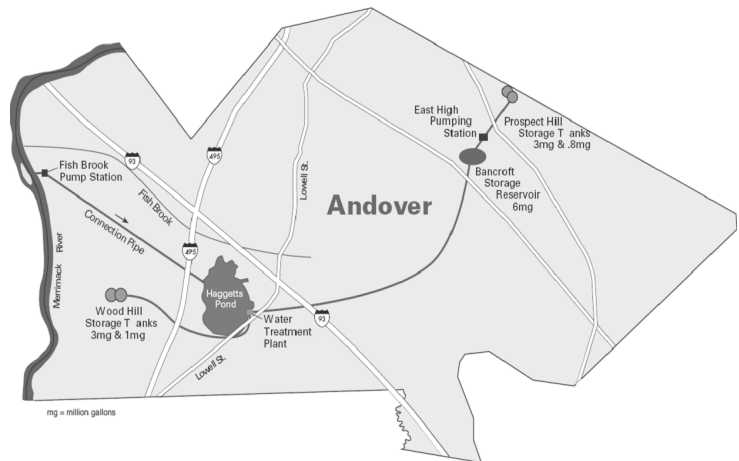
Community Participation

We encourage public participation on issues concerning the town’s drinking water. The dates, times, and locations of Board of Selectmen, Planning Board, and the Board of Health meetings are posted on the town website at: www.andoverma.gov.

Where Your Drinking Water Comes From

Andover’s Drinking Water comes from Haggetts Pond and the surrounding 1, 422 acres of watershed area. The pond is also supplemented with additional waters from Fish Brook and the Merrimack River. A combination of the three surface water sources is used to produce up to 18 million gallons of drinking water per day and approximately 2 billion gallons of drinking water per year. Andover retains 14 million gallons of water storage in the distribution system. This storage helps maintain consistent water pressure throughout the 250 miles of underground pipes that deliver drinking water to homes and businesses.

Water Source	ID Number
Haggetts Pond	3009000-01S
Fish Brook	3009000-02S
Merrimack River	3009000-03S



How Are These Sources Protected?

MassDEP prepared a Source Water Assessment Program (SWAP) Report for the water supply sources serving Andover’s water system. The purpose of the assessment was to determine the susceptibility of drinking water sources to potential contaminant sources (PCS) so that we can focus protection efforts. The results of the assessment are available in the SWAP report which is available online at <http://www.mass.gov/dep/water/drinking/sourcewa.htm#reports>. Andover was assigned a high susceptibility ranking based on the presence of at least one high threat land use within the water supply protection areas. The high threat activities listed by DEP are those that typically use, produce, or store contaminants of concern, which if managed improperly, are potential sources of contamination. It is important to understand that a release may never occur from the potential source, and the actual risk may be lower than the relative threat ranking assigned to it.

Water Treatment Process

We are proud of the exceptional quality of water that flows to your household or business daily. We treat it very carefully at our water treatment plant to enhance its quality. Source water transferred from Fish Brook and the Merrimack River into Haggetts Pond is drawn into the water treatment plant, which purifies millions of gallons of raw water daily. The water treatment plant process consists of a series of physical and chemical steps designed to produce a safe and consistent quality product. Fluoride is added to the finished water to about 1 ppm to prevent tooth decay and cavities. At this level it is safe, odorless, colorless and tasteless. Visit www.andoverma.gov/dpw/ to view a virtual tour of the water treatment plant.

To ensure that we provide the highest quality of water available, your water system is operated by Massachusetts certified operators who oversee the routine operations of our system. The water quality of our system is constantly monitored by us in our on-site laboratory, and by MassDEP to determine the effectiveness of existing water treatment and to determine if any additional treatment is required.

What EPA Says About Drinking Water Contaminants

Contaminants and Health Risks

Drinking water, including bottled water, may reasonably be expected to contain at least 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 (800-426-4791).

Other Important Health Information

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. EPA/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 (800-426-4791).

Contaminants

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, may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.

Inorganic contaminants -such as salts and metals, 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 - may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.

Organic chemical contaminants -include 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 - 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.

Water Quality Testing Results

During the year, we have taken hundreds of water samples to determine the presence of any biological, inorganic, volatile organic or synthetic organic contaminants. The tables below show only those contaminants that were detected in the water.

The water quality information presented in the tables is from the most recent round of testing done in accordance with the regulations. All data shown was collected during calendar year 2010 unless otherwise noted in the tables.

Parameter (Unit of Measure)	Maximum Amount Detected	Range of Detection	MCL	MCLG	Violation	Typical Source
Barium (ppm)	0.016	N/A	2	2	No	Naturally present in the environment
Bromate (ppb)	<5	ND	10	0	No	By-product of ozone disinfection
Fluoride (ppm)	1.28	0 -1.28	4	4	No	Water additive which promotes strong teeth
Manganese (ppb)	16	N/A	50	50 (EPA guideline)	No	Naturally present in the environment
Nitrate (ppm)	0.15	N/A	10	10	No	Run-off from fertilizer use, leaking septic tanks, erosion of natural deposits
Perchlorate (ppb)	<0.2	N/A	2	N/A	No	Inorganic chemicals used as oxidizers in solid propellants for rockets, missiles, fireworks, and explosives
Sodium (ppm)	67.8	41.2 - 67.8	N/A	20 (DEP guideline)	N/A	Naturally present in the environment, Road salt
Sulfate (ppm)	22	N/A	N/A	250 (EPA guideline)	N/A	Naturally present in the environment
Turbidity (NTU) ¹	0.24	0.02 – 0.24	TT=1.0 max TT <0.3 95% of time	N/A	No	Soil run-off

¹ Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system.

Parameter (Unit of Measure)	Maximum Amount Detected	Range of Detection	MCL	MCLG	Violation	Typical Source
Total Coliform (colonies/ml)	<5%	0-<5%	< 5% of samples positive in one month	0	No	Naturally present in the environment, human and animal waste
Heterotrophic Plate Count (cfu/ml)	91	0-91	500	N/A	No	Naturally present in the environment
Total Organic Carbon	2.674	1.977 -2.674	TT=35-45% removal	N/A	No	Naturally present in the environment

Chlorine is added to your drinking water for disinfection purposes. Chlorine residual is necessary to maintain disinfection throughout the distribution system. We are required to monitor the concentration of chlorine residuals entering the distribution system.

Parameter (Unit of Measure)	Average Amount Detected	Range of Detection	MRDL	MRDLG	Violation	Typical Source
Chlorine (ppm)	0.12	0.0 – 0.77	4	4	No	Water additive used to control microbes

The use of chlorine and other disinfectants such as ozone reduces the risk of waterborne disease; however, they can also create compounds known as disinfection by-products (DBPs). The EPA regulates DBPs because they are a potential health risk. Total trihalomethanes (TTHMs) and haloacetic acids (HAAs) are DBPs that form when chlorine is added to the water that contains naturally occurring organic matter.

Parameter (Unit of Measure)	Highest Quarterly Running Average	Range of Detection	MCL	MCLG	Violation	Typical Source
Haloacetic Acids (HAA5) (ppb)	5.5	ND – 12.1	60	N/A	No	By-product of chlorination
Total Trihalomethanes (TTHMs) (ppb)	28.5	16 – 63.1	80	N/A	No	By-product of chlorination

Important Definitions to Help You Understand the Tables

Term	Definition
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.
Maximum Residual Disinfectant Level (MRDL)	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 (ex., chlorine, chloramines, chlorine dioxide).
Maximum Residual Disinfectant Level Goal (MRDLG)	The level of a drinking water disinfectant below which there is no known of expected risk to health. MRDLG's do not reflect the benefits of the use of disinfectants to control microbial contaminants.
Treatment Technique (TT)	A required process intended to reduce the level of a contaminant in drinking water.
Action Level (AL)	The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.
90 th Percentile	Out of every 10 homes sampled, 9 were at or below this level.
ppm	parts per million, or milligrams per liter (mg/l)
ppb	parts per billion, or micrograms per liter (ug/l)
NTU	Nephelometric Turbidity Units
ND	Not Detected. The result was below the detection limit of instrumentation.
N/A	Not Applicable

Lead and Copper

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 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 <http://www.epa.gov/safewater/lead>.

The values reported in the table below represent the highest concentration found in 90% of the homes sampled. Water tests were conducted during the Summer 2010 and the results demonstrated that levels are well below the EPA's action levels requiring additional corrective measures. The next round of lead and copper sampling is scheduled for the Summer 2013.

Parameter (Unit of Measure)	90 TH percentile	Action Level	MCLG	# of sites sampled	# of sites above Action Level	Possible Source of Contamination
Lead (ppb)	4	15	0	30	0	Corrosion of household plumbing systems; Erosion of natural deposits
Copper (ppm)	0.071	1.3	1.3	30	0	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives

Water Resources

Stormwater Management: The Town is continuing to improve our Stormwater Management Program (SWMP) to improve water quality by reducing the discharge of pollutants from storm water runoff into local storm drains, rivers, ponds, streams and other receiving waterbodies. You can help!! For more information regarding the SWMP, visit the Town's website at <http://www.andoverma.gov/stormwater/>.

- TIPS:**
- ✓ Properly dispose of hazardous waste and recycle used motor oil.
 - ✓ Dispose of yard and pet waste properly.
 - ✓ Use pesticides and lawn fertilizers sparingly and follow manufacturer's instructions.
 - ✓ Wash your car at a car wash facility or park it on the grass before you wash it.
 - ✓ Make sure sanitary, laundry, carwash, and industrial wastewaters do not drain to the storm drain system.
 - ✓ Have your septic tank pumped and inspected at least every two years.

Water Conservation: Water resources are vital for the functioning of our homes and our community. By consuming less water, and wasting less, you save more energy, and the environment. More efficient water use begins with individuals. Here are some ways to make your home and your habits more water efficient.

For additional information check out US EPA's website at www.epa.gov/watersense, or visit the Town's website at <http://www.andoverma.gov/dpw/summerconservation.php>.

- TIPS:**
- ✓ 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.
 - ✓ Turn off the tap when brushing your teeth or washing and rinsing the dishes.
 - ✓ Only run your automatic dishwasher when loaded to capacity.
 - ✓ Reduce evaporation by mulching around trees and plants. This controls weeds and promotes plant growth.
 - ✓ Water during the cool parts of the day. Early morning is best than dusk since it helps to prevent the growth of fungus.
 - ✓ Avoid lawn watering on windy days.



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Water Resources, continued

Residential Plumbing Cross Connections: The Town delivers safe, high quality water to your home and business. The goal is to keep it that way. Help eliminate plumbing cross connections which are potential connections between a public water supply and a source of possible contamination or pollution. Contamination can occur when water flowing through your faucet or other plumbing fixture is suddenly drawn in the reverse direction due to a drop in supply pressure of the water distribution system from a water line break, water main repair, or during rapid withdrawal from a fire hydrant. This creates a vacuum which may pull or siphon contaminants or pollutants into the drinking water supply. For additional information about cross connection controls, check out the Town's website at: www.andoverma.gov/dpw/.

<i>Most Common Sources of Cross Connections</i>	<i>How to Eliminate Them</i>
Garden Hose	✓ Install a vacuum breaker on the faucet or hose
Swimming Pools or Hot Tubs	<ul style="list-style-type: none"> ✓ Never submerge the end of filling hose into pool/tub – always leave an air gap. ✓ If pool/hot tub is permanently connected to the home plumbing system, install a backflow prevention device.
Lawn Irrigation System	<ul style="list-style-type: none"> ✓ Protect your water supply with a backflow device if your irrigation system is underground and/or automated. ✓ Install an additional backflow prevention device, and conduct backflow testing if your system uses a pump or has fertilizer/chemical injection.
Private Wells and Secondary Water Sources	<ul style="list-style-type: none"> ✓ Wells and secondary systems are <u>prohibited</u> from connection to public water supply. Each system must be independent of one another. ✓ Install a backflow prevention device for secondary water sources.
Boiler System	<ul style="list-style-type: none"> ✓ Install a backflow prevention device if public water supply is used to replenish boiler water which may have chemicals.