

Winchendon Water Department

Public Water System #2343000

2016 Water Quality Report

Dear Water Customer,

We are pleased to present you with the 2016 Winchendon Water Quality Report. The Safe Drinking Water Act (SDWA) requires that utilities issue an annual Consumer Confidence Report (CCR) to customers in addition to other notices that may be required by law. Contained in this report is information about where your water is drawn from, how it is treated/filtered, how to protect it, levels of any contaminant detected, compliance with the Massachusetts Department of Environmental Protection (MA DEP) regulations, residential cross connections, and helpful definitions. The Winchendon Water Department is committed to providing you with the safest drinking water and enough capacity to meet your demands.

Where? How?



Winchendon's drinking water comes from Upper Naukeag Lake in Ashburnham. Upper Naukeag Lake is a shared water source that provides water to both the Town of Ashburnham and the Town of Winchendon. Water is pumped from the lake to the Ashburnham-Winchendon Joint Water Filtration Plant, which is located on Lake Road in Ashburnham. Here the water is treated and filtered. Chemicals are added to aid in the clarification/filtration process and to disinfect the water. The pH of the water is controlled to prevent corrosion to the plumbing systems of homes and businesses, which can cause lead, copper, and other metals to enter your water through the deterioration of plumbing pipes. Phosphates (corrosion inhibitors) are added to aid in plumbing and water main corrosion prevention as well. Water from the filtration plant is then pumped into the 70 miles of water transmission/distribution mains and two, one-million gallon water storage tanks. The total combined storage of the two tanks of 2 million gallons provides almost 3 days reserve based on average water usage. One storage tank is located on the High Street area and the other is on Elmwood Road. In addition, the system has two water booster pump stations that increase water pressure in the system. A third water booster station on Route 140 provides emergency fire supply protection in that area of town. There are more than 2,100 connections to the water system which supply homes and businesses with clean, safe drinking water. The water filtration plant produced an average of 648,998 gallons per day (GPD) for Winchendon, for a total of 236.88 million gallons for 2016. The statistics for 2015 were 692,662 GPD and 252.82 million gallons total – so the average usage in 2016 was approximately 5% less than 2015.

Protection and Conservation

Protecting our drinking water is crucial, whether it's from pollution (rain run-off, improper disposal of hazardous materials or cross connection) or waste due to leaks from plumbing fixtures or corroded pipes. Massachusetts DEP has written a Source Water Assessment and Protection (SWAP) Report for Winchendon's water system. This includes potential contamination sources near Upper Naukeag Lake. This report assesses the susceptibility of the water system. Winchendon was given a rating of "high" susceptibility due to land use in the area. It is important to understand that a release may never occur from a potential source of contamination provided facilities are using best management practices (BMPs). If BMPs are in place, the actual risk may be lower than the threat ranking. Many potential sources of contamination are regulated at the federal, state and/or local levels to further reduce the risk. This SWAP report can be obtained at the Winchendon DPW Office. For more information, call the Winchendon Water Dept. at (978) 297-0170 or go to <http://www.mass.gov/dep/water/drinking/2343000pd> and download it to your computer.

Water conservation is another way to protect our drinking water by ensuring that we don't diminish our resource. As much as 97% of the world's water is saltwater, leaving 3% freshwater, two-thirds of which is stored as icecaps or glaciers. This leaves us 1% of the world's water for drinking. Needless to say, water conservation will help us sustain our precious 1%. Here are a few ways to help out:

- *Water your lawn only when it needs it. Step on your grass. If it springs back when you lift your foot, it doesn't need water. **This can save 750-1,500 gallons per month.***
- *Turn off the water while brushing your teeth. **This can save three gallons each day.***
- *Set lawn mower blades one notch higher. Longer grass means less evaporation. **This can save 500 to 1,500 gallons each month.***
- *Put a layer of mulch around trees and plants. **This can save 750 to 1,500 gallons per month.***



Backflow and Cross-Connections

Massachusetts drinking water regulations state that an approved public water supply may not be connected to an unapproved supply, such as a private well. Such a connection is considered an illegal cross connection. A cross connection is any connection between piping that carries drinking water (also known as potable) and the piping or fixtures that carry other types of water or substances that are not safe to drink (also known as **non-potable**). Ideally, it is best to not have any cross-connections, but in certain situations they are unavoidable. Examples include residential and commercial fire sprinkler systems, wells or auxiliary water systems, lawn irrigation systems, boilers, swimming pools and hot tubs that are hard piped for filling purposes, and even garden hoses. When an installation requires a cross-connection, it must be properly protected with an acceptable backflow prevention assembly or device to eliminate any potential for a reverse flow back into the potable water supply. The vacuum breaker shown is a device that attaches to any garden hose connection and allows water to flow in only one direction. A garden hose placed into a bucket to fill without a device like this could pose a backflow risk if a fire hydrant was operated in the water system. The drop in water pressure could cause the contents of the bucket to be drawn into the water system and possibly contaminate the drinking water. An unprotected cross-connection threatens the health and safety of individuals and may contaminate food or beverage products utilizing water from that system.



Vacuum Breaker
for hose bib.

For more information, please review the Cross-connection Control Manual from the U.S. EPA's website at <http://water.epa.gov/infrastructure/drinkingwater/pws/crossconnectioncontrol/index.cfm>. You can also call the Safe Drinking Water Hotline at (800) 426-4791.

2016 Drinking Water Quality Test Results

In 2016 your water was tested for total coliform bacteria, chlorine residual, alkalinity, inorganics, nitrate, perchlorate, turbidity (clarity), trihalomethanes, haloacetic acids, volatile organic compounds (VOC's) and pH (Treatment Plant Sampling Plan). The results provided in this report are from 2016 or the most recent monitoring period for each contaminant group. Even though contaminants were detected, the presence of contaminants in drinking water does not necessarily indicate that the water poses a health risk. Drinking water, including bottled water, may reasonably be expected to contain at least low levels of some contaminants. 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 infants can be particularly at risk from infections. These people should seek advice from their health care providers. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline (1-800-426-4791). EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are also available from the Safe Drinking Water Hotline (1-800-426-4791).

Sources of Drinking Water and Drinking Water Contaminants

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 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 storm water runoff, and residential uses.

Organic chemical contaminants include synthetic and volatile organic contaminants 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.

Regulated Contaminants

Contaminant (unit of measure)	Date(s) or Frequency Collected	Highest Amount Detected or Highest RAA*	Range Detected	MCL or MRDL	MCLG or MRDLG	Violation (Y/N)	Possible Sources
Arsenic (ppm)	5/12/2016	ND	--	0.01	0	N	Erosion of natural deposits, runoff from fruit orchards,
Chlorine (ppm)	Monthly	0.46*	0.02-1.38	4	4	N	Water additive used to control microbes
Total Coliform Bacteria (# of positive samples)	Monthly	0	0 – 1	>1 positive sample per month	0	N	Naturally present in the environment
Total Trihalomethanes (TTHMs) (ppb)	Quarterly	49.40*	21.3-49.40	80	--	N	Byproduct of drinking water disinfection
Haloacetic Acids (HAA5s) (ppb)	Quarterly	31.5*	6.00 – 49.10	60	--	N	Byproduct of drinking water disinfection
Perchlorate (ug/l)	10/06/2016	ND	--	2	--	N	Rocket Propellants, blasting agents, fireworks
Barium (ppm)	5/12/2016	0.005	--	2	--	N	Erosion of natural deposits

*The running annual average (RAA) is the highest average of four consecutive quarters.

Turbidity

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. We begin by monitoring raw water turbidity, then we monitor turbidity after the filtration process and, finally, we take a finished water sample. This tells us how much turbidity we are removing. At the treatment plant, these turbidity levels are monitored continuously in addition to manual sampling each day to confirm that the in-line analyzers are accurate and functioning correctly. The average turbidity in the water leaving the plant for the year (2016) was 0.07 NTU (see Important Definitions below).

Turbidity is a measure of the “cloudiness” of the water. It is monitored because it is a good indicator of water quality.					
AWJWA Water Treatment Facility	TT	Lowest Monthly % of Samples	Highest Detected Daily Value	Violation (Y/N)	Possible Source of Contamination
Daily Turbidity Compliance (NTU)	1	----	0.14 May 2, 2016	N	Main Line Break
Monthly Compliance*	At least 95% <0.3 NTU	100	----	N	
*Monthly turbidity compliance is related to a specific treatment technique (TT). This treatment facility filters the water so that at least 95% of our samples each month must be below the turbidity limits specified in the regulations.					

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 the individual service lines to your home/business and also building plumbing systems. The Winchendon 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 (800-426-4791) or at <http://www.epa.gov/safewater/lead>

Lead and Copper Testing

Your drinking water was tested for lead and copper in 2016. Winchendon has a waiver for lead and copper testing due to historically favorable test results and is only required by MA DEP to complete this testing every third year. Sampling was conducted in September 2016. Below are the results from the 2016 sampling:

Lead and Copper	Date Collected	90 th Percentile*	Action Level (AL)	MCLG	# of sites sampled	Exceeds AL (Y/N)	# of sites above AL	Possible Sources
Lead (ppb)	September 2016	0.007	15	0	20	N	0	Corrosion of household plumbing
Copper (ppm)	September 2016.	0.18	1.3	1.3	20	N	0	Corrosion of household plumbing

*Lead and copper compliance is based on the 90th percentile value, which is the highest level found in 9 out of 10 homes sampled. This number is compared to the action level for each contaminant.

Unregulated and Secondary Contaminants

Unregulated contaminants are those for which the EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist the EPA in determining their occurrence in drinking water and whether future regulation is warranted. The Winchendon Water Department tested for unregulated/secondary contaminants in 2016 - these results are shown in the following table. Winchendon was last required to test for these contaminants in 2015. Please note that only those substances that were detected in samples have been shown. All detected substances did not exceed any MCL, SMCL, or Action level. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline (800-426-4791).

Unregulated Contaminants	Date Collected	Highest Amount Detected		Possible Sources	
Bromodichloromethane (ppb)	5/12/2016	1.0ppb		Byproduct of drinking water disinfection	
Chloroform (ppb)	5/12/2016	10ppb		Byproduct of drinking water disinfection	
Sodium (ppm)	5/12/2016	11.2		Natural sources; runoff from road salt	
Secondary Substances	Date Collected	Amount Detected	SMCL	ORSG	Possible Sources
Manganese (ppm)	6/30/2016	0.05	0.05	--	Leaching from natural deposits
Iron	6/30/2016	0.005	0.3	--	Leaching from natural deposits

Revised Total Coliform (RTCR)

During 2016 Total coliform and E coli were tested in the drinking water monthly. We are proud to say we had no presence of either of the two that require correctible action.

Important Definitions

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

Maximum Contaminant Level Goal or 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.

Unregulated Contaminants: Unregulated contaminants are those for which the EPA has not established drinking water standards.

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

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

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

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.

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

Secondary Maximum Contaminant Level (SMCL): These standards are developed to protect the aesthetic quality of drinking water and are not health based.

ORSG: Office of Research and Standards Guideline.

NTU: Nephelometric Turbidity Units.

PPM: One part per million parts, 1 milligram per liter, equivalent to one drop in 10 gallons.

PPB: One part per billion parts, 1 microgram per liter, equivalent to one penny in \$10 million dollars.



Health Information

In order to ensure that tap water is safe to drink, the EPA and MA DEP prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. 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 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).

***For any additional information about your water system and information about public participation opportunities please contact the Winchendon Water Department, at 978-297-0170. The DPW's administrative office is located on the first floor of the Winchendon Town Hall at 109 Front Street. Copies of the "Winchendon Water Department - 2016 Water Quality Report" are available at the DPW office upon request.

Current Town Hall hours of operation

Monday: 8:00am -6:00pm

Tuesday through Thursday: 8:00am -5:00pm

Friday: CLOSED

Summary of Violation(s) that occurred in 2016

We are extremely proud to report that not a single violation of drinking water quality standards occurred during 2016. Your drinking water met or exceeded all US EPA and MA DEP drinking water standards.