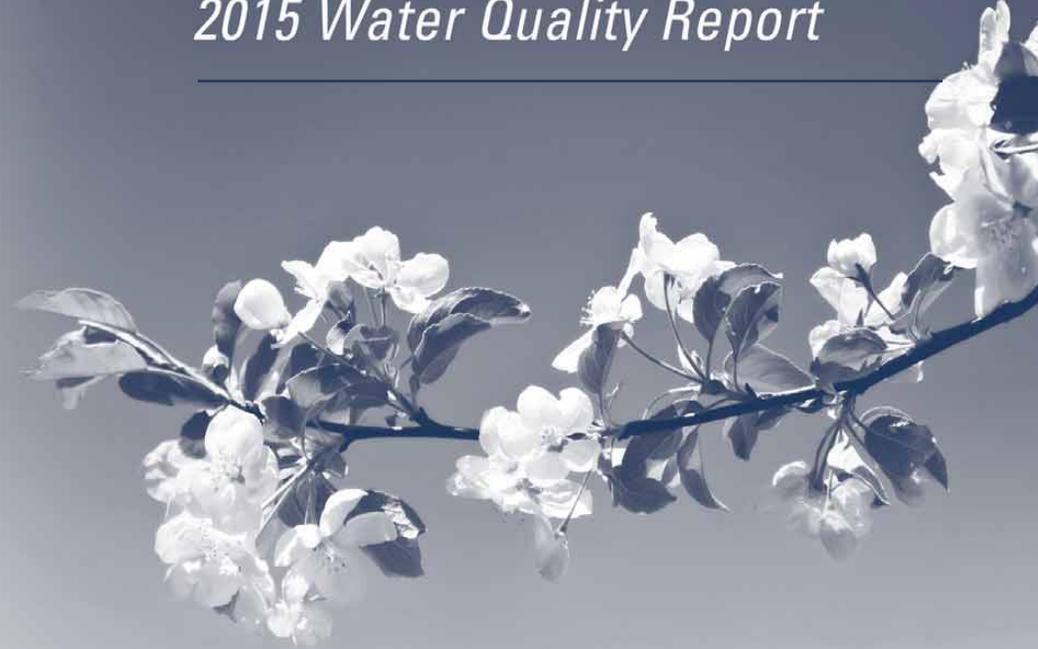




**AQUARION**  
Water Company

*Stewards of the Environment™*

## *2015 Water Quality Report*



***It's Time To Conserve. Water: It's Too Precious To Waste.***



## A Message from the Vice President



John Walsh  
Vice President, Operations  
Aquarion Water Company of MA

Dear Aquarion Customer:

Delivering safe drinking water to you is Aquarion's highest priority. That's why, in 2015, we conducted 8,111 tests on the water we supplied to our Massachusetts' customers. We're proud to publish the test findings in this report, again showing that the water we supplied to you in 2015 achieved our highest objective: delivering high-quality water to our customers.

Aquarion also has a strong, ongoing commitment to investing in infrastructure. Over the past year, we invested in the water infrastructure serving residents in Hingham, Hull and North Cohasset to meet a variety of needs. Projects included the installation of new water mains in Hull to increase flows for fire protection, reduce leakage and help prevent service interruptions. This means improved service for our customers.

We also invested in the industrial computer system we use continuously to monitor and control our water treatment facility and pumping systems. Upgrades to our pump systems ensure that we are always able to meet the communities' water demands. Significant leak detection efforts throughout our distribution system during the past year have helped reduce leakage, thus protecting the environment and ensuring an adequate water supply for today and the future.

As in past years, we have enjoyed the opportunity to sponsor and provide water to numerous community events, including: Pizzapalooza, benefitting South Shore SNAP; The Taste of Hingham; South Shore Pan-Mass. kids bike race; Hingham's July 4th activities; the End-of-Summer Classic at Bare Cove Park; the Nantasket Beach run to support the Hull Boosters; Hull's Endless Summer event; and a number of activities that benefited the public schools.

Aquarion also continued to play an active role in educating students in local schools through our partnership with The North and South Rivers Watershed Association and Holly Hill Farm.

In closing, I would like to thank all the residents we serve for helping to conserve water and for following the irrigation restrictions schedule last summer. Your conservation efforts helped ensure that we are able to adhere to state limitations on the amount of water we can withdraw from the environment at our wells and reservoir.

I also would like to thank all our employees for their excellent work in providing you with safe clean water and dependable service.

From all of us at Aquarion, it is a pleasure serving you and all our customers in Hingham, Hull, and North Cohasset.

Sincerely,

John Walsh  
Vice President, Operations  
Aquarion Water Company of MA



Stewards of the Environment™

## Facts and Figures



Aquarion conducts an extensive quality testing program each year to ensure our 56,000 customers in Massachusetts have safe, clean drinking water. In 2015, we collected 1,697 water samples, on which we conducted 8,111 quality tests. These tests are designed to detect and measure the presence of more than 100 compounds, many of which occur through erosion of natural deposits. Constant testing enables us to confirm that the water we supply meets or exceeds state and federal standards.

The results reported in the table on the next page demonstrate the effectiveness of our ongoing efforts to protect the purity of Aquarion water every step of the way from the source to your tap.

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# Water Quality Table for the Hingham/Hull/North Cohasset System

Your water has been tested for more than 100 compounds that are important to public health. Only 15 of these were detected, most of which are either naturally occurring or introduced as treatment to improve

water quality. Monitoring frequency varies from daily to once every nine years per EPA regulation, depending on the parameter. Our testing encompasses the full range of regulated inorganic, organic and radiological

compounds and microbiological and physical parameters. Results shown below are for detected compounds only.

Substance (Units of Measure)	Highest Allowed by Law		Compliance	Test Date	Hingham/Hull/ North Cohasset System Detected Level	
	MCLG	MCL			Average	Range
<b>Inorganic Compounds</b>						
Barium (ppm)	2	2	YES	2015	0.024	0.024
Copper (ppm)	1.3	AL = 1.3	NO++	2015	3.10*	
Fluoride (ppm)	4.0	4.0	YES	2015	0.76	0.54 – 1.00
Lead (ppb)	0	AL = 15	YES	2015	5**	
Nitrate (ppm)	10	10	YES	2015	0.570	0.570
Perchlorate (ppb)	NA	2	YES	2015	0.09	0.09
<b>Microbials</b>						
Total Coliform	0 positive samples per month	2 positive samples per month	YES	9/8/15	1 <sup>^</sup>	0 – 1
Turbidity (NTU)	NA	TT = 1 max	YES	2015	0.11 <sup>+</sup>	0.06 – 0.18
Turbidity (NTU)	NA	TT = 95% of samples < 0.3	YES	2015		100%
<b>Disinfectant</b>						
Chlorine (ppm)	MRDLG 4	MRDL 4	YES	2015	0.82	0.01 – 1.48
<b>Organic Compounds</b>						
Total Trihalomethanes (ppb)	NA	80	YES	2015	63***	30 – 77
Total Haloacetic Acids (ppb)	NA	60	YES	2015	43***	3 – 51
<b>Inorganic Compounds</b>						
Chloride (ppm)	NA	SMCL = 250	NA	2015	100	100
Manganese (ppb)	NA	SMCL = 50	NA	2015	20	10 – 30
Sodium (ppm)	NA	ORSG = 20	NA	2015	53	53
Sulfate (ppm)	NA	SMCL = 250	NA	2015	62	62

## Footnotes and Definitions for table on left

<	Less than
AL	Action Level: The concentration of a contaminant which, 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 contamination.
NA	Not Applicable
NTU	Nephelometric Turbidity Units, a measure of the presence of particles. Low turbidity is an indicator of high-quality water.
ORSG	Office of Research and Standards Guideline - State of Massachusetts
ppb	parts per billion, or micrograms per liter (ug/L)
ppm	parts per million, or milligrams per liter (mg/L)
SMCL	Secondary Maximum Contaminant Level
TT	Treatment Technique: A required process intended to reduce the level of a contaminant in drinking water.
*	90th percentile value in copper monitoring. Result is representative of customer sampling stagnant water. See ++ footnote below.
**	90th percentile value in lead monitoring. Result is representative of customer sampling stagnant water. No locations exceeded the action level for lead.
***	Reported value is the highest locational, annual average of quarterly measurements for disinfection by-products in the distribution system. Values in the range are individual measurements.
+	Value is the highest monthly average for turbidity reported from the surface water treatment plant effluent. Values in the range are individual measurements. Turbidity is a measure of the water's cloudiness. We monitor it because it is a good indicator of water quality.
++	<b>Copper action level exceeded in the Hingham System:</b> In 2015, a water testing program in customers' homes determined that copper was present in more than 10% of the samples at amounts exceeding the action level of 1.3 parts per million (ppm) (24 out of 31 samples). Copper in drinking water usually results from the leaching of copper pipes in the household plumbing. Aquarion Water Company notified customers of this occurrence in October, 2015. We immediately installed treatment controls to address this issue. Follow-up sampling confirmed that we were successful in minimizing the leaching of copper.
<sup>^</sup>	Highest level detected. Average is 0/month.

### HEALTH EFFECTS

**Manganese:** Manganese is a naturally occurring mineral. At a level greater than 0.05 mg/L (50 ppb) the water will appear brown, taste unpleasant, and may leave black stains on fixtures or on laundry. While manganese is part of a healthy diet, it can be harmful if consumed in large concentrations.

**Sodium:** Sodium-sensitive individuals, such as those experiencing hypertension, kidney failure, or congestive heart failure, who drink water containing sodium, should be aware of levels where exposures are being carefully controlled.



# Your Health Is Our Priority

The Hingham/Hull/North Cohasset System PWS ID#: MA4131000

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 **(800-426-4791)**. Here is some additional information of interest about Aquarion's drinking water.

## Where does your water come from?

The water delivered to our Hingham, Hull and North Cohasset customers is collected in a reservoir and wells in Hingham and pumped to the Hingham/Hull District water treatment facility. (The Downing Street Well was disconnected from the system in February, 2015.) Once treated, the water is then pumped to storage tanks, where it flows by gravity through 190 miles of pipe to our customers. This system, located in the Weir River Watershed, provides water for about 35,300 people during the winter and 46,900 in the summer.

The average amount of water delivered during 2015 was 3.3 million gallons per day. On average, 112,000 gallons per day was pumped through the Cohasset interconnection. In addition, the distribution system is interconnected with Weymouth's water supply system for use in emergencies.

## How is your water treated?

All water from our wells and reservoir is treated at our Hingham/Hull District water treatment facility. The water is clarified and filtered to remove particles. Chemicals are added to provide disinfection, corrosion control in the water mains, and fluoridation to prevent tooth decay/cavities. Cohasset water entering the system is treated similarly to water from the Hingham/Hull District water treatment facility.

## Cryptosporidium

The EPA requires public water systems that use surface water sources to monitor for Cryptosporidium. This is a microbial pathogen found in lakes and rivers throughout the U.S. that can cause gastrointestinal illness if consumed. Aquarion continues to monitor its surface water sources and did not detect Cryptosporidium in the reservoir that serves the Hingham/Hull System in our most recent testing.

## Disinfection By-Products

Disinfection by-products (DBPs) are chemicals formed during the disinfection process, when naturally occurring organic matter reacts with chlorine, which is added to water to eliminate bacteria and other microorganisms. Currently there are limits on two types of DBPs known as Total Trihalomethanes (TTHM) and Total Haloacetic Acids (THAA). Some people who drink water containing DBPs that exceed these limits over many years may experience problems with their livers, kidneys, or central nervous systems, and may have an increased risk of getting cancer.

The state has implemented new DBP regulations that change how compliance with the standards is determined. The intent is to increase protection against the potential health risks associated with DBPs. Aquarion Water Company continues to evaluate its systems to ensure compliance with DBP regulations.

## Source Water Assessment Report

The Massachusetts Department of Environmental Protection's (DEP) Source Water Assessment Program (SWAP), which evaluates each water source to identify potential contamination, states that the water sources that supply drinking water to the Hingham/Hull/North Cohasset System have a high susceptibility to potential contamination. The SWAP report is available at the state DEP website:

[mass.gov/dep/water/drinking/3131000.pdf](http://mass.gov/dep/water/drinking/3131000.pdf)

## Understanding Your Water Quality Table

- Barium:** Erosion of natural deposits.
- Copper:** Corrosion of household plumbing systems.
- Fluoride:** Water additive that promotes strong teeth; erosion of natural deposits.
- Lead:** Corrosion of household plumbing systems.
- Nitrate:** Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits.
- Perchlorate:** Rocket propellant, fireworks, munitions, flares and blasting agents; breakdown product of disinfection additive.
- Total Coliform:** Naturally present in the environment.
- Turbidity:** Sediment particles; naturally occurring iron and manganese; soil runoff.
- Chlorine:** Water additive used to control microbes.
- Total Trihalomethanes:** By-product of drinking water chlorination.
- Total Haloacetic Acids:** By-product of drinking water chlorination.
- Chloride:** Naturally present in the environment.
- Manganese:** Erosion of natural deposits.
- Sodium:** Water treatment processes; use of road salt; naturally present in the environment.
- Sulfate:** Naturally present in the environment.

## Monitoring Unregulated Contaminants

Unregulated contaminants are those for which the federal Environmental Protection Agency (EPA) has not established drinking water standards. The purpose of monitoring unregulated contaminants is to assist the EPA in determining their occurrence in drinking water and whether future regulation is warranted. This table shows only the compounds detected in your system. To learn more about the full list of unregulated contaminants included in the monitoring program, please call our Water Quality Department at **800-832-2373**.

Substance (Units of Measure)	Test Date	Average	Detected Level		Source of Contaminant
			Range		
<b>Unregulated Contaminants</b>					
Chlorate (ppb)	2015	125	ND < 20 - 230		Disinfection by-product
Chromium (ppb)	2015	0.38	ND < 0.20 - 0.86		Naturally occurring element
Hexavalent Chromium (ppb)	2015	0.24	ND < 0.03 - 0.68		Naturally occurring element
Strontium (ppb)	2015	102	ND < 0.30 - 150		Naturally occurring element
Vanadium (ppb)	2015	ND* < 0.20	ND < 0.20 - 0.44		Naturally occurring element

\*ND = None Detected

## Your Health Is Our Priority

### Copper and Lead

Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level\* over a relatively short period of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctor. Major sources of copper in drinking water include corrosion of household plumbing systems and erosion of natural deposits.

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water comes primarily from materials and components associated with service lines and home plumbing. Aquarion Water Company is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. Fortunately, the Lead in Drinking Water Act, which took effect in January 2014, requires a significant reduction of the lead content in new plumbing components that contact drinking water. As a result, the lead content in new pipes, fittings, fixtures and solder must be reduced from 8% to 0.25%.

Customers can minimize the potential for lead exposure when water has been sitting for several hours by running the 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 [epa.gov/safewater/lead](http://epa.gov/safewater/lead).

\*The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

### Immuno-compromised persons

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 about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

## More Information You Should Know

### Protecting your water at home

#### Cross-Connection Control Program

Our Cross-Connection Control Program helps ensure that your drinking water is protected from possible contamination. A cross-connection, as defined by the Massachusetts Department of Environmental Protection (DEP), "is any actual or potential connection between a distribution pipe of potable water from a public water system and any waste pipe, sewer, drain, or other unapproved source that has the potential, through back-pressure or back-siphonage, to create a health hazard to the public water supply and the water system within the premises."



Aquarion's DEP-certified, cross-connection surveyors and testers routinely conduct surveys and test backflow prevention devices at our customers' facilities for regulatory compliance. If they find unprotected cross-connections, they will require installation of backflow prevention devices to protect the water distribution system.

The best protection against cross-connection contamination is to eliminate the link. Garden hoses are a leading cause of cross-connection contamination. At your home, you can protect your family and the distribution system from potential contaminants by installing a simple, inexpensive backflow device called a Hose-Bibb Vacuum Breaker (HBVB) that mounts directly to your spigot.

### Protecting water at the source

Even small quantities of pollutants may be enough to contaminate a drinking water supply. Examples of pollutants that may wash into surface water or seep into ground water include:

- ◆ Microbial contaminants from septic systems, agriculture and livestock operations, and wildlife;

- ◆ Inorganic contaminants such as salts and metals that can be naturally occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, or farming;
- ◆ Pesticides and herbicides from 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
- ◆ Radioactive contaminants that can be naturally occurring.

### You can help prevent water contamination

- ◆ Ensure that your septic system is working correctly.
- ◆ Use chemicals and pesticides wisely.
- ◆ Dispose of waste chemicals and used motor oil properly.
- ◆ Report illegal dumping, chemical spills, or other polluting activities to the MA DEP's Emergency Response Section at (888-304-1133), Aquarion Water (781-740-6690), or your local police.

### Water conservation in your home

Our water supply is sufficient to meet your needs, but we still encourage you to conserve this precious natural resource for the good of our environment.

There are plenty of simple steps you can take to reduce your water consumption: fix faucet and toilet leaks; turn off the water while shaving or brushing your teeth; run full loads in your dishwasher and clothes washer; water your lawn in early morning; and use a broom to clean debris from your driveway instead of a hose.



# Your 2015 Water Quality Report

Customers who have questions about water quality should call us at **800-832-2373**; send an email to [waterquality@aquarionwater.com](mailto:waterquality@aquarionwater.com); or visit [aquarionwater.com](http://aquarionwater.com).

For other questions, or to report discolored water or other service problems, call the Water Quality Management Department at **800-732-9678**.

Massachusetts Department of Environmental Protection:  
[mass.gov/dep/water/drinking.htm](http://mass.gov/dep/water/drinking.htm)  
U.S. Environmental Protection Agency's Safe Drinking Water  
Hotline: **800-426-4791** or [epa.gov/safewater](http://epa.gov/safewater)

**PWS ID#: MA4131000**  
Hingham, Hull and  
North Cohasset System



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## Water: More Ways To Save It

Though this report focuses on the quality of the water Aquarion provides you, quantity is vitally important, too.

You and more than 700,000 other people depend on us to provide enough water to supply your daily needs. As rainfall patterns appear to be changing, it's time for all of us to be even more careful about the way we use water. Here are some tips on reducing waste that you may not have considered:

### Use water-efficient

**appliances.** Older washing machines and dishwashers consume large quantities of water. New ones work more efficiently, using just a fraction of what the earlier models need.



### Save with every flush.

New model toilets can save three or more gallons every time you flush, and they do the job just as well as the old-fashioned ones.



**Turn off the taps.** Whether you're brushing your teeth or getting a glass of water, try to keep

good, clean water from going down the drain. Turn off the faucet while tending to your teeth. And keep a jug of water in the refrigerator so a cold glass is instantly available, rather than running the tap until the water is cold.

### Shorten shower times.

You'll not only use less water; you'll reduce your water-heating costs as well.



### Water grass, not pavement.

Carefully aim sprinklers and irrigation heads so they're not wetting driveways, sidewalks and patios. Water either in early morning or early evening – and, of course, only when your lawn is actually starting to wilt.



For most people, conserving water is already second nature. Adding a few more techniques can reduce waste even more – and lower your water bill, too. For many more ways to ensure a healthy supply for decades to come, check out [aquarionwater.com/conserve](http://aquarionwater.com/conserve).

## Visit Mystic Aquarium's Beluga Whales Live!

Aquarion is the sponsor of three cameras trained on the exciting Beluga whale exhibit at Mystic Aquarium in Connecticut, the only one of its kind in New England. Go to [aquarionwater.com](http://aquarionwater.com) and click on the cameras at any time during daylight hours to watch the Aquarium's three belugas – Kela, Naku and Natuark – in the 750,000-gallon, arctic marine environment created just for them.



[aquarionwater.com](http://aquarionwater.com)