



2014 Water Quality Report

*For Customers in the Hingham, Hull
and North Cohasset System*

Caring For Our Environment. Committed To Our Communities.



A Message from the Vice President



John Walsh
Vice President, Operations
Aquarion Water Company of MA

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Dear Customer:

Safe, high-quality water is essential to many things – our individual health and well-being, community property values, a strong economic base for our entire area, and the integrity of our environment.

Accordingly, in 2014 we conducted more than 7,700 tests on the water we supply to our customers in Massachusetts. And we are proud to report that the water we supplied to you again met or surpassed each of the quality standards established by state and federal agencies.

Along with high-quality water, Aquarion is firmly committed to continuing its investment in the infrastructure. Our investments last year included upgrades to our water treatment plant, including: a major investment in our Supervisory Control and Data Acquisition (SCADA) system, upgrades to chemical systems, and replacement of the facility's roof. These investments help ensure that we can provide you with a reliable, high-quality, water supply 24/7.

We also continued to invest in the distribution system by replacing water mains on Free and Lazell streets in Hingham, and on Prospect Avenue in Hull. These investments help improve the reliability of our system by reducing the chance of water main breaks, and reducing leakage.

Moreover, Aquarion was pleased to announce earlier this year that our customers in Massachusetts would receive a 3.23% credit on their water bills throughout this year, as the result of a federal tax credit. This is the second time in the past few years that we have been able to reduce rates for our customers in Hingham, Hull, and North Cohasset.

In the past year, we have enjoyed the opportunity to provide water and sponsor a number of community events, including The Taste of Hingham, South Shore Pan-Mass. kids bike race, Hingham's Fourth of July activities, the End-of-Summer Classic at Bare Cove Park, the Nantasket Beach run to support the Hull Boosters, Hull's Endless Summer event, the Thanksgiving Turkey Trot, and a number of activities at Hingham's public schools. Aquarion also took an active role in planning for future water needs in the community, as well as educating residents. For more information on Aquarion's involvement in environmental education and outreach, please see the article on page 6.

During this past year we continued to conduct meetings with our Customer Advisory Board, a group of residents from Hingham, Hull and North Cohasset who meet with us to provide ongoing feedback about our service. Their suggestions this year were invaluable, and I want to thank them for their contribution and their support.

In closing, I'd 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.

Please feel free to share with us your questions about water-related issues in town. Our customer service line is 1-800-732-9678, or you may email Ronit Goldstein at rgoldstein@aquarionwater.com.

Sincerely,

John Walsh
Vice President, Operations
Aquarion Water Company of MA



Facts and Figures



Aquarion conducts an extensive quality testing program each year to ensure its 56,000 residents in Massachusetts have safe, clean drinking water. In 2014, we collected more than 1,700 water samples, on which we conducted more than 7,700 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.



Water Quality Table for the Hingham, Hull and North Cohasset System

Understanding Your Water

Your water has been tested for more than 100 compounds that are important to public health. Only 14 of these were detected, all of which were below the amounts allowed by state and federal law. Most of these compounds 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 and North Cohasset System Detected Level	
	MCLG	MCL			Average	Range
Inorganic Compounds						
Barium (ppm)	2	2	YES	2014	0.019	0.019
Copper (ppm)	1.3	AL = 1.3	YES	2012	0.63*	
Fluoride (ppm)	4.0	4.0	YES	2014	0.93	0.78 – 1.07
Lead (ppb)	0	AL = 15	YES	2012	3**	
Nitrate (ppm)	10	10	YES	2014	0.710	0.710
Microbials						
Total Coliform	0 positive samples per month	2 positive samples per month	YES	10/28/14	1^	0 – 1
Turbidity (NTU)	NA	TT = 1 max	YES	2014	0.11+	0.05 – 0.21
Turbidity (NTU)	NA	TT = 95% of samples < 0.3	YES	2014		100%
Disinfectant						
Chlorine (ppm)	MRDLG 4	MRDL 4	YES	2014	0.75	0.01 – 1.83
Organic Compounds						
Total Trihalomethanes (ppb)	NA	80	YES	2014	66***	34 – 70
Total Haloacetic Acids (ppb)	NA	60	YES	2014	39***	7 – 48
Inorganic Compounds						
Chloride (ppm)	NA	SMCL = 250	NA	2014	66.0	66.0
Manganese (ppb)	NA	SMCL = 50	NA	2014	10	10
Sodium (ppm)	NA	ORSG = 20	NA	2014	47	47
Sulfate (ppm)	NA	SMCL = 250	NA	2014	59	59

Footnotes, Definitions and Sources

- < 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. No locations exceeded the action level for copper.
- **** 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.
- +** Reported value is the highest monthly average for turbidity reported from the surface water treatment plant effluent. Values in the range are individual measurements.
- ^** 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.

Sources of Contaminants for table on left

- 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.
- 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.



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.

Source Water Assessment Report

The Massachusetts DEP's 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 report is available on the DEP website at mass.gov/dep/water/drinking/3131000.pdf.

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 (**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 Health Is Our Priority

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. 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 36,000 people during the winter and 48,000 in the summer.

The average amount of water delivered during 2014 was 3.5 million gallons per day. On average, 104,000 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, except water from the Downing Street Well, is treated at our Hingham/Hull District water treatment facility. Chemicals are added to provide disinfection, corrosion control in the water mains, and fluoridation to prevent tooth decay/cavities. The Downing Street Well water is filtered naturally underground, and then chemicals are added for disinfection, fluoridation, and corrosion control. Cohasset water entering the system is treated similarly to water from the Hingham/Hull District water treatment facility.

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.

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.

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**).

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.

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

Your 2014 Water Quality Report

Customers who have questions about water quality should call us at **800-832-2373**; send an email to waterquality@aquarionwater.com; or visit 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
U.S. Environmental Protection Agency's Safe Drinking Water Hotline: **800-426-4791** or epa.gov/safewater

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Hingham, Hull and
North Cohasset System



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Raising Awareness for a Precious Resource

Last year brought Aquarion some great opportunities for working with local school systems and community organizations on projects focused on environmental quality and water conservation.

For example, we partnered with environmental non-profits on a series of public environmental forums. These covered topics such as the health of our local watershed, water conservation and storm water management best practices.

For the ninth year, we sponsored the "Water All Around You" program for all fifth-graders in Hingham and Hull. Created by the North and South Rivers Watershed Association's Greenscapes program, it helps students



understand the relationship between water quality and the way we care for watershed land. The program included a "Water Day" at the schools and guided tours of the Hingham/Hull Water Treatment Plant.

Aquarion also took part in Hingham High School's annual Green Week by sponsoring nationally renowned storyteller Jay O'Callahan, who presented the true story of kayaker Dick Wheeler's famous 1,500-mile kayak journey in the North Atlantic.

In 2014, we launched our first Environmental Stewardship award program at Hingham High School. Each year, we will honor a graduating senior who shows leadership in environmental conservation.

We also helped Hingham Youth Hockey produce a public service announcement promoting water conservation. Twenty players taped three public service announcements at HCAM, asking residents to help conserve water during the summer months. The videos aired throughout the summer on the local cable access channel and YouTube.

In the fall, we teamed up with the Friends of Holly Hill Farm to bring a new program to local

schools focused on water's role in the community and how it can be conserved. Topics included the importance of adding compost to garden soil to reduce the amount of water used for growing healthy, organic produce.

Aquarion is proud and grateful to have been part of all these wonderful programs this past year, and we look forward to continuing our community involvement in the future.

Visit Mystic Aquarium's Beluga Whales Live!

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



aquarionwater.com