



AQUARION
Water Company

Stewards of the Environment™

2018 Water Quality Report

*Hampton, North Hampton
and Rye System*

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



A Message from the Vice President Operations



John Walsh
Vice President, Operations
Aquarion Water Company of MA



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Dear Aquarion Customer:

We are very pleased to provide you with Aquarion's annual update on the quality of the water we supply you – and even more pleased to report again that your water continues to meet or surpass every state and federal water quality standard.

Infrastructure investments are a key component to operational success and we were busy with more projects last year. During 2018, we replaced 1.3 miles of aging water mains on Mill Road in Hampton and North Hampton, and installed 3,600 feet of new raw water transmission mains. The new raw water mains link six wells together for a planned centralized treatment facility.

During 2018, Aquarion continued a robust testing program for PFAS, which are a group of manufactured compounds that have been detected in local groundwaters. We are closely monitoring state regulatory actions on PFAS standards and will continue to keep our customers and local public officials informed about PFAS.

In 2018, we also made progress bringing a new well – Well 22 – into service. We performed a month long pumping test, which indicated that Well 22 has capacity to produce over 1 million gallons of water per day, which would make it our largest capacity well. We are currently working to acquire a permit from the State of New Hampshire to bring this well into service.

Our Aquarion Environmental Champion Awards again recognized local volunteers who have made noteworthy contributions to protecting and preserving our natural environment. This annual event is a great opportunity to recognize the Seacoast's environmental stewards and celebrate with friends, neighbors, customers and local officials.

In closing, I would like to acknowledge the excellent work of our employees, whose efforts are critical to providing you with safe, high-quality water and dependable service.

From all of us at Aquarion, it is a pleasure serving you.

Sincerely,

John Walsh
Vice President, Operations

Facts and Figures



Aquarion conducts an extensive quality testing program each year to ensure we are providing safe, clean, drinking water to the nearly 23,000 residents we serve in Hampton, North Hampton and Rye, in addition to thousands of tourists and visitors. In 2018, we collected 433 water samples, on which we conducted 1,516 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.

Hampton, North Hampton and Rye System Water Quality Table

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		Violation	Test Date	Hampton, North Hampton and Rye System Detected Level	
	MCLG	MCL			Average	Range
Inorganic Compounds						
Arsenic (ppb)	0	10	NO	1 well: 8/15/18 3 wells: quarterly, 2018 6 wells: 2017 1 well: 2016	1	ND < 1 – 7
Barium (ppm)	2	2	NO	4/5/16, 7/11/17, 7/18/17, 8/15/18	0.022	0.013 – 0.041
Copper (ppm)	1.3	AL = 1.3	NO	4/6 – 5/19/17	0.72*	
Fluoride (ppm)	4.0	4.0	NO	4/5/16, 7/11/17, 7/18/17, 8/15/18	0.03	ND < 0.01 – 0.19
Lead (ppb)	0	AL = 15	NO	4/6 – 5/19/17	1**	
Nitrate (ppm)	10	10	NO	10/17 – 11/15/17, 4/10 – 8/15/18	1.65	ND < 0.50 – 4.1
Microbials						
Total Coliform	0 positive samples per month	1 positive sample per month	NO	1/17/18	1 [^]	0 – 1
Disinfectant						
Chlorine (ppm)	MRDLG 4	MRDL 4	NO	monthly, 2018	0.58	ND < 0.05 – 1.12
Organic Compounds						
Total Trihalomethanes (ppb)	NA	80	NO	7/24/18	20***	13 – 20
Total Haloacetic Acids (ppb)	NA	60	NO	7/24/18	4***	4
Radiologicals						
Combined Radium (pCi/L)	0	5	NO	7/18/17	1.05	ND < 1.0 – 1.4
Secondary Contaminants						
Chloride (ppm)	NA	SMCL = 250	NA	4/5/16, 7/11/17, 7/18/17, 8/15/18	94.1	46.0 – 160
Sodium (ppm)	NA	SMCL = 250	NA	4/5/16, 7/18/17, 8/15/18	51.3	23.0 – 110.0
Sulfate (ppm)	NA	SMCL = 250	NA	4/5/16, 7/11 – 11/15/17, 8/15/18	35.5	11.0 – 107.0

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
ND	Not Detected
pCi/L	Picocuries per liter
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
*	90th percentile value in copper monitoring. Result is representative of customer sampling stagnant water. One location exceeded the action level for copper.
**	90th percentile value in lead monitoring. Result is representative of customer sampling stagnant water. One location exceeded the action level for lead.
***	Reported value is the highest measurement for disinfection by-products in the distribution system. Values in the range are individual measurements.
[^]	Highest level detected. Average is 0/month.

Health Effects

Arsenic: While your drinking water meets the EPA's standard for arsenic, it does contain low levels of arsenic. The EPA's standard balances the current understanding of arsenic's possible health effects against the cost of removing arsenic from drinking water. The EPA continues to research the health effects of low levels of arsenic, which is a mineral known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems.

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

Hampton System PWS ID#: 1051010

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?

Water is pumped from 16 state-approved wells in Hampton, North Hampton, Rye and Stratham. It is delivered to you through an extensive underground piping system.

The water supply serves about 22,000 residents in Hampton, North Hampton, and Rye, plus thousands of visitors and tourists. In 2018, our wells supplied an average of 2.4 million gallons of water per day to the system. An average 25.6% of the demand is water drawn for firefighting, undetected leaks, and unauthorized use.

How is your water treated?

Water from the wells is naturally filtered ground water that is disinfected and adjusted for corrosion control.

Arsenic

While your drinking water meets the federal Environmental Protection Agency's (EPA's) standard for arsenic, some of Aquarion's wells do contain low levels of this element. Testing shows that these levels are less than the health standards set by the EPA and the New Hampshire Department of Environmental Services. Dilution in the distribution system with water from other wells further lowers arsenic concentrations at water taps.

Arsenic is a naturally occurring element in the Earth's crust, found in soil and rocks, which can enter ground water that comes in contact with these deposits. The EPA's standard balances the current understanding of arsenic's possible health effects against the costs of removing arsenic from drinking water. The agency continues to research the health effects of arsenic, which is known to cause cancer in humans at higher concentrations and is linked to other health effects such as skin damage and circulatory problems. Additional information can be found at epa.gov/safewater/arsenic.

Understanding Your Water Quality Table

- Arsenic:** Erosion of natural deposits.
- Barium:** Erosion of natural deposits.
- Copper:** Corrosion of household plumbing systems.
- Fluoride:** 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.
- Chlorine:** Water additive used to control microbes.
- Total Trihalomethanes:** By-product of drinking water chlorination.
- Total Haloacetic Acids:** By-product of drinking water chlorination.
- Combined Radium:** Erosion of natural deposits.
- Chloride:** Naturally present in the environment.
- Sodium:** Water treatment processes; use of road salt; naturally present in the environment.
- Sulfate:** Naturally present in the environment.

Unregulated Contaminants Monitoring Results

Substance (Units of Measure) Unregulated Contaminant Perfluorinated Compounds (PFCs)**	Test Date	Detected Level Range	Health Advisory Level	Source of Contaminant
Perfluorooctanoic acid (PFOA) (ppt)	2018	ND < 2 – 11.7	70	Manmade chemical; used in products to make them heat-and water-resistant
Perfluorooctanesulfonic acid (PFOS) (ppt)	2018	ND < 2 – 5.56	70	Manmade chemical; used in products to make them heat-and water-resistant
Perfluoroheptanoic acid (PFHpA) (ppt)	2018	ND < 2 – 6.85	None Established	Manmade chemical; used in products to make them heat-and water-resistant
Perfluorobutane sulfonate (PFBS) (ppt)	2018	ND < 2 – 7.22	None Established	Manmade chemical; used in products to make them heat-and water-resistant
Perfluorohexane sulfonate (PFHxS) (ppt)	2018	ND < 2 – 2.6	None Established	Manmade chemical; used in products to make them heat-and water-resistant
Perfluorononanoic acid (PFNA) (ppt)	2018	ND < 2 – 1.07	None Established	Manmade chemical; used in products to make them heat-and water-resistant
Perfluorohexanoic acid (PFHxA) (ppt)	2018	ND < 2 – 18	None Established	Manmade chemical; used in products to make them heat-and water-resistant
Perfluorobutanoic acid (PFBA) (ppt)	2018	ND < 2 – 6.04	None Established	Manmade chemical; used in products to make them heat-and water-resistant
Perfluoropentanoic acid (PFPeA) (ppt)	2018	ND < 2 – 20.1	None Established	Manmade chemical; used in products to make them heat-and water-resistant
6:2 Fluorotelomer sulfonate (6:2 FTS) (ppt)	2018	ND < 2 – 11.6	None Established	Manmade chemical; used in products to make them heat-and water-resistant

ppt parts per trillion, or nanograms per liter (ng/L)

** Perfluorinated Compounds (PFCs) are a large group of manufactured compounds widely used to make products more resistant to grease, stains and water that have been found released in the environment when products are made, used or discarded.

Aquarion Water Company of New Hampshire has tested all of its groundwater sources and found trace amounts of some of these compounds at levels well below any established Health Advisory Levels.

Copper

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.

*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).

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 federal Environmental Protection Agency (EPA) and Connecticut's Department of Public Health have established extensive regulations for water utilities to follow with regard to lead — and for very good reason. If present in drinking water, lead can cause numerous harmful effects on a person's health. The EPA has determined there is no safe level of lead.

Aquarion monitors for lead in the water we provide, by testing stagnant tap water samples from high-risk homes (such as homes built before 1950). We follow regulations mandated by the Safe Drinking Water Act, in which the EPA established a limit: 15 parts per billion (or micrograms per liter) in no more than 10 percent of tap water samples. Meeting this limit indicates that the water is minimally corrosive to lead.

If tests reveal that more than 10 percent of tested homes exceed the limit, then the EPA mandates a series of actions we would have to take. These include water treatment, notifying customers about the issue and removing lead service lines. The Aquarion system that supplies your water complies with the lead limit. Even so, some homes may have elevated lead levels due to lead materials in the plumbing or service line.

Health Effects

Lead is especially harmful for infants and young children, causing developmental delays, learning difficulties, irritability, loss of appetite, weight loss, sluggishness, fatigue, abdominal pain, vomiting, constipation and hearing loss.

Effects on adults may include high blood pressure, abdominal pain, constipation, joint pains, muscle pain, decline in mental functions such as abstract thinking and focus, numb or painful extremities, headache, memory loss, mood disorders, fertility issues in men, and miscarriage or premature birth in pregnant women.

Do you have a lead service line?

A service line is the pipe that connects a customer's premises to Aquarion's water main in the street. The customer owns the portion of the service line closest to the premises, while Aquarion owns the portion closest to the street. In some older structures built before 1950, these lines may have been made of lead.

If present, a lead service line can be the primary source of lead in your drinking water, because there is a much greater surface area where lead contacts the water, compared to lead-soldered pipe joints and leaded brass fixtures.

Therefore, if your house was built prior to 1950, you should check the service line where it enters the wall of your basement to see if it is made of lead. If it is a lead line, contact Aquarion at **1-800-732-9678** for advice on replacing it. This will help reduce your potential exposure to lead in drinking water.

How to reduce exposure to lead in drinking water

Damage from lead exposure cannot be cured, but it can be prevented, especially in drinking water. The best methods for reducing your exposure to lead include removing lead service lines and lead in your home's plumbing, and reducing the amount of time your water sits stagnant in contact with lead materials in the service lines and faucets.

- ◆ If you have not used any of your faucets for a number of hours (for example, overnight or while you are at work), run the water for several minutes. This will bring in fresh water from our water main, which contains no lead. (To conserve water, catch the flushed tap water in buckets or pots to use for cleaning or to water plants.)
- ◆ Always use cold water for drinking, cooking and preparing baby formula. Never cook with or drink water from the hot water tap. Never use water from the hot water tap to make baby formula.



- ◆ Periodically remove and clean the faucet screens/aerators. While doing so, run the tap to eliminate debris.
- ◆ Check your service line where it enters your building and determine if it is made of lead. If it is, replace it.
- ◆ Identify and replace old plumbing fixtures that contain lead. Brass faucets, fittings and valves may leach lead into drinking water — especially those purchased before 2014.

Homeowners who want to determine whether there is lead in their water should have a laboratory test it. You can find information about certified testing on the state Department of Health and Human Services' website www.dhhs.nh.gov/dphs/lab/water-lab/water-test-forms.htm.

For more information, our website has a section dedicated entirely to lead in drinking water; visit aquarionwater.com/learnaboutlead. If you have questions, call **1-800-832-2373**. You also can email us at waterquality@aquarionwater.com.

The EPA advises:

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.

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.

Water Protection: 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 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 certified cross-connection personnel routinely conducts surveys and tests 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. A lawn irrigation system is a prime example of a cross-connection needing a backflow-prevention device.

To prevent this backflow contamination, the state Department of Environmental Services (DES) requires that we inspect your irrigation system to ensure that an appropriate backflow prevention device is in place. The state DES also requires that these devices be tested annually to ensure proper performance.

Source Water Assessment Report

The state Department of Environmental Service's Source Water Assessment Report indicates an average of 6 contamination susceptibility factors were rated low, an average of 4 were rated medium, and 2 were rated high for 18 of our water sources. The complete report is available for inspection at our office during normal business hours at Aquarion Water Company, 7 Scott Road, Hampton, NH.

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 New Hampshire Department of Environmental Services at **603-271-3503**, Aquarion Water **603-926-3319**, 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.



Water Conservation Works!

By reducing water consumption, Aquarion customers have made outstanding progress in ensuring that our area has enough water, no matter what the skies deliver. Many thanks to all the customers who cut back on outdoor sprinkler irrigation and other uses. There's still more to do, though. Here are some easy tips on what everyone can do to conserve the supply of this irreplaceable resource:

Reduce excessive irrigation. Get rid of wasteful, "set 'em and forget 'em" clock timers. Water only when the ground feels dry. Use WaterSense-labeled spray sprinkler bodies.

Rely more on the sky. Put a rain barrel under a downspout to capture rainwater for your garden.



Forget fertilizing. Many use salts that make your lawn less drought-resistant.

Enjoy an edible landscape. Replace turf with berry bushes or fruit trees – they use less water.

Fill it up! Wait until you have a full load before running your washing machine and dishwasher.



Look at labels. Washing machines and dishwashers certified by ENERGY STAR use far less water. WaterSense-labeled fixtures do the same.

Jilt the jiggling. Fix leaky toilets. Watch our step-by-step video about finding and fixing leaks. Better yet, upgrade to a new, WaterSense-labeled model to save three or more gallons with every flush.



Turn off the taps. While brushing your teeth, shaving or just groping for a towel, keep good, clean water from disappearing down the drain.



Catch this idea. While waiting for tap or shower water to warm up or cool down, capture it in a container for watering plants or for your pets.

Recycle cooking water. Save water used for cooking pasta and vegetables – it's great for plants.



Shorten shower times. You'll not only use less water – you'll reduce energy costs, too.

Put scraps to work. Compost vegetable scraps to nourish your garden, instead of using water to grind them up in your garbage disposal.



Put a chill on waste. Keep a pitcher of drinking water in the fridge so you don't have to run the tap until the water gets cold.

Conserving water quickly becomes second nature. For many more ways to ensure that your water supply stays healthy for decades to come, check out the tips at aquarionwater.com/conserv.

Visit Mystic Aquarium's Beluga Whales And Penguins Live!

Aquarion is the sponsor of five cameras trained on the exciting beluga whale and African penguin exhibits at Mystic Aquarium in Connecticut.

Go to aquarionwater.com and click on the cameras at any time during daylight hours to watch the Aquarium's beluga whales and penguins live.



aquarionwater.com

Questions About Your Water Quality Report?

Customers who have questions about water quality should call us at **603-926-3319**.

Customers also may email us at waterquality@aquarionwater.com, or visit aquarionwater.com/NH.

For other questions, or to report discolored water or other service problems, call **603-926-3319**.

New Hampshire Department of Environmental Services: **603-271-3503** or des.state.nh.us

U.S. Environmental Protection Agency's Safe Drinking Water Hotline: **800-426-4791** or epa.gov/safewater