



**AQUARION**  
Water Company

*Stewards of the Environment™*

## 2020 Water Quality Report

The Birchwood Estates System,  
Marlborough

Water: It's Too Precious  
To Waste.



# A Message from the President



Donald J. Morrissey  
Aquarion President

Dear Aquarion Customer:

Despite the many challenges the pandemic has brought, we at Aquarion are grateful that we were able to continue providing you and all our customers with reliable, high quality water delivery and services throughout the past year.

We never let up on our rigorous, quality-control measures. During 2020, we conducted nearly 161,000 tests of our water. Once again, all results met or exceeded state and federal water quality standards. We were particularly thankful when federal authorities reported that the COVID-19 virus hasn't been detected in drinking water supplies anywhere — and should it ever appear, highly effective treatment methods such as ours would eliminate any risk.

Our ongoing commitment to water quality also led us to test voluntarily for perfluoroalkyl and polyfluoroalkyl substances (PFAS), chemicals that, in high concentrations, can have serious health effects. Our results continue to be well below state and federal limits. Nevertheless, we will continue our testing in 2021.

Another challenge in 2020 was drought. A year of drought strained water supplies throughout the state, especially as more people worked from home and irrigated lawns and gardens. Our mandatory irrigation schedule, required in several towns, was again highly successful in safeguarding supplies. This year, we will continue to expand the schedule to more towns.

With the pandemic limiting entertainment options, please remember that Aquarion customers are eligible for free ticket offers at several area attractions with COVID controls in place. We recently added the Mystic Seaport Museum and the Ridgefield Playhouse to the list. You can find more information on page 12 of this report or [www.aquarionwater.com/freetickets](http://www.aquarionwater.com/freetickets).

The last year has drawn many people's attention to the natural world's beauty, ecological functions and recreational opportunities. We invite you to use Aquarion's Environmental Champions Awards Program to nominate exemplary, voluntary efforts to protect and steward Connecticut's natural resources. More information is available at [www.aquarionwater.com/awards](http://www.aquarionwater.com/awards).

I'll close with sincere thanks to all our customers for everything you do to conserve water. For more ways to save this precious resource, please look elsewhere in this report and at [www.aquarionwater.com/conserve](http://www.aquarionwater.com/conserve).

With Appreciation,

A handwritten signature in blue ink that reads "Donald J. Morrissey".

Donald J. Morrissey



Don Morrissey, right, and Easton resident James Prosek walk the property on Kachele Street where Aquarion acquired a conservation easement in 2020. This parcel is part of the company's watershed and an important source that is now protected from development. James helped spearhead the years-long effort to preserve the property as open space.

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# Birchwood Estates System, Marlborough Water Quality Table

Your water has been tested for more than 100 compounds that are important to public health. Only 15 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	Birchwood Estate System Detected Level	
	MCLG	MCL			Average	Range
<b>Inorganic Compounds</b>						
Barium (ppm)	2	2	YES	2019	0.025	0.025
Copper (ppm)	1.3	AL = 1.3	YES	2019	0.11*	
Fluoride (ppm)	4.0	4.0	YES	2019	0.24	0.24
Lead (ppb)	0	AL = 15	YES	2019	ND < 1	
Nitrate (ppm)	10	10	YES	2020	0.072	0.072
<b>Disinfectant</b>						
Chlorine (ppm)	MRDLG 4	MRDL 4	YES	2020	1.13	0.86 – 1.40
<b>Organic Compounds</b>						
Total Trihalomethanes (ppb)	NA	80	YES	2020	13	13
Total Haloacetic Acids (ppb)	NA	60	YES	2020	4	4
<b>Radiologicals</b>						
Radium 226 & 228 (pCi/L)	0	5	YES	2019	1.6	1.6
<b>State-Required Testing Physical Characteristics^</b>						
Color (CU)	NA	15	YES	2020	1	1 – 3
pH	NA	6.4 – 10.0	YES	2020	7.3	6.9 – 7.6
Turbidity (NTU)	NA	5	YES	2020	0.10	0.10 – 0.25
<b>Inorganic Compounds</b>						
Chloride (ppm)	NA	250	YES	2019	35.0	35.0
Sodium (ppm)	NA	NL = 28	NA	2019	15.8	15.8
Sulfate (ppm)	NA	SMCL = 250	NA	2019	58.8	58.8

(See footnotes and definitions on page 4)

## Footnotes and Definitions for water quality table on previous page

<b>&lt;</b>	Less than	<b>NA</b>	Not Applicable
<b>AL</b>	Action Level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.	<b>ND</b>	Not Detected
<b>CU</b>	Color Units	<b>NL</b>	State of Connecticut customer notification level
<b>MCL</b>	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.	<b>NTU</b>	Nephelometric Turbidity Units: A measure of the presence of particles. Low turbidity is an indicator of high-quality water.
<b>MCLG</b>	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.	<b>pCi/L</b>	Picocuries per liter
<b>MRDL</b>	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.	<b>ppb</b>	parts per billion, or micrograms per liter (ug/L)
<b>MRDLG</b>	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.	<b>ppm</b>	parts per million, or milligrams per liter (mg/L)
		<b>SMCL</b>	Secondary Maximum Contaminant Level
		<b>*</b>	90th percentile value in copper monitoring. Result is representative of customers sampling stagnant water. No locations exceeded the action level for copper.
		<b>**</b>	90th percentile value in lead monitoring. Result is representative of customer sampling stagnant water. No locations exceeded the action level for lead.
		<b>^</b>	Measured at representative locations within the distribution system.

## Understanding Your Water Quality Table

**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.

**Chlorine:** Water additive used to control microbes.

**Total Trihalomethanes:**

By-product of drinking water chlorination.

**Total Haloacetic Acids:**

By-product of drinking water chlorination.

**Radium 226 & 228:**

Erosion of natural deposits.

**Color:** Natural organic matter such as decaying leaves; naturally occurring iron and manganese.

**pH:** Naturally occurring; water treatment processes.

**Turbidity:** Sediment particles; naturally occurring iron and manganese; soil runoff.

**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.



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

## Where does your water come from?

Your water is collected in wells, treated, and delivered to you through an underground piping system. The Birchwood Estates System supply is drawn from seven wells in Marlborough. It serves about 240 people and has an average customer demand of 13,800 gallons per day. Company-wide, an average of 15.7% of the demand is water drawn for firefighting, water main cleaning, water main breaks and leaks, and unauthorized use.

## How is your water treated?

Water from the wells is filtered naturally underground, treated to remove iron and manganese and then disinfected.

## 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 meet or exceed state and federal health and treatment standards. In addition, there are no reported cases of waterborne disease due to Cryptosporidium in Aquarion Water Company's drinking water.

## Source Water Assessment Report

Connecticut's Department of Public Health (DPH) states in its Source Water Assessment Report that the public drinking water sources in the Birchwood Estates System have a moderate susceptibility to potential contamination. To read the DPH report, visit [www.ct.gov/dph](http://www.ct.gov/dph).

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### 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 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.

### 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 and Total Haloacetic Acids. 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 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.

### Immuno-compromised people

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised people such as those with cancer undergoing chemotherapy, people 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](tel:800-426-4791)).

## Lead in Drinking Water: The Facts

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 exceeded 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.



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## 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.

## What to do about 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 [800-732-9678](tel:800-732-9678) for advice on replacing it. This will help reduce your potential exposure to lead in drinking water.

## Other precautions you can take

Health issues from lead exposure cannot be cured, but they 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. There is a list of certified testing laboratories on the state Department of Public Health's website ([www.ct.gov/dph](http://www.ct.gov/dph)).

For more information, our website has a section dedicated entirely to lead in drinking water; visit [www.aquarionwater.com/learningaboutlead](http://www.aquarionwater.com/learningaboutlead). If you have questions, call our Water Quality Department at [800-832-2373](tel:800-832-2373). You also can email us at [www.waterquality@aquarionwater.com](mailto:www.waterquality@aquarionwater.com).

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### 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 [www.epa.gov/safewater/lead](http://www.epa.gov/safewater/lead).



## Water Protection: Information You Should Know

### 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.



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### How Aquarion protects your drinking water

Aquarion Water Company's commitment to providing the highest quality water is evidenced by our regular inspection of homes, businesses, farms and other sites that could pollute water supplies. We also review new land development projects for impact on water quality. In total, we conduct nearly 161,000 water quality tests annually. We use the best water treatment and filtration technology and continue to invest in our water systems' infrastructure to improve your water security and quality.

### 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 state Department of Energy and Environmental Protection 24-hour hotline ([860-424-3338](tel:860-424-3338)), Aquarion Water ([800-732-9678](tel:800-732-9678)), or your local police.



### Protecting your water at home:

#### *Lawn irrigation systems*

Your irrigation system helps keep the lawn healthy and beautiful, but did you know it can also contaminate your family's drinking water? Chemicals and microbes on the lawn can flow back through your home's plumbing and even into the neighborhood water mains under low-pressure conditions. These conditions can occur when fire hydrants are in use, and during water main breaks.

To prevent this backflow contamination, the state Department of Public Health (DPH) requires that we inspect your irrigation system to ensure that an appropriate backflow prevention device is in place. The state DPH also requires these devices be tested annually to ensure proper performance. Please call us at [203-337-5871](tel:203-337-5871) to schedule your annual inspection and test.



### Water conservation in your home

We 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, such as using a broom to clean debris from your driveway instead of a hose. See more tips on page 11.

# Aquarion's Sample Results for PFAS

Throughout New England and across the nation, state and local officials, health departments, and water utilities — including Aquarion Water Company — have focused their attention on a group of man-made chemicals called per- and polyfluoroalkyl substances (PFAS) that have been detected in drinking water. PFAS are widely used in consumer products (e.g. nonstick cookware, stain-resistant carpets) and have numerous industrial applications (e.g. firefighting foam). They are pervasive and persistent once released into the environment.

The U.S. Environmental Protection Agency (EPA) has not established a maximum level of these chemicals that it will allow to be present in drinking water; however, EPA currently recommends that concentrations of two of the chemicals, PFOA and PFOS, should not exceed 70 parts per trillion (ppt) individually or combined. The Connecticut Department of Public Health (DPH) has taken a more conservative approach: it agrees that 70 ppt is an appropriate target concentration, but has included three additional PFAS (PFHxS, PFHpA and PFNA).

Recognizing the growing concern about PFAS, Aquarion voluntarily began a testing program in 2019 for our 72 public water systems in Connecticut. Below, you will find a chart showing test results for the system that provides your water supply.

Tests for the five chemicals listed below detected none. The DPH and EPA advisory limit is 70 ppt. (The limits may be subject to change in the future.)

In November 2019, Gov. Ned Lamont announced that the Connecticut Interagency PFAS Task Force had developed its PFAS Action Plan. One of the plan's key recommendations was to test drinking water for PFAS. We believe the results from our ongoing PFAS testing will help the state implement this endeavor.

In addition to the water tests, Aquarion also inspected land-use activities around each of our water sources and found no high-risk situations such as industrial, commercial, and municipal circumstances that might release high levels of PFAS into the environment.

Aquarion will remain vigilant about this important issue, including additional testing for PFAS at some of our water sources. We will continue to share test results with our customers and state and local officials. We also will maintain our relationships with public health agencies and drinking water associations to ensure protection of our drinking water supplies. As always, our primary concern is delivery of high-quality water to our customers.

## Birchwood Estates System, Marlborough PFAS Sampling Results

All results reported as parts per trillion (ppt)

Water System Name	Sample Location	PFOA	PFOS	PFHpA	PFHxS	PFNA	Total PFAS (5)	Current CT DPH Guideline	Other PFAS Tested PFBS
Birchwood Estates	Birchwood Wells, POE	ND	ND	ND	ND	ND	ND	70	ND

Definitions:  
1. POE: Point of entry. Sample collected after treatment as water enters the distribution system, before the first customer.  
2. ND: Not Detected.

# 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, helping to save more than 2 billion gallons of water across our systems over the last three years. 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.



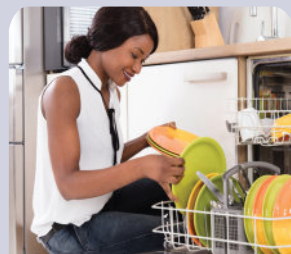
**Forget fertilizing.** Many use salts that make your lawn less drought-resistant.

**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 at [www.aquarionwater.com](http://www.aquarionwater.com) 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, capture the cooler water in a container for watering plants.

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



**Shorten shower times.** You will use less water – and 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 [www.aquarionwater.com/conserve](http://www.aquarionwater.com/conserve).



## The 2021 Aquarion Environmental Champion Awards

**Nominate an Individual or Organization Today!**  
Help us spotlight Connecticut's top Environmental Champions in six categories: adults, students (grades 9-12), non-profits, communications, and small and large businesses.

Details: [www.aquarionwater.com/awards](http://www.aquarionwater.com/awards) or  
[www.facebook.com/aquarionwater](https://www.facebook.com/aquarionwater)

**Nomination Deadline: July 16**



**Clean, safe water is just the start!**

**Free admission tickets!**

Be sure to take advantage of the special 2-for-1 ticket deals and other offers that Aquarion has arranged for its customers at great Connecticut attractions like the Stamford Museum and Nature Center, The Ridgefield Playhouse, Mystic Seaport Museum and Mystic Aquarium. You'll find full details at [www.aquarionwater.com/freetickets](http://www.aquarionwater.com/freetickets).

**We've got whales and penguins!**

Watch Mystic Aquarium's fascinating collection of beluga whales and penguins live on the webcams Aquarion sponsors. Find the fun at [www.aquarionwater.com](http://www.aquarionwater.com).



**MYSTIC  
AQUARIUM**



## Questions About Your Water Quality Report?

Customers who have questions about water quality should call us at 800-832-2373. Customers also may email us at [www.waterquality@aquarionwater.com](mailto:www.waterquality@aquarionwater.com), or visit [www.aquarionwater.com](http://www.aquarionwater.com).

For other questions, or to report discolored water/service problems, or if you would like to participate in a public meeting, call 800-732-9678.

Connecticut Department of Public Health Drinking Water Section: 860-509-7333 or [www.ct.gov/dph](http://www.ct.gov/dph)

U.S. Environmental Protection Agency's Safe Drinking Water Hotline: 800-426-4791 or [www.epa.gov/safewater](http://www.epa.gov/safewater)