



**AQUARION**  
Water Company

*Stewards of the Environment*

# 2009 Water Quality Report

For Customers in  
the Darien System

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## A Message from the President



Charles V. Firlotte,  
President and CEO

Once again, Aquarion Water Company is pleased to present you with our latest Water Quality Report. It details how the water we supplied to you in 2009 met or surpassed each of the many stringent quality standards set by state and federal health authorities.

These high marks are the direct result of Aquarion's continual attention to public health and safety, and our ongoing efforts to:

- Protect the lands surrounding our water sources
- Safeguard those water sources themselves
- Filter and disinfect the water entering our distribution system
- Maintain and improve hundreds of miles of pipes throughout our service areas
- Constantly monitor the quality of the water we're delivering.

From September, 2007, through September, 2010, we'll have invested \$102 million upholding the quality and reliability of the water that you and hundreds of thousands of other Aquarion customers drink, as well as use in so many other ways. Our efforts include maintaining and upgrading the water mains, storage tanks, treatment plants, dams, pump stations and other facilities that are critical to sustaining our quality levels.

Rigorous monitoring is another part of Aquarion's commitment to you. Each year we conduct more than 115,000 tests on over 11,000 samples of water from our systems. In addition, officials from public health agencies routinely review our results and inspect our facilities and equipment.

As essential as the safety and purity of your water supply is, Aquarion's focus on quality doesn't end there. It extends to the quality of every other aspect of our business, including our customer service, our support for community programs and our stewardship of the environment. For the latest information about these efforts, we invite you to explore our website at [aquarionwater.com](http://aquarionwater.com).

In closing, I would like to thank you for being an Aquarion customer. We recognize that, with every turn of the tap, you put your trust in us, and we pledge to continue making it our highest priority to uphold that trust.

Sincerely,

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*Aquarion's website offers a broad selection of information about topics ranging from environmental stewardship and water conservation, to education and community programs we sponsor. You'll also find personalized information concerning your account, as well as a simple guide to paying bills online. To learn more, visit [aquarionwater.com](http://aquarionwater.com).*

# The Results Are In

## Treated Water Table

Your water has been tested for over 100 compounds that are important to public health. Only 16 of these compounds were detected, all of which were below the amounts allowed by state and federal law. Most of these compounds are either naturally occurring or treatment chemicals added to improve water quality. We monitor for some parameters less than once per year because the concentrations of these substances do not change frequently. Some of our data, though representative, are more than one year old. Results shown are of detected compounds only.

| Substance                         | Highest Allowed by Law |                               | Compliance | Test Date | Darien System Detected Level |                    |
|-----------------------------------|------------------------|-------------------------------|------------|-----------|------------------------------|--------------------|
|                                   | MCLG                   | MCL                           |            |           | Average                      | Range              |
| <b>Inorganic Compounds</b>        |                        |                               |            |           |                              |                    |
| Barium                            | 2 ppm                  | 2 ppm                         | YES        | 2009      | 0.017                        | 0.010 – 0.024      |
| Copper                            | 1.3 ppm                | AL = 1.3 ppm                  | YES        | 2008      | 0.32*                        |                    |
| Fluoride                          | 4.0 ppm                | 4.0 ppm                       | YES        | 2009      | 0.97                         | 0.64 – 1.18        |
| Lead                              | 0 ppb                  | AL = 15 ppb                   | YES        | 2008      | 4**                          |                    |
| Nitrate                           | 10 ppm                 | 10 ppm                        | YES        | 2009      | 0.125                        | 0.118 – 0.136      |
| <b>Microbials</b>                 |                        |                               |            |           |                              |                    |
| Turbidity                         | N/A                    | TT = 1 NTU max                | YES        | 2009      | 0.09+                        | 0.03 – 0.16        |
| Turbidity                         | N/A                    | TT = 95% of samples < 0.3 NTU | YES        | 2009      | 100%                         |                    |
| <b>Disinfectant</b>               |                        |                               |            |           |                              |                    |
| Chlorine                          | MRDLG 4 ppm            | MRDL 4 ppm                    | YES        | 2009      | 0.78                         | 0.07 – 1.65        |
| <b>Organic Compounds</b>          |                        |                               |            |           |                              |                    |
| Dieldrin+++                       | N/A                    | AL = 0.03 ppb++               | N/A        | 2008      | ND < 0.001                   | ND < 0.001 – 0.007 |
| Total Organic Carbon (TOC)        | N/A                    | TT = Removal Ratio > 1#       | YES        | 2009      | 1.4                          | 1.2 – 1.6          |
| Total Trihalomethanes             | N/A                    | 80 ppb                        | YES        | 2009      | 40***                        | 20 - 51            |
| Total Haloacetic Acids            | N/A                    | 60 ppb                        | YES        | 2009      | 30***                        | 18 – 42            |
| <b>State-Required Testing</b>     |                        |                               |            |           |                              |                    |
| <b>Physical Characteristics ^</b> |                        |                               |            |           |                              |                    |
| Color                             | N/A                    | 15 CU                         | YES        | 2009      | 1                            | 0 – 11             |
| pH                                | N/A                    | 6.4 – 10.0 units              | YES        | 2009      | 7.2                          | 6.9 – 7.5          |
| Turbidity                         | N/A                    | 5 NTU                         | YES        | 2009      | 0.12                         | 0.05 – 1.5         |
| <b>Inorganic Compounds</b>        |                        |                               |            |           |                              |                    |
| Chloride                          | N/A                    | 250 ppm                       | YES        | 2009      | 33.3                         | 17.3 – 47.5        |
| Sodium                            | N/A                    | NL = 28 ppm                   | N/A        | 2009      | 22.7                         | 11.8 – 33.0        |
| Sulfate                           | N/A                    | SMCL = 250 ppm                | N/A        | 2009      | 19.4                         | 17.5 – 21.0        |

### Footnotes and Definitions *for table above*

|              |  |             |  |     |  |
|--------------|--|-------------|--|-----|--|
| >            | Greater than   | <b>SMCL</b> | Secondary Maximum Contaminant Level  | *** | Reported value is the highest annual average of quarterly measurements for disinfection by-products in the distribution system. Values in the range are individual measurements. |
| <            | Less than  | <b>TT</b>   | Treatment Technique  | +   | Reported value is the highest monthly average for turbidity reported from the surface water treatment plant effluents. Values in the range are individual measurements.          |
| <b>AL</b>    | Action Level   | *           | 90th percentile value in copper monitoring. Result is representative of customer sampling stagnant water. No locations exceeded the action level for copper.   | ++  | EPA has not set an MCL for Dieldrin. The State has set an Action Level of 0.03 ppb for private wells.  |
| <b>CU</b>    | Color Units  | **          | 90th percentile value in lead monitoring. Result is representative of customer sampling stagnant water. No locations exceeded the action level for lead.   | +++ | Detected Dieldrin comes from the Rewak Well. This well was not used during 2009.   |
| <b>MCL</b>   | Maximum Contaminant Level  |             | Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels in your home may be higher than at other homes in the community as a result of materials used in your home's plumbing. If you are concerned about elevated lead levels in your home's water, you may wish to have your water tested and run your tap for 30 seconds to 2 minutes before using your water. Additional information is available from the Safe Drinking Water Hotline (800-426-4791). | #   | The monthly TOC removal ratio is calculated as the ratio between the actual TOC removed and the TOC rule removal requirements. This number should be greater than 1.0.           |
| <b>MCLG</b>  | Maximum Contaminant Level Goal   |             |  | ^   | Measured at representative locations within the distribution system.   |
| <b>MRDL</b>  | Maximum Residual Disinfectant Level  |             |  |     |  |
| <b>MRDLG</b> | Maximum Residual Disinfectant Level Goal   |             |  |     |  |
| <b>N/A</b>   | Not Applicable   |             |  |     |  |
| <b>ND</b>    | Not Detected   |             |  |     |  |
| <b>NL</b>    | State of Connecticut customer notification level   |             |  |     |  |
| <b>NTU</b>   | Nephelometric Turbidity Units, a measure of the presence of particles. Low NTUs is an indicator of high-quality water. |             |  |     |  |
| <b>ppm</b>   | parts per million, or milligrams per liter (mg/L)  |             |  |     |  |
| <b>ppb</b>   | parts per billion, or micrograms per liter (ug/L)  |             |  |     |  |

# Digest of Water Quality Information

## **Protecting your water at home: Lawn irrigation systems**

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

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

## **Source water assessment report**

The state Department of Public Health (DPH) has found that the public drinking water sources in the Darien System have a low-to-high susceptibility to potential contamination sources. To read the DPH report, visit [www.ct.gov/dph](http://www.ct.gov/dph).

## **What is Aquarion doing to protect 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 and by our review of new land-development projects for impact on water quality. We use the best water treatment and filtration technology and continue to invest in our water system's infrastructure to improve the security and the quality of your water.

## **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**

- ▶ 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 CT DEP's 24-hour hotline **(860-424-3338)**, Aquarion Water **(203-452-3500)**, or your local police.

## **Use Water Wisely**

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 cut back 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.

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

**MCL:** 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:** 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:** 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:** 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 contaminants.

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

### **HEALTH EFFECTS**

**Sodium:** If you have been placed on a sodium-restricted diet, please inform your physician that our water may contain as much as 33.0 ppm of sodium.

### **SOURCES OF CONTAMINANTS**

**Barium:** Erosion of natural deposits.

**Copper:** Corrosion of household plumbing systems.

**Fluoride:** Water additive which 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.

**Turbidity:** Sediment particles; Naturally occurring iron and manganese; Soil runoff.

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

**Dieldrin:** Run-off from pesticide application.

**Total Organic Carbon:** Naturally present in the environment.

**Total Trihalomethanes:** By-product of drinking water chlorination.

**Total Haloacetic Acids:** By-product of drinking water chlorination.

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

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

**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.

# 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)**.

## **Pharmaceuticals in the environment**

The U.S. Environmental Protection Agency (EPA) and other scientific sources have released water quality studies in the past few years that show the presence of pharmaceuticals, or prescription drugs, in our nation's water bodies. Recent reports have documented that some pharmaceuticals are present at low levels in some drinking water supplies. This situation occurs when wastewater is released into water bodies that are used as or feed into drinking water supplies. The risk to Connecticut residents, however, is minimized because state law prohibits the discharge of wastewater into drinking water sources.

The EPA uses a well-defined process to determine whether a specific chemical or microbe found in drinking water should be regulated. Under this process, the EPA has considered more than 280 pharmaceutical compounds. In its most recent Contaminant Candidate List (September, 2009), the EPA has added 10 pharmaceutical compounds that will be considered for possible regulation. To date, according to the EPA, scientists have found no direct evidence of adverse human health effects from pharmaceuticals in the environment at levels they have detected. Aquarion scientists will continue to monitor developments with federal and state health agencies on this matter. For more information, visit our website at [www.aquarionwater.com](http://www.aquarionwater.com) or the EPA and state websites listed on the back cover of this report.

## **Copper and Lead**

Your local water system complies with the Copper and Lead action levels (health standard).

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, erosion of natural deposits, and leaching from wood preservatives.

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. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for

drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at [www.epa.gov/safewater/lead](http://www.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. If high levels of Cryptosporidium are found in untreated water sources, installation of additional treatment processes may be required.

Aquarion continues to monitor its water sources, and no Cryptosporidium was detected in the reservoirs that serve the Darien System in 2009. Although water treatment eliminates Cryptosporidium, the most commonly used treatment methods cannot guarantee 100% removal when it is present. Our water meets or exceeds state and federal health and treatment standards. In addition, there are no reported cases of water-borne disease due to Cryptosporidium in Aquarion Water Company's treated drinking water.

## **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. Aquarion Water Company's drinking water meets the EPA standards of 80 parts per billion (ppb) for TTHMs and 60 ppb for THAAs.

New DBP regulatory requirements that change how compliance with the standards is determined will become effective over the next few years. The intent is to increase protection against the potential health risks associated with DBPs. Regulations also require water utilities to test additional samples from across the distribution system for these DBPs. The ranges found in the Darien System were 16-46 ppb for Total Trihalomethanes and 21-43 ppb for Total Haloacetic Acids. Aquarion Water Company continues to evaluate its systems to ensure compliance with DBP regulations.

# Your 2009 Water Quality Report

PWS ID#: CT0350011

The Darien System

Customers with questions about water quality can call us at **203-445-7341** or **800-832-2373**; send an e-mail to **waterquality@aquarionwater.com**; or visit **www.aquarionwater.com**.

For other questions, or to report discolored water or other service problems, call **203-445-7310** or **800-732-9678**.

Connecticut Department of Public Health  
Drinking Water Section:  
**860-509-7333** or **www.ct.gov/dph**

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



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## Where Does Your Water Come From?

Your water is collected in reservoirs and wells, treated, and delivered to you through an extensive underground piping system. The Darien System supply, which serves about 18,600 people, is mostly surface water drawn from Aquarion's system of reservoirs in Stamford and Fairfield. During peak demand times in June through August, Aquarion also draws water from the Rewak Well in Darien, or purchases it from the Norwalk 2nd Taxing District. The average daily customer demand for the Darien System is 2.6 million gallons of water per day. Company-wide, an average of 16.5% of the demand is water drawn for firefighting, water main cleaning, water main breaks and leaks, and unauthorized use.

### ***How is your water treated?***

The reservoir water is filtered at our treatment facilities in Stamford and Fairfield. Water from the well is filtered naturally underground. The reservoir water and well water are disinfected, fluoridated, and further treated to protect the water supply piping system. Water from the Rewak Well is aerated to remove radon and trichloroethylene.

### Be Eco-Friendly

*Save Time!*  
*Save Money!*  
**Switch**  
*To Aquarion*  
**E-Billing!**



Go To  
**aquarionwater.com**  
For Info And Easy Sign-Up!