

Connecticut Water operates 65 water systems and strives to meet all water quality standards and requirements set by the United States Environmental Protection Agency (EPA) and the Connecticut Department of Public Health (DPH). We have a strong record of regulatory compliance and are committed to act promptly to resolve any issues that may arise.



Connecticut Water acted quickly to communicate with state health officials, inform customers, investigate the problem, and address the situation at Amston Lake. Customers can be confident that the water being delivered to homes is safe to drink.

While the Advisory was in effect, Connecticut Water communicated with customers at least daily and had a tanker with potable water and free bottled water available for customers. Affected year round Amston Lake customers were automatically credited for their January water bill.

Steps taken by the company, as approved by our regulators at the Connecticut Department of Public Health (DPH), to implement pH adjustment at the Amston Lake system have been effective in keeping copper levels below the EPA Action Level.

Within a week of the pH adjustment being implemented, copper levels dropped dramatically. Since January 20th an additional 76 samples have been taken and all copper results have been well below the Action Level of 1.3 mg/L with the average now at 0.30 mg/L.

A summary of copper and pH test results for the Amston Lake water system from early January is available at www.ctwater.com.



EPA requires systems that have demonstrated compliance for copper levels after initial testing to test for copper at least once every three years. The Amston Lake water system was last tested for copper in the summer of 2009. The 2009 results and all monitoring for lead and copper rule since 1995 have been in full compliance with the EPA rule.

The DPH has indicated, based on their review of the specifics at Amston Lake that:

- Copper levels in the Amston Lake Water System were not high enough to cause liver or kidney damage or any other permanent health effects.
- Historic data indicates that copper concentrations in the drinking water were high for only a relatively short period of time.
- No medical monitoring is recommended for Amston Lake customers.
- There is no reason to think copper is a carcinogen in people.

Key Findings of the Investigation and Steps Taken to Address the Problem

- Within a week of the 'Do Not Drink Advisory' being issued to customers, following extensive analysis of the data, consultation with outside experts, and approval from DPH, CT Water added potassium hydroxide to the water coming out of the wells to increase the pH levels of the water.
- Our corrosion science consultants, Matco, have ruled out electrical issues as the cause.
- The consultants have concluded that there has been a change in water chemistry at the source that affected the system. While the water source is safe to use as a supply, the recent change in the pH indicates that treatment is now warranted.
- Treatment for pH adjustment is in effect at 48 Connecticut Water facilities including Amston Lake.
- The consultants continue to examine the various factors that may have contributed to the recent change in chemistry including whether the extreme weather events or the record rainfall experienced in 2011 was a factor. The exact cause of the decline in pH may never be fully identified: however, CWC will monitor the pH and make treatment adjustments as necessary to maintain pH at the optimal level and manage water quality in the system.

Historic Water Quality Results

- Connecticut Water only acquired the Amston Lake system in January of 2008. A review of data since 2006 when the last lead and copper sampling was done under the previous owners, and since CWC has owned the system found that pH levels were consistently above the DPH recommended minimum of 6.4. There was no indication prior to January 2012, that pH adjustment of the source water was warranted.
- The historic data, as well as the evidence that the pH level has only recently changed, indicate that there was not an issue previously.

Benefits of pH adjustment

- Adjusting the pH of the water with the addition of potassium hydroxide or sodium hydroxide is a common practice among water utilities across the country and by Connecticut Water at many of its other systems around the state. Connecticut Water has pH adjustment at 48 facilities including Amston Lake.
- The pH is a measure of the relative acidity or alkalinity of the water with a scale of 0 to 14, with 7 being neutral. The acceptable range for pH in water systems in Connecticut is 6.4 to 10.0. By way of example, pH of some common household items such as milk is between 6 and 7, and baking soda is between 7 and 8.
- If pH levels are lower than 7 it can make the water more acidic, which can lead to higher levels of copper in the water from household plumbing. Maintaining optimal levels of pH is key to maintaining copper levels at acceptable levels.

Pipe Analysis

- The corrosion scientist report indicates that on a sample of customer's internal plumbing, the thickness of the ½ diameter piece is slightly below copper thickness range limits (0.040 plus or minus 0.004 inch). They note, however, it is extremely unlikely that this variation (up to 0.006 inch or 6 mils) around the pipe diameter is mostly due to corrosion or erosion. The non-symmetric thickness profile is more likely due to the manufacturing of the pipe, which has been seen in other Matco investigations.

Monitoring to Maintain pH Levels

- The pH level entering the water system is continuously monitored through the use of pH analyzers. If there were to be a problem with the pH potassium hydroxide feed – an alarm would be sent to Connecticut Water field services personnel who would promptly respond 24 hours a day. In addition, a chart recorder is used to record pH levels 24 / 7.
- The pH analyzer and chart recorder will be required as long as the water is treated to adjust the pH level. The pH treatment and monitoring equipment will work off back up power sources in the event of a power outage.

Water Sampling Program

- Under the current DPH approved interim operations plan, copper is now being monitored twice per week. Ten customers throughout the system have agreed to provide first draw water samples every Tuesday and Thursday that are tested for copper and pH.
- The frequency and location of the samples were approved by DPH as being representative of the system.
- A revised sampling schedule will be submitted for approval to DPH with our long term operations plan. The frequency of copper testing will be adjusted over time as we continue to demonstrate that all sample results are below the Action Level.
- As part of the DPH approval of the pH adjustment treatment system, Connecticut Water will be required to collect 20 first draw samples for compliance with the EPA lead and copper rule every 6 months. The first 6 month round of compliance samples will be collected before June 30, 2012. We are identifying lead and copper sampling locations from customer's homes that are representative of water throughout the Amston Lake water distribution year round.
- Upon review and approval of the additional sampling locations by DPH, Connecticut Water will conduct the required monitoring as part of our long term operations plan.

Customer Communications

- Connecticut Water has provided regular communications and updates for our customers, including daily reverse 911 updates and multiple hand delivered notices while the Advisory was in effect. Updates have been provided on our web site and customers will be notified of any additional findings by the consultants, recommendations by DPH, or other relevant information regarding water quality or treatment in the system. Customers with questions are encouraged to contact our customer service staff at 1-800-286-5700 or by email by clicking the Contact Us link on our Web site at www.ctwater.com.
- Connecticut Water will communicate directly with seasonal customers at the start of the season and will conduct additional testing, including samples upon customer request.