



City of Trenton / Trenton Municipal Utilities
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PUBLIC NOTICE – NEWS RELEASE: Disinfection By-Products

Trenton Municipal Utilities (TMU) works hard to provide high quality electric, water, and wastewater services in a cost-effective manner. These efforts include compliance with standards enacted by the Environmental Protection Agency (EPA) and Missouri Department of Natural Resources (DNR). A significant amount of time and effort is spent on testing in order to ensure that high quality is maintained. Occasionally there are times when we are not able to achieve the standards set by EPA and DNR. One of these times was over the past few years when we were not able to meet the standard for Total Trihalomethanes in our water.

What is the problem?

In January 2010 TMU received notice from DNR that the concentration of Total Trihalomethanes (TTHM's) for the 12 months ending with September 2009 exceeded the regulated maximum. The concentration of TTHM's for each of the 12 month periods since that time have also exceeded the regulated maximum. The limits established by DNR and EPA are referred to as the Maximum Contaminant Level (MCL). For Total Trihalomethanes the MCL is 80 micrograms per liter, or part per billion (ppb). In 2004, the Maximum Contaminant Level for TTHM's for our size system was lowered from by 20%, from 100 to 80 micrograms per liter, or parts per billion (ppb). (One gram equals 1 million micrograms and one microgram per liter is equal to one part per billion or one teaspoon in 1,300,000 gallons). Summarized below are the results from the most recent 12 months and the previous 12 month periods dating back to the one that ended with September 2009.

Time Period	Result
October 2008 to September 2009	83 ppb
January 2009 to December 2009	91 ppb
April 2009 to March 2010	89 ppb
July 2009 to June 2010	92 ppb
October 2009 to September 2010	94 ppb

Time Period	Result
January 2010 to December 2010	96 ppb
April 2010 to March 2011	97 ppb
July 2010 to June 2011	94 ppb
October 2010 to September 2011	88 ppb
January 2010 to December 2011	83 ppb

What are Trihalomethanes?

Trihalomethanes are a by-product of the disinfection process. Chlorine is added to the water during the treatment process. Chlorine is added to the water to kill bacteria, viruses, and other organisms that could cause serious waterborne illnesses and death. Unfortunately the chlorine also breaks down organic material in the water, causing disinfection by-products such as TTHM's.

Is this public notice timely or is it late?

While it may seem a bit delayed to be reporting on test results that are more than one year old compliance with this regulation can not be determined until a full year of data is collected. For a system of our size we are required to collect one sample at four sites once every three months. Compliance is based on the Running Annual Average (RAA) concentration for all 16 samples collected during the previous year. For example, the RAA for July 2008 to June 2009 was 61 micrograms per liter but from Oct 2008 to Sept 2009 the RAA was 83 micrograms per liter. While both of these averages used data from samples collected in Dec 2008, March 2009, and June 2009, the RAA for Sept 2009 dropped data from Sept 2008 and added data from Sept 2009. Since TTHM compliance is calculated once every three months and it uses data from the previous 12 months it requires using data that is more than one year old. Additionally, all of the samples are collected by TMU staff but the laboratory testing is completed by the State of Missouri Department of Health and Senior Services, State Public Health Lab so it does take some time for data to be compiled, analyzed, forwarded to DNR and then forwarded to TMU. Under the terms of our operating permit TMU is required to issue this public notice in a timely manner (within 30 days) and this notice is being provided to customers within that timeframe.

Is the water safe to drink?

There is not an immediate danger in consuming Trenton's water. According to EPA, Trihalomethanes *may* present health risks over a long period of time. The City of Trenton is working with the Missouri Department of Natural Resources and the University of Missouri to find a solution to the problem and lower the levels of Trihalomethanes.

What are the risks?

Long-term exposure to levels of Trihalomethanes *may* be a health concern. According to EPA and DNR research, a person consuming two liters (eight, eight ounce cups or about 1/2 gallon) of the same water for over 70 years could result in three to four cancers per 10,000 people. The DNR and EPA research also concludes that people drinking water exceeding the standards for Trihalomethanes *might* experience problems with their liver, kidneys or central nervous system and may have a slightly increased risk of getting cancer.

Are there filters that remove Trihalomethanes?

There are products that tout using activated carbon filters form as way to remove Trihalomethanes. The water has to be exposed to the filters for 15 minutes. TMU does not formally endorse these products and one of the reasons why is that the activated carbon filters have to be replaced as recommended. If not operated as recommended, including replacement of the media, other problems can occur. These problems can include bacterial growth on the filter media. If a filtration system is utilized the user needs to make sure and follow the manufacturer's recommendations for changing the filters.

Do reverse osmosis filtration systems remove Trihalomethanes?

The Missouri DNR does not recommend reverse osmosis systems to remove Trihalomethanes.

Will boiling the water remove Trihalomethanes?

No.

What is TMU doing to determine the source of the problem?

TMU has been working with the Missouri DNR and the University of Missouri's Water Resources Research Center in an attempt to identify possible solutions. The University of Missouri's research involved two phases with several rounds of sampling and analysis. In order to accurately study the changes in water quality that take place over time, what happens in the treatment process, and what happens in the water distribution system the study was conducted over a time period of at least 18 months. The study identified some areas of the process where the formation of TTHM's seems to be the greatest and some recommendations on treatment techniques that could reduce the formation of disinfection by-products. TMU will be working with our project engineers and MO DNR to review the recommendations and implement improvements to reduce the formation of disinfection by-products. Additionally, TMU has signed an Administrative Order on Consent with the MO DNR that includes a timeline to achieve compliance and specific milestones that we are expected to be met as we work towards achieving compliance.

Why is the water chlorinated?

Chlorine is added to the water to kill bacteria, viruses, and other organisms that could cause serious waterborne illnesses and death.

What is the risk to pregnant women?

According to the Missouri Department of Natural Resources, there is no conclusive evidence that Trihalomethanes are a health problem for pregnant women and the child they are carrying. Some research has been done but the studies did not take into account other health risks.

What is TMU doing to correct the problem?

TMU has routinely monitored the levels of TTHM's since the regulations for these criteria were established. In an effort to maintain compliance TMU has continually tried to fine tune the treatment process so that the amount of chlorine added is kept at a minimum. Chlorine cannot be completely eliminated at this time due to the risk of other waterborne illnesses forming. TMU is going to continue working with the Missouri Department of Natural Resources and Univ. of MO to discover the cause and try to find a solution that will lower the level of TTHM's.

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