



PUBLIC NOTICE OF TOTAL TRIHALOMETHANE (TTHM) MCL VIOLATION

The Texas Commission on Environmental Quality (TCEQ) has notified the CITY OF HORSESHOE BAY TX1500015 that the drinking water being supplied to customers had exceeded the Maximum Contaminant Level (MCL) for total trihalomethanes. The U.S. Environmental Protection Agency (U.S. EPA) has established the MCL for total trihalomethanes to be 0.080 milligrams per liter (mg/L) based on locational running annual average (LRAA) and has determined that it is a health concern at levels above the MCL. Analysis of drinking water in your community for total trihalomethanes indicates a compliance value in quarter four of 2018 of 0.082mg/L for DBP2-01.

Trihalomethanes are a group of volatile organic compounds that are formed when chlorine, added to the water during the treatment process for disinfection, reacts with naturally-occurring organic matter in the water.

Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidney, central nervous system, and may have an increased risk of getting cancer.

You do not need to use an alternative water supply. However, if you have health concerns, you may want to talk to your doctor to get more information about how this may affect you.

The flood event in October 2018 brought with it large amounts of decaying organic material. The high levels of organic material increase the organic compounds in the lake water that interacted with the Chlorine disinfection used at the water plants consequently producing higher concentrations of Total Trihalomethanes in the 4th quarter locational running annual average (LRAA) compliance to be exceeded by 0.002 mg/L. Due to the flood event City Staff had elevated the Chlorine levels to ensure disinfection against flood related concentrations of biological organisms, unfortunately which also caused the THM concentration to be higher than normal. The concentration of organics in the lake have steadily dropped since December and THM levels have begun to return to normal levels. We are working with TCEQ and an Engineering firm to determine best management practices for early detection and optimize treatment processes to mitigate elevated TTHM levels. City Staff have begun additional training on THM formation and have developed an action plan to test daily for organic concentration to ensure corrective actions mitigate future violations. We will work to optimize the mandatory minimum amount of chlorine that is required with the fluctuating organic concentration coming from the Lake LBJ source water.

Questions regarding this matter may be directed to Joshua Hisey at 830-598-9983 or jhisey@horseshoe-bay-tx.gov.

Additional information on TTHMs is provided on the back of this notice.

Understanding TTHM

What is TTHM?

When Chlorine is used for disinfection of water, it reacts with organic matter in the water and creates a by-product. This by-product is called Total Trihalomethane (TTHM) and is the most common by-product formed during the disinfection process.

Why is Chlorine used to Disinfect our Drinking water?

Chlorine is used to kill and oxidize harmful bacteria that are present in all surface water sources. These waterborne bacteria and other harmful organisms have been the source of many illnesses through out history. At the turn of the 20th century filtering and utilizing Chlorination as a disinfectant for water treatment significantly reduced waterborne illnesses and was a defining advancement in public health. State and Federal rules require a minimum residual of Chlorine, or Chloramine, residual to be present at the far ends of the distribution system to ensure disinfection is maintained to the public.

Where else can you find TTHMs?

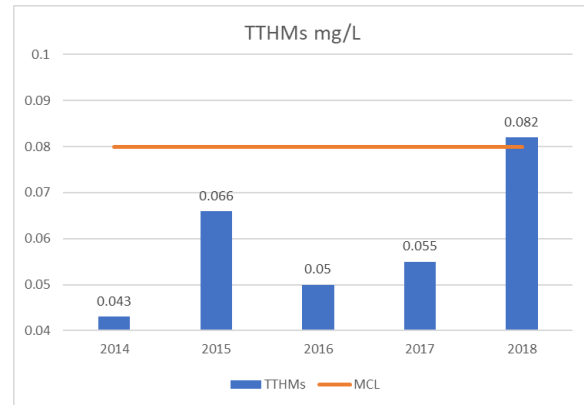
They can be found in swimming pools, soft drinks, coffee, tea, and some foods. TTHMs enter the body through inhalation during bathing/showering, skin contact during swimming and during food and drink consumption.

What are TTHM maximum contaminant levels and who establishes them?

The current maximum contaminant levels for TTHMs are 0.080 milligrams per liter (mg/L) which is equal to 80 parts per billion. These levels are established by the U.S. Environmental Protection Agency (EPA) and regulated by the Texas Commission on Environmental Quality (TCEQ). When the EPA establishes the maximum contaminant level for a chemical that is known or suspected to cause adverse health effects from long-term exposure, it is based upon people drinking two liters (about half a gallon) of water daily for 70 years (approximate one lifetime). Maximum contaminant levels are set at levels that are expected to protect susceptible groups in our population, for example, children, pregnant women, the elderly, and people who may have existing health problems. For chemicals that may cause cancer, EPA also considers what amount of the chemical would cause an increased risk of one case in 1,000,000 people who are exposed over their lifetime.

What were the sampling results for our water?

The latest results from one sampling location in the 4th quarter of 2018, showed a running average result of 0.082mg/L which is 0.002 mg/L over the allowable limit. This is equivalent to being over the limit by 2 parts per billion. For comparison, 2 parts per billion is equal to 2 drops of water in an Olympic size swimming pool. Below is the City's past five (5) years of annual TTHM test results.



What causes high TTHM levels?

Heavy rainfall can often introduce large amounts of organic matter into the water supply. The recent October 2018 flood event deposited a large quantity of organic matter into Lake LBJ, the water supply for the City. When this organic matter reacts with chlorine during the disinfection process it creates TTHMs. During a flood event high levels of animal waste is also washed into the lake which requires an increase in chlorine to the system to ensure adequate disinfection.

What is the city doing to eliminate TTHMs?

The City of Horseshoe Bay water plant staff test the raw source water for the levels of Total Organic Compounds that will effect the TTHM levels in the treatment process. During flood events staff work to balance disinfection with increased levels of TTHMs from the increase in organic compounds from the flood event. The 2018 flood levels of organic precursors exceed any past flood event and was the cause of exceeding the MCL. To safeguard against future issues the City is working with an Engineering firm to determine the best practices in early detection and for optimization of treatment to mitigate elevated TTHMs.

For additional information contact Joshua Hisey, Plant Operations Supervisor at (830)598-9983 or jhisey@horseshoe-bay-tx.gov.