TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

›› **Questions or Comments:**
pdws@tceq.texas.gov

Relative Risk to Public Water System Customers from Disinfection Byproducts

Explains the relative risk to Public Water System Customers from Disinfection Byproducts.

TCEQ Public Drinking Water Section, rev: August 12, 2005

Trihalomethanes (THMs) and haloacetic acids (HAAs) form when disinfectants are added to drinking water systems to kill potentially dangerous microorganisms. The added disinfectants react with naturally occurring organic chemicals in the water to form other chemicals, including THMs and HAAs. Because long-term exposures to these chemicals in our water may result in adverse health effects, EPA has established standards (the MCLs) for them. When they exceed their respective MCLs in drinking water, your provider is required to notify you. Notification is not intended to suggest that you or your family members will be harmed by the detected levels, but instead is meant to keep you informed. Exceedance of MCLs also informs the water supplier that action is warranted to reduce the concentrations of those chemicals in the water system.

The required public notice language for these violations includes statements like:

This is not an emergency.
You do not need to use an alternative water supply.
Some people who drinking water containing these chemicals in excess of the MCL over many years may have an increased risk of cancer (HAA and THM) or some other long-term health effect (THM only).

When EPA establishes the MCL for a chemical that is known or suspected to cause adverse health effects from long-term exposures, it assumes that the people who drink that water consume two liters (about half a gallon) of it every day for seventy years (approximately one lifetime). MCLs also 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 (1) case in one million (1,000,000) people who are exposed over their lifetime.

It is unlikely that the short amount of time (relative to seventy years) that customers will drink the water with high THMs and HAAs should cause any adverse effect on their health. EPA has identified THMs and HAAs as a long-term health risk, not a short-term health risk. The greater risk for short-term noncancer health problems to children and adults, including severe conditions, would be from the microorganisms that are killed by the added disinfectants from which THMs and HAAs are produced.

There is no imminent risk to the health of customers.

[1] https://www.tceq.texas.gov

[2] https://www.tceq.texas.gov/drinkingwater

[3] https://www.tceq.texas.gov/drinkingwater/chemicals

[4] https://www.tceq.texas.gov/drinkingwater/chemicals/dbp