

## **Question and Answer Guide to TTHMs Exceedance in Paola Water Distribution System**

Customers of the City of Paola water system have been notified as required by federal and state regulations that water supplied by the City did not meet current tolerance levels for Total Trihalomethanes (TTHMs). If you have received the TTHM notice don't panic as you do not need to take any immediate action. **The notice does not mean the city's water supply is unsafe to drink nor does it require any action such as boiling water before using it.**

### ***Why did I receive this notice?***

The notice you received is required to be sent to all customers of a water system when the system is notified of a non-compliance issue involving the level of Trihalomethanes (TTHMs) in the water supply. The City of Paola was notified by the Kansas Department of Health and Environment that its water system had exceeded the allowable TTHMs level based on test results from water samples collected in the running total of four calendar quarters beginning in November of 2013. Because the average of the four quarter running total was above the TTHMs level of 80 parts per billion (ppb) the notice requirements were triggered. The purpose of the notice is to keep our water users informed about water quality.

### ***What are TTHMs?***

TTHMs are a group of chemicals known as disinfection byproducts. They form when chlorine used for disinfection in the water treatment process reacts with naturally occurring organic material that is found in the Marias Des Cygnes Public Utility Authority (the City of Paola's water supplier) water source. TTHMs are colorless, tasteless, and evaporate out of the water into the air.

Levels of TTHMs generally increase in summer months due to warmer temperatures, but can also be affected by seasonal changes in source water quality or by changing the amounts of disinfectant added during the treatment process or during times of what is referred to as hyper-chlorination.

All water systems that use chlorine to disinfect the water are required by federal and state law to sample TTHMs on a regular basis (once every three months) in various locations of the distribution system. TTHM monitoring and testing is only one of several required water tests that are performed by the city.

### ***Why is chlorine added?***

The City of Paola is a member of the Marais Des Cygnes Public Utility Authority (PUA) and purchases water used in Paola from the PUA. The PUA adds chlorine to the water to disinfect it. Disinfection of water supplies is necessary to prevent illness and is a USEPA and KDHE approved method of water treatment. The practice of disinfection of public water supplies has nearly eliminated most acute waterborne diseases such as dysentery, typhoid fever, and cholera in the United States. These microbial diseases would otherwise be a major concern.

Since a surface water source such as the Marais des Cygnes River is open to the environment, it is vulnerable to contamination by waterborne microorganisms (viruses, bacteria, and protozoa). Disinfection of the water first kills the microorganisms that may be present in surface water. Then a small amount of disinfectant is required to be kept in the water as it travels through the pipes in the distribution system to prevent growth of microorganisms, or contaminants from an outside source, such as during a main break. In addition, as a routine maintenance procedure water systems typically perform what is termed hyper-chlorination on an annual basis. This hyper-chlorination is an extra measure of protection to ensure the distribution system meets safe water standards.

### ***What is an MCL and how is compliance with the MCL determined?***

Drinking water standards are set to protect the public against potential negative health effects from drinking water containing the chemicals. The Maximum Contaminant Level (MCL) in drinking water is set so that the amount of any chemical or contaminant does not exceed safe levels. Some MCLs regulate the daily amount consumed (for chemicals that pose an immediate risk), and some regulate the amount averaged over a long period of time (for chemicals that may pose a long-term risk). The TTHM MCL is set at a level to balance the immediate risk of bacterial contamination and the long-term risk of health effects such as kidney, liver, central nervous system ailments, or some forms of cancer. The USEPA and KDHE have set an MCL for TTHMs of 80 parts per billion (ppb) or micrograms per liter (ug/L).

Current federal and state regulations require us to determine the water system's compliance with the TTHM MCL by averaging the concentrations found at all sampling locations in the entire system over the past year, using a running average calculation method. The sampling locations and the number of samples required on a quarterly basis are reviewed and approved by KDHE. In the fourth quarter of 2013, the test results indicated that Paola's TTHMs were in excess of the allowable limit of 80 ppb. This situation occurred due to the hyper-chlorination that had taken place system wide and as a result of prolonged chlorine contact in the treatment process. All other test results since the fourth quarter of 2013 have been under the MCL of 80 ppb. Because the MCL compliance requirements are based on the running average of test results of four calendar year quarters, the total for the annual reporting period exceeded the

standards. It should be noted that Paola, like most similarly sized cities, was only required to begin testing for TTHMs in the fourth quarter of 2013.

***Why did it take so long to notify the public of a problem that occurred in November of 2013?***

The answer to that question lies in the method used to determine the exceeding of the MCL for TTHMs. Because the determination for a non-compliance notice for TTHMs is determined on the average of four quarterly testing results in a twelve month period, the city was not notified of the non-compliance until KDHE had compiled Paola's test data for the required number of quarters. As soon as the City of Paola received notification of the non-compliance from KDHE the public notice was prepared and mailed to our customers.

***What are the health risks of TTHMs?***

Health studies suggest that long-term TTHMs exposure at high concentrations may lead to a number of health risks including certain types of kidney or liver disease or certain types of cancer. The Center for Disease Control website provides detailed information relating to the health risks possibly associated with long-term exposures to excess levels of TTHMs. The following link will take you to the appropriate topic area of the CDC's website (<http://www.cdc.gov/safewater/chlorination-byproducts.html>).

***What is being done to ensure compliance with the TTHM standards?***

The City of Paola in cooperation with the Marais Des Cygnes Public Utility Authority and the Kansas Department of Health and Environment will be working closely to monitor future testing and test results. Events of hyper-chlorination and prolonged chlorine contact will be limited to annual system maintenance periods or in the event of other system problems.

***Do I need to take any action?***

**You do not need to take any remedial action.** Test results for TTHMs for the first, second, and third quarters of 2014 show that our water system is operating well under the MCL levels set by the USEPA and KDHE. The City will continue to closely monitor TTHM test results and will post updates on a quarterly basis.

If you are concerned about TTHMs and want to further reduce your exposure you can take a number of steps including installing point-of-use home water treatment systems on delivery lines in your house (faucet mount, pour through pitcher style, our plumbed in units). In addition, people are exposed to disinfectant by-products, including TTHMs from other uses of

the water besides drinking water. If you wish to reduce your overall TTHM exposure risk you may want to consider other recommendations such as ventilating the bathroom when bathing or showering, reduce temperatures on hot water heaters, and limit time spent in or around chlorinated pools or hot tubs.

For more information on home water treatment systems you may want to visit the NSF website at [www.nsf.org](http://www.nsf.org).

***Who should I contact if I still have questions?***

Please do not hesitate to contact Paola City Manager Jay Wieland, by any of the following means:

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