

Overview of Trihalomethanes and Halo Acetic Acids

The City of Rhome purchases surface water (water drawn from lakes) from Walnut Creek Special Utility District since the available ground water (water pumped from the City's water wells) in the City will not sufficiently cover the water consumption needs of its customers. Most of the water consumed by City of Rhome customers is surface water not ground water. Water samples are tested quarterly and results are monitored by the Texas Commission on Environmental Quality (TCEQ).

The Texas Commission on Environmental Quality (TCEQ) has notified the City of Rhome of multiple violations of trihalomethanes and halo acetic acids since 2015. Public Notices of quarterly violations were sent to the City of Rhome customers and to TCEQ.

What are Trihalomethanes and Halo Acetic Acids?

Trihalomethanes (THM) are a group of four chemicals that are formed along with other disinfection by products when chlorine or other disinfectants used to control microbial contaminants in drinking water react with naturally occurring organic and inorganic matter in water.

Halo Acetic Acids (HAA5) are a common undesirable by-product of drinking water chlorination. Exposure to such disinfection by-products in drinking water, at high levels over many years, has been associated with a number of adverse health outcomes by epidemiological studies.

What are the Risks?

§290.275(3)(82) TTHMs (Total Trihalomethanes) Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer.

§290.275(3)(75) Haloacetic acids (HAAs). Some people who drink water containing HAAs in excess of the MCL over many years may have an increased risk of getting cancer.

What are the Options?

The City of Rhome does not have a water treatment facility and is not able to treat the surface water from Walnut Creek Special Utility District for trihalomethanes or halo acetic acids. The City met with Walnut Creek Special Utility District representatives to discuss the actions being taken by Walnut Creek regarding the surface water quality. These actions include:

- Walnut Creek submitted an application to TCEQ to allow them to install an aeration system in the Walnut Creek facility to try to lower these contaminants.
- Walnut Creek also submitted an application to TCEQ to allow them to utilize chlorine dioxide treatment in the Walnut Creek facility to also try to lower these contaminants.
- Once these applications are approved by TCEQ, Walnut Creek will begin implementation. The implementation process will take many months to complete.
- The City of Rhome will monitor the progress of the changes and the implementation process to reduce these contaminant levels below the Maximum Contaminant Level (MCL).

When Should the City see the Effects of these Changes?

The City of Rhome's engineering firm believes these changes in the treatment of surface water at the Walnut Creek facility will reduce the contaminants which the City of Rhome receives in the surface water purchased from Walnut Creek to acceptable levels. These changes are necessary to resolve the ongoing violations for these contaminants. The City is doing its best to facilitate and expedite this process, but they will not be implemented overnight, and are largely out of the City's control.

Overview of Radium and Uranium in Ground Water

The City of Rhome purchases surface water (water drawn from lakes) from Walnut Creek Special Utility District since the available ground water (water pumped from the City's water wells) in the City will not sufficiently cover the water consumption needs of its customers. Most of the water consumed by City of Rhome customers is surface water not ground water. Water samples are tested quarterly and results are monitored by the Texas Commission on Environmental Quality (TCEQ).

The Texas Commission on Environmental Quality (TCEQ) notified the City of Rhome that at Entry Point 005 (EP005), otherwise known as Well #6 at 105 W. First Street, was above the Maximum Contaminant Level (MCL) for Quarter 4 of 2016 for Gross Alpha excluding Radon and Uranium. The MCL for such is 16pCi/L, and EP005 sampled at 17.9pCi/L. Public Notice of the violation was sent to the City of Rhome customers and to TCEQ.

What are Radium and Uranium?

Uranium is a naturally occurring radioactive metal. Radium is formed when uranium decays in the environment. Small amounts of radium and uranium occur in groundwater. Radioactive elements are unstable in nature and to reach a more stable condition, they give off energy or radiation. The main type of radiation emitted by radium or uranium is the alpha particle. This is not considered an immediate health concern.

What are the Risks?

Radiation cannot be eliminated from our environment, but possible health risks may be reduced by minimizing exposure to it. The risk estimates from exposure to radium or uranium in drinking water assumes that an individual drinks two liters of water each day for 70 years. The increased cancer risk associated with consuming water containing radium at the MCL for one year is comparable to one chest X-ray, or the cosmic radiation received during one round trip flight from Texas to California.

What are the Options?

The following are acceptable for lowering the levels to the MCL:

- Mixing of water from another source
- Carbon active filters
- Ozone treatment

What are the Options?

The City of Rhome is mixing more treated surface water at EP005 to reduce the MCL level which is the most cost effective solution. If this action does not reduce the levels to the MCL, then the City will pursue additional measures to reach the MCL. Any other method of treatment will require submitting an application of engineered changes in treatment to be approved by TCEQ.

For More Information on TCEQ Rules & Regulations for Public Water Systems:

[https://texreg.sos.state.tx.us/public/readtac\\$ext.ViewTAC?tac_view=4&ti=30&pt=1&ch=290](https://texreg.sos.state.tx.us/public/readtac$ext.ViewTAC?tac_view=4&ti=30&pt=1&ch=290)