



**CITY OF CHICKASHA**

## WATER TREATMENT UPGRADE FROM CHLORINE TO CHLORAMINE [AUGUST 2016]

### SCOPE OF PROJECT:

The City of Chickasha, the Public Works Department and USW will be implementing a chloramine water treatment system to ensure the water meets the new water quality standards required by the Oklahoma Department of Environmental Quality (ODEQ). In addition, chloramine systems have been growing in use because they have been shown to be a safer alternative to control algae and bacteria while not introducing high-quantities of chlorine which at that level could become carcinogenic.

### FORMER WATER TREATMENT PLAN

The Chickasha Water Treatment Plant has been producing chlorinated water for the residents for over 30 years. In that period of time, the Environmental Protection Agency (EPA) and the ODEQ have learned through progressive sampling techniques what chlorinated water can create if given the right circumstances.

When chlorinated water is left within the distribution system, over time, it can create Haloacetic Acids (HAA5s) and Trihalomethanes (TTHMs), which has shown to cause cancer in lab animals. HAA5s and TTHMs are cancer creating agents. The EPA and ODEQ have used new technology to determine a limit for the amounts of HAA5s and TTHMs in Chickasha's drinking water.



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ODEQ accepted the EPA's Drinking Water Byproducts Rule (Stage 2) in October 2013. The DBP Rule lowered the limits to HAA5s to 60ppb and TTHMs to 80ppb. Since then, Chickasha has barely exceeded the newly imposed limits several quarters throughout the last three years.

In order to reduce the amount of TTHMs and HAA5s, the City of Chickasha has worked with engineers and water specialists to come up with the best solution based on current operations and source of water being used to not only treat the water appropriately but insure consumer safety. The preferred and safest solution is to install a chloraminated water treatment system for the City of Chickasha.

### COMMON QUESTIONS & CONCERNS

#### SO WHAT IS THE DIFFERENCE BETWEEN CHORINE AND CHLORAMINES?

Chlorine is a great disinfectant, and is used to disinfect the water at the Chickasha Water Plant from waterborne diseases. It is also sent out into the distribution system to keep the water safe until it reaches the consumer's faucet. The main concern is chlorine is a very strong disinfectant and causes high levels of trihalomethanes (TTHMs) and haloacetic acids (HAA5s) to be produced over time.

Once the water has been disinfected at the Chickasha Water Plant, ammonia is added to the chlorine at a 4:1 ratio, which creates chloramines. Chlorine is a stronger disinfectant, however, chloramines are still an effective disinfectant, that will create smaller amounts of TTHMs and HAA5s that will be under the levels the limits required by both the EPA and ODEQ.

#### WILL THERE BE ANY NOTICEABLE CHANGES DURING THE CHANGE OVER FROM CHLORINE TO CHLORAMINE?

You may notice a change in odor, taste and possibly discoloration to the water throughout the distribution system when the City is changing over from chlorine to chloramines. The taste and odor should be a minimal effect and should last for a very short time.

The water may be discolored from the City lowering the water towers to eliminate the odor issue, which may allow sediment from the towers to be distributed through the city water lines.

To alleviate this issue, USW will be flushing the lines throughout the City to minimize the amount of sediment that could possibly enter residential and business water lines. Please be aware before washing any lighter colored clothing, bedding or towels.

#### CONCERNS FOR HEALTH SERVICE PROVIDERS WITH RENAL CONDITIONS

All dialysis users, hospitals, retirement centers, and assisted living centers that use Chickasha's water will need to have charcoal filters installed to remove the chloramine completely from the water being used for the dialysate, so that dialysis users will not get hemolytic anemia.

#### CONCERNS FOR AQUATIC ANIMALS

Residents who have fish tanks will need to make sure that the chemicals and filters used work with chloraminated water.

#### ARE THERE ANY OTHER MUNICIPALITIES THAT UTILIZE THIS SYSTEM?

Many larger municipalities, like Oklahoma City, Tulsa, Broken Arrow and several other Oklahoma towns utilize this water treatment system. Many additional towns that utilize surface water for their water source in Texas and Florida also use this system. There are many other municipalities in southwest Oklahoma that are currently switching from chlorine to chloramine to eliminate carcinogenic issues or concerns as well as meet the new water treatment standards.

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