

## ***High Levels of Total Haloacetic Acids (HAA5)***

### ***What happened:***

The Maximum Contaminant Level (MCL) exceedances at Disinfection By-Product (DBP) sites DBP002 and DBP003, sampled on **February 16, 2021**, and received by a certified lab on **February 17, 2021**, are most likely due to the dead-end nature of the distribution water main (main) supplying treated water to customers in those areas of the system. Low flow rates due to seasonally and potentially pandemic related diminished demand combined with a long length of main likely created a high residence time within the main.

In addition, there has been decreased demand in the lower zones of the District's distribution system as the Yampa Wells Treatment Plant (003) has been online in recent months. This has likely influenced the flow of water from the upper zones to the lower zone and subsequently created longer residence time in the South Tank, which is the primary treated water reservoir that services this area of the distribution system.

### ***What is being done:***

Upon receiving sample results from our certified lab on **March 2, 2021**, and subsequent violation letter from the Colorado Department of Public Health and Environment (CDPHE) on **March 9, 2021**, the District immediately increased flushing in these areas of the distribution system to eliminate the concern for high residence time for water within the main water lines (see attached Standard Operating Procedure (SOP) for routine flushing). A routine bi-weekly flushing schedule, paired with frequent chlorine residual sampling will ensure water within this area of the distribution system does not pose a threat of an MCL exceedance specific to HAA5's or other disinfection byproducts and maintain distribution water quality.

The District is also pursuing additional means to ensure water quality throughout the system. One such means is assessing the feasibility of installing automatic flushing stations in areas that are of concern for DBP formation. Additionally, a Free Chlorine Distribution System Influent Hold Study (as outlined by EPA publication 815-B-19-013) is being conducted to document sample results and provide conclusions that will support treatment changes and further subsidize future studies.

### ***What are Haloacetic Acids (HAA5):***

HAA5's is a group of compounds that can form in the water distribution systems when chlorine used to disinfect drinking water reacts with naturally occurring organic matter in the source water. Chlorine is important in drinking water treatment for controlling pathogenic organisms that can make us sick. Drinking water that is disinfected with chlorine to kill bacteria and viruses such as E. coli and cholera, is a benefit that far outweighs the perceived negative health risks at the present time. The degree of risk for these effects will depend on the HAA5 level and the duration of exposure. Consumption of water with HAA5 levels somewhat above the MCL for limited durations, for example, while corrective actions are being taken to lower the levels, is not likely to significantly increase risks of adverse health effects for most people.

***What to do if you have concerns:***

CDPHE requires us to take samples for HAA5 once each quarter. A maximum contaminant level (MCL) violation for DBP's is achieved when the locational running annual average (LRAA) for a site exceeds the MCL set for that analyte. In this case, a MCL of 0.06 mg/L for Haloacetic Acids (HAA5) was exceeded due to an above average result at two sites in Quarter 1, 2021. This contaminant, which is a by-product of chlorination, the primary disinfecting process of water treatment, is a chronic health risk, meaning prolonged exposure can have implications. Routine monitoring and lab analysis has shown that this is the only instance of these levels being above the MCL, therefore it does not necessitate an immediate alternative water source for the customer.

Should concerns exist, bottled water and point of use filtration that utilizes activated carbon cartridges are options available to customers. If you are interested in investigating in-home filtration, please research filters that have been certified by an independent third party such as NSF 53. Ask the filter company for their "Performance Data Sheet" that should list what their filter removes. You are looking for filters that remove Disinfection By-Products (DBP).