

DISINFECTION BYPRODUCTS

Chlorination of Drinking Water

What are Disinfection Byproducts (DBPs)?

Water systems commonly add chlorine to drinking water to kill or inactivate harmful organisms in a process called “disinfection.” During disinfection of the water treatment process, chlorine reacts with total organic carbon (TOC) of organic matter. The TOC's are left over after plants and leaf litter break down in rivers, lakes, and streams. This reaction forms disinfection by-products (DBPs).



What does it mean for me when DBP's exceed the maximum contamination limit?

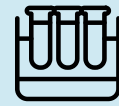
First, this is not an emergency. If it had been, you would have been notified by CCWD immediately. DBPs including haloacetic acids (HAA's) occur normally in drinking water that is disinfected with chlorine.

People drinking water containing HAA's in excess of the maximum contamination limit over many years may have an increased risk of getting cancer. Consequently the US EPA has set standards for controlling the levels of disinfectants, byproduct precursors and DBP's in drinking water.

Do the benefits of chlorination outweigh the health risks of DBP?

Yes. Adding chlorine to drinking water sources with bacteria and other harmful organisms makes the water safer to drink. When used correctly, chlorine kills or inactivates harmful microorganisms that cause diseases, such as E.coli infection, typhoid, cholera and dysentery. The immense benefits in reducing infectious diseases, and the simplicity and low cost of water treatment using chlorine, makes chlorination the most appropriate disinfectant for most water systems.

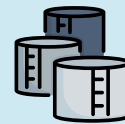
Let's break things down:



Routine DBP testing occurs at key CCWD sample sites: **Every 3 months**



Maximum Contaminate Level (MCL) for Haloacetic Acids (HAA): **60 parts per billion (ppb)**



Number of CCWD key sample sites in the Ebbetts Pass Service Area: **4 - 16 sites**



Number of CCWD sample sites exceeding the MCL limit for HAA's during the last routine test: **1 site, at 61 ppb**

So, how much is 1 part per billion?

1/2 teaspoon (or 1 ml) of water in an Olympic sized swimming pool





QUESTIONS?

Please reach out if you have questions or would like additional information on our DBP compliance order:

Damon Wyckoff, Director of Operations
209-754-3306 | damonw@ccwd.org

Jessica Self, External Affairs Manager
209-754-3123 | jessicas@ccwd.org

CCWD Customer Service
209-754-3543 | customerservice@ccwd.org



Recently constructed CCWD water tank located in the Meadowmont subdivision of Arnold.

WHAT CAN WATER SYSTEMS DO TO REDUCE THE FORMATION OF DBP'S?

Many water systems may be able to reduce the amount of DBPs formed without reducing public health protection by using one or more of the following methods:

- Remove or reduce the organic substances that react with the chlorine to produce DBPs.
- Reduce the contact time and/or the concentration of chlorine in the distribution system.
- Ensure adequate turnover in storage tanks and eliminate areas of stagnant water.
- Reduce the “water age” (the length of time water is in the distribution system).

NEXT STEPS:

What is CCWD doing to lower the HAA level in the Ebbetts Service System?

CCWD does not take this maximum contaminate limit exceedance lightly. Moving forward, we are working diligently and strategically to implement measures to restore the water supply at this sample site and assure future water quality tests are within an acceptable DBP range.

CCWD is currently undergoing project planning to:

- Replace multiple redwood tanks within the service area with new, modern tanks. This project is in the design phase, with planned construction in 2022. We will be providing customers with a project summary soon through multiple outreach avenues.
- Re-route tank piping in an effort to improve water quality and reduce water age.

District Staff will continue to implement additional solutions that can improve water age and water quality overall. One immediate remedy is to increase flushing efforts to reduce water age.

WOULD YOU LIKE TO LEARN MORE? JOIN US AT A VIRTUAL TOWN HALL MEETING.

FEBRUARY 23rd at 6:00 PM | Visit ccwd.org to sign up and attend

