

# FAQs for Disinfection Byproducts in Drinking Water

**I've never heard of disinfection byproducts before, so why am I hearing about this now?** Technological advances in laboratory analytical methods allow us to detect and report constituents we did not know existed as recently as the 1970s. Federal and State drinking water regulations continue to become more stringent. The requirement to notify you directly is similar to the Prop 65 state requirement to post 'this building contains chemicals dangerous to your health' signs at convenience stores or other businesses. All efforts are in an effort to protect public health.

**Why do we need to add chlorine to the water?** Chlorine in drinking water has prevented the spread of waterborne diseases and pathogens such as cholera, typhoid fever, dysentery and hepatitis A. At the turn of the 20<sup>th</sup> century, typhoid fever alone killed 1 person per 3,500. Drinking water chlorination and filtration have helped to virtually eliminate these diseases in the U.S. and other developed countries.

## **What is a THM and how is it formed?**

A THM is a chemical compound that often occurs in drinking water as a result from the reaction of chlorine treatment for disinfection purposes and natural organic matter present in the water. Often formed in areas of heavy rainfall, especially after a drought or extended period where sediment and debris have not been washed from the earth, THMs are colorless, volatile and readily dissolve in water. The four common THMs are chloroform, dibromochloromethane, dichlorobromomethane and bromoform.

**How much is a ug/l?** A ug/l is one part per billion. It equates to one minute in two thousand years, one aspirin dissolved in an Olympic swimming pool, or a single penny in \$10,000,000.

**What about other water systems?** This new regulation has been a challenge to water systems all over the state of California. Three other agencies that treat the same State Water Project water we use, which is high in organics, have already exceeded this new regulatory limit.

**Should I drink bottled water instead?** Bottled water is not regulated to the same level that tap water in California is regulated, but producers spend high dollars on advertising. The cost of bottled water (\$1/12 oz) is more than 250 times higher than the water that is delivered to your tap at less than a penny per gallon (0.536 cents/gal or \$0.0005/12oz). Bottled water is reasonably expected to contain at least small amounts of some contaminants. More information about contaminants and potential health effects can be obtained by calling the USEPA's Safe Drinking Water Hotline at (800)426-4791.

**What can I do to lower the THMs at my tap?** THMs are volatile organic compounds. That means they desire to release from the water into the air similar to the way carbonation in a carbonated beverage such as soda or seltzer water releases into the air when you first open the bottle. The City of Napa performed a small experiment at the treatment facility and analyzed several samples after they have been handled the common ways a customer might fill a glass of water to drink it in their home. This is only one experiment, but shows the nature of the reduction of THMs.

Each entry below was handled as described, then poured into a sample bottle with no head space per analytical protocols and analyzed for THMs.

FROM FAUCET DIRECT	<b>87.6</b>	
FROM FAUCET INTO GLASS SITTING FOR 5 MINUTES	<b>67.7</b>	
FROM FAUCET THROUGH A BRITA FILTER	<b>64.8</b>	
THROUGH A REFRIGERATOR FILTER	<b>54.4</b>	carbon filter for GE Model # PSCS3RGXCFSS. Filter #WF282 GE MSWF
THROUGH AN INLINE FILTER UNDER THE SINK FROM FAUCET	<b>2.7</b>	4 filter(GAC) R/O system, Sierra Model NS-1N30-00 by Nimbus Water Systems

Note this is one side by side study employing standard laboratory sample techniques. The City of Napa does not recommend one filter manufacturer over another, nor does it guarantee the effectiveness of any home filter devices. All home water filter systems need regular maintenance to operate effectively. The effectiveness of filter brands is tested by the National Science Foundation (NSF.) For specific information about your filter contact the manufacturer.