

# Trihalomethanes (TTHMs/THMs) – A disinfectant byproduct

- Legal Limit (MCL): 80 ppb or .08 mg/L

## Common sources of the contaminant in the Central Valley<sup>a</sup>

Trihalomethanes (THMs) are a byproduct of the chlorination process. When water is disinfected with chlorine, chlorine reacts with organic matter to create THMs, the byproduct. THMs most often occur in surface water; groundwater has less organic matter, so there is less chance the THMs will be created. Additionally, levels of THMs are generally much higher in warmer months than in colder months.

## Possible health effects of short-term exposure<sup>b</sup>

- Liver, kidney and thyroid damage

## Possible health effects of long-term exposure<sup>c</sup>

- Increased problems with the liver, kidneys, and central nervous systems
- Increased risks of cancer (especially bladder and colon cancer)
- Increased risk of miscarriages, still born babies, premature births and birth defects

## Sensitive populations<sup>d</sup>

Pregnant women are particularly at risk for health impacts.

## Pathways of exposure<sup>e</sup>

THMs primarily enter the body through drinking tap water that has THMs. Additionally, THMs easily evaporate, and can be inhaled while showering, cooking, washing dishes and clothes, or absorbed through the skin. Bottled water from chlorinated sources may also have THMs.

## Tips for reducing exposure at home

- Avoid taking long, hot showers.
- Keep windows open or use the fan or vent in your bathroom while showering, cooking, or washing clothes or dishes;
- Buy bottled water from non-chlorinated sources, or use approved home treatment devices or let water stand uncovered on the counter or in the fridge before drinking it. Certified home treatment devices include some carbon block filters, some granular activated charcoals units, and reverse osmosis units, including some on-tap faucet filters (e.g., Brita). A full list of approved filter devices is available at <http://ww2.cdph.ca.gov/certlic/device/Documents/WTDDirectory2008/Section6K.pdf> or by calling the California Dept. of Public Health at (916) 449-5600. Note that DPH updates this list each spring.



### **Warning:**

Bottled water from chlorinated sources may also have high levels of THMs. Read the label carefully and only buy bottled water from non-chlorinated sources.



This information was originally published in the Community Water Center's  
**Guide to Community Drinking Water Advocacy.**

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# Trihalomethanes (TTHMs/THMs) References

- a. EPA (2006), "Drinking Water Contaminants, Disinfectant Byproducts," available at <http://www.epa.gov/safewater/hfacts.html> (last visited Nov. 29, 2008); WHO (2005), "Trihalomethanes in Drinking Water," available at [http://www.who.int/water\\_sanitation\\_health/dwq/chemicals/THM200605.pdf](http://www.who.int/water_sanitation_health/dwq/chemicals/THM200605.pdf) (last visited Nov. 29, 2008).
- b. WHO (2005), "Trihalomethanes in Drinking Water," available at [http://www.who.int/water\\_sanitation\\_health/dwq/chemicals/THM200605.pdf](http://www.who.int/water_sanitation_health/dwq/chemicals/THM200605.pdf) (last visited Nov. 29, 2008); EPA (2005), "Drinking Water Criteria Document for Brominated Trihalomethanes," available at <http://www.epa.gov/waterscience/criteria/drinking/brthm.html> (last visited Nov. 29, 2008).
- c. EPA (2006), "Drinking Water Contaminants, Disinfectant Byproducts," available at <http://www.epa.gov/safewater/hfacts.html> (last visited Nov. 29, 2008); WHO (2005), "Trihalomethanes in Drinking Water," available at [http://www.who.int/water\\_sanitation\\_health/dwq/chemicals/THM200605.pdf](http://www.who.int/water_sanitation_health/dwq/chemicals/THM200605.pdf) (last visited Nov. 29, 2008).
- d. WHO (2005), "Trihalomethanes in Drinking Water," available at [http://www.who.int/water\\_sanitation\\_health/dwq/chemicals/THM200605.pdf](http://www.who.int/water_sanitation_health/dwq/chemicals/THM200605.pdf) (last visited Nov. 29, 2008).
- e. WHO (2005), "Trihalomethanes in Drinking Water," available at [http://www.who.int/water\\_sanitation\\_health/dwq/chemicals/THM200605.pdf](http://www.who.int/water_sanitation_health/dwq/chemicals/THM200605.pdf) (last visited Nov. 29, 2008).
- f. DPH (2007), "Devices Certified for the Reduction of Volatile Organic Compounds (VOCs)," available at <http://www.cdph.ca.gov/certlic/device/Documents/WTDDirectory2008/Section6K.pdf> (last visited Nov. 29, 2008).



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