

SAFD2 Monthly Meeting: Recommendation 11/21/22

Engage with Village, Town & local experts
Assess cost, benefits & risks associated migrating disinfectants
If merited, request formal plan to evaluate & implement

Question: Chlorine or Chloramine?

Chloramine Links:

https://www.cdc.gov/healthywater/drinking/public/water_disinfection.html
<https://www.epa.gov/dwreginfo/chloramines-drinking-water>
<https://www.richmondtx.gov/departments/public-works/water-department/chloramine-faq-s>
<https://www.richmondtx.gov/departments/public-works/wastewater-department/chloramine-conversion>
<https://www.thesprucepets.com/difference-between-chlorine-and-chloramine-1381900>
<http://www.champlainwater.org/CivicAlerts.aspx?AID=39>

Ray's contact info:

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802-585-4859

Discussions on 11/14:

Jason neutral on subject of converting, must be approved by Trustees?
Ray Solomon indicated makes sense for SAFD2
Health (reduced DBPs) and science would support conversion
VT has been resistant, expect push back (Grand Isle -> carbon filters)
75M people in USA use it w/o issue
Champlain Water District had complaints, real? Recent award with it.
Tony to talk w/ John & Alton, next steps?

Note: Converted to Chloramine in 2006



CHAMPLAIN WATER DISTRICT
Dedicated to Quality Water & Service



First In The Nation ~ Excellence In Water Treatment, Partnership For Safe Water

Champlain Water District wins “Best of the Best” People’s Choice Water Taste Test

June 9, 2015

Vermont Water Supplier People’s Choice Award at American Water Works Association’s Annual Conference and Exposition

(ANAHEIM) – The American Water Works Association announced that the Champlain Water District (CWD) in South Burlington VT has won the 2015 “Best of the Best” People’s Choice Water Taste Test. The People’s Choice award winner, chosen and determined by the conference attendees, in a blind taste test, went to Champlain Water District of South Burlington, VT. The event was composed of regional AWWA Section winners from water-tasting

Champlain Water District honored for best tasting drinking water

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Public Health Review of Monochloramine

October 19, 2012

The Vermont Department of Health has conducted an extensive review of scientific literature on monochloramine .Health has determined that the use of monochloramine as a water disinfectant is not likely to result in adverse health effects. On the contrary, the Health Department believes that the use of monochloramine will reduce the concentration of regulated and possibly unregulated DBPs in drinking water. This reduction may contribute to fewer adverse health effects compared to drinking water treated with free chlorine as a disinfectant.

Chloramines in Drinking Water

Chloramines (also known as secondary disinfection) are disinfectants used to treat drinking water and they:

- Are most commonly formed when ammonia is added to chlorine to treat drinking water.
- Provide longer-lasting disinfection as the water moves through pipes to consumers.

Chloramines have been used by water utilities since the 1930s. More than one in five Americans uses drinking water treated with chloramines.

Water that contains chloramines and meets EPA regulatory standards is safe to use for:

- Drinking
- Cooking
- Bathing
- Other household uses

Many public water systems (PWSs) use chlorine as their primary disinfectant. However, some PWSs changed their secondary disinfectant to chloramines to meet disinfection byproduct requirements. Since then, consumers have raised questions about this switch in disinfection.

BASIC INFORMATION ABOUT CHLORAMINES

1) What are chloramines?

Chloramines are **disinfectants** used to treat drinking water.

- Chloramines are most commonly formed when ammonia is added to chlorine to treat drinking water.
- The most typical purpose of chloramines is to protect water quality as it moves through pipes.
- Chloramines provide long-lasting protection as they do not break down quickly in water pipes.

The different types of chloramines are monochloramine, dichloramine, trichloramine, and organic chloramines.

- When chloramines are used to disinfect drinking water, monochloramine is the most common form.
- Dichloramine, trichloramine, and organic chloramines^{1,2} are produced when treating drinking water but at much lower levels than monochloramine.
- Trichloramines¹ are typically associated with disinfected water used in swimming pools.

The Environmental Protection Agency regulates the safe use of chloramines in drinking water.³

- EPA requires water utilities to meet strict health standards when using chloramines to treat water.
- EPA chloramines regulations are based on the average concentration of chloramines found in a water system over time.
- EPA regulates certain chemicals formed when chloramines react with natural organic matter⁴ in water.

Additional Supporting Information:

1. Dichloramine is formed when the chlorine to ammonia-nitrogen weight ratio is greater than 5:1, however, this reaction is very slow. Organic chloramines are formed when chlorine reacts with organic nitrogen compounds. Source: *Optimizing Chloramine Treatment*, 2nd Edition, AwwaRF, 2004
2. Trichloramine formation does not usually occur under normal drinking water treatment conditions. However, if the pH is lowered below 4.4 or the chlorine to ammonia-nitrogen weight ratio becomes greater than 7.6:1, then trichloramine can form. Trichloramine formation can occur at a pH between 7 and 8 if the chlorine to ammonia-nitrogen weight ratio is increased to 15:1. Source: *Optimizing Chloramine Treatment*, 2nd Edition, AwwaRF, 2004
3. The drinking water standard for chloramines is 4 parts per million (ppm) measured as an annual average. More information on water utility use of chloramines is available at <http://www.epa.gov/safewater/disinfection/index.html> and in the 1997-1998 Information Collection Rule, a national survey of large drinking water utilities for the Stage 2 Disinfection Byproducts Rule (DBPR). Information on the Stage 2 DBPR is available at <http://www.epa.gov/safewater/disinfection/stage2/>. More information on EPA's standard setting process may be found at <http://www.epa.gov/OGWDW/standard/setting.html>.
4. *Natural Organic Matter*: Complex organic compounds that are formed from decomposing plant, animal and microbial material in soil and water. They can react with disinfectants to form disinfection by products. Total organic carbon (TOC) is often measured as an indicator of natural organic matter.