IS CHLORAMINE DISINFECTION SAFE? IS IT A PROVEN TREATMENT METHOD? Yes to both questions. The U.S. Environmental Protection Agency (EPA) accepts chloramines as a disinfectant and recognizes its ability to control the formation of disinfection by-products. There are many cities and towns throughout the country that use chloramines for disinfection.

Chloraminated water is safe for bathing, drinking, cooking and other everyday uses. The vast majority of customers will not be affected by this change. However, there are two groups of people who need to take special care with chloraminated water: kidney dialysis patients and persons who keep fish, aquatic or semi-aquatic life.

HOW WILL THE CHANGE TO CHLORAMINES DISINFECTION AFFECT ME? Your drinking water will have fewer disinfection by-products and less of a chlorine taste and odor. Most customers will not observe any difference, other than some reduction in the swimming pool smell they may have experienced when drinking a glass of water. Some centers and hospitals providing kidney dialysis and individuals, commercial establishments and laboratories maintaining fish tanks will have to ensure that the pretreatment steps they currently use to remove free chlorine are adjusted to also remove chloramines. For example, activated carbon filtration or water treatment products that neutralize chloramines may be used. If you use an activated carbon filter, it must contain high quality granular activated carbon and you must permit sufficient contact time.

WILL REVERSE OSMOSIS TREATMENT UNITS REMOVE CHLORAMINE? No, like free chlorine, chloramines may pass through reverse osmosis membranes.

DO HOME WATER SOFTENERS REMOVE CHLORAMINES? No, like free chlorine, most softeners are not designed to remove chloramines.

WHAT ABOUT FISH TANK OWNERS? Fish tank owners, including hobbyists, restaurants and fish markets who now treat for free chlorine in the water should assure that they have appropriate activated carbon filtration equipment or use water treatment products that neutralize chloramines. These products are readily available through pet and aquarium stores and companies that service commercial fish tanks.

ARE KOI FISH AFFECTED BY CHLORAMINES LIKE OTHER FISH? Yes, Koi are just as susceptible to being harmed by chloramines as other fish.

ARE SALTWATER FISH AFFECTED BY CHLORAMINES? Yes.

DOES LETTING WATER SIT FOR A FEW DAYS REMOVE CHLORAMINES FROM TANKS OR POND WATER? No. Unlike free chlorine, which dissipates when water sits for a few days, chloramines may take weeks to dissipate.

WILL CHLORAMINES AFFECT THE WAY I TREAT MY SWIMMING POOL? No. You will still need a free chlorine residual to retard algae and bacteria growth.

HOW ARE KIDNEY DIALYSIS PATIENTS AFFECTED BY CHLORAMINES? Chloramines can diffuse through the reverse osmosis membrane filters used by some hemo-dialysis machines, and patients undergoing kidney dialysis could be adversely affected. To prevent this, dialysis equipment must be adjusted to remove chloramines and the treated water must be monitored to measure the final total combined chloramines concentration. Dialysis facilities will need to review their dialysis treatment equipment to determine its continued safe operation.

WHAT IS CWD DOING TO ENSURE THAT KIDNEY DIALYSIS CENTERS ARE PREPARED? CWD has notified and continues to follow-up with medical centers throughout the water distribution system areas about the coming change to chloramines disinfection. CWD notified our customers using our July 2005 Water Quality Report and mailed fact sheets directed to certain groups in December 2005. We will be using a combination of pamphlets, direct phone calls, and press releases in the coming months to help ensure all customers are aware of the pending change.

WHAT SHOULD PEOPLE WITH HOME DIALYSIS MACHINES DO TO REMOVE CHLORAMINES? Check with your physician. Often, home dialysis service companies can make the needed modifications.

IS IT SAFE FOR KIDNEY DIALYSIS PATIENTS TO DRINK WATER CONTAINING CHLORAMINES? Yes. Since the digestive process metabolizes chloramines before it reaches the bloodstream, everyone can drink chloraminated water. Kidney dialysis patients can drink, cook and bathe in chloraminated water. It is only when water interacts directly with the bloodstream, as in dialysis or in a fish's gill structure, that chloramines must be removed.

CAN CHILDREN AND PREGNANT WOMEN DRINK CHLORAMINATED WATER? Yes, everyone can drink water containing chloramines.

CAN I USE CHLORAMINATED WATER TO PREPARE MY BABY'S FORMULA? Yes.

CAN PEOPLE ON LOW-SODIUM DIETS OR WITH DIABETES USE CHLORAMINATED WATER? Yes, people with those medical problems can use chloraminated water.

IS IT OKAY TO WASH CUTS AND SCRAPES WITH CHLORAMINATED WATER? Yes, like water with free chlorine, chloraminated water is useful in cleaning these types of injuries.

WHO CAN I CALL IF I HAVE MORE QUESTIONS? Call the Champlain Water District at (802) 864-7454 if you have any questions.

WHY ARE WE SWITCHING TO CHLORAMINES?

Currently we use a free chlorine residual as a primary and secondary means to disinfect the water we supply to our customers. The conversion to a combined chloramines residual will change our secondary process only. This change is intended to provide better quality water to further control disinfection by-product formation and to maintain a stable disinfection residual through our twelve served municipal distribution systems.

WHAT IS THE DIFFERENCE BETWEEN FREE CHLORINE AND CHLORAMINES?

A free chlorine residual is a disinfectant that is added to the drinking water at the treatment plant using sodium hypochlorite. The free chlorine then stays in the water at a low concentration throughout the distribution system to keep the water safe by protecting against biological and microbial growth.

A combined chloramines residual is a type of disinfectant created by adding ammonium sulfate, a food-grade substance, to the water after sodium hypochlorite. CWD has invested in the use of ammonium sulfate technology to safely form a chloramine residual. Like chlorine, chloramines keep the water safe by protecting against biological and microbial growth throughout the distribution system, and chloramines produce many fewer disinfection by-products.

WHEN WILL THE CHANGE TO CHLORAMINES TAKE PLACE?

CWD is currently installing new feed equipment that will provide for the use of chloramines. However, the new equipment will not be used until the combined chloramines process starts to be implemented on April 10, 2006. This is to provide plenty of time for customers and each served community to understand and prepare for this change in disinfection method.

In the Spring of 2006, Champlain Water District (CWD) will begin using a combined **chloramines residual**, rather than a free chlorine residual, as its post disinfectant residual in drinking water supplied to its county service area. This service area includes the following municipal water systems:

- **Shelburne**
- **South Burlington**
- **Williston**
- **Essex Junction**
- **Essex**
- **Jericho Village**
- **Milton**
- **Winooski**
- **Mallets Bay Water Company**
- **Colchester Town**
- **Colchester Fire District #1**
- **Colchester Fire District #3**

CWD plans to start implementing this combined chloramines process on April 10, 2006.

Champlain Water District
403 Queen City Park Road
South Burlington, VT 05403
(802) 864-7454

prepared by: Weston&Sampson
printed on recycled paper

Questions & Answers about Our Upcoming Change to Disinfection Using Chloramines

Here are some questions regarding the upcoming change in our method of disinfection from a "free chlorine" residual to a combined "chloramines" residual in order to improve drinking water quality, and how the change may affect you, our customers.

PARTNERSHIP FOR SAFE WATER

Champlain Water District

Safe drinking water… all the way to your tap.