Champlain Water District
Water Quality 2018

Safe Drinking Water
All the Way to Your Tap

First Place
American Water Works Association
"Best of the Best"
in North America Taste Competition
WHAT ARE THE USEPA REGULATIONS?

CWD’s philosophy has always been to go beyond Federal and State requirements to protect public health as we continue to meet all present Federal and State water quality standards. In order to our customers to understand these standards, there are some important USEPA definitions to learn:

- Maximum Residual Disinfectant Level Goal (MRDLC) – The level of drinking water disinfectant above which there is no known or expected risk to health. The MRDLC for Monochloramine is 4 mg/L.
- Maximum Residual Disinfectant Level (MRDL) – The highest level of a disinfectant allowed in drinking water. Addition of a disinfectant maintains sanitary quality. The MRDL for Monochloramine = annual average of 4.0 mg/L.
- Maximum Contaminant Level (MCL) – the highest level of a contaminant that is allowed in drinking water.
- Maximum Contaminant Level Goal (MCLG) – level of a contaminant in drinking water below which there is no known or expected risk to health.
- MCLs and MCLGs are set by USEPA after extensive research and public comment. MCLs define a safe water supply by setting levels a trace contaminant may not exceed. MCLGs are set as close to the MCLG as feasible using the Best Available Technology.
- Action level - the concentration of a contaminant which triggers treatment or other requirements that a water system must follow.
- 90th Percentile - Ninety percent of the samples are below the action level. (Nine of ten samples were at or below this level).
- Nephelometric Turbidity Unit (NTU) - NTU is a measure of the clarity of water. Turbidity in excess of 5 NTU is just visually noticeable to the average person. A turbidity of 1 NTU is approximately equal to the amount of light scattering caused by one suspended particle in each liter of water.
- Parts per million (ppm) or Milligrams per Liter (mg/L) - one penny in ten thousand dollars or 1 second in 32 years.
- Pico-curies per liter (pCi/L) - a measure of radioactivity in water.

Treatment Technique: USEPA requirement for water suppliers to install and optimize water treatment processes that are intended to reliably remove a required percentage for a specific possible contaminant.

Treatment techniques are set by USEPA when monitoring technology cannot precisely detect certain contaminants. In cases, a surrogate measurement is used to determine compliance in a reliably operated treatment facility. An example is the use of turbidity to indicate microbial protection in a treatment plant (Turbidity is a good indicator of the effectiveness of the disinfectant, the filtration, and the general quality of the water.)

USEPA wants you to know that the presence of certain contaminants in drinking water does not necessarily indicate that the drinking water poses a health risk USEPA and the State of Vermont prescribe regulations which limit the amount of certain contaminants in water provided by the public water system. CWD monitors for all regulated trace contaminants (including naturally occurring radioactivity) on specific schedules as required by USEPA. USEPA never expresses results of water monitoring as “zero”. Scientifically, it is impossible to measure “zero”. Therefore, USEPA requires every trace substance to be analyzed using an approved method with a required detection limit.

When no trace substance is found, then it is expressed as “none detected = ND”

CWD monitors for these trace chemicals even though they are extremely unlikely to be present in CWD’s source because of the characteristics of CWD’s 333,000 gallon deep water Shelburne Bay source. CWD has monitored 157 trace substances for many years according to the schedules established by the USEPA and has received all non-detect test results for 2017.

To receive a listing of these specific undetected contaminants – contact CWD and ask for the latest specific non-detect report.

IN PROVIDING A SAFE, HIGH QUALITY WATER THERE ARE SEVERAL CHARACTERISTICS THAT A WATER SUPPLIER SHOULD MEET:

1. Sanitary quality - bacteriological, viral and protozoan quality that is assured by consistent and efficient filtration, and, by primary free chlorine disinfection and secondary monochloramine disinfection. This is the primary goal of any water supplier as consumers cannot reliably achieve this protection with home treatment devices.

2. USEPA requires all water systems, regardless of the type of source and treatment, to provide this information:

   - Maximum contaminant levels (MCLs) indicate that the drinking water poses a health risk. USEPA believes that drinking water, including bottled water, may reasonably be expected to contain at least trace amounts of contaminants. More information about contaminants and associated health risks can be obtained by calling CWD or the Safe Drinking Water Hotline.

   - Water Quality 2018 reports data from calendar year 2017.

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     2. USEPA requires all water systems, regardless of the type of source and treatment, to provide this information:
Service areas include:

- 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

CHAMPLAIN WATER DISTRICT WATER PROCESS

Did you know?

- your water, was selected as “The Peoples Choice - Best of the Best in North America” in a taste test competition among 40 regional taste winners in North America.
- your water, in 2014 was selected as “Best Tasting in New England” in a regional taste competition, and in both 2015 and 2016 won best surface water and best overall at the Vermont Rural Water Association Taste Competition.
- your water supplier was the first in the nation to receive the Fifteen Year Anniversary Excellence in Treatment Award from the Partnership for Safe Water for demonstrating superior water quality each year in complying with the Safe Drinking Water Act.
- your water supplier received the 2007 “Utility of the Year Award” and the year 2012 “Utility Service Award” from New England Water Works Association.
- your water supplier received the Grand Award for Engineering Excellence from the American Council of Engineering Companies for the design and implementation of the secondary disinfection project and for its 2012 Energy Savings Scoping Study.

Public Involvement: CWD is governed by a Board of Commissioners publicly elected from each member community. Public Board meetings are held at 12 noon the second Tuesday of each month.
Protozoan and virus protection is provided through optimized filtration and primary disinfection. When evaluating a water supplier for proper protozoan virus treatment, the obtained Shelburne Bay Deep filtration processes should remove and destroy 99.5% of cysts and 99.99% of viruses. The treatment removal/ inactivation graph below shows that CWD surpasses these treatment requirements.

USEPA believes some people may be more vulnerable to contaminants in drinking water than the general population. Cryptosporidium and Giardia are microbial parasites that can be found in surface water throughout the U.S. Although filtration removes Cryptosporidium, the most commonly used filtration methods cannot guarantee 100 percent removal. This is why CWD continues to upgrade and optimize its water treatment processes. USEPA turbidity standard is for all the combined. CWD’s turbidity goal is at stricker and is for each individual CWD. CWD’s continued use of the state art laboratory counting technology continues to allow each process filter to be optimized at removing particles at a size less than 2 microns (about 1/13,000th of an inch) in size.

USEPA requires that CWD monitors every 4 months for the six (6) PFCs including PFoA and PFoS. CWD began this monitoring in 2014. None of the PFCs have been detected in CWD water.

CWD monitors for naturally occurring radionuclides according to USEPA methods, and steps you can take to minimize exposure is available from the laboratory was unable to tell if their detection was due to the client sample or the lab/sampling process.

For more info on stormwater measures go to: www.smartwaterways.org

This graph shows how CWD untreated source water contains very low numbers of sanitary bacterial indicators even when comparing with levels USEPA says are allowable in bathing beach water. Of course, CWD finished water is free of any bacteriological indicator organisms.

CWD’s RADIONUCLIDES MONITORING CWD monitors for naturally occurring radionuclides according to USEPA requirements. This table shows those monitored and the background levels detected. Radionuclides are at background levels due to erosion of natural deposits.

CWD’s DIOXIN/FURAN MONITORING This follow up monitoring started in October 2016. All CWD inactives and all CWD’s systems have the following objectives:

CWD’S SOURCE QUALITY

Many of the people who live along Shelburne Bay, and the streams flowing into Shelburne Bay, do not realize that their homes, yards, and parks are served by the “Shelburne Bay Watershed.” By protecting the Shelburne Bay watershed, residents help protect the quality of CWD’s deep Shelburne Bay source. The streams that make up this water include the Lapham Fork, Potsah Brook, North Brook, Munroe Brook, McBean Brooks, Cabot Brook, and Bartlett Brook. CWD’s water source is far off shore in Shelburne Bay. CWD invested in this intake source area because it is well away from potential sources of contamination. Shelburne Bay holds 33 billion gallons of water. CWD’s Watershed Management Program for Source Protection has the following objectives:

CWD’S LEAD & COPPER TREATMENT

CWD adds 0.08 to 0.18 mg/L of zinc and from 0.8 to 1.8 mg/L of phosphates to reduce lead and copper leaching from individual plumbing.

If present, elevated levels of lead can cause serious health problems, especially for infants and young children. Drinking water is primarily from materials and components associated with service lines and home plumbing. CWD is responsible for providing high quality drinking water, but cannot control the variety of materials used in home plumbing components. Lead in drinking water is from materials associated with home plumbing installed prior to 1987. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using your water for drinking or cooking.

If you are concerned about lead in your drinking water, you may have the water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at www.epa.gov/safe-water/lead.

CWD’S SANITARY QUALITY (continued)

In providing a safe, high quality water there are several characteristics that a water system must follow. USEPA REQUIRES TREATMENT QUALITY

MUNICIPAL SERVED

This is the most common of disinfectants, with chlorine and monochloramine as annual average of 4.0 mg/L. USEPA REQUIRES TREATMENT REMOVAL / INACTIVATION

TURBIDITY

This is the amount of particulate matter that is suspended in the water. The turbidity level is expressed in NTU (Nephelometric Turbidity Units). The USEPA standard is 5 NTU. CWD monitors this parameter quarterly.

CWD’S GIARDIA AND CRYPTOSPORIDIUM TESTING CWD conducted the required Giardia and Cryptosporidium monitoring from April 2008 to December 2010 as required under USEPA’s Rules. CWD is conducting round 2 monitoring as specified by USEPA. This follow up monitoring started in October 2016. All CWD inactives and all CWD’s systems have the following objectives:

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If present, elevated levels of lead can cause serious health problems, especially for infants and young children. Drinking water is primarily from materials and components associated with service lines and home plumbing. CWD is responsible for providing high quality drinking water, but cannot control the variety of materials used in home plumbing components. Lead in drinking water is from materials associated with home plumbing installed prior to 1987. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using your water for drinking or cooking.

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**ADDITIONAL INFORMATION**

CWD contacts: 802-864-7454 • www.champlainwater.org  
Jim Fay – General Manager  
Michael G. Barsotti- Director - Water Quality & Production  
mike.barsotti@champlainwater.org  
USEPA Safe Drinking Water Hotline  
(provides information on potential health effects and how to lessen infection risk from Cryptosporidium and other biological contaminants)
1-800-426-4791  
Vermont 2-1-1, for health and human services information and referral 2-1-1  
Vermont DEC Drinking Water & Groundwater Protection Division 1-802-828-1535  
Vermont Dept of Health, Division of Environmental Health 1-802-652-0357  
Municipal water systems served by CWD:  
VT 0005087 Town of Shelburne 985-5122  
VT 0005091 City of South Burlington 864-4361  
VT 0005098 Town of Williston 878-1239  
VT 0005066 Village of Essex Junction 878-6944  
VT 0005065 Town of Essex 878-1344  
VT 0005058 Colchester Fire District #1 654-2872  
VT 0005060 Colchester Fire District #3 878-4337  
VT 0005077 Village of Jericho 899-2938  
VT 0020333 Mallets Bay Water Co. 864-7454  
VT 0005079 Town of Milton 893-6030  
VT 0005102 City of Winooski 655-6419  
VT 0005552 Colchester Town 864-7454  
Champlain Water District  
403 Queen City Park Road  
South Burlington, VT 05403

**AVAILABLE CWD PUBLICATIONS**

Modeling Storage and the Inlet Reconfiguration, AWWA International Retention Time Management Symposium 2002.  
CWD Lead Public Information Flyer.  
Planning and Maintaining Compliance with the Lead and Copper Rule when Making a Disinfectant Change, 2012 NEWWA Water Quality Symposium, May 2012.  
Success Stories from Phase III Self-assessments, 2013 AWWA Annual Conference, June 2013.  
Achieving and Maintaining the Phase IV Excellence in Water Treatment Award, 2017 AWWA ACE, June 2017

**PUBLIC NOTICE - IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER FROM 2017**

Quarterly Disinfection by-product (DBP) Monitoring Requirement Not Met for Champlain Water District (CWD)

CWD recently violated a drinking water monitoring requirement for disinfection by-products (DBPs) during the January through March 2017 quarterly monitoring timeframe. Samples were inadvertently collected on February 1, 2017 rather than during January 1 through 31, 2017. Even though this was not an emergency, as our customers, you have a right to know what happened and what we did to correct this situation.

CWD is required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not our drinking water meets health standards. During January of 2017, CWD did not monitor or test for Stage 2 Disinfection by-products and therefore cannot be sure of our drinking water quality during that time. Given CWD's change in secondary disinfection in 2006, the District has been meeting the goal levels for disinfection by-products given our optimized water treatment process. Samples taken on February 1, 2017 met federal drinking water standards and therefore, we believe public health is being adequately protected.

CWD collects very detailed data for surrogate parameters that show the Disinfection By-Product formation potential of the water entering the water system (temperature and UV adsorption(UV AS)). After realizing that the DBP samples had been inadvertently collected just after the end of the official monitoring period on February 1st, CWD reviewed our extensive database for temperature and UV adsorption(UV AS). CWD's data review showed that the: 1) UV AS (average) for January 2017 and for February 1, 2017 were the same at 0.023, and 2) the temperature (average) for January 2017 was 38 Deg-C and for February 1, 2017 was 37 Deg-C, both very similar. This data review strongly indicated that the DBP results from the samples collected on February 1, 2017 serve as useful, accurate indicators of conditions during the January 2017 timeframe.

What should I do? Review the above information. There is nothing you need to do at this time.

The table below lists the contaminants we did not test for during January 2017, how often and when we are supposed to sample, when and how many samples we actually collected.

<table>
<thead>
<tr>
<th>CONTAMINANT</th>
<th>REQUIRED SAMPLING PERIOD</th>
<th>ACTUAL SAMPLING PERFORMED ON</th>
<th>NUMBER SAMPLES REQUIRED</th>
<th>NUMBER SAMPLES ACTUALLY COLLECTED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage 2 Disinfection-By-Products</td>
<td>January 2017</td>
<td>February 1, 2017</td>
<td>14</td>
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</tr>
</tbody>
</table>

For more information, please contact Michael G. Barsotti Director- Water Quality & Production at 802-864-7454 (102) or Champlain Water District, 403 Queen City Park Road, South Burlington, Vermont 05403

Please share this information with all the other people who drink this water, especially those who may have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

Please open to find Champlain Water District’s latest water quality report.
Employers should provide enclosed information to their employees and landlords to their tenants.

Extra copies are available at no charge by contacting CWD or CWD served systems.