

Champlain Water District

Water Quality 2024

Safe Drinking Water
All the Way to Your Tap



PWS ID#: VT0005092



First in the Nation

24th Year Anniversary - Excellence in Water Treatment Award!

In 2023, Champlain Water District's Peter L. Jacob Water Treatment Facility continued to maintain the highest degree of treatment process optimization and has maintained the elite "Excellence in Water Treatment" status for 24 years from 1999 to 2023. CWD was the first water utility in the country to receive USEPA's Excellence in Water Treatment Award from the Partnership for Safe Water. To date, a total of 19 water suppliers in the U.S. have attained this pinnacle of public health protection. We invite school and community groups to visit our treatment facility, view this prestigious award, and learn about their drinking water "from source to tap." Water Quality 2024 reports data from calendar year 2023.

The Champlain Water District (CWD) works very hard to assure safe, high quality drinking water is delivered to its customers. We accomplish this by:

- protecting Shelburne Bay as the deep water source that supplies the water,
- treating the water with state-of-the-art filtration, disinfection and corrosion control at the Peter L. Jacob water treatment plant,
- assuring corrosion control and disinfection by-product control throughout the county-wide service area.

This year's Water Quality Report features CWD's Best Tasting Water in New England Award.

Please turn to the report cover to view this award

The water that CWD provides throughout Chittenden County - as far North as Milton, as far East as the Village of Jericho, and as far South as Shelburne - is of the highest quality and serves many uses for CWD's 83,500 customers and many of the area's major employers such as Global Foundries and Husky.

Regulatory Corner

Maximum Residual Disinfectant Level (MRDL)

Maximum Contaminant Level (MCL)

Treatment Technique

Regulation of Contaminants



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 for our customers to understand these standards, there are some important USEPA definitions to learn:

- ▶ **Maximum Residual Disinfectant Level Goal (MRDLG)** – The level of drinking water disinfectant below which there is no known or expected risk to health. The MRDLG 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, MCLs 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 sites sampled 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.
- ▶ **Parts per million (ppm) or Milligrams per Liter (mg/l)** - one penny in ten thousand dollars or 1 second in 11.6 days.
- ▶ **Parts per billion (ppb) or Micrograms per Liter (ug/l)** - one penny in ten million dollars or 1 second in 32 years.
- ▶ **Picocuries per liter (pCi/l)**- a measure of radioactivity in water.
- ▶ **Treatment Technique-** a 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 these 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 protozoan removal in a treatment plant. (Turbidity is a good indicator of the effectiveness of the disinfectant, the filtration, and the general quality of the water.)
- ▶ **Level 1 & 2 assessments:** Are studies of the water system triggered by monitoring results. The studies look to identify potential problems and determine why total coliform bacteria have been found in the water system (Level 1) or why an E.coli violation has occurred and/or why total coliform bacteria have been found in the water system on multiple occasions (Level 2). Level 2 is a very detailed study.
- ▶ **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."
- ▶ **Per- and polyfluoroalkyl substances (PFAS):** a group of over 4,000 human-made chemicals (they do not occur naturally) that have been used in industry and consumer products worldwide and includes:
 - (PFNA): Perfluorononanoic Acid
 - (PFOA): Perfluorooctanoic Acid
 - (PFOS): Perfluorooctane Sulfonic Acid
 - (PFHpA): Perfluoroheptanoic Acid
 - (PFHxS): Perfluorohexane Sulfonic Acid
 - (11Cl-PF3OUdS): 11-Chloroicosafuoro-3-oxaundecane-1-sulfonic Acid
 - (9Cl-PF3ONS): 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic Acid
 - (DONA): 4,8-Dioxa-3H-perfluorononanoic Acid
 - (HFPO-DA): Hexafluoropropylene Oxide Dimer Acid
 - (NEtFOSAA): N-ethyl perfluorooctanesulfonamidoacetic Acid
 - (NMeFOSAA): N-methyl perfluorooctanesulfonamidoacetic Acid
 - (PFBS): Perfluorobutane Sulfonic Acid
 - (PFDA): Perfluorodecanoic Acid
 - (PFDoA): Perfluorododecanoic Acid
 - (PFHxA): Perfluorohexanoic Acid
 - (PFTA): Perfluorotetradecanoic Acid
 - (PFTrDA): Perfluorotridecanoic Acid
 - (PFUnA): Perfluoroundecanoic Acid
- ▶ 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 33.3 billion gallon deep water Shelburne Bay source. CWD has monitored trace substances for many years according to the schedules established by the USEPA and has received all non-detect test results for 2023.
- ▶ CWD has also sampled for a series of contaminants including 29 PFAS chemicals under EPA's fifth Unregulated Contaminants Monitoring Rule (UCMR5). All samples taken in 2023 were non-detects.
- ▶ **To receive a listing of these specific undetected contaminants – contact CWD and ask for the latest specific non-detect report.**

Water Characteristics

Immuno-compromised persons read this!



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

SANITARY QUALITY

SOURCE QUALITY

DISINFECTANT BY-PRODUCT QUALITY

AESTHETIC QUALITY



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.

CWD wants immunocompromised persons (ICP's) to know that they may be particularly at risk from infections and should seek advice from their health care providers. ICP's include:

1. Those undergoing chemotherapy or organ transplants.
2. Those with AIDS / HIV or other immune system disorders.
3. Some elderly.
4. Infants.
2. Source quality - the cleaner a water supplier's source, the more effective a water supplier's treatment process is at producing high quality water. Common sense tells us that if you have high quality untreated water going into a facility, then you will have the highest quality finished water leaving that facility. This is important for sanitary and trace chemical considerations. Home owners cannot reliably treat poor quality source waters on their own.

In general, USEPA wants you to know that, depending on the condition of any water source and its watershed area, some untreated source water may be impacted by the following contaminants:

1. Biological (Viruses & Bacteria).
2. Inorganic (Metals & Salts).
3. Synthetic organic chemicals (Pesticides, Herbicides, Volatile Organic Chemicals).
4. Naturally occurring radioactivity.
3. Disinfectant-by-product quality - primary disinfection with free chlorine is essential to assure sanitary water. This disinfection process does create by-products (DBPs) that impact the finished water. All water suppliers must deal with the balancing of sanitary benefits and DBP risks from primary free chlorine disinfection. DBPs may be reduced by the consumer using treatment devices approved by NSF International for TTHM reduction, and only if these devices are installed, used and continually maintained according to manufacturer's instructions.
4. Aesthetic quality - aesthetic considerations also determine the acceptability of a water supply. Distribution system management may impact water taste and odor. Taste/odor is relatively easy to reduce by the consumer using properly installed and maintained NSF approved treatment devices.

VIOLATIONS THAT OCCURRED DURING THE YEAR: Champlain Water District had no regulatory violations during the year 2023.

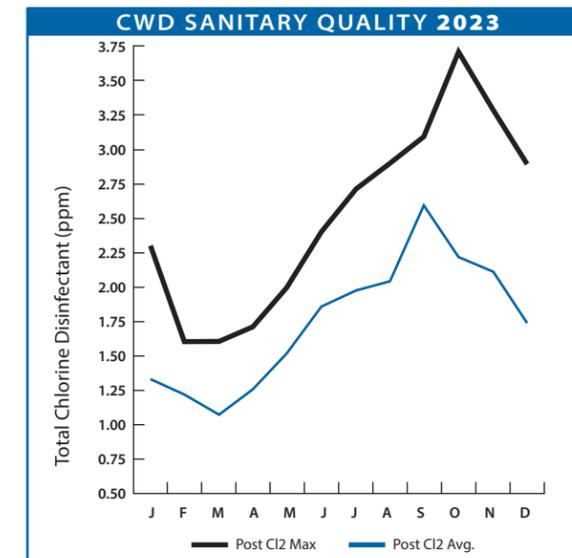
USEPA believes that drinking water, including bottled water, may reasonably be expected to contain at least trace

amounts of contaminants. More information about contaminants and associated health risks can be obtained by calling CWD or the Safe Drinking Water Hotline.

CWD's SANITARY QUALITY

When evaluating a high quality water you should look for:

- a) a monochloramine residual of at least 0.1 mg/L but not more than 4.0 mg/L (MRDL),
- b) median heterotrophic plate count (HPC) of less than 500 cfu/ml, and
- c) total coliform absent 95% of the time.
- d) less than 0.10 ntu turbidity from each filter.



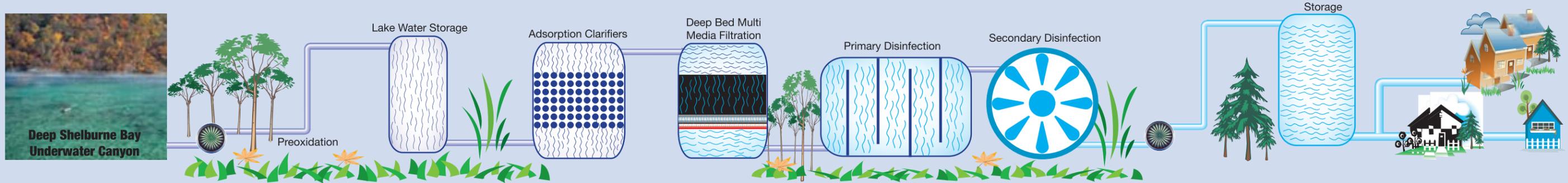
This graph shows that CWD's monochloramine disinfectant residual stays consistent throughout the year and is well below the USEPA allowable level for monochloramine residual of 4.0 mg/L.

The data from the table below shows that, even during warm water conditions experienced during June through October, the sanitary quality of CWD water is excellent with very low HPC levels and total coliforms absent 99.8% of the time.

2023 Month	AVG / WATER TEMP / DEG-F	MEDIAN HPC COUNT (STD=<500)	TOTAL COLIFORM (STD ABSENT 95% OF THE MONTH)
January	47	4	Absent 100%
February	44	4	Absent 100%
March	44	6	Absent 100%
April	45	6	Absent 100%
May	51	4	Absent 100%
June	57	3	Absent 100%
July	62	6	Absent 99%
August	64	4	Absent 99%
September	65	5	Absent 100%
October	63	7	Absent 100%
November	57	5	Absent 100%
December	51	3	Absent 100%

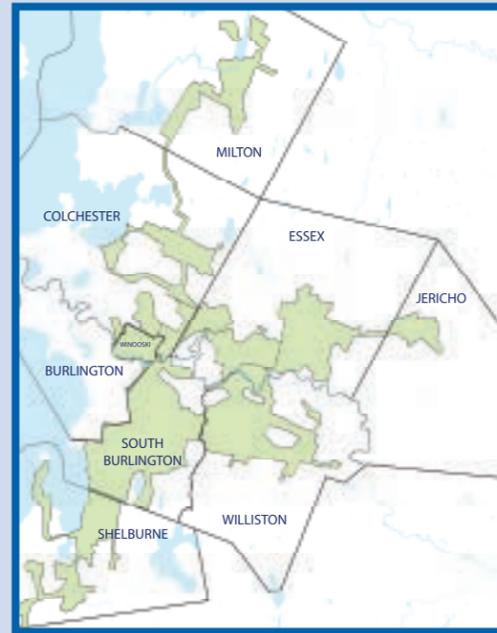
Date of Positive: 7/5/2023 & 8/1/2023 in South Burlington. Detected Level/year: Present 2 out of 1362 samples. Absent 99.8 % of year.

CHAMPLAIN WATER DISTRICT WATER PROCESS



Service areas include:

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



Did you know?

- ▶ Your water, in 2014, 2022, and again in 2023 was selected as “Best in New England” in a regional taste competition. In 2022, your water won best surface water at the Vermont Rural Water Association Taste Competition.
- ▶ In 2021, CWD’s Mat Cunninham received the Andrew D. Fish Laboratory Excellence Award.
- ▶ Your water supplier received the 2020 “Utility of the Year Award” from New England Water Works Association.
- ▶ Your water supplier in 2019 was the first in the nation to receive the Twenty 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, 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 supplier received the 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 third Tuesday of each month.



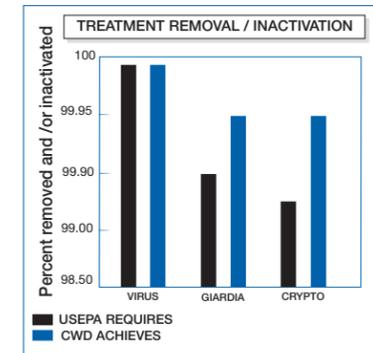
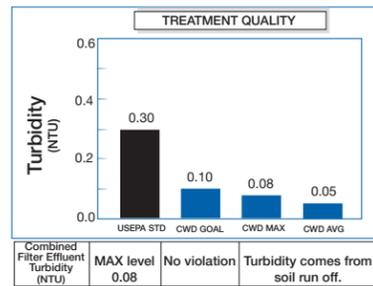
CWD TIMELINE

<p>1966 Initial organizational meetings to discuss a regional approach to drinking water supply in Chittenden County</p> 	<p>1971 Chartered by the State of Vermont as a Municipal Consolidated Water District</p> 	<p>1972 Construction of multiple water transmission main projects completed to link all members of the newly created Water District</p>	<p>1973 Water Treatment Facility online supplying South Burlington, Shelburne, Williston, Essex Junction, Essex Town, Winooski & Colchester</p> 	<p>1980 CWD 20 Year Master Plan completed by Hamlin Consulting Engineers</p> 	<p>1989 Water Treatment Facility Expansion (2 additional Deep Bed Filtration Units, Retrofit of (2) Adsorption Clarifiers, and a 1MG Disinfection Contact Tank)</p>	<p>1991 Milton & Village of Jericho join CWD</p>	<p>1992 Construction of a second 24" diameter High Service Transmission Main from Treatment Plant to the intersection of Route 15 & Woodside Drive</p>	<p>1993 CWD Treatment Facility dedicated to Peter L. Jacob, who was instrumental in the formation of CWD, and also served as the long-term Chair of the publicly elected CWD Board of Water Commissioners</p> 	<p>1995 Initiated zebra mussel treatment for source lake water supply</p>	<p>1999 CWD receives First in the Nation “Excellence in Water Treatment Award” from the Partnership for Safe Water Program</p> 	<p>1999 Water Treatment Facility expansion, an additional (third) Adsorption Clarifier is constructed and two additional Deep Bed Filtration Units are added</p>	<p>2002 Water Treatment Facility expansion, and additional (eighth) Deep Bed Filtration Unit is constructed</p>	<p>2002 CWD 20 Year Master Plan completed by Dufresne & Associates, PC</p> 	<p>2003 Completed (14) projects recommended in CWD’s 20 Year Master Plan related to improved pumping, treatment, electrical and Facility HVAC/Dehumidification</p>	<p>2004 5 Year Anniversary Award for maintaining Partnership for Safe Water “Excellence in Water Treatment” criteria for public health protection</p>	<p>2005 Completed construction of primary and secondary electrical supply reliability upgrades for treatment facility and lake water source pumping station</p>	<p>2008 Construction completed on a second lake intake pipe for overall reliability and redundancy</p> 	<p>2011 Began phased installation of two (2) miles of High Service “Cross-tie” transmission piping for overall reliability purposes</p> 	<p>2013 CWD celebrates 40th anniversary of providing safe drinking water and fire protection to (12) served municipal water systems in Chittenden County</p>	<p>2016 2016 Construction Completed on upgrade to high service pump discharge piping</p>	<p>2017 2017 Construction completed on new finished water storage tank at the Plant</p>	<p>2017 Completed construction of High Service “Close-In” Cross tie for increased reliability</p>	<p>2019 20 Year Anniversary Award for maintaining Partnership for Safe Water Treatment “Excellence in Water Treatment” criteria for Public Health protection</p>	<p>2021 CWD acquired ownership of Colchester Fire District 1 distribution system</p>	<p>2022 CWD acquired ownership of Colchester Fire District 3 distribution system</p>	<p>2023 Completed construction of Essex West Pump Station to improve turnover in the Essex West Tank and add redundancy and reliability in the transmission system</p>
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CWD's SANITARY QUALITY (continued)

Protozoan and virus protection is provided through optimized filtration and primary disinfection. When evaluating a water supplier for proper protozoan and virus treatment, the combined filtration and post-disinfection processes should remove and destroy 99.5% of *Cryptosporidium* oocysts, 99.9% of *Giardia* 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's turbidity standard is for all the filters combined. CWD's turbidity goal is much stricter and is for each individual filter. CWD's continued use of state of the art laser particle counting technology continues to allow each process filter to be optimized at removing particles larger than 2 microns (about 1/13,000th of an inch) in size.



CWD's GIARDIA AND CRYPTOSPORIDIUM TESTING

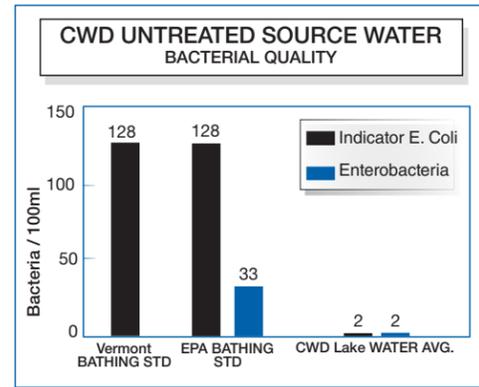
CWD completed the required Giardia and Cryptosporidium monitoring from April 2008 to December 2010 as required under USEPA's Rules. CWD has also conducted round 2 monitoring as specified by USEPA. This follow up monitoring was completed in September 2018. All CWD inactivation is performed using free chlorine as primary disinfectant.

CWD conducted several studies with Dr. Tom Manley of Middlebury College to determine the best strategic locations for our additional source water intake pipe. Results of these studies showed that CWD's 75 feet deep intake location to the northeast of White's Ridge along the Shelburne Bay Deep underwater canyon was the best location for a redundant intake pipe to assure adequate quantity and high quality of water into the future. This new 'south intake' was constructed in 2007 and placed into service in July 2008.

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 within an area called 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 watershed include the Laplatte River, Potash Brook, North Brook, Munroe Brook, McCabes 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:

- Characterize watersheds (all the rain and snow melt that enter a specific stream or river come from an area that is called that stream's "watershed") and the Shelburne Bay Source.
- Build partnerships toward improving lake water quality.
- Educate people about Shelburne Bay's role in providing drinking water.
- Limit degradation of the CWD source water.



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. Finished water nitrate result for 2023 was <0.50 mg/L. The MCL is 10.0 mg/L. Typical source of nitrate is runoff from fertilizer use and disinfection practices.

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.

RADIONUCLIDE	COLLECTION DATE	DETECTED	UNIT	MCL	TYPICAL SOURCE
Combined Radium	4/30/15	1.1	pCi/L	5	Erosion of Natural Deposits
Gross Alpha	6/6/11	0.73	pCi/L	15	Erosion of Natural Deposits
Radium-226	4/30/15	0.4	pCi/L	5	Erosion of Natural Deposits
Radium-228	4/30/15	0.65	pCi/L	5	Erosion of Natural Deposits

CWD's 2023 PFAS MONITORING

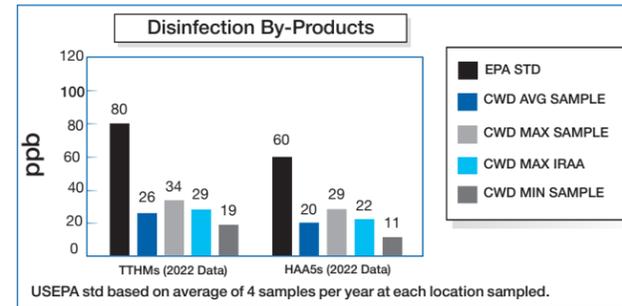
CONTAMINANT	DWG	DETECTED IN LAB FROM SAMPLE	DETECTION LIMIT OF TEST PROCEDURE	SOURCE OF OCCURRENCE
PFOA	20 ppt*	2.6 ppt	1.7 - 2.0 ppt	human made/industrial
PFOS	20 ppt*	ND	1.7 - 2.0 ppt	human made/industrial
PFNA	20 ppt*	ND	1.7 - 2.0 ppt	human made/industrial
PFHpA	20 ppt*	ND	1.7 - 2.0 ppt	human made/industrial
PFHxS	20 ppt*	ND	1.9 ppt	human made/industrial

ND = none detected in CWD water. *Combined concentration of any of these 5 PFAS should not exceed 20 ppt. <http://www.healthvermont.gov/health-environment/drinking-water/perfluorooctanoic-acid-pfoa>

Followup sampling of both source and finished water was performed and sample results were non-detect for PFOA and all other PFAS tested. Contact CWD if you are interested in more results, including PFAS not regulated by the Vermont Water Supply Rule.

CWD's DISINFECTANT BY-PRODUCT QUALITY

CWD maintains high quality drinking water, free from pathogenic (dangerous) bacteria, viruses, and protozoa while, at the same time, keeping disinfectant by-products (DBPs) to a minimum. USEPA continues to implement a stringent standard for two groups of compounds – known as total trihalo-methanes (TTHMs) and total haloacetic acids (HAA5s). CWD is fortunate to have extremely low natural levels of bromide in its source water as the brominated DBPs have been implicated as contributing the most risk. In 2018, USEPA required monitoring of 6 brominated HAAs which showed very low average levels of 2.2 ug/L with a range from 1.8 to 3 ug/L.



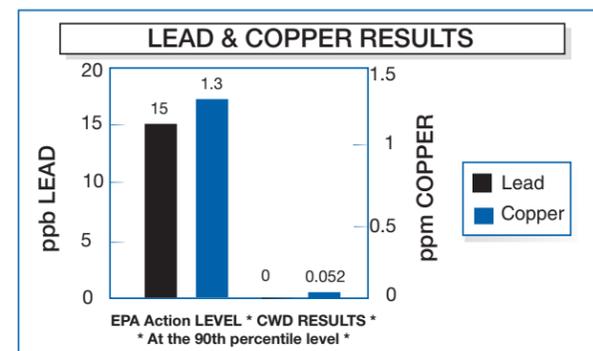
	MCL	Violation Yes or No	Average Detected	Range Detected	Maximum LRAA	Source
TTHMs	80 ppb	No	30 ppb	23-38 ppb	34 ppb	By-Product of Disinfection
HAA5s	60 ppb	No	22 ppb	17-26 ppb	24 ppb	By-Product of Disinfection

CWD uses monochloramine to significantly reduce TTHMs and HAA5s and continues to produce high quality, sanitary water. Locational running annual average (LRAA) - The average of sample analytical results for samples taken at a particular monitoring location during 4 consecutive calendar quarters.

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 phosphate to reduce lead and copper leaching from individual home plumbing. This program has been very effective and allowed CWD to become one of the first systems in Vermont to meet the USEPA action level for lead and copper leaching from home plumbing. CWD is required to extensively monitor 56 high risk sample sites for lead.

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in 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.



In 2022 (monitoring period 2020 to 2022), None (zero) of 56 first draw sample sites exceeded the USEPA action level for lead. The results of first draw sampling ranged from 0 to 1.5 ppb for lead. If your house contains leaded solder, flush your tap for 30 seconds to 2 minutes before using the tap water. None of the samples exceeded the action level for Copper and ranged from 0 to .082 ppm for Copper.

If you are concerned about lead in your drinking water, you may wish to have your 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](http://www.epa.gov/safewater/lead) or at <http://www.epa.gov/safewater/lead>.

CWD's AESTHETIC QUALITY

All of the different types of water quality presented - sanitary, source and DBP – interact and influence one another as well as affecting the aesthetic quality of the water, CWD's challenge - as for all water suppliers – is to manage all these aspects to produce high quality water. After CWD produces the water, it is distributed to 12 municipal water systems within nine served communities, the water systems then deliver the water to you, the consumer. The following table lists CWD aesthetic water conditions. These are parameters that are not based upon human health concerns, but affect how a consumer views their water supply.

AESTHETIC CONDITION	USEPA SECONDARY MCL	CWD TREATED WATER
ALUMINUM	0.20 ppm	0.061 ppm (0.000-0.090)
COLOR	15 UNITS	2 UNITS
ALKALINITY	N/A	61 ppm (48-73) AS CaCO3
CALCIUM HARDNESS	N/A	53 ppm (45-64) AS CaCO3
TOTAL HARDNESS	N/A	65 ppm as CaCo3 (3.6 GRAINS/GAL.)
CHLORIDE	250 ppm	22 ppm (20-24)
FOAMING AGENTS	0.5 ppm	LESS THAN 0.1 ppm
CONDUCTIVITY	N/A	204 uS (152-226)
pH	6.5-8.5 pH UNITS	7.63 units(7.38-7.84)
TOTAL DISSOLVED SOLIDS	500 ppm	113 ppm
IRON	0.3 ppm	LESS THAN 0.10 ppm
MANGANESE**	.05 ppm	0.002 ppm (0.000-0.005)
SODIUM	N/A	14 ppm
POTASSIUM	N/A	1.31 ppm
SULFATE	250 ppm	13 ppm (11-15)
SILVER	0.1 ppm	LESS THAN 0.005 ppm
SILICA	N/A	1.4 ppm
SILICON	N/A	0.67 ppm
BROMIDE	N/A	LESS THAN 0.010 ppm
IODIDE	N/A	LESS THAN 1.00 ppm
FLUORIDE ***	2 ppm	0.70 ppm (0.68-0.80)
AMMONIUM ION	N/A	0.09 ppm (0.01-0.89)

**Manganese has a Vermont Health Advisory level of 0.300 ppm
NOTE: Except for bacterial testing and process control testing, all CWD test analyses are conducted by independent certified laboratories. Bacteriological testing is conducted by CWD's on-site State and NELAC Certified Laboratory. CWD adds 0.6 ppm to the 0.1ppm within the lake water to end up with the CDC recommended 0.7 ppm of fluoride in the finished water. Fluoride is added for dental health under the Vermont Department of Health Fluoridation Program.

ADDITIONAL INFORMATION

CWD contacts: 802-864-7454 • www.champlainwater.org

Joe Duncan – General Manager

Travis Sheldon – Director of Water Quality Operations

travis.sheldon@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 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 0005065	Town of Essex	878-1344
VT 0005066	City of Essex Junction	878-6944
VT 0005058	Colchester Fire District #1	864-7454
VT 0005060	Colchester Fire District #3	864-7454
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

Watershed Management Program for Source Protection.

Cryptosporidium- The Filtration Challenge, New England Water Works Association (NEWWA) Journal, December 1999.

Applying Self assessment to Filter Optimization, American Water Works Association Opflow, February 1997.

Evaluation of Particle Counters Using Microscopic Counts, Journal of American Water Works Association, December 1997.

Count Matching In-Situ Particle Counts to Scanning Electron Microscopic Counts for Treatment Facility Control, AWWA, 1998 Water Quality Technology Conference.

Why a Water Utility Should Join the National Initiative Entitled Partnership for Safe Water, NEWWA Annual Conference, September 1998 and Reseau Environnement, St. Hyacinthe, Quebec, March 2000, NEWWA Journal, June 2000. AWWA Annual Conference 2004.

Surface Water Source Characterization to Overcome Operational Complacency and Aid Source Delineation, 1999 Water Quality Technology Conference, November 1999.

Investigating and Controlling HAA5s Within a Complex Transmission System, 2000

Water Quality Technology Conference, October 2000.

Exploring the Interrelationship of Water Quality Standards, Source Protection, and Wastewater Treatment in Northwestern Vermont, AWWA Source Protection Conference, January 2001.

Modeling Storage and the Inlet Reconfiguration, AWWA International Retention Time Management Symposium 2002.

Investigating a Stand Pipe Mixing System as a Tool for Managing Retention Time and DBP Formation, 2003 Water Quality Technology Conference, November 2003.

CWD Lead Public Information Flyer.

Partnering to Advance Source Protection within the Storm Water Arena, 2005 AWWA Source Protection Conference, January 2005.

Parent and Consecutive System Considerations in a Regional Municipal Water District in Northwestern Vermont, 2006 NEWWA Water Quality Symposium, May 2006.

Secondary Disinfection, 2008 Green Mountain Water Environment Association Spring Meeting, March 2008.

Long Term Experience with Conventional Filtration, 2008 NEWWA Water Quality Symposium, May 2008.

The Role of Water Quality and Operational Decision Making in Implementing a Load-shed Program, 2009 NEWWA Water Quality Symposium, May 2009.

Complying with the Upcoming Stage 2 Disinfection By-product Regulations, Green Mountain Water Environment Association Spring Meeting, May 2012.

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.

Improving Power Efficiency While Meeting the Water Quality Operational Goals of a Complex Transmission and Storage System, 2013 AWWA Water Quality Technology Conference, November 2013.

A Partnership for Success: Partnership for Safe Water Program Improves Water Quality & Operations. 2015 AWWA Annual Conference, June 2015.

Partnership for Safe Water, Water Systems Optimization Programs, 2018 AWWA Annual Conference, June 2017 and NEWWA Spring Joint Operations Conference, 2019.

Keep Your Systems Sustainable, Vermont Rural Water Association, March 2019, February, June 2020 & January 2022.

UVM Student presentation, UVM Water & Wastewater program. March 2022.

Champlain Water District here and now, South Burlington Rotary Club. March 2023.

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.