

CCR distribution methods under the Rule.

INSTRUCTIONS

Submittal of your CCR and Certification Form to the Public Water Supply Section

Beginning in 2018, the CCR for report year 2017 and future years must be submitted using our new ECert Online Certification application. You must submit your CCR and Certification form using the links provided below. Follow the directions to ensure efficient tracking and receipt of your submittal, and expedited review of report data by the Public Water Supply (PWS) Section for compliance with state and federal regulations.

➤ **CCR Template:** [http://ncdenr.s3.amazonaws.com/s3fs-public/Water%20Resources/files/pws/pnrule/CCR_Template_\(with%20Certification%20&%20ECert%20Inst.\)_lfr.doc](http://ncdenr.s3.amazonaws.com/s3fs-public/Water%20Resources/files/pws/pnrule/CCR_Template_(with%20Certification%20&%20ECert%20Inst.)_lfr.doc)

➤ **ECERT Access Instructions:** http://ncdenr.s3.amazonaws.com/s3fs-public/Water%20Resources/files/pws/compliance/ECERT_Access%20Instructions.pdf

➤ **ECERT Online Certification:** <https://pws.ncwater.org/ECERT/pages/default.aspx>
 For assistance with accessing ECERT please contact staff at: PWSS.CCR@ncdenr.gov
 (use 'Return Receipt Requested' to verify PWS Section's receipt.)

If you do not have internet access, please submit using the following methods:

➤ **By Postal Mail:** Mail your CCR and Certification form to: Public Water Supply Section, 1634 Mail Service Center, Raleigh, NC 27699-1634, Attn: CCR Rule Manager. (Physical Location: Archdale Bldg. 13th floor, 512 N. Salisbury St., Raleigh, NC)

➤ **By FAX:** FAX your CCR and Certification form to (919) 715-6637, Attn: CCR Rule Manager

CCR Customer Direct Delivery Requirements (Based on Population)

- **Systems serving 100,000 or more persons must** post the CCR on a publicly-accessible Internet site using a direct URL.
- **Systems serving 10,000 or more persons must** distribute the CCR by mail or direct delivery.
- **Systems serving less than 10,000 persons but more than 500 persons must either:** (1) distribute the CCR by mail or direct delivery **OR** (2) notify their customers that the CCR is not being mailed, but it will be in what newspaper(s) and when (attach copy of notice). The complete CCR should be printed in the local newspaper, and a copy of the CCR must be made available upon request. *(The 2nd option is not acceptable if using the CCR for Tier 3 Public Notification!)*
- **Systems serving 500 or fewer persons must either:** (1) distribute the CCR by mail or direct delivery **OR** (2) notify their customers that the CCR is not being mailed, and a copy of the CCR must be made available upon request. *(The 2nd option is not acceptable if using the CCR for Tier 3 Public Notification!)*

CCR Direct Delivery Methods for Bill-Paying Customers

CCR DELIVERY METHOD	METHOD DESCRIPTION (Click link: EPA-CCR Rule Delivery Options Memo January 3, 2013 for referenced Appendix Figures below.)
Mail – paper copy	CWS mails a paper copy of the CCR to each bill-paying customer.
Mail – notification that CCR is available on web site via a direct URL	CWS mails to each bill-paying customer a notification that the CCR is available and provides a direct URL to the CCR on a publicly available site on the Internet where it can be viewed. A URL that navigates to a web page that requires a customer to search for the CCR or enter other information does not meet the “directly deliver” requirement. The mail method for the notification may be, but is not limited to, a water bill insert, statement on the water bill or community newsletter. See Figure 1 in the Appendix.
Email – direct URL to CCR	CWS emails to each bill-paying customer a notification that the CCR is available and provides a direct URL to the CCR on a publicly available site on the Internet. A URL that navigates to a web page that requires a customer to search for the CCR or enter other information does not meet the “directly deliver” requirement. This method may only be used for customers when a CWS has a valid email address to deliver the CCR electronically. See Figure 2 in the Appendix.
Email – CCR sent as an attachment to email	CWS emails the CCR as an electronic file email attachment [e.g., portable document format (PDF)]. This method may only be used for customers when a CWS has a valid email address to deliver the CCR electronically. See Figure 3 in the Appendix.
Email – CCR sent as an embedded image in an email	CWS emails the CCR text and tables inserted into the body of an email (not as an attachment.) This method may only be used for customers when a CWS has a valid email address to deliver the CCR electronically. See Figure 4 in the Appendix.

Additional electronic delivery that meets “otherwise directly deliver” requirement

CWS delivers CCR through a method that “otherwise directly delivers” to each bill-paying customer and in coordination with the primacy agency. This category is intended to encompass methods or technologies not included above. CWSs and primacy agencies considering new methods or technologies should consult with the EPA to ensure it meets the intent of “otherwise directly deliver.”

Note: Use of social media or automated phone calls DO NOT meet existing CCR distribution methods under the Rule.

2016 Annual Drinking Water Quality Report

Town of Ossipee

Water System Number: 02-01-123

We are pleased to present to you this year's Annual Drinking Water Quality Report. This report is a snapshot of last year's water quality. Included are details about your source(s) of water, what it contains, and how it compares to standards set by regulatory agencies. Our constant goal is to provide you with a safe and dependable supply of drinking water. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources. We are committed to ensuring the quality of your water and to providing you with this information because informed customers are our best allies. **If you have any questions about this report or concerning your water, please contact Patti Dorsett at 336-584-4258. We want our valued customers to be informed about their water utility. If you want to learn more, please attend any of our regularly scheduled meetings. They are held at the AO Fire Department on the 4th Monday of each month.**

What EPA Wants You to Know

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline (800-426-4791).

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

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. [Name of Utility] is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. 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 water for drinking or cooking. If you are concerned about lead in your 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 or at <http://www.epa.gov/safewater/lead>.

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity. Contaminants that may be present in source water include microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife; inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming; pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses; organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems; and radioactive contaminants, which can be naturally-occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

When You Turn on Your Tap, Consider the Source

The water that was used by this system from January 2016 through June 2016 was ground water from 2 wells located at North Crest Heights and on the right side of NC Hwy 87. After June 2016, the water was supplied by the City of Burlington.

Source Water Assessment Program (SWAP) Results

The North Carolina Department of Environment and Natural Resources (DENR), Public Water Supply (PWS) Section, Source Water Assessment Program (SWAP) conducted assessments for all drinking water sources across North Carolina. The purpose of the assessments was to determine the susceptibility of each drinking water source (well or surface water intake) to Potential Contaminant Sources (PCSs). The results of the assessment are available in SWAP Assessment Reports that include maps, background information and a relative susceptibility rating of Higher, Moderate or Lower.

The relative susceptibility rating of each source for the Town of Ossipee was determined by combining the contaminant rating (number and location of PCSs within the assessment area) and the inherent vulnerability rating (i.e., characteristics or existing conditions of the well or watershed and its delineated assessment area). The assessment findings prior to July 2016 are summarized in the table below:

Susceptibility of Sources to Potential Contaminant Sources (PCSs)

Source Name	Susceptibility Rating	SWAP Report Date
Well # 2	Moderate	July 2015
Well #3	Moderate	July 2015

Beginning in July 2017 the Town began purchasing water from the City of Burlington. Information of the City of Burlington is included at the end of this report. The current complete SWAP Assessment report for Town of Ossipee and the City of Burlington may be viewed on the Web at: www.ncwater.org/pws/swap. Note that because SWAP results and reports are periodically updated by the PWS Section, the results available on this web site may differ from the results that were available at the time this CCR was prepared. If you are unable to access your SWAP report on the web, you may mail a written request for a printed copy to: Source Water Assessment Program – Report Request, 1634 Mail Service Center, Raleigh, NC 27699-1634, or email requests to swap@ncdenr.gov. Please indicate your system name, number, and provide your name, mailing address and phone number. If you have any questions about the SWAP report please contact the Source Water Assessment staff by phone at 919-707-9098.

It is important to understand that a susceptibility rating of “higher” does not imply poor water quality, only the system’s potential to become contaminated by PCSs in the assessment area.

Help Protect Your Source Water

Protection of drinking water is everyone’s responsibility. You can help protect your community’s drinking water source(s) in several ways: (examples: dispose of chemicals properly; take used motor oil to a recycling center, volunteer in your community to participate in group efforts to protect your source, etc.).

Violations that Your Water System Received for the Report Year

During 2016, or during any compliance period that ended in 2016, we received one violation. It was a Lead Consumer Notice of Violation that covered the time period of January 1, 2016-December 31, 2016. We failed to use the proper form for notifying the sampling participants of the results of the lead and copper sampling in 10/26/2016. We have since mailed the form letters specified by the state as required and we are in compliance with the regulations.

NOTICE TO THE PUBLIC

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER

Violation Awareness Date: 11/22/2016

We are 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 the compliance period specified in the table below, we [‘did not monitor or test’ or ‘did not complete all monitoring or testing’] for the contaminants listed and therefore cannot be sure of the quality of your drinking water during that time.

CONTAMINANT GROUP**	FACILITY ID NO./ SAMPLE POINT ID	COMPLIANCE PERIOD BEGIN DATE	NUMBER OF SAMPLES/ SAMPLING FREQUENCY	WHEN SAMPLES WERE TAKEN (Returned to Compliance)
LEAD AND COPPER	D01	JULY 1, 2016	20	10/26/2016

(LC) Lead and Copper are tested by collecting the required number of samples and testing each of the samples for both lead and copper.

What should I do? There is nothing you need to do at this time.

What is being done? Approved form has been saved for future use.

Please share this information with all the other people who drink this water, especially those who may not 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.

For more information about this violation, please contact the responsible person listed in the first paragraph of this report.

Water Quality Data Tables of Detected Contaminants

We routinely monitor for over 150 contaminants in your drinking water according to Federal and State laws. The tables below list all the drinking water contaminants that we detected in the last round of sampling for each particular contaminant group. The presence of contaminants does not necessarily indicate that water poses a health risk. **Unless otherwise noted, the data presented in this table is from testing done January 1 through December 31, 2016.** The EPA and the State allow us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Some of the data, though representative of the water quality, is more than one year old.

Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulations are warranted.

Important Drinking Water Definitions:

Not-Applicable (N/A) – Information not applicable/not required for that particular water system or for that particular rule.

Non-Detects (ND) - Laboratory analysis indicates that the contaminant is not present at the level of detection set for the particular methodology used.

Parts per million (ppm) or Milligrams per liter (mg/L) - One part per million corresponds to one minute in two years or a single penny in \$10,000.

Parts per billion (ppb) or Micrograms per liter (ug/L) - One part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.

Action Level (AL) - The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

Maximum Residual Disinfection Level (MRDL) – The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

Maximum Residual Disinfection Level Goal (MRDLG) – The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

Locational Running Annual Average (LRAA) – The average of sample analytical results for samples taken at a particular monitoring location during the previous four calendar quarters under the Stage 2 Disinfectants and Disinfection Byproducts Rule.

Maximum Contaminant Level (MCL) - The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

Maximum Contaminant Level Goal (MCLG) - The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

Tables of Detected Contaminants

TOTAL COLIFORM RULE (Samples Taken January 1, 2016 through March 31, 2016):

Microbiological Contaminants in the Distribution System - For systems that collect *less than 40* samples per month.

Contaminant (units)	MCL Violation Y/N	Your Water	MCLG	MCL	Likely Source of Contamination
Total Coliform Bacteria (presence or absence)	N	Absent	0	1 positive sample / month*	Naturally present in the environment
Fecal Coliform or <i>E. coli</i> (presence or absence)	N	Absent	0	Note: If either an original routine sample and/or its repeat samples(s) are fecal coliform or <i>E. coli</i> positive, a Tier 1 violation exists.	Human and animal fecal waste

* If a system collecting fewer than 40 samples per month has two or more positive samples in one month, the system has a MCL violation.

REVISED TOTAL COLIFORM RULE (Samples taken April 1, 2016 through December 31, 2016):

Microbiological Contaminants in the Distribution System - For systems that collect *less than 40* samples per month

Contaminant (units)	MCL Violation Y/N	Your Water	MCLG	MCL	Likely Source of Contamination
Total Coliform Bacteria (presence or absence)	N	Absent	N/A	TT*	Naturally present in the environment
<i>E. coli</i> (presence or absence)	N	Absent	0	Routine and repeat samples are total coliform-positive and either is <i>E. coli</i> -positive or system fails to take repeat samples following <i>E. coli</i> -positive routine sample or system fails to analyze total coliform-positive repeat sample for <i>E. coli</i> Note: If either an original routine sample and/or its repeat samples(s) are <i>E. coli</i> positive, a Tier 1 violation exists.	Human and animal fecal waste

Inorganic Contaminants

Contaminant (units)	Sample Date	MCL Violation Y/N	Your Water	Range		MCLG	MCL	Likely Source of Contamination
				Low	High			
Barium (ppm)	11/15/12	N	0.022	0.01-0.034		2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Fluoride (ppm)	11/15/12	N	7.5	7.2-7.5		4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories

Nitrate/Nitrite Contaminants

Contaminant (units)	Sample Date	MCL Violation Y/N	Your Water	Range		MCLG	MCL	Likely Source of Contamination
				Low	High			
Nitrate (as Nitrogen) (ppm)	12/2/15	N	3.73	N/A		10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits

Lead and Copper Contaminants

Contaminant (units)	Sample Date	Your Water	Number of sites found above the AL	MCLG	AL	Likely Source of Contamination
Copper (ppm) (90 th percentile)	10/26/16	0.0734	0	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits

Lead (ppb) (90 th percentile)	10/26/16	0	0	0	AL=15	Corrosion of household plumbing systems; erosion of natural deposits
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Disinfectant Residuals Summary

	Year Sampled	MRDL Violation Y/N	Your Water (highest RAA)	Range		MRDLG	MRDL	Likely Source of Contamination
				Low	High			
Chlorine (ppm)	2016	N	0.73	0.06	0.73	4	4.0	Water additive used to control microbes
Chloramines (ppm)	2016	N	1.77	1.35	1.77	4	4.0	Water additive used to control microbes

Stage 1 Disinfection Byproduct Compliance - Based upon Running Annual Average (RAA)

Disinfection Byproduct	Year Sampled	MCL Violation Y/N	Your Water (highest RAA)	Range		MCLG	MCL	Likely Source of Contamination
				Low	High			
TTHM (ppb)	2016	N	0.047	0.032	0.047	N/A	80	Byproduct of drinking water disinfection
HAA5 (ppb)	2016	N	0.032	0.018	0.032	N/A	60	Byproduct of drinking water disinfection

For TTHM: *Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer.*

For HAA5: *Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer.*

Stage 2 Disinfection Byproduct Compliance - Based upon Locational Running Annual Average (LRAA)

Disinfection Byproduct	Year Sampled	MCL Violation Y/N	Your Water (highest LRAA)	Range		MCLG	MCL	Likely Source of Contamination
				Low	High			
TTHM (ppb)						N/A	80	Byproduct of drinking water disinfection
B01	2016	N	123*	93	123			
B02	2016	N	132*	94	132			
HAA5 (ppb)						N/A	60	Byproduct of drinking water disinfection
B01	2016	N	63	63	66			
B02	2016	N	75	65	75			

For TTHM: *Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer.*

For HAA5: *Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer.*

The PWS Section requires monitoring for other misc. contaminants, some for which the EPA has set national secondary drinking water standards (SMCLs) because they may cause cosmetic effects or aesthetic effects (such as taste, odor, and/or color) in drinking water. The contaminants with SMCLs normally do not have any health effects and normally do not affect the safety of your water.

Other Miscellaneous Water Characteristics Contaminants

Contaminant (units)	Sample Date	Your Water	Range		SMCL
			Low	High	
Manganese (ppm)	11/15/2012	0.055	0 – 0.11		0.05 mg/L
Sodium (ppm)	11/15/2012	25.9	10.6 – 41.2		N/A
Sulfate (ppm)	11/15/2012	10.5	2.4 – 18.6		250 mg/L
pH	11/15/2012	7.55	7.2 – 7.9		6.5 to 8.5

2016 City of Burlington

2016 ANNUAL DRINKING WATER QUALITY REPORT

CITY OF BURLINGTON, NC - Public Water System ID# 02-01-010

The City of Burlington is pleased to present you with the eighteenth annual water quality report, also known as the Consumer Confidence Report (CCR). This report provides our customers with a snapshot of the previous year's water quality. This report includes details about where your water comes from, what it contains, and how it compares to standards set by regulatory agencies. During the calendar year 2016, The City of Burlington delivered an average of 11.4 million gallons of water per day through more than 440 miles of pipe. The peak day was Wednesday, August 17 when over 17.5 million gallons of water was pumped into the distribution system. Our goal is to provide our citizens with an uninterrupted supply of safe and high quality drinking water. We want you to understand the efforts we make to improve the water treatment process and protect our water resources. We are committed to ensuring the quality of your water and to providing you with this information.

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material. These minerals are carried with the water as "contaminants". The water may pick up other contaminants, resulting from plants, animal or human activities. The City provides treatment designed to remove many of the contaminants, especially any harmful ones. However, some trace amounts of contaminants may remain after treatment. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk.

More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at (800) 426-4791.

SOURCES OF DRINKING WATER

The City of Burlington utilizes two (2) surface water supply sources. Lake Mackintosh is located in Southwest Alamance County and Southeast Guilford County. It supplies the J.D. Mackintosh, Jr. Water Treatment Plant (JDMWTP) located in Southwest Alamance County. Stoney Creek Reservoir is located near the Hopedale community. It supplies the Ed Thomas Water Treatment Plant (ETWTP) located in downtown Burlington.

A source water assessment has been prepared by the North Carolina Department of Environment and Natural Resources. Source Water Assessments were performed on Stoney Creek Reservoir and Lake Mackintosh and were updated in July 2015. These assessments indicate that each lake has a susceptibility rating of "Moderate". You can find more information about the NCSWAP program online at http://www.ncwater.org/?page=600&Action=Swap_Search

DEFINITIONS & ABBREVIATIONS

AL	ACTION LEVEL: The concentration of a contaminant that, if exceeded, triggers treatment or other requirements, which a water system must follow.	ng/L	NANOGRAM PER LITER: A measure of mass per unit volume to express the concentration of a solution, also referred to as "parts per trillion" – often abbreviated as ppt.
MCLG	MAXIMUM CONTAMINANT LEVEL GOAL: The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.	MFL	MILLION FIBERS PER LITER: A measure of the amount of asbestos per unit volume.
MCL	MAXIMUM CONTAMINANT LEVEL: The highest level of a contaminant allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.	pCi/L	PICOCURIES PER LITER: A measure of radioactive intensity per unit volume.
ug/L	MICROGRAM PER LITER: A measure of mass per unit volume to express the concentration of a solution, also referred to as "parts per billion" – often abbreviated as ppb.	SMCL	SECONDARY MAXIMUM CONTAMINANT LEVEL: The highest concentration of a contaminant based on apparent quality such as color, odor, or taste, but does not imply any known health effects.
mg/L	MILLIGRAM PER LITER: A measure of mass per unit volume to express the concentration of a solution, also referred to as "parts per million" – often abbreviated as ppm.	TT	TREATMENT TECHNIQUE: A required process intended to reduce the level of a contaminant in drinking water.
		ND	NOT DETECTED: This term is used when the concentration of a substance is too low to be detected by standard lab tests.
		NA	NOT APPLICABLE: Information does not apply to this parameter.

DRINKING WATER QUALITY SUMMARY

Just How Much Is One Part Per Billion?

The concentrations of substances measured in drinking water are usually expressed as parts per million (ppm), parts per billion (ppb) or even parts per trillion (ppt). It is often difficult to grasp just how large a million, a billion or a trillion really is. We have included some examples to provide perspective on how large numbers like 1 million, 1 billion and 1 trillion are. Here are a few examples...

If something is measured as 1 Part Per Million (ppm or mg/L)	If something is measured as 1 Part Per Billion (ppb or ug/L)
1 ppm is the same as 1 second compared to 11½ days	1 ppb is the same as 1 second compared to 31¼ years
1 ppm is the same as 1 penny compared to \$10,000	1 ppb is the same as 1 penny compared to TEN MILLION dollars
1 ppm is the same as 1 inch compared to 15 miles	1 ppb is the same as 1 inch compared to 3 trips from Burlington to Los Angeles, CA and back to Burlington
1 part per trillion (ppt or ng/L) is the same as 1 inch compared to 31 trips from the earth to the moon and back!	



Chloramines

In July of 2011, the City of Burlington transitioned from FREE CHLORINE as a secondary disinfectant to a combined form of chlorine called CHLORAMINES. This was a highly publicized event. This change resulted in better maintained chlorine residual in the city's distribution system, fewer taste and odor complaints and lower Disinfection By-Product (DBP) formation. There is a difference in the regulatory requirements for Chloramine versus Free Chlorine. The minimum allowable concentration of **free chlorine** is 0.2 mg/L. The minimum allowable concentration for **chloramines** is 1.0 mg/L. The maximum residual disinfectant level for both free chlorine and chloramine is 4.0 mg/L.

The City of Burlington uses free chlorine as a primary disinfectant (at the plant) and chloramines as a secondary disinfectant (in the distribution system) to control microbial growth.

Inorganic Compounds

The USEPA has set standards for a number of inorganic chemicals that can affect our health. Inorganic contaminants in source water such as salts and metals, can be naturally occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.

Parameter	MCLG	Federal MCL	JDMWTP	ETWTP	Range	Major Sources in Drinking Water
Fluoride (mg/L)#	4	4	0.70#	0.70#	0.70	Added to water to promote strong teeth
Free Chlorine* (mg/L)	NA	NA	Free chlorine concentration did not exceed MRDL of 4.0 mg/L			Water additive used to control microbes
Chloramine (mg/L)	NA	NA	Chloramine concentration did not exceed MRDL of 4.0 mg/L			Water additive used to control microbes

* Chlorine is used as a disinfectant in drinking water. The minimum acceptable free chlorine residual is 0.2 mg/L. The maximum allowable chlorine residual has been set at 4.0 mg/L. Chlorine is measured at several points in the treatment process. **The residuals reported in this table are Point-of-Entry samples.** The chlorine residual in the City of Burlington distribution system will fluctuate depending on the season of the year, location in the system, time of day or even which water plant is in operation at any given time.

- This certified fluoride analysis was conducted on 2/17/2016.

Organic Compounds

There are a number of organic compounds that are of potential concern in drinking water. This group includes Volatile Organic Compounds (VOC's), which vaporize easily, and Synthetic Organic Compounds (SOC's), which are manmade, such as some pesticides and herbicides. *These contaminants may come from sources like agriculture, urban stormwater runoff, residential uses, industrial processes and petroleum production, gas stations, and septic systems.* Trihalomethanes and Haloacetic acids are disinfection byproducts that are formed when organic compounds that are in water react with chlorine used to disinfect drinking water. These disinfection by-products are made up of several components. None of the individual components of these disinfection byproducts are regulated. However, the sum of these components is regulated and is included in the table below.

On April 1, 2012, The City of Burlington became subject to what are commonly referred to as the Stage 2 Disinfection Byproduct Rules or the Stage 2 DBP rules. **Under the new Stage 2 DBP rule**, compliance with the rule is calculated by averaging the four quarterly results for **each** of the 8 different sample locations. If the 4-quarter result for any 1 of the 8 sample locations exceeds the compliance limit for any of the Disinfection By-Products, the entire water system is considered out of compliance with the Stage 2 DBP rule and a public notification must be sent to customers.

Parameter	MCLG	Federal MCL	Burlington Water System	Major Sources in Drinking Water	Health Effects
Total Trihalomethanes (ug/L) 4-Quarter Average	NA	80	41.0	By-product of drinking water chlorination	Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer.
Range for 2016 (ug/L)			40 - 65	This is the range (lowest and highest) of all compliance values for TTHM samples reported in 2016	
Total Haloacetic acids (ug/L) 4-Quarter Average	NA	60	37.0	By-product of drinking water chlorination	Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer
Range for 2016 (ug/L)			25 - 63	This is the range (lowest and highest) of all compliance values for HAA samples reported in 2016	

All compliance locations were in compliance with the Stage 2 DBP rules in 2016.

Pesticides & Synthetic Organic Compounds

These contaminants may come from sources like agriculture, urban stormwater runoff, residential uses, industrial processes and petroleum production, gas stations, and septic systems.

The City of Burlington is required to test for Pesticides and Synthetic Organic Compounds at both water treatment plants every three years. The last test for these compounds was conducted in April and July of 2016. **There were no Synthetic Organic Chemicals or Pesticides detected** in samples analyzed during the most recent round of testing. **The next round of testing will be conducted in 2019.**

Lead & Copper

USEPA requires that the City perform household testing in accordance with the 1994 Lead and Copper Rule. According to that rule, 90% of the samples taken from locations in Burlington identified as "high risk" must have less than 15 parts per billion (ppb or ug/L) of lead and less than 1,300 parts per billion (ppb or ug/L) of copper. These sample locations are classified as "high risk" because they were constructed using copper pipe and lead solder as components in the plumbing system. New building codes and regulations no longer permit houses to be built using these components. Testing in 2015 indicated that the average concentration of lead in these "high risk" homes was less than 3 ppb, and the average concentration of copper was less than 50 ppb, both well below the regulatory limits. Lead and copper samples are collected by the homeowner and analyzed by a certified laboratory. Samples are collected after the water has been left undisturbed in the household plumbing for an extended period of time. This is intended to collect a water sample that represents the "worst case" for lead and copper. **The next scheduled round of Lead and Copper sampling will occur between June 1 and September 30, 2018.**

Parameter	MCLG	Action Level	Max	Average result from Tier 1 sites in Burlington		Major Sources in Drinking Water
				Average	90 th Percentile	
Lead (ug/L)	0	15	7.0	<3	<3	Corrosion of household plumbing systems; Erosion of natural deposits.
Copper (ug/L)	1,300	1,300	74	<50	56	Corrosion of household plumbing systems; Erosion of natural deposits.



Microbiological

Microbial contaminants in the source water, such as viruses and bacteria, may come from sewage treatment plants, septic systems, agricultural livestock and wildlife. The physical processes and disinfection chemicals used during the treatment process effectively eliminate harmful organisms that may be in the untreated water. Microbiological testing is performed daily to assure the absence of these organisms and to monitor the efficiency of these treatment techniques. Total and Fecal Coliform tests are performed on samples taken from the treatment plants, homes and businesses throughout the city.

Parameter	MCLG	Federal MCL	Burlington Water System Average	JDMWTP	ETWTP	Major sources in Drinking Water
Total Coliform*	0	<5% of samples	0.14%	NA	NA	Naturally present in the environment
Fecal Coliform (e. coli)	0	0	0.0%	NA	NA	Human and animal fecal waste
Average Turbidity (NTU)**	NA	TT	NA	0.05	0.12	Soil runoff
Maximum Turbidity**	NA	TT	NA	0.22	0.14	Soil runoff

100% of finished water samples tested for turbidity in 2016 were below 0.3 NTU.

*Total coliform samples are samples that are taken from homes and businesses in the distribution system. There were 723 samples collected in 2016. One (1) of these samples tested positive for total coliform. Follow-up samples for each of this location where coliform were detected came up negative. To help provide some perspective on these results, consider that the safe drinking water standards would permit up to 36 of the 723 samples to be positive for total coliform without exceeding the limit for safe water set by the EPA.

**100% of samples were below the limit. Turbidity requirements – Water must be less than 0.3 Turbidity Units 95% of the time and never allowed to exceed 1.0 Turbidity Units. Turbidity itself has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea and associated headaches.

Radioactive Contaminants

Radioactive contaminants in source water may be naturally occurring or may be the result of oil and gas production and mining activities. The table is based on samples collected in 2016.

Parameter	Last Test	MCLG	Federal MCL	Burlington Water System	Major Sources in Drinking Water
Beta Photon emitters (pCi/L)	2016	0	50	ND	Decay of natural and man-made deposits
Alpha emitters (pCi/L)	2016	0	15	ND	Erosion of natural deposits
Uranium (pCi/L)	2016	0	20.1	ND	Erosion of natural deposits
Radium 228	2016	0	2	ND	Erosion of natural deposits
Radium 226	2016	0	3	ND	Erosion of natural deposits
Combined Radium (pCi/L)	2016	0	5	N/A	Erosion of natural deposits

Secondary Standards

Secondary standards are non-enforceable standards that assure that your water meets standards of appearance, odor, and taste. These aesthetic contaminants normally do not affect the safety of your water.

Parameter	SMCL	JDMWTP	ETWTP	System Range	Major sources in drinking water
Iron (ug/L)*	300	ND	ND	ND	Naturally occurring
Manganese (ug/L)*	50	ND	23	ND	Naturally occurring

*Data reported for Iron and Manganese was taken from 3rd party analysis of inorganic chemicals conducted on 2/17/2016. Iron and manganese are tested regularly for process control.

Cryptosporidium sp.

Cryptosporidium sp. is a microscopic organism that, when ingested, can cause diarrhea, fever and other gastrointestinal symptoms. The organism occurs naturally in surface waters (lakes and streams) and comes from animal wastes. Cryptosporidium sp. is eliminated by an effective treatment combination of coagulation, sedimentation, filtration and disinfection. Both of the City's water supply reservoirs are currently in the midst of a 2-year sampling program to evaluate the water supplies for this organism. The City of Burlington conducted monthly sampling at both reservoirs for 12 months in 2016. Each sample was sent to a certified lab for analysis. Sampling results from January 1, 2016 through December 31, 2016 (12 samples at each reservoir) are listed below.

Location	Samples Collected	Total oocysts detected	Average Concentration	Concentration Requiring Additional Treatment
Stoney Creek Reservoir	12 (120 Liters)	1 oocyst	0.010 / Liter	0.075 oocysts / Liter
Mackintosh Reservoir	12 (120 Liters)	2 oocysts	0.020 / Liter	0.075 oocysts / Liter

Some people may be more vulnerable to contaminants in drinking water than the general population. People whose immune systems have been compromised – such as people with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV / AIDS or other immune system disorders, some elderly, and infants – can be particularly at risk for infections. These people should seek the advice about drinking water from their healthcare providers. Environmental Protection Agency and the Center for Disease Control guidelines on appropriate means to lessen the risk of infection by Cryptosporidium sp. and other microbiological contaminants are available from the Safe Drinking Water Act Hotline at (800) 426-4791.

Other Physical and Chemical Information

The following information is derived from routine analyses and is included for your information. These parameters are not regulated under the Safe Drinking Water Act and may vary widely between systems. Unless otherwise noted (*), all results in this table are system averages that were reported on monthly operation reports.

Parameter	JDMWTP	ETWTP	Parameter	JDMWTP	ETWTP
Alkalinity, mg/L as CaCO ₃	35.6	39.5	Sodium (mg/l)*	23.3*	27.6*
Carbon Dioxide	2.9	2.1	Sulfate (mg/L)*	28.0*	36.0*
Orthophosphorus, ug/L	864	870	Hardness (mg/L)	33.7	31.5
PH, standard units	8.27*	8.94*	Hardness (Grains/Gal)	2.0	1.9

*Data reported was taken from 3rd party analysis of inorganic chemicals conducted on 2/17/2016.

Unregulated Contaminant Monitoring Rule Sampling (UCMR3)

The UCMR requires water systems to collect and analyze water samples for 28 chemicals and 2 viruses that are **currently not regulated**. The results of these samples help to guide EPA in setting future drinking water regulations. The results of the most recent UCMR3 data are included in the table below. This table only includes data for UCMR3 parameters that were **detected**. The UCMR 3 list was developed by EPA and includes compounds for potential regulation to determine their relative occurrence around the country.

UCMR3 parameter	JD Mackintosh WTP		Ed Thomas WTP		Distribution System	
	average	range	average	range	average	range
Chlorate, ug/L	14	ND - 57	112	51 - 190	172	51 - 420
Total Chromium, ng/L	130	ND - 280	60	ND - 240	60	ND - 240
Chromium 6, ng/L	56	37 - 71	43	ND - 68	57	31 - 76
Strontium, ug/L	79	65 - 91	60.5	50 - 73	61	48 - 79
Vanadium, ng/L	235	ND - 610	60	ND - 240	120	ND - 470

Individuals may obtain the analytical results and health information for all UCMR3 data by contacting the City of Burlington Water Resources Department at (336) 222-5133.

For more information on the UCMR3, please visit the EPA website at: <https://www.epa.gov/sites/production/files/2016-05/documents/ucmr3-factsheet-list1.pdf>

For more information

If you would like more information about the City of Burlington's Water Resources or this report, the following contacts may be able to assist you: The Director of Water Resources can be reached at (336) 222-5130, the Water and Sewer Field Operations Manager at (336) 222-5140, the City Engineer at (336) 222-5050, the Chief Chemist or the Water and Sewer Operations Manager at (336) 222-5133. The Burlington City Council meets on the first and third Tuesday of each month. You may also log on to EPA's website at <http://www.epa.gov/ccr>.

PLEASE NOTE: Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the **Safe Drinking Water Hotline (800-426-4791)**.

Violations

There were zero (0) violations of drinking water quality standards in 2016.

The City of Burlington 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. **The City of Burlington had no violations in 2016.**

A "**Monitoring Violation**" means that water was not tested within the appropriate timeframe. A "**Reporting Violation**" means that the samples were analyzed, but the results were either not reported or reported incorrectly.

SPECIAL NOTICE REGARDING LEAD AND COPPER

The following special notice is provided solely for the information of our water customers.

There has been no indication that any City of Burlington water sample has shown elevated levels of lead or copper. However, regulations require that we provide certain information to our customers regarding the health effects of lead and copper.

Lead & Copper - If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. If lead is found in drinking water, it is almost always a result of the materials and components associated with the service lines and household plumbing. The City of Burlington is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours it tends to accumulate minute quantities of contaminants present in your household plumbing. You can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. The City of Burlington Water Resources Department would be happy to assist you with this. 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 <http://www.epa.gov/lead>

Health Effects Language

LEAD – Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water (*water containing lead in excess of the action level*) over many years could develop kidney problems or high blood pressure.

COPPER – Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctor.