



2017 Annual Drinking Water Quality Report

City of Conover

Water System Number: 01-18-1-020

The City of Conover is pleased to present to you this 2017 edition of the Annual Drinking Water Quality Report. This report is a snapshot of 2017 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 Brian Bradshaw at (828) 464-4808. 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 City Council meetings. They are held on the first Monday of each month at 7:00 pm in the City Hall Council Chambers.**

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. The City of Conover 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 is used by the City of Conover is purchased from the City of Hickory, which treats surface water from Lake Hickory on the Catawba River. The City of Conover owns 3 million gallons per day capacity and currently uses approximately 1.58 million gallons per day, serving some 5658 customers. Conover owns, operates and maintains its own distribution system that consists of approximately 150 miles of water lines and two 1 million gallon elevated water storage tanks. Test result information will represent analytical data for Conover and Hickory's water systems.

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 City of Hickory 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 are summarized in the table below:

Susceptibility of Sources to Potential Contaminant Sources (PCSs)

Source Name	Susceptibility Rating	SWAP Report Date
City of Hickory	Higher	August 2017

The complete SWAP Assessment report for City of Conover 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 water).

Water Quality Data Tables of Detected Contaminants

We routinely monitor for contaminants in your drinking water according to Federal and State laws. The table below lists all the drinking water contaminants that we detected in the last round of sampling for the particular contaminant group. The presence of contaminants does not necessarily indicate that water poses a health risk. **Unless otherwise noted, the data presented in the following tables are from testing done January 1 through December 31, 2017.** 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.

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.

Parts per quadrillion (ppq) or Picograms per liter (picograms/L) - One part per quadrillion corresponds to one minute in 2,000,000,000 years or one penny in \$10,000,000,000,000.

Picocuries per liter (pCi/L) - Picocuries per liter is a measure of the radioactivity in water.

Million Fibers per Liter (MFL) - Million fibers per liter is a measure of the presence of asbestos fibers that are longer than 10 micrometers.

Nephelometric Turbidity Unit (NTU) - Nephelometric turbidity unit is a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

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

Treatment Technique (TT) - A required process intended to reduce the level of a contaminant in drinking water.

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.

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.

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

Level 1 Assessment – A Level 1 assessment is a study of the water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in our water system.

Level 2 Assessment - A Level 2 assessment is a very detailed study of the water system to identify potential problems and determine (if possible) why an E. coli MCL violation has occurred and/or why total coliform bacteria have been found in our water system on multiple occasions.

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.

City of Hickory 2017 Test Results

Tables of Detected Contaminants

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

Contaminant (units)	MCL Violation Y/N	Drinking Water Average	MCLG	MCL	Likely Source of Contamination
Total Coliform Bacteria (presence or absence)	N	0.004% Monthly average 0.017 Highest monthly average	0	No more than 5% of monthly samples are positive	Naturally present in the environment
Fecal Coliform or <i>E. coli</i> (presence or absence)	N	0 positive samples	0	0	Human and animal fecal waste

NOTE: (The MCL is exceeded if a routine sample and repeat sample are total coliform positive, and one is also fecal coliform or *E. coli* positive)

E.coli - Fecal coliforms and *E.coli* are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and people with severely-compromised immune systems.

Fecal Indicators (enterococci or coliphage) - Fecal indicators are microbes whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term health effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and people with severely compromised immune systems.

Turbidity

Contaminant (units)	Treatment Technique (TT) Violation Y/N	Drinking Water	Treatment Technique (TT) Violation if:	Likely Source of Contamination
Turbidity (NTU) - Highest single turbidity measurement	N	0.133 NTU	Turbidity > 1 NTU	Soil runoff
Turbidity (NTU) - Lowest monthly percentage (%) of samples meeting turbidity limits	N	100%	Less than 95% of monthly turbidity measurements are \leq 0.3 NTU	

* Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system. The turbidity rule requires that 95% or more of the monthly samples must be less than or equal to 0.3 NTU.

Inorganic Contaminants

Contaminant (units)	Sample Date	MCL Violation Y/N	Drinking Water	Range Low High	MCLG	MCL	Likely Source of Contamination
Fluoride (ppm)	1/03/17	N	0.373	0.36-0.385	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories

Nitrate/Nitrite Contaminants

Contaminant (units)	MCL Violation Y/N	Drinking Water	Range Low High	MCLG	MCL	Likely Source of Contamination
Nitrate (as Nitrogen) (ppm)	N	ND	N/A	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Nitrite (as Nitrogen) (ppm)	N	0.10 mg/l	N/A	1	1	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits

Nitrate in drinking water at levels above 10 ppm is a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant you should ask advice from your health care provider.

Lead and Copper Contaminants

Contaminant (units)	Sample Date	Drinking Water	# of sites found above the AL	MCLG	AL	Likely Source of Contamination
Copper (ppm) (90 th percentile)	Aug 2016	0.188	0	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits
Lead (ppb) (90 th percentile)	Aug 2016	ND	1	0	AL=15	Corrosion of household plumbing systems, erosion of natural deposits

Radiological Contaminants 2017: None were detected in the source water.

Total Organic Carbon (TOC)

Contaminant (units)	TT Violation Y/N	Drinking Water (RAA Removal Ratio)	Range Quarterly Removal Ratio Low-High	MCLG	TT	Likely Source of Contamination	Compliance Method (Step 1 or ACC#)
Total Organic Carbon (removal ratio) (TOC)-TREATED	N	1.53	1.00-2.86	Compliance Method ACC#2 Treated Water <2.00	TT	Naturally present in the environment	ACC #2

Disinfectants and Disinfection Byproducts Contaminants

Contaminant (units)	MCL/MR DL Violation Y/N	Drinking Water RAA (Stage 2)	Range Low High	MCLG	MCL	Likely Source of Contamination
TTHM (ppm) [Total Trihalomethanes]	N	0.057	0.035- 0.097	N/A	0.08	By-product of drinking water chlorination
HAA5 (ppm) [Total Haloacetic Acids]	N	0.030	0.019 -0.053	N/A	0.06	By-product of drinking water disinfection
Chlorine	N	1.23	0.2- 1.92	4	4	Water additive used to control microbes

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	Drinking Water	Range Low/High	SMCL
Iron (mg/L)	1/03/17	ND	N/A	0.300 mg/L
Hardness (mg/L CaCO ₃)	1/03/17	16.9	N/A	N/A
Alkalinity (mg/L CaCO ₃)	1/03/17	17.0	N/A	N/A
Sodium (mg/L)	1/03/17	12.2	N/A	N/A
Sulfate (mg/L)	1/03/17	ND	N/A	250 mg/L
pH (su)	1/3/17	7.13	N/A	6.5 to 8.5

City of Conover 2017 Test Results

Tables of Detected Contaminants

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

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

E.coli - Fecal coliforms and E.coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and people with severely-compromised immune systems.

Fecal Indicators (enterococci or coliphage) - Fecal indicators are microbes whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term health effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and people with severely compromised immune systems.

Lead and Copper Contaminants

Contaminant (units)	Sample Date	Drinking Water	# of sites found above the AL	MCLG	AL	Likely Source of Contamination
Copper (ppm) (90 th percentile)	Sept. 2016	0.084	0	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits
Lead (ppb) (90 th percentile)	Sept. 2016	< 3.0	0	0	AL=15	Corrosion of household plumbing systems, erosion of natural deposits

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

Contaminant (units)	Year Sampled	MCL Violation Y/N	Drinking Water (highest LRAA)	Range Low High	MCLG	MCL	Likely Source of Contamination
TTHM (ppb) (TotalTrihalomethanes)					N/A	80	By-product of drinking water chlorination
Site B01	2017	N	74	54-99	N/A	80	
Site B02	2017	N	58	38-77	N/A	80	
Site B03	2017	N	56	38-69	N/A	80	
Site B04	2017	N	68	45-93	N/A	80	
HAA5 (ppb) (Haloacetic Acids)					N/A	60	By-product of drinking water disinfection
Site B01	2017	N	33	19-43	N/A	60	
Site B02	2017	N	35	25-40	N/A	60	
Site B03	2017	N	33	21-38	N/A	60	
Site B04	2017	N	38	25-51	N/A	60	

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.*

Asbestos Contaminant

Contaminant (units)	Sample Date	MCL Violation Y/N	Drinking Water	Range Low High	MCLG	MCL	Likely Source of Contamination
Total Asbestos (MFL)	4/1/13	N	ND	N/A	7	7	Decay of asbestos cement water mains; erosion of natural deposits