



City of Maryville Water Quality Report

2020

Great People, Great Water

Maryville Water Filtration and Distribution operations continued to shine during 2019.

The most recent Sanitary Survey (2018) by the Tennessee Department of Environment and Conservation rated the City of Maryville Water system with a score of 99 out of 100.

HOW CAN I GET INVOLVED?

Water quality and operations decisions are made by the Water and Sewer Department of the City of Maryville. If you have comments or concerns please contact Doyle Prince, Water/Wastewater Plant Manager, at 273-3300 or Eric Holder, Water Plant Superintendent, at 982-7990.

Major financial decisions and significant public issues are decided by the Maryville City Council. City Council meetings are held on the first Tuesday of each month at 7:00 pm at the Maryville Municipal Center (400 W. Broadway). The meetings are announced in *The Daily Times* and the agendas are posted at, www.maryvillegov.com, the City website, prior to each meeting. We value your opinions, please feel free to participate in these meetings.

IS MY DRINKING WATER SAFE?

Yes, our water meets all of EPA's health standards. In 2019, we conducted thousands of tests for over a hundred contaminants that may be in drinking water. As you'll see in the chart, we only detected some of these contaminants.

WHAT IS HARDNESS?

Many industrial and domestic water users are concerned about the hardness of their water. Hard water requires more soap and synthetic detergents for home laundry and washing, and contributes to scaling in boiler and industrial equipment. Hardness is caused by compounds of calcium and magnesium, and by a variety of other metals. Water is an excellent solvent and readily dissolves minerals it comes in contact with. As water moves through soil and rock, it dissolves very small amounts of minerals and holds them in solution. Calcium and magnesium dissolved in water are the two most common minerals that make water "hard." The hardness of water is referred to by three types of measurements: grains per gallon (gpg), milligrams per liter (mg/l), or parts per million (ppm). Milligrams per liter and parts per million are roughly equal in water analysis, whereas one gpg is equivalent to 17.1 ppm or mg/l. The water produced by the City of Maryville is considered "soft" according to the U.S. Geological Survey classification.

Often, when you purchase a new dishwasher or washing machine, the manufacturer has recommended settings that depend on the hardness of the water. The 2019 annual average hardness for water delivered to your home from the City of Maryville was 53 mg/l.

GRAINS PER GALLON (gpg)	MILLIGRAMS PER LITER (mg/l) or PARTS PER MILLION (ppm)	RATING
0 – 3.5	0 - 60	Soft
3.5 – 7.0	60 - 120	Moderately Hard
7.0 – 10.5	120 - 180	Hard
Over 10.5	Over 180	Very Hard

DID YOU KNOW?

2019- The City of Maryville provided our customers with 1,529,248,000 gallons of drinking water. That is enough water to cover the Maryville High School football field 3,549 feet deep, or over half way up Mt. Le-Conte as measured from sea level.

WE DELIVER - The Maryville water system consists of over 296 miles of water distribution pipe. These lines deliver clean, safe, drinking water directly to you in your home 365 days a year! Our "in home" delivery of water saves you time, energy, and money, without adding to the plastic bottles filling our landfill.

WE SAVE YOU MONEY — An average Maryville home uses about 1 and 1/2 gallons per day for drinking water and more than 130 gallons of water per day in total water usage. Think what this would cost you as a homeowner if purchased anywhere else.

THINK BEFORE YOU FLUSH! - Flushing unused or expired medicines can be harmful to your drinking water. Properly disposing of unused or expired medication helps protect you and the environment. Keep medications out of Tennessee's waterways by disposing in one of our permanent pharmaceutical take back bins. There are nearly 100 take back bins located across the state, to find a convenient location please visit: <http://tdeonline.tn.gov/rxtakeback/>. You can dispose of medication at the Blount County Justice Center.

Address: 940 East Lamar Alexander Pkwy, Maryville, TN 37804.
Phone : 865-273-5149

WHAT IS THE SOURCE OF MY WATER?

Our water is a surface water source from the Little River originating in the Great Smoky Mountains. A final source water assessment of our watershed has been completed by the Tennessee Division of Water Supply, which considers the untreated water source serving our system to be of moderate susceptibility to potential contamination. An explanation of Tennessee's Source Water Assessment program and the source water assessment for the Maryville system can be viewed online at <https://www.tn.gov/environment/program-areas/wr-water-resources/water-quality/source-water-assessment.html>.

SOURCE WATER

The sources of drinking water (both tap 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 waters are:

- 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, or 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.
- 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 and the Tennessee Department of Environment and Conservation prescribe regulations which limit the amount of certain contaminants in water provided by public water systems. Food and Drug administration (FDA) regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

DO I NEED TO TAKE SPECIAL PRECAUTIONS?

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. Environmental Protection Agency/Center for Disease Control guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbiological contaminants are available from the Safe Drinking Water Hotline (800-426-4791). For more about your drinking water, please call us at 982-7990.

2019 WATER QUALITY DATA

Regulated Contaminants

Contaminant (unit)	MCLG	MCL	Level Found	Range	Violation	Sample Date	Typical Source of Contaminant
Total Coliform Bacteria ¹	TT	N/A	3	n/a	No	Ongoing	Naturally present in the environment
E.Coli	0	Routine and repeat samples are total coliform positive and either is <i>E. coli</i> positive or system fails to take repeat samples	0	n/a	No	Ongoing	Human and animal fecal waste
Copper (ppm) ²	1.3	AL=1.3	90th percentile 0.06		No	6/18 - 8/18	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Fluoride (ppm)	4	4	0.87 maximum	0.53-0.87	No	Ongoing	Erosion of natural deposits; water additive which promotes strong teeth
Lead (ppb) ²	0	AL=15	90th percentile 0.3		No	6/18 - 8/18	Corrosion of household plumbing systems; erosion of natural deposits
Nitrate (as Nitrogen) (ppm)	10	10	0.359	n/a	No	2/7/19	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Haloacetic Acids (HAA5) (ppb) ³	n/a	60	22.3	6.3-44.3	No	Ongoing	By-product of drinking water chlorination
Total Trihalomethanes (TTHMs) (ppb) ³	n/a	80	38.4	12.0-83.7	No	Ongoing	By-product of drinking water chlorination
Turbidity (NTU) ⁴	n/a	TT=0.3 95% of samples to be ≤ 0.3 NTU in a given month	0.09 NTU maximum	0.01-0.09	No (TT)	Ongoing	Soil runoff
Total Organic Carbon (TOC) (ppm) ⁵	TT	No MCL for 2019. We met the requirements for TOC removal	See Note 5		No (TT)	Ongoing	Naturally present in the environment

Contaminant /Disinfectant	MRDLG	MRDL	Level Found	Range	Violation	Sample Date	Typical Source of Contaminant
Chlorine (ppm)	4	4	2.59 maximum	1.88-2.59	No	Ongoing	Water additive used to control microbes

Unregulated Contaminants

Contaminant (unit)	MCLG	MCL	Level Found	Range	Violation	Sample Date	Typical Source of Contaminant
Sodium (ppm)	n/a	n/a	3.43	n/a	No	2/6/19	Erosion of natural deposits

About the data: Most of the data presented in this table is from testing done between 1 Jan-31 Dec 2019. We monitor for some contaminants less than once per year, and for those contaminants, the date of the last sample is shown in the table.

Note 1: The level found represents 3 out of 50 samples in 1 month. Repeat sampling resulted in an absence of bacteria. Suspected sampling technique error. The 11 other months indicated an absence of bacteria in all samples. Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system. We found coliforms indicating the need to look for potential problems in water treatment or distribution. When this occurs we are required to conduct assessment(s) to identify problems and to correct any problems that were found during these assessments. During the past year we were required to conduct one Level 1 assessment. One Level 1 assessment was completed. In addition we were required to take two corrective actions and we completed both of these actions.

Note 2: During the most recent round of lead and copper testing, 0 out of 30 household samples contained concentrations exceeding the action level.

Note 3: HAA5 and TTHMs are the highest running annual average for all quarters of 2019. Maryville water meets the EPA's standard for trihalomethanes (TTHMs), however, it does contain low levels. Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidney, or central nervous systems, and may have an increased risk of getting cancer.

Note 4: Annually we run more than 2190 turbidity tests. 100% of our samples were below the turbidity limit of 0.3 NTU.

Note 5: We met the Treatment Technique for Total Organic Carbon in 2019.

WHAT DOES THIS CHART MEAN?

AL: Action Level, or the concentration of a contaminant which, when exceeded, triggers treatment or other requirements which a water system must follow.

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.

MCL: Maximum Contaminant Level, or 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.

MCLG: Maximum Contaminant Level Goal, or 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.

MRDL: Maximum Residual Disinfectant Level, the highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for the control of microbial contaminants.

MRDLG: Maximum Residual Disinfectant Level Goal, the level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLG's do not reflect the benefits of the use of disinfectants to control microbial contaminants.

n/a: not applicable

TT: Treatment Technique, or a required process intended to reduce the level of a contaminant in drinking water.

Turbidity: We monitor turbidity, which is a measure of the cloudiness of water, because it is a good indicator that our filtration system is functioning properly.

Units of Measure:

ppb - parts per billion or micrograms per liter, explained in terms of money as one penny in \$10,000,000

ppm - parts per million or milligrams per liter, explained in terms of money as one penny in \$10,000

NTU - Nephelometric Turbidity Units - Turbidity is a measure of the clarity of the water. Turbidity in excess of 5 NTUs is just noticeable to the average person.

≤ - Less than or equal to

WHY ARE THERE CONTAMINANTS IN MY WATER?

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. 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 regulation is warranted. 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).

LEAD IN DRINKING WATER

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 Maryville Water and Sewer Department 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>.