

City of Martinsville Annual Water Quality Report for 2019

The Water Resources Department is providing this report for the calendar year 2019 to inform you about the quality of your drinking water. Our goal is to provide you with a safe and dependable supply of drinking water, and we want you to be aware of the efforts we make to protect your water supply. The quality of your drinking water must meet State and Federal requirements administered by the Virginia Department of Health (VDH).

GENERAL INFORMATION

As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and can pick up substances (referred to as contaminants) 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 naturally-occurring or result from urban storm water runoff, industrial livestock operations, and wildlife.

- * Inorganic contaminants, such as salts and minerals, which can be

- or dissolved in water, or result from urban storm water runoff, industrial or domestic wastewater discharges, oil or gas production, mining, or farming.

- * Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.

- * Organic chemical contaminants, including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production, and can come from gas stations, urban storm water runoff, and septic systems.

- * Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.

A source water assessment of our system has been conducted by the Virginia Department of Health in year 2002. The reservoir and creeks were determined to be of high susceptibility to contamination, as are virtually all other surface water sources in the State, using criteria developed by the State in its approved Source Water Assessment Program. The assessment report consists of maps showing the source water assessment area, an inventory of known land use activities of concern, and documentation of any known contamination within the prior 5 years. Additional information is available by contacting the waterworks representative noted elsewhere in this report.

In order to ensure that tap water is safe to drink, EPA prescribes regulations that 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.

All drinking water, including bottled drinking 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 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 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 waterborne infections. These persons 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).

Source and Treatment: Our main raw water source is the Beaver Creek Reservoir. A secondary source of raw water supply from Leathwood Creek can be used in emergency situations. Before infection by *cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

Martinsville Water Treatment Plant to insure that potentially harmful or otherwise objectionable substances are removed. At the water treatment plant raw water is treated with alum for coagulation and flocculation, lime to adequately raise the pH and add hardness, and fluoride to help reduce tooth decay. The water then flows through the sedimentation basins allowing the floc particles to settle out before being filtered. After filtration chlorine is added to maintain a residual throughout the distribution system for disinfection. Sodium hydioxide is added for pH adjustment, and is sodium hexametaphosphate is added to reduce pipe corrosion. All chemicals meet Federal guidelines and dosages are maintained and regulated by the Virginia Department of Health.

About Disinfection Byproducts in Drinking Water
Disinfection is an absolutely essential component in the treatment of drinking water preventing the occurrence and spread of many serious and potentially deadly water-borne diseases. Chlorination is a time proven method for disinfection. Disinfection byproducts (DBPs) do occur in the form of trihalomethanes (THMs) and haloacetic acids (HAA5). Chlorine combines with naturally occurring organic matter in the raw water. Organic levels are monitored coming from source water and test for removal. Consumption of potable water containing THMs or HAA5 in excess of the MCL limits over many years may have increased risk of individuals getting cancer or could experience problems with their liver, kidneys, or central nervous system.

Water Quality Results
The water purification plant routinely monitor for various contaminants in the water-supply to meet all regulatory requirements. During the first quarter of 2019 the THMs exceeded than four quarters rolling average results. The limit is 0.80 mg/liter (MCL), the sampling results was 0.88 mg/liter exceeding the set limits. The city water purification plant has taken multiple steps to decrease the levels of contaminants in the drinking water and has improved significantly in regards to THMs removal. The Fourth Quarter of 2019 has been reduced to 0.56 mg/l. Steps taken are in coordination with health department officials to help reduce contaminants to acceptable levels. The Operational Evaluation Limit (OEL) report was not prepared on timely manner for the first quarter of 2019 which is a violation of Health Department Regulation and the consumers are required to be notified. The OEL report is to acknowledge elevated THMs, possible causes and actions to improve.

About 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 Martinsville 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 15 to 30 seconds or until it becomes cold or reaches a steady temperature 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>. If you have questions about this report, want additional information about any aspect of your drinking water or want to know how to participate in decisions that may affect water quality, please write to the address below or call 276-503-5157.

Regularly scheduled City Council meetings are held on the 2nd and 4th Tuesday of each month at 7:30 PM in the City of Martinsville administration building located at 55 W Church Street.

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WATER QUALITY RESULTS

Substance/Unit	MCLG	MCL	Level Found/Range	Regulated	Viol.	Date of Viol.	Typical Source of Substance
Fluoride ppm	4	4	Range 0.31 to 1.20	No	Single	Not Applicable	Erosion of natural deposits, water additive which promotes strong teeth. Discharge from fertilizer and aluminum factories
Total Coliform MPN/100 ml.	0	Present < 5% of samples	** Bulk storage down for request Sept - Dec. Office of Drinking Water audit. None Detected during 2018	No	Weekly	Not Applicable	Naturally present in the environment
Turbidity NTU	NA	TT = 95% of monthly samples must be < 0.1 NTU	Max. 0.38 Lowest monthly percentage of samples < 0.1 = 99.9%	No	Continuous / Every 2 hrs	Not Applicable	Soil runoff (turbidity itself is not harmful, but high levels may indicate other treatment problems) (See "Disinfection Byproducts" on other side)
Total Trihalomethanes ppb	NA	60	Max. Rolling Avg. 81 Range 10-120	Yes	Every 90 days	Not Applicable	By-product of drinking water chlorination (See "Disinfection Byproducts" on other side)
Halogenated Acids ppb	NA	TT = TOC removal rate greater than or equal to 60.0 MRDL = 4.0	Max. Rolling Avg. 45 Range 16-57	No	Every 90 days	Not Applicable	By-product of drinking water chlorination (See "Disinfection Byproducts" on other side)
Total Organic Carbon ppm	NA	AL = 13	Min. Rolling Avg. Removal Ratio: 1.38 Max. Rolling Avg. Removal Ratio: 1.38 Range: 1.30 to 1.55 Max. Output Avg. 1.64 Range: 0.80 to 2.40	No	Monthly	Not Applicable	Neutrally poised to the environment. Reporting violation. Water additive used to control microbes.
Chlorine ppm	MRDLG = 4.4	AL = 13	0.97 (0.96th percentile Range: 0.601 - 0.14)	No	Every 2 hrs	Not Applicable	Control of household plumbing systems, erosion of natural deposits.
Copper ppm	0	AL = 15	None of the 12 samples above AL Range: 0.001 - 0.48	No	June -17	Not Applicable	Corrosion of household plumbing systems, erosion of natural deposits.
Lead ppm	0	AL = 15	2.4 (0.5th percentile Range: ND - 48 One of the 12 samples above AL)	No	June -17	Not Applicable	Corrosion of household plumbing systems, erosion of natural deposits.
Combined radium 226/228	0	5	11	No	May-18	Not Applicable	Erosion of natural deposits

Cryptosporidium

In 2018, The City of Martinsville analyzed 24 samples of source water for cryptosporidium. These samples were collected before any treatment had been applied at our water treatment plant. Cryptosporidium is a microbial pathogen found in surface water though out the U.S. Ingestion of Cryptosporidium may cause cryptosporidiosis, an abdominal infection. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals can overcome the disease within a week. However, immune-compromised people, infants and small children, and the elderly are at a greater risk of developing life threatening illness. Cryptosporidium must be ingested to cause disease, and it may be by other means than drinking water. The City of Martinsville Department of Water Resources works diligently to optimize the filtration process in order to ensure greatest cryptosporidium removal.

DEFINITIONS

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.

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. In developing the standards EPA assumes that the average adult drinks 2 liters of water each day throughout a 70-year life span. EPA generally sets MCLs at levels that will result in no adverse health effects for some contaminants or a one-in-ten-thousand to one-in-a-million chance of having the described health effect for other contaminants.

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

Maximum Residual Disinfectant 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.

Non-detects (ND) - lab analysis indicates that the contaminant is not present

Parts per million (ppm) or Milligrams per liter (mg/l) - one part per million corresponds to one minute in two years.

Parts per billion (ppb) or Micrograms per liter (µg/l) - 17.5 Parts per million

Nephelometric Turbidity Unit (NTU) - 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.

Secondary Maximum Contaminant Level (SMCL) - non-enforceable guidelines regarding contaminants that may cause cosmetic effects (such as skin or tooth discoloration) or aesthetic effects (such as taste, odor, or color) in drinking water.

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

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

< - less than

Monitoring Notes
We constantly monitor for various contaminants in the water supply to meet all regulatory requirements. The tables list only those that had some level of detection.

Most of the results in the tables are from testing done in 2018. However, the State allows monitoring for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of our data, though representative, is more than one year old.