

# City of Martinsville Annual Water Quality Report for 2018

The Water Resources Department is providing this report for the calendar year 2018 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 livestock operations, and wildlife.

- \* Inorganic contaminants, such as salts and minerals, which can be naturally occurring 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 reservoirs 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. Immunocompromised persons 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 biological 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 Leatherwood Creek can be used in emergency situations. Before

entering the distribution system. Your water is treated at the 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 to group the impurities into a floc, 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 hydroxide is added for pH adjustment, and is sodium hexametaphosphate is added to reduce pipe corrosion. All chemicals meet federal guidelines and dosages are maintain 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 total trihalomethanes (TTHMs) and Haloacetic acids (HAAs). 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 TTHMs or HAAs in excess of the MCLs limits over many years may have an 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 fourth quarter of 2018 the TTHMs exceeded the four quarter rolling average results. The limit is 0.80 mg/liter (MCL). Sampling results was 0.81 mg/liter exceeding the set limits. It is required by the state to make the public aware of any treatment or monitoring violations that may occur during the course of the year. The city water purification plant are taking multiple steps to decrease the levels of contaminants in the drinking water. Steps taken are in coordination with health department officials to help reduce contaminates to acceptable levels.

## 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 276-403-5157. Regularly scheduled City Council meetings are held on the 2nd and 4th Tuesday of each month at 7:30 P.M. at the City of Martinsville administration building located at:

55 W. Church Street.

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# WATER QUALITY RESULTS

Substances	MCLG	SMCL	Level of Treatment		Vessel	Date of Sampling	Typical Source of Substance
			Unregulated	Regulated			
Fluoride ppm	4	4			Vehicle	Shuttle Daily	Erosion of natural deposits, water additive which prevents tooth decay; Discharge from fertilizer and aluminum factories
Total Coliform MPN/100 mL	0	Present < 5% of samples			Vehicle	Range: 0.41 to 0.95	Escherichia coli (E. coli) is a naturally present in the environment
Turbidity NTU	NA	TT = 95% of monthly samples must be < 0.3 NTU	TT = 95% of monthly samples must be < 0.3 NTU	95% of samples detected during 2020	No	Weekly	By-product of drinking water chlorination (See "Disinfection Byproducts" on other side)
Total Trihalomethanes ppm	NA				No	Continuous / Every 2 hrs	Still runoff (turbidity isn't not harmful, but high levels may indicate other treatment problems)
Halogenated Acids ppm	NA	60			No	Every 90 days	By-product of drinking water chlorination (See "Disinfection Byproducts" on other side)
Total Organic Carbon ppm	NA	TT = TOC removal ratio greater than or equal to 0.9	Vehicle	Max: 0.25 Lowest monthly percentage of samples <0.1 is 100%	No	Every 90 days	Organic material in the environment
Chlorine ppm	MDL-G	MDL = 4.0	Vehicle	Vehicle Rolling Avg Removal Ratio 1.38	No	Monthly	Naturally present in the environment
Copper ppm	1.300	AL = 1.000	Vehicle	Vehicle Daily Avg: 1.42 Range: 1.00 to 2.30	No	Every 2 hrs	Water additive used to control microbes
Lead ppm	0	AL = 15	Vehicle	90th Percentile-based Range: 10.0-100.0 of the 25 samples above AL.	No	August 2019	By-product of drinking water chlorination (See "Disinfection Byproducts" on other side)
Constituted sodium EC/L	6	5	Vehicle	One of the 32 Samples above AL. Range: 30-100	No	August 2019	Corrosion of household plumbing systems; erosion of natural deposits
Sodium ppm	NA	NA	Unregulated		No	May 16	Erosion of natural deposits
Hardness ppm	NA	NA	14-15 ppm		No	July 2020	Naturally occurring in environment, added by some of the chemical additive like calcium from Measure of naturally occurring hardness metals
Magnesium ppm	NA	NA	18 ppm		No	July 2020	Naturally occurring in the environment, when above the SMCL can lead to aesthetic problems such as staining/discoloration and infiltration
Aluminum ppm	NA	50,000 SMCL	213 ppm		Yes	July 2020	Naturally occurring and from water additives used to treat water, when above the SMCL, can lead to aesthetic problems (color)

**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 the water treatment plant. Cryptosporidium is a microbial pathogen found in surface water throughout 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 illness within a week. However, immune-compromised individuals, infants and small children, and the elderly are at a higher risk. Cryptosporidium must be ingested to cause illness and may also come from sources other than water. The City of Martinsville Department of Water Resources works diligently to optimize the filtration process in order to ensure cryptosporidium removal.

## Definitions

**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 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 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.

**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.

**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 - one part per billion corresponds to one minute in 2,000 years.

Grains per gallon (gpg) = 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.

**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 results are from 2020, but state allows for some contaminants to be done less frequently.