



Charles City County  
2016 Annual Drinking Water Quality Report  
Mt. Zion/Rustic Area

### **Introduction**

This Annual Drinking Water Quality Report (Consumer Confidence Report) for calendar year 2016 as required by the Safe Drinking Water Act (SDWA). This report is designed to provide details about where your water comes from, what it contains, and how it meets state and federal requirements administered by the Virginia Department of Health. Our goal is to provide you with a safe and dependable supply of drinking water and for you to understand the efforts we make to protect your water supply.

### **General Information**

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/Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Water Drinking Hotline (800-426-4791).

### **Source(s) and Treatment of Your Water Drinking Water**

The source of your drinking water is groundwater from a well located along Wilcox Neck Road in Charles City, Virginia. Reverse Osmosis filtration along with chemical treatment removes particles that cause taste and odor. Anti-scalant preserves the filtration membrane, sulfuric acid lowers the pH, and zinc orthophosphate reduces corrosion within the water distribution-piping network. Sodium Hypochlorite provides disinfection

### **Source Water Assessment and Its Availability**

As a first step toward protection of our sources of drinking water, the Virginia Department of Health (VDH) evaluated the susceptibility of Virginia's water supplies to contamination. The Virginia Department of Health conducted a source water assessment of our system during 2002. The Mt. Zion/Rustic Area Well was determined to be of low susceptibility to contamination, using criteria developed by the State in its' EPA-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 know contamination with the last 5 years from the date of the assessment.

## **What Is In Drinking 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. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's (EPA) Safe Drinking Water Hotline (800-426-4791). 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: microbial contaminants, such as viruses and bacteria, that 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 that 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.

## **Description of Water Treatment Process**

Your water is treated by filtration and disinfection. Filtration removes particles suspended in the source water. Particles typically include clays and silts, natural organic matter, iron and manganese, and microorganisms. Your water is also treated by disinfection. Disinfection involves the addition of chlorine or other disinfectants to kill bacteria and other microorganisms (viruses, cysts, etc.) that may be in the water. Disinfection is considered to be one of the major public health advances of the 20th century.

## **Further Information**

If you have questions about the waterworks, please call the Public Works office at 804-652-4730. Also, please visit the websites for the EPA or VDH to learn more about the water you drink.

## **Water Conservation Tips**

Did you know that the average U.S. household uses approximately 400 gallons of water per day or 100 gallons per person per day? Luckily, there are many low-cost and no-cost ways to conserve water. Small changes can make a big difference - try one today and soon it will become second nature.

- Take short showers - a 5 minute shower uses 4 to 5 gallons of water compared to up to 50 gallons for a bath.
- Shut off water while brushing your teeth, washing your hair and shaving and save up to 500 gallons a month.
- Use a water-efficient showerhead. They're inexpensive, easy to install, and can save you up to 750 gallons a month.
- Run your clothes washer and dishwasher only when they are full. You can save up to 1,000 gallons a month.
- Water plants only when necessary.
- Fix leaky toilets and faucets. Faucet washers are inexpensive and take only a few minutes to replace. To check your toilet for a leak, place a few drops of food coloring in the tank and wait. If it seeps into the toilet bowl without flushing, you have a leak. Fixing it or replacing it with a new, more efficient model can save up to 1,000 gallons a month.
- Adjust sprinklers so only your lawn is watered. Apply water only as fast as the soil can absorb it and during the cooler parts of the day to reduce evaporation.
- Teach your kids about water conservation to ensure a future generation that uses water wisely. Make it a family effort to reduce next month's water bill!

- Visit [www.epa.gov/watersense](http://www.epa.gov/watersense) for more information.

### **Cross Connection Control Survey**

The purpose of this survey is to determine whether a cross-connection may exist at your home or business. A cross connection is an unprotected or improper connection to a public water distribution system that may cause contamination or pollution to enter the system. We are responsible for enforcing cross-connection control regulations and insuring that no contaminants can, under any flow conditions, enter the distribution system. If you have any of the devices listed below please contact us so that we can discuss the issue, and if needed, survey your connection and assist you in isolating it if that is necessary.

- Boiler/ Radiant heater (water heaters not included)
- Underground lawn sprinkler system
- Pool or hot tub (whirlpool tubs not included)
- Additional source(s) of water on the property
- Decorative pond
- Watering trough

### **Source Water Protection Tips**

Protection of drinking water is everyone's responsibility. You can help protect your community's drinking water source in several ways:

- Eliminate excess use of lawn and garden fertilizers and pesticides - they contain hazardous chemicals that can reach your drinking water source.
- Pick up after your pets.
- If you have your own septic system, properly maintain your system to reduce leaching to water sources or consider connecting to a public water system.
- Dispose of chemicals properly; take used motor oil to a recycling center.
- Volunteer in your community. Find a watershed or wellhead protection organization in your community and volunteer to help. If there are no active groups, consider starting one. Use EPA's Adopt Your Watershed to locate groups in your community, or visit the Watershed Information Network's How to Start a Watershed Team.
- Organize a storm drain stenciling project with your local government or water supplier. Stencil a message next to the street drain reminding people "Dump No Waste - Drains to River" or "Protect Your Water." Produce and distribute a flyer for households to remind residents that storm drains dump directly into your local water body.

### **Additional Information for Lead**

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 Department of Public Works 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>.

### **Additional Information for Arsenic**

While your drinking water meets EPA's standard for arsenic, it does contain low levels of arsenic. EPA's standard balances the current understanding of arsenic's possible health effects against the costs of removing arsenic from drinking water. EPA continues to research the health effects of low levels of arsenic which is a mineral known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems.

## Water Quality Data Table

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of contaminants in water provided by public water systems. The table below lists all of the drinking water contaminants that we detected during the calendar year of this report. Although many more contaminants were tested, only those substances listed below were found in your water. All sources of drinking water contain some naturally occurring contaminants. At low levels, these substances are generally not harmful in our drinking water. Removing all contaminants would be extremely expensive, and in most cases, would not provide increased protection of public health. A few naturally occurring minerals may actually improve the taste of drinking water and have nutritional value at low levels. Unless otherwise noted, the data presented in this table is from testing done in the calendar year of the report. The EPA or the State requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants do not vary significantly from year to year, or the system is not considered vulnerable to this type of contamination. As such, some of our data, though representative, may be more than one year old. In this table you will find terms and abbreviations that might not be familiar to you. To help you better understand these terms, we have provided the definitions below the table.

Contaminants	MCLG or MRDLG	MCL, TT, or MRDL	Detect In Your Water	Range		Sample Date	Violation	Typical Source
				Low	High			
<b>Disinfectants &amp; Disinfection By-Products</b>								
Chlorine (as Cl <sub>2</sub> ) (ppm)	4	4	.59	.13	.81	2015	No	Water additive used to control microbes
Haloacetic Acids (HAA5) (ppb)	NA	60	3.6	NA	NA	2016	No	By-product of drinking water chlorination
TTHMs [Total Trihalomethanes] (ppb)	NA	80	4.6	NA	NA	2016	No	By-product of drinking water disinfection
<b>Inorganic Contaminants</b>								
Arsenic (ppb)	0	10	3	NA	NA	2016	No	Erosion of natural deposits
Fluoride (ppm)	4	4	1	NA	NA	2016	No	Erosion of natural deposits
<b>Microbiological Contaminants</b>								
E. Coli (RTCR) - in the distribution system (positive samples)	0	TT	0	NA	NA	2016	No	agricultural product runoff
<b>Radioactive Contaminants</b>								
Gross Alpha (pCi/L)	0	15	< 0.7	NA	NA	2013	No	Erosion of natural deposits
Gross Beta (pCi/L)	0	50	2	NA	NA	2013	No	Decay of natural and man-made deposits.
Radium (combined 226/228) (pCi/L)	0	5	.7	NA	NA	2013	No	Erosion of natural deposits

Contaminants	MCLG	AL	Your Water	Sample Date	# Samples Exceeding AL	Exceeds AL	Typical Source
<b>Inorganic Contaminants</b>							
Copper (ppm)	1.3	1.3	.045	2014	0	No	Erosion of natural deposits
Lead (ppb)	0	15	3.6	2014	0	No	Erosion of natural deposits

## Other Potential Contaminants

In an effort to insure the safest water possible, the County is required to monitor for some contaminants not required by Federal regulations. Please see the table below for those contaminants that were detected in your water.

Contaminants	State MCL	Your Water	Violation	Explanation and Comment
Barium	2 ppm	.01 ppm	No	
Sodium	-	224 ppm	No	
Sulfate	250 mg/l	23.1 mg/l	No	

<b>Unit Descriptions</b>	
Term	Definition
ppm	ppm: parts per million, or milligrams per liter (mg/L)
ppb	ppb: parts per billion, or micrograms per liter (µg/L)
pCi/L	pCi/L: picocuries per liter (a measure of radioactivity)
NA	NA: not applicable
ND	ND: Not detected
NR	NR: Monitoring not required, but recommended.
positive samples	positive samples/yr: The number of positive samples taken that year

<b>Important Drinking Water Definitions</b>	
Term	Definition
MCLG	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.
MCL	MCL: Maximum Contaminant Level: 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.
TT	TT: Treatment Technique: A required process intended to reduce the level of a contaminant in drinking water.

<b>Important Drinking Water Definitions</b>	
AL	AL: Action Level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
Variations and Exemptions	Variations and Exemptions: State or EPA permission not to meet an MCL or a treatment technique under certain conditions.
MRDLG	MRDLG: Maximum residual disinfection level goal. 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.
MRDL	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 control of microbial contaminants.
MNR	MNR: Monitored Not Regulated
MPL	MPL: State Assigned Maximum Permissible Level

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