

# Annual Drinking Water Quality Report for 2015

## *Town of Charlotte Court House*

*PWS ID No. 5037150*

### **INTRODUCTION**

This Annual Drinking Water Quality Report for the 2015 calendar year is designed to inform you about your drinking water quality. Our goal is to provide you with a safe and dependable supply of drinking water, and we want you to understand 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).

If you have questions about this report, please contact:

Charlotte Court House Town Office: 434-542-5781

If you want additional information about any aspect of your drinking water or want to know how to participate in decisions that may affect the quality of your drinking water, please contact

Water Operator, Curtis Inge: 434-547-7334

The times and location of regularly scheduled board meetings are as follows:

The 3<sup>rd</sup> Monday of each Month at 7:00 p.m. / Town Office at 350 George Washington Highway

**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 resulting from the presence of animals or from human activity. Contaminants in source water may be naturally occurring substances, or may come from septic systems, discharges from domestic or industrial wastewater treatment facilities, agricultural and farming activities, urban stormwater runoff, residential uses, and many other types of activities. Water from surface sources is treated to make it drinkable while groundwater may or may not have any treatment.

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 byproducts 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 prescribes regulations which limit the amount of certain contaminants in water and provided by public water systems. Food and Drug Administration 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).

**VULNERABLE POPULATIONS** 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 microbiological contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

**SOURCE(S) AND TREATMENT OF YOUR DRINKING WATER** The source of your drinking water is groundwater drawn from five drilled wells and one spring located within the Town. The groundwater and the spring are treated with a sodium bicarbonate solution for pH adjustment and corrosion control. The spring and Well no. 7 are also treated with a sodium hypochlorite solution for continuous disinfection, when in use. Well No. 7 includes greensand filtration in which iron, manganese and radium are removed.

A source water assessment of our system was conducted in 2002 by the Virginia Department of Health. The wells were determined to be of high susceptibility to contamination using the 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 last 5 years. The report is available for review at the Town Office at 432-542-5781.

**DEFINITIONS** Contaminants in your drinking water are routinely monitored according to federal and state regulations. The table on the next page shows the results of this monitoring for the period of January 1<sup>st</sup> through December 31<sup>st</sup>, 2015. In the table and elsewhere in this report you will find many terms and abbreviations you might not be familiar with. The following definitions are provided to help you better understand these terms:

*Non-detects (ND)* - lab analysis indicates that the contaminant is not detectable, based on the limits of the analytical equipment used.

*Parts per million (ppm) or Milligrams per liter (mg/l)* - one part per million corresponds to one minute in two years or one penny in \$10,000.

*Parts per billion (ppb) or Micrograms per liter (µg/l)*- one part per billion corresponds to one minute in 2,000 years, or one penny in \$10,000,000.

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

*Nephelometric Turbidity Unit (NTU)* - nephelometric turbidity unit is a measure of the cloudiness 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 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.

*Maximum Residual Disinfectant 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 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.

*Variances and exemptions* - state or EPA permission not to meet an MCL or a treatment technique under certain conditions

**WATER QUALITY RESULTS** We routinely monitor for various contaminants in the water supply to meet all regulatory requirements.

The table lists only those contaminants that had some level of detection. Many other contaminants have been analyzed but were not present or were below the detection limits of the lab equipment.

The results in the following table are from testing done between 2014 and 2015. The state allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of our results, though representative, are more than one year old. The U.S. Environmental Protection Agency sets MCLs at very stringent levels. 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-one-million chance of having the described health effect for other contaminants.

Inorganic Contaminants						
Contaminant / Unit of Measurement	MCLG	MCL	Level Found/Range	Violation	Date of Sample	Typical Source of Contamination
Nitrate (ppm)	10	10	Highest: 2.24 Range: <0.05 to 2.24	No	Sept. 2015	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Fluoride (ppm)	4	4	Highest: 0.21 Range: <0.1 to 0.21	No	Sept. 2014 Oct. 2015	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Barium (ppm)	2	2	Highest: 0.049 Range: 0.011 to 0.049	No	Sept. 2014 Oct. 2015	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Chromium (ppb)	100	100	Highest: 4 Range: <1 to 4	No	Sept. 2014 Oct. 2015	Discharge from steel and pulp mills; Erosion of natural deposits
Radiological Contaminants						
Contaminant / Unit of Measurement	MCLG	MCL	Level Found/Range	Violation	Date of Sample	Typical Source of Contamination
Alpha Emitters (pCi/L)	0	15	Highest: 3.9 Range: 0.9 to 3.9	No	July 2015 (Wells 3, 4, 5)	Erosion of natural deposits
Combined Radium (pCi/L)	0	5	Highest: 0.3 Range: ND to 0.3	No		Erosion of natural deposits
Alpha Emitters (pCi/L)	0	15	*RAA: 3.6 Range: 2.6 - 3.9	No	2 <sup>nd</sup> Qtr. 2014 - 1 <sup>st</sup> Qtr. 2015 (Well 7)	Erosion of natural deposits
Combined Radium (pCi/L)	0	5	*RAA: 2.5 Range: 2.2 - 2.9	No		Erosion of natural deposits
Lead and Copper						
Contaminant / Unit of Measurement	MCLG	MCL	Level Found / Range	Exceedence	Date of Sample	Typical Source of Contamination
Lead (ppb)	0	AL=15	2 (90 <sup>th</sup> percentile) Range: <1-3 Of the ten samples collected none exceeded the AL.	No	Sept 2015	Corrosion of household plumbing systems; Erosion of natural deposits
Copper (ppm)	1.3	AL=1.3	0.78 (90 <sup>th</sup> percentile) Range: <0.01-0.89 Of the ten samples collected none exceeded the AL.	No	Sept 2015	Corrosion of household plumbing systems; Erosion of natural deposits
Disinfection Byproducts						
Contaminant / Unit of Measurement	MCLG	MCL	Level Found / Range	Violation	Date of Sample	Typical Source of Contamination
TTHMs (Total Trihalomethanes) (ppb)	N/A	80	2.7	No	August 2015	By-product of drinking water disinfection
Chlorine (ppm)	MRDLG =4	MRDL =4	No Chlorine Residual Provided	No	Monthly 2015	Water additive used to control microbes
Microbiological Contaminants						
Contaminant / Unit of Measurement	MCLG	MCL	Level Found / Range	Violation	Date of Sample	Typical Source of Contamination
Total Coliform Bacteria	0	1 positive monthly sample	Of five samples collected, one was positive	No	February 2015	Naturally present in the environment
Aesthetic Quality						
Contaminant / Unit of Measurement	MCLG	SMCL	Level Found/Range	Exceedence	Date of Sample	Typical Source of Contamination
Iron (ppm)	N/A	0.3	Highest: .75 Range: <0.01 to 0.75	Yes	Sept. 2014 Oct. 2015	Erosion of natural deposits
Manganese (ppm)	N/A	0.05	Highest:0.062 Range: <0.005 to 0.62	Yes		Erosion of natural deposits

\*RAA = Running annual average based on 4 quarters of analysis.

We are pleased to report to you that there were no detections of total HAA5s (Haloacetic Acids) in the samples collected during calendar year 2015.

**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 Town of Charlotte Courthouse 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>.

**VIOLATION INFORMATION** The Town of Charlotte Courthouse received no violations in 2015.