

# Drinking Water Quality Report

2015



## Town of Amherst

Town of Amherst  
 174 S. Main St.  
 P.O. Box 280  
 Amherst, VA 24521

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Contaminant	MCLG	MCL or PMCL	Level Found	Range	Violation	Date of Samples	Typical Source of Contamination
<b>Microbiological Contaminants</b>							
Total Coliform Bacteria	0	Presence of coliform bacteria in no more than 1 sample per month	Total coliform present in 2 of 6 samples in July 2015 (0 E. coli present samples in 2015)	0-2 total coliform present samples	Yes	Monthly at six sites	Naturally present in the environment and are used as an indicator that other potentially-harmful, bacteria that may be present.
Turbidity, NTU	N/A	TT= Max 1 NTU TT= 95% of monthly samples must be <0.3 NTU	Highest reported value: 0.1	Lowest monthly percentage of samples <0.3- 100%	No	Continuous	Soil runoff
<b>Radioactive Contaminants</b>							
Alpha Emitters, pCi/L	0	15	0	N/A	No	January 2014	Erosion of natural deposits
Beta/photon emitters*, pCi/L	0	50	1.6	N/A	No	January 2014	Decay of natural and man-made deposits
Radium-228, pCi/L	0	5	0	N/A	No	January 2014	Erosion of natural deposits
<b>Copper and Lead</b>							
Copper, ppm	AL = 1.3	AL = 1.3	0.2 (90 <sup>th</sup> percentile)	0.01-0.2 Of ten samples collected, none exceeded the AL	No	June 2014	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead, ppb	0	AL = 15	1 (90 <sup>th</sup> percentile)	0.2-1.4 Of ten samples collected, none exceeded the AL	No	June 2014	Corrosion of household plumbing systems; erosion of natural deposits
<b>Inorganic Contaminants</b>							
Fluoride, ppm	4	4	Highest reported value: 1.0	0.1-1.0	No	Daily	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Nitrate, ppm	10	10	0.25	N/A	No	July 2015	Runoff from fertilizer use; leaching from septic tank sewage; erosion of natural deposits
Barium, ppm	2	2	0.018	N/A	No	July 2015	Discharge of drilling waste; discharge from metal refineries; erosion of natural deposits
<b>Disinfection By-Products, Precursors, and Residuals</b>							
Chlorine, ppm	MRDLG 4.0	MRDL 4.0	Highest quarterly average: 1.2	0.02-2.0	No	Monthly at six sites	Water additive used to control microbes
Haloacetic Acids (HAA5), ppb	N/A	60 (running 4 quarter average at each sample site)	Highest 4 quarter average: 57	3-100	No	Quarterly 2015	Byproduct of drinking water disinfection
Total Trihalomethanes (TTHM), ppb	N/A	80 (running 4 quarter average at each sample site)	Highest 4 quarter average: 57	11-86	No	Quarterly 2015	Byproduct of drinking water chlorination
Total Organic Carbon (TOCs), ppm	N/A	TT- Based on % removed during treatment process; meets when removal ratio ≥ 1.0	Lowest 4 quarter average removal ratio: 1.0	Range of monthly removal- 1.0-1.7	No	Monthly	Naturally occurring in the environment

\* Certain minerals are radioactive and may emit forms of radiation known as photons and beta radiation. Some people who drink water containing emitters in excess of the MCL over many years may have an increased risk of getting cancer. The PMCL for beta particles is 4 mrem/yr. The EPA considers 50 pCi/L to be the level of concern for beta particles.

Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer.

### CONTACT INFORMATION

This Water Quality Report was prepared by the Town's Director of Public Utilities, Thomas W. Fore. If you have questions about this report or would like additional information about any aspect of your drinking water, or would like to know how to participate in the in the decisions that affect the quality of your drinking water, please contact Mr. Fore at 946-1267. Decisions concerning your drinking water quality are made during the regularly scheduled Town Council meeting held on the second Wednesday of each month at 7:00 p.m. in the Town Hall, located at 174 South Main Street. If you are interested in obtaining a copy of the Town of Amherst's source water assessment, please call 946-1267 or write to: Director of Public Utilities, Town of Amherst, P.O. Box 280, Amherst, VA 24521.

**EMPLOYMENT:** Employees of the Town and applicants for employment shall be afforded equal opportunity in all aspects of employment without regard to race, color, religion, political affiliation, national origin, disability, marital status, gender or age.

**SODIUM:** According to results of the chemical analyses for METALS based on a sample collected in July 2015, the SODIUM in the treated water is 12.6 ppm for entry point EP001. This is below the level of 20 ppm for SODIUM in drinking water, which is established as the maximum level for those individuals on a "strict" SODIUM intake diet.

**Violations:** We took six routine water samples during July 2015. Two of those samples showed the presence of total coliform bacteria. The standard is that no more than one sample per month may do so. An additional six repeat samples were collected after the initial presence was detected and were found to be absent for total coliform bacteria. Coliforms are bacteria which are naturally present in the environment and are used as an indicator that other, potentially-harmful, bacteria may be present. Coliforms were found in more samples than allowed and this was a warning of potential problems. Whenever we detect coliform bacteria in any sample, we do follow-up testing to see if other bacteria of greater concern, such as E. coli, are present. We did not find any of these bacteria in our subsequent testing, and further testing shows that this problem has been resolved. Our water treatment plant provides continuous chlorination for the disinfection of microorganisms and we strive to maintain these residuals throughout the distribution system.

## INTRODUCTION

This Annual Drinking Water Quality Report for the calendar year 2015 is designed to inform you about your drinking water quality. The Town's goal is to provide you with a safe, dependable and affordable supply of drinking water, and to help you understand its efforts to protect your drinking 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 other substances as well, all of which are referred to as contaminants. In source water, these may come from septic tank systems, discharges from domestic or industrial wastewater treatment facilities, agricultural and farming activities, urban storm water 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 require any treatment.

Various contaminants may be present in source water. They include **microbial contaminants**, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural or livestock operations and wildlife; **inorganic contaminants**, such as salts and metals, which may be naturally occurring or a result of urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining and farming; **pesticides** and **herbicides**, which may come from a variety of sources, including agricultural operations, urban storm water runoff and residential uses; **organic chemical contaminants**, including synthetic and volatile organic compounds, which are often byproducts of industrial processes and petroleum production and may also come from gas stations, urban runoff and septic systems; and **radioactive contaminants**, which may be naturally occurring or the result of oil and gas productions and mining activities.

In order to ensure that tap water is safe to drink, the US Environmental Protection Agency (EPA) prescribes regulations to limit the amount of certain contaminants in

water provided by public water systems. The Food and Drug Administration regulations establish limits for contaminants in bottled water, which must provide the same protection of public health.

All drinking water, including bottled water, may reasonably be expected to contain at least small amounts of contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. 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, persons with HIV/AIDS or other immune system disorders, some elderly, and infants can all be particularly at risk from infections. These persons should seek advice about drinking water from their health care providers. Information about EPA/CDC guidelines on drinking water contaminant regulations and appropriate means to lessen the risk of cryptosporidium and other microbiological contaminants is available from the EPA's Safe Drinking Water Hotline at 1-800-426-4791.

## SOURCE AND TREATMENT OF YOUR DRINKING WATER

The source of the Town's drinking water is the Buffalo River, a surface water source located in the upper middle basin of the James River. In a source water assessment of our system conducted in April 2003 by the Virginia Department of Health, the Buffalo River was determined to be of high susceptibility to contamination based on the criteria developed by the state in its approved Source Water Assessment Program. The assessment consists of maps showing the source water assessment area, an inventory of known land use activities of concern, and documentation of any known contamination. Information regarding the report can be obtained as explained under Contact Information in this report. The Town also has the Robert E. Lee Soil and Water Conservation District that continues an ongoing assessment of the Buffalo River.

The Town's Water Plant is a conventional surface water filtration plant. At various points in the treatment process, chemicals are added to the water. Aluminum sulfate and soda ash are added to remove contaminants dissolved in the water; chlorine is added for disinfection; fluoride is

added to promote strong teeth; carbon is added when necessary to improve the taste and odor of the water; and lime and orthophosphate are added to reduce the corrosivity of the finished water. The water travels through a combination of mixing chambers, then into settling chambers where contaminants and suspended matter settle out. The water is then filtered before being pumped into the distribution system. If you would like to tour the water treatment plant, contact Tom Fore as explained under Contacts Information in this report for an appointment.

## Lead and Copper

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 Amherst 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>.

## DEFINITIONS

Contaminants in your drinking water are routinely monitored according to federal and state regulations. The table on the other side of this page shows the results of the Town's 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 abbreviations that you may not be familiar with. The following definitions are provided to help you understand these terms.

**Action Level (AL):** concentration of a contaminant that, if exceeded, triggers treatment or other requirements that a water system must follow.

**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 to control microbial contaminants.

**Maximum Contaminant Level (MCL):** the highest allowable 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 health risk.

**Milirems Per Year (mrem/yr):** a measure of radiation absorbed by the body.

**Nephelometric Turbidity Units (NTU):** measurement of the clarity of the water; turbidity in excess of 5 NTU is just noticeable to the average person.

**Parts Per Million (ppm):** measure of concentration, corresponds to one minute in two years or a single penny in \$10,000.00.

**Parts Per Billion (ppb):** measure of concentration, corresponds to one minute in twenty years or a single penny in \$10,000,000.00.

**PicoCuries Per Liter (pCi/L):** a measure of radioactivity.

**Local Running Annual Average (LRAA):** An annual average based on quarterly results taken during the year at each sample location.

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

## QUALITY MONITORING

*The Town of Amherst constantly monitors various contaminant levels in the water supply to meet all regulatory requirements. The table included in this report 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.*