

Annual Water Quality Report

INTRODUCTION

This Annual Drinking Water Quality Report for calendar Year 2016 is designed to provide you with valuable information about your drinking water quality. The City of Waynesboro is committed to providing 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 meets all state and Federal requirements administered by the Virginia Department of Health (VDH), Office of Drinking Water.

General Information

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 can pick up substances resulting from the presence of animals or from human activity. Contaminants that may be present in source water include: (1) Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife. (2) Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming. (3) Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses. (4) 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 storm water runoff, and septic systems. (5) 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 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. Water from surface sources is treated to make it drinkable while groundwater may or may not have any treatment. 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. 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).

Sources and Treatment of Your Drinking Water

Your drinking water is provided by two wells and one spring. The combined sources are treated by a membrane filtration plant. The water is then chlorinated for disinfection and supplemented with fluoride.

Source Water Assessments

A source water assessment has been completed by VDH. The assessment determined that our sources may be susceptible to contamination because they are located in an area that promotes migration of contaminants from land use activities of concern. More specific information may be obtained by contacting the water system representative listed below.

Quality of Your Drinking Water

Your drinking water is routinely monitored according to Federal and State Regulations for a variety of contaminants. The tables that follow show the results of our monitoring for the period of January 1st through December 31st, 2016.

Contaminant Regulations

We constantly 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 detection limits of the lab equipment. Maximum Contaminant Levels (MCL's) are set at very stringent levels by the U.S. Environmental Protection Agency. 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 MCL's 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 contaminants.

Lead Contaminants

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. We are 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 15-30 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 (1-800-426-4791) or at <http://www.epa.gov/safewater/lead>.

Cryptosporidium

Cryptosporidium is a microbial pathogen found in surface water throughout the US. Although filtration removes Cryptosporidium, the most commonly used filtration methods cannot guarantee 100% removal. Our monitoring did not indicate the presence of these organisms in

our source water. Current test methods do not allow us to determine if the organisms are dead or if they are capable of causing disease. 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 few weeks. However, immune-compromised people, infants, small children and the elderly are at greater risk of developing life-threatening illness. We encourage immune-compromised individuals to consult their doctor regarding appropriate precautions to take to avoid infection. *Cryptosporidium* must be ingested to cause disease, and it may spread through means other than drinking water.

Definitions

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 present

Parts per million (ppm) or Milligrams per liter (mg/l) - one part per million corresponds to one minute in 2 years or one penny in \$10,000

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

Parts per trillion (ppt) or Nanograms per liter (nanograms/l) - one part per trillion corresponds to one minute in 2,000,000 years or one penny in \$10,000,000,000

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 clarity of water. Turbidity in excess of 5 NTUs is just noticeable to the average person

Action Level - 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, or MCL - the highest level of a contaminant that is allowed in drinking water. MCLs are set as close to MCLGs as feasible using the best available treatment technology

Maximum Contaminant Level Goal, or 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

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

Violation Information

No violations in the year 2016.

Water Quality Results

Contaminant/Unit of Measure	MCLG	MCL	Level Found/Range	Violation	Sample Date	Typical Source of Contamination
Inorganic Contaminants						
Fluoride ppm	4	4	Avg: 0.37 mg/l Range: 0.00-0.88 mg/l	No	Daily 1/1/16-12/31/16	Erosion of natural deposits; Water additive which promotes strong teeth. Discharge from Fertilizer and aluminum factories
Total Organic Carbon	TT	NA	ND-0.28 mg/l	No	Monthly January-May 2016	Naturally present in the environment
Nitrate 10 ppm	10	10	0.55	No	August 2016	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Barium ppm	2	2	0.0247	No	August 2016	Discharge of drilling wastes; discharge from metal refineries and erosion of natural deposits
Radiological Contaminants						
Combined Radium (pCi/L)	0	5	0.86	No	July 2015	Erosion of natural deposits
Alpha emitters (pCi/L)	0	15	1.1	No	July 2015	Erosion of natural deposits
Gross Beta (pCi/L)	0	50	2.6	No	July 2015	Decay of natural and man-made deposits

Contaminant/Unit of Measure	MCLG	MCL	Level Found/Range	Violation	Sample Date	Typical Source of Contamination
Lead & Copper						
Copper ppb	1.3	AL=1.3	0.091 (90 TH Percentile) Zero of 30 samples collected exceeded the AL	No	July/August 2016	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood or wood preservatives
Lead ppb	0	AL=15	14 (90 th Percentile) 3 of 30 samples collected exceeded the AL		July/August 2106	Corrosion of household plumbing systems; Erosion of natural deposits
Disinfection by-Products						
TTHM's (Trihalomethanes) ppb	0	80	Avg.: 2 ppb Range: ND-6.15ppb	No	Quarterly 2016	By-product of drinking water chlorination
Haloacetic acids (Haas) ppb	NA	60	Avg: >1 ppb Range: ND-1.89ppb	No	Quarterly 2016	By-product of drinking water chlorination
Bacteriological Contaminants						
Total Coliform Bacteria	0	Presence of Coliform Bacteria in no more than one sample per month	0 samples positive for total coliform out of 240	No	20 samples per Month 2016	Naturally present in environment
Turbidity NTU ppm	0	0.3	Max.: 0.043 Avg.: 0.039 All monthly percentages 100% of samples < 0.3 NTU	No	Daily 1/1/16-12/31/16	Soil runoff; Turbidity is a measure of cloudiness of water

The results in the table include testing done from 2015-2016. The state allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. If you have any questions about this report or want additional information, please contact: Mr. Greg Campbell at (540)-946-3754.