LEAD & COPPER

(Most Recent Monitoring Period - July 2014)

Contaminant	MCLG	MCL	Level Found	Unit Measurement
Lead	0	AL=15	3.57	ppb
Copper	1.3	AL=1.3	0.102	mg/l

Lead AL Exceeded: **NO**
Lead Samples > AL: **0**

Copper AL Exceeded: **NO**
Copper Samples >AL: **0**

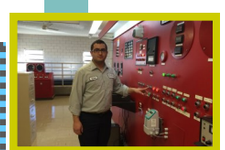
Typical Source of Contamination for Lead & Copper: Corrosion of household plumbing systems; Erosion of natural deposits

(1) Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.

(2) Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's disease should consult their personal doctor.

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. The Town of Woodstock is responsible for providing high quality drinking water, but cannot control the variety of materials used in the 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 the 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.



Questions?
Contact our staff:

Daniel Bailey
Chief Operator
dan.bailey@townofwoodstockva.gov

James Didawick
Superintendent of Public Works
james.didawick@townofwoodstockva.gov

SOURCES & TREATMENT OF YOUR DRINKING WATER

The Source - The North Fork of the Shenandoah

Your drinking water is surface water obtained from the North Fork of the Shenandoah River (all the more reason to protect it!!). The raw water intake consists of three 16-inch ductile iron pipes. Raw water must pass through a vertical traveling screen powered by a 1-hp electrical motor. The screen travels at a speed of 10 fpm and is cleaned by high-pressure water jets capable of delivering a wash water flow of 59 gpm at 80 psi.

Raw water flows by gravity into a 61,037 gallon (20'x24'x17') concrete wet well and is delivered to the water treatment plant by one 100hp, 1400gpm at 225 feet TDH water-lubricated vertical turbine pump and two 60 hp, 700 gpm at 225 feet TDH water-lubricated vertical turbine pumps located in the raw water pump station. The raw flow is continuously monitored by an indicating, recording and totalizing flow meter.

Water is distributed throughout the community by three high service pumps, two storage tanks and distribution piping consisting of 12-inch,8-inch, 6-inch and 4-inch pipe.

Treatment is provided at the Woodstock Water Treatment Plant. Treatment is achieved by rapid mix, flocculation, sedimentation, and filtration for turbidity removal, chlorination for disinfection of the water and fluoridation to aid in reducing tooth decay.

Chemical Addition: Provisions are made for the addition of polyaluminum hydrochlorosulfate (PAC), potassium permanganate, powdered activated carbon, chlorine and fluoride.

The Virginia Department of Health has established a design capacity for the Woodstock Water Treatment Plant. The design basis is 2.016 million gallons per day.

Source Water Assessment

A source water assessment for the Town of Woodstock was completed by the Virginia Department of Health (VDH) in February 2015. This assessment determined that the Town's raw water source, the North Fork of the Shenandoah River, may be susceptible to contamination because it is surface water exposed to a wide array of contaminants at varying concentrations. Changing hydrologic, hydraulic and atmospheric conditions promote migration of contaminants from land use activities of concern within the assessment area. More specific information may be obtained by contacting the water system representative referenced within this report.

We constantly monitor for various contaminants in the water supply to meet all regulatory requirements. The tables list 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 lab equipment. Maximum Contaminant Levels (MCLs) are set at very stringent levels by the US Environmental Protection Agency (EPA). 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.

The Town is in full compliance w/ all monitoring & reporting requirements. No violations in CY 2015.

A PROJECT IN THE PIPELINE...

Water Treatment Plant Upgrade Project
Fiscal Year 2017

The Town continues to identify important improvements that will be made to its infrastructure system in order to keep our drinking water safe. As part of the approved FY 2016-2022 Capital Improvement Plan, Fiscal Year 2017 will see the upgrade of the Water Treatment Plant.

The improvements that are necessary include the way the Town manages solids (that enter the treatment process from the source water—essentially, river mud), reduction of trihalomethanes (a byproduct of disinfection), a replacement of filter media (which is original to the construction of the treatment plant), and the elimination of the potential for microbial pathogen presence.

Proactive Investments & Necessary Upgrades Include:

- **FILTRATION**—New filter media, a filter media cleaning system, and new filter operating tables
- **ENHANCED DISINFECTION**—Ultraviolet Light Disinfection
- **SOLIDS MANAGEMENT**—Solids processing improvements including sludge collectors, equalization tanks, sewer force main construction (no hauling of sludge)
- **TECHNOLOGICAL**—Improvements made to the computer operating system while maintaining physical system overrides

Project funding is from the Virginia Department of Health Revolving Loan Program, whereby the Town received a low interest rate loan.

The project has been designed by engineers who are experts in the field of Water Treatment and is currently under review by the Virginia Department of Health.

Project construction bidding will occur in Fall 2016 and construction will begin shortly thereafter.

Award-Winning Facility!

VRWA Water Operators of the Year (3)
VRWA Water Office Worker of the Year
VRWA Annual Drinking Water Quality Reporting
VDH Excellence in Clarification, Filtration, Backwash
VDH Fluoridation Award

Town of Woodstock

Department of Public Works

Division of Water Treatment

2015 Annual Drinking Water Quality Report

Town of Woodstock
Water Treatment Plant
135 North Main Street
Woodstock, Virginia 22664
Chief Operator Daniel Bailey
Phone: 540-459-5513
Fax: 540-459-4201
www.townofwoodstockva.gov

GENERAL INFORMATION

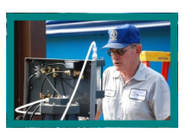
This Annual Drinking Water Quality Report for calendar year 2015 is designed to provide you with valuable information about your drinking water quality. The Town of Woodstock is committed to providing you with a safe and dependable supply of drinking water. **It is important for you to know that the quality of your drinking water meets all state and federal requirements administered by the Virginia Department of Health (VDH).** We are pleased to provide to you this report under the requirements of VDH. If you have further questions after your review of this report, please contact:

Daniel Bailey, Chief Operator
Woodstock Water Treatment Plant - (540) 459-5513

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 human activity. Substances (referred to as contaminants) in source water 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.

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.

Some people may be more vulnerable to contaminants in drinking water than others. Immune-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk for infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen risk of infection by cryptosporidium and other microbiological contaminants are available from the Safe Drinking Water Hotline (800-426-4791).



Your drinking water is *routinely* monitored according to Federal & State regulations for a variety of contaminants. The tables provided show the results of our monitoring for the period of January 1, 2015 to December 31, 2015.

DEFINITIONS

In this report you will find many terms and abbreviations that 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 two years or a single 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 a single 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)	Nephelomteric turbidity unit is a measure of the clarity of water. Turbidity in excess of 5 NTU 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 (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 technology
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
Variances & Exemptions	State or EPA permission not to meet an MCL or a treatment technique under certain conditions
Entry Point (EP)	Place where water from the source or sources after the application of any treatment is delivered to the distribution system

Most of the results in the tables are from testing done in 2015. However, 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 data, though accurate, is more than one year old.

WATER QUALITY

Microbiological

Contaminant	MCLG	MCL	Level Found	Unit Measurement
Total Coliform Bacteria(1)	0	Presence of Coliform Bacteria in >1 sample per month	0	Presence or Absence

Violation: NO
Date of Sample: Monthly
Typical Source of Contamination: Naturally Present in the Environment

(1) Total Coliform Bacteria. Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful bacteria may be present. Total Coliform bacteria were found in more samples than allowed and this was a warning of potential problems.

Turbidity

(1) Turbidity is the measure of the cloudiness of the water. We monitor it because it is a good indicator of our water quality and the effectiveness of the filtration process.
(2) Treatment Technique (TT) MCL: 1 NTU max, ≤ 0.3 NTU in at least 95% of samples tested

Contaminant	MCLG	MCL	Highest Single Level Found	Unit Measurement	Lowest Monthly % <0.3 NTU
Turbidity	N/A	TT	0.15	NTU	100

Violation: **NO**
Date of Sample: **07/15**
Typical Source of Contamination: Soil Runoff

Inorganic Contaminants

Contaminant	MCLG	MCL	Level Found	Unit Measurement
Nitrates	10	10	2.12	mg/l
Fluoride	4	4	1.11	mg/l
Barium	2	2	0.03	mg/l

Barium Violation: **NO**
Barium Date of Sample: **02/15**
Barium Typical Source of Contamination: Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits

Nitrates Violation: **NO**
Nitrates Date of Sample: **02/15**
Nitrates Typical Source of Contamination: Runoff from fertilizer use; leaching from septic tanks, sewage; Erosion of natural deposits

Fluoride Violation: **NO**
Fluoride Date of Sample: **02/15**
Fluoride Typical Source of Contamination: Erosion of natural deposits; Water additive which promotes strong teeth

Disinfection Byproduct Contaminants

Contaminant	MCLG	MCL	Level Found	Unit Measurement
Total Trihalomethanes (TTHM)	0	80	38.5 (avg.) Range 25-115	ppb
Haloacetic Acid (HAA5)	0	60	56.0 (avg.) Range 1.6-87	ppb

Total Trihalomethanes Violation: **NO**
Total Trihalomethanes Date of Sample: **Quarterly**
Total Trihalomethanes Typical Source of Contamination: Byproduct of drinking water chlorination

Haloacetic Acid Violation: **NO**
Haloacetic Acid Date of Sample: **Quarterly**
Haloacetic Acid Typical Source of Contamination: Byproduct of drinking water chlorination

(1) Some people who drink water containing Total Trihalomethanes in excess of the MCL over many years could experience problems with their liver, kidneys, or central nervous systems and may have increased risk of getting cancer.
(2) Some people who drink water containing haloacetic acids in excess of the MCL over many years may have increased risk of getting cancer.

Disinfection Residual Contaminants

Contaminant	MRDLG	MRDL	Level Found	Unit Measurement
Chlorine	4	4	1.53 (avg.) Range 0.59-2.4	mg/l

Violation: **NO**
Date of Sample: **Monthly**
Typical Source of Contamination: Water additive used to control microbes

Total Organic Carbon

Contaminant	MCLG	MCL	Level Found	Unit Measurement
Total Organic Carbon (4)	N/A	TT	1.1 (avg.) Range 1.0-2.2	Ratio of Actual to Required Removal

Violation: **NO**
Date of Sample: **08/15**
Typical Source of Contamination: Naturally Present in the Environment

(1) Total Organic Carbon (TOC) has no health effects. However, total organic carbon provides a medium for the formation of disinfection byproducts. These byproducts include trihalomethanes (TTHM) and haloacetic acids (HAA5). Drinking water containing these byproducts in excess of the MCL may lead to adverse health effects, liver or kidney problems or nervous system effects and may lead to an increased risk of getting cancer.

More Water Quality Information on Reverse Side...