

Town of Buchanan

Annual Drinking Water Quality Report

INTRODUCTION

This Annual Drinking Water Quality Report for calendar year 2019 is designed to provide you with valuable information about your drinking water quality. We are 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).

If you have questions about this report, 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:

Jason Tyree, Town Manager at (540) 254-1212

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. 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. More information can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline (800-426-4791).

Some people may be more vulnerable to contaminants in drinking water than the general population. Immune-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).

SOURCES AND TREATMENT OF YOUR DRINKING WATER

Your drinking water is groundwater currently obtained from four wells. Water is distributed throughout the system by one concrete reservoir, two storage tanks, three booster pumping stations, and the distribution piping. Wells 3 and 4 are filtered through a membrane treatment system before entering the system. Disinfection treatment is provided for all wells.

SOURCE WATER ASSESSMENTS

A source water assessment has been completed by VDH. The assessment determined that the wells may be susceptible to contamination because they are located in areas that promote migration of contaminants with land use activities of concern. More specific information may be obtained by contacting the number listed above.

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 2019.

Most of the results in the table are from testing done in 2019. 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.

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 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.

Parts per trillion (ppt) or Nanograms per liter (nanograms/l) – one part per trillion corresponds to one minute in 2,000,000 years, or a single 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 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, or 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 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.

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

Level 1 Assessment – A Level 1 assessment is a study of the water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in our water system.

Level 2 Assessment – A Level 2 assessment is a very detailed study of the water system to identify potential problems and determine (if possible) why an *E. coli* MCL violation has occurred and/or why total coliform bacteria have been found in our water system on multiple occasions.

WATER QUALITY RESULTS

Microbiological

Contaminant	Unit of Measurement	MCLG	MCL	Level Found	Violation	Sample Date(s)	Typical Source of Contamination
Total Coliform bacteria	Presence or Absence	0	presence of coliform bacteria in >1 sample per month	0	No	Monthly	naturally present in the environment

Total coliforms are analyzed monthly. Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other potentially harmful bacteria may be present.

Inorganic & Metal Contaminants

Contaminant	Unit of Measurement	MCLG	MCL	Level Found	Violation	Sample Date(s)	Typical Source of Contamination
Turbidity – Wells 3 & 4	NTU	NA	TT	0.09	no	daily	soil runoff
a. highest measurement							
b. lowest monthly % percentage meeting 0.3 TU limits	%	NA	TT	100%	no	monthly	
Nitrate	ppm	10	10				runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Well 1				0.04	no	9/13/19	
Well 2				0.38	no	9/13/19	
Wells 3 & 4				0.34	no	9/13/19	
Fluoride	ppm	4	4				erosion of natural deposits; discharge from fertilizer and aluminum factories.
Well 1				< 0.05	no	7/19/18	
Well 2				0.1	no	7/19/18	
Wells 3 & 4				0.11	no	8/22/19	
Barium	ppm	2	2				discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Well 1				0.062	no	7/19/18	
Well 2				0.59	no	7/9/18	
Wells 3 & 4				0.047	no	8/22/19	

Inorganic contaminants are analyzed every three years for Wells 1 & 2; annually for Wells 3 & 4. Nitrates are analyzed annually for all wells.

Lead and Copper (2019)

Contaminant	Unit of Measurement	MCLG	MCL	90% Level	AL Exceeded	Samples > AL	Typical Source of Contamination
Lead	ppb	0	AL = 15	1.7	no	0	corrosion of household plumbing systems; erosion of natural deposits
Copper	ppm	1.3	AL = 1.3	0.078	no	0	

Current analysis frequency for lead and copper is every three years.

Radiological Contaminants

Contaminant	Unit of Measurement	MCLG	MCL	Level Found	Violation	Sample Date(s)	Typical Source of Contamination
Gross Alpha radiation	pCi/l	0	15				erosion of natural deposits
Well 1				-2.0	no	8/24/16	
Well 2				2.2	no	8/24/16	
Wells 3 & 4				0.82	no	9/26/18	
Gross Beta radiation	pCi/l	0	50				erosion of natural deposits
Well 1				-0.11	no	8/24/16	
Well 2				5.0	no	8/24/16	
Wells 3 & 4				3.4	no	9/26/18	
Radium 228	pCi/l	0	5				erosion of natural deposits
Well 1				0.98	no	8/24/16	
Well 2				0.96	no	8/24/16	
Wells 3 & 4				0.60	no	9/26/18	

Analysis frequency for radiological is every six years for Wells 1 & 2; three years for Well 3 & 4.

Volatile Organic Contaminants

Contaminant	Unit of Measurement	MCLG	MCL	Level Found	Violation	Sample Date(s)	Typical Source of Contamination
No volatile organic contaminants detected	ppb						discharge from petroleum factories or leaking petroleum storage tanks
Well 1				ND	no	7/19/18	
Well 2				ND	no	7/19/18	
Wells 3 & 4				ND	no	8/22/19	

Analysis frequency for volatile organics is every three years for Wells 1 & 2; annually for Wells 3 & 4.

Disinfection Byproduct Contaminants

Contaminant	Unit of Measurement	MCLG	MCL	Level Found	Violation	Date of Sample(s)	Typical Source of Contamination
Total Trihalomethanes	ppb	0	80	range 0.53 to 5.8	no	2/12/19 5/14/19 8/16/19 11/12/19	by-product of drinking water chlorination
Total Haloacetic Acids	ppb	0	60	range ND to 4.3	no	2/12/19 5/14/19 8/16/19 11/12/19	by-product of drinking water chlorination

Disinfection Byproducts are analyzed quarterly.

Synthetic Organic Contaminants (Wells 3 and 4)

Contaminant	Unit of Measurement	MCL G	MCL	Level Found	Violation	Date of Sample(s)	Typical Source of Contamination
Synthetic Organic Contaminants	ppb	0		ND		10/10/17	

Analyses frequency is every three years.

Disinfection Residual

Contaminant	MRDLG	MRDL	Level Found Average & Range	Unit Measurement	Violation	Date of Sample	Typical Source of Contamination
Chlorine	4	4	1.03 range 0.79– 1.21	mg/l	no	monthly	Water additive used to control microbes

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 the detection limits of the lab equipment.

Maximum Contaminant Levels (MCLs) 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 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.

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 Buchanan 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 of at <http://www.epa.gov/safewater/lead>.

VIOLATION INFORMATION

Water Quality Violations – None

Monitoring and Reporting Violations – None

This Drinking Water Quality Report was prepared by the town with the assistance and approval of the Virginia Department of Health. Please call if you have questions.

Signature: _____

Date: _____