Annual Drinking Water Quality Report

Town of Middletown PWSID# 2069333

INTRODUCTION

This Annual Drinking Water Quality Report for calendar year 2021 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:

Mr. Les Morefield, Superintendent of Public Works, Town of Middletown at 540-869-7731

You can obtain additional information by attending Town Council meetings held at 7:00 p.m. the second Monday of each month in the Town Council Chambers.

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 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 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 surface water purchased from the City of Winchester and obtained from the North Fork, Shenandoah River. Water is distributed to the town from master meter connections to the City of Winchester system through variously sized distribution pipes. Storage for the town is provided by the City of Winchester.

All water supplied to the Town undergoes treatment. This treatment is accomplished at the Percy D. Miller water treatment plant prior to distribution and consists of chemical addition, flocculation, sedimentation and filtration to remove turbidity; chlorination to disinfect the water; phosphate addition for corrosion control; and fluoridation to aid in reducing tooth decay.

SOURCE WATER ASSESSMENTS

Source water assessments for the City of Winchester were completed by the Virginia Department of Health (VDH) on March 14, 2018. These assessments determined that the City’s primary water source, North Fork Shenandoah River, maybe susceptible to contamination because it is a 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 City of Winchester, Department of Public Utilities at 540-667-1815.

QUALITY OF YOUR DRINKING WATER

Your drinking water is routinely monitored according to Federal and State Regulations for a variety of contaminants. The table on the next page shows the results of our monitoring for the period of January to December 31, 2021. 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:

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

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.

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 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 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.

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 contamination.

Nephelometric Turbidity Unit (NTU) - A measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

Non-detects (ND): Lab analysis indicates that the contaminant is not present

Parts per billion (ppb) or Micrograms per liter (µg/L): One part per billion corresponds to one minute in 2,000 years, or a single penny in $10,000,000.

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.

Picocuries per liter (pCi/L): A measure of the radioactivity in water.

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

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

WATER QUALITY RESULTS

The Town of Middletown and the City of Winchester 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 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 other contaminants.

TOWN OF MIDDLETOWN MONITORING RESULTS

Lead and Copper						
Contaminant / Unit of Measurement	MCLG	MCL	90th Percentile # Samples > AL	Exceedance	Date of Sample	Typical Source of Contamination
Lead ppb	0	AL=15	<2.0 No samples exceeded the AL	No	August 2020	Corrosion of household plumbing systems; Erosion of natural deposits
Copper ppm	1.3	AL=1.3	0.052 No sample exceeded the AL	No	August 2020	Corrosion of household plumbing systems; Erosion of natural deposits
Disinfection Byproducts						
Contaminant/Unit of Measurement	MCLG	MCL	Level Found (Range)	Violation (uses 4 Quarter Average)	Date of Sample	Typical Source of Contamination
Haloacetic Acids (HAA5) ppb	NA	60	30 (12-38)	No	Quarterly 2021	By-product of drinking water disinfection
Total Trihalomethanes (TTHM) ppb	NA	80	50 (11-94)	No	Quarterly 2021	By-product of drinking water disinfection
Disinfection Residual						
Contaminant/Unit of Measurement	MRDLG	MRDL	Level Found (Range)	Violation	Date of Sample	Typical Source of Contamination
Chlorine ppm	4	4	3.23 (2.2 – 3.9)	No	Monthly	By-product of drinking water chlorination
Total Coliform						
Contaminant/Unit of Measurement	MCLG	MCL	Level Found	Violation	Date of Sample	Typical Source of Contamination
Total Coliform Presence or Absence	0	Presence of Coliform Bacteria in >1 Sample per month	0	No	2021	Naturally Present in the environment

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 Middletown 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.

SOURCE WATER CITY OF WINCHESTER MONITORING RESULTS

Turbidity[1]							
Contaminant / Unit of Measurement	MCLG	MCL	Level Found (Range)	Lowest Monthly % <0.3 NTU	Violation	Date of Sample	Typical Source of Contamination
Turbidity NTU	NA	TT[2]	0.11 (0.01-0.11)	100%	No	Feb 2021	Soil Runoff

Total Organic Carbon						
Contaminant	MCLG	MCL	Removal Ratio of Actual to Required removals (Level Found)	Violation	Date of Sample	Typical Source of Contamination
Total Organic Carbon	NA	TT	1.45	No	2021	Naturally present in the environment

Inorganic Contaminants						
Contaminant / Unit of Measurement	MCLG	MCL	Level Found	Exceedance	Date of Sample	Typical Source of Contamination
Barium ppm	2	2	0.040	No	02/07/21	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Fluoride ppm	4	4	0.74	No	02/07/21	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Nitrate ppm	10	10	1.79	No	02/07/21	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Sodium ppm	n/a	n/a	10.9	No	03/16/21	Sodium may reach both ground and surface water supplies as a result of residential, commercial and industrial activity, such as road salting.

Radiological Contaminants						
Contaminant / Unit of Measurement	MCLG	MCL	Level Found	Violation	Date of Sample	Typical Source of Contamination
Alpha Emitter pCi/L	0	15	<0.36	No	02/26/18	Erosion of Natural Deposits
Beta Emitter pCi/L	0	50*	3.9	No	02/26/18	Decay of natural and man-made deposits
Combine Radium pCi/L	0	5	<0.45	No	02/26/18	Erosion of Natural Deposits

[1] Turbidity is a 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] Turbidity TT = 1 NTU Max; ≤ 0.3 NTU in at least 95% of all samples tested.
*The MCL for beta particles is 4 mrem/yr. EPA considers 50 pCi/L to be the level of concern for beta particles.

Cryptosporidium Monitoring

Cryptosporidium is a microbial pathogen found in surface water throughout the U.S. Although filtration removes Cryptosporidium, the most commonly-used filtration methods cannot guarantee 100 percent removal. City of Winchester monitoring indicates the presence of these organisms in the 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, immuno-compromised people, infants and small children, and the elderly are at greater risk of developing life threatening illness. We encourage immuno-compromised individuals to consult their doctor regarding appropriate precautions to take to avoid infection. Cryptosporidium must be ingested to cause disease, and it may be spread through means other than drinking water.

VIOLATION INFORMATION

The Town of Middletown was in full compliance with all water quality, monitoring, and reporting requirements, and no violations occurred during the calendar year 2021.

The City of Winchester was in full compliance with all water quality, monitoring, and reporting requirements, and no violations occurred during the calendar year 2021.

The waterworks owners prepared this Drinking Water Quality Report with the assistance and approval of the Virginia Department of Health (VDH). Please call if you have questions.

Signature:

Les Morefield

Date: 4/26/2022