2019 Annual Drinking Water Quality Report

Town of Dayton

INTRODUCTION
This Annual Drinking Water Quality Report for calendar year 2019 is designed to provide you with valuable information about your drinking water quality. The Town of Dayton 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.

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:

Ms. Angela Lawrence, Town Manager at (540) 879-9538

GENERAL INFORMATION
The sources of drinking water (both tap water and bottled water) includes, 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 stormwater 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 stormwater 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 stormwater 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 was groundwater obtained from one spring, Silver Lake Spring. Silver Lake Spring is a subterranean spring tapped by a 12-inch line, water is pumped to the new membrane filtration facility. Two wells have been drilled and they pump to the treatment facility for filtration. This system also consists of a membrane filtration plant, chlorination, fluoridation, booster pump stations, a steel storage tank, and a distribution system.

The Virginia Department of Health has established a design capacity for the Town of Dayton waterworks to be 1.4 mgd or 3500 residential connections.

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 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.

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 (AL) - 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 Contaminants						
Contaminant / Unit of Measurement	MCLG	MCL	Level Found / Range	Violation	Date of Sample	Typical Source of Contamination
Turbidity NTU	NA	TT=0.3 NTU TT=95% of monthly samples must be <0.3 NTU	0.10 Max All monthly samples were < 0.3 NTU 100 % of the time	No	Daily 2019	Soil runoff
Inorganic Contaminants						
Fluoride ppm	4	4	Range: 0.63 to 0.75	No	Monthly 2019	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Nitrate ppm	10	10	Average 5.6	No	Quarterly 2019	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Barium ppm	2	2	0.028	No	March 2019	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Lead & Copper						
Contaminant / Unit of Measurement	MCLG	MCL	Level Found / Range	Exceedance	Date of Sample	Typical Source of Contamination
Lead ppb	0	AL=15	7.5 (90^{th} percentile) One of the ten samples collected exceeded the lead AL.	No	September 2017	Corrosion of household plumbing systems; erosion of natural deposits
Copper ppm	1.3	AL=1.3	0.22 (90^{th} percentile) None of the ten samples collected exceeded the copper AL.	No	September 2017	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Radiological Contaminants						
Contaminant / Unit of Measurement	MCLG	MCL	Level Found / Range	Violation	Date of Sample	Typical Source of Contamination
Alpha emitters pCi/L	0	15	1.1	No	March 2017	Erosion of natural deposits
Gross Beta pCi/L	0	50	1.4	No	March 2017	Decay of natural and man-made deposits
Combined Radium pCi/L	0	5	1.7	No	March 2017	Erosion of natural deposits
Disinfection By-Products						
Contaminant/Unit of Measurement	MCLG	MCL	Level Found	Violation	Date of Sample	Typical Source of Contamination
(TTHM's) Total Trihalomethanes ppb	0	80	34	No	August 2019	By-product of drinking water chlorination
(HAA) Haloacetic acids ppb	NA	60	1.7	No	August 2019	By-product of drinking water chlorination
Disinfectant Residual Contaminants						
Contaminant/Unit of Measurement	MCLG	MCL	Level Found / Range	Violation	Date of Sample	Typical Source of Contamination
Chlorine mg/L	4	4	0.45 to 1.12	No	Monthly 2019	By-product of drinking water chlorination

Metals						
Contaminant/Unit of Measurement	MCLG	MCL	Level Found / Range	Violation	Date of Sample	Typical Source of Contamination
Sodium mg/L	-	-	5.61	No	January 2019	Erosion of natural deposits; de-icing salt runoff; water softeners

The results in the table are from testing done in 2017 and 2019. 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, may be more than one year old.

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 (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.

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 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 or at http://www.epa.gov/safewater/lead.

ABOUT THE PRESENCE OF NITRATE
We have not had any levels that exceeded the Primary Maximum Contaminant Level (PMCL) of 10 ppm. However, since we have exceeded ½ of the PMCL we are required to notify consumers the health effect language required by the Environmental Protection Agency for Nitrate. The samples we collected in January and May 2019 had a nitrate level of 6.58 ppm and 5.85. Infants below the age of six months who drink water containing nitrate in the excess of the PMCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome.

ABOUT THE PRESENCE OF LEAD
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. We only had one of ten samples exceed lead action level. This is not a violation.

VIOLATION INFORMATION:

We did not have any violations during the year 2019.