2021 Annual Drinking Water Quality Report

Of the

Emporia Filtration Works

PWSID: 3595250

INTRODUCTION

This Annual Drinking Water Quality Report for the calendar year 2021 is designed to inform you about your drinking water quality. Our goal is to provide 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 must meet state and federal requirements as administered by the Virginia Department of Health (VDH).

If you have questions about this report, please contact:

Jeffery Davis, Emporia Filtration Works; 434 634-2544

If you would like 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. William Johnson, City Manager; 434 634-3332 or Melvin Prince, Public Utilities Director; 434 634-4500

The times and location of regularly scheduled board meetings are as follows:

The first and third Tuesday of every month at the City Council Chambers at 6:30 PM.

For information pertaining how you may participate in decisions regarding your water supply you may contact:
Melvin Prince
Emporia Public Utilities
201 South Main Street
Emporia Va. 23847
434-634-4500.

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, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or human activity.

Contaminants that may be present in source water include:

- Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife;
- 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;
- Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm-water runoff, and residential uses;
- Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic system;
- Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities

Drinking water, including bottled 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 about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline (800-426-4791).

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 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.

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 microbial contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

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 the bottled water which must provide the same protection for public health.

SOURCE (S) and TREATMENT OF YOUR DRINKING WATER

The source of your drinking water is surface water:

The City of Emporia is served by one reservoir that is 220 Acres in size. The Meherrin River supplies the reservoir.

Is there any treatment of your drinking water supply? (X) Yes () No If yes, it is described below:

A Pre-oxidant of Potassium Permanganate is added to the Raw water then followed by coagulants to cause a flocculation. As flocculation begins the water travels across large basins where sedimentation occurs, the larger particles fall out and the water continues on to the membrane filters where the remaining suspended particles are removed. After the filters, the water is chlorinated to provide chlorine residual for the distribution system and caustic is added to correct the pH of the water. Fluoride and corrosion inhibitor are also added after the membrane filters.

The Virginia Department of Health conducted a Source Water Assessment of the City of Emporia Waterworks in 2001. The reservoir was determined to be of high susceptibility to contamination using the criteria developed by the state in its approved Source Water Assessment Program. The assessment report consists of maps showing the Source Water assessment area, an inventory of known Land Use Activities, and Potential Sources of Contamination. Best Management Practices utilized at Land Use Activity sites in Zone 1 and documentation of any known contamination within the last five years, Susceptibility Explanation Charts and Definitions of Key Terms. The report is available by contacting Melvin Prince at the Public Utilities Office at 434-634-4500.

WATER QUALITY RESULTS

We constantly monitor for various contaminants in the water supply to meet all regulatory requirements.
Contaminants in your drinking water are routinely monitored according to Federal and State regulations. The EPA requires that Table I reflect monitoring results for the period of January 1st 2017 through December 31st, 2021. 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. Only the most recent sample results from the prescribed period are reported. 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.

DEFINITIONS:

Contaminants in your drinking water are routinely monitored according to Federal and State regulations. 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 (µg/l)* - 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)* - 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.
- *Maximum Residual Disinfectant Level or 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 or 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.
- *Level 1 Assessment* - An evaluation to identify the possible presence of sanitary defects, defects in distribution system coliform monitoring practices, and (when possible) the likely reason that the system triggered the assessment.
- *Level 2 Assessment* - An evaluation to identify the possible presence of sanitary defects, defects in distribution system coliform monitoring practices, and (when possible) the likely reason that the system triggered the assessment in a more comprehensive investigation than a Level 1 assessment.
- *Sanitary Defect* - A defect that could provide a pathway of entry for microbial contamination into the distribution system or that is indicative of a failure or imminent failure in a barrier that is already in place.

WATER QUALITY RESULTS (Detected contaminants only)

Contaminant	MCLG	MCL	Level Found	Range	Violation	Date of Sample	Typical Source of Contamination
Turbidity	N/A	TT=1.0 NTU Max	0.3 NTU	.02-.3	No	2021	Soil runoff
		< 0.3 NTU 100% of the time	100%				
Fluoride (ppm)	4.0	4.0	0.59	NA	No	2021	Water additives that promote strong teeth.
Chlorine (ppm)	MRDLG= 4.0	MRDL= 4.0	1.15	0.2 – 2.2	No	2021	Water additive used to control microbes
Barium (mg/l)	2	2	.026	N/A	No	2021	Erosion of natural deposits, discharge of drilling wastes, discharge from metal refineries.
Haloacetic acids (ppb)	N/A	60	54	28 – 51	No	2021	By-product of drinking water disinfection.
Total Trihalomethanes (ppb)	N/A	80	86	34-110	Yes (1)	2021	By-product of drinking water disinfection.
Combined Radium (pCi/L)	0	5	0.2	NA	No	2021	Erosion of natural deposits
Gross Beta (pCi/L)	0	50*	2.2	NA	No	2021	Erosion of natural and man-made deposits

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

A note about fluoride in drinking water: Some people who drink water containing fluoride in excess of the MCL (4 ppm) over many years could get bone disease, including pain and tenderness of the bones. Fluoride in drinking water at half the MCL or more may cause mottling of children's teeth, usually in children less than nine years old. Mottling, also known as dental fluorosis, may include brown staining and/or pitting of the teeth, and occurs only in developing teeth before they erupt from the gums.

A note about lead in drinking water: 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. This waterworks 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 or at http://www.epa.gov/safewater/lead.

LEAD AND COPPER CONTAMINANTS

CONTAMINANT (units)	MCLG	Action Level	Level Detected	Range	# of samples above AL	Date of Sample	Typical Source of Contamination
Copper (ppm)	1.3	1.3	0.048	ND – 0.10	0	2019	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching of wood preservatives.
Lead (ppb)	0	15	1.0	ND – 11.1	0	2019	Corrosion of household plumbing; Erosion of natural deposits

Additional Nonregulated Monitoring Results

Analyte (units)	Level Detected	Range	Date of Sample	Typical Source of Contamination
Sodium (ppm)	12.9	NA	2021	Sodium occurs naturally in groundwater. However, sources such as road salt, water softeners, natural underground salt deposits, pollution from septic systems as well as saltwater intrusion due to proximity to the ocean are often causes of elevated levels in drinking water supplies.

A note about sodium in drinking water. Sodium was detected in your water sample. There is presently no established standard for sodium in drinking water. Water containing more than 270 mg/l of sodium should not be used as drinking water by those persons whose physician has placed them on moderately restricted sodium diets. Water containing more than 20 mg/l should not be used as drinking water by those persons whose physician has placed them on severely restricted sodium diets.

Violations:
Our water system recently violated a drinking water standards. Although this is not an emergency, as our customers, you have a right to know what happened, what you should do, and what we are doing to correct this situation.

We exceeded the Maximum Contaminant Level (MCL), for TTHMs 4 times during 2021. Compliance is determined on locational running annual averages (LRAA). Specific TTHM results follow:

Sampling Location	MCL	1st Quarter 2021 (period of April 2020 – March 2021)	2nd Quarter 2021 (period of July 2020 – June 2021)
Briggs Street	80 ug/L	**110 ug/L**	**86 ug/L**
Peachtree Street	80 ug/L	**110 ug/L**	**92 ug/L**

We are making changes to how we disinfect your drinking water. This change should lower the level of TTHMs to below the MCL.

A hard copy of this report can be acquired at the Treasurer's Office or viewed on the City Government Channel 17. There will be no hard copy mailed.

Este informe contiene informacion muy importante sobre su agua de beber. Traduzcalo o hable con alguien que lo entienda bien.