2016 ANNUAL WATER QUALITY REPORT FOR THE BEALETON WATER SYSTEM FAUQUIER COUNTY WATER & SANITATION AUTHORITY

Introduction

The Fauquier County Water & Sanitation Authority ("WSA") is pleased to present you with our annual Water Quality Report for calendar year 2016. 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. In this Report you will find information that applies to your local water system, and that the water we supply to you **meets or surpasses all federal and state water quality regulations as administered by the Virginia Department of Health.** Since April 2016 we have been operating a new microfiltration plant to improve the water quality in the Bealeton Regional Water System.

It's Your Water. Get to Know It.

Do you ever wonder about the journey your water takes before it reaches your tap? We want you to.

Informed consumers are our best allies in maintaining safe drinking water. We want you to get to know your water, and we want to assure you that we met or exceeded all requirements for your water in 2016. This Water Quality Report provides valuable information about the quality of the water you consume. It covers all water testing performed from January through December 2016 as required by the U.S. Environmental Protection Agency (EPA) in accordance with the amendment to the Safe Drinking Water Act. The WSA makes a daily pledge to provide the highest quality drinking water to its customers. To ensure a superior product is constantly delivered to taps throughout Fauquier County, we diligently and innovatively meet the challenges of water treatment and conservation.

For more information about this report or if you have questions related to your drinking water, please contact Joanne Dzenkowski, Water Dept. Supervisor, at (540) 349-2092 or visit the Authority's web site at www.fcwsa.org.

What is the Source of My Drinking Water?

The source of your drinking water is groundwater obtained from the **Meadowbrooke #1R Well (500' deep (currently off line), Meadowbrooke Well #2 (500' deep), Miller ES Well (490' deep), Mintbrook Well B-1 (360' deep), Mintbrook Well B-3 (320' deep) and Mintbrook Well B-4 (520' deep)**. All six wells are situated in fractured bedrock.

Treatment of Drinking Water Supply

The Miller Elementary School and Bealeton WTF wells are treated with a Hypochlorite solution to protect against bacteria in the water.

A phosphate chemical is also injected at Miller Elementary School and Bealeton WTF well sites to control color and sediment, and reduce corrosion.

A source water assessment of our system has been conducted by the Virginia Department of Health. The wells were 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 of concern, and documentation of any known contamination within the 5 year study period. The report is available by contacting the Virginia Department of Health at (540) 829-7340.

Understanding Your Water Quality Report

Your water is monitored in several stages from source to tap, and includes analyses of more than 130 different contaminants. Joiner Micro Lab of Warrenton and the Division of Consolidated Laboratory Services in Richmond perform most of the testing, and water is tested daily from the distribution system. Last year we conducted hundreds of analyses to ensure biological, chemical, physical and radiological parameters were safe and acceptable. **We are pleased to report no *E. coli* in our water system and no violations.**

The tables on the next page show the most recent results of our monitoring and show only those regulated chemical and radiological contaminants that were detected in the water. The substances listed here are under the Maximum Contaminant Level (MCL). We believe it is important that you know exactly what was discovered and how much of the substance was present in the water. The State requires us to monitor for certain substances less than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are reported, including the year in which the sample was taken.

Definitions

Contaminants in your drinking water are routinely monitored according to Federal and State regulations. In the tables 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) - one part per million corresponds to one minute in two years or a single penny in $10,000.

Parts per billion (ppb) - 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.

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 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 contaminants.

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.

Nephelometric Turbidity Units, or NTU - a measure of the cloudiness of water. We monitoring turbidity because it is a good indicator of the effectiveness of our filtration system.

MCL's are set at very stringent levels by the U.S. 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 change of having the described health effect for other contaminants.

I. **Microbiological Contaminants** –

Contaminant	MCLG	MCL	No. of Samples Indicating Presence of Bacteria	Violation (Y/N)	Range of Detection at Sampling Point	Sampling Month	Typical Source of Contamination
Total coliform bacteria	0	Presence in more than 1 sample each month.	1	N	NA	March 2016	Naturally present in the environment

One sample collected during March 2016 was positive. We immediately collected additional samples, which were all negative.

II. **Lead and Copper Contaminants** –

Contaminant	Units of Measure	Action Level	MCLG	Results of samples for the 90th Percentile Value	Action Level Exceedance (Y/N)	Sampling Year	# of Sampling Sites Exceeding Action level	Typical Source of Contamination
Lead	ppb	15	0	< 2	N	2016	0	Corrosion of household plumbing systems
Copper	ppm	1.3	1.3	0.4	N	2016	0	Corrosion of household plumbing systems

III. Other Chemical and Radiological Contaminants –

Contaminant	Units of Measure	MCLG	MCL	Level Detected	Violation (Y/N)	Range of Detection at Sampling Points	Sampling Year	Typical Source of Contamination
Nitrate/Nitrite	ppm	10	10	2.21	N	0.32-2.21	2016	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Alpha Emitters	pCi/L	0	15	7.5	N	4-7.5	2015 2016	Erosion of natural deposits
Combined Radium	pCi/L	0	5	1.0	N	ND-1.0	2015 2016	Erosion of natural deposits
Arsenic[1]	ppb	0	10	7	N	4-7	2015 2016	Erosion of natural deposits; Run off from orchards
Chlorine	ppm	MRDLG 4	MRDL 4	1.1	N	0.5-1.7	2016	Water additive used to control microbes
Barium	ppm	2	2	0.12	N	0.05-0.12	2015 2016	Erosion of natural deposits
Fluoride	ppm	4	4	0.23	N	0.20-0.23	2014 2016	Erosion of natural deposits
Turbidity[2]	NTU	N/A	TT	Highest: 0.15	N	N/A	2016	Soil runoff, naturally occurring minerals in water
Total Trihalomethanes	ppb	N/A	80	18	N	8.5-18	2016	By-product of drinking water chlorination
Total Haloacetic Acids	ppb	N/A	60	4.1	N	3.0-4.1	2016	By-product of drinking water chlorination

[1]While your drinking water meets EPA's standard for Arsenic, it does contain low levels of Arsenic. EPA's standard balances the current understanding of Arsenic's possible health effects against the cost of removing Arsenic from drinking water. EPA continues to research the health effects of low levels of Arsenic which is a mineral known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems.
[2]100% of readings were below 0.3 NTU. At least 95% of readings each month must be below 0.3 NTU.

Additional Health Information for Lead—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 FCWSA 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 15 to 30 seconds or until it becomes cold or reaches a steady temperature 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.

Important Health Information

To ensure that tap water is safe to drink, the EPA prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

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 obtain by calling the EPA's Safe Drinking Water Hotline at (800) 426-4791.

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs and wells. As water travels over land surfaces 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 or wildlife.
- **Inorganic Contaminants**, such as salts and metals, which may naturally occur or may result from urban storm water runoff; industrial or domestic wastewater discharges; oil and gas production; and 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 byproducts of industrial processes and petroleum production, and may come from gas stations, urban storm water runoff and septic systems.
- **Radioactive Contaminants**, which may naturally occur or may be the result of oil and gas production and mining activities.

Should Some People Take Special Precautions?

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as those with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, the elderly and infants may 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 contaminates are available from the Safe Drinking Water Hotline at (800) 426-4791.

How To Reach Us

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Lobby Hours: Monday thru Friday
8:30 a.m. to 4:30 p.m.