2023

Drinking Water Quality Report

RSA

Rapidan Service Authority

Wilderness

PWSID #6137999

2023 Drinking Water Quality Report

Rapidan Service Authority (RSA) is pleased to present to you the 2023 Annual Water Quality Report. This report is designed to inform you, the customer, about the quality of water and services delivered to you every day. RSA's goal is to always provide you with a safe and dependable supply of drinking water. We want you to understand the efforts made to continually improve the water treatment process and protect our water resources. RSA is committed to ensuring the quality of your water.

Your Drinking Water

The sources of drinking water (both tap water and bottled water) include rivers, lakes or reservoirs, 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 from human activity.

Substances (referred to as contaminants) in source water may include: (i) microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife; (ii) 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; (iii) pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses; (iv) 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; and (v) radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.

Your drinking water comes from the Rapidan River. A source water assessment of the Rapidan River was completed by the Virginia Department of Health in May 2002 and may be obtained by contacting RSA. While all surface water sources are vulnerable to contamination due to changing atmospheric conditions and land use activities, no known contamination was discovered during the period of review.

Water from the Rapidan River is treated by RSA to not only meet State and Federal regulations, but also to be aesthetically pleasing for customers. Treatment includes oxidation using Sodium Permanganate, coagulation using Polyaluminum Chloride, flocculation, sedimentation, and filtration. Sodium Fluoride is then added to help promote strong teeth and prevent tooth decay. Next, Sodium Carbonate is used to adjust pH and prevent corrosion in the distribution system. Finally, chlorine is added to disinfect the water before heading to your tap. For more information on the treatment process, visit rapidan.org/water-treatment-process.

Protecting Your Water

Rapidan Service Authority employees are working around the clock to provide top quality water to every tap. We ask that all our customers help us protect and conserve our water sources, which are the heart of our community, our way of life, and our children's future. We also want to remind all of our customers to be aware of possible cross connections to the potable water system. A cross connection is a link between the potable water system and any non-potable source and can affect not only your home, but it can also affect the entire potable water supply. **If you think you have the possibility of a cross connection, please contact RSA immediately**.

In our continuing efforts to maintain a safe and dependable water supply it may be necessary to make improvements in your water system. The costs of these improvements may be reflected in the rate structure. Rate adjustments may be necessary in order to address these improvements and must be approved by the RSA Board of Members following a public hearing.

RSA wants its valued customers to be informed about their water utility. If you have concerns to share with our Board, you may attend any of our regularly scheduled meetings. They are held, as needed, on the third Thursday of the month at 2:00 P.M in the counties we serve – Orange and Madison. Visit rapidan.org/calendar-of-events for more details on meeting dates and locations.

If you have any questions about this report or your water utility, please contact **David Jarrell at (434) 985-7811.**

Definitions

To ensure that tap water is safe to drink, EPA prescribes regulations that limit the amount of certain contaminants in the water provided by waterworks. The U.S. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water which must provide the same protection for public health. RSA routinely monitors for contaminants in the drinking water, in accordance with Federal and State regulations. The table on the next two pages shows the results of testing for the most recent monitoring period. In this table you will find terms and abbreviations you might not be familiar with. To help you better understand these terms we have provided the following definitions:

- *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 Goal (MRDLG)*: the level of 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 (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 Unit (NTU)*: a measure of the clarity of water. Turbidity in excess of 5 NTUs is just noticeable to the average person.
- *Non-Detects (ND)*: laboratory analysis indicates that the constituent 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 (ug/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):* a measure of radioactivity.
- *Treatment Technique (TT):* A treatment technique is a required process intended to reduce the level of a contaminant in drinking water.
- *Ultraviolet (UV):* A treatment method to disinfect water using ultraviolet light.

WATER QUALITY RESULTS

Detected Contaminant	Sampling Year	Violation	Level Detected/ Range	Units	MCLG	MCL	Likely Source of Contamination
Microbiological Contaminants							
E-coli Bacteria	2023	No	0	Presence or absence	0	Routine and repeat samples are total coliform positive and one is E-coli positive	Human and animal fecal waste
Chemical & Radiological Contaminants							
Barium	2023	No	0.015	ppm	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Fluoride	2023	No	0.4	ppm	4	4	Water additive which promotes strong teeth; erosion of natural deposits; discharge from fertilizer and aluminum factories
Nitrite + Nitrate	2023	No	0.4	ppm	10	10	Runoff from fertilizer use; leaching from septic systems; erosion of natural deposits
Sodium	2023	No	17.4	ppm	N/A	N/A	Erosion of natural deposits
Turbidity % samples ≤0.3 NTU	2023	No No	0.2 100%	NTU %	N/A N/A	TT 95%	Soil runoff
Disinfection By-Products, Precursors & Residuals							
Chlorine	2023	No	1.1 (0.3 – 2.3)	ppm	MRDLG =4	MRDL =4	Water additive used to control microbes
Total Organic Carbon	2023	No	RAA 1.20	Removal Ratio	N/A	TT	Naturally present in the environment
Haloacetic Acids Site 1 Site 2 Site 3 Site 4	2023	 Yes, Q1-2 No Yes, Q1-2 Yes, Q2	 49 (30 - 57) 46 (36 - 60) 46 (34 - 56) 53 (32 - 65)	ppb	N/A	60	By-product of chlorination
Total Trihalomethanes Site 1 Site 2 Site 3 Site 4	2023	 No No No No	 43 (29 - 63) 45 (28 - 70) 37 (22 - 65) 44 (29 - 61)	ppb	N/A	80	By-product of chlorination

Lead & Copper Contaminants	Sampling Year	AL Exceeded?	Results of 90th% Value	Units	MCLG	Action Level	# of Sample Sites Exceed AL	Likely Source of Contamination
Lead	2023	No	13.4	ppb	0	15	3	Corrosion of household plumbing systems
Copper	2023	No	0.087	ppm	1.3	1.3	0	Corrosion of household plumbing systems

Violation Information

In 2023, drinking water being served to our customers in the Wilderness water system did not comply with the Primary Maximum Contaminant Level (MCL) for Haloacetic Acids in the 1st and 2nd Quarters. Notices were sent directly to all customers.

Haloacetic Acids are one of the many contaminants monitored in your drinking water on a regular basis. They are formed via a chemical reaction between organic material found naturally in drinking water and chlorine which is used to disinfect your water. There are several factors which influence the formation of these contaminants, including organics content, chlorine concentration, pH, and temperature.

Compliance with the Primary Maximum Contaminant Level for Haloacetic Acids is based on an average of the prior four quarters of test results for each testing location. In the Wilderness water system, there are four testing locations: Ramsay Rd (DS001), Flat Run Rd at Locust Grove Middle School (DS002), Wilderness Shores Way (DS003), and Route 3 at Germanna Community College (DS004). Testing results we received show that our system exceeded the standard, or maximum contaminant level (MCL), for Haloacetic Acids at three locations. The standard for Haloacetic Acids is 0.060 ppm (parts per million). Compliance values for each location are listed in the table below.

Location	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
DS001	0.065 ppm	0.062 ppm	0.053 ppm	0.049 ppm
DS002	0.046 ppm	0.044 ppm	0.052 ppm	0.046 ppm
DS003	0.064 ppm	0.061 ppm	0.048 ppm	0.046 ppm
DS004	0.057 ppm	0.061 ppm	0.057 ppm	0.053 ppm

Rapidan Service Authority has been working to investigate and resolve the elevated results at these locations. We continue to explore treatment methods that will further reduce concentrations of Haloacetic Acids – in coordination with the Virginia Department of Health Office of Drinking Water.

You do not need to use an alternative (e.g., bottled) water supply. However, if you have specific health concerns, consult your doctor. This is not an immediate risk. If it had been, you would have been notified immediately. Animal studies suggest that people who drink water containing Haloacetic Acids in excess of the MCL over many years may have an increased risk of getting cancer. For more information, please contact Rapidan Service Authority at (540) 972-2133 or (434) 985-7811. Please share this information with other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

Additional Health Information

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

Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system. We found coliforms indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct assessments to identify problems and to correct any problems that are found. During the past year, we were required to conduct one Level 1 assessment. One assessment was completed. No corrective actions were required.

Lead Education Statement

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/building plumbing. RSA 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 two minutes before using water for drinking or cooking. If you are concerned about lead in your water, then 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 (800-426-4791).

The waterworks owners prepared this Drinking Water Quality Report with the assistance and approval of the Virginia Department of Health (VDH). Please call our office at (434) 985-7811 if you have questions regarding your water system.