Water Quality Report

Reporting Year 2020

City of Harrisonburg, VA
Public Utilities Department
PWS ID# 2660345

Dear Consumer,

Typically fifty to sixty percent of the source water for the City of Harrisonburg comes from the Switzer Reservoir. It is well known for its clarity and quality. However, no matter how clear and pure a water source is, it still takes a highly skilled and trained group of employees to supply, treat, and deliver high-quality drinking water to customers ***every*** hour of the day, ***every*** day of the week, ***every*** week of the year. We want you to be confident about the quality of water you receive ***every*** time you reach for the faucet.

Thank you for taking the time to look through this report. You will discover where your water comes from, how your water and sewer rates compare to similar water systems, and the results from the water testing conducted on our water system between January and December 2020.

If you have any questions or would like more information about your drinking water, please give me a call. I'd be happy to hear from you.

David Gray | Engineering Manager
dave.gray@harrisonburgva.gov
540-434-9959

Virginia Optimization Program

The City of Harrisonburg Water Treatment Plant (WTP) voluntarily participates in the Virginia Optimization Program (VOP) created by the Virginia Department of Health (VDH).

"The mission of the VOP is to encourage waterworks to provide water with a quality that ***exceeds*** minimum regulatory standards and to operate water systems in an exemplary manner."

The WTP continuously strives to meet all parameters dictated in the program. In 2020, the WTP received the VDH Operations Performance **Silver Award** for successfully meeting the filtration and backwash parameters.

Water System Facts

Population served	54,224
MGD capacity	13.1
Miles of Sewer Mains	205
Miles of Water Mains	323
Water Distribution Stations	12
Sewer Pump Stations	6
Storage Tanks	12
Automated Valve Vaults	15
SCADA units	36
Water Quality Tests	1,326
Fire Hydrants	1,881
Valves	4,319
Manholes	5,286
Water Meters	16,270

COVID-19

The COVID-19 virus has **not** been detected in drinking water supplies. You can continue to use and drink water from your tap as usual.

The EPA has established regulations with treatment requirements for public water systems that prevent waterborne pathogens such as viruses from contaminating drinking water. These treatment requirements include filtration and disinfectants such as chlorine that remove or kill pathogens before they reach the tap. We typically use 0.2 to 1.2 parts per million chlorine. It's recognized by some customers but our control of organic matter minimizes the taste and byproducts.

The Public Utilities Department is proud to have essential employees who provide essential services under modified operations. We have adapted to new technology and made process changes in order to keep our employees safe and to maintain the same level of service.

Where Your Water Comes From

The City of Harrisonburg has two reliable water supply sources. The Dry River in Rawley Springs is a surface water source. The watershed includes the Switzer Reservoir Impoundment and delivers the highest quality water at the most cost-effective price. The North River in Bridgewater is also a surface water source. Approximately 50% of Harrisonburg's water comes from each source. Because of our commitment to long term economic sustainability and environmental stewardship, we are in the process of developing a supply line from the South Fork Shenandoah River. Once this project has been completed, we expect to provide a supply of 15 million gallons per day to our customers.

Health Information for Special Populations

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised 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 may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The U.S. EPA/CDC (Centers for Disease Control and Prevention) 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 or at

http://water.epa.gov/drink/ hotline.

Source Water Assessment

A Source Water Assessment for the City of Harrisonburg was completed by the Virginia Department of Health on March 2, 2018. This assessment determined that the city's water sources, North River and Dry River, are surface waters exposed to a wide array of changing hydrologic, hydraulic, and atmospheric conditions. More specific information may be obtained by contacting the Harrisonburg Department of Public Utilities at **(540) 434-9959**.

Substances that could be in Water

To ensure that tap water is safe to drink, the U.S. EPA prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. U.S. Food and Drug Administration 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 these contaminants does not necessarily indicate that the water poses a health risk.

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, in some cases, radioactive material, and substances resulting from the presence of animals or from human activity. Substances that may be present in source water include the following.

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 & 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 may also come from gas stations, urban storm water runoff and septic systems. **Radioactive Contaminants,** which can be naturally occurring or may be the result of oil and gas production and mining activities.

For more information about contaminants and potential health effects, call the U.S.EPA's **Safe Drinking Water Hotline at (800) 426-4791**

Sampling Results

Contaminants detected
January 2020—December 2020

During the past year, we have taken hundreds of water samples in order to determine the presence of any radioactive, biological, inorganic, volatile organic, or synthetic organic contaminants. The table below shows only those contaminants that were detected 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 included, along with the year in which the sample was taken.

Regulated Substances							
Substance (Unit of Measure)	Year Sampled	MCL [MRDL]	MCLG [MRDLG]	Amount Detected	Range Low-High	Violation	Typical Source
Barium (ppm)	2020	2	2	0.0226	NA	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Haloacetic Acids [HAA5] (ppb)	2020	60	NA	24.0	4-42	No	By-product of drinking water disinfection
Nitrate (ppm)	2020	10	10	ND	NA	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
TTHMs [Total Trihalomethanes] (ppb)	2020	80	NA	49.0	14-93	No	By-product of drinking water disinfection
Total Coliform Bacteria (% positive samples)[3]	2020	5% of monthly samples are positive	0	0 positive samples in 2020 (0%)	NA	No	Naturally present in the environment
Fluoride (mg/l)	2020	4	4	0.66	0-0.75	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from aluminum and fertilizer factories
Total Organic Carbon (mg/L)	2020	TT	NA	0.91	ND-1.0	No	Naturally present in the environment
Turbidity[1] (NTU)	2020	TT	NA	NA	0.02-0.15	No	Soil Runoff
Turbidity (Lowest monthly percent of samples meeting limit)	2020	<0.3 NTU	NA	100%	NA	No	Soil Runoff
Radiological							
Beta Emitters (mrem/yr)	2016	4	0	1.0	NA	No	Decay of natural and man-made deposits
Alpha Emitters (pCi/l)	2016	15	0	< 0.27	NA	No	Erosion of natural deposits
Combined Radium (pCi/l)	2016	5	0	< 0.4	NA	No	Erosion of natural deposits
Lead and Copper Sampling							
Substance (Unit of Measure)	Year Sampled	AL	MCLG	Amount Detected (90th %tile)	Sites Above AL/ Total Sites	Violation	Typical Source
Copper[2] (mg/l)	2019	1.3	1.3	0.0876	0/30	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead[2] (ppb)	2019	15	0	3.6	0/30	No	Corrosion of household plumbing systems; Erosion of natural deposits

[1] Turbidity is a measure of the cloudiness of the water. It is monitored because it is a good indicator of the effectiveness of the filtration system.
[2] Tap water samples were collected for lead and copper analyses from sample sites throughout the community.
[3] The reported amount detected is the average of all samples in the current year.

Definitions

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

MCL (Maximum Contaminant Level): 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.

MCLG (Maximum Contaminant Level Goal): 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.

MGD: Million Gallons per Day.

MRDL (Maximum Residual Disinfection Level): 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.

MRDLG (Maximum Residual Disinfection Level Goal): 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.

NA: Not applicable

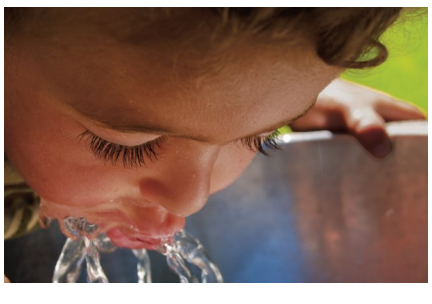
ND (Not Detected): Indicates that the substance was not found by laboratory analysis.

NTU (Nephelometric Turbidity Unit): Measure of water clarity. Turbidity in excess of five NTUs is barely noticeable to the average person.

Ppb (parts per billion): One part substance per billion parts water (or micrograms per liter).

Ppm (parts per million) or mg/l (milligrams per liter): One part substance per million parts water or milligrams per liter.

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



Market Analysis Of Water & Sewer Rates

Among Water Systems of 10,000-30,000 Residential Water Units

With 5,000 Gallons Water & Sewer Consumption

UTILITY PROVIDER	RESIDENTIAL WATER UNITS	WATER $/5000 GAL	SEWER $/5000 GAL	W & S RATE $/5000 GAL
Harrisonburg , City of	**18,613**	**$ 19.95**	**$ 28.85**	**$ 48.80**
Danville, City of	17,500	$ 26.27	$ 24.80	$ 51.07
Lynchburg, City of	23,000	$ 21.09	$ 45.56	$ 66.65
Henry Co Public Service Authority	12,288	$ 34.70	$ 34.70	$ 69.40
Hanover County	20,195	$ 24.11	$ 45.80	$ 69.91
Campbell Co. Utilities & Service Auth.	10,467	$ 39.34	$ 39.03	$ 78.37
Manassas, City of	14,069	$ 23.62	$ 55.15	$ 78.77
Frederick Water	15,911	$ 30.33	$ 48.56	$ 78.89
Virginia Control Group Average		**$ 35.76**	**$ 44.98**	**$ 80.74**
James City Service Authority	21,986	$ 26.29	$ 56.75	$ 83.04
Leesburg, Town of	17,026	$ 41.54	$ 43.30	$ 84.84
Augusta Co. Service Authority	14,270	$36.97	$ 61.27	$ 98.24
Bedford Regional Water Authority	13,293	$ 44.00	$ 56.00	$100.00

"For over 20 years, Draper Aden Associates has tracked a select group compromised of twenty water and wastewater providers who represent a cross section of utilities across the Commonwealth.

Courtesy of Draper Aden Associates 2020 Study

Ridgeville Tank

It is Our Mission to provide

- reliable delivery of safe potable water that meets the Water Works Regulations, Virginia Administrative Code, Chapter 590,
- a quantity of water that will enhance fire suppression as determined according to ISO rating, and
- the conveyance of sanitary sewer service to our citizens in accordance to Sewage Collection and Treatment Regulations, Virginia Administrative Code, Chapter 790.

Storage Tank at Treatment Plant

Lead in Home Plumbing

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 Harrisonburg Public Utilities Department assists by controlling pH and alkalinity in its 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.**

pH is measured on a scale of 0 to 14. Water with values lower than 6 are acidic and can have aesthetic problems such as a metallic or sour taste. Water with values greater than 8.5 is less corrosive to metal piping and efficiency with chlorine disinfection decreases.

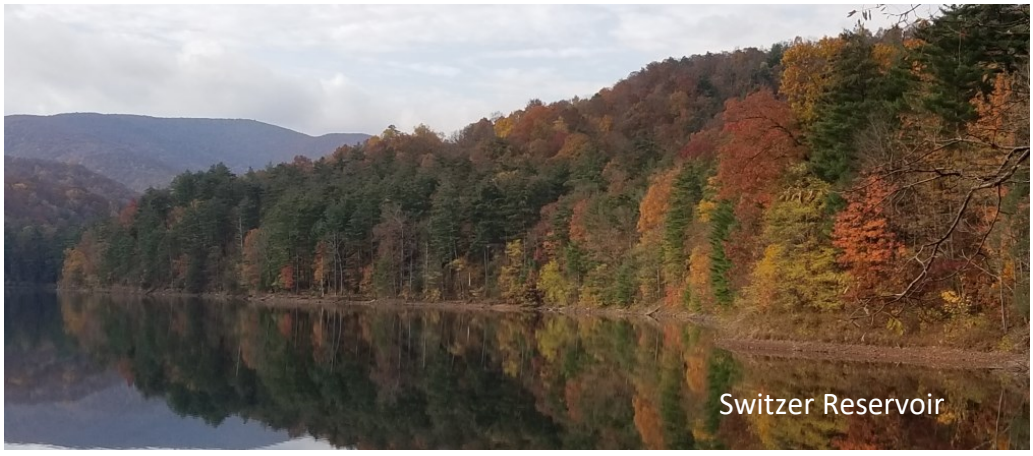
While the ideal pH level of drinking water should be between 6-8.5, the human body maintains pH equilibrium on a constant basis and will not be affected by water consumption. For example our stomachs have a naturally low pH level of 2, which is a beneficial acidity that helps us with food digestion. **In 2020,** our pH levels were **between 7.0 and 10.1.**

pH Examples	
Substances	pH
Apple Juice	3.0
Orange Juice	3.5
Coffee	5.5
Milk	6.2
Baking Soda	8.5
Soapy Water	10.0

Classification	Hardness in mg/L
Soft	0 - 60
Moderately Hard	61 —120
Hard	121-180
Very Hard	≥ 181

Do I Have Hard or Soft Water?

Water is soft when it falls as rain. It readily dissolves minerals as it travels through rock and soil. The treatment process removes some of the mineral content and impurities, but calcium and magnesium will generally not be removed. These minerals are not harmful to your health. See the chart for the measurement ranges used by the U.S. Geological Survey to classify hard and soft water. **In 2020**, our water was **between 9 and 95 mg/l (**milligrams per liter).



Switzer Reservoir

Copies of this report are available in Harrisonburg

- Water Operations Center
  2155 Beery Rd
- Massanutten Regional Library
  174 South Main St