

ANNUAL WATER QUALITY REPORT

Reporting Year 2021



Presented By
Berkeley County PSWD

PWS ID#: WV3300218

We've Come a Long Way

Once again, we are proud to present our annual water quality report covering the period between January 1 and December 31, 2021. In a matter of only a few decades, drinking water has become exponentially safer and more reliable than at any other point in human history. Our exceptional staff continues to work hard every day—at all hours—to deliver the highest-quality drinking water without interruption. Although the challenges ahead are many, we feel that by relentlessly investing in customer outreach and education, new treatment technologies, system upgrades, and training, the payoff will be reliable, high-quality tap water delivered to you and your family.

Source Water Assessment

A source water assessment has been completed for our system. The purpose of the assessment is to determine the susceptibility of each drinking water source to potential contaminant sources. The report includes background information and a relative susceptibility rating of “Higher,” “Moderate,” or “Low.” It is important to understand that a susceptibility rating of “Higher” does not imply poor water quality, only the system’s potential to become contaminated within the assessment area. The assessment findings are summarized in the table below:

SUSCEPTIBILITY OF SOURCES TO POTENTIAL CONTAMINANT SOURCES		
SOURCE NAME	SUSCEPTIBILITY RATING	SWAP REPORT DATE
Potomac River	High	May 2021

If you would like a copy of our assessment report, please feel free to contact our office during regular business hours at (304) 267-4600 or online at berkeleywater.org.

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. We are responsible for providing high-quality drinking water, but we 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, 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 at (800) 426-4791 or online at: www.epa.gov/safewater/lead.

Think Before You Flush!

Flushing unused or expired medicines can be harmful to your drinking water. Properly disposing of unused or expired medication helps protect you and the environment. Keep medications out of our waterways by disposing responsibly. To find a convenient drop-off location near you, please visit <https://bit.ly/3IeRyXy>.

About Our System

Our water system serves an estimated population of 27,335 and is required to test a minimum of 30 samples per month in accordance with the Total Coliform Rule for microbiological contaminants. Coliform bacteria are usually harmless, but their presence in water can be an indication of disease-causing bacteria. When coliform bacteria are found, special follow-up tests are done to determine if harmful bacteria are present in the water supply. If this limit is exceeded, the water supplier must notify the public.

The Berkeley County PSWD Potomac plant produced more than 1.4 billion gallons of water and collected over 400 samples in 2021. The staff at BCPSWD works hard on a daily basis to provide safe drinking water and quality service to its customers.

Community Participation

You are invited to participate in our public forum and voice your concerns about your drinking water. We meet the second and fourth Monday of each month beginning at 5:00 p.m. in the Board Room, 251 Caperton Boulevard, Martinsburg.

Important Health Information

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 at (800) 426-4791 or online at: <http://water.epa.gov/drink/hotline>.



QUESTIONS? For more information about this report, or for any questions relating to your drinking water, please call Steve De Ridder, Water Department Superintendent, at (304) 267-4600.

Where Does My Water Come From?

SOURCE NAME	SOURCE WATER TYPE
Well B	Groundwater
Potomac River	Surface Water
Well A	Groundwater
Well D	Groundwater

What are PFAS?

Per- and polyfluoroalkyl substances (PFAS) are a group of manufactured chemicals used worldwide since the 1950s to make fluoropolymer coatings and products that resist heat, oil, stains, grease, and water. During production and use, PFAS can migrate into the soil, water, and air. Most PFAS do not break down; they remain in the environment, ultimately finding their way into drinking water. Because of their widespread use and their persistence in the environment, PFAS are found all over the world at low levels. Some PFAS can build up in people and animals with repeated exposure over time.



The most commonly studied PFAS are perfluorooctanoic acid (PFOA) and perfluorooctane sulfonic acid (PFOS). PFOA and PFOS have been phased out of production and use in the United States, but other countries may still manufacture and use them.

Some products that may contain PFAS include:

- Some grease-resistant paper, fast food containers/wrappers, microwave popcorn bags, pizza boxes
- Nonstick cookware
- Stain-resistant coatings used on carpets, upholstery, and other fabrics
- Water-resistant clothing
- Personal care products (shampoo, dental floss) and cosmetics (nail polish, eye makeup)
- Cleaning products
- Paints, varnishes, and sealants

Even though recent efforts to remove PFAS have reduced the likelihood of exposure, some products may still contain them. If you have questions or concerns about products you use in your home, contact the Consumer Product Safety Commission at (800) 638-2772. For a more detailed discussion on PFAS, please visit <https://www.atsdr.cdc.gov/pfas/index.html>.

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:

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 can be naturally occurring or may result from urban stormwater 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 stormwater 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 stormwater 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.

Level 1 and 2 Assessment Update

Coliforms are bacteria that are naturally present in the environment and 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 correct any problems that were found during these assessments.

During the past year, we were required to conduct one Level 1 assessment. One Level 1 assessment was completed. We were not required to take any corrective actions.

During the past year, we were required to conduct one Level 2 assessment. One Level 2 assessment was completed. We were not required to take any corrective actions.

Test Results

Our water is monitored for many different kinds of substances on a very strict sampling schedule, and the water we deliver must meet specific health standards. Here, we only show those substances that were detected in our water (a complete list of all our analytical results is available upon request). Remember that detecting a substance does not mean the water is unsafe to drink; our goal is to keep all detects below their respective maximum allowed levels.

The following tables list all the drinking water contaminants that were detected during the 2021 calendar year. The presence of these contaminants does not necessarily indicate the water poses a health risk.

The state recommends monitoring 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 SUBSTANCES¹

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Alpha Emitters (pCi/L)	2019	15	0	0.071	0.071–0.071	No	Erosion of natural deposits
Barium (ppm)	2021	2	2	0.048	0.048–0.048	No	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Chlorine (ppm)	2021	[4]	[4]	1.7	NA	No	Water additive used to control microbes
Fluoride (ppm)	2021	4	4	0.81	0.81–0.81	No	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Nitrate (ppm)	2021	10	10	0.38	0.38–0.38	No	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Total Organic Carbon² (ppm)	2021	TT	NA	12.7	1.1–12.7	No	Naturally present in the environment

Tap water samples were collected for lead and copper analyses from sample sites throughout the community

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AL	MCLG	AMOUNT DETECTED (90TH %ILE)	SITES ABOVE AL/TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2021	1.3	1.3	0.19	/60	No	Corrosion of household plumbing systems; erosion of natural deposits
Lead (ppb)	2021	15	0	1.8	/60	No	Lead service lines; corrosion of household plumbing systems, including fittings and fixtures; erosion of natural deposits

Definitions

90th %ile: The levels reported for lead and copper represent the 90th percentile of the total number of sites tested. The 90th percentile is equal to or greater than 90% of our lead and copper detections.

AL (Action Level): 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.

LRAA (Locational Running Annual Average): Average of analytical results for samples taken at a particular monitoring location during the previous four calendar quarters.

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.

MPA (Monitoring Period Average): An average of sample results obtained during a defined time frame, common examples of monitoring periods are monthly, quarterly, and yearly.

MRDL (Maximum Residual Disinfectant 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 Disinfectant 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.

mrem/yr (millirem per year): A measure of radiation absorbed by the body.

NA: Not applicable.

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

NTU (Nephelometric Turbidity Unit): A measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person. Turbidity is not regulated for groundwater systems.

pCi/L (picocuries per liter): A measure of radioactivity.

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

ppm (parts per million): One part substance per million parts water (or milligrams per liter).

RAA (Running Annual Average):

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

					Berkley Plaza		Brookfield Subdivision Sample Hydrant		
DISINFECTION BY-PRODUCTS	MONITORING PERIOD	UNIT	MCL	MCLG	HIGHEST LRAA	RANGE LOW-HIGH	HIGHEST LRAA	RANGE LOW-HIGH	TYPICAL SOURCE
Total Haloacetic Acids (HAA5)	2021	ppb	60	0	23	0.00734 - 0.043	24	0.00619 - 0.041	By-product of drinking water disinfection
TTHM	2021	ppb	80	0	46	0.02028 - 0.071	44	0.01576 - 0.069	By-product of drinking water chlorination
					Camp Frame Rd Sample Hydrant		Shell Station I-81 Exit 20		
DISINFECTION BY-PRODUCTS	MONITORING PERIOD	UNIT	MCL	MCLG	HIGHEST LRAA	RANGE LOW-HIGH	HIGHEST LRAA	RANGE LOW-HIGH	TYPICAL SOURCE
Total Haloacetic Acids (HAA5)	2021	ppb	60	0	33	0.01689 - 0.042	17	0.00417 - 0.035	By-product of drinking water disinfection
TTHM	2021	ppb	80	0	59	0.03433 - 0.078	37	0.01482 - 0.075	By-product of drinking water chlorination

UNREGULATED SUBSTANCES				
SUBSTANCE (UNIT OF MEASURE)	DATE SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE
Nickel (ppm)	2021	0.0014	0.0014–0.0014	Naturally occurring
Sodium (ppm)	2021	9.2	9.2–9.2	NA
Strontium (ppb)	2021	240	240–240	NA

¹ In August 2021, three samples tested positive for total coliforms.
² The value reported under Amount Detected for TOC is the lowest ratio between percentage of TOC actually removed to the percentage of TOC required to be removed. A value of greater than 1 indicates that the water system is in compliance with TOC removal requirements. A value of less than 1 indicates a violation of the TOC removal requirements.

Safeguard Your Drinking Water

Protection of drinking water is everyone’s responsibility. You can help protect your community’s drinking water source in several ways:

- Eliminate excess use of lawn and garden fertilizers and pesticides. They contain hazardous chemicals that can reach your drinking water source.
- Pick up after your pets.
- If you have your own septic system, properly maintain it to reduce leaching to water sources, or consider connecting to a public water system.
- Dispose of chemicals properly; take used motor oil to a recycling center.
- Volunteer in your community. Find a watershed or wellhead protection organization in your community and volunteer to help. If there are no active groups, consider starting one. Use U.S. EPA’s Adopt Your Watershed to locate groups in your community.
- Organize a storm drain stenciling project with others in your neighborhood. Stencil a message next to the street drain reminding people: “Dump No Waste – Drains to River” or “Protect Your Water.” Produce and distribute a flyer for households to remind residents that storm drains dump directly into your local water body.