



2019 Annual

Water Quality Report

Elk River Regional System

PWS ID: WV3302016



This report contains important information about your drinking water. We encourage you to read and share this annual Water Quality Report that can be viewed electronically at www.amwater.com/ccr/kanawhavalley.pdf

A Message from the West Virginia American Water President



At West Virginia American Water, our customers are at the center of everything we do. That's why we work 24 hours a day, seven days a week to protect our water supplies and provide our communities with safe, clean tap water that meets or surpasses drinking water standards. We care about protecting our precious water resources, and we've invested millions of dollars in technology and equipment to test and monitor our drinking water supplies.

I am pleased to share with you another excellent report on the quality of your drinking water. As you read through this annual water quality information, you will see that we continue to supply high quality drinking water to help keep your life flowing.

Last year, we invested \$76 million to upgrade our water treatment and pipeline systems across West Virginia. This investment allowed us to improve water quality, water pressure and service reliability for our customers. With over 155,000 customers, that's an investment of nearly \$500 per customer.

These investments included:

- Replacing aging water lines and valves
- Upgrading existing water treatment plant intakes, pumps, filters, chemical feed systems instrumentation and technology
- Constructing new pump stations and tanks
- Improving fire protection by upsizing water lines and replacing fire hydrants
- Upgrading water treatment processes to comply with the latest water quality standards
- Enhancing source water monitoring systems to facilitate water

I am also delighted to remind customers that seven of our eight water treatment plants have been nationally recognized with prestigious Directors Awards from the American Water Works Association and U.S. Environmental Protection Agency's (EPA) Partnership for Safe Water program. This program recognizes water systems that surpass federal and state drinking water standards. All of our plants that hold this award have done so for many years – some as many as 20 consecutive years – and are the only water treatment plants in West Virginia to do so.

West Virginia American Water remains committed to protecting our sources of drinking water. We have been recognized nationally for advanced technology and detection methods that are paving the way for source water protection across the country. Additionally, our Kanawha Valley and Huntington treatment plants are part of the ORSANCO Organics Detection System monitoring network, providing source water monitoring data that is vital for detecting trends and understanding source water conditions.

We hope our commitment to you and our passion for water shines through in this report detailing the source and quality of your drinking water in 2019. We will continue to work to help keep your life flowing – today, tomorrow and for future generations.

Proud to be your local water service provider,

Robert Burton
President, West Virginia American Water



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WE CARE ABOUT WATER. IT'S WHAT WE DO.®

Where Does My Water Come From?

West Virginia American Water and its customers in the Elk River Regional Water system are fortunate because we enjoy an abundant water supply from the Elk River, which is a surface water source. The current treatment plant provided roughly 10 billion gallons of water throughout the year to customers in Kanawha, Boone, Putnam, Lincoln, Logan and Cabell counties. The water supply is distributed for residential, commercial and industrial use. Learn more about the Elk River and local waterways at <https://watersgeo.epa.gov/mywaterway>.

How is My Water Treated and Purified?

Current treatment processes include coagulation and settling followed by filtration and disinfection. An inhibitor is added for corrosion control and fluoridation is provided for reduction of dental cavities. Throughout the process dedicated plant operations and water quality staff monitor and control these plant processes.

Commonly Asked Questions

Is there lead in my water?

Although we regularly test lead levels in your drinking water, it is possible that lead and/or copper levels at your home are higher because of materials used in your 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. West Virginia American Water is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. We take steps to reduce the potential for lead to leach from your pipes into the water. This is accomplished by adding a corrosion inhibitor to the water leaving our treatment facility. There are steps that you can take to reduce your household's exposure to lead in drinking water. For more information, please review our Lead and Drinking Water Fact Sheet at <https://amwater.com/wvaw/water-quality/lead-and-drinking-water>.

How hard is my water?

Hardness is a measure of the concentration of two minerals, calcium and magnesium, naturally present in water. Hardness levels range from 13 to 85 ppm, or about 1 to 5 grains per gallon of water.

How much sodium is in my water?

The sodium level is approximately 7.7 ppm (or mg/L).

What is the pH (acidity) range of my water?

Water in the distribution system averages 7.2 pH units. A pH of 7.0 is considered neutral, neither acidic nor alkaline.

Is there fluoride in my water?

West Virginia American Water adds fluoride to a level of near 0.8 ppm to assist in the prevention of dental cavities.

Partnership for Safe Drinking Water Program

West Virginia American Water is a member of the national Partnership for Safe Water (an association of water utilities and government) which is committed to providing drinking water quality that is far better than what is required by federal regulation. The Elk River Regional Water Treatment Plant has completed its self-assessment and received the "Director's Award" presented by the Administrator of the EPA. In 2015, this facility received the Five Year Directors award for continuous compliance with the Partnership goals.



Source Water Assessment and Protection

The West Virginia Department of Health and Human Resources (DHHR) completed a source water assessment of the Elk River in July 2002 to meet Federal requirements of the Safe Drinking Water Act. The study looked at the drainage area and ranked its vulnerability to contamination. DHHR ranked the susceptibility high because the Elk River is a surface water body exposed above the ground. To get a copy of the assessment, contact DHHR at (304) 356-4298 or visit: <https://www.wvdhhr.org/oehs/eed/swap>.



As a protective measure, the Elk River Regional Water system, in conjunction with the Ohio River Valley Water Sanitation Commission (ORSANCO) and other water utilities along the Ohio River and major tributaries, jointly operate the Organic

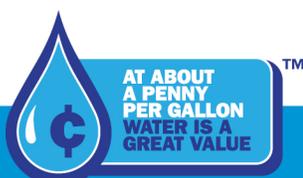
Detection System for detection and tracking of in-stream chemical spills.

Protecting Your Drinking Water Supply

Protecting drinking water at its source is an important part of providing high quality water. It takes a community effort to protect our shared resources. It takes a community effort to protect our shared resources. This includes utilities, businesses, residents, government agencies and community organizations. Everyone who lives, works, and plays in the area has a role and stake in clean water supplies.

What Can You Do? Quality drinking water starts upstream. Everyone can help maintain and improve drinking water supplies through the following actions:

- Dispose of pharmaceuticals, household chemicals, oils and paints at proper waste collection sites. Materials can impact waterways if poured down



the drain, flushed down the toilet, or dumped on the ground.

- Clean up after your pets and limit the use of fertilizers and pesticides.
- Inspect your septic system and have it serviced – usually every 3 to 5 years.
- Look for local opportunities to take part in watershed activities.
- Report any spills, illegal dumping or suspicious activity to DEP at 1-800-642-3074.

What Are We Doing? We strive to Keep Life Flowing for our customers and our communities. Our priority is to provide reliable, quality drinking water for our customers, and our sources of supply are an important part of that mission. We work to understand and reduce potential risks to your drinking water supply. We have developed a Source Water Protection Plan (SWPP) under state requirements. The SWPP includes an updated assessment and actions to address potential threats. Our strategies include proactive outreach, contaminant data, monitoring, emergency preparedness, and policy input.

Here are a few activity highlights from 2019:

- **Source Water Protection Plan:** We hosted online webinars and in-person public meetings to gain feedback from our customers on our source water protection planning efforts. We reached out to representatives from emergency response agencies, health departments and non-government organizations to request their input on potential threats. We partnered with a consulting firm to evaluate progress on our plan implementation. We compiled all this information and our own internal changes and incorporated it into the three year SWPP update. A copy of the submitted SWPP is available online at www.westvirginiaamwater.com under Water Quality & Stewardship > Source Water Protection menu. We welcome input anytime through our online feedback form.
- **Source Water Monitoring:** We expanded our continuous water quality monitoring to include an advanced event detection system. Water treatment plant operators are now receiving alert notifications for changes in the river water quality where our intakes are located. Centralized and risk specific advanced laboratory equipment was added to build upon our monitoring proficiency.
- **Emergency Preparedness:** We are in the process of conducting Risk & Resiliency workshops with

intentions to incorporate the findings into an updated Emergency Response Plan. We hosted a practice exercise of a hypothetical source water contamination event. Seventeen partner organizations participated. We improved incident readiness and built stronger relationships with community partners.

- **Outreach and Education:** We conducted tours, school visits, and programs to educate the community about water supplies and treatment. For more information on community involvement, visit <https://amwater.com/wvaw/news-community/community-involvement>.

Share This Report

Landlords, businesses, schools, hospitals and other groups are encouraged to share this important information with water users at their location who are not billed customers of West Virginia American Water and therefore do not receive this report directly.

Information on the Internet

The EPA Office of Water and the Centers for Disease Control and Prevention (CDC) websites provide a substantial amount of information on many issues relating to water resources, water conservation and public health. You may visit these sites or West Virginia American Water's website at the web addresses below:

West Virginia American Water
www.westvirginiaamwater.com

West Virginia Bureau for Public Health
www.wvdhhr.org/oehs

United States Environmental Protection Agency
www.epa.gov/safewater

Safe Drinking Water Hotline: (800) 426-4791

Centers for Disease Control and Prevention
www.cdc.gov

Special Monitoring:

Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted. The fourth Unregulated Contaminant Monitoring Rule (UCMR 4) was published in the Federal Register on December 20, 2016. UCMR 4 requires monitoring for 30 chemical contaminants between 2018 and 2020 using analytical methods developed by EPA and consensus organizations. This monitoring provides a basis for future regulatory actions to protect public health. Should you



desire any further information, please contact West Virginia American Water, P. O. Box 1906, Charleston, WV 25327 or by calling (800) 685-8660.

Chromium, a metallic element, is found in rocks, soil, plants, and animals. Chromium is also used in steel making, metal plating, leather tanning, paints, dyes and wood preservatives. The most common forms of chromium in the environment are trivalent (chromium-3), hexavalent (chromium-6) and the metal form, (chromium-0). USEPA currently regulates chromium-6 as part of the total chromium drinking water standard. Additional information can be found at <http://water.epa.gov/drink/info/chromium/index.cfm/>.

Substances Expected to be in Drinking Water

To ensure that tap water is of high quality, EPA prescribes regulations limiting the amount of certain substances 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. West Virginia American Water's treatment processes are designed to reduce any such substances to levels below any health concern.

The source of drinking water (both tap water and bottled water) includes 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 from 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 can be naturally occurring or may 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 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 EPA's Safe Drinking Water Hotline at (800) 426-4791.

Additional Regulatory Requirements

Cryptosporidium is a microbial pathogen found in surface water throughout the US. Although *Cryptosporidium* can be removed through commonly-used filtration methods, EPA issued a new rule in January 2006 that requires systems with higher *Cryptosporidium* levels in their source water to provide additional treatment. West Virginia American Water's Elk River Regional Treatment Plant monitored for *Cryptosporidium* in its raw water in 2004-2005. Based on the results of this round of *Cryptosporidium* monitoring, no additional treatment was required under US EPA regulation. In May 2015, the Elk River Regional Treatment Plant began a second round of monitoring for *Cryptosporidium* which was completed in 2017. Based on the results of our *Cryptosporidium* monitoring, an engineering study is currently being conducted by West Virginia American Water to further characterize our source water and identify potential types of additional treatment.

Special 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. 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 or by calling our Customer Service Center at (800) 685-8660.

About American Water

West Virginia American Water, a subsidiary of American Water (NYSE: AWK), is the largest investor-owned water utility in the state, providing high-quality and reliable water services to approximately 565,000 people.

With a history dating back to 1886, American Water is the largest and most geographically diverse U.S. publicly traded water and wastewater utility company. The company employs more than 6,800 dedicated professionals who provide regulated and market-based drinking water, wastewater and other related services to 15 million people in 46 states. American Water provides safe, clean, affordable and reliable water services to our customers to keep their lives flowing. For more information, visit amwater.com and follow American Water on Twitter, Facebook and LinkedIn.



There's a lot more to your water bill than just water.

When you turn on the tap, it's easy to see what your water bill buys. What's not as easy to see is what it takes to bring that water to your home. The miles of pipeline hidden below the ground. The facilities that draw water from the source. The plant where it's treated and tested. The scientists, engineers, and maintenance crews working around the clock to make sure that water is always there when you need it. Your water payments are helping to build a better tomorrow by supporting needed improvements that will keep water flowing for all of us—today and well into the future. All for about a penny a gallon.

AT ABOUT A PENNY PER GALLON WATER IS A GREAT VALUE™

WE CARE ABOUT WATER. IT'S WHAT WE DO. FIND OUT WHY YOU SHOULD, TOO, at amwater.com.

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present in the water. Please carefully review this report as it provides important information about drinking water and your health. The company remains committed to providing high quality water to our customers. For help with interpreting this table, see the "Table Definitions" section.

Unregulated substances are measured, but maximum allowed contaminant levels have not been established by the government.

Table Definitions and Abbreviations

- **Action Level:** The concentration of a contaminant that, if exceeded, triggers treatment or other requirements that 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.
- **MRDL (Maximum Residual Disinfectant Level):** The highest level of disinfectant routinely allowed in drinking water. Addition of a disinfectant is necessary for control of microbial contaminants.
- **MRDLG (Maximum Residual Disinfectant Level Goal):** 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 contamination.
- **NA:** Not applicable
- **NTU - Nephelometric Turbidity Units:** Measurement of the clarity, or turbidity, of water.
- **pCi/L (picocuries per liter):** Measurement of the natural rate of disintegration of radioactive contaminants in water (also beta particles).
- **ppm (parts per million):** One part substance per million parts water, or milligrams per liter.
- **ppb (parts per billion):** One part substance per billion parts water, or micrograms per liter.
- **ng/L (parts per trillion):** One part substance per trillion parts water, or nanograms per liter.
- **µg/L:** Micrograms per liter or parts per billion.
- **pH:** A measurement of acidity, 7.0 being neutral.
- **Secondary MCL (Secondary Maximum Contaminant Level):** Contaminants levels that may result in cosmetic or aesthetic effects in drinking water.
- **TT (Treatment Technique):** A required process intended to reduce the level of a contaminant in drinking water.

Water Quality Statement

The staff and management of West Virginia American Water are pleased to report that the water provided to our Kanawha Valley customers during 2019 met all the state and federal standards set for drinking water.

The state requires a water utility 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.

How to Read the Data Tables

For your information, we have compiled a list in the adjacent table showing the results of the testing of your drinking water during 2019. Although all of the substances listed are under the Maximum Contaminant Level (MCL) set by the EPA, we feel it is important that you know exactly what was detected and how much of the substance was



Water Quality Results

Regulated Substances (Measured on the Water Leaving the Treatment Facility unless noted)

Substance (units)	Year Sampled	MCLG	MCL	Amount Detected	Range Low-High	Compliance Achieved	Typical Source
Gross Alpha (pCi/L)	2014	0	15	< 0.7	NA	Yes	Radioactive decay of natural deposits
Barium (ppm)	2019	2	2	< 0.1	NA	Yes	Discharge of drilling waste; Discharge of from metal refineries; Erosion of natural deposits
Radium-228 (pCi/L) ¹	2014	0	5	< 1.0	NA	Yes	Radioactive decay of natural deposits and man made sources
Chlorine (ppm) ²	2019	MRDLG=4	MRDL=4	2.2	0.3 - 3.2	Yes	Water additive to control microbes
Fluoride (ppm)	2019	4	4	0.8	0.5 - 1.1	Yes	Water additive which promotes strong teeth
Haloacetic Acids (HAAs) (ppb) ³	2019	0	60	13.8	6.1 - 33.6	Yes	By-product of drinking water chlorination
Nitrate (ppm)	2019	10	10	0.31	NA	Yes	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Nitrite (ppm)	2019	1.0	1.0	< 0.1	NA	Yes	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Total Trihalomethanes (TTHMs) (ppb) ⁴	2019	0	80	26	7.5 - 89.5	Yes	By-product of drinking water chlorination
Total Organic Carbon (Removal Ratio) ⁵	2019	NA	TT	1.0	1.0 - 1.3	Yes	Naturally decaying vegetation
Turbidity (NTU) ⁶	2019	NA	TT	0.14	0.01 - 0.14	Yes	Soil runoff

¹ EPA considers 5 pCi/L as the level of concern for Radium.

² Amount detected based on a yearly running average of all bacteriological samples collected in the distribution system.

³ Based on a yearly running average. The amount detected was determined by averaging the numerical running annual average at each of 8 distribution compliance sites.

⁴ Based on a yearly running average. The amount detected was determined by averaging the numerical running annual average at each of 8 distribution compliance sites. 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 system, and may have an increased risk of getting cancer.

⁵ The Treatment Technique (TT) is met if the TOC Removal Ratio (based on a four quarter running annual average) is greater than or equal to 1.0.

⁶ Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration. A minimum of **100%** of all samples taken to measure turbidity met the treatment technique requirement.

Regulated Substances: Lead and Copper Results (water tap samples)

Substance (units)	Year Sampled	MCLG	Action Level	Amount Detected 90 th Percentile	Number of Samples	Homes Above Action Level	Compliance Achieved	Typical Source
Copper (ppm)	2018	1.3	1.3	0.154	50	0	Yes	Corrosion of household plumbing systems, erosion of natural deposits
Lead (ppb)	2018	0	15	1	50	0	Yes	Corrosion of household plumbing systems, erosion of natural deposits



Bacterial Results (from the Distribution System)

Substance (units)	Year Sampled	MCLG	MCL	Highest Percentage Detected	Compliance Achieved	Typical Source
Total coliform (% Positive samples)	2019	0	5% Positive samples	0%	Yes	Bacteria naturally present in the environment

Unregulated Substances (Measured on the Water Leaving the Treatment Facility unless otherwise noted)

Substance (units)	Year Sampled	Average Results	Secondary MCL	Range Low-High	Typical Source
Aluminum (ppb)	2019	20	200	NA	Mineral that occurs naturally in the soil
Chlorides (ppm)	2019	11.2	250	NA	Mineral that occurs naturally in the soil and runoff from road deicing
Iron (ppb)	2019	<100	300	NA	Mineral that occurs naturally in the soil and runoff from mining operations
Manganese (ppb)	2019	<10	50	NA	Mineral that occurs naturally in the soil and runoff from mining operations
Nickel (ppb)	2019	< 5	NA	NA	Industrial sources such as metal reclamation and production of certain alloys
Total Chromium(ppb)	2019	<7.0	NA	NA	Industrial sources such as metal reclamation and production of certain alloys
Sodium (ppm)	2019	7.7	NA	NA	Element that occurs naturally in water and soil; road salt; water softeners
Sulfate (ppm)	2019	25.9	250	NA	Mineral that occurs naturally in the soil
Zinc (ppm)	2019	0.08	5	0.05 - 0.15	Element that occurs naturally in the water; constituent of corrosion control additive

Additional Water Quality Parameters of Interest

This table shows average levels of additional water quality parameters which are often of interest to consumers. Values shown here are averages of operating data for 2019. Values may vary from day to day. There are no health-based limits for these substances in drinking water.

Additional Constituents

Substance (units)	Year Sampled	Average Amount Detected	Range Low-High
Alkalinity, Total (ppm)	2019	36	16 - 58
Hardness, Total (ppm)	2019	38	13 - 85
pH (standard units)	2019	7.2	7.0 - 7.5

