



2014 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

To Our Valued Customer:



West Virginia American Water is proud to be your local water service provider, and I am pleased to share with you good news about the quality of your drinking water. Each year, we provide you with our annual water quality report. Like so many years prior – you will find that we continue to supply water that meets or surpasses all state and federal water quality regulations.

It is no simple task to move water from rivers and reservoirs through the water treatment process to our distribution lines and tanks, and, finally your home, school or place of work. It requires having the right team of experts and technologies in place, and our scientists, chemists, engineers, operators and maintenance crews are always on the job. Delivering high-quality, reliable water service to your tap around the clock also requires significant investment in our water infrastructure. In 2014 alone, we invested more than \$36.5 million in water system improvements statewide. From upgrading our treatment facilities to replacing more than 18 miles of aging water pipelines, we invested prudently and with purpose. We also invested in new laboratory equipment and online, multi-panel source water quality monitoring devices for early detection of source water contamination to comply with new state requirements. Because we invest our dollars responsibly, we provide our water at about a penny per gallon – an exceptional value for a service that is so essential to our daily lives.

Our regulatory compliance record is a testament to our commitment to water quality and environmental stewardship. In 2014, there were more than 4,000 health-based or monitoring/reporting drinking water Notices of

Violation (NOVs) issued to community drinking water systems in West Virginia. We are extremely proud that West Virginia American Water once again did not receive any drinking water NOVs over the course of the year. Furthermore, just over 400 surface water treatment plants nationally are part of USEPA's Partnership for Safe Water Program, which is a voluntary effort designed to increase protection against microbial contamination through treatment optimization. All nine West Virginia American Water surface water treatment plants participate in this program and are the only plants in West Virginia to receive the program's nationally recognized Director's Awards.

We hope you agree that high quality, reliable water service is worth every penny and worth learning more about. Please take the time to review this report. It provides details about the source and quality of your drinking water using the data from water quality testing conducted for your local water system from January through December 2014. For an electronic copy of this report, visit us online at www.westvirginiaamwater.com and click "Water Quality Reports" under the Water Quality & Stewardship tab.

At West Virginia American Water, our customers are our top priority, and we are committed to providing you with the highest quality drinking water and service possible now and in the years to come.

Sincerely,

Jeffrey L. McIntyre

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.



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

Commonly Asked Questions

Is there lead in my water?

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. 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 2 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 or at <http://www.epa.gov/safewater/lead>.

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 38 to 171 ppm, or 2 to 10 grains per gallon of water.

How much sodium is in my water?

The sodium level is approximately 9.3 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 0.7 ppm to assist in the prevention of dental cavities.

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 11 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. To learn more about our watershed on the internet, go to the U.S. EPA's Search Your Watershed at www.epa.gov/owow/.

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. This facility completed its self-assessment in 2010 and received



the "Director's Award" presented by the administrator of the US Environmental Protection Agency. In addition, this award has been maintained in each year since 2010 for continuous compliance with the Partnership goals.

Source Water Assessment and Protection

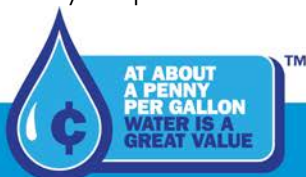
A Source Water Assessment Program (SWAP) is a result of the 1996 amendments to the Federal Safe Drinking Water Act (SDWA). Those amendments require all states to establish a program to assess the vulnerability of public water systems to potential contamination. Surface water systems such as the Kanawha Valley treatment plant could be impacted by a potential contaminant source. In addition, in 2014 the State of West Virginia adopted legislation requiring updates to source water assessment and protection programs. In order to develop protection plans consistent with the new regulations, West Virginia American Water initiated a number of source water assessment and protection efforts in 2014:

- Partnered with Corona Environmental Consulting and the Water Research Foundation on a project to develop an advanced, dynamic, automated tool and contaminant information database that will update information on potential contaminant sources within the system's zone of critical concern on a weekly basis
- Constructed a new \$400,000 laboratory at the Kanawha Valley water treatment plant and installed two gas chromatograph/mass spectrometers, which are high-tech devices that test for volatile organic compounds and semi-volatile organic compounds
- Conducted a thorough analysis of available early detection technology and is installing monitoring equipment of this type as its baseline level system at a cost of approximately \$30,000 per facility
- Commissioned a detailed engineering study to evaluate options for alternate sources of supply, second intakes, reservoirs and interconnections with other water systems

Community involvement in this Source Water Protection Program is vital to its success. For additional information please contact our Water Quality Manager at (800) 685-8660.

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



continuously monitor and control these plant processes to assure you, our customers, a superior quality water.

Information on the Internet

The U.S. EPA Office of Water and the Centers for Disease Control and Prevention 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:

In addition to the unregulated contaminants normally monitored by our facility, in 2014 the Elk River Regional Water system began sampling for a series of unregulated contaminants in accordance with the Unregulated Contaminant Monitoring Rule (UCMR₃). Unregulated contaminants are those that don't yet have a drinking water standard set by USEPA. The purpose of monitoring for these contaminants is to help the EPA decide whether the contaminants should have a standard. UCMR₃ sampling will be completed in 2015. Two of the unregulated compounds included in the UCMR₃ study were detected in the Elk River Regional Water facility samples collected in 2014. Strontium and Chromium (VI) were both detected, with detection levels listed in the Unregulated Substances section of this report. Should you desire any further information, the specific UCMR₃ results from each sampling event are available at West Virginia American Water, P. O. Box 1906, Charleston, WV 25327 or may be requested 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, U.S. Environmental Protection Agency 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 advanced water treatment processes are designed to reduce any such substances to levels well 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 U.S. 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, US EPA issued a rule in January 2006 that requires systems with higher *Cryptosporidium* levels in their source water to provide additional treatment. In anticipation of this upcoming rule, 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 initial



Cryptosporidium monitoring, no additional treatment was required under this US EPA regulation. An updated rule was recently enacted which requires a second round of monitoring to begin in 2015.

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

How to Read the Data Tables

For your information, we have compiled a list in the adjacent table showing what substances were detected in our drinking water during 2014. Although all of the substances listed are under the Maximum Contaminant Level (MCL) set by the U.S. EPA, we feel it is important that you know exactly what was detected and how much of the substance was 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 the highest 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.
- **NA (Not Applicable):** Range not established (single measurement) or limit not established
- **ND (Non Detectable):** Below detection limits
- **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.
- **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.

About American Water

West Virginia American Water, a wholly owned 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 560,000 people.

Founded in 1886, American Water is the largest publicly traded U.S. water and wastewater utility company. With headquarters in Voorhees, N.J., the company employs approximately 6,400 dedicated professionals who provide drinking water, wastewater and other related services to an estimated 15 million people in more than 45 states and parts of Canada. More information can be found by visiting www.amwater.com.

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 the past year 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.



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
Alpha Emitters (pCi/L)	2014	0	15	< 0.7	NA	Yes	Radioactive decay of natural deposits
Barium (ppm)	2014	2	2	< 0.1	NA	Yes	Discharge of drilling waste; Discharge of from metal refineries; Erosion of natural deposits
Beta/photon emitters (pCi/L) ¹	2014	0	50	< 1.0	NA	Yes	Radioactive decay of natural deposits and man-made sources
Chlorine (ppm) ²	2014	MRDLG=4	MRDL=4	2.5	0.2 – 3.4	Yes	Water additive to control microbes
Fluoride (ppm)	2014	4	4	0.7	0.5 - 1.3	Yes	Water additive which promotes strong teeth
Haloacetic Acids (HAAs) (ppb) ³	2014	0	60	16	8.2 – 30.6	Yes	By-product of drinking water chlorination
Nitrate (ppm)	2014	10	10	0.33	NA	Yes	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Total Trihalomethanes (TTHMs) (ppb) ⁴	2014	0	80	41	21.5 - 62.0	Yes	By-product of drinking water chlorination
Total Organic Carbon (Removal Ratio) ⁵	2014	NA	TT	1.45	1.1 – 1.9	Yes	Naturally decaying vegetation
Turbidity (NTU) ⁶	2014	NA	TT	0.88	0.02 – 0.88	Yes	Soil runoff

¹ The MCL for Beta/photon emitters is written as 4 mrem/year. EPA considers 50 pCi/L as the level of concern for beta emitters.

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 99% of all samples taken to measure turbidity met the treatment technique requirement.

Regulated Substances: Lead and Copper Results (at customer's tap)

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)	2014	1.3	1.3	0.1	50	0	Yes	Corrosion of household plumbing systems, erosion of natural deposits
Lead (ppb)	2014	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)	2014	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)	2014	25	200	NA	Mineral that occurs naturally in the soil
Chlorides (ppm)	2014	12	250	NA	Mineral that occurs naturally in the soil and runoff from road deicing
Iron (ppb)	2014	6	300	0 – 60	Mineral that occurs naturally in the soil and runoff from mining operations
Manganese (ppb)	2014	5	50	0 - 26	Mineral that occurs naturally in the soil and runoff from mining operations
Nickel (ppb)	2014	< 5	NA	NA	Industrial sources such as metal reclamation and production of certain alloys
Hexavalent Chromium(ppb)	2014	0.04	100	0.03 – 0.06	Industrial sources such as metal reclamation and production of certain alloys
Hexavalent Chromium (ppb) – Distribution System	2014	0.25	NA	0.07 – 0.4	Industrial sources such as metal reclamation and production of certain alloys
Strontium(ppm)	2014	0.13	NA	0.09 – 0.20	Mineral that occurs naturally in the soil and runoff from mining operations
Strontium (ppm) – Distribution System	2014	0.15	NA	0.08 – 0.20	Mineral that occurs naturally in the soil and runoff from mining operations
Sodium (ppm)	2014	9.3	NA	NA	Element that occurs naturally in water and soil; road salt; water softeners
Sulfate (ppm)	2014	56.8	250	NA	Mineral that occurs naturally in the soil
Zinc (ppm)	2014	0.089	5	0.06-0.35	Element that occurs naturally in the water; constituent of corrosion control additive

Unregulated Contaminants (Measured on Water Leaving the Treatment Facility) – January 9, 2014 Elk River Chemical Spill at Freedom Industries

Substance (units)	Year Sampled	MCLG	MCL	Range Low-High	Violation Y/N	Source of Contamination
Methylcyclohexanemethanol (MCHM) (ppm) ¹	2014	NA	NA	ND – 5.57	N	Chemical used in cleaning coal
Glycol ether (Dowanol™) (PPh, di-PPh) (ppm) ²	2014	NA	NA	ND	N	Chemical used for phenolic coatings and linings

¹ MCHM was introduced into the Elk River on January 9, 2014 following a spill at Freedom Industries. Daily monitoring was conducted from 1/9/14-6/20/14, with the highest value measured during the Do Not Use period. All values were below 1 ppm by 10 am on 1/10/14. After consultation with the WV Bureau of Public Health, finished water monitoring was discontinued following a final round of testing at the 0.38 ppb level and repeated ND results at the 2.0 ppb (or 0.002 ppm) level in the raw water. Raw water monitoring was conducted 1/9/14-12/31/14 and is on-going in 2015.

² PPh and di-PPh were never detected in the water produced by the plant.



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 2014. Values may vary from day to day. There are no health-based limits for these substances in drinking water.

Additional Constituents (Measured on Water Leaving the Treatment Facility)

Substance (units)	Year Sampled	Average Amount Detected	Range Low-High
Alkalinity, Total (ppm)	2014	43	18 - 80
Hardness, Total (ppm)	2014	81	38 - 171
pH (standard units)	2014	7.2	7.0 - 7.4

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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