2016 Annual Water Quality Report

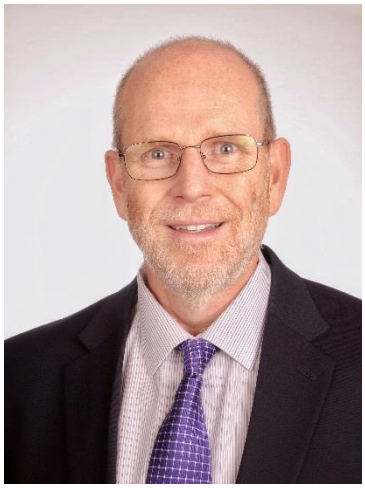
Brownell
PWS ID: PA2359001

Fallbrook
PWS ID: PA2359006

PENNSYLVANIA AMERICAN WATER

Este informe contiene información importante acerca de su agua potable. Haga que alguien lo tradúzca para usted, ó hable con alguien que lo entienda. (This report contains important information about your drinking water. Have someone translate it for you if needed.)

A Message from the Pennsylvania American Water President



Dear Valued Customer:

On behalf of all Pennsylvania American Water employees, I am pleased to share some very good news about the quality of your drinking water. This annual Water Quality Report is based on testing results between January and December 2016, and as you read it, you will see that we continue to supply water that meets or surpasses all regulatory drinking water standards.

Water service from Pennsylvania American Water is an exceptional value when you consider the science, expertise, equipment and technology involved in bringing water from the source, treating it, and then delivering clean, safe water to your tap. What's more, our plant operators, water quality experts, engineers and maintenance crews work around the clock to make sure that quality water is always there when you need it.

Delivering reliable, high-quality water service also requires significant investment to replace and upgrade aging infrastructure. **In 2016 alone, we invested approximately $309 million in system improvements across the Commonwealth.**

Water is essential for public health, fire protection, economic development and our overall quality of life. Every Pennsylvania American Water employee takes this responsibility very seriously and works hard to keep quality water flowing not only today but well into the future. Please take the time to carefully review this report about the source and quality of your drinking water. We hope you agree that your water service is worth every penny.

Sincerely,

Jeffrey L. McIntyre
President, Pennsylvania American Water

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

Our Mark of Excellence

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 6,700 dedicated professionals who provide regulated and market-based drinking water, wastewater and other related services to an estimated 15 million people in 47 states and Ontario, Canada. More information can be found by visiting www.amwater.com.

Pennsylvania 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 and/or wastewater services to approximately 2.3 million people.

We are once again proud to present our annual water quality report. This edition covers all testing completed from January through December 2016. Over the years, we have dedicated ourselves to producing drinking water that meets or surpasses all state and federal drinking water standards. We continually strive to adopt new and better methods of delivering the best quality drinking water to you. As regulations and drinking water standards become more stringent, it is our commitment to you to ensure compliance with these standards in an expeditious and cost-effective manner, while maintaining our objective of providing quality drinking water at an affordable price. We are pleased to tell you that our compliance with all state and federal drinking water laws remains exemplary. To that end, we remain vigilant in meeting the challenges of source water protection, water conservation, and community education while continuing to serve the needs of all our water users.

For more information about this report, or for any questions relating to your drinking water, please feel free to call our Customer Service Department at 1-800-565-7292.

Source Water Information

Two main surface sources supply the Brownell and Fallbrook service areas. Pennsylvania American Water maintains a treatment facility on the Brownell Reservoir capable of processing a maximum of 4 million gallons of water per day (MGD). The Brownell Reservoir is supplemented by Carbondale #4 Reservoir. Another treatment facility on the Fallbrook Reservoir is capable of processing a maximum of 1.6 million gallons of water per day (MGD). The Fallbrook Reservoir is supplemented by Crystal Lake. The water supply is distributed for residential, commercial, and industrial use.

Cryptosporidium (Measured on Raw Source Water Prior to Treatment) – Long Term 2 Enhanced Surface Water Treatment Rule (LT2ESWTR) Round 2 Cryptosporidium Monitoring Results

In 2016, monitoring for Cryptosporidium, a microbial parasite commonly found in surface water, was conducted as part of the Long Term 2 Enhanced Surface Water Treatment Rule (LT2ESWTR). Current test methods do not allow us to determine if the organisms detected are dead or if they are capable of causing disease. Typical sources would be fecal material from wildlife such as deer, other mammals, and warm blooded animals that are present in the watershed. Cryptosporidium must be ingested for it to cause disease, and may be transmitted through means other than drinking water. Symptoms of infection include nausea, diarrhea, and abdominal cramps. These symptoms can also be the result of different food related organisms, flu or ingesting untreated water such as while swimming in lakes or reservoirs. Most healthy individuals are able to overcome the disease within a few weeks. However, some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised people, such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people living with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk. These people should seek advice 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 (1-800-426-4791).

Beginning in October of 2016, monthly cryptosporidium monitoring was conducted on the raw source water for the Brownell and Fallbrook Water Treatment Plants. There were no detections in the Brownell Reservoir for cryptosporidium. One monthly sample had a detection in the Fallbrook Reservoir. The concentration of that result was 0.093 oocysts/L. Monitoring will continue through September of 2018 for these sources. The final results will be used to determine if additional treatment is required.

Protecting Your Water Source

The Pennsylvania Department of Environmental Protection (DEP) and PAW completed an assessment of the drinking water sources for the Brownell and Fallbrook surface water supplies in 2002. Although no man-made contaminants were detected, the water sources were considered most vulnerable to the following potential impacts: roadways, past mining activities, junkyards, auto storage facilities, boating activities, and storm water runoff associated with farms and golf courses.

A summary of the completed Source Water Assessment may be viewed by following the link at the end of this paragraph. Additional information can also be obtained by calling the local office of the DEP at (570) 826-2511. PAW encourages you to take an active part in protecting your water supply by participating in local watershed activities as they occur in your area.

Brownell Source Water Assessment Program

Other Water Quality Parameters of Interest

Is there lead in your 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. Pennsylvania 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:

U.S. Environmental Protection Agency Web Page on Lead

Does your water contain nitrates?

PAW's normal range of nitrate levels is below the MCL of 10 ppm. Nitrate enters the water supply from fertilizers used on farms and natural erosion of deposits in the watershed. Levels above 10 ppm are a health risk for infants under six months of age and can cause blue baby syndrome. Check with your physician if you have questions.

How hard is your water?

Hardness is a measure of the concentration of two minerals naturally present in water – calcium and magnesium. High hardness levels cause soap not to foam as easily as it would at lower levels. Hardness levels range from 14 ppm to 70 ppm, or 0.8 to 4.1 grains per gallon of water.

How much sodium is in your water?

The sodium level ranges from approximately 9 to 15 ppm.

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

Water in the distribution system averaged 7.4 pH units. A pH of 7.0 is considered neutral, neither acidic nor basic.

Is there fluoride in your water?

PAW does not add fluoride to your water supply

Partnership for Safe Drinking Water Program

In 2000 the Brownell and Fallbrook water treatment facilities were awarded the prestigious Director's Award under the Partnership for Safe Water program. The program is administered by the U.S. Environmental Protection Agency, the Pennsylvania Department of Environmental Protection, and other water-related organizations. The award honors utilities for achieving operational excellence by voluntarily optimizing their treatment facility operations and adopting more stringent performance goals than those required by federal and state drinking water standards. We are proud to report that the Brownell and Fallbrook water treatment facilities have met the voluntary goals of the program for 16 continuous years. In 2015, the Brownell Water Treatment Plant application for the Partnership for Safe Water President's Award successfully met all

criteria and was approved for Presidents Award status. The President's Award recognizes treatment plants that have achieved the highest possible levels of individual filter turbidity performance goals. We are proud to report the Brownell Water Treatment Plant has met the goals of the President's Award for 2 consecutive years.

How to Contact Us

Additional copies of this report can be printed directly from this site www.amwater.com/ccr/brownellfallbrook.pdf. Questions can be presented to our Customer Service Department at 1-800-565-7292. Additional information can be gathered from the following sources:

Pennsylvania American Water Web Page

Pa. Department of Environmental Protection Web Page

U.S. Environmental Protection Agency Web Page

Safe Drinking Water Hotline: (800) 426-4791

Center for Disease Control and Prevention Web Page

American Water Works Association Web Page

Substances Expected to be in Drinking Water

In order to ensure that tap water is safe to drink, the U.S. Environmental Protection Agency (EPA) prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. U.S. Food and Drug Administration regulations also establish limits for contaminants in bottled water, which must provide the same protection for public health. Pennsylvania American Water's treatment processes are designed to reduce any such substances to levels well below any health concern and the processes are controlled to provide maximum protection against microbial and viral pathogens which could be naturally present in surface and groundwater. 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 water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline at (800) 426-4791.

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 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 EPA's Safe Drinking Water Hotline (800) 426-4791.

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, and 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.

Important Information About Your Drinking Water

Availability of Monitoring Data for Unregulated Contaminants for Pennsylvania American Water – Brownell. Our water system conducted monitoring for several unregulated contaminants in 2014. Unregulated contaminants are those that do not yet have a drinking water standard set by the EPA. The purpose of monitoring for these contaminants is to help the EPA decide whether the contaminants should be regulated. As our customers, you have a right to know that these data are available. If you are interested in discussing the results please contact Emery Yurko at 570-457-1550.

How to Read This Table

Start with a **Substance** and read across. **Year Sampled** is usually in 2016 or years prior. **MCL** shows the highest level of substance (contaminant) allowed. **MCLG** is the goal level for that substance (goal may be set lower than what is allowed). **Amount Detected** represents the measured amount (lower is better). **Range** shows the highest and lowest amounts measured. A **Yes** under **Compliance Achieved** means the amount of the substance met government requirements. **Typical Source** tells where the substance usually originates. Various non-regulated substances are measured; however, maximum contaminant levels have not been established by the government. These contaminants are shown for your information.

Definitions of Terms Used in This Report

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.

MRDL (Maximum Residual Disinfectant Level): The highest level of 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 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.

Entry Point: A point at which finished water representative of each source enters the distribution system.

NA: Not applicable

ND: Not detected

NTU (Nephelometric Turbidity Units): Measurement of the clarity, or turbidity, of the 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.

SS: Single sample

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

90th Percentile: The highest concentration of lead and copper in tap water that is exceeded by 10 percent of the sites sampled during a monitoring period. This value is compared to the lead and copper action level (AL) to determine whether an AL has been exceeded.

%: means percent.

>: means greater than.

<: means less than.

≤: means less than or equal to.

≥: means greater than or equal to.

Water Quality Statement

We are pleased to report that during the past year, the water delivered to your home or business complied with all state and federal drinking water requirements. For your information, we have compiled a list in the table below showing what substances were detected in your drinking water during 2016. The Pennsylvania DEP allows us to monitor for some contaminants less than once per year because the concentration of the contaminants does not change frequently. Some of our data, though representative, is more than one year old. Although all of the substances listed below are under the Maximum Contaminant Levels (MCL) set by U.S. Environmental Protection Agency and the Pennsylvania DEP, we feel it is important that you know exactly what was detected and how much of each substance was present in the water.

Water Quality Results

Turbidity – A Measure of the Clarity of the Water at the Treatment Facilities

Substance (units)	Year Sampled	MCLG	MCL	Highest Single Measurement or Lowest Monthly % of Samples ≤0.3 NTU	Compliance Achieved	Typical Source
Turbidity (NTU) [1]	2016	NA	TT = 1 NTU for a single measurement	0.12 (Highest Measurement) (Fallbrook)	Yes	Soil runoff
				0.07 (Highest Measurement) (Brownell)		
		NA	TT = at least 95% of monthly samples ≤0.3 NTU	100% (Fallbrook)	Yes	Soil runoff
				100% (Brownell)		

[1] All turbidity readings were below the treatment technique requirement of 0.3 NTU in 95% of all samples taken for compliance on a monthly basis. Turbidity serves as an indicator of the effectiveness of the filtration process.

Disinfectant Residual - Measured on the Water Leaving the Treatment Facility

Substance (units)	Year Sampled	Minimum Residual Disinfectant Level	Lowest Amount Detected	Range Low - High	Compliance Achieved	Typical Source
Entry Point Chlorine (ppm)	2016	0.2	1.4 (Fallbrook)	1.4 - 2.6 (Fallbrook)	Yes	Water additive used to control microbes
			1.2 (Brownell)	1.2 - 2.5 (Brownell)		

Disinfectant Residual – Measured in the Distribution System

Substance (units)	Year Sampled	MRDL	MRDLG	Highest Amount Detected	Range Low - High	Compliance Achieved	Typical Source
Distribution Chlorine (ppm)[2]	2016	4	4	1.9 (Fallbrook)	1.2 - 1.9 (Fallbrook)	Yes	Water additive used to control microbes
				1.7 (Brownell)	1.2 - 1.7 (Brownell)		

[2] Range represents the calculated monthly averages of the results for the routine individual samples.

Total Organic Carbon (TOC) – Measured at the Fallbrook Treatment Facility

Plant	Substance (units)	Year Sampled	MCL	MCLG	Range of Removal Required (%)	Range of Removal Achieved (%)	Number of Quarters Out of Compliance	Compliance Achieved	Typical Source
Fallbrook	TOC Removal Efficiency (%)	2016	TT	NA	≥35	44 - 56	0	Yes	Naturally present in the environment

Regulated Substances - Measured on the Water Leaving the Treatment Facility

Substance (units)	Year Sampled	MCLG	MCL	Highest Amount Detected	Range Low - High	Compliance Achieved	Typical Source
Nitrate (ppm)	2016	10	10	0.05 (Fallbrook)	SS	Yes	Runoff from fertilizer use; Leaching from septic tanks; Sewage; Erosion of natural deposits

Bacterial Results – Measured in the Distribution System

Substance	Year Sampled	MCLG	MCL [4]	Highest Number of Positive Samples per Month	Compliance Achieved	Typical Source
Total Coliform Bacteria [3]	2016	Zero bacteria	1 positive sample during the month	0 (Fallbrook) 0 (Brownell)	Yes	Naturally present in the environment

[3] The original Total Coliform Rule (TCR) effective during the first quarter of 2016 specified both an MCL and an MCLG. The Revised Total Coliform Rule (RTCR) specified Treatment Technique requirements and became effective on April 1st, 2016. These Treatment Technique requirements are based on several criteria depending on the presence of coliform bacteria or E. coli in a series of samples. Depending on the type of bacteria and the samples affected, different types of assessment and corrective actions are required. Coliform and/or E. coli bacteria were not detected in any samples collected during 2016.

Tap Water Samples: Lead and Copper Results

Substance (units)	Year Sampled	Action Level	MCLG	Number of Samples	90th Percentile	Number of Samples Above Action Level	Compliance Achieved	Typical Source
Lead (ppb)	2016	15	0	10 (Fallbrook) 30 (Brownell)	<1 (Fallbrook) 8 (Brownell)	0 (Fallbrook) 2 (Brownell)	Yes	Corrosion of household plumbing systems; Erosion of natural deposits
Copper (ppm)	2016	1.3	1.3	10 (Fallbrook) 30 (Brownell)	0.1 (Fallbrook) 0.07 (Brownell)	0 (Fallbrook) 0 (Brownell)	Yes	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives

Regulated Compounds (Measured in the Distribution Systems)

Substance (units)	Year Sampled	MCLG	MCL	Results	Range Low - High	Compliance Achieved	Typical Source
Total Trihalomethanes (TTHM) (ppb) [4]	2016	NA	80	35 (Fallbrook) 54 (Brownell)	21 - 51 (Fallbrook) 18 - 67 (Brownell)	Yes	By-product of drinking water chlorination
Haloacetic Acids (HAA5) (ppb) [4]	2016	NA	60	30 (Fallbrook) 24 (Brownell)	15 - 44 (Fallbrook) 15 - 29 (Brownell)	Yes	By-product of drinking water chlorination

[4] Stage 2 Disinfection By-Product Rule: The Range represents the sampling results of all distribution system locations in 2016. The results are the highest quarterly running annual average of the individual locations which is used to determine compliance with the MCL.

Unregulated Compounds (UCMR3) (Measured on the water leaving the treatment facility and in the distribution system) [5] - Brownell

Substance (units)	Year Sampled	Average	Range Low - High	Typical Source
Strontium (ppb)	2014	15 (Brownell)	14 - 17	Naturally-occurring element; historically, commercial use of strontium has been in the faceplate glass of cathode-ray tube televisions to block x-ray emissions.

[5] Substances were monitored under the Unregulated Contaminant Monitoring Rule 3 (UCMR3). MCLs and MCLGs are not established for these compounds.