



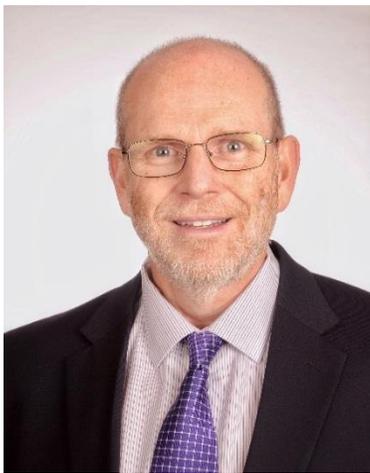
2016 Annual Water Quality Report

Butler
PWS ID: PA5100012



Este informe contiene información importante acerca de su agua potable. Haga que traduzca 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



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

Our Mark of Excellence

With 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

The Oneida Reservoir and the Thorn Run Reservoirs are the two main sources of supply for the Butler service area. Supplemental water during periods of drought can be transferred to either reservoir from the Allegheny River. Pennsylvania American Water maintains the Oneida Valley treatment facility which is capable of processing a maximum of 12 million gallons of water per day (MGD). The water supply is distributed for residential, commercial, and industrial use.

In addition, the Butler service area draws up to 20% of its supply from the Ellwood City Service Area to serve some areas in the western portion of the system. These areas include Butler Township, Connoquenessing Township, and Connoquenessing Borough. The amount taken from Ellwood City varies depending on the season and drought conditions, with more water typically taken in the summer and fall.

The Slippery Rock Creek is the sole source of supply for the Ellwood City service area. Pennsylvania American Water maintains a treatment facility on the Slippery Rock Creek capable of processing a maximum of 5.2 million gallons of water per day (MGD). The water supply is distributed for residential, commercial, and industrial use.

Protecting Your Water Source

In February of 2003, the Pennsylvania Department of Environmental Protection (DEP) and PAW completed an assessment for the drinking water sources for the Butler System and Ellwood System. The Butler water sources are considered most vulnerable to the following activities (although not associated with any detected chemicals): Petroleum based products from activities such as auto repair shops, transportation corridors, and bus and truck terminals; Storm water runoff from residential areas during construction that add to siltation problems; and runoff from residential areas with malfunctioning on-lot septic systems. The Ellwood City water source is considered most vulnerable to the following activities (although not associated with any detected chemicals): the accidental release of contaminants along the major transportation corridors, bridges, and railroads; storm water runoff from residential areas; accidental release or overflow from wastewater treatment plants; and discharge leachate from landfills.

A copy of the completed Source Water Assessment for either the Butler or Ellwood City System may be viewed by calling the local office of the Pennsylvania DEP at (724) 656-3160. PAW encourages you to take an active part in protecting your water supply by participating in activities as they occur in your local area.



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 by following the link below:

<http://www.epa.gov/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 – and will vary seasonally. High hardness levels cause soap not to foam as easily as it would at lower levels and may cause spotting on glassware. The hardness of the water presents no health issues. The hardness levels of the Butler treatment facility range from 58 ppm to 120 ppm, or 3 to 7 grains per gallon of water. The hardness levels of the Ellwood City treatment facility range from 94 ppm to 275 ppm, or 5 to 16 grains per gallon of water.

How much sodium is in your water?

The sodium level is approximately 11 ppm for the Butler system and it is approximately 12 ppm for the Ellwood City system.

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

Water in the Butler distribution system averages 7.1 pH units. Water in the Ellwood City distribution system averages 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 Butler System and the Ellwood City System were awarded the prestigious Director's Award – Treatment under the Partnership for Safe Drinking 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 that those required by federal and state drinking water standards. We are proud to report that the Butler and Ellwood City Systems have met the voluntary goals of the program for 16 continuous years.

How to Contact Us

Additional copies of this report can be printed directly from this site at www.amwater.com/ccr/butler.pdf.

Additional information on the Ellwood City system can be found by visiting www.amwater.com/ccr/ellwoodcity.pdf.

Questions can be presented to our Customer Service Department at 1-800-565-7292. Added information can be gathered by viewing the following links on the Internet:

[Pennsylvania American Water Web Page](#)

[Pa. Department of Environmental Protection Web Page](#)



[United States Environmental Protection Agency Web Page](#)

[Center for Disease Control and Prevention Web Page](#)

[American Water Works Association Web Page](#)

Safe Drinking Water Hotline: (800) 426-4791

Substances Expected to be in Drinking Water

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit 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. 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 U.S. Environmental Protection Agency'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 at (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 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.

Cryptosporidium

Cryptosporidium is a microbial pathogen found in surface water throughout the U.S. Although filtration removes *Cryptosporidium*, the most commonly-used filtration methods cannot guarantee 100 percent removal. If the organism was detected, current test methods do not allow us to determine if the organisms are dead or if they are capable of causing disease. Ingestion of *Cryptosporidium* may cause cryptosporidiosis, an abdominal infection. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals can overcome the disease within a few weeks. Based on the results of first round of *Cryptosporidium* monitoring, no additional treatment will be required by the new US EPA regulations. The Butler and Ellwood City systems began a second round of source monitoring in October 2016. In this monthly sampling, Butler has detected zero *Cryptosporidium*, while Ellwood City has detected zero to 0.093 oocyst/L *Cryptosporidium*. During October and November 2016, Ellwood City failed to collect enumerated *E.coli* samples in conjunction with the *Cryptosporidium* sampling. We have since taken the required samples and are in compliance with the regulations. This sampling will continue for both systems into 2018.



How to Read This Table

Starting with a **Substance**, read across. **Year Sampled** is usually in 2016 or year 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). **Highest Amount Detected** represents the measured amount (less is better). **Range** tells 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.

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.

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.

ppt (parts per trillion): One part substance per trillion parts water, or nanograms per liter.

SS: Single sample

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

%: means percent.

90th Percentile: The highest concentration of lead or 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.

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, are more than one year old. Although all of the substances listed below are under the Maximum Contaminant Levels (MCL) set by the 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

Treatment Facility	Substance (units)	Year Sampled	MCL	MCLG	Highest Single Measurement	Compliance Achieved	Typical Source
Butler - Oneida Valley Plant	Turbidity (NTU) ¹	2016	TT	NA	0.08	Yes	Soil runoff
Ellwood City Plant	Turbidity (NTU) ¹	2016	TT	NA	0.09	Yes	Soil runoff

¹Turbidity readings were below the treatment technique requirement of 0.3 NTU in 95% of all samples taken for compliance on a monthly basis. 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 system.

Entry Point Disinfectant Residual - Measured on the Water Leaving the Treatment Facilities

Substance (units)	Year Sampled	Minimum Disinfectant Residual Required by DEP	Lowest Level Detected	Range Low - High	Compliance Achieved	Typical Source
Total Chlorine Residual (ppm)	2016	0.2	1.6 (Butler)	1.6 – 3.6 (Butler)	Yes	Water additive used to control microbes
	2016	0.2	0.5 (Ellwood City)	0.5 – 3.2 (Ellwood City)	Yes	

Regulated Substances - Measured on the Water Leaving the Treatment Facilities

Substance (units)	Year Sampled	MCL	MCLG	Highest Amount Detected	Range Low-High	Compliance Achieved	Typical Source
Nitrate as Nitrogen (ppm)	2016	10	10	0.68 (Butler)	SS (Butler)	Yes	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
	2016	10	10	0.37 (Ellwood City)	SS (Ellwood City)	Yes	
Total Chromium (ppb)	2015	100	100	0.5 (Ellwood City)	0.3 – 0.5 (Ellwood City)	Yes	Discharge from steel and pulp mills; erosion of natural deposits.
1,2-Dibromo,3-chloropropane (ppt)	2014	200	0	10 (Butler)	ND – 10	Yes	Runoff/leaching from soil fumigant used on soybeans, cotton, pineapples and orchards.

Total Organic Carbon Removal - Measured at the Treatment Facilities

Substance (units)	Year Sampled	TT	Range of Percent Removal Required	Range of Percent Removal Achieved	Compliance Achieved	Typical Source
Total Organic Carbon (TOC) (% removal) ²	2016	Meet EPA Removal Requirements	25 - 35 (Butler)	46 - 57 (Butler)	Yes (Butler)	Naturally present in the environment
Total Organic Carbon (TOC) (% removal) ²	2016	Meet EPA Removal Requirements	25 - 35 (Ellwood City)	44 - 68 (Ellwood City)	Yes (Ellwood City)	Naturally present in the environment

²Adequate removal of TOC may be necessary to control the unwanted formation of chlorinated by-products. Naturally occurring organic matter present in the source water can react with the disinfectants used at the treatment facility to form these by-products.



Disinfectant Residual - Measured in the Butler Distribution System

Substance (units)	Year Sampled	MRDL	MRDLG	Highest Amount Detected	Range ³ Low - High	Compliance Achieved	Typical Source
Total Chlorine (ppm)	2016	4	4	2.3	1.3 – 2.3	Yes	Water additive used to control microbes

³Range represents the calculated monthly average of the results for the routine individual samples.

Tap Water Samples: Lead and Copper Results - Measured in the Butler Distribution System

Substance (units)	Year Sampled	Action Level	MCLG	Number of Samples Taken	90th Percentile	Number of Samples Above Action Level	Typical Source
Lead (ppb)	2016	15	0	30	6	0	Corrosion of household plumbing systems; Erosion of natural deposits
Copper (ppm)	2016	1.3	1.3	30	0.23	0	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives

Other Regulated Compounds - Measured in the PAW Butler Distribution System

Substance (units)	Year Sampled	MCL	MCLG	Average ⁴ Results	Range ⁵ Low - High	Compliance Achieved	Typical Source
Total Trihalomethanes (ppb)	2016	80	NA	38	22 - 56	Yes	By-product of drinking water chlorination
Haloacetic Acids (HAA5) (ppb)	2016	60	NA	27	15 - 42	Yes	By-product of drinking water disinfection

⁴Highest running annual average for individual sampling points.

⁵Range represents sampling at individual sample points.





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.



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

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