



2016 Annual

# Water Quality Report

Pittsburgh, McMurray, Mon-Valley  
PWS ID: PA5020039



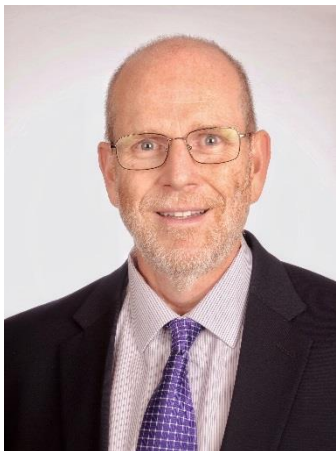
PENNSYLVANIA  
AMERICAN WATER



This report contains important information about your drinking water. Have someone translate it for you if needed.

Este informe contiene información importante acerca de su agua potable. Haga que alguien lo traduzca para usted, ó hable con alguien que lo entienda.

## *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.

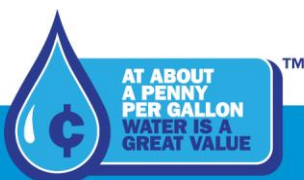
Water service from Pennsylvania American Water is an exceptional value when you consider the science, expertise, equipment and technology involved in bringing water from the source, treating it, and then delivering clean, safe water to your tap. What's more, our plant operators, water quality experts, 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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## 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](http://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 Monongahela River is the sole source of supply for the Pittsburgh, McMurray, and Mon-Valley service areas. Pennsylvania American Water maintains treatment facilities on the Monongahela River capable of processing a maximum of 110 million gallons of water per day (MGD). The water supply is distributed for residential, commercial, and industrial use.

## Protecting Your Water Source

The Pennsylvania Department of Environmental Protection (DEP) and PAW completed an assessment of the drinking water sources for the Pittsburgh, McMurray, and Mon-Valley system in May 2002.

In 2009 PAW became a member of the Pittsburgh Source Water Technical Assistance Program (SWPTAP). The water sources are considered most vulnerable to the following activities (although not associated with any detected chemicals): transportation corridors, boating, barge traffic, salt storage, auto repair, utility substations, power plants, combined sewer outfalls, and runoff from non-point sources such as residential developments, farms and abandoned mines. A SWPTAP steering committee meeting was held on December 9<sup>th</sup>, 2016 to discuss potential threats to the watershed.

A copy of the completed Source Water Assessment may be viewed by following the link below or by calling the local office of the Pennsylvania DEP at 412-442-4000. PAW encourages you to take an active part in protecting your water supply by participating in local activities as they occur in your local area.

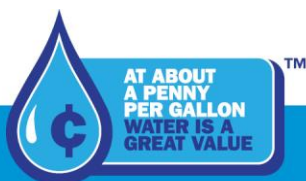
[Pittsburgh System Source Water Assessment Link](#)

## Other Water Quality Parameters of Interest

### Is there lead in your water?

If present, elevated levels of lead may 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:

[U.S. Environmental Protection Agency Web Page on Lead](#)



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## Does your water contain nitrates and nitrites?

The normal range of nitrate levels is below the MCL of 10 ppm. The normal range of nitrite levels is below the MCL of 1 ppm. Nitrate and nitrite enters the water supply from fertilizers used on farms and natural erosion of deposits in the watershed. Both nitrite and nitrate levels may increase in the distribution system due to the microbial reduction of ammonia, which is part of the chloraminated disinfectant. This is monitored carefully through testing, system flushing and annually changing the disinfectant to free chlorine for 4-6 weeks. Levels above the MCL 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 in 2016 ranged from 68 to 186 ppm, or 4 to 11 grains per gallon of water.

## How much sodium is in your water?

The average sodium level from water leaving both treatment plants in 2016 was 29 ppm.

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

Water in the distribution system averaged 7.5 pH units in 2016. A pH of 7.0 is considered neutral, neither acidic nor basic.

## Is there fluoride in your water?

PAW adds fluoride to a level of near 0.7 ppm to assist in the prevention of dental cavities.

## Partnership for Safe Drinking Water Program



In 2000, the Hays Mine and Aldrich Water Treatment Plants 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 Pittsburgh system has met the voluntary goals of the program for 16 consecutive years.

## How to Contact Us

This report can be printed directly from this pdf document stored on our website at [www.amwater.com/ccr/greaterpgh.pdf](http://www.amwater.com/ccr/greaterpgh.pdf). Additional information can be gathered by calling our Customer Service Department at 1-800-565-7292 or by viewing the following information on the Internet:

[Pennsylvania American Water Web Page](#)

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

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

**Safe Drinking Water Hotline:** 1-800-426-4791

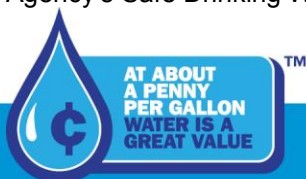
[Center for Disease Control and Prevention Web Page](#)

[American Water Works Association Web Page](#)

## Substances Expected to be in Drinking Water

In order to ensure that tap water is safe to drink, 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 (800) 426-4791.



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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 also may 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.

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

### **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 the first round of *Cryptosporidium* monitoring, no additional treatment was required by the US EPA regulations. The Hays Mine and Aldrich Stations began a second round of source monitoring from the Monongahela River in April of 2015. In this monthly sampling in 2016, Hays Mine Station has detected zero to 0.093 oocyst/L *Cryptosporidium*, while Aldrich Station has detected zero to 0.186 oocyst/L *Cryptosporidium*. This sampling will continue for both facilities into 2017.

### **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 EPA (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.

### **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 a 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 (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.



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## 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
- **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).
- **mrem/yr (Millirems Per Year):** A measure of radiation absorbed by the body.
- **ppm or mg/L (parts per million):** One part substance per million parts water, or milligrams per liter.
- **ppb or µg/L (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 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 levels (AL) to determine whether an AL has been exceeded.
- **%:** means percent
- **> :** means greater than
- **< :** means less than



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## Water Quality Results

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

| Location          | Parameter                    | MCL  | MCLG | Highest Level Detected <sup>2</sup> | Sample Date       | Violation | Typical Source |
|-------------------|------------------------------|--|------|-------------------------------------|-------------------|-----------|----------------|
| Hays Mine Station | Turbidity (NTU) <sup>1</sup> | TT= NTU for a single measurement               | NA   | 0.16                                | 12/19/2016        | No        | Soil runoff    |
|                   |                              | TT= at least 95% of monthly samples <= 0.3 NTU |      | 100%                                | 1/01/16 -12/31/16 |           |                |
| Aldrich Station   | Turbidity (NTU) <sup>1</sup> | TT= NTU for a single measurement               | NA   | 0.12                                | 06/30/16          | No        | Soil runoff    |
|                   |                              | TT= at least 95% of monthly samples <= 0.3 NTU |      | 100%                                | 1/01/16 -12/31/16 |           |                |

<sup>1</sup> Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of the filtration system.

<sup>2</sup> All samples met the turbidity limit of 0.3 NTU greater than 95% of the time.

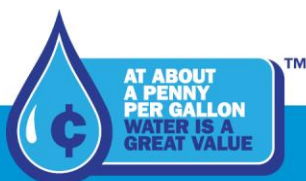
### Regulated Substances - Measured on the Water Leaving the Treatment Facilities

| Substance (units)         | Year Sampled | MCL | MCLG | Maximum Amount Detected | Range Low - High | Compliance Achieved | Typical Source  |
|---------------------------|--------------|-----|------|-------------------------|------------------|---------------------|---|
| Barium (ppm)              | 2011         | 2   | 2    | 0.032                   | 0.031 – 0.032    | Yes                 | Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits  |
| Nitrate as Nitrogen (ppm) | 2016         | 10  | 10   | 0.88                    | 0.59-0.88        | Yes                 | Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits |
| Fluoride (ppm)            | 2016         | 2   | 2    | 1.2                     | 0.16-1.2         | Yes                 | Added to water to promote healthy teeth   |
| Total Chromium (ppb)      | 2015         | 100 | 100  | 1.1                     | 0.40 – 1.1       | Yes                 | Discharge from steel and pulp mills; Erosion of natural deposits.                           |

### Disinfectant Residual - Measured on Water Leaving the Treatment Facilities

| Free/Total Chlorine (mg/L) <sup>3</sup> | Year Sampled | Minimum Disinfectant Level Required by DEP | Lowest Amount Detected | Range     | Compliance Achieved | Typical Source                          |
|---|--------------|--|------------------------|-----------|---------------------|---|
| Hays Mine Treatment Plant               | 2016         | 0.2  | 1.04                   | 1.04-3.23 | Yes                 | Water additive used to control microbes |
| Aldrich Treatment Plant                 | 2016         | 0.2  | 1.35                   | 1.35-3.78 | Yes                 | Water additive used to control microbes |

<sup>3</sup> Chlorine is monitored continuously at both treatment plants and the lowest daily readings are reported to regulatory agency each month.



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## Total Organic Carbon Removal - Measured within the Treatment Facilities

| Location and Substance <sup>5</sup>        | Year Sampled | TT                            | Range of Percent Removal Required | Range of Percent Removal Achieved <sup>4</sup> | Compliance Achieved | Typical Source                       |
|--|--------------|-------------------------------|-----------------------------------|--|---------------------|--------------------------------------|
| Hays Mine – Total Organic Carbon % Removal | 2016         | Meet EPA Removal Requirements | 25 - 35                           | 26-58  | Yes                 | Naturally present in the environment |
| Aldrich – Total Organic Carbon % Removal   | 2016         | Meet EPA Removal Requirements | 25 - 35                           | 24-45  | Yes                 | Naturally present in the environment |

<sup>4</sup> In months that the percent achieved was below required, there was no exceedance of the MCL because PAW met alternative compliance criteria as required by the PA Safe Drinking Water Act.

<sup>5</sup> Adequate 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.

## Bacterial Results - Measured in the Distribution System

| Substance               | Year Sampled <sup>6</sup> | MCL  | MCLG          | Highest Percentage of Positive Samples Detected per Month | Compliance Achieved | Typical Source                       |
|-------------------------|---------------------------|--|---------------|---|---------------------|--------------------------------------|
| Total Coliform Bacteria | January – March 2016      | No more than 5.0% of the monthly samples taken can be positive per month | Zero bacteria | 0.5   | Yes                 | Naturally present in the environment |

<sup>6</sup> The only bacteriological data required to be reported from January to March of 2016 due to the revised Total Coliform Rule, which took effect in April of 2016. The only bacteriological data required to be reported after April would be if there was an E. Coli positive or if a Level 1 or 2 assessment was conducted.

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

| Substance (units) | Violation Y/N | Year Sampled | Action Level | MCL G | Highest Sample Result | Number of Samples Taken | 90th Percentile | Number of Samples Above Action Level | Typical Source   |
|-------------------|---------------|--------------|--------------|-------|-----------------------|-------------------------|-----------------|--------------------------------------|--|
| Lead (ppb)        | No            | 2016         | 15           | 0     | 7                     | 50                      | 3               | 0                                    | Corrosion of household plumbing systems; Erosion of natural deposits |
| Copper (ppm)      | No            | 2016         | 1.3          | 1.3   | 0.31                  | 50                      | 0.24            | 0                                    | Corrosion of household plumbing systems; Erosion of natural deposits |



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## Other Regulated Compounds - Measured in the Distribution System

| Substance (units)                        | Year Sampled | MCL | MCLG | Results | Range Low – High <sup>8</sup> | Compliance Achieved | Typical Source  |
|--|--------------|-----|------|---------|-------------------------------|---------------------|---|
| Total Trihalomethanes (ppb) <sup>7</sup> | 2016         | 80  | NA   | 60      | 25-99                         | Yes                 | By-product of drinking water chlorination   |
| Haloacetic Acids (ppb) <sup>7</sup>      | 2016         | 60  | NA   | 20      | 8-28                          | Yes                 | By-product of drinking water chlorination   |
| Total Chromium (ppb)                     | 2015         | 100 | 100  | 0.9     | 0.3-0.9                       | Yes                 | Discharge from steel and pulp mills; Erosion of natural deposits.                           |
| Nitrate as Nitrogen (ppm)                | 2016         | 10  | 10   | 1.11    | 0.53-1.11                     | Yes                 | Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits |
| Nitrite as Nitrogen (ppm)                | 2016         | 1   | 1    | 0.3     | ND-0.3                        | Yes                 | Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits |

<sup>7</sup> Highest annual running average for individual sample points

<sup>8</sup> Range represents sampling at individual sample points

## Disinfectant Residual - Measured in the Distribution System

| Substance (units)                          | Year Sampled | MRDL | MRDLG | Results <sup>10</sup> | Range Low - High | Compliance Achieved | Typical Source                                   |
|--|--------------|------|-------|-----------------------|------------------|---------------------|--|
| Total Chlorine Residual (ppm) <sup>9</sup> | 2016         | 4    | 4     | 2.16                  | 1.20-2.16        | Yes                 | Added as a disinfectant to the treatment process |

<sup>9</sup> MRDL (maximum residual disinfectant level) applies. Routine samples were collected monthly with the results from all locations averaged each month.

<sup>10</sup> Highest monthly average for individual sample points



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**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.



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