Drinking Water Quality Report

We have three **drinking water treatment plants** in Philadelphia...

2024 • Published in 2025
PWD's Public Water System Identification **#PA1510001**

PHILADELPHIA WATER DEPARTMENT

...But, our water quality story is bigger than our borders.

A message from the Philadelphia Water Department (PWD)

Providing top-quality water today, tomorrow, and beyond.

The past year has marked various advancements in the department's drinking water treatment and delivery. We're continuing our established work while adopting new processes.

Throughout the last year, we have made major strides in lead plumbing and water quality initiatives. Every division across the department has been involved with developing and implementing PWD's emerging lead-related programs. Staff are piloting new programs to identify and remove lead from plumbing in properties across the city. We're also conducting free water testing at schools and childcare facilities.

Our staff is dedicated to going beyond what is required, as we value our customers' experiences. Over the past year, PWD hosted both in-person and virtual meetings to inform residents of these new regulations.

Additionally, due to new Per- and polyfluoroalkyl substances (PFAS) standards, we're in the planning phases to upgrade drinking water treatment plants with new technologies to meet these federal standards when they begin in a few years.

We're also planning beyond the foreseeable future.

The new decades-long Water Revitalization Plan will allow us to continue to provide safe and reliable drinking water for future generations. The plan will ensure system-wide resiliency for a range of emergency conditions.

We are so proud of our diligent and hardworking staff across the department who are ensuring that safe, reliable drinking water gets delivered to Philadelphia homes every day.

PENNSYLVANIA

Monitoring source water to promote health and safety

We study PFAS and other potentially harmful chemicals used by industry in the region.

SCHUYLKILL RIVER

PHILADELPHIA

DELAWARE RIVER

NEW JERSEY

Protecting properties with lead plumbing

We have been working for decades to protect Philadelphians from lead getting into water from plumbing.

Revitalizing water storage and distribution

The Water Revitalization Plan will allow us to create a drinking water system that can respond to events like natural disasters or emergencies.

High-quality staff, high-quality results

The experts working at our treatment plants take pride in using water drawn from local rivers. Hundreds of millions of gallons of top-quality drinking water are produced every day.

Belmont Drinking Water Treatment Plant

Queen Lane Drinking Water Treatment Plant

Baxter Drinking Water Treatment Plant

Water treatment operations began on these sites over 100 years ago. Many of the current buildings that comprise our treatment plants were built over 60 years ago, dating to the 1950s and 60s.

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View this report online:

water.phila.gov/2024-quality

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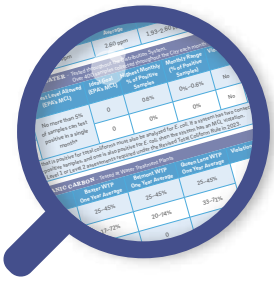
Sharing this report

Please share this report with all people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand and mail.

To receive a printed copy of this report, please email: waterquality@phila.gov.



3: Delivery

Safe transit through the system

4: At your taps

The final stretch to your tap!

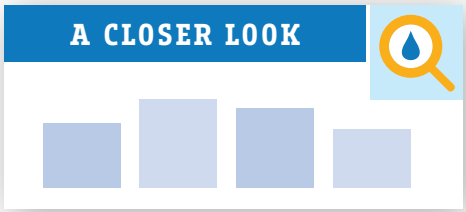
2024 Data tables & more

People with special health concerns

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 and other immune system disorders, and some elderly people and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers.

U.S. Environmental Protection Agency (EPA)/Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of drinking water contaminants are available from the Safe Drinking Water Hotline: (800) 426-4791.

Look for these quick guides throughout the report



Charts and graphs let you see the data in a new way.

Here's the story of why we do this test

Handwritten notes explain how and why we do these tests.

☑ RESULT: **Better than standards.**

Look here for key takeaways.

Your water begins in freshwater streams

Philadelphia's water comes from the Delaware River Watershed. The watershed begins in New York State and extends 330 miles south to the mouth of the Delaware Bay. The Schuylkill River is part of the Delaware River Watershed.

Protection starts at the sources

We take a holistic approach, beginning with Philadelphia's water supply. We monitor waterways across the watershed and look for potential sources of contamination. We keep track of water availability and flow.

Our wide range of tools for protecting water sources includes:

Research

- We study regional influences, such as natural gas drilling, and global influences, like sea level rise.

Projects in the field

- We protect against stormwater and agricultural runoff.
- We monitor contaminants.

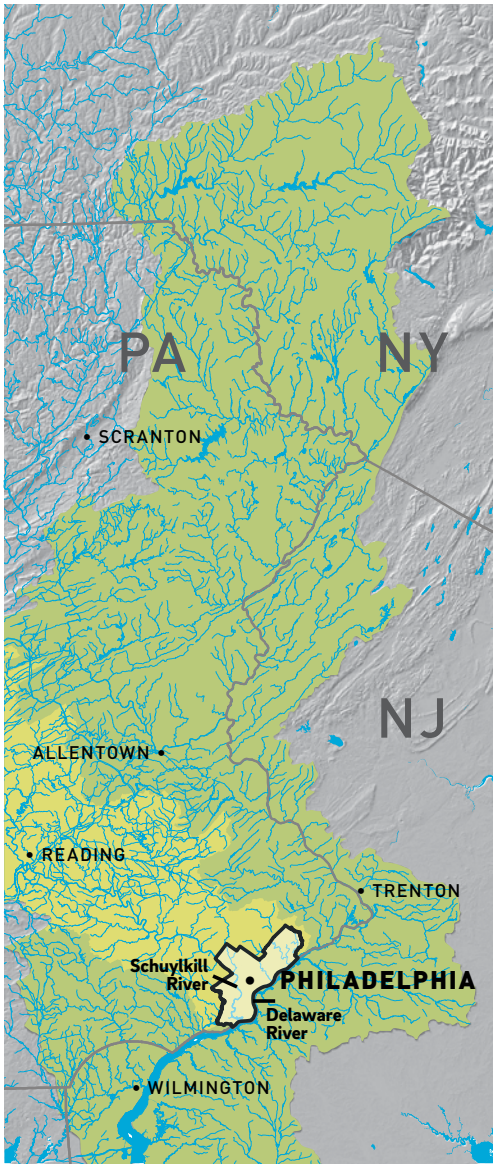
Partnerships

- We team up with organizations across the region to protect our entire watershed.

Philadelphia source watersheds

Delaware River Watershed

Schuylkill River Watershed



Routine testing for PFAS
We collect samples upstream and within the city's waterways. We also test the finished, treated water we deliver to our 1.6 million customers.

Treating water to remove "Forever" Chemicals

Per- and Polyfluoroalkyl Substances (PFAS) are a group of long-lasting chemicals used in consumer products. Long-term exposure can have adverse health effects, but our goal is to ensure your water is safe.

PFAS can pollute our region's water sources, which supply drinking water to millions. PFAS contamination can be found globally in air, water, and food.

Pennsylvania set drinking water standards for two PFAS compounds known as PFOS and PFOA. The Environmental Protection Agency (EPA) also set a stricter national limit for some PFAS substances. As of May 2025, those limits will apply to drinking water in 2029.

What we are doing

We can use advanced treatment processes to remove PFAS from water. We're currently testing these new treatment methods at our plants. To effectively inform treatment, our scientists have been monitoring our rivers for years.

➤ See the results at water.phila.gov/pfas

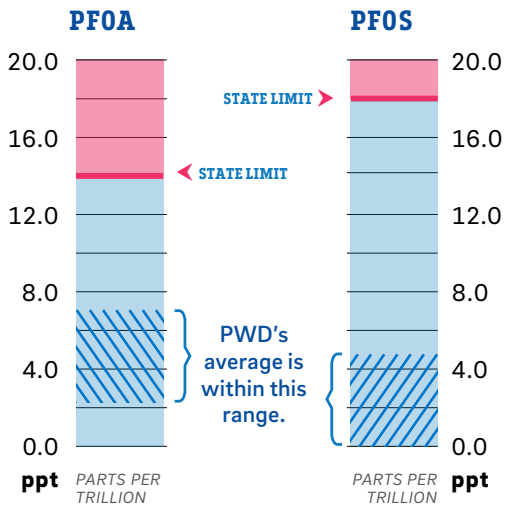
A CLOSER LOOK

PFAS

Human-made PFAS chemicals, such as PFOS and PFOA, don't easily break down, so they can pollute our water sources. We monitor for PFAS and test levels in treated water.

Good to know: *Treatment can help reduce PFAS levels in water. We're planning major upgrades for PFAS at our treatment plants. We're preparing to meet updated regulatory limits.*

Most recent results



What this means for you

We must be ready to meet even stricter limits as regulations evolve.

☑ **RESULT:**
Better than standards.

Drinking Water Treatment Plants

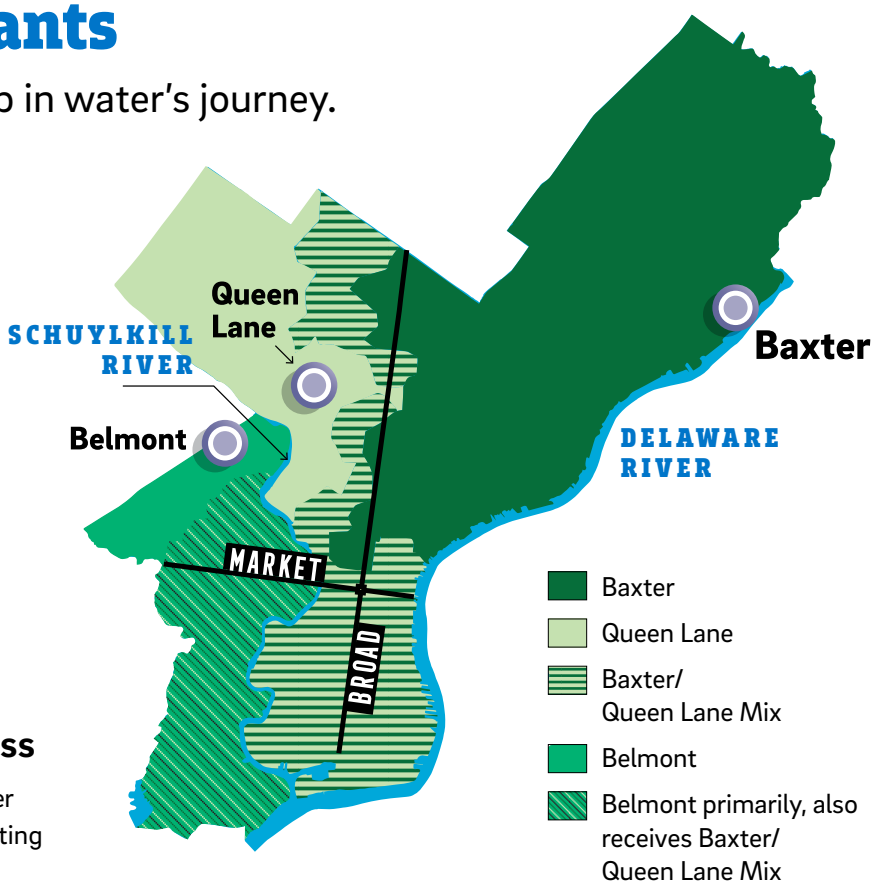
An important early step in water's journey.

We have three drinking water treatment plants.

Baxter pulls water from the Delaware River. **Queen Lane** and **Belmont** pull from the Schuylkill.

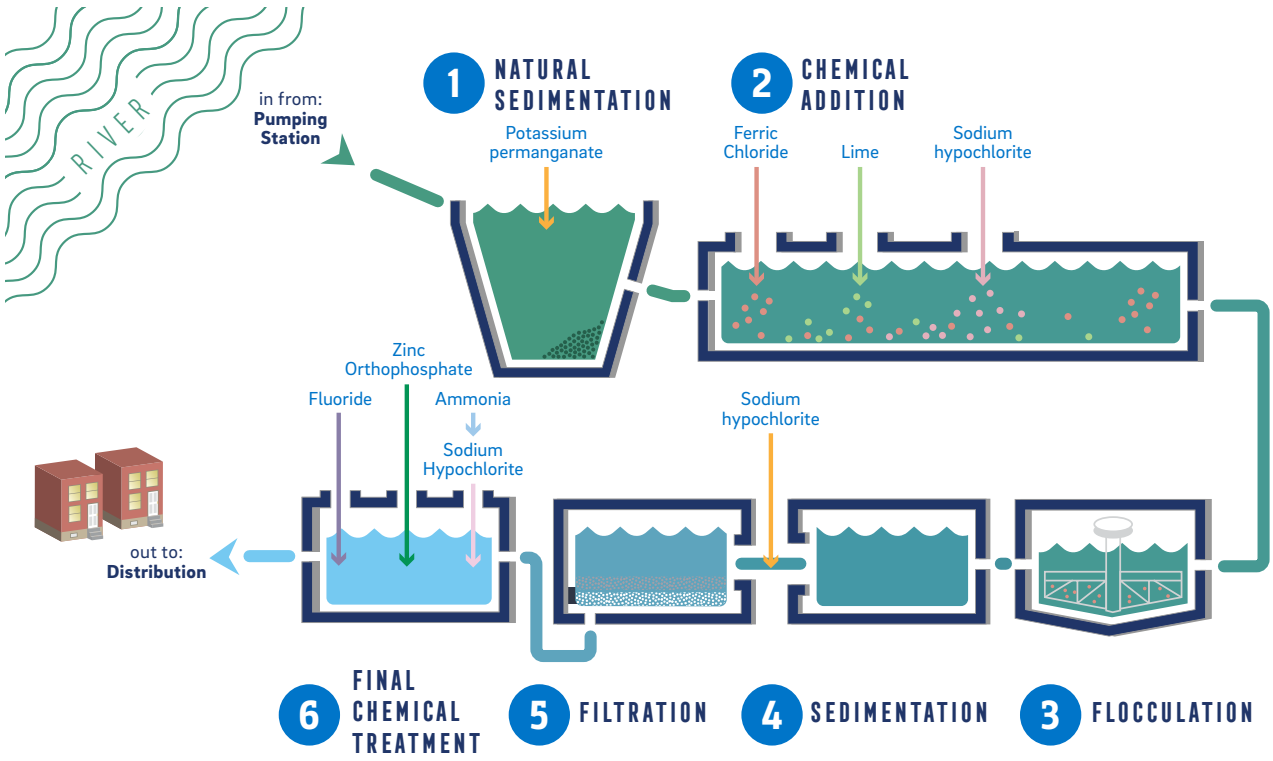
Each plant has a service area. Some areas in Philadelphia receive a mix from multiple treatment plants.

Use this map to see where your water is treated. ➤



Typical Treatment Process

These are some of the stages water goes through during normal operating conditions.



Before water leaves the plant

We test our treated water for about 100 regulated contaminants, ranging from organisms, like bacteria, to chemicals like nitrate.

Final touches

Chlorine + Ammonia

Chlorine protects us from organisms found in untreated water that can cause disease. Ammonia is added to make the chlorine last longer and reduce the bleach-like smell.

Fluoride

All water contains some fluoride. We adjust the natural levels slightly to help protect your teeth against decay.

Zinc orthophosphate

Zinc orthophosphate is a compound that helps form a protective coating inside pipes. It prevents corrosion (or breaking down over time).

A CLOSER LOOK

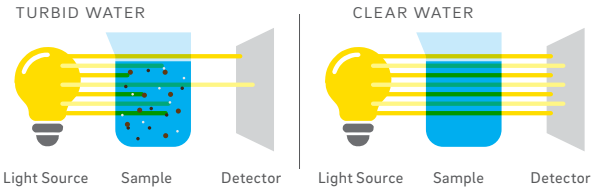
Turbidity

Turbidity is a measurement of cloudiness from particles. A high turbidity reading means there are a lot of particles in the water. They could be sand, silt, or organic particles.

We monitor turbidity because it is a good indicator of the effectiveness of our filtration system.

Good to know: *Turbidity is different from the cloudiness you sometimes see when air bubbles are trapped in your tap water. Air bubbles usually disappear after a few minutes.*

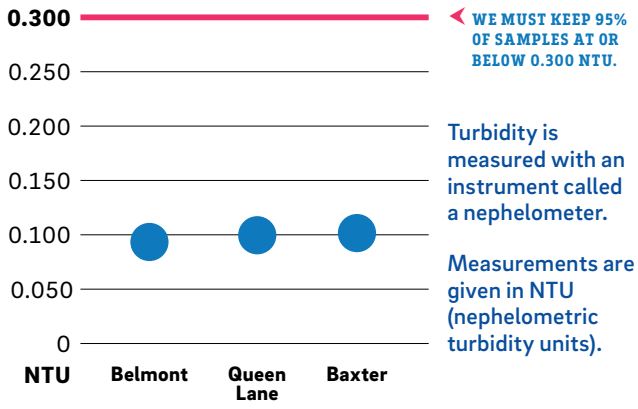
How we test for turbidity



In turbid water, light shines into water and bounces off particles.

In clear water, light passes directly through to the detector.

2024 Average Results



What this means for you

☑ RESULT:
Our water samples are consistently less turbid than limits set by the EPA.

Why can high turbidity lead to a drinking water warning?
Turbidity itself has no health effects. However, it can interfere with disinfection. If we can't measure turbidity during disinfection, we can't be sure the process has worked properly.

A safe path through the system

We have about 3,100 miles of water mains that deliver clean tap to customers. To ensure water stays safe as it moves from the plant to you, we take samples and monitor real-time water quality data 24/7.

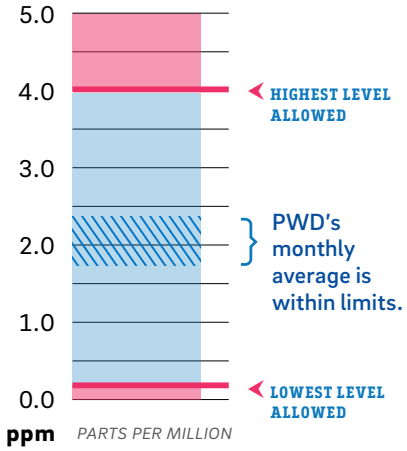
We travel the city to collect samples of drinking water from fire and police stations, pumping stations, and more.

A CLOSER LOOK

Residual Chlorine

This test is done throughout the system. It checks that the chlorine added at plants remains at levels that keep water fresh and safe while staying within regulations.

Most recent results



What this means for you

Residents ask us how we're sure water is safe after it leaves the plants. These tests confirm we have proper levels of disinfection. ***We do over 400 of these tests every month!***

☑ **RESULT:**
Better than standards.

SPOTLIGHT:

Water Revitalization Plan

Upgrading our infrastructure

The **Water Revitalization Plan (WRP)** is our plan to strengthen essential drinking water infrastructure.

Why are we doing this now?

Like many older cities, our drinking water facilities are showing their age. We need to upgrade these facilities.

Without these improvements, we may face unplanned, costly, and disruptive repairs.

What will *revitalization* mean for Philadelphians?

These projects will:

- Improve water service for everyone in Philadelphia
- Develop a drinking water system better prepared for natural disasters and emergencies
- Deliver safe and reliable drinking water for generations to come
- Create jobs in Philadelphia
- Encourage partnerships with local small businesses

Tapping into the community

The Plan's **Stakeholder Advisory Group** is comprised of community members with a vested interest in these projects.

Members apply to join the group. They share their voice, time, and expertise to raise awareness of the Plan. They highlight how these projects will improve drinking water across our communities. They share important updates with their community and collect feedback for PWD.

Sign up to receive project news & learn how you can get involved.
➤ water.phila.gov/revitalization

A thoughtful approach

The Water Revitalization Plan identified dozens of projects focused on the improvement of existing facilities and the construction of several new facilities.

Key projects include:

- Schuylkill River Crossing *(Water Transmission Main)*
- Baxter Water Treatment Plant upgrades
- Belmont Water Treatment Plant upgrades and expansion
- Queen Lane Water Treatment Plant replacement

HIGHLIGHT:

Pump Station Upgrades

We are upgrading the Torresdale Treated Water Pump Station in Northeast Philadelphia. ➤

Pump stations like this need crucial updates to prepare for climate change and extreme weather events.

We estimate the work will be complete in 2027*.

** Dates are subject to change.*

Water where you live, work, and play

When water leaves a water main, it enters a property's service line. From there, the property's plumbing system carries water to the taps or fixtures we use every day at home, school, or work.

Approximately

1 in 3

customers don't trust the pipes in their home.

Our most recent annual Customer Survey shows 34% of customers don't trust their pipes at home. Flushing (next page) is an excellent way to trust your tap water!

Source: 2024 PWD Comprehensive Survey Report

Does your tap water appear cloudy?

This is usually not a water quality issue. Water pressure in the main creates air bubbles in water. When you fill a glass with tap water, the bubbles rise from the bottom of the glass and are released at the top.

Call us to report a water quality issue if the bubbles don't disappear after a few seconds.

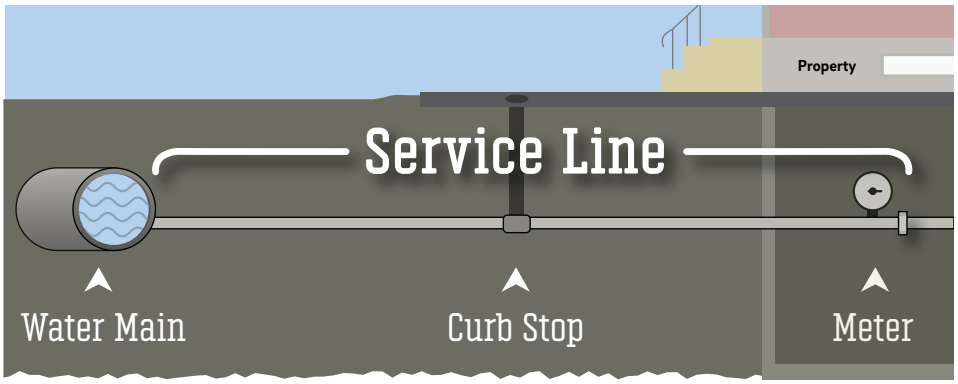
We hear you!

Thanks to customer surveys and neighborhood events, like the **Philly Water Bar**, we hear loud and clear from the people of Philadelphia:

Safe drinking water is a top priority for our customers.

Meet your service line

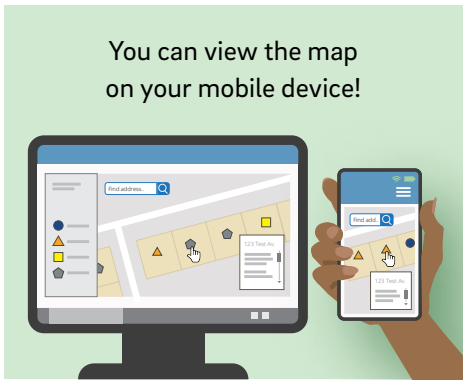
The service line is the pipe that carries clean water into your property from the city's network of water mains. This pipe material can affect your water quality.



Pipe materials

Newer service lines are made of a non-lead material, like **copper** or **plastic**. Older homes may have **lead** or **galvanized metal** in some part of their service line. If your home has a pipe with lead or galvanized metal, follow the instructions on the following pages. See more at water.phila.gov/lead.

? For most properties, we don't have complete records for buried portions of service lines. If the overall category for your line is **"unknown",** it means we don't have a complete record.



Service Line Material Map

Our online map shares any known records about the materials in your property's service line. It also offers guidance, based on each property's records.

➤ **Explore the map:**
water.phila.gov/service-line-map

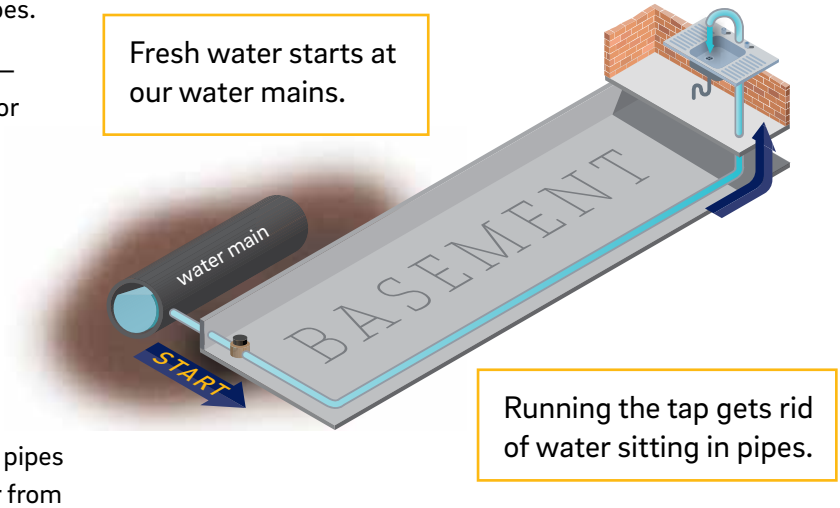
Flush your pipes

Run fast, cold water from a faucet for 3–5 minutes.
This will flush out water that's been sitting in your pipes.

When: If you haven't used water for 6 hours or more — usually first thing in the morning when you wake up, or when you come home after work or school.

If your property has a lead service line: Flushing is important to do every day.

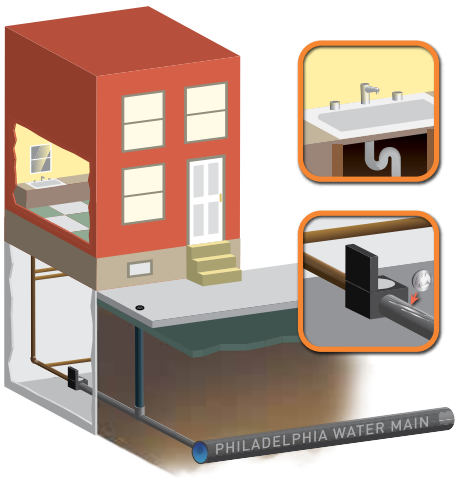
Cost: It costs only pennies (or less) per day!



How it works

When you run your tap, it pulls the old water sitting in pipes out and down your drain. Run the tap until fresh water from the main comes through. Use longer times if your property is set back further from the street.

If lead is found in water, the source is somewhere in a property's plumbing.



In a home's older fixtures & valves:
Lead can also be in solder where pipes are joined.

In a part of a service line:
This is one of the first places to look for lead.

Age matters:
Older fixtures and buildings are more likely to contain lead. Lead was used less after the 1950s, but fixtures and solder could still contain lead. Brass fixtures could contain lead until as late as 2014.

1 in 20

Estimated households with lead service lines in Philadelphia.

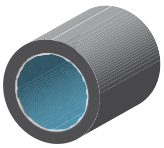
We have gathered a variety of sources for recent estimates, but this number is only an approximation. Further verification is needed.

Source: PWD Data

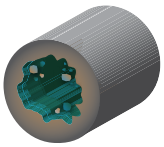
The good news? We use Corrosion Control.

Zinc Orthophosphate, added during treatment, forms a protective coating on the inside of pipes.

For over 25 years, Philadelphia has successfully used this process to reduce the amount of lead that can dissolve from plumbing into water. However, different building plumbing systems and usage patterns can affect how well corrosion control works.



With corrosion control



Without corrosion control

How do we know it works?
Tests at homes with lead plumbing show our treatment is working: corrosion control keeps lead levels below state and federal limits.

Replacing a lead service line

During planned water main construction
When we dig, we offer to replace any lead or galvanized metal service lines we uncover. This free service is only available on blocks where we replace water mains.

If we offer free service line replacement, a property owner must complete and submit a signed ***Service Line Replacement Authorization Form.*** We encourage property owners to sign these forms if they are offered this free service!

Loans for homeowners
We offer a zero-interest loan for replacing lead or galvanized metal service lines. The Homeowners Emergency Loan Program (HELP) can cover the cost of a replacement.

➤ **Learn more & apply: www.phila.gov/water/helploan**

Hiring a private plumber
Customers can also hire a licensed and insured plumber to replace the line.

Scientists in our labs analyze water samples collected in homes throughout Philadelphia.

A CLOSER LOOK

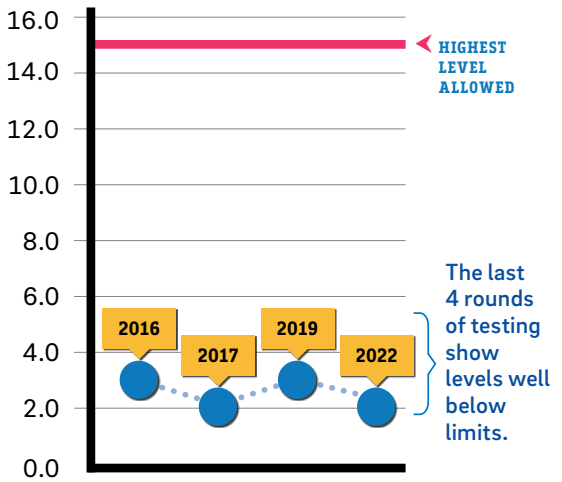
Carefully Monitoring Lead

In addition to regular tests in customer homes, we also perform rounds of sampling for lead and copper regulations.

We share the results with the Environmental Protection Agency (EPA) and the public.

The EPA requires that 90% of homes show lead levels less than 15 ppb.

Most recent results



ppb
PARTS PER BILLION

For each round: We take samples from 50–100 homes that have lead service lines.

What this means for you

We use the results from our tests to optimize our corrosion control process on a regular basis. We're collecting a new round of samples from customers during Summer 2025.

☑ RESULT:
Results show our corrosion control process is effectively reducing the risks from lead plumbing.

From the EPA:

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. PWD is responsible for providing high-quality drinking water and removing lead pipes, but cannot control the variety of materials used in plumbing components in your home. You share the responsibility for protecting yourself and your family from the lead in your home plumbing. You can take responsibility by identifying and removing lead materials within your home plumbing and taking steps to reduce your family's risk. Before drinking tap water, flush your pipes for several minutes by running your tap, taking a shower, doing laundry or a load of dishes. You can also use a filter certified by an American National Standards Institute accredited certifier to reduce lead in drinking water. If you are concerned about lead in your water and wish to have your water tested, contact PWD at (215) 685-6300.

Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available at: http://www.epa.gov/safewater/lead.

An introduction to the results

All of PWD's results are better than the required federal levels designed to protect public health.

This data shows how our processes keep your drinking water safe.

By reporting these results in these tables, we are meeting a requirement of the EPA.

Some contaminants may pose a health risk at certain levels to people with special health concerns. Others are used as indicators for treatment plant performance.

PPM vs. PPB vs. PPT

Many of these results are reported as "parts per million (ppm)" or "parts per billion (ppb)".

ppm (parts per million): Denotes 1 part per 1,000,000 parts, which is equivalent to **two-thirds of a gallon** in an Olympic-sized swimming pool.

ppb (parts per billion): Denotes 1 part per 1,000,000,000 parts, which is equivalent to **half a teaspoon** in an Olympic-sized swimming pool.

ppt (parts per trillion): Denotes 1 part per 1,000,000,000,000 parts, which is equivalent to **one drop in 20 Olympic-sized swimming pools.**

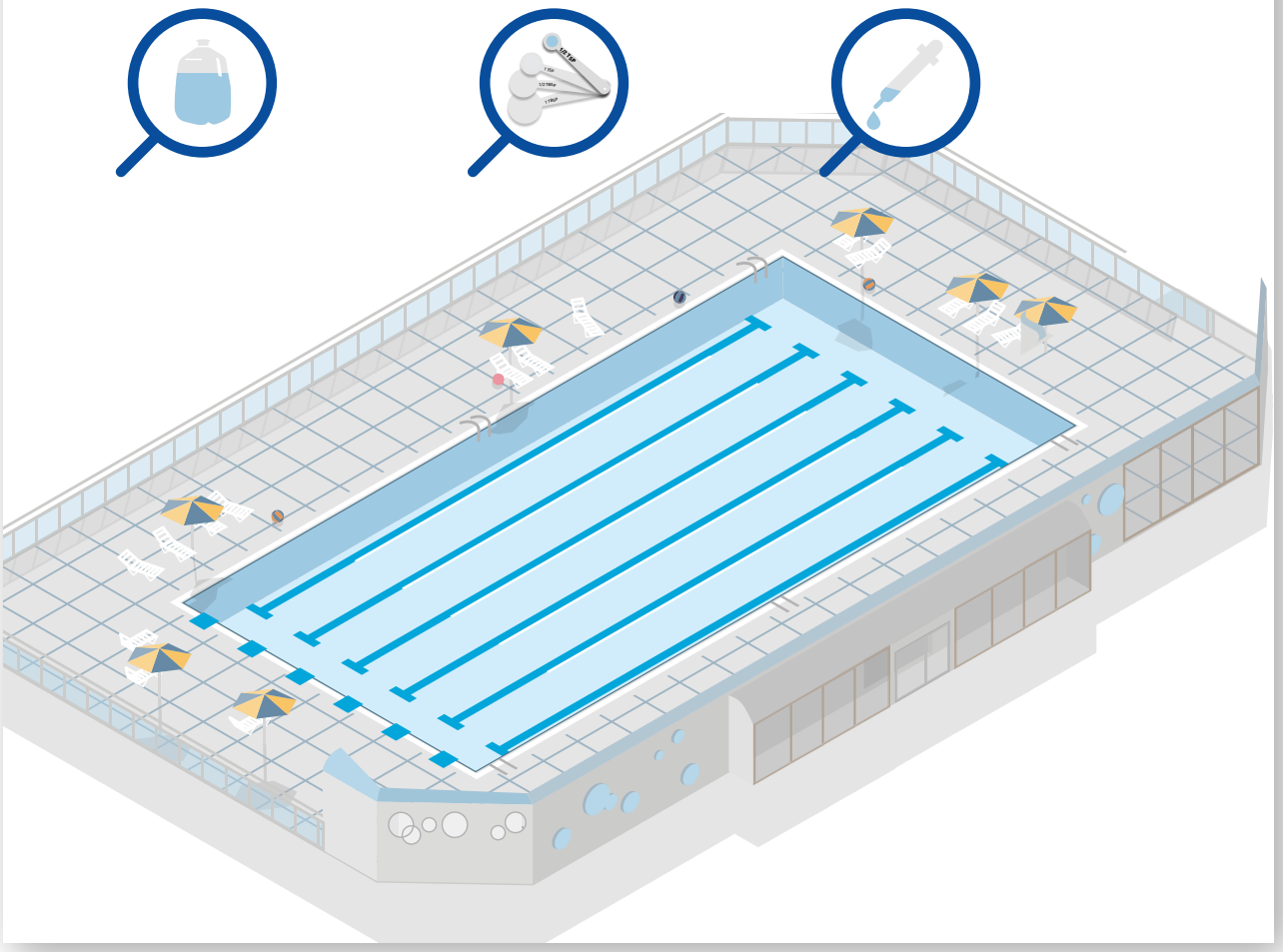


Illustration: GoodStudio / Shutterstock.com, and Philadelphia Water Department

Glossary

Here are definitions for some words and phrases we use in the report and in our data tables.

Action Level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow. The action level is not based on one sample; instead, it is based on many samples.

Alkalinity: A measure of the water's ability to resist changes in the pH level and a good indicator of overall water quality. Although there is no health risk from alkalinity, we monitor it to check our treatment processes.

E. coli (Escherichia coli): A type of coliform bacteria that is associated with human and animal fecal waste.

gpg (grains per gallon): A unit of water hardness. One grain per gallon is equal to 17.1 parts per million.

Level 1 Assessment: A study of the water system to identify potential problems and determine (if possible) why total coliform bacteria were found in our water system.

Level 2 Assessment: A very detailed study of the water system to identify potential problems and determine (if possible) why an *E. coli* MCL violation has occurred and/or why total coliform bacteria were found in our water system on multiple occasions.

Locational Running Annual Average (LRAA): We calculate the average of samples taken from each location every quarter (3 months), and then the average of the last four quarterly averages to get the LRAA.

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 Disinfection Level): The highest level of disinfectant that is allowed in drinking water. The addition of a disinfectant is necessary for the control of microbial contaminants.

MRDLG (Maximum Residual Disinfection Level Goal): The level of a disinfectant in drinking water 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 contaminants.

Minimum Residual Disinfectant Level: The minimum level of residual disinfectant required at the entry point to the distribution system.

NTU (nephelometric turbidity units): Turbidity is measured with an instrument called a nephelometer. Measurements are given in nephelometric turbidity units.

Pathogens: Bacteria, viruses, or other microorganisms that can cause disease.

pCi/L (Picocuries per liter): A measure of radioactivity.

PFAS: Human-made perfluoroalkyl and polyfluoroalkyl substances used in industrial applications and a wide range of consumer products. PFAS compounds are found around the world and are not solely in water.

ppm (parts per million): Denotes 1 part per 1,000,000 parts, which is equivalent to two-thirds of a gallon in an Olympic-sized swimming pool.

ppb (parts per billion): Denotes 1 part per 1,000,000,000 parts, which is equivalent to half a teaspoon in an Olympic-sized swimming pool.

µg/L (Microgram per liter): One microgram per liter is equal to one part per billion.

ppt (parts per trillion): Denotes 1 part per 1,000,000,000,000 parts, which is equivalent to one drop in 20 Olympic-sized swimming pools.

SMCL (Secondary Maximum Contaminant Level): Non-enforceable Federal water quality guidelines that are established for managing aesthetic and cosmetic conditions of water (e.g. taste, odor, color).

SOC (Synthetic Organic Chemical): Commercially made organic compounds, such as pesticides and herbicides.

Total Coliform: Coliforms are bacteria that are naturally present in the environment. Their presence in drinking water may indicate that other potentially harmful bacteria are also present.

THAAs (Total Haloacetic Acids): A group of chemicals known as disinfection byproducts. These form when a disinfectant reacts with naturally occurring organic and inorganic matter in the water.

TOC (Total Organic Carbon): A measure of the carbon content of organic matter. This measure is used to indicate the amount of organic material in the water that could potentially react with a disinfectant to form disinfection byproducts.

TTHMs (Total Trihalomethanes): A group of chemicals known as disinfection byproducts. These form when a disinfectant reacts with naturally occurring organic and inorganic matter in the water.

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

Turbidity: A measure of the clarity of water related to its particle content. Turbidity serves as an indicator for the effectiveness of the water treatment process. Low turbidity measurements, such as ours, show the significant removal of particles that are much smaller than can be seen by the naked eye.

VOC (Volatile Organic Chemicals): Organic chemicals that can be either man-made or naturally occurring. These include gases and volatile liquids.

WTP: Water Treatment Plant.

What we test for and how

Public drinking water systems monitor their treated drinking water for approximately 100 regulated contaminants. These regulatory parameters are defined within federal rules, such as the Revised Total Coliform Rule, Surface Water Treatment Rule, Disinfectants and Disinfection Byproducts Rules, Lead and Copper Rule, and the Radionuclides Rule.

We monitor for the regulated parameters listed below.

Any contaminants found are noted in the tables on the following pages.

Inorganic Chemicals

Antimony
Arsenic
Barium
Beryllium
Cadmium
Chromium
Copper
Cyanide
Fluoride
Lead
Mercury
Nickel
Nitrate
Nitrite
Selenium
Thallium

Synthetic Organic Chemicals

2,3,7,8-TCDD (Dioxin)
2,4-D, 2,4,5-TP (Silvex)
Alachlor
Atrazine
Benzopyrene
Carbofuran
Chlordane
Dalapon
Di(ethylhexyl) adipate
Di(ethylhexyl) phthalate
Dibromochloropropane
Dinoseb
Diquat
Endothall
Endrin
Ethylene Dibromide
Glyphosate
Heptachlor
Heptachlor epoxide
Hexachlorobenzene
Hexachlorocyclopentadiene
Lindane
Methoxychlor
Oxamyl
PCBs Total
Pentachlorophenol
Picloram
Simazine
Toxaphene

Volatile Organic Chemicals

Benzene
Carbon Tetrachloride
1,2-Dichloroethane
o-Dichlorobenzene
p-Dichlorobenzene
1,1-Dichloroethylene
cis-1,2-Dichloroethylene
trans-1,2-Dichloroethylene
Dichloromethane
1,2-Dichloropropane
Ethylbenzene
Monochlorobenzene
Styrene
Tetrachloroethylene
Toluene
1,2,4-Trichlorobenzene
1,11-Trichloroethane
1,1,2-Trichloroethane
Trichloroethylene
o-Xylene
m,p-Xylenes
Vinyl Chloride

Radiological Contaminants

Uranium
Alpha Emitters
Radium 226
Radium 228

Perfluoroalkyl and Polyfluoroalkyl Substances

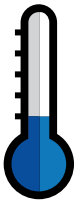
PFOA
PFOS
PFNA
PFBS
PFHxS
HFPO-DA (GenX)

Other factors that can impact drinking water

Appealing to Your Senses

We work to ensure your water looks, tastes, and smells the way it should.

To meet all water quality taste and odor guidelines, we test for the following: alkalinity, aluminum, chloride, color, hardness, iron, manganese, odor, pH, silver, sodium, sulfate, surfactants, total dissolved solids, turbidity, and zinc.



Temperature and Cloudiness

The temperature of the Schuylkill and Delaware Rivers varied seasonally in 2024 from approximately 34°–91° Fahrenheit. PWD does not treat the water for temperature.

Cloudiness in tap water most commonly happens in the winter, when the cold water from the water main is warmed up quickly in household plumbing. Cold water and water under pressure can hold more air than warmer water and water open to the atmosphere.

When really cold winter water comes out of your tap, it's simultaneously warming up and being relieved of the pressure it was under inside the water main and your plumbing. The milky white color is actually just tiny air bubbles. If you allow the glass to sit undisturbed for a few minutes, you will see it clear up gradually.

2024 Data tables

LEAD & COPPER – Tested at customers' taps. Testing is done every 3 years. Most recent tests were done in 2022.

	EPA's Action Level - for a representative sampling of customer homes	Ideal Goal (EPA's MCLG)	90% of PWD customers' homes were less than	Number of homes considered to have elevated levels	Range of Tap Sampling Results	Violation	Source
Lead	90% of homes must test less than 15 ppb	0 ppb	2.0 ppb	3 out of 104	0–102 ppb	No	Corrosion of household plumbing; Erosion of natural deposits
Copper	90% of homes must test less than 1.3 ppm	1.3 ppm	0.219 ppm	0 out of 104	0.006–0.399 ppm	No	Corrosion of household plumbing; Erosion of natural deposits; Leaching from wood preservatives

INORGANIC CHEMICALS (IOC) – PWD monitors for IOC more often than required by the EPA.

Chemical	Highest Level Allowed (EPA's MCL)	Ideal Goal (EPA's MCLG)	Highest Result	Range of Test Results for the Year	Violation	Source
Antimony	0.006 ppm	0.006 ppm	0.0006 ppm	0–0.0006 ppm	No	Discharge from petroleum refineries; Fire retardants; Ceramics; Electronics; Solder
Barium	2 ppm	2 ppm	0.046 ppm	0.027–0.046 ppm	No	Discharges of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Chromium	100 ppb	100 ppb	2 ppb	0–2 ppb	No	Discharge from steel and pulp mills; Erosion of natural deposits
Fluoride	2 ppm*	2 ppm*	0.624 ppm	0.619–0.624 ppm	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Nitrate^	10 ppm	10 ppm	4.52 ppm	0.92–4.52 ppm	No	Runoff from fertilizer use; Leaching from septic tanks; Erosion of natural deposits

*EPA's MCL and MCLG is 4 ppm, but PADEP has set this lower MCL and MCLG which takes precedence.

^Nitrate in drinking water at levels above 10 ppm is a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant, you should ask for advice from your health care provider.

PWD also monitored for Arsenic, Beryllium, Cadmium, Cyanide, Mercury, Nitrite, Selenium, and Thallium in 2024; all results were below respective parameter detection limits.

RADIOLOGICAL CONTAMINANTS

	Highest Level Allowed (EPA's MCL)	Ideal Goal (EPA's MCLG)	Highest Result	Range of Test Results for the Year	Violation	Source
Alpha Emitters	15 pCi/L	0 pCi/L	5.32 pCi/L	0–5.32 pCi/L	No	Erosion of natural deposits

TOTAL CHLORINE RESIDUAL – Continuously monitored at Water Treatment Plants

Sample Location	Minimum Disinfectant Residual Level Allowed	Lowest Level Detected	Yearly Range	Violation	Source
Baxter WTP	0.2 ppm	2.24 ppm	2.24–3.55 ppm	No	Water additive used to control microbes
Belmont WTP		1.85 ppm	1.85–2.86 ppm		
Queen Lane WTP		1.60 ppm	1.60–2.70 ppm		

TOTAL CHLORINE RESIDUAL – Tested throughout the Distribution System. Over 400 samples collected throughout the City every month.

Sample Location	Maximum Disinfectant Residual Allowed	Highest Monthly Average	Monthly Average Range	Violation	Source
Distribution System	4.0 ppm	2.33 ppm	1.73–2.33 ppm	No	Water additive used to control microbes

BACTERIA IN TAP WATER – Tested throughout the Distribution System. Over 400 samples collected throughout the City each month

	Highest Level Allowed (EPA's MCL)	Ideal Goal (EPA's MCL)	Highest Monthly % of Positive Samples	Monthly Range (% of Positive Samples)	Violation	Source
Total Coliform	No more than 5% of samples can test positive in a single month*	0	2.4%	0%–2.4%	No	Naturally present in the environment.
E. coli		0	0%	0%	No	Human or animal fecal waste.

*Every sample that is positive for total coliforms must also be analyzed for *E. coli*. If a system has two consecutive total coliform positive samples, and one is also positive for *E. coli*, then the system has an MCL violation. There were no MCL violations in 2024. There were no Level 1 or Level 2 assessments required under the Revised Total Coliform Rule in 2024.

TOTAL ORGANIC CARBON – Tested at Water Treatment Plants

	Baxter WTP One Year Average	Belmont WTP One Year Average	Queen Lane WTP One Year Average	Violation	Source
Percent of Removal Required	25–45%	15–35%	15–35%	No	Naturally present in the environment.
Percent of Removal Achieved*	0–72%	23–62%	0–64%		
Number of Quarters out of Compliance*	0	0	0		

*PWD achieved TOC removal requirements in all quarters of 2024 at all WTPs. Compliance is based on a running annual average computed quarterly. The numbers shown represent a range of TOC results in weekly samples.

TURBIDITY, A MEASURE OF CLARITY – Tested at Water Treatment Plants					
	Baxter WTP	**Belmont WTP**	**Queen Lane WTP**	**Violation**	**Source**
Treatment Technique Requirement: *95% of samples must be at or below 0.300 NTU*	100% below 0.300 NTU	100% below 0.300 NTU	100% below 0.300 NTU	No	Soil runoff, river sediment
Highest single value for the year	0.104 NTU	0.097 NTU	0.103 NTU	No	

DISINFECTION BYPRODUCTS					
	Highest Level Allowed (EPA's MCL) - One Year Average	**Running Annual Average 2024***	**System-Wide Range of Results**	**Violation**	**Source**
Total Trihalomethanes (TTHMs)	80 ppb	51 ppb	14–76 ppb	No	Byproduct of drinking water disinfection
Total Haloacetic Acids (THAAs)	60 ppb	43 ppb	16–52 ppb	No	Byproduct of drinking water disinfection

*Monitoring is conducted at 16 locations throughout the City of Philadelphia.
This result is the highest locational running annual average in 2024.

Trichloroacetic Acid (TCAA) Health Advisory Level (HAL) exceedance in Q2 2024

On 06/25/2024, our routine water quality tests showed that average levels of the chemical byproduct, Trichloroacetic acid (TCAA), were higher than targets at one location. This exceeded the EPA's Lifetime Health Advisory Level. TCAA is one of the chemicals that make up Total Haloacetic Acids (THAA). The state requires us to notify residents if the average level exceeds their limit (0.02 mg/L). Parts of Northwest Philadelphia showed an average value of 0.0252 mg/L. In July 2024, we directly notified impacted customers. These levels are not associated with acute health effects. Health warnings related to TCAA are based on higher amounts and longer exposure. Potential health effects would require drinking 2 liters of water with this amount of TCAA every day for 70 years.
For more information, please see: https://water.phila.gov/drops/notification-2024-07/

Monitoring Violation for Total Trihalomethane (TTHMs) in Q1 2025

We are required to collect TTHM samples during the second month of each quarter. In February 2025, PWD failed to properly collect samples for TTHM at six of our sixteen monitoring locations. We collected samples at these six locations, but they were not collected according to proper sampling protocol. In January and March 2025, we properly collected samples at these six locations.
All results from properly collected samples were within regulatory limits. There was no impact to the safety of your drinking water from these sampling errors.

Reporting Violation for Total Trihalomethanes (TTHMs) in Q1 2024 and Volatile Organic Compounds (VOC) in Q3 2024

We had two administrative reporting errors in 2024. For these two errors, PWD reported data later than required. The first instance involved our monthly TTHM results from March 2024. The second instance involved our quarterly VOC results from July 2024.
All results were within regulatory limits. There was no impact to the safety of your drinking water from these administrative errors.

PFAS – SYSTEM WIDE RANGE OF RESULTS								
Chemical	Highest Level Allowed (MCL)		Ideal Goal (MCLG)		Highest Result	System Wide Range of Results*	Violation^	Source
	EPA[†]	PA DEP	EPA[†]	PA DEP				
PFOA	4 ppt	14 ppt	0 ppt	8 ppt	7.3 ppt	2.5–7.3 ppt	No	Discharge from manufacturing facilities and runoff from land use activities.
PFOS	4 ppt	18 ppt	0 ppt	14 ppt	5.5 ppt	0–5.5 ppt	No	
PFNA	10 ppt	n/a	10 ppt	n/a	4.0 ppt	0–4 ppt	No	
PFBS[‡]	Hazard Index	n/a	Hazard Index	n/a	9.2 ppt	0–9.2 ppt	No	
PFHxS	10 ppt	n/a	10 ppt	n/a	1.9 ppt	0–1.9 ppt	No	
HFPO-DA (GenX)	10 ppt	n/a	10 ppt	n/a	0 ppt	0 ppt	No	

* Samples were collected on 1/8/2024, 4/8/2024, 7/15/2024, 10/7/2024, and 10/28/2024

^ Compliance for 2024 was based on Running Annual Averages at each Water Treatment Plant compared to Pennsylvania Department of Environmental Protection's (PA DEP) MCLs.

[†] As of May 2025, Compliance with EPA MCLs and MCLGs begins in 2029.

[‡] PFBS does not have an individual MCL but is included in Hazard Index calculation

For more information, please see our website: water.phila.gov/PFAS

UNREGULATED CONTAMINANT MONITORING (UCMR)

Chemical	Testing Period	Average	Range
PFOA	1/8/2024–10/7/2024	4.6 ppt	0–8.1 ppt
PFOS	1/8/2024–10/7/2024	3.6 ppt	0–6.0 ppt
PFHxA	1/8/2024–10/7/2024	5 ppt	0–9.1 ppt
PFPeA	1/8/2024–10/7/2024	4.9 ppt	0–9.9 ppt
PFBS	1/8/2024–10/7/2024	3.6 ppt	0–10.0 ppt
PFBA	1/8/2024–10/7/2024	2.3 ppt	0–7.6 ppt
PFNA	1/8/2024–10/7/2024	0.8 ppt	0–4.5 ppt
PFHpA	1/8/2024–10/7/2024	1 ppt	0–3.3 ppt

In 2024, PWD performed special monitoring as part of the Unregulated Contaminant Monitoring Rule (UCMR), a nationwide monitoring effort conducted by the EPA. 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 have a standard. For more information concerning the UCMR, visit these websites: https://www.epa.gov/dwucmr/fifth-unregulated-contaminant-monitoring-rule or https://drinktap.org/Water-Info/Whats-in-My-Water/Unregulated-Contaminant-Monitoring-Rule-UCMR.

UNREGULATED CONTAMINANTS NOT DETECTED AT ANY OF THE SAMPLING LOCATIONS:

11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS), 1H,1H, 2H, 2H-perfluorodecane sulfonic acid (8:2FTS), 1H,1H, 2H, 2H-perfluorohexane sulfonic acid (4:2FTS), 1H,1H, 2H, 2H-perfluorooctane sulfonic acid (6:2FTS), 4,8-dioxa-3H-perfluorononanoic acid (ADONA), 9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS), hexafluoropropylene oxide dimer acid (HFPO-DA)(GenX), nonafluoro-3,6-dioxaheptanoic acid (NFDHA), perfluoro (2-ethoxyethane) sulfonic acid (PFEESA), perfluoro-3-methoxypropanoic acid (PFMPA), perfluoro-4-methoxybutanoic acid (PFMBA), perfluorodecanoic acid (PFDA), perfluorododecanoic acid (PFDoA), perfluoroheptanesulfonic acid (PFHpS), perfluorohexanesulfonic acid (PFHxS), perfluoropentanesulfonic acid (PFPeS), perfluoroundecanoic acid (PFUnA),N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA), N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA), perfluorotetradecanoic acid (PFTA), perfluorotridecanoic acid (PFTrDA), Lithium

Secondary chemicals

The EPA has established National Secondary Drinking Water Regulations (NSDWRs) that set non-mandatory water quality standards. The EPA does not enforce these "secondary maximum contaminant levels" (SMCLs). They are established as guidelines to assist public water systems in managing their drinking water for aesthetic considerations, such as taste, color, and odor. These contaminants are not considered to present a risk to human health at the SMCL.

SECONDARY MCLS: AESTHETIC IMPACTS IN TAP WATER

	EPA's SMCL	Baxter WTP One Year Range	Belmont WTP One Year Range	Queen Lane WTP One Year Range	Violation*
Chloride	250 ppm	28–124 ppm	57–133 ppm	61–161 ppm	No
Copper	1.0 ppm	0.057–0.101 ppm	0.008–0.018 ppm	0.033–0.051 ppm	No
Fluoride	2 ppm^	0.62 ppm	0.62 ppm	0.62 ppm	No
Iron	0.3 ppm	0–0.014 ppm	0–0.020 ppm	0–0.023 ppm	No
pH	6.5–8.5	7.01–7.29	7.10–7.30	7.11–7.25	No
Sulfate	250 ppm	0.00–23.40 ppm	18.20–62.00 ppm	12.60–61.30 ppm	No
Total Dissolved Solids	500 ppm	137–309 ppm	198–398 ppm	216–471 ppm	No

PWD also monitored for Aluminum, Color, Manganese, and Silver in 2024; all results were below respective parameter detection limits.

* Individual results are averaged monthly, and compliance is based on the running annual average.

^ EPA's MCL and MCLG are 4 ppm, but PADEP has set this lower MCL and MCLG, which takes precedence.

Sources of Secondary Chemicals

Chloride	Copper	Fluoride	Iron	pH	Sulfate	Total Dissolved Solids
Main component of many salts, may increase in winter months; Erosion of natural minerals; Used in the water treatment process in the form of ferric chloride.	Corrosion of copper pipes in premise plumbing; Erosion of natural deposits.	Erosion of natural deposits; Water additive that promotes strong teeth; Discharge from fertilizer and aluminum factories.	Corrosion of iron water mains and premise plumbing; Erosion of natural minerals; Used in the water treatment process in the form of ferric chloride.	Adjusted during the water treatment process.	Erosion of natural minerals; Runoff from mining operations.	Erosion of natural minerals; May increase during winter months due to road salt runoff or during drought conditions.

Sodium, Hardness, and Alkalinity in tap water

The parameters listed on this page are not part of the EPA's requirements and are provided for information purposes.

SODIUM IN TAP WATER	Baxter WTP One Year Average	Belmont WTP One Year Average	Queen Lane WTP One Year Average
Average (ppm)	23 ppm	47 ppm	41 ppm
Average (mg in 8 oz. glass of water)	5 mg	11 mg	10 mg
Range (ppm)	17–33 ppm	30–67 ppm	21–66 ppm
Range (mg in 8 oz. glass of water)	4–8 mg	7–16 mg	5–16 mg

HARDNESS IN TAP WATER	Baxter WTP One Year Average	Belmont WTP One Year Average	Queen Lane WTP One Year Average
Average	98 ppm or 6 gpg	152 ppm or 9 gpg	168 ppm or 10 gpg
Minimum	81 ppm or 5 gpg	114 ppm or 7 gpg	99 ppm or 6 gpg
Maximum	113 ppm or 7 gpg	206 ppm or 12 gpg	220 ppm or 13 gpg

Hardness defines the quantity of minerals, such as calcium and magnesium, in water. These minerals react with soap to form insoluble precipitates and can affect common household chores, such as cooking and washing. Philadelphia's water is considered "moderately hard" or "hard" depending on your service area.

ALKALINITY IN TAP WATER	Baxter WTP One Year Average	Belmont WTP One Year Average	Queen Lane WTP One Year Average
Average	41 ppm	75 ppm	72 ppm
Minimum	26 ppm	47 ppm	42 ppm
Maximum	53 ppm	105 ppm	103 ppm

Top customer questions

Can I get my water tested?

Yes! We offer free testing for lead, copper, and other select water quality concerns.

We are seeing an increase in water quality testing requests. The results continue to show our treatment processes keep water safe.

➤ To request an appointment
Call (215) 685-6300

Should I use a filter?

The water we deliver to your property does not need a filter. Your plumbing can impact your water quality, especially when service lines are disturbed. This can happen during construction or repairs near your property. If you use a filter, you must follow all instructions from the manufacturer. It should be certified for lead reduction by the National Sanitation Foundation (NSF).

➤ **Learn more at nsf.org**

Why does water have an earthy flavor sometimes?

Earthy or musty flavors occur naturally in drinking water. When certain algae-type organisms grow in our rivers, detectable levels of these odors can make their way into the treated drinking water.

These natural compounds have no known health effects at their natural levels and are found in various foods.

We take steps to reduce their presence when detected.

➤ **water.phila.gov/drinking-water/FAQ/**

Can I replace a lead service line?

Yes. If you don't want to contact a plumber directly, apply for our Homeowners Emergency Loan Program (HELP).

A zero-interest loan can cover the cost of replacement.

➤ Learn more & apply
water.phila.gov/help

Also: PWD will replace lead service lines for free if they are discovered during planned work on water mains.

➤ **water.phila.gov/lead**

Why does my water look cloudy sometimes?

This is usually not a water quality issue. Water pressure in the main creates air bubbles in water. When you fill a glass with tap water, the bubbles rise from the bottom of the glass and are released at the top.

Call us to report a water quality issue if the bubbles don't disappear after a few seconds.

➤ **Call (215) 685-6300**

Why does my tap water smell like a pool sometimes?

The smell of chlorine means your water is safe and treated to remove harmful organisms. You can reduce the smell by keeping a pitcher of fresh water in the refrigerator. This also reduces the earthy odor sometimes produced by algae in the rivers during spring.

➤ **water.phila.gov/drinking-water/FAQ/**

Why do water utilities add fluoride to water?

It's a natural element that helps prevent cavities. Philadelphia's Health Department (and dentists) recommend we add fluoride to a level that helps protect children's teeth.

➤ **water.phila.gov/drinking-water/FAQ/**

How hard is Philadelphia's water?

Philadelphia's water is considered moderately hard. Hardness depends on the treatment plant that serves your area of the city.

➤ See results on **page 25**

Working together

You can help protect Philadelphia's water quality.

Join a cleanup.

Group cleanups help remove trash and litter from our waterways. There are a number of ways to stay informed about upcoming cleanups: visit the @PhillyH2O blog (water.phila.gov/blog), follow us on social media (@phillyh2o), email us at waterinfo@phila.gov, call us at (215) 685-6300, or sign up for event information at water.phila.gov/signup.

Enjoy top-quality tap at the Philly Water Bar.

The Philly Water Bar is a relationship-building tool and interactive platform that educates and engages the public around Philadelphia's top-quality tap water.

- Learn more about upcoming Water Bar events: **water.phila.gov/water-bar**

Visit the Fairmount Water Works Interpretive Center.

The Fairmount Water Works Interpretive Center is a great resource for educational programming and information. Topics include our water infrastructure and watersheds, local native wildlife, and STEAM (science, technology, engineering, arts, and math) activities.

- Learn more: **fairmountwaterworks.org**

Keep trash out of our waterways.

Make sure to put your recyclable paper, metal, and plastics in a recycling bin. Put disposable gloves, masks, food waste, and other garbage in a trash can, so they don't end up in our rivers and streams.

Always properly recycle or dispose of household hazardous wastes.

Don't flush them down the toilet or down the sink, and don't pour them into storm drains. Many storm drains flow directly to our streams and rivers.

Don't flush anything but toilet paper.

Yes, even "flushable" wipes! They don't dissolve like toilet paper and can lead to clogs and backups, causing waste to flow into our homes and our streets.

Stay informed

Sign up to receive water quality updates and more!

Get the latest news, useful information, and find out about upcoming events.

- **water.phila.gov/signup**

Get alerts and updated from the City of Philadelphia.

Sign up for emergency, traffic, weather, and safety information.

- Text **READYPHILA** to **888-777**
- **phila.gov/ready**

Take a tour.

Tour a Water Treatment Plant to learn more about how we test and treat our water, or visit Green Stormwater Infrastructure (GSI) sites to learn how Philadelphia is using GSI to keep our water cleaner and make our city greener.

- Schedule a tour **waterinfo@phila.gov**

Philadelphia Water Department

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water.phila.gov

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Philadelphia Water Department
Veracity Studios

Organizations we partner with

American Water Resources Association
American Water Works Association
Partnership for Safe Water
American Public Works Association
Association of Metropolitan Water Agencies
National Association of Clean Water Agencies
Partnership for the Delaware Estuary
Schuylkill Action Network
Schuylkill River Restoration Fund
Tookany/Tacony-Frankford (TTF) Watershed Partnership
U.S. Water Alliance
Water Environment Federation
Water Environment Research Foundation
Water Research Foundation