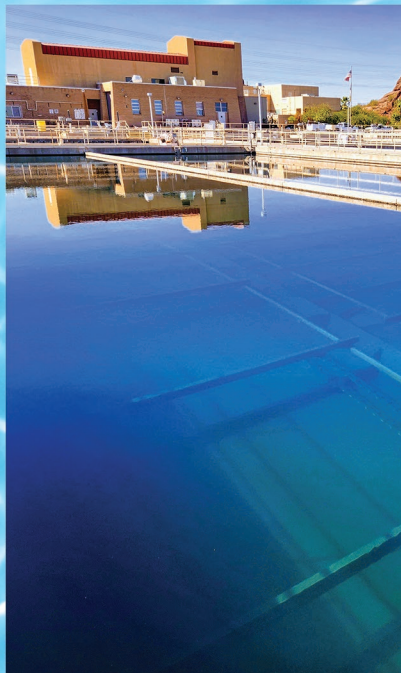




2023

# Consumer Confidence and Water Quality Report



This report is also available at [tempe.gov/ccr](https://tempe.gov/ccr)

# 2023 Consumer Confidence and Water Quality Report

Each year, Tempe produces a *Consumer Confidence and Water Quality Report*, which shares important information about the quality of potable (drinking) water provided by the City of Tempe. This report contains information on Tempe’s water sources and drinking water quality compared to the standards set by the United States Environmental Protection Agency (EPA) under the Safe Drinking Water Act (SDWA).

This report describes Tempe Water Utilities’ efforts to provide high-quality water, wastewater and stormwater services that support the community’s public health, quality of life and economic vitality. Tempe provides these essential services through investing in a diverse portfolio of water supplies, empowering water conservation and ensuring the financial health of the utility.

Tempe water professionals manage and operate numerous critical infrastructure systems and perform rigorous testing to ensure that potable water is safe and meets regulatory requirements, and the environment is protected from pollution. In 2023, Tempe provided 16 billion gallons of potable water to Tempe and Guadalupe customers, averaging about 44.7 million gallons per day. Tempe’s chemists, specialists and operators perform thousands of tests, monitoring water quality beyond those required by federal SDWA standards.

*Those responsible for providing water to others, such as tenants, residents, patients, students or employees, may post this report in a visible location or provide it to them through direct, hand delivery, mail or email.*

*El informe contiene información importante sobre la calidad del agua en su comunidad. Tradúzcalo o hable con alguien que lo entienda bien. Póngase en contacto con el Departamento de Comunicaciones de la Ciudad de Tempe al 480-350-4311.*



Civil engineers design, plan and manage projects for water, wastewater and stormwater infrastructure to ensure these assets are reliable and meet current and future needs.



Water conservation program coordinators evaluate infrastructure upgrades for incentive programs, such as the cooling tower rebate, to ensure significant and permanent increases in water use efficiency.

## Water Sources

Tempe’s water supply comes from several sources. Figure 1 shows those sources, which include rivers, lakes, groundwater wells and the canal systems that deliver surface water sources to Tempe.

**Salt River Project (SRP)** – Surface water is collected from the Salt and Verde River watersheds, stored in six SRP reservoirs and diverted into SRP canals at Granite Reef Dam in Mesa. The quantity of water provided by SRP to its service area within Tempe varies from year to year, as SRP provides the amount of water needed to meet the demands. In 2023, SRP supplied 11.7 billion gallons of water to Tempe to meet potable demands, an average of 32 million gallons per day. This represents about 74% of water used in Tempe and Guadalupe.

**Groundwater** – In 2023, Tempe used eight groundwater wells (see Figure 3) to supplement surface water supplies. Tempe withdrew about 2.5 billion gallons of water from wells for an average of 7 million gallons per day. This source provided about 16% of water used in the Tempe Water Service Area in 2023.

**Central Arizona Project (CAP)** – Colorado River water is delivered to Tempe through the CAP canal system. In 2023, Tempe used 1.5 billion gallons of Colorado River water delivered by CAP, an average of 4 million gallons per day. This source provided 10% of the water used in the Tempe Water Service Area in 2023.

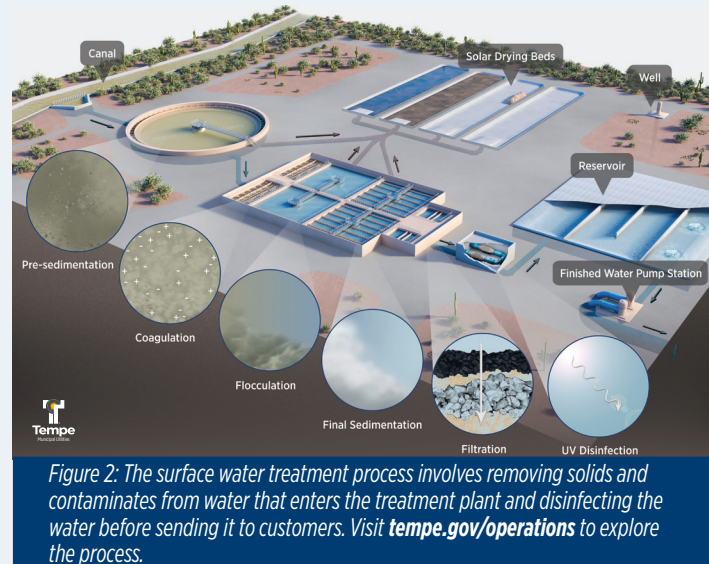
# City of Tempe Water Sources



Figure 1: SRP and CAP convey water from their sources through a series of canals to the Johnny G. Martinez and South Tempe Water Treatment Plants, where supplies are treated before being delivered to customers through Tempe's water distribution system.

## Surface water treatment process

Surface water received from SRP and CAP must be treated to produce potable water that meets SDWA standards. In 2023, Tempe's potable supply delivered by these sources was processed and delivered through two surface water treatment plants: Johnny G. Martinez Water Treatment Plant and South Tempe Water Treatment Plant. Each plant has the capacity to produce 50 million gallons of potable water per day. The plants are staffed 24 hours a day by an operations team of operators, mechanics, electricians, and instrument and control technicians. These professionals ensure all potable water meets SDWA standards through the treatment processes (see Figure 2), which includes chemical coagulation, mechanical flocculation, sedimentation, filtration, and ultraviolet and sodium hypochlorite disinfection. Treated water is stored securely in reservoirs and remote storage tanks, ensuring that drinking water is available when needed.



## Protection of water quality, the environment

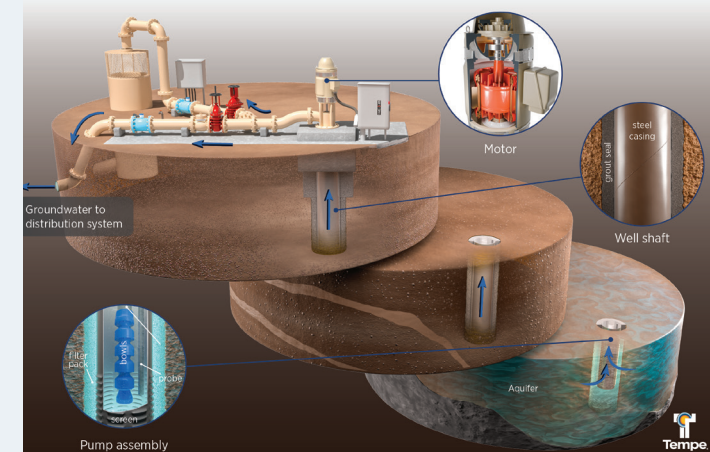
Tempe Water Utilities staff protects water quality and the environment through management of programs required under the SDWA, Clean Water Act, Clean Air Act and many other federal, state and local environmental laws and regulations. Environmental Services staff, including water quality specialists, environmental quality specialists, chemists and environmental compliance inspectors work to protect public health and the environment by utilizing their knowledge of regulatory requirements and partnering with business and industrial customers. This group manages:

- A state-certified water quality laboratory
- Programs to manage regulatory compliance
- Industrial and commercial inspections
- Backflow prevention
- Water, wastewater, stormwater sampling
- Water quality planning initiatives



*Plant operators oversee the surface water treatment process to ensure the potable water is safe and available to meet the community's needs.*

## Water, wastewater, stormwater, flood irrigation infrastructure



*Figure 3: Plant mechanics, instrumentation and control technicians, and electricians maintain Tempe's 11 groundwater wells. Tempe has stored water underground for decades to supplement surface water supplies which enables Tempe to meet water demands when needed.*

Highly-skilled employees perform the operations and maintenance of the water distribution and wastewater collection system, and stormwater and flood irrigation infrastructure to ensure the safe and reliable transportation and delivery of water and protect public health 24-hours-a-day, 365-days-a-year.

After treatment, drinking water leaves the plants and enters the water distribution system, which contains over 860 miles of water pipes, 44,000 water meters, 9,500 fire hydrants and 29,300 water valves. Utility Services technicians maintain the system throughout Tempe and Guadalupe to ensure the safe and reliable delivery of drinking water.

After water is used, Tempe collects and conveys wastewater away from the community for treatment to protect public health. Technicians maintain 500 miles of wastewater pipes, 10,700 manholes and 36,200 service connections to ensure wastewater is safely

transported to a wastewater treatment plant to be treated and recycled. Currently, all wastewater collected in Tempe is treated at the 91st Avenue Wastewater Treatment Plant in Phoenix. This facility is co-owned by the City of Tempe and several other local municipalities. Here, wastewater is treated and reused for energy generation, irrigation of non-food crops and riparian habitats. In late 2026, Tempe will bring the Kyrene Water Reclamation Facility back online. Wastewater entering this facility in central Tempe will be treated and used locally to support energy generation, groundwater storage and landscape irrigation.

Tempe's stormwater conveyance system consists of 200 miles of stormwater mains, 3,600 catch basins and 1,700 stormwater manholes. Technicians maintain these assets to prevent streets and properties from flooding during storms.

Some customers receive urban flood irrigation from SRP. Tempe maintains a staff of professional irrigators who provide irrigation services to these customers that live on SRP eligible lands in Tempe. Irrigators coordinate the delivery of SRP irrigation water to 17 city parks and approximately 850 residential customers and collaborate with other users to maintain the 40 miles of irrigation mains and thousands of irrigation valves that make this possible.

## Compliance and process control testing

Water quality specialists, plant operators and others collect samples and chemists analyze the samples from the water treatment plants, groundwater wells, water distribution system, water storage tanks, wastewater and stormwater pipes located throughout Tempe and Guadalupe, complying with federal, state and local regulations and ensuring effective treatment.

Tempe's chemists and water quality specialists conduct thousands of tests in the laboratory or in the field each year to ensure water is safe and of highest quality when leaving a water treatment plant, groundwater well and storage tanks. Chemists and specialists perform tests and monitoring beyond those required by federal SDWA standards, ensuring Tempe's potable water meets or exceeds federal and state regulatory drinking water standards.



*Chemists in Tempe's full-service water quality laboratory perform numerous inorganic, organic and microbiological tests daily. In addition to ensuring water quality, their work is used to analyze trends and make recommendations to optimize water treatment.*

## Water resources and conservation

Tempe's water resources staff efficiently manage Tempe's water supplies and effectively plan for the community's future water needs. The water resources manager administers Tempe's water rights and contracts and oversees water accounting and assured water supply planning. In 2023, as a response to the ongoing drought on the Colorado River, Tempe remained in Stage 0 – Watch of its Drought Preparedness Plan. To learn more, visit [tempe.gov/water](https://tempe.gov/water).

Tempe's Water Conservation Program is more than a regulatory requirement; it illustrates the city's dedication to educating the community on the many ways residents and businesses can take proactive actions to ensure Tempe maintains sufficient water to meet its needs now and into the future. Since 2000, proactive water conservation efforts have resulted in a 19% decrease in the potable demands of the Tempe water service area, while Tempe's population has increased by 26%.

Tempe's water conservation specialists provide customized assistance to customers to help reduce water waste and increase water efficiency. Specialists implement a variety of educational programs, promote financial incentives and encourage customers to monitor water usage on Tempe's WaterSmart Customer Portal. This free tool helps customers adopt customized, efficient water practices at their homes or in Tempe's businesses. These resources can be found on [tempe.gov/conservation](https://tempe.gov/conservation).



Water conservation specialists provide water conservation education and technical assistance to customers, helping reduce utility bills and ensuring water is used effectively in Tempe.

## Contaminants in drinking water

To ensure potable water is safe to drink, the EPA prescribes regulations limiting the levels of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water. Drinking water, including bottled water, may reasonably be expected to contain low levels of some contaminants. The levels of contaminants in Tempe's potable water are determined largely by the source water, which can vary from year-to-year depending on watershed conditions, reservoir storage and volume of groundwater pumped. The presence of contaminants does not indicate that water poses a health risk. Sources of raw water for both tap and bottled water include rivers, lakes, streams, ponds, reservoirs, springs and wells. As water travels, it can dissolve naturally occurring minerals and accumulate substances resulting from the presence of animals or human activity.

Contaminants that may be present in source water include:

- Microbial contaminants such as viruses and bacteria that may be from wastewater or septic systems, agricultural livestock operations or wildlife.

- Inorganic contaminants such as salts and metals that occur naturally or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming.
- Pesticides and herbicides that may come from a variety of sources such as agriculture, urban stormwater runoff and residential uses.
- Organic chemical contaminants including synthetic and volatile organics that are by-products of industrial processes and petroleum production from gas stations, urban stormwater runoff and septic systems.
- Radioactive contaminants that can occur naturally or be the result of oil and gas production and mining activities.

Information about contaminants in tap water and potential health effects can be obtained by visiting the EPA website [epa.gov/SafeWater](https://www.epa.gov/safewater). Information on bottled water can be obtained from the FDA by calling 888-INFO FDA (888-463-6332).

## Drinking water quality

Tables 1-4 contain regulated contaminants that were required to be monitored and were detected in Tempe's drinking water in 2023. For each contaminant detected, the tables provide the highest concentration or level allowed by regulation, the ideal goals for public health, the amount detected in Tempe's water and major sources of contamination. Certain contaminants require monitoring fewer than one time per year because concentrations of these contaminants are not expected to vary significantly from year to year. For contaminants that were not required to be tested in 2023, this report depicts results from the most recent required testing and the year the testing occurred.



Chemists performed thousands of tests in 2023, ensuring that Tempe's drinking water continues to comply with all SDWA standards.

### Definitions and acronyms

**Action Level (AL):** The concentration of a contaminant that, if exceeded, triggers treatment or other requirements that a public water system shall follow.

**Health Advisory Level (HAL):** The concentration of a chemical found in drinking water with no existing regulatory standard is a value that, based on the available data, at which adverse health effects and/or aesthetic effects are not anticipated to occur if consumed over a lifetime.

**Maximum Contaminant Level Goal (MCLG):** 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.

**Maximum Contaminant Level (MCL):** 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.

**Maximum Residual Disinfectant Level (MRDL):** The highest level of a disinfectant allowed in drinking water. Addition of a disinfectant is necessary to control microbial contaminants.

**Maximum Residual Disinfectant Level Goal (MRDLG):** The level of a 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 contaminants.

**Non-Detect (ND):** Not detected in samples.

**Not Applicable (N/A):** Does not apply.

**Parts per million (ppm) or milligrams per liter (mg/L):** Units used to measure the concentration of a constituent found in water. One ppm is approximately equal to one quart of water in an Olympic-size swimming pool.

**Parts per billion (ppb) or micrograms per liter (µg/L):** Units used to measure the concentration of a constituent found in water. One ppb is one thousand times less than one ppm. One ppb is approximately equal to one-half a teaspoon of water in an Olympic-size swimming pool.

**Parts per trillion (ppt) or nanograms per liter (ng/L):** Units used to measure the concentration of a constituent found in water. One ppt is equivalent to a single drop of water in 20 Olympic-sized swimming pools.

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

**Running Annual Average (RAA):** The average of analytical results for samples taken during the previous four calendar quarters.

**Locational Running Annual Average (LRAA):** RAA for a specified location.

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

**Variations and Exemptions:** State or EPA permission to not meet a MCL or a treatment technique under certain conditions.

# Regulated Detected Contaminants

Table 1 - Regulated Detected Contaminants

Constituent	Unit	MCL	MCLG	Range	Violation (Yes or No)	Major Sources
Arsenic	ppb	10	0	ND - 4	No	Erosion of natural deposits; runoff from orchards; runoff from glass and electronic production waste.
Barium	ppm	2	2	0.05 - 0.09	No	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits.
Chlorine	ppm	4.0 (MRDL)	4.0 (MRDLG)	0.02 - 1.9	No	Disinfectant added to control microbial contaminants.
Chromium (Total)	ppb	100	100	ND - 10	No	Erosion of natural deposits.
Fluoride	ppm	4.0	4.0	0.14 - 1.1	No	Erosion of natural deposits; water additive which promotes strong teeth.
Adjusted Gross Alpha (2021)	pCi/L	15	0	ND - 2.0	No	Erosion of natural deposits.
Nitrate	ppm	10	10	ND - 7	No	Runoff from fertilizer use.
Selenium	ppb	50	50	ND - 2	No	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines.
Tetrachloroethylene	ppb	5	0	ND - 0.8	No	Discharge from factories and dry cleaners.
Trichloroethylene	ppb	5	0	ND - 0.6	No	Discharge from metal degreasing sites and other factories.
Total Organic Carbon	ppm	TT	N/A	0.7 - 3.3	No	Naturally present in the environment.
Uranium (2021)	ppb	30	0	ND - 7	No	Erosion of natural deposits.

**Arsenic** - While Tempe's drinking water meets EPA's standard for arsenic, it contains low levels of this element. EPA's standard balances the current understanding of arsenic's possible health effects against the cost to remove arsenic from drinking water. The EPA continues to research the health effects of low levels of arsenic, which is a metal known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems.

**Nitrate** - Nitrate in drinking water at levels higher than 10 ppm is a health risk for infants six months and younger. High nitrate levels

in drinking water can cause cyanotic newborn or "blue baby" syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If caring for an infant, ask for advice from a healthcare provider.

**Fluoride** - In addition to compliance sampling, fluoride levels are monitored daily at both treatment plants and reported to the Arizona Department of Health Services monthly for oral health monitoring. The range reported is the combined result of the daily treatment plant and system monitoring.

Table 2 - Turbidity

Constituent	Unit	MCL	Highest Value	Lowest monthly % meeting limit	Violation (Yes or No)	Major Sources
Turbidity	NTU (Nephelometric Turbidity Unit)	TT = 1; and not less than 95% ≤ 0.3 NTU	0.2	100%	No	Soil runoff into canals.

**Turbidity** - Turbidity is a measure of the cloudiness of water. Turbidity is monitored because it is a good indicator of water quality. High turbidity can reduce the effectiveness of disinfectants.

Table 3 - Trihalomethanes and Haloacetic Acids

Constituent	Unit	MCL	Highest LRAA	Range (single sample)	Violation (Yes or No)	Major Sources
Total Trihalomethanes (TTHM)	ppb	LRAA of 80	56	2.7 - 72	No	By-products of drinking water chlorination.
Total Haloacetic Acids (HAA)	ppb	LRAA of 60	17	ND - 20	No	

THMs and HAAs are the result of a reaction between the chlorine used for disinfecting tap water and naturally occurring matter in the water. They are groupings of chemicals called disinfection byproducts (DBPs), at elevated levels DBPs have been associated with negative health effects such as an increased risk of cancer, liver or kidney problems, nervous system effects.

Table 4 - Lead and Copper

Constituent	Unit	Action Level	90th Percentile Result	Number of results above action level	Violation (Yes or No)	Major Sources
Copper (2021)	ppm	1.3	0.20	0	No	Corrosion of household plumbing systems; erosion of natural deposits.
Lead (2021)	ppb	15	5	0	No	Corrosion of household plumbing systems; erosion of natural deposits.

Fifty-one households were tested for lead and copper.

**Lead** - If present, elevated levels of lead can cause serious health problems especially for pregnant women and young children. Lead in drinking water primarily comes from materials and components associated with service lines and home plumbing. The City of Tempe is responsible for providing high-quality drinking water but cannot control the variety of materials used in plumbing components in homes. Customers share the responsibility for protecting themselves and their families from the lead in home plumbing. They can take responsibility by identifying and removing lead materials within home plumbing and taking steps to reduce risk. Customers concerned about lead in water and those who wish to have it tested may contact the City of Tempe for information on lead in drinking water, testing methods and steps to take to minimize exposure. Before drinking or cooking with tap water, concerned customers may flush pipes for several minutes by running the tap, taking a shower, doing laundry or a load of dishes. Customers may opt to install a filter certified by an American National Standards Institute accredited certifier to reduce lead in drinking water. Additional information is available at [epa.gov/SafeWater/Lead](http://epa.gov/SafeWater/Lead).

In 2021, the EPA revised the Lead and Copper Rule (LCRR) to protect public health and reduce exposure to lead and copper in drinking water. Tempe has been monitoring lead and copper in

homes since 1992 and has been compliant with the regulations. The new LCRR goes into effect on Oct. 16, 2024, and requires the utility to complete numerous actions such as the following.

- Identifying areas most affected through a service line inventory
- Strengthening treatment requirements
- Replacing lead service lines systematically, if found, and creating a plan for replacing certain galvanized service lines
- Increasing sample reliability
- Improving risk communication
- Prioritizing protection of children in schools and childcare facilities

Tempe's environmental quality specialists are working with water quality experts and regulatory agencies in developing and implementing a compliance strategy that addresses the new requirements, which include identifying materials for privately-owned service lines serving residential, commercial and industrial buildings. Visit [tempe.gov/LeadandCopper](http://tempe.gov/LeadandCopper) to review the steps that Tempe is taking to meet the objectives of this rule.



Water Quality Specialists routinely collect water samples for field or laboratory analysis to ensure regulatory requirements are met.

### 2023 Results for Unregulated Contaminant Monitoring Rule (UCMR5)

Tempe is committed to providing drinking water that meets or exceeds all state and federal health standards. The EPA uses the UCMR to collect data for contaminants that are suspected to be present in drinking water and do not have health-based standards. To assist with this research effort, Tempe collected data, from the surface water treatment plants, on 30 currently unregulated contaminants. Twenty-nine (29) per- and polyfluoroalkyl substances (PFAS) and one (1) metal - lithium. The purpose of this monitoring is to gather occurrence data to support the U.S. Environmental Protection Agency (EPA) in making decisions regarding whether to regulate these contaminants in the future. These substances do not have Maximum Contaminant Levels. Instead, results are reported to the Minimum Reporting Levels (MRL). The EPA established the MRL as the lowest accurately reportable limit for these substances. Only the three substances in the table below were detected. Tempe will closely monitor EPA's health studies and will keep informed of any regulatory developments. Should new regulations be developed, Tempe will ensure drinking water continues to meet EPA requirements.

Table 5 - Detected UCMR Substances

Substance	Units	MRL	Average	Range
Lithium	ppb	9	133	125 - 138
Perfluorobutanesulfonic acid (PFBS)	ppb	0.003	0.01	0.008 - 0.02
Perfluorobutanoic acid (PFBA)	ppb	0.005	<0.005	ND - 0.005

## People who are immunocompromised

Some people may be more vulnerable to contaminants in drinking water than the general population. People who are immunocompromised can be particularly at risk for infection. Examples include:

- individuals with cancer
- those undergoing chemotherapy
- people who have undergone organ transplants
- those with human immunodeficiency virus, acquired immunodeficiency syndrome or other immune system disorders

People in these categories or their caregivers should seek advice regarding drinking water from their healthcare providers.

## Cryptosporidium

Cryptosporidium is a microbial pathogen found in surface water throughout the United States. 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; however, immunocompromised people, infants, small children and the elderly are at greater risk of developing life-threatening illness. Although filtration removes Cryptosporidium, most common filtration methods cannot guarantee 100% removal. Although infrequent, monitoring indicates these organisms are present in Tempe's source water. Current test methods do not identify whether the organisms are dead or if they can cause disease. Based on source water monitoring for Cryptosporidium at Tempe's two water treatment plants between 2015 and 2017, Tempe is required to maintain ongoing documentation of effective disinfection practices. The EPA and Centers for Disease Control and Prevention's guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available through the EPA website [epa.gov/SafeWater](https://www.epa.gov/SafeWater).

## Per- and polyfluoroalkyl substances (PFAS)

On April 10, 2024, the Environmental Protection Agency (EPA) established new regulations for PFAS in drinking water. PFAS are a category of manufactured chemicals used in a wide range of products and the new regulations focus specifically on perfluorooctanoic acid (PFOA), perfluorooctane sulfonic acid (PFOS), Perfluorononanoic acid (PFNA), hexafluoropropylene oxide dimer acid (HFPO-DA, commonly known as GenX Chemicals), perfluorohexane sulfonic acid (PFHxS), and perfluorobutane sulfonic acid (PFBS).

The new regulations established individual MCLs and MCLGs for five PFAS compounds, and a Hazard Index to account for the combined and co-occurring level of three of these PFAS compounds and one additional PFAS component in drinking

water. These regulatory limits become effective on April 10, 2029, which allows time for nationwide water providers to implement treatment technologies.

Tempe continues to monitor for PFAS on a quarterly basis at its water sources and proactively design and prepare to implement treatment strategies to comply with these regulations prior to the EPA's deadline of April 10, 2029. Tempe has procured laboratory instrumentation that will test for PFAS at Tempe's State Certified Water Quality Laboratory.

Table 6 summarizes the range and average of PFAS substances in parts per trillion (ppt) or the unitless calculation for Hazard Index from in Tempe drinking water sources used in 2023.

Table 6 - PFAS

Substance	Units	MCL	Average	Range
PFOA	ppt	4.0	0.7	ND - 4.9
PFOS	ppt	4.0	1	ND - 7.4
PFHxS	ppt	10	0.3	ND - 5.8
PFNA	ppt	10	ND	ND
HFPO-DA GenX	ppt	10	ND	ND
Hazard Index*: Mixtures containing two or more of PFHxS, PFNA, HFPO-DA, and PFBS have a combined calculated unitless standard	unitless	1*	0.04*	ND - 0.6

\* Hazard Index is a unitless standard

Tempe continues to monitor water sources regularly to ensure customers continue to receive drinking water that is compliant with applicable health and environmental regulations. Currently, Tempe is researching and implementing technologies that reduce PFAS in drinking water and is working with local and state officials to develop long-term solutions to remain in compliance. For

information on Tempe's water and PFAS, visit [tempe.gov/PFAS](https://tempe.gov/PFAS). For information about PFAS and their health effects, review the EPA's health advisory at [epa.gov/ground-water-and-drinking-water/drinking-water-health-advisories-pfoa-and-pfos](https://www.epa.gov/ground-water-and-drinking-water/drinking-water-health-advisories-pfoa-and-pfos).

# Source Water Assessment summary

The Arizona Department of Environmental Quality (ADEQ) evaluates each water source used by public water systems in the state. These evaluations assess the hydrogeology of drinking water sources to determine the quality of groundwater being drawn into wells, the watersheds supplying surface water and survey land being used for activities occurring near drinking water sources.

ADEQ completed an assessment of the surface water and groundwater wells for Tempe’s public water system in 2004. Based on the information available on the hydrogeologic settings and the adjacent land uses in the specified proximity of the drinking water source(s), ADEQ has given a high-risk designation for the degree to which this public water system drinking water source(s) are protected. A designation of high risk indicates there

may be additional source water protection measures that can be implemented on the local level. This does not imply that the source water is contaminated, nor does it mean that contamination is imminent. Rather, it indicates that land use activities or hydrogeologic conditions exist that make the source water susceptible to possible contamination.

Tempe regularly conducts monitoring of all drinking water sources, ensuring nearby land use has not impacted water quality. The complete Source Water Assessment is available for review at ADEQ, 1110 W. Washington St., Phoenix, AZ 85007, or an electronic copy may be requested by phone: 602-771-4597. For information, visit the ADEQ website at [azdeq.gov/Source-Water-Protection](http://azdeq.gov/Source-Water-Protection).

## Tempe frequently receives questions about the hardness of water and the presence of radon.

**Hardness** – Hardness (Table 7) describes the amount of naturally occurring minerals calcium and magnesium, that are dissolved by source waters as they contact soil. “Hard” water often refers to drinking water that contains relatively more dissolved minerals than “soft” water. Hard water is common in most of the United States, especially in the Southwestern United States and Arizona.

**Radon** – Radon (Table 7) is a radioactive gas that occurs naturally in groundwater and is released from water into the air during household use. Radon entering the home through soil versus that which enters the home through tap water will, in most cases, be a very small source. For information, call Arizona Radiation Regulatory Agency at 602-255-4845 or contact EPA’s Radon Hotline 800-767-7236.

Table 7 - Hardness and Radon

Constituent	Units	Average Value	Range of Values
Hardness	ppm	187	163 - 500
Hardness	grains/gallon	10.9	9.5 - 29
Radon (2008 and 2011)	pCi/L	346	ND - 704

# Capital Improvement Program (CIP)

Tempe Water Utilities engineers and geographic information system coordinators plan and manage a comprehensive asset management program that includes assessment and improvements to all aspects of water, wastewater and stormwater utility operations. This program includes projects designed to ensure Tempe is providing high quality water to its customers and efficient wastewater collection and treatment at the lowest reasonable cost, while meeting all applicable federal, state and local rules, regulations, and statues. CIP planning for Fiscal Year 2024-2025 through Fiscal Year 2028-2029, for both water and wastewater, is nearly \$750 million throughout the five-year planning period.

Highlights of the water CIP include rehabilitation and improvements to the following major areas of Water Utilities operation.

- Water treatment plant asset maintenance and upgrades
- Transmission and distribution system assessment, replacements and improvements
- Water system pumping stations, reservoirs and tank projects
- Wells – asset maintenance and new production
- Kyrene Water Reclamation Facility reactivation and associated recharge wells construction

# Protecting Tempe’s waterways

Stormwater runoff does not go to a treatment plant before entering retention basins, washes, rivers or lakes. Runoff can collect dirt, litter, oil, grease, pet waste, chemicals and other pollutant as it flows over surfaces such as roads, parking lots, sidewalks, driveways or lawns. Customers can help reduce pollutants entering the stormwater system and protect waterways by ensuring only rain enters the storm drains. Tips found at [tempe.gov/Stormwater](http://tempe.gov/Stormwater) explain how properly draining pools, picking up after pets and utilizing the Household Products Collection Center contribute to protecting waterways.



Geographic information systems coordinators and technicians transform data into maps that help the utility make informed decisions about how to prioritize capital investments to manage essential water, wastewater and stormwater infrastructure assets.



Environmental Compliance Inspectors conduct industrial inspections to ensure cross connection control, stormwater and wastewater code requirements are met.

# Operating budget

Every two years, Public Works conducts a cost of service study to help determine what, if any, adjustments are needed to recover the costs of water, wastewater and stormwater services. Periodic review of cost-based rates, fees and charges is an important component of a well-managed and operated water utility. As utility costs throughout the country continue to rise, staff is committed to managing costs and staying efficient while upholding Tempe’s commitment to a sustainable future. The Water Utilities Division Fiscal Year 2023-2024 operating budget is \$109,489,401.

# Customer services

Tempe’s Customer Services is responsible for water and wastewater billing and customer service operations. Tempe has made significant investments in Advanced Metering Infrastructure, which automatically and electronically collects water usage data every hour from more than 43,000 water meters. Customers can

access water usage data by visiting [tempe.gov/WaterSmart](http://tempe.gov/WaterSmart). Tempe offers multiple ways to pay for the utility services, and information on payment options, rates and other utility billing-related questions can be found at [tempe.gov/CustomerService](http://tempe.gov/CustomerService).

# Information

Call the City of Tempe at 480-350-4311 or visit [tempe.gov/water](http://tempe.gov/water).

Address the Tempe City Council during regularly scheduled Council meetings. City Council meetings are usually held every other Thursday. Meeting schedules and agendas may be found online at [tempe.gov/clerk](http://tempe.gov/clerk) or by calling 480-350-4311.

Visit the EPA website at [epa.gov/SafeWater](http://epa.gov/SafeWater).





This report is also available at [tempe.gov/ccr](https://tempe.gov/ccr)

