



CITY OF  
TUCSON

TUCSON WATER  
DEPARTMENT

March 24, 2017

Dear Community Water System Retailer,

Tucson Water is providing the enclosed Consumer Confidence Report (CCR) to you to fulfill its regulatory obligation as a water wholesaler. We are sending this information to all Community Water Systems that purchased water from Tucson Water during the previous year.

The USEPA Guidance for the Consumer Confidence Rule specifies that the water wholesaler is responsible for ensuring its customers receive a CCR report containing all required CCR contents. The water wholesaler must provide the retailer with monitoring data and other information that will enable the retailer to produce a CCR. Wholesalers are not responsible for creating the report for the retailer, nor are they responsible for providing data on contaminants that the retailer monitors. The enclosed report contains the required CCR contents, as well as extra monitoring and educational information.

If you have no new data to add, you could simply send out our enclosed CCR report with a cover letter explaining our relationship. If you have new data to add, you may choose to reprint our report with a new title/letterhead and the extra data.

This report is already posted at Tucson Water's website at [www.tucsonaz.gov/water/wqreport](http://www.tucsonaz.gov/water/wqreport). Please feel free to contact me at (520) 837-2445 for any further information.

Sincerely,

Mohsen Belyani  
Environmental Scientist  
Tucson Water

My Documents/16CCRWholesaler



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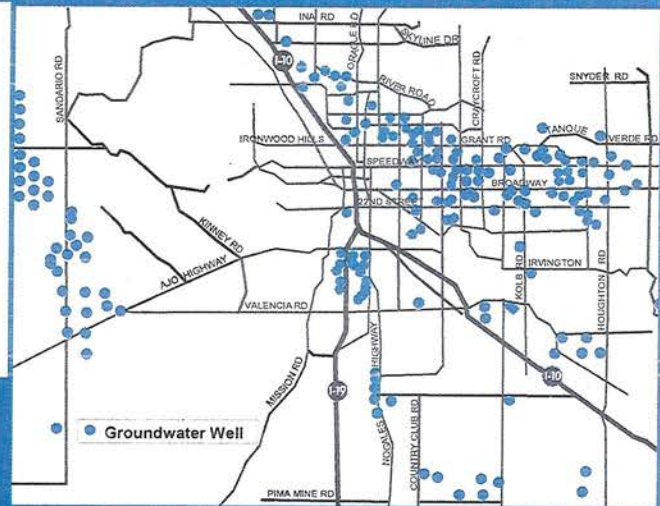


# 2016 Annual Water Quality Report

Water Quality & Operations Division • Main System 10-112



This Annual Water Quality Report provides information on your drinking water. The United States Environmental Protection Agency (EPA) requires that all drinking water suppliers provide a water quality report to their customers on an annual basis. This report also contains important information on the quality of your water and contact information you may wish to use.



If you are a non-English speaking resident, we recommend that you obtain a copy in Spanish by calling (520) 791-4331 or speak with someone about this report.

Para nuestros clientes de habla español: Este informe contiene información muy importante sobre la calidad de su agua beber. Tradúscalo o hable con alguien que lo entienda bien. Para obtener una copia de este reporte en Español, llame al (520) 791-4331.

## WHERE DOES MY WATER COME FROM?

Tucson Water serves about 722,000 people in the Tucson area. The water supply comes from approximately 200 groundwater wells located in and around the Tucson metropolitan area (see map). Most of the wells, also known as Entry Points to the Distribution System (EPDS), serve the neighborhood in which they are located, with

excess supply routed to reservoirs for use elsewhere in the system. Tucson Water's system contains 37 water service areas that are located in and around the Tucson metropolitan area, 4,500 miles of pipes and 145 booster stations that are dedicated to pumping drinking water.

## WERE THERE ANY CONTAMINANTS DETECTED IN MY DRINKING WATER?

Tucson Water regularly monitors the drinking water that is delivered to you to comply with regulations set by the EPA. In addition to this required monitoring, Tucson Water performs a great deal of discretionary monitoring in order to provide both staff and customers with additional water quality information. We are pleased to report that the results from the monitoring conducted in 2016 met all standards for safe drinking water.

In most cases, the minimum detection level of a contaminant is well below the EPA regulatory limit for that contaminant. The table on pages 2 and 3 lists the contaminants that were detected in the required drinking water monitoring. To compare the detected amount with the highest level allowed by the EPA, refer to the Maximum Contaminant Level (MCL) column in the table. The vast majority of regulated contaminants were not detected in the drinking water delivered by Tucson Water and those non-detected results were not included in the table. For a complete list of all EPA regulated contaminants, contact the EPA at 1-800-426-4791 or visit the EPA website at [www.epa.gov/safewater/mcl.html#mcls](http://www.epa.gov/safewater/mcl.html#mcls).



For accommodations, materials in accessible formats, foreign language interpreters, and/or materials in a language other than English, please contact Tucson Water at (520) 791-4331 or (520) 791-2639 for TDD.

## WHY ARE THERE CONTAMINANTS IN MY DRINKING WATER?

All drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants.

Tucson's groundwater contains dissolved minerals and organic compounds, which have been leached from the rock, sediments, and plant materials through which the water travels. One would expect to find beneficial minerals such as calcium and magnesium, harmless minerals such as chloride, bicarbonate, and sulfate, and metals such as iron, copper, arsenic, and lead, which may be either beneficial or harmless at low concentrations, but harmful at high concentrations. In addition to these naturally occurring contaminants, our groundwater may contain contaminants resulting from industrial or domestic activities. For this reason, water utilities must currently monitor for approximately 90 regulated and 31 unregulated contaminants.

The following language is required by the EPA to appear in this report, some of which may not be applicable to deep groundwater wells, the primary source of the Tucson Water supply:

Contaminants that may be present in source water can include:

- Microbial contaminants, such as viruses and bacteria, which may come from sewage, septic systems, agricultural livestock, and wildlife.

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

*In order to ensure that tap water is safe to drink, EPA regulations limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration regulations establish limits for contaminants in bottled water that must provide the same protection for public health. Bottled water may come from either a surface water source or groundwater source, and may be treated minimally or extensively. For information on the quality of your bottled water, contact the water bottling company.*

### Detected Contaminants Table

Contaminant	Sample Year	Maximum Result	Range	MCL	MCLG	Major Sources of Contaminant
<b>Disinfection By-Products</b>						
Haloacetic Acids (HAA5)						
HAA5 Locational Running Annual Average (LRAA)	16	3.8 ppb	NA	60 ppb	None	By-product of Chlorination
Total Trihalomethanes (TTHM)						
TTHM Locational Running Annual Average (LRAA)	16	21 ppb	NA	80 ppb	None	By-product of Chlorination
<b>Inorganics</b>						
Arsenic	11 - 16	7.5 ppb	< 2.0 – 7.5 ppb	10 ppb	0 ppb	Natural deposits, run offs
Barium	11 - 16	0.16 ppm	< 0.02 – 0.16 ppm	2 ppm	2 ppm	Natural deposits, Industrial Use
Fluoride	16	1.17 ppm	< 0.1 – 1.17 ppm	4 ppm	4 ppm	Natural deposits
Nitrate (as N)	16	5.78 ppm	< 0.25 – 5.78 ppm	10 ppm	10 ppm	Natural deposits, septic tanks, agriculture, sewage
Selenium	11 - 16	6.0 ppb	< 1.0 – 6.0 ppb	50 ppb	50 ppb	Discharge from petroleum, metal refineries, mines, erosion of natural deposits
Sodium	11 - 16	116 ppm	13 – 116 ppm	None	None	Natural deposits

## Detected Contaminants Table *continued*

Contaminant	Sample Year	Maximum Result	Range	MCL	MCLG	Major Sources of Contaminant
<b>Synthetic Organics</b>						
Atrazine	11 - 16	0.08 ppb	<0.05 – 0.08 ppb	3 ppb	3 ppb	Herbicide runoff
Simazine	11 - 16	0.11 ppb	<0.05 – 0.11 ppb	4 ppb	4 ppb	Herbicide runoff
<b>Radioactive Chemicals</b>						
Alpha Emitters	11 - 16	6.0 pCi/l	< 1.0 – 6.0 pCi/l	15 pCi/l	0 pCi/l	Natural deposits
Combined Radium	11 - 16	1.3 pCi/l	< 0.3 – 1.3 pCi/l	5.0 pCi/l	0 pCi/l	Natural deposits
Uranium	11 - 16	18 ppb	<0.6 – 18 ppb	30 ppb	0 ppb	Natural deposits

Contaminant	Year Sampled	No. of Samples above Action Level	90th Percentile Value	Action Level	Action Level Goal	Major Sources of Contaminant
Lead	2014	None	1.0 ppb	15 ppb	0 ppb	Corrosion of household plumbing systems, erosion of natural deposits
Copper	2014	None	0.142 ppm	1.3 ppm	1.3 ppm	Corrosion of household plumbing systems, erosion of natural deposits

Disinfectant	Year Sampled	Annual Average	Monthly Average Range	MRDL	MRDLG	Source
Chlorine	2016	0.89 ppm	0.79 – 0.98 ppm	4 ppm	4 ppm	Disinfection additive used to control microbes

Contaminant	Month Detected	Positive Samples for the Month	Total Samples for the Month	MCL	MCLG	Source
Total Coliform	Jan. & Jul. 2016	0.8% or 2 sample	250	< 5% of Samples	0	Naturally present in the Environment



### EXPLANATION OF THE DATA PRESENTED IN THE DETECTED CONTAMINANTS TABLE:

Tucson Water routinely monitors for contaminants in your drinking water as specified in the national Primary Drinking Water Standards. Monitoring results for the period of January 1 to December 31, 2016, or from the most recent period, are included in the table. Certain contaminants are monitored less than once a year because the concentrations of these contaminants are not expected to vary significantly from year to year, or the system is not considered vulnerable to this type of contamination.

## DO I NEED TO TAKE SPECIAL PRECAUTIONS?

While the Safe Drinking Water Act regulations are intended to protect consumers throughout their lifetime, some people may be more vulnerable to infections from drinking water than the general population. These "at-risk" populations include: immuno-compromised persons such as persons with cancer undergoing chemotherapy, people who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, and in some cases, elderly people and infants. These people should seek advice about drinking water from their health care providers. EPA/Centers for Disease Control (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.

### DETAILED INFORMATION ON DETECTED CONTAMINANTS

**Haloacetic Acids (HAA5)** are a group of chemicals that are formed along with other disinfection by-products when chlorine or other disinfectants used to control microbial contaminants in drinking water react with naturally occurring organic and inorganic matter in water. The regulated haloacetic acid compounds, known as HAA5, are monochloroacetic acid, dichloroacetic acid, trichloroacetic acid, monobromoacetic acid, and dibromoacetic acid. EPA has established an MCL of 60 parts per billion for HAA5. Compliance with the HAA5 standard is based on the Locational Running Annual Average (LRAA) concentration. The maximum LRAA for HAA5 in 2016 was 3.8 ppb.

**Total Trihalomethanes (TTHMs)** are formed when chlorine combines with naturally occurring organic material in water. Since the level of organic matter in our groundwater is extremely low, these compounds are found at very low concentrations. The compounds which make up the TTHMs include bromodichloromethane, bromoform, chlorodibromomethane, and chloroform. Compliance with the TTHM standard is based on the Locational Running Annual Average (LRAA) concentration. The maximum LRAA for TTHMs in 2016 was 21 ppb (the MCL is 80 ppb).



**Arsenic** is a naturally occurring substance commonly found in groundwater in the southwestern United States. While your drinking water meets EPA's standard for arsenic, it does contain low levels of arsenic. EPA's standard balances the current understanding of arsenic's possible health effects against the cost of removing arsenic from drinking water. EPA continues to research the health effect of low levels of arsenic which is a mineral known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems. The highest arsenic concentration detected during 2011 – 2016 was 7.5 ppb (the MCL is 10 ppb).

**Barium** occurs naturally at very low concentrations in our groundwater. The highest barium value during 2011 – 2016 was 0.16 ppm (the MCL is 2 ppm).

**Fluoride** is an important naturally occurring mineral that helps to form healthy teeth and bones. A concentration of 1 ppm is considered optimum. At concentrations above 2 ppm, fluoride can cause mild discoloration of teeth, and exposure at above the MCL of 4 ppm can cause both severe discolorations of teeth and over many years of exposure, bone disease. The highest level of fluoride detected during 2016 was 1.17 ppm (the MCL is 4 ppm).

**Nitrate** is a form of nitrogen and an important plant nutrient. Tucson Water performs more frequent monitoring of wells high in nitrate for extra assurance that action can be taken when approaching the MCL. Nitrate in drinking water at levels above 10 ppm is a health risk for infants 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, ask advice from your health care provider. The highest level for nitrate during 2016 was 5.78 ppm (the MCL is 10 ppm).

**Selenium** is an important nutrient. However, some people who drink water containing selenium in excess of MCL over many years could experience hair or fingernail losses, numbness in fingers or toes, or problems with their circulation. The highest level in 2011 – 2016 was 6.0 ppb (the MCL is 50 ppb).

## DRINKING WATER TERMS AND DEFINITIONS:

**Action Level.** The concentration of a contaminant, which, if exceeded, triggers a treatment or other requirement which a water system must follow.

**Entry Point to the Distribution System (EPDS).** All water sources are monitored at the entry point to the distribution system before the first customer but after any required treatment.

**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. If a contaminant is believed to cause health concerns in humans, then the MCL is set as close as practical to zero and at an acceptable level of risk. Generally, the maximum acceptable risk of cancer is 1 in 10,000 with 70 years of exposure.

**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 Residual Disinfectant Level (MRDL).** The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of 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.

**Parts Per Billion (ppb).** Some constituents in water are measured in very small units. One ppb equals one microgram per liter. For example, one part per billion equals: 2 drops of water in a 15,000 gallon backyard swimming pool, one second of time in 31.7 years, or the first 16 inches of a trip to the moon.

**Parts Per Million (ppm).** One ppm equals one milligram per liter or 1,000 times more than a ppb. One part per million equals: 1/4 cup of water in a typical 15,000 gallon backyard swimming pool; or one second of time in 11.6 days.

**Picocurie Per Liter (pCi/l).** It is defined as the quantity of radioactive material in one liter which produces 2.22 nuclear disintegrations per minute.

**Sodium** is the sixth most abundant element on Earth and is widely distributed in soils, plants, water, and food. A goal of 2300 mg/day dietary sodium has been proposed by several government and health agencies. Drinking water containing between 30 and 60 ppm would contribute only 2.5% to 5% of the dietary goal if tap water consumption is 2 liters per day. Currently, there is no MCL for sodium in drinking water. The recommended EPA guidance level for individuals on a very low sodium diet (500 mg/day) is 20 ppm in drinking water. The highest sodium value in Tucson water during 2011 – 2016 was 116 ppm. Drinking water does not play a significant role in sodium exposure for most individuals. Those who are under treatment for sodium-sensitive hypertension should consult with their health care provider regarding sodium levels in their drinking water supply and the advisability of using an alternative water source or point-of-use treatment to reduce the sodium.

**Synthetic Organics** are generally not mobile. Atrazine, an herbicide, was detected at concentration of 0.08 ppb in 2011 – 2016 (MCL is 3 ppb). Simazine, also an herbicide, was detected at concentration of 0.11 ppb in 2011 – 2016 (the MCL is 4 ppb).

**Alpha emitters** are a measure of radioactivity due to naturally occurring minerals in groundwater. This excludes the radioactivity contributed by either radon or uranium. The highest level for alpha emitters during 2011 – 2016 was 6.0 picocuries per liter or pCi/L (the MCL is 15 pCi/L).

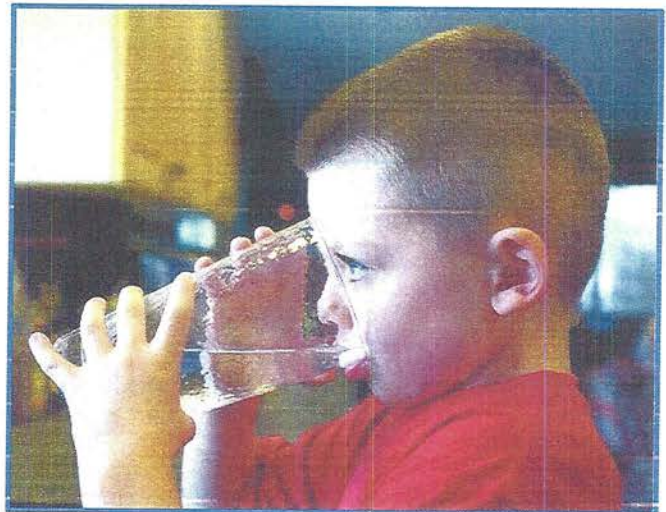
**Radium 226 and 228** are two of the most common radium isotopes. Radium is a naturally occurring radionuclide, formed by the decay of uranium or thorium in the environment. It occurs at low concentrations in virtually all rock, soil, water, plants, and animals. The highest concentration for combined radium 226 and 228 during 2011 – 2016 was 1.3 pCi/l (the MCL is 5.0 pCi/l).

**Uranium** is a metallic element which is highly toxic and radioactive. The highest level for uranium during 2011 – 2016 was 18 ppb (the MCL is 30 ppb).

**Coliform Bacteria** are common in the environment. While rarely harmful, they indicate that the water may also contain harmful microorganisms. There were only three positive total coliforms for the entire 2016. The recollect samples were all negative. (The MCL is less than 5% per month or 12 samples.)

**Lead and Copper** are naturally occurring metals which are generally found at very low levels in source waters. If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. Tucson 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 at [www.epa.gov/safewater/lead](http://www.epa.gov/safewater/lead). The required lead and copper monitoring was performed during 2014. The 90th percentile value was 1.0 ppb for lead (Action Level is 15 ppb) and 0.142 ppm for copper (Action Level is 1.3 ppm). No sample was above the action level for lead. There were no samples above the action level for copper either.

**Chlorine Residual Disinfection** is maintained throughout the distribution system. Approximately 1 ppm of chlorine is added to the drinking water supply at well sites, reservoirs and other facilities to provide assurance that water delivered to customers will remain free of microbiological contamination. This also ensures that the water meets microbiological drinking water standards from the time it is pumped from the ground until it reaches the customer's tap. Chlorine Residual Disinfectant is measured from 247 sample stations where the bacteriological samples are collected monthly. The annual chlorine residual disinfectant is calculated using the monthly chlorine averages for the past 12 months. The annual average for twelve months of 2016 was 0.89 ppm. The maximum monthly average was 0.98 ppm. (The Maximum Residual Disinfectant Limit or MRDL is 4 ppm.)



**Unregulated Contaminant Monitoring Regulation (UCMR) and Data Availability:** Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of monitoring for these contaminants is to help EPA decide whether the contaminants should have a standard or warrant future regulation. The presence of a compound does not necessarily equate to a health risk; the concentration of a compound is a far more important factor in determining whether there are health implications. We will closely monitor both the concentrations of these compounds and the EPA's health studies and will keep you informed of any development. UCMR sampling was conducted by Tucson Water in two rounds during 2013. The following UCMRs were detected in 2013.



## Unregulated Contaminants Table

UCMR Contaminant	Average	Range	Explanation
1,1-Dichloroethane	0.021 ppb	<0.03 – 0.042 ppb	Used as an intermediate in chemical synthesis to manufacture rubber, plastic, and oils
1,4-Dioxane	3.33 ppb	<0.07 – 6.66 ppb	Used as a stabilizer in chlorinated solvents
Chlorate	0.55 ppm	<0.02 – 1.1 ppm	Used in making herbicides, explosives, dyes, cosmetics, and paper
Chlorodifluoromethane	0.045 ppb	<0.08 – 0.09 ppb	A colorless gas used as a propellant and refrigerant
Chromium hexavalent	4.72 ppb	0.045 – 9.4 ppb	Discharge from steel and pulp mills, corrosion of natural deposits
Chromium total	3.85 ppb	<0.2 – 7.7 ppb	Discharge from steel and pulp mills, corrosion of natural deposits
Molybdenum	7.5 ppb	<1.0 – 15 ppb	Recovered from naturally occurring low grade deposits, mined either from a primary deposit or by-product of copper processing
Strontium	0.94 ppm	0.18 – 1.7 ppm	A silvery soft metal, by product of the fission of uranium and plutonium in nuclear reactors
Vanadium	6.65 ppb	2.3 – 11 ppb	Occurs as a metal compound in nature
Perfluoro octanesulfoonic Acid (PFOS)	0.028 ppb	<0.04 – 0.056 ppb	Used as a key ingredient in Scotch Gard, as a fabric protector, and stain repellents
Perfluoro-1-hexanesulfoonic Acid (PFHxS)	0.21 ppb	<0.03 – 0.42 ppb	Used in manufacturing of stain, oil, and water resistant products

As a Tucson Water customer, you have the right to know that this data is available. If you are interested in examining the results, please contact the Water Quality and Operations Division at (520) 791-2544.

Source Water Assessments on file with the ADEQ are available for public review. You may obtain a copy by contacting the Arizona Source Water Coordinator at (602) 771-4597.

### SOURCE WATER ASSESSMENT PROGRAM (SWAP)

The Arizona Department of Environmental Quality (ADEQ) has completed a source water assessment for Tucson Water drinking water wells. This assessment reviewed the adjacent land uses that may pose a potential risk to the water sources. These risks include, but are not limited to, gas stations, landfills, dry cleaning, agricultural fields, wastewater treatment plants, and mining activities. The assessment has classified approximately 1/3 of our wells as high risks.

Tucson Water ensures the safety of our drinking water by conducting regular monitoring of all sources. If any contamination approaches the drinking water MCL, the source is removed from service.

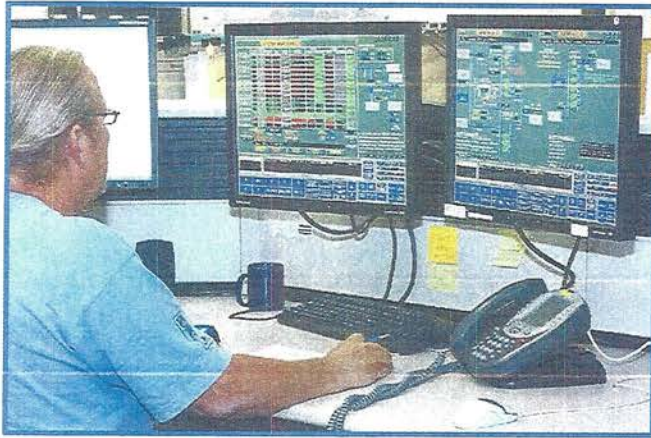
Residents can help protect our water sources by practicing good septic system maintenance, limiting pesticide and fertilizer use, and by taking hazardous household chemicals to the Household Hazardous Waste Program locations (visit [www.tucsonaz.gov/hhw](http://www.tucsonaz.gov/hhw) or call (520) 791-3171).

### PERFLUORINATED COMPOUNDS (PFOA & PFOS)

In May 2016, the EPA issued a revised Health Advisory for the perfluorinated compounds perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS). The lifetime health advisory for each compound is 0.07 ug/L, which is applicable to each compound individually or in combination. The EPA Health Advisory is based on a developmental toxicity study in mice; consequently, the sensitive sub-populations of concern are pregnant and nursing mothers. Tucson Water, based on historical PFOA/PFOS observation and per EPA recommendation, took additional samples to assess the level, scope and source of contamination in order to determine next steps. This additional sampling for PFOA/PFOS identified five wells that were above the new health advisory and thus were promptly taken out of service while Tucson water evaluates its treatment options. Tucson Water continues to investigate its system for PFOA/PFOS detections and is committed to ensuring compliance with all drinking water regulations. More information can be found at

<https://www.epa.gov/ground-water-and-drinking-water/drinking-water-health-advisories-pfoa-and-pfos>





## MONITORING WAIVERS

The Arizona Department of Environmental Quality (ADEQ), the regulatory agency for all public water suppliers in Arizona, grants waivers for certain monitoring requirements. Tucson Water participates in IOC, SOC, and VOC waiver programs offered to public water systems by the ADEQ. Waivers save money by reducing the monitoring frequencies for these contaminants without affecting public safety. To determine a system's eligibility for an SOC susceptibility waiver, ADEQ's evaluation includes the following:

- Previous analytical results
- Previous vulnerability assessments
- Proximity of the system to adjacent land uses
- Mobility of the compound
- Methods in place to control contaminant sources
- Releases of worst case contaminant in the study area
- Source construction including depth to groundwater, soil type, and hydrogeological setting.
- Source Water Assessment Plan
- Historical information related to current waivers and historical full and partial waivers.

In 2016, Tucson Water utilized IOC, SOC, and VOC Waivers in its main system. Most of Tucson Water's sources (wells) were eligible for waivers.

## WERE THERE ANY MONITORING FAILURES OR VIOLATIONS?

At the end of each quarter, Tucson Water conducts an internal audit of compliance monitoring records to verify that all required monitoring has been completed and reported to the State. During 2016, there was a Monitoring Violation for nitrate on one of Tucson Water well, D-047A. This well supplied water for a limited time in January 2016. Tucson Water could not sample this well because it became inoperable. It was then air-gapped and removed from service.

## WHAT ABOUT CAP WATER?

The City of Tucson has rights to approximately 144,000 acre-feet of Colorado River water per year, delivered through the Central Arizona Project (CAP). In 2015, the City of Tucson's Colorado River allocation was not used directly, but was recharged into the aquifer and allowed to blend with the existing groundwater. In 2016, Tucson Water took delivery of 117,000 acre feet of its annual allocation of Colorado River Water. The remainder of the full allocation was included in conservation measures to protect water levels in Lake Mead. At the Clearwater Renewable Resource Facility located in Avra Valley, Tucson Water is recharging the City's available CAP supply by delivering the river water to shallow basins and allowing the water to percolate (or recharge) naturally through the earth to reach and blend with the groundwater below. Tucson Water began delivery of this blend of recharged Colorado River water and groundwater in 2001. At the end of 2016, the blend was about 29% native groundwater and 71% recharged Colorado River water. Over time, it will contain an increasing percentage of recharged Colorado River water; the percentage will also vary according to which Clearwater production wells are pumped.

## HOW IS OUR DRINKING WATER TREATED?

The groundwater delivered by Tucson Water meets all drinking water standards without treatment, with the exception of the water supplied from the Tucson Airport Area Remediation Project or TARP (see below). However, approximately 1 ppm of chlorine is added to the drinking water supply at well sites, reservoirs and other facilities to provide assurance that water delivered to customers will remain free of microbiological contamination. This also ensures that the water meets microbiological drinking water standards from the time it is pumped from the ground until it reaches the customer's tap.

## MORE ABOUT TARP

TARP was developed in order to clean and make beneficial use of water contaminated with the industrial solvent trichloroethylene (TCE). Tucson Water operates TARP under an agreement with the USEPA and other industrial and governmental agencies. All costs associated with operating and maintaining the TARP facility are fully reimbursed to Tucson Water.

Nine wells extract the contaminated water and deliver it through a pipeline to a treatment plant that removes the TCE from the water. The TARP treatment plant uses an "air stripping" process which forces volatile contaminants such as TCE to evaporate from the water into air. The air is then passed through activated carbon filters, which removes the airborne TCE. The TARP plant is designed to treat approximately 8.4 million gallons of water per day (or 5,800 gallons per minute).

During 2016, this plant treated a total of approximately 2.21 billion gallons of water. The treatment system removed 185 pounds of combined volatile organics from the groundwater.

In February 2014, Tucson Water proactively put into operation the Advanced Oxidation Process (AOP) Facility at TARP to additionally treat for contaminant 1,4-dioxane from the nine groundwater extraction wells that feed the TARP Plant. The AOP Facility is now removing 1,4-dioxane to below detection limits.

### WHOM DO I CONTACT FOR MORE INFORMATION?

For more information, questions, or comments on this Tucson Water report, contact Mohsen Belyani Water Quality & Operations Division at (520) 791-2544 or [Mohsen.belyani@tucsonaz.gov](mailto:Mohsen.belyani@tucsonaz.gov)

Tucson's Mayor and Council set policy and direction for Tucson Water, including those policies that may impact water quality. Mayor and Council meetings are normally held every other Tuesday and are open to the public. Mayor and Council meeting agendas and other opportunities for public comments are published at [www.tucsonaz.gov/mcc](http://www.tucsonaz.gov/mcc). Tucson Water customers may leave a recorded message on the Mayor and Council comment line at (520) 791-4700.

Tucson Water's Water Quality Information Net program provides timely information about the quality of tap water in your neighborhood at [tucsonaz.gov/water/water-quality](http://tucsonaz.gov/water/water-quality). For questions, comments, or reports on water quality topics in your neighborhood, contact our water quality concerns team at (520) 791-5945 or email [CustomerSupportUnit@tucsonaz.gov](mailto:CustomerSupportUnit@tucsonaz.gov).

To schedule a tour of Tucson Water's Water Quality Laboratory or a speaker for your organization, contact the Public Information Office at (520) 791-4331 or email [pico@tucsonaz.gov](mailto:pico@tucsonaz.gov)

### CONTACT INFORMATION:

Tucson Water Public Information Office	(520) 791-4331
Tucson Water Quality & Operations Division	(520) 791-2544
Tucson Water Customer Service/Billing	(520) 791-3242
Tucson Water 24-hour Emergency	(520) 791-4133
USEPA Safe Drinking Water Hotline	1-800-426-4791
USEPA Website	<a href="http://epa.gov/safewater">epa.gov/safewater</a>
Si usted desea este documento escrito en español, por favor, llame al	(520) 791-4331
City of Tucson TTY#	(520) 791-2639

Para nuestros clients de habla español: Éste informe contiene información muy importante sobre la calidad de su agua beber. Traduscalo o hable con alguien que lo entienda bien. Para obtener una copia de este reporte en español, llame al (520) 791-4331.

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