

San Xavier West Annual Water Quality Report

Public Water System #090400035

2019

This report is a snapshot of your water quality. Included are details about where your water comes from, what it contains, and how it compares to standards set by regulatory agencies. We are committed to providing you with information because informed customers are our best allies.

Do I need to take special precautions?

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The Environmental Protection Agency (EPA) and 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 Safe Water Drinking Hotline (800-426-4791).

Where does my water come from?

Your water comes from 1 ground water source.

January 1, 2019-June 3, 2019 your water was coming from one ground water source purchased from Public Water System #AZ010112. At the end of this report the Tucson Water Report will be attached.

Why are there contaminants in my drinking water?

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline (800-426-4791).

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity including:

microbial contaminants, such as viruses and bacteria, that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife; inorganic contaminants, such as salts and metals, which can be naturally occurring or result from urban stormwater runoff, industrial, or domestic wastewater discharges, oil and gas production, mining, or farming; pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses; organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems; and 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 prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

WATER QUALITY TABLE

The table below lists all of the drinking water contaminants detected during the calendar year of this report. The presence of contaminants in the water does not necessarily indicate that the water poses a health risk. Unless otherwise noted, the data presented in this table is from testing done in the calendar year of the report. The EPA or the State requires monitoring for certain contaminants less than once per year because the concentrations of these contaminants do not change frequently.

Contaminants	MCLG	MCL	Your Water	Range Low High	Sample Date	Violation	Typical Source
Inorganic Contaminants							
Arsenic Units: ppb	0	10	9.3	ND 9.3	2019	No	Erosion of natural deposits; runoff from orchards; glass and electronics production wastes
Fluoride Units: ppm	4	4	1.2	N/A N/A	2019	No	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Nitrate [reported as Nitrogen] Units: ppm	10	10	1.1	0.93 1.1	2019	No	Runoff and leaching from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Sodium Units: ppm			69	63 69	2019	N/A	Erosion of natural deposits; salt water intrusion

Contaminants	MCLG	Action Level	Your Water	Range	Sample Date	A.L. Exceeded	Typical Source
Lead and Copper Rule							
Copper Units: ppm - 90th Percentile	1.3	1.3	0.055	0 sites over Action Level	2018	No	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead Units: ppb - 90th Percentile	0	15	0.5	0 sites over Action Level	2018	No	Corrosion of household water plumbing systems; discharges from industrial manufacturers; erosion of natural deposits

Contaminants	MCLG	MCL	Your Water	Range Low	Range High	Sample Date	Violation	Typical Source
Radiological Contaminants								
Adjusted Alpha (Excl. Radon & U) Units: pCi/L	0	15	3.6	ND	7.2	2019	No	Erosion of natural deposits
Uranium (combined) Units: ppb	0	30	8.8	6.9	10.728	2019	No	Erosion of natural deposits

Health Effects Language

PCBs [Polychlorinated biphenyls]

Some people who drink water containing PCBs in excess of the MCL over many years may experience changes in their skin, thymus gland problems, immune deficiencies, or reproductive or nervous system difficulties, and may have an increased risk of getting cancer.

Special Education Statements

Additional Information for Arsenic

While your drinking water meets the EPA standard for arsenic, it does contain low levels of arsenic. The EPA standard balances the current understanding of arsenic's possible health effects against the costs of removing arsenic from drinking water. The EPA continues to research the health effects 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.

Additional Information for Lead

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. PWS system 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 1-800-426-4791 or at <http://www.epa.gov/your-drinking-water/basic-information-about-lead-drinking-water>.

Microbiological Testing

We are required to test your water regularly for signs of microbial contamination. Positive test results could lead to follow-up investigations called assessments and potentially the issuance of public health advisories. Assessments could lead to required corrective actions. The information below summarizes the results of those tests.

Sampling Requirements	Sampling Conducted (months)	Total E.Coli Positive	Assessment Triggers	Assessments Conducted
2 Samples due monthly	12 out of 12	0	0	0

Unit Definitions

Term	Definition
ppm	ppm: parts per million, or milligrams per liter (mg/L)
ppb	ppb: parts per billion, or microgram per liter (ug/L)
positives samples	positive samples/yr: the number of positive samples taken that year
% positive samples/month	% positive samples/month: % of samples taken monthly that were positive
N/A	N/A: Not applicable
ND	ND Not detected
mrem/yr	mrem/yr: Millirem per year
MCLG	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.
MCL	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.
TT	TT: Treatment Technique: A required process intended to reduce the level of a contaminant in drinking water.
AL	AL: Action Level: The concentration of a contaminant which, if exceeded, trigger treatment or other requirements which a water system must follow.

Public Notice for Monitoring/Reporting and Other Violations

We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not our drinking water meets health standards. During the period covered by this report, we did not complete all monitoring or testing for the contaminants listed below, and therefore cannot be sure of the quality of your drinking water during that time. Violations which have not been returned to compliance will be repeated annually. The table below lists the contaminants we did not properly test for or other violations during the report period.

Contaminant Name	Type of Violation	Begin/End Date	Comments	Steps Taken to Correct the Violation	Return to Compliance	Return Date	Action Comment
Combined Radium 226/228	Major monitoring/reporting violation for routine chemical monitoring.	10/1/2019 12/31/2019	Failed to monitor and/or report required monitoring results due quarterly.	Reporting monitoring results as required.	Yes	2/13/2020	Subsequent reporting of required results.

What should I do, as a consumer?

There is nothing you need to do at this time.

What is being done by the utility?

We will work with our regulatory official to conduct all required contaminant monitoring as directed.

How can I get involved?

Please feel free to contact the number provided below for more information or for a translated copy of the report if you need it in another language.

Please share this information with all the other 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 or mail.

For more information please contact:

Ross Schroeder, Manager, P.O. Box 816 , Sells, Arizona 85634

Phone: (520) 383-5897

Fax: (520) 419-4525

2018 Annual Water Quality Report

Water Quality & Operations Division

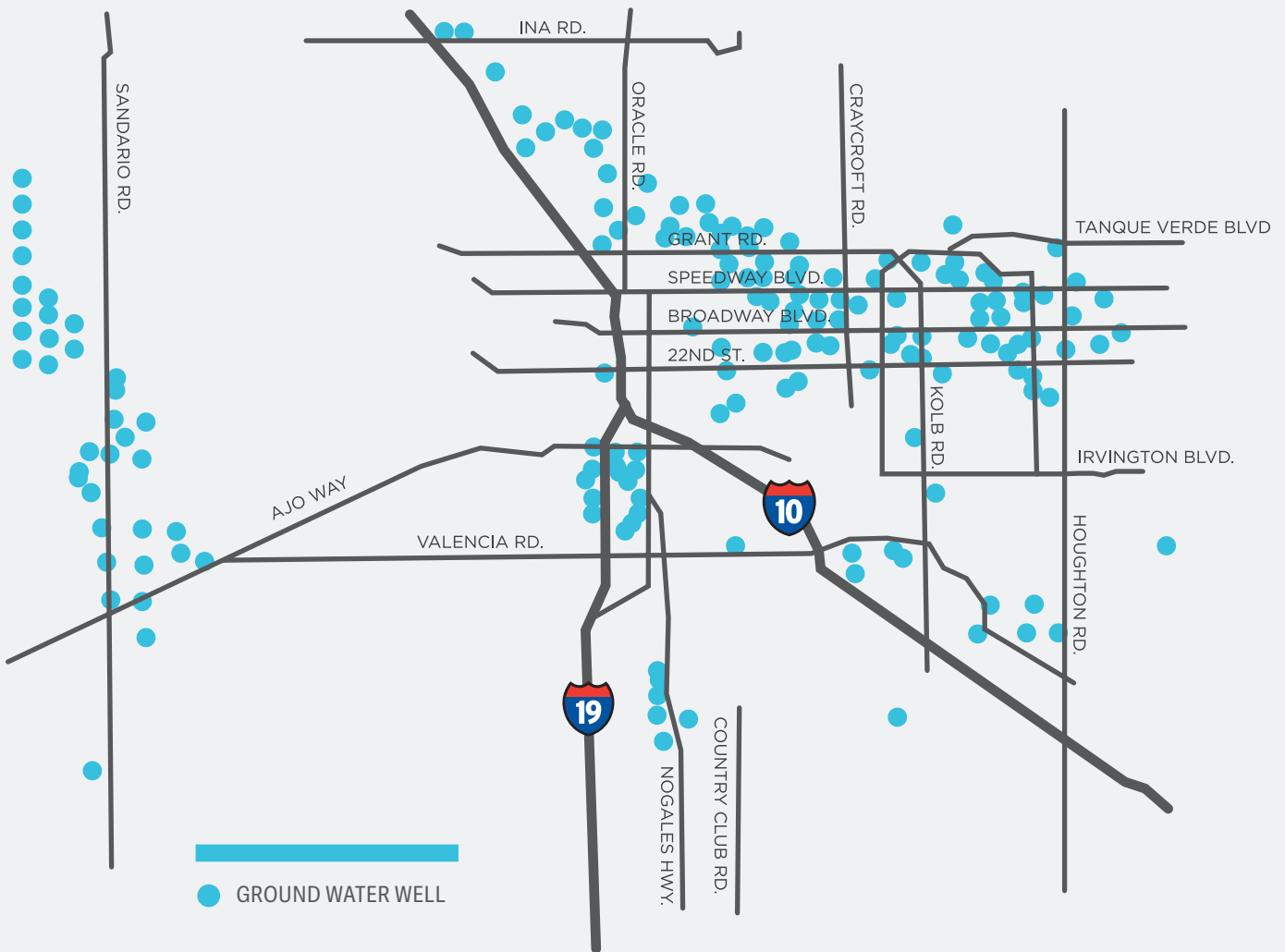
Main System 10-112



A proud part of the City of Tucson



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 speak with someone about this report by calling (520) 791-4331.

Para nuestros clientes de habla español: Éste 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 Espanol, llame al (520) 791-4331.



WHERE DOES MY WATER COME FROM?

Tucson Water serves about 731,000 people in the Tucson area. The water supply comes from approximately 200 groundwater wells located in and around the Tucson metropolitan area (see map). A number of these wells are within the area of the Avra Valley facilities designated as the Clearwater Recharge & Recovery Facilities. At the Clearwater facilities, Tucson Water is recharging the Colorado River water into the aquifer, where it blends with local groundwater. As water is recovered from the aquifer there through well pumpage, the blend that gets delivered to customers will contain higher levels of Colorado River water.

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 2018 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 page 4 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.

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 by-products 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.

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, 2018, 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.

Detected Contaminants Table

Contaminant	Sample Year	Maximum Result	Range	MCL	MCLG	Major Sources of Contaminant
Disinfection By-Products						
Haloacetic Acids (HAA5)						
HAA5 Locational Running Annual Average (LRAA)	18	2.0 ppb	NA	60 ppb	None	By-product of Chlorination
Total Trihalomethanes (TTHM)						
TTHM Locational Running Annual Average (LRAA)	18	19 ppb	NA	80 ppb	None	By-product of Chlorination
Inorganics						
Arsenic	13 - 18	7.0 ppb	< 2.0 – 7.0 ppb	10 ppb	0 ppb	Natural deposits, runoffs
Barium	13 - 18	0.14 ppm	< 0.02 – 0.14 ppm	2 ppm	2 ppm	Natural deposits, industrial
Fluoride	18	1.09 ppm	< 0.1 – 1.09 ppm	4 ppm	4 ppm	Natural deposits
Nitrate (as N)	18	5.80 ppm	< 0.25 – 5.80 ppm	10 ppm	10 ppm	Natural deposits, septic tanks, agriculture, sewage
Selenium	13 - 18	6.2 ppb	< 1.0 – 6.2 ppb	50 ppb	50 ppb	Discharge from petroleum, metal refineries, mines, erosion of natural deposits
Sodium	13 - 18	105 ppm	13 – 105 ppm	None	None	Natural deposits
Synthetic Organics						
Atrazine	13 - 18	0.08 ppb	< 0.05 – 0.08 ppb	3 ppb	3 ppb	Herbicide runoffs
Simazine	13 - 18	0.07 ppb	< 0.05 – 0.07 ppb	4 ppb	4 ppb	Herbicide runoffs
Volatile Organics						
Trichloroethene (TCE)	13 - 18	0.7 ppb	< 0.5 – 0.7 ppb	5.0 ppb	0 ppb	Metal degreasing sites
Radioactive Chemicals						
Alpha Emitters	13 - 18	6.0 pCi/l	< 1.0 – 6.0 pCi/l	15 pCi/l	0 pCi/l	Natural deposits
Combined Radium	13 - 18	1.3 pCi/l	< 0.3 – 1.3 pCi/l	5.0 pCi/l	0 pCi/l	Natural deposits
Uranium	13 - 18	19 ppb	< 0.6 – 19 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	2017	None	1.07 ppb	15 ppb	0 ppb	Corrosion of household plumbing systems, erosion of natural deposits
Copper	2017	None	0.127 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	2018	0.93 ppm	0.90 – 0.99 ppm	4 ppm	4 ppm	Disinfection additive used to control microbes
Disinfectant	Month Detected	Positive Samples for the Month	Total Samples for the Month	MCL	MCLG	Source
Total Coliform	July 2018	0.4% or 1 sample	250	< 5% of Samples	0	Naturally present in the environment to control microbes

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 2018 was 2.0 ppb (the MCL is 60 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 2018 was 19 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 2013 – 2018 was 7.0 ppb (the MCL is 10 ppb).

Barium occurs naturally at very low concentrations in our groundwater. The highest barium value during 2013 – 2018 was 0.14 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 2018 was 1.09 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 2018 was 5.80 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 selenium level in 2013 – 2018 was 6.2 ppb (the MCL is 50 ppb).

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 2013 – 2018 was 105 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, a herbicide, was detected at concentration of 0.08 ppb in 2013 – 2018 (MCL is 3 ppb). Simazine, also an herbicide, was detected at concentration of 0.07 ppb (MCL is 4 ppb).

Volatile Organics (VOC) include such compounds as TCE, which are volatile like alcohol or gasoline, and migrate through soils readily. Maximum TCE during 2013 - 2018 was 0.7 ppb (MCL is 5).

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 2013 – 2018 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 2013 – 2018 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 2013 – 2018 was 19 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 was only one positive total coliforms for the entire 2018. 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. The required lead and copper monitoring was performed during 2017. The 90th percentile value was 1.07 ppb for lead (Action Level is 15 ppb) and 0.127 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 1.0 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 2018 was 0.93 ppm. The maximum monthly average was 0.99 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 UCMRs detected in 2013 are shown on page 8.



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.

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.



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
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 Scotchgard, 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 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 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 or call (520) 791-3171).

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.

PERFLUORINATED COMPOUNDS (PFOA & PFOS)

In May 2016, the EPA issued a revised Health Advisory for the perfluorinated compounds perfluorooctanoic acid (PFOA) and perfluorooctanesulfoonic 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.

In 2018, Tucson Water continued to investigate its system for PFOA/PFOS detections by collecting and analyzing over six hundred ninety (690) samples. These efforts resulted in Tucson Water developing a voluntary, proactive operational policy to protect public health by removing production wells from service that exceed 0.018 ug/L. Wells with PFOA/PFOS detections less than 0.018 ug/L are used on a last-on, first-off basis. Tucson water is committed to protecting public health and 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 2018, 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 2018, there was no monitoring violation or failure.

WHAT ABOUT COLORADO RIVER 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). 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 2018, the blend was about 25% native groundwater and 75% 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 designed to extract contaminated water and deliver it through a pipeline to the Advanced Oxidation Process (AOP) facility at TARP, where both TCE and 1,4-dioxane are removed from the water to below detection limit. Per Federal Consent Decree that specifies the procedures of TARP, the water still passes through the original “air-stripping” towers before being chlorinated and sent into the distribution system.

The TARP Facilities are designed to treat approximately 8.4 million gallons of water per day or 5,800 gallons per minute.

During 2018, this plant treated a total of approximately 1.91 billion gallons of water. The treatment system removed 169 pounds of combined volatile organics from the groundwater.

In February 2014, Tucson Water proactively put into operation the above-mentioned 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

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.

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. 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.

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**

Tucson Water is committed to ensuring that our customers receive high quality water and excellent service in a safe, reliable, efficient, and environmentally responsible manner.

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	epa.gov/safewater
Si usted desea este documento escrito en español, por favor, llame al	(520) 791-4331
City of Tucson TTY#	(520) 791-2639

