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.

WHERE DOES MY WATER COME FROM?
Thunderhead Ranch is a small community water system located west of Old Spanish Trail and about one and a half miles south of Irvington Road. It has 59 services supplying approximately 165 persons with water from two wells, G-006A and G-009A. G-009A is the primary well and has been operational since 2003. This system was acquired by Tucson Water in 1997. An aeration system to elevate pH and thus control corrosion was designed, installed, and has been in operation since June 2005.

WERE THERE ANY CONTAMINANTS DETECTED IN MY DRINKING WATER?
Tucson Water continuously 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 2020 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 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/sites/production/files/2016-06/documents/npwdr_complete_table.pdf](http://www.epa.gov/sites/production/files/2016-06/documents/npwdr_complete_table.pdf)

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 small traces of some contaminants. Tucson’s groundwater contains dissolved minerals and organic compounds, which have been leached from the soil, 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 storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban 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 storm water runoff, and septic systems.
- Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.

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, 2020, 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**

<table>
<thead>
<tr>
<th>Contaminant</th>
<th>Sample Year</th>
<th>Maximum Result</th>
<th>Range</th>
<th>MCL</th>
<th>MCLG</th>
<th>Units</th>
<th>Major Sources of Contaminant</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Disinfection By-Products</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Trihalomethanes (TTHMs)</td>
<td>2020</td>
<td>2.3</td>
<td>2.3 – 80</td>
<td>2</td>
<td></td>
<td>ppb</td>
<td>Byproduct of chlorination</td>
</tr>
<tr>
<td><strong>Inorganics</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Barium</td>
<td>2019</td>
<td>0.033</td>
<td>0.033 – 2</td>
<td>2</td>
<td></td>
<td>ppm</td>
<td>Natural deposits, industrial use</td>
</tr>
<tr>
<td>Fluoride</td>
<td>2019</td>
<td>0.17</td>
<td>0.17 – 4</td>
<td>4</td>
<td></td>
<td>ppm</td>
<td>Natural deposits, septic tanks, agriculture, sewage</td>
</tr>
<tr>
<td>Nitrate (as N)</td>
<td>2020</td>
<td>1.6</td>
<td>1.6 – 10</td>
<td>10</td>
<td></td>
<td>ppm</td>
<td>Natural deposits, septic tanks, agriculture, sewage</td>
</tr>
<tr>
<td>Sodium</td>
<td>2019</td>
<td>13</td>
<td>13</td>
<td></td>
<td></td>
<td>ppm</td>
<td>Natural deposits</td>
</tr>
</tbody>
</table>

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, 2020, 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**

<table>
<thead>
<tr>
<th>Contaminant</th>
<th>Sample Year</th>
<th>No. of Samples Above Action Level</th>
<th>90th Percentile Value</th>
<th>Action Level</th>
<th>Action Level Goal</th>
<th>Units</th>
<th>Major Sources of Contaminant</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Lead</strong></td>
<td></td>
<td></td>
<td></td>
<td>1.81</td>
<td>15</td>
<td></td>
<td>Corrosion of household plumbing systems, erosion of natural deposits</td>
</tr>
<tr>
<td><strong>Copper</strong></td>
<td></td>
<td></td>
<td></td>
<td>0.081</td>
<td>1.3</td>
<td></td>
<td>Corrosion of household plumbing systems, erosion of natural deposits</td>
</tr>
</tbody>
</table>

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, 2020, 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.

**Disinfectant**

<table>
<thead>
<tr>
<th>Year Sampled</th>
<th>Annual Average</th>
<th>Monthly Average Range</th>
<th>MRDL</th>
<th>MRDLG</th>
<th>Units</th>
<th>Major Sources of Contaminant</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Chlorine</strong></td>
<td></td>
<td></td>
<td>0.03 – 4.5</td>
<td>4</td>
<td></td>
<td>ppm</td>
</tr>
</tbody>
</table>

DETAILED INFORMATION ON DETECTED CONTAMINANTS

**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. Some people who drink TTHMs in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer. The maximum TTHMs detected in 2020 was 2.3 ppb (the MCL is 80 ppb).

**Barium** occurs naturally at very low concentrations in our groundwater. The highest barium value during 2019 was 0.033 parts per million (ppm) (the MCL is 2 ppm).

**Fluoride** is an important naturally occurring mineral that helps form healthy teeth and bones. A concentration of 1 ppm is considered optimum. Some people who drink water containing fluoride in excess of the MCL over many years could get bone disease, including pain and tenderness of the bones. Fluoride in drinking water at half the MCL or more may cause mottling of children’s teeth, usually in children less than nine years old. Mottling, also known as dental fluorosis, may include brown staining and/or pitting of the teeth, and occurs only in developing teeth before they erupt from the gums. The highest concentration of fluoride detected during 2019 was 0.17 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 levels may rise quickly for short periods of time because of rainfall or agricultural activity. Infants below the age of six months who drink water containing nitrate in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome. If you are caring for an infant, ask advice from your healthcare provider. The highest nitrate concentration during 2019 was 2.3 ppm (the MCL is 10 ppm).

**Sodium** is the sixth most abundant element on Earth and is widely distributed in soils, plants, water, and food. A goal of 2,300 mg/day dietary sodium has been proposed by several government and health agencies. 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 healthcare 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.

**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 private 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/ground-water-and-drinking-water/basic-information-about-lead-drinking-water.

The required lead and copper monitoring was performed during 2019. The 90th percentile value was 1.81 ppb for lead (Lead Action Level is 15 ppb) and 0.081 ppm for copper (Copper Action Level is 1.3 ppm). Both lead and copper 90th percentiles were below their respective Action Level. Exposure to lead in drinking water can cause serious health effects in all age groups. Infants and children can have decreases in IQ and attention span. Lead exposure can lead to new learning and behavior problems or exacerbate existing learning and behavior problems. The children of women who are exposed to lead before or during pregnancy can have increased risk of these adverse health effects. Adults can have increased risks of heart disease, high blood pressure, kidney, or nervous system problems.
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. Some people who use water containing chlorine well in excess of the MRDL could experience irritating effects to their eyes and nose. Some people who use water containing chlorine well in excess of the Maximum Residual Disinfectant Limit (MRDL) could experience stomach discomfort or anemia. Chlorine Residual Disinfectant is measured from sample stations where the bacteriological samples are collected. The monthly average was 4.5 ppm (the MRDL is 4 ppm).

Low Risk: Based on the information currently available on the hydrogeological settings of and the adjacent land uses that are in the specified proximity of the drinking water source(s) of this public water systems, the Arizona Department of Environmental Quality has given us a low risk designation for the degree to which this public water system drinking water source(s) are protected. A low risk designation indicates that most source water protection measures are either already implemented, or the hydrogeology is such that the source water protection measures will have little impact on protection.

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. For more information visit https://www.tucsonmar.gov/or household-hazardous-waste or call (520) 791-3371.

Source Water Assessments on file with the ADEQ are available for public review. You may obtain a copy by contacting the Arizona Source Water Assessments Coordinator at (502) 771-4397 or (502)771-4298.

PERFLUORINATED COMPOUNDS (PFAS & PFOS)
In May 2016, the EPA issued a revised Health Advisory for the perfluorinated compounds perfluorooctanoic acid (PFCA) and perfluorooctanoic acid (PFOA). The lifetime health advisory for each compound is 70 parts per trillion or ppt, which is applicable to each compound individually or in combination.

In December, 2019, Tucson Water enhanced its voluntary, proactive operational policy, which protects public health, by removing wells from service that exceed 18 ppt for the PFAS compounds PFOA, PFOS, Perfluorooctane sulfonic acid (PFOS), and Perfluoroheptanoic acid (PFHxA). In addition, PFTOna not to exceed 200,000 ppt and PFBF not to exceed 420 ppt. Wells with PFOA, PFOS, PFTOna, and PFHxA detections less than 18 ppt are placed in a standby mode on a let-on, first-off basis. In 2020, Tucson Water continued to investigate and assess its system for PFAS detections by collecting and analyzing over 1,550 samples. More information can be found on https://www.epa.gov/ground-water-and-drinking-water/dinking-water-health-advisories-pfas-and-pfos.

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 immunocompromised 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 the healthcare 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 (1-800-426-4791). 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) 791-554.

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 2020, there were no reporting violations, health-based violations, or monitoring violations.

HOW IS OUR DRINKING WATER TREATED?
The groundwater delivered by Tucson Water meets all drinking water standards without treatment. 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 INFORMATION ABOUT CONTAMINANTS AND POTENTIAL HEALTH EFFECTS**

More information about contaminants and potential health effects can be obtained by calling EPA’s Safe Drinking Water Hotline 1-800-426-4791.
WHOM DO I CONTACT FOR MORE INFORMATION?

For more information, questions, comments on this Tucson Annual Water Quality report or on water quality topics in your neighborhood, please contact our water quality concerns team at (520) 791-5945 or email CustomerSupportUnit@tucsonaz.gov. Tucson Water’s Water Quality Information Net program provides timely information about the quality of tap water in your neighborhood at https://tucsonaz.gov/water/water-quality. Use this link to see water quality tests closest to your home or business using our Online Water Quality Map.

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 schedule, agendas, and other opportunities for public comments are published at www.tucsonaz.gov/gov/meeting-schedules-and-agendas.

Tucson Water customers may leave a message for the Mayor and Council at (520) 791-4201.

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 Support Unit (520) 791-5945
Tucson Water Customer Service/Billing (520) 791-3242
Tucson Water 24-hour Emergency (520) 791-4133
EPA Safe Drinking Water Hotline 1-800-426-4791
EPA Website epa.gov/ground-water-and-drinking-water
Si usted desea este documento escrito en Español, por favor, llame al (520) 791-4331
City of Tucson TTY# (520) 791-2639