

# Annual Water Quality Report

PWSID# 10136 — PALO VERDE

## TOWN OF MARANA WATER SYSTEM

For more information about the Town of Marana Water Department, visit us at [www.MaranaWater.com](http://www.MaranaWater.com)

March 2021

*Este informe contiene información muy importante sobre su agua de beber.  
Tradúzcalo ó hable con alguien que lo entienda bien.*

### MARANA WATER SYSTEM MEETS SAFE DRINKING STANDARDS

This year's Annual Water Quality Report covers the monitoring period between January 1, 2020 and December 31, 2020. This report is a snapshot of the year's water quality and the services Town of Marana Water Department provides. Our goal is and always has been to provide you with a safe and dependable supply of drinking water. We are committed to ensuring the quality of your water. The water we provide meets and/or exceeds the Safe Drinking Water Standards established by the U.S. Environmental Protection Agency (EPA) and the State of Arizona's Department of Environmental Quality (ADEQ). Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water which must provide the same protection for public health. For information on the quality of your bottled water, contact the water bottling company.

### WHERE DOES OUR WATER COME FROM?

The sources of drinking water (tap and bottled) 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. Water can also pick up substances resulting from the presence of animals or from human activity.

Our water source is groundwater from the Lower Santa Cruz portion of the Tucson Basin Aquifer. Our portion of the aquifer was created primarily by runoff from the surrounding mountain ranges of Southern Arizona along with storm water percolating through the ground along the Lower Santa Cruz and its tributaries, Marana, and other water agencies, as well as Central Arizona Project water in this aquifer.

Town of Marana Water System (Palo Verde) consists of one potable well pumping water at depths ranging from 200 to 220 feet below ground from our aquifer. The water from this well is stored in a reservoir where it is chlorinated and pumped through pipelines to reach your home or business.

### WHAT TYPE OF CONTAMINANTS MIGHT BE PRESENT IN MY WATER?

Contaminants that may be present in source water include:

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

### VULNERABLE POPULATION

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. Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons, such as people 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 care providers. Call the Safe Drinking Water Hotline at (800) 426-4791 to learn more about EPA and Center for Disease Control (CDC) guidelines on appropriate means to reduce the risk of infection by cryptosporidium and other microbiological contaminants, as well as other potential health effects.

### SOURCE WATER ASSESSMENT PROGRAM (SWAP)

In 2003, ADEQ completed a Source Water Assessment for the Town of Marana Water Department's drinking water wells. This assessment reviewed the adjacent land uses that may pose a risk to the water sources. Based on the information currently available on the hydrogeologic settings of and the adjacent land uses that are in the specified proximity of the drinking water source(s) of this public water system, the department has given 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. Further source water assessment documentation can be obtained by contacting ADEQ.

Residents can help protect water sources by practicing good septic system maintenance, limiting pesticide and fertilizer use, and taking hazardous household chemicals to appropriate collection sites. Source Water Assessments on file with ADEQ are available for public review.

### TERMS & ABBREVIATIONS

To help you better understand the terms and abbreviations used in this report please use the following definitions:

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

**Level 1 Assessment** – A study of the water system to identify potential problems and determine (if possible) why total coliform bacteria was present

**Level 2 Assessment** – A very detailed study of the water system to identify potential problems and determine (if possible) why an E. coli MCL violation has occurred and/or why total coliform bacteria was present

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

The Department of Environmental Quality (DEQ) ID is assigned by DEQ to each Public Water System (PWS). Certain contaminants are monitored less than once per 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.

|        |                         |                         |
|--------|-------------------------|-------------------------|
| DEQ ID | Water System Name (PWS) | General Area            |
| 10136  | Palo Verde              | Twin Peaks Rd & Clayton |

## DETECTED CONTAMINANTS

| Inorganic Contaminants        |                            |      |       |       |                          |                         |                    |                       |   |   |
|-------------------------------|----------------------------|------|-------|-------|--------------------------|-------------------------|--------------------|-----------------------|---|---|
| DEQ ID                        | Contaminant                | MCL  | MCLG  | Units | Level Detected/<br>Range | Highest Detect/RAA      | Violation (Yes/No) | Sample Month/<br>Year | Likely Source of Contamination  |   |
| 10136                         | Arsenic                    | 10   | 0     | ppb   | 5.20                     | 5.20                    | No                 | 04/12                 | Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes                    |   |
| 10136                         | Barium                     | 2    | 2     | ppm   | 0.12                     | 0.12                    | No                 | 04/12                 | Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits                                |   |
| 10136                         | Chromium                   | 100  | 100   | ppb   | 2.20                     | 2.20                    | No                 | 04/12                 | Discharge from steel and pulp mills; erosion of natural deposits  |   |
| 10136                         | Fluoride                   | 4    | 4     | ppm   | 0.26                     | 0.26                    | No                 | 04/12                 | Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories |   |
| 10136                         | Nitrate (as Nitrogen)      | 10   | 10    | ppm   | 3.4                      | 3.4                     | No                 | 4/20                  | Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits                               |   |
| Radionuclides                 |                            |      |       |       |                          |                         |                    |                       |   |   |
| DEQ ID                        | Contaminant                | MCL  | MCLG  | Units | Level Detected/Range     |                         | Violation (Yes/No) | Sample Month/<br>Year | Likely Source of Contamination  |   |
| 10136                         | Gross Alpha                | 15   | 0     | pCi/L | 14                       |                         | No                 | 4/18                  | Erosion of natural deposits   |   |
| Volatile Organic Contaminants |                            |      |       |       |                          |                         |                    |                       |   |   |
| DEQ ID                        | Contaminant                | MCL  | MCLG  | Units | Level Detected/<br>Range | Highest Detect          | Violation (Yes/No) | Sample Month/<br>Year | Likely Source of Contamination  |   |
| 10136                         | Xylenes                    | 10   | 10    | ppm   | 0.00055                  | 0.00055                 | No                 | 4/18                  | Discharge from petroleum factories, discharge from chemical factories   |   |
| Disinfectants                 |                            |      |       |       |                          |                         |                    |                       |   |   |
| DEQ ID                        | Contaminant                | MRDL | MRDLG | Units | Range                    | Level Average           | Violation (Yes/No) | Year Tested           | Likely Source of Contamination  |   |
| 10136                         | Chlorine Residual          | 4    | 4     | ppm   | 0.39-1.20                | 0.71                    | No                 | 2020                  | Disinfection additive used to control microbe   |   |
| Lead and Copper               |                            |      |       |       |                          |                         |                    |                       |   |   |
| DEQ ID                        | Contaminant                | AL   | ALG   | Units | 90th Percentile          | Number of Sites over AL | Violation (Yes/No) | Sample Month/<br>Year | Likely Source of Contamination  |   |
| 10136                         | Copper                     | 1.3  | 1.3   | ppm   | 0.064                    | 0                       | No                 | 07/18                 | Corrosion of household plumbing systems; erosion of natural deposits  |   |
| 10136                         | Lead                       | 15   | 0     | ppb   | <5                       | 0                       | No                 | 07/18                 |   |   |
| Disinfection Byproducts       |                            |      |       |       |                          |                         |                    |                       |   |   |
| DEQ ID                        | Contaminant                | MCL  | MCLG  | Units | Average                  | Range                   | Highest RAA        | Violation (Yes/No)    | Sample Month/<br>Year   | Likely Source of Contamination            |
| 10136                         | Total Trihalomethane (TTM) | 80   | N/A   | ppb   | 1.0                      | 1.0                     | 1.0                | No                    | 08/18   | By-product of drinking water disinfection |
| Unregulated Compounds         |                            |      |       |       |                          |                         |                    |                       |   |   |
| Compound                      |                            | MCL  | MCLG  | Units | Level Detected/<br>Range | Highest Detect          | Violation (Yes/No) | Sample Month/<br>Year | Likely Source of Contamination  |   |
| Sodium                        |                            | N/A  | N/A   | ppm   | 95                       | 95                      | No                 | 03/18                 | Erosion of natural deposits   |   |

**Maximum Contaminant Level (MCL)** – The “maximum allowed” is 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. MCLs are set at stringent levels.

**Maximum Contaminant Level Goal (MCLG)** – The “goal” is 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 health risk. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

**Minimum Reporting Limit (MRL)** – The smallest measured concentration of a substance that can be reliably measured by a given analytical method.

**Millirems per year (MREM)** – A measure of radiation absorbed by the body.

**Nephelometric Turbidity Units (NTU)** – A measure of water clarity

**Non Detect (ND)** – The contaminant is below the detection level.

**Not Applicable (NA)** – Sampling was not completed by regulation or was not required.

**Parts per million (ppm) or Milligrams per liter (mg/L)** – One part per million corresponds to one minute in two years or a single penny in \$10,000.  $\text{ppm} \times 1,000 = \text{ppb}$ .

**Parts per billion (ppb) or Micrograms per liter ( $\mu\text{g/L}$ )** – One part per billion corresponds to one minute in 2,000 years or a single penny in \$10,000,000.  $\text{ppb} \times 1,000 = \text{ppt}$ .

**Parts per trillion (ppt) or Nanograms per liter** –  $\text{ppt} \times 1,000 = \text{ppq}$ . One part per trillion corresponds to one minute in 2,000,000 years or a single penny in \$10,000,000,000.

**Parts per quadrillion (ppq)** – Also known as Picograms per liter.

**Picocuries per liter (PCi/L)** – A measure of the radioactivity in water.

**Running Annual Average (RAA)** – An average of monitoring results for the previous 12 calendar months.

## ADDITIONAL INFORMATION

### Arsenic

While your drinking water meets EPA standards, it contains low levels of arsenic. EPA's standard balances the current understanding of arsenic's possible health effects against the costs of removing it from drinking water. EPA continues to research the health effects of low levels of arsenic (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). In 2020, there were no violations with regard to arsenic.

### Lead

Lead, in drinking water, is primarily from materials and components associated with service lines and home plumbing. If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Marana Water is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When water has been sitting for several hours, potential for lead exposure can be minimized by flushing tap for 30 seconds to 2 minutes before using water for drinking or cooking. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at [www.epa.gov/safewater/lead](http://www.epa.gov/safewater/lead).

### Nitrates

Nitrates in drinking water at levels above 10 ppm are a health risk for infants younger than six months of age and elderly people on oxygen continually. 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 and detected nitrate levels are above 5 ppm you should seek advice from your healthcare provider. In 2020, there were no violations with regard to nitrates.

### Unregulated Compounds

Unregulated compounds are classified as compounds not part of mandatory water quality testing required by the EPA. However, the EPA is continually examining compounds for their effects on humans and has established health advisories while they continue these studies. Marana has conducted voluntary sampling for the group of compound called Perfluoroalkyl Substances (PFAs) and 1,4-Dioxane. Currently, two PFAs have

an EPA Health Advisory. The PFA compounds of PFOA and PFOS have a combined health advisory of 70 ppt. The health advisory for 1,4-Dioxane is 0.35 ppb. For more information, please visit our website at [www.MaranaAZ.gov/water-quality](http://www.MaranaAZ.gov/water-quality) or call (520) 382-2595.

## MONITORING ASSISTANCE PROGRAM (MAP)

The Arizona Department of Environmental Quality has extended this program to ensure water suppliers serving fewer than 10,000 customers complete all monitoring requirements under the rules of government agencies responsible for safe drinking water. Under this agreement, the state employs an independent firm to take the required water samples and send them to a laboratory for analysis. The results are sent to the water provider and the Arizona Department of Environmental Quality. In this way, you—our customer—the state and we are guaranteed that tests are done in a timely manner.

## HOW DO I KNOW IF MY WATER IS SAFE?

Under the ADEQ Monitoring Assistance Program (MAP), Marana Water System, in collaboration with MAP, routinely monitors for more than 80 contaminants as required by federal and state regulations. Testing is required for synthetic organic chemicals (SOCs), inorganic chemicals (IOCs), volatile organic chemicals (VOCs), radio chemicals, lead and copper and disinfection byproducts. Bacteriological tests are required monthly.

## WHAT HAPPENS IF THE WATER TESTED INDICATES CONTAMINATION?

If a constituent is found to be out of compliance with the Safe Drinking Water Standards, we are required by federal and state law to notify our customers. Notifications can be made by letter, the media or through this report. If a serious situation occurs that may affect the health, safety and well-being of our residents, we will do whatever is necessary to advise our customers and find an alternate source of safe drinking water.

In order to ensure that tap water is safe to drink, the EPA prescribes regulations that limit the amount of certain contaminants in water provided by public systems. Food and Drug Administration regulations establish limits for contaminants in bottled water that must provide the same protection for public health.

## REPORT PERIOD

All systems were tested monthly, quarterly or annually for contaminants, depending on the guidelines for each established by the EPA.

## SYSTEM VIOLATIONS

In 2020, Marana Water Palo Verde System (PWSID# 10136), had no violations.

## CHLORINATION

Marana Water treats its water with calcium hypochlorite (chlorine). Chlorine is the most commonly used disinfectant for water and saves lives by controlling waterborne diseases.

## WATER HARDNESS

Arizona water passes through soils that are rich in calcium and magnesium. These harmless, tasteless minerals become completely dissolved, creating what is known as hard water. Water hardness poses no health risk to consumers; however, it can create challenges around the house, such as a reduction in the cleansing ability of laundry soap and deposits left behind on bath fixtures, dishes and glassware.

A table of water hardness for the Marana Water service area is available on our website at [www.MaranaAZ.gov/water-quality](http://www.MaranaAZ.gov/water-quality).

## WHOM DO I CONTACT FOR ADDITIONAL INFORMATION ABOUT MY WATER QUALITY?

Questions or comments regarding this report should be directed to Paul Martinez, Water Operations Manager, at (520) 382-2570. You may also reach him via e-mail at [pmartinez@MaranaAZ.gov](mailto:pmartinez@MaranaAZ.gov).





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