

# **Davis-Monthan AFB Annual Water Quality Report for Calendar Year 2023**

## **Is my water safe?**

Yes, your water is safe! We are pleased to present this year's Annual Water Quality Report (Consumer Confidence Report) as required by the Safe Drinking Water Act (SDWA). This report is designed to provide details about where your water comes from, what it contains, and how it compares to standards set by regulatory agencies. This report is a snapshot of last year's water quality. The Davis-Monthan Air Force Base (DMAFB) provides safe drinking water that complies with all federal, state, and local drinking water regulations. The Bioenvironmental Engineering and Civil Engineering Flights work together to monitor drinking water quality at 9 wells, 2 reservoirs, and 20 sampling locations.

## **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. Environmental Protection Agency (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 Safe Water Drinking Hotline (800-426-4791).

## **Where does my water come from?**

DMAFB is located within the Tucson basin, a northwest trending alluvial valley. The Santa Cruz River flows northwesterly and provides the main drainage for the Tucson basin and is located approximately 4.6 miles west of the base. DMAFB is located in the Sonoran Desert which has an arid climate with a low precipitation rate of 12 inches per year and a high evaporation rate of 65 inches per year.

Groundwater occurs within the unconsolidated alluvial deposits consisting of interfingering sand, gravel, silt, and clay. The saturated thickness of these sediments is extremely variable, being thin (less than 200 feet) toward the mountains and thickening (greater than 5,000 feet) toward the center of the basin. These deposits were distributed laterally over time by a constantly changing stream course.

In the vicinity of DMAFB, the Pantano Formation, Tinaja Beds, and Fort Lowell Formation are the primary water bearing units. Groundwater is encountered at approximately 350 feet below ground surface near DMAFB, and groundwater generally flows in a northwest direction.

## **Source water assessment and its availability**

All drinking water is chlorinated for disinfection purposes. Disinfection involves the addition of chlorine to kill bacteria and microbes that may be present in the water. Throughout each month, the Bioenvironmental Engineering Flight monitors the base drinking water to ensure chlorination and acidity levels are within an acceptable range and that bacteriological contamination is non-existent. Additional sampling is performed on a periodic basis for other contaminants to ensure our drinking water remains compliant with safety regulations set by the EPA and Arizona Department of Environmental Quality (ADEQ).

Based on the information currently available on the hydrogeological settings and the adjacent land uses that are in the specified proximity of the drinking water source(s) of this public water system, ADEQ has given a high-risk designation for the degree to which this public water system drinking water source(s) are protected. A designation of high risk indicates there may be additional source water protection measures which can be implemented on the local level. This does not imply that the source water is contaminated, nor does it mean that contamination is imminent. Rather, it simply states that land use activities or hydrogeological conditions exist that make the source water susceptible to possible future contamination. Further source water assessment documentation can be obtained by contacting ADEQ.

## **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 EPA 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 human activity. This could 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 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.

To ensure that tap water is safe to drink, EPA prescribes regulations that limit the number 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.

### **How can I get involved?**

We would like you to understand the efforts we make to continually improve the water treatment process and protect our water resources. If you would like additional information concerning this report, or if you have any questions about the drinking water program, please feel free to contact the Davis-Monthan Drinking Water team members and we will be happy to assist you in any way we can.

Bioenvironmental Engineering Flight: 520-228-5369

Civil Engineer Customer Service: 520-228-3171

Soaring Heights: 520-748-3339

### **Water Conservation Tips**

Did you know that the average U.S. household uses approximately 400 gallons of water per day or 100 gallons per person per day? Luckily, there are many low-cost and no-cost ways to conserve water. Small changes can make a big difference - try one today and soon it will become second nature.

- Take short showers - a 5-minute shower uses 4 to 5 gallons of water compared to up to 50 gallons for a bath.
- Shut off water while brushing your teeth, washing your hair and shaving and save up to 500 gallons a month.
- Use a water-efficient showerhead. They're inexpensive, easy to install, and can save you up to 750 gallons a month.
- Run your clothes washer and dishwasher only when they are full. You can save up to 1,000 gallons a month.
- Water plants only when necessary.
- Fix leaky toilets and faucets. Faucet washers are inexpensive and take only a few minutes to replace. To check your toilet for a leak, place a few drops of food coloring in the tank and wait. If it seeps into the toilet bowl without flushing, you have a leak. Fixing it or replacing it with a new, more efficient model can save up to 1,000 gallons a month.
- Adjust sprinklers so only your lawn is watered. Apply water only as fast as the soil can absorb it and during the cooler parts of the day to reduce evaporation.
- Teach your kids about water conservation to ensure a future generation that uses water wisely. Make it a family effort to reduce next month's water bill!
- Visit [www.epa.gov/watersense](http://www.epa.gov/watersense) for more information.

### **Source Water Protection Tips**

Protection of drinking water is everyone's responsibility. You can help protect your community's drinking water source in several ways:

- Eliminate excess use of lawn and garden fertilizers and pesticides - they contain hazardous chemicals that can reach your drinking water source.
- Pick up after your pets.
- If you have your own septic system, properly maintain your system to reduce leaching to water sources or consider connecting to a public water system.
- Dispose of chemicals properly; take used motor oil to a recycling center.
- Volunteer in your community. Find a watershed or wellhead protection organization in your community and volunteer to help. If there are no active groups, consider starting one. Use EPA's Adopt Your Watershed to locate groups in your community or visit the Watershed Information Network's How to Start a Watershed Team.
- Organize a storm drain stenciling project with your local government or water supplier. Stencil a message next to the street drain reminding people "Dump No Waste - Drains to River" or "Protect Your Water." Produce and distribute a flyer for households to remind residents that storm drains dump directly into your local water body.

### **Is there PFOS/PFOA in my drinking water?**

No, there have been no instances where the contaminants known as PFOS/PFOA (perfluorooctane sulfonate and perfluorooctanoic acid respectively, both members of the perfluorinated compounds (PFC's) family) were detected in the drinking water at DMAFB. Monitoring of the drinking water for these contaminants was accomplished in 2020 and the results showed no detectable levels. No tests conducted by DMAFB or the surrounding area that Tucson Water is responsible for have found PFC's in the ground water at the depth that DMAFB's drinking water wells pull water from (500 feet or deeper). The Air Force continues to play an active role in groundwater testing, and we are working closely with our partners at Tucson Water and the ADEQ. An initial site survey report conducted in 2017 recommended an expanded site survey at the deeper aquifer monitoring wells located down-gradient of the Stormwater Outfall Canal, on the north side of the installation property. This expanded site inspection began in August 2021 and no PFOS/PFOA detection were found in the wells sampled. In April 2021 the first phase of field work for a Remedial Investigation began, led by the Air Force Civil Engineer Center, and sampling is expected to continue through the Summer of 2024. The first sampling events occurred in April 2023 through December 2023, and results for PFOS/PFOA returned as non-detect. Bioenvironmental Engineering will complete PFOS/PFOA sampling in June 2024. Additional information about PFOS/PFOA and the Air Force's response in the Davis-Monthan community can be found on the DMAFB website: <https://www.dm.af.mil/About-DM/Environmental-Stewardship/>

### **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. USAF Davis-Monthan AFB 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 or at <http://www.epa.gov/safewater/lead>.

### Additional Information for Arsenic

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 costs of removing arsenic from drinking water. 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.

## Water Quality Data Table

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of contaminants in water provided by public water systems. The table below lists all of the drinking water contaminants that we detected during the calendar year of this report. Although many more contaminants were tested, only those substances listed below were found in your water. All sources of drinking water contain some naturally occurring contaminants. At low levels, these substances are generally not harmful in our drinking water. Removing all contaminants would be extremely expensive, and in most cases, would not provide increased protection of public health. A few naturally occurring minerals may actually improve the taste of drinking water and have nutritional value at low levels. 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 us to monitor for certain contaminants less than once per year because the concentrations of these contaminants do not vary significantly from year to year, or the system is not considered vulnerable to this type of contamination. As such, some of our data, though representative, may be more than one year old. In this table you will find terms and abbreviations that might not be familiar to you. To help you better understand these terms, we have provided the definitions below the table.

Contaminants	MCLG or MRDLG	MCL, TT, or MRDL	Detect In Your Water	Range		Sample Date	Violation	Typical Source
				Low	High			
Disinfectants & Disinfection By-Products								
(There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants)								
Chlorine (as Cl2) (ppm)	4	4	1.11	.77	1.73	2023	No	Water additive used to control microbes
Haloacetic Acids (HAA5) (ppb)	NA	60	2.8	NA	2.8	2023	No	By-product of drinking water chlorination

Contaminants	MCLG or MRDLG	MCL, TT, or MRDL	Detect In Your Water	Range		Sample Date	Violation	Typical Source
				Low	High			
TTHMs [Total Trihalomethanes] (ppb)	NA	80	10	3.3	10	2023	No	By-product of drinking water disinfection
Inorganic Contaminants								
Arsenic (ppb)	0	10	3.5	1.2	3.5	2023	No	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes
Barium (ppm)	2	2	.08	.0084	.08	2023	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Chromium (ppb)	100	100	1.6	NA	16	2023	No	Discharge from steel and pulp mills; Erosion of natural deposits
Copper - source water (ppm)	NA	1.3	.091	.013	.2	2021	No	Corrosion of household plumbing systems; Erosion of natural deposits
Nitrate [measured as Nitrogen] (ppm)	10	10	1.5	1.1	1.5	2023	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Sodium (optional) (ppm)	NA	NA	33	26	33	2023	No	Erosion of natural deposits; Leaching
Radioactive Contaminants								
Alpha emitters (pCi/L)	0	15	.7	.7	.7	2019	No	Erosion of natural deposits
Uranium (ug/L)	0	30	2.3	1.3	2.3	2018	No	Erosion of natural deposits
Contaminants	MCLG	AL	Your Water	Sample Date	# Samples Exceeding AL	Exceeds AL	Typical Source	
Inorganic Contaminants								
Lead - action level at consumer taps (ppb)	0	15	0	2021	0	No	Corrosion of household plumbing systems; Erosion of natural deposits	

## Additional Contaminants

In an effort to ensure the safest water possible, the State has required us to monitor some contaminants not required by Federal regulations. Of those contaminants, only the ones listed below were found in your water.

Contaminants	State MCL	Your Water	Violation	Explanation and Comment
Lithium	NA	14 ug/L	No	Lithium is an emerging contaminant. An emerging contaminant is commonly defined as chemicals, or materials, which may enter the environment via a release pathway and potentially present an unacceptable risk to human or environmental health.

Unit Descriptions	
Term	Definition
ug/L	ug/L : Number of micrograms of substance in one liter of water
ppm	ppm: parts per million, or milligrams per liter (mg/L)
ppb	ppb: parts per billion, or micrograms per liter (µg/L)
pCi/L	pCi/L: picocuries per liter (a measure of radioactivity)
NA	NA: not applicable
ND	ND: not detected
NR	NR: Monitoring not required, but recommended.

Important Drinking Water Definitions	
Term	Definition
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, triggers treatment or other requirements which a water system must follow.
Variances and Exemptions	Variances and Exemptions: State or EPA permission not to meet an MCL or a treatment technique under certain conditions.
MRDLG	MRDLG: Maximum residual disinfection level goal. 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.

<b>Important Drinking Water Definitions</b>	
MRDL	MRDL: Maximum residual disinfectant level. 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.
MNR	MNR: Monitored Not Regulated
MPL	MPL: State Assigned Maximum Permissible Level

**For more information please contact:**

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