



1,4-Dioxane – Frequently Asked Questions

Is my water safe?

Yes. Tucson Water ensures that all the water it delivers meets all federal drinking water standards as established by the U.S. Environmental Protection Agency (EPA) and is safe at all times for drinking, cooking, bathing and other uses.

What is 1,4-Dioxane?

1,4-Dioxane is a stabilizing agent for Trichloroethane (TCA), a hazardous chemical used in industrial and defense related activities in the 1950s - 1970s. For more information, visit the EPA Fact Sheet at <https://www.epa.gov/fedfac/technical-fact-sheet-14-dioxane>.

Where is the 1,4-Dioxane located?

1,4-Dioxane is found in groundwater pumped from a contamination plume on Tucson's south side. The water from this plume is pumped to the Tucson Airport Remediation Project (TARP) Treatment Plant where, since 1995, the groundwater has been treated to remove trichloroethylene (TCE) as part of the cleanup of that contamination. However, the TARP plant did not remove 1,4-Dioxane from the water.

When was 1,4-Dioxane first found in our groundwater?

1,4-Dioxane was first recognized at the TARP Treatment Plant in 2002 when the EPA first notified water utilities across the nation that the substance was appearing in superfund sites. Tucson Water immediately made operational changes to ensure the levels at the plant remained below the EPA advisory level.

What does the EPA say about 1,4-Dioxane?

The EPA currently has a Health Advisory level for 1,4-Dioxane of ≤ 0.35 parts per billion. No federal Maximum Contaminant Level (MCL) has been established. 1,4-Dioxane is classified as "likely to be carcinogenic to humans" by all routes of exposure. EPA advisories and technical fact sheets on the contaminant are provided as guidelines for water utilities across the county and are not enforced by the agency.

How is 1,4-Dioxane removed from the water?

Tucson Water constructed an Advanced Oxidation Process Water Treatment Facility which began operation in January 2014. The technology combines ultraviolet (UV) light with hydrogen peroxide to create a strong oxidant that removes 1,4-Dioxane from water. Granular-activated carbon then removes any hydrogen peroxide left in treated water.



Where is this water being delivered?

After blending, water pumped from the TARP well field is delivered to the west-central and northwest portions of Tucson Water's service area. Tucson Water collects samples on a weekly basis and conducts tests for 1,4-Dioxane in these water delivery areas. All tests show a non-detectable level of the substance in the water. Together, TARP and AOP treat nearly seven million gallons of water per day which is delivered to approximately 60,000 customers for drinking water. Tucson Water's new analytical methodology allows it to detect 1,4-Dioxane in the range of ≤ 0.1 parts per billion.

Is there 1, 4-Dioxane in the water delivered to the area around the TARP well field?

There is no 1,4-Dioxane in the water delivered to the southern part of Tucson Water's service area – the area near and around the TARP well field. Water delivered here comes from the Santa Cruz Well Field, the Clearwater Facility, and the Southern Avra Valley Well Field. Tucson Water tests water in this area to verify that no 1,4-Dioxane is present.

Who is responsible for oversight of the TARP Plant and Tucson's water quality?

Tucson Water reports regularly about the TARP Plant to the Unified Community Action Board (UCAB) - the citizens group charged with monitoring the TCE remediation process and 1, 4-Dioxane levels. Tucson Water reports the results of all water quality testing to the Arizona Department of Environmental Quality (ADEQ) on a regular basis. ADEQ is responsible for overseeing and enforcing all EPA water quality regulations in Arizona.

Does Tucson Water test my water to make sure it's safe?

Yes. Tucson Water is committed to providing safe, high-quality water to all its customers. We perform about 14,500 water quality tests on samples collected from all over our service area. The testing is done at our Water Quality Laboratory at the Hayden-Udall Facility in Avra Valley. We also send samples to independent labs. Tucson Water is responsible for reporting regularly to the Arizona Department of Environmental Quality on all water quality testing.

What exactly is a "part per billion"?

One part per billion is like one drop of water in 22,000 gallons. Another analogy for one part per billion is one inch in 16 miles. In other words, one part per billion is a very small amount. Tucson Water's testing in the water delivery area shows 1,4-Dioxane at undetectable levels of less than ≤ 0.1 parts per billion.