



What's in
your water?

1,4-dioxane

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To find out more about 1,4-dioxane and other water quality issues, contact Tucson Water at (520) 791-4331 or www.tucsonaz.gov/water to:

- tour the TARP facility and Water Quality Lab
- schedule a speaker
- subscribe to the online Water Quality newsletter by calling (520) 837-2465 or by emailing Dan.Quintanar@tucsonaz.gov



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YOUR WATER · CLEAN · CLEAR · SECURE





1,4-dioxane

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1,4-dioxane is a colorless organic compound that is used as a solvent for resins, waxes, some dyes, paints, varnishes and cellulose compounds. It is a common byproduct of the manufacturing process and may be present in cosmetics, shampoo, toothpaste, mouthwash and deodorant.

During the 1940s-1970s, it was used as a stabilizer in solvents in industrial and defense-related activities. Industrial sites near the Air Force Base released TCE, TCA and 1,4-dioxane and other hazardous wastes into the environment, which caused contaminated ground water plumes.

To remove the TCE in this water, the Tucson Airport Authority, U.S. Air Force and others built a treatment plant – the Tucson Airport Area Remediation Project (TARP) – located on the east side of the Santa Cruz River near Irvington Road. The TARP plant treats approximately 8.4 million gallons of water per day. The plant also disinfects the water and adjusts its pH. Treated water is sampled and tested weekly for TCE and 1,4-dioxane prior to entering the distribution system.

What is an advisory level?

The U.S. Environmental Protection Agency (USEPA) assesses 1,4-dioxane levels and its potential impacts and issues a 'health advisory level.' The USEPA's advisory level provides guidance and is not a legal mandate.

1,4-dioxane was first detected in a ground water plume in Tucson's southwest side in 2002 when the USEPA notified water utilities nationwide that the substance was appearing at sites where TCE was present. Tucson Water immediately initiated changes to ensure 1,4-dioxane remained below the USEPA's advisory level of 3 parts per billion (ppb).

In 2010 the USEPA completed a review that indicates that 1,4-dioxane is more likely to cause cancer than was previously estimated. The agency recently released an updated advisory level of 0.35 ppb.

Treatment

New Treatment Process Removes 1,4-dioxane

Tucson Water is currently blending water from the TARP well field with water from other sources to reduce 1,4-dioxane. (A home water treatment system will not remove 1,4-dioxane from water.)

To meet the new, lower advisory level, Tucson Water is building a new advanced oxidation treatment facility that will remove 1,4-dioxane from water.

Tucson Water performs thousands of tests each year on water samples collected from across its service area at the utility's Water Quality Laboratory.

To give you an idea of how small one part per billion is, it's like 1 drop of water in 22,000 gallons of water.

Information and updates about the 1,4-dioxane treatment facility can be found on the web at www.tucsonaz.gov/water.

