

Water Quality and the Long Range Plan *Water Plan 2000-2050*

Tucson Water's *Water Plan 2000-2050* addresses possible changes in the quality of our drinking water in the near future. One of these changes concerns the level of dissolved minerals, or total dissolved solids (TDS), contained in our drinking water.

In 1999, Tucson Water customers determined they preferred the dissolved minerals/TDS level of the Clearwater blend to be at or below 450 mg/L*. At this level the taste of the Clearwater blend was acceptable. (EPA recommends TDS levels below 500 milligrams per liter (mg/L) because higher levels can impart a salty taste, affect the hardness, increase the amount of mineral deposits, and color of drinking water.) Currently the average dissolved minerals/TDS level of the Clearwater blend is around 300 mg/L but by 2010 will be above 450 mg/L. Keep in mind the levels of dissolved minerals/TDS in our drinking water vary in all areas currently served by Tucson Water, from above 580 mg/L to below 150 on average. So, dissolved minerals/TDS levels above 450 mg/L in our tap water are nothing new.

In 2006, we must choose between two alternatives regarding the dissolved minerals/TDS level in the Clearwater blend. The future quality of our drinking water depends on how we as a community answer the critical question:

What level of dissolved minerals/TDS is acceptable in the Clearwater blend?

- A) Keep the dissolved minerals/TDS level at 450 mg/L.
- or
- B) Let the dissolved minerals/TDS level slowly increase to approximately 600 mg/L by 2025.

If the community picks "A" the following three things will need to happen that will be costly to the community:

- 1) New enhanced treatment facilities would need to be constructed at the existing Hayden-Udall Treatment Plant. This would most likely be some kind of membrane filtration system.
- 2) Evaporation ponds would need to be constructed to dispose of the brine waste stream that would be produced by enhanced treatment. With current technology, the brine stream would be about 15% of the total amount of water treated.

3) A new well field near Three Points in Avra Valley would need to be constructed to provide additional groundwater for blending to reduce the dissolved minerals.

If the community picks "B" no further action is required by Tucson Water and there will not be any costs to the community.

Tucson Water recommends allowing the dissolved minerals/TDS of the Clearwater blend to gradually increase until they reach a level of approximately

600 mg/L around the year 2025.

A second decision will also need to be made in 2006 regarding whether Tucson Water recharges all of its Colorado River water prior to delivery, or rehabilitates the Hayden-Udall Treatment Plant to treat a portion of our river water, mix it with the Clearwater blend and deliver it to customers. We will explore that decision in the next EMPACT newsletter. For more information on *Water Plan 2000-2050* visit us at www.tucsonaz.gov/water and click on the *Water Plan 2000-2050* link, or call Mitch Basefsky, our Public Information Officer, at 791-4331.



*One milligram per liter is the same as one part per million and equals 1 teaspoon in 1,320 gallons.

Community Connections

Pima Association of Governments



Pima Association of Governments (PAG), through its Watershed Planning Program, is generally responsible for helping to keep the Tucson region's public (including residents, businesses, industries, and special interest groups) informed about environmental matters related to water quality. Through its Environmental Planning Advisory Committee and its Watershed Planning Subcommittee, PAG has helped Tucson Water showcase and promote the EMPACT program since its inception. Tucson Water employees are key members of these PAG committees, and the forums provided by such recurring regional meetings are instrumental in communicating relevant information to the public and in coordinating regional water quality issues with other jurisdictions, agencies, and groups.



PAG's Watershed Planning staff helps local governments work together to protect our water resources.

PAG also helps Tucson Water and other agencies coordinate their water-related outreach and education activities through PAG's "Outreach Connection" project, which is a cooperative effort with the Sustainability of semi-Arid Hydrology and Riparian Areas (SAHRA) center at the University of Arizona.

Coordination of stormwater management activities is another key role that PAG plays in the Tucson metropolitan area. Under the Clean Water Act, the City of Tucson, Pima County, and other local cities and towns are required to protect stormwater runoff from pollution. The local governments work together on stormwater pollution prevention through PAG's Stormwater Management Working Group. Public education is a key focus of this group.

In addition to public outreach and coordination activities, PAG's Watershed Planning program conducts applied research projects for the local governments. Examples include studies that identify locations of privately owned wells near potential pollution sources and studies that help Tucson Water monitor the percolation of recharged Colorado River water in Avra Valley.

For further information about public participation in PAG's committees or about the regional Watershed Planning Program, see www.pagnet.org/EPD.

Q&A

Customer: *If I live near a landfill is my tap water safe and of good quality, or should I worry that it may be contaminated?*

EMPACT Team: Your tap water is safe and of good quality. Even if you live near a landfill you do not need to worry about the safety or the quality of your tap water. The tap water that Tucson Water delivers to homes and businesses located near landfills does not come from the immediate area surrounding a landfill. It comes from other groundwater sources that are free of contamination.

Tucson Water and the City of Tucson Environmental Services Dept. work together to ensure the safety of the community's water supply. Environmental Services investigates potential groundwater contamination sources such as landfills. Over 300 groundwater monitor wells have been installed by Environmental Services on or around the City's active and closed landfills. These monitor wells are regularly sampled for many chemicals and the results are reported to Tucson Water and other agencies. In addition, Tucson Water regularly samples the drinking water supply itself for many of the same potential groundwater contaminants.

Working together, these two City departments ensure the tap water Tucson Water delivers to you is safe, is of good quality and meets or exceeds the drinking water standards set by USEPA and the Arizona Department of Environmental Quality. For more information, call our Water Quality Management Division at 791-5252 or Environmental Services at 791-5414. You can also find detailed information on the City of Tucson's Landfill Groundwater Monitoring Program at www.cityoftucson.org/ets/Groundwater/groundwater.html.



Email your questions about drinking water quality to Dan Quintanar at Dan.Quintanar@tucsonaz.gov.

Water Quality and Stormwater

What's the Stormwater Story?

Stormwater's a good thing, especially in our arid state that sees little rain. Rainwater harvesting is a great way to save our precious drinking water, so why would you need a permit for stormwater? The answer is because when it does rain, it can really pour, and stormwater runoff has a high potential to carry pollutants. Stormwater runoff collects pollutants from every exposed surface and carries these through municipal storm sewer systems to waters of the United States.

Unlike many other states, Arizona's streambeds are normally dry. In other states, where streams and rivers flow year-round, stormwater runoff is a significant cause of poor surface water quality. Common stormwater pollutants consist of trash, oils, chemicals, and sediments eroded from bare soils. These pollutants originate from places such as streets, parking lots, construction sites, agricultural lands, and industrial areas where chemicals and wastes are stored improperly. All these pollutants can adversely influence streams and rivers - even our dry washes - so it is important to safeguard them from stormwater pollutants.

For this reason, the Arizona Department of Environmental Quality (ADEQ) requires that urbanized municipalities, certain key industries, and construction sites disturbing one or more acres apply to ADEQ for permits to discharge stormwater. These permits require controls to reduce or eliminate pollutants in stormwater runoff. The National Pollutant Discharge Elimination System permitting program was originally implemented by EPA in the 1970's to protect our nation's waterways. In December of 2002, Arizona received the authority from EPA to administer the permitting program and create the first Arizona Pollutant Discharge Elimination System (AZPDES) permits.



Stormwater runoff can also impact the aquifer, depending on whether the stormwater can reach the aquifer and the type and concentration of the pollutant. The most immediate way stormwater gets into the aquifer is through wellheads, but Tucson Water's wellhead protection program helps prevent pollutants from entering the aquifer by preventing stormwater from entering the area around the wellhead. Without the assistance of a wellhead, stormwater has a much harder time reaching the aquifer. As stormwater passes through layers of soil, most if not all of the less mobile pollutants are left behind and do not enter the aquifer.

Most stormwater pollutants such as heavy metals and petroleum products are present in low concentrations and are usually left on the soil surface as stormwater infiltrates. Pollutants such as solvents that are readily able to move through the soil to reach aquifers are not usually found in stormwater, and when they are present, it is an indication of improper use or illegal disposal of chemicals.

Stormwater pollution control is everyone's concern. Please dispose of household wastes such as cleaning products, pesticides, paints, and automotive products properly and help protect our natural resources. The cleaner our stormwater runoff is, the cleaner our state's surface water and groundwater will be for future generations.

For more information, contact the City of Tucson's Stormwater Management Program at 791-4251, or contact the Arizona Department of Environmental Quality at its Tucson office, 628-6733, or its Phoenix office at (602) 771-4376.



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EMPACT



EMPACT News is published by the EMPACT Team led by Tucson Water and provides up-to-date information about water quality in the greater Tucson area. To be added to the mailing list, please call 791-5080, ext. 1372 or email Dan.Quintanar@tucsonaz.gov.

Esta información está disponible en español. Por favor llame al 791-5080, ext. 1372.

For more information about the EMPACT program for Tucson's water quality reporting, visit the Tucson Water web site at www.cityoftucson.org/water. For more information about the USEPA's EMPACT programs nationwide, visit the EPA website at www.epa.gov/empact.