

Your Water CONNECTION

Investing in Infrastructure

Tucson Water's distribution and transmission facilities represent more than a \$1 billion in community investment. The Utility's professionals take great care in the long range planning and budgeting to maintain, improve, and operate these critical infrastructure assets.

Strategic capital improvements and preventative maintenance programs are an essential part of the **Water Reliability Program's** utility operations and systems focus. Some of these specific efforts include:

- ◆ Replacing meters to improve accuracy and forecasting
- ◆ Launching alternative energy projects to save money
- ◆ Building an eastside maintenance center to improve field operations
- ◆ Expanding recycled water programs to ensure sustainability
- ◆ On-going program to rehabilitate reservoirs and tanks for potable and reclaimed facilities

In this issue of *Your Water Connection*, you'll learn more about the Tucson Water employees behind the Utility's infrastructure 'brain' - the Supervisory Control and Data Acquisition (SCADA) system. SCADA manages power, captures data, controls equipment at all water production and distribution facilities, links with maintenance systems, conducts on line analytical sampling, ensures security, and more. A new, state-of-the-art SCADA system is in the works right now and will be fully implemented by 2018 to ensure an efficient, reliable water supply and water system in the future.

Turn the page to find out more about SCADA.

— Sandy Elder, INTERIM DIRECTOR, TUCSON WATER

TUCSON ARTS BRIGADE PRESENTS



SUNDAY, MARCH 18 • 10 a.m.- 4 p.m.
Armory Park Center • 220 S. 5th Avenue

Be a part of the third annual celebration of The Water Festival: Synergy of Art, Science, and Community. It's a fun, creative, and educational festival celebrating water and water stewardship. The Festival features an exhibitor fair, art show, music, workshops, panel discussions, kids' activities, dance and theater performances, and more. This local celebration coincides with the United Nations' World Water Day on March 22.

For more information or to be part of The Water Festival, go to H₂O Topics at tucsonaz.gov/water.

Cold Weather Tips

Prepare for cold February temperatures with tips and information to prevent pipes from freezing and more: via the homepage tucsonaz.gov/water, online tucsonaz.gov/water/winter-prep, e-mail waterleaks@tucsonaz.gov, or phone (520) 791-4331.

For more information, materials in accessible formats, foreign language interpreters, and/or materials in a language other than English, please contact Tucson Water at (520) 791-4331 or (520) 791-2639 for TDD.



PIMA COUNTY

New Laboratory Complex Opens

The Pima County Regional Wastewater Reclamation Department (RWRD) must meet standards established by the federal Clean Water Act (CWA) and the Arizona Department of Environmental Quality. These standards regulate the quality of cleaned wastewater discharged into the Santa Cruz River.

To comply with CWA water quality standards, RWRD must perform hundreds of tests to assure that each step of the wastewater treatment process meets required standards day in and day out.

In calendar year 2011, more than 19,000 samples were delivered to RWRD's laboratories and more than 48,000 individual analyses were performed.

In December, RWRD laboratory personnel moved into a new state-of-the-art facility. This new facility replaced multiple, aging laboratory sites located in inadequate facilities with old technology. The new laboratory consolidates all laboratory activities into one location with high-tech equipment that allows employees to perform the required tests more easily and efficiently.

The new laboratory complex is a component of the Regional Optimization Master Plan (ROMP). The ROMP is a program that will upgrade and expand the Ina Road Wastewater Reclamation Facility (WRF) and will replace the existing Roger Road WRF.

Through the ROMP, these two major facilities will have the technology to meet new environmental standards and also the capacity to treat 82 million gallons of sewage each day.

The new laboratory will be part of a national network of laboratories that can provide emergency analysis in the event of a regional or national disaster.

CITY OF TUCSON

Feasibility Study of Solar Projects on Closed Landfills

City of Tucson Environmental Services (ES) was selected by the U.S. Environmental Protection Agency (EPA) and the U.S. Department of Energy (DOE) to receive technical assistance to evaluate the feasibility of building solar energy projects on closed landfills. Developing renewable energy resources has been a goal of the Mayor and City Council and ES. The City owns sixteen old landfills that comprise more than 1,500 acres of land that cannot be easily redeveloped. Development on closed landfills poses some unique challenges such as land subsidence and landfill gas production as waste decomposes. Developing solar energy projects

using these former landfills that would otherwise sit vacant can



benefit the community and enable the City to work toward expansion of its sustainable energy portfolio.

The DOE and the EPA will provide technical assistance to the City to determine how to best build solar systems on the old landfills and how to obtain financing for future projects. No City monies will be spent on the project. It is anticipated that the study will be a year long process.

The closed landfills may be ideal sites for solar energy because they are shade-free and close to energy distribution lines. It would be a much-needed source of renewable energy and put the unused land back to beneficial use for the community.

Your utilities services statement includes fees for your water, wastewater, and environmental services.

The Pima County Regional Wastewater Reclamation Department (PCRWRD) – For more information about the regional wastewater system, call (520) 740-6500 or visit pima.gov/wwm.

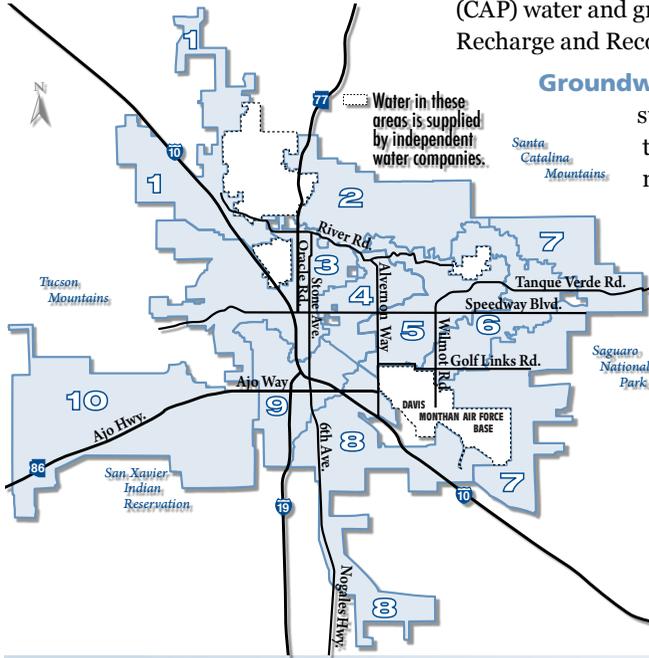
Environmental Services (ES) – Learn about how ES is protecting our groundwater and the environment at tucsonaz.gov/esd and (520) 791-3171.

Water Quality Report

December 2011



More than 20,000 individual water quality tests are performed annually on the drinking water derived from two sources: 1) groundwater and 2) the blend of recharged Central Arizona Project (CAP) water and groundwater from the Clearwater Recharge and Recovery Facility (CRRF).



Groundwater Source Report – Less than 50% of our total water supply comes from pumping native groundwater wells in the Tucson metropolitan area. These test results reflect the main distribution system, divided into 10 zones:

test results

*mg/L means milligrams per liter
1 mg/L = 1 teaspoon in 1,302 gallons.

Zones	Sodium (mg/L)* 86 SP	Mineral Content (mg/L)* 247 SP	Hardness (mg/L)* 86 SP	pH Level (S.U.) 247 SP	Temperature (deg°F) 247 SP
1	58	435	192	7.9	69
2	64	466	226	8.1	70
3	63	453	221	8.0	71
4	59	444	206	8.1	71
5	62	459	221	8.1	70
6	64	474	225	8.1	70
7	59	419	212	8.1	69
8	55	457	238	7.9	71
9	60	443	221	7.0	73
10	59	375	200	7.0	70
Avg	61	447	219	8.1	70

The U.S. Environmental Protection Agency (USEPA) has primary standards for levels of coliform bacteria and the disinfectant chlorine.

coliform

EPA standards for positive samples

Positive results
247 samples



chlorine

EPA Standard
Max. 4.0 mg/L

Actual Average
247 samples 0.9 mg/L

Tucson Water target average
0.8 to 1.2 mg/L

Clearwater Report – More than 50% of our total water supply is a blend of recharged CAP water and native groundwater from the CRRF. Using this recovered blended water means that we reduce groundwater pumping.

Sodium	66 mg/L	(Dec. 14, 2011)
Mineral Content	502.5 mg/L	(Dec. 8, 2011–Jan. 9, 2012 avg.)
Hardness	222 mg/L	(Dec. 14, 2011)
pH	7.63 S.U.	(Dec. 8, 2011–Jan. 9, 2012 avg.)
Coliform Bacteria	Negative	(Dec. 14, 2011)
Chlorine Level	104.3 mg/L	(Dec. 8, 2011–Jan. 9, 2012 avg.)
Temperature	75.73°F	(Dec. 8, 2011–Jan. 9, 2012 avg.)

To obtain water quality information, go to tucsonaz.gov/water and click on the Water Quality Tab for maps, FAQs, definitions, reports, online monitoring station results, and more. Or call (520) 791-4331 to schedule speakers, ask for an Annual Water Quality Report, or to request brochures.

New Remote Control System Offers Efficiencies and Energy Savings

There is a team of 14 Tucson Water professionals dedicated to the Supervisory Control and Data Acquisition (SCADA) system, the Utility's computerized remote system that moves water efficiently throughout the Tucson Water service area, maintains water pressure, collects water system data, and regulates water quality.

"We have staff monitoring and operating the potable water SCADA system and its ancillary operations round-the-clock, every day of the year from the Hayden-Udall Water Treatment Facility," says Albert C. Avila, Water Operations Plant Supervisor.

"Because SCADA is so important to system operations and water quality, our team literally works with every single division – water resources, customer service, water quality, and engineering." That also means that the SCADA team includes a group of professionals with diverse backgrounds in field operations, maintenance mechanics, electrical work, information technology, and water quality. Avila, an Arizona native, brought 12 years of SCADA systems experience from the mining industry to Tucson Water.

According to Avila, a Tucson Water employee of 11 years, installation of a new and improved SCADA system is slated to be fully implemented by 2018. The new SCADA technology will consolidate all operations and features into



one master system that will allow Tucson Water to move water throughout the potable water distribution system with increased efficiencies which will reduce energy use and costs. With energy costs accounting for approximately \$15 million of the Utility's operating budget, SCADA's improved efficiency means significant savings.



Water Operations Plant Supervisor Albert Avila holds Arizona Department of Environmental Quality certifications in water distribution systems, water treatment, wastewater treatment, and collections.

Aside from the SCADA system upgrade, Avila views the team's biggest on-going challenge as working with other Tucson Water divisions to coordinate temporary system shutdowns for maintenance work – while ensuring all work is transparent to customers.

For example, the recent rehabilitation of the Craycroft Reservoir required the SCADA team to shut down and isolate the reservoir for 72 hours, conduct leak tests, and

use the data collected by the system so that employees could make cost-efficient repairs. The team also had to redirect water supplies in the distribution system to ensure customers continued to receive high quality water during testing and repair.

"Our team helps Tucson Water deliver safe, clean tasting water, with good water pressure, every day of the year to our customers."