Water Resources Research Center

Arizona Water Resource Supplement
July-August 2007

College of Agriculture and Life Sciences *The University of Arizona*

WRRC Hosted ADEQ's 20th Anniversary Conference

Water quality was main item on the agenda

By: Joe Gelt and Melissa Lamberton

Above shows Governor Bruce Babbitt signing into law Arizona's Environmental Quality Act. Signed Aug. 13, 1986, the law created a new state environmental agency as of July 1, 1987, the Arizona Department of Environmental Quality. A Los Angeles Times article at the time called it "the nation's toughest law to protect underground water."

The finding of toxic contaminants in Arizona's aquifers in the early 1980s raised concerns about the efficacy of the state's regulatory powers. Or as Jack Pfister, former general manager of the Salt River Project, described the situation: "Prior to 1986, there was a lot of discontent with Arizona water laws. As the pollutants were percolating down, political discontent was bubbling up."

This bubbling up of political discontent eventually led to the passage of the Environmental Quality Act and the establishment of the Arizona Department of Environmental Quality in 1987. The Water Resources Research Center's annual conference on June 5, commemorated the occasion. Titled "The 20th anniversary of the Environmental Quality Act and ADEQ: Assessing and Protecting the State's Water Quality," the conference was a forum for discussing the history of the law, current water quality issues and the future of ADEQ. Following is a brief program summary.

In the opening remarks of the conference Grant Woods, former Arizona attorney general, addressed the question posed in the title of his address: Environmental Protection: How Far Have We Come? He acknowledged that it had been a struggle to establish environmental protection during the early days of ADEQ. Although progress has been made, the struggle continues. Rapid growth has made the issue especially acute, with ADEQ seeking ways to ensure a continued supply of clean water.

Session I, History of Environmental Quality Act

The panel, made up of people who had a central role in drafting the EQA, consisted of Jim Derouin, partner, Steptoe & Johnson, LLP; Roger Ferland, partner, Quarles & Brandy, LLP; and Priscilla Robinson, Southwest Environmental Service, retired. Nancy Wrona, director, ADEQ Air Quality Division, served as moderator

This panel's presentations told of the environmental consciousness raising that was occurring in the 1980s. One particularly egregious situation occurred in Tucson that sparked special concern. In 1981, when tests showed soil and water pollution on the south side from disposal of industrial chemicals, Pima County Health Department ordered polluted wells shut down. This incident along with others occurring in other parts of the state demonstrated the need for stricter water quality regulations.

Whatever laws were currently on the books were inadequate. Further complicating the situation was the confusion about which competing agencies, the Department of Health Services or the Water Quality Control Council, had primary responsibility for regulating water quality.

The Legislature labored to little effect, hopelessly deadlocked. A coalition of public interest groups then took action, announcing in late 1985 plans to place an anti-pollution initiative on the Nov. 1986 ballot. This referendum put lawmakers on notice that unless

WRRC Conference, a Team Effort

The Water Resources Research Center is grateful to the sponsoring agencies and organizations that contributed to the success of the conference; the event was truly a team effort. Arizona Department of Environmental Quality and Arizona Water Institute co-sponsored the event. Other sponsors were Central Arizona Project; U.S. Geological Survey; U.S. Bureau of Reclamation; Salt River Project; Brown and Caldwell; Steptoe and Johnson, LLP; Engineering & Environmental Consultants, Inc.; Quarles & Brady, LLP; Squire Sanders; Metropolitan Pima Alliance; Arizona Cooperative Extension; UA College of Agriculture and Life Sciences; and UA Water Sustainability.

they acted voters themselves would directly decide the issue.

An opening in the legislative logjam occurred in fall of 1985 when Representative Larry Hawke took the lead to work out among key interests a framework for water quality legislation. Other key legislator included Senator Greg Lunn and Representative David Bartlett. The bill that eventually emerged was swiftly adopted in a bi-partisan vote.

Session II, WQARF: Past, Present and Future

This panel addressed a key component of the EQA, the Water Quality Assurance Revolving Fund or WQARF. Panelists in this session were Karen Gaylord, attorney, Salmon, Lewis & Weldon, PLC; Rick Lavis, executive vice president, Arizona Cotton Growers Association; and Jim Vieregg, director of government relations, Abrams Airborne Mfg, Inc. Tamara Huddleston, section chief counsel, Environmental Enforcement Section, Arizona Office of the Attorney General, served as moderator

WQARF, designed specifically to identify and clean up contaminated sites that might affect groundwater or public health, was created with the Environmental Quality Act in 1986.

For the next ten years, WQARF functioned without a secure funding source. What those responsible for the pollution didn't pay was covered by legislative appropriations, corporate income taxes and special fees. In fact, the concept of making the polluters responsible was largely a failure. According to Rick Lavis, chairman of the WQARF Advisory Board, the state paid almost the total costs on 36 sites.

It was clear that the WQARF needed to be restructured into a more practicable, flexible and cost-effective program. Jim Vieregg, an environmental attorney who helped draft the original law, set to work on reforming it. An amendment to EQA, passed in 1997, required ADEQ to identify as many of the parties responsible for the pollution as possible and allocate responsibility proportionately among them. The new standard, called proportional liability, ensured that no single party would be held responsible for cleaning up an entire aquifer, unless that party was solely responsible for the contamination.

These new requirements, which moved away from the strict "polluter pays" concept used in the federal Superfund legislation, meant that, if the polluters are unable to pay their fair share, the state becomes responsible for paying the "orphan" shares. The reform, however, removed a major incentive for responsible parties to construct barriers to cleanup actions by the agency, resulting in better cooperation and greater progress.

WQARF continues to face the challenge of finding what Philip Lagas, once a consultant for the program, calls "a grudging consensus" among varied stakeholders. Karen Gaylord, a member of the WQARF advisory board, said finding this consensus was especially difficult in determining exactly how clean a Superfund site should be. The argument continued until Don Ritchie, an ADEQ representative, suggested that instead of setting a number, they select remedies according to the uses of each site. The goal, he said, was not to clean up all contamination but to ensure that people living in the area could safely use the water. This clear focus of why the program exists as well as the creative thinking of ADEQ personnel qualifies WQARF, according to Gaylord, to serve as "a model for other states to look to and admire."

Session III, Emerged and Emerging Contaminants

One of the water quality issues gaining increased attention is emerging contaminants. Panelists addressing this issue were Phil Lagas, vice president, Brown & Caldwell; Paul Westerhoff, associate professor, civil & environmental engineering, Arizona State University; and David Quanrud, research scientist, the UA Office of Arid Lands Studies. Chuck Graf, Arizona Water Institute associate director and liaison with ADEQ, was the moderator.

When a wastewater treatment plant releases effluent into a stream or a dry riverbed, it may contain various contaminants such as Deet, caffeine, and ibuprofen. These byproducts of everyday life end up in the environment. Treatment plants also release traces of birth control pills and other estrogen-containing compounds. Called endocrine disruption compounds or EDCs, these natural and synthetic compounds alter the function of the hormonal system. They have been known to have various effects on wildlife reproduction and development; for example, causing female marine animals to develop male organs.

Other kinds of EDCs are found in plastic water bottles, detergents, and flame retardants. According to David Quanrud, concentrations of EDCs in water are often so small they can't be accurately measured.

Paul Westerhoff said these contaminates are products of the technological revolutions that brought more effective drugs to our pharmacies and better fertilizers to our fields. "Not everybody can live upstream," he said. Downstream of treatment plants, wells may be pumping water from an aquifer for potable supplies. The aquifer is likely hydraulically connected to the river above. In a closely interrelated ecosystem, humans are subject to what's in the water just as much as the fish.

According to David Quanrud, concentrations of EDCs in water are often so small they can't be accurately measured. About five to six nanograms of EDCs are found in every liter of treated effluent. But small doesn't necessarily mean harmless.

Another water quality concern is in the offing. According to Westerhoff a nanotechnological revolution is on the horizon. The United States is spending more than a billion dollars a year on nano-research, and nanos are used in everything from socks to

sunscreen. Westerhoff expects the specific properties of these minuscule particles to become useful in medical imaging, computer chips, even milk containers.

A critical water quality question today is whether nanos will show up in rivers, and what effect they will have. Discovering exactly what dose becomes dangerous is the key to preventing and regulating the release of nanos into nature. But analytical chemists, according to Westerhoff, are looking only for what they can measure, which is not necessarily the same as what poses the greatest risk.

Session IV, Emerging Policy Challenges

Discussing emerging policy challenges were Delia Carlyle, chairman, Ak Chin Indian Community; Deb Hill, supervisor, Coconino County Board of Supervisors; Trevor Hill, president and CEO, Global Water; David Modeer, director, Tucson Water; and Sandy Bahr, conservation outreach director, Sierra Club. Joan Card, director of ADEQ Water Quality Division, moderated the session.

An important policy challenge identified in this session was the need to bring everyone to the table when decisions about our water supplies are made. This includes developing and maintaining good relationships with the state's 22 Native American tribes. One of these is the Ak Chin, a community of 900 members located in Pinal County south of Phoenix.

The washes flowing through the reservation are a vital part of the tribe's history and culture: Even the name Ak Chin comes from an O'odham word meaning "place where the wash loses itself in the sand." Community elders gather food and basket-weaving materials in the same streambeds they played in as children. Delia Carlyle described a threat to reservation washes in January 2006 when the Ak Chin was asked to allow a release of effluent into washes that flowed onto the reservation.

After five months of collaboration with the ADEQ and other government organizations, the Ak Chin community succeeded in negotiating an agreement that no effluent would be discharged upstream of Ak Chin washes. They felt this was a victory in getting their voices heard. "Our needs are no different from the people in Arizona," Carlyle said of the Ak Chin tribe. "Decisions need to be made together."

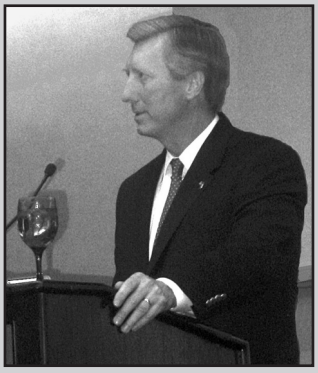
Like Native tribes, rural communities also struggle to be included in decision-making processes. Rural communities are rarely asked for input into the federal and state policies that govern Arizona's water; in fact, until recently, such communities were prohibited from being involved. Deb Hill said that Coconino County was sued three times for considering groundwater in their zoning applications. She said, "It was pointed out, all three times, that we don't have jurisdiction over groundwater, or surface water, or water at all."

Without funding and without a strong voice in government, rural communities are not able to prepare their residents to meet the threat of water shortages. Like Native tribes, they don't have the resources to invest in the technology or personnel needed to respond to the crisis.

The greatest policy challenge facing Arizona today is its unfettered growth. How can we continue to provide a sustainable water supply when aquifers levels are dropping and cities are growing? David Modeer described what is being done in Tucson to reduce groundwater use and increase consumption of Colorado River water. He expects that 95 percent of Tucson's average daily supply will be from the Colorado River within the next five years.

ADEQ Directors, Past and Present, Take Part in Event

The conference served as a reunion with former ADEQ directors, as well as the present director, speaking at the event. Former directors Russell Rhoades and Ed Fox reflected on their administrations, the problems encountered and progress made. Both had high praise for ADEQ staff. Rhoades characterized staff as "the ones in the trenches. Whatever the political situation is, they're the ones who do the job." Fox credited the success of the department to staff, the people who "make the tough decisions day in and day out"



ADEQ Director Steve Owens

Current ADEQ Director Steve Owens, along with acknowledging staff commitment, recognized the contributions of past directors. He said, "All the things we are working on now at ADEQ — the efforts we have underway, the initiatives we are taking part in, the good things that are happening are due in great part to efforts of Russ Rhoades, Ed Fox and Jacqueline Schafer and everyone else who came before us."

He described the difficulties of his job saying, "Being ADEQ director is a lot like trying to take a drink of water from a fire hose."

Owens mentioned that one of the accomplishments of which he is most proud is improving outreach and communications "to areas of the state where ADEQ was not seen as the most favored state agency. We worked hard with small businesses and under-served communities, aware that they were not getting the attention they deserved and needed from ADEQ. We were proactive."

He mentioned a new responsibility that the agency has taken on. ADEQ at the behalf of Governor Napolitano is taking the lead to work with other states to address climate change issues.

Owens was concerned about agency funding. He said that for a state the size of Arizona his agency is one of the smaller environmental protection agencies. Less than eight percent of the funding comes from state general funds. The agency has a staff of about 700.

Owens, however, was optimistic about ADEQ progress saying, "We are all in this together. At the end of the day, Arizona's going to be a better place for all of us to live."

Modeer also discussed the use of effluent as a water resource strategy. This is a strategy Tucson Water has implemented in parks, schools, golf courses and more than 600 commercial and residential buildings. This solution to Arizona's water scarcity problems, however, faces significant technological and societal challenges. Trevor Hill, President of Global Water, is working to overcome some of the obstacles.

Managing scarcity, which has been made a necessity by exploding population growth and uncertain water supplies, is the mandate of Global Water, a private water utility dedicated to reusing wastewater in a variety of ways. For private companies, Hill said, "You almost need to be green now to raise private money." But he also emphasized that water conservation is expensive, making it financially impossible for some companies to undertake such activities without raising prices.

The last event of the conference, its grand finale, was the opening of the ADEQ time capsule. One of the treasures removed from the capsule, along with ADEQ boxer shorts and an old computer, was an original poster used to collect signatures that would have put an anti-pollution initiative on the ballot in 1986. The threat of the iniative is credited with promping legislators to pass Arizona's Environmental Quality Act. Photo: Chuck Graf

But Hill was optimistic about the future of organizations like Global Water that seek to decrease Arizona's dependence on groundwater with a greater reliance on treated effluent. Hill described dual-pipe systems that would allow reclaimed water to be used for flushing toilets and a variety of other household uses and thus sidestep issues with quality. The challenge, Hill says, is not merely to improve the technology, but to get the public to trust reclaimed water as an alternative supply.

Despite progress diligence is still called for to protect the environment. Sandy Bahr voiced her concern over what she called the erosion of the EQA. She says that over the last decade, the language of the law has been amended so that many standards can be no more stringent than federal ones. "Federal laws were meant to be the floor, not the ceiling," Bahr said. "And we need to get out of the basement."

When bringing all the stakeholders to the table, one that is often left out of negotiations is the environment itself. "We have as little as ten percent of the riparian areas remaining in our state," Bahr said. "It's time we valued them a little more." ADEQ's future policies must adjust not only for the changing times, but for changing perceptions about the environment's worth and the value of clean water.

Bahr noted a recent survey of 600 rivers and streams in the western United States that found widespread mercury poisoning, not only in the water, but in all the fish that were tested.

Session V, Future of ADEQ

The final panel addressed question: "Where do we go from here?" The two panelists were Pat Mariella, director, American Indian Policy & Leadership Development Center, ASU, and Karen Peters, Intergovernmental Program Coordinator, City of Phoenix, with Patrick Cunningham, ADEQ deputy director, as moderator.

Pat Mariella said the emerging importance of tribes is a factor to consider when the future of ADEQ is pondered. A strategy of future importance might be multi-jurisdictional projects and approaches to environmental management that include tribes, state and federal agencies.

She said an example of such an approach would be the highly successful joint air toxic assessment project for the Phoenix metro area, funded largely by EPA and involving tribes, ADEQ and the counties. She suggested a parellel project of an interbasin or multi-jurisdictional effort involving water.

Another reason she gave for involving tribes is that they are able to be more creative than jurisdictions such as the state with regulatory traditions built up over the years. Tribes have the potential to operate with more flexibility. For example, they are not as restricted by regulatory limitations and can offer more flexibility in the way permits are issued. She says tribal leadership should be looked to in the environmental area.

She expressed concern that some of the ADEQ regulatory approaches have not adequately recognized the public health foundation of environmental regulation. She said, "Much more remains to be done to refocus environmental regulations to give due consideration to health concerns."

Karen Peters noted that ADEQ has accomplished some impressive groundbreaking work, achieving innovations unmatched by other states. But she warned resource constraints could limit the potential benefits of the innovations. She stressed the need for additional ADEQ funding, saying "In my vew ADEQ's future rests on the resources our state is willing to devote to the agency."

Further, partnerships are going to be increasingly important in the future, partnerships with tribes and other state agencies. She sees ADEQ's future as one of innovative partnerships to meet the challenges of sustaining our environment and our quality of life.

In Conclusion

The best the above brief program review can do is to provide a general overview of the conference, identifying major issues and summarizing presentations. What the overview is not able to convey is the full, in-depth coverage of the talks, the give-and-take among participants, the impromptu between-session discussions and the humor that are ingredients of a truly productive conference.

According to participants' responses the WRRC conference measured up to the essential criteria of a successful event. We thank all who participated in the event.