States Move Forward to Meet New

Alison Bolen *– Southwest Hydrology Feature Editor*

State water quality officials throughout the Southwest are initiating plans to meet the new nationwide standard for arsenic in drinking water - reduced recently from 50 to 10 parts per billion by the United States Environmental Protection Agency (EPA).

For many communities in the semi-arid Southwest, where water is a scarce resource and existing ground water supplies contain naturally high levels of arsenic, meeting the new standard by the January 2006 deadline will pose a challenge. To help ease the burden, state agencies throughout this region are taking steps to help communities develop technologically sound and economically efficient compliance plans.

Communicating Financial Costs

To begin the compliance process, most states have estimated the impact of the new standard and identified those communities that will be most affected. New Mexico Environment Secretary Pete Maggiore, for example, affirms that more than 140 communities in his state will face this new burden at an estimated statewide cost of $440 million. In Albuquerque alone, nearly 40 percent of the wells will have to be treated to meet the new standard.

Many officials throughout the region echo Maggiore's concerns. "Financing will be our biggest challenge," says Galen Denio, Manager of Public Health Engineering for the Nevada Bureau of Health Protection Services. "For the systems affected in Nevada, we've estimated that the cost will be a little under $300 million."

California's David Spath, Chief of Drinking Water and Environmental Management for the state's Department of Health Services, agrees. "Our biggest challenge is funding, particularly for the smaller systems. By and large, in California, that's where the impact will lie."

In all states, the impact will be lessened somewhat through drinking water revolving funds and a small number of grants and long-term loans from public and private sources. Efforts are already under way in Nevada and California, for example, to notify water systems managers about the new standard and to provide information about available financing options.

Likewise, Arizona's newly shaped Arsenic Master Plan includes information to help the state's water suppliers understand the legal processes for obtaining rate increase approvals. In most communities around the country, water consumers will shoulder at least a portion of the annual cost increases - which the EPA estimates to range anywhere from $.86 to $327 per household, depending on the size and location of the water system.

Focusing on Education

Documents within Arizona's Arsenic Master Plan reflect a common goal to educate smaller water suppliers about all aspects of the new arsenic standard, including a discussion of treatment and non-treatment methods for meeting the standard. The plan also offers a clear list

Arsenic State-by-State

	Arizona	California	Nevada	New Mexico	Texas
Approximate number of wells or systems above 10 ppb	N/A	6210 wells	220 wells	1310 wells	240 systems
Approximate percentage of systems above 10 ppb	35%	38%	19%	20%	5%
Approximate population affected	4,100,000	22,016,500	417,700	1,562,700	N/A
Maximum exceedence	21 ppb	50 ppb	12 ppb	20 ppb	50 ppb

The data above are provided by the states and are estimates only. N/A = not available

Sources:
The Arizona Department of Water Quality, **www.adeq.state.az.us**
California Department of Health Services, **www.dhs.cahwnet.gov**
Nevada Bureau of Health Protection Services, **www.state.nv.us/health/bhps**
The New Mexico Environment Department, **www.nmenv.state.nm.us**
Texas Natural Resource Conservation Commission **www.tnrcc.state.tx.us**

Arsenic Standard

of compliance options, which includes the pros and cons of each alternative and a cost estimate for each.

Nevada is in the beginning phases of its planning process, but Denio may adopt some of Arizona's tactics. "Education is really the name of the game early in this stage," he says. "Some systems are already making their plans and they know what they're going to do, but those are the more experienced and mostly the larger systems. Many of the smaller systems really don't understand yet what they're facing."

Texas Drinking Water Leader Tony Bennett agrees. An official from the state's Natural Resource Conservation Commission, he says, "The real challenges are with small systems understanding the technology and affording the costs of putting that technology into place, especially when we're talking about those that need to have a treatment option."

For those systems where treatment is necessary, the long-term costs of treatment cannot be overlooked. In varying degrees, all technologies for arsenic removal include operational and maintenance expenses and the ongoing costs associated with the disposal of any resulting hazardous wastes. Along with New Mexico's estimate of $440 million for the initial capital expenditures of arsenic removal, the New Mexico Environment Department also estimates that the annual operating costs for that state's water suppliers will fall somewhere between $16 million and $21 million.

Moving Forward

New Mexico and Nevada are the only states to sue the EPA over the new 10 ppb standard. The lawsuit, filed in April 2001, questions the science behind the new standard and requests funding to assist state compliance with the new rule. "Our goal is to achieve as much benefit as possible for the citizens of this state through litigation," says Secretary Maggiore. His team has worked with independent researchers to determine the health effects of existing arsenic levels within the state and to calculate a cost-benefit analysis for changing the standard in New Mexico. Although their reports dispute the EPA's ruling, the New Mexico Water Quality Control Consortium will likely move forward with adopting the new standard sometime in 2003.

Arizona, Texas and Utah also are on track to implement the new standard at the state level by mid 2003. California's law requires the state to adopt the EPA standard by mid-2004, so officials in the Department of Health Services are moving forward with adoption procedures as well.

While state officials throughout the region are proceeding with adoption, the feasibility of removing arsenic from drinking water is still a concern for many. Although the EPA remains confident that arsenic can be removed, only a few full-scale arsenic-removal plants have been built and tested in the Southwest. (see page 21) Currently, state officials throughout the region are monitoring the results of pilot tests in their states and remaining hopeful that newer, cheaper technologies for arsenic mitigation will be available soon.

While monitoring and testing continues to take place, many state officials will be heeding Bennett's advice. He says the best solution for every water system - both large and small - will be the simplest option available. "The simpler the treatment solution, the better the chance of success, especially for the smaller systems, where there aren't enough resources to support the salary of a full-time operator of a sophisticated plant. Here, a simple plant that will run itself and will be affordable from a maintenance standpoint is essential. Those are the goals we have to shoot for in order to be successful."

Arizona Identifies Skills Needed for Arsenic Compliance

In its Arsenic Master Plan, the Arizona Department of Environmental Quality has identified eight areas of expertise needed for the state to adopt the new arsenic standard. The necessary skills include an understanding of

- *Treatment options*
- *Non-treatment options*
- *Point-of-use (POU) systems*
- *Water system planning*
- *Financial planning*
- *Water system and treatment facility operation*
- *Regulatory expertise*
- *Water system management*

For more on Arizona's Arsenic Master Plan, read the state's documentation online at:

www.adeq.state.az.us/environ/water/dw/