

The Daily Courier

Tuesday, January 18, 2011

Talk of the Town: Protect our aquifer from contaminants

By [JOHN ZAMBRANO](#)

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On Nov. 13, the Citizens Water Advocacy Group and the Verde Watershed Association hosted an all-day forum in Prescott, "Wastewater Recharge to Groundwater: What Are the Risks?" The forum dealt with the health and ecological risks from wastewater contaminants that are not regulated and are not completely removed by our conventional treatment plants.

This is the 10th in a series of CWAG Courier columns. Read previous columns at www.cwagaz.org/articles.html.

John Zambrano is president of the Citizens Water Advocacy Group and is a retired environmental engineer.

Details of the event were described in our column Nov. 7 and a Courier article Nov. 14. A video of the forum can be accessed at www.cwagaz.org/video.html.

Many classes of residual contaminants were discussed. The speakers, however, expressed the greatest concern with the contaminants that can disrupt human and wildlife endocrine systems, which secrete the hormones that regulate growth and development and other functions. They noted that adverse effects can occur at extremely low concentrations.

Although the specific risks to our aquifer from these contaminants could not be assessed at the forum, many of the attendees left thinking that these contaminants should be removed before wastewaters are recharged to the aquifer that is our source of drinking water.

The speakers discussed advanced wastewater treatment systems (treatment beyond our conventional treatment) for the near-complete removal of these contaminants, including recognition of these systems' relatively high cost. Our community officials have stated a willingness to do only what is required by the state in this regard. Thus, it appears doubtful that they would voluntarily undertake the additional costs of advanced wastewater treatment.

Although many attendees are disappointed with our officials' position, the forum did reveal some positive and useful information concerning the design and operation of the conventional wastewater treatment plants that the communities in our region currently use to meet regulatory requirements.

Dr. David Quanrud of the [University of Arizona](#) presented the results of studies that showed the removal of some of these contaminants for different types of conventional treatment processes. The studies show that if there is sufficient treatment capacity, the kind of conventional treatment processes our communities already use can be operated to destroy or remove most troublesome contaminants. Providing this more efficient or larger conventional treatment would not entail the

much greater expense of advanced wastewater treatment.

A reasonable conclusion that can be drawn from Quanrud's presentation is that communities that recharge to an aquifer should monitor their treatment systems for selected indicator contaminants to determine their presence and removal efficiency. This monitoring could be relatively inexpensive and could be used to provide an indication of the risk these contaminants pose and whether their treatment facilities could be operated differently or be modestly expanded to maximize removals. This is particularly relevant for the [City of Prescott](#), which is in the process of designing major modifications to its two treatment plants.

It seems wise to investigate and, if warranted, take action now, rather than find out later that we have contaminated our aquifer. When we eventually have regulations for some of these contaminants, we may be required to not only expand our wastewater treatment facilities but also treat the contaminated drinking water we take from our aquifer.

The forum speakers also stressed that it is best to keep these contaminants from entering the wastewater in the first place. To that end, our communities need to better educate the public on the proper disposal of pharmaceuticals and personal care products. Programs for the safe disposal of pharmaceuticals exist in three of our communities but could be better publicized. And hazardous waste collection programs should be highlighted and held more frequently.

Business and household consumers can learn more about proper disposal of their pharmaceutical and personal care products at www.epa.gov/ppcp/faq.html. And we all should consider using more environmentally-friendly products. For example, I am going to stop, or at least minimize, the use of those ubiquitous antimicrobial soaps that typically contain triclosan, which may alter hormone processes, and its overuse may contribute to making bacteria resistant to antibiotics. Regular soap and water work fine in most circumstances.

Our communities, at a minimum, should monitor for those potentially harmful and unregulated contaminants we are adding to our water supply. They should also optimize their treatment operations and provide and publicize effective disposal programs for households. Consumers, in turn, need to do their part when buying and disposing of pharmaceutical and personal care products and hazardous wastes.

Please submit your questions and comments about our water issues to info@cwagaz.org.

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