

# Drugs in the water?

## Undefined standards, costs keep testing elusive

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There have been a number of reports stating that there are a variety of pollutants, including pharmaceutical drugs, in various water supplies throughout the country, but most cities including Fresno are not required to test for these types of contaminants.

There are tests done on the City of Fresno's water that have to meet the drinking standard but pharmaceuticals, caffeine and newer pesticides are not part of the regulations.

"A lot of treatments are good in removing metals, solids and nutrients, but are not made to remove pharmaceuticals," Ron Boquist, director of analytical chemistry at Moore Twining Associates, Inc. in Fresno said.

A 2008 investigation by the Associated Press found "a vast array of pharmaceuticals — including antibiotics, anti-convulsants, mood stabilizers and sex hormones — have been found in the drinking water supplies of at least 41 million Americans." While the reports state the amounts found are negligible, some scientists are concerned about the long-term conse-

quences to human health.

Boquist said the instruments to test for pharmaceuticals are expensive, so most labs don't buy it because their customers don't request the tests. Moore Twining's water testing lab conducts drinking water standards tests called title 22.

"Just because there are pollutants in the water, it doesn't mean it is bad to drink," he said. "The big question is how much is too much and what level is safe?"

The issue is similar to the controversy surrounding the plastic contaminants leaking into bottled water. At what level does the contaminant become unhealthy?

People who drink bottled water are not necessarily drinking better water because there are issues with plastic softeners, which are additives to plastic. And if the bottles are sitting in the sun or in higher temperatures it can leak into the water.

Boquist said bottled water facilities actually start with the water that cities provide and then runs it through filters or reverse osmosis because the water has to meet certain standards. He thinks under the current standards, the City of Fresno does do a conscious, good job of testing the water here.



COURTESY OF MATTHEW BOWDEN (WIKIPEDIA)

**There are currently no official local standards for acceptable pharmaceutical levels in public drinking water, though officials insist our supply is one of the cleanest in the country.**

"The city does an extensive amount of testing on its water," Boquist said.

City of Fresno Water Division Assistant Director of the Department of Public Utilities Martin Querin said the surface water from both the San Joaquin and Kings Rivers is extremely high-quality water.

"Although both the quantity and quality of the groundwater under the City of Fresno varies, in general, the groundwater is of an extremely high quality," Querin said. "We are fortunate to live in such close proximity to two very pro-

ductive watersheds."

He said the surface water is less reliable than groundwater, but the combined management of both groundwater and surface water will provide the City of Fresno with something most major metro regions in California don't possess — a balanced, sustainable supply of safe, clean drinking water.

Excess water from home use and rain flows into the city's gutters, then into pipes and eventually goes into ponding basins, canals, creeks and the San Joaquin River.

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This is what makes up the ground-water recharge (the replenishment of groundwater) and ends up in the drinking water supply.

Querin did admit to some localized groundwater contamination due to natural and human activity.

"We are currently managing 30 well-head treatment facilities to treat and remove impurities from the groundwater," he said.

The primary naturally occurring contaminants in Fresno's groundwater are fluoride, iron, manganese, arsenic and uranium. It is required to test the water at regular intervals and report the results of our testing to the California Department of Public Health.

People are not going to find a lot of data about pharmaceuticals in the water because government agencies and universities are mostly conducting the studies surrounding the issue.

Querin said there is no specific list of regulated "contaminants of emerging concern," or CECs, specific connections to health issues or approved or specific methodology to test for these constituents. Because of this, the California Water Resources Control Board formed a science advisory panel to initiate studies to address and better understand those issues and to be able to make regulatory decisions based upon sound science.

"Pharmaceuticals and endocrine disruptors are part of a new, specific class of chemicals called CECs," Querin said. "These CECs could potentially pass through the wastewater treatment process and could be present in recycled water making its way to receiving waters, including groundwater."

According to Boquist, anything can be in the water because people excrete drugs. The body takes what it needs and gets rid of the rest. In recent years more people have been consuming caffeine but caffeine levels in the water are not regulated either.

Querin says it has only had to test for caffeine in one location mainly because it was to determine the source of another type of contamination but there was no caffeine detected in the groundwater. The main source of caffeine would be from septic tanks, and within

the city's area of service, only the county islands remain on septic tanks. Querin thinks the real concern with the county Islands isn't caffeine — it is nitrate contamination.

Querin believes the reclaimed water is the most reliable resource the city has. The Regional Wastewater Reclamation Facility treats approximately 67 million gallons per day, which provides a substantial reliable resource of reclaimed water to irrigate landscaping and for other non-potable demands.

The best way to reduce the introduction of CECs into the environment is to choose products that cause the least environmental impact. Dispose of chemicals or unused medicine properly, cut down on the amount of personal care products and household chemicals and conserve water, the less used, the less needs to be treated.

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