

## Scottsdale officials keep eye on fissure

By Ari Cohn

Tribune



*DANGER: A stake marks a hole in the ground that is part of a fissure near Taliesin Drive in Scottsdale.*

*Tribune*

Declining groundwater supplies have opened up a fissure in the earth in north Scottsdale, and city officials say the problem could get worse if overall pumping continues to outpace the city's efforts to replace the water.

### SPECIAL REPORT: Buyers beware, does your area have fissures?

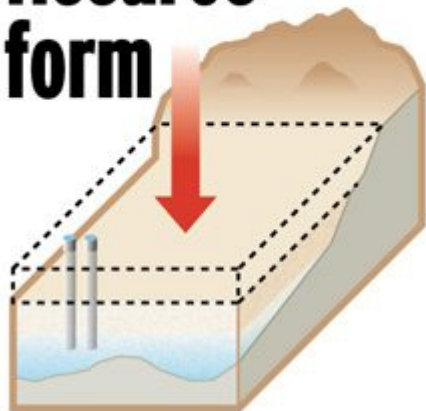
The Arizona Geological Survey, a state agency, recently released maps of fissures found in Maricopa County and some surrounding counties. The maps detail locations where groundwater has receded and the earth has settled unevenly, leaving large gashes in the ground.

Mountains.

Michael Conway, an Arizona Geological Survey section chief, said fissures often develop near mountain ranges that form the edges of groundwater basins, like the McDowell Mountains' relation to the lower valley. The soil is less uniform on the basin's slopes, and when groundwater is removed, the valley floor sinks, creating fissures, Conway said.

[Click to view an interactive graphic](#)

## How earth fissures form



"The ground is sort of like a sponge. As we pump water out, the sediments get compacted closer and closer together," he said. "We tend to see the fissures developing near to the mountain fronts."

One concern about the Scottsdale fissure is its proximity to the CAP Canal, he said.

"Fissures have cut canals before, there's no question about it," Conway said.

Marshall Brown, Scottsdale's water resources general manager, said the fissure sits on vacant Central Arizona Project land and runs parallel to the canal rather than intersecting it. It also doesn't appear to be a danger to surrounding development, he said.

"The fissures are usually fairly localized and they tend to follow geologic features," he said.

**KNOWN FOR 5 YEARS**

City officials have been aware of the fissure for about five years, and monitoring has shown that the ground there is no longer subsiding because the city stopped pumping groundwater in the area, he said. Instead, the city pumps water back into the aquifer to the north at the Scotts-dale Water Campus, just off Pima Road at Hualapai Drive.

"The water level has been stabilized," Brown said.

The loss of groundwater is a regional problem, and Scottsdale is working with Phoenix and Salt River Project to limit pumping and increase aquifer recharge, he said. Allowing the groundwater to recharge naturally takes an extremely long time, he said.

City Councilman Ron McCullagh said the future sustainability of the city's groundwater supply could be endangered by increased pumping at Arizona American Water Co.'s Miller Road Treatment Facility, at Miller Road and McDonald Drive.

It's also affected by the loss of up to 3 million gallons of water per day that is pumped and treated from a contaminated well by Motorola contractors, McCullagh said. The treated well water is dumped into the SRP canal and transported downstream to other cities.

The well, called PCX-1, pumps and treats groundwater from the North Indian Bend Wash Superfund site, a federally listed toxic waste site, wherein groundwater beneath a vast swath of south Scottsdale is contaminated with trichloroethylene, or TCE - a suspected carcinogen.

Previously, water produced by PCX-1 was pumped and treated by Arizona American Water Co., a private utility serving about 12,000 people in Scottsdale and Paradise Valley, and then blended into the company's drinking water supply.

## **TAINTED WELL DISCONNECTED**

Arizona American treated the water on behalf of Motorola, one of the companies responsible for the pollution. But the utility disconnected the contaminated well from its system and cut ties with Motorola after it was revealed that high levels of TCE had entered the utility's drinking water supply in October, and then again in January. The loss of the well has prompted the company to bring another of its groundwater wells from about half capacity to full operation.

Todd Walker, Arizona American spokesman, said the fissure predates the company's decision to bring its wells up to full capacity. The company "utilizes what is authorized by the Arizona Department of Water Resources and nothing more," Walker said.

"Arizona American Water is committed to using Arizona's most precious resource in an environmentally sensitive and friendly manner," he said.

Motorola is still liable for pumping and treating contaminated groundwater. It hired another contractor in April to do the work and release the treated water into the canal.

McCullagh has called for the city to look into buying or condemning Arizona American's local system after the two drinking water scares.

The council is paying consulting firm Carrollo Engineers about \$312,000 to draft an appraisal of Arizona American's system. By acquiring the system, McCullagh has said Scottsdale could regulate the amount of water pumped from the aquifer.

McCullagh said he wasn't familiar with the fissure in north Scottsdale, but he plans to wait for the results of the consultants' appraisal, expected to take months, before taking action.

"I will be looking into this and asking the Water Resources Department to look into this," said McCullagh, an Arizona American customer. "It's very interesting to me, if it's evidence of a declining water table."

Brown has said the city recharges as much water into the aquifer as it pumps out, but the additional pumping could upset that balance.

"Pumping anywhere in the northeast area affects the groundwater in Scottsdale," he said.

Conway said the state only started systematic mapping of fissures in the last couple of years, and many factors are involved in the creation of fissures that aren't fully understood.

"We just don't know enough about how these things evolve over time," he said. "If you continue to lower the groundwater table, you would anticipate these fissures have the potential to grow."