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From tap to sewer to tap. Ew?

Plan in California to reuse water is hard for some to swallow

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NEWPORT BEACH, Calif. —Parched by a deepening water crisis, the West has launched the world's largest operation to recycle sewage water—and the first such major effort in America—but some residents of Orange County are finding it hard to swallow and branding it distastefully as "toilet-to-tap."

"That's gross!" said Stephanie Pakalns, 23, a trade show decorator, after she used a public bathroom along the beach, which happened to be next to a drinking fountain. "Bottled-water companies—they're going to be making a lot of business."

Not everyone agrees. "I don't have a problem with it," said John Scarich, 88, who's retired from building electrical motors. "It's supposed to be OK."

Beginning this year, the Orange County government started taking sewer water and, instead of dumping it into the ocean after treatment, cleaned it a second time using technology that renders the water almost distilled, exceeding all state and federal drinking standards, officials said.

The water then goes from the new \$480 million water plant in nearby Fountain Valley to the drinking supply that lies beneath [Anaheim](#)—percolating many months through the earth into an aquifer serving 2.3 million people in 20 cities.

The process departs from the routine: Treated sewage typically is returned to the environment at large, such as in rivers and lakes, and after it dilutes in the vast bodies, the water is reharvested. The Orange County process skips the return-to-the-great-outdoors step.

County officials acknowledge a public "yuck factor," which has stymied similar projects elsewhere, including in Los Angeles. But officials say the additional purification is intensive, involving three steps: microfiltration,

also used in purifying baby food and sodas; reverse osmosis, which water bottlers employ; and ultraviolet light with hydrogen peroxide, similar to how hospitals and dentists sterilize instruments.

The advent of recycled sewer water left some residents near hysterics in November, when the plant was supposed to open, and they complained that their water tasted like a sewer. In fact, the new Groundwater Replenishment System had been postponed until January, officials said.

"There's this few people who don't trust government," said Gina DePinto, a spokeswoman for the project jointly operated by the Orange County Water and Sanitation Districts. "They're germophobes. They don't use microwaves. And they say, 'Forget it, you're not going to sell me on this.'"

"This has been the most watched and most regulated water plant on the planet," she added. "Sewer water has been treated and used for landscaping for many years. But when you're talking about putting it in the drinking-water supplies, it's a new thing."

Advocates say the 2.3 million residents won't notice a difference in their tap.

West's water needs rise

Some experts predict Orange County's initiative will become a popular, cost-effective way to quench the thirst of the West, which has seen a huge influx of people over the past few decades.

Conveniently next to the wastewater plant in the heart of the county, the new purification facility produces 70 million gallons of water a day, enough for 500,000 people for 24 hours, officials said.

The wastewater reuse has been done in a handful of places for as long as 30 years, but nothing on the massive scale of Orange County today. They include projects in three other [California](#) communities; El Paso, [Texas](#); Scottsdale, Ariz.; northern Virginia; and [New Jersey](#), according to experts.

Outside the United States, Singapore has an ambitious program similar to Orange County's.

Still, the mayor of nearby [San Diego](#) balked at such a project, but the City Council recently overrode his veto.

Only one place on the planet, Windhoek, Namibia, puts the highly recycled wastewater directly back into the tap—pipe-to-pipe—and no problems have been reported, said [Wade Miller](#), executive director of the Water Reuse Association, a non-profit group that advocates wastewater recycling.

"The Orange County model is definitely one that is going to be emulated in other parts of the country over the next two decades," Miller said.

Drought, global warming and population growth are straining the West's water supplies, especially in arid regions such as Southern California, experts say.

"This coming specter of climate change has water managers concerned because they are going to have to change the way they operate reservoirs," said Dan Cayan, climate researcher with the Scripps Institution of Oceanography and the U.S. Geological Survey.

'It's fail-safe'

Chicago officials are watching Orange County, but any copying is a distant idea and likely would be limited to landscaping or for industrial purposes, not for drinking, officials said. The Chicago area's treated effluent is poured into canals, creeks and rivers that feed the Illinois River.

"As far as the psychology [of recycling sewage for drinking supplies], it's a tough sell" to the public, said Dick Lanyon, general superintendent of the Metropolitan Water Reclamation District. "At some point in the future, we may be hard-pressed to meeting our water needs. With Lake Michigan next to the city, we're not there yet."

Back in Orange County, 69-year-old Ron Mack of Newport Beach likes how earth filtration assists in the reuse of cleansed wastewater. "To me, that is just as natural as rainwater," the retired warehouse worker said.

Officials said the reverse osmosis removes pharmaceuticals in the wastewater, a nationwide concern being studied by federal officials.

"People say, 'What if the system breaks down? Are we going to get sewer water in the home?' " said DePinto, who has consumed water at the plant and says it has a normal taste and no unusual odor. "The answer is no. There's so many checks and balances in the system, it's fail-safe."