impact
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Reclaiming Wastewater through Soil Aquifer Treatment

Issue

Water-short areas in the U.S. and around the world have turned to reclaiming wastewater as a way to increase water supplies. Some treatment methods use chemical additives to help purify the water. Charles Gerba, a University of Arizona environmental microbiologist, tested a more natural method currently used in Tucson, and found that it produced high quality nonpotable water without additives at a low cost.

What has been done?

The soil aquifer treatment used a 37-meter layer of soil as a filter. Wastewater was purified as it passed through, and was then collected in underground storage tanks. This is a natural, sustainable system that will not wear out. It takes the place of building a conventional treatment plant.

Impact

The soil aquifer treatment significantly reduced enteroviruses as they passed through the soil. Groundwater samples held no Giardia. The two organic compounds present were reduced by 92% and 85% respectively, and total nitrogen leached out 47% during recharge. The project has now expanded to include the City of Phoenix in Arizona, and Los Angeles and Orange Counties in California, at the request of those communities.

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Contact
Charles Gerba, environmental microbiologist,
Department of Soil, Water and Environmental Science
Shantz Bldg., Room 429, PO Box 210038, The University of Arizona
Tucson, AZ 85721
Telephone: (520) 621-6906 Fax: (520) 621-1647
Email: gerba@ag.arizona.edu