



AWWA DIRECTOR'S REPORT

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Pharmaceutical Waste Products – An Engineering Concern

IN RECENT YEARS THERE HAS BECOME A GROWING CONCERN ABOUT THE IMPACTS OF pharmaceutical waste products in the water supply. This problem was highlighted in a report issued in 2002 by the U.S. Geological Survey (USGC), which was the first major study on the occurrence of these products in the nation's water supply. The USGC tested various streams throughout the country and concluded that contaminants from pharmaceuticals, cosmetics, detergents, and steroids are found in many of the streams tested.

These contaminants are generally contained in a group called "pharmaceuticals and personal care products" or PPCPs. PPCPs include prescription and non-prescription medications consumed by humans and animals, and include all prescription drugs, antibiotics, pain killers, birth control pills, tranquilizers, cosmetics, fragrances, toiletries and anti-bacterial agents. Another reason why PPCPs are of concern lately is that the sensitivity of analytical equipment has significantly advanced so they can now detect contaminants at extremely low concentrations. Accordingly, PPCPs are being detected in surface waters and wastewater effluents generally in concentrations of parts-per-trillion up to parts-per-billion at which concentrations they are at least 100 times below therapeutic doses. There has also been reporting of PPCPs in groundwaters and drinking waters, but at much lower concentrations.

So what are the concerns with PPCPs? There are some reports showing evidence of environmental effects including changes in reproductive processes in fish such as altering sperm levels and spawning patterns in marine life. There is currently little evidence of

human health effects, but research is increasing as there is a growing concern that there may be synergistic effects of multiple PPCP compounds and potential long-term health impacts and/or ecological impacts.

What should we do now? Unused medicines and personal care products of any nature should be disposed with household trash that goes to lined landfills. Do not throw them down the toilet as many of these products are not reduced in conventional wastewater treatment processes and, thus, will wind up in effluents, receiving waters, and reclaimed waters.

We should also encourage a public awareness program of the concerns with PPCPs primarily because our source waters from the Salt, Verde, and Colorado Rivers receive discharges of wastewater treatment plant effluents that likely contain PPCPs. Also, we should encourage the need for additional research to determine any health and ecosystem effects from PPCPs.



American Water Works Association
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