

commentletters

From: Jane Nielson <jenielson@comcast.net>
Sent: Tuesday, February 16, 2016 10:55 AM
To: commentletters
Subject: Sebastopol Water Information Group Comment on General Order for Recycled Water Use
Attachments: PastedGraphic-1.pdf

February 16, 2015



Dear State Water Board Members:

The Sebastopol Water Information Group (SWiG) is an alliance of Sebastopol residents and well owners, with groundwater information and expertise in west Sonoma County, California. SWiG provides Sonoma County citizens with accurate scientific information on water supplies and water quality.

SWiG understands the State Water Board's attempt to extend limited potable supplies by recycling large amounts of wastewater as a response to the apparently ongoing drought. But we are SWiG members are concerned about possible unintended consequences of the Board's *General Order for Recycled Water Use* as a way to streamline the process for developing new projects. We request that the Board delay authorizing this General Order to afford additional study of the whole issue.

Currently about 85,000 chemicals are registered for use, but almost none are regulated. At least 1000 of these chemicals have demonstrated endocrine disrupting characteristics. Scientific studies have shown that even exposures to minute amounts can cause a multitude of serious health problems, especially in exposed children. Impacts on fish in natural settings may be even more devastating. People who eat the fish may be exposed to a range of disease-causing substances.

Wastewater treatment systems aggregate masses of unknown chemicals, including cleaning, pharmaceuticals, cleaning, personal care, and building products, and many more. How these substances may combine in wastewater to form new, and sometimes more dangerous, compounds is unknown. Two relatively benign chemicals can react to form toxic substance. **Such toxic substances have been found in even the most highly treated wastewaters.**

Tertiary-treated wastewater irrigation water often runs off into local storm sewers, and can end up in streams, where it has the potential to affect the habitats of wildlife, fish and other aquatic life, and human recreational areas. The health of any living things in these areas thus could be at serious risk.

The proposed General Order states that if recycled wastewaters meet "Title 22" standards, and all other applicable laws intended to protect public health, then they are safe for approved uses, including irrigation of food crops, spraying of children's parks and schools, and other uses. None of the cited regulations address endocrine disruption, nor many of the toxins or the pesticides in runoff from the wastewater application. Health departments are concerned about pathogens, but almost totally ignore toxic exposures. *Notably, even organic vegetables can be irrigated with wastewater.*

Furthermore, these projects would take place in summer, when natural flows generally are extremely low, and may be even lower due to drought. In summer the receiving water body may have no capacity to assimilate nutrients or toxins in the wastewater. Summer is also the time when humans are most likely to have direct contact with the wastewater through recreational activities.

State Panel Scientists have not adequately addressed the ‘low dose effect’, which some peer-reviewed studies have demonstrated to be highly toxic (the 4 references below represent a few of many internet pages on this topic). These reports show clearly that the State Panel has made a premature, and inadequately considered, determination that it is safe to irrigate urban landscapes with tertiary wastewater, without even monitoring the impacts of these toxins!

Please do not authorize this General Order in its current form.

Sincerely,

Jane E. Nielson Ph.D., PG

for the Sebastopol Water Information Group

Kortenkamp, A., 2007, Ten years of mixing cocktails: A review of combination effects of endocrine-disrupting chemicals: Environmental Health Perspectives, v. 115, 98-105 (<http://bura.brunel.ac.uk/handle/2438/10767>)

Vandenberg, L.N., and others, 2012, Hormones and endocrine-disrupting chemicals: low-dose effects and nonmonotonic dose responses: Endocrine Reviews (<http://press.endocrine.org/doi/abs/10.1210/er.2011-1050>)

Von Saal, Frederick S., and Claude Hughes, 2005, An extensive new literature concerning low-dose effects of Bisphenol A shows the need for a new risk assessment: Environmental Health Perspectives, v. 113, p. 926-933
(http://www.jstor.org/stable/3436346?seq=1#page_scan_tab_contents)

Welshons, Wade V., and others, 2003, Large effects from small exposures. I. Mechanisms for endocrine disrupting chemicals with estrogenic activity: Environmental Health Perspectives, v. 111, 994-1006
(<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1241550/>)

Hormones and Endocrine-Disrupting Chemicals: Low-Dose Effects and Nonmonotonic Dose Responses

Laura N. Vandenberg, Theo Colborn, Tyrone B. Hayes, Jerrold J. Heindel, David R. Jacobs, Jr., Duk-Hee Lee, Toshi Shioda, Ana M. Soto, Frederick S. vom Saal, Wade V. Welshons, R. Thomas Zoeller, and John Peterson Myers

- See more at: <http://press.endocrine.org/doi/abs/10.1210/er.2011-1050#sthash.TjGhzoc.dpuf>