

To: Advisory Panel for CECs in Recycled Water

RE: Public Comment on Draft Report: Monitoring Strategies for Constituents of Emerging Concern (CECs) in Recycled Water: Recommendations of a Science Advisory Panel

Greetings Advisory Panel Members,

I wish to express my appreciation to the 2018 expert panel for your work producing this draft report. You have clearly provided a great deal of time and expertise, but as a member of the public your assurances of "a very large margin of safety" fail to assure me that recycled water is currently safe for all permitted uses in California when these assurances are taken with other information presented in this draft report. According to this report, many potentially toxic contaminants are in use but are currently uncharacterized in recycled water for various reasons (Figures ES.1, 5.1). Important pathways of exposure are also excluded from consideration by this panel and it's not clear whether and when they will be evaluated. For example, the following excerpt is from page x: Executive Summary, Final Recommendations of 2018 Panel of the draft report:

"The Panel cannot stress strongly enough that the outcome of the 2018 application of the risk-based framework clearly points to the safety of potable and non-potable reuse practices in California. It is essential that all stakeholders and the public realize that the Panel's findings and recommendations include a very large margin of safety. That large margin of safety arises from conservative assumptions that are built into each step of the overall human health CEC screening process."

I would like to know how this panel reconciles the above statement with the following concern: The surrogate parameters for nonpotable reuse (turbidity, chlorine residual and total coliform) are deemed sufficiently protective of public health for all permitted uses by this panel, but overall food safety (including uptake of regulated contaminants and CECs) for agricultural irrigation with municipal recycled water has apparently not been addressed thus far by this or any other panel or regulatory agency. Also, these parameters leave me wondering if/how undisinfectated secondary is evaluated.

Another concern I have is that crucial recommendations of the 2010 CEC expert panel have been delayed or not implemented at all (Table 2.2; Section 5). What are the impacts on public health and safety of not completing these tasks while continuing to permit all uses of recycled water in Table C.1? I wonder whether convening a volunteer expert panel every few years is really the best method for dealing with the critical public health concern of developing monitoring protocols for CECs in recycled water during this important developmental phase. In the panel's own words,

"...a concern might arise where data collected either in California or elsewhere suggest that MEC/MTL or PEC/MTL ratios could be greater than 1 but that such CECs are added to the list only upon Panel review. The CEC listing and de-listing process needs to be responsive to new data and developments as they occur and, ideally, not depend on a Panel triennial review." (draft report page 43)

It feels to me like the state is rushing to expand wastewater recycling while dealing with important water quality concerns (with public health and ecological implications) at a much slower pace, even putting specific recommendations of the CEC expert panel it has engaged on the back burner. This is especially concerning given that state policy has promoted rapid expansion of wastewater recycling

in recent years while continually assuring the public that wastewater recycling is perfectly safe -- a common strategy of the water reuse industry when promoting reuse projects is to attempt to persuade the public that concerns about recycled water are baseless, psychological "yuck factor" responses of scientifically ignorant people. In reality, important scientific public health and environmental safety questions about the various forms and uses of recycled water remain unanswered while new recycled water regulations and projects forge ahead in California as part of legislated state water policy.

Although I have not had time to study this report as thoroughly as I would have liked in time to submit a comment letter by the deadline, I have a few additional questions:

How is the margin of safety for CECs known and determined to be acceptable to this expert panel for all uses in Table C.1: Recycled water uses allowed in California? Does the following statement (from page 3) apply to all categories and uses of recycled water in Table C.1 including undisinfected secondary wastewater?

"The Panel also chose not to consider the occurrence of waterborne microbial pathogens. Given the multiple barrier concept and water treatment process redundancy requirements in place, the Panel believes that the potential public health risk associated with exposure to pathogens in recycled water used for non-potable reuse and potable reuse practices is rather small and well managed."

How is it ensured that wastewater samples taken infrequently (e.g. every 5 years) are representative enough of the waste stream to be used for setting future monitoring schedules and requirements?

Is it known whether low-level exposure to CEC contaminants such as pharmaceuticals can trigger allergic reaction in highly allergic people? (e.g. sulfamethoxazole for some people with "sulfa" allergies?)

Given the uncertainty that currently exists surrounding ARG and ARB in the various forms of recycled water and their potential impacts, does this advisory panel think it would be prudent for the state to suspend permitting the use of undisinfected secondary wastewater for irrigation until more information is known about antibiotic resistance? What about disinfected secondary-23 wastewater?

How is the public (consumers of recycled water and products produced with recycled water) represented (e.g. as stakeholders) in this process? How is the public notified of opportunities to review and comment on expert panel draft reports and draft regulations concerning contaminants in recycled water?

Thanks again for your work and thanks for considering my comments and questions.

Deb Wirkman