



Terrie L. Mitchell
Tri-TAC Chair
Sacramento Regional County Sanitation District
10060 Goethe Road
Sacramento, CA 95827
(916) 876-6092
mitchellt@sacsewer.com

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Mr. Charles R. Hoppin, Chair and Members
State Water Resources Control Board
1001 I Street, 24th Floor
Sacramento, CA 95814

Via Email: commentletters@waterboards.ca.gov

SUBJECT: COMMENT LETTER – AMENDMENT TO THE RECYCLED WATER POLICY

Dear Chair Hoppin and Members of the Board:

Tri-TAC and the Central Valley Clean Water Association (CVCWA) are pleased to submit comments on the May 7, 2012 *Draft Amendment to the Recycled Water Policy* (Amendment) which addresses the monitoring of constituents of emerging concern (CECs) in recycled water used for groundwater recharge and landscape irrigation.

As background, Tri-TAC is a technical advisory group for POTWs in California. It is jointly sponsored by the California Association of Sanitation Agencies, the California Water Environment Association, and the League of California Cities. The constituency base for Tri-TAC collects, treats, and discharges or reclaims wastewater and manages biosolids from more than 90% of the sewered population of California. These agencies collectively treat and reclaim more than two billion gallons of wastewater each day and beneficially recycle or otherwise manage more than 600,000 dry tons of biosolids annually.

CVCWA is a non-profit organization that represents more than 50 publicly owned treatment works throughout the Central Valley Region in regulatory matters affecting surface water discharge, land application, and water reuse. CVCWA approaches these matters with a perspective to balance environmental and economic interests consistent with state and federal law.

We hope that you will consider our suggestions in the spirit of continuing the collaboration that resulted in the Recycled Water Policy (Policy) and the convening of the Science Advisory Panel (expert panel) that developed recommendations for CEC monitoring.

Vice Chair

Jacqueline Kepke
East Bay Municipal
Utility District
375 – 11th Street, MS702
Oakland, CA 94607
(510) 287-1608
jkepke@ebmud.com

*Water Committee
Co-Chairs*

Lorien Fono
Patricia McGovern
Engineers
2242 Leavenworth St.
San Francisco, CA
94133
(510) 684-2993
lfono@pmengineers.com

Shannon Bishop
Los Angeles County
Sanitation Districts
1955 Workman Mill
Road
Whittier, CA 90601
(562) 908-4288 x2843
sbishop@lacsds.org

*Land Committee
Co-Chairs*

Vincent De Lange
East Bay Municipal
Utility District
375 – 11th Street, MS702
Oakland, CA 94607
(510) 287-1141
vdelange@ebmud.com

Tom Meregillano
Orange County
Sanitation District
10844 Ellis Avenue
Fountain Valley, CA
92708
(714) 593-7457
tmeregillano@ocsd.com

We continue to urge the State Water Resources Control Board (Board) to adhere as closely as possible to the recommendations of the expert panel as the June 2010 report¹ represents the “best available science” on the potential health and environmental effects of CECs related to the use of recycled water for landscape irrigation and groundwater recharge. Basing decisions on recycled water permits on the “best available science” is a principle that has been consistently endorsed by the Board and by the Policy stakeholders group. In addition, relying on the expert panel’s specialized expertise is the best way for the Board to assure the public that CECs in recycled water are receiving appropriate scrutiny. The expert panel’s recommended approach ensures that agencies will identify the presence and concentrations of CECs well before those concentrations can pose any risk to public health. This approach, which addresses occurrence in recycled water and treatment plant performance, should give water users, regulators, and the public the confidence that CECs will not pose public health threats.

For the most part, we concur with the Amendment, which largely incorporates the expert panel’s approach and many of the written comments that you received in January, 2011. In particular, we appreciate that the Amendment (and Attachment A thereto):

- Affirms that CEC monitoring is not required for landscape irrigation projects nor are landscape irrigation projects required to determine removal differentials for surrogate compounds
- Limits CEC monitoring for groundwater recharge projects to the chemicals recommended by the expert panel
- Does not provide authority for a Regional Water Quality Control Board (Regional Board) to add CECs for monitoring groundwater projects that use tertiary recycled water/soil aquifer treatment (SAT) or reverse osmosis/advanced oxidation (RO/AOP) beyond what is included in the Amendment
- Creates a phased approach for CEC monitoring with refinements allowed based on the results of the previous phase
- Allows for the use of historic monitoring data to be used to tailor programs to assess occurrence and removal

However, we wish to highlight several remaining issues of concern and recommend a different course than suggested in the Amendment. Based on input from CDPH, even though the draft regulations are likely to be revised based on comments submitted earlier this year, the major concepts, including CEC monitoring are not going to change. Thus, it will be beneficial for the CEC provisions in the Policy Amendment to be aligned with the groundwater recharge regulations as recommended by the expert panel in its June 2010 report. Striving to achieve consistency between the Policy (as amended) and the CDPH recharge regulations is a critical step to promoting recycled water use, a primary goal of the Policy.

The Board should clarify in the Policy that Priority Pollutant monitoring for landscape irrigation projects is limited to recycled water.

The proposed Policy language specifies that priority pollutant monitoring be conducted twice per year for landscape irrigation projects except for small disadvantaged communities. See Policy, Section 7.b.(3) at pg. 9. The language in the Policy is vague and does not specify what has to be monitored (recycled water only, groundwater, etc.).

¹ Drewes, J.E., Anderson, P., Denslow, N., Olivieri, A., Schlenk, D., and Snyder, S. (2010) Final Report Monitoring Strategies for Chemicals of Emerging Concern (CECs) in Recycled Water Recommendations of a Science Advisory Panel, SWRCB, Sacramento, CA, June 25, 2010.

Based on the June 8, 2012 meeting with WaterReuse California (WaterReuse) and Board staff, we understand that the intent of this Policy provision is for priority pollutant monitoring to be required for recycled water only. Groundwater monitoring would only occur on a case-by-case basis if recycled water data indicated that groundwater quality is threatened.

The Board should revise the permit streamlining provisions for priority pollutant monitoring to specify that reduced monitoring applies to all small communities, not just small disadvantaged communities, and should consider removing or reducing this monitoring requirement for all small communities.

The Amendment would add the following provision to the section of the Policy titled “Streamlined Permitting”:
“For landscape irrigation projects, priority pollutants shall be monitored twice per year, except for landscape irrigation projects owned by small disadvantaged communities which shall be monitored for priority pollutants once every two years.” (Amendment, p. 9, footnote omitted.) As amended, the Policy would define “small disadvantaged communities” as “[t]hose communities having a population of less than 20,000 and a median household income less than 80 percent of the statewide median household income.” (Amendment, p. 9 fn. 1.)

While we appreciate your consideration of small disadvantaged communities in this regard, we believe that the Policy should afford additional monitoring relief and extend this relief to all small communities, because the expense of this monitoring will be a barrier to implementation of recycled water projects. As an initial matter, we believe that given the low threat to water quality posed by recycled water and the many existing state, regional, and local policies calling for increased water recycling, small communities should not be required to monitor for priority pollutants when using recycled water for landscape irrigation. In the event that such monitoring is required, we respectfully request that the Policy provide small communities an opportunity to reduce their monitoring frequency for priority pollutants based on initial monitoring results.

Further, monitoring for priority pollutants twice per year represents an increase in monitoring frequency for many small communities.² Contrary to the spirit of the Policy and its water recycling goals, the increased costs associated with the increased monitoring may discourage small communities from producing recycled water. Therefore, extending the provision to include all small communities is consistent with the Policy itself.

The requested change is also consistent with the Board’s *Water Quality Enforcement Policy* (May 20, 2010) (Enforcement Policy) and Resolution No. 2008-0048, *Promoting Strategies to Assist Small and/or Disadvantaged Communities with Wastewater Needs* (July 1, 2008). The Enforcement Policy recognizes that “complying with environmental laws and regulations will require higher per capita expenditures in small communities than in large communities.” (Enforcement Policy, p. 3.) As a result of this recognition combined with the significant costs associated with traditional water quality enforcement practices, the Enforcement Policy eases enforcement burdens on all small communities, not just those that are disadvantaged. (*Ibid.*) Specifically, the Enforcement Policy generally directs that informal enforcement or compliance assistance be the first steps taken to return a facility serving a small community to compliance. (*Ibid.*) Resolution No. 2008-0048 also recognizes the small communities, not just those that are disadvantaged, lack economies of scale and the funding necessary for compliance with water quality regulations. Therefore, Resolution No. 2008-0048 directs Board staff to take certain actions related easing the financial burdens of regulatory compliance.

² See e.g., *Waste Discharge Requirements for the Nevada County Sanitation District No. 1 Lake of the Pines Wastewater Treatment Plant*, Order No. R5-2009-0031/NPDES No. CA0081612 (April 24, 2009), pp. E-4 to E-10; *Monitoring and Reporting Program for the City of Brentwood* Order No. R5-2004-0132 (Sept. 10, 2004), pp. 2-4.

The Board should modify Attachment A so that the monitoring locations for surface and subsurface groundwater recharge projects conform to the expert panel recommendations.

The monitoring locations specified in Attachment A of the Amendment for CEC health-based indicators, CEC performance indicators, and surrogates for surface and subsurface application projects are not in conformance with the expert panel recommendations. See Attachment A, pg. 2, pgs. 6 - 14. While the expert panel provided examples in the June 2010 report, the expert panel specifically recommended that the exact monitoring locations be selected in consultation with CDPH. Based on the June 8, 2012 WaterReuse meeting with Board staff, we understand that because of uncertainty in CDPH finalizing the draft recharge regulations and their continued evolution, the Board staff have elected to proceed with their own interpretation of monitoring based on the expert panel report and recent communications with some of the panel members in cases where the report was unclear. However, the expert panel did explicitly recognize that monitoring locations for recharge projects would need to be selected on a case-by-case basis in consultation with CDPH regardless of the status of the recharge regulations. We understand that the panel intends to submit comments confirming this intent. It is our understanding based on discussion with CDPH that while some modifications may be made to the November 2011 draft groundwater recharge regulations, the general concepts, including CEC monitoring, will not change. It is important to remember that the draft regulations have been used for over 30 years to permit groundwater recharge projects with monitoring programs developed on a project-specific basis. This approach will continue even when the final regulations are adopted. Project sponsors would be much better able to achieve the Board's recycled water goals if the CDPH and Board monitoring efforts were harmonized rather than having this Policy Amendment establish requirements that may later conflict with CDPH's monitoring recommendations.

The Board should modify Attachment A to verify that a goal of the initial CEC monitoring assessment is to establish project-specific expected removal rates.

We are concerned that the proposed requirements derive from a misinterpretation of the purpose of the initial CEC monitoring. In particular, Attachment A states that "calculated removal differentials less than the expected removal differentials [in Table 6] provide an indication that treatment processes may not be operating as expected or to technical specifications. If the removal differential is less than expected, assessment of the treatment processes may be warranted." This inappropriately establishes Table 6 values as a benchmark for treatment effectiveness, fails to acknowledge that removal rates are highly project-specific, and that monitoring results will be used to establish the expected removal rates for CEC performance indicators and surrogates for baseline and subsequent monitoring. See Attachment A, pgs. 8 and 16. The June 2010 expert panel report provides an example of expected performance (Table 8.2 on pg. 66) based on one study and specific operational conditions that may not be representative of all recharge projects. The expert panel recognized that removals would be unique for each project and recommended that the initial monitoring phase be used to establish expected removals for use during subsequent monitoring phases. The removals will be project specific as acknowledged by the expert panel. During the June 8, 2012 meeting with Board staff, WaterReuse was informed that one expert panel member consider the expected removals included in Attachment A of the Amendment (e.g., those from Table 8.2 in the June 2010 report) to be "industry standards" that any project can meet. We believe the expert panel member in question has been misunderstood, and that the panel intends to submit a comment letter that clarifies this issue. The removal of CECs in groundwater recharge projects is a dynamic area of research with new results coming out on a frequent basis. While these studies have consistently shown that CECs are removed, the magnitude of removal for a particular CEC in a particular context is hardly settled science. Changes or variability in influent concentrations to treatment processes, variations in treatment processes, and differences in site conditions will all influence removal rates and may be different than the conditions that led to the removal rates in Attachment A. Drewes et al. (2011) noted that it is important to consider initial concentration levels when utilizing and interpreting percent removal data as well as

travel time.³ This research report is incorporated by reference. An ongoing WateReuse Research Foundation Project (WRF 10-05) headed by Dr. Jörg Drewes, the chair of the expert panel, is further exploring specific project site conditions influence on performance. One preliminary finding is that that differences in site conditions can lead to differences in CEC performance. The use of fixed expected removal differentials in the Amendment that could differ from project- specific removals could trigger unwarranted response actions.

The Board should modify Attachment A to clarify that CDPH is the lead agency for selection of CEC monitoring for treatment processes not addressed in the Policy.

The expert panel addressed only two types of treatment processes for CEC monitoring: (1) tertiary recycled water and soil aquifer treatment (SAT) for surface spreading groundwater recharge projects; and (2) reverse osmosis/advanced oxidation (RO/AOP) for subsurface application groundwater recharge projects. In Attachment A of the Amendment, the Board allows for Regional Boards to establish CEC monitoring requirements “in consultation with CDPH” for treatment processes other than tertiary/SAT and RO/AOP. See Attachment A, pg. 2. We believe that CDPH has the most knowledge and expertise related to the selection of CECs for monitoring groundwater recharge projects that utilize alternative technologies, both in terms of health relevance and technology performance. Thus, CDPH should be the lead for making determinations for selecting CECs for treatment processes not addressed by the expert panel, until such time as a future expert panel is convened and makes appropriate recommendations that would be considered by the Board as amendments to the Policy. This is a relevant and timely issue for one existing permitted recharge project that utilizes another technology, the Dominquez Gap Barrier Project, and several planned projects that are considering alternative technologies. In addition, our recommendation to make CDPH the lead agency conforms to the permitting process for groundwater recharge projects whereby CDPH makes recommendations to the Regional Board, and the Regional Board issues the permit for the project.

The Board should modify Attachment A to clarify how surrogates are selected for monitoring.

We are concerned that the requirements in Attachment A of the Amendment are not particularly clear on how surrogate selection occurs, and thus could allow Regional Boards the discretion to increase the number of surrogates that must be monitored for groundwater recharge projects and landscape irrigation projects. See Attachment A, pg. 5.

The Board should modify Attachment A to clarify that an EPA approved method for CEC monitoring must be a promulgated method.

In Attachment A of the Amendment, the Board specifies that if the U.S. Environmental Protection Agency (EPA) has “approved” an analytical method for a CEC or surrogate, that method must be used. See Attachment A, pg. 4. We are concerned that any published EPA method could be improperly interpreted to mean that it is an approved method (e.g. Method 1694: Pharmaceuticals and Personal Care Products in Water, Soil, Sediment, and Biosolids by HPLC/MS/MS). We understand, in accordance with the Board’s standard provisions, that only a method that has been promulgated in 40 Code of Federal Regulations (CFR) Part 136 or Part 141 is an approved method. As

³ Drewes, J.E., Dickenson, E., and Snyder, S. (2011) Development of Surrogates to Determine the Efficiency of Groundwater Recharge Systems for the Removal of Trace Organic Chemicals. Pg. 50. WateReuse Research Foundation, Alexandria, VA.

discussed during the June 8, 2012 WateReuse meeting with Board staff, we recognize a lack of approved methods for CEC analyses. This issue and QA/QC monitoring was addressed by the expert panel, and the robustness of methods was a factor in the selection of CECs for monitoring. We believe that the approach in the CDPH November 2011 draft groundwater recharge regulations for CEC analytical methods should be utilized in the Policy Amendment because it recognizes the status of CEC methods and would allow for consistency in monitoring; namely, that unless a promulgated method is available for use, other methods for CECs should be proposed by the project sponsor in the project's CDPH approved Operations Plan.

Attachment A should be modified to allow credit for historical, piloting and research data to satisfy or offset initial assessment, baseline, and standard operation monitoring.

As previously noted, we support the Board's decision to allow for the use of historical monitoring data to assess the occurrence and removal of CECs and surrogates for the initial assessment, baseline monitoring, and standard operation phases. See Attachment A, pgs. 8 and 9. We believe this allowance should also apply to agencies that have already conducted pilot testing and other research for existing or planned projects. Because these data sets may not exactly align with the proposed monitoring approaches in the Policy Amendment, projects should receive partial or total credit for the data already collected when CEC indicator and surrogate monitoring programs are established in terms of selection of constituents and frequency of sampling. At the June 8, 2012 meeting with WateReuse, Board staff noted that the details regarding use of historical data were not spelled out in the Amendment, but that use of available data would be allowed.

Attachment A should be modified to clarify how CECs and surrogates are selected and monitoring frequencies are determined for standard operation monitoring.

As previously noted, we appreciate that the Policy Amendment creates a phased approach for CEC monitoring with refinements allowed based on the results of the previous phase. Per the June 8, 2012 WateReuse meeting with Board staff, we understand that it is the Board's intent to utilize data from each phase to make adjustments to the subsequent phases in terms of selection of CECs and surrogates and monitoring frequency. However, we believe that the language in Attachment A is not particularly clear with regard to how modifications will be made nor the circumstances for monitoring to be discontinued (e.g., a monitoring off ramp). For example, many of the monitoring trigger levels (MTLs) used to select the CECs may no longer represent the best available science. The Amendment should explicitly allow for new or updated MTLs to be used to evaluate data as well as to inform decisions regarding the need for continued monitoring and/or appropriate response actions. In addition, in cases where the continued collection of data is no longer yielding useful information for health-based or performance based parameters, the Amendment should provide off ramps to allow for data collection to cease. We believe that all monitoring programs should be evaluated over time, that adjustments should be made to ensure that scarce resources are used to collect useful information, and where appropriate, non-essential monitoring should be reduced or eliminated. This approach is especially important in current times when public resources are scarce and must be used as strategically as possible.

The Board should modify Attachment A to clarify that responses to health-based CEC results should be based on consultations with CDPH and Regional Board, and not a mandatory framework.

We are concerned that the language in Attachment A of the Amendment (e.g., the use of "shall implement") establishes a mandatory regulatory framework for responses to CEC monitoring results, which is contrary to the expert panel's recommendations and WateReuse's discussion with Board staff on June 8, 2012. See Attachment A, pgs. 16 - 17. While we agree the data should be assessed and responses undertaken by project sponsors based on the

results, the specific responses should be developed based on consultation with CDPH and the Regional Board, and may not be the same as those presented in Table 7. The responses in Table 7 reflect the “guidance” offered in the expert panel report; however, the expert panel explicitly recommended that specific actions be developed in consultation with the regulatory agencies on a case-by-case basis.

The Board should provide input on how other expert panel recommendations will be implemented in preparation for the next expert panel meeting.

The expert panel intended that the Board implement recommendations that are not included in the proposed Amendment, including (1) that the Board should conduct a more thorough review of CECs likely to occur in recycled water using data from peer-reviewed literature and occurrence studies outside California and submit these for future expert panel evaluation; (2) that the Board should develop a detailed procedure to estimate predicted environmental concentrations for CECs for which MECs are currently not available based on production, use and environmental fate; and (3) that the Board should develop a process to rapidly compile, summarize and evaluate monitoring data as they become available, and identify trends in occurrence pattern as a function of time and sampling locations. At the June 8, 2012 meeting with WateReuse, Board staff noted that the June 2010 Report contained numerous recommendations, and at this time, the Board has established bioassay research as a top priority to shift away from chemical-by-chemical monitoring. We support this priority, but acknowledge that chemical-by-chemical monitoring may be necessary in the short-term, and we urge the Board to direct resources at the other expert panel recommendations to collect the information that will be critical for use by the next expert panel convened pursuant to the Policy.

Please note that we are fully supportive of the position and comments expressed by the Association of California Water Agencies (ACWA), the California Association of Sanitation Agencies (CASA) and WateReuse (collectively, the Associations). As such, we wish to refer you to the Associations’ response letter for the detailed comments which include suggestions for rewording of specific sections of the Policy and Appendix A.

Overall, we are pleased with the direction the Board is poised to take to embrace the expert panel’s recommendations. We commend the Board for its commitment to a science-based and consistent statewide approach to CEC monitoring in recycled water. Most importantly, we are truly encouraged that this process has not only allowed all of the stakeholders to engage with the best current science, but has established a framework we can all use in the future. We look forward to our continued partnership as we work for our shared goal of a safe, abundant water supply for California.

Sincerely,



Terrie L. Mitchell
Chair, Tri-TAC



Debbie Webster
Executive Officer, CVCWA

cc: Leah Walker, CDPH