



October 8, 2012

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State Water Resources Control Board
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Reply to:
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Via Email: commentletters@waterboards.ca.gov

Subject: Comment Letter – Amendment to the Recycled Water Policy



Dear Chair Hoppin and Members of the Board:

The Association of California Water Agencies (ACWA), the California Association of Sanitation Agencies (CASA) and WaterReuse California (collectively, the Associations) are pleased to provide comments on the proposed Amendment to the Recycled Water Policy regarding monitoring of constituents of emerging concern (CECs) in recycled water used for groundwater recharge and landscape irrigation.

The Associations appreciate Water Board staff meeting with us to review the prior version of the proposed amendment and appreciate the high level of responsiveness to our comments evident in the current version of the proposed Amendment. We commend Water Board staff for preparing a proposed Amendment that is consistent with the original intent of the Recycled Water Policy (Policy) and Science Advisory Panel (expert panel) that developed recommendations for CEC monitoring. We appreciate that the Water Board staff needed to draft specific requirements for monitoring CECs for recycled water, in some cases, in the absence of specific expert panel recommendations. In general, we concur with the recommended Amendment but we have several important concerns that are described, along with proposed changes to the Amendment in this letter.

1. Clarify Landscape Irrigation Project Monitoring Requirements

Section 7.b(4) of the Policy was modified to specify that the required priority pollutant monitoring frequency for landscape irrigation projects be based on “design production flows”. Please clarify whether “design production flows” refers to the design flow of the treatment plant, design flow of the entire reuse system, design flow of a reuse project, or design flow of the landscape irrigation component of the reuse system or project. In addition, for both groundwater recharge projects and landscape irrigation projects, the language in the Policy should clarify that priority pollutant monitoring is to be conducted on recycled water produced at a water reclamation facility (as opposed to being conducted in groundwater).

2. Modify CEC Selection Process for Alternative Treatment Processes

Attachment A provides specific CEC recommendations for surface spreading projects that use tertiary recycled water and soil aquifer treatment and subsurface application projects that use reverse osmosis/advanced oxidation processes (RO/AOPs). For other treatment processes, Attachment A, Section 1, paragraph 4 appears to make Regional Water Boards the lead in selecting CECs even though consultation occurs with the California Department of Public Health (CDPH). We are fully aware of the permitting process for groundwater recharge projects and the roles of CDPH and Regional Water Boards. However, until such time as a future State Water Board expert panel addresses additional treatment processes and CEC monitoring, CDPH should be the lead in designating CEC monitoring for groundwater recharge projects as it has the most expertise, both in terms of health relevance and alternative technology performance. In addition, the CDPH draft groundwater recharge regulations include a process for assessing alternatives to any provision in the regulations, including alternative treatment technologies. To obtain approval for an alternative, the project sponsor must demonstrate that the alternative provides the same level of public health protection. If required by CDPH or Regional Water Board, the project sponsor must conduct a public hearing; and unless otherwise specified by CDPH, an expert panel must review the alternative.

We therefore, request the following revision to Attachment A, Section 1, paragraph 4, second sentence:

“CEC monitoring requirements for groundwater recharge reuse projects implementing treatment processes that provide control of CECs by processes other than soil aquifer treatment or RO/AOPs shall be established on a case-by-case basis by the Regional Water Boards per written recommendation from ~~in consultation with~~ CDPH.”

3. Remove Inappropriate Reference to Salt and Nutrient Management Plans

Attachment A, Section 1.1, provides three exceptions for Regional Water Boards to impose additional CEC monitoring requirements beyond what is specified in Attachment A: (1) if recommended by CDPH; (2) if requested by a project sponsor; and (3) or required in an adopted regional salt and nutrient management plan (SNMP). Section 6.b(3)(b) of the Policy states that SNMPS must include, “A provision for annual monitoring of Constituents of Emerging Concern (e.g., endocrine disrupters, personal care products or pharmaceuticals) (CECs) consistent with recommendations by CDPH and consistent with any actions by the State Water Board taken pursuant to paragraph 10(b) of this Policy.” Section 10(b) refers to the expert panel and recommendations regarding CEC monitoring. However, the expert panel did not address or make recommendations related to CEC monitoring for SNMPS. Until such time as a State Water Board expert panel specifically makes recommendations, this issue will be left to stakeholders preparing SNMPS and the Basin Plan amendment process. Therefore, mentioning SNMPS in the amended Policy as a driver for CEC monitoring is premature

and inappropriate. Therefore, we request the following change to Attachment A, Section 1.1:

“The Regional Water Boards shall not issue requirements for monitoring of additional CECs, beyond the requirements provided in this Policy, except when:

- recommended by CDPH; or
- requested by the project proponent; ~~or~~
- ~~required by an adopted regional salt and nutrient management plan.”~~

4. CEC Analytical Methods

While we appreciate the State Water Board removing the requirement to use analytical methods for CECs that have been “approved” by the U.S. EPA, further changes to the proposed language are necessary. The analytical chemistry underlying CEC measurement continues to improve, and restricting analytical methods to those that have been peer reviewed and published provides an undue constraint on innovation to continue this improvement. Additionally WaterRF project 4167 demonstrated that many of the published methods are not sufficiently precise or accurate for monitoring programs. Furthermore, the currently-proposed language does not address instances in which no published methods are available for a specific matrix and/or a sensitivity requirement. Laboratories typically analyze CECs using methods that are based upon existing EPA methods or methods published in scientific journals, but include modifications that have not been published. In these instances, laboratories should be allowed to make appropriate modifications to existing published methods, so long as the modified methods met the quality assurance/quality control measures specified on page 3 of Attachment A, Section 1.1. The peer-review and publishing process is often a time-consuming process that might take as little as a few months or as long as several years. Without the flexibility to modify published methods, laboratories will have to go through the lengthy peer-review and publishing process before their methods can be used to satisfy Policy requirements. We therefore request that Section 1.1 be modified as follows:

“Analytical methods for laboratory analysis of CECs shall be selected to achieve the reporting limits presented in Table 1, and These methodologies shall be based upon EPA-published methods, State-certified methods, or shall be peer reviewed and published methods (including those published by voluntary consensus standards bodies such as the Standard Methods Committee and ASTM International). Any modifications to the published or certified methods shall be disclosed in the required quality assurance project plan available for review by the Regional Water Board.”

5. Clarify DEET Reporting Limit

The reporting limit (RL) for DEET specified in Attachment A Table 1 was revised to 0.05 ug/L for surface application projects, but not revised and specified as 0.01 ug/L for subsurface application projects. Therefore, the RL for DEET in the *Subsurface Application* portion of Table 1 should be changed from 0.01 to 0.05 ug/L.

6. Clarify Monitoring Locations for Performance Indicator CECs and Surrogates for Subsurface Application Projects

Attachment A, Section 2.2.2, specifies where treatment process performance monitoring should occur for subsurface application projects using performance-based indicator CECs and surrogates. In particular, monitoring “following treatment by RO/AOPs prior to release to the aquifer” is specified. We are concerned that this statement will be interpreted to mean that monitoring for all performance indicator CECs and surrogates must be conducted after both RO and AOP have been applied. RO and AOP are distinct processes intended to remove particular constituents. Some CEC performance indicators and surrogates are only good measures of performance for RO or AOP, but not both. Of particular importance is use of on-line monitoring equipment to specifically evaluate RO performance using Total Organic Carbon or Electrical Conductivity. Some projects have already installed these monitoring systems, which are placed directly after RO and before AOP. We are therefore concerned that a requirement to monitor “following treatment by RO/AOPs prior to release to the aquifer” could be interpreted to mean after both RO and AOP, which, for surrogate compounds would unnecessarily strand existing monitoring assets at existing treatment plants, and not provide value added information for assessing performance. Therefore, we recommend the following change:

“(1) Prior to treatment by RO/AOPs; and

(2) Following treatment by RO and/or AOPs prior to release to the aquifer.
The location for monitoring shall be selected in consultation with CDPH.”

This issue also needs to be addressed in the context of Attachment A Tables 3, 4 and 5 in which the subsurface spreading monitoring locations for performance indicator CECs and surrogates are specified as “[p]rior to RO treatment” and “[f]ollowing RO/AOPs prior to release to aquifer.” Tables 3, 4 and 5 should be modified consistent with change proposed above for Section 2.2.2.

7. Clarify Distinction Between Monitoring Required for Subsurface Versus Surface Application Projects

The monitoring framework recommended by the expert panel includes important distinctions between monitoring of projects involving subsurface application of recycled water and those involving percolation of recycled water. Consistent with the expert panel recommendations, groundwater monitoring for CECs and surrogates is not appropriate

for subsurface application projects since such projects do not rely on treatment to occur in the subsurface environment. To avoid confusion implementing the Policy, we recommend that the first sentence in Attachment A, Section 3.1 be changed to make this clear, as follows:

"The purposes of the initial assessment phase are to (1) identify the occurrence of health-based CECs, performance indicator CECs, and surrogates in recycled water, and groundwater¹, ..."

"1. For groundwater, only for surface applications."

In addition, for surface applications, programs that employ multiple recharge basins should be allowed, in consultation with CDPH, to identify a representative basin at which the initial assessment, baseline monitoring, and standard monitoring will be conducted. We recommend that Attachment A, Section 2.1.1. be changed to clarify this as follows:

"(1) Following tertiary treatment⁷ prior to application to the representative surface spreading area; and"

8. Remove Unclear Reference to "Treatment Processes"

The first paragraph of Attachment A, Section 3.1 identifies a purpose of the initial monitoring phase as being "determine the treatment effectiveness of unit processes" that remove CECs. Nearly every unit process in a treatment plant removes CECs, but the monitoring framework is, with a few exceptions, designed to evaluate overall treatment effectiveness as opposed to that of individual unit processes. Furthermore, the term "unit processes" is not defined in the Policy. Therefore, we request that Section 3.1 be modified as follows:

"The purposes of the initial assessment phase are to (1) identify the occurrence of health-based CECs, performance indicator CECs, and surrogates in recycled water, and groundwater; and (2) determine ~~the~~ treatment effectiveness of ~~unit processes~~⁹; (3) define the project-specific performance indicator CECs and surrogates to monitor during the baseline phase; and (4) specify the expected removal percentages for indicator CECs and surrogates."

Footnote 9 should also be deleted to avoid the potential for misinterpretation of monitoring locations.

Alternatively, if Section 3.1 is not modified and footnote 9 not deleted as proposed above, footnote 9 should be modified as follows:

⁹ Unit processes that remove CECs, as specified in Section 2."

9. Clarify Basis For Additional Monitoring

Attachment A, Section 3, describes the phased monitoring requirements and portions of the section describe criteria for determining the need for additional monitoring. On page 9, paragraph 1, and page 9, paragraph 5, the State Water Board appropriately deleted the criterion “increased occurrence and/or concentrations of CECs.” However, to be consistent, the same modification to remove the same criterion should also apply to other locations in Sections 3.1 and 3.2.

In addition, the consultation process for decisions regarding modifications to the different monitoring phases could benefit from additional clarification.

We propose the following changes:

- The second sentence in paragraph 4 of Attachment A, Section 3.1 and the second sentence in paragraph 3 of Attachment A, Section 3.2 contain the phrase “or the increased occurrence and/or concentrations of CECs” twice. In the current draft, this phrase is appropriately deleted in the second instance (shown in italics for clarity below) but not in the first instance (shown in bold for clarity). The first instance (bold) should also be deleted, as follows.

“If evaluation of monitoring results indicates a concern (i.e., the effectiveness of the treatment processes to achieve the expected degree of removal of ~~CECs or the increased occurrence and/or concentrations of CECs~~) more frequent monitoring shall be required to further evaluate the effectiveness of the treatment process *or the increased occurrence and/or concentrations of CECs.*”

- As proposed, the fourth sentence in paragraph 4 of Attachment A, Section 3.1 and the fourth sentence in paragraph 3 of Attachment A, Section 3.2 imply that the decision about additional monitoring is to be made solely by the Regional Water Board. As described in Comment 2 above, CDPH has considerable expertise and should be part of the decision about the need for additional monitoring, as acknowledged in footnote 2 in Table 3. The following should be changed to clarify that Regional Water Boards and CDPH will collaborate to determine if additional monitoring is needed.

“~~If additional monitoring is required,~~ If additional monitoring is required, ~~the~~ Regional Water Board shall consult with CDPH to determine if additional monitoring is required, and will revise the Monitoring and Reporting Program as appropriate.”

10. Clarify Removal Differentials Shall Not Be Used As Compliance Requirements

Attachment A, Section 4.1, states that “[t]he established removal percentages for each project shall be used to evaluate treatment efficacy and operational performance.”

However, Attachment A should clearly state that removal percentages established for each project and those given in Table 6 shall not be used as compliance requirements.

Indeed, the previous Attachment A draft contained a statement to this effect (see last sentence in second paragraph in Section 4.1). We request that two sentences be added as follows:

“The established removal percentages for each project shall be used to evaluate treatment efficacy and operational performance. Neither the established removal percentages for each project nor the removal percentages in Table 6 shall be used as compliance requirements. If the removal differential is less than expected, assessment of the treatment processes may be warranted.”

We appreciate the direction the State Water Board is poised to embrace the expert panel’s recommendations. We commend the State Water 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,



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