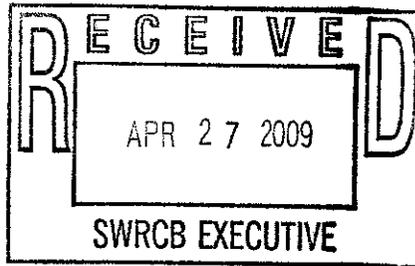




April 21, 2009

Ms. Jeanine Townsend  
Clerk to Board  
SWRCB  
1001 I Street, 24<sup>th</sup> Floor  
Sacramento, CA 95812



**SUBJECT: Comments on Draft General Waste Discharge Requirements for Landscape Irrigation Uses of Municipal Recycled Water**

Dear Ms. Townsend:

ECO:LOGIC Engineering and our clients appreciate the opportunity to review and comment on the draft General Permit. ECO:LOGIC specializes in wastewater permitting and assists numerous clients in northern California with compliance with the Clean Water Act, Porter-Cologne Water Quality Control Act, and various state water resource and wastewater policies. We offer these comments to the Board to clarify and improve the language to ensure minimal misinterpretation of the permit once adopted by the Board.

1. Per the title of this proposed General Permit, these are discharge requirements for site-specific landscape irrigation use of municipal recycled water, i.e., this General Permit is intended for users of recycled water. In other words, this Order appears to be specific to landscape irrigation use of municipal recycled water, not the production or distribution of such recycled water, which may be handled by different legal entities.

2. Finding 2 says this General Order is intended for Producers and Distributors of recycled water, not users as implied by the title. The Finding's Footnote 4 guides the reader to the definitions of Producer and Distributor in Attachment A:

- Distributor means wholesaler, retailer, or supplier of recycled water.
- Producer means the public entity producing recycled water.

These legal entities are not necessarily the users of recycled water, therefore the Order title and the intended party covered by the Order appear to be in conflict.

3. Finding 4.C requires Producer and Distributor to ensure that Users comply with statewide reclamation criteria. If Users are responsible for their acts related to using recycled water, then neither Producer nor Distributor should need to ensure Users' compliance. If Producer and Distributor are responsible for Users' acts, then this will be a liability problem in some situations when Producer, Distributor, and User are not one in the same. The liability is acceptable to some Producers and Distributors as evidenced by Master Reclamation Permits requiring similar policing of Users by the Distributor/Producer.

4. Finding 7 states "This General Permit is applicable to Use Areas where...". This further confuses whether the General Permit is about distribution or use of recycled water.

5. Finding 8: The Distributor submits the NOI and assumes responsibility for the administration of the recycled water program. This suggests the General Permit is a streamlined Master Reclamation Permit for the general and as-needed use of recycled water in a geographic region described in the NOI informational package and a CEQA document.

6. As of 8 April 2009, only "Draft" versions of the Recycled Water Policy could be found on various State agency websites. This inability to find an adopted version of the Recycled Water Policy may reflect our inabilities. Clearly, for the General Permit to refer to the Recycled Water Policy, such a policy must be adopted prior to the adoption of the General Permit.

7. The last sentence of Finding 19 is baffling based on our understanding of agronomy. Storage of salt in soil (as opposed to soil moisture or shallow groundwater) via controlled irrigation efficiency is limited essentially to the depth of the crop root zone. Storing salt in the crop root zone is a very short-term proposition before vegetation problems become manifest. Additionally, in Finding 19, the reference to salt load (if this refers to salt "mass") may be misleading. Salt concentration, not mass, is the issue. Lake Tahoe water contains tons of salt, but in irrigation use would not pose a salinity threat to California's groundwater resources. From our years of concern about this issue, the concept we use to assess reclamation salt impacts is "Excess Salt Mass" (ESM):

$$\text{ESM, lb/yr} = (\text{Annual Vol. of Percolate, Mgal}) \times (\text{Percolate TDS, mg/L} - \text{TDS WQO, mg/L}) \times (8.345)$$

8. Finding 20 is troubling. Distributor (or Producer) should be responsible for discharged salt only if Distributor (or Producer) forced User to use recycled water via the California Water Code, and only to the extent that the recycled water's salinity (or specific ion concentration) was greater than User's historical water supply. For projects that are required to use recycled water of a given salinity as a condition of approval, responsibility for salinity rests with User who elected to go forward with the project knowing the salinity of water available. Any other interpretation means any water distributor is responsible for the salt in the water distributed regardless of the land use practices involving use of the water. In other words, irrigation districts are responsible for salinity degradation caused by agriculture though the choice of water supply and land use (and profits) rests with the land user, and user's cropping and irrigation practices.

9. Finding 21 is troubling, specifically the statement "This General Permit attempts to accomplish the balancing of factors necessary to evaluate most projects in the absence of case-specific information". How can one balance factors in the absence of case-specific information that, in theory, constitute the factors to be balanced? We think it is common knowledge that use

of recycled water usually degrades shallow groundwater quality. If that is the case, the CEQA document describing the use of recycled water would provide case-specific information estimating the extent of salinity degradation expected by the “project” using recycled water. In theory, the CEQA document includes an Anti-Degradation Analysis per Resolution No. 68-16 justifying the degradation and forecasting why exceedences of either salinity WQOs or existing water quality, whichever is greater, in shallow groundwater resources will not occur.

10. In Finding 44, the “nutrient requirements” of concern should be defined: nitrogen, phosphorus, potassium, iron, etc.

11. Regarding Finding 46, see Comments 2 and 3.

12. Under Order A.1, it would appear that the complete package of documents for application would include:

- a. NOI form
- b. O & M Plan
- c. Title 22 Engineering Report
- d. CEQA document
- e. Anti-Degradation Analysis
- f. Letter of conditional approval of project from CDPH.

13. Order A.14 needs clarification. Does this apply to first recoverable groundwater (i.e., shallow groundwater and/or perched groundwater capable of producing 200 gallons per day)? Additionally, this should read, “causes or contributes to an exceedance of an applicable water quality objective or ambient groundwater quality, whichever is greater, is prohibited”?

14. In Order B.5, “nutrient demand” should be defined to be the agronomic fertilizer application rate. The nutrient demand of the actual landscape vegetation will be a portion of the agronomic fertilizer application rate based on:

- a. Nutrient losses to soil bacteria (e.g., denitrification)
- b. The relatively poor nutrient uptake efficiency of some vegetation, especially if low irrigation efficiencies are used to minimize the salt concentrating effect of evapotranspiration.

15. This General Permit would not apply to any recycled water use project that involves any recycled water pipe under any potable water pipe crossing based on the 4-foot horizontal separation requirement of Order B.9. This will limit the applicability of the General Permit because recycled water pipes cross under potable water pipes in many recycled water distribution and use projects.

16. Order B.13 should provide a definition for “mist” because there are various definitions in the engineering and scientific literature. CDPH does not provide any definition for its use of the term “mist”. Words without common or specified definitions should be avoided in regulation.

17. Under Order C.1.c, how can Distributor (let alone Producer who is even more removed from use) be responsible for the application and use of recycled water? Does User have any responsibility?

18. Under Order C.3, the “Conditions of Approval” should be part of applicant’s “NOI” package so that applicant and CDPH can find common ground acceptable to both parties prior to application (see Comment 12). CDPH conditions unacceptable to applicant and handed to applicant under the Notice of Applicability may render General Permit coverage useless.

19. Order C.5 should read, “Prior to commencing distribution” because Distributor only distributes recycled water for subsequent irrigation by Users.

20. Order C.5.b is more complicated than it may appear. Very high irrigation efficiencies reduce the mass of salt applied to the ground, but maximize the salinity concentration in the leaching fraction. Which effect, total salt mass or leaching fraction salt concentration, has greater adverse impact on shallow groundwater quality should be developed further.

21. Under Order C.5.g, how is Distributor to ensure/verify that User’s designated recycled water use supervisor has attended training regarding safe and efficient O & M of recycled water use facilities? Is the State Board planning of offer certification classes?

22. Regarding Order C.14, with Title 22 tertiary effluent (suitable for body contact recreation), endangerment of human health can result from:

- a. Substandard effluent being provided by Producer to Distributor, in theory, a violation of Producer’s WDRs. Producer has notification responsibility.
- b. Distributor cross-connects recycled water pipe to potable water pipe. Distributor has notification responsibility.
- c. User cross-connects recycled water pipe to potable water pipe. User has notification responsibility.

Distributor can provide notification of "a" or "c" only after being notified by Producer or User, respectively.

Environmental endangerment from Title 22 tertiary effluent could result from effluent entering a surface water with toxicants (primarily chlorine) in acutely toxic concentrations. User, not Distributor, will have first knowledge of effluent runoff, except in the rare case of Distributor's distribution pipe breaking. Therefore, Distributor can provide notification only after being notified by User.

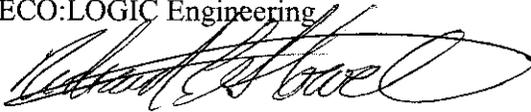
23. Under Order C.15, the 50,000 gallon figure should be tied to some time frame, e.g., per day, per event, cumulative per month, etc.

24. In the last paragraph on the first page of the MRP "examined once per week following irrigation events" should be changed for clarity to read "examined once in the course of the week following an effluent irrigation event".

25. Attachment C, III. A and B: Isn't tertiary effluent suitable for body contact recreation? If so, what are the potential health hazards associated with contact?

We appreciate Board consideration of our comments and we look forward to reviewing a revised version of the policy. If you need any clarification of our comments and suggestions, please call me or Doug Brewer at (916) 773-8100.

Sincerely,  
ECO:LOGIC Engineering



Richard E. Stowell Ph.D. P.E.