12/4/07 Bd. Mtg.
Water Recycling Policy
Deadline: 10/26/07 by Noon

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COMMENTS ON THE DRAFT WATER RECYCLING POLICY

Thank you for the opportunity to comment on the subject draft Water Recycling Policy. I have read the document with great interest and I present my comments in the following General and Specific sections:

1. General Comments

    a. I fully support the concept of an increase use of recycled water for a multitude of uses. Recharging wastewater to the groundwater for later extraction and use is an approach that has much value. However, the one-concept- fits- all approach as presented in the draft policy can adversely affect groundwater quality. Each proposed project needs to be considered individually on its own merits. The quality of the groundwater and the quality of the wastewater proposed for recharge need to be evaluated on a case-by-case basis to assure that groundwater is sufficiently protected. This is more fully elaborated in the specific comments, below.

    b. Not all of the various Regions of the State Regional Water Quality Control Board systems have the same need or desire to protect groundwater quality. As an example, Region 5 (the Central Valley Region's Basin Plan is the only one that have read in its entirety) places a good deal of emphasis on protection of groundwater quality. That Basin Plan contains both a narrative toxicity objective for groundwater (no detrimental physiologic responses in humans) and a *Policy for Application of Water Quality Objectives*, which requires that narratives be applied with numerical limits in Board Orders. No other Region has this combination of Basin Plan features. Region 5 is also unique in that it supplies 2/3 of the State's demand for surface water and 3/4 of the State's demand for groundwater. As such, Region 5 has a need to be more protective of its water resources.

2. Specific Comments:

    a. Whereas 4. It is stated that uniform interpretation of the similar requirements found in Regional Water Quality Control Board's Basin Plans is needed to reduce uncertainty in the design requirements of recycled water projects. Though, in part, that may be a desirable outcome, one should not default to the most lenient,

and least water quality protective, interpretation of those requirements, as it appears to occur in this draft policy. As drafted the policy would allow:

~~1.~~i. Using the entire capacity of the receiving water to assimilate selected pollutants. By doing so, it places a greater burden on downgradient sources of those pollutants to reduce their impact on the receiving water and potentially requires them to cleanup further than would ordinarily be required and/or provide additional treatment;

~~2.~~ii. The concentrations of pollutants in the aquifer from recharge of the recycled water to exceed concentrations that are being required to be remediated at groundwater pollution sites in our Region;

~~3.~~iii. For a different interpretation of our Basin Plan requirements than the interpretation that has been provided by our legal counsels from the State Board over the last 20-30 years.

3. Whereas 9. Shouldn't implementation of the nutrient management plan also reduce nutrients and salts other than nitrates?

4. Whereas 11. The concept presented in this clause, that the increase in the amount of salt that flows to groundwater during application of recycled water is flawed. The way the policy is structured the salts being applied will, by design, migrate to groundwater to avoid buildup in the root zone. The additional applied salts will increase the salt concentration in the groundwater except in areas that are already high in TDS. [

5. Whereas 13. It is stated that "recycled water projects generally pose a threat to water quality similar to irrigation projects using surface water or groundwater, for which groundwater monitoring is not required." This statement is not correct, as the key component is the quality of the source of the water being used. In most cases recycled water from a municipal wastewater source will contain a much higher number, and concentration, of pollutants than when the source of is raw water. This is particularly true given the allowable concentrations of pollutants this policy would allow for waters being used for recycling. Many of those pollutants do not have primary or secondary drinking water standards. Groundwater monitoring should be allowed on a case-by-case basis. If the delay in the pollutants reaching groundwater poses a problem with the applicability of groundwater monitoring, then vadose zone monitoring is an option that should be considered – similar to what is required at many waste discharge to land facilities. Groundwater monitoring, in many cases, is needed to verify that water quality objectives are being met.

6. Whereas 15 and 16. The statement that MCLs and other requirements or recommendations provided by CDPH provide reasonable protection of groundwater quality for the beneficial use of municipal supply is not a valid statement. There are many chemicals for which there is no MCL but can pose an unacceptable risk to human health through municipal use of water containing those chemicals. Each water source proposed for recharge to groundwater should undergo a risk assessment process to evaluate the complete range of chemicals, particularly those that do not have MCLs associated with them. In addition, risks posed by some chemicals have been reassessed since the original MCL was established for the chemical. As examples the reassessment has shown a greater risk associated with PCE, TCE and vinyl chloride than was considered during the adoption of the MCL. Some of the MCLs were established at the detection level at the time of development and/or did not take into account inhalation of the pollutant during normal residential use of the water.

7. As written the policy could allow recharge of water containing pollutants at concentrations we currently require responsible parties to cleanup in groundwater. A classic example is n-nitrosodimethylamine (NDMA), a pollutant that has a Public Health Goal of 3 ppt and a notification level of 10 ppt. NDMA is associated with hydrazine and is also formed in many water and wastewater treatment processes that use chlorine in the presence of nitrogen compounds. Currently we are requiring cleanup of NDMA to 2-3 ppt and this policy would not restrict the application of NDMA-bearing recycled waters to concentrations that would necessitate remediation. This has an even greater impact on domestic use or systems with less than 15 connections that do not require treatment or disinfection prior to serving the water.

8. Whereas 17. If one is relying on biodegradation of selected pollutants in the vadose zone, more than just appropriate hydrogeologic conditions need to be present. The appropriate conditions to stimulate biological growth and reduction of the pollutant need to be present. These conditions include the type of bacteria present, available nutrients for bacterial growth, carbon source, and sufficient attenuation within the vadose zone to allow the degradation to occur.

9. The last part of this clause states that groundwater limitations, along with groundwater monitoring, provide adequate protection of water quality protection. Whereas 13 attempts to make the case that groundwater monitoring is not needed for irrigation projects using recycled water. If there are no effluent limitations and no groundwater monitoring, how is it determined that the recycling project is meeting water quality objectives?

10. Whereas 19. This whereas only deals with injection by means of a waste well, it does not deal with the recharge of wastewater to groundwater through other means such as percolation basins.

11. Whereas 26. This clause states that the benefits of recycling projects outweigh the costs associated with lowering of water quality. Nowhere in the document does it present what the costs are that are associated with the "lowering of water quality." How does one put a price tag on using up a groundwater aquifer's ability to assimilate pollutants once the concentrations reach water quality objectives? In many cases, depending on the quality of the water being reclaimed, it is likely that the recycling project provides a net benefit. However, there can be cases where the water quality of the recycled water and the of the aquifer are such that the "costs" outweigh the "benefits." It is my contention that the a project-specific analysis should be performed on each proposed recycling project to ascertain its merits versus the degradation of water quality that would occur. This does not adequately occur in the development of a "Policy."

12. Item No. 7. The monthly average TDS concentration in the recycled water is to not exceed the monthly average TDS concentration of the source water plus 300 mg/L. If the source water is the groundwater, then the TDS of the source water will continually increase as more recycled water is added. This in turn will increase the TDS of the recycled water and so forth

13. Item No. 8. As stated above in the comment on Whereas No. 13, groundwater monitoring should be allowed on a case-by-case basis. Irrigation water applied across large acreage of crops is dissimilar to potential impacts associated with irrigation of landscaping at residences, buildings and medians. [

14. Item No. 10. This proposal is unacceptable, as MCLs do not necessarily meet our narrative toxicity objective. Economics are taken into account when developing the MCL values. MCLs are not revised swiftly in response to changing risk values and detection levels. This proposal would allow the discharge of pollutants to groundwater at concentrations that we do not allow under other waste discharge requirements and require responsible parties to cleanup. Best available technology should also be considered when establishing the effluent limitations. The goal should be to minimize the discharge of pollutants and maintain the existing quality of the groundwater to the extent possible. Most regions do not have a narrative toxicity objective for groundwater. Regions without a toxicity objective use their chemical constituents objective and antidegradation to justify limits lower than MCLs. To be fair, shouldn't the policy be reworded not to focus only on narrative toxicity objectives? This affects both items 10 and 11.

15. Item No. 11. This approach should be applied to all pollutants. In addition, the last requirement that "approved analytical methods are available to measure the concentration of the constituent" is needed to establish the effluent limit should not be a requirement. The effluent limitation should be established at the determined risk value. If there is no analytical method that can measure the value selected, then the analytical method with the best available practical detection level should be required. A non-detect at that level would show compliance with the effluent limitation. This process has been used successfully in the past in some waste discharge requirements and NPDES permits. The effluent limit should not be a function of the detection limit

16. Item No. 12. Is the Regional Board allowed to establish in the WDRs for groundwater recharge projects both effluent and groundwater limitations for a pollutant? This would be similar in concept to the effluent and receiving water limitations established in NPDES permits. In most waste discharge to land waste discharge requirements, groundwater limitations are established, not effluent limitations.

17. In addition, the third sentence begins with "The groundwater shall comply . . ." It is the Discharger that must comply. It would be better to state that at specified monitor points the concentrations of pollutants in the groundwater must be at or below the groundwater limitations.

Thank you for considering the above comments in developing revisions to the draft Water Recycling Policy.

If you have any questions, please call me at (916) 858-1030 or e-mail me at sansuey@sbcglobal.net.

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