



San Diego County Water Authority

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May 17, 2018

Randy Barnard

Division of Drinking Water, Recycled Water Unit

State Water Resources Control Board

P.O. Box 100

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**OTHER
REPRESENTATIVE**

County of San Diego

Sent via email to: ddwrecycledwater@waterboards.ca.gov

Subject: Comments-Proposed Framework for Regulating Direct Potable Reuse in California

Dear Randy,

The San Diego County Water Authority appreciates the opportunity to comment on the State Water Resources Control Board's (State Water Board's) proposed Framework for Regulating Direct Potable Reuse in California (Framework). Potable reuse is an important future water supply for the San Diego region and is the next increment of water supply development in our region's diversified water supply portfolio. Several of the Water Authority's member agencies have plans to develop potable reuse projects. Advancement of potable reuse regulations, including the development of raw water regulations will create a pathway for new projects while ensuring protection of public health.

At the public workshop in April 2018, the State Board staff indicated that you do not intend to revise the Framework, but have released the Framework as a beginning point for further discussions with stakeholders on regulatory requirements for potable reuse. We appreciate your openness to receiving input on the regulatory approach and are providing feedback to address some of the issues and questions that were raised in the Framework and at the workshop. Because development of raw water augmentation regulations is in its early phases, we are hopeful that this dialogue between the stakeholders and State Water Board will continue as the regulations are developed and ask that the State Board plan for additional stakeholder workshops and input at key points in the regulatory process. In particular, we would like the opportunity to provide input on an informal draft of the regulations before they are sent to the Expert Panel for their review and approval.

The comments below provide our recommendations on the proposed development of raw water augmentation regulations:

A public agency providing a safe and reliable water supply to the San Diego region

Raw Water Augmentation Scenarios

The Framework includes three proposed scenarios which could be included as “raw water augmentation”. The second scenario includes the recycled water that is mixed with raw water in the conveyance to a drinking water treatment plant such that the blend provides a meaningful public health benefit (Pg.08). However, the Framework does not describe how a meaningful public health benefit would be determined. The regulations should provide a log reduction credit for pathogens equivalent to the percent dilution, where dilution provides at least 0.5 log dilution of pathogens.

Scenarios for both “raw water augmentation” and “treated water augmentation” include scenarios where the project does not meet the indirect potable reuse criteria or raw water augmentation criteria, such as environmental buffer and/or dilution criteria (Pg. 09). This is confusing because it implies that there is a minimum dilution and could also be interpreted that projects that fall short of meeting the reservoir augmentation criteria could be considered “treated water augmentation”. A minimum dilution should not be mandatory, but it should be considered as one of the many approaches that can provide a pathogen barrier or increase reliability. In addition, projects that fall short of the reservoir augmentation criteria should be addressed in the raw water augmentation criteria.

Any regulations for raw water augmentation should also include an additional scenario which is “The delivery of recycled water to a raw water conveyance system, upstream of multiple water treatment plants.”

Risk Management Approach

The proposed Framework recommends the use of a Quantitative Microbial Risk Assessment (QMRA) approach. This approach will develop the log removal values (LRV) necessary to ensure public health protection based on concentrations of pathogens in sewage and then assess whether the treatment provided will reliably meet the needed LRV through a probabilistic analysis of treatment train performance (PATTP). We support this science-based approach, which can provide flexibility to adapt to the advancement of the science and technology used to develop and operate potable reuse projects (Pg. 19).

We are concerned that the Framework indicates that the downstream surface water treatment plant could not be used to obtain the basic log removal values. This is surprising since existing surface water treatment plants use proven robust treatment technologies that have effectively and reliably achieved LRVs for pathogens for decades. The regulations should provide a pathway to obtain full LRV credit for all treatment provided at a surface water treatment plant. Many of the technologies used at a surface water treatment plant can also reduce chemical contaminants in the water, using such technologies as ozone and biologically active carbon filtration. We also encourage the State Water Board to allow agencies to obtain additional LRV credits for removal of

pathogens in the upstream wastewater treatment plant. This would encourage agencies to retrofit the plants to provide the most updated technologies and operations which would result in an increased public health benefit.

Paths for Approval of Treatment Trains

The Framework talks about specific treatment that could be required, but also asks the question about whether treatment trains should be approved on a case by case basis. The regulations should identify standardized treatment trains that can be permitted for surface water augmentation projects without requiring additional pilot testing to demonstrate the efficacy of the treatment processes. Agencies should be allowed to rely on the past testing and operations of treatment technologies that have been proven to be effective in potable reuse projects and be granted standardized log removal credit for each technology in the treatment train. At the same time, to encourage innovation and advancements in both treatment and monitoring technologies, and to optimize the treatment provided, the regulations should allow for approval of new treatment and monitoring technologies, as well as alternative treatment trains on a case by case basis. This is similar to the approach allowed in the surface water treatment rule (Pg. 19).

We expect that there will be a wide variety of unique approaches for potable reuse projects, and having flexibility will provide cost effective solutions, while ensuring public health protection. Proven treatment trains provide a foundation to compare new and innovative treatment trains and the QMRA/PATTP approach provides a methodology that can be used to approve unique treatment trains. The PATTP approach should take into consideration new monitoring technologies that increase treatment reliability to allow a higher LRV credit and reduce the need for additional treatment barriers.

Use of Additional Indicator Pathogens

The Framework indicates that the regulations will establish log reduction requirements for Giardia, Cryptosporidium and viruses. Ensuring a reduction of these pathogens through a multibarrier treatment process will also assure that other known or unknown pathogens in the drinking water will also be adequately reduced through the treatment processes. The Framework also suggests that demonstrated reduction of other pathogens could also be required (Pg. 12). Currently, there is limited information showing the need to assess other pathogens, or information regarding effectiveness of individual treatment processes to reduce other pathogens. Therefore, the proposed regulations should rely on removal of Giardia, Cryptosporidium and viruses and should not include other pathogen removal requirements. If significant studies are done in the future demonstrating a need, then this could be considered for future regulations.

Compliance with Chemical Standards

The Framework states that chemicals that are “problematic” for direct potable reuse are good candidates for notification levels (Pg. 23). Development of notification levels

should occur only when potable reuse projects demonstrate persistent and repeated occurrence of constituents found in treated water at levels of public health concern. Application of notification levels to a project should consider the ability of the downstream surface water treatment plant to reduce any chemical constituents found in the effluent of the advance water treatment plant.

The Framework does not address the fate and formation of disinfection byproducts (DBPs) upstream or downstream of the drinking water treatment plant in raw water augmentation projects. We encourage the State Water Board to consider the fate and formation of regulated and unregulated DBPs, when evaluating approaches for chemical control in raw water augmentation projects.

Permitting Approaches

The primary purpose of a potable reuse project is to provide a safe drinking water supply and many cases there will be no intervening discharge to a water of the State, the State Water Board, Division of Drinking Water (DDW) should be the lead agency for issuing the permits with input from the local Regional Water Board. Any water potentially discharged into the environment will be of extremely high quality and the primary concern will be the protection of public health. Disposal of any concentrate or bypass water which may be discharged would need to be permitted by the Regional Water Board under waste discharge requirements. The State Water Board should develop a clear policy on how Clean Water Act and Safe Drinking Water Act regulatory pathways will be implemented by the State and Regional Water Boards. Any policy should also address regulatory oversight of enhanced source water control programs required for direct potable reuse projects.

DPR Inspection and Supervision Program

The proposal suggests that the regulations may include criteria for treatment plant audits, which may include third party audits at all stages of a project, from design to ongoing operations (Pg.32). While the State Water Board should review and approve plans and specifications and should conduct an inspection before treatment facilities are brought into service, conducting additional inspections during the construction process would be unnecessary and could significantly slow the construction process.

We also understand that the State Water Board is concerned about human failure during the operations of the facilities. Routine audits and inspections by State Water Board staff, or their representative, in the normal course of regulatory oversight would be appropriate and helpful to ensure public health protection. The primary approaches to avoid failure due to human error should focus on ensuring that:

1. The operating agency has a comprehensive operating plan,
2. The operating agency has the technical, managerial and financial capacity to operate a highly technical and complex treatment facility, and

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3. The operators of the facilities are adequately trained and certified as water or wastewater operators, and have additional training and certification in the operation of advanced water treatment facilities.

We thank you for the opportunity to comment on the proposed Framework. We appreciate your openness to receiving input on the development of proposed regulatory criteria and look forward to working with the State Water Board as you develop the raw water augmentation regulations.

Sincerely,

A handwritten signature in black ink, appearing to read "Toby Roy". The signature is written in a cursive, flowing style.

Toby Roy
Water Resources Manager