

Central Valley Regional Water Quality Control Board
4/5 October 2012 Board Meeting

Response to Comments
for the
City of Angels
Wastewater Treatment Plant
Tentative Waste Discharge Requirements

The following are Central Valley Regional Water Quality Control Board (Central Valley Water Board) staff responses to comments submitted by interested parties regarding the tentative Waste Discharge Requirements (NPDES Permit No. CA0085201) renewal for the City of Angels (Discharger) Wastewater Treatment Plant (Facility).

The tentative NPDES Permit was issued for a 30-day public comment period on 29 June 2012 with comments due by 6 August 2012. The Central Valley Water Board received public comments regarding the tentative Permit by the due date from the Central Valley Clean Water Association (CVCWA). Some changes were made to the tentative Permit based on public comments received.

The submitted comments were accepted into the record, and are summarized below, followed by Central Valley Water Board staff responses.

CVCWA COMMENTS

CVCWA Comment A. The Requirement to Perform a Chemical Additives Evaluation and Minimization Study Is Improper and Should Be Deleted

CVCWA requests revising the proposed Permit by removing the requirement for a Chemical Additives Evaluation and Minimization Study, because the proposed permit already requires a Salinity Evaluation and Minimization Plan, which addresses chemical additions at the Facility.

RESPONSE: Central Valley Water Board staff concurs that there is some overlap on the requirements of the two studies. The Chemical Additives Evaluation and Minimization Study requirement has been removed from the proposed permit. However, to ensure the Discharger adequately evaluates non-salinity related chemical usage at the Facility, the Salinity Evaluation and Minimization Plan requirement has been clarified to require an evaluation of all chemicals added to the wastewater treatment process at the Facility.

CVCWA Comment B. The Tentative Order's Use of Recent Treatment Plant Performance Is an Improper Baseline for Determining Consistency with the Antidegradation Policy

CVCWA comments that the antidegradation determinations require consideration of the impact to water quality when compared to the existing permitted condition of that water body. (Administrative Procedures Update No. 90-004, State Water Board (July 1990) at p. 4.) Accordingly, calculating WQBELs and preventing antidegradation are two different

processes. Using the procedure in the Tentative Order for determining the water quality-based effluent limitations (WQBELs) for ammonia thus undercuts the existing water quality planning process and impermissibly amounts to open-ended regulatory authority to dictate outcomes in the permitting process.

CVCWA asserts that recent treatment plant performance constitutes an improper baseline for interpreting consistency with the Antidegradation Policy. Further, it is inappropriate to use the Antidegradation Policy to truncate effluent limitations.

RESPONSE: Central Valley Water Board does not concur. The Antidegradation Policy (State Water Resources Control Board's Resolution 68-16) must be considered in determining the applicable water quality standards and, since the Discharger requested a mixing zone for ammonia, the analysis of the current Facility performance is necessary to ensure the mixing zone is sized appropriately.

CVCWA comments that calculating WQBELs and preventing degradation are two different processes. Central Valley Water Board staff does not concur. Section 301(b) of the CWA and 40 CFR 122.44(d) require that permits include limitations more stringent than applicable federal technology-based requirements where necessary to achieve applicable water quality standards. Water quality standards are composed of three parts; 1) beneficial uses, 2) numeric and narrative water quality objectives, and 3) Antidegradation Policy. The Antidegradation Policy is considered in identifying the applicable water quality standards, which are used to calculate WQBELs. Therefore, the Antidegradation Policy and calculating WQBELs are not separate processes.

In the proposed permit, the applicable water quality standard for ammonia was based on the Basin Plan's narrative toxicity objective, which was implemented using USEPA's National Ambient Water Quality Criteria for ammonia. A further reduction of USEPA's recommended criteria, or more stringent criteria, based on the Antidegradation Policy was not implemented in the proposed permit. However, the Antidegradation Policy was considered in evaluation of the amount of dilution and size of the mixing zone for ammonia.

Section 1.4.2.2 of the SIP¹ requires that, "*A mixing zone shall be as small as practicable.*", and Section 1.4.2.2.B requires, "*The RWQCB shall deny or significantly limit a mixing zone and dilution credits as necessary to protect beneficial uses, meet the conditions of this Policy, or comply with other regulatory requirements.*"

In the proposed permit, the Central Valley Water Board finds that granting of the full dilution credits for ammonia allocates an unnecessarily large portion of the receiving

¹ Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (State Implementation Policy or SIP)

water's assimilative capacity for ammonia which in turn violates the Antidegradation Policy. Although the Antidegradation Policy does not apply within a mixing zone, the allowance of a mixing zone allows an increased concentration and loading of pollutants. Therefore, when a mixing zone and dilution credits are allowed, it is necessary to ensure the discharge complies with the Antidegradation Policy outside the mixing zone. The Antidegradation Policy requires that a discharge shall implement best practicable treatment or control (BPTC) to minimize degradation, which in this case for ammonia is, at minimum, the existing facility performance. Allowing the full dilution credit would allow the Discharger to increase its loading of ammonia to Angels Creek and reduce the treatment and control of the pollutant. Allowing the Discharger to reduce the level of treatment and/or control does not comply with the BPTC requirements of the Antidegradation Policy and the existing treatment and controls the Discharger currently has in place.

The reduction in the dilution credits, and thus implementation of more stringent WQBELs for ammonia from the previous permit, is appropriate because the Discharger changed Facility operations that have improved ammonia removal². Only considering existing permitting requirements for evaluating compliance with the Antidegradation Policy is not appropriate.

CVCWA Comment C. The UV Requirements Should Be Modified In a Manner That Ensures Proper Disinfection Without Dictating the Manner of Permit Compliance

CVCWA comments that ultraviolet (UV) disinfection system operational and monitoring requirements in the Tentative Order impermissibly specifies the manner of compliance with the Tentative Order's disinfection requirements.

RESPONSE: Central Valley Water Board staff does not concur. The proposed Permit requires disinfection, while discharging to Angels Creek, at a level equivalent to Title 22 disinfected tertiary recycled water. This requirement is necessary to protect public health from contact with undiluted treated municipal wastewater. The proposed Permit includes effluent limits and operating specifications to ensure this level of disinfection, including effluent limits for total coliform organisms, and operating specifications for the ultraviolet (UV) disinfection system (e.g., turbidity, UV dose, and UV transmittance). Compliance with the effluent limits and operating specifications demonstrates compliance with the equivalency to Title 22 disinfection requirement.

CVCWA comments that turbidity specifications and total coliform organism effluent limits are sufficient to ensure compliance with the Title 22 disinfected tertiary recycled water requirement. Central Valley Water Board staff does not concur. The California Department of Public Health developed the requirements for turbidity and

² The Discharger began adding a hydrated lime slurry in June 2010 to the influent to aid nitrification and denitrification, resulting in improved treatment and lower ammonia concentrations.

total coliform based on the use of chlorine disinfection. For facilities that utilize UV disinfection, DPH requires compliance with additional specifications to ensure adequate disinfection is provided.

The National Water Research Institute (NWRI) and American Water Works Association Research Foundation NWRI/AWWRF's "Ultraviolet Disinfection Guidelines for Drinking Water and Water Reuse" first published in December 2000 and revised as a Second Edition dated May 2003 (NWRI Guidelines) includes UV operating specifications for compliance with Title 22 disinfected tertiary recycled water. For water recycling in accordance with Title 22, DPH requires that the UV system shall be an approved system included in the Treatment Technology Report for Recycled Water, December 2009 (or a later version, as applicable) published by the DPH. The UV system shall also conform to all requirements and operating specifications of the NWRI Guidelines. A Memorandum dated 1 November 2004 issued by DPH to Regional Water Board executive officers recommended that provisions be included in permits for water recycling treatment plants employing UV disinfection requiring dischargers to establish fixed cleaning frequency of lamp sleeves, as well as, include provisions that specify minimum delivered UV dose that must be maintained (per the NWRI Guidelines).

The proposed Permit includes UV specifications for UV dosage, UV transmittance, and lamp cleaning/replacement in accordance with the NWRI Guidelines. These requirements are necessary for UV disinfection systems to ensure the facility adequately disinfects the wastewater for virus inactivation as required by Title 22.

Since the UV specifications are based on the NWRI Guidelines, a reopener provision included in the proposed Permit to allow modification of the UV operation specifications in the event the Discharger conducts a site-specific UV Engineering study that demonstrates modified UV specifications will achieve the virus inactivation required by Title 22 for disinfected tertiary recycled water.

CVCWA Comment D. The Findings Regarding Ammonia Should Be Revised to Be Consistent With the Applicable Water Quality Objective

CVCWA request that the language regarding the reasonable potential analysis for ammonia stated in Section IV.C.3.c.i.(b) of the Fact Sheet be revised to be consistent with the Basin Plan's narrative toxicity objective.

RESPONSE: Central Valley Water Board staff concurs. The language in the Tentative Permit Section IV.C.3.c.i.(b) of the Fact Sheet has been revised to add clarity as follows in underline/strikeout format:

(b) RPA Results. Per Section 1.3, Step 7, of the SIP, the facility type may be used as information to aid in determining if the discharge may cause or contribute to an exceedance of a water quality objective and a WQBEL is required. The Facility is a POTW that treats domestic wastewater. ~~Untreated d~~Domestic

wastewater inherently contains ammonia. Nitrification is ~~a the~~ biological process that converts ammonia to ~~nitrite and nitrite to~~ nitrates. Denitrification is a process that converts nitrates ~~to nitrite or nitric oxide and then to nitrous oxide or nitrogen gas~~, which is then released to the atmosphere. The Discharger currently uses nitrification to remove ammonia from the waste stream. Potential inadequate or incomplete nitrification may result in the discharge of ammonia to the receiving stream.

Ammonia is known to cause toxicity to aquatic organisms in surface waters, so discharges of ammonia in concentrations that produce detrimental physiological responses to human, plant, animal, or aquatic life would violate the Basin Plan narrative toxicity objective. Since the Discharger started adding a hydrated lime slurry to aid in nitrification in June 2010, the ~~MEC for ammonia concentrations~~ during the discharge season (15 November through 15 May) ~~was 4.9 µg/L~~ has reduced and does not pose a reasonable potential based on quality of treated effluent alone. However, due to the facility type and inherent nature of domestic wastewater, while ammonia was not detected in the upstream receiving water. Therefore, ammonia in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the NAWQC.

CVCWA Comment E. The Effluent Limitations for Bis (2-Chloroethyl) Ether Should Be Replaced With Monitoring Requirements In Accordance With the SIP

CVCWA comments that the effluent limitations for bis(2-chloroethyl)ether should be replaced with monitoring requirements in accordance with the State Implementation Policy (SIP), because there is insufficient data to conduct a reasonable potential analysis (RPA).

RESPONSE: Central Valley Water Board staff does not concur. Only two effluent bis(2-chloroethyl)ether samples were collected during the current permit cycle and were non-detect. However, the method detection limits (MDLs) were above the California Toxics Rule (CTR) human health criterion of 0.031 µg/L. Central Valley Water Board staff concur that there is insufficient data to conduct the RPA. However, the effluent limits cannot be removed due to federal antibacksliding regulations. The Clean Water Act (CWA) specifies that a revised permit may not include effluent limitations that are less stringent than the previous permit unless a less stringent limitation is justified based on exceptions to the anti-backsliding provisions contained in Clean Water Act sections 402(o) or 303(d)(4), or, where applicable, the Code of Federal Regulations [40 CFR 122.44(l)]. . The existing data for bis(2-chloroethyl)ether does not provide new information that was not available at the time the current permit was adopted. The data at hand is insufficient information to meet the exceptions to the federal antibacksliding provisions of the CWA and federal regulations. Furthermore, pursuant to CWA section 303(d)(4), although Angels Creek is an attainment water, there is insufficient information to evaluate compliance with the federal and state antidegradation policies at this time. Therefore, the bis(2-chloroethyl)ether effluent limits cannot be removed.