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Central Valley Clean Water Association
Representing Over Fifty Wastewater Agencies

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June 14, 2013

Via Electronically Only

Mr. Lonnie Wass
 Supervising Engineer
 Regional Water Quality Control Board,
 Central Valley Region
 1685 "E" Street, Suite 100
 Fresno, CA 93706-2007
lwass@waterboards.ca.gov

**RE: Comments on the Tentative Waste Discharge Requirements Order R5-2013-XXXX,
 Yosemite National Park, Wawona Wastewater Treatment Facility, Mariposa County**

Dear Mr. Wass:

The Central Valley Clean Water Association ("CVCWA") appreciates the opportunity to submit comments on the tentative Waste Discharge Requirements for the Yosemite National Park Wawona Wastewater Treatment Facility ("Tentative Order"). CVCWA is a non-profit association of public agencies located within the Central Valley region that provide wastewater collection, treatment, and water recycling services to millions of Central Valley residents and businesses. We approach these matters with the perspective of balancing environmental and economic interests consistent with state and federal law. In this spirit, we provide the following comments regarding the performance-based effluent limitation for nitrate and the use of normally distributed data to determine effluent limitations.

I. Approach to Dilution Credits

The Tentative Order includes a final average monthly effluent limitation ("AMEL") for nitrate¹ of 42 mg/L. (Tentative Order at pp. 11, F-40 to F-42.) To calculate this effluent limitation, the Central Valley Regional Water Quality Control Board ("Regional Board") evaluated the assimilative capacity of the receiving water and the requirements for allowing a mixing zone and dilution credits for a specific constituent. Although the Regional Board acknowledged that the receiving water contains assimilative capacity for nitrate, and a mixing zone for nitrate meets the requirements of the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins ("Basin Plan"), the Regional Board finds that the facility can comply with a more stringent effluent limitation than one using the full allowance of dilution. The Regional Board ultimately proposes a water quality-based effluent limitation with a human health dilution credit of 3.6 based on plant performance. Using the dilution credit of 3.6 results in an AMEL of 42 mg/L compared to the AMEL of 1,433 mg/L when using the full dilution credit of 150. (Tentative Order at p. F-18.)

It is CVCWA's position that when granting dilution credits and determining the size of mixing zones, the Regional Board should not unreasonably restrict the amount of dilution granted in the derivation of effluent limits. In this case, it appears that the Regional Board is looking to unreasonably restrict the amount of dilution granted based on the use of existing facility performance as the basis for determining a nitrate dilution credit. In general, CVCWA believes that the Regional Board's practice of restricting dilution credits based on existing facility performance is inappropriate, for the reasons described below.

As a preliminary matter, CVCWA representatives have been working with Regional Board staff to reach agreement on mixing zone issues and the derivation of effluent limits based on dilution. To date, we have reached agreement on the following principles regarding effluent limits that are established when dilution credits are being applied, or being considered for application:

1. Effluent limits must protect beneficial uses outside of the applicable mixing zone.
2. As applicable, such limits must meet requirements of the state's *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* ("SIP") (which is not applicable here).
3. Adoption of such limits must satisfy antidegradation policies, where such policies are applicable.
4. The impacts of mixing zone decisions on assimilative capacity must be considered.
5. Inappropriate permit violations resulting from unintentionally restrictive effluent limits should be avoided.

¹ The Tentative Order refers to the nonconventional constituent at issue as "nitrite plus nitrate as (N)." (E.g., Tentative Order at p. 11.) For convenience, CVCWA will abbreviate its references to the constituent to "nitrate."

Working with Regional Board staff, CVCWA has developed an approach to the development of effluent limits that addresses antidegradation and assimilative capacity concerns. We are currently working to finalize an agreement with Regional Board staff on that approach. The basis for this approach is that incremental increases in the discharge of a constituent from existing levels that are less than 10 percent of the remaining assimilative capacity of the receiving water represent minimal risk to the receiving water. Using 10 percent as a significance threshold with respect to protecting high quality waters in the case where ambient water quality is better than the criterion is discussed in a 2005 U.S. Environmental Protection Agency ("USEPA") memorandum.² The 2005 Memorandum was the result of a four year process led by USEPA involving environmental groups, industry representatives, and other experts where a consensus was reached that any individual decision to lower water quality for non-bioaccumulative chemicals that is limited to 10 percent of the available assimilative capacity (i.e., difference between the downstream ambient concentration and the water effects ratio adjusted copper wasteload application in that case) "represents minimal risk to the receiving water and is fully consistent with the objectives and goals of the Clean Water Act." Considering the process in which the 10 percent significance threshold was identified, it is an appropriate threshold to apply in the Central Valley as well in the exercise of best professional judgment for determining whether an amount of assimilative capacity being used is significant.

Further, while CVCWA understands Regional Board staff's concern that effluent quality will deteriorate if higher effluent limits are adopted, the approach advocated by staff, which is tied directly to existing facility performance, is arbitrary and should be reconsidered. An alternative approach that could be considered would be to use intermediate trigger values, somewhere between the existing effluent quality and the allowable effluent limit that would have the permittee submit information to the Regional Board to explain increases above the trigger concentration. This would provide flexibility not afforded by unnecessarily stringent permit limits and would avoid inappropriate permit violations that have no bearing on impacts to water quality or beneficial uses.

Accordingly, CVCWA recommends that the Regional Board consider including additional dilution credits in the calculation of the effluent limitation for nitrate to account for uncertainty rather than adopting an effluent limit that is tied directly to existing facility performance, and to include an intermediate trigger value to provide review if the trend in nitrate concentrations in the effluent increase over time.

II. Normally Distributed Data

In section IV.C.3.d of the Fact Sheet provided in the Tentative Order, the Regional Board describes the calculation of the AMEL for nitrate, stating that "[i]n developing the performance-based AMEL . . . sampling and laboratory variability is accounted for by establishing limitations

² E.S. King, Office of Science and Technology. Tier 2 Antidegradation Review and Significance Thresholds. Memorandum to Water Management Division Directors, Regions 1-10. August 10, 2005 ("2005 Memorandum").

that are based on normally distributed data where 95% of the data points lie within 2.0 standard deviations of the mean." (Tentative Order at p. F-42.)

Here, CVCWA comments that effluent and receiving water data are nearly always log-normally distributed, and as such, the Regional Board should use the log-normal distribution to calculate the applicable percentile. Using the normal distribution and two times the standard deviation results in a significant underestimation of the potential maximum effluent concentration for two reasons. First, upper end percentile values (i.e., 95th percentile) typically will be higher based on a log-normal distribution compared to a normal distribution. Second, by definition, an effluent limitation based on a 95th percentile value will be exceeded 5 percent of the time, or once every 20 samples. For a performance-based effluent limitation that is 30 to 40 times less than the water quality-based effluent limitation (i.e., 42 mg/L vs. 1,433 mg/L), the performance-based effluent limitation should never be violated if the plant is operating properly. Therefore, the effluent limitation should be based on a percentile that corresponds to a higher compliance rate. For example, allowing an exceedance no more than once in three years would correspond to the 97.2 percentile (1 in 36 samples) for an AMEL. If an exceedance were allowed no more than once in a five year permit term (1 in 60 samples), this would correspond to nitrate concentration levels being less than the AMEL 98.3 percent of the time. It is often cited that nearly all data are contained within 3.3 standard deviations from the mean, which translates to a 99.95 percentile.

Accordingly, and at the very least, where performance-based effluent limitations are being imposed, statistics based on log-normally distributed data generally should be used rather than normally distributed data. The data should be evaluated to determine whether normal or log-normal better describes the observed distribution. At a minimum, an AMEL should be based on a value that will not be exceeded once in five years (98.3 percentile). To ensure that the performance-based effluent limitation is not unnecessarily stringent, CVCWA recommends using the 99.95 percentile for deriving performance-based effluent limitations.

We appreciate your consideration of these comments and request that you revise the Tentative Order as suggested above. If you have any questions or if CVCWA can be of further assistance, please contact me at (530) 268-1338 or eofficer@cvcwa.org.

Sincerely,



Debbie Webster,
Executive Officer

cc: Pamela Creedon, CVRWQCB (via email)
Paul Waymon, Wawona WWTF (via email)