

ITEM: 9

SUBJECT: City of Nevada City Wastewater Treatment Plant, Nevada County

BOARD ACTION: *Consideration of NPDES Permit Renewal (NPDES No. CA0079901)*

BACKGROUND: The City of Nevada City (Discharger) owns and operates the Wastewater Treatment Plant (Facility) that serves a population of 3,100. The Facility discharges up to 0.69 million gallons per day (mgd) of disinfected tertiary level treated effluent to Deer Creek, a water of the United States and a tributary to the Yuba River within the Sacramento River watershed.

Existing Order R5-2008-0177 (existing NPDES Permit) contains final effluent limitations for carbon tetrachloride, chronic whole effluent toxicity, copper, nitrate plus nitrite, nitrite, settleable solids, and zinc. The Discharger's monitoring data collected since the adoption of existing Order R5-2008-0177 did not indicate concentrations of these constituents in the effluent discharge, therefore the proposed NPDES Permit renewal does not include these final effluent limitations. The proposed NPDES Permit includes new effluent limitations for lead.

ISSUES: Public comments were received from the Discharger, the California Sportfishing Protection Alliance (CSPA), and the Central Valley Clean Water Association (CVCWA). The following is a summary of public comments received on major permitting issues and Central Valley Water Board staff responses. Detailed comments and responses are included in the staff Response to Comments document included in this agenda item.

Lead Effluent Limit. The Discharger comments that the proposed NPDES Permit should not contain a lead effluent limit since lead concentrations in the effluent are below the water quality criteria. Staff responds that while lead concentrations in the effluent do not exceed the water quality criteria, receiving water background concentrations do exceed criteria. The Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (SIP) requires that if the pollutant concentration in the receiving water is above the water quality criteria and the pollutant is detected in the effluent, an effluent limitation must be established in the NPDES permit. Therefore, the proposed NPDES Permit contains a lead effluent limitation.

Mass-Based Effluent Limitations. CSPA comments that the proposed NPDES Permit fails to include mass limitations for chlorine, dichlorobromomethane, and lead. Staff responds that 40 CFR section 122.25(f)(1)(ii) states that mass limits are not required when applicable standards are expressed in terms of other units of measurement. The numerical effluent limitations for these constituents in the proposed NPDES Permit are expressed in terms of concentration, and therefore, the proposed NPDES Permit appropriately does not contain mass-based limits.

EC Effluent Limitations. CSPA comments that EC is improperly regulated as an annual average contrary to 40 CFR 122.45(d)(2). Staff responds that the proposed NPDES Permit contains the same EC limit as established by Existing Order R5-2008-0177, an annual average performance-based

effluent limitation for EC of the municipal water supply EC plus an increment of 500 $\mu\text{mhos/cm}$, or 700 $\mu\text{mhos/cm}$, whichever is less. For EC, annual average performance-based effluent limitations are appropriate, due to fluctuations that can occur in the Discharger's effluent caused by changes in its water supply EC. Consequently, it is impracticable to calculate performance-based effluent limitations for EC on a shorter averaging period. Thus, the EC limit in the proposed NPDES Permit is in accordance with 40 CFR 122.45(d)(2).

Chronic Toxicity Effluent Limitations. CSPA comments that the proposed NPDES Permit does not contain effluent limitations for chronic toxicity and thus, does not comply with the 40 CFR 122.44 (d)(1)(i) and the SIP. Staff responds that whole effluent chronic toxicity test results showed that the discharge does not have reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan's narrative toxicity objective. Therefore, the proposed NPDES Permit appropriately does not contain a narrative whole effluent chronic toxicity limit.

Antibacksliding Requirements. CSPA comments that the proposed NPDES Permit contains effluent limitations less stringent than those in the existing permit contrary to antibacksliding requirements. Board staff responds that the proposed NPDES Permit is consistent with anti-backsliding requirements. The requirements in the proposed NPDES Permit renewal are based on new monitoring data and new information obtained since adoption of Existing Order R5-2008-0177. Based on effluent sampling events conducted from December 2008 through September 2011, the proposed NPDES Permit appropriately contains effluent limitations for those constituents that demonstrated a reasonable potential for the effluent to cause or contribute to an excursion above applicable water quality standards.

The proposed NPDES Permit contains dichlorobromomethane effluent limitations that have been recalculated using proposed dilution credit from an approved mixing zone study. The mixing zone complies with the SIP and the Basin Plan, and will not adversely impact beneficial uses. Therefore, the proposed NPDES Permit appropriately includes dichlorobromomethane effluent limitations that are less stringent than the existing Order R5-2008-0177, based on a new mixing zone study, and that are consistent with anti-backsliding requirements.

Antidegradation Analysis. CSPA comments that the proposed NPDES Permit contains no antidegradation analysis and does not comply with the federal or state requirements. CSPA contends that chemicals were added to the treatment system to intentionally raise the hardness and subsequently alter the effluent limitations for copper and zinc. CSPA further states that the allowance of a mixing zone also requires an antidegradation analysis.

Antidegradation does not apply within a mixing zone. Staff responds that the proposed NPDES Permit is for an existing discharge with no increase in capacity or permitted flow. The concentration or mass of constituents that are granted dilution does not increase at the edge of the mixing zone where the receiving water is at criteria; therefore a complete antidegradation analysis is not necessary. The Discharger instituted a permanent operational change to stabilize the nitrification process and reduce the need

for post-chlorination/dechlorination use of sodium hydroxide, which subsequently increased hardness and reduced sodium in the effluent. This operational change does not lower water quality and therefore, an antidegradation analysis is also not required. Nevertheless, the Fact Sheet evaluates pollutant by pollutant the impact to waters of the state and demonstrates that such discharges will not unreasonably degrade the waters of the state. In fact, the operational changes assure successful nitrification and reduce chlorination/dechlorination agents, thus reducing the threat of toxicity in the effluent.

The proposed NPDES Permit allows a mixing zone in accordance with the Basin Plan and the SIP. Water quality standards are not required to be met within mixing zones as long as the requirements of the mixing zone policy are met. Only a simple antidegradation analysis consisting of a finding that the mixing zone will not be adverse to the purpose of the state and federal antidegradation policies is required. Additional language was added to the Fact Sheet for clarification.

Aluminum Effluent Limitations. CSPA comments that the proposed NPDES Permit fails to include aluminum effluent limitations. Staff responds that based on extensive research review, US EPA's recommended chronic criteria is not applicable to this receiving water, and therefore, was not used in determining the appropriate application of aluminum water quality objectives to comply with the Basin Plans' narrative toxicity objective. The next most stringent criteria are Department of Public Health Secondary MCL of 200 µg/L for drinking water aesthetic conditions and US EPA's recommended acute criterion of 750 µg/L for protection of aquatic species. The maximum aluminum concentrations in the effluent and receiving water are 120 µg/L and 23 µg/L, respectively, which do not exceed either of these water quality objectives. Therefore, the discharge complies with the Basin Plan's narrative toxicity objective, and the proposed NPDES Permit appropriately does not contain water quality based effluent limitations for aluminum.

Nitrate Effluent Limitations. CSPA comments that the proposed NPDES Permit fails to contain a nitrate effluent limitation. Staff responds that based on 132 samples, obtained since the adoption of the existing Order R5-2008-0177 in December 2008, the maximum effluent concentration was 5.26 mg/L, which is below the applicable water quality objective at 10 mg/L. Therefore, the NPDES Permit appropriately does not contain an effluent limitation for nitrate.

Denial of Full Dilution Credit. CVCWA comments that the proposed NPDES Permit impermissibly denies calculated dilution credits and truncates effluent limitations without making the requisite findings.

Staff responded that the effluent limitations were calculated based on the performance of the Facility in accordance with the SIP and antidegradation policies, which constitutes a mixing zone that is as small as practicable. Therefore, the proposed NPDES Permit contains dichlorobromomethane effluent limitations that utilize approximately 4.1:1 (receiving water/effluent) of the available mixing and dilution in Deer Creek, instead of based on the requested dilution credit of 7.28:1. Staff worked with the Discharger who confirmed that they can comply with the performance-based dilution level as

they continue to implement the existing Best Practical Treatment or Control (BPTC), required in antidegradation policies.

RECOMMENDATION: Staff recommends Board adoption of the proposed NPDES Permit Renewal.

Mgmt. Review _____

Legal Review _____

7/8 June 2012 Board Meeting
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