

ITEM: 26

SUBJECT: Nevada County Sanitation District No. 1, Lake of the Pines Wastewater Treatment Plant, Nevada County

BOARD ACTION: *Consideration of NPDES Permit Renewal (NPDES Permit No. CA0081612)*

BACKGROUND: The Nevada County Sanitation District No. 1 is the owner of the Lake of the Pines Wastewater Treatment Plant (Facility), located at 10803 Riata Way, Auburn, CA. The Facility provides sewerage services for the communities of Lake Of The Pines and Darkhorse, serving a population of approximately 6,900. Discharge from the Facility is currently regulated by Waste Discharge Requirements Order R5-2009-0031, permitting an average dry weather flow of 0.72 million gallons per day (MGD). Treated wastewater from the Facility is discharged to the Magnolia Creek, a water of the United States and a tributary to Bear River, within the Bear River Watershed. The United States Environmental Protection Agency and the Central Valley Water Board have classified this discharge a minor discharge.

The proposed NPDES permit renewal includes new or more stringent effluent limits for ammonia, nitrate plus nitrite, and total recoverable copper. The proposed Order also removes effluent limits for nitrite, because the discharge no longer exhibits reasonable potential to cause or contribute to an exceedance of the applicable water quality objectives for these constituents.

The Tentative Order issued on 21 January 2015, included effluent limitations based on USEPA's 2013 recommended ammonia criteria. Because a separate basin planning effort is underway to evaluate the appropriate methodology to implement USEPA's 2013 criteria, on 3 March 2015, staff issued a supplemental notice to the Discharger and interested parties noting proposed changes to the Tentative Order that would follow USEPA's 1999 recommended ammonia criteria instead of the 2013 Criteria. The Order in the agenda package implements the 1999 Criteria. Included for the Board's consideration is a change sheet that identifies the necessary changes to the Order if the Board instead decides to regulate ammonia using the 2013 Criteria.

ISSUES: A Notice of Public Hearing was sent to the discharger and interested parties on 21 January 2015 for a 30-day public comment period. Timely public comments on the tentative NPDES permit were received by the Central Valley Clean Water Association (CVCWA) and California Sportfishing Protection Alliance (CSPA). A Supplemental Notice of Public Hearing was sent to the discharger and interested parties on 3 March 2015 for a 30-day public comment period noting the change from using the 2013 ammonia criteria to the 1999 ammonia criteria. Comments on the Supplemental Notice of Public Hearing are due 2 April 2015. The following is a summary of the comments on the 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 the agenda package.

Peracetic Acid As Additional Disinfectant. CSPA contests the use of Peracetic Acid (PAA) as an additional disinfectant without further study.

The Central Valley Water Board staff does not concur. EPA previously approved peracetic acid (PAA) as a wastewater disinfectant. Central Valley Water Board staff reviewed the relative documentation to fully assess the water quality impacts related to the use of PAA in wastewater treatment. Based on review of these documents, Central

Valley Water Board staff recommends the use of PAA as an additive to UV disinfection. However, Central Valley Water Board staff have not included a final effluent limit for PAA because there are currently no criteria for PAA that can be used to establish a limit.

As for toxicity caused by PAA, the document *Emerging Technologies for Wastewater Treatment and In-Plant Wet Weather Management* also states that “PAA does not affect wastewater toxicity, so need not be removed as with chlorine.” If the Discharger adds PAA to the treatment stream, it will be added upstream of the UV disinfection system to supplement disinfection and not be the primary method of disinfection. With PAA being strongly reactive as cited by CSPA and added in small doses prior to UV disinfection, the probability of PAA discharge to Magnolia Creek is much less than if PAA was used as the only disinfectant. The proposed Order requires daily PAA monitoring and annual acute and chronic toxicity monitoring that Central Valley Water Board staff believe are adequate for protecting the beneficial uses of Magnolia Creek. CSPA is concerned about low pH caused by PAA since it is an acid; however, the proposed Order includes an instantaneous minimum pH effluent limit of 6.5 to protect Magnolia Creek that must be met during plant discharge, which prevents pH levels from dropping below 6.5 where metals can more readily convert from total concentrations to the more toxic dissolved form. Furthermore, the Discharger is using PAA only as a supplement to UV disinfection not a replacement so this should minimize the acid effects of PAA addition.

Use of Effluent Hardness to Determine Hardness-dependent Metals Criteria.

CSPA contends that the proposed Order establishes effluent limitations for metals based on the hardness of the effluent (48 mg/L) as opposed to the lower upstream receiving water hardness (44 mg/L) as required by the California Toxics Rule.

Central Valley Water Board staff does not concur. Magnolia Creek is an ephemeral stream, which creates effluent dominated conditions during portions of the year. The minimum observed upstream hardness is 44 mg/L, which is slightly less than the minimum effluent hardness of 48 mg/L, and virtually the same with respect to the criterion derived when calculating hardness-dependent metals criteria. CSPA contends that the Sacramento Superior Court in the SRCSD decision rejected the methodology of using effluent hardness to calculate hardness-dependent metals criteria for effluent dominated receiving waters. The Court did not explicitly reject this methodology in its decision. The Court discussed the differences between the Sacramento River and an effluent dominated stream where the facts are significantly different. In the case of Deer Creek, an effluent dominated stream, the Court determined that, “it was reasonable to use the effluent hardness as a measure of a realistic “worst-case” scenario to ensure “that effluent limitations will be fully protective under all flow conditions.” Magnolia Creek, an effluent dominated stream, is similar to the case of Deer Creek, and not similar to Sacramento River which is not an effluent dominated water. Therefore, the Central Valley Water Board is justified in using the minimum effluent hardness in calculating the “worst-case” downstream ambient receiving water conditions to ensure that effluent limitations will be fully protective under all flow conditions.

Reasonable Potential for Cyanide. CSPA contends that the proposed Order does not include an effluent limitation for cyanide despite data showing reasonable potential to exceed the cyanide water quality standard. CSPA contends that the cyanide is a product of legacy mining; therefore, it is possible for cyanide to be present in the wastewater.

Central Valley Water Board staff does not concur. Using current EPA approved total

cyanide analytical methods has shown to produce false positives in wastewater effluent samples caused by the creation of cyanide precursors during disinfection (from both chlorination and UV disinfection) and analytical interferences. In particular, the use of sodium hydroxide which was used by the Discharger to preserve samples has itself shown to be an interferent for which there are no specific mitigation techniques.

The collection system for Lake of the Pines is directly connected to residences and business and does not receive industrial discharges from gold mining operations that use cyanide in their gold processing activities. Also, there was no measurable precipitation in the area on that day or the previous day that could have helped in infiltrating cyanide into the collection system.

For the above mentioned reasons, Central Valley Water Board staff has determined that there is insufficient data to determine if there is reasonable potential present for cyanide and are proposing to continue quarterly monitoring for cyanide. During the next permit renewal, cyanide data will be reviewed once again to determine if there is reasonable potential present to require a cyanide effluent limit. Also, during the upcoming permit term, if cyanide concentrations are consistently above the cyanide criterion the Central Valley Water Board may reopen the Order at any time to add a final effluent limit for cyanide.

Determination of Mussels Absent for 2013 Ammonia Criteria. CSPA contends that the Central Valley Water Board failed to justify mussels are absent when calculating the ammonia effluent limitations using U.S. EPA's Recommended 2013 Ammonia Criteria.

Central Valley Water Board staff does not concur. The proposed Order calculates U.S. EPA's Recommended 2013 Ammonia Criteria with the assumption that mussels are not present for several reasons. Magnolia Creek is an ephemeral stream that would not support mussels because of the absence of year round flow and the diurnal temperature fluctuations in the stream when there is little or no flow present. The discharge conditions at the Lake of the Pines Facility is similar to discharge conditions at the Discharger's Lake Wildwood Facility, which discharges to Deer Creek an ephemeral stream at a similar elevation and location in the Sierra Foothills. The Sierra Streams Institute has been sampling macroinvertebrates twice per year at 15 sites on Deer Creek over the past 15 years. During these surveys the Sierra Streams Institute has not identified mussels as being present in Deer Creek. In addition, in the report prepared by The Nature Conservancy, *Sensitive Freshwater Mussel Surveys in the Pacific Southwest Region: Assessment of Conservation Status*, does not contain survey information indicating that mussels are present in Magnolia Creek. In addition, Central Valley Water Board staff is recommending a permit alternative for the regulation of ammonia using EPA's 1999 Criteria instead of EPA's 2013.

Average Weekly Effluent Limit for Nitrate plus Nitrite. Central Valley Water Board staff inadvertently excluded an Average Weekly Effluent Limit (AWEL) for nitrate plus nitrite of 20 mg/L. The AWEL of 20 mg/L was added as a final effluent limit in the proposed Order, for which the Facility can meet this limit based on historical data.

RECOMMENDATION: Adopt NPDES Permit Renewal, as proposed.

Mgmt. Review NM

Legal Review NJJ

16/17 April 2015 Board Meeting

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