ITEM: 8

SUBJECT: City of Roseville Pleasant Grove Wastewater Treatment Plant (WWTP) Placer County

BOARD ACTION: *Consideration of NPDES Permit Renewal And Time Schedule Order*

BACKGROUND: The City of Roseville (hereinafter Discharger) is the owner and operator of the Pleasant Grove WWTP (hereinafter Facility). Since January 2005, the Facility has provided tertiary treatment to wastewater from the northwestern portion of City of Roseville, portions of southeast Placer County, and residents within the South Placer Municipal Utility District. The Facility serves a population of approximately 78,000 people. The current City residential monthly flat rate sewer charge is $26.85. Industrial wastewater from five of the six locally-permitted significant industrial users within the City discharge to the Facility. Tertiary treated municipal wastewater is discharged to Pleasant Grove Creek, a tributary to Pleasant Grove Creek Canal, Natomas Cross Canal, and the Sacramento River, south of confluence with the Feather River.

The existing Waste Discharge Requirements (NPDES permit) authorizes a major discharge of up to 12.0 million gallons per day (mgd) to the receiving water. The Discharger is proposing a Facility upgrade to increase the treatment capacity to 15.0 mgd (ADWF). The proposed NPDES permit renewal includes an increased regulated flow based on an antidegradation analysis performed by the Discharger.

The proposed NPDES permit renewal is more stringent than the existing permit and includes new and/or more stringent effluent limitations for aluminum, ammonia, cadmium, cyanide, dibromochloromethane, dichlorobromomethane, iron, manganese, mercury, fluoride, and total chlorine residual, and zinc. The effluent limitations for aluminum, ammonia and total chlorine residual are based on implementation of the narrative Basin Plan objective. The specific criteria used to interpret the narrative Basin Plan objective and calculate effluent limitations for aluminum, ammonia and total chlorine residual is the USEPA's National Recommended Ambient Water Quality Criteria for protection of aquatic life. A Time Schedule Order (TSO), including time schedules and corresponding interim effluent limitations, is proposed for new and more stringent effluent limitations in which the Discharger is unable to immediately comply.

The Discharger submitted public comments regarding the tentative NPDES Permit and TSO. The major issues discussed in the Discharger's public comments are summarized below. Further detail on all comments is included in Regional Water Quality Control Board staff Responses to Comments:

Compliance Schedules: In its Infeasibility Study (dated 17 March 2008 and amended on 2 May 2008), the Discharger requested time schedules in both the proposed NPDES Permit and the proposed Time Schedule Order (TSO) to comply with final effluent limitations for numerous

pollutants. Regional Water Board staff concluded that, due to potentially conflicting requirements associated with the California Toxic Rule compliance date of May 2010, compliance schedules are to be either in the NPDES permit or in an enforcement order, but not in both. Therefore, the proposed NPDES permit contains final effluent limitations for the discharge, and the proposed TSO requires the Discharger to comply with final effluent limitations for cyanide, dibromochloromethane and dichlorobromomethane effluent limitations by 1 January 2013, and with effluent limitations for cadmium, fluoride, and zinc effluent limitations is required by 1 June 2013.

Compliance With Total Residual Chlorine Effluent Limitations: In its public comments, the Discharger comments that the proposed final effluent limitations for total residual chlorine indicate the need to measure total residual chlorine to the one-thousandth (1/1000th) mg/L (e.g., 0.011 mg/L, as a 4-day average; and 0.019 mg/L, as a 1-hour average). Based on the Discharger's experience optimizing online chlorine analyzers for process control and compliance reporting, field application of online analyzers, considering the calibrations and maintenance, can only be relied upon to accurately measure to the one-hundredth ($1/100^{th}$) mg/L in treated wastewater. Therefore, the Discharger requests that the total chlorine residual effluent limitations be revised to reflect actual analytical capability.

Based on direction from USEPA and the State Implementation Policy (or SIP), Regional Water Board staff does not concur that the total chlorine residual effluent limitations in the proposed NPDES Permit should be adjusted to accommodate the sensitivity of analytical methods. To address the Discharger's concern, however, the compliance determination language for chlorine residual effluent limitations in the proposed permit has been modified to account for the issue of analytical method sensitivity.

The Discharger also requests that the total chlorine residual effluent limitations become "non-effective" after it certifies that the proposed UV disinfection system is operational (proposed for May 2011). However, in place of proposing that the final effluent limitations become ineffective upon Discharger certification of no use of chlorine in the treatment process, the proposed permit was modified to have the required compliance monitoring for chlorine residual become ineffective upon written certification that the use of chlorine has been ceased. This approach negates the need for the Regional Water Board to reopen the NPDES permit should the Discharger, during the life of the permit, need to use chlorine in the treatment process.

Use of Inhibition Concentration – 25 Percent (IC25): The Discharger requests the option of substituting the IC25 method in place of the No Observed Effects Concentration (NOEC) method when measuring whole effluent toxicity in the effluent. The Discharger believes that the IC25 method is a more dependable approximation of the no effect level and provides a better indication of the ability to see an effect in the toxicity test. USEPA has consistently recommended the use of point estimates

(e.g., IC25) rather than hypothesis tests to analyze whole effluent toxicity data. Specifically in the USEPA *Technical Support Document for Water Quality-based Toxics Control* (TSD), the EPA concludes, '…*comparisons of both types of data indicate that an IC25 is approximately the analogue of an NOEC derived using hypothesis testing.*

The NOEC method is required in NPDES permits to calculate chronic toxic units because the NOEC endpoint represents no toxicity. This is consistent with the Regional Water Board Basin Plan's narrative toxicity objective and toxicity testing required in the other Regional Water Board's regulatory programs. The point estimate, IC25, assumes that some level of toxicity is acceptable. The selection of an acceptable level of toxicity to ensure compliance with the narrative toxicity objective is not consistent with the Basin Plan narrative toxicity objective. Staff believes that approval of a future use of the IC25 chronic toxicity assessment in an NPDES permit is an amendment that should obtain Regional Water Board approval.

Salinity: Discharge from the Facility currently does not have reasonable potential to cause or contribute to an in-stream excursion of water quality objectives or agricultural goals for salinity. However, the receiving water is a tributary of the Sacramento River and the Sacramento – San Joaquin Delta; therefore, the discharge contributes to the salinity in Delta waters. The Discharger is implementing local measures to address water supply issues that are expected to increase the Facility effluent salinity levels. The Discharger recently initiated an Aquifer Storage and Recovery (ASR) system. When stored water is retrieved for domestic use at a later time, it may be higher in salinity than the water introduced into the system. Additionally, the Discharger has implemented an aggressive water conservation program throughout its service area which may impact the salinity level in the discharge. As a result of the ASR and water conservation initiatives, the salinity data to date is not expected to be representative of short and long-term salinity levels from the Facility.

The proposed NPDES permit includes an interim performance-based limitation for electrical conductivity (EC), but no final effluent limitation due to the uncertainty of future salinity characteristics of the effluent and potential conflict with efforts to ensure long-term reliable water supplies. Further data collection to during implementation of local water conservation storage measures is necessary prior to consideration of final EC effluent limitations. To ensure the Discharger continues to implement salinity minimization measures, the proposed permit requires the Discharger to develop and implement a Salinity Minimization plan, and develop and implement a Site-specific Salinity/EC Study to determine appropriate salinity levels to protect the beneficial uses of Pleasant Grove Creek and its immediate tributaries.