

Regional Water Quality Control Board
North Coast Region

Executive Officer's Summary Report
Thursday, August 17, 2017
Regional Water Board Office
Santa Rosa, California

ITEM: 4

SUBJECT: Public Hearing on Order No. R1-2017-0007 to consider adoption of proposed Waste Discharge Requirements for City of Rio Dell Wastewater Treatment Facility, WDID No. 1B83134OHUM, NPDES No. CA0022748 (*Cathleen Goodwin*)

BOARD ACTION: The Board will consider adoption of Waste Discharge Requirements Order No. R1-2017-0007. The Order will serve as a National Pollutant Discharge Elimination System (NPDES) permit for a period of five years.

BACKGROUND: The City of Rio Dell (Permittee) owns and operates a municipal wastewater treatment plant and associated wastewater collection and disposal facilities (Facility) for treating primarily domestic wastewater for a population of approximately 3,100 residential users in the community of Rio Dell. The Facility also serves several small commercial facilities.

The Facility is currently regulated under Waste Discharge Requirements Order No. R1-2011-0054 for discharges to surface waters and for land disposal of disinfected secondary effluent.

The Facility has an average dry weather design treatment capacity of 0.40 million gallons per day (mgd), and an average wet-weather treatment capacity of 1.25 mgd. The treatment system consists of a headworks, Aero-Mod secondary treatment and solids stabilization system, chlorine disinfection in two chlorine contact tanks, and dechlorination using sodium bisulfite.

Solids removed from the wastewater are stored and thickened in two aerated digesters and subsequently dewatered with a belt filter press. The dewatered biosolids process through an indirect sludge dryer, which produces Class A biosolids that the Permittee gives away to residents as a soil amendment.

The Permittee is subject to the Water Quality Control Plan for the North Coast Basin (Basin Plan) seasonal discharge prohibition to the Lower Eel River between October 1 and May 14. The Permittee discharges treated wastewater to a 23-acre irrigation site located northwest of the City and west of the southbound Highway 101 Bridge from May 15 to September 30. The Permittee's irrigation discharge was designed as a land disposal system rather than a water recycling system.

ISSUES:

Effluent Limitations and Monitoring and Reporting Requirements. Order No. R1-2017-0007, as proposed, continues to prescribe technology-based effluent limitations for biochemical oxygen demand (BOD), total suspended solids (TSS), settleable solids, pH; and water quality-based effluent limitations for total coliform bacteria, total residual chlorine, dichlorobromomethane, chlorodibromomethane, Total Trihalomethane, Haloacetic Acids, and total nitrogen. The proposed Order also retains land discharge specifications for BOD, TSS, pH, and total coliform bacteria, and adds a numeric discharge specification for total nitrogen and narrative land discharge requirements to ensure that land applied effluent meets all requirements of the Order, including requirements to properly operate and maintain irrigation infrastructure to minimize the potential for runoff or overspray, prevent nuisance conditions (odors and vectors), and to protect groundwater.

The proposed Order includes new effluent monitoring and reporting requirements for chronic toxicity. Monitoring and reporting requirements have been added for aluminum and chlorine disinfection by-products, including dichlorobromomethane, chlorodibromomethane, and Haloacetic Acids for discharges to the Lower Eel River, and for total nitrate, total nitrogen, total dissolved solids, and chlorine disinfection by-products for discharges to land.

Removal of Mass-based Effluent Limitations for BOD and TSS. At the request of the Permittee, mass-based effluent limitations for BOD and TSS were removed from the proposed Order. 40 C.F.R. section 122.45(f) does not require the establishment of mass-based effluent limitations, but, as stated in section 122.45(f)(2), allows for the establishment of both mass- and concentration-based effluent limitations. Regional Water Board staff (Staff) established mass-based effluent limitations in addition to concentration-based effluent limitations as a means to cause the Permittee to address infiltration and inflow (I/I) associated with excessive wet-weather flow being discharged to the wastewater treatment plant. This has not proven to be the most expedient way to address excessive I/I. Staff recently changed the approach to include special study requirements, when warranted, for the Permittee to perform sewer system evaluations that lead to development and implementation of a plan to address excessive I/I.

Removal of Ammonia Effluent Limitations and Mussel Study. Staff re-evaluated its approach to determining whether or not there is reasonable potential for ammonia. In light of this review, Staff has determined that it is appropriate to remove effluent limitations for ammonia.

The Draft Permit established ammonia effluent limitations primarily based on the Facility being a municipal wastewater treatment facility that treats wastewater that is high in ammonia and the desire to incentivize optimization of treatment capabilities. A careful review of the Permittee's data during the previous permit term shows that once the Permittee got through the initial start-up period for the upgraded Facility, the Permittee

has operated the Facility efficiently and effectively for ammonia removal. Ammonia violations only occurred during Facility startup. The Permittee invested in a wastewater treatment process that is designed to remove ammonia and significantly reduce total nitrogen. The proposed Order includes requirements to operate and maintain the Facility as designed (for ammonia removal/nitrogen reduction) and the reopener provision that allows the Regional Water Board to revise the Order in the event that future monitoring data shows reasonable potential for exceedance of ammonia water quality objectives.

The requirement to conduct a study for the presence of freshwater mussels in the Lower Eel River was also removed from the proposed Order due to Staff's re-evaluation of the Permittee's ammonia data, which resulted in a determination that the Permittee's discharge does not exhibit reasonable potential for ammonia.

Chlorine Disinfection By-Products. The reasonable potential analysis performed during the development of the proposed Order revealed that the Permittee's discharge has reasonable potential for several chlorine disinfection by-products to be present in the Permittee's discharge at concentrations that exceed applicable water quality criteria. These include dichlorobromomethane, chlorodibromomethane, Total Trihalomethanes, and Haloacetic Acids. Under a 13267 Order issued by the Regional Water Board Executive Officer on January 9, 2017, the Permittee was required to conduct additional monitoring for these chlorine disinfection by-products. The monitoring confirmed that these pollutants are consistently present in the Permittee's discharge.

On July 19, 2017, the Permittee submitted a letter requesting that the Regional Water Board consider giving the Permittee a compliance schedule to provide the City with time to come into compliance with effluent limitations for chlorine disinfection by-products (dichlorobromomethane, chlorodibromomethane, Total Trihalomethanes, and Haloacetic Acids). The Permittee has identified the need to make some operational, Supervisory Control and Data Acquisition (SCADA) programming, and structural modifications as a first step toward controlling the production of these chlorine disinfection by-products in its chlorine disinfection system and complying with these effluent limitations. The Permittee has acknowledged that it is prepared to take additional steps in the future, as needed, in order to achieve compliance.

Staff proposes the issuance of a Time Schedule Order (TSO) for compliance with effluent limitations for chlorine disinfection by-products. In addition, the TSO will also include a compliance schedule for the Permittee to conduct the sewer system evaluation identified above. The Executive Officer intends to issue the TSO using delegated authority following a 30-day public comment period and after addressing any public comments that are received. This will occur after the proposed Order is adopted.

Changes to Chlorine Residual Monitoring Requirements. The proposed Order eliminates the requirement for the Permittee to maintain a chlorine residual of 1.5 mg/L at the end of the chlorine contact tank and replaces this with a requirement to demonstrate

that a sufficient chlorine residual is maintained to ensure proper disinfection. The proposed Order also includes new requirements for the Permittee to conduct continuous monitoring to demonstrate that an appropriate amount of chlorine residual is present at the end of the chlorine contact tank on a continuous basis to ensure proper disinfection and to demonstrate that all chlorine has been properly removed after dechlorination. Continuous monitoring after dechlorination may be performed with any appropriate continuous monitoring device, including chlorine residual or bisulfite residual analyzers, or oxidation-reduction potential meters. The Permittee's Facility is already equipped with continuous chlorine residual analyzers at the beginning and end of the chlorine contact tank and a bisulfite residual analyzer, thus the Permittee has the equipment necessary to comply with the chlorine residual monitoring requirement.

Changes to Chronic Toxicity Test Procedures and Statistics. The proposed Order continues to require 5 concentration toxicity tests, but the Permittee is required to evaluate the results of the toxicity tests using the Test of Significant Toxicity (TST) as the analytical approach in place of the No Observed Effect Concentration (NOEC) approach that was required in previous permits. During the public comment period, the Permittee requested that it be allowed to continue to use the NOEC analytical approach. Staff maintain that the TST is the appropriate analytical approach to evaluate the results of toxicity tests because it is consistent with the State Water Board's proposed toxicity amendment to the Water Quality Control Plan for Enclosed Bays and Estuaries of California and it is supported by U.S. EPA as being more rigorous and accurate than the NOEC hypothesis test.

Request for De-Designation of the Municipal (MUN) Beneficial Use. The Permittee's comment letter requested that the Regional Water Board de-designate the MUN beneficial use in the Lower Eel River based on the City's observation that there are no municipal drinking water systems in the Lower Eel River. Response to Comments document provides a detailed response of why the MUN beneficial use must be retained in the Lower Eel River.

Request for Dilution Credits/Mixing Zones. The Permittee's comment letter requested that the Regional Water Board grant dilution credits up to 100:1 dilution based on the Basin Plan one percent flow limitation that is included in the proposed Order. The Basin Plan requirement for discharges not to exceed one percent of the receiving stream's flow is a flow limitation, not a dilution credit. The flow limitation requirement ensures protection of the receiving water at the end of pipe. The Response to Comments document provides a detailed response to this issue. If the Permittee wishes to request consideration of dilution credits in the future, the Permittee would need to conduct a mixing zone study and assimilative capacity evaluation to determine if granting of dilution credits could be done in a manner that protects water quality.

Resolution of Public Comments. Staff received timely comments on the Draft Order from the Permittee and made several changes to the proposed Order in response to those comments. The most significant changes made to the proposed Order in response to the Permittee's comments were (1) removal of effluent limitations for ammonia and mass-

based effluent limitations for BOD and TSS; (2) removal of the mussel study requirement; (3) removal of requirements to monitor groundwater for chlorine disinfection by-products; and (4) agreement to develop a Time Schedule Order to give the Permittee additional time to comply with final effluent limitations for chlorine disinfection by-products and evaluate its collection system. Many small changes were made to the proposed Order in response to the Permittee's comments, and a full explanation of the comments and responses is provided in the attached Response to Comments document. Other changes that were made to the proposed Order by Staff initiation are also included in the Response to Comments document.

Staff met with the Permittee to discuss the Permittee's comments and Staff's Proposed Changes to the proposed Order. The Permittee indicated that Staff's response to the Permittee's comments and changes to the proposed Order are acceptable. The proposed Order is uncontested.

RECOMMENDATION: Adopt Order No. R1-2017-0007, as proposed.

**SUPPORTING
DOCUMENTS:**

1. Proposed Order No. R1-2017-0007
2. Staff Responses to Written Comments
3. City of Rio Dell Comment Letter
4. Public Notice