Regional Water Quality Control Board
North Coast Region

Executive Officer's Summary Report
Thursday, June 16, 2016
Regional Water Board Office
Santa Rosa, California

ITEM: 9

SUBJECT: Public Hearing on Order No. R1-2016-0015 to consider adoption of proposed Waste Discharge Requirements for City of Healdsburg Wastewater Treatment, Recycling, and Disposal Facility, WDID No. 1B82046OSON, NPDES No. CA0025135 *(Cathleen Goodwin)*

BOARD ACTION: The Board will consider adoption of Waste Discharge Requirements Order No. R1-2016-0015 (Proposed Permit). The Proposed Permit will serve as a National Pollutant Discharge Elimination System (NPDES) permit for a period of five years.

BACKGROUND: The City of Healdsburg (Permittee) owns and operates a municipal wastewater treatment facility and associated wastewater collection, recycling, and disposal facilities (Facility) that serve a population of approximately 12,200 people. The Permittee's wastewater makeup is approximately 90 percent residential flow and 10 percent combined commercial, industrial and municipal flows.

The Facility is currently regulated under Waste Discharge Requirements Order No. R1-2010-0034, which serves as a NPDES permit for waste discharges to surface waters and a master recycling permit for distribution and use of recycled water.

The Facility has an average dry weather design treatment capacity of 1.4 million gallons per day (mgd), and a peak wet weather treatment capacity of 4.0 mgd. Wastewater treatment consists of influent screening and grit removal; biological treatment and nitrogen removal in aerobic, anoxic, and pre-anoxic basins; microfiltration through a membrane bioreactor (MBR); ultraviolet (UV) light disinfection; and return activated sludge pumping from the MBR back to the aeration basins. Waste activated sludge pumping removes excessive biomass from the system, followed by a proprietary sludge digestion process, dewatering via centrifuge, and disposal to a sanitary landfill. The Facility includes a 5 million gallon aerated influent equalization basin which provides equalization storage capacity for extended wet weather flows and a 25 million gallon recycled water storage pond.

Disinfected tertiary effluent is currently discharged to Basalt Pond at Discharge Point 001 year round. Basalt Pond has been determined to be a water of the United States that is hydrologically connected to the Russian River. The disposal of disinfected tertiary

effluent will continue to be permitted under the Proposed Permit. The Permittee has been under a Cease and Desist Order (CDO) that requires the Permittee to cease discharges to Basalt Pond during the period May 15 through September 30 as required by the Basin Plan and Discharge Prohibition III.I of the Proposed Permit. A renewed CDO is also proposed for adoption (Proposed CDO R1-2016-0016) concurrent with the adoption of the Proposed Permit.

The CDO will extend deadlines for the Permittee to develop an expanded recycled water distribution system to reduce and eventually cease the discharge to Basalt Pond during the period May 15 through September 30. During the dry season, a portion of the tertiary treated effluent is recycled via pipeline or trucking for various uses, including vineyard, residential and commercial irrigation, and dust control and construction uses. The Permittee is expanding its recycled water uses to include aggregate processing, street sweeping and sewer cleaning. The Permittee operates two recycled water fill stations for the trucked recycled water program. Syar Industries, Inc. operates its own recycled water hydrant at its aggregate processing facility for filling trucks with recycled water from the Permittee for dust control. The Permittee's distribution and use of recycled water is not permitted through the Proposed Permit, rather the Permittee's Recycled Water Program will be regulated under the State Water Resources Control Board Order No. WQ 2014-0090-DWQ, General Recycled Water Requirements for Recycled Water Use (statewide Recycled Water General Order).

ISSUES:

The Proposed Permit continues to prescribe technology-based effluent limitations for biochemical oxygen demand (BOD) and total suspended solids, and water quality-based effluent limitations (WQBELs) for ammonia and copper for discharges to Basalt Pond at Discharge Point 001. The following paragraphs describe the most significant issues addressed in the Proposed Permit and changes incorporated in response to comments.

Recycled Water. Recycled water requirements that apply to the distribution and use of recycled water were included in Order No. R1-2010-0034, but are not included in the Proposed Permit. The Permittee is enrolling its distribution and use of recycled water under the statewide Recycled Water General Order. The Proposed Permit retains requirements that apply to the treatment of recycled water including specifications for turbidity and disinfection.

Reasonable Potential for Ammonia. The reasonable potential analysis (RPA) identified reasonable potential for ammonia to exceed water quality standards. The Facility converts almost all of the ammonia into nitrate and nitrogen gas through nitrification and

denitrification, respectively. Even with the high level of treatment for nitrogen removal, occasional low concentrations of ammonia are still high enough to have potential toxic effects on aquatic organisms. Ammonia toxicity increases with increasing temperature and pH. Basalt Pond, the Permittee's point of discharge, experiences higher temperatures and pH than would be present in a flowing stream. In addition, the Permittee currently discharges to Basalt Pond year round. Late spring, summer, and early fall temperatures and pH can cause even low ammonia concentrations (e.g., <0.5 mg/L) to be toxic to aquatic life. Ammonia criteria are established by U.S. EPA based on the presence of sensitive aquatic organisms including salmonids and freshwater mussels. The ammonia effluent limitations in the Proposed Permit are established based on the presence of early life stage salmonids because Basalt Pond is hydrologically connected to the Russian River. If freshwater mussels are determined to be present in Basalt Pond, the effluent limitations would be more stringent. The Proposed Permit includes requirement for the Permittee to conduct a special study to determine the presence or absence of freshwater mussels in Basalt Pond prior to the end of the term of the Proposed Permit. The RPA for ammonia for the next permit term will be evaluated based on the results of this special study.

Reasonable Potential for Copper. The RPA identified reasonable potential for copper to exceed water quality standards, as did the RPA performed during the development of Order No. R1-2010-0034. In 2010, the Permittee believed that compliance with copper effluent limitations would be achieved with the treatment plant upgrade that came on-line in 2008. Copper monitoring data collected by the Permittee between mid-2008 through 2010 had shown compliance with copper effluent limitations, as did copper monitoring data collected through most of the term of Order No. R1-2010-0034. The Permittee exceeded the average monthly effluent limitation for copper in August 2014 and October 2015, demonstrating that the upgraded wastewater treatment facility cannot consistently achieve compliance with copper effluent limitations. Copper effluent limitations in the Proposed Permit are more stringent than those established in Order No. R1-2010-0034 because Order No. R1-2010-0034 has floating effluent limitations that are calculated based on the hardness of the effluent, while the Proposed Permit establishes discrete copper effluent limitations based on worst case conditions (the maximum observed copper concentration and lowest hardness concentration in the receiving water). The change from floating limits to discrete limits is being made in all renewed permits at the request of U.S. EPA in order to facilitate electronic reporting.

Based on the State Water Board's Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries for California (State Implementation Policy or SIP), and U.S. EPA technical guidance, a permittee can conduct a site-specific study to account for a difference between the toxicity of a metal in laboratory dilution water and its toxicity in the ambient water. The difference is translated into a water effect ratio (WER). The WER can then be used to adjust the aquatic life criteria from the California Toxics Rule (CTR) to derive site-specific aquatic life criteria.

The Permittee has proposed to conduct a WER study in the fall/winter of 2016 and to submit results of the study by June 1, 2017. Since the Permittee made diligent efforts to comply with copper effluent limitations, a schedule for compliance with final copper effluent limitations and interim copper effluent limitations have been established in the Proposed CDO. After the Permittee submits the WER study results, the copper RPA will be re-evaluated and the Proposed Permit may be reopened to reflect the site-specific WER. If the WER shows there is no reasonable potential for copper to exceed water quality standards, copper effluent limitations may be removed.

Chronic Toxicity Requirements. The Proposed Permit includes new effluent monitoring and reporting requirements for chronic toxicity. The Proposed Permit 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. Regional Water Board 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 than the NOEC hypothesis test.

Monitoring Requirements. Quarterly monitoring requirements for aluminum, lead and zinc included in Monitoring and Reporting Program No. R1-2010-0034 were not retained in the Proposed Permit due to a finding of no reasonable potential for these three pollutants in the discharge. In addition, a receiving water monitoring requirement for CTR priority pollutants was added to the Proposed Permit. This monitoring requirement was inadvertently left out of Order No. R1-2010-0034.

A comment letter was received from the Permittee. Minor changes were made to the Proposed Permit in response to the Permittee's comments and by Regional Water Board staff initiation, and are described in the attached Response to Comments document.

Adoption of the Proposed Permit is uncontested by the Permittee.

RECOMMENDATION: Adopt Order No. R1-2016-0015, as proposed.

SUPPORTING DOCUMENTS:

1. Proposed Order No. R1-2016-0015
2. Staff Response to Written Comments
3. City of Healdsburg Comment Letter
4. Public Notice