

Regional Water Quality Control Board  
North Coast Region  
Executive Officer's Summary Report  
August 20, 2020

**ITEM: 5**

**SUBJECT:** Public Hearing on Order No. R1-2020-0012 to consider adoption of Waste Discharge Requirements for City of Santa Rosa Regional Water Reuse System, NPDES No. CA0022764, WDID No. 1B83099OSON, Sonoma County (Cathleen Goodwin)

**BOARD ACTION:** The Board will consider adoption of Waste Discharge Requirements Order No. R1-2020-0012 (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 Santa Rosa (City) owns and operates the Santa Rosa Regional Water Reuse System, previously referred to as the Subregional Water Reclamation System, and also referred to as the Laguna Treatment Plant, which provides wastewater treatment and disposal services for residences, businesses, and industries within the Santa Rosa area, as well as the communities of Cotati, Rohnert Park, and Sebastopol, collectively referred to as the Regional System. The City also produces reclaimed water for agricultural and urban irrigation and production of steam at the Geysers Recharge Project.

The City of Santa Rosa is currently regulated under Waste Discharge Requirements Order No. R1-2013-0001, which serves as a NPDES permit for its waste discharges to surface water and a Master Water Reclamation permit for distribution and use of recycled water.

Wastewater treatment for the Regional System occurs at the Laguna Treatment Plant and consists of primary sedimentation tanks and biological secondary treatment (activated sludge) followed by tertiary filtration and ultraviolet light disinfection that produces wastewater that meets Title 22 guidelines for tertiary recycled water. The current design treatment capacities of the Laguna Treatment Plant are 21.34 MGD (average daily dry weather flow) and 64 MGD (peak weekly wet weather flow).

The City recycles approximately 6.6 billion gallons of disinfected tertiary-treated wastewater each year through irrigation on approximately 6,400 acres of farmlands, vineyards, urban landscaping including parks and golf courses in both Santa Rosa and Rohnert Park, and through diversion to the Geysers Recharge Project for steam production for power generation. This amounts to approximately 98 percent of the wastewater that is processed through the City's Facility. Treated wastewater that is not reclaimed or held in storage is discharged to Santa Rosa Creek during the discharge season (October 1- May 14) immediately upstream of the confluence of the Laguna de Santa Rosa and Santa Rosa Creek, which are tributary to the Russian River.

The City manages its treated wastewater to maximize reclamation and minimize discharges to surface waters. Prior to distribution to the water reclamation system or discharge to surface water, advanced treated effluent is discharged to an effluent storage pond system. The storage ponds, with a maximum capacity of 1.650 billion gallons, allow the City to control the timing, location, and volume of discharge to protect beneficial uses of the receiving water and provide a source of recycled water during the discharge prohibition period (May 15-September 30). Discharges only occur during periods of heavy sustained rainfall causing storage ponds to fill and only as needed to maintain a proper water balance. The City's primary discharge point is from Delta Pond to Santa Rosa Creek, but the City also has discharge points from Meadowlane Ponds to the Laguna de Santa Rosa, as well as the ability to discharge directly from the Facility to the Laguna de Santa Rosa or Santa Rosa Creek if needed.

During the term of Order No. R1-2013-0001, the Permittee discharged a total of 69 days during heavy rainfall periods in early 2017 and 2019. The other years of the permit term (2014-2016, 2018, and 2020), the Permittee did not discharge to surface waters.

**DISCUSSION:** Order No. R1-2020-0020 (Proposed Permit) replaces Order No. R1-2013-0001 (2013 Order). The Proposed Permit retains many effluent limitations, requirements and provisions from the 2013 Order, including final effluent limitations for nitrogen and phosphorus. The Proposed Permit also includes several changes and new requirements described in the following enumerated paragraphs:

1. Phosphorus Compliance Requirements. The "no net loading" phosphorus limitation is retained from the 2013 Order while the means for complying with the "no net loading" limitation have changed. The Nutrient Offset Program that was part of the 2013 Order is no longer included as a compliance option and is replaced by two new compliance options in the Proposed Permit to achieve compliance with the "no net loading" requirement in Proposed Order section IV.A.2.a.i. The first option is to use the Laguna de Santa Rosa Water Quality Trading Framework (WQTF) that is included as Attachment K to the Proposed Permit. The WQTF proposed for adoption as Attachment K is a modified version that will replace the WQTF adopted by the Regional Water Board by Resolution R1-2018-0025. The most notable modifications allow direct approval of restoration projects without a pre-qualified practice and extend the maximum allowable credit banking period. The Proposed Permit also includes a second compliance option for phosphorus referred to as the Alternative Compliance Option, a concept that was first proposed by the City, that would allow the City to comply with the "no net loading" limit through the completion of a high value restoration project in the Laguna de Santa Rosa and to develop, submit, and receive approval for two pre-qualified practices consistent with the Laguna WQTF. (Order section VII.O and Fact Sheet section IV.I)
2. Reasonable Potential and New Effluent Limitations. New effluent limitations for copper, pentachlorophenol, and total residual chlorine at Monitoring Locations EFF-006A(1), EFF-012A(1), and EFF-015 are included due to a finding of reasonable potential for these pollutants based on monitoring data collected during the term of the 2013 Order.

3. Tertiary Filter and UV Requirements. Revised requirements applicable to the tertiary filters and UV disinfection system are included as recommended by State Water Board Division of Drinking Water. (Order section IV.D and MRP sections IX.A). These include the addition of filtration rate, filter turbidity, and UV disinfection system requirements that were modified based on studies conducted by the City shortly after the adoption of the 2013 Order. The Permittee has been implementing these modified requirements per the State Water Board Division of Drinking Water's (DDW) August 29, 2010 conditional acceptance letter but are added to the NPDES permit as enforceable requirements.
4. Bacteria Provisions. New receiving water limitations for *E.coli* bacteria are included to implement the new bacteria provisions that were adopted by the State Water Board on August 7, 2018 and amended into the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California. (Receiving Water Limitations V.A.18)
5. Basin Plan Receiving Water Limitations. Modified dissolved oxygen receiving water limitations and a new groundwater toxicity objective are included to implement 2016 amendments to the Water Quality Control Plan for the North Coast Region (Basin Plan). (Receiving Water Limitations V.A.3.a and V.B.6)
6. Reopener and Special Study Provisions.
  - a. Pathogen reopener and pathogen special study requirements are included to assess compliance with the new *E. coli* bacteria requirements and to ensure that sufficient data is gathered prior to the next permit renewal for assessment of compliance with the Russian River Watershed Pathogen TMDL Action Plan adopted by the Regional Water Board on August 14, 2019. (Provision VI.C.1.k and VI.C.2.b). The Monitoring and Reporting Program (MRP) includes new monitoring requirements for *E. coli* bacteria so that sufficient data is gathered prior to the next permit renewal for assessment of compliance with the Russian River Watershed Pathogen TMDL Action Plan. (MRP sections IV.A.2, IV.B, and IV.C)
  - b. A requirement to conduct an engineering evaluation of the recycled water storage ponds and discharge outfalls is included to ensure that these crucial structures are in proper operating condition to ensure functionality and protection of surface water and groundwater. This engineering evaluation is necessary due to unauthorized discharges and a site inspection that occurred in 2017. (Provision VI.C.2.c)
  - c. A new requirement to develop a disaster preparedness assessment report and action plan has been included. This is a new standard requirement for permits for facilities that are vulnerable to natural disasters and extreme weather and other conditions that may be exacerbated by climate change. (Provision VI.C.2.f)

7. Changes to the monitoring requirements, as follows:

- a. New monitoring requirements for *E. coli* bacteria so that sufficient data is gathered prior to the next permit renewal for assessment of compliance with the Russian River Watershed Pathogen TMDL Action Plan. (MRP sections IV.A.2, IV.B, and IV.C)
- b. Inclusion of weekly monitoring requirements for mercury so that sufficient data is gathered prior to the next permit renewal to assess whether there is reasonable potential with regard to new mercury provisions that were adopted by the State Water Board on May 2, 2017 and amended into the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California. (MRP sections IV.A.1, IV.A.2, IV.B, and IV.C)
- c. New requirements to evaluate toxicity data using the Test of Significant Toxicity. (MRP sections V.A.6.a, V.A.9, V.B.6.a, V.B.8)
- d. New groundwater monitoring requirements to assess impacts of storage ponds and recycled water use. (MRP section VIII.C)
- e. New annual volumetric reporting requirements to implement requirements of the State Water Board Recycled Water Policy. (MRP section X.D.5)
- f. New Discharge Season Annual Report requirement that includes discharge management reporting and phosphorus effluent limitation compliance reporting. (MRP section X.D.6)

Extensive comments on the Draft Permit were received from the City of Santa Rosa, Russian River Watershed Protection Committee, and Russian Riverkeeper. A full explanation of the comments and Regional Water Board Staff's (Staff) responses is provided in the attached Response to Comments document. The Proposed Permit has been revised in response to some of the comments received. The most significant concerns expressed in the comments are summarized in the following enumerated paragraphs with Staff's response and proposed resolution where applicable.

1. Effluent Limitations for Nitrogen and Phosphorus

Final effluent limitations for total phosphorus that are expressed as "no net loading" and concentration-based effluent limitations for nitrogen (based on treatment plant performance) are retained from the 2013 Order. These limitations are based on the results of a reasonable potential analysis showing no assimilative capacity in the receiving water for total phosphorus, but some remaining assimilative capacity for total nitrogen.

The Permittee objects to the final limitation for total phosphorus, asserting that the "no net loading" limitation is inappropriate, unreasonable, not supported by science,

and contrary to State Water Board and judicial precedent. In addition, the Permittee's compliance strategy during the term of the 2013 Permit (i.e., implementation of an approved nutrient offset program) has proved challenging and raises doubts on the part of the Permittee about its ability to comply with the "no net loading" limitation. The Permittee requests a performance-based effluent limitation for phosphorus in place of "no net loading." The Permittee further requested modifications to the WQTF and that the modified version of the WQTF be adopted in a quasi-legislative rather than a quasi-adjudicative hearing.

Russian Riverkeeper expressed concerns that the total nitrogen effluent limitation in the Draft Permit had been changed to be less stringent than the limit in the 2013 Order and recommended modifications to the WQTF to add more prescriptive requirements and to provide clarity.

**Response:** Staff has concluded that the "no net loading" limitation for phosphorus is scientifically sound, based on available evidence, is appropriate and achievable by the Permittee. The performance-based limitation for phosphorus requested by the Permittee to replace the "no net loading" limitation will not prevent further degradation of water quality in the greater Laguna de Santa Rosa watershed and is not legally allowable in combination with nutrient offset credits. The final performance-based limitation for nitrogen is appropriate to comply with anti-degradation requirements, is permitted under federal anti-backsliding regulations, and is achievable by the Permittee. This rationale is discussed in detail in the Proposed Permit Fact Sheet and in the response to the Permittee's and Russian Riverkeeper's comments.

The WQTF has been designed to replace the existing Santa Rosa Nutrient Offset Program and to be available to both the City of Santa Rosa and the Town of Windsor as an approved method for complying with the "no net loading" effluent limitation for total phosphorus established in each of their NPDES permits. The WQTF was initially adopted separately from the permit renewals in order to have the WQTF in place in time for the permit renewals. It is perfectly appropriate that the revised WQTF be adopted in a quasi-adjudicative action as part of the Santa Rosa and Windsor permit renewals, as the WQTF is a compliance option provided for both NPDES permittees to meet the no net loading effluent limitation. Regional Water Board intends to expand the use of trading programs in the region and ultimately adopt a TMDL (a quasi-legislative action) that will include water quality trading programs as a component of a program of implementation.

Staff also concluded that most of the requests by the City and Russian Riverkeeper did not improve on what is already proposed in the WQTF. A few minor modifications were made to the WQTF in the Proposed Permit based on comments received.

## 2. Compliance with Total Coliform Effluent Limitations

The Permittee requested an in-permit compliance schedule and interim effluent limitations for total coliform until the Permittee completes construction of a new ultraviolet light (UV) disinfection system because the Proposed Permit requires a more stringent method of assessing compliance with the total coliform effluent limitation. The Permittee's existing UV disinfection system is old, outdated, and requires a lot of extra maintenance to achieve compliance with the total coliform effluent limitations in the Proposed Permit. The 2013 Permit allowed compliance with the total coliform effluent limitation to be assessed using the geometric mean of the total coliform results from multiple channels (the UV system has three channels). Developed in consultation with DDW, the Proposed Permit requires compliance to be assessed using the highest total coliform result when more than one channel is in operation. The total coliform effluent limitation includes a 7-day median limit of 2.2 MPN/100 mL and a maximum monthly limit of 23 MPN/100 mL not to be exceeded in more than one sample per month, and no sample may exceed 240 MPN/100 mL. The Permittee is concerned that exceedances of the 7-day median limit could occur more frequently with the new compliance assessment method and requested a compliance schedule and interim effluent limitations based on the inclusion of the new, more stringent total coliform effluent limitation in the Proposed Permit.

**Response:** Staff carefully considered the Permittee's request and reviewed recent total coliform monitoring data to assess the Permittee's current ability to comply with the more stringent method of assessing compliance with the total coliform effluent limitations.

The total coliform effluent limitations in the Proposed Permit must be protective of public health both for recycled water use and discharges to surface waters. These limits come from State recycled water regulations in Title 22, therefore, Staff discussed the Permittee's concerns with DDW staff. DDW staff confirmed that the requirement to assess compliance with total coliform effluent limits using the maximum reported value of all operational channels is necessary for protection of public health at recycled water use sites. In addition, DDW staff do not support interim limitations for total coliform. DDW staff requested that the Permittee be placed under a schedule of no more than five years that requires the Permittee complete the disinfection project in the shortest possible reasonable time frame. Therefore, the Proposed Permit has been modified to include a compliance schedule that requires completion of the UV disinfection system upgrade in five years.

Staff reviewed the Permittee's total coliform monitoring data over the last permit term and considered the data in light of the new method of assessing compliance. The data shows that the Permittee has improved UV system performance with its improved operation and maintenance measures. Staff's assessment is that, using the Permittee's reported data since October 2018, the Permittee would have no violations using the new method of assessing compliance. It is Staff's understanding that the Permittee modified UV disinfection system operation and maintenance (O&M) measures beginning late summer 2018. Staff believe that the Permittee's

recent data demonstrates that the Permittee should be able to maintain compliance with the new compliance assessment method as long as the City continues to adhere to its stringent O&M measures. Therefore, interim effluent limitations for total coliform were not added to the Proposed Permit.

### 3. Compliance with Dissolved Oxygen Receiving Water Limitations

The Permittee also requested an in-permit compliance schedule and interim receiving water limitations for dissolved oxygen in light of the inclusion of a more stringent receiving water limitation for dissolved oxygen in the Proposed Permit. The new dissolved oxygen receiving water limitation is based on the dissolved oxygen Basin Plan amendment that the Regional Water Board adopted in June 2015 and was approved by U.S. EPA in April 2017. The Permittee has expressed that the new dissolved oxygen receiving water limitation will result in more stringent operational requirements for the Permittee. The Permittee is also concerned that the Basin Plan allowance to develop site-specific condition could be used to make the DO limit more stringent. This is not the case, and the Fact Sheet has been revised to clarify this.

**Response:** Staff recognize the concern of the Permittee in meeting the dissolved oxygen (DO) surface water limitation from the Basin Plan but has determined that a compliance schedule is not appropriate at this time. Staff met with the Permittee to discuss their request for a dissolved oxygen compliance schedule. Staff informed the Permittee that the language in the Proposed Permit states that the Permittee shall not *cause* the receiving water to be depressed below the 9 mg/L and 11 mg/L limits. (Italics added for emphasis.) The Permittee is concerned that the more stringent DO receiving water limitations could reduce the amount of treated effluent that could be discharged or require discharges to begin sooner in the discharge season. The Permittee will evaluate their discharge in light of the new receiving water limitations and revise their management strategy as needed to achieve compliance with the new dissolved oxygen receiving water limitations. If Staff determines, during the life of the Proposed Permit, that the Permittee is causing the DO to be depressed below these levels, then the Regional Water Board may require an investigation and consider other available information to determine cause and culpability prior to asserting that a violation has occurred. Staff recognize that many factors must be considered when assessing compliance with receiving water limitations. Section V (Receiving Water Limitations) of the Proposed Permit has been modified to read, "...The Regional Water Board may require an investigation and/or may consider other available information to determine cause and culpability prior to asserting that a violation has occurred."

In addition, Section 3.3.5 of the Basin Plan includes the daily minimum objective of 9.0 mg/L dissolved oxygen for the spawning, reproduction, and/or early development (SPWN) beneficial use. This section also includes a 7-day moving average objective of 11.0 mg/L that was inadvertently omitted from the Draft Permit. Staff recognized this omission while reviewing the Permittee's request for a compliance schedule and have revised Section V.A.1. of the Proposed Permit to include the full

dissolved oxygen objective from the Basin Plan to read: “The discharge shall not cause the dissolved oxygen (DO) concentration of the receiving water to be depressed below 9.0 mg/L daily and 11.0 mg/L as a rolling average.”

#### 4. Toxicity Test Procedures and Statistics

The Proposed Permit requires evaluation of toxicity test results 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 2013 Order and prior permits. During the public comment period, the Permittee requested that it be allowed to continue to use the NOEC analytical approach.

**Response:** Staff maintains 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 Provisions and it is supported by U.S. EPA as being more rigorous and accurate than the NOEC analytical approach. Consequently, no changes were made to the Toxicity Provisions section of the Proposed Permit.

#### 5. Request for Removal of All Requirements Related to Recycled Water from the Proposed Permit

Requirements related to the distribution and use of recycled water are regulated through the State Water Resources Control Board Order WQ 2016-0068-DDW, Water Reclamation Requirements for Recycled Water Use (Recycled Water General Order or General Order). Requirements related to the production and storage of recycled water are regulated in WDRs/NPDES permits. The Cities of Santa Rosa and Rohnert Park, which both distribute and use recycled water generated at the Laguna Treatment Plant, submitted Notices of Intent to enroll their respective recycled water programs under the General Order. The Permittee expressed concern over the appearance of dual requirements being established for recycled water and requested removal of all requirements related to recycled water from the Proposed Permit, including those that address the production of recycled water asserting that the General Order contains all the production and use specifications applicable to recycled water use.

**Response:** The Proposed Permit does not establish dual requirements for recycled water. Consistent with the intent of the General Order, requirements related to production of recycled water are included in the Proposed Permit. Requirements related to recycled water storage were included in the Proposed Permit because the Permittee’s main storage ponds (Delta Pond and Meadow Lane Ponds) are used for both discharges to surface waters and distribution to the recycled water system.

The Permittee’s NPDES permit has historically regulated both discharges to waters of the U.S. and recycled water distribution and use as allowed by both state and federal regulations. Since the Permittee has requested separate coverage of its recycled water system under the General Order, Staff made a concerted effort to

draft the NPDES permit to recognize that recycled water distribution and use will be separately permitted.

The General Order is clear that it applies to the distribution and use of recycled water and not to the production of recycled water. (See General Order Finding 31.e, Specifications B.1.f, B.2). The Permittee has misinterpreted General Order Discharge Specifications A.1 and B1 to mean that the General Order applies to the production and storage of recycled water. In addition, references to the Title 22 Recycled Water Engineering Report (Title 22 Report) that are included in the Proposed Permit are necessary as the Title 22 Report addresses the production, distribution and use of recycled water. The Proposed Permit repeatedly states that the water recycling requirements in the NPDES permit apply only to the production and storage of recycled water and also states that the Cities of Santa Rosa and Rohnert Park have separate coverage under the General Order to regulate recycled water distribution and use (see for example Effluent Limitations and Discharge Specifications section IV.C.2 of the Draft Permit). In response to this comment, Staff modified the Proposed Permit to provide clarity regarding this issue and also removed Table 3, Recycled Water Distribution Locations of the Draft Permit.

#### 6. Method of Permitting Recycled Water Use and Concerns about Incidental Runoff

Russian River Watershed Protection Committee (RRWPC) is concerned that the enrollment of the cities' recycled water programs under the Statewide Recycled Water General Order does not provide an adequate means for the public to comment on the permitting of recycled water distribution and use. It further believes that water reclamation requirements in the Recycled Water General Order are inadequate to ensure compliance with recycled water requirements. In particular, they maintain that incidental runoff is a threat to water quality and public health and that inspections by the Permittee and Staff may be inadequate to ensure that recycled water is properly controlled to prevent runoff. Suggestions for additional permit requirements were offered (e.g., minimum setbacks, irrigation restrictions and prohibitions, and third-party inspections) to address these concerns.

**Response:** Note that this is not a comment that affects the NPDES permit directly as the City of Santa Rosa and Rohnert Park are both enrolling their recycled water programs under the Statewide Recycled Water General Order. Staff are noting this concern here to demonstrate that the comments have been considered and responded to in detail in the attached Response to Comments document.

Staff has determined that the additional requirements suggested by Russian River Watershed Protection Committee are misplaced as the NPDES permit does not regulate recycled water use.

#### 7. Monitoring for Endocrine Disrupting Chemicals

RRWPC believes that the State Water Board has underestimated the threat that endocrine disrupting chemicals, also referred to as contaminants of emerging

concern (CECs), pose to water quality, aquatic life, and public health and ignored scientific opinion that is contrary to findings in the State Recycled Water Policy and request that the Proposed Permit include routine monitoring and reporting requirements for CECs in recycled water.

**Response:** Note that this is not a comment that affects the NPDES permit directly as the City of Santa Rosa and Rohnert Park are both enrolling their recycled water programs under the Statewide Recycled Water General Order. Staff are noting this concern here to demonstrate that the comments have been considered and responded to in detail in the attached Response to Comments document.

The State Water Board Recycled Water Policy expressly restricts the ability of regional water boards to require monitoring of CECs in recycled water in waste discharge permits.

A copy of the Draft Permit was posted on the Regional Water Board website and was available for public comment from February 28, 2020 through March 29, 2020 for an initial 30-day comment period which was extended another 30 days to April 28, 2020 in light of the COVID-19 emergency. Comments were received from the City of Santa Rosa, Russian Riverkeeper, Russian River Watershed Protection Committee, and Coast Action Group. Staff met with the City to discuss some of their comments. Staff also had discussions with Russian River Watershed Protection Committee and Coast Action Group regarding their comments and reached out to Russian Riverkeeper to invite them to discuss their comments regarding the Draft Permit but did not meet with them. A full explanation of the comments and responses is provided in the attached Response to Comments document. The Proposed Permit has been revised in response to some of the comments received. Comment letters and staff responses are attached.

The Permittee has requested to address the Board during the public hearing.

**RECOMMENDATIONS:** Adopt Order No. R1-2020-0012, as proposed.

**SUPPORTING DOCUMENTS:**

1. Proposed Order No. R1-2020-0012
2. Staff Response to Comments
3. Comment Letters
4. Public Notice

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