

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

ORDER R5-2014-XXXX

AMENDING WASTE DISCHARGE REQUIREMENTS  
ORDER R5-2010-0114-02 (NPDES PERMIT NO. CA0077682)

SACRAMENTO REGIONAL COUNTY SANITATION DISTRICT  
SACRAMENTO REGIONAL WASTEWATER TREATMENT PLANT  
SACRAMENTO COUNTY

The California Regional Water Quality Control Board, Central Valley Region, (hereafter Central Valley Water Board) finds that:

1. On 9 December 2010, the Central Valley Water Board adopted Waste Discharge Requirements Order R5-2010-0114, prescribing waste discharge requirements for the Sacramento Regional Wastewater Treatment Plant, Sacramento County. For the purposes of this Order, the Sacramento Regional County Sanitation District is hereafter referred to as "Discharger" and the Sacramento Regional Wastewater Treatment Plant is hereafter referred to as "Facility."
2. On 1 December 2011, the Central Valley Water Board adopted Order R5-2011-0083, amending Order R5-2010-0114 and Time Schedule Order R5-2010-0115 making changes to the Monitoring and Reporting Program, recycled water use, manganese effluent limitations, and interim effluent limitations for chlorpyrifos and diazinon.
3. On 4 October, 2013, the Central Valley Water Board adopted Order R5-2013-0124, amending Order R5-2010-0114 by: conforming ammonia and nitrate effluent limitations to State Water Resources Control Board (State Water Board) Order WQ 2012-0013; incorporating the effect of the stays of certain time deadlines and schedules issued by the Sacramento County Superior Court; modifying final effluent limitations for chlorodibromomethane and dichlorobromomethane; and removing effluent limitations and revising monitoring requirements for N-nitrosodimethylamine (NDMA).
4. The Facility's treatment system consists of mechanical bar screens, aerated grit removal, primary sedimentation, pure oxygen activated sludge, secondary clarification, chlorine disinfection with dechlorination and a diffuser for river discharge. Solids handling consists of dissolved air flotation thickeners, gravity belt thickeners, anaerobic digesters and sludge stabilization basins with disposal on-site through land application or biosolids recycling facility. Wastewater is discharged to the Sacramento River at Freeport, a water of the United States.
5. **Title 22 or Equivalent Disinfection, Total Coliform, and Turbidity Specifications.** Order R5-2010-0114-02 includes more stringent disinfection requirements that include a special provision requiring wastewater to be oxidized, coagulated, and filtered and adequately disinfected pursuant to specified California Department of Public Health (CDPH) reclamation criteria (Title 22) or equivalent. Consistent with the new disinfection requirements, Order R5-2010-0114-02 includes new effluent limitations for total coliform organisms and operational specifications for turbidity. The total coliform limits are 2.2 most probable number (MPN) per 100 mL as a 7-day median; 23 MPN/100 mL not to be exceeded more than once in any 30 day period; and 240 MPN/100 mL not to be exceeded at any time. The operational specifications for turbidity were included as an indicator of the effectiveness of tertiary filtration treatment units, and require

continuous turbidity monitoring. Under the terms of Order R5-2012-0114-02 these new requirements become effective **9 May 2023**.

6. Order R5-2010-0114-02 also establishes new effluent limitations for ammonia and nitrate. The Discharger has identified biological nutrient removal (BNR) secondary treatment as the selected technology for nitrification and denitrification to comply with the new effluent limitations for ammonia and nitrate. The Discharger's evaluations show that secondary effluent quality that results from BNR treatment have lower pathogen concentrations (cryptosporidium and giardia) and is more susceptible to effective chlorine disinfection than current pure oxygen activated sludge secondary effluent. The BNR process will be designed to treat flows up to 330 million gallons per day (mgd). The Discharger will provide additional flow equalization to store peak flows during rainfall events, when influent flows can exceed 330 mgd. This operation will ensure consistent flows to the BNR for improved treatment.
7. Due to the lower pathogens in the BNR secondary effluent and reduced public exposure in the river during the colder and wetter periods, the Discharger evaluated sizing and operation of filters for 217 mgd. All treated effluent would be filtered from May – October. During November – April, all treated flows up to 217 mgd would be filtered and would be combined with excess BNR flows prior to chlorine disinfection. The Discharger demonstrated this design would result in very limited amounts of treated effluent not receiving filtration but would result in significant reduction of project costs as compared to a project based on full Title 22, or equivalent, disinfection of all flows at all times.
8. The alternative disinfection requirements implemented by this Order would modify total coliform effluent limitations, remove the requirement to provide Title 22, or equivalent, disinfection during November – April, and establish the turbidity monitoring location so that compliance with the turbidity specifications is conducted immediately after the filters. The alternative requirements represent a seasonal level of disinfection that was not considered with adoption of Order R5-2010-0114, and are based, in part, upon information that was not available at the time of adoption of Order R5-2010-0114. This new information, which is discussed in greater detail below and in the amended NPDES Permit, includes:
  - a. The Discharger has determined that the existing pure oxygen activated sludge secondary treatment system will be replaced by a BNR secondary wastewater treatment system.
  - b. Pilot testing of the BNR secondary treatment system indicates that the BNR effluent will have lower pathogen concentrations (cryptosporidium and giardia) and lower particle concentrations than the current pure oxygen activated sludge secondary effluent, which will respectively reduce the pathogens discharged to the Sacramento River and make disinfection more effective relative to the current wastewater discharge, even without addition of effluent filtration.
  - c. Expansion and enhancement of wastewater storage within the wastewater treatment plant that will occur as part of the treatment plant upgrades will allow the Discharger improved control of the varying flow of wastewater, including during peak wet weather flow events.
  - d. To comply with Title 22, or equivalent, disinfection year-round, the Discharger would need to construct an effluent filtration system with a design flow of 330 mgd in order to filter peak wet weather flows that occur during sustained wet weather. The 330 mgd flow takes

into consideration the flow equalization that will occur with operation of the wastewater storage facilities discussed in 8.c, above.

- e. Construction of a smaller effluent filtration system to treat a discharge flow of 217 mgd, operated year-round, would allow the Discharger to fully filter the wastewater during dry weather, which includes the times when dilution is generally lowest in the Sacramento River and when potential for public contact with the discharged wastewater is the highest, and additionally during most wet weather periods. In a 11 March 2014 Technical Memorandum<sup>1</sup>, the Discharger estimated that filters designed for 217 mgd, operated year-round, would provide tertiary filtration for approximately 97 percent of the annual treated wastewater flow.
- f. Under the alternative disinfection requirements implemented by this Order, during May-October the Title 22, or equivalent, disinfection requirements would be required. During November - April, the Title 22, or equivalent, disinfection requirements would not be required, but the filters would be operated to the design capacity. Treated wastewater effluent flows to the river or storage basins in excess of 217 mgd design capacity would not be filtered, but would be of improved BNR secondary effluent quality with a reduced pathogen concentration relative to the current wastewater discharge. Unfiltered BNR effluent and filtered wastewater would be combined and disinfected with chlorine prior to discharge to the Sacramento River. This combined discharge would occur at times when wet weather and other conditions minimize public use of the river, and high river dilution is generally available, minimizing any increased risk of public contact with wastewater pathogens. The final total coliform requirements would change seasonally, to provide that total coliform shall not exceed:

**May-October**

- (a) 2.2 most probable number (MPN) per 100 mL, as a 7-day median;
- (b) 23 MPN/100 mL, more than once in any 30-day period; and
- (c) 240 MPN/100 mL, at any time.

**November-April**

- (a) 2.2 MPN per 100 mL, as a monthly median;
- (b) 23 MPN/100 mL, weekly median; and
- (c) 240 MPN/100 mL, at any time.

- g. By allowing for construction of a smaller filtration facility, the Discharger has estimated a savings of over \$100 million in capital and operational costs.
9. At the time Order R5-2010-0114 was being developed the CDPH recommended Title 22, or equivalent, disinfection to protect public health. Central Valley Water Board staff has consulted with CDPH regarding the proposed modified filter design. Due to reduced public exposure during the colder months, expected higher flows in the river during periods when treated effluent flows exceed 217 mgd, improved secondary effluent quality, and the expected minimal percentage (approximately 3%) of non-filtered effluent, the CDPH determined that operating the Facility in this manner is fully protective of public health and supports the modification of the permit.

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<sup>1</sup> Technical Memorandum to District Leadership from Ken Abraham, "Additional Tables Calculation Projected Blend Volumes", 11 March 2014.

10. The modification of Order R5-2010-0014-02 to require seasonal Title 22, or equivalent, disinfection and establish seasonally-different total coliform effluent limitations will not have a significant effect on beneficial uses.
11. To the extent that anti-backsliding requirements may be applicable to limits not in effect at this time (and which became the subject of presently-unresolved litigation), the Central Valley Water Board finds that the seasonally-different total coliform effluent limitations are subject to one or more anti-backsliding exceptions. There are two sets of exceptions to the antibacksliding rules for water-quality based effluent limits, one in Clean Water Act section 303(d)(4) and one in Section 402(o)(2). USEPA has consistently interpreted Section 402(o)(2) to allow relaxation of effluent limitations if either of the requirements of section 303(d)(4) or 402(o)(2) are met. These two subsections contain independent exceptions to the prohibition. (In the Matter of the Environmental Law Foundation, WQO No. 2008-0006 at p. 7.)

In this case, for water quality-based effluent limitations such as for the seasonally-different total coliform limitations, the Central Valley Water Board finds that one exception to anti-backsliding is applicable pursuant to Section 402(o)(2)(B)(i). In pertinent part, this exception applies when information is available which was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and which would have justified the application of a less stringent effluent limitation at the time of permit issuance. Here, the new information available to support seasonally-different total coliform effluent limitations is outlined in Findings No. 6 through 9 above.

Second, Clean Water Act section 303(d)(4)(B) allows for the relaxation of a water quality-based effluent limitation if the less stringent limitation is consistent with federal antidegradation regulations and the State antidegradation policy. In this case, the Central Valley Water Board has determined that the background water quality is higher than necessary to support beneficial uses with respect to pathogens. The Central Valley Water Board finds that any lowering of water quality will be de minimis and will accommodate important economic or social development in the Sacramento area. Any such change is also consistent with State Water Board Resolution 68-16. The de minimis change will not unreasonably affect present and anticipated beneficial uses and will not result in water quality less than prescribed in State Water Board policies or the Sacramento-San Joaquin Basin Plan.

Changes to the Discharger's facilities will result in best practicable treatment or control of the discharge to assure that a pollution or nuisance will not occur and the highest water quality consistent with maximum benefit to the people of the State will be maintained. In this particular case, the sizing and operation of filters to treat 217 mgd during November through April and treating remaining effluent flow with secondary treatment would result in a minor amount of effluent not receiving filtration and result in significant reduction of project costs compared to a project based on full Title 22 disinfection of all flows at all times. More specifically, filters designed for 217 mgd would provide tertiary filtration for approximately 97% of the wastewater flow discharged from the Facility to the Sacramento River. In addition, the change in the Facility to enhanced secondary treatment using BNR will result in improved secondary effluent quality as compared to the existing Facility. The Discharger has indicated that the construction and operation of a smaller filtration facility will result in savings of over \$100 million in capital and operational costs that would otherwise have been expended. There would be virtually no corresponding decrease in water quality to the Sacramento River.

12. Order R5-2010-0114-02 may be reopened and modified in accordance with the Code of Federal Regulations (CFR) at 40 CFR 122.62(a)(2).
13. Issuance of modifications to the NPDES Permit is exempt from the California Environmental Quality Control Act (Public Resources Code section 21000, et seq.) in accordance with California Water Code section 13389.
14. The Central Valley Water Board has notified the Discharger and interested agencies and persons of its intent to amend Waste Discharge Requirements for this discharge and has provided them with an opportunity to submit their written views and recommendations.

**IT IS HEREBY ORDERED THAT:**

Waste Discharge Requirements Order R5-2010-0114-02 (NPDES No. CA0077682) is amended as shown in underline/strikeout format in Attachment 1.

This order shall become effective on [50 days after date of adoption]; provided, however, that if a notice of dismissal has not been filed with the Sacramento Superior Court in Case No. 34-2011-80001028-CU WM-GDS as provided in paragraph III. of the Court's "Order for: Terms to Resolve Remaining Issues; Further Adjustment of Hearing Date and Briefing Deadlines Should Merits Hearing Occur; Further Adjustment of Stay of Certain Provisions of Respondents' Orders; and Additional Terms" before [50 days after date of adoption], this order shall not take effect and Order R5-2010-0114-02 (as amended by Order R5-2011-0083, Order R5-2013-0124 and WQO 2012-0013) shall continue in effect until modified, rescinded or terminated.

Any person aggrieved by this action of the Central Valley Water Board may petition the State Water Resource Control Board (State Water Board) to review the action in accordance with CWC section 13320 and California Code of Regulations, title 23, sections 2050 and following. The State Water Board must receive the petition by 5:00 p.m., 30 days after the date of this Order, except that if the thirtieth day following the date of this Order falls on a Saturday, Sunday, or state holiday (including mandatory furlough days), the petition must be received by the State Water Board by 5:00 p.m. on the next business day. Copies of the law and regulations applicable to filing petitions may be found on the Internet at: [http://www.waterboards.ca.gov/public\\_notices/petitions/water\\_quality](http://www.waterboards.ca.gov/public_notices/petitions/water_quality) or will be provided upon request.

I, PAMELA C. CREEDON, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on XX August 2014.

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PAMELA C. CREEDON, Executive Officer