

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER R5-2013-XXXX

AMENDING WASTE DISCHARGE REQUIREMENTS
ORDER R5-2010-0114-01 (NPDES PERMIT NO. CA0077682)
AND TIME SCHEDULE ORDER R5-2010-0115-01

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 No. R5-2011-0083, amending Order R5-2010-0114 and Time Schedule Order R5-2010-0115 making changes to the Monitoring and Reporting Plan, recycled water use, manganese limitation and interim limitation for chlorpyrifos and diazinon.
3. On 4 December 2012, the State Water Resources Control Board (State Water Board) adopted Order WQ 2012-0013, revising certain provisions in Order R5-2010-0114. Order WQ 2012-0013 revised the final effluent limitations for ammonia (total as nitrogen) to 1.5 mg/L average monthly and 2.0 mg/L maximum daily for April through October, and 2.4 mg/L average monthly and 3.3 mg/L maximum daily for November through March. The Fact Sheet includes corresponding changes for ammonia as adopted in Order WQ 2012-0013. In addition, Order WQ 2012-0113 approved the nitrate effluent limitation from Order R5-2010-0114 as an "interim" limit. Also, certain time deadlines and schedules have been affected by orders of the Sacramento Superior Court. Although the actions of the State Water Board and court are self-implementing, it is appropriate to integrate the effects of such action into the waste discharge requirements at this time.
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. **Chlorodibromomethane (CDBM) and Dichlorobromomethane (DCBM).** Order R5-2010-0114-01 includes new effluent limitations for ammonia and nitrate, and a requirement for tertiary filtration or equivalent, which requires modification and replacement of existing treatment facilities to nitrify and denitrify. One result of the new ammonia effluent limitation is that, if the Discharger continues to use chlorine as the primary effluent disinfectant, the disinfection process will change from a chloramination process to a free chlorination process, which generates higher concentrations of disinfection byproducts, including CDBM and DCBM. The Discharger constructed a pilot plant to identify treatment processes to meet the requirements in Order R5-2010-0114-01. The results from the pilot plant confirmed increased concentrations of CDBM and DCBM.
6. Order R5-2010-0114-01 contains maximum daily effluent limitations for CDBM and DCBM based on the concentrations of these constituents discharged from the current wastewater treatment plant facility. Upgrading of the treatment process to nitrify and denitrify will increase concentrations of CDBM and DCBM above the effluent limitations in Order R5-2010-0114-01.
7. The Discharger conducted tests using a pilot scale wastewater treatment plant to estimate approximate concentrations of CDBM and DCBM that may be discharged from the upgraded wastewater treatment facilities. The Discharger also determined that an additional 40% process scale-up factor is appropriate considering the uncertainties and variability associated with data from the pilot test. It may be necessary to further adjust performance based effluent limitations once full-scale implementation has occurred.
8. There is sufficient assimilative capacity in the Sacramento River for CDBM and DCBM, beyond the assimilative capacity that was granted to the Discharger in Order R5-2010-0114-01, to provide dilution for the higher concentrations of CDBM and DCBM without exceedance of water quality objectives at the edge of a mixing zone (approximately three miles downstream from the discharge) and without causing any adverse impact on beneficial uses.
9. The Discharger evaluated disinfection alternatives including gaseous chlorine, liquid chlorine and pre-ozonation with ultraviolet light (UV) disinfection. Chlorination remains the best disinfection process for the Facility. The Discharger estimates that cost of alternative disinfection facilities will increase construction and operational costs over chlorine disinfection by \$220 million and \$5 million/year, respectively. Alternative disinfection facilities are estimated to increase greenhouse gas emissions and the facilities' carbon footprint over chlorine disinfection by 210 times. Considering the significant economic and environmental impact of pre-ozonation + UV disinfection, the Central Valley Water Board finds chlorine disinfection to be best practicable treatment or control consistent with maximum benefit to people of the state. In all other aspects, the anti-degradation findings of Order R5-2010-0114-01 remain applicable.

10. The increased concentrations of CDBM and DCBM associated with upgrading of the wastewater treatment system to affect ammonia and nitrate removal is new information that was not available at the time of adoption of Order R5-2010-0114-01. Further, the addition of ammonia and nitrate removal systems are material and substantial alterations or additions to the permitted facility that will occur after permit issuance, which justifies application of a less stringent effluent limitations. Amendment of Order R5-2010-0114-01 to provide higher CDBM and DCBM effluent limitations upon the initial discharge of wastewater from the upgraded ammonia and nitrate removal treatment system is consistent with the anti-backsliding requirements of the Clean Water Act (CWA) section 402(o)(2)(B)(i).
11. **N-nitrosodimethylamine (NDMA).** Order R5-2010-0114-01 imposed new effluent limitations for NDMA based on the California Toxics Rule criterion of 0.00069 µg/L for the protection of human health, and based on data collected between June 2005 and July 2008. The Central Valley Water Board determined that the Facility could not immediately achieve the final NDMA effluent limitations and issued a Time Schedule Order R5-2010-0115-01, which includes an interim effluent limit and protection from mandatory minimum penalties. Order R5-2010-0114-01 and R5-2010-0115-01 specify that the Facility must achieve full compliance with the final effluent limitations by 1 December 2015.
12. NDMA laboratory data used to determine reasonable potential and subsequent effluent limitation was analyzed using EPA Method 521 with a reporting level (RL) of 2 ng/L. Subsequent to Order R5-2010-0114-01, the Discharger completed an evaluation of literature reviews of NDMA treatment technologies and sources, NDMA laboratory analysis methods and laboratories that conduct the analyses at low RLs, and other NDMA pollution prevention activities. Two analytical methods for NDMA that can meet low RLs are EPA Method 521 for drinking water and a modified EPA Method 1625 for wastewater. The Discharger investigated and found only six commercial laboratories that conducted analyses of NDMA with advertised RLs of 2 ng/L. The Discharger conducted further evaluation of the laboratories to determine if the low RL could be met by developing a blind test with a sample of known NDMA concentration and a blank sample. The Discharger found high variability between the laboratories' results and NDMA detection in some of the blank samples. The Discharger concluded that none of the laboratories at this time can reliably meet a RL of 2 ng/L for NDMA analysis of wastewater.
13. Additionally, under the *Policy for Implementation of Toxics Standards for Inland Surface Water, Enclosed Bays and Estuaries of California* (SIP) the minimum required RL for NDMA is 5000 ng/L, which is the lowest minimum level (ML) listed in Appendix 4. The Central Valley Water Board has determined that data reported below the minimum level are inappropriate and insufficient to be used to determine reasonable potential. Thus, the Central Valley Water Board finds that there are insufficient data to determine reasonable potential pursuant to the terms of the SIP, and is complying with section 1.3, step 8 of the SIP, which allows the Central Valley Water Board to require monitoring for a pollutant in place of an effluent limitation when data are unavailable or insufficient. Based on this new information provided by the Discharger, Order R5-

2010-0114-01 and R5-2010-0115-01 are amended to remove the final and interim effluent limitations for NDMA and is consistent with the anti-backsliding requirements contained in CWA 402(o)(2)(B)(i).

14. Order R5-2010-0114-01 may be reopened and modified in accordance with the Code of Federal Regulations (CFR) at 40 CFR 122.62(a)(2).
15. Issuance of modifications to the NPDES Permit and Time Schedule Order are exempt from the California Environmental Quality Control Act (Public Resources Code section 21000, et seq.) in accordance with California Water Code section 13389.
16. 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 R5-2010-0114-01 (NPDES No. CA0077682) and Time Schedule Order R5-2010-0115-01 are amended as shown in underline/strikeout format in Attachment 1 and Attachment 2 to this Order, respectively

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 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 9 December 2010, as amended on 1 December 2011 by Order R5-2011-0083 and as amended by Order R5-2013-XXXX on X October 2013.

PAMELA C. CREEDON, Executive Officer