

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER R5-2014-0099

CEASE AND DESIST ORDER

FOR
CITY OF DIXON
DIXON WASTEWATER TREATMENT FACILITY
SOLANO COUNTY

TO CEASE AND DESIST
FROM DISCHARGING CONTRARY TO REQUIREMENTS

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

1. The City of Dixon (hereafter "Discharger") owns and operates a wastewater treatment facility (WWTF) in Dixon, Solano County.
2. The WWTF is at 6915 Pedrick Road in Dixon (Section 1, T6N, R1E; Sections 6 and 7, T6N, R2E MDB&M). The WWTF occupies Assessor's Parcel Numbers (APN) 14301-0040, 14301-0050, 14302-0080, and 14306-0060, as shown on Attachment A, which is attached hereto and made part of this Order by reference.
3. The WWTF was previously regulated under WDRs Order 94-187, adopted by the Central Valley Water Board on 24 June 1994, and Cease and Desist Order (CDO) R5-2008-0136, adopted by the Central Valley Water Board on 11 September 2008.
4. The WWTF is currently regulated by WDRs Order R5-2014-0098, which was adopted by the Central Valley Regional Water Board on 8 August 2014.
5. Wastewater is currently treated using nine stabilization treatment ponds and four polishing ponds. The ponds are unlined and have a total surface area of 122 acres. Treated wastewater is disposed using percolation basins that have a total surface area of 160 acres. The WWTF also has 120 acres of land application area but the fields have not been used for disposal since 2009.
6. Cease and Desist Order R5-2008-0136 required the Discharger to implement salinity source control and allowed an average dry weather influent flow of up to 1.82 million gallons per day (MGD). As a result of the CDO, the Discharger has implemented salinity source control and now proposes to upgrade the WWTF to improve effluent quality. The proposed WWTF will be able to accommodate future capacity increases resulting from city growth. The 2008 CDO is no longer adequate and is being replaced by this Order.

Enforcement History

7. The City was previously regulated by CDO 96-152, CDO 97-193, and CDO R5-2005-0078. The previous CDOs required the Discharger to construct capacity improvements, address sewer inflow and infiltration (I/I) problems, and comply with groundwater limitations, particularly those related to salinity, which was determined in part to primarily be caused by residential and commercial self-regenerating water softeners. The City complied with the capacity and I/I requirements but did not take sufficient action resulting in full compliance with the 2005 CDO. Compliance with the 2005 CDO was partly hampered by a ratepayer initiative that prevented approval of a bond issue intended to fund the majority of planned compliance projects.
8. In September 2008, the Central Valley Water Board adopted CDO R5-2008-0136 due to noncompliance with CDO R5-2005-0078. The 2008 CDO provided site-specific numeric groundwater limitations based on an assessment of background groundwater quality data available at that time or the most stringent interpretation of narrative water quality objectives set forth in the Basin Plan, whichever was greater. Based on those limits, the findings of the CDO concluded that the City caused pollution for chloride, sodium, electrical conductivity (EC), total dissolved solids (TDS), and boron. The 2008 CDO set interim performance-based effluent limits for chloride (340 mg/L) and sodium (330 mg/L), and final effluent limits (effective 1 January 2014) for chloride (106 mg/L) and sodium (143 mg/L). The final effluent limits were based on the most stringent interpretation of the narrative water quality objective to protect agricultural beneficial uses of groundwater or the background groundwater concentration, whichever was greater. The 2008 CDO also set an average daily dry weather flow limit of 1.82 MGD based on the treatment, storage, and disposal capacity of the WWTF.
9. The Discharger stated that many residences and businesses use self-regenerating water softeners, and the discharge of brine accounted for a significant portion of salinity at the WWTF. Residential discharges alone were estimated to account for 40 to 50 percent of the total chloride load. The 2008 CDO required that the Discharger implement salinity source control, evaluate the effectiveness of the source control, submit progress reports, and submit a RWD if WWTF improvements were necessary to comply with the CDO requirements. The key requirements and due dates of the 2008 CDO are summarized in the following table.

Requirement	Due Date
Submit a <i>Salinity Source Study</i> .	30 September 2008
Adopt an Ordinance prohibiting installation of new self-regenerating water softeners.	30 November 2008
Adopt an Ordinance setting sodium and chloride limits for industrial and commercial sewer system dischargers.	30 November 2008

Requirement	Due Date
Submit a <i>Residential Salinity Source Control Plan</i> that describes measures and timelines to reduce sodium and chloride discharged to the sewer resulting from residential water softening.	30 April 2009
Submit a <i>Salinity Source Control Effectiveness Report</i> .	31 January 2012
Submit a RWD if WWTF improvements are necessary to comply with the CDO requirements	31 January 2013*
Submit a <i>Facilities Plan</i> if wastewater treatment facility improvements are necessary and will be financed by the State Revolving Fund loan program.	30 April 2014*
Comply with final effluent limits	1 January 2014*

* Due date was subsequently extended as discussed below.

The 2008 CDO allowed the Discharger to request re-evaluation of the groundwater limits and final effluent limits by providing an updated groundwater quality evaluation.

10. In a 30 January 2013 letter from the Executive Officer and pursuant to Item 11 of the 2008 CDO, the due dates of the RWD, *Facilities Plan*, and compliance with the final effluent limits were extended. The extension was based on the number of days that the Executive Officer's letter exceeded the 60-day response deadline after receiving the Discharger's *Salinity Source Control Effectiveness Report*. The extended due dates are tabulated below.

Requirement	Due Date
Submit a RWD if WWTF improvements are necessary to comply with the CDO requirements	30 November 2013
Submit a <i>Facilities Plan</i> if wastewater treatment facility improvements are necessary and will be financed by the State Revolving Fund loan program.	31 January 2014
Comply with final effluent limits	31 October 2014

11. All reports required by the 2008 CDO were submitted complete and on time. The Discharger has complied with the requirements of CDO R5-2008-0136 and has implemented a salinity source control program as follows:
- Approximately 50 percent of the influent chloride load was identified to originate from self-regenerating water softeners. In November 2008, the Discharger passed ordinances that prohibit installation of self-regenerating water softeners and set industrial effluent limits for TDS, sodium, and chloride (800 mg/L, 107 mg/L, and 80 mg/L, respectively).

- In late 2009, the Discharger worked with a new industrial discharger that accounts for about 4 percent of flow to the WWTF to achieve an average sodium concentration of 64 mg/L and 19 mg/L for chloride – well below the industrial effluent limit. The industrial discharger now utilizes potassium chloride for water softener regeneration, which results in about 400 percent higher cost compared to using sodium chloride. The Discharger states that it is not likely that all industrial dischargers could achieve the same results due to the cost.
- The Discharger actively supported the passing of AB 1366, which allows local agencies to prohibit the installation of residential self-regenerating water softeners and require the removal of currently installed water softeners with a buyback program. The Discharger reports investing \$650,000 in a water softener buyback program that began in October 2010 and has removed more than 600 self-regenerating water softeners. The buyback program ended in November 2012.
- The Discharger performs routine sewer line monitoring for salinity to assess effectiveness of salinity control measures, verify compliance by industrial dischargers, and identify areas that require focus of the public outreach campaign.
- The Discharger began working with the City’s two water suppliers to install deeper wells and preferentially operate water wells with better quality to reduce salinity and hardness.

12. In January 2012, the Discharger submitted a *Source Control Effectiveness Report* as required by the CDO. The report shows that the Discharger’s salinity source control efforts have been effective at reducing influent salinity concentrations. Using recent data through 2013, the influent TDS and chloride concentrations have been reduced by 18 percent and 23 percent, respectively. The influent sodium concentration has not changed and the influent boron concentration has unexpectedly increased by 35 percent, from 0.63 to 0.85 mg/L as an annual average. The boron increase is not associated with any changes in the domestic source water and the cause is not clear but may be associated with removal of ion-exchange water softeners. The following table summarizes the results of the Discharger’s salinity source control efforts.

Constituent	2008 Influent Average Concentration (mg/L)	2013 Influent Average Concentration (mg/L)	Approximate Percent Change
Total Dissolved Solids	740	610	18% Decrease
Chloride	150	115	23% Decrease
Sodium	140	140	0%
Boron	0.63	0.85	35% Increase

13. Based on the results of the *Source Control Effectiveness Report* and the voluntarily submitted *Groundwater Characterization Report*, the Discharger concluded that source control alone was insufficient and that WWTF improvements are required to comply

with the Basin Plan. The Discharger estimates that the large foot print of the treatment ponds and percolation basins causes salinity concentrations to increase by approximately 80 percent due to evapoconcentration from the time wastewater flows through treatment ponds until it percolates below the percolation basins.

14. In January 2014, the Discharger submitted a *WWTF Facilities Plan Report* that evaluated WWTF improvements and a range of other compliance alternatives and proposed a WWTF improvement project that will bring the facility into compliance with the Basin Plan and the CDO R5-2008-0136.

Planned Changes in the Facility and Discharge

15. The Discharger plans to decommission the 122 acres of treatment ponds and construct an activated sludge treatment system to minimize evapoconcentration of salts. The new system will contain two treatment trains operated in parallel. Each treatment train will consist of a concrete oxidation ditch and a secondary clarifier. The RWD states that evapoconcentration during treatment will be negligible. The activated sludge treatment system will be constructed in the northern area of the current wastewater ponds.
16. Influent wastewater character is not expected to change except with respect to salinity and boron. The boron concentration may increase if residents use boron containing detergents to improve the cleaning efficiency of hard water and the loss of water softeners. Additionally, overall influent salinity could increase due to increased household water conservation.
17. A 30 January 2013 letter from the Executive Officer extended the final effluent limit compliance date of the 2008 CDO to 31 October 2014. However, construction of the new WWTF is not expected to be complete until October 2016. The Discharger has also proposed new effluent limits that comply with the Basin Plan and are established in WDRs Order R5-2014-0098. This Order replaces the 2008 CDO and sets compliance dates to complete construction of the new WWTF, which will be regulated by WDRs Order R5-2014-0098.

Regulatory Considerations

18. The Central Valley Water Board's *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins*, Fourth Edition, revised September 2009 (the Basin Plan), designates beneficial uses, includes water quality objectives to protect the beneficial uses, and includes implementation plans to implement the water quality objectives.
19. Local drainage is to Dickson Creek, which is a tributary of the Sacramento San Joaquin Delta. The beneficial uses of the Sacramento San Joaquin Delta, as stated in the Basin Plan, are municipal and domestic supply; agricultural supply; industrial service supply; industrial process supply; navigation; water contact recreation; non-contact water recreation; warm freshwater habitat; cold freshwater habitat; wildlife habitat; migration of aquatic organisms; and spawning, reproduction, and/or early development.

20. The beneficial uses of underlying groundwater are municipal and domestic water supply, agricultural supply, industrial service supply, and industrial process supply.

21. Water Code section 13301 states, in relevant part:

When a regional board finds that a discharge of waste is taking place or threatening to take place in violation of requirements or discharge prohibitions prescribed by the regional board or the state board, the board may issue an order to cease and desist and direct that those persons not complying with the requirements or discharge prohibitions (a) comply forthwith, (b) comply in accordance with a time schedule set by the board, or (c) in the event of a threatened violation, take appropriate remedial or preventive action. In the event of an existing or threatened violation of waste discharge requirements in the operation of a community sewer system, cease and desist orders may restrict or prohibit the volume, type, or concentration of waste that might be added to such system by discharges who did not discharge into the system prior to the issuance of the cease and desist order. Cease and desist orders may be issued directly by a board, after notice and hearing.

22. Water Code section 13267 (b) states:

In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge waste within its region, shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports.

23. The technical reports required by this Order are necessary to assure compliance with both this Order and the WDRs, and to ensure protection of public health and safety. The Discharger owns and operates the facility that discharges the waste subject to this Order.

24. Issuance of this Order is an enforcement action of a regulatory agency, and therefore, is exempt from the provisions of the California Environmental Quality Act (Pub. Resources Code § 21000 et seq.), in accordance with California Code of Regulations, title 14, section 15321(a)(2).

IT IS HEREBY ORDERED that, pursuant to Water Code sections 13301 and 13267, the City of Dixon, its agents, successors, and assigns, shall implement the following measures to ensure long-term compliance with WDRs Order R5-2014-0098.

This Cease and Desist Order rescinds Cease and Desist Order R5-2008-0136 except for the purpose of enforcing violations that have occurred to date.

Any person signing a document submitted to comply with this Order shall make the following certification:

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my knowledge and on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

1. **By 1 December 2016**, the Discharger shall submit a *Wastewater Treatment Facility Completion Report* that certifies construction and start-up testing of the new wastewater treatment system as defined in this Order and WDRs Order R5-2014-0098. The report shall include as-built drawings of the WWTF and justify any changes to the design described in WDRs Order R5-2014-0098.
2. **By 15 August 2017**, the Discharger shall submit a *Final WWTF Completion Report* that certifies that the new wastewater treatment system is fully operational.

In addition to the above, the Discharger shall comply with all applicable provisions of the Water Code that are not specifically referred to in this Order. As required by the Business and Professions Code sections 6735, 7835, and 7835.1, all technical reports shall be prepared by, or under the supervision of, a California Registered Engineer or Professional Geologist and signed/stamped by the registered professional.

If, in the opinion of the Executive Officer, the Discharger fails to comply with the provisions of this Order or the WDRs, the Executive Officer may refer this matter to the Attorney General for judicial enforcement or may issue a complaint for administrative civil liability.

Failure to comply with this Order or with the WDRs may result in the assessment of Administrative Civil Liability of up to \$10,000 per violation, per day, depending on the violation, pursuant to the Water Code, including sections 13268, 13350 and 13385. The Central Valley Water Board reserves its right to take any enforcement actions authorized by law.

Any person aggrieved by this action of the Central Valley Water Board may petition the State Water Board to review the action in accordance with Water Code 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 that this Order becomes final, except that if the thirtieth day following the date that this Order becomes final falls on a

Saturday, Sunday, or state holiday, 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 that the foregoing is a full true, and correct copy of an Order adopted by the California Regional Water Quality Control Board on 8 August 2014.

Original signed by Kenneth Landau for
PAMELA C. CREEDON, Executive Officer