

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER R5-2012-XXXX
AMENDING TIME SCHEDULE ORDER R5-2008-0056-01
(NPDES PERMIT NO. CA0077691)

CITY OF VACAVILLE
EASTERLY WASTEWATER TREATMENT PLANT
SOLANO COUNTY

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

1. On 18 March 2010, the Central Valley Water Board adopted amended Time Schedule Order (TSO) R5-2008-0056-01, prescribing compliance time schedules for the City of Vacaville Easterly Wastewater Treatment Plant in Solano County. For the purposes of this Order, the City of Vacaville is hereafter referred to as "Discharger" and the Easterly Wastewater Treatment Plant is hereafter referred to as "Facility".
2. The Discharger owns and operates the Facility, which consists of two parallel plants, the existing North Plant and the newly constructed South Plant. The treatment system consists of headworks, primary sedimentation basins, aeration basins, secondary circular clarifiers, chlorination and dechlorination facilities, emergency ponds, dissolved aeration floatation thickener, anaerobic digesters, biosolids storage ponds, biosolids belt filter press and biosolids drying beds. Secondary treated wastewater is discharged to Old Alamo Creek, tributary to New Alamo Creek, tributary to Ulatis Creek, and tributary to Cache Slough, all waters of the United States.
3. The Discharger is constructing the Easterly WWTP Denitrification Improvements Project to reduce nitrate concentrations in the effluent in order to comply with final nitrate effluent limitations in Waste Discharge Requirements R5-2008-0055-01. As part of the Denitrification Improvements Project it is necessary to take aeration basins out of service, which results in the elimination of anoxic zones. The anoxic zones are used to denitrify the wastewater (i.e., remove nitrate).
4. The interim effluent limitations for nitrate in TSO R5 2008-0056-01 were originally established based on the performance of the Facility, prior to the recent changes during the construction of the Denitrification Improvements Project. As discussed above, during construction of the Facility upgrades to improve nitrification and denitrification, it was necessary to take some of the aeration basins out of service, which reduced the ability of the Facility to denitrify the wastewater. This has resulted in higher concentrations of nitrate. Due to the change in Facility operations, the nitrate data used to calculate the performance-based interim effluent limitations is no longer applicable. By letter dated 16 March 2012, the Discharger requested a change to the interim effluent limits for nitrate to represent the current Facility performance. Based on the recent changes to the Facility, this Order amends TSO R5 2008-0056-01 to modify the interim effluent limits for nitrate.

IT IS HEREBY ORDERED THAT:

Time Schedule Order R5-2008-0056-01 (NPDES No. CA0084255) is amended as shown in underline/strikeout format in Attachment 1 to this Order.

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 2012**.

PAMELA C, CREEDON, Executive Officer

ATTACHMENT 1

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD CENTRAL VALLEY REGION

TIME SCHEDULE ORDER ~~NO. R5-2008-0056-042~~
As Amended by Orders ~~No. R5-2010-0027~~ and R5-2012-XXXX

REQUIRING THE CITY OF VACAVILLE EASTERLY WASTEWATER TREATMENT PLANT SOLANO COUNTY

TO COMPLY WITH REQUIREMENTS PRESCRIBED IN ORDER ~~NO. R5-2008-0055-01~~
(NPDES PERMIT NO. CA0077691)

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

1. On 25 April 2008, the Regional Central Valley Water Board adopted Waste Discharge Requirements (WDR) Order ~~No. R5-2008-0055-01~~, prescribing waste discharge requirements for the City of Vacaville (hereafter Discharger) at the Easterly Wastewater Treatment Plant (hereafter Facility), Solano County.
2. WDR Order ~~No. R5-2008-0055-01~~, contains Final Effluent Limitations IV.A.1.a. which reads, in part, as follows:

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Nitrate (as N) (total recoverable)	mg/L	17	--	--	--	--
Dibromochloromethane	µg/L	0.41	--	0.86	--	--
Dichlorobromomethane	µg/L	0.63	--	0.99	--	--

3. California Water Code (CWC) section 13300 states: *“Whenever a regional board finds that a discharge of waste is taking place or threatening to take place that violates or will violate requirements prescribed by the regional board, or the state board, or that the waste collection, treatment, or disposal facilities of a discharger are approaching capacity, the board may require the discharger to submit for approval of the board, with such modifications as it may deem necessary, a detailed time schedule of specific actions the discharger shall take in order to correct or prevent a violation of requirements.”*
4. Federal regulations, 40 CFR §122.44 (d)(1)(i), require that NPDES permit effluent limitations must control all pollutants which are or may be discharged at a level which will cause or have the reasonable potential to cause or contribute to an in-stream excursion above any State water quality standard, including any narrative criteria for water quality. Beneficial uses, together with their corresponding water quality objectives or promulgated water quality criteria, can be defined per federal regulations as water quality standards.

5. In accordance with CWC section 13385(j)(3), the ~~Regional~~ Central Valley Water Board finds that, based upon results of effluent monitoring, the Discharger is not able to consistently comply with the new effluent limitations for nitrate, dibromochloromethane and dichlorobromomethane. These limitations are new requirements that become applicable to the Order after the effective date of adoption of the waste discharge requirements, and after July 1, 2000, for which new or modified control measures are necessary in order to comply with the limitations, and the new or modified control measures cannot be designed, installed, and put into operation within 30 calendar days.
6. Immediate compliance with these new effluent limitations for nitrate, dibromochloromethane, and dichlorobromomethane are not possible or practicable. The Clean Water Act and the California Water Code authorize time schedules for achieving compliance.
7. On 15 February 2007 and on 12 November 2009, the Discharger submitted justification for a compliance schedule for nitrate, and dibromochloromethane and dichlorobromomethane, respectively, which included: (a) documentation that diligent efforts have been made to quantify pollutant levels in the discharge and the sources of the pollutant in the waste stream; (b) documentation of source control measures and/or pollution minimization measures efforts currently underway or completed; (c) a proposal for additional or future source control measures, pollutant minimization actions, or waste treatment (i.e., facility upgrades) with projected time schedules to achieve compliance with final effluent limitations; and (d) a demonstration that the proposed schedule is as short as practicable. Therefore, this Order provides a time schedule for the Discharger to develop, submit, and implement methods of compliance, including utilizing pollution prevention activities, conducting site specific studies to develop site specific water quality objectives, conducting Use Attainability Analysis to determine if the MUN designation is appropriate in New Alamo Creek, or constructing necessary treatment facilities to meet the new effluent limitations or require modification of the effluent limitations for nitrate, dibromochloromethane and dichlorobromomethane.
8. WDR Order No. ~~R5-2008-0055-01~~ also contains, in part, the following interim limits that are in effect through the 17 May 2010.

Interim Effluent Limitations (CTR)

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Dibromochloromethane	µg/L	--	--	14	--	--
Dichlorobromomethane	µg/L	--	--	43	--	--

9. Since the adoption of WDR Order No. ~~R5-2008-0055-01~~ and TSO No. ~~R5-2008-0056-01~~, the Discharger has performed monitoring studies to confirm that compliance with the final effluent limitations for dibromochloromethane and

dichlorobromomethane in WDR Order ~~№.~~ R5-2008-0055-01 cannot be attained with current facilities. The Discharger conducted a use attainability analysis (UAA) for the downstream receiving waters. Based on the results of the UAA, the Discharger has chosen to pursue a Basin Plan amendment to establish site-specific water quality objectives applicable to the downstream receiving waters (i.e., New Alamo Creek and Ulatis Creek). The proposed site-specific objectives are currently being drafted by Central Valley Water Board staff as an amendment to the Basin Plan. The adoption of the site-specific objects, as proposed, would result in the removal of the effluent limitations for dibromochloromethane and dichlorobromomethane in WDR Order ~~№.~~ R5-2008-0055-01. Therefore, in the interim, the Discharger requests additional time to complete the Basin Plan amendment process, or complete upgrades to the Facility, as necessary.

10. On 22 October 2008, as required in Order ~~№.~~ R5-2008-0055-01, the Discharger submitted a work plan and schedule for completion of an electrical conductivity (EC) and pH study to evaluate site-specific water quality objectives to protect the agricultural beneficial uses of the receiving water. However, since the adoption of WDR Order ~~№.~~ R5-2008-0055-01, several developments pertaining to salinity have occurred regarding approaches to determining applicable salinity standards in Central Valley receiving waters. The developments include the CV-SALTS efforts initiated by the Central Valley Water Board, and the State Water Resources Control Board's reevaluation of salinity standards in the South Delta as described in the report by Dr. Hoffman, "Salt Tolerance of Crops in the Southern Sacramento-San Joaquin Delta." The Discharger, in order to be consistent with the approaches that are being developed under these two efforts, has requested additional time to revise its work plan, if necessary, and to extend the due date for submittal of the final study report to April 2015.

Mandatory Minimum Penalties

11. CWC section 13385(h) and (i) require the ~~Regional~~ Central Valley Water Board to impose mandatory minimum penalties (MMPs) upon dischargers that violate certain effluent limitations. CWC section 13385(j) exempts certain violations from the mandatory minimum penalties. CWC section 13385(j)(3) exempts the discharge from mandatory minimum penalties "*where the waste discharge is in compliance with either a cease and desist order issued pursuant to Section 13301 or a time schedule order issued pursuant to Section 13300, if all the [specified] requirements are met..... For the purposes of this subdivision, the time schedule may not exceed five years in length.....*"
12. By statute, a Cease and Desist Order or Time Schedule Order may provide protection from MMPs for no more than five years. Compliance with this Order exempts the Discharger from mandatory penalties for violations of effluent limitations for nitrate, dibromochloromethane, and dichlorobromomethane, only, in accordance with CWC section 13385(j)(3). Protection from MMPs for the effluent limitations for nitrate begins

on 25 April 2008 and may not extend beyond 25 April 2013. The Central Valley Water Board has not previously issued an Order to provide MMP protection from exceedance of dibromochloromethane and dichlorobromomethane for this facility. Therefore, compliance with this Order exempts the Discharger from mandatory penalties for violations of the final effluent limitations for dibromochloromethane and dichlorobromomethane in accordance with CWC section 13385(j)(3). Protection from MMPs begins on 18 March 2010 and may not extend beyond the compliance schedule listed in this Order (i.e., 1 March 2015).

13. Since the time schedules for completion of action necessary to bring the waste discharge into compliance exceeds 1 year, this Order includes interim requirements and dates for their achievement. The time schedules do not exceed 5 years.

The compliance time schedules in this Order include interim performance-based effluent limitations for nitrate, dibromochloromethane and dichlorobromomethane. The interim effluent limitations consist of a maximum daily effluent concentration derived using sample data provided by the Discharger. The interim limitations for dibromochloromethane, and dichlorobromomethane in WDR Order No. R5-2008-0055-01 are re-established in this Order and they are based on the current plant performance.

~~In developing the interim limitations, w~~When there are ten sampling data points or more, sampling and laboratory variability is accounted for by establishing interim limits that are based on normally distributed data where 99.9% of the data points will lie within 3.3 standard deviations of the mean (*Basic Statistical Methods for Engineers and Scientists, Kennedy and Neville, Harper and Row*). Therefore, for nitrate, the interim limitations in this Order are were originally established as the mean plus 3.3 standard deviations of the available data. However, during construction of the Facility upgrades to improve nitrification and denitrification, it was necessary to take some of the aeration basins out of service, which reduced the ability of the Facility to denitrify the wastewater. This has resulted in higher concentrations of nitrate. Due to the change in Facility operations, the nitrate data used to calculate the performance-based interim effluent limitations is no longer applicable. By letter dated 16 March 2012, the Discharger requested a change to the interim effluent limits for nitrate to represent the current Facility performance. Based on the changes to the Facility, the interim effluent limits have been modified. Where actual sampling shows an exceedance of the proposed 3.3-standard deviation interim limit, the maximum detected concentration has been established as the interim limitation. When there are less than 10 sampling data points available, the *Technical Support Document for Water Quality-Based Toxics Control* ((EPA/505/2-90-001), TSD) recommends a coefficient of variation of 0.6 be utilized as representative of wastewater effluent sampling. The TSD recognizes that a minimum of 10 data points is necessary to conduct a valid statistical analysis. The multipliers contained in Table 5-2 of the TSD are used to determine a maximum daily limitation based on a long-term average objective. In this case, the long-term average objective is to maintain, at a minimum, the current plant performance level.

~~Therefore, when there are less than ten sampling points for a constituent, interim limitations are based on 3.11 times the maximum observed effluent concentration to obtain the daily maximum interim limitation (TSD, Table 5-2). Derivation of these interim limitations is summarized below:~~

Constituent	Units	MEC	Mean	Standard Deviation	Interim limitation
Nitrate	mg/L	27	46	4.23	30

14. The ~~Regional~~ Central Valley Water Board finds that the Discharger can undertake treatment plant measures to maintain compliance with the interim limitations included in this Order. Interim limitations are established when compliance with the final effluent limitations cannot be achieved by the existing discharge. Discharge of constituents in concentrations in excess of the final effluent limitations, but in compliance with the interim effluent limitations, can significantly degrade water quality and adversely affect the beneficial uses of the receiving stream on a long-term basis. The interim limitations, however, establish an enforceable ceiling concentration until compliance with the effluent limitation can be achieved.

Other Regulatory Requirements

15. On 25 April 2008, ~~and on 18 March 2010, and X August 2012,~~ in Sacramento, California, after due notice to the Discharger and all other affected persons, the Central Valley Water Board conducted public hearings at which evidence was received to consider a Time Schedule Order ~~and the amendments~~ of the Time Schedule Order, respectively, under CWC section 13300 to establish a time schedule to achieve compliance with waste discharge requirements.
16. The issuance of this Order is not a “project” as defined by the California Environmental Quality Act (Public Resources Code, Section 21000, *et seq.*) (CEQA), and does not have the potential to cause a significant adverse impact on the environment (Title 14 CCR section 15061(b)(3)). This Order enforces preexisting requirements to improve the quality of ongoing discharges that are part of the CEQA “baseline”; and includes interim effluent limitations to ensure that discharges do not increase above the CEQA baseline. Any measures to meet effluent limitations are the result of WDRs Order No. R5-2008-0055-01 and not this Order. Even assuming the issuance of this Order is a “project” within the meaning of CEQA, issuance of this Order is exempt from the provisions of in accordance with Water Code Section 13389, which exempts the adoption or modification of a NPDES Permit for an existing source. This Order only serves to implement a NPDES permit and is therefore exempt under Section 13389. The issuance of this Order is also exempt under Section 15321(a)(2), Title 14, California Code of Regulations (CCR).

17. Any person adversely affected by this action of the Central Valley Water Board may petition the State Water Resources Control Board to review this action. The petition must be received by the State Water Resources Control Board, Office of the Chief Counsel, P.O. Box 100, Sacramento, CA 95812-0100, within 30 days of the date on which this action was taken. Copies of the law and regulations applicable to filing petitions will be provided upon request.

IT IS HEREBY ORDERED THAT:

1. The Discharger shall comply with the following time schedule to ensure compliance with the effluent limitations for nitrate, dibromochloromethane, and dichlorobromomethane, contained in WDR Order No. R5-2008-0055-01 as described in the above Findings:

a. <u>Task</u>	<u>Date Due</u>
Submit Method of Compliance Workplan/Schedule for nitrate	Within 6 months of adoption of this Order <u>10 October 2008</u>
Submit Pollution Prevention plan (PPP) ¹ pursuant to CWC section 13263.3 for nitrate	Within 6 months of adoption of this Order <u>10 October 2008</u>
Progress Reports ²	1 June annually , after approval of work plan until final compliance
Full compliance with effluent limitations for nitrate	1 May 2013
b. <u>Task</u>	<u>Date Due</u>
Submit Method of Compliance Workplan/Schedule for dibromochloromethane, and dichlorobromomethane	1 July 2010
Submit Pollution Prevention plan (PPP) ¹ pursuant to CWC section 13263.3 for dibromochloromethane, and dichlorobromomethane	1 October 2010
Progress Reports ²	1 September, annually , after approval of work plan until final compliance
Full compliance with effluent limitations for dibromochloromethane, and dichlorobromomethane	1 March 2015

¹ The PPP shall be prepared for nitrate, dibromochloromethane and dichlorobromomethane where appropriate, and shall meet the requirements specified in CWC section 13263.3(d)(3).

² The progress reports shall detail what steps have been implemented towards achieving compliance with waste discharge requirements, including studies, construction progress, evaluation of measures implemented, and recommendations for additional measures as necessary to achieve full compliance by the final date.

2. The following interim effluent limitations shall be effective immediately. The interim effluent limitations for nitrate shall be effective until 30 April 2013, and for dibromochloromethane and dichlorobromomethane until 28 February 2015 or when the Discharger is able to come into compliance, whichever is sooner.

Parameter	Maximum Daily Effluent Limitation
Nitrate as N (Total Recoverable) (mg/L)	3040
Dibromochloromethane ($\mu\text{g/L}$)	14
Dichlorobromomethane ($\mu\text{g/L}$)	43

3. For the compliance schedules required by this Order, the Discharger shall submit to the ~~Regional Central Valley~~ Water Board on or before each compliance report due date, the specified document or, if appropriate, a written report detailing compliance or noncompliance with the specific schedule date and task. If noncompliance is being reported, the reasons for such noncompliance shall be stated, and shall include an estimate of the date when the Discharger will be in compliance. The Discharger shall notify the ~~Regional Central Valley~~ Water Board by letter when it returns to compliance with the time schedule.
4. If, in the opinion of the Executive Officer, the Discharger fails to comply with the provisions of this Order, the Executive Officer may apply to the Attorney General for judicial enforcement. If compliance with these effluent limitations is not achieved by the Full Compliance date, the discharge would not be exempt from the mandatory minimum penalties for violation of certain effluent limitations, and would be subject to issuance of a Cease and Desist Order in accordance with CWC section 13301.

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 25 April 2008, ~~and amended by Order No. R5-2010-0027 on 18 March 2010, and amended by Order R5-2012-XXX on X August 2012.~~

PAMELA C. CREEDON, Executive Officer