

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION
ORDER R5-2020-0006

AMENDING WASTE DISCHARGE REQUIREMENTS
ORDER R5-2016-0062-01 (NPDES PERMIT CA0078999)

CITY OF COLUSA
WASTEWATER TREATMENT PLANT
COLUSA COUNTY

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

1. The City of Colusa's Wastewater Treatment Plant (Facility) is a Publicly Owned Treatment Works, owned and operated by the City of Colusa (Discharger). The Facility provides sewerage service for the City of Colusa and serves a population of approximately 6,000. The treatment system consists of an influent pump station, headworks with mechanical screening and flow metering, a nitrifying activated sludge system (an aeration basin, air blowers, secondary clarifier, and return sludge pump station), tertiary filtration facilities (chemical addition, flocculation, and cloth media filtration), ultraviolet (UV) light disinfection, and an effluent re-aeration basin and pump station. The Central Valley Water Board adopted WDRs Order R5-2016-0062 (NPDES Permit) on 18 August 2016, and subsequently amended on 6 April 2018, authorizing the discharge of tertiary treated, disinfected wastewater to the unnamed tributary to Powell Slough.
2. The Water Quality Control Plan, Fifth Edition, for the Sacramento River Basin and the San Joaquin River Basin (Basin Plan) contains a water quality objective for surface waters that states, in part, "at no time or place shall the temperature of COLD or WARM intrastate water be increased more than 5 degrees Fahrenheit above natural receiving water temperature". In determining compliance with the water quality objectives for temperature, appropriate averaging periods may be applied provided that beneficial uses will be fully protected.
3. The NPDES Permit contains upstream and downstream receiving water monitoring requirements and a receiving water limitation for temperature based on the Basin Plan objective that states, in part, "the discharge shall not cause the natural temperature of the unnamed tributary to Powell Slough to be increased by more than 5 degrees Fahrenheit". Compliance with this temperature receiving water limit was required to be determined by the difference between the temperature measurements at Monitoring Locations RSW-001D (downstream of the discharge) and RSW-001U (upstream of the discharge). However, based on the Fact Sheet of Order R5-2016-0062-01 it was the intent of the Central Valley Water Board to remove the temperature receiving water monitoring as discussed in Attachment F, Section VII.D.1.c, Rationale for Monitoring and Reporting Requirements, which states the following:

“Receiving water monitoring for temperature has been removed from this Order because the unnamed tributary does not have a “natural receiving water temperature”. “Natural receiving water temperature” is defined in the Board’s Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California (1975) (Thermal Plan). It means “[t]he temperature of the receiving water at locations, depths, and times which represent conditions unaffected by any elevated temperature waste discharge or irrigation return waters.” The flow upstream of the facility discharge is often zero during dry periods of the year and highly variable during the rainy season only consisting of urban and agricultural runoff. This finding is consistent with the findings of presidential [sic] State Board Order WQO 2002-0015 for Vacaville’s Easterly Wastewater Treatment Plant in regard to Old Alamo Creek.”

4. The State Water Resources Control Board (State Water Board) adopted precedential Order WQO 2002-0015 on 3 October 2002 for the City of Vacaville’s Easterly Wastewater Treatment Plant (Vacaville Order), which found that the “natural receiving water temperature” is defined in the State Water Board’s Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California (1975) (Thermal Plan). According to the Thermal Plan, “natural receiving water temperature” means “[t]he temperature of the receiving water at locations, depths, and times which represent conditions unaffected by any elevated temperature waste discharge or irrigation return waters.”
5. The characteristics of the unnamed tributary to Powell Slough were evaluated as part of the development of the Central Valley Water Board’s Basin Plan Amendment titled Amendment to the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins to Remove the Municipal and Domestic Supply (MUN) Beneficial Use in Twelve Constructed and/or Modified Water Bodies in the Sacramento River Basin that Receive Treated Municipal Wastewater from the Cities of Biggs, Colusa, Live Oak, or Willows, Resolution R5-2015-0022 adopted on 16 April 2015 (MUN BPA). The MUN BPA removes the municipal and domestic water supply (MUN) beneficial use designation from Powell Slough and the unnamed tributary.
6. The April 2015 Central Valley Water Board Final Staff Report, provided as a part of the MUN BPA, determined that the unnamed tributary to Powell Slough is a constructed agricultural drain:

“The unnamed tributary to Powell Slough is a two mile long water body in Colusa County used primarily for agricultural drainage, prior to its confluence with Powell Slough. The unnamed tributary also receives some storm and urban runoff from the southwest portion of the City of Colusa. Historic maps show that the unnamed tributary was constructed

by the mid-1900s. In 2011, an almost one half-mile New Ditch (2011) that flows into the unnamed tributary was also constructed for Ag drainage (Central Valley Water Board, 2012b). The source of the water for irrigation and ultimately drainage into the New Ditch (2011) is predominantly groundwater from the new wells that were recently installed on a local landowner's property.”

7. The receiving water, the unnamed tributary to Powell Slough, is a constructed agricultural drain that at times captures storm water runoff and natural temperature cannot be determined because there is no natural flow to use to determine the natural temperature. This finding is consistent with the Vacaville Order, as discussed in Finding 4 above. Therefore, the Basin Plan temperature objective for natural surface waters does not clearly apply to this discharge. As was the intent when the NPDES Permit was originally adopted, this Order removes the upstream temperature receiving water monitoring requirements from the NPDES Permit because it does not characterize natural receiving water temperature. Downstream temperature monitoring has been maintained because it is necessary to calculate ammonia water quality criteria. Furthermore, consistent with the Vacaville Order, this Order also amends the NPDES Permit to require the Discharger conduct a site-specific temperature study for the receiving water for the implementation of appropriate temperature receiving water limitations to protect the COLD and WARM beneficial uses, and a reopener provision has been added to allow the NPDES Permit to be reopened to revise the temperature receiving water limitations, as appropriate.
8. The NPDES Permit requires monthly monitoring of groundwater. The Discharger recently completed installation of 5 additional wells and requested the groundwater monitoring frequency to be reduced to quarterly due to the high cost of the monitoring. In accordance with State Water Board Resolution No. 2013-0029 adopted on 24 September 2013, the State Water Board is committed to identification and implementation of measures to reduce costs of compliance while maintaining water quality protection. Under normal conditions, credible changes to groundwater occur slowly. Quarterly monitoring of groundwater is sufficient to characterize groundwater quality; therefore, quarterly monitoring is sufficient to evaluate compliance.
9. Issuance of this Order is exempt from the provisions of the California Environmental Quality Act (Pub. Resources Code, § 21000 et seq.) (“CEQA”) pursuant to Water Code section 13389, since the adoption or modification of a NPDES permit for an existing source is statutorily exempt and this Order only serves to modify a NPDES permit (Pacific Water Conditioning Ass’n, Inc. v. City Council of City of Riverside (1977) 73 Cal.App.3d 546, 555-556.).

10. The Central Valley Water Board has notified the Discharger and interested agencies and persons of its intent to amend the NPDES permit for this discharge and has provided them with an opportunity to submit written comments.

IT IS HEREBY ORDERED THAT:

Effective immediately upon adoption, Waste Discharge Requirements Order R5-2016-0062-01 (NPDES CA0078999) is amended as shown in items a through o below:

- a. Change the Order number throughout to R5-2016-0062-02.
- b. **Cover Page.** Modify the Cover Page, in part, as shown in underline/strikeout format below:

**ORDER R5-2016-0062-0402
AS AMENDED BY ORDER R5-2018-0018
NPDES NO. CA0078999**

I, PAMELA C. CREEDON, Executive Officer, do hereby certify that this Order with all attachments is a full, true, and correct copy of the Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on **18 August 2016 and amended by order R5-2018-0018 on 6 April 2018, and amended by Order R5-2020-0006 on 20 February 2020.**

- c. **Surface Water Limitations.** Modify section V.A.15 of the Limitations and Discharge Requirements, as shown in strikeout format below:

15. **Temperature.** The natural temperature to be increased by more than 5°F.
~~Compliance to be determined based on the difference in temperature at Monitoring Locations RSW-001D and RSW-001U.~~

- d. **Reopener Provisions.** Add section VI.C.1.g of the Limitations and Discharge Requirements, as shown in underline format below:

g. **Temperature Study.** This Order requires the Discharger to conduct a site-specific temperature study to determine the appropriate temperature(s) that will protect beneficial uses of the receiving water. Based upon the results of this study, this Order may be reopened to revise temperature limitations or include additional related requirements.

- e. **Special Studies, Technical Reports and Additional Monitoring Requirements.** Add section VI.C.2.g of the Limitations and Discharge Requirements, as shown in underline format below:

g. **Temperature Study.** To ensure protection of the COLD and WARM aquatic life beneficial uses, this Order requires the Discharger to conduct a site-specific Temperature Study to determine appropriate temperature limitations.

The Discharger shall develop a Study Work Plan in consultation with the California Department of Fish and Wildlife to evaluate the appropriate temperature limitations for the protection of aquatic life. The Study Work Plan shall be submitted by the Discharger for approval by Central Valley Water Board staff. The Study Work Plan and Temperature Study shall be submitted in accordance with the following schedule:

<u>Task</u>	<u>Task Description</u>	<u>Compliance Date</u>
<u>1</u>	<u>Submit Work Plan</u>	<u>1 June 2020</u>
<u>2</u>	<u>Submit Completed Temperature Study</u>	<u>1 April 2022</u>

- f. **Table E-6. Receiving Water Monitoring Requirements.** Modify footnote 2 in Table E-6 Receiving Water Monitoring Requirements, section VIII.A.1 of the Monitoring and Reporting Program Attachment E, as shown in underline format below:
- 2 Temperature and pH data shall be collected on the same date and time as the ammonia sample. Temperature monitoring is only required at RSW-001D.
- g. **Table E-8. Groundwater Monitoring Requirements.** Change the minimum sampling frequency from once per month to once per quarter for all parameters in Table E-8 Groundwater Monitoring Requirements, section VIII.C.2 of the Monitoring and Reporting Program Attachment E.
- h. **Self-Monitoring Reports (SMRs).** Remove section X.B.7.g of the Monitoring and Reporting Program Attachment E, as shown in strikeout format below:
- ~~g. **Temperature Receiving Water Limitations.** The Discharger shall calculate and report the temperature increase in the receiving water based on the difference in temperature at Monitoring Locations RSW-001U and RSW-001D.~~
- i. **Permit Information.** Add sections I.D and I.E to the Fact Sheet Attachment F, as shown in underline format below:
- D. 2018 Permit Amendment.** On 6 April 2018, the Central Valley Water Board adopted Order R5-2018-0018 amending Order R5-2016-0062. The permit was amended based on a site-specific copper Water-Effects-Ratio (WER) study submitted by the Discharger, resulting in the removal of the final effluent limitations and the monthly effluent compliance monitoring for copper.
- E. 2020 Permit Amendment.** On 20 February 2020, the Central Valley Water Board adopted Order R5-2020-0006 amending Order R5-2016-0062-01. The changes are summarized below:

1. Temperature Receiving Water Limitation and Monitoring. The temperature receiving water limit may be inappropriate because the Basin Plan temperature objective addresses temperatures over natural receiving water temperature and do not clearly apply in this case. Based on this new information, upstream receiving water temperature monitoring has been removed, which was intended in previous Order R5-2016-0062, because it does not provide the natural receiving water temperature in which to evaluate compliance with the receiving water limits. Therefore, a site-specific temperature study was added to this Order, which should have been included in the previous Order R5-2016-0062 requiring the Discharger to develop the appropriate temperature controls to protect aquatic life beneficial uses of the receiving water. Based upon the results of this study, this Order may be reopened to revise temperature limitations or include additional related requirements.

2. Groundwater Monitoring Frequency. The sampling frequency was reduced from once a month to once a quarter.

j. Satisfaction of Anti-Backsliding Requirements. Modify section IV.D.3, in part, of the Fact Sheet Attachment F, as shown in underline format below:

- a. **CWA section 402(o)(1) and 303(d)(4).** CWA section 402(o)(1) prohibits the establishment of less stringent water quality-based effluent limits “except in compliance with Section 303(d)(4).” CWA section 303(d)(4) has two parts: paragraph (A) which applies to nonattainment waters and paragraph (B) which applies to attainment waters.

The unnamed tributary is considered an attainment water for aluminum, bis (2-ethylhexyl) phthalate, copper, dibromochloromethane, dichlorobromomethane, iron, methylene blue active substances, manganese, nitrate plus nitrite, temperature, total residual chlorine, and total trihalomethanes because the receiving water is not listed as impaired on the 303(d) list for these constituents. As discussed in section IV.D.4, below, removal of the effluent limits complies with federal and state antidegradation requirements. Thus, removal of the effluent limitations for aluminum, bis (2-ethylhexyl) phthalate, copper, dibromochloromethane, dichlorobromomethane, iron, methylene blue active substances, manganese, nitrate plus nitrite, total residual chlorine, and total trihalomethanes from Order R5-2008-0184 meets the exception in CWA section 303(d)(4)(B).

- b. **CWA section 402(o)(2).** CWA section 402(o)(2) provides several exceptions to the anti-backsliding regulations. CWA 402(o)(2)(B)(i) allows a renewed, reissued, or modified permit to contain a less stringent effluent limitation for a pollutant if 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.

As described further in section IV.C.3.b of this Fact Sheet, updated information that was not available at the time Order R5-2008-0184 was issued indicates that aluminum, bis (2-ethylhexyl) phthalate, copper, dibromochloromethane, dichlorobromomethane, iron, methylene blue active substances, manganese, nitrate plus nitrite, total residual chlorine, and total trihalomethanes do not exhibit reasonable potential to cause or contribute to an exceedance of water quality objectives in the receiving water. Additionally, updated information that was not available at the time Order R5-2008-0184 was issued indicates that less stringent effluent limitations for aluminum, bis (2-ethylhexyl) phthalate, copper, dibromochloromethane, dichlorobromomethane, iron, methylene blue active substances, manganese, nitrate plus nitrite, total residual chlorine, and total trihalomethanes based on available dilution credits satisfy requirements in CWA section 402(o)(2). The updated information that supports the relaxation of effluent limitations for these constituents includes the following:

x. **Receiving Water Temperature.** After review of the unnamed tributary to Powell Slough, the BPA and the Final Staff Report for the BPA include information concluding the unnamed tributary is not a natural receiving water. In accordance with State Water Board's precedential Order WQO 2002-0015 for the City of Vacaville's Easterly Wastewater Treatment Plant (Vacaville Order), the temperature receiving water limits may be inappropriate because the Basin Plan temperature objective addresses temperatures over natural receiving water temperature and do not clearly apply in this case. Based on this new information, upstream receiving water temperature monitoring has been removed, because it does not provide natural receiving water temperature in which to evaluate compliance with the receiving water limits. The Discharger is developing a site-specific temperature study, and based upon the results of that study, this Order may be reopened to revise temperature limitations or include additional related requirements.

Thus, removal or relaxation of the effluent limitations for aluminum, bis (2-ethylhexyl) phthalate, dibromochloromethane, dichlorobromomethane, iron, methylene blue active substances, manganese, nitrate plus nitrite, total residual chlorine, and total trihalomethanes from Order R5-2008-0184 is in accordance with CWA section 402(o)(2)(B)(i), which allows for the removal of effluent limitations based on information that was not available at the time of permit issuance.

k. Antidegradation Policies. Modify section IV.D.4.a, of the Fact Sheet Attachment F, as shown in underline format below:

- a. **Surface Water.** Order R5-2020-0006 revised Order R5-2016-0062-01 to remove the receiving water limitation for temperature because it was inappropriately established to evaluate compliance with the Basin Plan's water quality objective for temperature. This change may allow for an increase in downstream receiving water temperatures by more than 5°F; however, per State Water Board's precedential Order WQO 2002-0015 for the City of Vacaville's Easterly Wastewater Treatment Plant (Vacaville Order), the receiving water limits may be inappropriate because the Basin Plan temperature objective addresses temperatures over natural receiving water temperature and do not clearly apply in this case as it is not a natural waterbody. This Order requires the Discharger conduct a site-specific temperature study to determine appropriate temperature receiving water limits to protect the WARM and COLD aquatic life beneficial uses of the downstream receiving water.

The permitted surface water discharge is consistent with the antidegradation provisions of 40 C.F.R. section 131.12 and State Water Board Resolution No. 68-16. Compliance with these requirements will result in the use of best practicable treatment or control of the discharge to ensure a pollution or nuisance will not occur, and the highest water quality consistent with maximum benefit of the people of the State will be maintained. The impact on existing water quality will be insignificant.

l. Surface Water. Modify section V.A.1.o of the Fact Sheet Attachment F, as shown in underline format below:

- o. **Temperature.** The Colusa Basin Drain, to which the receiving water is tributary, has the beneficial uses of both COLD and WARM. The Basin Plan includes the objective that "[a]t no time or place shall the temperature of COLD or WARM intrastate waters be increased more than 5°F above natural receiving water temperature." This Order includes a receiving water limitation based on this objective.

Although receiving water limitations based on the Basin Plan's temperature objective have been applied in this Order, in accordance with State Water Board's precedential Order WQO 2002-0015 for the City of Vacaville's Easterly Wastewater Treatment Plant (Vacaville Order), the limits may be inappropriate because the Basin Plan temperature objective addresses temperatures over natural receiving water temperature and do not clearly apply in this case. Consistent with the Vacaville Order, this Order requires the Discharger conduct a site-specific temperature study for the receiving water for the implementation of appropriate temperature controls to protect the

COLD and WARM beneficial uses. A reopener provision has been included to allow the Order to be reopened to revise the temperature receiving water limitations, as appropriate. In the meantime, upstream receiving water temperature monitoring has been removed, because it does not provide natural receiving water temperature in which to evaluate compliance with the receiving water limits.

The Vacaville Order found that “natural receiving water temperature” is defined in the State Water Board’s Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California (1975) (Thermal Plan). According to the Thermal Plan, “natural receiving water temperature” means “[t]he temperature of the receiving water at locations, depths, and times which represent conditions unaffected by any elevated temperature waste discharge or irrigation return waters.”

The characteristics of the unnamed tributary to Powell Slough were evaluated as part of the development of the Central Valley Water Board’s Basin Plan Amendment titled Amendment to the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins to Remove the Municipal and Domestic Supply (MUN) Beneficial Use in Twelve Constructed and/or Modified Water Bodies in the Sacramento River Basin that Receive Treated Municipal Wastewater from the Cities of Biggs, Colusa, Live Oak, or Willows, Resolution R5 2015 0022 adopted on 16 April 2015 (MUN BPA). The MUN BPA removes the municipal and domestic water supply (MUN) beneficial use designation from Powell Slough and the unnamed tributary.

The April 2015 Central Valley Water Board Final Staff Report, provided as a part of the MUN BPA, determined that the unnamed tributary to Powell Slough is a constructed agricultural drain:

“The unnamed tributary to Powell Slough is a two mile long water body in Colusa County used primarily for agricultural drainage, prior to its confluence with Powell Slough. The unnamed tributary also receives some storm and urban runoff from the southwest portion of the City of Colusa. Historic maps show that the unnamed tributary was constructed by the mid-1900s. In 2011, an almost one half-mile New Ditch (2011) that flows into the unnamed tributary was also constructed for Ag drainage (Central Valley Water Board, 2012b). The source of the water for irrigation and ultimately drainage into the New Ditch (2011) is predominantly groundwater from the new wells that were recently installed on a local landowner’s property.”

Based on the Vacaville Order, since the receiving water is a constructed agricultural drain that at times captures stormwater runoff, natural

temperature cannot be determined, and thus the temperature objectives do not clearly apply to the receiving water.

- m. Special Studies and Additional Monitoring Requirements.** Add section VI.B.2.c of the Fact Sheet Attachment F, as shown in underline format below:
- c. Temperature Study.** To ensure protection of aquatic life beneficial uses, this Order requires the Discharger to conduct a site-specific Temperature Study to determine the appropriate temperature limitations to protect the downstream beneficial uses of COLD and WARM. A Study Work Plan shall be submitted by the Discharger for approval by Central Valley Water Board staff that has been developed in consultation with the California Department of Fish and Wildlife to evaluate the appropriate temperature limitations for protection of aquatic life.
- n. Surface Water.** Remove section VII.D.1.c of the Fact Sheet Attachment F, as shown in underline/strikeout format below:
- c. Upstream Receiving water monitoring for temperature has been removed from this Order because the unnamed tributary does not have a “natural receiving water temperature”. As discussed in section V.A.1.o of this Fact Sheet, consistent with the findings of precedential State Water Board Order WQO 2002-0015 for the City of Vacaville’s Easterly Wastewater Treatment Plant, this Order finds that the receiving water limits based on the Basin Plan’s temperature objective are not clearly applicable and requires the Discharger to conduct a site-specific temperature study to protect the downstream COLD and WARM beneficial uses. Furthermore, this Order includes a reopener provision to implement revised temperature limitations based on the site-specific study. Downstream receiving water temperature monitoring is continued, because it is used to develop ammonia criteria that vary based on temperature and pH. “Natural receiving water temperature” is defined in the Board’s Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California (1975) (Thermal Plan). It means “[t]he temperature of the receiving water at locations, depths, and times which represent conditions unaffected by any elevated temperature waste discharge or irrigation return waters.” The flow upstream of the facility discharge is often zero during dry periods of the year and highly variable during the rainy season only consisting of urban and agricultural runoff. This finding is consistent with the findings of presidential State Board Order WQO 2002-0015 for Vacaville’s Easterly Wastewater Treatment Plant in regard to Old Alamo Creek.**
- o. Surface Water.** Modify section VII.D.2.c of the Fact Sheet Attachment F, as shown in underline format below:
- c.** This Order requires the Discharger to continue groundwater monitoring and includes a regular schedule of quarterly groundwater monitoring in the

attached Monitoring and Reporting Program. Under normal conditions, credible changes to groundwater occur slowly, therefore, monthly monitoring is not necessary and monitoring groundwater on a quarterly basis is sufficient to characterize groundwater quality. In accordance with State Water Board Resolution No. 2013-0029 to reduce cost of compliance, this Order allows the Discharger to monitor the groundwater on a quarterly basis in lieu of a monthly basis. Reducing the frequency of monitoring does not change the operation of treatment Facility and does not increase the pollutant load discharged to groundwater. The groundwater monitoring reports are necessary to evaluate impacts to waters of the State to assure protection of beneficial uses and compliance with Central Valley Water Board plans and policies, including Resolution No. 68-16. Evidence in the record includes effluent monitoring data that indicates the presence of constituents that may degrade groundwater and surface water.

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 of this Order, except that if the thirtieth day following the date of this Order 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 [State Water Board website](https://www.waterboards.ca.gov/public_notices/petitions/water_quality/): (https://www.waterboards.ca.gov/public_notices/petitions/water_quality/) or will be provided upon request.

I, Patrick Pulupa, Executive Officer, do hereby certify that this Order with all attachments is a full, true, and correct copy of the Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on **20 February 2020**.

PATRICK PULUPA, Executive Officer