Central Valley Regional Water Quality Control Board
22 August 2025 Board Meeting

Response to Written Comments on
Tentative Waste Discharge Requirements for
City of Merced
Merced Wastewater Treatment Facility
Merced County

At a public hearing scheduled for 22 August 2025, the Regional Water Quality Control Board, Central Valley Region (Central Valley Water Board) will consider adoption of tentative Waste Discharge Requirements (NPDES No. CA0079219) for the City of Merced, Merced Wastewater Treatment Facility. This document contains responses to written comments received from interested persons and parties in response to the Tentative Order. Written comments from interested parties were required to be received by the Central Valley Water Board by 21 July 2025 in order to receive full consideration. Comments were received prior to the deadline from:

1. Central Valley Clean Water Association (CVCWA) (received 21 July 2025)
2. Jo Anne Kipps (received 21 July 2025)

Written comments from the above interested parties are summarized below, followed by the response of Central Valley Water Board staff.

CVCWA COMMENTS

CVCWA COMMENT #1 – Removal of Groundwater Limitation V.B.3

Groundwater Limitation V.B.3 should be removed because demonstration of an exceedance of current groundwater quality is evidenced by an analysis of each groundwater compliance well. Moreover, to the extent limitations in the Tentative Order are based on “first encountered” groundwater, CVCWA recommends using an alternative method for ensuring Basin Plan compliance.

RESPONSE:

Waste Discharge Requirements (WDRs) adopted by the Central Valley Water Board must implement the applicable portions of the Central Valley Water Board’s Water Quality Control Plans (i.e., Basin Plans). (Wat. Code, § 13263(a).) As stated in the Fact Sheet, Section III.C. and Section V.B, these WDRs implement the Board’s Water Quality Control Plan for the Sacramento and San Joaquin River Basins (SSJR Basin

Plan), which includes, at section 3.2.4, a narrative water quality objective stating, "Ground waters shall not contain taste- or odor-producing substances in concentrations that cause nuisance or adversely affect beneficial uses." Accordingly, Groundwater Limitation V.B requires that the Facility's discharges not cause or contribute to groundwater containing taste or odor-producing constituents in concentrations that cause nuisance or adversely affect beneficial uses.

The Board acknowledges that the narrative objective for taste- and odor-producing constituents has some overlap with the narrative objective for chemical constituents, which incorporates the MCLs specified in California Code of Regulations, title 22 (Title 22). However, this does not justify removal of the taste and odor narrative objective from these WDRs because it is possible that certain taste- and odor-causing constituents that are not captured in Title 22's MCLs, or for which numeric water quality objectives have not been established, could still be discharged from this facility.

To the extent there are water quality exceedances caused by influences outside of the City of Merced's control, the City cannot contribute to those exceedances as further explained in the Section V.B.4 of the Fact Sheet.

The City of Merced has established a monitoring well network that is predominantly screened within first encountered groundwater (see section II.C.2 of the Fact Sheet). The Tentative Order requires the City to monitor this monitoring well network to, in part, assess the Facility's compliance with the groundwater limitations. Nevertheless, references to "first-encountered groundwater" in the Tentative Order circulated for public comment have been removed and replaced with "underlying groundwater" with the exception of the title of Section VIII.B of the Monitoring and Reporting Program (Attachment E) which was changed to "Groundwater Monitoring."

CVCWA COMMENT #2 – Pyrethroid Management Plan

The deadlines in Table 8 of the Tentative Order states that the progress reports are "required" by and must be "approved by" certain dates calculated from the "permit effective date," "3rd year in permit term," and "3rd year to permit expiration date." The deadlines in Table 8 should be revised since they are contradictory to Provision VI.C.3.b., which requires deliverables only if an exceedance of any pyrethroid numeric trigger is identified.

RESPONSE:

Per the express terms of the language in VI.C.3.b., progress reporting in Table 8 is only required if an exceedance of any pyrethroid numeric trigger is identified. The entries in

first column of Table 8 have been updated to add “(if required)” after the date ranges for clarity.

CVCWA COMMENT #3 – Toxicity Changes for Discharge Point 003

The Tentative Order includes a Chronic Whole Effluent Toxicity (WET) Maximum Daily Effluent Target (MDET) and a Chronic WET Median Monthly Effluent Target (MMET) for the Wildlife Management Area (WMA or Discharge Point 003). The previous permit R5-2020-0014 contained only an acute WET effluent limitation for Discharge Point 003. Additional information and explanation are needed for the use of chronic WET targets. The use of chronic WET targets may increase the likelihood that the Discharger is required to conduct a Toxicity Reduction Evaluation (TRE).

RESPONSE:

Hartley Slough (Discharge Point 002) WET effluent limitations changed from acute limits to chronic limits due to implementation of the Statewide Toxicity Provisions. Historically, toxicity monitoring for both Discharge Point 002 and Discharge Point 003 are satisfied by the same sample collected at Monitoring Location M-001, which is representative of effluent discharged to any discharge location. Continuing acute WET monitoring requirements at Discharge Point 003 would put increased monitoring costs on the Discharger, since the acute WET would otherwise not be monitored at other discharge locations. The Discharger typically discharges to Discharge Point 002 daily. Chronic WET monitoring that results in a TRE at Discharge Point 003 would likely also trigger a TRE at Discharge Point 002. Ultimately, if the Discharger continues daily discharge to Discharge Point 002, WET monitoring (and any potential TRE requirements) conducted at Monitoring Location M-001 satisfies requirements at both Discharge Point 002 and Discharge Point 003 without additional monitoring burden on the Discharger.

No changes are proposed to the Tentative Order.

JO ANNE KIPPS COMMENTS

JO ANNE KIPPS COMMENT #1 – Site Map and Description Updates

The Commenter requests to revise the Tentative Order’s Map (Attachment B) to:

- label the treatment works area “WWTF” and revise legend to Wastewater Treatment Facility
- depict the lined Equalization Basin
- depict the two stormwater basins identified in the Flow Schematic

- revise the location and label for Discharge Point 002
- depict MW-12
- revise the location of MW-7 to reflect that in Discharger groundwater gradient maps
- identify in the legend the fill pattern for Abandoned Ponds 5 & 6 (or simply use the same patterns the 580-acre LAA)
- depict the 580-acre LAA that receives biosolids as being rectangular in shape
- revise the Map and references to latitude/longitude to reflect actual point locations of effluent discharge to Discharge Points 003 and 004, if appropriate

RESPONSE:

The Site Map has been updated to include missing elements and to enhance the accuracy. Other edits have not been made at the level of detail that the Commenter has requested.

JO ANNE KIPPS COMMENT #2 – Facility Description and Monitoring Locations

The Commenter requests updates in the Fact Sheet's Facility Description to provide descriptions of the Hartley Slough outfall structure, the liner installed in the equalization basin, liner inspection protocol and history of repairs, and identification of all surface impoundments. Additionally, the Commenter requests some word choice changes to reference "centrate station and equalization tank" in the Facility Description. The Commenter also requests correction of Monitoring Location BIO-001 description to reference the active solar dryers.

RESPONSE:

The references to Monitoring Location BIO-001 have been updated, as requested, to reference the active solar dryers. The Hartley Slough outfall structure description and coordinates have been updated and descriptions of surface impoundments have been expanded. Other word choice requests and additional Facility Description discussion have not been made at the level of detail that the Commenter has requested.

JO ANNE KIPPS COMMENT #3 – Former Sludge Drying Beds and Effluent Channel

Revise Special Provision VI.C.2.b to address risks to groundwater quality from excessive organic loading that has caused a condition of groundwater pollution for arsenic and manganese. Additionally, please explain why the Discharger still uses the Effluent Channel, which historically conveyed effluent to Discharge Point 001 at the

approximate location of latitude 37°14'39" N longitude -120°32'31" W. Consider revising the special provision, or including a separate special provision, to require the Discharger to implement corrective measures to mitigate the groundwater impacts resulting from its use of the unlined Effluent Channel. Include a requirement in the work plan to either cease effluent discharges to the Effluent Channel or equip it with a liner meeting a hydraulic conductivity standard of at least 1 x 10-6 centimeters per second (cm/sec). Also please revise the Tentative Order's Fact Sheet to elaborate on what staff means by the term, "proper characterization," as used in the special provision. To this end, consider consulting with staff in the Non-15 Discharges of Waste to Land Program to develop an Information Needs attachment to the Tentative Order that identifies the minimum technical information requirements of an acceptable Former Sludge Drying Beds Closure Work Plan.

RESPONSE:

The Effluent Channel serves to transport water to WMA. The proposed Order has been updated to describe the Effluent Channel flow in the Facility Description. Water within the Effluent Channel is tertiary treated and fully disinfected wastewater that meets end-of-pipe requirements for discharge directly into surface water. If the disinfected tertiary effluent at times is discharging directly into groundwater, the highly treated effluent is not expected to adversely impact groundwater. Therefore, requiring additional control measures, such as lining the Effluent Channel, is not warranted.

However, Special Provision VI.C.2.b of the Tentative Order has been updated to include an analysis of arsenic, manganese, and any other constituents of concern that the Discharger identifies. Special Provision VI.C.2.b has also been updated to require the Discharger to assess the degree to which effluent in the unlined Effluent Channel is mobilizing, or threatens to mobilize, nitrogen, arsenic, manganese, and other constituents of concern in groundwater beneath the former sludge drying beds.

The proposed Order regulates current discharges from the Facility. Legacy issues or closure activities associated with formal site cleanup, if determined necessary, would be pursued through a separate Order.

JO ANNE KIPPS COMMENT #4 – WMA and LAA Effluent Discharges

Revise the Tentative Order to characterize the hydraulic loading of Facility effluent discharges to the WMA ponds and LAA fields, and the associated nitrogen loadings associated with these discharges, as well as the nitrogen loadings to LAA fields that receive biosolids applications. Disclose whether the annual nitrogen loadings associated with effluent and biosolids discharges to LAA fields are reasonable and do

not exceed reasonable agronomic rates. Also, disclose that the discharge to the WMA and LAA has caused or contributed to groundwater pollution for arsenic, manganese, and nitrate. In light of this, explain why authorization to continue this discharge is consistent with the Basin Plan and why Facility discharges to the WMA and LAA qualify for an exemption from the prescriptive containment standards of Title 27. Further, explain why a direct discharge to groundwater, which appears to be occurring in WMA trenches within and outside its ponds, reflects the implementation of best practicable treatment or control. Consider revising the Tentative Order to include a special provision requiring the Discharger to fill in these trenches to preclude the direct injection of effluent to groundwater.

RESPONSE:

The Discharger reports hydraulic and nitrogen loading information within its electronic self-monitoring reports (eSMRs) available for public query. The Discharger typically applies biosolids to two or three of the seven LAA fields on a rotating basis and supplements with fertilizer to meet agronomic needs of the crops. Biosolids and fertilizer appear to be being applied at agronomic rates, as required in the proposed Order and as documented in the eSMRs. The proposed Order has been updated to include an additional hydraulic/nutrient balance in Table E-5 for more thorough assessment of the LAA activities.

The effluent discharged to both WMA and LAA is tertiary treated wastewater that has been denitrified consistently. Total nitrogen in the effluent averaged 6.4 mg/L from 2020 through 2024. Biochemical oxygen demand in the effluent consistently meets tertiary treatment standards with an average of 2.1 mg/L from 2020 through 2024. The effluent is highly treated wastewater with a consistent quality. The WMA was created in 1978 to mitigate the loss of wetlands that occurred with the construction of the Facility. To create the WMA, berms were constructed to form two ponds using the fill material excavated from the edges of the ponds, resulting in trenches. While it is not a natural feature, the WMA is a constructed wetland that is consistent with the maximum benefit of the people of the state.

Existence of ponding in natural or constructed wetlands is likely to result in reducing conditions underneath the feature even with highly treated water. The reducing conditions, a common effect of constructed wetlands, is a likely cause of exceedances of manganese and arsenic in groundwater monitoring wells at the WMA (MW-9 and MW-10). Downgradient of the WMA and LAA, MW-3 also exhibits some exceedances of the WQO for manganese, which may also be attributed to the wetlands. Similar to the Effluent Channel discussion in Comment #3, the tertiary treated wastewater discharged

to the trenches in WMA may at times directly discharge to groundwater, which is not expected to adversely impact groundwater.

The proposed Order has been updated to include background information about the WMA and additional discussion of manganese and arsenic in groundwater.

JO ANNE KIPPS COMMENT #5 – Groundwater Monitoring Network Description

Revise the Tentative Order to include a description of the Facility's environs, land uses, climate, soils, regional and site-specific groundwater conditions in sufficient detail comparable to WDR orders prepared by staff with the Non-15 Discharge to Land Program. Include in the Fact Sheet a table disclosing information on the Facility's groundwater monitoring well network (i.e., installation year, location, depth, reference elevation, screen interval elevations). Include a discussion of groundwater elevation and gradient data to support the identification of wells as upgradient, downgradient, and crossgradient. For example, the Tentative Order, like the current order, confines its discussion of site-specific groundwater information in one table, Table F-3, Historic Groundwater Monitoring Data. Groundwater elevation gradient maps submitted pursuant to the current MRP consistently indicate only one upgradient monitoring well, MW-1. All other wells are downgradient of the Facility's discharges. Yet, Table F-3 in the current and Tentative Orders identify three wells as upgradient, MW-1 and MW-8 and MW-11. Both MW-8 and MW-11 are consistently downgradient of groundwater passing under LAA fields receiving biosolids applications.

RESPONSE:

The proposed Order has been updated to include more detailed description of the groundwater monitoring well network, including a discussion on upgradient wells and well construction details.

JO ANNE KIPPS COMMENT #6 –Groundwater Monitoring Summary Table F-3

Review monitoring data submitted over the current permit cycle for groundwater depth, elevation, and gradient to characterize site-specific groundwater occurrence, flow direction, and gradient. Revise Table F-3 to use data only from MW-1 to characterize upgradient groundwater quality. Based on the revised Table F-3, conclude that past and current discharge practices have created a condition of groundwater pollution for arsenic, manganese and, in places and at times, also for nitrate-N. Cite this characterization as evidence to conclude the Facility's discharges to land are not consistent with the Basin Plan and do not qualify for an exemption from Title 27 prescriptive containment standards. Include a special provision requiring the Discharger

to implement corrective measures to achieve and maintain compliance with groundwater WQOs to protect designated beneficial uses.

RESPONSE:

Table F-3 has been updated to reflect data only from MW-1 and MW-11 to characterize upgradient groundwater quality, since MW-11 at times represents upgradient groundwater. No additional conclusions have been added to the proposed Order based on the updated table.

JO ANNE KIPPS COMMENT #7 – Biochemical Oxygen Demand Loadings

Revise the Tentative Order's MRP to clarify whether or not it requires monitoring of biochemical oxygen demand (BOD) loadings associated with effluent discharges to the LAA and WMA. If staff determines monitoring and reporting of BOD loadings to the LAA and WMA are warranted, revise the MRP to include such monitoring and consult with staff with the Non-15 Discharges of Waste to Land Program for how to specify this in the MRP.

RESPONSE:

The Fact Sheet, in Section VI.E.7 has been corrected to describe land discharge monitoring requirements at the LAA. Calculation of BOD loading rates is not warranted in this situation, due to the high quality of the tertiary treated wastewater.