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Comments— Tentative WDRs and NPDES Permit for Cutler-Orosi Joint Powers Wastewater Authority, Wastewater Treatment Facility, Tulare County

This letter presents my comments on the subject tentative order issued 17 February 2023. I am a California registered civil engineer and worked in the Central Valley Regional Water Quality Control Board's Fresno office (1998-2010), mostly in the WDR Program.

The tentative order will replace WDR Order R5-2018-0011 / NPDES Permit No. CA0081485 for the Discharger's Facility. The current order authorizes a seasonal discharge of up to 2.0 million gallons per day (mgd) to Sand Creek, an intermittent stream and water of the U.S. that borders the Facility's eastern and southern boundaries. The tentative order does not authorize the surface water discharge, and only authorizes the Discharger's effluent land disposal operation.

Discharge Flow Limitation. The current order indicates that the Facility's design treatment flow capacity is 2.0 mgd. It sets a 1.5-mgd limit for the average dry weather discharge flow rate to the ponds and Use Area in Recycling Specification C.d.i. It further defines that compliance with the flow limit is "determined annually based on the average daily flow over three consecutive dry weather months (e.g., July, August, and September)" (VII.C). The tentative order carries over the 1.5-mgd limit in Flow Limitation C.1, but provides no instruction for compliance determination (at least I couldn't readily find it).

The tentative order's de facto discharge flow limit should be enforceable not only during "dry weather" but year-round, even in rainfall years of 100-year frequency. Implicit in the "dry weather" qualifier is that influent flows in excess of 1.5 mgd during wet weather are not subject to enforcement, even if they may result in violations of prohibitions against surface water spills and/or specifications restricting discharge when soils are saturated or otherwise at rates exceeding reasonable agronomic demand. Influent flow data from January 2020 on available through eSMR show no apparent significant inflow or infiltration during wet weather months. So, the restriction of the influent flow rate to just dry weather appears inappropriate for this discharge.

Please explain why the tentative order restricts its flow limitation to "dry weather" months in light of data showing no apparent significant inflow and infiltration. Elimination of this qualifier from the flow limitation compels the Discharger to ensure

the discharge flow to the ponds and Use Area does not exceed their combined disposal capacity all year round, even in rainfall years of 100-year frequency. If staff dismisses my recommendation, please at least revise Flow Limitation C.1 to instruct how compliance will be determined.

Effluent Characterization. The Discharger is operating the Facility in a manner that provides consistent excellent removals of conventional pollutants – organics, represented by 5-day biochemical oxygen demand (BOD_5) and total suspended solids (TSS) (Finding 15). The tentative order characterizes effluent nitrogen in two findings. From 2018 to 2022, effluent concentrations of nitrate-nitrogen ranged from non-detect to 34 mg/L, and total nitrogen ranged from 1.6 to 41 (Finding 60, Table 7). In 2021, effluent nitrate-nitrogen averaged 13 mg/L (Finding 69). It would be helpful if the tentative order consolidated its effluent nitrogen characterization in a separate finding after Finding 15. Presenting at least three years' worth of average values provide information on the variability of effluent nitrogen content.

Water & Nitrogen Balances Justifying Land Disposal Capacity. Waste discharge requirements orders for effluent disposal operations that rely on land discharge usually cite water balances that demonstrate adequate effluent storage and disposal capacity in rainfall years with a 100-year frequency. The current order cites a 30 July 2009 Recycled Water Engineering Report containing water and nitrogen balances reportedly demonstrating the Discharger's 1.5-mgd land disposal capacity (F-47). The tentative order does not mention this or any other water and nitrogen balances justifying the 1.5 mgd limit. The Discharger's 16 February 2023 Report of Waste Discharge mentioned in Finding 7 should contain water and nitrogen balances for a 100-year rainfall year showing adequate disposal capacity while complying with specifications requiring recycled water to be applied at "reasonable" rates (H.5), "only when needed and in amounts consistent with that need" (H.5.b.i), and in a manner that minimizes "the percolation of waste constituents below the root zone" (H.5.b.iv).

Please revise the tentative order to summarize the findings of water and nitrogen balances submitted by the Discharger to justify the tentative order's 1.5-mgd influent flow limitation. Did the balances employ a constant influent flow of 1.5 mgd throughout the year? Please confirm that staff concurs that the balances show adequate effluent disposal capacity through pond percolation (and evaporation) and recycling on Use Area crops at reasonable agronomic rates.

Ponds 1 and 2 have a combined volume of 21.5 million gallons (MG). The bottom areas of Ponds 1 and 2 are 5.13 and 4.26 acres, respectively, according to the Discharger's 2016 water balance (Table 5 Estimate of Pond Losses – Year 2016). Google Earth historic images show the northern pond, Pond 1, always in service, and Pond 2 dry in many images. The 2016 water balance confirms the Discharger's preference for using Pond 1 (290 in-service days compared to Pond 2's 134). It uses 2016 service day data and an assumed percolation rate of 20 inches per month to estimate an annual percolation loss of 81.7 acre-feet (af) from Pond 1 and 31.0 af from Pond 2 (combined 112.7 af). It similarly uses service days

and reference evaporation losses reduced to reflect pond evaporation to estimate evaporation losses of 16.9 af from Pond 1 and 14.0 af from Pond 2 (combined 31 af).

The current Use Area is 106 acres since the removal of Field A, adjacent to Pond 1, due to domestic well setback requirements. The Facility's current influent flow is 1.0 mgd or 365 MG annually (1,120 af). Self-monitoring data indicates that effluent is typically discharged to Use Area fields directly from the ponds and not also from the effluent pump station, as depicted in Attachment B, Flow Schematic. Staff should confirm this and, as appropriate, revise the flow schematic to reflect current practices or otherwise explain that it does not reflect current practices.

The tentative order carries over the current order's requirement for annual Hydraulic/Nutrient Balances in 4th Quarterly self-monitoring reports. Both orders specify that the balances "shall include the total water application to cropland, including treated effluent and other irrigation water; the total nutrient loading from wastewater, sludges, and chemical fertilizers; and amount of nutrient removed through harvest of the crop."

The Discharger uploads to eSMR Excel files containing self-monitoring data, including pond monitoring data, including net flow and freeboard, and daily Use Area monitoring data in a sheet named "Recycling CRP-001." There is no column in this sheet for reporting daily precipitation data. There are two data entry cells for entering or linking effluent nitrogen and TDS concentration data, but the cells are almost always blank. There are cells for displaying calculated values for nitrogen and TDS loadings, but these rarely contain values.

In the unlikely event that the Discharger submitted its annual Hydraulic/Nutrient Balances under separate cover, thereby explaining their absence from eSMR, it appears that the Discharger has been in chronic violation of the current order's requirement for submitting annual Hydraulic/Nutrient Balances. Please confirm this and, as appropriate, explain in Response to Comments how staff intends to enforce this chronic violation (e.g., request the Discharger to submit the missing annual balances for the last five years).

Self-monitoring data show the total discharge flow of recycled water to the Use Area was 256 MG in 2020, 262 MG in 2021, and 239 MG in 2022. The 3-year average, 253 MG/year (787 af/year), yields an average hydraulic loading of 7.3 feet/year. This appears excessive without justification and concerning, since this loading reflects current flows, which are lower than the tentative order's 1.5-mgd influent flow.

Self-monitoring data from 2020 to 2022 show that some fields receive much more recycled water than others. For example, average annual hydraulic loadings to Field D ranged from 3.7 to 5.3 feet and from 11.8 to 15.4 feet to Field B. Assuming effluent total nitrogen is 15 mg/L, the associated annual nitrogen loadings to Field B ranged from 480 to 630 lbs/acre. Again, these loadings appear excessive without justification. [Note, the identical flow data is reported in "Recycling CRP-001" sheets in January's Monthly Data Entry Excel files for 2021, 2022, and 2023.]

Self-monitoring data from 2020 to 2022 also show several days during which large volumes of impounded effluent were discharged from Pond 1 to a single Use Area field. These occurred on days outside of the irrigation season or otherwise when crop demand is expected to be low. Field C received 18.64 MG (3.2 feet) on 17 February 2020. Field B received 13.48 MG (2.4 feet) on 30 November 2020. Field D received 18.11 MG (2.1 feet) on 5 January 2021 and another 20.13 MG (1.6 feet) less than a month later from 2 to 3 February. Pond discharge flow and freeboard data show that these seemingly 'out-of-season' discharges from Pond 1 to Use Area fields occur when Pond 2 is empty, so deficient storage capacity does not appear to be an issue.

Please explain these large apparent 'out-of-season' discharges from Pond 1 to Use Area fields. Were crops actively growing on these fields during these application days? Does the Discharger view these discharges as reasonable? Does staff?

Given that current influent flow is 1 mgd (1,120 af/year), Use Area fields currently receive about 250 MG/year (775 af/year), and roughly 25 af/year is lost from evaporation (after adjusted for precipitation gains), then pond percolation accounts for the remaining 320 af/year. This equates to a hydraulic loading of 34 feet/year to pond bottom soils, assuming both ponds are in constant service, or about 70 feet/year if just one pond is in service at all times. Given this loading and an assumed average effluent total nitrogen concentration of 15 mg/L yields an annual nitrogen loading to pond bottom soils of almost 1,400 lbs/acre assuming both ponds are in service. While some nitrogen attenuation occurs in the vadose zone, this loading represents a significant point source of nitrogen that contributes to existing high nitrate concentrations in groundwater (indicated in Finding 60). Were it not for the diluting effect of the infiltration of surface water in Sand Creek, and possibly Tout Ditch, the degradation to groundwater caused by the pond discharge would be worse.

Please consider revising the tentative order to summarize the assumptions and results of water and nitrogen balances demonstrating the Discharger's ability to comply with the 1.5-mgd monthly average dry weather flow limit and recycled water specifications cited above. And, please disclose the water balance's estimates of effluent flow discharged to groundwater via pond percolation (MG/year and feet/year), along with the corresponding nitrogen loading to pond bottom soils (lbs/acre/year). If staff dismisses this last suggestion as irrelevant because crops are not grown on pond bottom soils, please explain why the Board should not consider the discharge's nitrogen loading to pond bottom soils as a controllable concentrated source of nitrogen that, if left unabated, will contribute to an existing condition of nitrate pollution in groundwater and render the discharge inconsistent with the Antidegradation Policy.

And, most importantly, please consider revising the tentative order to establish an effluent limitation of 10 mg/L for monthly average total nitrogen, and recirculate for public comment along with an accompanying enforcement order that sets a compliance schedule not to exceed 10 years.

Should staff cite the Discharger's choice of Pathway B, the Management Zone Permitting Approach, as the reason for dismissing my recommendation for an effluent nitrogen limitation, then please explain whether the objectives of Board's Nitrate Control Program supersede the Board's authority to require dischargers to implement best practicable treatment or control (BPTC) measures to ensure the discharge does not cause or contribute to exceedances in groundwater of water quality objectives established to protect its designated beneficial uses.

Discharge during High Groundwater Conditions. Regional groundwater levels have decreased significantly since 2019. However, levels do recover during periodic wet years like the current one, judging from groundwater elevation data available from on the SGMA Data Viewer website (sgma.water.ca.gov). At times, apparently, groundwater levels rise and encroach upon the bottom elevations of Ponds 1 and 2 and the surface elevations of Use Area fields. The tentative order, like the current and preceding orders, requires effluent disinfection treatment when groundwater is less than five feet from the pond bottoms and Use Area fields. Because the Discharger uses ultraviolet (UV) disinfection, the tentative order carries over the previous orders' UV Disinfection System Operation Specifications. Both current and tentative orders do not identify the bottom elevation of Ponds 1 and 2 (at least I couldn't readily find this information). This reference information, along with groundwater elevation monitoring data, is required by the Discharger and compliance staff alike to evaluate when effluent disinfection treatment is required.

In shallow groundwater conditions, there exists an unexplained inconsistency in how the Board regulates discharges of effluent to unlined ponds and discharges of sludge to unlined lagoons and drying beds, as well as storage of dried sludge in unlined beds and elsewhere. Bottom or surface elevations according to Google Earth are: Pond 2 (353 feet), west sludge lagoon (351 feet), east sludge lagoon (353 feet), and sludge drying beds (354 to 357 feet). The Board requires effluent disinfection treatment during high groundwater conditions, but places no restrictions on discharges of high-strength and pathogen-laden sludge to unlined lagoons and drying beds that appear to be of comparable or even lower surface elevations than the bottom of Pond 2 (at least according to Google Earth).

Please revise the tentative order to disclose the bottom elevations of Ponds 1 and 2, and the surface elevations of each Use Area field.

Unlined Sludge Lagoons and Drying Beds. Finding 12 describes the Facility's solids handling as including "four Deskins lined sludge drying beds, two newly constructed lined sludge drying beds, eight unlined sludge drying beds, and two unlined sludge lagoons." From Google Earth, it appears that the two lagoons are each 125-feet square or 15,000 sf, and the beds each about 100 feet by 50 feet, or 5,000 sf. The lagoons and drying beds encompass about 3.3 acres. To the immediate south is a one-acre area that appears, at times, to contain sludge stockpiles.

Please provide the area, depth, volume, and bottom elevation of each lagoon, and the dimensions and surface elevations of the sludge drying bed area and of the dried sludge storage areas. And, describe how the sludge lagoon is operated (e.g., How long is sludge stored in lagoons? When dry, are they used to store dried sludge?)

What is the nature of containment underlying the Deskins drying beds (e.g., reinforced concrete, geosynthetic liner)? What is its bottom elevation?

When were the two lined sludge drying beds and storage area constructed, where are they in relation to the Deskins beds, and what is their liner construction?

Like the current order, the tentative order requires the Discharger to contain sludge leachate and minimize its infiltration into soil in a manner that violates groundwater limitations. The current order finds that the Discharger's use of unlined surfaces for sludge treatment and storage: (1) may threaten beneficial uses of underlying groundwater, (2) is not BPTC, and (3) is inconsistent with the Antidegradation Policy. The current order's Provision VI.C.2.b requires the Discharger to submit a Solids Management and Storage Work Plan to describe actions it will take to address this problem and propose a time schedule for implementing the proposed actions. Finding 12 of the tentative order cites this work plan and states, "the Discharger is considering pursuing mechanical dewatering methods to supplement the Deskins lined sludge drying beds, pending funding."

Please revise this finding to disclose the Discharger's proposed time schedule for implementing mechanical dewatering, summarize this option's cost information – projected capital outlay and O&M – and assess its financial impact on rate payers.

In what seems like déjà vu, the tentative order's Other Provision K.4 requires another technical report about sludge practices. It grants the Discharger a two-year deadline for submitting a Sludge Management Work Plan for Board approval which "should further explore implementing the option of mechanical dewatering or other long-term solutions for sludge management…[and] shall include an implementation plan and schedule for actions." It does not establish a firm, enforceable deadline for the Discharger to complete its long-term solution once approved (same for Other Provision K.5 below). A deadline establishes a financial incentive for the Discharger to implement its preferred option, mechanical sludge dewatering, in a timely fashion which, when completed, will render the sludge lagoons and drying beds obsolete and ready for decommissioning.

Similarly, the tentative order's Other Provision K.5 grants a three-year deadline for the Discharger to submit an Unlined Sludge Surfaces Closure Work Plan for Board approval "which must propose actions to permanently decommission the unlined sludge drying beds and the unlined sludge lagoons such that they no longer threaten to violate Provision J.2 …[and] shall include an implementation plan and schedule for actions." Again, no deadline for the Discharger to complete this work, let alone begin.

Please consider revising the tentative order to

- ***Prohibit the discharge of sludge and other treatment waste solids to unlined surfaces effectively immediately and,***

- ***Establish 10-year compliance time schedules in an accompanying enforcement order, with appropriate milestones and reporting requirements, for the Discharger to complete its***
    - ***Long-term solution to its deficient sludge management practices in its approved Sludge Management Work Plan***
    - ***Cleanup and abatement work in its Approved Unlined Sludge Surfaces Closure Work Plan***

Please clarify if the phrase, "for Central Valley Water Board approval," means that the Executive Officer will not have the authority to approve the Sludge Management Work Plan.

The tentative order's 1.5-mgd discharge flow limit reflects the reported effluent disposal capacity available from pond percolation and Use Area crop irrigation. Sometime between 2013 and 2018, Facility influent flows increased beyond the capacity of the four Deskins lined sludge drying beds, necessitating the resumption of sludge discharges to unlined beds. The Board has recognized this sludge practice is not BPTC and threatens the beneficial uses of underlying groundwater. A case can be made that the Facility's actual treatment capacity is limited to the maximum capacity of its four Deskins lined beds. When appropriate, the Board imposes an interim discharge flow limit reflecting current discharge flow rates until such time identified deficiencies are corrected. In my experience, nothing gets a municipal discharger's attention more than the prospects of a pending connection ban. Perhaps it's not time yet for this Discharger, but I hope staff does not discount this option should the Discharger not make a good faith effort to solve in a timely fashion its sludge management problem and complete work to decommission the lagoons and drying beds.

Additional Comments and Recommendations.

Finding	Comment
11	Consider including in this finding the pond dimension and bottom elevation information mentioned above, as well as the surface elevation range of Use Area fields for reasons cited above. Each pond currently provides about ten days detention, during which additional BOD_5 removal is expected. However, such reduction may be offset by the BOD_5 created by the death and decay of algae, which flourishes in the nitrogen-rich effluent.

Finding	Comment
	Please consider including in the MRP's Pond Monitoring Requirements monthly grab sample monitoring of pond discharge to the Use Area for BOD_5, nitrogen compounds, EC, and fixed dissolved solids. And, require an annual evaluation of this data in the annual monitoring report that includes an analysis of the accuracy of EFF-001 monitoring data to characterize the pond discharge to the Use Area.
18	The current order mentions the Discharger's intent to add 20 more acres to the Use Area. The order preceding the current one, WDR Order R5-2013-0047, states the Discharger "owns 20 additional acres of cropland that could receive WWTF effluent if conveyance piping were to be installed" (II.B). Please provide an update on the status of the Discharger's plans to expand its Use Area. As appropriate, please consider revising the tentative order to include this field in the Use Area and a provision requiring Executive Officer approval prior to commencing recycling on the new field (e.g., approval of a supplement to the Discharger's Title 22 Engineering Report).
27	The current order indicates that Sand Creek is not used for irrigation deliveries, and cites its maximum flow capacity as about 500 cubic feet per second (cfs), though flows do not usually exceed 5 to 10 cfs. This information helps characterize the discharge situation, even for a discharge to groundwater. The FEMA flood insurance map shows the Facility, ponds, and Use Area are beyond 100-year floodplain, but the Sand Creek channel is in this floodplain. The 1,000-foot-long eastern berm of Ponds 1 and 2 is immediately adjacent to Sand Creek. Runoff from recent rains have swelled Sand Creek's flows and stressed its levees. A recent levee break upstream from Pond 1, about 1,700 feet northeast, near Road 124 and Avenue 408, flooded an adjoining residential area. Please identify the party or parties responsible for maintaining Sand Creek's levees. How reliant is the Discharger on this entity for the integrity of the eastern berm of Ponds 1 and 2? And, please identify whether Tout Ditch is used for irrigation deliveries and, if so, the name of the party or parties responsible for its operation.

Finding	Comment
32	In addition to citing the proximity of Prima Wawona, the tentative order should also disclose that this fruit packing facility discharges up to 44,000 gallons per day to two unlined ponds located about 500 feet northeast of Pond 1 under the terms and conditions of WDR Order R5-2012-0042. Also, is the Facility within an irrigation district? Does an irrigation district supply surface water deliveries to area growers, or are they reliant on groundwater for irrigation? What is the Discharger's source of supplemental irrigation supply, if any?
34	It's much worse. Data available on the SGMA Data Viewer shows spring 2022 groundwater depth has decreased to about 120 feet bgs in the Facility vicinity.
35	When did the Discharger initiate groundwater quality monitoring? Finding 59 indicates 2001, but WDR Order R5-2013-0047 indicates 1996 (Table 3 on F-7). Please clarify.
36	Table 5 does not include MW-F, depicted in Attachment A, Site Location Map, as located about 300 feet north of MW-G and included in Table 9, Use of Ultraviolet Light Disinfection, which also cites a well identified as "Well PBs." Please define or explain. WDR Order R5-2013-0047 indicates that MW-F is screened from 18 to 33 ft bgs (F-7, Table F-3) and characterizes groundwater passing through MW-A through MW-G. Groundwater in MW-F had the highest average nitrate-nitrogen concentration (34 mg/L). Please explain the omission of MW-F from the groundwater monitoring well network. Table 5 would be more effective if it didn't present information better presented in text and displayed meaningful data depicting the recent decline in groundwater elevations. Consider simply stating that the wells are currently dry (implying groundwater depth is greater than the bottom screen interval), and include in Table 5 each well's construction date and average annual groundwater elevations for 2019, 2020, and 2021. Also, consider noting that MW-G is about 70 feet from the confluence of Sand Creek and Tout Ditch, and MW-F is about 80 feet east of Tout Ditch, and disclosing that groundwater passing through these wells is influenced by the intermittent recharge of surface water with low mineral content.

Finding	Comment
37	If and when groundwater levels recover, the groundwater monitoring well network appears adequate to evaluate groundwater affected by discharges of recycled water to Use Area fields. Because of their location relative to the Discharger's property, MW-D and MW-H are of limited utility for determining compliance with groundwater limitations. Fertilizer application on crops grown on the farm parcel upgradient from MW-H, which is not under the Discharger's control, likely contributes to the elevated nitrate concentrations in this well. The network is deficient, however, because it lacks wells in proximity to Ponds 1 and 2 and the unlined sludge lagoons, drying beds, and storage beds. This was apparently recognized ten years ago. WDR Order R5-2013-0047 cites a 21 May 2013 amendment to the Discharger's *Hydrogeologic Investigation Report and Groundwater Monitoring Well Installation Workplan* that "proposes adding three additional shallow (35 feet) monitoring wells located around the perimeter of the storage ponds and utilizing an existing non-potable well to enhance the groundwater potentiometric surface map." Please revise the tentative order to require the network include monitoring wells in close proximity to Ponds 1 and 2, yet not under the direct influence of Sand Creek, and immediately downgradient from the sludge treatment and storage area.
61	Because the tentative order does not prohibit sludge discharges to unlined surfaces and does not prescribe an effluent limitation of 10 mg/L for total nitrogen, its terms and conditions **are not** adequate "to ensure that the authorized discharge from the Facility will not excessively degrade groundwater quality, contribute to existing pollution, or unreasonably affect present and anticipated future beneficial uses." And, the Discharger's continued use of unlined sludge lagoons and drying beds threaten to violate Discharge Prohibition B.2.a. I encourage staff to make these changes and re-circulate the tentative order along with a tentative enforcement order to establish a time schedule not to exceed ten years for the Discharger to implement nitrogen removal treatment and a long-term solution to its sludge practices, and for decommissioning the lagoons and drying beds.

Finding	Comment
62	Granted, the Discharger consolidates sewage service for six separate unincorporated low-income and disadvantaged communities. And, it operates its Facility in a manner that consistently provides excellent BOD_5 and TSS removals. But its effluent contains total nitrogen in concentrations greater than 10 mg/L. When discharged to groundwater via pond percolation, it contributes to existing concentrations of nitrate exceeding the water quality objective. And, high-strength leachate infiltrating into soil from unlined sludge facilities threatens to cause or contribute to exceedances of water quality objectives in groundwater. Both sources of waste constituents are controllable and, as such, the Board should not find that the resulting degradation "consistent with the maximum interest of the people of the state of California." This reinforces the need for the tentative order to establish an effluent limitation of 10 mg/L for total nitrogen and to prohibit sludge discharges to unlined surfaces.
63	The BPTC measures listed are inadequate to minimize the extent of water quality degradation resulting from the Facility's operation and discharges. To ensure that the discharge, as authorized, is consistent with the Antidegradation Policy and protective of groundwater quality, it should establish an effluent limitation for total nitrogen of 10 mg/L and prohibit the discharge of sludge to unlined surfaces. Then, in 15 years or so, updated WDRs for this discharge will be able to include nitrogen removal treatment and mechanical sludge dewatering in its BPTC measure bullet list.
69	The characterization of effluent quality should include total nitrogen, as nitrate alone is not the only threat. So, too, is the nitrate that eventually forms from the decomposition of organic nitrogen in the effluent. And, as written, the tentative order also authorizes ongoing sludge discharges to unlined surfaces for the indefinite future.
72	The problem with shortening the Title 27 exemption, which is the fashion in recent WDR orders, is that the main reason for the exemption escapes adequate scrutiny, namely the Board's regulation of the discharge in the WDR order should result in a discharge that complies with the applicable Basin Plan. The Discharger's practice to store sludge in unlined lagoons and dewater sludge in unlined beds has already been cited as not BPTC and likely has already degraded groundwater.

Finding	Comment
	Were it not for the proximity of Sand Creek, the impact would be worse. As such, the discharge, specifically its sludge discharges, is not compliant with the Basin Plan, calling to question its Title 27 exemption. This again reinforces the need to prohibit sludge discharges to unlined surfaces now, and allow continued use of sludge drying beds under the terms and conditions of an accompanying enforcement order until mechanical sludge dewatering is online.
Finding 73	All storm water from the treatment works area is reportedly captured and returned to the headworks. Attachment B, Flow Schematic, does not depict storm water flows to the headworks. Please confirm that all storm water runoff is indeed collected and routed back to the headworks. And, as appropriate, revise Attachment B, Flow Schematic, or alternatively, disclose that the flow schematic does not depict storm water flows.

Discharge Prohibition B.2. Until it implements its long-term sludge management solution and decommissions the sludge lagoon and drying beds, the Discharger will be in threatened violation of this prohibition. This is perhaps the major reason for an accompanying enforcement order.

Discharge Prohibition B.3. Where does the tentative order "otherwise expressly" authorize the discharge of sewage and other waste to surface waters or surface water drainage courses?

Discharge Prohibitions B.6 and B.7. These appear duplicative, and they don't mention Ponds 1 and 2 as part of the land discharge operation. And, "Use Area" means an area where recycled water is used pursuant to Title 22. So, it is unnecessary to preface "Use Area" with "recycled water."

Effluent Limitation D.1. As written, the BOD_5 and TSS limitations apply to effluent discharged to the ponds or to the Use Area. As mentioned earlier, it appears that all discharges to Use Area fields originate from the ponds, not the Facility. Please confirm and consider applying these limitations only to Facility effluent discharged to the ponds. And, revise the tentative MRP to delete "or Use Areas" from the description of EFF-001.

Effluent Limitation D.3.i. Table 9 identifies "Well PBs" for PND-001 and PND-002. The tentative MRP defines them as "Piezometer between the wastewater ponds to determine groundwater depth underneath the ponds" (Table 1), and requires they be monitored quarterly for groundwater depth. Please provide more information on these piezometer

wells. When were they constructed? What are their depths? Why are they not mentioned in the description the Facility's well network?

Discharge Specification F.13. This specification essentially allows sludge to accumulate in ponds until it encroaches upon required storage capacity. As it percolates through a sludge layer, effluent is bound to be degraded from its contact with sludge waste constituents. The Discharger's wastewater treatment relies on contained unit operations (i.e., oxidation ditch, trickling filter), not wastewater treatment ponds. There is no mention of sludge accumulating in Ponds 1 and 2. Is this a problem? Please consider whether this specification applies to this discharge situation.

Other Provision K.2. This provision grants the Discharger a three-year deadline to submit a Groundwater Monitoring Well Installation Work Plan. Recent rains and snow melt flows will hopefully result in area groundwater rising to the screened intervals of existing wells, eliminating the need for their replacement. The provision should disclose this possibility.

In addition to the existing upgradient wells and wells on the downgradient boundary of the Discharger's property, the network needs at least three wells in the vicinity of the ponds and sludge handling area, as discussed above.

Please specify firm deadlines for beginning and finishing the work following receipt of Executive Officer written approval (e.g., within two years).

Other Provision K.3. Again, please specify firm deadlines for beginning and finishing the work following receipt of Executive Officer written approval.

Other Provision K.6. Consider requiring annual sludge progress reports be included in the Facility's annual report.

Other Provision K.7. The Facility doesn't have an anaerobic digester, so this provision appears unnecessary.

F. Use Area Monitoring. The Facility provides excellent BOD_5 removal. Effluent BOD_5 is consistently lower than the 30/60 limitation, often much lower. BOD_5 loading is very low even during the large, out-of-season hydraulic loadings described earlier. However, it might be appropriate to continue reporting daily BOD_5 loading if effluent BOD_5 averaged 30 mg/L and large volumes continued to be discharged to Use Area fields on a single day. Provided the Discharger assures staff that these large out-of-season dischargers were aberrant, and do not represent typical recycled water irrigation practices, consider eliminating the requirement for calculating and reporting BOD_5 loading to the Use Area.

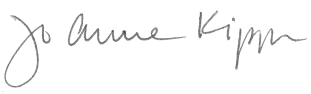
Effluent Application Rate and Supplemental Irrigation Rate are expressed in terms of inches/day. Consider expressing these as inches/day, as that is more meaningful from an irrigation perspective. And, what supplemental irrigation water? The tentative order does not mention the Discharger's access to supplemental irrigation water.

As mentioned earlier, to periodically confirm that the concentration data from EFF-001 used to calculate nitrogen and salinity loadings to the Use Area accurately represents or is otherwise comparable to concentrations of nitrogen and salinity in the pond discharge to the Use Area, consider expanding the pond monitoring to include at least monthly grab sample monitoring of BOD_5 and nitrogen compounds and fixed dissolved solids. And, in the annual report, require inclusion of a summary and analysis of effluent and pond BOD and total nitrogen data.

I offer these recommendations with the hope that staff will revise the tentative order accordingly, and re-circulate it along with a tentative enforcement order. It may delay Board consideration of this discharge until its June meeting, but the time and effort will be worth it as it will likely be 15 to 20 years before the Board considers this discharge again.

And, I encourage future tentative orders for discharges reliant on pond percolation to disclose the discharge's current and maximum loadings to pond bottom soils of water in feet/year and nitrogen in lbs/acre/year. Also, the tentative order refers to Facility effluent in a multitude of ways (wastewater, treated wastewater, treated effluent, recycled water). Effluent storage ponds are likewise referenced by various terms (treated wastewater pond, evaporation/percolation ponds, recycled water impoundment, authorized waste treatment and/or containment structures). It's probably too late for this tentative order, but I encourage staff to strive for nomenclature consistency in future orders.

Thank you for your time and consideration.



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