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**Comments— Tentative WDRs for Rivermaid Trading Company, San Joaquin County**

This letter transmits my comments on the subject Tentative Order issued 15 June 2021. I am a California registered civil engineer and, from 1998 through 2010, worked in the Central Valley Water Board's Fresno office, mostly in the WDR regulatory program. I also served on the State Board's CIWQS business rules subcommittee.

**Preliminaries.** Many of my comments concern apparent errors that would have been recognized by supervisory review and corrected by staff prior to Tentative Order issuance. If supervisory staff is too busy for such review, then management should hire a professional writer who is able to perform this review function.

The Tentative Order uses the same name for both Discharger and Facility. To eliminate ambiguity when referencing either, the Facility name should reflect its function. Finding 1 refers to the Facility as "a fruit processing plant" so it would appear logical to name it "Fruit Processing Plant." I thought there are CIWQS business rules that Place names (i.e., Facility names) should reflect the facility's function, not ownership. Not that CIWQS business rules should dictate regulatory decisions, but they do help ensure statewide consistency in nomenclature.

Finding 2 should disclose that Rivermaid Trading Company is a California corporation. Also, Findings 4.a and 4.b should be revised (Site Map, Facility Map) to match the legend titles of Attachments B and C (or vice versa). Finding 3 cites the Facility's address followed by APNs of two parcels, one for the 17.6-acre Facility and the other for the 11-acre LAA. Attachment B, SITE FEATURES MAP, should identify the APNs of the two parcels cited in Finding 3, and Finding 3 should be revised to read: "…, as shown on Attachments A and B, which are attached hereto."

**Major Concerns.** The Tentative Order imposes new requirements for an unregulated waste discharge that has been ongoing since 1979. There are many similar unregulated facilities in the Central Valley Region. I appreciate the priority Central Valley Water Board management places on getting this and other such facilities regulated through individual WDRs (or waivers of WDRs). The Tentative Order does not explain why, after all these decades of noncompliance, the Discharger submitted a RWD in November 2020, along with supplemental information in March 2021.

The RWD bases its characterization of the discharge on the analytical results of a single sample of commingled wastewater and storm water collected in mid October 2019 from the Facility's 1.3-MG wastewater pond (Pond). The Tentative Order's terms and conditions relating to groundwater protection, then, hinges on whether that one sample is representative of the Facility's overall discharge.

Wastewater generated through the washing and cold storage of cherries (April - July) and pears (July - October) is discharged to the Pond, which is used to dispose of Facility's storm water. Currently, about seven MG wastewater and eight MG storm water are discharged annually to the Pond (Finding 12). The Tentative Order should disclose the current Pond infiltration rate to groundwater. Given that the Pond is 1.3 acres in size (Finding 11) and the area's average evapotranspiration annual rate is about 51 inches (Finding 26), then the current annual Pond discharge amounts to a net infiltration rate of about 30 feet per year [(8 MG/year + 7 MG/year)(3.069 AF/MG)/(1.3 acres) – (51 inches/year)/(12 inches/foot) = 31 feet/year]. Compared to the infiltration of rainfall and applied irrigation water, the Pond discharge represents a significant source of groundwater recharge.

Historical imagery of the Facility shows that, sometime between 1993 and 2002, the Discharger completed a major Facility expansion and relocated and enlarged the Facility's wastewater pond. And, between March 2016 and March 2017, the Discharger had rooftop solar panels installed on all the Facility's large buildings. The major Facility expansion and recent solar panel installation suggests the Discharger should have had sufficient financial resources to adequately characterize the discharge in its RWD. Yet, it only provided the results of one sample. Information necessary to characterize the discharge could have been requested in staff's response to the RWD and/or through issuance of a 13267 Letter or even a stand-alone MRP.

With only one sample to characterize the discharge, the Tentative Order relies on a small sample of wastewater TDS data from a similar situated facility owned by Delta Packing Company. While instructive, the data are not equivalent to an adequate characterization of the discharge subject to the Tentative Order. There is insufficient technical justification that the one sample taken at the tail end of the pear processing season is representative of the discharge from both the cherry and pear processing seasons, especially for BOD (discussed later). Lacking this justification, the Tentative Order should be tabled this data is obtained and evaluated.

**Miscellaneous Comments and Recommendations**. Source water use (14 MG/year, Finding 8) and wastewater generation (7 MG/year, Finding 12) vary significantly. There appears to be no method to accurately measure Facility wastewater flow, so the 7 MG is an estimate. Can staff explain what happens to the 7 MG/year of source water that the Facility uses but is apparently not discharged as wastewater to the Pond? Finding 12 characterizes daily average influent flow as 20,000 gpd. While not stated as such, the annualized value is presumably all wastewater [(7 MG/year)*(1,000,000 gallons/MG)/(year/365 days) = 19,178 gpd, round to 20,000 gpd]. Recommend finding clarify this. Also, when characterizing average daily discharge flow from industrial facilities, it is customary to

divide the total flow generated during a given time interval (year, month) by the number of days the facility was operating during this time interval. Why wasn't this approach used to characterize the Facility's average daily discharge flow?

Finding 13's Table 3, Wastewater Quality, lists the concentrations of various constituents of concern in a sample of Pond water collected in mid-October 2019. It also identifies the WQOs for most of these constituents, information that is duplicated in the Antidegradation Analysis Finding 53 (more on this later). The units for Sodium and Chloride in Table 3 are presented as micrograms per milliliter instead of milligrams per milliliter (the same mistake occurs in Finding 53's Table 4). Table 3 shows that the sample's iron and manganese concentrations exceed their respective WQOs (Secondary MCLs). Total nitrogen is the sum of TKN (ammonia, organic and reduced nitrogen) and nitrate-nitrite. Table 3 cites pond wastewater TKN as 5.7 mg/L and Total Nitrogen as only 1.2 mg/L. Is there an explanation for this?

The low value of 15 mg/L for BOD in Table 3 is likely not representative of the overall discharge, given that the Pond water sample was collected at the tail end of the pear processing season following months of detention during which BOD naturally attenuated. It is unlikely that this low value is representative of the overall discharge. More likely, discharge BOD is significantly greater than 15 mg/L.

It is disingenuous to include the 15 mg/L BOD result without presenting BOD data from a similar situated facility (like the Antidegradation Analysis does for TDS). Pond water BOD data from Delta Packing Company, a similar situated facility cited in Finding 53.a, reveals higher BOD concentrations. Finding 13 of WDRs Order R5-2016-0029 for Delta Packing Company and John Tecklenburg presents the following pond wastewater BOD results: 230 mg/L ("Pre-Season Sample"), 23 to 130 mg/L (three Mid-Season Samples), and 61 mg/L (Post-Season Sample). The single BOD result of 15 mg/L makes it appear that the Pond discharge poses a low risk to groundwater from organic overloading compared to most unlined surface impoundments of food processing wastewater. It is more likely that the Pond discharge threatens to cause or contribute to groundwater impacts from organic overloading (e.g., unreasonable degradation for alkalinity and hardness, both contributors to TDS, as well as iron and manganese concentrations exceeding WQOs). This highlights the need for a complete characterization of the discharge prior to the drafting of the Tentative Order.

Finding 14 indicates the Discharger proposes to use wastewater to irrigate on-site landscaping and an 11-acre LAA cropped with alfalfa and "native vegetation" (euphemism for weeds?). Because of the potential for employee contact with on-site landscaping, the tentative Order should provide data on wastewater quality *prior* to Pond discharge confirming the absence of cross-connection contamination. Or, alternatively, the Order should require a short sampling period (say, weekly for four weeks) during which Pond influent is monitored for total and fecal coliform (and perhaps caffeine). The Order should prohibit wastewater discharge to on-site landscaping until this sampling period is concluded and Pond influent data show shows no cross-contamination with the Facility's

domestic wastewater collection system. The area encompassed by on-site landscaping appears to be around one acre, according to Google Earth images. Given the prescribed setback of 25 feet from the edge of the LAA to property boundary (Land Application Area Specification 5), the Discharger may find it more trouble than it's worth to install separate dedicated pipelines and sprinklers to use process wastewater to irrigate on-site landscaping.

Finding 16 indicates that an on-site irrigation well will supply supplemental irrigation water to meet crop demand. The RWD should have provided information on this well's water quality and construction details, including annular seal depth and perforation interval(s). If it did, this finding should summarize this information.

Finding 20 summarizes local land uses. This finding should also mention the nearby cemetery and identify the number of wineries and other food processors regulated by the Central Valley Water Board operating in the discharge vicinity (say, within a 0.5-mile radius). This information discloses the potential for cumulative impacts to groundwater from other winery and food processing wastewater discharges near the Facility.

Findings 24 and 25 should be removed because information on surface water and groundwater beneficial uses in the discharge area is duplicated in Basin Plan Implementation Findings 43 and 44. Finding 43 also locates the Facility within the San Joaquin Delta Hydrologic Area, presumably as depicted on the interagency hydrologic maps prepared by the Department of Water Resources in August 1986. If so, the finding should state as much. Given recently mandated groundwater basin management efforts, the finding might also indicate the Facility is within the boundaries of the Eastern San Joaquin Subbasin Groundwater Stability Plan.

Finding 28 characterizes groundwater depth in the discharge vicinity based on data from DWR's "Information Center Interactive Map Application website," which is hyperlinked to DWR's Groundwater Basin Boundary Assessment Tool. This tool does not appear to provide information on individual groundwater wells. The hyperlink is followed by another website in parentheses (https://gis.water.ca.gov/app.bbat) is no longer valid (404 – File or directory not found.) Recommend clarifying the source of the cited groundwater depth data.

Finding 50 refer to Finding 14 for "list of crops…that are or could be grown in the area affected by the discharge." Finding 14 identifies only alfalfa and landscaping as "crops" grown on the Facility's grounds and LAA. Recommend including a finding describing crops grown in the discharge vicinity that cites DWR land use data, which identifies deciduous fruit and vineyard as the dominant crops currently grown in the discharge vicinity (see https://gis.water.ca.gov/app/CADWRLandUseViewer/).

Finding 51 is the Salt and Nitrate Control Programs Reopener finding regarding the Tentative Order's implementation of new Basin Plan amendments for CV-Salts. Another

Finding 51 follows this finding and appears to duplicate information provided in the last paragraph of the first Finding 51.

*Antidegradation Analysis*. Finding 53 describes the results of staff's Antidegradation Analysis for TDS, Nitrate, and Sodium and Chloride. The analysis relies on one sample of impounded commingled wastewater and storm water collected during the tail end of the pear processing season. There is no information to indicate this sample is also representative of cherry processing wastewater. The tentative Order requires discharge monitoring and may be reopened and revised should data show the discharge is not what was represented in the RWD. However, this is unlikely given the current workload of Central Valley Water Board staff. Chances are that, once adopted, the Tentative Order will regulate the discharge for the next 20 years. This highlights the need for RWDs to include a complete characterization of the discharge.

The Pond water sample described in Finding 13 contained 307 mg/L TDS, 26 mg/L sodium, and 14 mg/L chloride. Finding 53's Antidegradation Analysis for TDS compares the single result of 307 mg/L against similar results of three wastewater pond samples from Delta Packing Company. The single Pond water sample also contains iron and manganese in concentrations exceeding their respective WQOs. Future monitoring may confirm iron and manganese concentrations in Pond water consistently approach or exceed WQOs. Iron and manganese concentrations in Delta Packing Company's pond wastewater also exceed WQOs (WDRs Order R5-2016-0029, Finding 13). This evidence suggests iron and manganese are waste constituents of concern that have the potential to degrade groundwater. The Tentative Order's Antidegradation Analysis does not, but should, include these two constituents (see, for example, Finding 57.b in WDRs Order R5-2016-0029).

*Inconsistent WQOs for salinity constituents*. The Upper MCL for TDS is 1,000 mg/L. The Secondary Recommended MCLs for TDS and chloride are 500 mg/L and 250 mg/L, respectively. The lowest agricultural water quality goals for EC, sodium, and chloride are 700 umhos/cm, 69 mg/L, and 106 mg/L, respectively. The Analysis uses the correct WQOs for nitrate and TKN. However, it uses the Upper MCL for TDS, the Recommended MCL for chloride, and the lowest agricultural water quality goals for EC and sodium. The intent of the Antidegradation Policy is to maintain the highest water quality for the maximum public benefit. The Central Valley Water Board should not "give away the store" to a private for-profit business that since 1979 had conducted an unauthorized waste discharge and only recently submitted a RWD that failed to properly characterize the discharge. Unless technical justification is provided, the WQOs for the identified constituents of concern should be: 700 umhos/cm EC, 500 mg/L TDS (or, preferably a lower value corresponding to an EC of 700 umhos/cm), 10 mg/L each for Nitrate as N and for TKN, 69 mg/L sodium, and 106 mg/L chloride.

The Tentative Order's Finding 53 compares the TDS value of 307 mg/L of one sample to the average source water TDS of 271 mg/L, and concludes the discharge is "unlikely to impact groundwater" for TDS. The Tentative Order establishes an effluent limitation of 600 mg/L for annual average TDS concentration without justifying why the limitation should be so

much higher than discharge TDS, as currently characterized. Again, another example of why a complete discharge characterization is necessary for a RWD to be determined complete.

Finding 54 lists two best management practices: (1) solids capture (via screened floor drains) and off-site disposal and (2) even wastewater application over the LAA. Finding 55 inappropriately elevates these arguably bare-bone BMPs as BPTC measures and concludes these will be sufficient to "minimize the extent of water quality degradation resulting from the Facility's operation and discharge." This finding makes this conclusion without

- A complete characterization of the discharge and accumulated Pond sludge for all waste constituents of concern
- An estimate of the annual Pond wastewater infiltration rate (feet/year)
- Evidence indicating waste constituents are not accumulating in Pond bottom soils to the extent that threatens violation of Discharge Prohibition A.3 regarding the discharge of designated waste.

Arguably, BPTC measures that would "minimize the extent of water quality degradation resulting from the Facility's operation and discharge" include periodic monitoring of pond bottom soils to assess the extent to which waste constituents are accumulating in the soil profile in concentrations that threaten to unreasonably degrade groundwater. If such monitoring confirms this threat, the Tentative Order should include a provision to respond to this turn of events. The provision should require the Discharger to cease discharge to the Pond until such time it or a replacement pond is equipped with a liner similar to that specified the in State General Winery Order. Because lining the Pond would essentially cease Pond infiltration, the Discharger will also have to demonstrate its 11-acre LAA is sufficiently sized to dispose of all the Facility's wastewater and storm water flows in accordance with the Tentative Order's terms and conditions.

Finding 62, the Title 27 exemption finding, shows the pitfalls of using a template for Tentative Orders. I have recently communicated my concern to management about the trend in recent WDRs to abbreviate past Title 27 boilerplate findings to almost an afterthought and recommend for inclusion the following new findings:

1. California Water Code (CWC) Section 13173 defines designated waste as either:

    a. Hazardous waste that has been granted a variance from hazardous waste management requirements pursuant to Section 25143 of the Health and Safety Code.

    b. Non-hazardous waste that consists of, or contains, pollutants that, under ambient environmental conditions as a waste management unit, could be released in concentrations exceeding applicable water quality objectives or could reasonably be expected to affect beneficial

uses of the waters of the state contained in the appropriate state water quality control plan

2. Release of designated waste is subject to full containment pursuant to the requirements of Title 27. Section 20090(b) of Title 27 exempts discharges of designated waste to land from Title 27 containment standards provided the following conditions are met:

   a. The applicable regional water board has issued waste discharge requirements, or waived such issuance;

   b. The discharge is in compliance with the applicable basin plan; and

   c. The waste is not hazardous waste and need not be managed according to Title 22 as a hazardous waste.

A site-specific finding should follow that provides the technical justification for exempting the Pond discharge from Title 27 prescriptive standards.

Finding 63 should ideally be tailored for the discharge situation (i.e., the Facility has no dedicated storm water basins).

**IT IS HEREBY ORDERED**. Terminology used in this section should ideally match that presented in the findings. For example, Flow Limitation B.1 refers to the Pond as a "wastewater treatment pond." Granted, passive treatment for BOD and nutrient removal does occur in Pond, but information in the Tentative Order suggests that the Discharger doesn't operate the Pond for treatment, but for disposal (and now for storage prior to reuse on a new cropped LAA). Perhaps designate the unlined wastewater pond as "Pond" from the start and use that term throughout the Tentative Order. The second sentence in Flow Limitation B.1, "Flows will be calculated as a portion of the total flow, which will include storm water and process wastewater and excludes supplemental irrigation water." What is meant by "will be calculated as a portion of the total flow?"

Because the vast majority of wastewater and storm water discharged to the Pond infiltrates to groundwater, it is more appropriate to establish the effluent flow limitation to the combined flow of wastewater and storm water entering the Pond. Should the Tentative Order be adopted in its current form, I predict that the "effluent flow" to the LAA will be considerably less than the 15 MG annual rate allowed by the Tentative Order. Unless technical justification is provided, the effluent flow limitation should apply to Pond influent flow. And, the MRP should require the Discharger to install and operate another meter to monitor Pond influent flow. Monitoring both Pond influent *and* effluent flow is necessary to estimate the amount of impounded wastewater and storm water that infiltrates annually to groundwater.

Effluent Limitation C.1 states:

> The total volume of treated wastewater and contact storm water in the wastewater pond shall not exceed an **TDS annual average concentration of 600 mg/L**. The FDS flow weighted annual average is based on total flow and concentration of wastewater discharged.

This limitation needs work. Perhaps something like:

> The 12-month rolling average TDS of pond wastewater shall not exceed 600 mg/L Compliance with this limit shall be determined monthly.

Discharge Specification E.13 does not specify when the Discharger is to begin monitoring of pond sludge accumulation. Perhaps specify the beginning date with, for example, "within 60 days of Order adoption." Also, because Pond sludge is a concentrated source of waste constituents and its removal a potential odor and fly nuisance, the Tentative Order should include a finding discussing Pond sludge accumulation rates and removal practices.

Discharge Specification E.10 cites E.7 and E.8 (should be E.8 and E.9).

There should be a discharge specification regarding cross connections along the lines of:

> No physical connection shall exist between wastewater piping and any domestic water supply or domestic well, or between wastewater piping and any irrigation well that does not have an air gap or reduced pressure principle device.

Groundwater Limitation preface should read: "Release of waste constituents from any portion of the facility *and the LAA* shall not cause groundwater to:"

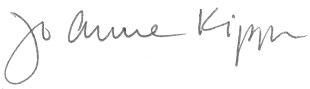
**Monitoring and Reporting Program**. The Flow Monitoring section refers to a compliance flow meter location depicted in Attachment C. At this location, the flow meter would monitor flow discharged from the pond to the LAA (or on-site irrigation). The Flow Monitoring section begins with, "When wastewater is discharged to the pond, the Discharger shall monitor wastewater flows from the" cited flow meter location. If the intent is for the monitoring data to show compliance with Effluent Flow Limitation B.1, then the section should read: "When wastewater is discharged ~~to~~ *from* the pond…." And, again, what is meant by "Flows will be calculated as a portion of total flow?"

As mentioned previously, the effluent flow limitation should apply to Pond influent flow and the MRP should require a meter to monitor this flow (also update Attachment C).

The Tentative Order establishes Discharge Specification E.7 concerning the minimum Pond DO content. Yet, the MPR does not, but should, require Pond DO monitoring.

The MRP should require the Discharger to estimate and report the annual net infiltration rate of wastewater and storm water from the Pond in feet/year (e.g., by means of an annual water balance). Also, the MRP should require annual monitoring of the Pond soil profile to a minimum depth of six feet bgs. The soil samples should be analyzed for the typical waste constituents of concern, including TKN, nitrate, salinity (TDS or EC), iron, manganese, and total organic carbon. Annual reports should include a summary of this data and an evaluation of the extent to which the existing Pond discharge threatens to unreasonably degrade groundwater.

Thank you for the opportunity to submit these comments.



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