

**Regional Water Quality Control Board
Central Valley Region
Board Meeting –25/26 July 2013**

**RESPONSE TO WRITTEN COMMENTS ON TENTATIVE WASTE DISCHARGE
REQUIREMENTS FOR SUN-MAID GROWERS OF CALIFORNIA,
KINGSBURG FACILITY
FRESNO COUNTY**

At a public hearing scheduled for 25/26 July 2013, the Regional Water Quality Control Board, Central Valley Region (Central Valley Water Board) will consider adoption of Waste Discharge Requirements (WDRs), which were circulated as tentative on 21 May 2013 for discharges from the Sun-Maid of California (Sun-Maid), Kingsburg Facility to 81.1 acres of farmland. This document contains responses to written comments received from interested parties regarding the tentative WDRs. Written comments from interested parties were required to be received by the Central Valley Water Board by 5:00 p.m. on 24 June 2013 in order to receive full consideration. Comments were received by the deadline from:

- a. Sun-Maid of Kingsburg and its consultant Provost & Pritchard Consulting Group, and
- b. Ms. JoAnne Kipps.

Staff has made some minor changes to the proposed WDRs based on the comments. Staff has also made changes to the WDRs to increase clarity and fix typographical errors. Where specific changes are presented below, additions are in bold text and deletions are in strike-out.

SUN-MAID COMMENTS

SUN-MAID - COMMENT - 1: Sun-Maid is requesting a change in the proposed minimum three day cycle average for BOD loading to reflect its irrigation practices. Sun-Maid proposes sprinkler applications be limited to 30 to 120 minutes followed by a rest period that is twice the application period. Worst case applications would be a maximum of two hours followed by at least a four hour rest period. Sun-Maid reasons such management practices will ensure adequate irrigation of the crop without generating soil saturation and anaerobic conditions. Sun-Maid indicates soil moisture can be demonstrated using existing soil moisture probes.

RESPONSE: The proposed WDRs have been modified to reflect how the wastewater will be applied with shorter application and resting periods. Findings 17, 46, 47, 49, 50, 57.b, Discharge Specification D.3, and Land Application Area Specification D.3 of the proposed WDRs were modified. Specific modifications to Finding 17, Finding 47, Discharge Specification B.3., and Land Application Area Specification D.3 are shown below:

17. ~~Using the~~ **Subsequent to** the March 2013 updated water and nutrient balances, the Discharger ~~has~~ requested a **application periods of between 30 minutes to 120 minutes (two hours) followed by a rest period of at least two times the application period and a cycle average (3 to 5 days) BOD loading rate of 150 lbs/ac/day. **Implementation of this request will result in lower loadings than presented in the March 2013 updated water and nutrient balances.** This Order sets a **maximum application period of two hours followed by a rest period of at least two times the application period.** ~~minimum three day cycle average (one day application, two days rest).~~ This Order also sets a ~~cycle average~~ BOD loading rate for the Land Application Area of 150 lbs/ac/day consistent with Risk Category 2 in the Guidance Manual prepared by the California League of Food Processors for discharges using sprinkler application to land with well drained soils. According to the Guidance Manual, discharges to land under Risk Category 2 pose a minimal risk of unreasonable degradation to groundwater provided reasonable care is taken to properly manage the Land Application Area.**

- B.3. The discharge shall not exceed a ~~cycle average~~ BOD loading rate of 150 lbs/ac/day at any time. Compliance with this limit shall be determined by using the average of the last three effluent BOD monitoring results.
- D.3. Wastewater shall be applied to the Land Application Areas with appropriate resting periods. **The maximum application period shall be two hours. The minimum rest period shall be at least twice the preceding application period.** ~~for the proposed cycle average (i.e., three day cycle average; application on day one, rest days two and three, repeat) between each wastewater application. The minimum application cycle shall be three days.~~
47. c. **Division of the 81.1 acres of Land Application Areas into 35 separate parcels of about 2.3 acres each.**
- d. **Sprinkler** application of wastewater **to each parcel of the** Land Application Areas with a ~~cycle average~~ loading rate for BOD of 150 lbs/ac/day or less.
- e. **Sprinkler** application of wastewater at rates that will not allow wastewater to stand for more than 48 hours.
- f. **Sprinkler application of wastewater to each parcel from 30 to a maximum of 120 minutes, followed by a minimum rest period of twice the application period.**
- g. Resting periods ~~of three to five days~~ between wastewater applications.

The Monitoring and Reporting Program and the Information Sheet were modified to reflect the above changes.

SUN-MAID - COMMENT - 2: Provost and Pritchard reports Sun-Maid changed several of its wastewater management practices to reduce loading of constituents that may be contributing to groundwater degradation. For example, hydrogen peroxide or potassium hydroxide is now used for cleaning operations instead of sodium hydroxide, potassium hypochlorite is now used instead of sodium hypochlorite to disinfect source water, calcium hydroxide is now used in place of sodium hydroxide for wastewater pH adjustment, gypsum applications to the land application area have been discontinued and in-plant, Sun-Maid is requiring physical removal of raisin solids instead of rinsing them down the drain and relying solely on wastewater screens for removing them, as was the practice in the past.

RESPONSE: The proposed WDRS and Information Sheet have been modified to reflect the changes in the types of cleansers used. Items j – m, as shown below, were added to Finding 47 of the proposed WDRs.

- j. **Elimination of the use of sodium based cleansers for the cleaning and sanitizing of the processing equipment and replacement with peroxide and/or potassium based cleaning products.**
- k. **Elimination of sodium hypochlorite for source water disinfection and replacement with potassium hypochlorite.**
- l. **Elimination of sodium hydroxide to adjust pH and replacement with calcium hydroxide.**
- m. **Implementation of in-plant solids collection and removal of waste raisins and residuals and reduction of the volume of solids washed into the waste stream.**

SUN-MAID - COMMENT - 3: Provost and Pritchard reports Sun-Maid video logged monitoring well MW-1 in April 2013 and found that sediment had entered the well, and the dedicated pump was

drawing sediment into the water that is sampled. How the sediment entered the well is unknown, but Sun-Maid has proposed to replace the well and will work with Central Valley Water Board staff to determine the location of the replacement. Sun-Maid notes that the material being sampled by existing MW-1 may not be representative of the groundwater at the site.

RESPONSE: Finding 35, 38, and Provision F.12 of the proposed WDRS and the Information Sheet have been modified to reflect the information regarding MW-1. Specific changes made to Finding 35 are shown below:

35. MW-1 was installed as a background well, but it is set about 40 to 50 feet into the 45-acre Land Application Area and appears to be influenced by the discharge. Beginning in mid-2010, EC and nitrate as nitrogen results from this well began increasing dramatically as shown in the following table. **The well was video logged in April 2013 and found to have excess sediment/mud in the base into which the pump was set. It was unclear how the sediment entered the well, but the well service that did the inspection recommended either raising the pump above the sediment or installing a new well. Sun-Maid has elected to replace the well. Provision F.12 requires Sun-Maid to submit a work plan for a groundwater monitoring well network assessment. The location and depth of a replacement well for MW-1 can be assessed at that time.** ~~cause of the sudden increase in constituent levels in MW-1 is unknown, but the data indicates either the discharge is compromising the water quality in the well or the well itself may have been compromised (damaged).~~

MS. KIPPS COMMENTS

Ms. Kipps' letter provides numerous comments on the content of the proposed WDRs Findings and three recommendations for changes to them. Ms. Kipps' letter recommends one change to the requirements of the WDRs. Below are her salient comments followed by staff's responses.

MS KIPPS – COMMENT 1: Ms. Kipps states, "The Tentative Order indicates that Discharger did not characterize the discharge for salinity (e.g., electrical conductivity or fixed total dissolved solids) and, instead, characterizes discharge EC as 542 umhos/cm based on data obtained by a third party (Selma-Kingsburg-Fowler County Sanitation District). The Tentative Order should provide additional information on how estimated discharge EC was derived."

RESPONSE: Sun-Maid has characterized its wastewater for EC, which is a surrogate for salinity. Footnote No. 3 to Finding 11 was modified to clarify how the effluent EC data presented in the Finding were obtained. Although existing WDR Order 84-035 does not require Sun-Maid to analyze the effluent for EC, the EC of the effluent is recorded by Selma-Kingsburg-Fowler (SKF) wastewater treatment facility (WWTF) personnel as it is discharged from the holding sump at the Sun-Maid Facility to the WWTF. The wastewater delivered to SKF is the same wastewater discharged by Sun-Maid to its land application areas. The proposed WDRs require rigorous wastewater EC, TDS and FDS monitoring.

Footnote No. 3 to Finding 11 has been modified as follows:

3. EC is not part of the Monitoring and Reporting Program Order 84-035-, **but the EC of Sun-Maids effluent is recorded by SKF WWTF personnel.** The EC value presented was **averaged** estimated from two years of SKF effluent data: **from 2008 – 2010.**

MS KIPPS - COMMENT 2: Ms. Kipps notes that Finding 14 indicates the Sun-Maid applied solids to the land application areas, while the 2010 Report of Waste Discharge indicates all solids will be disposed of offsite. Ms. Kipps states that this inconsistency in discharge practices are a cause for concern.

RESPONSE: No changes were made to the TWDRs. The Finding states the facts. Provision F.12 requires Sun-Maid to develop and submit a Solids Management Plan to address the disposal and handling of all solids and grit generated during the processing of raisins.

MS KIPPS - COMMENT 3: Ms. Kipps recommends that Finding 15 be modified to replace the statement “for recycling of wastewater,” with “for treatment, reuse, and disposal of wastewater.”

RESPONSE: The Finding and associated parts of the proposed WDRs have been modified to reflect the requested change.

MS KIPPS - COMMENT 4: Ms. Kipps recommends that Finding 17 be modified to state whether or not the California League of Food Processors’ Guidance Manual has been subject to an independent peer review.

RESPONSE: The requested change has not been made. The manual provides guidance that was developed by the California League of Food Processors.

MS KIPPS - COMMENT 5: Ms. Kipps takes exception to the statement included in Finding 46.a. that, “*This combined with a cycle average BOD loading rate of 150 lbs/ac/day or less should prevent organic overloading of the Land Application Areas.*” Ms. Kipps recommends Finding 46.a. be revised to describe the technical evidence supporting the conclusion that the prescribed BOD loading rate should prevent organic overloading.

RESPONSE: No changes were made to the TWDRs. The evidence that supports proposed BOD loading rate follows:

- a. The proposed application rate for BOD of 150 lbs/ac/day is lower than previously authorized by WDRs Order 84-035, which contained no limits for BOD and nitrogen. Under WDRs Order 84-035, average monthly BOD applications were as high as 224 lbs/ac/day, and the Board did not require specific management of the discharge.
- b. The Board has not received recent nuisance odor or vector complaints regarding Sun-Maid’s wastewater disposal operations.
- c. Groundwater does not show the presence of significant reducing conditions that would be indicative of organic overloading.
- d. While organic loading to the existing land application area may have contributed, possibly indirectly, to groundwater degradation down gradient of the site, as Ms. Kipps notes in her letter, the degradation is more likely associated with Sun-Maid’s application of gypsum to increase soil permeability, and/or the use of sodium-based cleaners. As noted above, Sun-Maid has ceased gypsum applications and swapped its sodium-based cleaners and disinfectants for those that do not contain sodium.

MS KIPPS - COMMENT 6: Ms. Kipps questions how Central Valley Water Board staff could determine “the discharge relative of best practicable treatment or control” when the Discharger didn’t adequately characterize its potential to degrade groundwater and does not treat for BOD removal prior to land application. Ms. Kipps states that since groundwater already contains nitrates exceeding the water quality objective, the maximum nitrogen application rate should not exceed 75% of the crop agronomic demand.

RESPONSE: No changes were made to the TWDRs. When the Board evaluates whether a particular Discharger utilizes “best practicable treatment or control” of the discharge, it evaluates not only the treatment or control technologies utilized by other Dischargers, but also the practicality and benefits of implementing alternative technologies at a specific site. This means that the Board’s evaluation is both site-specific and discharger-specific, which frequently makes it difficult to compare seemingly similar Dischargers. In order to lessen the environmental effects of its discharge, Sun-Maid has implemented many management practices, including screening its discharge and irrigating with a sprinkler system, which provides for better wastewater distribution than other irrigation methods. The proposed WDRs will require Sun-Maid to limit BOD loading to much less than has historically been authorized and applied (WDRs Order 84-035 contains no BOD or nitrogen loading limits). The Board can reasonably find that the suite of management practices that Sun-Maid employs at the Kingsburg Facility, including those practices that are designed to meet the Board-imposed BOD limit of 150 lbs/acre/day, are reflective of best practicable treatment or control methodologies for this Discharger.

Regarding the potential for the discharge to contribute to existing groundwater nitrate pollution, the proposed WDRs limit the application of all sources of nitrogen to the crop uptake rate. Arbitrarily limiting the application rate to something less than the crop uptake rate would reduce the ability of the crop to remove not only nitrogen, but other salt constituents. Additionally, should some of the applied nitrogen pass beyond the root system, it would be subject to some losses in the soil column.