

Central Valley Regional Water Quality Control Board  
13 August 2009 Board Meeting

Response to Comments for Sutter Home Winery  
Sutter Home Winery Westside Facility  
Tentative Waste Discharge Requirements

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The following are Central Valley Regional Water Quality Control Board (Central Valley Water Board) staff responses to comments submitted by an interested party regarding the tentative Waste Discharge Requirements (WDRs) for the Sutter Home Winery Westside Facility. The order was distributed for public comment on 4 June 2009. Comments were required to be submitted to the Regional Water Board by 9 a.m. on 6 July 2009. Comments were received from the California Sportfishing Protection Alliance (CSPA) within the comment period. The comments were accepted into the record and are summarized below, followed by Regional Water Board staff responses.

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**CALIFORNIA SPORTFISHING PROTECTION ALLIANCE COMMENTS**

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**Designated Party Status** CSPA requested designated party status with regard to the WDRs revision for the facility. The board will address this request separately.

**Comment No. 1 The proposed Order must be revised to include an NPDES permit in accordance with California Water Code Section 13376.**

The comment also states the following:

- a. The California Water Code (CWC) requires submittal of a Report of Waste Discharge (RWD) for discharge of wastewater to surface water.
- b. Because the Discharger lacks sufficient storage, wastewater will be applied throughout the year, which will result in waste being deposited on surface soils.
- c. As a result of the Land Application Areas (LAAs) being located in the 100-year flood zone and the Discharger's operational requirement to discharge year round, waste will be discharged to surface waters during periods of flooding. The Order must be revised to be a National Pollutant Discharge Elimination System (NPDES) permit or protect the land application areas from flooding.

**RESPONSE:**

The comment seems to assume that wastewater discharge will continue whether the LAAs are flooded or not. That assumption is incorrect; application of wastewater to flooded LAAs is specifically prohibited as described below.

- a. Because there will not be a discharge to flooded LAAs, an NPDES permit is not required. Discharge to the LAAs is restricted as follows:

<u>Reference</u>	<u>Requirement</u>
DP A.1	Discharge of wastes, including tailwater, to surface waters or surface water drainage courses is prohibited.
DS B.10	The wastewater treatment ponds and LAAs shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency. Adequate LAA shall be available to replace LAA made unusable by a flood event.
DS B.11	The Discharger shall cease land application of treated wastewater no later than 24 hours in advance of predicted large storm events
LAAR D.15	A berm shall be maintained around the perimeter of the LAAs to prevent the runoff of treated wastewater or stormwater.
LAAR D.17	The Discharger may not discharge effluent to the LAAs within 24 hours of a predicted storm event, during periods of precipitation, and for at least 24 hours after cessation of precipitation, or when soils are saturated.

DP denotes Discharge Prohibition. DS denotes Discharge Specification. LAAR denotes Land Application Area Requirement.

- b. Wastewater will be applied to LAA acreage that is in the 100-yr flood zone. However, the Discharger is required to manage the application so that wastewater percolates before a flood event.
- c. It is noted that only approximately 49 acres of the immediately available 107.5 acres are located in the 100-yr flood zone, and there is an additional 79 areas located outside that flood zone. A provision has been added to the Order that requires the Discharger to prepare the additional 79 acres to accept wastewater in the event the 49 acres becomes unavailable.

**Comment No. 2 The proposed Order fails to require the Discharger to comply with California Code of Regulations (CCR) Title 27 requirements and must be revised to comply with Title 27.**

The comment also states the following:

- a. The proposed Order does not provide sufficient data to demonstrate that the discharge complies with the Basin Plan and is exempt from Title 27 requirements.
- b. The Discharger has not provided any data to support claims that future modifications to the facility will reduce waste concentrations. Planned modifications will increase waste constituent loading rates.

- c. Title 27 requires demonstration, prior to application of waste, that the waste can be degraded, transformed, or immobilized in the treatment zone. Lacking a demonstration, the RWD is incomplete.

## **RESPONSE:**

The evaluation of the applicability of Title 27 to the discharge that is provided in Finding No. 60 has been modified to address recent State Board clarification on this issue. The finding states the discharge is exempt from Title 27 because the Regional Water Board is issuing WDRs, the WDRs require compliance with the Basin Plan, and the waste doesn't need to be managed as a hazardous waste.

Each of the items is addressed below:

- a. The proposed Order presents data to initially determine the discharge is exempt from Title 27. However, some of the information consists of forecasts of water quality improvement that are based on the Discharger's experience at a similar winery in St. Helena, Napa County. That data was considered appropriate because the activities at the St. Helena winery are a better match for the future activities at the Westside Facility than the present activities.
- b. The data that is provided in the proposed Order includes projected wastewater quality and quantity, historic groundwater data from wells, and grab groundwater sampling performed in the proposed new land application sites. The groundwater data indicates significant variation of groundwater quality exists across the site. The Order requires further investigation of the ambient groundwater quality at the site. As described in Provision G.1.e, the FDS ambient groundwater value will be compared to the annual average effluent limit. If the ambient groundwater value is higher than the effluent limit, a higher effluent limit may be pursued; if the ambient groundwater value is lower than effluent limit, a Facility Improvement Workplan is required. Section F presents interim groundwater limits that are effective immediately and require no degradation beyond existing ambient groundwater quality. Final groundwater limits are effective on 1 July 2014 and provide numeric limits, or ambient groundwater concentrations, whichever is greater.
- c. As stated above, the proposed Order presents sufficient data to initially determine the discharge will comply with the Basin Plan and is exempt from Title 27 requirements.
- d. It is correct that the Discharger has not provided any site-specific data supporting claims of future wastewater quality. But those data are not available because the improvements have not been constructed. The proposed Order is written to encourage salinity reduction and control. As described above, comparison of the ambient groundwater quality and annual average effluent limit can trigger additional source control. It will be in the Discharger's self-interest to control salinity to the maximum extent possible so as not to incur additional costs. The MRP has been modified to clarify the annual comparison of the ambient groundwater quality and the average effluent limit.

Wineries have been regulated in the non-15 program at the Central Valley Water Board. The Sutter Home Winery Westside Facility is already included in the non-15 program. It is appropriate to continue the non-15 permitting status pending evaluation of groundwater quality and effluent limits. As described above, additional source control can be required if needed.

State Water Resources Control Board (State Board) Resolution No. 68-16 (the Antidegradation Policy) requires that the Regional Water Board, in regulating the discharge of waste, must maintain the high quality of waters of the state until it is demonstrated that any change in quality will be consistent with maximum benefit to the people of the state, will not unreasonably affect beneficial uses, and will not result in water quality less than that described in the Regional Water Board's policies (e.g., quality that exceeds water quality objectives). Resolution No. 68-16 also requires that waste discharged to high quality waters be required to meet WDRs that will result in the best practicable treatment or control of the discharge. Resolution 68-16 prohibits degradation of groundwater quality as it existed in 1968, or at any time thereafter that groundwater quality was better than in 1968, other than degradation that was previously authorized. An antidegradation analysis is required for an increased volume or concentration of waste.

The property where the winery is located, and the surrounding property, has been used for agriculture, including livestock enclosures for many years. Area groundwater has been impacted by the operations. Degradation caused by prior activities at the facility may require corrective action.

However, limited degradation of high-quality groundwater by some of the typical waste constituents released with discharge from a winery (after effective source control, treatment, and control) may be consistent with maximum benefit to the people of California at appropriate sites. When allowed, the degree of degradation permitted depends upon many factors (i.e., background water quality, the waste constituent, the beneficial uses and water quality objectives, management practices, source control measures, waste constituent treatability).

This Order contains tasks for assuring that BPTC and the highest water quality consistent with the maximum benefit to the people of the State will be achieved. Upon completion of the scheduled tasks, this Order will prohibit the Discharger from causing or contributing to an exceedence of groundwater objectives, and minimizes any degradation that may occur pending completion of the required tasks. Completion of these tasks, and implementation of the approved strategies developed from that work, will ensure that BPTC and the highest water quality consistent with the maximum benefit to the people of the State will be achieved.

The Discharger expects the facility to provide four employees year-round and an additional 20 seasonal jobs. Prohibiting discharges pending completion of the required facility upgrades could eliminate some or all those jobs. In addition, it is reasonable to assume that the facility provides an economic benefit to the growers that will use the crushing facilities, and to equipment suppliers and transportation companies. Any limited, short-term degradation that may result while the Discharger completes the required studies is consistent with maximum benefit to the people of the State. This Order establishes requirements to ensure the discharge will not unreasonably threaten

present and anticipated beneficial uses or result in groundwater quality that exceeds water quality objectives set forth in the Basin Plan. This Order establishes effluent limitations that are protective of the beneficial uses of the underlying groundwater, and requires a hydrogeologic study to determine ambient groundwater quality to determine if the discharge of waste further impacts the underlying groundwater quality. Based on the result of the scheduled tasks, this Order may be reopened to reconsider effluent limitations and other requirements to comply with Resolution 68-16. Accordingly, the discharge is consistent with the antidegradation provisions of Resolution 68-16.

**Comment No. 3 The proposed Order must be revised to address seasonal variability of nutrient uptake by crops.**

The comment also states the following:

- a. The application of waste is highest during the early spring and winter when crop uptake is low, and vineyards are dormant in the late fall and early winter season.
- b. Groundwater is shallow and waste constituents will pass through to groundwater contributing to further degradation. Groundwater at the site is already polluted and wastewater application during months of low uptake will exacerbate the groundwater problem.

**RESPONSE:**

Attempting to limit nitrogen application seasonally based on crop uptake would be onerous for dischargers and is not likely to significantly improve groundwater quality protection. Each of the items is discussed below:

Each of the items is addressed below:

- a. The comment is correct in that the application of nitrogen is not limited except for the annual total limit of 300 lbs/ac/year. But the WDRs contain numerous controls on how and when wastewater can be applied. Those requirements are intended to minimize the potential for generation of nuisance conditions (odors, mosquito/fly breeding), protection of groundwater quality, and reuse of wastewater to the extent possible.

In general the application of nitrogen in wastewater does not mean that it is immediately available for the crop to take up. Nitrogen can be in organic or inorganic form when applied at the LAA. Essentially all nitrogen absorbed from soil by plant roots is in the inorganic form of either nitrate or ammonium. Soil conditions that promote plant growth (warm and well aerated) also promote conversion of ammonium to nitrate. As a result, nitrate is generally more abundant when growing conditions are most favorable. Furthermore, not all nitrogen applied to a crop will be taken up by the crop. Some is unavailable as it is in the wrong chemical compound, some will be lost to ammonia volatilization, some will be denitrified and lost to the atmosphere, and some will be bound in microbes. In addition, many of the processes described above

are temperature dependant or oxygen content dependant. Limiting the application of nitrogen to the crop uptake rate is considered protective given the large numbers of variables that cannot easily be controlled.

- b. Groundwater is shallow, but monitoring performed in the 15.5 acre LAA does not show a clear relationship between land application of wastewater and groundwater nitrate concentrations. For example, both Wells GW-5 and GW-6 are located at the downgradient boundary of the 15.5 acre LAA; Well GW-5 has an average nitrate concentration (21.8 mg/L) that is 5.2 times higher than the concentration reported in Well GW-6 (4.2 mg/L). Furthermore, some of the highest concentrations of nitrate and/or electrical conductivity were reported in samples collected in areas where no winery wastewater has been applied. As stated in the Groundwater Conditions section of the tentative Order (beginning with Finding No. 33), groundwater quality at the site is highly variable, the sources of degradation are not defined, and further investigation of groundwater quality is needed. Because crops will take up at least a portion of the nitrogen applied, it is anticipated that expanding wastewater application at the facility will not degrade groundwater quality further.

**Comment No. 4 Finding No. 27 is incorrect and must be revised.**

The comment also states the following:

- a. Finding No. 24 states 55 percent of the LAA will be dedicated to vineyards. Typically, vineyards are subjected to minor annual pruning and will not be cropped as indicated in Finding No. 27.

**RESPONSE:**

It should be noted that only 25 acres of the immediately available 107.5 acres (approximately 23 percent) will be cropped as vineyards. When the future LAAs are developed, approximately 55 percent of the total LAA will be vineyards if a change in the crop grown is not made. The management of vineyards will remove nitrogen and FDS. After harvesting the grapes, the previous year's cane growth and leaves are removed through pruning. However, after reviewing the finding, it was noted that the uptake rate for vineyards was not accurately presented. Finding No. 27 has been modified to clarify the uptake rate of the vineyards, which is less than the uptake rate presented in the finding.

- a. According to the Western Fertilizer Handbook, grapes take up 125 lbs/ac/year of nitrogen. That uptake rate is greater than the annual application of nitrogen from wastewater sources (79.2 lbs/ac/year). The crop uptake rate can be higher than 125 lbs/ac/year when cover crops are grown between the rows of grape vines.