

INFORMATION SHEET

ORDER R5-2015-XXXX
GOLDEN STATE VINTNERS
CUTLER WINERY
TULARE COUNTY

Background

Golden State Vintners, a California Corporation (hereafter GSV or Discharger), owns and operates the Winery at 38558 Road 128 in Tulare County, approximately two miles south of Cutler. The Winery has been in operation since 1936 and is currently regulated by Waste Discharge Requirements (WDRs) Order 87-114, adopted by the Central Valley Water Board on 26 June 1987. Order 87-114 allows a maximum daily discharge of up to 0.35 million gallons per day (mgd) from August through November and up to 0.1 mgd from December through July of stillage and wash water to approximately 50 acres of land adjacent to the Winery.

Since 1987 activities at the Winery have changed. In 1996 the Winery ceased distillation activities and stopped discharging stillage waste to the land application area. In 2001 the Winery ceased grape crushing and fermentation activities. GSV acquired the Winery in 2004. Currently the Winery acts as a wine blending, storage, and packing facility, with flows below the limits prescribed in Order 87-114.

On 9 July 2014, GSV submitted a Report of Waste Discharge (RWD) to update its WDRs and address operational changes at its Winery. Additional information was submitted on 1 October 2014 to complete the RWD.

Wastewater

Wastewater generated at the Winery consists of tank rinse water, tanker wash water, storm water, incidental spillage and cleaning water from the export skid and packaging plant, cooling water condensate, boiler blow down, and water softener regenerate.

The Winery operates year-round and receives liquid wine and juice from other facilities owned by Golden State Vintners and The Wine Group. In 2014 the Winery added the production of Special Natural (SN) wines to its product line, and in the future may add wine distillation to increase the alcohol content, and/or a wine ion exchange system. The wine and juice is received in trucks and unloaded in the receiving area then pumped to insulated holding tanks. From the holding tanks the liquid is refrigerated and cooled prior to filtering and clarification for export or packaging.

Cleaning chemicals used at the Winery include ethyl alcohol, Evonik Peraclean 5%, Shureclean Plus, Cleaner QT-185, BCS General Cleaner, Bristol Sterling Super XFG-4890, and potassium hydroxide. Other chemicals in use that may be present in the wastewater include sodium hydroxide, hydrochloric acid, sodium hypochlorite, and diatomaceous earth (DE).

Current flows based on data provided by the Discharger for the last five years, range from about 0.02 to 0.054 million gallons per day (mgd). The RWD proposes an average daily flow

limit of 0.075 mgd with a maximum daily flow of 0.15 mgd to handle projected increases in Winery operations. These are below the current limits prescribed in Order 87-114.

Order 87-114 requires the Discharger to sample its wastewater for biochemical oxygen demand (BOD), nitrate as nitrogen (NO₃-N), Total Kjeldahl Nitrogen (TKN), and total nitrogen on a monthly basis. Table 1 presents average, minimum, and maximum wastewater concentrations for these constituents based on data collected from January 2009 through August 2014:

TABLE 1. Wastewater Quality

Constituent	Units	Wastewater Quality		
		Average	Minimum	Maximum
Biochemical Oxygen Demand (BOD)	mg/L	4,380	53	11,900
Nitrate as Nitrogen (NO ₃ -N)	mg/L	5.1	<0.1	9.4
Total Kjeldahl Nitrogen (TKN)	mg/L	12	2	53
Total Nitrogen	mg/L	18	4.2	60

Additional samples of the wastewater were collected by the Discharger in April 2014, and Central Valley Water Board staff in September 2014 to further characterize the quality of the discharge. The results are presented in Table 2 below:

TABLE 2. Wastewater General Minerals and Nitrogen Forms

Constituent	Units	8 April 2014	4 September 2014
pH	s.u.	7.1	5.8
Electrical Conductivity (EC)	umhos/cm	810	1,400
Biochemical Oxygen Demand (BOD)	mg/L	2,400	4,500
Total Dissolved Solids (TDS)	mg/L	820	2,800
Fixed Dissolved Solids (FDS)	mg/L	380	1,080
Nitrate as Nitrogen (NO ₃ -N)	mg/L	1.6	1.9
Total Kjeldahl Nitrogen (TKN)	mg/L	12	48
Total Nitrogen	mg/L	14	50
Bicarbonate	mg/L	140	280
Calcium	mg/L	67	37
Magnesium	mg/L	29	21
Sodium	mg/L	51	250
Potassium	mg/L	24	97
Chloride	mg/L	92	54
Sulfate	mg/L	46	80

Since the Winery is primarily used for storage and processing, the wastewater is not a typical winery waste stream that may include gape solids or tank bottoms and is not expected to show significant fluctuations due to seasonal operations.

Solid waste generated at the Winery consists of spent DE from two filter systems, a pack press filter system and a Velo screened filter system. Spent DE from the pack press filters is stored on a concrete pad and taken off-site for use as a soil amendment. Residual DE from the Velo screen filter is discharged into the wastewater collection system and applied to the land application area. The RWD estimates that approximately 32,000 pounds of residual DE from the Velo screen filter is discharged to the land application area on an annual basis.

Discharge

Wastewater from the Winery drains to a series of ten sumps scattered throughout the site. From the sumps the wastewater is pumped to the collection system where it flows by gravity to a 900-gallon surge tank on the north end of the production area. In addition, a majority of the precipitation which falls on the paved areas at the site is collected in the various sumps and added to the waste stream. Storm water runoff from the building on the southern portion of the site drains to the Button ditch just south of the Winery. According to the RWD this is insignificant and does not contact any of the production areas. GSV is in the middle of a capital improvement project to redirect this flow to its wastewater collection system.

From the surge tank the wastewater is pumped into a 6-inch irrigation line and applied by flood irrigation to the land application area. The land application area is divided into wide checks (approximately 525 to 660 feet by 50 feet) each covering approximately 0.7 acres. There are three risers for each check. According to the RWD, the wastewater is applied to a depth of two to four inches during each irrigation event with a resting period of 10 to 30 days between applications.

Given the lower flows from the Winery, GSV currently applies wastewater to only about 20 acres of land. However, there is approximately 50 acres of land available for wastewater applications. According to the RWD, the land application area will be expanded to include the entire 50 acres, as needed, to ensure compliance with these WDRs. The water balance provided with the RWD shows that there is sufficient land to handle the discharge from the Winery along with precipitation from a 100-year wet year, and that supplemental irrigation water will be required to meet crop demand during the spring, summer, and early fall.

Crops will be grown within the land application area to take up excess nutrients and salts from the discharge. The RWD proposes to double crop the fields with a summer crop of sudan grass and a winter crop of oat hay or similar fodder crop. With nitrogen concentrations between 4 and 60 mg/L the nitrogen load to the land application area at an annual discharge of 25 million gallons would be between 17 and 250 lbs/acre/year. This is less than the annual nitrogen uptake for a double cropped field of sudan grass and winter oat hay of approximately 440 lbs/acre/year (Western Fertilizer Handbook, 8th edition).

With an average BOD concentration of 4,380 mg/L, the cycle average BOD loading rate at 0.075 mgd to the 50-acre land application area would be about 55 lbs/acre/day assuming the minimum 10 day resting period between applications proposed by the Discharger.

This Order sets a cycle average BOD loading limit of 100 lbs/acre/day and includes a Provision that requires the Discharger to submit a Wastewater and Nutrient Management plan to ensure wastewater and nutrient applications are at reasonable agronomic rates.

Groundwater Conditions

According to the Department of Water Resources Groundwater Elevation Maps (Spring 2010) first encountered groundwater in the vicinity of the site occurs between 40 and 50 feet below ground surface (bgs). Regional flow in the area is to the southwest.

Three monitoring wells were installed at the site in 1993. Depth-to-water in these wells has ranged from about 20 to 70 feet bgs. In August 2014, depth-to-groundwater in these wells ranged from about 65 feet bgs in up-gradient MW-2 to 69 feet bgs in down-gradient MW-1. These monitoring wells are sampled annually for pH, EC, nitrate as nitrogen (NO₃-N), and total Kjeldahl Nitrogen (TKN).

Table 3, presents average groundwater concentrations for these constituents for 2011 through 2014 in relation to their respective Maximum Contaminant Levels (MCLs):

TABLE 3. Groundwater Quality

Constituent	Unit	MW-1	MW-2	MW-3	MCLs
pH	s.u.	7.0	7.4	7.6	
EC	umhos/cm	1,812	1,185	864	900/1,600 ¹
NO ₃ -N	mg/L	<1	42	31	10 ²
TKN	mg/L	<1	<1	<1	

MCLs= Maximum Contaminant Levels for drinking water. Concentrations shown in bold exceed their respective MCLs.

1. Recommended/Upper Secondary MCL.
2. Primary MCL.

Both monitoring wells MW-2 and MW-3, up-gradient and cross-gradient of the land application area contain nitrate as nitrogen above the primary MCL of 10 mg/L. High nitrate concentrations up-gradient of the land application area is likely the result of existing agricultural activities in the area. A check of the Geotracker GAMA database identified seven supply wells within about a mile of the site. Nitrate as nitrogen in these wells ranged from about 1 mg/L to 14 mg/L; however, details on the construction of these wells are unknown.

The elevated EC and low nitrate observed in down-gradient monitoring well MW-1 compared to monitoring wells MW-2 and MW-3 is indicative of possible organic overloading of the land application area. This is likely the result of legacy issues when the Winery's operations grape crushing and discharge of stillage waste. Additional information is necessary to determine the extent of groundwater degradation/pollution beneath the site.

Source Water: Source water for the Winery is provided by an on-site well. From a sample of collected on 8 April 2014, the source water is relatively good, with an electrical conductivity (EC) of 690 umhos/cm, total dissolved solids (TDS) of 440 mg/L, and nitrate as nitrogen (NO₃-N) of 9.8 mg/L.

Basin Plan, Beneficial Uses, and Regulatory Considerations

The Winery and land application area lie within the Alta Hydrologic Area (551.6) of the South Valley Floor Hydraulic Unit. Local drainage is by sheet flow to the southwest toward Cottonwood Creek and the valley floor.

The *Water Quality Control Plan for the Tulare Lake Basin, Second Edition*, revised January 2004 (Basin Plan) designates beneficial uses, establishes numerical and narrative water quality objectives, contains implementation plans and policies for protecting all waters of the basin, and incorporates by reference plans and policies of the State Water Board. Beneficial uses often determine the water quality objectives that apply to a water body. The receiving water for this discharge is groundwater. The beneficial uses of groundwater in the area are municipal and domestic supply, agricultural supply, industrial service supply, and industrial process supply.

The Basin Plan identifies the greatest long-term water quality problem facing the entire Tulare Lake Basin is increasing salinity in groundwater, a process accelerated by man's activities and particularly affected by intensive irrigated agriculture. The Basin Plan recognizes that degradation is unavoidable until there is a long-term solution to the salt imbalance. Until then, the Basin Plan establishes several salt management requirements, including the following discharge limits:

- a. The incremental increase in salts from use and treatment must be controlled to the extent possible. Dischargers are required to limit the increase in EC of a point source discharge to land to a maximum of 500 umhos/cm.
- b. Discharges to areas that may recharge good quality groundwater shall not exceed an EC of 1,000 umhos/cm, a chloride content of 175 mg/L, or boron content of 1.0 mg/L

According to the Basin Plan, effluent limits established for Municipal discharges "generally" apply to industrial discharges. The Basin Plan does allow for an exception to the incremental EC increase limit for food processing industries that discharge to land, where the discharge exhibits a disproportionate increase in EC over source water due to unavoidable concentrations of organic dissolved solids, provided the Discharger implements BPTC to minimize the salinity of the discharge and beneficial uses are protected. Based on sampling for total and fixed dissolved solids collected in 2014, the discharge shows a 40 to 50 percent increase in TDS due to the presence of organic dissolved solids similar to what has been seen in data collected from other wineries. Thus, the discharge is eligible for the Basin Plan exception. Given this, it is not appropriate to generally apply the 1,000 umhos/cm EC limit to this industrial discharge.

This Order requires effluent monitoring for EC, TDS, and FDS to ensure the exception eligibility continues, and requires the Discharger to prepare and implement a Salinity Control Plan to minimize the salinity of its discharge to the extent practicable.

Antidegradation

State Water Board Resolution 68-16, the Statement of Policy with Respect to Maintaining High Quality of Waters in California (Anti-Degradation Policy), requires the regional water boards to maintain high quality waters of the State until it is demonstrated that any change in quality will not result in water quality less than that described in State and Regional Water Board policies or exceed water quality objectives, will not unreasonably affect beneficial uses and is consistent with the maximum benefit to the people of the State.

As discussed in the Findings in the WDRs, the discharge as authorized by this Order is not expected to unreasonably affect present and anticipated future beneficial uses or result in groundwater quality that exceeds water quality objectives. The Discharger provides or will provide, as a condition of this Order, treatment and control measures intended to minimize degradation to the extent feasible.

With wastewater application at the loading rates authorized by this Order, appropriate application and resting periods, and reuse of wastewater on crops, the discharge will not cause impermissible degradation of the underlying groundwater.

Managed degradation of groundwater by some of the typical waste constituents released with discharge from a food processing facility after effective source reduction is consistent with maximum benefit to the people of the State. The Cutler Winery contributes to the economic prosperity of the region by direct employment of approximately 44 full time employees, provides incomes for numerous surrounding farmers and associated trucking firms, and provides a tax base for local and state governments. Economic prosperity of valley communities and associated industry is of maximum benefit to the people of the State, and therefore sufficient reason to accommodate growth and groundwater degradation provided terms of the Basin Plan are met.

The Order establishes effluent and groundwater limitations for the Winery that 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.

Title 27

Title 27 of the California Code of Regulations, section 20005 et seq (Title 27) contains regulations to address certain discharges to land. Title 27 establishes a waste classification system, specifies siting and construction standards for full containment of classified waste, requires extensive monitoring of groundwater and the unsaturated zone for any indication of failure of containment, and specifies closure and post-closure maintenance requirements. Generally, no degradation of groundwater quality by any waste constituent in a classified waste is acceptable under Title 27 regulations.

Unless exempt, release of designated waste is subject to full containment pursuant to Title 27 requirements. Title 27 Section 20090(b) exempts discharges of designated waste to land from Title 27 containment standards and other Title 27 requirements 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, CCR, Division 4.5, Chapter 11, as a hazardous waste.

The discharge meets the above requirements and is therefore exempt from Title 27.

CEQA

WDRs for the Winery were first adopted in 1976. All wastewater management systems and land application areas have been installed and are currently in use at the Winery. The adoption of this Order for an existing facility is exempt from the provisions of the California Environmental Quality Act in accordance with California Code of Regulations, Title 14, section 15301, which exempts the "operation, repair, maintenance, [and] permitting... of existing public or private structures, facilities, mechanical equipment, or topographical features" from environmental review.

Proposed Order Terms and Conditions

Discharge Prohibitions, Effluent Limitations, Discharge Specifications, and Provisions

The proposed Order would prohibit discharge to surface waters and surface water drainage courses.

The proposed Order would limit the monthly average daily discharge flow to 75,000 gpd (or 0.075 mgd), and set a maximum annual flow limit of 25 million gallons.

The proposed Order sets an average BOD loading limit of 100 lbs/acre/day, and requires that wastewater be applied at agronomic rates. The proposed Order includes provisions requiring the Discharger to prepare and implement a Salinity Control Plan, Wastewater and Nutrient Management Plan, and requires the Discharger to submit a technical report to provide an appropriate plan to accommodate allowable wastewater flow and seasonal precipitation with a time schedule to provide adequate wet weather storage, if required. In addition, the proposed Order also requires the Discharger evaluate its groundwater monitoring well network and determine the extent of groundwater degradation/pollution beneath its land application area.

The proposed Order would prescribe groundwater limitations that implement water quality objectives for groundwater from the Basin Plan. The limitations require that the discharge not cause or contribute to exceedance of these objectives or natural background water quality,

whichever is greatest, and sets a specific limit for nitrate as nitrogen (NO₃-N) of 10 mg/L consistent with the Primary MCL.

Monitoring Requirements

Section 13267 of the CWC authorizes the Central Valley Water Board to require monitoring and technical reports as necessary to investigate the impact of waste discharges on waters of the State. Water Code Section 13268 authorizes assessment of civil administrative liability where appropriate.

The proposed Order includes effluent, source water, irrigation water, and groundwater monitoring. This monitoring is necessary to evaluate the potential for degradation resulting from the discharge.

Reopener

The conditions of discharge in the proposed Order were developed based on currently available technical information and applicable water quality laws, regulations, policies, and plans, and are intended to assure conformance with them. The proposed Order would set limitations based on the information provided thus far. If applicable laws and regulations change, or if new information is obtained that will change the overall discharge and its potential to impact groundwater, it may be appropriate to reopen the Order.
(Legal review: ASD)