

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER R5-2015-0086

WASTE DISCHARGE REQUIREMENTS

FOR
THE WINE GROUP, INC.
GOLDEN STATE VINTNERS, D.B.A. FRANZIA-MCFARLAND WINERY
KERN COUNTY

The California Regional Water Quality Control Board, Central Valley Region, (hereafter Central Valley Water Board) finds that:

1. The Wine Group, Inc., (hereafter "Discharger") owns and operates the Golden State Vintners d.b.a. Franzia-McFarland Winery at 31795 Whisler Road in McFarland (Section 30, Township 26 South, Range 26 East, Mount Diablo Base & Meridian). The winery occupies Assessor's Parcel Number (APN) 060-251-02, which includes approximately 320 acres of land, as shown on Attachment A, which is attached hereto and made part of this Order by reference.
2. Waste Discharge Requirements (WDRs) Order No. 91-040, adopted by the Central Valley Water Board on 25 January 1991, prescribes requirements for the separate discharge of winery process wastewater and stillage waste to two separate land application areas. WDRs Order No. 91-040 allows monthly average wastewater flows of up to 0.275 million gallons per day (mgd) of winery process wastewater (also referred to as Discharge 001) and 0.150 mgd of stillage waste (also referred to as Discharge 002). WDRs Order No. 91-040 also includes Stillage Waste Discharge Specifications for Discharge 002 that are consistent with the guidelines for the land disposal of stillage waste from wineries from the *Water Quality Control Plan for the Tulare Lake Basin, Second Edition, revised January 2004*. WDRs Order No. 91-040 is outdated and do not reflect the current policies of the Central Valley Water Board. Therefore, WDRs Order No. 91-040 will be rescinded and replaced with this Order.
3. Cease and Desist Order (CDO) No. 91-041 was adopted by the Central Valley Water Board on 25 January 1991 because, at the time, the Discharger violated, or threatened to violate conditions of WDRs Order No. 91-040. The CDO included a time schedule to fully comply with WDRs Order No. 91-040. Based on the information included in the Central Valley Water Board's project file, it appears the Discharger has completed the tasks required by CDO No. 91-041. Therefore, CDO No. 91-041 was rescinded by Order R5-2015-0086, adopted by the Central Valley Water Board on 5 June 2015.
4. The Wine Group, Inc., owns and operates the winery that generates the waste and the land discharge areas and is responsible for compliance with these WDRs.

Existing Facility and Discharge

5. The winery crushes, ferments, stores, and blends wine grapes in addition to producing high proof alcohol via distillation. Infrastructure at the winery includes: an office, maintenance area, processing buildings, and tank farms. These areas are mostly paved with asphalt or concrete. The winery also has 127 acres of onsite vineyards to the north of the processing area that does not currently accept wastewater generated at the winery.
6. The on-site Land Application Area (LAA) is divided into two distinct areas, identified as LAA-001 and LAA-002. LAA-001 receives Discharge 001 and LAA-002 receives Discharge 002.
7. Discharge 001 is generated from winery activities, including cleaning and sanitizing wine tanks and equipment, cooling tower blowdown, and wine ion exchange regeneration. The process wastewater is collected in drains throughout the winery and flows by gravity to a sump. From the sump, the process wastewater is pumped to LAA-001, which is divided into 53 checks with a total of 75 acres. Discharge 001 is applied to checks 1 through 7, one at a time, via flood irrigation. As process wastewater reaches the end of one check, the next check in sequence is used. When the land applied process wastewater reaches the end of Check 7, the process wastewater is directed back to check 1. Checks 8 through 53 are available for additional land application and treatment in the event the soil in check 1 is saturated. No crops are currently grown in LAA-001.
8. Discharge 002 is the waste stream generated by the distillation process. This stillage waste is segregated from Discharge 001 and discharged directly to LAA-002. The 20-acre LAA-002 is divided into 15 checks varying in size from 0.6 acres to 1.6 acres. According to the Discharger, stillage application is rotated between the 15 checks. No crops are currently grown in LAA-002.
9. Solids generated at the winery consist of grape solid by-products from processing. The Discharger estimates approximately 4,500 tons of solids are produced annually during August through November and are sold and hauled off-site by the end of January.
10. Source water for the winery is provided by an on-site water supply well. The Discharger has been monitoring the electrical conductivity (EC) of the source water on a daily basis when Discharge 001 is occurring. The EC of source water steadily increased from approximately 900 umhos/cm to approximately 1,100 umhos/cm from January to August 2013, followed by a slight decrease through the end of October 2013. During November and December 2013, the EC of source water alternated between 1,000 and 1,900 umhos/cm. The EC of source water steadily increased from approximately 1,000 umhos/cm to approximately 1,300 umhos/cm from January to June 2014, followed by a decline to approximately 900 umhos/cm at the end of 2014.

This corresponds to a range of source water EC during that time period from 826 umhos/cm to 1,891 umhos/cm, with an average of 1,116 umhos/cm.

11. The Discharger reports that approximately 12,600 pounds of sodium hydroxide is used each year for equipment cleaning at the winery.
12. Current flows based on data provided by the Discharger from 2011 through 2014, range from 0.001 mgd to 1.631 mgd with an average of 0.118 mgd for Discharge 001 and range from 0.005 mgd to 0.146 mgd with an average of 0.059 mgd for Discharge 002.
13. For Discharge 001, the total annual volume of wastewater discharged from 2011 through 2014 was: 48 million gallons in 2011; 28.7 million gallons in 2012; 23.2 million gallons in 2013; and 18.6 million gallons in 2014.
14. For Discharge 002, the total annual volume of wastewater discharged from 2011 through 2014 was: 3.5 million gallons in 2011; 0.9 million gallons in 2012; 1.4 million gallons in 2013; and 1.8 million gallons in 2014.
15. WDRs Order No. 91-040 requires the Discharger to monitor Discharge 001 and 002 for various parameters. Effluent monitoring data collected from 2011 through 2014 are summarized in Table 1 below:

TABLE 1. Effluent Data (2011 - 2014)

	Biochemical Oxygen Demand (mg/L)	Nitrate as Nitrogen (mg/L)	Total Kjeldahl Nitrogen (mg/L)	Total Nitrogen (mg/L)	Electrical Conductivity (umhos/cm)	pH
Discharge 001						
Ave	2,752	16	15	30	2,129	--
Max	30,500	31	75	92	25,200	12.5
Min	59	<0.5	<1.0	3.5	725	2.26
Count	43	43	43	43	436	438
Discharge 002						
Ave	16,732	5	275	279	--	--
Max	35,200	17	950	960	--	4.81
Min	11,000	<0.5	40	40	--	3.3
Count	19	19	19	19	--	69

16. Based on the permitted flow rate of 0.275 mgd (average monthly), an average total nitrogen effluent concentration of 30 mg/L, and 75 acres of land, the annual total nitrogen loading to LAA-001 is 335 pounds per acre per year (lbs/ac/yr). This Order includes a compliance schedule ([Provision G.5](#)) to allow the Discharger to establish crops (including irrigation infrastructure) in LAA-001 and to come into compliance with [Land Application Area Specification D.2](#) requiring the annual nutritive loading,

including the nutritive value of organic and chemical fertilizers and of the wastewater, not to exceed the annual crop demand.

17. If the timing of wastewater application at the permitted flow rate of 0.275 mgd (monthly average) and an average BOD concentration of 2,752 mg/L, is managed correctly, it appears there is sufficient cropland available in LAA-001 so that the cycle average BOD loading will not exceed 100 pounds per acre per day (lbs/acre/day).
18. There is insufficient land available in LAA-002 to accept Discharge 002's permitted flow rate of 0.150 mgd (average monthly) at the average effluent concentrations of 279 mg/L for total nitrogen and 16,732 mg/L for BOD. However, if the flow rate of Discharge 002 continues to be similar to the flow rates from 2011 through 2014, and if the timing of wastewater application is managed correctly, it appears there is sufficient land available for reasonable total nitrogen and BOD loading. Therefore, this Order includes an annual flow limitation commensurate with the size of LAA-002 and total nitrogen and BOD loadings. An average monthly effluent flow rate limitation is not appropriate since Discharge 002 is sporadic.
19. This Order includes a compliance schedule ([Provision G.5](#)) to allow the Discharger to establish crops (including irrigation infrastructure) in LAA-002 and come into compliance with [Land Application Area Specifications D.2 and D.4](#) requiring the annual nutritive loading, including the nutritive value of organic and chemical fertilizers and of the wastewater, not to exceed the annual crop demand and the cycle average BOD loading shall not exceed 100 lbs/acre/day when wastewater is applied via flood irrigation or 150 lbs/acre/day when wastewater is applied via sprinkler or water cannon irrigation.
20. WDRs Order No. 91-040 requires the Discharger to monitor soils in LAA-001 and LAA-002 for various parameters. Soil monitoring data collected from 2013 and 2014 are summarized in Table 2 below:

TABLE 2. Soil Data

Location	Date	Depth (ft. bgs.)	Nitrate as Nitrogen (mg/kg)	Total Kjeldahl Nitrogen (mg/kg)	Ammonia as Nitrogen (mg/kg)	pH	% Saturation
LAA-001							
Background	8/2/2013	2	4	546	67.5	6.6	36
		4	27	219	34.8	8.6	35
		6	8	91.6	<2.5	6.4	29
	8/1/2014	2	0.40	180	5.1	7.8	--
		4	0.33	97	4.1	8.6	--
		6	0.43	66	2.9	8.8	--
1	8/2/2013	2	121	217	<2.5	8.5	29
		4	138	278	27.6	8.1	38
		6	142	374	23.6	9.1	32

Location	Date	Depth (ft. bgs.)	Nitrate as Nitrogen (mg/kg)	Total Kjeldahl Nitrogen (mg/kg)	Ammonia as Nitrogen (mg/kg)	pH	% Saturation
1 (cont.)	8/1/2014	2	5	140	19	5.4	--
		4	3.6	100	10	4.8	--
		6	7.3	66	5.6	5.9	--
2	8/2/2013	2	1	105	<2.5	7.5	27
		4	3	65.2	<2.5	7.6	26
		6	1	109	<2.5	7.8	22
	8/1/2014	2	8.4	390	16	5.9	--
		4	1.1	18	6.1	7.6	--
		6	<0.2	85	4.4	7.5	--
3 ¹	8/2/2013	2	--	--	--	--	--
		4	--	--	--	--	--
		6	--	--	--	--	--
	8/1/2014	2	14	270	12	5.6	--
		4	1.9	140	5.1	8.0	--
		6	0.23	170	5.7	8.1	--
LAA-002							
Background	8/2/2013	2	135	290	<2.5	6.9	50
		4	38	194	<2.5	7.4	49
		6	4	102	6.7	7.3	24
	8/1/2014	2	0.27	88	5.4	7.4	--
		4	18	72	4.4	7.6	--
		6	4	75	4.2	7.7	--
1	8/2/2013	2	4	91.7	<2.5	7.9	21
		4	6	53	<2.5	7.8	21
		6	3	53.7	<2.5	8.4	20
	8/1/2014	2	1.2	320	28	7.8	--
		4	1.5	120	180	8.8	--
		6	<0.41	270	64	9.6	--
2	8/2/2013	2	14	211	<2.5	6.6	24
		4	9	188	<2.5	6.2	22
		6	4	71.5	<2.5	6.4	23
	8/1/2014	2	130	660	35	9.1	--
		4	46	320	16	9.1	--
		6	54	120	6.3	9.1	--

¹ Sample collected at Location 3 in 2014 because Location 1 did not receive wastewater.

21. The soil data indicates background soil and soil within the Land Application Areas have a significant amount of nitrogen, particularly in the form of Total Kjeldahl Nitrogen (TKN). TKN can mineralize and convert to nitrate. However, as indicated in [Finding 33](#), it is not clear if concentrations of nitrate as nitrogen in groundwater in the vicinity of the winery are a result winery operations or a region-wide issue.

22. This Order requires the Discharger to grow crops in the Land Application Areas to aide in the removal of nutrients from soil before they can migrate to groundwater and conduct soil sampling to monitor the effectiveness of the crops at nutrient removal.
23. Domestic waste generated at the winery is discharged to an on-site septic system regulated by Kern County.

Planned Changes in the Discharge

24. The Discharger has indicated its business plan calls for increasing distillation activities at the winery, which will increase the flow rate of Discharge 002 above recent flow rates observed during 2011 through 2014, but less than the permitted flow rate from WDRs Order No. 91-040.
25. The Discharger plans to increase the size of LAA-002 by 10 acres, resulting in a total area of 30 acres available to receive Discharge 002. This Order allows an increase to Discharge Specification B.2 subject to compliance with Provision G.4.

Site-Specific Conditions

26. The Winery and LAA's are on the southern end of the San Joaquin Valley. Topography in the area is generally flat with an approximate elevation of 390 feet above mean sea level.
27. Federal Emergency Management Agency Flood Insurance Rate Map 06029C0740E, effective 26 September 2008, show the winery, LAA-001, and a portion of LAA-002 are within Flood Zone A, areas where no base flood elevations have been determined for a flood that has a 1% chance of being equaled or exceeded in any given year (100-year flood). The northwest portion of LAA-002 is within Zone AH, areas with flood depths of 1 to 3 feet (usually areas of ponding) with based flood elevations determined for a 100-year flood.
28. According to the Unites States Department of Agriculture, National Resource Conservation Survey maps, approximately 60 percent of the winery is underlain by Wasco Sandy Loam and the other 40 percent by McFarland Loam. The Wasco and McFarland soil series are both described as well drained. The two soils have a typical profile being more that 80 inches thick and are typically found on flood plains and alluvial fans. The soils, which are distributed over an area much larger than the winery, formed in alluvium derived from granite.
29. Climate in the Central Valley is characterized by hot dry summers and mild winters. The rainy season generally extends from November through April. Occasional rains occur during the spring and fall months, but summer months are dry. According to the Western Regional Climate Center, average annual precipitation and pan evaporation in Bakersfield are 6.24 inches and 65.11 inches, respectively. According to Department of Water Resources Bulletin No. 195, the maximum annual precipitation

for a wet year with a 100-year return period in Bakersfield is 12.5 inches. According to maps prepared by the California Irrigation Management Information System, the reference evapotranspiration in the vicinity of the winery is about 58 inches per year.

30. The winery is in a rural area, approximately two miles south of the City of McFarland. Land use in the vicinity of the winery includes vineyards and almond, walnut, and miscellaneous deciduous orchards. The winery is bordered by Highway 99 on the west, orchards on the north and east, and the Friant-Kern canal on the south. The cement-lined canal runs adjacent to the property for approximately 6,500 feet. The east side of the canal is bordered by a bulk fertilizer supplier and the south side of the canal is bordered by a trucking and motor freight business.

Groundwater Conditions

31. Three monitoring wells (MW-1, MW-2, and MW-3) were installed at the winery in the mid-1990's. The direction of groundwater flow has historically been to the south, fluctuating between southwest and southeast. Due to the decline in groundwater elevation, well MW-3 went dry in 2008 and MW-2 went dry in 2012. Two additional monitoring wells (MW-4 and MW-5) were installed in 2013. However, these wells were dry by June 2014. Currently, only MW-1 is constructed with screen below first encountered groundwater. Monitoring well construction details are summarized in Table 3 below:

TABLE 3. Monitoring Well Construction Details

Well ID	Installation Date	Depth (ft. bgs. ⁽¹⁾)	Diameter (inches)	Blank Interval (ft. bgs.)	Screen Interval (ft. bgs.)	Cement Seal (ft. bgs.)	Bentonite Seal (ft. bgs.)	Filter Pack (ft. bgs.)
MW-1	12/1994	350	4	0 - 276	276 - 348	0 - 54	54 - 240	240 - 350
MW-2	10/1995	350	5	0 - 261	261 - 330 ⁽²⁾	0 - 58	58 - 230	230 - 350
MW-3	12/1996	286.5 ⁽³⁾	-- ⁽⁴⁾	--	--	--	--	--
MW-4	6/2013	350	5	0 - 277	277 - 347	0 - 263	263 - 271	271 - 350
MW-5	6/2014	352	5	0 - 278	278 - 347	0 - 261	261 - 272	272 - 350

⁽¹⁾ ft. bgs. = feet below ground surface.

⁽²⁾ Well casing failed during construction. A bentonite plug was placed at bottom of well. Top of plug is now effective well depth, is at 330 ft. bgs.

⁽³⁾ Depth of well determined by tagging bottom of well during sample event on 3 March 2012.

⁽⁴⁾ "--" denotes unknown well construction.

32. The Discharger conducts groundwater monitoring on a quarterly basis. A summary of groundwater monitoring data are summarized in Table 4 below:

TABLE 4. Groundwater Data (1994 - 2014)

		NO ₃ -N (mg/L)	TKN (mg/L)	pH	EC (umhos/cm)	TDS (mg/L)	Cl (mg/L)	SO ₄ (mg/L)	HCO ₃ (mg/L)	Ca (mg/L)	Mg (mg/L)	K (mg/L)	Na (mg/L)	B (mg/L)	Fe (mg/L)	PO ₄ (mg/L)
MW-1	Ave	13.8	0.58	--	880	515	46	176	116	101	5	3	51	0.10	0.5	0.41
	Max	21.8	1.0	8.9	1,320	670	67	288	150	139	8	5	64	0.5	6.4	0.8
	Min	8.0	0.005	6.5	592	288	30	96	81	76	3	2	35	0.01	0.1	0.3
	Count	25	28	26	27	16	16	16	16	16	16	16	16	24	24	7
MW-2	Ave	12.2	0.5	--	679	493	53	135	117	91	4	3	54	0.1	0.4	0.3
	Max	15.6	1.2	8.0	788	550	66	172	160	107	10	5	63	0.1	1.8	0.3
	Min	6.7	0.2	6.7	515	450	45	109	80	75	1	2	50	0.02	0.1	0.3
	Count	18	20	18	20	10	10	10	10	10	10	10	10	18	18	3
MW-3	Ave	14.2	0.4	--	1,027	889	137	251	163	166	9	6	83	0.1	0.2	--
	Max	16.6	1.0	8.0	1,440	1,060	145	450	180	210	9	23	90	0.1	1.6	--
	Min	10.0	0.1	7.1	751	763	130	195	124	148	8	3	75	0.03	0.1	--
	Count	13	15	13	15	7	7	7	7	7	7	7	7	15	15	--
MW-4	Ave	13	0.5	--	1,600	1,100	92	590	73	170	6.2	6.4	170	0.06	0.1	0.5
	Max	13	0.5	8.0	1,600	1,100	92	590	73	170	6.2	6.4	170	0.06	0.1	0.5
	Min	13	0.5	8.0	1,600	1,100	92	590	73	170	6.2	6.4	170	0.06	0.1	0.5
	Count	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
MW-5	Ave	12.3	1.0	--	1,030	670	75	229	130	88	8	6	114	0.1	1.31	0.3
	Max	12.3	1.0	7.7	1,030	670	75	229	130	88	8	6	114	0.1	1.31	0.3
	Min	12.3	1.0	7.7	1,030	670	75	229	130	88	8	6	114	0.1	1.31	0.3
	Count	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

33. There is no discernable difference between the concentrations of nitrate as nitrogen in groundwater upgradient and downgradient of LAA-001 and LAA-002.
34. The elevated EC, sulfate, calcium, and sodium in monitoring well MW-4, compared to upgradient wells may be the result of process wastewater leaching through the sandy loam soils in LAA-001. The Discharger reports that gypsum is not applied to either of the LAA's. However, as stated in Finding 11, the Discharger uses sodium hydroxide as a cleaning agent. This Order requires the Discharger to monitor Discharge 001 for general minerals in order to characterize process wastewater to better understand its potential for impact on underlying groundwater.
35. The elevated iron concentration in well MW-5, compared to upgradient wells is indicative of possible organic overloading of LAA-002.

Basin Plan, Beneficial Uses, and Regulatory Considerations

36. The *Water Quality Control Plan for the Tulare Lake Basin, Second Edition, revised January 2004* (hereafter Basin Plan) designates beneficial uses, establishes water quality objectives, contains implementation plans and policies for protecting waters of the basin, and incorporates by reference plans and policies adopted by the State Water Board. Pursuant to Water Code section 13263(a), waste discharge requirements must implement the Basin Plan.
37. The winery and land application area lie within the North Kern Hydrologic Area (No. 558.80) of the South Valley Floor Hydrologic Unit, as depicted on interagency

hydrologic maps prepared by the State Water Resources Control Board and the Department of Water Resources, revised August 1986.

38. The beneficial uses of underlying groundwater as set forth in the Basin Plan are municipal and domestic supply, agricultural supply, industrial service supply and industrial process supply.
39. The Basin Plan encourages the reuse of wastewater and identifies crop irrigation as a reuse option where the opportunity exists to replace an existing or proposed use of fresh water with reused water.
40. The Basin Plan establishes narrative water quality objectives for chemical constituents, tastes and odors, and toxicity in groundwater. The toxicity objective requires that groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life associated with designated beneficial uses. The Basin Plan states that when compliance with a narrative objective is required to protect specific beneficial uses, the Central Valley Water Board will, on a case-by-case basis, adopt numerical limitations in order to implement the narrative objective.
41. The Basin Plan's narrative water quality objectives for chemical constituents, at a minimum, require waters designated as domestic or municipal supply to meet the MCLs specified in Title 22 of the California Code of Regulations (hereafter Title 22). The Basin Plan recognizes that the Central Valley Water Board may apply limits more stringent than MCLs to ensure that waters do not contain chemical constituents in concentrations that adversely affect beneficial uses.
42. The Basin Plan identifies the greatest long-term problem facing the entire Tulare Lake Basin as the increase in salinity in groundwater, which has accelerated due to the intensive use of soil and water resources by irrigated agriculture. The Basin Plan recognizes that degradation is unavoidable until a valley wide drain is constructed to carry salts out of the basin. Until the drain is available, the Basin Plan establishes several salt management requirements, including:
 - a. The incremental increase in salts from use and treatment must be controlled to the extent possible. The maximum electrical conductivity (EC) in the discharge shall not exceed the EC of the source water plus 500 umhos/cm. When the source water is from more than one source, the EC shall be a weighted average of all sources.
 - 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 a boron content of 1.0 mg/L.

43. The Basin Plan allows an exception to the EC limitation of source water plus 500 umhos/cm where the discharge exhibits a disproportionate increase in EC over the EC of source water due to unavoidable concentrations of organic dissolved solids from the raw food product, provided water quality objectives are met and the Discharger has implemented best available technology and best management practices that control inorganic dissolved solids to the maximum extent feasible.
44. The Discharger has not demonstrated that either Discharge 001 or Discharge 002 meets the exception to the Basin Plan's EC limitation of source water plus 500 umhos/cm. However, Discharge 002 is stillage waste, which is a well-defined type of waste stream that is known to have an elevated EC due to its organic dissolved content and meets the exception to the Basin Plan's EC limitation of source water plus 500 umhos/cm.
45. Based on the effluent quality of Discharge 001 summarized in [Finding 15](#), consistent compliance with the Basin Plan's effluent EC limitation of source water plus 500 umhos/cm is not immediately practicable. Therefore, [Provision G.5](#) includes a compliance schedule to allow the Discharger time to comply with the EC limitation or demonstrate that exception from the EC effluent limitation is appropriate.
46. In the absence of specific numerical water quality limitations, the Basin Plan methodology is to consider any relevant published criteria. General salt tolerance guidelines, such as *Water Quality for Agriculture* by Ayers and Westcot and similar references indicate that yield reductions in nearly all crops are not evident when irrigation water has an EC less than 700 µmhos/cm. There is, however, an eight- to ten-fold range in salt tolerance for agricultural crops and the appropriate salinity values to protect agriculture in the Central Valley are considered on a case-by-case basis. It is possible to achieve full yield potential with waters having EC up to 3,000 µmhos/cm if the proper leaching fraction is provided to maintain soil salinity within the tolerance of the crop.
47. The list of crops in [Finding 30](#) is not intended as a definitive inventory of crops that are or could be grown in the area affected by the discharge, but it is representative of current and historical agricultural practices in the area.
48. Excessive application of high organic strength wastewater to land can create objectionable odors, soil conditions that are harmful to crops, and degradation of underlying groundwater with nitrogen species and metals, as discussed below. Such groundwater degradation can be prevented or minimized through implementation of best management practices which include planting crops to take up plant nutrients and maximizing oxidation of BOD to prevent nuisance conditions.
49. It is reasonable to expect some attenuation of various waste constituents that percolate below the root zone within the vadose (unsaturated) zone. Specifically, excess nitrogen can be mineralized and denitrified by soil microorganisms, organic

constituents (measured as both BOD and volatile dissolved solids) can be oxidized, and the cation exchange capacity of the soil may immobilize some salinity constituents.

50. With regard to BOD, excessive application can deplete oxygen in the vadose zone and lead to anoxic conditions. At the ground surface, this can result in nuisance odors and fly-breeding. When insufficient oxygen is present below the ground surface, anaerobic decay of the organic matter can create reducing conditions that convert metals that are naturally present in the soil as relatively insoluble (oxidized) forms to more soluble reduced forms. This condition can be exacerbated by acidic soils and/or acidic wastewater. If the reducing conditions do not reverse as the percolate travels down through the vadose zone, these dissolved metals (primarily iron, manganese, and arsenic) can degrade shallow groundwater quality. Many aquifers contain enough dissolved oxygen to reverse the process, but excessive BOD loading over extended periods may cause beneficial use impacts associated with these metals.
51. Typically, irrigation with high strength wastewater results in high BOD loading on the day of application. It is reasonable to expect some oxidation of BOD at the ground surface, within the evapotranspiration zone and below the root zone within the vadose (unsaturated) zone. The maximum BOD loading rate that can be applied to land without creating nuisance conditions or leaching of metals can vary significantly depending on soil conditions and operation of the land application system.
52. *Pollution Abatement in the Fruit and Vegetable Industry*, published by the United States Environmental Protection Agency, cites BOD loading rates in the range of 36 to 600 lb/acre-day to prevent nuisance, but indicates the loading rates can be even higher under certain conditions. The studies that supported this report did not evaluate actual or potential groundwater degradation associated with those rates. There are few studies that have attempted to determine maximum BOD loading rates for protection of groundwater quality. Those that have been done are not readily adapted to the varying soil, groundwater, and climate conditions that are prevalent throughout the region.
53. This Order sets a cycle average BOD loading rate for the LAAs of 100 lbs/acre/day when wastewater is applied via flood irrigation or 150 lbs/acre/day when wastewater is applied via sprinkler or water cannon irrigation, requires the Discharger to prepare a Wastewater and Nutrient Management Plan to address BOD, salinity, and nutrient loading rates to the land application area, and requires the Discharger to evaluate the adequacy of the existing groundwater monitoring well network and install additional wells as necessary.

Antidegradation Analysis

54. State Water Resources Control Board Resolution 68-16 ("Policy with Respect to Maintaining High Quality Waters of the State") (hereafter Resolution 68-16) prohibits degradation of groundwater unless it has been shown that:
- a. The degradation does not result in water quality less than that prescribed in state and regional policies, including violation of one or more water quality objectives;
 - b. The degradation will not unreasonably affect present and anticipated future beneficial uses;
 - c. The discharger employs best practicable treatment or control (BPTC) to minimize degradation; and
 - d. The degradation is consistent with the maximum benefit to the people of the state.
55. Constituents of concern that have the potential to cause degradation of high quality waters include, in part, organics, nutrients, and salts.
- a. For organics, this Order sets a cycle average BOD loading rate for LAA-001 and LAA-002 of 100 lbs/acre/day when wastewater is applied via flood irrigation or 150 lbs/acre/day when wastewater is applied via a sprinkler or water cannon, which is expected to prevent odor and nuisance conditions, minimize the potential for anoxic and reducing conditions in soil, and preclude iron and manganese degradation of groundwater from organic loading. This Order also requires the Discharger to cease discharging to the land application areas in the event the soils become saturated, and requires weekly monitoring of the land application areas to check for ponding and/or nuisance conditions.
- With the conditions stipulated in this Order, and depth to groundwater, the discharge is not expected to cause nuisance conditions or unreasonably degrade groundwater with constituents related to organic overloading.
- b. For nitrogen, most of the nitrogen in the effluent is present as TKN (particularly the stillage waste) which can mineralize and be converted to nitrate (with some loss via ammonia volatilization). Nitrate in groundwater upgradient of the winery already exceeds the primary maximum contaminant level of 10 mg/L and there is no discernable difference between the concentrations of nitrate as nitrogen in groundwater upgradient and downgradient of the winery.

With nitrogen uptake by crops, nitrification and denitrification in soils, depth to groundwater beneath the site, the discharge is not expected to contribute to groundwater degradation that would violate water quality objectives. This Order includes a Provision requiring the Discharger to submit a Wastewater and

Nutrient Management Plan to ensure application of wastewater to the land application areas at agronomic rates.

- c. For salinity, as discussed in [Finding 44](#), a large portion of the TDS of Discharge 002 is in the volatile form, which can be broken down and biologically treated by soil microorganisms. In addition, a portion of the fixed dissolved solids will bind to soil and can be reduced by nutrient uptake by crops primarily calcium, magnesium, nitrates, phosphorous, and potassium. Until the Discharger demonstrates a large portion of the TDS of Discharge 001 is also in the volatile form, this Order includes an effluent EC limitation of source water plus 500 umhos/cm.

With a cycle average BOD loading limit of 100 lbs/acre/day when wastewater is applied via flood irrigation or 150 lbs/acre/day when wastewater is applied via sprinkler or water cannon irrigation to reduce the organic loading on the land application areas, the requirement for the discharge to be at agronomic rates for nutrient and hydraulic loading, and growing crops to take up excess nutrients and salts, the discharge is not expected to further degrade groundwater for salinity. In addition, this Order includes a Provision requiring the Discharger to submit a Salinity Control Plan to evaluate and implement measures to control salinity of its discharge to the extent practicable.

Treatment and Control Practices

56. The Discharger has implemented, or is required by this Order to implement, the following treatment and control of the discharge:
 - a. Reuse of wastewater for irrigation of crops at agronomic rates;
 - b. A cycle average BOD loading limitation of 100 lbs/acre/day when wastewater is applied via flood irrigation or 150 lbs/acre/day when wastewater is applied via sprinkler or water cannon irrigation;
 - c. Resting periods between wastewater applications;
 - d. Hydraulic loading rates that preclude standing water in the land application areas;
 - e. Proper handling and off-site disposal of solids;
 - f. Groundwater monitoring to monitor the impact of the discharge on first encountered groundwater, and
 - g. Preparation of a Salinity Control Plan and Wastewater Nutrient Management Plan.

Antidegradation Conclusions

57. This Order establishes groundwater limitations that allow some degradation, but that will not unreasonably threaten present and future anticipated beneficial uses of

groundwater or result in groundwater quality that exceeds water quality objectives set forth in the Basin Plan.

58. The treatment and control measures described above in [Finding 56](#), in combination with the requirements of this Order, represent BPTC. Adoption of this Order will result in the implementation of BPTC. In addition, this Order requires monitoring to evaluate potential groundwater impacts from the discharge and confirm that BPTC measures are sufficiently protective of groundwater quality.
59. The Discharger aids in the economic prosperity of the region by direct employment and provides a tax base for local and county governments. Provided the discharge complies with State and Central Valley Water Board plans and policies, authorized degradation due to the continued operation of the winery is to the maximum benefit to the people of the State. In addition, the use of process wastewater for irrigation in place of higher quality groundwater is of further benefit to the people of the State.
60. The discharge and the potential for groundwater degradation allowed in this Order is consistent with the Antidegradation Policy since: (a) the limited degradation allowed by this Order will not result in water quality less than water quality objectives, or unreasonably affect present and anticipated beneficial uses of groundwater, (b) the Discharger have implemented BPTC to minimize degradation, and (c) the limited degradation is of maximum benefit to the people of the State.

Other Regulatory Considerations

61. In compliance with Water Code section 106.3, it is the policy of the State of California that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes. This order promotes that policy by requiring discharges to meet maximum contaminant levels designed to protect human health and ensure that water is safe for domestic use.
62. Based on the threat and complexity of the discharge, the facility is determined to be classified as 2B as defined below:
 - a. Category 2 threat to water quality: "Those discharges of waste that could impair the designated beneficial uses of the receiving water, cause short-term violations of water quality objectives, cause secondary drinking water standards to be violated, or cause a nuisance."
 - b. Category B complexity, defined as: "Any discharger not included in Category A that has physical, chemical, or biological treatment systems (except for septic systems with subsurface disposal), or any Class 2 or Class 3 waste management unit."
63. Title 27 of the California Code of Regulations (hereafter Title 27) contains regulatory requirements for the treatment, storage, processing, and disposal of solid waste. However, Title 27 exempts certain activities from its provisions. Discharges regulated

by this Order are exempt from Title 27 pursuant to provisions that exempt wastewater. Title 27, section 20090 states in part:

The following activities shall be exempt from the SWRCB-promulgated provisions of this subdivision, so long as the activity meets, and continues to meet, all preconditions listed:

(b) Wastewater - Discharges of wastewater to land, including but not limited to evaporation ponds, percolation ponds, or subsurface leachfields if the following conditions are met:

- (1) the applicable RWQCB has issued WDRs, reclamation requirements, or waived such issuance;
- (2) the discharge is in compliance with the applicable water quality control plan; and
- (3) the wastewater does not need to be managed according to Chapter 11, Division 4.5, Title 22 of this code as a hazardous waste.

64. The discharge authorized herein, and the treatment and storage facilities associated with the discharge, are exempt from the requirements of Title 27 as follows:
 - a. The discharges to the Land Application Areas are exempt pursuant to Title 27, section 20090(b) because they are discharge of wastewater to land and:
 - i. The Central Valley Water Board is issuing WDRs.
 - ii. The discharge is in compliance with the Basin Plan, and;
 - iii. The treated effluent discharged to the ponds does not need to be managed as hazardous waste.
65. The State Water Board adopted Order 97-03-DWQ (NPDES General Permit CAS000001) specifying waste discharge requirements for discharges of storm water associated with industrial activities. A new General Permit for industrial storm water discharges, Order 2014-0057-DWQ (NPDES General Permit CAS000001) was adopted on 1 April 2014 and will become effective on 1 July 2015. Order 2014-0057-DWQ requires all applicable industrial dischargers to apply for coverage under the new General Order by the effective date. However, all storm water at the winery is captured and commingled with process wastewater before being discharged to LAA-001 in accordance with these WDRs, which prohibits the discharge from leaving the site and entering waters of the United States. Therefore, the Discharger is not required to obtain coverage under the new NPDES General Permit.

66. Water Code section 13267(b) states:

In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge waste within its region, or any citizen or domiciliary, or political agency or entity of this state who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge, waste outside of its region that could affect the quality of waters within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports.

The technical reports required by this Order and the attached Monitoring and Reporting Program R5-2015-0086 are necessary to ensure compliance with these waste discharge requirements. The Discharger owns and operates the facility that discharges the waste subject to this Order.

67. The California Department of Water Resources sets standards for the construction and destruction of groundwater wells (hereafter DWR Well Standards), as described in *California Well Standards Bulletin 74-90* (June 1991) and *Water Well Standards: State of California Bulletin 74-81* (December 1981). These standards, and any more stringent standards adopted by the state or county pursuant to Water Code section 13801, apply to all monitoring wells used to monitor the impacts of wastewater storage or disposal governed by this Order.
68. Pursuant to Water Code section 13263(g), discharge is a privilege, not a right, and adoption of this Order does not create a vested right to continue the discharge.

California Environmental Quality Act

69. A mitigated negative declaration was prepared in support of adoption of WDRs Order No. 91-040. This Order does not allow for increased effluent flow rates from the winery. Therefore, the action to adopt waste discharge requirements for this existing facility is exempt from the provisions of the California Environmental Quality (CEQA), in accordance with the California Code of Regulations, title 14, section 15301.

Public Notice

70. All the above and the supplemental information and details in the attached Information Sheet, which is incorporated by reference herein, were considered in establishing the following conditions of discharge.

71. The Discharger and interested agencies and persons have been notified of the Central Valley Water Board's intent to prescribe waste discharge requirements for this discharge, and they have been provided an opportunity to submit written comments and an opportunity for a public hearing.
72. All comments pertaining to the discharge were heard and considered in a public hearing.

IT IS HEREBY ORDERED that Order No. 91-040 is rescinded except for purposes of enforcement, and, pursuant to Water Code sections 13263 and 13267, The Wine Group, Inc., their agents, successors, and assigns, in order to meet the provisions contained in Division 7 of the Water Code and regulations adopted thereunder, shall comply with the following:

A. Discharge Prohibitions

1. Discharge of wastes to surface waters or surface water drainage courses is prohibited.
2. Discharge of waste classified as 'hazardous', as defined in the California Code of Regulations, title 23, section 2510 et seq., is prohibited.
3. Bypass of untreated or partially treated waste is prohibited, except as allowed by Standard Provision E.2 of the *Standard Provisions and Reporting Requirements for Waste Discharge Requirements*.
4. Discharge of waste at a location or in a manner different from that described in the Findings herein, is prohibited.
5. Discharge of domestic wastewater to the land application areas or any surface waters is prohibited.

B. Discharge Specifications

1. As determined by measuring the flow at monitoring location EFF-001¹, Discharge 001 shall not exceed a monthly average daily flow rate of 0.275 mgd.
2. As determined by measuring the flow at monitoring location EFF-002¹, Discharge 002 shall not exceed a maximum annual flow rate of 3 million gallons per year until the Discharger has satisfied Provision G.4, after which, Discharge 002 shall not exceed a maximum annual flow rate of 4.5 million gallons per year.

¹ Monitoring Locations EFF-001 and EFF-002 are described in Monitoring and Reporting Program R5-2015-0086.

3. No waste constituent shall be released, discharged, or placed where it will be released or discharged, in a concentration or in a mass that causes violation of the Groundwater Limitations of this Order.
4. Wastewater treatment, storage, and disposal shall not cause pollution or a nuisance as defined by Water Code section 13050.
5. The discharge shall remain within the permitted waste treatment/containment structures and land application areas at all times.
6. The Discharger shall operate all systems and equipment to optimize the quality of the discharge.
7. Objectionable odors as a result of winery operations shall not be perceivable beyond the limits of the property where the waste is generated, treated, and/or discharged at an intensity that creates or threatens to create nuisance conditions.
8. Discharge 001 shall be distributed uniformly on adequate acreage within LAA-001 and Discharge 002 shall be distributed uniformly on adequate acreage within LAA-002 in compliance with the Discharge Specifications.

C. Effluent Limitations

1. As determined by collecting samples from monitoring location EFF-001¹ and source water location SPL-001¹, the 12-month rolling average EC of the discharge shall not exceed the 12-month rolling average EC of the source water plus 500 umhos/cm, subject to the Compliance Schedule provided in [Provision G.5](#). When source water is from more than once source, the EC shall be a flow-weighted average of all sources.

D. Land Application Area Specifications

1. Crops shall be grown in the LAA-001 and LAA-002. Crops shall be selected based on nutrient uptake, consumptive use of water, and irrigation requirements to maximize crop uptake of water and nutrients.
2. Application of waste constituents to LAA-001 and LAA-002 shall be at reasonable agronomic rates to preclude creation of a nuisance or unreasonable degradation of groundwater, considering the crop, soil, climate, and irrigation management system. The annual nutritive loading of LAA-001 and LAA-002, including the

¹ Monitoring Locations EFF-001 and SPL-001 are described in Monitoring and Reporting Program R5-2015-0086

nutritive value of organic and chemical fertilizers and of the wastewater, shall not exceed the annual crop demand.

3. Hydraulic loading of wastewater and irrigation water shall be at reasonable agronomic rates.
4. The BOD loading to LAA-001 and LAA-002, calculated as a cycle average as determined by the method described in the attached Monitoring and Reporting Program, shall not exceed 100 pounds per acre per day when wastewater is applied via flood irrigation or 150 pounds per acre per day when wastewater is applied via sprinkler or water cannon irrigation.
5. The pH of Discharges 001 and 002 shall not exceed the buffering capacity of the soil within LAA-001 and LAA-002.
6. Land application of wastewater shall be managed to minimize erosion.
7. The Discharger may not discharge process wastewater to LAA-001 or LAA-002 when soils are saturated.
8. Any runoff of wastewater or irrigation water shall be confined to LAA-001 and LAA-002 and shall not enter any surface water drainage course or storm water drainage system.
9. LAA-001 and LAA-002 shall be managed to prevent breeding of mosquitos. More specifically:
 - a. All applied irrigation water must infiltrate completely within 48-hours;
 - b. Ditches not serving as wildlife habitat shall be maintained free of emergent, marginal, and floating vegetation; and
 - c. Low-pressure and unpressurized pipeline and ditches accessible to mosquitos shall not be used to store recycled water.

E. Solids Disposal Specifications

Solids as used in this document, means the grape solid by-product from processing.

1. Solids shall be removed from processing equipment, drains, and sumps as needed to ensure optimal operation to ensure compliance with this Order.
2. Any handling and storage of solids shall be controlled and contained in a manner that minimizes leachate formation and precludes infiltration of waste constituents into soils in a mass or concentration that will violate the groundwater limitations of this Order.

3. Solids generated at the winery shall be hauled off-site.
4. Any proposed change in solids use or disposal practice shall be reported in writing to the Executive Officer at least 90 days in advance of the change.

F. Groundwater Limitations

Release of waste constituents associated with the discharge shall not cause or contribute to groundwater containing constituent concentrations in excess of the concentrations specified below or in excess of natural background quality, whichever is greater:

- a. Nitrate as nitrogen of 10 mg/L.
- b. For constituents identified in Title 22 of the California Code of Regulations, the MCLs quantified therein.

G. Provisions

1. The Discharger shall comply with Monitoring and Reporting Program (MRP) R5-2015-0086, which is part of this Order, and any revisions thereto as ordered by the Executive Officer. The submittal dates of self-monitoring reports shall be no later than the submittal date specified in the MRP.
2. The Discharger shall comply with the "Standard Provisions and Reporting Requirements for Waste Discharge Requirements", dated 1 March 1991, which are attached hereto and made a part of this Order. This attachment and its individual paragraphs are commonly referenced as "Standard Provisions."
3. **By 7 December 2015**, the Discharger shall submit a work plan for Executive Officer approval to evaluate the adequacy of the existing groundwater monitoring well network to monitor for changes in groundwater quality associated with the winery operations.
4. **Within 30 days** of increasing the size of LAA-002 by 10 acres, the Discharger shall submit a report, subject to Executive Officer approval, documenting at least 30 acres of LAA-002 are available to receive Discharge 002 from the winery. The report shall include a map of LAA-002 showing predominant features, irrigation piping, field numbers, and acreage.
5. The Discharger shall comply with Effluent Limitations C.1 and Land Application Area Specifications D.1, D.2, D.3, and D.4 in accordance with the following compliance schedule:

Task	Description	Date Due
1	Submit a Salinity Control Plan, with salinity source control reduction goals and an implementation schedule for Executive Officer approval. The control plan shall identify existing salinity control measures as well as any additional methods (i.e., switch from sodium based to potassium based cleaner) that could be used to further reduce the salinity of Discharges 001 and 002 to the maximum extend feasible.	7 December 2015
2	Submit a Wastewater and Nutrient Management Plan with an implementation schedule for Executive Officer approval. At a minimum, the Plan must include: (a) procedures for monitoring winery operations and discharge; (b) plans for establishing crops in LAA-001 and LAA-002 and associated irrigation infrastructure; (c) measures to ensure even application of wastewater; and (d) an action plan to deal with objectionable odors and/nuisance conditions. The plan should also include management practices that will ensure BOD loading to LAA-001 and LAA-002 will not exceed 100 lbs/acre/day (as a cycle average) when wastewater is applied via flood irrigation or 150 lbs/acre/day when wastewater is applied via sprinkler or water cannon irrigation and that wastewater, irrigation water, and fertilizers are applied at agronomic rates to LAA-001 and LAA-002.	7 March 2016
3	Submit either a technical report for Executive Officer approval that demonstrates Discharge 001 meets the exception to Effluent Limitation C.1 that includes (a) Discharge 001 exhibits a disproportionate increase in EC over the source water due to unavoidable concentrations of organic dissolved solids; and (b) the Discharger implements best practicable treatment or control (BPTC) to minimize the salinity of the discharge and beneficial uses of groundwater are protected or submit an Effluent Salinity Compliance Workplan for Executive Officer approval that includes tasks and a schedule the Discharger will implement at the winery in order to comply with Effluent Limitation C.1 .	7 September 2016

Task	Description	Date Due
4	Submit a technical report demonstrating complete implementation of the Salinity Control Plan.	In accordance with the approved Task 1 schedule but no later than 5 June 2018
5	Submit a technical report demonstrating complete implementation of the Wastewater and Nutrient Management Plan.	In accordance with the approved Task 2 schedule but no later than 5 June 2018
6	If the Discharger cannot demonstrate Discharge 001 meets the exception to Effluent Limitation C.1, submit a technical report demonstrating Discharge 001 is in compliance with Effluent Limitation C.1 .	In accordance with the approved Task 3 schedule but no later than 5 June 2018

6. In accordance with California Business and Professions Code sections 6735, 7835, and 7835.1, engineering and geologic evaluations and judgments shall be performed by or under the direction of registered professionals competent and proficient in the fields pertinent to the required activities. All technical reports specified herein that contain work plans for investigations and studies, that describe the conduct of investigations and studies, or that contain technical conclusions and recommendations concerning engineering and geology shall be prepared by or under the direction of appropriately qualified professional(s), even if not explicitly stated. Each technical report submitted by the Discharger shall bear the professional's signature and stamp.
7. The Discharger shall submit the technical reports and work plans required by this Order for consideration by the Executive Officer, and incorporate comments the Executive Officer may have in a timely manner, as appropriate. Unless expressly stated otherwise in this Order, the Discharger shall proceed with all work required by the foregoing provisions by the due dates specified.
8. The Discharger shall comply with all conditions of this Order, including timely submittal of technical and monitoring reports. On or before each report due date, the Discharger shall submit the specified document to the Central Valley Water Board or, if appropriate, a written report detailing compliance or noncompliance with the specific schedule date and task. If noncompliance is being reported, then the Discharger shall state the reasons for such noncompliance and provide an estimate of the date when the Discharger will be in compliance. The Discharger shall notify the Central Valley Water Board in writing when it returns to compliance with the time schedule. Violations may result in enforcement action, including Central Valley Water Board or court orders requiring corrective action or imposing civil monetary liability, or in revision or rescission of this Order.

9. The Discharger shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) that are installed or used by the Discharger to achieve compliance with the conditions of this Order. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems that are installed by the Discharger only when the operation is necessary to achieve compliance with the conditions of this Order.
10. As described in the Standard Provisions, the Discharger shall report promptly to the Central Valley Water Board any material change or proposed change in the character, location, or volume of the discharge.
11. **At least 90 days** prior to termination or expiration of any lease, contract, or agreement involving disposal or recycling areas or off-site reuse of effluent, used to justify the capacity authorized herein and assure compliance with this Order, the Discharger shall notify the Central Valley Water Board in writing of the situation and of what measures have been taken or are being taken to assure full compliance with this Order.
12. In the event of any change in control or ownership of the winery, the Discharger must notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to the Central Valley Water Board.
13. To assume operation as Discharger under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order. The request must contain the requesting entity's full legal name, the state of incorporation if a corporation, the name and address and telephone number of the persons responsible for contact with the Central Valley Water Board, and a statement. The statement shall comply with the signatory paragraph of Standard Provision B.3 and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the Water Code. If approved by the Executive Officer, the transfer request will be submitted to the Central Valley Water Board for its consideration of transferring the ownership of this Order at one of its regularly scheduled meetings.
14. A copy of this Order including the MRP, Information Sheet, Attachments, and Standard Provisions, shall be kept at the winery for reference by operating personnel. Key operating personnel shall be familiar with its contents.
15. If the Central Valley Water Board determines that the discharge has a reasonable potential to cause or contribute to an exceedance of a water quality objective, or to

create a condition of nuisance or pollution, this Order may be reopened for consideration of additional requirements.

16. The Central Valley Water Board is currently implementing the CV-SALTS initiative to develop a Basin Plan amendment that will establish a salt and nitrate management plan for the Central Valley. Through this effort, the Basin Plan will be amended to define how the narrative water quality objectives are to be interpreted for the protection of agricultural use. If new information or evidence indicates that groundwater limitations different than those prescribed herein are appropriate, this Order will be reopened to incorporate such limits.
17. The Central Valley Water Board will review this Order periodically and will revise requirements when necessary.

If, in the opinion of the Executive Officer, the Discharger fails to comply with the provisions of this Order, the Executive Officer may refer this matter to the Attorney General for judicial enforcement, may issue a complaint for administrative civil liability, or may take other enforcement actions. Failure to comply with this Order may result in the assessment of Administrative Civil Liability of up to \$10,000 per violation, per day, depending on the violation, pursuant to the Water Code, including sections 13268, 13350 and 13385. The Central Valley Water Board reserves its right to take any enforcement actions authorized by law.

Any person aggrieved by this action of the Central Valley Water Board may petition the State Water Board to review the action in accordance with Water Code section 13320 and California Code of Regulations, title 23, sections 2050 and following. The State Water Board must receive the petition by 5:00 p.m., 30 days after the date of this Order, except that if the thirtieth day following the date of this Order falls on a Saturday, Sunday, or state holiday, the petition must be received by the State Water Board by 5:00 p.m. on the next business day. Copies of the law and regulations applicable to filing petitions may be found on the Internet at:

http://www.waterboards.ca.gov/public_notices/petitions/water_quality

or will be provided upon request.

I, PAMELA C. CREEDON, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board on, 5 June 2015.

Original signed by:

PAMELA C. CREEDON, Executive Officer

Order Attachment

A. Site Location Map

Monitoring and Reporting Program R5-2015-0086

Information Sheet Order R5-2015-0086

Standard Provisions (1 March 1991) (separate attachment to Discharger only)

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM R5-2015-0086

FOR

THE WINE GROUP, INC.
GOLDEN STATE VINTNERS D.B.A. FRANZIA-MCFARLAND WINERY
KERN COUNTY

This Monitoring and Reporting Program (MRP) is required pursuant to Water Code section 13267.

The Discharger shall not implement any changes to this MRP unless and until the Central Valley Water Board adopts, or the Executive Officer issues, a revised MRP. Changes to sample location shall be established with concurrence of Central Valley Water Board staff, and a description of the revised stations shall be submitted for approval by the Executive Officer.

All samples shall be representative of the volume and nature of the discharge or matrix of material sampled. All analyses shall be performed in accordance with **Standard Provisions and Reporting Requirements for Waste Discharge Requirements**, dated 1 March 1991 (Standard Provisions).

Field test instruments (such as pH, temperature, and electrical conductivity) may be used provided that the operator is trained in the proper use of the instrument and each instrument is serviced and/or calibrated at the recommended frequency by the manufacturer or in accordance with manufacturer instructions.

Analytical procedures shall comply with the methods and holding times specified in the following: *Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater* (EPA); *Test Methods for Evaluating Solid Waste* (EPA); *Methods for Chemical Analysis of Water and Wastes* (EPA); *Methods for Determination of Inorganic Substances in Environmental Samples* (EPA); *Standard Methods for the Examination of Water and Wastewater* (APHA/AWWA/WEF); and *Soil, Plant and Water Reference Methods for the Western Region* (WREP 125). Approved editions shall be those that are approved for use by the United States Environmental Protection Agency or the State Water Resources Control Board, Division of Drinking Water Environmental Laboratory Accreditation Program. The Discharger may propose alternative methods for approval by the Executive Officer.

If monitoring consistently shows no significant variation in magnitude of a constituent concentration or parameter after at least 12 months of monitoring, the Discharger may request this MRP be revised to reduce monitoring frequency. The proposal must include adequate technical justification for reduction in monitoring frequency.

A glossary of terms used within this MRP is included on [page 11](#).

The Discharger shall monitor the following locations to demonstrate compliance with the requirements of this Order:

Monitoring Location Name	Monitoring Location Description
EFF-001	Location where a representative sample of Discharge 001 (Process Wastewater) can be obtained prior to discharge to the land application area.
EFF-002	Location where a representative sample of Discharge 002 (Stillage Waste) can be obtained prior to discharge to the land application area.
SPL-001	Location where a representative sample of the water supply entering the winery can be obtained.
LAA-001	Land Application Area 001 where Discharge 001 is applied.
LAA-002	Land Application Area 002 where Discharge 002 is applied.
LAA001SOIL1@2, LAA001SOIL1@4, and LAA001SOIL1@6	Soil sample collected from Location 1 within LAA-001 at 2, 4, and 6 feet below ground surface.
LAA001SOIL2@2, LAA001SOIL2@4, and LAA001SOIL2@6	Soil sample collected from Location 2 within LAA-001 at 2, 4, and 6 feet below ground surface.
LAA001SOILB@2, LAA001SOILB@4, and LAA001SOILB@6	Soil sample collected from Background outside LAA-001 at 2, 4, and 6 feet below ground surface.
LAA002SOIL1@2, LAA002SOIL1@4, and LAA002SOIL1@6	Soil sample collected from Location 1 within LAA-002 at 2, 4, and 6 feet below ground surface.
LAA002SOIL2@2, LAA002SOIL2@4, and LAA002SOIL2@6	Soil sample collected from Location 2 within LAA-002 at 2, 4, and 6 feet below ground surface.
LAA002SOILB@2, LAA002SOILB@4, and LAA002SOILB@6	Soil sample collected from Background outside LAA-002 at 2, 4, and 6 feet below ground surface.
IW-001	Location where a representative sample of the supplemental irrigation water can be obtained.
GW-01 through GW-05	Groundwater monitoring well locations.

EFFLUENT MONITORING

The Discharger shall monitor effluent at EFF-001 and EFF-002 for the constituents listed below. Effluent samples shall be representative of the volume and nature of the discharge. Time of collection of the samples shall be recorded. Effluent monitoring shall include at least the following:

<u>Frequency</u>	<u>Constituent/Parameter</u>	<u>Units</u>	<u>EFF-001</u>	<u>EFF-002</u>
Continuous	Flow	mgd	Meter	Meter
Weekly	pH	pH Units	Grab	Grab
Weekly	EC	umhos/cm	Grab	Grab
Monthly	Biochemical Oxygen Demand	mg/L	24-Hour Composite	Grab
Monthly	Total Dissolved Solids	mg/L	24-Hour Composite	Grab
Monthly	Fixed Dissolved Solids	mg/L	24-Hour Composite	Grab
Monthly	Nitrate as nitrogen	mg/L	24-Hour Composite	Grab
Monthly	Nitrite as nitrogen	mg/L	24-Hour Composite	Grab
Monthly	Ammonia as nitrogen	mg/L	24-Hour Composite	Grab
Monthly	Total Kjeldahl Nitrogen	mg/L	24-Hour Composite	Grab
Monthly	Total Nitrogen	mg/L	Calculated	Calculated
Quarterly ¹	General Minerals ²	various	24-Hour Composite	Grab

¹ Samples to be collected in January, April, July, and October.

² General mineral analysis shall include, alkalinity (as CaCO₃), bicarbonate (as CaCO₃), boron, calcium, carbonate (CaCO₃), chloride, hardness, iron, magnesium, manganese, nitrate as nitrogen, potassium, sodium, sulfate, and TDS. Samples collected for metals shall be filtered with a 0.45 micron filter prior to preservation, digestion, and analysis.

SOURCE WATER MONITORING

The Discharger shall collect samples of its source water for the winery at SPL-001, and analyze them for the constituents specified below. If the source water is from more than one source, the results shall be presented as a flow-weighted average of all sources.

<u>Frequency</u>	<u>Constituent/Parameter</u>	<u>Units</u>	<u>Sample Type</u>
Quarterly	EC	mg/L	Grab
1/three years ¹	General Minerals ²	mg/L	Grab

¹ Sample to be collected and analyzed for general minerals once every three years. Starting in October following adoption of this Order.

² General mineral analysis shall include, alkalinity (as CaCO₃), bicarbonate (as CaCO₃), boron, calcium, carbonate (CaCO₃), chloride, hardness, iron, magnesium, manganese, nitrate as nitrogen, potassium, sodium, sulfate, and TDS. Samples collected for metals shall be filtered with a 0.45 micron filter prior to preservation, digestion, and analysis.

LAND APPLICATION AREA MONITORING

The Discharger shall inspect the condition of the land application area at least once per week and write visual observations in a bound logbook. Evidence of erosion, field saturation, runoff, or the presence of nuisance conditions (i.e., flies, ponding, etc.) shall be noted in the logs and included as part of the quarterly monitoring report.

In addition, the Discharger shall perform the following routine monitoring and loading calculations for each discrete irrigation area within LAA-001 and LAA-002. The data shall be collected and presented in tabular format and shall include the following:

<u>Frequency</u>	<u>Constituent/Parameter</u>	<u>Units</u>	<u>Sample Type</u>
Daily ¹	Application Area	acres	n/a
Daily ¹	Wastewater flow	gallons	Metered
Daily ¹	Wastewater loading	inches/day	Calculated
Daily ¹	Precipitation	inches	Rain gage ²
Monthly ¹	Supplemental irrigation	gallons	Estimated
Monthly ¹	Total hydraulic loading ³	inches/acre-month	Calculated
<u>BOD Loading⁴</u>			
Daily	Day of application	lbs/acre-day	Calculated
Average	cycle average ⁵	lbs/acre-day	Calculated
<u>Nitrogen Loading⁴</u>			
Annually	From wastewater	lbs/acre-year	Calculated
Annually	From fertilizers	lbs/acre-year	Calculated
<u>Salt Loading⁴</u>			
Annually	From wastewater	lbs/acre-year	Calculated

^{1.} When discharging and while wastewater is applied to the land application area.

^{2.} National Weather Service or CIMIS data from the nearest weather station is acceptable.

^{3.} Combined loading from wastewater, irrigation water, and precipitation.

^{4.} Loading rates shall be calculated using the applied volume of wastewater, applied acreage, and average effluent concentrations for BOD, total nitrogen, and FDS.

^{5.} The BOD loading rate shall be divided by the number of days between applications for each individual irrigation section to determine the cycle average loading rate.

SOIL MONITORING

The Discharger shall collect at least two discrete depth soil samples from within the LAA-001 and LAA-002. In addition, at least two discrete depth soil samples shall be collected that represent background conditions (i.e., that historically have not received process wastewater). The samples shall be collected and analyzed for the constituents and frequencies specified below:

<u>Frequency</u>	<u>Constituent/Parameter</u>	<u>Units</u>	<u>Sample Depth</u>
Annually	EC	umhos/cm	2, 4, and 6 feet bgs ¹
Annually	Nitrate as Nitrogen	mg/kg	2, 4, and 6 feet bgs
Annually	Ammonia as Nitrogen	mg/kg	2, 4, and 6 feet bgs
Annually	Total Kjeldahl Nitrogen	mg/kg	2, 4, and 6 feet bgs
Annually	pH	pH Units	2, 4, and 6 feet bgs

^{1.} feet bgs = feet below ground surface

IRRIGATION WATER MONITORING

Samples of supplemental irrigation water used to irrigate the land application area shall be collected at IW-001, and analyzed for the constituents specified below.

<u>Frequency</u>	<u>Constituent/Parameter</u>	<u>Units</u>	<u>Sample Type</u>
Quarterly	EC	umhos/cm	Grab
Quarterly	TDS	mg/L	Grab
Monthly	Volume	acre-feet	Metered

GROUNDWATER MONITORING

After measuring water levels and prior to collecting samples, each monitoring well shall be adequately purged to remove water that has been standing within the well screen and casing that may not be chemically representative of formation water. Depending on the hydraulic conductivity of the geologic setting, the volume removed during purging is typically from 3 to 5 well casing volumes.

The Discharger shall monitor the wells in its monitoring well network GW-001 through GW-005 and any subsequent additional monitoring wells as follows:

<u>Frequency</u>	<u>Constituent/Parameter</u>	<u>Units</u>	<u>Sample Type</u>
Quarterly	Depth-to-Water	Feet ¹	Measured
Quarterly	Groundwater Elevation	Feet ²	Calculated
Quarterly	pH	pH units	Grab
Quarterly	EC	umhos/cm	Grab
Quarterly	General Minerals ^{3,4}	various	Grab
Quarterly	Total Organic Carbon	mg/L	Grab

^{1.} To the nearest hundredth foot.

^{2.} Groundwater elevation shall be calculated based on depth-to-water measurements from a surveyed measuring point.

^{3.} General mineral analysis shall include, alkalinity (as CaCO₃), bicarbonate (as CaCO₃), boron, calcium, carbonate (CaCO₃), chloride, hardness, iron, magnesium, manganese, nitrate as nitrogen, potassium, sodium, sulfate, and TDS.

^{4.} Samples collected for metals shall be filtered with a 0.45 micron filter prior to preservation, digestion, and analysis.

The Discharger shall maintain its groundwater monitoring well network. If a groundwater monitoring well(s) is dry for more than four consecutive sampling events, the Discharger shall submit a work plan and proposed time schedule to replace the well(s). The well(s) shall be replaced following Executive Officer approval of the work plan and time schedule.

REPORTING

All monitoring results shall be reported in **Quarterly Monitoring Reports**, which are due by the first day of the second month after the calendar quarter. Therefore, monitoring reports are due as follows:

- First Quarter Monitoring Report: **1 May**
- Second Quarter Monitoring Report: **1 August**
- Third Quarter Monitoring Report: **1 November**
- Fourth Quarter Monitoring Report: **1 February.**

The Central Valley Water Board has gone to a Paperless Office System. All regulatory documents, submissions, materials, data, monitoring reports, and correspondence should be converted to a searchable Portable Document Format (PDF) and submitted electronically. Documents that are less than 50MB should be emailed to: centralvalleyfresno@waterboards.ca.gov. Documents that are 50MB or larger should be transferred to a disk and mailed to the appropriate regional water board office, in this case 1685 E Street, Fresno, CA, 93706.

To ensure that your submittals are routed to the appropriate staff, the following information block should be included in any email used to transmit documents to this office:

Program: Non-15, WDID: 5D152039001, Facility Name: Golden State Vintners D.B.A
Franzia-McFarland Winery, Order: R5-2015-0086

In reporting monitoring data, the Discharger shall arrange the data in tabular form so that the date, the constituents, and the concentrations are readily discernible. The data shall be summarized in such a manner that illustrates clearly, whether the Discharger complies with waste discharge requirements. In addition to the details specified in Standard Provision C.3, monitoring information shall include the method detection limit (MDL) and the Reporting limit (RL) or practical quantitation limit (PQL). If the regulatory limit for a given constituent is less than the RL (or PQL), then any analytical results for that constituent that are below the RL (or PQL) but above the MDL shall be reported and flagged as estimated.

Laboratory analysis reports do not need to be included in the monitoring reports; however, the laboratory reports must be retained for a minimum of three years in accordance with Standard Provision C.3.

All monitoring reports shall comply with the signatory requirements in Standard Provision B.3. For a Discharger conducting any of its own analyses, reports must also be signed and certified by the chief of the laboratory.

All monitoring reports that involve planning, investigation, evaluation, or design, or other work requiring interpretation and proper application of engineering or geologic sciences, shall be

prepared by or under the direction of persons registered to practice in California pursuant to California Business and Professions Code sections 6735, 7835, and 7835.1.

In the future, the State or Central Valley Water Board may notify the Discharger to electronically submit and upload monitoring reports using the State Water Board's California Integrated Water Quality System (CIWQS) Program Web site <http://www.waterboards.ca.gov/ciwqs/index.html> or similar system. Electronic submittal to CIWQS, when implemented, will meet the requirements of our Paperless Office System.

A. All Quarterly Monitoring Reports shall include the following:

Effluent Monitoring Reporting:

1. Tabulated results of effluent monitoring specified on [page 3](#).
2. For each month of the quarter, calculation of the monthly flow and the monthly average daily flow.

Source Water Reporting

1. The results of the source water monitoring for the winery specified on [page 3](#). If multiple sources are used the Discharger, shall calculate the flow-weighted average concentrations for the specified constituents. Results must include supporting calculations, if required.

Land Application Area Reporting:

1. The results of monitoring and loading calculations specified on [pages 3 and 4](#).
2. Calculation of the hydraulic load for wastewater and supplemental irrigation water to the land application area in gallons and/or acre-inches.
3. A summary of the notations made in the log book during each quarter. The entire contents of the log do not need to be submitted.
4. For each week, calculation of the daily and average BOD loading for the irrigation cycle, using the BOD results for that month.

Irrigation Water Reporting

1. The results of monitoring of supplemental irrigation water as specified on [page 5](#). If multiple sources are used the Discharger shall provide sampling results and volume of irrigation water provided from each source.

Groundwater Reporting:

1. The result of groundwater monitoring specified on [page 5](#). If there is insufficient water in the well(s) for sampling, the monitoring well(s) shall be reported as dry for that quarter.
2. For each monitoring well, a table showing groundwater depth, elevation, and constituent concentrations for the five previous years, up through the present quarter.
3. A groundwater contour map based on groundwater elevations for that quarter. The map shall show the gradient and direction of groundwater flow. The map shall also include locations of all monitoring wells and wastewater storage and application areas.

B. Fourth Quarter Monitoring Reports, in addition to the above, shall include the following:

Facility Information:

1. The names and telephone numbers of persons to contact regarding the discharge for emergency and routine situations.
2. A statement certifying when the flow meter and other monitoring instruments and devices were last calibrated, including identification of who performed the calibrations (Standard Provision C.4).
3. A summary of any changes in processing that might affect waste characterization and/or discharge flow rates.

Effluent Monitoring Reporting:

1. A summary of tabulated results of effluent monitoring specified on [page 3](#).
2. Calculation of the maximum daily flow, monthly average flow, and cumulative annual flow.

Solids Reporting

1. Annual production totals for solids (excluding trash and recyclables) in dry tons or cubic yards.
2. A description of disposal methods, including the following information related to the disposal methods used. If more than one method is used, include the percentage disposed of by each method.
 - a. For landfill disposal, include: the name and location of the landfill, and the Order number of WDRs that regulate it.
 - b. For land application, include: the location of the site (field identification), and the Order number of any WDRs that regulate it.

- c. For incineration, include: the name and location of the site where incineration occurs, the Order number of WDRs that regulate the site, the disposal method of ash, and the name and location of the facility receiving ash (if applicable).
- d. For composting, include: the location of the site, and the Order number of any WDRs that regulate it.
- e. For animal feed, include: the location of the site, and the Order number of any WDRs that regulate it.

Source Water Reporting

- 1. The results of annual monitoring of source water and as specified on [page 3](#). If multiple sources are used the Discharger, shall calculate the flow-weighted average concentrations for the specified constituents. Results must include supporting calculations, if required.

Land Application Area Reporting:

- 1. The type of crop(s) grown, planting and harvest dates, and the quantified nitrogen and fixed dissolved solids uptakes including potassium (as estimated by technical references or, preferably, determined by representative plant tissue analysis).
- 2. The monthly and annual discharge volumes during the reporting year expressed as million gallons and inches.
- 3. A monthly balance for the reporting year that includes:
 - a. Monthly average ET_o (observed evapotranspiration) – Information sources include California Irrigation Management Information System (CIMIS) <http://www.cimis.water.ca.gov/>
 - b. Monthly crop uptake
 - i. Crop water utilization rates are available from a variety of publications available from the local University of California Davis extension office.
 - ii. Irrigation efficiency – Frequently, engineers include a factor for irrigation efficiency such that the application rate is slightly greater than the crop utilization rate. A conservative design does not include this value.
 - c. Monthly average precipitation – this data is available at <http://www.cimis.water.ca.gov/> or at <http://www.ncdc.noaa.gov/oa/climate/online/ccd/nrmlprcp.html>.
 - d. Monthly average and annual average discharge flow rate.

- e. Monthly estimates of the amount of wastewater percolating below the root zone (i.e., amount of wastewater applied in excess of crop requirements)
4. A summary of average and cycle BOD loading rates.
5. The total pounds of nitrogen applied to the land application areas in lbs/acre-year, as calculated from the sum of the monthly loadings.
6. The total pounds of fixed dissolved solids (FDS) that have been applied to the land application areas in lbs/acre-year, as calculated from the sum of the monthly loadings.

Soil Reporting:

1. The tabulated summary results of Soil Monitoring as specified on [page 4](#).

The Discharger shall implement the above monitoring program on the first day of the month following adoption of this Order.

Ordered by:

Original signed by:

PAMELA C. CREEDON, Executive Officer

5 June 2015

(Date)

GLOSSARY

BOD ₅	Five-day biochemical oxygen demand
CaCO ₃	Calcium carbonate
EC	Electrical conductivity at 25° C
FDS	Fixed dissolved solids
TKN	Total Kjeldahl nitrogen
TDS	Total dissolved solids
Continuous	The specified parameter shall be measured by a meter continuously.
24-Hour Composite	Unless otherwise specified or approved, samples shall be a flow-proportioned composite consisting of at least eight aliquots.
Daily	Samples shall be collected every day.
Twice Weekly	Samples shall be collected at least twice per week on non-consecutive days.
Weekly	Samples shall be collected at least once per week.
Twice Monthly	Samples shall be collected at least twice per month during non-consecutive weeks.
Monthly	Samples shall be collected at least once per month.
Bimonthly	Samples shall be collected at least once every two months (i.e., six times per year) during non-consecutive months
Quarterly	Samples shall be collected at least once per calendar quarter. Unless otherwise specified or approved, samples shall be collected in January, April, July, and October.
Semiannually	Samples shall be collected at least once every six months (i.e., two times per year). Unless otherwise specified or approved, samples shall be collected in March and September.
Annually	Samples shall be collected at least once per year. Unless otherwise specified or approved, samples shall be collected in October.
mg/L	Milligrams per liter
mL/L	Milliliters [of solids] per liter
ug/L	Micrograms per liter
umhos/cm	Micromhos per centimeter
mgd	Million gallons per day
General Minerals	Analysis for General Minerals shall include at least the following:
	Alkalinity (as CaCO ₃) Carbonate (as CaCO ₃) Magnesium Sodium
	Bicarbonate (as CaCO ₃) Chloride Manganese Sulfate
	Boron Hardness Nitrate (NO ₃ -N) TDS
	Calcium Iron Potassium
	General Minerals analyses shall be accompanied by documentation of cation/anion balance.

INFORMATION SHEET

ORDER R5-2015-0086
THE WINE GROUP, INC.
GOLDEN STATE VINTNERS D.B.A. FRANZIA-MCFARLAND WINERY
KERN COUNTY

BACKGROUND

The Golden State Vintners d.b.a. Franzia-McFarland Winery, accompanying vineyard and land application areas are in Section 30, Township 26 South, Range 28 East, Mount Diablo Base & Meridian at 31795 Whisler Road in McFarland. The winery crushes, ferments, stores, and blends wine in addition to producing high-proof alcohol via distillation. The Wine Group, Inc. (TWG or Discharger), purchased the winery in 2003. The previous owners include Bisceglia Brothers Wine Company, Canandaigua Wine Company, and Capello Winery. Waste Discharge Requirements (WDR) Order No. 91-040 and associated Monitoring and Reporting Program (MRP) were adopted on 25 January 1991. A draft revised MRP was issued to the winery in 2000 and was used for monitoring by the previous owner and TWG until September 2007, when Central Valley Water Board staff instructed TWG to revert to the adopted 1991 MRP.

Cease and Desist Order (CDO) No. 91-041 was adopted by the Central Valley Water Board on 25 January 1991 because, at the time, the Discharger violated, or threatened to violate conditions of WDRs Order No. 91-040. The CDO included a time schedule to fully comply with WDRs Order No. 91-040. Based on the information included in the Central Valley Water Board's project file, it appears the Discharger has completed the tasks required by CDO No. 91-041. This Order includes Receiving Water Limitations for groundwater that are similar to WDRs Order No. 91-040 and addition Discharge Specifications. Therefore, CDO No. 91-041 was rescinded by Resolution R5-2015-0090, adopted by the Central Valley Water Board on 5 June 2015.

Wastewater

The winery produces two waste streams, winery process water (Discharge 001) and stillage waste (Discharge 002). Discharge 001 is made up of wash water, cooling water, and ion exchange wastewater. Discharge 002 is the waste stream generated by the distillation process.

Current flows based on data provided by the Discharger from 2011 through 2014, range from 0.001 mgd to 1.631 mgd with average of 0.118 mgd for Discharge 001 and range from 0.005 mgd to 0.146 mgd with an average of 0.059 mgd for Discharge 002.

For Discharge 001, the total annual volume of wastewater discharged from 2011 through 2014 was: 48 million gallons in 2011; 28.7 million gallons in 2012; 23.2 million gallons in 2013; and 18.6 million gallons in 2014.

For Discharge 002, the total annual volume of wastewater discharged from 2011 through 2014 was: 3.5 million gallons in 2011; 0.9 million gallons in 2012; 1.4 million gallons in 2013; and 1.8 million gallons in 2014.

Source Water

Source water for the winery is provided by an on-site water supply well. The Discharger has been monitoring the electrical conductivity (EC) of the source water on a daily basis when Discharge 001 is occurring. For 2013 through 2014, the EC of the source water ranged from 826 micromhos per centimeter (umhos/cm) to 1,891 umhos/cm, with an average of 1,116 umhos/cm.

DISPOSAL METHODS

Solids

Solids generated at the winery consist of a grape solid by-product from processing. The Discharger estimates approximately 4,500 tons of solids are produced annually during August through November and are sold and hauled off-site by the end of January.

Wastewater

Wastewater generated from wine processing (Discharge 001) and distillation activities (Discharge 002) are discharged on-site to two separate Land Application Areas (LAAs).

LAA-01 receives Discharge 001, is approximately 75 acres in size and is divided into 53 checks. Discharge 001 is applied to one check at a time via flood irrigation and absorbed via rapid infiltration. No crops are currently grown in LAA-01. Discharge 001 is collected in a sump and pumped to LAA-01.

LAA-02 consists of 20 acres and is in the southwest corner of the winery. It is divided into 15 checks. Discharge 002 is managed separately from Discharge 001. Stillage is discharged directly to LAA-02. No crops are currently grown in LAA-02.

GROUNDWATER CONDITIONS

Three monitoring wells (MW-1, MW-2, and MW-3) were installed at the winery in the mid-1990's. The direction of groundwater flow has historically been to the south, fluctuating between southwest and southeast. Due to the decline in groundwater elevation, well MW-3 went dry in 2008 and MW-2 went dry in 2012. Due to a decline in groundwater elevation below the bottom of two of the original monitoring wells, the Discharger installed monitoring wells MW-4 and MW-5 in June 2013. Although these wells were constructed with 70 feet of screen, only ten feet of screen was installed below first encountered groundwater in MW-4 and only 30 feet of screen was installed below first encountered groundwater in MW-5. Central Valley Water Board Staff's letter approving the well installation work plan requested the wells be installed with 50 feet of screen below first encountered groundwater. In a 23 January 2014 letter, staff requested the Discharger explain why the wells were not installed deeper. To date, the Discharger has not submitted the requested explanation. Both wells were dry by June 2014. Currently, only MW-1 is constructed with screen below first encountered groundwater.

There is no discernable difference between the concentrations of nitrate as nitrogen in groundwater upgradient and downgradient of LAA-001 and LAA-002. The elevated electrical conductivity (EC) in monitoring well MW-4 and elevated iron concentration in well MW-5,

compared to upgradient wells are indicative of possible organic overloading of the land application areas.

REGULATORY CONSIDERATIONS

Basin Plan

The *Water Quality Control Plan for the Tulare Lake Basin*, Second Edition (hereafter Basin Plan) designates beneficial uses, establishes water quality objectives, contains implementation plans and policies for protecting waters of the basin, and incorporates by reference plans and policies adopted by the State Water Board. Pursuant to Water Code section 13263(a), waste discharge requirements must implement the Basin Plan. The winery and land application area lie within the North Kern Hydrologic Area (No. 558.80) of the South Valley Floor Hydrologic Unit, as depicted on interagency hydrologic maps prepared by the State Water Resources Control Board and the Department of Water Resources, revised August 1986. The Basin Plan designates the beneficial uses of underlying groundwater as municipal and domestic supply; agricultural supply; and industrial service and process supply.

Treatment and Control Practices

The Discharger has implemented or will implement the following treatment and control of the discharge:

- a. Reuse of wastewater for irrigation of crops at agronomic rates;
- b. A cycle average BOD loading limitation of 100 lbs/acre/day when wastewater is applied via flood irrigation or 150 lbs/acre/day when wastewater is applied via sprinkler or water cannon irrigation;
- c. Resting periods between wastewater applications;
- d. Hydraulic loading rates that preclude standing water in the land application areas;
- e. Proper handling and off-site disposal of solids;
- f. Groundwater monitoring to monitor the impact of the discharge on first encountered groundwater, and
- g. Preparation of a Salinity Control Plan and Wastewater Nutrient Management Plan.

In combination with the requirements of this Order, these treatment and control measures represent best practicable treatment and control (BPTC).

Antidegradation

The antidegradation directives of State Water Board Resolution No. 68-16, "*Statement of Policy With Respect to Maintaining High Quality Waters in California*," or "Antidegradation Policy" require that waters of the State that are better in quality than established water quality objectives be maintained "consistent with the maximum benefit to the people of the State." Policy and procedures for complying with this directive are set forth in the Basin Plan.

The discharge and the potential for groundwater degradation allowed in this Order is consistent with the Antidegradation Policy since: (a) the limited degradation allowed by this Order will not result in water quality less than water quality objectives, or unreasonably affect present and anticipated beneficial uses of groundwater, (b) the Discharger have implemented BPTC to minimize degradation, and (c) the limited degradation is of maximum benefit to people of the State.

Title 27

Unless exempt, the release of designated waste is subject to full containment pursuant to Title 27 requirements. Here, the discharge is exempt from the requirements of Title 27 pursuant to the wastewater exemption found at Title 27, section 20090(b).

California Environmental Quality Act

A mitigated negative declaration was prepared in support of adoption of WDRs Order No. 91-040. This Order does not allow for increased effluent flow rates from the winery. Therefore, the action to adopt waste discharge requirements for this existing facility is exempt from the provisions of the California Environmental Quality (CEQA), in accordance with the California Code of Regulations, title 14, section 15301

PROPOSED ORDER TERMS AND CONDITIONS

Discharge Prohibitions, Effluent Limitations, Discharge Specifications, and Provisions

The proposed Order prohibits discharge to surface waters and drainage courses.

The proposed Order sets the following Discharge Specifications for effluent flow from the winery:

1. For Discharge 001, effluent flow rate shall not exceed a monthly average daily flow rate of 0.275 mgd.
2. For Discharge 002, effluent flow rate shall not exceed a maximum annual flow rate of 3 million gallons per year when the size of LAA-002 is 20 acres and 4.5 million gallons per year when the size of LAA-002 is 30 acres.

The Discharger has indicated its business plan calls for increasing distillation activities at the winery, which will increase the flow rate of Discharge 002 above recent flow rates observed during 2011 through 2014, but less than the permitted flow rate from WDRs Order No. 91-040. The Discharger would ultimately like to discharge up to 20 million gallons per year. This Order includes an annual flow limitation of 3 million gallons per year, which is commensurate with the 20-acre size of LAA-002 and total nitrogen and BOD loadings. With an average total nitrogen effluent concentration of 279 mg/L and 20 acres available in LAA-002, an annual flow of 3 million gallons from Discharge 002 would result in a total nitrogen loading of 350 pounds per acre per year. The Discharger has additional land available and has indicated it can easily increase the size of LAA-002 by 10 acres for a total size of 30 acres available to receive Discharge 002. With an average total nitrogen effluent concentration of 279 mg/L and 30

acres available in LAA-002, an annual flow of 4.5 million gallons from Discharge 002 would result in a total nitrogen loading of 350 pounds per acre per year.

In order for the Discharge Specification to be increased to up to 20 million gallons per year, the Discharger shall submit a technical report justifying how the revision will not degrade or threaten to degrade groundwater quality. Central Valley Water Board would consider any justified change through amendment of the adopted Order.

The 12-month rolling average EC of Discharge 001 shall not exceed the 12-month rolling average EC of the source water plus 500 umhos/cm. When source water is from more than once source, the EC shall be a flow-weighted average of all sources

Consistent compliance with the effluent limitation for EC is not immediately practicable. Therefore, the tentative WDRs include a compliance schedule to allow Discharge 001 to come into compliance with the effluent limitation. The compliance schedule also requires the Discharger to submit for Executive Officer approval and implement a Salinity Control Plan and a Wastewater and Nutrient Management Plan. The compliance schedule will be for a period of three years.

Application of waste constituents to the LAAs shall be at reasonable agronomic rates to preclude creation of a nuisance or unreasonable degradation of groundwater, considering the crop, soil, climate, and irrigation management system. The annual nutritive loading of the wastewater application area, including the nutritive value of organic and chemical fertilizers, manure from non-commercial livestock, and of the wastewater, shall not exceed the annual crop demand.

This Order requires the Discharger to evaluate the adequacy of the existing groundwater monitoring well network and propose the installation of additional wells as necessary.

Monitoring Requirements

Water Code section 13267 authorizes the Central Valley Water Board to require monitoring and technical reports as necessary to investigate the impact of a waste discharge on waters of the State. Water Code section 13268 authorizes the assessment of administrative civil liability for failure to submit required monitoring and technical reports.

The Order includes monitoring requirements for effluent, soil, and groundwater. In addition, the Order requires loading calculations to the LAA for wastewater, irrigation water, organics, nutrients, and salts. This monitoring is necessary to characterize the discharge, and evaluate compliance with effluent limitations and discharge specifications prescribed in the Order.

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. It may be appropriate to reopen the Order if new technical information is provided or if applicable laws and regulations change.



Ø Monitoring Well + Soil Sampling Location

Drawing Reference:
GOOGLE MAPS
2014

ATTACHMENT A – SITE LOCATION MAP
WASTE DISCHARGE REQUIREMENTS
ORDER R5-2015-0086
THE WINE GROUP, INC.
GOLDEN STATE VINTNERS D.B.A.
FRANZIA-MCFARLAND WINERY
KERN COUNTY

