

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

WASTE DISCHARGE REQUIREMENTS ORDER R5-2015-XXXX
FOR
GIUMARRA VINEYARDS CORPORATION AND
GIUMARRA AND ASSOCIATES BEVERAGE COMPANY, LLC
EDISON GRAPE PROCESSING FACILITY
KERN COUNTY

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

Background

1. Giumarra Vineyards Corporation (hereafter Giumarra or Discharger) owns and operates a grape processing facility (Edison Facility) at 11220 Edison Highway in Edison, California. The discharge is regulated under Waste Discharge Requirements (WDRs) Order 74-66 that authorizes the discharge of bottling spillage, wash waters, and domestic wastewater to a septic tank and leachfield system. Order 74-66 also authorizes the discharge of winery wastewater to ponds and a land application area (LAA).
2. On 15 August 1980, the Central Valley Water Board issued Revised Monitoring and Reporting Program (MRP) 74-66 to add constituents to the effluent monitoring and include soil monitoring and groundwater monitoring.
3. On 31 October 2014, NV5 Beyond Engineering (Consultant) submitted a Report of Waste Discharge (RWD) on behalf of Giumarra for a monthly average flow of 192,000 gallons per day (gpd) (annual discharge of 70 million gallons) of comingled clean-in-place wastewater, ion-exchange regeneration wastewater, boiler blowdown, and condensate from the evaporator (hereafter grape process wastewater), condensates and defrost wastewater (cold storage wastewater), water softer regenerate and reverse osmosis reject wastewaters (bottling/canning wastewater), and potato washing wastewater (potato wastewater) to 80 acres owned by Giumarra. The RWD indicates Giumarra owns an additional 75 acres that could be made available, if needed, to expand the LAA.
4. The Edison Facility occupies Assessor's Parcel Numbers (APNs) 177-120-02-01-9, 177-120-03-00-3, 177-120-04-00-6, 170-20-05-00-9, and 177-120-07-00-5. The 80-acre LAA and the additional 75 acres occupy APNs 388-040-04-00-1, 380-040-02-00-5, 388-040-03-00-8, and 388-040-08-00-3. The Edison Facility and the LAA's are shown on Attachment A, which is incorporated by reference and a part of this Order.

5. WDRs Order 74-66 and Revised MRP 74-66 need to be updated to ensure that the discharge is consistent with Central Valley Water Board plans and policies and to prescribe requirements that reflect changes the Discharger has made to its Edison Facility and operations. WDRs Order 74-66 will be rescinded and replaced with this Order.

Existing Facility and Discharge

6. Operations at the Edison Facility include: processing grapes to produce grape juice/concentrate products, cold storing grapes for distribution to supermarkets, bottling/canning of carbonated non-alcoholic beverages and energy drinks, and storing wine.
7. The Edison Facility operates year round with the crush season from August through November. During the crush season, the Edison Facility operates 24 hours per day, 6 days a week. During the non-crush season, the Edison Facility operates 24 hours per day, 5 days a week.
8. Giumarra processes approximately 12,000 to 20,000 tons of grapes per year. Grapes are crushed and transferred into tanks prior to being screened and again stored in tanks. To produce juice concentrate, juice from the tanks is processed through an evaporator, filtered and processed through ion-exchange units, then passed through a final evaporator. Waste streams generated from the grape processing operation include clean-in-place wastewater, ion-exchange regeneration wastewater, boiler blowdown, and condensate from the evaporator (grape process wastewater).
9. Approximately 4,000 tons of solid waste is generated from the grape processing operation of which, 40 percent is pomace that is hauled off-site to a dairy for animal feed, and 40 percent is stems that are land applied to property owned by Giumarra that does not include the 80-acre LAA. The remaining 20 percent of the solids is not characterized in the RWD and is reportedly taken to a landfill. This Order requires the Discharger to prepare a Solids Management Plan to characterize all solids removed during the grape processing operation and demonstrate that disposal operations are consistent with Central Valley Water Board plans and policies. This Order also requires the Discharger to report the amount of solids produced, disposal method used, and ultimate disposal site.
10. The cold storage portion of the Edison Facility operates from July through December, 24 hours per day, 7 days week. Waste streams generated from the cold storage operation include condensates and defrost wastewater (cold storage wastewater).
11. Since 2007, Giumarra and Associates Beverage Company, LLC (GABCO) has been in operation at the Edison Facility producing non-alcoholic beverages and energy drinks. GABCO operates year round with the peak season from May through September. The bottling/canning process includes carbonation, filtration, softening, reverse osmosis treatment, batching, and filling. Wastewater generated from the bottling/canning operation includes water softener regenerate and reverse osmosis reject wastewaters (bottling/canning wastewater).

12. Grape processing wastewater, cold storage wastewater, and bottling/canning wastewater are comingled in a sump before being discharged to the 80-acre LAA. A process flow schematic is shown in Attachment B, which is incorporated by reference and a part of this Order. Based on data from 2013 through 2014, the quality of the comingled wastewater is shown in Table 1.

Table 1. Annual Average Quality of Comingled Wastewater

Constituent/Parameter	Units	2013	2014
Biochemical Oxygen Demand	mg/L	1,059	1,735
Electrical Conductivity (EC)	umhos/cm	1,206	1,142
Total Dissolved Solids (TDS)	mg/L	1,434	1,843
Fixed Dissolved Solids	mg/L	860	905
Total Suspended Solids	mg/L	125	70
Chloride	mg/L	261	197
Total Nitrogen	mg/L	11	13
Total Kjeldahl Nitrogen	mg/L	7	9
Nitrate as Nitrogen	mg/L	4	3

13. Based on 2013 and 2014 annual data, organic compounds appear to comprise 40 percent to 50 percent of the comingled wastewater TDS, with a FDS of 860 mg/L (in 2013) and 905 mg/L (in 2014), and an average TDS of 1,434 mg/L (in 2013) and 1,843 (in 2014).

Proposed Facility and Discharge

14. Historically, Giumarra accepted harvested potatoes for washdown and preparation for commercial sale. According to the RWD, the potato processing operations will be reinstated and will run from December through June of each year. Source water from the Niles Community Services District is used for the potato processing operation and is stored in two unlined ponds where chlorine is added to control odors and bacteria. The ponds are continuously refilled with source water. At the end of the potato season, the wastewater will be discharged to the 80-acre LAA.
15. No data is available from Giumarra's historic potato processing operation. However, the quality of potato processing wastewater from a similar potato facility that washes and packages potatoes for commercial sale is shown in Table 2.

Table 2. Annual Average Quality of Potato Wastewater

Constituent/Parameter	Units	2011	2012
Biochemical Oxygen Demand	mg/L	71	24
EC	umhos/cm	947	1,048
TDS	mg/L	1,106	991
Fixed Dissolved Solids	mg/L	---	---
Total Suspended Solids	mg/L	102	36
Chloride	mg/L	214	258
Total Nitrogen	mg/L	---	---
Total Kjeldahl Nitrogen	mg/L	6	3.6
Nitrate as Nitrogen	mg/L	1.4	1.2

16. Chemicals used at the Edison Facility include: malic acid (3,500 lbs/yr), sulfuric acid (299,660 lbs/yr), sulfur dioxide (231,300 lbs/yr), ammonium hydroxide (252,080 lbs/yr), hydrated lime (65,000 lbs/yr), AlkaChlor NF (clean-in-place chemical) (14,460 gal/yr), calcium hypochlorite (3,200 lbs/yr), Agro-Chlor Solution (disinfectant) (165 gal/yr), sodium hypochlorite (30 gal/yr), brine solution (4,656 gal/yr), and salt (98,000 lbs/yr).
17. Storm water generated on-site drains in underground drains and concrete swales to seven unlined ponds with a total storage capacity of 10 million gallons. The footprint of the seven ponds is approximately eight acres with a depth of six feet. According to the RWD, during emergencies, wastewater may be discharged to the storm water ponds and then pumped to the sump and LAA.
18. Domestic wastewater is discharged separately to an on-site septic tank/leachfield regulated by Kern County.

Land Application Area Practices

19. Excessive application of food processing wastewater to land can create objectionable odors, soil conditions that are harmful to crops, and degradation of underlying groundwater by overloading the soil profile and causing waste constituents (i.e., organic carbon, nitrates, other salts, and metals) to percolate below the root zone. Irrigation with high-strength wastewater can result in high BOD loading on the day of application, which can deplete oxygen in the soil and lead to anoxic conditions. When insufficient oxygen is present below the ground surface, anaerobic decay of organic matter can create reducing conditions that convert metals 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 reducing conditions do not reverse as the percolate travels through the vadose zone, these dissolved metals (primarily iron, manganese, and arsenic) can degrade shallow groundwater quality. Excessive organic loading can also increase groundwater bicarbonate concentrations, which cause increases in groundwater EC and total dissolved solids.

20. 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 causing unreasonable degradation of groundwater can vary significantly depending on soil conditions and operation of the land application system.
21. Pollution Abatement in the Fruit and Vegetable Industry, published by the United States Environmental Protection Agency, cites BOD loading rates associated with crop irrigation in the range of 36 to 100 lbs/acre/day to prevent nuisance, but indicates that loading rates can be even higher under certain conditions. The studies that support this report did not evaluate actual or potential groundwater degradation associated with those loading rates. There are few studies that have attempted to determine maximum BOD loading rates for protection of groundwater quality. Those that have are not readily adapted to varying soil, groundwater, and climate conditions that are prevalent throughout the region.
22. The California League of Food Processors *Manual of Good Practice for Land Application for Food Processing/Rinse Water* proposes risk categories associated with particular BOD loading rate ranges as follows:
 - a. Risk Category 1: (less than 50 lbs/ac/day; depth to groundwater greater than 5 feet) Indistinguishable from good farming operations with good distribution important.
 - b. Risk Category 2: (less than 100 lbs/ac/day; depth to groundwater greater than 5 feet) Minimal risk of unreasonable groundwater degradation with good distribution more important.
 - c. Risk Category 3: (greater than 100 lbs/ac/day; depth to groundwater greater than 2 feet) Requires detailed planning and good operation with good distribution very important to prevent unreasonable degradation, as well as use of oxygen transfer design equations that consider site-specific application cycles and soil properties and special monitoring.

The *Manual of Good Practice* recommends allowing a 50 percent increase in the BOD loading rates in cases where sprinkler irrigation is used, but recommends that additional safety factors be used for sites with heavy and/or compacted soils. The Manual of Good Practice also states that the use of surface irrigation (boarder check method) makes uniform application difficult, especially for coarse textured soils.

23. Although it has not been subject to a scientific peer review process, the Manual of Good Practice provides science-based guidance for BOD loading rates that, if fully implemented, may be considered management practices to prevent groundwater degradation due to reduced metals.
24. Soils in the 80-acre LAA are predominately Delano Sandy Clay Loam followed by Cuyaman Loam, according to the Web Soil Survey published by the United States Department of Agriculture, Natural Resources Conservation Service. Delano Sandy Clay Loam has a land capacity classification of 1. Soils with "Class 1" have slight limitations that restrict their use.

Cuyaman has a land capacity classification of 6e. Soils with "Class 6" have severe limitations that make them generally unsuitable for cultivation and that restrict their use mainly to pasture, rangeland, forestland, or wildlife habitat. The subclass "e" shows that the main problem is the hazard of erosion unless close-growing plant cover is maintained. The susceptibility to erosion and past erosion damage are the major soil-related factors affecting the soils that are assigned this subclass. In 1974, a permeability test was performed at the Facility. Results indicate that soils at the Facility have a permeability rate of 5 minutes per inch (or 24 feet per day).

25. The 80-acre LAA is flood irrigated with wastewater using furrows up to 800 feet in length. The 80-acre LAA is divided into three fields. Furrows in the north field are oriented east to west. Furrows in the middle and south fields are oriented southeast to northwest. On any given day during the processing season, three to four furrow lines are open at the same time. Current management practices include growing native grasses in the LAA and plowing them twice a year. There is no set rotation pattern for irrigation and no set rest period between wastewater applications. The Discharger does not intensively manage the LAA to ensure wastewater and nutrients are applied evenly at agronomic rates. Because of the coarse nature of the soils in the area and the long furrow lengths, wastewater loading concentrates at the upper end of the furrows and may not reach the lower end of the furrows.
26. Review of the October 2009, July 2013 and October 2013 aerial photographs on Google Earth depict how wastewater discharged at the 80-acre LAA is concentrated at the head of the furrows and does not typically reach the entire length of the furrows. Further, the aerial photographs show that wastewater is mostly applied to the middle field and the south west corner of the south field as shown in the July 2013, August 2013, and April 2014 aerial photographs. This uneven distribution of wastewater has the potential to degrade and pollute groundwater.
27. The Discharger has identified an additional 75 acres as potential LAA that it says it will flood irrigate and grow native grasses similar to the 80-acre LAA. The RWD states that sudan grass may be grown and harvested in the future. Approximately 29 acres of the additional 75 acres are currently fallow and have not been used as farmland. Conversion of this land into cultivation would require additional environmental review. At this time 46 acres of the 75 acres could be used for wastewater reuse. However, in addition to the 75 acres, the Discharger owns an additional 181 acres of farmland that was not described in the RWD but could potentially be used as LAA; this farmland is shown on Attachment C, which is incorporated by reference and a part of this Order.
28. The average BOD loading rate to the 80-acre LAA, assuming a proposed monthly average flow of 192,000 gpd, an effluent BOD concentration of 1,735 mg/L, and that the discharge is spread evenly across the 80-acre LAA, is 35 lbs/acre/day, every day. As discussed above, with an additional 46 acres of potential farmland, the BOD loading rate to a total of 126 acres (80 acres plus 46 acres) is 22 lbs/acre/day. Giumarra has not provided enough information to determine cycle average BOD loading rates for the LAA's. In order to provide a seven day rest period and meet a typical cycle average BOD loading rate of 100 lbs/acre/day, the average daily wastewater flow to the 80-acre LAA would have to be reduced to approximately

78,900 gpd (annual discharge of 29 million gallons). With the additional 46 acres of land, the average daily wastewater flow to meet the cycle average BOD loading rate would be 124,000 gpd (annual discharge of 45 million gallons) which is less than proposed 192,000 gpd (annual discharge of 70 million gallons). At the proposed flow of 192,000 gpd, the Discharger needs a total of approximately 195 acres of LAA in order to provide a seven day rest period and meet a typical cycle average BOD loading limit of 100 lbs/acre/day.

29. The total nitrogen loading rate to the 80 acres of LAA based on a proposed annual flow of 70 million gallons, a total nitrogen concentration of 13 mg/L, and that wastewater is evenly distributed would be 95 lbs/acre/year. With the additional 46 acres of land, the nitrogen loading rate to a total of 126 acres (80 acres plus 46 acres) would be 60 lbs/acre/day. The RWD assumes the nitrogen uptake rates for native grasses/pastures will be similar to that of oats (115 lbs/acre/year). Given that the native grasses are disked into the soil, nitrogen uptake is assumed to be minimal. The uneven application of nitrogen with wastewater and the lack of a demonstrated uptake mechanism for nitrogen indicates the discharge threatens underlying groundwater.
30. This Order requires the Discharger to submit a Wastewater and Nutrient Management Plan (Provision G. 13.) that details proposed methods to evenly apply wastewater to the 80-acre LAA and the additional 46 acres of LAA's if Giumarra decides to incorporate these to its LAA. Giumarra will also need to describe the amount of nutrient crops grown in the LAA's will take up based on site specific information and demonstrate how much wastewater may be applied to the LAA's without violating the terms of this Order.

Source Water

31. The Edison Facility receives supply water from East Niles Community Services District. The quality of supply water based on the annual average is tabulated below.

Table 3. Annual Average Source Water Quality

Constituent/Parameter	Units	2013	2014
Biochemical Oxygen Demand	mg/L	3	1.8
EC	umhos/cm	930	785
TDS	mg/L	599	512
Fixed Dissolved Solids	mg/L	461	379
Total Suspended Solids	mg/L	1.0	1.1
Chloride	mg/L	103	89
Total Nitrogen	mg/L	4	3.4
Total Kjeldahl Nitrogen	mg/L	0.1	<0.20
Nitrate as Nitrogen	mg/L	4	3.4

Site-Specific Conditions

32. Land uses in the vicinity of the Edison Facility and LAA's are primarily agricultural. Crops grown in the area include: oranges, vineyards, and field crops, according to the Kern County 2006 Land Use Maps published by the Department of Water Resources.
33. The Edison Facility and LAA's are in an arid climate characterized by dry summers and mild winters. The rainy season generally extends from November through April. Average annual pan evaporation is about 70 inches and the average annual precipitation is about 7.5 inches according to the Department of Water Resources, Agricultural Climate and Evaporation Data published in 1996.
34. According to the September 2008 Federal Emergency Management Agency maps (Map Numbers 06029C2307E), a small portion of the Edison Facility is in Zone A. In Zone A, there is a one percent annual chance of flooding (typically called the 100-year floodplain). No depth or base flood elevations are shown in the FEMA maps for this area. A portion of the future LAA, adjacent to the Edison Facility is in Zone AH. In Zone AH, there is a one percent annual chance of shallow flooding (typically called the 100-year floodplain), usually in the form of a pond, with an average depth ranging from 1 to 3 feet. The 80-acre LAA and remainder portions of the future LAA are in Zone X, areas outside of the 100-year floodplain.

Basin Plan, Beneficial Uses, and Water Quality Objectives

35. The *Water Quality Control Plan for the Tulare Lake Basin, Second Edition, revised January 2004* (hereafter "Basin Plan") designates beneficial uses, establishes narrative and numerical water quality objectives, contains implementation plans and policies for protecting all waters of the Basin, and incorporates, by reference plans and policies of the State Water Board. In accordance with Water Code section 13263 (a), these waste discharge requirements implement the Basin Plan.
36. The Edison Facility, the 80-acre LAA, and the future 46 acres of LAA are all in Detailed Analysis Unit (DAU) No. 258, within the Kern County Basin unit. The Basin Plan identifies the beneficial uses of groundwater in the DAU as municipal and domestic supply (MUN), agricultural supply (AGR), industrial service supply (IND), and industrial process supply (PRO).
37. The Edison Facility, the 80-acre LAA, and the future 46 acres of LAA's are in the Arvin-Wheeler Ridge Area No. 557.30 of the South Valley Floor Hydrologic Unit, as depicted on hydrologic maps prepared by State Water Resources Control Board in August 1986. As indicated in the Basin Plan, the beneficial uses of Valley Floor Waters are: agricultural supply (AGR), industrial service supply (IND), industrial process supply (PRO), water contact recreation (REC-1), non-water contact recreation (REC-2), warm freshwater habitat (WARM), wildlife habitat (WILD), rare, threatened, or endangered species (RARE), and groundwater recharge (GWR).

38. The Basin Plan includes narrative water quality objectives for chemical constituents that, at a minimum, require water designated as domestic or municipal supply to meet the Maximum Contaminant Levels (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.
39. The Basin Plan establishes narrative water quality objectives for chemical constituents, taste and odors, and toxicity. The toxicity objective, in summary, 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. Quantifying a narrative water quality objective requires a site-specific evaluation of those constituents that have the potential to impact water quality and beneficial uses.
40. 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 limitation in order to implement the narrative objective.
41. 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 there is a long-term solution to the salt imbalance. Until then, 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 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 to good quality groundwater, the Basin Plan states that they shall not exceed an EC of 1,000 umhos/cm, a chloride of 175 mg/L, or a boron content of 1.0 mg/L. The Basin Plan generally applies these limits to industrial discharges to land.
42. The Basin Plan authorizes an exemption to the incremental EC increase limit in Finding 41.a. for food processing industries that discharge to land and exhibit a disproportionate increase in EC of the discharge over the EC of the source water due to unavoidable concentrations of organic dissolved solids from the raw food product, provided that beneficial uses are protected. Exceptions must be based on demonstration of best available technology and best management practices that control inorganic dissolved solids to the maximum extent feasible.

Groundwater Considerations

43. The Discharger has not conducted required groundwater monitoring and there are no monitoring wells in the immediate vicinity of LAA. Groundwater in area is approximately 350 feet below ground surface (ft bgs) and flows in the southwest direction, according to the *Lines of Equal Elevation of Water in Wells* map published by the DWR in 2010.

44. The quality of groundwater in the area, based on four nearby wells, is shown in Table 4. The depth of the wells ranges from 660 to 1,957 ft bgs.

Table 4. Groundwater Quality

	Well Depth (feet)	Date Sampled	EC (umhos/cm)	TDS (mg/L)	Nitrate as Nitrogen (mg/L)	Chloride (mg/L)
29S29E31H001M	798	7/12/1955	559	---	---	37
		6/16/1966	628	470	1.5	67
		7/25/1977	600	361	1.0	71.5
29S29E32L001M	660	8/4/1952	595	---	3.1	40
		8/12/1953	650	---	2.1	40
		5/25/1954	796	476	12.0	74
		7/12/1955	678	---	---	44
		10/19/1955	666	---	---	42
29S29E32L002M	1,100	4/7/1948	622	360	0.05	69
		5/18/1965	840	---	0.34	119
29S29E33F002M	1,957	9/25/1957	1,080	---	0.14	225
		5/3/1966	845	702	5.0	84

45. Water quality from the Orange Grove Recreational Vehicle (RV) Park approximately half a mile south of the Edison Facility is tabulated below. For comparison purposes, State drinking water primary and secondary maximum contaminant levels (MCLs) are listed at the end of the table, where bold, constituent concentration are greater than listed MCLs.

Table 5. Orange Grove RV Park Groundwater Quality

Date Sampled	EC (umhos/cm)	TDS (mg/L)	Chloride (mg/L)
3/31/1988 ¹	1420	985	135
1/11/1997	330	170	10.1
12/21/1997	377	233	10
4/20/1998	320	219	8.8
3/12/2002	522	316	21
MCL	900/1600	500/1000	250

¹ This sampling event shows elevated concentrations of EC, TDS, and chloride in comparison the other sampling events. Sample may be an outlier.

46. Groundwater from the Orange Grove RV Park well has nitrate as nitrogen concentrations ranging from 2.2 mg/L to 21.7 mg/L, and an average of 8 mg/L based data from 1988 through 2015 (55 sampling events).
47. Based on limited data available, it appears groundwater quality meets the water quality objectives for domestic and municipal supply. According to the Groundwater Pollution Study by Kern County Health Department (1980) shallow groundwater in the area has a total dissolved solids ranging from 500 to 1,000 mg/L and boron ranging from 0.07 to 0.1 mg/L. This Order requires the Discharger to monitor groundwater potentially affected by the facility discharges.

Antidegradation Analysis

48. State Water Board Resolution 68-16, the *Statement of Policy with Respect to Maintaining High Quality of Waters in California* (the "Antidegradation Policy"), prohibits the Central Valley Water Board from authorizing activities that will result in the degradation of high quality groundwater unless it has been shown that:
 - a. The degradation will 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 will employ 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.
49. Available groundwater quality data indicate that the local groundwater is of good quality with respect to EC, chloride, and boron and meets the water quality objectives for domestic and municipal supply.
 - a. While the reported average BOD loading rate of 35 lbs/acre/day to the 80-acre LAA is relative low, the organic loading rate is based on the assumption that the discharge is spread evenly across the 80-acre LAA, every day. As described in Findings 25 through 28, the discharge to the 80-acre LAA is not evenly distributed and concentrates at the head of the furrows. The uneven distribution of wastewater is primarily due to high permeable soils at the Edison Facility and current management practices that have the potential to degrade and pollute groundwater. This Order limits the organic loading to 100 lbs/acre/day over an appropriate discharge cycle when wastewater is applied via flood irrigation and up to 150 lbs/acre/day over an appropriate discharge cycle when wastewater is applied via sprinkler irrigation. This Order also requires the submittal of a Wastewater and Nutrient Management Plan to ensure even application of wastewater to the LAA's. These requirements should preclude impermissible degradation of underlying groundwater from organic loading.

- b. For salinity, groundwater in the area is of good quality, with EC ranging from 500 to 1,000 umhos/cm. The source water plus 500 umhos/cm limit is approximately 1,285 to 1,430 umhos/cm. EC of the wastewater varies, but has been up to 1,206 umhos/cm. The Basin Plan allows for an exception to the effluent EC limit contained therein for food processing industries that exhibit a disproportionate increase in EC of the discharge over the EC of the source water plus 500 umhos/cm limit due to unavoidable concentrations of organics. Given that the elevated EC of the wastewater is due to organics that will degrade in the soils, if not properly managed, the effluent limit of 1,000 umhos/cm does not apply. This Order does require Giumarra to submit and implement a Salinity Control Plan.
 - c. For chloride, the average groundwater concentration of 76 mg/L is below the Basin Plan effluent limit of 175 mg/L. Chloride of the process wastewater is 261 mg/L (in 2013) and chloride of the potato wastewater is 258 mg/L (in 2012), both of which exceed the recommended secondary MCL, some agricultural water quality goals for local crops, and the Basin Plan limit for chloride. With respect to boron, groundwater concentrations average 0.2 mg/L, with a maximum concentration of 0.38 mg/L. Boron concentrations of the wastewater are unknown. This Order sets chloride and boron limits of 175 mg/L and 1.0 mg/L, respectively. The Order also includes a provision requiring Giumarra to come into compliance with the Basin Plan effluent chloride limit and, if applicable, the effluent boron limit, as described in Provision G.13. Tasks 2 and 4.
 - d. For Nitrogen, this Order limits the application of wastewater to agronomic rates for both nutrient and hydraulic loading. Total nitrogen loading estimates indicate the discharge will add about 95 lbs/acre/year to the 80-acre LAA in use in any given year if the discharge is evenly distributed. Approximately, 60 lbs/acre/year will be applied to the total 126 acres if Giumarra utilizes the additional 46 acres of LAA and the discharge is evenly distributed. This Order includes a compliance schedule that requires Giumarra to submit and implement a Wastewater and Nutrient Management Plan to assess and implement measures to ensure nitrogen is applied at agronomic rates. These measures should preclude impermissible degradation of underlying groundwater with nitrate as nitrogen.
50. The Discharger provides control of the discharge, or will provide control of the discharge as required by this Order, that incorporates:
- a. Pre-cleaning to remove leaves, twigs, and other debris;
 - b. Preparation and implementation of a Solids Management Plan to characterize the various solids generated at the Edison Facility;
 - c. A cycle average BOD loading rate to the LAA's of 100 lbs/acre/day via flood irrigation and up to 150 lbs/acre/day via sprinkler irrigation;
 - d. Soil monitoring at the LAA's;

- e. Preparation and implementation of a Salinity Control Plan, and a Wastewater and Nutrient Irrigation Management Plan;
- f. Groundwater monitoring and
- g. Groundwater limitations.

These control practices are reflective of BPTC of the discharge.

- 51. Economic prosperity of valley communities and associated industry is of maximum benefit to the people of the State and, therefore, sufficient reason exists to accommodate growth and limited groundwater degradation around the Facility, provided that the terms of the Basin Plan are met. The Discharger aids in the economic prosperity of the region by the direct employment of about 18 to 35 people during the crush season, 15-30 people during the non-crush season, 20-40 people for the cold storage operation, and 62 people for the bottling/canning operation.
- 52. This Order establishes terms and conditions to ensure that the discharge does not unreasonably affect present and anticipated future beneficial uses of groundwater or result in groundwater quality worse than background or the water quality objectives set forth in the Basin Plan.
- 53. This Order is consistent with the Anti-Degradation Policy since: (a) the Discharger has or will implement BPTC to minimize degradation, (b) the limited degradation allowed by this Order will not unreasonably affect present and anticipated future beneficial uses of groundwater, or result in water quality less than water quality objectives, and (c) the limited degradation is of maximum benefit to the people of the State.

Other Regulatory Considerations

- 54. 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.
- 55. Based on the threat and complexity of the discharge, the Edison Facility is 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: "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 units."

56. California Code of Regulations, Title 27 ("Title 27") contains regulatory requirements for the treatment, storage, processing, and disposal of solid waste, which includes designated waste, as defined by Water Code section 13173. However, Title 27 exempts certain activities from its provisions. The grape processing wastewater, cold storage wastewater, bottling/canning wastewater, and potato wastewater discharges are regulated by this Order are exempt from Title 27 pursuant to provisions that exempt wastewater discharges. The exemption, found at Title 27, section 20090, is described below:

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 regional water quality control board has issued WDRs, reclamation requirements, or waived such issuance;
- (2) The discharge is in compliance with 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.

57. The discharge of grape processing wastewater, cold storage wastewater, bottling/canning wastewater, and potato wastewater are authorized herein is exempt from the requirements of Title 27 in accordance with Title 27, section 20090(b) because:

- a. The Central Valley Water Board is issuing WDRs,
- b. The discharge authorized herein will comply with the Basin Plan, and;
- c. The effluent discharged to the LAA's does not need to be managed as hazardous waste.

58. On 1 April 2014, the State Water Board adopted Order 2014-0057-DWQ (NPDES General Permit CAS000001) specifying waste discharge requirements for discharges of storm water associated with industrial activities. Order 2014-0057-DWQ supersedes State Water Board Order 97-03-DWQ (NPDES General Permit CAS000001) and becomes effective 1 July 2015. Order 2014-0057-DWQ requires dischargers to submit Permit Registration Documents for

either Notice of Intent (NOI) or No Exposure Certification (NEC) coverage. The Discharger is not enrolled under 2014-0057-DWQ (NPDES General Permit CAS000001). Storm water generated by this facility does not discharge to waters of the U.S. Coverage under Order 2014-0057-DWQ is not required at this time.

59. Water Code section 13267(b) states that:

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...shall furnish, under penalty of perjury, technical or monitoring program reports which the 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.

60. The technical reports required by this Order and monitoring reports required by the attached MRP R5-2015-XXXX are necessary to assure compliance with these waste discharge requirements. The Discharger owns and operates the Facility that discharges the waste subject to this Order.

61. The issuance of this Order is exempt from the provisions of California Environmental Quality Act ("CEQA")(Pub. Resources Code, § 21000 et seq.) in accordance with California Code of Regulations, title 14, section 15301, which exempts the "operation, repair, maintenance, [and] permitting ... of existing public or private structures, facilities, mechanical equipment, or topographical features" from environmental review. This action may also be considered exempt because it is an action by a regulatory agency for the protection of natural resources (Cal. Code Regs., tit. 14, § 15307.) and an action by a regulatory agency for the protection of the environment (Cal. Code Regs., tit. 14, § 15308.).

62. 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.

Public Notice

63. 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 conditions of discharge of this Order.

64. 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.

65. All comments pertaining to the discharge were heard and considered in a public meeting.

IT IS HEREBY ORDERED that Waste Discharge Requirements Order 74-66, and Revised Monitoring and Reporting Program 74-66, are rescinded except for enforcement purposes. Pursuant to Water Code sections 13263 and 13267, Giumarra Vineyards Corporation, and Giumarra and Associates Beverage Company, LLC, 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 waste to surface waters or surface water drainage courses is prohibited.
2. Discharge of waste classified as 'hazardous', as defined in California Code of Regulations, title 23, section 2521 et seq., is prohibited.
3. Discharge of waste classified as 'designated', as defined in Water Code section 13173, in a manner that causes violation of groundwater limitations, is prohibited.
4. Treatment system bypass or overflow of untreated wastes is prohibited, except as allowed by Standard Provisions E.2 in *Standard Provisions and Reporting Requirements for Waste Discharge Requirements*, dated 1 March 1991.
5. Discharge of wastewater in a manner or location other than that described herein or in the RWD is prohibited.
6. Application of residual solids to the LAA's is prohibited.
7. Discharge of domestic wastewater to the process wastewater treatment system is prohibited.
8. Discharge of process wastewater to the domestic wastewater treatment system (septic system) is prohibited.
9. Discharge of domestic wastewater to the storm water ponds, LAA's, or any surface water is prohibited.

B. Effluent and Mass Loading Limitations

1. The monthly average flow [**Compliance shall be determined at EFF-001**] shall not exceed 192,000 gpd (total annual flow of 70 mgd). The Discharger shall satisfy: Provision G.13, Task 1 within six months following Order adoption and Task 3 no later than 3 years following Order adoption.
2. The cycle average BOD loading rates to LAA's shall not exceed 100 lbs/acre/day over the course of an appropriate discharge cycle (i.e., the time between successive applications) when wastewater is applied via flood irrigation or 150 lbs/acre/day over the course of an appropriate discharge cycle when wastewater is applied via sprinkler irrigation. The

Discharger shall comply with this limitation in accordance with the compliance schedule in Provision G.13, Tasks 1 and 3.

3. The daily maximum chloride and boron concentrations of the discharge shall not exceed 175 mg/L, and 1.0 mg/L, respectively. The Discharger shall comply with this limitation in accordance with the compliance schedule provided in Provision G.13, Tasks 2 and 4. **[Compliance shall be determined at EFF-001]**

C. Discharge Specifications

1. 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 Groundwater Limitations of this Order.
2. Wastewater treatment, storage, and disposal shall not cause pollution or a nuisance as defined by Water Code section 13050.
3. The discharge shall remain within the permitted waste treatment/containment structures and LAA's at all times.
4. The Discharger shall operate all systems and equipment to optimize the quality of the discharge.
5. All conveyance, treatment, storage, and disposal units shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.
6. Objectionable odors shall not be perceivable beyond the limits of 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.
7. As a means of discerning compliance with Discharge Specification C.6, the dissolved oxygen (DO) content in the upper one foot of any pond containing wastewater or irrigation reservoir containing wastewater shall not be less than 1.0 mg/L for three consecutive weekly sampling events. If the DO in any single pond is below 1.0 mg/L for three consecutive sampling events, the discharger shall report the finding to the Central Valley Water Board in writing within 10 days and shall include a specific plan to resolve the low DO issues within 30 days.
8. The Discharger shall operate and maintain all ponds and irrigation reservoirs sufficiently to protect the integrity of containment dams and berms and prevent overtopping and/or structural failure. Unless a California-registered civil engineer certifies (based on design, construction, and conditions of operation and maintenance) that less freeboard is adequate, the operating freeboard in any pond shall never be less than two feet (measured vertically from the lowest possible point of overflow). Process wastewater shall only be discharged to the existing storm water ponds during emergencies.

D. Groundwater Limitations

Release of waste constituents from any component of any treatment, storage, delivery system, or land application area associated with the discharge shall not cause or contribute to groundwater containing constituent concentrations in excess of the concentrations specified below or natural background quality, whichever is greater:

1. Nitrate (as N) of 10 mg/L.
2. For constituents identified in Title 22, the MCLs quantified therein.

E. Land Application Area Specifications

1. Tailwater runoff and spray of wastewater shall not be discharged outside of the LAA's.
2. Crops shall be grown in the LAA. Crops shall be selected based on nutrient uptake, consumptive use of water, and irrigation requirements to minimize crop uptake of water and nutrients.
3. Land application of wastewater shall be managed to minimize erosion.
4. Application of waste constituents to the LAA's shall be at reasonable agronomic rates to preclude creation of a nuisance and degradation of groundwater, considering the crop, soil, climate, and irrigation management system. The annual nutritive loading of the LAA's, including the nutritive value of organic and chemical fertilizers and of the wastewater shall not exceed the annual crop demand.
5. The Discharger shall ensure that water, BOD, and nitrogen are applied and distributed uniformly across each land application area field. The Discharger shall implement changes to the irrigation system and/or operations practices as needed to ensure compliance with this requirement.
6. Hydraulic loading of wastewater and supplemental irrigation water shall be at reasonable agronomic rates.
7. The Discharger may not discharge process wastewater to the LAA within 24 hours of a storm event of measurable precipitation or when soils are saturated.
8. The LAA's shall be managed to prevent breeding of mosquitos. In particular:
 - a. All applied irrigation water must infiltrate within 48 hours;
 - b. Tailwater ditches shall be maintained essentially free of emergent, marginal, and floating vegetation; and

- c. Low-pressure and unpressurized pipelines and ditches accessible to mosquitoes shall not be used to store recycled water.
9. Irrigation of the LAA's shall occur only when appropriately trained personnel are on duty.
10. LAA's shall be inspected as frequently as necessary to ensure continuous compliance with the requirements of this Order.
11. Any irrigation runoff shall be confined to the LAA's and shall not enter any surface water drainage course or storm water drainage system.

F. Solids Specifications

Solids, as used in this document, includes all residual solids, including but not limited to, grape stems and pomace, diatomaceous earth, and semisolids residues removed during the grape processing, or cleaning of equipment.

1. Any drying, handling and storage of solids at the Facility shall be temporary, and controlled and contained in a manner that minimizes leachate formation and precludes the development of odor nuisance conditions and infiltration of waste constituent into soils in a mass or concentration that will violate groundwater limitations of this Order.
2. Collected screenings and other solids removed from the liquid waste shall be disposed of in a manner approved by the Executive Officer and consistent with Title 27. Removal for further treatment, disposal, or reuse at sites (i.e., landfill, composting sites, soil amendment sites) operated in accordance with valid waste discharge requirements issued by a regional water quality control board or as proposed in a Solids Management Plan approved by the Executive Office will satisfy this specification.
3. Any proposed change in solids use or disposal practice shall be reported to the Executive Officer at least 90 days in advance of the change.

G. Provisions

1. The Discharger shall comply with the *Standard Provisions and Reporting Requirements for Waste Discharge Requirements*, dated 1 March 1991 (Standard Provisions), which are part of this Order.
2. The Discharger shall comply with MRP R5-2015-XXXX, which is part of this Order, and any revisions thereto as adopted by the Central Valley Water Board or approved by the Executive Officer.
3. A copy of this Order, including its MRP, Information Sheet, Attachments, and Standard Provisions, shall be kept at the discharge facility for reference by operating personnel. Key operating personnel shall be familiar with its contents.

4. 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 documents 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.
5. 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 include 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.
6. 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.
7. 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.
8. In the event of any change in control or ownership of the Facility, the Discharger shall 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.
9. To assume operation as a 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 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.

10. **By (180 days following Order adoption)**, the Discharger shall submit a Solids Management Plan to characterize the various solids generated at the Edison Facility with respect to organic matter, nutrients, salts, and metals; identify any practicable beneficial uses (i.e., soil supplement, animal feed, biomass fuel, etc.); provide a description of the tasks, cost, and time required to investigate and implement various beneficial reuse elements in the Plan; and provide an implementation time schedule for Executive Officer approval. The Discharger shall implement the approved plan in accordance with the approved schedule.

11. The Discharger shall comply with the following schedule to monitor groundwater beneath the LAA's and potentially affected by the discharges from the Edison Facility;

	<u>Task</u>	<u>Due Date</u>
a.	Submit a Work Plan for the implementation of a groundwater monitoring well network at the 80-acre LAA. The Work Plan shall include a propose implementation schedule subject to Executive Officer approval. All existing wells proposed for inclusion of the groundwater monitoring network shall have known construction details and be capable of monitoring first encountered groundwater to determine the effect of present and future discharges on first encountered groundwater. The Work Plan shall satisfy the information needs specified in the monitoring well installation section of Attachment D, <i>Standard Requirements for Monitoring Well Installation Work Plans and Monitoring Well Installation Reports</i> . All new wells shall comply with appropriate standards as described in California Well Standard Bulletin 74-90 (June 1991) and Water Well Standards: State of California Bulletin 74-81 (December 1981), and any more stringent standards adopted by the State or county pursuant to CWC section 13801, apply to all monitoring wells used to monitor the impacts of wastewater storage or disposal governed by this Order.	3 months following Order adoption
b.	Complete well installation as necessary and commence groundwater monitoring in accordance with the Work Plan submitted pursuant to Provision G.11.a and Monitoring and Reporting Program R5-2015-XXXX.	In accordance with the approved Task a. time schedule or according to a time schedule directed by the Executive Officer if the Work Plan and time schedule proposed

		is determined to be inadequate.
c.	Submit a groundwater monitoring well installation report that meets the requirements of Attachment D, <i>Standard Requirements for Monitoring Well Installation Work Plans and Monitoring Well Installation Reports.</i>	1 month from the completion of Task b.

12. The Discharger shall maintain a complete groundwater monitoring well network. If monitoring well(s) go dry, the Discharger shall replace the monitoring well(s). The new well(s) shall be constructed in a similar manner as the existing monitoring well(s). Upon installation of the monitoring well(s), the Discharger shall submit a groundwater monitoring well installation report. The groundwater monitoring well installation report shall describe well construction details for each new well, including the location, groundwater elevation, reference point elevation, geologic log, and other details.
13. The Discharger shall comply with Effluent and Mass Loading Limitations B.1, B.2, and B.3 in accordance with the following compliance schedule:

<u>Task</u>	<u>Description</u>	<u>Date Due</u>
1	Regarding compliance with Effluent and Mass Loading Limitations B.1 and B.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 and removing crops in LAAs for nutrient uptake; (c) measures to ensure even application of wastewater; and (d) an action plan to deal with potential objectionable odors and/nuisance conditions. The plan must also include measures that will be implemented to ensure BOD loading to the LAAs will not exceed 100 lbs/acre/day (as a cycle average) over an appropriate discharge cycle when wastewater is applied via flood irrigation or 150 lbs/acre/day over an appropriate discharge cycle when wastewater is applied via sprinkler irrigation and that wastewater, irrigation water, and fertilizers and other soil amendments are applied at agronomic rates to LAAs.	Within 6 months following the adoption date of this Order.
2	Regarding compliance with Effluent and Mass Loading Limitation B.3, 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	Within 6 months following the adoption date of this Order.

	reduce the salinity, and specifically, the chloride concentrations of the Discharge to the maximum extent feasible.	
3	Submit a technical report demonstrating complete implementation of the Wastewater and Nutrient Management Plan and compliance with Effluent and Mass Limitations B.1 and B.2. Upon receipt of written concurrence by the Executive Officer, this task shall be considered complete.	In accordance with the approved Task 1 schedule but no later than 3 years following adoption of this Order.
4	Submit a technical report demonstrating complete implementation of the Salinity Control Plan and compliance with Effluent and Mass Limitation B.3. Upon receipt of written concurrence by the Executive Officer, this task shall be considered complete.	In accordance with the approved Task 2 schedule but no later than 3 years following adoption of this Order.

14. 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 dues dates specified.
15. 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.
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 are 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, section 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 filling 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 the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on _____.

PAMELA C. CREEDON, Executive Officer

Order Attachments:

- A Facility Map
 - B Process Flow Schematic
 - C Available Land Application Area Map
 - D Standard Requirements for Monitoring well Installation
Work Plans and Monitoring Well Installation Reports
- Monitoring and Reporting Program R5-2015-XXXX
Information Sheet
Standard Provisions (1 March 1991)

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM R5-2015-XXXX
FOR
GIUMARRA VINEYARDS CORPORATION AND
GIUMARRA AND ASSOCIATES BEVERAGE COMPANY, LLC
EDISON GRAPE PROCESSING FACILITY
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) 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 and 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/AWWAWEF); 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 Board's 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 the requested reduction in monitoring frequency.

A glossary of terms used within this MRP is included on page 10.

MONITORING AND REPORTING PROGRAM ORDER R5-2015-XXXX
 GIUMARRA VINEYARDS CORPORATION AND
 GIUMARRA AND ASSOCIATES BEVERAGE COMPANY, LLC
 EDISON GRAPE PROCESSING FACILITY
 KERN COUNTY

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

Monitoring Location Name	Monitoring Location Description
EFF-001	At the sump before comingled wastewater is discharged to the 80-acre LAA and the additional 46 acres of LAA.
SW-001	Source water from the Niles Community Services District
LAA-001 and LAA-002	80-acre LAA (LAA-001) and additional 46-acre LAA (LAA-002)

EFFLUENT MONITORING

Effluent samples shall be collected at EFF-001 during the harvesting season. Time of collection of the sample shall be recorded. Effluent monitoring shall include the following:

<u>Frequency</u>	<u>Constituent/Parameter</u>	<u>Units</u>	<u>Sample Type</u>
Continuous	Effluent Flow	mgd	Meter
Daily	pH	pH Units	24-hour Composite
Daily	Electrical Conductivity (EC)	umhos/cm	24-hour Composite
Biweekly ¹	Biochemical Oxygen Demand ₅ (BOD) ²	mg/L	24-hour Composite
Biweekly ¹	Total Organic Carbon	mg/L	24-hour Composite
Biweekly ¹	Total Suspended Solids (TDS)	mg/L	24-hour Composite
Biweekly ¹	Total Dissolved Solids	mg/L	24-hour Composite
Biweekly ¹	Fixed Dissolved Solids	mg/L	24-hour Composite
Biweekly ¹	Total Kjeldahl Nitrogen (TKN)	mg/L	24-hour Composite
Biweekly ¹	Nitrate as Nitrogen	mg/L	24-hour Composite
Biweekly ¹	Nitrite as Nitrogen	mg/L	24-hour Composite
Biweekly ¹	Ammonia as Nitrogen	mg/L	24-hour Composite
Biweekly ¹	Total Nitrogen	mg/L	Computed
Biweekly ¹	Chloride	mg/L	24-hour Composite
Biweekly ¹	Boron	mg/L	24-hour Composite
Biweekly ¹	Sodium	mg/L	24-hour Composite
Biweekly ¹	Potassium	mg/L	24-hour Composite
Monthly	General Minerals ³	mg/L	24-hour Composite

¹ Biweekly means every two weeks

² Five-day, 20°C biochemical oxygen demand (BOD₅).

³ See glossary on page 10 for list of general mineral constituents.

MONITORING AND REPORTING PROGRAM ORDER R5-2015-XXXX
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 GIUMARRA AND ASSOCIATES BEVERAGE COMPANY, LLC
 EDISON GRAPE PROCESSING FACILITY
 KERN COUNTY

SOURCE WATER MONITORING

The Discharger shall monitor source water SW-001. For each source (either well or surface water supply), the Discharger shall calculate the flow-weighted average concentrations for the specified constituents utilizing monthly flow data and the most recent chemical analysis conducted in accordance with Title 22 drinking water requirements.

<u>Frequency</u>	<u>Constituent/Parameter</u>	<u>Units</u>	<u>Sample Type</u>
Quarterly	Flow-Weighted EC	umhos/cm	Grab
Annually	General Minerals ^{1,2}	mg/L	Grab

1 With the exception of wastewater samples, samples must be filtered. If field filtering is not feasible, samples shall be collected in unpreserved containers and submitted to the laboratory within 24 hours with a request (on the chain-of-custody form) to immediately filter then preserve the sample.

2 See glossary on page 10 for list of general mineral constituents.

LAND APPLICATION AREA MONITORING

The Discharger shall perform the following routine monitoring and loading calculations for the 80-acre (LAA-001) and additional 46-acre (LAA-002) LAA's. In addition the Discharger shall keep a log of routine monitoring observations (e.g. areas of ponding, broken irrigation pipes, odors and/or flies within the LAA's, etc.). 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	Application Location	n/a	n/a
Daily	Application Area	acres	n/a
Daily	Wastewater Flow	gallons	Metered
Daily	Wastewater Loading	inches/day ¹	Computed
Daily	Supplemental Irrigation	inches/day ¹	Computed
Daily	Precipitation ²	inches/day ¹	Rain gage ²
<u>BOD₅ Loading Rates:</u>			
Daily	On Day of Application ³	lbs/acre	Computed
Daily	Cycle Average ⁴	lbs/acre/day	Computed
<u>Nitrogen Loading Rates:</u>			
Monthly	From Wastewater ⁵	lbs/acre	Computed
Monthly	From Fertilizer ⁶	lbs/acre	Computed
<u>Salt Loading Rates:</u>			
Monthly	From Wastewater ⁵	lbs/acre	Computed
Annually	Cumulative Salt Loading	lbs/acre/year	Computed

1 Report to the nearest 0.01 inch.

2 National Weather Service data from the nearest weather station is acceptable.

3 Loading rates to be calculated using the applied volume of wastewater, applied acreage, and average of the four most recent concentrations for BOD₅.

4 The cycle average BOD₅ loading rates shall be calculated using applied volume of wastewater, applied acreage, and average of the four most recent concentrations for BOD₅ and divided by the number of days between applications.

MONITORING AND REPORTING PROGRAM ORDER R5-2015-XXXX
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 GIUMARRA AND ASSOCIATES BEVERAGE COMPANY, LLC
 EDISON GRAPE PROCESSING FACILITY
 KERN COUNTY

- 5 Nitrogen and salt shall be calculated using the applied volume of wastewater, applied acreage, and average of the four most recent concentrations for total nitrogen and Fixed Dissolved Solids.
- 6 Additional nitrogen loading to the land application area from other sources (i.e. organic matter and manure).

GROUNDWATER MONITORING

The Discharger shall install a groundwater monitoring well network in accordance to Provision G.11, and shall monitor the monitoring wells, any subsequent additional wells.

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 3 to 5 volumes of the standing water within the well casing and screen, or additionally the filter pack pore volume.

<u>Frequency</u>	<u>Constituent/Parameter</u>	<u>Units</u>	<u>Sample Type</u>
Quarterly	Depth to groundwater	feet	Measured
Quarterly	Groundwater elevation	feet	Computed
Quarterly	pH	pH units	Grab
Quarterly	EC	umhos/cm	Grab
Quarterly	TDS	mg/L	Grab
Quarterly	TKN	mg/L	Grab
Quarterly	Nitrate as Nitrogen	mg/L	Grab
Quarterly	Nitrite as Nitrogen	mg/L	Grab
Quarterly	Ammonia as Nitrogen	mg/L	Grab
Quarterly	Total Nitrogen	mg/L	Grab
Quarterly	General Minerals ^{1,2}	mg/L	Grab

¹ With the exception of wastewater samples, samples must be filtered. If field filtering is not feasible, samples shall be collected in unpreserved containers and submitted to the laboratory within 24 hours with a request (on the chain-of custody form) to immediately filter then preserve the sample.

² National Weather Service data from the nearest weather station

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 written Executive Officer approval of the work plan and time schedule.

SOIL MONITORING

The Discharger shall establish with concurrence of Central Valley Water Board staff, at least six soil profile monitoring locations within the LAA's and at least two representative background location(s) (i.e., that historically have not received process wastewater). The Discharger shall submit a map to the Central Valley Water Board with the identified sample locations no fewer than **30 days** prior to the first sampling event in October following adoption of this Order. The samples shall be collected and analyzed for the constituents and frequencies specified below:

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<u>Frequency</u>	<u>Constituent/Parameter</u>	<u>Units</u>	<u>Sample Type</u>
Annually	Moisture Content	% volume	Grab ¹
Annually	Cation Exchange Capacity	meq/100 grams	Grab ¹
Annually	Soil pH	pH units	Grab ¹
Annually	Buffer pH	mg/kg as CaCO ₃	Grab ¹
Annually	Sodium	mg/kg	Grab ¹
Annually	Chloride	mg/kg	Grab ¹
Annually	Potassium	mg/kg	Grab ¹
Annually	Nitrate as Nitrogen	mg/kg	Grab ¹
Annually	Ammonia as Nitrogen	mg/kg	Grab ¹
Annually	TKN	mg/kg	Grab ¹

¹ Samples shall be collected at 6-inches, 2.5, 5, 7.5, and 10 feet below ground surface (bgs).

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 shall be converted to a searchable Portable Document Format (PDF) and submitted electronically. Documents that are less than 50MB should be mailed to: centralvalleyfresno@waterboards.ca.gov. Documents that are 50MB or larger should be transferred to a disc 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: 5D152006001, Facility Name: Giumarra Edison Facility, Order: R5-2015-XXXX

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, and shall discuss any violations that occurred during the reporting period and all actions taken or planned for correcting violations, such as operation or facility modifications. If the Discharger has previously submitted a report describing corrective actions or a time schedule for implementing the corrective actions, reference to the previous correspondence is satisfactory.

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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.

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 District 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.

A. All Quarterly Monitoring Reports shall include the following:

Wastewater Reporting

1. The results of Effluent Monitoring specified on page 2.
2. For each month of the quarter, calculation of the maximum daily flow and the monthly average flow.
3. For each month of the quarter, calculation of the monthly average effluent EC and BOD₅ concentrations.

Source Water Reporting

1. The results of Source Water Monitoring specified on page 3.

Land Application Area Reporting

1. The results of the routine monitoring and loading calculations specified on pages 3 and 4.
2. Provide a Site Map of the LAA's showing predominant features, and include field numbers (if applicable) and acreage where wastewater was applied.

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3. For each month that wastewater is applied to the LAA's, calculation of the monthly hydraulic load for wastewater and supplemental irrigation water (in million gallons) to each discrete irrigation area.
4. A summary of the notations made in the LAA's monitoring log during each quarter. The entire contents of the log do not need be submitted.

Groundwater Reporting

1. The results of Groundwater Monitoring specified on page 4.
2. For each monitoring well, a table showing constituent concentration for at least five previous years, if available, through the current quarter.
3. A groundwater contour map based on groundwater elevations for that quarter. The map shall show the gradient and direction of groundwater flow under/around the facility and/or effluent disposal area(s). The map shall also include the location of monitoring wells and wastewater discharge area(s).

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

Facility Information

1. The names and general responsibilities of all persons in charge of wastewater management.
2. The names and telephone numbers of persons to contact regarding the facility for emergency and routine situations.
3. 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).
4. A summary of any changes in processing that might affect waste characterization and/or discharge flow rates.

Solids Reporting

1. Annual production total 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.

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- b. For land application, include: the location of the site, 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 beneficial reuse at locations and by entities not operating under a WDRs, and as approved by the Executive Officer, include: the name and location of the site where the beneficial reuse occurs and/or solids are sent for beneficial reuse.

Soil Reporting

1. The tabulated results of Soil Monitoring as specified on page 4 and 5.

Source Water Reporting

1. The results of annual monitoring of source water for EC and general minerals as specified on page 3. If multiple source 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 in the LAA's, planting and harvest dates, and the quantified nitrogen and fixed dissolved solids uptakes (as estimated by technical references or, preferably, determined by representative plant tissue analysis).
2. The monthly and annual discharge volume during the reporting year expressed in million gallons and inches.
3. A monthly balance for the reporting year that includes:
 - a. 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.
 - (a) Monthly average precipitation – this data is available at

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<http://www.cimis.water.ca.gov/> or at <http://www.ncdc.noaa.gov>

- (b) Monthly average and annual average discharge flow rates.
 - (c) 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 BOD₅ loading rates.
 5. The total pounds of nitrogen applied to the LAA's, as calculated from the sum of the monthly loadings, and the total annual nitrogen loading to the LAA's in lbs/acre-year.
 6. The total pounds of fixed dissolved solids that have been applied to the LAA's in lbs/acre-year, as calculated from the sum of the monthly loadings.

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

Ordered by: _____
PAMELA C. CREEDON, Executive Officer

(Date)

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GLOSSARY

BOD ₅	Five-day biochemical oxygen demand		
CBOD	Carbonaceous BOD		
DO	Dissolved oxygen		
EC	Electrical conductivity at 25° C		
FDS	Fixed dissolved solids		
NTU	Nephelometric turbidity unit		
TKN	Total Kjeldahl nitrogen		
TDS	Total dissolved solids		
TSS	Total suspended solids		
Continuous	The specified parameter shall be measured by a meter continuously.		
24-Hour Composite	Samples shall be a flow-proportioned composite consisting of at least eight aliquots.		
Daily	Samples shall be collected at least 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 April and October.		
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		
MPN/100 mL	Most probable number [of organisms] per 100 milliliters		
General Minerals	Analysis for General Minerals shall include at least the following:		
	Alkalinity	Chloride	Sodium
	Bicarbonate	Hardness	Sulfate
	Calcium	Magnesium	TDS
	Carbonate	Potassium	Nitrate
	General Minerals analyses shall be accompanied by documentation of cation/anion balance.		

INFORMATION SHEET

INFORMATION SHEET-ORDER R5-2015-XXXX
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Background

Waste Discharge Requirements (WDRs) Order 74-66, adopted 26 October 1973 authorize the discharge of bottling spillage, wash waters, and domestic wastewater to a septic tank and leachfield system at the Edison Grape Processing Facility (Edison Facility) in Edison, California. Order 74-66 also authorizes the discharge of winery wastewater to ponds and a land application area (LAA).

On 15 August 1980, the Central Valley Water Board issued Revised Monitoring and Reporting Program (MRP) 74-66 to add constituents to the effluent monitoring and include soil monitoring, and groundwater monitoring.

On 31 October 2014, NV5 (consultant) submitted a Report of Waste Discharge (RWD) on behalf of the Giumarra Vineyards Corporation (Giumarra) for a monthly average discharge of 192,000 gallons per day (gpd) (annual discharge of 70 million gallons) of comingled grape process wastewater, cold storage wastewater, bottling/canning wastewater, and potato wastewater to 80 acres of LAA own by Giumarra. The RWD indicates Giumarra owns an additional 75 acres that could be made available, if needed, to expand the LAA.

The Edison Facility and portions of the additional 75 acres are in section 5 of Township 30 South, Range 29 East Mount Diablo Base and Meridian (MDB&M). The 80-acre LAA and the remainder 75-acre LAA is in section 32 of Township 29 South, Range 29 East, MDB&M.

Discharge

The Edison Facility operates year round with the crush season from August through November. Waste streams at the Edison Facility are generated from the grape processing operation that includes clean-in-place wastewater, ion-exchange regeneration wastewater, boiler blowdown, and condensate from the evaporators (grape processing wastewater); the cold storage operation that includes condensates and defrost wastewater (cold storage wastewater); the bottling/canning operation that includes water softener regenerate and reverse osmosis reject wastewater (bottling/canning wastewater); and the potato processing operation that generates potato wash wastewater (potato wastewater).

During the crush season, grape processing wastewater, cold storage wastewater, and bottling/canning wastewater are collected in a sump before being discharged to the 80-acre LAA. Quality of comingled wastewater is shown in Table 1.

Table 1. Annual Average Quality of Comingled Wastewater

Constituent/Parameter	Units	2013	2014
Biochemical Oxygen Demand	mg/L	1,059	1,735
Electrical Conductivity	umhos/cm	1,206	1,142
Total Dissolved Solids	mg/L	1,434	1,843
Fixed Dissolved Solids	mg/L	860	905
Total Suspended Solids	mg/L	125	70
Chloride	mg/L	261	197
Total Nitrogen	mg/L	11	13
Total Kjeldahl Nitrogen	mg/L	7	9
Nitrate as Nitrogen	mg/L	4	3

The quality of potato processing wastewater is shown in Table 2.

Table 2. Quality of Process Wastewater Contributions

Constituent/Parameter	Units	2011	2012
Biochemical Oxygen Demand	mg/L	71	24
Electrical Conductivity	umhos/cm	947	1,048
Total Dissolved Solids	mg/L	1,106	991
Fixed Dissolved Solids	mg/L	---	---
Total Suspended Solids	mg/L	102	36
Chloride	mg/L	214	258
Total Nitrogen	mg/L	---	---
Total Kjeldahl Nitrogen	mg/L	6	3.6
Nitrate as Nitrogen	mg/L	1.4	1.2

The 80-acre LAA is flood irrigation with wastewater using furrows. The Discharger does not have a consistent rotation pattern and rest period between applications of wastewater at the 80-acre LAA. Giumarra has not provided enough information to determine cycle average BOD loading rates for the LAA's.

Giumarra has an additional 75 acres that could be made available, if needed, to expand the LAA. However, approximately 29 acres of the additional 75 acres are currently fallow and have not been used as farmland. Additional environmental review would be necessary in order for Giumarra to use this land for waste disposal or reuse. This leaves Giumarra with of 46 acres of potential land to expand its LAA's. Giumarra does own an additional 181 acres of land adjacent to the proposed 75 acres but has not identified this land for future expansion.

In order for Giumarra to provide a typical seven day rest period and meet a cycle average BOD loading rate of 100 lbs/acre/day, the average daily wastewater flow to the 80-acre LAA is approximately, 78,900 gpd. With the additional 46 acres of land, the average daily wastewater flow to meet the cycle average BOD loading rate of is 124,000 gpd, less than proposed 192,000 gpd.

The Discharger needs a total of approximately 195 acres of LAA in order to provide a seven day rest period, meet the cycle average BOD loading limit of 100 lbs/acre/day, and discharge its proposed flow of 192,000 gpd.

This Order requires Giumarra to submit a Wastewater and Nutrient Management Plan with measures to ensure BOD loading to the LAA's will not exceed a cycle average BOD limit of 100 lbs/acre/day when wastewater is applied via flood irrigation or 150 lbs/acre/day over when wastewater is applied via sprinkler irrigation.

Soil and Groundwater Conditions

According to the RWD, soils in the area are highly permeable, with a percolation rate of 24 feet/day. Groundwater in the area is approximately 350 feet below ground surface (ft bgs) and flows in the southwest direction.

Based on the limited data available, groundwater in area appears to be of good quality and meets the water quality objective for domestic and municipal supply. Groundwater EC ranges from 500 to 1,000 umhos/cm. Groundwater boron ranges from 0.07 to 0.1 mg/L. Groundwater chloride averages 76 mg/L.

Basin Plan, Beneficial Uses, and Regulatory Considerations

The *Water Quality Control Plan for the Tulare Lake Basin, Second Edition, revised January 2004* (Basin Plan) designates beneficial uses, establishes narrative and numerical water quality objectives, contains implementation plans and policies for protecting waters of the Basin, and incorporates, by reference, plans and policies of the State Water Board.

The beneficial uses of the underlying groundwater are municipal and domestic supply.

The Basin Plan identifies the greatest long-term water quality problem facing the entire Tulare Lake Basin is increasing salinity in groundwater, a process accelerated due to the intensive use of soil and water resources by irrigated agriculture. The Basin Plan recognizes that degradation is unavoidable until there is a long-term solution to the salt imbalance. Until then, the Basin Plan establishes several salt management requirements, including:

- a. The incremental increase in salts from use and treatment must be controlled to the extent possible. The maximum 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 to good quality groundwater, the Basin Plan states that they 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. The Basin Plan generally applies these limits to industrial discharges to land.

The Basin Plan authorizes an exemption to the incremental increase limit for food processing industries that discharge to land and exhibit a disproportionate increase in EC of the discharge over

the EC of the source water due to unavoidable concentrations of organic dissolved solids from the raw food product, provided that beneficial uses are protected. Exceptions shall be based on demonstration of best available technology and best management practices that control inorganic dissolved solids to the maximum extent feasible.

Antidegradation

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

The constituents of concern in the discharge that have the potential to degrade and pollute groundwater include organics, nutrients, and salts. Groundwater in the area is of good quality with respect to EC, chloride, and boron. The Discharger provides control of the discharge or will provide control of the discharge that incorporates or will incorporate:

1. Pre-cleaning to remove leaves, twigs, and other debris;
2. Preparation and implementation of a Solids Management Plan to characterize the various solids generated at the Edison Facility;
3. A cycle average BOD loading rate of 100 lbs/acre/day via flood irrigation and 150 lbs/acre/day via sprinkler irrigation;
4. Soil monitoring at the LAA's;
5. Preparation and implementation of a Salinity Control Plan, a Wastewater and Nutrient Management Plan;
6. Groundwater monitoring; and
7. Groundwater limitations.

This Order establishes terms and conditions to ensure that the authorized discharge will not unreasonably affect present and anticipated future beneficial uses of groundwater or result in groundwater quality worse than background or the water quality objectives set forth in the Basin Plan.

This Order is consistent with the Anti-Degradation Policy since: (a) the Discharger has or will implement Best Practicable Treatment or Control to minimize degradation, (b) the limited degradation will not unreasonably affect present and anticipated beneficial uses of groundwater, or result in water quality less than water quality objectives, and (c) the limited degradation is of maximum benefit to the people of the State.

CEQA

The action to adopt Waste Discharge Requirements for this existing plant is exempt from provision of the California Environmental Quality Act (CEQA), in accordance with the California Code of Regulations, title 14, section 15301 (existing facilities).

Title 27

Unless the Board finds that the discharge of designated waste is exempt from Title 27 of the California Code of Regulations, the release of designated waste is subject to full containment requirements. Here, the discharge grape processing wastewater, cold storage wastewater, bottling/canning wastewater, and potato wastewater is exempt from the requirements of Title 27 pursuant to the wastewater exemptions found at Title 27, sections 20090 (b).

Proposed Order Terms and Conditions

Discharge Prohibitions, Specifications and Provisions

The proposed Order prohibits the discharge of waste to surface waters and to surface water drainage courses. The proposed Order includes a tiered incremental flow increase that restricts the discharge to a monthly average daily flow limit of 78,900 gpd (annual flow of 29 mgy) until the Discharger can demonstrate it can dispose of 192,000 gpd (annual flow of 70 mgy) of wastewater at agronomic rates as specified in Provision G.13 Tasks 1 and 3.

This Order sets cycle average BOD₅ loading rate limits of 100 lbs/acre/day (flood irrigation) and 150 lbs/acre/day (sprinkler irrigation) over the course of any discharge cycle at the LAA's. The proposed Order includes Provisions requiring the Discharger to monitor groundwater and submit a Solids Management Plan, Salinity Control Plan, and a Wastewater and Nutrient Management Plan.

The proposed Order prescribes groundwater limitations that ensure the discharge does not affect present and anticipated beneficial uses of groundwater. The limitations require that the discharge not cause or contribute to exceedances of water quality objectives or natural background water quality, whichever is greater.

Monitoring Requirements

Section 13267 of the Water Code authorizes the Central Valley Water Board to require the Discharger to submit monitoring and technical reports as necessary to investigate the impact of a waste discharge on waters of the State.

The proposed Order includes effluent monitoring, source water monitoring, land application area monitoring, groundwater monitoring, and soil monitoring. This monitoring is necessary to characterize the discharge, evaluate compliance with effluent and mass loading limitations prescribed by 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 received or if applicable laws and regulations change.