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CENTRAL VALLEY REGION

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WASTE DISCHARGE REQUIREMENTS ORDER R5-2024-0061

ORDER INFORMATION

Order Type(s):	Waste Discharge Requirements (WDRs)
Status:	ADOPTED
Program:	Non-15 Discharge to Land
Region 5 Office:	Sacramento (Rancho Cordova)
Discharger(s):	Bogle Vineyards, Inc. and The Bogle Family Limited Partnership
Facility:	Bogle Delta Winery
Address:	49762 Hamilton Road, Clarksburg, CA, 95612
County:	Yolo County
Parcel Nos.:	APNS: 043-310-014, 043-310-015, 043-310-016, and 043-180-013
WDID:	5A57NC00034
CIWQS Place ID:	767906
Prior Order(s):	R5-2011-0033

CERTIFICATION

I, PATRICK PULUPA, Executive Officer, hereby certify that the following is a full, true, and correct copy of the order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 13 December 2024.

Date: 2024.12.30 12:02:02 -08'00'

PATRICK PULUPA, Executive Officer

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GLOSSARY

Antidegradation Policy	Statement of Policy with Respect to Maintaining High Quality Waters in California, State Water Board Resolution 68-16
APN	Assessor's Parcel Number
B	boron
Basin Plan	Water Quality Control Plan for Sacramento and San Joaquin River Basins
bgs	below ground surface
BOD_5	[5-day] biochemical oxygen demand at 20 degrees Celsius
BMPs	best management practices
BPTC	best practical treatment or control
CEQA	California Environmental Quality Act, Public Resources Code section 21000 et seq
C.F.R.	Code of Federal Regulations
CG	cross-gradient
Conc	concentration
CV-SALTS	Central Valley Salinity Alternatives for Long-Term Sustainability
DG	downgradient
DO	dissolved oxygen
EC	electrical conductivity
EIR	environmental impact report
FDS	fixed dissolved solids
FE	iron
FEIR	final environmental impact report
FEMA	Federal Emergency Management Agency
ft	feet
gal	gallons
gpd	gallons per day
gpy	gallons per year
GW	groundwater

GLOSSARY

LAAs	land application areas
MCL	maximum contaminant level
Mn	manganese
MPN	most probable number
MRP	Monitoring and Reporting Program
msl	mean sea level
µg/L	Micrograms per Liter
µmhos/cm	Micromhos per Centimeter
mgal	million gallons
MG[D]	million gallons [per Day]
mg/L	milligrams per liter
MUN	municipal
MW	monitoring well
NTU	Nephelometric Turbidity Units
N	nitrogen
NA	not applicable or not available
NCP	Nitrate Control Program
ND	not detected or non-detect
NPDES	National Pollutant Discharge Elimination System
NW	northwest
OAL	Office of Administrative Law
lb	pounds
lb/ac/day	pounds per acre per day
Part 503	Title 40, Code of Federal Regulations, Standards for the Use or Disposal of Sewage Sludge
P&O Study	Prioritization and Optimization Study of the Salt Control Program of CV-SALTS
PW	process wastewater
RL	reporting limit
ROWD	Report of Waste Discharge

GLOSSARY

SCP	Salt Control Program
SE	southeast
SERC	State of Emergency Response Commission
SPRRs	Standard Provisions and Reporting Requirements
SW	southwest
TDS	total dissolved solids
Title 22	California Code of Regulations, Title 22
Title 23	California Code of Regulations, Title 23
Title 27	California Code of Regulations, Title 27
TKN	total Kjeldahl nitrogen
UG	upgradient
U.S. EPA	United States Environmental Protection Agency
UV	Ultraviolet
UVT	UV Transmittance
Wat. Code	Water Code
WDRs	Waste Discharge Requirements
WQOs	Water Quality Objectives

FINDINGS

The Central Valley Regional Water Quality Control Board (Central Valley Water Board) hereby finds as follows:

Introduction

1. Bogle Delta Winery (Facility) is an existing winery located at 49762 Hamilton Road in Clarksburg, Yolo County. The Facility, including wastewater ponds and land application areas (LAAs) is within Section 12, Township 6 N, Range 3 E, Mount Diablo Base and Meridian (MDB&M). The Facility is owned by Bogle Vineyards, Inc. (Bogle) and is located on property owned by The Bogle Family Limited Partnership. Facility location is depicted in **Attachment A** (Site Location Map).

2. The Facility is a complete winemaking facility, from receiving and crushing grapes to packaging and shipment of wine off-site. There are no winery events or hospitality. Process wastewater is generated from wine production activities and limited amounts of process wastewater trucked from nearby Bogle-owned winery facilities. The Facility began operations in 2011; however, discharges of process wastewater to the LAAs began in May 2013. The treatment and land discharge of process wastewater was previously regulated by Waste Discharge Requirements (WDRs) Order R5-2011-0033, adopted by the Central Valley Water Board on 9 June 2011. Domestic wastewater is treated via an onsite wastewater treatment system that was historically permitted by Yolo County.

3. Bogle Vineyards, Inc. and The Bogle Family Limited Partnership (collectively, Discharger) are responsible for compliance with the WDRs prescribed in this Order.

4. The following materials are attached and incorporated as part of this Order:

   a. Attachment A – Site Location Map

   b. Attachment B – Facility and Monitoring Well Location Map

   c. Attachment C – Combined Wastewater Flow Diagram

   d. Attachment D – Domestic Wastewater Flow Diagram

   e. Information Sheet

   f. Standard Provisions & Reporting Requirements dated 1 March 1991 (1 March 1991 SPRRs) [https://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/std_provisions/wdr-mar1991.pdf]

5. Also attached is **Monitoring and Reporting Program Order R5-2024-0061** (MRP), which requires monitoring and reporting for discharges regulated under these WDRs.

6. WDRs are needed for this Facility to ensure the discharge will comply with applicable water quality plans and policies and reflect current treatment and disposal operations. This Order rescinds and replaces WDRs Order R5-2011-0033.

Regulatory History

7. The Facility began operations in 2011; however, discharges of process wastewater to the LAAs began in May 2013. There are two wastewater treatment systems: one for winery process wastewater and one for domestic wastewater. WDRs Order R5-2011-0033 authorized the discharge of up to 4.9 million gallons (mgal) per month and an annual total of up to 30.3 mgal of process wastewater to the treatment ponds and LAAs. The domestic wastewater system was historically permitted through Yolo County.

8. Bogle submitted a Report of Waste Discharger (ROWD) dated 14 March 2023 requesting revisions to the WDRs to reflect the following:

    a. Replace the failing domestic wastewater treatment system that was designed for 85 employees and approximately 1,275 gallons per day (gpd) with a new system to be regulated by the Central Valley Water Board. Domestic wastewater will be treated to California Code of Regulations, title 22 (Title 22) disinfected secondary-2.2 recycled water standards and then discharged to the existing process wastewater treatment pond system.

    b. Expand the LAAs from 122 acres to approximately 261 acres.

    c. Propose an annual fixed dissolved solids (FDS) loading limit in lieu of the FDS effluent monthly maximum concentration limit of 900 mg/L.

9. A Revised ROWD dated 26 May 2023 was submitted to address the items requested in the Central Valley Water Board's 27 April 2023 letter. A revised water balance was submitted on 20 September 2023. A Revised ROWD dated 31 July 2024 was submitted to address additional changes to the proposed disinfection system.

10. Bogle submitted a Title 22 Engineering Report dated 14 March 2023 and a revised Title 22 Engineering Report dated 26 April 2024 to State Water Resources Control Board (State Water Board), Division of Drinking Water (DDW), for review. DDW issued a conditional acceptance of the Title 22 Engineering Report, dated 2 October 2024, which replaced the 13 September

2024 letter due to a typographical error, and included recommendations that have been incorporated within this Order.

Existing Domestic Treatment System and Discharge

11. Domestic wastewater is generated from toilets, sinks, breakrooms, and kitchen facilities within the winery associated with employee uses. Domestic wastewater flows through a gravity collection system to two underground sumps. The collection system consists of several sumps throughout the facility that direct flow to a 3,000-gallon septic tank, which then gravity flows to a 3,000-gallon sump pump tank. From the pump tank, wastewater is pumped to a 10,500 square foot mound system which was permitted by the local agency. The mound system has failed. The earliest records available show that the Discharger has been hauling domestic waste to an offsite permitted facility for disposal since April 2018.

Existing Process Wastewater Treatment System and Discharge

12. Process wastewater (PW) is generated from the following areas: press area, external work areas and tank farm, barrel building, bottling and case goods building, and mechanical area. The Facility may also receive up to 0.372 mgal a year of process wastewater from the Discharger's off-site Old River Vineyard and Bogle Vineyard main facilities. The crush season is typically from August through October.

13. The existing PW System consists of a screened gravity collection system, pump tanks, a solids removal screen, three aerated facultative ponds, and 122 acres of LAAs. Process wastewater undergoes solids removal and biological treatment prior to land application. Application is via spray/sprinkler irrigation. The LAAs are typically cropped with alfalfa and winter wheat. A facility map is shown in **Attachment B**. A process wastewater flow diagram is shown in **Attachment C.**

    a. Process wastewater is collected in floor drains and trenches from within the winery, receiving, crush, tank, and wash down areas. Screened baskets and strainers are installed within the floor drains and trench drains to provide initial screening.

    b. Process wastewater from the Discharger's off-site Old River Vineyard and Bogle Vineyard main facilities is received at an on-site dump station then comingled with the onsite process wastewater.

    c. All process wastewater gravity flows into designated pump stations.

    d. A solids removal screen is used to filter and separate solids from the wastewater. Grape pomace (skin, pulp, seeds, and stems) and diatomaceous earth (DE) containing filterable solids from wine

fermentation, such as lees and minor amount of wine, are the process solid wastes that are generated from the wine making process.

e. The three ponds were built above grade, are aerated, and lined with a single layer of 60-mil high density polyethylene liner. Two layers of liner are placed under all pond equipment. In addition to the double liner, a 10-foot square concrete pad is installed under each aerator. The pond system has a hydraulic residence time (HRT) of 117.6 days and 74.5 days during peak flow conditions (during harvest). A summary of the pond system is provided in the table below. Pond capacity and freeboard is based on 2-feet of freeboard.

Table 1. Pond Summary

Pond Name	Function	Pond Capacity	Pond Depth at 2-ft Freeboard	Pond Bottom Elevation ft msl	Pond Berm Elevation ft msl
Pond 1	Secondary Treatment	8.0 mgal	12 ft	3	17
Pond 2	Polishing	5.6 mgal	12 ft	3	17
Pond 3	Polishing and Irrigation	5.6 mgal	12 ft	3	17

i. Pond liner repairs were performed at Pond 3 during July and August 2016 as a result of a Pond Leak Test conducted in February 2016.

ii. The Discharger encountered pond capacity issues in December 2022 and January 2023 due to back-to-back rain events. As a result, wastewater was discharged to the LAAs within a 24-hour rain event from 12 January 2023 through 14 January 2023, which was in violation of WDRs Order R5-2011-0033, Land Application Area Requirement D.15. Review of the Discharger's monitoring reports indicated that no discharges to the LAAs occurred during the months of May through September, when most of the process wastewater is generated. The Discharger will manage ponds by lowering water levels in anticipation of rain events.

iii. On 23 December 2023, the Discharger reported a slippage of the western berm under the liner at Pond 2. No damage to the liner was reported.

14. Influent process wastewater flows (data collected from 2015 through 2022) as provided in the ROWD and the Discharger's monitoring reports are summarized in the table below.

Table 2. Process Wastewater Flows, mgal

Month	2015	2016	2017	2018	2019	2020	2021	2022
January	1.54	1.43	1.11	0.88	1.09	1.11	0.88	1.09
February	1.09	1.47	0.94	1.23	0.72	0.94	1.23	0.97
March	1.65	1.30	1.23	1.27	1.34	1.23	1.26	1.34
April	1.51	1.01	1.27	1.06	1.25	1.27	1.06	1.25
May	1.55	1.12	1.20	1.14	1.19	1.20	1.14	1.19
June	1.44	1.58	1.12	1.15	1.03	1.12	1.15	1.03
July	1.57	1.49	1.17	0.96	0.88	1.17	0.96	0.88
August	1.50	1.52	1.48	1.07	1.27	1.48	1.07	1.27
September	2.39	1.75	2.42	1.32	2.96	2.42	1.32	2.96
October	3.13	2.41	2.10	3.25	1.87	2.10	3.25	1.87
November	1.34	1.10	0.99	0.94	1.06	0.99	0.94	1.06
December	1.16	0.96	0.97	1.22	1.20	0.97	1.22	1.20
Total	19.88	17.15	15.99	15.49	16.13	16.00	15.49	16.13

15. Process wastewater quality based on samples (data collected from 2014 through 2022) taken from Pond 3 is summarized in the table below. Units are in mg/L unless noted otherwise. For non-detections (ND), half the reporting limit was used to determine average concentration.

Table 3. Process Wastewater Quality

Constituents	Concentration Range	Average Concentration	No. of Data Points
BOD_5	3 - 215	34	106
EC (µmhos/cm)	1,158 – 5,730	2,275	418
TDS	870 – 3,930	1,836	106
FDS	380 – 2,850	1,315	106

Constituents	Concentration Range	Average Concentration	No. of Data Points
Chloride	59 – 301	112	36
Sodium	167 - 957	371	36
Nitrate as Nitrogen	ND, <0.1 – 3.70	0.29	106
TKN	ND, <0.1 – 84.7	15	106
Boron (µg/L)	1,200 – 5,300	2,477	36
Iron	ND, <0.1	NA	36
Manganese	ND, <0.02	NA	36

16. Annual average FDS effluent concentrations range from 960 to 1,630 mg/L, as summarized in the table below.

Table 4. Annual Average FDS Concentrations

Year	Annual Average FDS, mg/L
2014	1,348
2015	1,240
2016	1,204
2017	963
2018	1,322
2019	1,080
2020	1,525
2021	1,632
2022	1,520

17. Total nitrogen, salt, and BOD loading to the LAAs from 2014 through 2022 provided in the ROWD and the Discharger's monitoring reports are summarized in the table below. BOD loading as reported in accordance with the 2011 WDRs are representative of instantaneous BOD loadings and the cumulative for the year is shown in the table below.

Table 5. Nutrient and Salt Loading, lb/ac/yr

Parameter	2014	2015	2016	2017	2018	2019	2020	2021	2022
Total Nitrogen	28	13	20	13	19	20	9	19	14
TDS	2,604	3,111	4,662	1,774	2,713	2,875	1,351	3,059	2,320
FDS	1,848	2,337	3,547	1,391	2,291	2,088	955	2,209	1,633
BOD	79	59	58	29	31	46	12	32	26

a. Based on information from *The Western Fertilizer Handbook* (California Fertilizer Association, 1995, Interstate Publishers), alfalfa and wheat will take up at least 480 pounds per acre per year (lb/ac/yr) and 175 lb/ac/yr of nitrogen, respectively, or a combined total of 655 lb/ac/yr during years when winter wheat is planted prior to starting the next alfalfa crop.

b. TDS is composed of both volatile dissolved solids (VDS) and fixed dissolved solids (FDS). The proportion of VDS to FDS in wastewater varies with the source, but 50 percent of the TDS in winery wastewater may be in the volatile form. VDS can be biologically treated by soil microorganisms in a well-managed wastewater treatment and land application system, when wastewater is not over-applied. FDS are reduced by plant uptake of nutrients, primarily nitrates, phosphorus, and potassium (and to a lesser degree calcium, magnesium, and sulfur).

c. Excessive application of winery processing wastewater to the LAAs can create objectionable odors (a possible nuisance condition), soil conditions that are harmful to crops, and degrade the underlying groundwater by overloading the shallow soil profile and causing waste constituents (organic carbon, nitrate, other salts, and metals) to percolate below the root zone. The maximum BOD loading rate that can be applied to land without creating nuisance conditions can vary significantly depending on the operation of the land application system. *Pollution Abatement in the Fruit and Vegetable Industry* (*Pollution Abatement*), published by the United States Environmental Protection Agency (U.S. EPA Publication No. 625/3-77-0007), cites BOD loading rates for irrigation purposes in the range of 36 to 100 lb/ac/day.

18. Winery process solids are collected for distribution to the LAAs as a soil amendment or transported off-site to a permitted facility.

a. Large solids removed from the collection area (screening operations) are sent directly to truck trailers and hauled off-site.

b. Solids from the winery operations include pomace, seeds, stems, and diatomaceous earth (DE). Solids generated from the grape presses go directly into truck trailers, are stored at the pomace storage area, then hauled off-site for disposal. Solids removal via hauling occurs multiple times per week between August and November. A sump along the pomace storage area collects run-off from the site. During harvest when there are solids on the pomace storage area, valve controls allow leachate to be directed to the process wastewater ponds.

19. Solids, in the form of sludge, that accumulate in the ponds are periodically removed every 5 to 10 years, as needed. In 2019, pond sludge was removed and distributed to the LAAs using a tractor with injection system and incorporated into the soil. Application was performed during the months between June through September and when there was no wastewater applied to the LAAs.

20. Most of the winery operations are conducted under covered areas to avoid storm water wastewater mixtures. Storm water that mixes with wastewater from the outdoor tank farm and process areas, including the pretreatment and crush areas not under a roof, is discharged to the process wastewater treatment system. Uncontaminated storm water is discharged to the storm water detention basin.

21. A variety of chemicals are used in the winemaking, processing, cleaning, and sanitation processes which are identified in the table below.

Table 6. Chemical Usage Summary

Chemical	Use
Calcium hypochlorite (65 %)	Floor cleaning
Caustic soda (50 %)	Tanks, piping, and equipment cleaning
Citric acid	Tanks, piping, and equipment cleaning
Chlorinated tri sodium phosphate	Floor cleaning
Peracetic acid (5 %)	Tanks, piping, and equipment cleaning and sanitization
Potassium hydroxide	Tanks, piping, and equipment cleaning
Ammonium chloride	Tanks, piping, and equipment cleaning
Potassium Metabisulfite	Winemaking
Sodium bisulfate	Winemaking

22. The following best management practices (BMPs) have been implemented since the start of operations:

    a. Use of boilers that do not require boiler blow down or chemical additives.

    b. A non-chemical evaporative cooled refrigeration system is used to control the temperature of the wine and the winery's HVAC system, which reduces the amount of iodine and zinc discharged into the process wastewater.

    c. Wine temperature control is accomplished by pumping glycol through jacketed stainless-steel tanks. This process reduces the need to pump wine from the storage tanks through a remote wine chiller and therefore reduces the amount of line sanitation, water, and chemical usage associated with wine chillers.

    d. Replacement of chemicals with more environmentally acceptable substitutes.

    e. A water efficient high pressure/low volume barrel cleaning system is used to allow for shorter wash cycles and eliminate the need for chemicals.

    f. Process wastewater is collected in sumps and pumped through a solids removal screen before entering the pond system, which removes solids and reduces ultimate organic loading to the treatment ponds.

    g. Wastewater is treated using biological processes in the form of aerated lined ponds to reduce BOD.

    h. The crush, pomace loading and storage, dump station, and solids removal screen areas are located on concrete pads, which allows drainage to designated pump stations, therefore preventing leachate generation and infiltration into the ground. Solids are containerized for off-site disposal.

    i. Crops are planted in the LAAs to assimilate nutrients in the treated wastewater and are harvested and removed from the site.

    j. Tailwater is collected for reapplication or sent back to the treatment system.

Changes to Domestic Treatment System and Discharge

23. The Discharger plans to treat their domestic wastewater to Title 22 disinfected secondary-2.2 requirements for non-potable use by means of a membrane bioreactor (MBR) system and inline ultraviolet (UV) disinfection system. Disinfected secondary treated wastewater will be discharged to the existing process wastewater treatment pond system. The MBR and disinfection system

will be sized for up to 150 employees.

24. The existing subsurface mound system will be abandoned. The existing domestic wastewater collection system, septic tank, and pump tank will remain operational.

    a. The septic tank will provide solids removal prior to treatment in the MBR system.

    b. From the septic tank, domestic wastewater flows via gravity to the pump tank.

    c. The pump tank will transfer domestic wastewater to the MBR.

25. The MBR treatment process will utilize an aerated bioreactor with return-activated sludge (RAS) as well as microfiltration to produce effluent that will remove up to approximately 97 percent and 92 percent of incoming BOD and total nitrogen concentrations, respectively. Effluent turbidity is anticipated to be <0.5 NTU (after filtration, prior to UV disinfection).

26. The UV disinfection system will be a single unit designed with a UV dose at a minimum of 40 millijoules per square centimeter (mJ/cm^2) for flows less than or equal to 40 gallons per minute (gpm). Disinfected effluent will be stored in post disinfection holding tanks with a total storage capacity of 20,000 gallons. The UV unit will operate in a recirculating manner where portions of the disinfected effluent will either be discharged to the process water pond system (via the post disinfection holding tank) or returned to the post-treatment holding tank for UV treatment. A backup chlorine disinfection pump will be used if effluent in the post-disinfection holding tank does not meet Title 22 specifications.

27. After disinfection, the effluent will be commingled with the onsite winery process wastewater and Bogle's offsite process wastewater at Pump Station PS-4, then pumped to the existing PW pond system. A process flow diagram is shown on **Attachment D**.

28. Solids accumulated in the settling and pump tanks will be removed as part of the regular service and maintenance. Solids that accumulated in the MBR will be stored in a 3,000-gallon sludge storage tank and hauled offsite for disposal.

29. Anticipated domestic wastewater flows are summarized in the table below. The harvest months are from August through October.

Table 7. Anticipated Domestic Wastewater Flows

Wastewater Flow Description	Flow
Annual Domestic Wastewater - Harvest	207,000 gpy
Annual Domestic Wastewater - Non-Harvest	450,450 gpy
Total Annual Domestic Wastewater:	657,450 gpy
Peak Daily Domestic Wastewater - Harvest	2,250 gpd
Average Daily Domestic Wastewater - Non-Harvest	1,650 gpd

30. The strength of the domestic wastewater is expected to be typical of average domestic flows (Metcalf & Eddy, 2014, *Wastewater Engineering*, 5th Ed, McGraw Hill) as shown in the table below.

Table 8. Untreated Domestic Wastewater Characteristics

Parameter/Constituent	Range
BOD, mg/L	133 - 400
Total Suspended Solids, mg/L	130 - 389
Volatile Suspended Solids, mg/L	101 – 304
TDS, mg/L	374 – 1,121
FDS, mg/L	224 - 672
Total Nitrogen as N, mg/L	23 - 69
Organic, mg/L	10 -29
Free Ammonia, mg/L	14 -41
Nitrite, mg/L	0
Nitrate, mg/L	0

Changes to Process Wastewater Treatment System and Discharge

31. The existing PW treatment pond system will receive two waste types: winery process wastewater and disinfected secondary-2.2 recycled water produced from the MBR and disinfection system. Effluent (combined winery process wastewater and recycled water) from the process wastewater pond system will to be used to irrigate the LAAs. A process flow diagram is shown on **Attachment C.**

32. Anticipated process wastewater flows from winery operations are shown in the table below.

Table 9. Anticipated Process Wastewater Flows.

Wastewater Flow Description	Flow
Process Wastewater – Winemaking Process	22,275,000 gpy
Process Wastewater - Bogle's other off-site facilities	372,000 gpy
Process Wastewater - Evaporative Condenser	6,604,658 gpy
Total Annual Process Wastewater:	29,251,658 gal
Process Wastewater – Annual Average Flow	81,000 gpd
Process Wastewater – Average during Harvest	126,000 gpd
Process Wastewater – Peak Harvest	162,000 gpd
Process Wastewater – Average during Non-Harvest	65,000 gpd

33. Based on the high quality and relatively low volume of treated domestic wastewater (recycled water), it is not expected to impact the treatment pond beyond adding a small volume of water. Recycled water will increase influent flows to the pond by approximately 657,450 gal each year. The irrigation crop demand of the LAAs is expected to exceed the estimated effluent volumes. Supplemental irrigation water supplied by Reclamation District 999 will continue to be applied on the LAAs as needed to meet irrigation demands.

34. The Facility and LAAs are located on four parcels (**Attachment B**). The Facility is acquiring a new parcel that will encompass approximately 139 acres of additional LAA, increasing total LAA acreage from approximately 122 to 261 acres available for waste discharges of the commingled winery process wastewater and recycled water. Alfalfa is the primary crop grown in the LAAs, in addition to winter wheat. Crops grown within the LAAs are used as feed for animals, and the crops may feed animals that produce milk for human consumption. Crops are replanted annually and harvested and removed regularly throughout the growing season. A summary of the LAAs is shown in the table below.

Table 10. Winery and LAAs Summary

Feature	Parcel APN	Area, acres
Winery	043-310-016, 043-310-014	57.3
Existing LAA	043-310-015	122
New LAA	043-180-013	139

35. The 2011 WDRs prescribed an FDS effluent monthly maximum concentration limit of 900 mg/L. This Order replaces that limit with a Performance-Based Salinity Limit of **1,960 mg/L for FDS** as a flow-weighted annual average on the discharge of treated wastewater from the ponds to the LAAs. The previous FDS effluent monthly concentration limit was based on the Discharger's expected concentrations of process wastewater, chemicals used in the winemaking process, and the net effect of water lost from evaporation from the evaporative condenser and the ponds. However, actual salinity concentrations are much higher than previously anticipated. The Discharger relies on the use of Reclamation District water to meet crop demands, which also helps to maintain FDS loading applied to the LAAs throughout the entire irrigation season, but process wastewater and supplemental water are not commingled prior to land discharge. The quality of supplemental water sourced from the Reclamation District may also vary, depending on when water is released into the canals for irrigation use. The new FDS limit authorized by this Order is based on historical effluent data and includes a factor to allow for water conservation efforts. As reported in the Discharger's Annual Reports from 2014 through 2022, average monthly FDS concentrations varied between 140 to 1,850 mg/L, with annual FDS loading rates ranging from 960 to 3,550 lb/ac/yr.

36. Finding 15 shows that effluent FDS concentrations ranged from 380 to 2,850 mg/L. Finding 16 shows that the annual average FDS concentration is approximately 1,320 mg/L and the maximum annual average concentration is approximately 1,630 mg/L. Effluent FDS concentrations exceed 900 mg/L, however ongoing quarterly groundwater monitoring shows no significant impacts to groundwater quality. This Order prescribes an FDS effluent limit as a performance-based flow-weighted annual average based on historical effluent data and includes a factor to allow for water conservation efforts.

37. This Order does not authorize changes to previously authorized and/or documented pond capacities. The Discharger does not anticipate discharge flows to increase beyond the previously authorized flow limitations, which are continued in this Order.

38. The process wastewater treatment ponds will receive an additional waste source (disinfected secondary-2.2 recycled water); however, this Order does not authorize an increase in waste flows to the Facility's treatment and disposal

facilities. The Discharger's water balance demonstrates that the additional waste source will not impact pond capacity and that the previously permitted annual waste flow of approximately 30.3 mgal will not be exceeded as a result of the new waste source. The water balance was based on typical winery flows, anticipated domestic wastewater flows, reasonable estimates of local evapotranspiration, precipitation, and pan evaporation, and the availability of 260 acres of LAAs.

39. Sludge and solids collected in the ponds will be removed as needed to ensure optimal facility operation. Residual sludge and solids from the ponds may be land applied to the LAAs or be disposed of at an appropriately permitted disposal site.

Site-Specific Conditions

Topography, Climate, and Land Use

40. Local land use is agriculture. This includes small wineries and larger wine production facilities, organic produce farms, and pastureland. The site is bounded to the north by farmland. Irrigation of surrounding facilities is provided by on-site wells, reuse, or local irrigation canals managed by Reclamation District 999. Irrigation ditches cross the central portion of the site and are also located near the sites northern, western, and southern boundaries.

41. Nearest surface water drainage course is the local irrigation canal, which flows throughout the property. The main canal system is managed and maintained by Reclamation District 999. An existing drainage canal bisects the LAAs and is privately owned and operated by the winery.

42. The area surrounding the winery property was previously in a Flood Zone B as defined by Federal Emergency Management Agency (FEMA). The Flood Zone B designation applies to areas between the 100-year flood and 500-year flood or areas protected by levees from the base flood. On 18 June 2010, a revised FEMA flood map redesignated the region, including and surrounding the winery property, as Flood Zone A. Areas designated as Flood Zone A do not have a determined 100-year flood, base flood elevation, or flood hazard factors.

    The Discharger has taken the necessary measures to ensure the protection of the ponds from inundation and/or washout due to flooding with a 100-year return frequency. In consideration of the Facility elevation and proximity to the Sacramento River Deep Water Channel (approximately 2.3 miles west of the Facility), the pond dikes were designed at an elevation of 17 feet with the ability to be increased to 21 feet, if needed in the future.

43. Soils within the vicinity of the pond area and LAAs are primarily Sacramento Clay, characterized as poorly drained, nearly level silty clay loams and clays, in basins and typically of moderate to high shrink swell potential.

44. Based on information from the California Management Information Systems (CIMIS), the annual average precipitation is 19.2 inches. The 100-year 365-day precipitation is 36.4 inches. The annual reference evapotranspiration is 57.9 inches based on Zone 15.

Facility Source Water

45. There are two water supply wells (Water Supply #1 and #2). Supply Well #1 is located west of the Barrel Building and Supply Well #2 is located north of the Press Area. Water quality from Supply Well #1 as provided in WDRs Order R5-2011-0033 is shown in the table below. The well depth for Supply Well #1 is approximately 360 feet with a screened interval between 320 feet and 340 feet. Water from Supply Well #2 is blended with water from Supply Well #1 for use at the Facility.

Table 11. Supply Well Characteristics

Constituent	**Analytical Result**
pH, standard units	8.3
TDS, mg/L	290
Nitrate as NO_3, mg/L	< 0.5 (non-detect, reporting limit shown)
Iron, mg/L	0.110
Manganese, mg/L	0.037
Sodium, mg/L	98

Groundwater

46. The groundwater monitoring network includes five groundwater monitoring wells. Monitoring wells MW-1, MW-2, and MW-3 were installed in March 2010. In anticipation of the planned expansion of the LAAs discussed in these WDRs, monitoring wells MW-4 and MW-5 were installed in April 2020. Upon inclusion of the new LAA, monitoring wells MW-2 and MW-3 will be considered cross-gradient for future evaluation. Well locations are shown in **Attachment B** and well construction details are provided in the table below. Average depth to groundwater is based on available 2020 data.

Table 12. Monitoring Well Details

Parameter	MW-1	MW-2	MW-3	MW-4	MW-5
Position with respect to new and expanded LAAs	down gradient	cross-gradient	cross-gradient	upgradient	down gradient
Total Depth, ft	26	26	26	27	27
Screen Interval, ft	11 - 26	11 - 26	11 - 26	12.5 – 25.5	13.5 – 25.5
Average Depth to Groundwater, ft	7.01	7.75	7.00	6.91	9.77

47. Monitoring wells MW-1, MW-2, and MW-3 were sampled and analyzed in 2010 (four sampling events from March through June) to determine initial baseline groundwater quality prior to onsite wastewater discharges. Additional samples were taken in September and December 2010. Discharges to the LAAs began in May 2013. Based on initial pre-discharge water quality data from March 2010 through June 2010, wells MW-2 and MW-3 had relatively higher concentrations of most analytes tested than those reported in downgradient well MW-1. Initial pre-discharge groundwater data show first encountered groundwater is not high-quality water with respect to salts and metals for wells MW-1, MW-2, and MW-3.

    a. TDS concentrations ranged from 1,000 to 1,700 mg/L, which exceeds 500 mg/L, the recommended secondary maximum contaminant level (sMCL).

    b. Boron concentrations ranged from 2,000 to 3,000 µg/L, which exceeds the numeric value of 700 µg/L, the agricultural water quality goal. There is no established maximum contaminant level (MCL) for boron, but, in some cases, the agricultural water quality goal is used as a reference for establishing numeric criteria for application of the narrative water quality objective (WQO) for chemical constituents in groundwater.

    c. Manganese concentrations ranged from 170 to 840 µg/L, which exceeds 50 µg/L, the sMCL.

48. Monitoring wells MW-4 and MW-5 were sampled monthly over a four-month period from April 2020 through July 2020 to provide a baseline groundwater assessment. Groundwater flow direction was towards the southeast. In general, upgradient well MW-4 had higher or similar concentrations of water quality parameters than downgradient well MW-5. Additionally, the water quality concentrations for MW-4 and MW-5 were similar to historic concentrations in the existing monitoring well network (MW-1, MW-2, and MW-3), with the exception of salts (specific conductivity, TDS, chloride, and sodium) which were noticeably

lower in MW-5 than in the other wells.

49. Groundwater quality for monitoring wells MW-1, MW-2, and MW-3 has been monitored since 2010. Average concentrations shown below were based on available data from 2019 through 2023. Groundwater flow direction varied to the east and to the southeast. Average concentrations for monitoring wells MW-4 and MW-5 were based on four sampling events during the months of April, May, June, and July of 2020. No other samples have been obtained from MW-4 and MW-5 to date. The position of the monitoring wells noted below are with respect to inclusion of the expanded LAAs. WQO denotes water quality objectives. DG denotes downgradient. UG denotes upgradient. CG denotes cross-gradient. For non-detects, half the reporting limit was used to calculate the average.

Table 13. Average Groundwater Quality (2019 – 2023)

Constituents	Potential WQO	MW-1 (DG)	MW-2 (CG)	MW-3 (CG)	MW-4 (UG)	MW-5 (DG)
EC, µmhos/cm	700 (Ag) See Note 1 below	2,121	2,028	1,547	1,700	946
TDS, mg/L	500 (sMCL)	1,277	1,339	951	993	548
Nitrate as N, mg/L	10 (MCL)	0.2	6.5	0.2	0.7	0.6
TKN, mg/L	none	0.2	0.3	0.3	0.5	0.3
Chloride, mg/L	250 (sMCL)	316	300	203	255	55
Sodium, mg/L	69 (Ag)	298	212	217	148	100
Boron, µg/L	700 (Ag)	2,816	2,044	2,179	1,675	950
Iron, µg/L	300 (sMCL)	85	234	70	4,225	2,055
Manganese, µg/L	50 (sMCL)	603	397	337	288	87

Table Note:

1. Numeric value of 700 µmhos/cm is considered to be a conservative value that is protective of the agricultural beneficial use during Phase 1 of the Salt Control Program.

50. Based on available groundwater data from 2010 through 2023 shows the following:

    a. Salinity concentrations (EC and TDS) prior to discharge activities exceeded their respective potential WQOs. Based on available data from 2010 through 2023, salinity concentrations in first encountered

groundwater remain elevated, but do not appear to be increasing, except for TDS concentrations for well MW-2. Based on available groundwater data, TDS concentrations for cross-gradient monitoring well MW-2 show increasing trends. However, EC concentrations for MW-2 remain stable. TDS concentrations for MW-3, which is also cross-gradient of the LAAs, appear to be decreasing.

Based on four monthly sampling events from April through July 2020, EC concentrations exceed 700 µmhos/cm for wells MW-4 and MW-5. TDS concentrations ranged from 940 to 1,100 mg/L for upgradient well MW-4 and from 530 to 580 mg/L for downgradient well MW-5, which exceeds the sMCL recommended level of 500 mg/L.

b. Nitrate as N concentrations in first encountered groundwater prior to discharge activities were below 10 mg/L, the primary MCL. Based on available data from 2010 through 2023, nitrate as N concentrations continue to be below 10 mg/L and concentration trends appear to be decreasing for MW-1, MW-2, and MW-3.

   Based on four monthly sampling events from April through July 2020, nitrate as N concentrations for wells MW-4 and MW-5 did not exceed 10 mg/L and ranged from non-detect to 0.9 mg/L.

c. Boron concentrations in first encountered groundwater prior to discharge activities exceeded 700 µg/L, the agricultural water quality goal. Based on available data from 2010 through 2023, boron concentrations show an increasing trend for MW-1, appear stable for MW-2, and show a decreasing trend for MW-3.

   Based on four monthly sampling events from April through July 2020, boron concentrations exceeded 700 ug/L for wells MW-4 and MW-5.

d. Iron concentrations in first encountered groundwater prior to discharge activities were non-detect. Based on available data from 2010 through 2023, iron concentrations appear stable for wells MW-1, MW-2, and MW-3.

   Based on four monthly sampling events from April through July 2020, iron concentrations for wells MW-4 and MW-5 exceeded the sMCL of 300 µg/L. Concentrations were noticeably higher than those observed in the existing monitoring well network.

e. Manganese concentrations prior to discharge activities exceeded 50 µg/L, the sMCL. Based on available data from 2010 through 2023, manganese concentration trends show an increasing trend for MW-1, stable for MW-2, and show a decreasing trend for MW-3.

Based on four monthly sampling events from April through July 2020, manganese concentrations for MW-4 and MW-5 exceeded 50 µg/L the sMCL, except during the April sampling event for MW-5.

f. Water quality in MW-4 is similar to that of MW-3, with the exception of iron. MW-4 is upgradient of the expanded LAAs and MW-3 is now cross-gradient of the expanded LAAs.

51. In accordance with Provision G.1.f of WDRs Order R5-2011-0033, the Discharger submitted a *Background Groundwater Quality Report* dated 14 March 2014 to characterize and determine background groundwater quality. Based on the data and spatial variability of the water quality observed between each monitoring well, a statistical analysis using an intra-well comparison was performed to determine baseline groundwater quality for each well for select parameters, as shown in the table below. Baseline groundwater quality was based on 15 monitoring events conducted between March 2010 and September 2013. During this monitoring period, groundwater flowed towards the east or southeast, on 14 of the 15 events and towards the west only once (September 2010). Average groundwater concentrations from Table 13 are shown for comparison. GW denotes groundwater. Conc denotes concentration. ND denotes non-detect.

Table 14. Baseline Groundwater Quality for Wells MW-1, MW-2, and MW-3

Concentrations	EC, µmhos/cm	TDS, mg/L	Nitrate as N, mg/L	B, µg/L	Fe, µg/L	Mn, µg/L
MW-1 Average GW Conc	2,121	1,277	0.2	2,816	85	603
MW-1 Baseline Quality	2,086	1,237	10	2,499	ND	505
MW-2 Average GW Conc	2,028	1,339	6.5	2,044	234	397
MW-2 Baseline Quality	2,041	1,265	15	2,233	ND	375
MW-3 Average GW Conc	1,547	951	0.2	2,179	70	337
MW-3 Baseline Quality	2,531	1,523	10	2,719	ND	725

Legal Authorities

52. This Order is adopted pursuant to Wat. Code section 13263, subdivision (a), which provides as follows:

> *The regional board, after any necessary hearing, shall prescribe requirements as to the nature of any proposed discharge, existing discharge, or material change in an existing discharge…, with relation to the conditions existing in the disposal area … into which, the discharge is made or proposed. The requirements shall implement any relevant water quality control plans that have been adopted and shall take into consideration the beneficial uses to be protected, the water quality objectives reasonably required for that purpose, other waste discharges, the need to prevent nuisance, and the provisions of [Water Code] Section 13241.*

53. The ability to discharge waste is a privilege, not a right, and adoption of this Order shall not be construed as creating a vested right to continue discharging waste. (Wat. Code, section 13263, subd. (g).)

54. This Order and its associated MRP are also adopted pursuant to Wat. Code section 13267, subdivision (b)(1), which provides as follows:

> *[T]he 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 … shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports and shall identify the evidence that supports requiring that person to provide the reports.*

55. The reports required under this Order and the separately issued MRP are necessary to verify and ensure compliance with WDRs. The burden associated with such reports is reasonable relative to the need for their submission.

Basin Plan Implementation

Beneficial Uses of Water

56. This Order implements the Central Valley Water Board's *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins* (Basin Plan), which designates beneficial uses for surface water and groundwater and establishes WQOs necessary to preserve such beneficial uses. (See Wat. Code, section 13241 et seq.).

57. The Facility is within the Yolo Bypass Hydrologic Area (No. 510.00), as depicted on interagency hydrologic maps prepared by the Department of Water Resources (DWR) in August 1986. The beneficial uses of the Yolo Bypass are agricultural supply (AGR); water contact recreation (REC-1); non-contact water recreation (REC-2); warm freshwater habitat (WARM); migration of aquatic organisms (MIGR); spawning, reproduction, and/or early development (SPWN); and wildlife habitat (WILD).

58. The beneficial uses of underlying groundwater are municipal and domestic water supply (MUN), agricultural supply (AGR), industrial service supply (IND), and industrial process supply (PRO).

Water Quality Objectives

59. The Basin Plan establishes narrative WQOs for chemical constituents, taste and odors, and toxicity in groundwater. It also sets forth a numeric objective for total coliform organisms.

60. The Basin Plan's numeric WQO for bacteria requires that the most probable number (MPN) of coliform organisms over any seven-day period shall be less than 2.2 per 100 mL in MUN groundwater.

61. The Basin Plan's narrative WQOs for chemical constituents require MUN designated water to at least meet the MCLs specified in 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.

62. Quantifying a narrative WQO requires a site-specific evaluation of those constituents that have the potential to impact water quality and beneficial uses. The Basin Plan states that when compliance with a narrative objective is required to protect specific beneficial uses, the Central Valley Water Board will, on a case-by-case basis, adopt numerical limitations to implement the narrative objective.

Salt and Nitrate Control Programs

63. On 31 May 2018, the Central Valley Water Board adopted Basin Plan amendments incorporating the Salt Control Program and Nitrate Control Program (Resolution R5-2018-0034). The Basin Plan amendments became effective on 17 January 2020. On 10 December 2020, the Central Valley Water Board adopted revision to the Basin Plan amendments with Resolution R5-2020-0057 (https://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/resolutions/r5-2020-0057_res.pdf.). Those revisions became effective on 10 November 2021.

64. For the Salt Control Program (SCP), the Discharger was issued a Notice to

Comply (**CV-SALTS ID 2886**). The Discharger submitted a Notice of Intent and elected to participate in the Prioritization and Optimization Study (P&O Study) under the Alternative Salinity Permitting Approach. To maintain existing salt discharges and minimize salinity impacts, this Order does the following:

a. Requires the Discharger to continue efforts to control salinity in its discharge; and

b. Sets a Performance-Based Salinity Limit of **1,960 mg/L for FDS** as a flow-weighted annual average on the discharge of treated wastewater from the ponds to the LAAs. Based on available data, the Facility's discharge has historically been consistent, as shown in Finding 16, and review of the groundwater monitoring data shows that the discharge has not significantly impacted groundwater quality. This limit is intended to ensure that the Facility's discharge of salinity does not increase over time.

65. The discharges regulated by this Order are not currently subject to the Nitrate Control Program (NCP). The Facility and LAAs are within Sub-basin 5-21.66 (Solano), a non-prioritized basin, so the Central Valley Water Board has not yet issued a Notice to Comply with the NCP for this Facility. Furthermore, because this Order does not authorize a new or expanded discharge, NCP provisions that apply to new and expanding discharges of nitrate are not applicable in this instance. Accordingly, this Order requires the Discharger to meet groundwater limitations for nitrate based on the MCLs listed in Title 22 section 64431. This Order may be modified in the future to implement provisions of the NCP if and when the Executive Officer of the Central Valley Water Board determines that coverage thereunder is necessary and appropriate.

66. As these strategies are implemented, the Central Valley Water Board may find it necessary to modify the requirements of these WDRs. As such, this Order may be amended or modified to incorporate any newly applicable requirements to ensure that the goals of the Salt and Nitrate Control Programs are met. More information regarding this regulatory planning process can be found on the Central Valley Water Board's CV-SALTS website. (https://www.waterboards.ca.gov/centralvalley/water_issues/salinity)

Special Consideration for High Strength Waste

67. For the purpose of this Order, "high strength waste" is defined as wastewater that contains concentrations of readily degradable organic matter that exceed typical concentrations for domestic sewage. Such wastes contain greater than 500 mg/L BOD. Typical high strength wastewaters include septage, some food processing wastes (e.g., slaughterhouse wastes), winery wastes, and rendering plant wastes.

68. Excessive application of high strength wastewater to land can create

objectionable odors, soil conditions that are harmful to crops, and degradation of underlying groundwater with nitrogen species and metals, as discussed below. Such groundwater degradation can be prevented or minimized through implementation of best management practices, which include planting crops to take up nutrients and maximizing oxidation of BOD to prevent nuisance conditions.

69. Regarding BOD, excessive application can deplete oxygen in the vadose zone and lead to anoxic conditions. At the ground surface, this can result in nuisance odors and fly breeding. When insufficient oxygen is present below the ground surface, anaerobic decay of the organic matter can create reducing conditions that convert metals that are naturally present in the soil as relatively insoluble (oxidized) forms to more soluble reduced forms. This condition can be exacerbated by acidic soil and/or acidic wastewater. If the reducing conditions do not reverse as the percolate travels down through the vadose zone, these dissolved metals (primarily iron, manganese, and arsenic) can degrade shallow groundwater quality. Many aquifers contain enough dissolved oxygen to reverse the process, but excessive BOD loading over extended periods may cause beneficial use impacts associated with these metals.

70. Typically, irrigation with high strength wastewater results in high loading on the day of application. It is reasonable to expect some oxidation of BOD at the ground surface, within the evapotranspiration zone, and below the root zone within the vadose (unsaturated) zone. The maximum BOD loading rate that can be applied to land without creating nuisance conditions or leaching of metals can vary significantly depending on soil conditions and operation of the land application system.

71. *Pollution Abatement in the Fruit and Vegetable Industry*, published by the U.S. EPA, cites BOD loading rates in the range of 36 to 600 lb/acre-day to prevent nuisance, but indicates the loading rates can be even higher under certain conditions. The studies that supported this report did not evaluate actual or potential groundwater degradation associated with those rates. There are few studies that have attempted to determine maximum BOD loading rates for protection of groundwater quality. Those that have been done are not readily adapted to the varying soil, groundwater, and climate conditions that are prevalent throughout the region.

72. The *California League of Food Processors' Manual of Good Practice for Land Application of Food Processing/Rinse Water* (Manual of Good Practice), prepared for the California League of Food Processors, proposes risk categories associated with particular BOD loading rate ranges as follows:

    a. Risk Category 1: (less than 50 lb/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 lb/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 lb/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.

73. 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, are considered a best management practice to prevent groundwater degradation due to reduced metals. Annual BOD loading rates from 2014 through 2022 to the LAAs were between 12 and 79 lb/ac/yr, as discussed in Finding 17. These WDRs establish a daily maximum BOD loading rate of 75 lb/ac/day to prevent odor conditions from occurring and to prevent groundwater degradation due to reduced metals.

Compliance with Antidegradation Policy

74. State Water Resources Control Board (State Water Board) Resolution 68-16, *Policy with Respect to Maintaining High Quality Waters of the State* (Antidegradation Policy) prohibits degradation of high-quality groundwater unless it is shown that such degradation:

a. Will be consistent with the maximum benefit to the people of the state;

b. Will not unreasonably affect present and anticipated future beneficial uses; and

c. Will not result in water quality less than that is prescribed in state and regional policies, including violation of one or more water quality objectives.

75. The Antidegradation Policy further requires that any discharge to existing high quality waters be required to meet WDRs that will result in the best practicable treatment or control (BPTC) of the discharge necessary to assure that pollution and/or nuisance will not occur and that the highest quality consistent with the maximum benefit to the people of the state will be maintained.

76. Given the unavailability of pre-1968 water quality information, compliance with the Antidegradation Policy will be determined on available historic onsite

groundwater monitoring data. Monitoring of the shallow groundwater began in March 2010 (before process wastewater was discharged to the LAAs), with three groundwater monitoring wells MW-1, MW-2, and MW-3. Two additional groundwater monitoring wells, MW-4 and MW-5 were added in 2020.

77. The Antidegradation Policy applies when a discharge will result in degradation of high-quality waters. "High quality waters" are defined as those waters where water quality is more than sufficient to support beneficial uses designated in the Basin Plan. Whether a water is high-quality water is established on a constituent-by-constituent basis, which means that an aquifer can be considered a high-quality water with respect to one constituent, but not for others (SWRCB Order WQ 91-10). If the activity will not result in the degradation of high-quality waters, the Antidegradation Policy does not apply.

78. For the purposes of this Order, constituents/parameters of concern (COCs) associated with this Facility include salts (represented by EC, TDS, and FDS), nitrate, boron, iron, and manganese. Average concentrations are shown in the table below. Units are in mg/L unless otherwise shown. NA denotes not available. ND denotes non-detect, reporting limit is shown. DG denotes downgradient. CG denotes cross-gradient. UG denotes upgradient. WW denotes wastewater.

Table 15. Constituents with Potential for Degradation

Sample Source	EC, µmhos/cm	TDS	FDS	Nitrate as N	B, µg/L	Fe, µg/L	Mn, µg/L
Source Water	NA	290	NA	ND, <0.5	NA	110	37
Domestic WW	NA	250 - 500	NA	0	NA	NA	NA
Winery WW	2,275	1,836	1,320	0.29	2,477	ND, <0.1	ND, <0.02
MW-1 (DG)	2,121	1,277	NA	0.2	2,816	85	603
MW-2 (CG)	2,028	1,339	NA	6.5	2,044	234	397
MW-3 (CG)	1,547	951	NA	0.2	2,179	70	337
MW-4 (UG)	1,700	993	NA	0.7	1,675	4,225	288
MW-5 (DG)	946	548	NA	0.6	950	2,055	87

Sample Source	EC, µmhos/cm	TDS	FDS	Nitrate as N	B, µg/L	Fe, µg/L	Mn, µg/L
Potential WQO (reference)	700 (Ag) See Note 1 below	500 (sMCL)	NA	10 (MCL)	700 (Ag)	300 (sMCL)	50 (sMCL)

Table Note:

1. Numeric value of 700 µmhos/cm is considered to be a conservative value that is protective of the agricultural beneficial use during Phase 1 of the Salt Control Program.

79. **Salinity (TDS)**. For the purpose of evaluation, TDS is representative of overall salinity. The best measure for total salinity in groundwater is TDS. FDS is the non-volatile fraction of TDS that has the potential to percolate or leach into shallow groundwater. Therefore, the best measure for total salinity in the process wastewater is FDS.

Domestic wastewater will be treated to disinfected secondary-2.2 recycled water standards and commingled with winery wastewater. Salinity impacts from recycled water are considered minimal based on volume and quality. For the purpose of evaluation, winery wastewater is analyzed. Based on available data collected in 2014 through 2022, TDS concentrations in winery wastewater are relatively stable but exceed 500 mg/L, the recommended sMCL for TDS. In comparison to source water and upgradient groundwater quality, discharges of the commingled wastewater have the potential to degrade groundwater with respect to salinity.

First encountered groundwater is not identified as high-quality water with respect to TDS, as TDS concentrations in groundwater have exceeded 500 mg/L, the recommended sMCL, for as long as this parameter has been monitored. Therefore, the Antidegradation Policy does not apply with respect to TDS. Nevertheless, concentrations of TDS discharged to groundwater from the Facility are reduced through the use of a lined pond system, aerators, and land application. Site conditions (climate and soils) are relied upon to control the persistence and transport of constituents into the aquifer. High quality water is used as a source for supplemental irrigation, which is needed to meet the crop demands planted in the LAAs and helps to maintain FDS loading applied to the LAAs throughout the irrigation season.

First encountered groundwater is not identified as high-quality with respect to FDS. Therefore, the Antidegradation Policy does not apply with respect to FDS. Nevertheless, this Order requires the Discharger to comply with the Salt Control Program, which constitutes BPTCs for FDS. Pursuant to the Salt Control Program, the Discharger has elected to participate in the P&O Study; therefore,

this Order includes an FDS effluent limitation as a performance-based limit, which is based on historical effluent data and consideration of water conservation efforts. Review of the available groundwater data collected in 2010 through 2023 suggests that the discharge has not significantly impacted groundwater quality with respect to salinity, except for cross-gradient monitoring well MW-2. TDS concentrations for MW-2 show increasing trends, however TDS concentrations for MW-3 which is also cross-gradient of the LAAs appear decreasing. The purpose of this limit is to ensure the Discharger is implementing appropriate performance-based measures at the Facility and to prevent increases of TDS concentrations in groundwater beyond current conditions. Compliance with the performance-based effluent limit shall constitute compliance with the water quality control plan and ensures that the Discharger is maintaining current discharge concentrations and loading levels of salt. In addition, the Discharger is required to evaluate groundwater TDS concentrations to determine whether further degradation is occurring.

80. **Nitrate as Nitrogen (N).** First encountered groundwater is high-quality with respect to nitrate as N. For nutrients such as nitrate, the potential for groundwater degradation depends on wastewater quality and the ability of the vadose zone below the LAAs to support the biological conversion of organic nitrogen to nitrate and subsequent denitrification of nitrate to nitrogen gas in the percolating wastewater before it reaches the water table.

Nitrate impacts from recycled water are considered minimal based on volume and quality. For the purpose of evaluation, winery wastewater is analyzed. Based on available winery wastewater data collected from 2014 through 2022, total nitrogen is primarily TKN, which consists of organic nitrogen and ammonia nitrogen. TKN has the potential to mineralize and convert to nitrate (with some loss via ammonia volatilization). Historically, nitrate as N concentrations in the winery wastewater have not exceeded 10 mg/L, the primary MCL for nitrate. Nitrate concentrations in first encountered groundwater also do not exceed 10 mg/L and concentrations appear to be decreasing for wells MW-1, MW-2, and MW-3. Based on this information, the discharge has not historically impacted groundwater with respect to nitrate as N.

This Order does not authorize an increase in the quantity of nitrate discharged, but does authorize an expansion of LAA acreage, which is anticipated to reduce the amount of nitrate as N that reaches receiving groundwater. Therefore, this Order does not authorize degradation with respect to nitrate as N and, thus, the Antidegradation Policy does not apply. Nevertheless, for the protection of groundwater quality, this Order requires continued groundwater monitoring for nitrate, requires nitrogen monitoring in the commingled recycled water and winery process water, and requires the Discharger to evaluate groundwater nitrate concentrations to identify any potential impacts to the beneficial uses of groundwater that may occur.

81. **Iron (Fe) and Manganese (Mn).** Typical winery wastewater is not expected to contain significant iron or manganese concentrations and available data collected from the Facility between 2014 and 2022 show that both constituents are non-detect in the winery wastewater. However, as described in preceding findings, excessive BOD loading rates can solubilize naturally occurring metals in soil, such as iron and manganese, resulting in degradation of local groundwater with these constituents.

    First-encountered groundwater may be high-quality with respect to iron. Iron concentrations prior to waste discharges to the LAAs were non-detect for wells MW-1, MW-2, and MW-3. More recent data show an occasional detection above 300 µg/L in MW-2. Iron concentration trends in groundwater were not significant for wells MW-1, MW-2, and MW-3.

    First-encountered groundwater is identified as not high-quality with respect to manganese, as manganese concentrations have historically exceeded 50 µg/L, the sMCL, in receiving groundwater. Therefore, the Antidegradation Policy does not apply with respect to manganese. Manganese concentration trends for MW-1 appear to be increasing, not significant for MW-2, and decreasing for MW-3.

    This Order does not authorize degradation with respect to iron or manganese, nor BOD loading to a level at which such degradation is anticipated to occur; therefore, the Antidegradation Policy does not apply with respect to these constituents. The Facility uses multiple screening equipment for solids recovery and aerated ponds to minimize organic loading into the ponds. Nevertheless, this Order requires continued monitoring of BOD in wastewater, prescribes a BOD loading limit, and requires continued monitoring of iron and manganese in groundwater.

82. **Boron (B).** Based on available data from 2014 through 2022, boron concentrations in the winery wastewater range from 1,200 to 5,300 µg/L and 2,477 µg/L as an average. Boron concentrations in first encountered groundwater prior to wastewater discharges to the LAAs exceeded 700 µg/L, the agricultural water quality goal, and remain elevated. Therefore, first-encountered groundwater is not high-quality with respect to boron and the Antidegradation Policy does not apply to this constituent. Nevertheless, this Order requires continued monitoring of boron in both the wastewater and groundwater and requires monitoring of boron in the source water.

83. Although this Order does not authorize degradation of high-quality water with respect to any of the COCs, this Order nevertheless requires the Discharger to implement the best practicable treatment and control (BPTC) for the COCs, including:

    a. For salinity, compliance with the Salt Control Program, as implemented through this Order's requirements that the Discharger maintain good

standing in the P&O Study and implement the performance-based salinity limit.

b. Solids removal and disposal at an appropriate off-site location, which reduces organic loading to treatment ponds and groundwater or application to cropped fields for limited purpose of nutrient recycling.

c. Impermeable ground surfaces and wastewater collection in production areas to prevent infiltration.

d. Storage and treatment of wastewater in a lined pond.

e. Domestic wastewater will be treated to meet Title 22 disinfected secondary-2.2 recycled water standards prior to discharges to land.

f. Land application of wastewater to cropped fields with tailwater collection systems, application at agronomic rates for the limited purpose of nutrient recycling.

g. Groundwater limits and monitoring of source water, effluent, and groundwater to ensure compliance with these limits.

84. The Discharger's implementation of the above-listed BPTCs, and the dilution provided by higher quality supplemental irrigation water from Reclamation District 999, will minimize the extent of water quality degradation resulting from the Facility’s continued operation.

85. 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. Degradation of groundwater by some typical waste constituents released with discharge from the Facility after effective source reduction, treatment and control, and considering the best efforts of the Discharger and magnitude of degradation, is of maximum benefit to the people of the state.

86. The Facility contributes to the economic prosperity of the region by providing a service and employment for the local community, by providing incomes for numerous aligned businesses, and by providing a tax base for local and county governments. The Facility employs between 85 and 150 employees. Accordingly, to the extent that any degradation occurs as the result of the Facility’s operation, such degradation is consistent with the maximum interest of the people of the State of California.

87. Based on the foregoing, the adoption of this Order is consistent with the State Water Board’s Antidegradation Policy.

California Environmental Quality Act

88. The issuance of this Order, which prescribes requirements for and monitoring of waste discharges at an existing facility, with negligible or no expansion of its existing use, is exempt from the procedural requirements of the California Environmental Quality Act (CEQA), Public Resources Code section 21000 et seq., pursuant to California Code of Regulations, title 14, section 15301. The discharges authorized under this Order are substantially within parameters established under prior WDRs, particularly with respect to character and volume of discharges. To the extent that the construction of any new basins, ponds, surface impoundments, and/or use of existing irrigated lands as new LAAs are authorized under this Order, such features involve minor alterations to land exempt from CEQA review pursuant to California Code of Regulations, title 14, section 15304.

Other Regulatory Considerations

Wat. Code Section 13149.2

89. These WDRs regulate a facility that may impact a disadvantaged community and/or tribal community and include an alternative compliance path that allows the Discharger time to come into compliance with a water quality objective (i.e., salinity). The Discharger has selected the Alternative Salinity Permitting Approach for the Salt Control Program, which provides an alternative approach for compliance with salinity limits through implementation of specific requirements (i.e., support facilitation and completion of the Salinity P&O Study). The Central Valley Water Board has satisfied the outreach requirements set forth in Wat. Code section 189.7 by conducting outreach in affected disadvantaged and tribal communities. Pursuant to Wat. Code section 13149.2, the Central Valley Water Board reviewed readily available information and information raised to the Board by interested persons concerning anticipated water quality impacts in disadvantaged or tribal communities resulting from adoption of these WDRs. The Board also considered environmental justice concerns within the Board's authority and raised by interested persons with regard to those impacts.

90. The Central Valley Water Board anticipates that the issuance of these WDRs will result in water quality impacts within the scope of the Board's authority. Specifically, these WDRs authorize the continued discharge of wastewater with salinity concentrations above applicable water quality objectives. The Central Valley Water Board has identified the following measures available and within the scope of its authority to address the impacts of the Facility to the nearby disadvantage communities in Yolo County: 1) require the Discharger to maintain active participation in the P&O Study and compliance with the Salt Control Program and performance-based salinity limitation, 2) require maintenance of the lined wastewater effluent treatment ponds, 3) require application of wastewater to crops at agronomic rates, and 4) require implementation of other BPTC

requirements of this Order (see Finding 83).

Human Right to Water

91. Pursuant to Wat. Code section 106.3, subdivision (a), 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." Although this Order is not subject to Wat. Code section 106.3, as it does not revise, adopt or establish a policy, regulation or grant criterion, (see section 106.3, subd. (b)), it nevertheless promotes the policy by requiring discharges to meet MCLs for drinking water, which are designed to protect human health and ensure that water is safe for domestic use. For salinity, this Order requires compliance with the SCP. Although the Basin Plans' Exceptions Policy for Salinity allows participants in this Program to obtain limited-term exceptions from MCLs for salinity, this Program is consistent with the Human Right to Water Policy because their over-arching management goals and priorities include short-term provision of safe drinking water to impacted users and long-term restoration of impacted groundwater basins and sub-basins where reasonable, feasible, and practicable

Threat-Complexity Rating

92. For the purposes of the California Code of Regulations, title 23, section 2200, the Facility has a threat and complexity rating of **2-B** as defined below:

    a. Threat Category "2" – 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. Complexity Category "B" - 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.

Title 27 Exemption

93. This Order, which prescribes WDRs for discharges of industrial process water from winery operations and treated domestic wastewater, is exempt from the prescriptive requirements of California Code of Regulations, title 27 (Title 27), section 20005 et seq. (See Title 27 section 20090, subd. (b).).

Storm Water

94. The State Water Board adopted Order 2014-0057-DWQ (NPDES General Permit CAS000001) specifying WDRs for discharges of storm water associated with industrial activities and requiring submittal of a Notice of Intent by all affected

industrial dischargers. The Facility is enrolled and has coverage under General Order 2014-0057-DWQ, which has been active since July 2011.

Groundwater Well Standards

95. The California Department of Water Resources (DWR) sets standards for the construction and destruction of groundwater wells (hereafter DWR Well Standards), as described in California Well Standards Bulletin 74-90 (June 1991) and Water Well Standards: State of California Bulletin 74-81 (December 1981). These standards, and any more stringent standards adopted by the state or county pursuant to Water Code section 13801, apply to all monitoring wells used to monitor the impacts of wastewater storage or disposal governed by this Order.

Statistical Data Analysis

96. Statistical data analysis methods outlined in the U.S. EPA's Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance (Unified Guidance) are appropriate for determining compliance with the Groundwater Limitations of this Order. Depending on the circumstances, other methods may also be appropriate.

Scope of Order

97. This Order is strictly limited in scope to those waste discharges, activities, and processes described and expressly authorized herein.

98. Pursuant to Wat. Code section 13264, subdivision (a), the Discharger is prohibited from initiating the discharge of new wastes (i.e., other than those described herein), or making material changes to the character, volume and timing of waste discharges authorized herein, without filing a new ROWD per Wat. Code section 13260.

99. Failure to file a new ROWD before initiating material changes to the character, volume, or timing of discharges authorized herein shall constitute an independent violation of these WDRs.

100. This Order is also strictly limited in applicability to those individuals and/or entities specifically designated herein as "Discharger," subject only to the discretion to designate or substitute new parties in accordance with this Order.

Reporting Requirements

101. This Order is also issued in part pursuant to Wat. Code section 13267, subdivision (b)(1), which provides that:

> *[T]he 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 regional board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports.*

102. The technical reports required under this Order, as well as those required under the separately issued MRP, are necessary to ensure compliance with prescribed WDRs. The burdens associated with such reports are reasonable relative to the need for their submission.

103. Failure to comply with the reporting requirements under this Order and the MRP may result in enforcement action pursuant to Wat. Code section 13268.

Procedural Matters

104. All of the above and the supplemental information and details in the attached Information Sheet, were considered in establishing the following conditions of discharge.

105 The Discharger, interested agencies, and interested persons were notified of the Central Valley Water Board's intent to prescribe the WDRs in this Order, and provided an opportunity to submit their written views and recommendations at a public hearing. (Wat. Code, section 13167.5)

106. At a public meeting, the Central Valley Water Board heard and considered all comments pertaining to the discharges regulated under this Order.

107. The Central Valley Water Board will review and revise the WDRs in this Order as necessary.

REQUIREMENTS

IT IS HEREBY ORDERED, that Waste Discharge Requirements Order R5-2011-0033 is rescinded (except for enforcement purposes) and, pursuant to Water Code sections 13263 and 13267, Bogle Vineyards, Inc. and The Bogle Family Limited Partnership, as well as their respective agents, successors, and employees, shall comply with the following:

A. Standard Provisions

1. Except as expressly provided herein, the Discharger shall comply with the Standard Provisions and Reporting Requirements dated 1 March 1991 (1 March 1991 SPRRs).

B. Discharge Prohibitions

1. Discharge of waste to surface waters or surface water drainage courses is prohibited.

2. No waste constituent shall be released, discharged, or placed where it will cause a violation of the Groundwater Limitations of this Order.

3. Waste constituents shall not be discharged or otherwise released from the Facility (including during treatment and storage activities) in a manner that results in conditions of “nuisance” or “pollution,” as defined per Wat. Code section 13050.

4. Discharge of waste classified as “hazardous” (see Cal. Code Regs., tit. 22, section 66261.1 et seq.), is prohibited.

5. Discharge of waste classified as “designated”, as defined in Water Code section 13173, in a manner that causes violation of Groundwater Limitations, is prohibited.

6. Treatment system bypass of untreated or partially treated waste is prohibited, except as allowed by Standard Provision E.2 of the 1 March 1991 SPRRs.

7. Discharge of waste at a location or in a manner different from that described in the Findings is prohibited.

8. Discharge of toxic substances into any wastewater treatment system or land application area such that biological treatment mechanisms are disrupted is prohibited.

9. Discharge of domestic wastewater to the process water treatment ponds and land application areas is prohibited unless treated to disinfected secondary-2.2 recycled water in accordance with California Code of Regulations, title 22, section 60301.

10. Storage of process residual solids on areas not equipped with a means to prevent storm water infiltration or a paved leachate collection system is prohibited.

C. Flow Limitation

1. Waste discharges (combined winery process waste and recycled water) to the ponds shall not exceed a **maximum monthly flow of 4.9 MG** and an **annual total of 30.3 MG** for the calendar year (1 January through 31 December).

2. Disinfected secondary-2.2 recycled water discharged to the ponds shall not exceed an annual total of **0.66 MG** for the calendar year (1 January through 31 December).

D. Performance Based Salinity Limit

1. The flow-weighted annual average FDS limitation in effluent is a performance-based limitation (as discussed in Finding 64). The purpose of this limit is to ensure the Discharger is implementing appropriate performance-based measures and maintaining existing discharge concentrations.

Table 16. Performance Based Salinity Limit

Constituent	Limit	Basis of Compliance Determination
FDS	1,960 mg/L	Pond 3

E. Mass Loading Limitations

1. The total nitrogen loading from the discharge to the LAAs, as determined by the methods described in the attached MRP, shall not **exceed crop demand**.

2. The maximum daily BOD loading to the LAAs, as determined by the methods described in the attached MRP, shall not exceed **75 lb/ac/day**.

F. Discharge Specifications

1. Domestic wastewater shall be treated to disinfected secondary-2.2 recycled water in accordance with California Code of Regulations, title 22, section 60301, prior to discharge to the ponds and land application areas.

2. All wastewater discharges shall remain within the lined treatment and storage pond(s), LAAs, and any authorized waste treatment and/or containment structures as described in the Findings. The engineered lined

surface shall meet a hydraulic conductivity standard of at least 1×10^{-6} centimeter per second.

3. All systems and equipment shall be operated to optimize discharge quality.

4. All conveyance, treatment, storage, and disposal systems shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.

5. Objectionable odors shall not be perceivable beyond the limits of the Facility property where the waste is generated, treated, and/or discharged at an intensity that creates or threatens to create nuisance.

6. As a means of ensuring compliance with Discharge Specification E.5, the dissolved oxygen (DO) content in the upper one foot of any wastewater treatment or storage pond shall not be less than 1.0 mg/L for three consecutive sampling events. Notwithstanding the DO monitoring frequency specified in the monitoring and reporting program, if the DO in the pond(s) is below 1.0 mg/L for any single sampling event and objectionable odors are perceivable beyond the property limits, the Discharger shall report the findings to the Central Valley Water Board in accordance with Section B.1 of the 1 March 1991 SPRRs. The written notification shall include a specific plan to resolve the low DO results within 30 days of the first date of violation.

7. The Discharger shall design, construct, operate, and maintain all ponds 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). As a means of management and to discern compliance with this requirement, the Discharger shall install and maintain in each pond a permanent staff gauge with calibration marks that clearly show the water level at design capacity and enable determination of available operational freeboard.

8. Wastewater treatment, storage, and disposal ponds or structures shall have sufficient capacity to accommodate allowable wastewater flow, design seasonal precipitation, and ancillary inflow and infiltration during the winter while ensuring continuous compliance with all requirements of this Order. Design seasonal precipitation shall be based on total annual precipitation using a return period of 100 years, distributed monthly in accordance with historical rainfall patterns.

9. On or about **1 October** of each year, available capacity shall at least equal the volume necessary to comply with Discharge Specifications E.7 and E.8.

10. All ponds and open containment structures shall be managed to prevent breeding of mosquitoes. Specifically:

    a. An erosion control program shall be implemented to ensure that small coves and irregularities are not created around the perimeter of the water surface.

    b. Weeds shall be minimized through control of water depth, harvesting, or herbicides.

    c. Dead algae, vegetation, and debris shall not accumulate on the water surface.

    d. The Discharger shall consult and coordinate with the local Mosquito Abatement District to minimize the potential for mosquito breeding as needed to supplement the above measures.

11. Newly constructed or rehabilitated berms or levees (excluding internal berms that separate ponds or control the flow of water within a pond) shall be designed and constructed under the supervision of a California registered civil engineer.

12. The Discharger shall monitor process residual solids accumulation in the pond(s) annually and shall periodically remove residual solids as necessary to maintain adequate storage capacity. Any sludge removed from ponds shall be hauled off-site for disposal or land applied in accordance with the Pond Sludge/Biosolids Disposal Specifications in this Order.

13. The Discharger shall regularly inspect the liner condition of the lined treatment pond(s). The Discharger shall maintain and repair the liner as necessary to ensure the integrity of the pond liner is maintained and leakage from the liner is minimized.

14. Lined ponds shall be tested for leaks at least once every **5 years** using a performance test (e.g., seepage/leak test, water balance, liner leak detection testing, or geologic evaluation) to demonstrate that the existing pond is operating with minimal leaking and meets the hydraulic conductivity standard.

15. The Discharger shall adhere to the following setbacks (minimum horizontal distances) unless a different setback is approved by the Central Valley Water Board.

a. Neither waste nor recycled water shall be discharged within 100 feet of any water supply well.

b. No impoundment of disinfected secondary recycled water shall occur within 100 feet of any domestic water supply well.

c. Neither waste nor recycled water shall be discharged within 50 feet of surface waters or surface water drainage courses.

d. Waste shall not be discharged within 100 feet from a residence or a place where public exposure could be similar to that of a park, playground, or school yard.

G. Land Application Area Specifications

For the purposes of this Order, the terms “land application areas” or “LAAs” refer to the discharge areas described in the Findings and shown in **Attachment B**.

1. Crops shall be grown on the LAAs. Crops shall be selected based on nutrient uptake, consumptive use of water, and irrigation requirements to maximize uptake of nutrients.

2. Wastewater shall not be applied to an LAA within 24 hours of forecasted precipitation, during precipitation events, or when the LAA surface soil is saturated.

3. The perimeter of the LAAs shall be graded to prevent ponding along public roads or other public areas and prevent runoff or overspray onto adjacent properties not owned or controlled by the Dischargers.

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

5. Hydraulic loading of wastewater and irrigation water shall be at reasonable agronomic rates designed to minimize the percolation of wastewater and irrigation water below the root zone (i.e., deep percolation).

6. Land application of wastewater shall be managed to minimize erosion.

7. Any irrigation runoff shall be confined to the LAA and shall not enter any surface water drainage course or storm water drainage system.

8. The LAAs shall be managed to prevent breeding of mosquitos. More specifically:

    a. All applied irrigation water must infiltrate completely within 48 hours;

    b. Ditches not serving as wildlife habitat shall be maintained free of emergent marginal, and floating vegetation; and

    c. Low-pressure and unpressurized pipeline and ditches accessible to mosquitos shall not be used to store process wastewater.

9. LAAs shall be inspected periodically to determine compliance with the requirements of this Order. If an inspection reveals noncompliance or threat of noncompliance with this Order, the Discharger shall temporarily stop land application use immediately and implement corrective actions to ensure compliance with this Order.

H. Recycled Water General Requirements

1. Recycled water is defined in Wat. Code section 13050 and Title 22 section 60301.220.

2. The Discharger's recycled water program must comply with all applicable requirements set forth in Title 22 for the production, distribution, and use of recycled water.

3. Cross connection control must comply with the State Water Board's Cross Connection Control Policy Handbook.

4. All recycled water produced at the Facility must be filtered using the membrane bioreactor as described in the Discharger's Engineering Report.

5. No changes, additions, or modifications can be made to the disinfection process unless approval is obtained from DDW.

6. Recycled water discharged to the ponds and land application areas shall be at least disinfected secondary-2.2 recycled water as defined in Title 22 section 60301

7. In accordance with Title 22 section 60301, disinfected secondary-2.2 recycled water shall meet the following:

    a. Sampling for total coliform bacteria shall be conducted daily on the days that disinfected secondary water is discharged to the pond system. The median concentration of total coliform bacteria measured in the disinfected effluent must not exceed the following:

i. MPN of 2.2 per 100 milliliters utilizing the bacteriological results of the last seven days which analyses have been completed;

ii. MPN of 23 per 100 milliliters in more than one sample in any 30-day period, and

iii. MPN of 240 total coliform bacteria per 100 milliliters, at any time.

Report daily values, rolling seven-day median values, and maximum monthly values.

8. The Discharger shall provide qualified personnel to operate the domestic wastewater treatment system effectively to always achieve the required level of treatment. Qualified personnel must be those meeting requirements pursuant to Wat. Code division 7, chapter 9 (section 13625 et seq.).

9. Per Title 22, division 4, chapter 3 (Recycled Water Criteria), articles 8 and 10, the Discharger must always maintain the reliability features and contingency measures for the domestic wastewater treatment system processes and ensure non-compliant recycled water is not being delivered for recycled water use.

10. The Discharger must not bypass untreated or partially treated wastewater from the domestic wastewater treatment system, or any intermediate unit processes, to the point of use. Excess flows and/or noncompliant process flows must be returned to the equalization tank for full treatment or hauled offsite.

11. No changes, additions, or modifications shall be made to the Facility's treatment or discharge of domestic wastewater unless approval is obtained from DDW and the Central Valley Water Board.

I. Recycled Water Land Application Area Specifications

Application and use of disinfected secondary-2.2 recycled water must be in accordance with the Title 22 Recycled Water Criteria. The Discharger must ensure the recycled water uses and practices adhere to the following:

1. An engineering report must be submitted to DDW and the Central Valley Water Board for review and approval of any future use of recycled water or expansion of existing irrigation areas beyond those described in the approved Title 22 Engineering Report(s).

2. Plans for future uses of recycled water or expanded irrigation areas, when available, must be submitted to DDW and the Central Valley Water Board for review and approval.

3. Application of recycled water must be confined to the ponds and LAAs described in the Findings of this Order and in accordance with Title 22.

4. In accordance with Title 22 section 60310, subdivision (e), the use of recycled water must comply with the following:

    a. Any recycled water irrigation runoff must be confined to the LAAs areas unless the runoff does not pose a public health threat and is authorized by the regulatory agency.

    b. Spray, mist, or runoff shall not enter dwelling, designated outdoor eating areas, or food handling facilities.

5. Public contact with wastewater/recycled water must be precluded through use of fences, signs, and/or other appropriate means. LAAs where recycled water is used must be posted with signs that are visible, in a size no less than 4 inches by 8 inches and include the following wording, “Recycled Water – Do Not Drink.” (Title 22, section 60310, subdivision (g).) Signs must be placed in conspicuous places including at each entrance to the recycled water irrigated area. Alternative signage and wording, or an educational program, provided the Discharger demonstrates to DDW that the alternative approach will assure an equivalent degree of public notification may be acceptable upon DDW approval.

6. In accordance with Title 22 section 60310, subdivision (h), no physical connection can be made or allowed to exist between the recycled water system and any separate system conveying potable water. Supplementing of recycled water with potable water must always be through an approved air gap separation.

7. The installation of recycled water pipeline(s) at the use site area(s) must be in accordance with the separation criteria pursuant to the Title 22, division 4, chapter 16 (California Waterworks Standards), article 3, section 64572.

8. Pipeline(s), control valves, and other appurtenances located at the recycled water use areas must have identification markings and color coding. Purple color coding must be used, such as purple identification tape, or a purple polyethylene vinyl wrap color Pantone 522C to tag the RW pipelines and appurtenances.

9. In accordance with Title 22 section 60310, subdivision (i), the recycled water system in irrigated areas must not include hose bibs. Only quick couplers that differ from those used on potable water system can be used.

10. Irrigation of the LAAs with recycled water shall occur only when appropriately trained personnel are on duty.

11. LAAs that are irrigated with recycled water shall be designed, maintained, and operated to comply with the following setback requirements:

Table 17. LAA Setbacks

Setback Definition	Minimum Irrigation Setback (feet)
Edge of LAA to domestic water supply well	100
Edge of LAA to residence	100
Edge of LAA to surface waters or surface water drainage courses.	50

J. Groundwater Limitations

Discharge of waste from any portion of the Facility shall not cause or contribute to groundwater containing constituent concentrations in excess of the concentrations specified below or in excess of baseline groundwater quality, whichever is greater:

1. Contain constituents in concentrations that exceed either the Primary or Secondary MCLs established in Title 22, excluding salinity.

   The Discharger has chosen to participate in the Alternative Salinity Permitting Approach for the Salt Control Program. The Basin Plans' Exceptions Policy for Salinity allows participants in these Programs to obtain limited-term exceptions from MCLs.

2. Contain taste or odor-producing constituents, toxic substances, or any other constituents in concentrations that cause nuisance or adversely affect beneficial uses.

K. Winery Process Solids Disposal Specification

1. For the purpose of this Order, "process solids" refer to grit and screenings and organic matter removed during the screening of winery wastewater from crushing or processing activities.

2. Process solids shall be removed from screens, vaults, sumps, and tanks as needed to ensure optimal operation, prevent nuisance conditions, and maintain adequate storage capacity.

3. Stored process solids shall be protected from precipitation as needed (e.g., containerized, covered with tarps, stored under roofed areas) or stored in areas protected from stormwater runon or runoff (e.g., bermed or graded to direct stormwater away from stockpiles) to minimize leachate formation.

4. Process solids shall be stored and managed such that free draining liquid is contained (e.g., placed on a compacted, bermed outdoor pad, controlled with a leachate collection and return system), directed to a containment structure (e.g., process water pond), or otherwise similarly controlled and contained to prevent leachate runoff and minimize infiltration.

5. Process solids shall be managed to prevent nuisance conditions (e.g., stored in covered containers, dried and moved offsite as soon as practicable, or promptly land applied).

6. Any handling and storage of process solids shall be temporary and controlled and contained in a manner that minimizes leachate formation and precludes infiltration of waste constituents into soils in a mass or concentration that will violate the groundwater limitations of this Order.

7. If removed from the site, process solids shall be disposed of in a manner consistent with Title 27, division 2. Removal for reuse as animal feed, biofuel feedstock, or land disposal at facilities (i.e., landfills, composting facilities, or soil amendment sites operated in accordance with valid WDRs issued by a Regional Water Board) will satisfy this specification.

8. Any proposed change in process solids use or disposal practice shall be reported in writing to the Executive Officer **at least 90 days** in advance of the change.

L. Pond Sludge/Biosolids Disposal Specification

1. For the purpose of this Order, pond sludge means the solid, semisolid, and liquid residues removed from the treatment ponds. Residual sludge means sludge that will not be subject to further treatment at the wastewater system. Biosolids refers to sludge that has undergone sufficient treatment and testing to qualify for reuse pursuant to the U.S. EPA Part 503 Biosolids Rule. (40 C.F.R. § 503.)

2. The use and disposal of biosolids, specifically pond sludge, to the LAAs is prohibited unless pond sludge meets the vector attraction and pollution

concentration limits for heavy metals specified in U.S. EPA Biosolids Rule (see 40 C.F.R. § 503) and pathogen reduction standards specified in 40 Code of Federal Regulations part 503.32, subdivision (b).

a. Pond sludge applied to LAAs shall not exceed the ceiling concentrations for pollutants shown below.

Table 18. Ceiling Concentrations

Constituent	Ceiling Concentration mg/kg dry weight
Arsenic	75
Cadmium	85
Copper	4,300
Lead	840
Mercury	57
Molybdenum	75
Nikel	420
Selenium	100
Zinc	7,500

b. Pond sludge applied to the LAAs shall not exceed the cumulative pollutant loading rate limits listed below

Table 19. Cumulative Pollutant Loading

Constituent	Cumulative Pollutant Loading Rate Limit lb/ac
Arsenic	36
Cadmium	34
Copper	1,336
Lead	267
Mercury	15

Constituent	Cumulative Pollutant Loading Rate Limit lb/ac
Molybdenum	16
Nikel	374
Selenium	89
Zinc	2,494

c. Pond sludge applied to the LAAs shall comply with the applicable pathogen reduction standards for Class B listed in 40 Code of Federal Regulations part 503.

d. Pond sludge applied to the LAAs shall comply with one of the applicable vector attraction reduction requirements specified listed in 40 Code of Federal Regulations part 503.33.

e. If pond sludge is applied to the LAA where the soil will be tilled, pond sludge shall be incorporated within 24 hours after application during the time period beginning 1 May and ending 31 October and within 48 hours in non-arid areas during the remaining time period.

f. The application of pond sludge to water-saturated or frozen ground, or during periods of precipitation that induces runoff from the permitted site, is prohibited.

g. The application of pond sludge in areas that are subject to gully erosion or washout off site is prohibited.

h. The application of pond sludge to slopes exceeding 25 percent is prohibited.

i. After an application of pond sludge to any field, the Discharger shall ensure the following:

   i. For at least 30 days:

      Food, feed, and fiber crops are not harvested.

   ii. For at least 60 days after application in areas with average daily (daytime) air temperatures exceeding 50 degrees Fahrenheit or for at least 90 days after land application where such conditions are not met:

Domesticated animals are not grazed.

iii. For at least 12 months:

(a) Public access to the site is restricted for sites with a high potential for public exposure.

(b) Turf is not to be harvested if the harvested turf is placed on land with a high potential for contact by the public as defined in 40 Code of Federal Regulations part 503.11; and

(c) Grazing of milking animals used for producing unpasteurized milk for human consumption is prevented if the field is used as pasture.

iv. For at least 14 months:

Food crops with harvested parts that touch the pond solids/soil mixture and are totally above the land surface are not harvested.

v. For at least 20 months:

Food crops with harvested parts below the land surface are not harvested when pond sludge remain exposed on the surface for four months or longer prior to incorporation.

vi. For at least 38 months

Food crops with harvested parts below the land surface are not harvested when the pond solids remain exposed on the ground surface for less than four months prior to incorporation into the soil.

j. Staging and pond sludge application areas shall be at least:

i. 10 feet from property lines. This requirement may be waived when property lines are adjacent to properties also using pond sludge as a soil amendment.

ii. 500 feet from domestic water supply wells. A lesser setback distance from domestic water supply wells (not to be less than 100 feet) may be used if it can be demonstrated that the groundwater, geologic, topographic, and well construction conditions at the specific site are adequate to protect the health of individuals using the supply well.

iii. 100 feet from non-domestic supply wells. A lesser setback distance (not to be less than 25 feet) may be used if it can be demonstrated that the groundwater, geologic, topographic, and well construction conditions at the specific site are adequate to protect the groundwater. Not including agricultural drains.

iv. 50 feet from public roads and occupied onsite residences.

v. 100 feet from surface waters, including wetlands, creeks, ponds, lakes, underground aqueducts, and marshes.

vi. 33 feet from primary agricultural drainage ways.

vii. 500 feet from occupied non-agricultural buildings and off-site residences. A lesser setback from non-agricultural buildings and off-site residences (not less than 100 fee) may be allowed provided that a lesser setback is not initially opposed by the current resident within 500 feet.

viii. 400 feet from a domestic water supply reservoir.

ix. 200 feet from a primary tributary to a domestic water supply.

x. 2,500 feet from any domestic surface water supply intake.

xi. 500 feet from enclosed water bodies that could be occupied by pupfish.

3. Sludge shall be removed from the wastewater ponds as needed to ensure optimal plant operation.

4. Treatment and storage of pond sludge shall be confined to the wastewater system property and shall be conducted in a manner that precludes infiltration of waste constituents into soil in a mass or at concentrations that will violate the groundwater limitations of this Order.

5. Any storage of residual sludge at the wastewater system shall be temporary, and the waste shall be controlled and contained in a manner that minimizes leachate formation and precludes infiltration of waste constituents into soils in a mass or at concentrations that will violate the groundwater limitations of this Order.

6. Residual sludge shall be disposed of in a manner approved by the Regional Water Board's Executive Officer and consistent with Title 27 division 2. Removal for further treatment, disposal, or reuse at disposal

sites operated in accordance with valid WDRs issued by the State Water Board or Regional Water Board will satisfy this specification.

7. Any proposed change in pond sludge use or disposal practice shall be reported in writing to the Executive Officer **at least 90 days** in advance of the change.

M. Provisions

1. **Within 4 months** after effective date of this Order, the Discharger shall submit a *Wastewater Treatment System Operations Plan* to DDW and the Central Valley Water Board prior to start-up and subsequently upon any changes or modification to the treatment facilities and/or operations.

2. **Within 6 months** after effective date of this Order, the Discharger shall develop a Preventative Maintenance Program (Title 22, section 60327) for the Wastewater Treatment System to ensure all equipment is kept in a reliable operating condition.

3. **By 1 August 2026**, the Discharger shall submit a *Geotechnical Analysis Report* which demonstrates the slope stability of Pond 2. The report shall include a plan and schedule to address any slope stability issues and to make the necessary repairs to Pond 2. Any necessary repairs shall be performed within 1 year of the inspection. The report shall be submitted by a California Registered Engineer or a Certified Engineering Geologist.

4. **By the end of the 2026 calendar year,** the Discharger shall conduct a pond liner inspection on all three ponds and submit a *Pond Liner Leak Testing Final Report* by **1 February 2027**. The report shall include a description of the methods, procedures, calibrations and results of the testing/survey and any liner repairs made.

5. 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 workplans 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.

6. The Discharger shall submit the technical reports and work plans required by this Order for consideration by the Executive Officer and incorporate

comments the Executive Officer may have in a timely manner, as appropriate. Unless expressly stated otherwise in this Order, the Discharger shall proceed with all work required by the foregoing provisions by the due dates specified.

7. The Discharger shall comply with the separately issued **MRP R5-2024-0061**, and any revisions thereto as ordered by the Executive Officer. The submittal dates of Discharger monitoring reports shall be no later than the submittal date specified in the MRP.

8. The Discharger shall comply with all conditions of this Order, including timely submittal of technical and monitoring reports. On or before each report due date, the Discharger shall submit the specified document to the Central Valley Water Board or, if appropriate, a written report detailing compliance or noncompliance with the specific schedule date and task. If noncompliance is being reported, then the Discharger shall state the reasons for such noncompliance and provide an estimate of the date when the Discharger will be in compliance. The Discharger shall notify the Central Valley Water Board in writing when it returns to compliance with the time schedule. Violations may result in enforcement action, including Central Valley Water Board or court orders requiring corrective action or imposing civil monetary liability, or in revision or rescission of this Order.

9. The Discharger shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) that are installed or used by the Discharger to achieve compliance with the conditions of this Order. Proper operation and maintenance also 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 when the operation is necessary to achieve compliance with the conditions of this Order.

10. The Discharger shall use the best practicable cost-effective control technique(s), including proper operation and maintenance, to comply with this Order.

11. As described in the 1 March 1991 SPRRs, 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.

12. In the event that the Discharger reports toxic chemical release data to the State Emergency Response Commission (SERC) pursuant to section 313 of the Emergency Planning and Community Right to Know Act (42 U.S.C. § 11023), the Discharger shall also report the same information to the Central Valley Water Board within 15 days of the report to the SERC.

13. 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.

14. In the event of any change in control or ownership of the facility, the Discharger must notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to the Central Valley Water Board.

15. To assume operation as Discharger under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order. The request must contain the requesting entity's full legal name, the state of incorporation if a corporation, the name and address and telephone number of the persons responsible for contact with the Central Valley Water Board, and a statement. The statement shall comply with the signatory paragraph of Standard Provision B.3 and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the Water Code. If approved by the Executive Officer, the transfer request will be submitted to the Central Valley Water Board for its consideration of transferring the ownership of this Order at one of its regularly scheduled meetings.

16. In order to secure rescission of WDRs that are no longer necessary because the discharge to land permitted under this Order has ceased, the Discharger must contact the Central Valley Water Board to coordinate appropriate wastewater treatment, storage, and conveyance closure requirements.

17. A copy of this Order including the MRP, Information Sheet, Attachments, and 1 March 1991 SPRRs, shall be kept at the Facility for reference by operating personnel. Key operating personnel shall be familiar with its contents.

18. The Discharger shall comply with the Salt Control Program by maintaining good standing in the P&O Study and implementing the Performance Based Salinity Limit.

19. A discharger whose waste flow has been increasing, or is projected to increase, shall estimate when flows will reach hydraulic and treatment capacities of its treatment, collection, and disposal facilities. The projections shall be made in January, based on the last three years' average dry weather flows, peak wet weather flows and total annual flows,

as appropriate. When any projection shows that capacity of any part of the facilities may be exceeded in four years, the discharger shall notify the Central Valley Water Board by 31 January.

20. The Central Valley Water Board will review this Order periodically and will revise requirements when necessary.

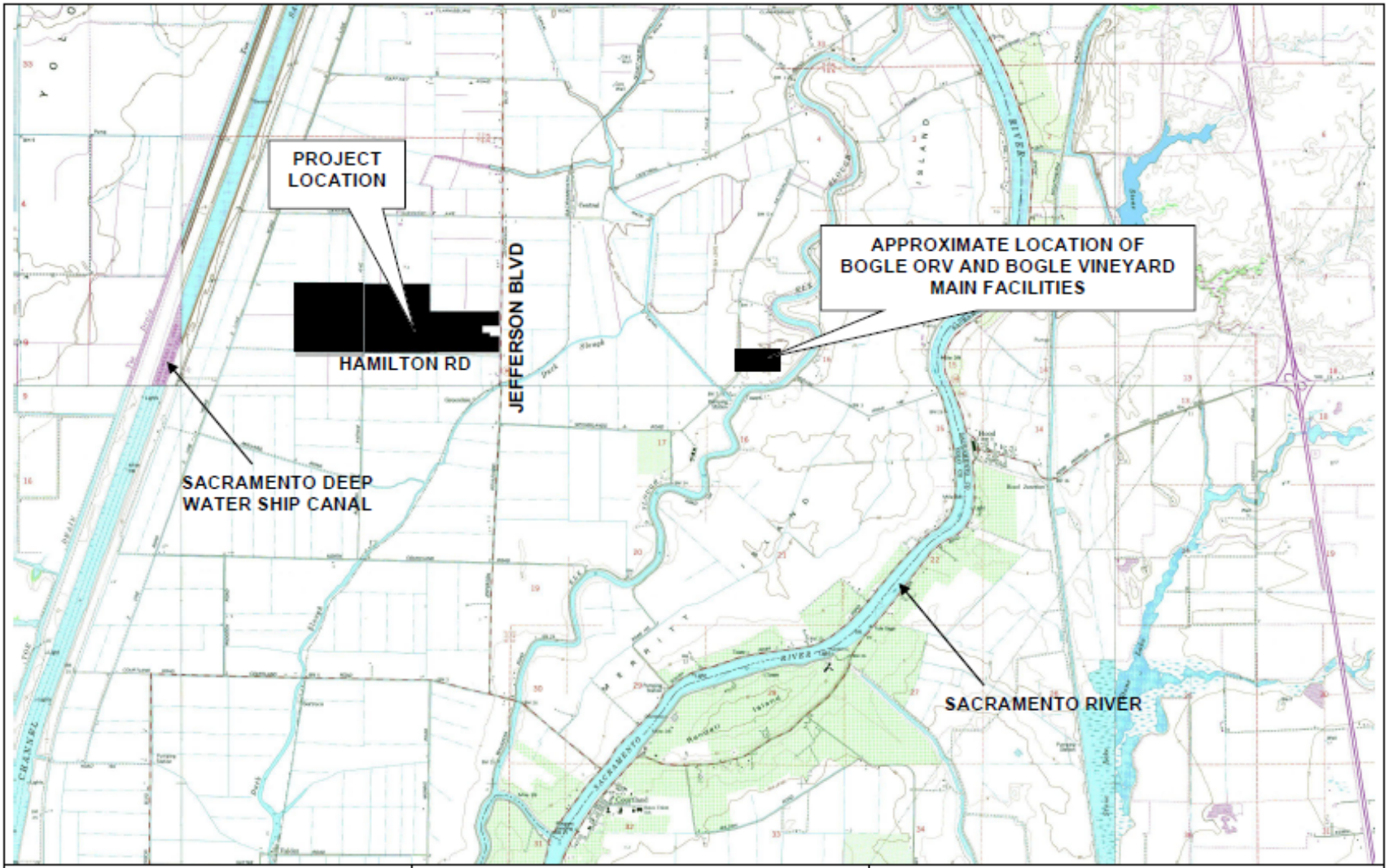
ENFORCEMENT

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 Wat. Code, including sections 13268, 13350, and 13385. The Central Valley Water Board reserves its right to take any enforcement actions authorized by law.

ADMINISTRATIVE REVIEW

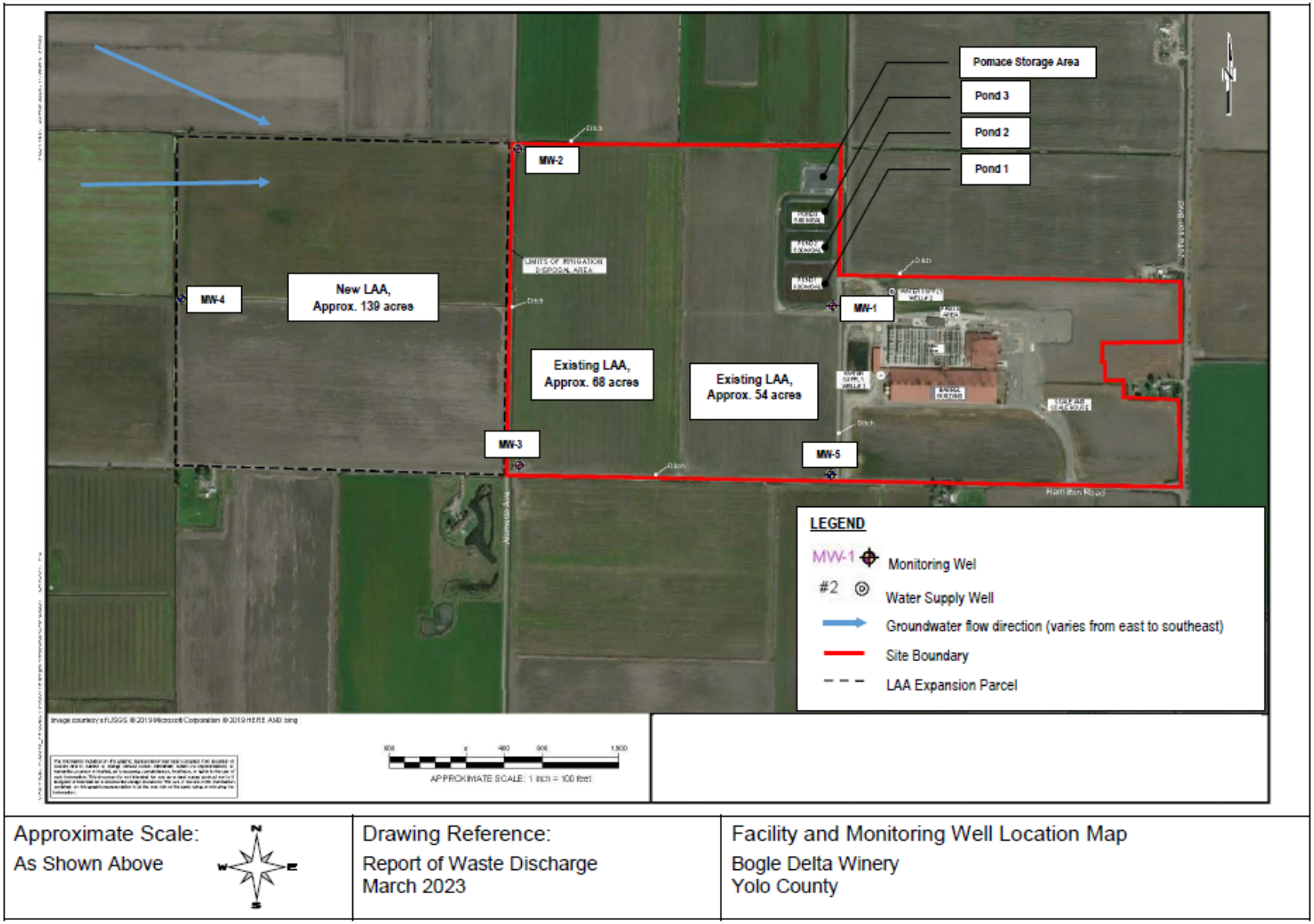
Any person aggrieved by this Central Valley Water Board action may petition the State Water Board for review in accordance with Wat. Code section 13320 and California Code of Regulations, title 23, section 2050 et seq. To be timely, the petition must be received by the State Water Board by 5:00 pm on the 30th day after the date of this Order; if the 30th day falls on a Saturday, Sunday or state holiday, the petition must be received by the State Water Board by 5:00 pm on the next business day. The law and regulations applicable to filing petitions are available on the State Water Board website (http://www.waterboards.ca.gov/public_notices/petitions/water_quality). Copies will also be provided upon request.

ATTACHMENT A – SITE LOCATION MAP



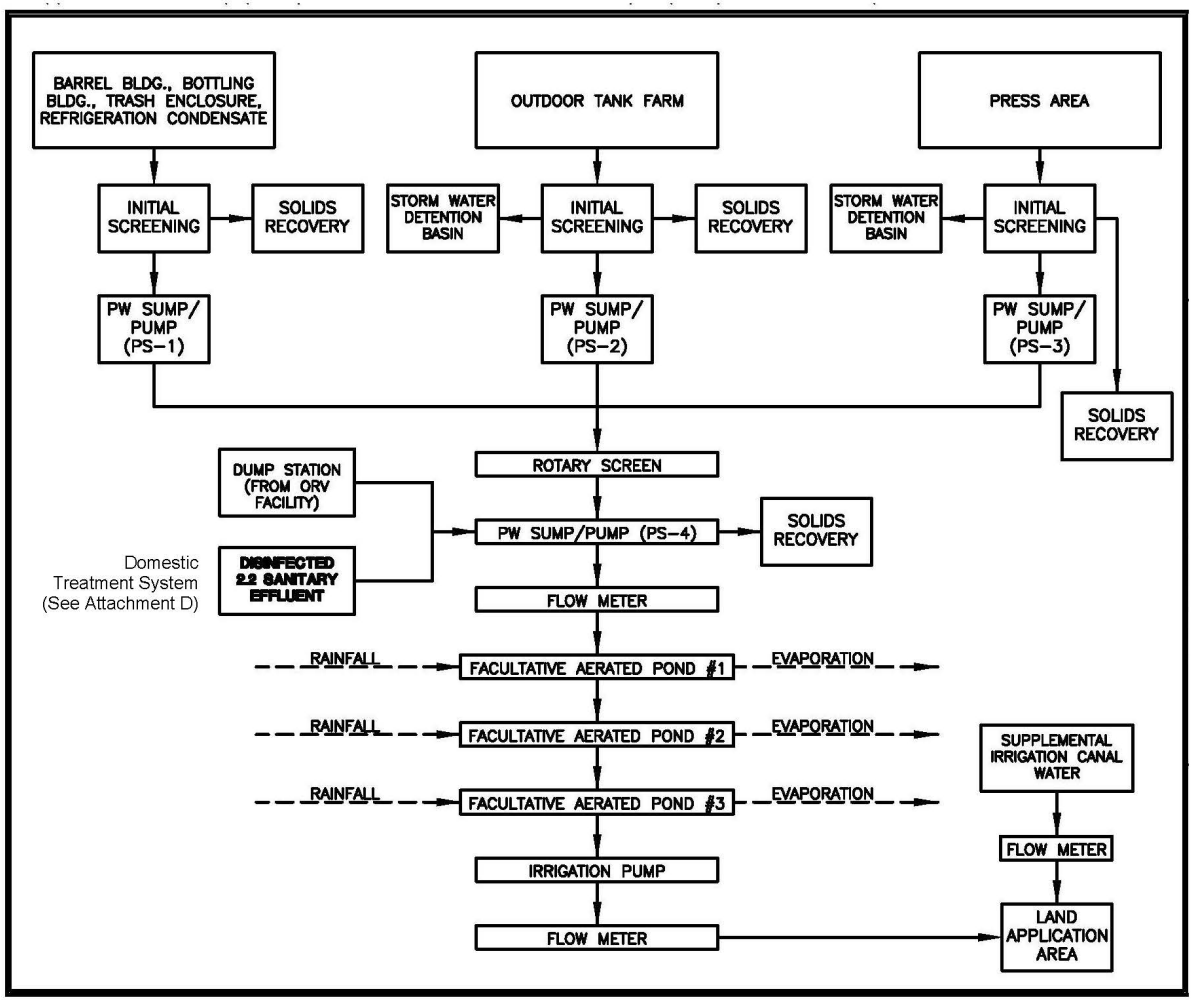
Approximate Scale	Drawing Reference:	Site Location Map
1 inch = 5000 feet	U.S.G.S., Clarksburg Quadrangle TOPOGRAPHIC MAP, 7.5 MINUTE QUAD	Bogle Delta Winery Yolo County

ATTACHMENT B – FACILITY AND MONITORING WELL LOCATION MAP



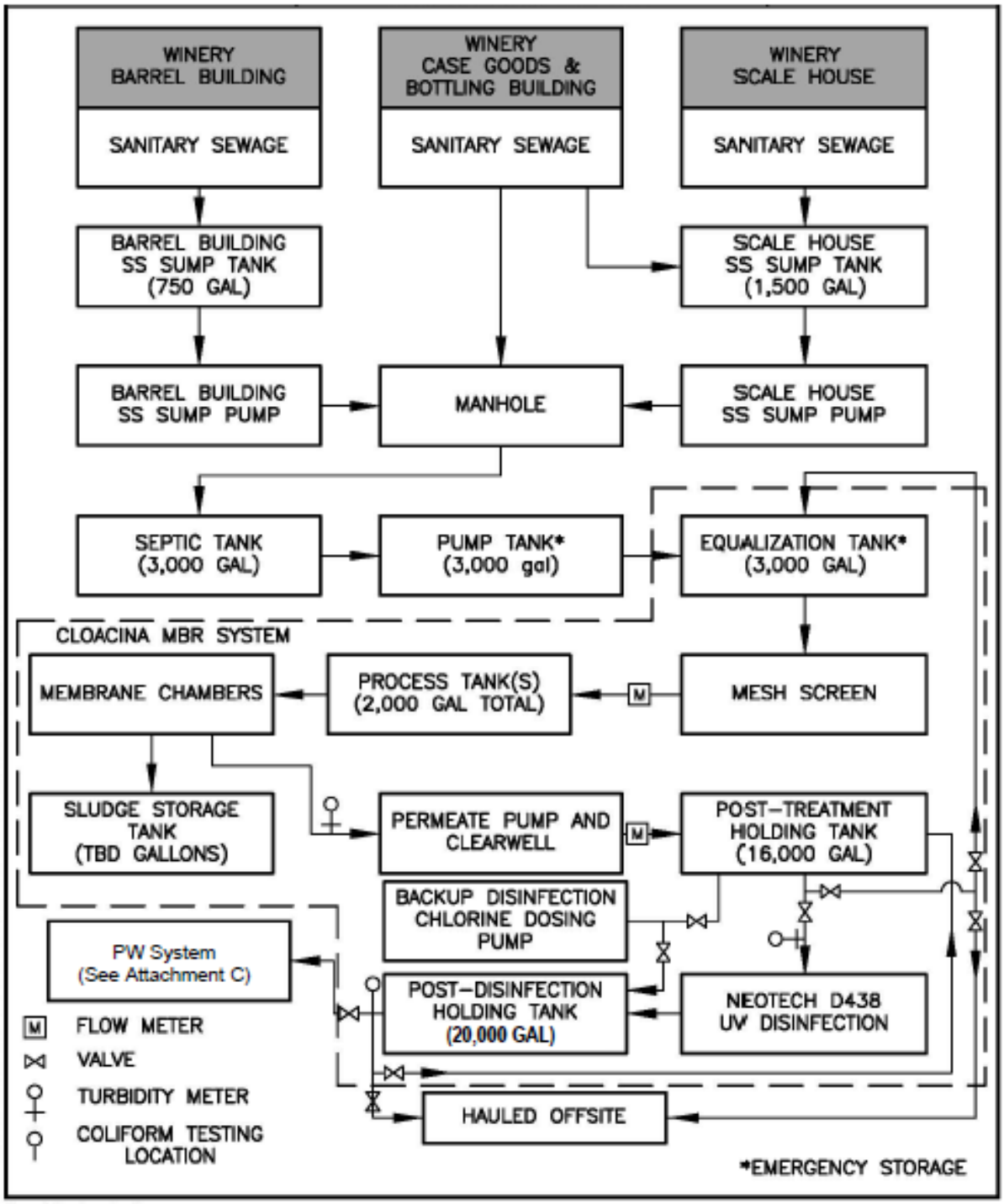
Approximate Scale:	Drawing Reference:	Facility and Monitoring Well Location Map
As Shown Above	Report of Waste Discharge March 2023	Bogle Delta Winery Yolo County

ATTACHMENT C– COMBINED WASTEWATER FLOW DIAGRAM



Approximate Scale:	Drawing Reference:	Combined Wastewater Flow Diagram
No Scale	Report of Waste Discharge Rev1 May 2023	Bogle Delta Winery Yolo County

ATTACHMENT D – DOMESTIC WASTEWATER FLOW DIAGRAM



Approximate Scale:	Source:	Domestic Wastewater Flow Diagram
No Scale	Report of Waste Discharge, May 2023	Bogle Delta Winery Yolo County

INFORMATION SHEET

Background

The Facility is a complete winemaking facility from receiving and crushing grapes to packaging and shipment of wine off-site. Within the last 5 years (2020 through 2024), the Facility has received approximately 27,000 to 45,000 tons of grapes per year. Process wastewater is generated from wine production activities and limited amounts of process wastewater trucked from nearby Bogle owned winery facilities (approximately 0.192 mgal from the Old River Vineyard Facility and approximately 0.180 mgal from the Vineyard Main Facility on an annual basis). There has not been any production at the Vineyard Main Facility for the past few years. Wastewater received from the Old River Vineyard Facility in 2023 and 2024 were approximately 48,000 and 108,000 gallons, respectively.

The treatment and land discharge of process wastewater has been regulated by WDRs Order R5-2011-0033 adopted by the Central Valley Water Board on 9 June 2011. The process wastewater (PW) treatment system consists of a series of three aerated facultative ponds lined with a 60-mil HPDE liner and 122 acres of LAAs cropped with alfalfa and winter wheat.

The existing domestic wastewater treatment system consists of a septic tank and mound system that has historically been regulated by Yolo County. The system has failed and is no longer operational.

The Facility is enrolled and has coverage under General Order 2014-0057-DWQ, for discharges of storm water associated with industrial activities which has been active since July 2011. During non-harvest, when there are no solids present at the Pomace Storage Area, runoff is diverted to the existing irrigation canal (per approval from Reclamation District 999).

Domestic and Process Wastewater Treatment and Disposal

The failing domestic treatment system will be replaced with a membrane bioreactor (MBR) system. Effluent from the MBR system is expected to contain less than 10 mg/L BOD and TSS, and less than 5 mg/L of total nitrogen. Disinfection will be performed by an inline ultraviolet (UV) system. Domestic wastewater will be treated to disinfected secondary-2.2 recycled water standards and comingled with winery process wastewater prior to discharge to the treatment pond system and then to the LAAs.

The LAAs will increase from approximately 122 to 261 acres for waste discharges of the commingled winery process wastewater and recycled water. The LAAs are cropped with alfalfa and winter wheat. Supplemental irrigation water from Reclamation District 999 is used to help meet the crop water demands.

Groundwater Considerations

There are five shallow groundwater monitoring wells on-site. Groundwater monitoring wells MW-1, MW-2, and MW-3 were installed in March 2010 and sampled for analysis to determine pre-discharge groundwater quality. In anticipation of expanding the LAAs, groundwater monitoring wells MW-4 and MW-5 were installed in April 2020. Monitoring wells MW-4 and MW-5 were only sampled in 2020 to determine baseline groundwater conditions. Groundwater flow direction is typically to the east and southeast. Based on 2020 data from all five wells, depth to first encountered groundwater ranged from 6.9 to 9.8 feet bgs. Groundwater conditions are discussed in Findings 46 through 51.

Pre-discharge groundwater data shown as a range for monitoring wells MW-1, MW-2, MW-3, MW-4, and MW-5 are shown in the table below. ND denotes non-detect and the reporting limit is shown. Pre-discharge groundwater data for wells MW-1, MW-2, and MW-3 are based on six sampling events during the months of March, April, May, June, September, and December of 2010. Pre-discharge groundwater data for wells MW-4 and MW-5 are based on four sampling events during the months of April, May, June, and July of 2020. Available data show first encounter groundwater is not considered high-quality water with respect to salinity and metals. Based on initial pre-discharge water quality data from March 2010 through June 2010, MW-2 and MW-3, had relatively higher concentrations of most analytes tested than those reported in downgradient well MW-1. In general, MW-4 (upgradient) had higher or similar concentrations of water quality parameters than MW-5 (downgradient).

Table 20. Pre-Discharge Groundwater Quality

Constituents	MW-1	MW-2	MW-3	MW-4	MW-5
EC, µmhos/cm	1,500 – 2,000	1,500 – 2,100	1,600 – 2,700	1,599 - 1,746	931 - 960
TDS, mg/L	980 – 1,300	1,000 – 1,300	1,000 – 1,700	940 - 1,100	530 - 580
Nitrate as N, mg/L	ND <0.5	8.3 - 29	ND <0.5 – 2.4	0.40 - 0.98	0.40 – 0.67
Boron, µg/L	2,100 – 2,400	2,000 – 2,300	2,500 – 3,000	1,500 - 1,800	800 – 1,000
Iron, µg/L	ND <100	ND <100	ND <100	1,600 - 7,700	480 – 6,400
Manganese, µg/L	240 - 690	170 - 440	ND <20 - 840	250 -360	50 - 110

Since 2013, groundwater has been monitored for alkalinity, hardness, potassium, and sulfate on a quarterly basis. A range of data from September 2013 through December 2023 is shown in table below. Average concentrations shown in parentheses. Units are in mg/L.

Table 21. Groundwater Quality (2013 – 2023)

Constituents	MW-1	MW-2	MW-3
Alkalinity	410-740 (500)	350-480 (420)	2.5-510 (396)
Hardness	230-500 (373)	250-970 (678)	220-650 (371)
Potassium	0.5-4.1 (1.1)	0.5-3.7 (1.8)	0.5-2.6 (1.3)
Sulfate	170-420 (281)	45-440 (318)	11-350 (191)

Chloride and sulfate concentrations are similar with a few occurrences where concentrations of sulfate were higher than that of chloride. TDS is comprised of inorganic salts including chlorides and sulfate and is sufficient to determine overall impacts to groundwater quality. Potassium-based cleaning products are used in lieu of sodium based products and therefore potassium is expected to be in the wastewater. Review of the groundwater data show groundwater trends with respect to potassium are not significant and therefore not expected to negatively impact groundwater. Available groundwater data for alkalinity show groundwater trends not significant. Hardness concentrations in groundwater, particularly in MW-1 and MW-2, show increasing trends. Since hardness is a reflection of magnesium and calcium, monitoring TDS in groundwater is sufficient to determine overall salinity impacts to groundwater quality.

Antidegradation

Antidegradation analysis and conclusions are discussed in Findings 74 through 87.

Based on volume and quality of the treated domestic wastewater, discharges are not anticipated to impact groundwater quality, especially in light of the added land application areas. Domestic wastewater will be treated to disinfected secondary-2.2 recycled water standards. The anticipated volume of recycled water is less than 3 percent of the permitted wastewater flow allowed.

Typical winery wastewater is not expected to contain significant iron concentrations and available data show that iron concentrations in the winery wastewater are non-detect. However, as described in preceding findings, excessive BOD loading rates can solubilize naturally occurring metals in soil, such as iron and manganese, resulting degradation of local groundwater with these constituents. This Order does not authorize degradation with respect to iron, nor BOD loading to a level at which such degradation

is anticipated to occur; therefore, the Antidegradation Policy does not apply with respect to these constituents.

The Discharger has elected to participate in the Salt Control Program and has enrolled in the P&O Study. Therefore, this Order sets a Performance-Based Salinity Limit for FDS of 1,960 mg/L (flow-weighted annual average).

This Order sets a maximum daily BOD as a loading limit of 75 lb/ac/day. If manganese or iron concentrations show increasing concentration trends, the BOD effluent limit may be re-evaluated at that time.

Discharge Prohibitions, Effluent Limitations, Discharge Specification, and Provisions

Based on the water balance, the Order sets the following flow limits:

1. Waste discharges (combined winery process waste and recycled water) to the ponds shall not exceed 4.9 MG per month. In addition, the discharge shall not exceed an annual total of 30.3 MG for the calendar year (1 January through 31 December).

2. Disinfected secondary 2.2 recycled water discharged to the ponds shall not exceed an annual total of 0.66 MG.

This Order sets a performance-based flow-weighted annual average of 1,960 mg/L for FDS. This limit was based on historical effluent data with a 20 percent safety factor to allow flexibility for water conservation efforts and review of the groundwater data which suggests that effluent has not significantly impacted groundwater quality with respect to salinity. By choosing to participate in the Prioritization and Optimization (P&O) Study, the Discharger may continue implementing reasonable, feasible, and practicable efforts to control salinity through performance-based measures.

In addition, the WDRs prescribes a total nitrogen not to exceed crop demand and a maximum daily BOD loading limit of 75 lb/ac/day.

Monitoring Requirements

Section 13267 of the California Water Code authorizes the Central Valley Water Board to require monitoring and technical reports as necessary to investigate the impact of waste discharges on waters of the State. Water Code Section 13268 authorizes assessment of civil administrative liability where appropriate. The Order includes treated domestic wastewater, commingled wastewater, pond, LAAs, solids and groundwater monitoring requirements. This monitoring is necessary to characterize the discharge and evaluate any impacts to groundwater and compliance with the requirements and specifications in the Order.

Salt and Nitrate Control Programs Regulatory Considerations

As part of the Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS) initiative, the Central Valley Water Board adopted Basin Plan amendments (Resolution R5-2018-0034) incorporating new programs for addressing ongoing salt and nitrate accumulation in the waters and soils of the Central Valley at its 31 May 2018 Board Meeting. On 16 October 2019, the State Water Resources Control Board adopted Resolution No. 2019-0057 conditionally approving the Central Valley Water Board Basin Plan amendments and directing the Central Valley Water Board to make targeted revisions to the Basin Plan amendments within one year from the approval of the Basin Plan amendments by the Office of Administrative Law. The Office of Administrative Law (OAL) approved the Basin Plan amendments on 15 January 2020 (OAL Matter No. 2019-1203-03).

For the Salt Control Program, the Discharger (**CV-SALTS ID 2886**) has chosen to pursue Option 2 (Alternative Salinity Permitting Approach) and participation in the Prioritization and Optimization (P&O) Study.

For the Nitrate Control Program, the Facility and LAAs are within Sub-basin 5-21.66 (Solano), a non-prioritized basin, so the Central Valley Water Board has not yet issued a Notice to Comply with the Nitrate Control Program for this Facility. Furthermore, because this Order does not authorize a new or expanded discharge, NCP provisions that apply to new and expanding discharges of nitrate are not applicable in this instance. Accordingly, this Order requires the Discharger to meet groundwater limitations for nitrate based on the MCLs listed in Title 22. This Order may be modified in the future to implement provisions of the NCP if and when the Executive Officer of the Central Valley Water Board determines that coverage thereunder is necessary and appropriate.

The CV-SALTS initiative will result in regulatory changes that will be implemented through conditional prohibitions and modifications to many WDRs regionwide, including the WDRs that regulate discharges from the Facility. More information regarding the CV-SALTS regulatory planning process can be found at the following link: (https://www.waterboards.ca.gov/centralvalley/water_issues/salinity/)

Reopener

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

Legal Effect of Rescission of Prior WDRs or Orders on Existing Violations

The Central Valley Water Board's rescission of prior waste discharge requirements and/or monitoring and reporting orders does not extinguish any violations that may have occurred during the time those waste discharge requirements or orders were in effect. The Central Valley Water Board reserves the right to take enforcement actions to address violations of prior prohibitions, limitations, specifications, requirements, or provisions of rescinded waste discharge requirements or orders as allowed by law.