



**State Water Resources Control Board
Order WQ 2021-0002-DWQ**

**General Waste Discharge Requirements
for
Winery Process Water**

January 20, 2021



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STATE WATER RESOURCES CONTROL BOARD
ORDER WQ 2021-0002-DWQ
GENERAL WASTE DISCHARGE REQUIREMENTS FOR
WINERY PROCESS WATER

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Acronyms and Abbreviations

µmho/cm	micromhos per centimeter	FEMA	Federal Emergency Management Agency
Basin Plan	Regional Water Board Water Quality Control Plan	gal/sqft/d	gallons per square foot of discharge trench per day
BOD	biochemical oxygen demand	gal/sqft/mo	gallons per square foot of discharge trench per month
BPTC	best practicable treatment or control	General Order	general waste discharge requirements order
BPC	Business and Professions Code	gpd	gallons per day
CEQA	California Environmental Quality Act	ILRP	Irrigated Lands Regulatory Program
CCR	California Code of Regulations	in/ac/d	inches per acre per day
		in/ac/mo	inches per acre per month
CIMIS	California Irrigation Management Information System	LAA	land application area
		lb/ac	pounds per acre
cm/s	centimeters per second	lb/ac/d	pounds per acre per day
CV-SALTS	Central Valley Salinity Alternatives for Long-term Sustainability	lb/ac/mo	pounds per acre per month
		lb/ac/yr	pounds per acre per year
DO	dissolved oxygen	LLC	limited liability company
EC	electrical conductivity	MCL	maximum contaminant level
ETc	crop evapotranspiration	MDL	method detection limit
ETo	reference evapotranspiration	MG	million gallons
FDS	fixed dissolved solids	mg/kg	milligrams per kilogram
		mg/L	milligrams per liter

ACRONYMS AND ABBREVIATIONS
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mil	thousandths of an inch	SAP	sampling and analysis plan
MRP	monitoring and reporting program	SDS	subsurface disposal system
N	elemental nitrogen	SGMA	Sustainable Groundwater Management Act
NA	not applicable	SNMP	salt and nutrient management plan
NOA	Notice of Applicability	TCR	tribal cultural resource
NOI	Notice of Intent	TDS	total dissolved solids
NOT	Notice of Termination	TKN	total Kjeldahl nitrogen
NPDES	National Pollutant Discharge Elimination System	TSS	total suspended solids
OAL	Office of Administrative Law	U.S. EPA	United States Environmental Protection Agency
pdf	portable document format	Water Code	California Water Code
PRC	Public Resources Code	WDRs	waste discharge requirements
PQL	practical quantification limit		
RL	reporting limit		
ROWD	report of waste discharge		

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FINDINGS

The State Water Resources Control Board (State Water Board) finds that:

BACKGROUND

1. The wine industry in California is an important economic engine. Wine America, a trade association, commissioned an economic analysis of the American wine industry, including a state-by-state breakdown. The analysis reported the industry's total national annual impact of \$220 billion with \$71 billion annual impact to California's economy.¹ The analysis reported:
 - a. The production, distribution, sales, and consumption of wine in California benefits many sectors of the state's economy. This economic activity preserves agricultural land, provides jobs, attracts tourists, generates taxes, and enhances the quality of life. The broader economic impact affects industries as varied as farming, banking, accounting, engineering, manufacturing, packaging, transportation, printing, advertising, and retail.
 - b. The California wine industry directly employs as many as 259,600 people and generates an additional 90,100 jobs in supplier and ancillary industries, which supply goods and services to the industry, and whose sales depend on the wine industry's economic activity. Ultimately, 485,000 jobs are created and supported by the wine industry.
2. The climate, soils, and regional geographic differences produce ideal growing conditions unique to California where approximately 4,580 wineries exist and approximately 560,000 acres of vineyards produce a variety of grapes for the wineries² where the Wine Institute estimates 2,070 (57%) of the 3,612 bonded wineries in California will be subject to this general waste discharge requirements order (General Order). The remaining 43% are likely not subject to this General Order because of operations not resulting in discharges to land (e.g., process water discharges to surface water or tank and haul operations of process water).
3. Based on a 2020 estimate, 589 (16%) of the bonded wineries are currently permitted by the regional water quality control boards (regional water boards) through general waste discharge requirements (WDRs), individual WDRs, or a conditional waiver of WDRs.

¹ John Dunham and Associates. 2017. Economic Impact of Wine Industry Report. Commissioned by Wine America. [Summarized report information](https://wineamerica.org/impact/) available on the Wine America website <<https://wineamerica.org/impact/>>. Accessed June 2, 2020.

² John Dunham and Associates, 2017.

APPLICABILITY

4. This General Order is a general waste discharge requirements order for wineries and other similar facilities with activities related to producing wine or grape juice that generate winery waste and discharge it to land for reuse or disposal. Hereafter, such facilities are referred to as "winery" or "facility" and the facility owner or operator is referred to as "Discharger."
5. This General Order includes a glossary of terms used throughout and is provided in Attachment A, which is hereby attached and made a part of this General Order.
6. Facilities that discharge winery waste to land for the purpose of disposal or reuse are eligible for coverage under this General Order. Reuse activities include the use of treated process water for agricultural or landscape irrigation and the use of residual solids from winery processing as a soil amendment.
7. For the purposes of this General Order, winery waste includes, but is not limited to, wine, grape juice, winery process water, and winery process solids. Winery process water includes, but is not limited to, washwater, cooling water, and stormwater directed through the process water collection, treatment, or disposal system and/or land applied. Winery process solids include, but are not limited to, leaves, stems, pomace (grape skins, seeds, and pulp), lees (yeast and other fine particulates), bentonite, and diatomaceous earth.
8. Discharge of winery waste is an activity subject to the California Water Code (Water Code). Discharge of winery waste without WDRs or a waiver of WDRs is a violation of the Water Code because winery waste is a waste as defined by Water Code section 13050(d) and the discharge of winery waste can affect the quality of waters of the state (Water Code, section 13260(a)).
9. Pursuant to Water Code, section 13260(a), any person discharging waste or proposing to discharge waste within a region, other than to a community sewer system, that could affect the quality of the waters of the state, must file a report of waste discharge (ROWD) to obtain coverage under WDRs or a waiver of WDRs.
10. Pursuant to Water Code, section 13263(i), the State Water Board may prescribe general WDRs for a category of discharges if the discharges are produced by the same or similar operations, involve the same or similar types of waste, require the same or similar treatment standards, and are more appropriately regulated under general WDRs than individual WDRs. Discharges to land from winery process water and waste treatment and disposal systems have certain common characteristics, such as similar constituents, concentrations of constituents, and disposal techniques, and they require the same or similar treatment standards. These types of discharges are more appropriately regulated under general WDRs.

11. Dischargers authorized under this General Order are classified into regulatory tiers based on the permitted annual facility process water design flow, which is the total volume of process water that may be discharged from the winery, including process water generated from outdoor processing areas, and measured prior to treatment, e.g., before discharged to a pond, land application area (LAA), or subsurface disposal system (Table 1). The annual total process water discharge flow (i.e., winery effluent flow) shall not exceed the permitted design flow stated in the facility Notice of Applicability (NOA). The application requirements, fees, and monitoring and reporting requirements are connected to, and commensurate with, the complexity of the discharge regulated under each tier.

Table 1. Tier Determination

Tier	Facility process water flow ⁽¹⁾ (gal/yr)
Exempt	<10,000
Tier 1	10,000 – 30,000
Tier 2	30,001 – 300,000
Tier 3	300,001 – 1,000,000
Tier 4	1,000,001 – 15,000,000

(1) Process water flow shall be measured directly via a flowmeter or, for Tier 1 and Tier 2 facilities only, may be calculated using an accurate alternative method (e.g., assumed equal to facility source water use, determined from a storage tank water balance). The regional water board may specify a required flow measurement method for the facility.

12. Wineries with process water design flows less than 10,000 gallons per year (gal/yr) are unlikely to degrade water quality and are therefore exempt from this General Order provided they comply with the following:

- a. The Discharger shall not discharge waste:
 - i. To surface waters or surface water drainage courses.
 - ii. That is classified as "hazardous," as defined in California Code of Regulations (CCR), title 23, section 2521, or classified as "designated," as defined in Water Code section 13173.
 - iii. That is untreated or partially treated from the treatment system.
 - iv. To land not owned, operated, controlled, or contracted by the Discharger.

- b. The Discharger shall implement the following management practices:
 - i. Manage winery product, winery waste, and winery waste areas (e.g., storage, loading, conveyance, treatment, and disposal areas) to prevent, mitigate, and promptly clean up any spills.
 - ii. Maintain all winery waste within property boundaries and within appropriate onsite use areas (e.g., loading, processing, storage, treatment, disposal, and reuse areas).
 - iii. Manage winery waste to minimize nuisance conditions (e.g., objectionable odors; mosquitoes in ponds, ditches, and other open storage areas).
 - iv. Manage stormwater that contacts winery waste as process water. Protect stored process solids from precipitation to minimize process water generation.
13. Exempt facilities are not required to enroll under this General Order. However, exempt facilities that violate General Order prohibitions or exempt status conditions, or are otherwise determined to pose a threat to water quality, including a large concentration in an area, may no longer qualify for exempt status and may be required to submit an application for General Order coverage as a Tier 1 facility if directed to do so by the State Water Board or a regional water board. A facility's exempt status does not diminish the State Water Board or regional water board permitting or enforcement authority related to waste discharges.
14. Facilities that discharge small volumes (10,000 – 30,000 gal/yr) of process water are considered to have a low potential for degrading water quality provided they comply with General Order requirements. Such wineries are required to apply for General Order coverage as a Tier 1 facility. A large concentration of Tier 1 facilities in an area, however, may pose a higher threat to water quality and result in groundwater degradation. Therefore, such Tier 1 facilities in high density areas, or Tier 1 facilities that are determined to pose a threat to water quality, may be required to apply for General Order coverage as a Tier 2 facility if directed to do so by the State Water Board or regional water board.
15. Facilities that direct all process water to a community sewer system are not required to apply for General Order coverage (Water Code, section 13260(a)). Facilities that containerize all process water and transport it to a community sewer system for offsite disposal (i.e., tank and haul) are not required to apply for General Order coverage. The regional water board may direct the Discharger to apply for General Order coverage if it is determined that a facility is discharging process water onsite.
16. A Discharger irrigating a commercial crop (e.g., a vineyard, row crop, orchard) may be required to enroll under a regional water board Irrigated Lands Regulatory Program (ILRP) WDRs order or conditional waiver of WDRs. Dischargers may contact the appropriate regional water board to determine ILRP applicability. All facilities eligible for Tiers 1 to 4 that discharge winery waste to land must apply for coverage under this General Order whether or not the facility is enrolled in an ILRP.

17. This General Order is not a National Pollutant Discharge Elimination System (NPDES) permit issued pursuant to the Federal Clean Water Act. Winery operations with the potential to discharge winery waste to a water of the United States may require coverage under an NPDES permit. Wineries with the potential to discharge stormwater to a surface water of the United States are also required to have coverage under the statewide General Permit for Storm Water Discharges Associated with Industrial Activities, Order No. 2014-0057-DWQ, NPDES No. CAS000001 (Industrial General Permit), the statewide General Permit for Storm Water Discharges Associated with Construction Activities, NPDES No. CAS000002 (Construction General Permit), and any future promulgations, if the terms of these permits apply to the facility.

PROCESS WATER CHARACTERIZATION

18. Winery process water is generated during production and cleaning. Wine production involves harvesting and crushing grapes, fermentation, clarification, aging and storing, blending, and bottling. Individual facilities vary and can include one or more of these operations. Facility cleaning involves washing processing equipment, floors, tanks, barrels, and bottles. Other sources of process water are cleaning chemicals, spilled wine or juice, water softener regeneration brine, and boiler or cooling tower blowdown.
19. Process water collection and storage involves use of floor drains and trenches, piping, pumps, tanks, and other ancillary equipment. Wineries typically use ponds, land application, and subsurface disposal systems to treat, reuse, and/or dispose of process water.
20. Process water quality varies based on the source water quality, facility operations, and cleaning chemicals used. Process water quality and volume also vary seasonally, with the highest flows and highest constituent concentrations found during crush when grapes are harvested and pressed. Crush typically occurs from September through November for about 45 to 75 days³ though this varies by winery. Some wineries operate year-round, generating process water during the off-season from blending, bottling, and cleaning. Winery process water quality characteristics are provided in Table 2. Published winery process water studies and/or United States Environmental Protection Agency (U.S. EPA) winery process water publications also contain winery process water characteristic information.
21. Pomace is separated from wine after the first fermentation step and lees are precipitated from the second fermentation step. Coarse screens are used to remove the larger solids and fine screens, filters, or settling may be needed to remove the smaller particulates from process water.

³ U.S. EPA. 1975. Pilot Scale Treatment of Wine Stillage. Prepared by E. Schroeder. EPA-660/2-75-002.

Table 2. Winery Process Water Characteristics

Parameter	Unit	Process water average ⁽¹⁾	Process water range ^(1,2)
pH	pH units	--	3.8 - 9.3
BOD	mg/L	2,767	190 - 9,100
EC	µS/cm	1,428	958 - 2,100
TDS	mg/L	1,356	520 - 2,270
FDS	mg/L	759	350 - 1,000
VDS	mg/L	598	100 - 1,290
TSS	mg/L	580	40 - 2,300
NH ₃ as N	mg/L	60	0.5 – 360
NO ₂ as N	mg/L	0.4	<0.1 - 1.6
NO ₃ as N	mg/L	1.8	<0.45 - 5.7
Organic N	mg/L	17	3 – 70
TKN	mg/L	64	<4 – 430
Total N	mg/L	78	5 – 430
B	mg/L	0.25	0.1 - 0.4
Na	mg/L	108	31 - 200
K	mg/L	144	36 - 369
Ca	mg/L	55	13 - 130
Mg	mg/L	21	8 - 44
Fe	mg/L	1.03	0.50 - 1.67
Mn	mg/L	0.10	<0.025 - 0.16
Cu	mg/L	0.16	0.04 - 0.62
Zn	mg/L	0.30	0.06 - 1.2
Cl	mg/L	85	5 - 180
S ²⁻	mg/L	3	<0.1 - 7.2
SO ₄	mg/L	149	56 - 359

Source: Wine Institute. 2009. Comprehensive Guide to Sustainable Management of Winery Water and Associated Energy. Prepared by Kennedy/Jenks Consultants.

"< [value]" = analytical result below reported detection limit

(1) Process water samples collected from two wineries during crush and non-crush periods; conditions at other wineries will vary.

(2) Maximum values in range are generally representative of crush operations.

22. The primary constituents of concern in process water are nitrogen, biochemical oxygen demand (BOD), and salinity. Grape juice, wine, pomace, and cleaning chemicals contribute nitrogen, BOD, and salinity. Source water is also a significant source of salinity and can sometimes contribute nitrogen to process water.
- a. Nitrogen – process water has low levels of nitrate and high concentrations of ammonia and organic nitrogen, which can readily mineralize and convert to nitrate in soil. Excessive nitrogen application to land from process water and other nitrogen-containing materials can result in nitrate leaching and groundwater degradation. The federal and state drinking water maximum contaminant levels (MCLs) for nitrate as nitrogen are both 10 milligrams per liter (mg/L). Therefore, this General Order requires land application of process water nutrients at agronomic rates and discharge of process water treated to meet a nitrogen effluent limit prior to subsurface disposal to preclude the creation of pollution, contamination, or nuisance. Some of the nitrogen in the process water will be lost to the atmosphere, stored in the soil matrix, or taken up by plants when applied to cropped (or landscaped) land. As a result, land application at an agronomic rate and subsurface disposal of process water treated to an effluent limit are unlikely to impair beneficial uses of groundwater.
 - i. An agronomic rate is the rate of application of nutrients in amounts necessary to satisfy the plant nutrient demand (crop uptake) while minimizing the movement of nutrients below the plant root zone, considering the crop, soil, climate, irrigation method and efficiency, leaching fraction, and factors that impact plant available nitrogen (e.g., nitrogen loss from denitrification, volatilization, and soil storage). Application at an agronomic rate must account for nutrient loading from all sources, e.g., process water, supplemental water, process solids, fertilizers, compost, and soil amendments. Nitrogen lost to denitrification, volatilization, and storage in soil humus can be estimated based on the irrigation method.⁴ This General Order requires Dischargers to apply nitrogen at rates that do not exceed the crop agronomic rate as defined in this General Order.
 - ii. Crop uptake values to calculate the agronomic rate are typically determined from plant tissue sampling or published sources. Crop uptake values for common plants can be found in the California League of Food Processors Manual of Good Practice⁵ and the Western Fertilizer Handbook.⁶ Additionally, the California

⁴ California League of Food Processors. 2007. [Manual of Good Practice for Land Application of Food Processing/Rinse Water](http://clfp.com/documents/Manualofgoodpractice/CLFP%20Manual_COMPLETE_FINAL_3-14-07%20(2).pdf). Prepared by Brown and Caldwell and Kennedy/Jenks Consultants. <[http://clfp.com/documents/Manualofgoodpractice/CLFP%20Manual_COMPLETE_FINAL_3-14-07%20\(2\).pdf](http://clfp.com/documents/Manualofgoodpractice/CLFP%20Manual_COMPLETE_FINAL_3-14-07%20(2).pdf)>. Accessed June 10, 2020. (California League of Food Processors, 2007).

⁵ California League of Food Processors, 2007.

⁶ Western Plant Health Association. 2002. Western Fertilizer Handbook. 9th edition.

Department of Food and Agriculture⁷ and the University of California Agriculture and Natural Resources⁸ have developed resources that can be used to determine crop uptake values.

- b. Biochemical oxygen demand – although biodegradable organic matter (measured as BOD) increases soil productivity, soil fertility, and crop production, excessive BOD application to land can result in nuisance odors and anaerobic conditions not favorable to biological treatment conditions, which can mobilize metals such as iron and manganese.⁹ Similarly, excessive BOD loading to ponds can lead to anaerobic conditions, impact process water treatment, and cause nuisance odors. Discharger compliance with this General Order, including the BOD loading limit, effluent limits, and best practicable treatment or control (BPTC) measures will control the generation of nuisance odors, provide adequate treatment, and protect water quality.
- c. Salinity – total dissolved solids (TDS) is a measurement of salinity, which consists of volatile (organic) and fixed (inorganic) fractions. A significant proportion of winery process water is made up of volatile dissolved solids (VDS), which break down in the soil. The fixed dissolved solids (FDS) portion, however, does not degrade biologically and is the primary salinity constituent of concern. Excessive salinity loading from process water, supplemental water, fertilizer, and soil amendments can impact the beneficial uses of groundwater and soil hydraulic conductivity.
 - i. Source control is the best approach for addressing salinity. A number of chemical replacements for sodium-based chemical compounds are available that can reduce the salinity of the winery process water.
 - ii. Discharger compliance with this General Order, including the implementation of minimum salt control BPTC measures and additional salt controls in response to exceedances of the FDS threshold¹⁰ will control salinity in discharges and protect water quality.

⁷ California Department of Food and Agriculture. 2020. [Fertilization Guidelines](https://www.cdfa.ca.gov/is/ffldrs/frep/FertilizationGuidelines/). <<https://www.cdfa.ca.gov/is/ffldrs/frep/FertilizationGuidelines/>>. Accessed November 10, 2020.

⁸ [University of California, Agriculture and Natural Resources](https://ucanr.edu/). 2020. <<https://ucanr.edu/>>. Accessed November 10, 2020.

⁹ California League of Food Processors, 2007.

¹⁰ See Salt Control section findings.

23. Chemical use, product loss from grape juice and wine, and biological reactions during process water storage and treatment can increase or decrease the pH of process water. The pH of water determines the solubility and biological availability of chemical constituents such as nutrients and heavy metals. Low or high pH of process water discharged to land can deteriorate soil health and mobilize metals, potentially degrading the underlying groundwater quality. Winery process water that is neutralized to a pH between 6.0 and 9.0 prior to discharge to land will minimize the potential for negative impacts to soil biological treatment, crop growth, and groundwater quality.
24. To minimize the risk from inadvertent or accidental winery waste or domestic wastewater discharges offsite or impacts to water supply sources, this General Order requires setbacks (minimum horizontal distances) to prevent discharging too closely to surface waters, water supply wells (e.g., drinking water wells, agricultural irrigation wells), and the facility property line. Such setbacks reduce the risk of direct and indirect discharges (e.g., spills from a berm, pond, or other containment failure, percolation or groundwater flow containing constituents traveling over time towards a well) by increasing the travel distance to the site feature, which also allows time to detect, prevent, and mitigate potential impacts.

PROCESS WATER PONDS

25. Process water ponds (hereafter referred to as ponds) provide process water storage, mixing, equalization, treatment, disposal, and operational flexibility for wineries. Most ponds settle suspended solids, ponds with aeration reduce BOD, and ponds with alternating aerobic and anoxic zones remove nitrogen. Constructed wetlands (engineered vegetated ponds) reduce BOD and nitrates and are effective as a polishing step prior to land application.
26. Pond size and land disposal acreage are interrelated; more available storage means less area is needed for land application or subsurface disposal, and vice versa. This balance is determined by site conditions and constraints, process water volume and quality, treatment objectives, costs, and operational resources.
27. Ponds are sized using normal year and wet year water balances (calculated monthly). The water balance accounts for pond inputs (e.g., process water generation, precipitation) and pond outputs (e.g., process water use, evaporation). The water balance can also be used to identify water shortfalls and when supplemental water may be needed to augment process water supplies to meet seasonal crop needs.
- a. Ponds are sometimes emptied before the start of crush to maximize available capacity when process water generation is highest. Water levels tend to increase throughout the fall and winter, when crop needs are low and precipitation is high, and begin to drop during the spring and summer growing seasons when water use is higher to meet crop demand.

- b. Crop water needs for the water balance can be determined from published or recorded data. Reference evapotranspiration (ET_o), crop evapotranspiration (ET_c), crop coefficients, and site-specific precipitation data can be found from these or similar sources. Crop evapotranspiration can also be calculated using the appropriate ET_o and crop coefficient.
 - i. California Irrigation Management Information System (CIMIS)¹¹ – informational source for precipitation, reference evapotranspiration, and crop coefficient data.
 - ii. California League of Food Processors Manual of Good Practice¹² – informational source for crop evapotranspiration and crop coefficient data.
 - iii. Irrigation Training & Research Center at Cal Poly¹³ – informational source for crop evapotranspiration data.
28. Undersized ponds can lead to process water spills, insufficient treatment, anaerobic conditions, and nuisance odors. Low dissolved oxygen (DO) levels are an early indicator of deteriorating pond performance and the need to evaluate operations (e.g., additional aeration may be needed).
- a. To minimize these problems, this General Order requires ponds be sized to meet a 100-year, 24-hour peak storm design standard unless a smaller pond is allowed with regional water board approval. A smaller pond is required to meet a 25-year, 24-hour peak storm design standard at a minimum. The Discharger is also required to submit a technical report describing how a smaller pond will be operated without overtopping under 100-year, 24-hour peak storm conditions.
 - b. Tier 1 and Tier 2 facility ponds generally contain smaller amounts of process water for a shorter period of the year and pose a smaller threat to water quality if the ponds are properly maintained and in good working condition (e.g., no spills). Therefore, Tier 1 and Tier 2 facilities with existing ponds may continue operating the ponds at their current sizes provided they are in compliance with all other General Order requirements, including applicable pond specifications. Tier 1 facilities may also construct ponds that are smaller than the peak storm design standards provided they meet all other General Order requirements, including applicable pond specifications.
29. Ponds that percolate process water have the potential for degrading underlying groundwater. Ponds lined with a relatively impermeable layer (e.g., clay, concrete, or geomembrane liner) minimize percolation. However, existing ponds at Tier 1 and Tier 2 facilities generally contain smaller amounts of process water for a shorter period of the year and pose a smaller threat to water quality if ponds are properly maintained and in good working condition. Therefore, Tier 1 and Tier 2 facilities may continue operating the

¹¹ [California Irrigation Management Information System](https://cimis.water.ca.gov/). 2020. <<https://cimis.water.ca.gov/>>. Accessed November 10, 2020.

¹² California League of Food Processors, 2007.

¹³ [Irrigation Training & Research Center](http://www.itrc.org/etdata/index.html), Cal Poly, San Luis Obispo. 2020. <<http://www.itrc.org/etdata/index.html>>. Accessed November 10, 2020.

existing ponds at their current lined or unlined status provided they are in compliance with all other General Order requirements, including applicable pond specifications. New ponds at Tier 1 facilities may be lined or unlined provided they are in compliance with all other General Order requirements, including applicable pond specifications. The regional water board may require ponds that are determined to have had, or have the potential for, frequent or significant spills or have the potential to cause groundwater pollution to comply with the General Order pond capacity and/or liner requirements.

30. This General Order requires new or expanding ponds at Tiers 2, 3, and 4 facilities to be lined to meet a hydraulic conductivity standard of 1×10^{-6} centimeters per second (cm/s) or less to prevent percolation-related degradation. Continued use of an existing lined or unlined pond may be allowed depending on facility tier and pond performance.
31. Facilities with larger process water ponds inherently have a higher potential for groundwater degradation since small, but ongoing leaks can result in a large amount of process water percolating to groundwater. Therefore, Tier 4 facilities are required to conduct groundwater monitoring at the process water ponds unless the Discharger demonstrates a reduced potential for groundwater degradation and qualifies for a regional water board approved exemption.

LAND APPLICATION

32. Land application is a strategy to beneficially reuse process water to grow crops (or plants, including landscape irrigation). Because winery process water contains organic matter and nitrogen, land applying it improves soil productivity and provides supplemental plant nutrients while simultaneously treating and disposing of the process water. The FDS in process water includes plant macronutrients (e.g., ammonium, nitrate, phosphorous, potassium) that are removed by land application systems that incorporate growing and removing crops.¹⁴
33. Crop water needs are met through precipitation, process water, and supplemental water from fresh water sources (e.g., irrigation canals, groundwater wells, and stored stormwater). This General Order requires the Discharger to monitor the source water, process water, and supplemental water quality to determine compliance with applicable nitrogen and BOD loading limits.
34. Land application areas can be effectively managed to prevent excessive nitrogen and BOD loading by applying process water nutrients at agronomic rates and within the BOD loading limit, respectively.
35. Nitrogen needs for a healthy crop are met through process water, supplemental water, fertilizers, and soil amendments.
 - a. Nitrogen from process water goes through chemical and biological transformations in soil. Organic nitrogen mineralizes over time to ammonia, some of which is converted to nitrate by microbes under aerobic conditions (nitrification). Nitrate can be taken up

¹⁴ California League of Food Processors, 2007.

by plants, immobilized in the soil, converted under low oxygen (anoxic) conditions to nitrogen gas and lost to the atmosphere (denitrification), or leached to groundwater. Nitrogen lost to denitrification, volatilization, and storage in soil humus can be estimated based on the irrigation method.¹⁵

- b. Nitrogen uptake is subject to many environmental and management variables, is crop specific, and changes during the growing season. Nitrogen in process water and process solids becomes plant available more slowly than synthetic fertilizer nitrogen. Therefore, this General Order requires nitrogen balances to be performed on an annual basis.
- c. Nitrogen is a primary plant nutrient that is taken up by plants as nitrate or ammonium ions. Nitrate can be mobile in the environment and can move with soil water to plant roots where uptake can occur. Ammonium nitrogen is adsorbed to soil particles and has limited mobility in the environment. All forms of nitrogen can be converted to nitrate under the proper conditions of temperature, aeration, moisture, etc. by microbial activity.
 - i. Nitrogen or nitrogen compounds may be lost to the atmosphere by the process of denitrification or by ammonia volatilization. Nitrate may be leached below the root zone by percolation. Erosion of nitrogen containing materials can transport nitrogen containing materials to surface water.
 - ii. Generally, young plants absorb ammonium more readily than nitrate; however, as the plant ages the reverse is true. Warm, well-aerated soil conditions that promote plant growth also promote the microbial conversion of ammonium to nitrate. As a result, nitrate is generally more abundant when growing conditions are most favorable.
- d. The soil profile removes biodegradable organics (measured as BOD) via filtration, adsorption, and biological activity. Because most microbial activity occurs near the surface, it's important to maintain an aerobic upper soil profile between irrigation cycles by managing the organic loading, hydraulic loading, drying time, and cycle time.¹⁶
 - i. To manage BOD loading, this General Order requires that land application occur within a cycle average BOD loading limit of 100 pounds per acre per day (lb/ac/d). An irrigation cycle is made up of irrigation days and the subsequent dry days. For example, a LAA divided into seven sections would have a 7-day irrigation cycle for each section if each received one day of application followed by six days of drying.
 - ii. Field rotation, alternating wet and dry times, infiltrating water within **48 hours**, and managing the hydraulic loading are all necessary to allow the soil to return to aerobic conditions.

¹⁵ California League of Food Processors, 2007.

¹⁶ California League of Food Processors, 2007.

36. Employing good land application and farming practices and site controls are necessary to prevent excessive hydraulic loading, nuisance conditions, and offsite discharges. LAAs must have irrigation water distribution uniformity (e.g., considering LAA slope and size, irrigation method, soil properties), be operated to prevent ponding or odors, and be equipped with the field controls (e.g., containment berms or ditches, tailwater collection and return) necessary to prevent offsite discharges of process water.
37. Irrigation systems are typically designed to irrigate slightly above a plant's evapotranspiration needs by incorporating a reasonable leaching fraction (e.g., 15 percent) to ensure that salts are not accumulating in the soil profile. Irrigation volumes are also based on the irrigation method efficiency (e.g., for drip, sprinkler, furrow, or flood irrigation). The land application area must be properly managed to prevent over irrigation, which can result in runoff or ponding.
38. Wineries that generate and land apply larger volumes of process water inherently have a higher potential for percolation to groundwater and groundwater degradation. Therefore, Tier 4 facilities are required to conduct groundwater monitoring at the LAA unless the Discharger demonstrates a reduced potential for groundwater degradation and qualifies for a regional water board approved exemption.
39. Wineries with groundwater monitoring data demonstrating impacts to water quality may be required by the regional water board to evaluate the winery, treatment, and disposal operations and address and mitigate groundwater quality impacts through the development and implementation of a site-specific Nitrogen Control Plan.

SUBSURFACE DISPOSAL SYSTEM

40. Subsurface disposal systems (SDSs) consist of a treatment unit and a subsurface disposal area (e.g., drainfield, infiltration gallery, dispersal area). Treated effluent is discharged via gravity flow or a low-pressure distribution system to a shallow disposal area. Plants grown at the subsurface disposal area can provide some additional treatment.
41. Though more commonly used by smaller wineries, larger wineries with limited land application area or pond capacity also use SDSs. Wineries sometimes use an SDS in conjunction with land application.
42. Siting, design, and operation of an SDS depend on site conditions, groundwater elevation, process water volume and characteristics, and soil properties (e.g., soil depth, texture, permeability, and soil layers that restrict water flow).¹⁷
43. SDSs are designed with different treatment objectives.
 - a. Simple SDSs with only solids settling provide minimal treatment. In the settling tank, process solids settle out and the anaerobic conditions provide some BOD reduction

¹⁷ Wine Institute. 2009. Comprehensive Guide to Sustainable Management of Winery Water and Associated Energy. Prepared by Kennedy/Jenks Consultants.

but nitrogen removal varies depending on the system design and operation. Once discharged, the effluent BOD can biodegrade further in the aerobic conditions of the subsurface disposal area and the nitrogen can be converted to nitrate.

- b. More advanced SDSs can be designed for nitrogen and/or BOD removal. Treatment alternatives include biological filters, pretreatment in process water ponds designed for nitrification and denitrification upstream of the SDS, and other engineered alternatives.
44. This General Order includes effluent limits for total nitrogen, BOD, and total suspended solids (TSS) to assess SDS treatment effectiveness and minimize the potential for degrading groundwater. Nitrogen in SDS effluent can transform into nitrate in the soil and excessive loading can result in nitrate leaching to groundwater. The BOD and TSS limits are to prevent excessive organic loading and to minimize system plugging. The SDS effluent limits, as measured prior to discharge to the subsurface disposal area, are total nitrogen of 10 mg/L, BOD of 300 mg/L, and TSS of 330 mg/L. Tiers 2, 3, and 4 facilities that exceed the total nitrogen effluent limit may be required to evaluate the winery, treatment, and disposal operations and prepare a Nitrogen Control Plan describing results and the improvements needed to comply with the limit.
45. This General Order requires the Discharger to implement SDS operational controls and provide sufficient disposal area necessary to prevent excessive loading, inadequate treatment, and nuisance conditions. The General Order also requires that the SDS meet a maximum hydraulic loading limit of one gallon per square foot of discharge trench per day (gal/sqft/d) to prevent excessive loading to the subsurface disposal area. The subsurface disposal area is usually sized using the average daily flow during peak flow conditions (typically crush).¹⁸ Dischargers must also adhere to design criteria (e.g., designing for alternating wet and dry periods, distribution uniformity) to maintain effective SDS operations.
46. Wineries that discharge large volumes of process water to the subsurface disposal area have a higher potential for percolation to groundwater and groundwater degradation. Therefore, Tier 4 facilities are required to conduct groundwater monitoring for SDSs.

SOLIDS MANAGEMENT

47. Coarse and suspended process solids are screened, filtered, precipitated, and settled from grape juice, wine, and process water. Removing solids prior to directing process water to flowmeters, storage tanks, and treatment systems minimizes system clogging, extends the life of equipment, improves treatment efficiency, and restores system capacity.
48. Process solids are also generated from process water treatment systems. Ponds are periodically dredged to restore capacity. Sludge and scum from settling tanks are also removed as part of regular maintenance.

¹⁸ Wine Institute, 2009.

49. Process solids release nitrogen, BOD, and salinity as the organic material breaks down. Liquid (process water) drained from solids after precipitation exposure or during storage have high concentrations of these constituents. Discharge or percolation of this higher strength process water can potentially degrade groundwater. Process solids are typically containerized or stockpiled and dried before they are land applied as a soil amendment or disposed of offsite. Onsite composting and reuse of process solids are encouraged.

SALT CONTROL

50. Effective strategies to minimize the FDS concentration in process water include facility source control, chemical substitution and recycling, good housekeeping, solids removal, and other BPTC measures. Most of these measures aim to keep salts out of process water. Salt reduction technologies (e.g., reverse osmosis) are available, but can be expensive so are not as widely used.
- a. Source control – facility methods aimed at isolating high FDS, often low volume, waste streams, then treating and disposing of them separately from the bulk process water flow. Discrete wastes from salt additive processes, such as regeneration brine from water softeners, can be straightforward to isolate.
 - b. Chemical substitution – facility use of available alternative non-salt-based cleaning chemicals, when feasible, can be part of an effective approach to salt management. Chlorinated cleaning solutions can be substituted for peracetic acid or other non-ionic, non-sodium, non-chloride cleaners. Although replacing sodium-based chemicals with potassium-based ones does not reduce salt concentrations, the substitution is still beneficial because potassium is a nutrient that is taken up by bacteria and plants when land applied and has less of a potential to reach groundwater than sodium.¹⁹
 - c. Chemical recycling and reuse – facility methods aimed at using chemical solutions more than once in some processes before discharging (e.g., for cleaning successive tanks) reduces the volume of chemicals used and its associated salts. Some chemicals can also be recovered, purified, and reused (e.g., clean-in-place systems, ion exchange, distillation).
 - d. Good housekeeping – improved employee training and implementation of facility cleanup and operational methods can be inexpensive but effective at reducing salt discharges. These methods include using dry sweeping instead of wet rinses, using high pressure, low flow water nozzles with automatic shutoffs, and directing pomace to a solids collection bin rather than to process water drains.
 - e. Solids removal – screening, settling, flotation, and other methods are widely used to remove solids from process water and can substantially reduce the BOD, nitrogen, and salt loads.
 - f. Reverse osmosis – semi-permeable membrane technologies (e.g., reverse osmosis, nanofiltration) can be used to separate dissolved salt from source water to produce

¹⁹ California League of Food Processors, 2007.

soft water for boilers, cooling towers, and other systems. These salt separation methods concentrate salt from source water into a brine solution that can be disposed of separately or discharged to the process water system.

51. Minimum salt control BPTC measures, generally consisting of good housekeeping, source control and reduced salt usage, and solids screening and management, are required on a compliance schedule in this General Order.
52. Wineries generally have greater control over their winemaking operations and chemical use than changing the source of their water supply. Normal winery operations will increase process water salinity above source water salinity. Implementing best practices can minimize this salinity increase.
 - a. This General Order requires Tiers 2, 3, and 4 facilities to compare winery effluent FDS concentrations to an FDS threshold to determine if additional measures are needed at the facility to control salt and minimize the potential for groundwater degradation. The FDS threshold is equal to the source water FDS concentration plus 320 mg/L and is based on reasonable BPTC measures that can be implemented at wineries to minimize salinity impacts to groundwater.²⁰
 - b. Facilities that exceed the FDS threshold may be required to evaluate the winery, treatment, and disposal operations, discuss findings, and propose improvements to reduce effluent FDS in a Salt Control Plan. An exceedance of the FDS threshold is not a violation of this General Order, however this General Order requires the Discharger to implement salt control BPTCs and to potentially submit a Salt Control Plan if the FDS threshold is exceeded.

OTHER WINERY ACTIVITIES NOT COVERED BY THIS GENERAL ORDER

53. Some wineries have developed public assembly facilities for weddings, corporate meetings, retreats, or concerts. Those activities generate wastewater that is not covered under this General Order and the discharges may be permitted either by a local agency or the regional water board based upon the effluent flow rate and quality.
54. Some wineries operate distilleries to produce brandy and fortifying spirits. Distilleries and stillage (distillation waste) are not covered by this General Order.
55. Stormwater that comes into contact with winery waste contains process water constituents of concern and for that reason is considered winery process water. Such contacted stormwater is required to be managed as directed by this General Order. This General Order does not cover stormwater controlled and contained separately that does not contact winery waste.

²⁰ California League of Food Processors, 2007.

56. Domestic wastewater is not covered by this General Order and will need to be permitted by a local agency, a regional water board, or other appropriate entity.
- a. Wineries produce domestic wastewater generated by employees and visitors. It is desirable to keep the process water and domestic wastewater separated due to the additional requirements imposed to address domestic wastewater associated constituents, such as pathogens. Regional water board orders for winery process wastewater including the North Coast Water Board Order No. R1-2002-0012 and Central Coast Water Board Order R3-2017-0020 explicitly outline the segregation of domestic wastewater and process water systems.
 - b. Alternative commingled process water and domestic wastewater treatment systems may be permitted by a local agency, a regional water board, or other appropriate entity. Regulatory limits for these systems vary in stringency and are out of scope for coverage under this General Order.
 - c. Some wineries may allow recreational vehicles (RVs) to visit their facilities or use portable toilets to accommodate large events. Discharges from RV holding tanks or portable toilets may contain chemicals that can pollute groundwater quality. Some commercially available products used to control holding tank/portable toilet odors may contain chemicals such as formaldehyde, methyl alcohol, zinc, phenol, or other harmful chemicals. These chemicals can kill the bacteria in wastewater treatment systems and cause wastewater to be inadequately treated. Inadequately treated wastewater may cause additional problems such as leach field/seepage pit failure, surfacing wastewater, and potential exposure and health risks. Discharge of these chemicals to groundwater that creates pollution may result in enforcement activities requiring groundwater remediation. This General Order prohibits the discharge of RV holding tank wastewater or portable (chemical) toilet waste to an onsite wastewater treatment system without separate WDRs issued by the regional water board addressing the waste.
 - d. Use of recycled water is subject to the Uniform Water Recycling Criteria contained in Title 22, Division 4, of the California Code of Regulations. Because the use of recycled water requires additional authorization from the regional water board and State Water Board Division of Drinking Water, wineries that produce recycled water subject to Title 22 are not eligible for coverage under this General Order. Wineries that commingle wastewater in a way that makes the discharge subject to the Uniform Water Recycling Criteria (e.g., irrigate with treated wastewater that contains any amount of treated or untreated domestic waste) are not eligible for coverage under this General Order.
 - e. Dischargers that land apply solids that contain domestic wastewater associated solids are not covered by this General Order and are subject to the requirements in 40 Code of Federal Regulations (CFR) Part 503.

- f. Some wineries have existing wastewater systems (e.g., SDS, septic tank and leach field) that treat commingled process water and domestic wastewater.
 - i. Wineries with these existing systems must be modified so that process water is managed and treated separately and is no longer commingled with domestic wastewater in order to maintain coverage under this General Order.
 - ii. Wineries with continued operation of an existing commingled process water and domestic wastewater system, or that choose to expand or install a new commingled system, are not eligible to maintain coverage of the commingled system under this General Order beyond the compliance period provided in the Technical Provisions section and shall obtain a separate permit to regulate the commingled wastewater.
- g. Wineries that treat process water separately from domestic wastewater but discharge the individually-treated waste streams to the same subsurface disposal area may be eligible for coverage under this General Order if such a use is approved by the regional water board. The Discharger must submit technical justification that demonstrates the subsurface disposal area is appropriately sized, designed, and operated to receive and treat the process water and domestic wastewater and the domestic wastewater system and subsurface disposal area may also be regulated under a separate domestic wastewater permit through the regional water board or appropriate local agency.

APPLICATION AND TERMINATION PROCESSES

- 57. Existing wineries, except those with individual WDRs, general WDRs, or conditional waivers of WDRs, are required to seek coverage under this General Order by submitting a complete Notice of Intent (NOI) (Attachment B), including the appropriate filing fee (CCR, title 23, section 2200), and a technical report including, but not limited to, the information requested in Attachment C to the regional water board. Attachment B and Attachment C are hereby attached and made a part of this General Order. The NOI, technical report, and filing fee must be submitted within **3 years** of adoption of this General Order unless otherwise notified of an earlier enrollment date by the regional water board.
- 58. **For existing facilities:** The technical report shall include a proposed schedule for full compliance that must be as short as practicable but may not exceed **5 years** from the date of the NOI. If any proposed completion dates exceed the compliance periods stipulated in this General Order, the change must be supported with appropriate technical and/or economic justification. The regional water board may modify the proposed schedule as appropriate and will provide the approved schedule in the NOA.
- 59. The State Water Board intends for this General Order to be the primary permitting mechanism for wineries in the state. Dischargers covered by individual WDRs, general WDRs, or a conditional waiver of WDRs may continue discharging under that authority until those orders expire or come up for renewal. At that time, or earlier at the discretion of the regional water board, it is the intent of the State Water Board that regional water boards will enroll all eligible wineries under this General Order. If a regional water board

determines that, due to site-specific conditions, coverage under this General Order will not be protective of water quality, the regional water board may issue individual WDRs.

60. New wineries that propose to begin operating after adoption of this General Order are required to seek coverage by submitting a complete NOI (Attachment B), including the appropriate filing fee (title 23 CCR, section 2200) and a technical report including, but not limited to, the information requested in Attachment C, to the regional water board at least **180 days** prior to commencement of operations.
61. For the purposes of this General Order, an NOI and accompanying technical report (as described in Attachment B and Attachment C, respectively) is equivalent to a ROWD. After the State Water Board or regional water board determines that the NOI and accompanying technical report are complete, the initial fee has been received, and the winery can be appropriately regulated under this General Order, an NOA will be issued by the State Water Board or regional water board. Within the NOA, the State Water Board or regional water board will, at a minimum, confirm the Discharger's tier, provide a Monitoring and Reporting Program (MRP), and, if applicable, a timeline for compliance. The State Water Board or regional water board may provide procedures for electronic submittal or modifications to application information or documents.
62. Upon issuance of an NOA for coverage under this General Order, the Discharger's NOI and technical report will become incorporated by reference, with the NOA, into this General Order. The Discharger is responsible for implementing all operations in a manner that complies with this General Order.
63. The Discharger is required to pay an annual fee (e.g., waste discharge permit fee) (Water Code, section 13260 et seq.). The filing fee accompanying the NOI is the first year's annual fee. The annual fee may be based on the winery tier or the threat to water quality and complexity rating of the discharge (title 23 CCR, section 2200). The [fee schedule and ratings](http://www.waterboards.ca.gov/resources/fees/) are available at: <http://www.waterboards.ca.gov/resources/fees/>.
 - a. Reduced fees may be available for Dischargers enrolled in a sustainability program accepted by the State Water Board or regional water board.
 - b. Dischargers enrolled in a Local Agency Oversight Program are responsible for submitting fees to the State Water Board and to the local agency. Reduced General Order fees may be available for Dischargers enrolled in a Local Agency Oversight Program.
64. Dischargers with exempt facilities directed by the regional water board to apply for General Order coverage as a Tier 1 facility are required to submit an NOI, abbreviated technical report as noted in Attachment C, and the associated fees.
65. Dischargers issued an NOA and who subsequently require a change in tier classification shall submit a new NOI and technical report for the appropriate tier at least **120 days** before the anticipated change. Once approved, the regional water board will issue a new NOA. A change in tier classification may also necessitate an application fee and/or a change in the annual fee.

66. To terminate enrollment under this General Order, Dischargers are required to submit a complete Notice of Termination (NOT) (Attachment D), which is hereby attached and made a part of this General Order, at least **120 days** prior to terminating all waste discharge activities. A regional water board inspection of the facility may be required prior to termination of coverage.
- a. The Discharger must submit a complete NOT to the regional water board and, if applicable, provide a copy to the local agency providing General Order oversight.
 - b. The Discharger filing a request for termination of General Order coverage does not stay any requirement of this General Order. The Discharger continues to be responsible for the fees and self-monitoring reports required by this General Order until the NOT is approved by the regional water board.

LOCAL AGENCY OVERSIGHT PROGRAM

67. Local agencies may apply to the State Water Board or regional water board for oversight of wineries located within the local agency jurisdiction and covered by this General Order. Some regional water boards work with County Environmental Health Programs and may authorize local agencies to oversee winery process water activities. Continuation of local agency oversight consistent with this General Order can streamline regional water board resources for General Order implementation.
68. Local agencies are required to adhere to the Local Agency Oversight Program requirements in Attachment E, which is hereby attached and made a part of this General Order. The primary role of the local agency is to oversee implementation of the technical requirements of this General Order after the Discharger enrolls in the General Order and related enrollment in the local oversight program. The regional water board or State Water Board may coordinate with the local agency on the Discharger General Order enrollment, Notice of Applicability issuance, and Notice of Termination approvals to support the requirements of this General Order.
69. Local agencies seeking oversight responsibilities for winery waste discharges must demonstrate adequate resources and technical expertise to implement such a program and must also have the legal authority to administer this General Order.
- a. The local agency must submit a Local Agency Oversight Program application to the State Water Board or regional water board, as described in Attachment E, to apply for authorization to administer this General Order.
 - b. The State Water Board or regional water board will issue an authorization letter to the local agency to indicate approval of the Local Agency Oversight Program application and that oversight authorization has been granted. The State Water Board or regional water board may limit the tiers that are eligible for local agency oversight.
70. Local agencies that obtain oversight responsibility will administer this General Order, but local agency oversight is not a substitute for regulation under this General Order. Dischargers are required to comply with all requirements of this General Order and the facility NOA, MRP, and compliance schedule.

- a. The State Water Board and regional water boards retain enforcement authority related to this General Order regardless of Discharger participation in a Local Agency Oversight Program.
 - b. The local agency may require Dischargers to comply with additional requirements related to winery waste. Results of any additional or more frequent monitoring than specified in the MRP shall be reported in the next regularly scheduled monitoring report and shall be included in calculations, as appropriate.
71. Dischargers that enroll in a Local Agency Oversight Program must apply for General Order coverage through the State Water Board or regional water board by submitting a complete application as described in the Application and Termination Processes section of this General Order. The State Water Board or regional water board will issue an NOA to authorize order coverage if approved. The Discharger is responsible for submitting annual fees to the State Water Board. Dischargers with wineries enrolled in a State Water Board or regional water board authorized Local Agency Oversight Program may receive a reduction in their annual fee. The Discharger may be required to submit a separate application and fee to the local agency to enroll in the Local Agency Oversight Program.

ANTIDEGRADATION ANALYSIS

72. State Water Board Resolution 68-16, *Statement of Policy with Respect to Maintaining High Quality of Waters in California* (hereafter the Antidegradation Policy), requires that disposal of waste into waters of the state be regulated to achieve the highest water quality consistent with the maximum benefit to the people of the state. The quality of some waters is higher than established by adopted policies and that higher quality water shall be maintained to the maximum extent possible consistent with the Antidegradation Policy. The Antidegradation Policy requires the following:
- a. Maintenance of existing high quality waters of the state unless limited degradation is consistent with maximum benefit to the people of the state, will not unreasonably affect present and anticipated beneficial use of the water, and will not result in water quality less than that prescribed in state policies. Higher quality water will be maintained until it has been demonstrated to the state that any change will be consistent with the maximum benefit to the people of the state, will not unreasonably affect present and anticipated beneficial uses of the water, and will not result in water quality less than that prescribed in state policies.
 - b. Any activity that produces or may produce a waste and discharges or proposes to discharge to existing high quality waters will be required to meet WDRs that will result in BPTC of the discharge necessary to assure pollution or nuisance will not occur, and the highest water quality consistent with maximum benefit to the people of the state will be maintained.
73. This General Order requires Dischargers to implement BPTCs to maintain the highest water quality consistent with maximum benefit to the people of the state. The required BPTCs are included in the NOA issued by the regional water board.

74. This General Order allows discharge to numerous groundwater sources, each with its own chemical characteristics. There is insufficient data to determine which receiving waters are high quality waters. This General Order authorizes limited degradation to high quality waters provided it is consistent with the terms of the applicable regional water board water quality control plan (Basin Plan), other applicable State Water Board and regional water board policies, the Antidegradation Policy, and as described in these findings.
75. This General Order includes BPTC requirements, a BPTC compliance schedule, and monitoring and reporting requirements. BPTC measures are defined for all tiers. Higher risk tiers have more BPTC requirements than lower risk tiers. This General Order does not preclude Dischargers from implementing more than the minimum BPTC measures required for each tier. Wineries with process water design flows less than 10,000 gallons implementing the control measures defined in this General Order are unlikely to degrade water quality and are exempt from this General Order. This General Order includes provisions for the regional water board to enroll such Dischargers found to be a threat to water quality to enroll into Tier 1 of this General Order.
76. This General Order places restrictions on the discharge of waste from winery operations. The terms and conditions of this General Order are designed to minimize groundwater quality degradation and protect beneficial uses of waters of the state, including access to safe and reliable drinking water. The primary constituents of concern in winery waste that have the potential to degrade water quality are BOD, nitrogen, and salinity.
- a. This General Order includes a BOD loading limit for land application, a BOD effluent limit for subsurface disposal, and pond operational requirements to minimize the potential for process water to create or contribute to nuisance conditions.
 - b. This General Order includes a nitrogen application rate limit for land application, a nitrogen effluent limit or first encountered groundwater limit for subsurface disposal, and pond siting and liner hydraulic conductivity requirements to minimize the potential to cause or contribute to groundwater quality above the nitrate water quality objective. Facilities that exceed the nitrogen limits may be required to evaluate the winery, treatment, and disposal operations to determine improvements needed to comply with the limits.
 - c. This General Order requires facilities in all tiers to control salt and Tiers 2, 3, and 4 facilities to also evaluate compliance with the FDS threshold and implement additional salt control measures to minimize process water salinity. Facilities that exceed the FDS threshold may be required to evaluate the winery, treatment, and disposal operations for additional salt control measures.
77. The California wine industry benefits many sectors of the state's economy. This economic activity preserves agricultural land, provides jobs, attracts tourists, generates tax revenues, and, on a broader economic basis, affects other industries such as farming, banking, engineering, manufacturing, packaging, transportation, advertising, and retail. The wine industry includes approximately 4,580 wineries in the state that produce grapes across approximately 560,000 acres of vineyards, supports approximately 485,000 jobs, and generates a national annual impact of about \$220 billion and a statewide annual

impact of about \$71 billion.²¹ The economic prosperity of communities and associated industry is of maximum benefit to the people of the state and provides sufficient justification for allowing the limited groundwater degradation that may occur. Limited degradation of groundwater by some waste constituents associated with winery process water, after effective source control, treatment, and control measures are implemented as required by this General Order, is consistent with the maximum benefit to the people of the state.

TITLE 27 EXEMPTIONS

78. The winery waste treatment, storage, and disposal activities described in this General Order are exempt from the requirements of *Consolidated Regulations for Treatment, Storage, Processing, or Disposal of Solid Waste* in CCR, title 27, division 2, subdivision 1, section 20005, et seq. (hereafter Title 27). The activities are exempt from the requirements of Title 27 so long as the activity meets, and continues to meet, all preconditions listed below.

- a. Wastewater, section 20090(b) – discharges of wastewater to land, such as evaporation ponds, percolation ponds, or subsurface leach fields, if the following conditions are met:
 - i. The applicable regional water board has issued WDRs, reclamation requirements, or waived such issuance.
 - ii. The discharge complies with the applicable water quality control plan.
 - iii. The wastewater does not need to be managed according to CCR, title 22, division 4.5, chapter 11, as a hazardous waste.

These conditions are satisfied because winery process water discharges covered by this General Order must comply with the applicable regional water board Basin Plan or any applicable statewide water quality control plan or policy and process water does not need to be managed as a designated or hazardous waste.

- b. Soil amendments, section 20090(f) – use of nonhazardous decomposable waste as a soil amendment pursuant to applicable best management practices, provided that regional water boards may issue waste discharge or reclamation requirements for such use.

Application of winery waste to land is a beneficial reuse of this organic material as a soil amendment and source of plant nutrients.

- c. Reuse, section 20090(h) – recycling or other use of materials salvaged from waste, or produced by waste treatment, such as scrap metal, compost, and recycled chemicals, provided that discharges of residual wastes from recycling or treatment operations to land shall be according to applicable provisions of this division.

²¹ John Dunham and Associates, 2017.

Application of process solids (e.g., pomace, lees, settled pond solids) to land is also a beneficial reuse of this organic material as a soil amendment and source of plant nutrients. Onsite composting and reuse of process solids are encouraged.

- d. Fully enclosed units, section 20090(i) - waste treatment in fully enclosed facilities, such as tanks, or in concrete-lined facilities of limited areal extent, such as oil water separators designed, constructed, and operated according to American Petroleum Institute specifications.

Process water is discharged to tanks, sumps, aerated ponds, and other similar equipment during normal operations for flow equalization, treatment, or storage.

CALIFORNIA ENVIRONMENTAL QUALITY ACT

- 79. The State Water Board is the lead agency for purposes of complying with the California Environmental Quality Act (CEQA) (Public Resources Code, sections 21100 – 21177). The State Water Board provided notice of intent to adopt a mitigated negative declaration (**SCH No. #2020070485**) for this General Order on **July 3, 2020 and specifically through the State Clearing House on July 24, 2020** (CCR, Title 14, section 15072) as lead agency under CEQA. The State Water Board, after the consideration of the mitigated negative declaration and comments received during the public review process, hereby determines that any potential effects of the proposed project are mitigated by the strict eligibility criteria, discharge prohibitions, WDRs, monitoring and reporting requirements, and other requirements of this General Order, such that no significant effects will occur.
- 80. This General Order is intended to cover both new and existing wineries.
 - a. The adoption of this General Order for new and existing wineries is categorically exempt from CEQA under CCR, title 14, section 15308 (actions by regulatory agencies for protection of the environment). Additionally, the adoption of this General Order for existing wineries is categorically exempt from CEQA under CCR, title 14, section 15301 (ongoing or existing projects).
 - b. California Code of Regulations, section 15300.2 provides exceptions to these categorical exemptions based on location, cumulative impact, and significant effects due to unusual circumstances, scenic highways, hazardous waste sites, and historical resources. There is no evidence that any of these exceptions apply. However, in the event this evidence is found to exist, an Initial Study was prepared pursuant to the CEQA Guidelines (CCR, title 14, section 15063) to consider whether adoption of this General Order could have a significant effect on the environment.
 - c. This General Order Initial Study analysis and early consultation with the responsible and trustee agencies did not identify any significant impacts on the environment.
 - d. New or expanding wineries are subject to further CEQA evaluation on a site-specific basis by local agencies performing CEQA evaluations of proposed projects. The potential significant environmental impacts from discharges of winery waste can be

mitigated to less than significant impacts by compliance with this General Order, the NOA, and any mitigation measures adopted by local agencies.

- e. The State Water Board provided notice of an opportunity for tribal cultural resource consultation per Public Resources Code section 21080.3.1, which was distributed to Assembly Bill 52 listed and non-listed tribes. A project description was transmitted to the tribes, which concluded in consultation with Buena Vista Rancheria of Mi-Wuk Indian Tribe, Rincon Band of Luiseno Indian Tribe, and the Wilton Rancheria Tribe.
- f. This General Order includes mitigation measures for potential impacts due to winery activities to tribal cultural resources²² in Attachment F, which is hereby attached and made a part of this General Order.

OTHER SALT AND NITROGEN CONSIDERATIONS

81. Sustainability Programs

- a. Sustainability programs that address salt and nitrogen control for winery waste to protect groundwater quality can greatly assist statewide General Order compliance efforts. Sustainability program efforts to provide technical assistance can help winery operators gain a greater understanding of the need for water quality protection.
- b. Dischargers with wineries certified under a sustainability program accepted by the State Water Board or regional water board may receive a reduction in their annual fee.
 - i. Additionally, Dischargers required to prepare a Salt Control Plan may refer to the sustainability program measures to control and reduce salt rather than generate a site-specific plan, provided the Discharger certifies that the appropriate salt control measures have been implemented (as described in the Technical Provisions section). However, because of the higher salt loading potential at larger facilities, the regional water board may direct Tier 3 and Tier 4 facilities to prepare a Salt Control Plan that evaluates site-specific measures that may be more protective than the general sustainability program measures. Such facilities are required to implement the Salt Control Plan measures in addition to the sustainability program measures.
 - ii. Dischargers with land application area operations required to prepare a Nitrogen Control Plan may refer to the sustainability program measures to control and reduce nitrogen rather than generate a site-specific plan, provided the Discharger certifies (as described in the Technical Provisions section) that the appropriate nitrogen control measures have been implemented. However, because of the higher nitrogen loading potential at larger facilities, the regional water board may

²² Tribal cultural resource (TCR) is defined in Public Resources Code section 21074 as either a site, feature, place, or cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe. This may include, but is not limited to, sites of historical, cultural, tribal, or related resource significance.

direct Tier 3 and Tier 4 facilities to prepare a Nitrogen Control Plan that evaluates site-specific measures that may be more protective than the sustainability program measures. Such facilities are required to implement the Nitrogen Control Plan measures in addition to the sustainability program measures.

- iii. Discharger participation in a sustainability program may assist a facility in meeting the requirements of this General Order, but these programs are not a substitute for regulation under this General Order. Dischargers are required to comply with all other requirements of this General Order and the facility NOA, MRP, and compliance schedule. The State Water Board and regional water boards retain enforcement authority related to this General Order regardless of Discharger participation in a sustainability program.
- c. The State Water Board or regional water board will evaluate a sustainability program for its ability to demonstrate and ensure the protection of water quality. Only robust and transparent programs that achieve and document measurable water quality protection will be accepted by the State Water Board or regional water board. Sustainability programs shall include, at a minimum:
 - i. Best management practices for managing and minimizing salinity and nitrogen at the winery and in the land treatment and disposal operations. The salt management practices are required to include, at a minimum, the BPTCs described in the Salt Control section of this General Order.
 - ii. Facility best management practices (e.g., employee training, standard operating procedures).
 - iii. A certification and inspection process to verify ongoing Discharger participation and compliance with the sustainability program.

82. Salt and Nutrient Management Plans

- a. Dischargers may elect to participate in, or develop, a regional salt and nutrient management plan (SNMP). The regional SNMP must include appropriate salt and nitrogen control measures that can be implemented at the facility to facilitate compliance with the requirements of this General Order. The regional SNMP may include participation in a basin-wide offset program and may also include short-term, site-specific BPTC measures and participation in long-term basin planning efforts.
- b. Dischargers required to prepare a Salt Control Plan or Nitrogen Control Plan may refer to a regional water board accepted regional SNMP rather than generate a site-specific plan provided that the potential facility salt or nitrogen loading are addressed consistent with the requirements of this General Order and the Discharger certifies that the appropriate salt or nitrogen control measures have been implemented at the facility. However, the salt or nitrogen loading potential at larger facilities is higher and the regional water board may direct Tier 3 and Tier 4 facilities to prepare a Nitrogen Control Plan or Salt Control Plan that evaluates site-specific measures in addition to implementing the regional SNMP measures.

83. The Central Valley Regional Water Board adopted Basin Plan amendments incorporating new programs for addressing ongoing salt and nitrate accumulation on May 31, 2018 (Resolution No. R5-2018-0034). The State Water Board adopted a resolution (Resolution 2019-0057) approving the Central Valley Water Board Basin Plan amendments and also directed 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 (OAL). The Office of Administrative Law approved the amendments on January 15, 2020 (OAL Matter No. 2019-1203-03). The resolution, *Amendments to the Water Quality Control Plans for the Sacramento River and San Joaquin River Basins and the Tulare Lake Basin to Incorporate a Central Valley-wide Salt and Nitrate Control Program (R5-2018-0034)*, resulted from a Central Valley Regional Water Board initiated collaborative stakeholder initiative known as the Central Valley Salinity Alternatives for Long-term Sustainability (CV-SALTS).
- a. To the extent consistent with CV-SALTS, Dischargers determined by the Central Valley Regional Water Board to be participants in good standing in the CV-SALTS Alternative Permitting Approach for Salinity are exempt from compliance with Discharge Specifications C.1.a and C.1.c, Section D.1.b and D.1.d, and Groundwater Limitations F.1 and F.2, as they apply to water quality objectives for salinity. All other provisions of this General Order remain in effect.
 - b. The Central Valley Regional Water Board may approve exceptions consistent with CV-SALTS to the crop agronomic rate limitation for nitrogen application to land application areas in Effluent Limitations B.4, the 10 mg/L nitrogen effluent limitation for subsurface disposal systems in Effluent Limitations B.6, and Groundwater Limitations F.1 and F.2 as they apply to nitrate/nitrogen. The Nitrogen Control Plan requirements remain in effect where applicable by the terms of this General Order, but the Central Valley Regional Water Board may approve the functional equivalent of a Nitrogen Control Plan through a management zone implementation plan. The Central Valley Water Board may approve these CV-SALTS exceptions by issuing waste discharge requirements under Water Code section 13263 or a time schedule order under Water Code section 13300. Either such approval will have the effect of modifying this General Order. The Regional Water Board's approval of any exceptions for enrollees under this General Order must specify that all other provisions of this General Order remain in effect.

OTHER REGULATORY CONSIDERATIONS

84. Beneficial uses for groundwater are determined by each regional water board and are listed in their respective Basin Plans. Beneficial uses for groundwater include: agricultural supply (AGR), aquaculture (AQUA), fresh water replenishment (FRSH), groundwater recharge (GWR), hydropower generation (POW), industrial service supply (IND), municipal and domestic supply (MUN), industrial process supply (PROC), water contact recreation (REC-1), and wildlife habitat (WILD). Some beneficial uses only apply to certain geographic areas within a region.

85. Some groundwater basins in the state contain salts and nutrients that exceed or threaten to exceed water quality objectives established in the applicable Basin Plan and not all Basin Plans include adequate implementation procedures for achieving or ensuring compliance with the water quality objectives for salts or nutrients. These conditions can be caused by naturally occurring sources of salinity, discharges of agricultural, domestic, industrial, and municipal wastewater; fertilizers; and residual solids (including onsite wastewater treatment systems). In addition, irrigation using imported water, diverted water, surface water, groundwater, or recycled water, and indirect potable reuse for groundwater recharge can contribute to increased salt and nutrient loading.
86. Basin Plans establish water quality objectives to protect beneficial uses. The objectives may be narrative, numeric, or both. This General Order requires the Discharger to comply with those objectives in receiving groundwater. All WDRs must implement the applicable regional water board Basin Plan for the region in which the discharge occurs. Therefore, this General Order requires Dischargers to comply with all applicable Basin Plan requirements, including any prohibitions and water quality objectives governing the discharge. In the event of a conflict between the requirements of this General Order and the Basin Plan, the more stringent requirement prevails unless otherwise specified in this General Order.
87. This General Order does not authorize the commission of any act causing damage to the property of another, or protect the Discharger from liabilities under federal, state, or local laws. This General Order does not convey any property rights or exclusive privileges.
88. This General Order does not supersede any federal, state, or local law or regulation.
89. This General Order does not preempt or supersede the authority of local governmental agencies to prohibit, restrict, or control discharges of waste subject to their jurisdiction. It is the responsibility of the Discharger to obtain any required local governmental agency permits or authorizations necessary for compliance with this General Order.
90. This General Order does not relieve the Discharger from responsibility to obtain any required local, state, or federal permits to construct facilities necessary for compliance with this General Order, nor does this General Order prevent imposition of additional standards, requirements, or conditions by any other agency.

OTHER WATER CODE CONSIDERATIONS

91. Pursuant to Water Code, section 106.3, it is the policy of the State of California that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes. This General Order promotes this policy by including process water discharge specifications and prohibitions and requiring that discharges not cause or contribute to exceedances of water quality objectives that have been developed to protect municipal and domestic water supplies.
92. Pursuant to Water Code, section 13225(c), regional water boards may require local agencies to investigate and report on any technical factors involved in water quality control or to obtain and submit analyses of water. This General Order allows local

agencies that are approved by the State Water Board or regional water board to administer this General Order and provide oversight of wineries in their jurisdiction. Wineries under local agency oversight are required to apply for coverage under this General Order. Local agencies are required to report any inspection, permit violations, and enforcement actions to the regional water board.

93. Consistent with Water Code, section 13241, the State Water Board, in establishing the requirements contained herein, considered factors including, but not limited to, the following:
- a. Past, present, and probable future beneficial uses of water;
 - b. Environmental characteristics of the hydrographic unit under consideration, including the quality of water available thereto;
 - c. Water quality conditions that could reasonably be achieved through the coordinated control of all factors which affect water quality in the area;
 - d. Economic considerations;
 - e. Need for developing housing within the region(s); and
 - f. Need to develop and use recycled water.
94. Pursuant to Water Code, section 13263(g), the discharge of waste into waters of the state is a privilege, not a right, and adoption of this General Order does not create a vested right to discharge winery waste. Failure to prevent conditions that create or threaten to create pollution or nuisance or that may unreasonably degrade waters of the state will be sufficient reason to modify, revoke, or enforce this General Order.
95. Pursuant to Water Code, section 13267, Dischargers may be required to furnish, under penalty of perjury, technical or monitoring program reports as a condition of this General Order. Water Code section 13267 states, in part:
- "(b)(1) In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge waste within its region, or any citizen or domiciliary, or political agency or entity of this state who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge, waste outside of its region that could affect the quality of waters within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports.*
- (f) The state board may carry out the authority granted to a regional board pursuant to this section if, after consulting with the regional board, the state board determines that it will not duplicate the efforts of the regional board."*

- a. Estimated Monitoring and Reporting Program Cost Ranges: Staff have reviewed regional water board orders and industry data to develop the General Order monitoring and reporting requirements. This General Order is designed to ensure winery waste discharged to land does not impact the beneficial uses of groundwater and balances the cost to industry. This General Order provides a model MRP that provides Dischargers and regional water boards some alternatives to address site-specific conditions to achieve General Order compliance. The below MRP cost estimates are general ranges and actual costs will depend on many factors, including but not limited to, winery processing period, discharge volume and water quality, design, size, age, number and type of winery features (e.g., ponds), winery waste treatment, reuse, and disposal methods, additional monitoring needed to address site-specific considerations, and staff resources. The one-time monitoring cost for Tier 1 (assuming 45 days of discharge) is \$500 to purchase a flow meter (no ongoing monitoring costs) and for Tiers 2 to 4 is \$500 – \$750 for purchasing a pH and electrical conductivity (EC) meter. The estimated annual ongoing monitoring costs by tier are: Tier 2 (assuming 61 days of discharge) of \$1,500 – \$5,000, Tier 3 (assuming 75 days of discharge) of \$3,000 – \$10,000, Tier 4 (assuming 100 days of discharge) of \$25,000 – \$45,000. These estimated ongoing annual monitoring costs do not include labor costs for in-house staff or consultants, which are estimated to range from 80 – 900 hours with an estimated wage range of \$35 - \$150 an hour depending on the specific facility.
- b. Other Potential General Order Costs: Potential intermittent, upfront, and/or one-time costs were evaluated and considered in the development of this General Order. However, the above estimated cost ranges do not include costs to a winery for possible engineering, design, permitting, or construction work that may be necessary for General Order compliance or the technical reports potentially required if certain General Order activities or requirements are triggered because the specific work necessary at individual wineries will vary significantly and it is not feasible to summarize such costs and factors in this General Order. This General Order addresses facility-specific compliance costs by providing Dischargers alternatives to demonstrate compliance with meeting specific design or performance standards, a compliance schedule to complete necessary upgrades at existing wineries, and compliance options for addressing specific General Order exceedances.
- c. The technical and monitoring reports required by this General Order, NOA, and MRP are necessary to evaluate and ensure compliance with this General Order. The effort to develop required technical reports is estimated to range from 40 hours of in-house staff time to 100 hours of in-house and/or consultant time, depending on the winery size and complexity and the needs of the specific technical report. The burden and cost of these reports are reasonable and consistent with the interest of the state in protecting water quality, which is the primary purpose of requiring the reports. The State Water Board has consulted with the regional water boards and determined that required reports will not be duplicative. Failure to furnish the reports by the due date or falsifying information in the reports is a misdemeanor that may result in assessment of civil liabilities against the Discharger.

IT IS HEREBY ORDERED

IT IS HEREBY ORDERED that pursuant to Water Code sections 13263 and 13267, the Discharger, its agents, successors, and assigns, in order to meet the provisions contained in Division 7 of the Water Code and regulations adopted hereunder, shall comply with the following:

Dischargers in all tiers shall comply with all prohibitions, specifications, provisions, and other requirements described below unless otherwise noted.

A. DISCHARGE PROHIBITIONS

1. Discharge of waste to surface waters or surface water drainage courses is prohibited.
2. Discharge of waste classified as "hazardous," as defined in CCR, title 23, section 2521, or classified as "designated," as defined in Water Code section 13173, is prohibited.
3. Discharge of toxic substances into any waste treatment system or land application area such that biological treatment mechanisms are disrupted is prohibited.
4. Discharge of untreated or partially treated waste from treatment system bypass is prohibited.
5. Discharge of waste to land not owned, operated, controlled, or contracted by the Discharger is prohibited.
6. Discharge of waste in a manner or location other than that described in this General Order or the NOA is prohibited.
7. Discharge of stillage and other distillery waste is prohibited.
8. Discharge and/or application of process solids to the subsurface disposal area is prohibited.
9. Discharge of water softener brine is prohibited.
10. Discharge of waste to an unlined pond is prohibited except as otherwise provided in this General Order.
11. Discharge of waste to spreading basins, permeable basins, or other similar rapid infiltration or high rate land application systems is prohibited except as otherwise provided in this General Order.
12. Discharge of domestic wastewater to a process water treatment system, process water pond, LAA, or any surface water is prohibited.
13. Discharge of process wastewater to a domestic wastewater treatment system (e.g., septic system) is prohibited.
14. Discharge of commingled process water and domestic wastewater to an SDS is prohibited, except as stipulated in the Technical Provisions section for addressing an existing commingled system.

15. Discharge of domestic wastewater to the subsurface disposal area is prohibited, except as stipulated in the Subsurface Disposal Specifications section, whereby treated wastewater from separate process water and domestic wastewater systems may be directed to the same subsurface disposal area with regional water board approval.

B. EFFLUENT LIMITATIONS (TIERS 2, 3, AND 4)

1. The Discharger shall notify the regional water board when an effluent limitation is exceeded in a Compliance Letter as described in the MRP.
2. The annual total process water discharge flow from the winery, including process water generated from outdoor processing areas, and measured prior to treatment (e.g., before discharged to a pond, LAA, or SDS) shall not exceed the permitted process water design flow stated in the facility NOA.
3. Average BOD loading to the LAA shall not exceed 100 lb/ac/d over the course of any discharge cycle (i.e., irrigation cycle). BOD loading shall be determined using a moving average of the three most recent BOD process water sample results.
4. Application of waste constituents to the LAA shall be at agronomic rates as demonstrated with an annual nitrogen balance for the plants grown at the LAA. Nitrogen application rates shall not exceed the crop agronomic rate as defined in this General Order. Crop uptake values used to calculate agronomic rates shall be determined using one of the following methods:
 - a. Analytical results from representative plant tissue samples collected from the crops harvested or removed from the site.
 - b. Crop uptake values specified from one of the following sources:
 - i. California League of Food Processors, 2007, Manual of Good Practice for Land Application of Food Processing/Rinse Water.²³
 - ii. Western Plant Health Association, 2002, Western Fertilizer Handbook, 9th edition.
 - c. A Discharger proposed crop uptake value (e.g., from a published reference) subject to approval by the regional water board.
5. Daily discharge flow to the subsurface disposal area shall not exceed one gallon per square foot of discharge trench per day (1 gal/sqft/d), except as stipulated in the Technical Provisions section for updating an existing SDS.

²³ California League of Food Processors, 2007.

6. The Discharger shall monitor the treated SDS effluent. The treated SDS effluent shall be measured prior to discharge to the subsurface disposal area and shall not exceed total nitrogen of 10 mg/L, BOD of 300 mg/L, and TSS of 330 mg/L as a rolling average of the three most recent samples.
 - a. The Discharger may submit a request in the Notice of Intent to the regional water board to conduct groundwater monitoring as specified in the MRP using an onsite monitoring well network designed to assess the potential impact of discharging process water to the SDS in lieu of meeting the SDS nitrogen effluent limit. The request is subject to review and approval, following any necessary antidegradation analysis, by the regional water board after a public notice and opportunity for written comments. If approved, the Discharger shall ensure the monitoring demonstrates whether the soil treatment processes are consistently operating to ensure that first encountered groundwater does not exceed the nitrate MCL of 10 mg/L as N or a total nitrogen level of 10 mg/L. If the first encountered groundwater exceeds the nitrate MCL of 10 mg/L as N or the total nitrogen level of 10 mg/L the Discharger is responsible for meeting the SDS total Nitrogen effluent limit of 10 mg/L within 1 year of the exceedance and prepare and submit a Nitrogen Control Plan to the regional water board per the schedule and requirements in the Subsurface Disposal System for Tier 2, 3, and 4 Specifications and the Technical Provisions of this General Order.
 - b. The Discharger shall comply with the groundwater monitoring well installation requirements and compliance schedule in the Technical Provisions Section.
 - c. The Discharger shall comply with the Tier 4 groundwater monitoring and reporting provisions of this General Order. The Discharger may install vadose zone monitoring devices in lieu of groundwater monitoring wells if the first encountered groundwater underlying the bottom of the SDS is at least 50 feet below ground surface. The Discharger shall ensure the monitoring devices are designed to assess the potential impact of discharging process water to the SDS and maintain proper calibration of the installed monitoring device(s). The Discharger shall ensure the monitoring devices are installed beneath and immediately downgradient of the subsurface disposal area to demonstrate that soil treatment processes are consistently operating to ensure that water at the monitored depth in the vadose zone does not exceed the nitrate MCL of 10 mg/L as N or a total nitrogen level of 10 mg/L.

C. DISCHARGE SPECIFICATIONS (TIER 1)

1) General Specifications

- a. The Discharger shall ensure no waste constituent is released, discharged, or placed where it can be released or discharged in a concentration or in a mass that causes a violation of the Groundwater Limitations Section.
- b. The Discharger shall ensure all winery waste and winery waste processing, loading, storage, treatment, disposal, and reuse areas are properly managed and controlled with spill prevention, mitigation, and cleanup measures.

- c. The Discharger shall ensure all waste treatment, storage, and disposal will not create or threaten to create a condition of pollution, contamination, or nuisance as defined by Water Code section 13050.
- d. The Discharger shall ensure all discharges occur within the permitted waste treatment and containment areas or structures, LAAs, and SDSs, in the manner specified in the NOI and/or technical report and approved by the regional water board.
- e. The Discharger shall ensure all objectionable odors are not perceivable beyond the limits of the property at an intensity that creates or threatens to create nuisance conditions.
- f. The Discharger shall ensure stormwater that has contacted winery waste, processing equipment, or processing areas shall be managed as process water in accordance with this General Order.
- g. The Discharger shall manage all ponds, ditches, and other open containment structures to prevent breeding of mosquitoes. Specifically:
 - i. An erosion control program shall be implemented to minimize the formation of small coves and irregularities around the perimeter of the water surface.
 - ii. Weeds shall be minimized by controlling water depth, harvesting, or applying herbicides, if necessary.
 - iii. Dead algae, vegetation, and debris shall not accumulate on the water surface.
- h. Mosquito breeding shall be minimized by consulting and coordinating with the local mosquito abatement or vector control district and supplementing the above measures as needed.

2) Process Water Pond Specifications

- a. Process water ponds (hereafter referred to as ponds) shall be managed, operated, and maintained to protect containment integrity, prevent overtopping or structural failure, and prevent damage from burrowing animals. Pond containment damage shall be repaired as soon as possible.
- b. Pond capacity and hydraulic conductivity
 - i. New or expanding ponds – The Discharger may construct an unlined pond or a pond that is smaller than the peak storm design standard provided all other requirements of this General Order are met. At least **120 days** prior to the start of pond construction, the Discharger shall submit relevant information to the regional water board describing the capacity, lined or unlined status, and, if applicable, liner characteristics (e.g., material, thickness) of the new or expanding pond.
 - ii. Existing ponds – The Discharger may continue to operate an existing pond at its present size and present lined or unlined state (on or before this General Order adoption date) provided all other requirements of this General Order are met. Details of the existing pond capacity, liner status, and liner characteristics

(e.g., pond dimensions and age; liner material, thickness, age, and condition) shall be provided in the NOI and/or technical report with all other relevant information.

- iii. The regional water board may require Tier 1 ponds that are determined to have had, or have the potential for, frequent or significant spills to comply with the pond capacity requirements stated in the Pond Specifications section for Tier 2 facilities within **3 years** of regional water board notification. Additionally, the regional water board may require Tier 1 ponds determined to have caused, or have the potential to cause, groundwater pollution to comply with the pond liner requirements stated in the Pond Specifications section for Tier 2 facilities within **5 years** of regional water board notification.

3) Land Application Specifications

- a. Irrigation water shall be applied to the land application area with distribution uniformity and in a manner that minimizes ponding and allows sufficient dry time between irrigation cycles.
- b. All irrigation water and runoff shall be confined to the land application area and shall not enter any surface waters, surface water drainage course, or stormwater drainage system.
- c. Process solids shall be applied uniformly and incorporated into the soil in a manner that minimizes nuisance conditions.
- d. Process water and process solids shall not be applied to the LAA within **24 hours** of forecasted precipitation with a greater than 50-percent probability of occurring, during precipitation events, or when the ground is saturated.

4) Subsurface Disposal Specifications

- a. Process water shall be discharged to the subsurface disposal area with distribution uniformity and in a manner that allows for sufficient dry time between applications, minimizes clogging in the discharge piping, and prevents wastewater from surfacing at any time.
- b. Process water shall be confined to the subsurface disposal area and shall not enter any surface waters, surface water drainage course, or stormwater drainage system.
- c. The subsurface disposal area shall be managed to prevent disturbance or compaction. Specifically:
 - i. Crops, trees, and other vegetation shall be controlled to prevent damage to the subsurface disposal area.
 - ii. Vehicles, heavy equipment, and large animals shall be excluded from the subsurface disposal area to prevent compaction.
 - iii. The subsurface disposal area shall not be paved, covered in plastic materials, or otherwise covered in a manner or with materials that restrict oxygen transfer.

- iv. Materials or waste shall not be applied in a manner that disturbs, damages, or compacts the subsurface disposal area.
- d. The discharge of treated wastewater from separate process water and domestic wastewater systems may be directed to the same subsurface disposal area if approved by the regional water board and provided the required Tier 2-4 conditions specified in Section D.4.b Discharge Specifications (Tiers 2, 3, and 4), Subsurface Disposal Specifications are met.

D. DISCHARGE SPECIFICATIONS (TIERS 2, 3, AND 4)

1) General Specifications

- a. Salt Control
 - i. The Discharger shall reduce the salinity loading to the process water treatment and disposal systems and the underlying groundwater by implementing good housekeeping practices, source control and waste minimization measures (e.g., solids screening, pressure washing, washwater and chemical reuse), and by minimizing the use of salt-containing and non-biodegradable chemicals.
 - ii. The flow-weighted annual average FDS concentration of the process water discharge from the winery, including process water from outdoor processing areas, measured prior to treatment in a pond, LAA, or SDS is used to determine if the facility is meeting the FDS threshold. The FDS threshold (in mg/L) is equal to the annual average flow-weighted FDS concentration (in mg/L) of the facility source water plus 320 mg/L.
 - a) **Tiers 2 and 3:** If the FDS threshold is exceeded, the Discharger shall submit a Salt Control Plan if directed to do so by the regional water board if site-specific conditions indicate a threat to water quality.
 - b) **Tier 4:** If the FDS threshold is exceeded, the Discharger shall submit a Salt Control Plan.
 - c) In lieu of submitting a Salt Control Plan, Dischargers enrolled in a State Water Board or regional water board accepted sustainability program that contains salt control measures to address discharges in this General Order may implement the sustainability program salt control measures instead. The Discharger shall certify that the required salt control measures have been implemented.
 - (1) **Tiers 3 and 4:** The regional water board may direct Dischargers to submit a Salt Control Plan in addition to implementing the sustainability program measures if site-specific conditions indicate a threat to water quality.
 - d) In lieu of submitting a Salt Control Plan, Dischargers may elect to participate in a regional SNMP and implement the regional SNMP instead. The regional SNMP must contain salt control measures to address discharges in this General Order. The Discharger shall certify that the required salt control measures have been implemented.

- (1) **Tiers 3 and 4:** The regional water board may direct Dischargers to submit a Salt Control Plan in addition to complying with a regional SNMP program if site-specific conditions indicate a threat to water quality.
- b. The Discharger shall ensure no waste constituent is released, discharged, or placed where it can be released or discharged in a concentration or in a mass that causes a violation of the Groundwater Limitations Section of this General Order.
 - c. The Discharger shall ensure all winery waste and winery waste processing, loading, storage, treatment, disposal, and reuse areas are properly managed and controlled with spill prevention, mitigation, and cleanup measures.
 - d. The Discharger shall ensure all waste treatment, storage, and disposal will not create or threaten to create a condition of pollution, contamination, or nuisance as defined by Water Code section 13050.
 - e. The Discharger shall ensure all discharges will occur within the permitted waste treatment and containment areas or structures, LAAs, and SDSs, in the manner specified in the NOI and/or technical report and approved by the regional water board.
 - f. The Discharger shall ensure all systems and equipment are operated to optimize the quality of the discharge.
 - g. The Discharger shall ensure all objectionable odors are not perceivable beyond the limits of the property at an intensity that creates or threatens to create nuisance conditions.
 - h. The Discharger shall ensure all structural conveyance, treatment, storage, reuse, and disposal systems are designed, sited, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency. For design purposes, the most recent Federal Emergency Management Agency (FEMA) approved 100-year base flood elevations may be used.
 - i. The Discharger shall ensure stormwater that has contacted winery waste, processing equipment, or processing areas is managed as process water in accordance with this General Order.
 - j. The Discharger shall adhere to the following setbacks (minimum horizontal distances) unless a different setback is approved by the regional water board based on site-specific conditions or except as otherwise required (e.g., California Plumbing Code, county or local agency requirements, California Well Standards, part II, section 8).
 - i. Waste shall not be discharged within 50 feet of any water supply well.
 - ii. Waste shall not be discharged within 50 feet of surface waters or surface water drainage courses.
 - iii. Waste shall not be discharged within 25 feet of the property line, except for land application areas where a 5 foot setback from the property line shall apply, provided the irrigation system is managed to prevent discharges offsite.

- k. The Discharger shall manage all ponds, ditches, and other open containment structures to prevent breeding of mosquitoes. Specifically:
 - i. An erosion control program shall be implemented to minimize the formation of small coves and irregularities around the perimeter of the water surface.
 - ii. Weeds shall be minimized by controlling water depth, harvesting, or applying herbicides, if necessary.
 - iii. Dead algae, vegetation, and debris shall not accumulate on the water surface.
 - iv. Mosquito breeding shall be minimized by consulting and coordinating with the local mosquito abatement or vector control district and supplementing the above measures as needed.

2) Process Water Pond Specifications

- a. General Process Water Pond Specifications
 - i. The new construction or rehabilitation of berms or levees (excluding internal berms that separate ponds or control the flow of water within a process water pond) shall be designed and constructed under the supervision of a California Registered Civil Engineer or Certified Engineering Geologist.
 - ii. The base of the process water ponds (hereafter referred to as ponds) shall be at least five feet above the seasonal high water table. A smaller separation (minimum two feet) may be approved by the regional water board if compliance with the five foot separation is infeasible and site-specific conditions indicate the smaller separation will not pose a threat to water quality; technical justification shall be provided by the Discharger.
 - iii. The ponds shall be operated and maintained to protect the integrity of containment dams and berms and prevent overtopping and/or structural failure.
 - iv. The ponds shall be managed to prevent damage from burrowing animals that may compromise pond containment integrity. Damage to pond containment shall be repaired as soon as possible.
 - v. The upper one foot of water in the ponds shall have a DO concentration of at least 1.0 mg/L to minimize the potential for objectionable odors.
 - vi. The operating freeboard in a pond shall be a minimum of two feet, as measured vertically from the lowest point of overflow. The Discharger shall install and maintain a permanent staff gauge with calibration marks (or other equivalent measuring method) that clearly show the water level in each pond to enable freeboard determination.
 - vii. The ponds shall have sufficient capacity to accommodate process water, design seasonal precipitation, and ancillary inflow and infiltration, and maintain adequate freeboard. Design seasonal precipitation shall be based on the total annual precipitation for the specified storm standard, distributed monthly in accordance

with historical rainfall patterns. The Discharger shall ensure ponds have available capacity necessary to comply with the pond capacity requirements in this section by **September 1** of each year to minimize the potential for spills during peak flows from crush season and precipitation.

viii. The ponds shall be lined or shown to be structurally sound and operating with minimal leaking.

b. New or Expanding Pond Specifications

i. Capacity – The Discharger shall demonstrate sufficient pond capacity using normal year and wet year water balances. The water balances shall include relevant information, such as monthly rainfall and process water flows, crop evapotranspiration, irrigation factors (e.g., leaching fraction, irrigation efficiency), and operational factors (e.g., freeboard), that served as the basis for calculations. New or expanding ponds shall be designed to one of the following standards:

- a) The pond shall be sized to meet a 100-year, 24-hour peak storm design standard.
- b) The pond shall be sized to meet a 25-year, 24-hour peak storm design standard, at a minimum, if approved by the regional water board based on a technical report submitted by the Discharger that describes how the process water system will be operated and managed under 100-year, 24-hour peak storm conditions (e.g., considering rainfall, pond water levels, site drainage, and site run on and runoff) to prevent process water spills.

ii. Hydraulic conductivity – The Discharger shall ensure new or expanding ponds are designed, constructed, and maintained to meet a hydraulic conductivity standard of 1×10^{-6} cm/s or less using one of the following:

- a) A compacted clay liner, with a minimum clay thickness of two feet.
- b) A Portland cement concrete liner, designed to minimize cracking and infiltration.
- c) A synthetic liner, consisting of a 40 thousandths of an inch (mil) synthetic geomembrane or a 60-mil high-density polyethylene liner installed over a prepared base or a secondary clay or concrete liner.
- d) An equivalent engineered alternative specified in the NOI and/or technical report approved by the regional water board.

c. Existing Pond Specifications

i. Capacity – The Discharger shall comply with the following requirements to continue operating an existing pond. The regional water board may require ponds that are determined to have had, or have the potential for, frequent or significant spills to comply with the pond capacity requirements in this section within **3 years** of regional water board notification.

- a) **Tier 2:** The Discharger may continue to operate an existing pond at its present size provided all other requirements of this General Order are met. The existing

pond capacity shall be provided in the NOI and/or technical report with accompanying relevant information used to determine the capacity.

- b) **Tiers 3 and 4:** The Discharger shall demonstrate that the present pond capacity meets one of the peak storm design standards described in this section for new or expanding ponds, including obtaining regional water board approval to operate a smaller pond.
- ii. Hydraulic conductivity – The Discharger shall comply with the following requirements to continue pond operations. The regional water board may require ponds determined to have caused, or have the potential to cause, groundwater pollution to comply with the pond liner requirements in this section within **5 years** of regional water board notification.
 - a) **Tier 2:** The Discharger may continue to operate an existing pond in its present lined or unlined state provided all other requirements of this General Order are met. Details of the present liner status and liner characteristics, as applicable, shall be provided in the NOI and/or technical report with accompanying relevant information.
 - (1) If it is determined that a Tier 2 facility with an unlined pond poses a higher threat to water quality (e.g., it is located within a large concentration of facilities with unlined ponds), the regional water board may require the Discharger to comply with the pond liner requirements in this section within **5 years** of regional water board notification.
 - b) **Tiers 3 and 4:** The Discharger shall do one of the following:
 - (1) If the existing pond liner was installed no more than **10 years** ago, demonstrate that the liner is equivalent to the design standards in this section using pond liner design and construction details. The Discharger shall provide supporting documentation (e.g., specifications, drawings) prepared by or under the supervision of an appropriately qualified professional in accordance with the California Business and Professions Code (BPC) (BPC, sections 6735, 7835, and 7835.1) and, if applicable, the regional water board approval for use of an engineered pond liner alternative. The Discharger shall describe how the present liner meets the hydraulic conductivity standard and if liner modifications or repairs are needed to continue pond operations.
 - (2) Demonstrate using a performance test (e.g., seepage/leak test, water balance, liner leak detection testing, or geologic evaluation) that the existing pond is operating with minimal leaking and meets the hydraulic conductivity standard. The Discharger shall describe the performance test methodology, pond liner characteristics and conditions, visual observations, test results and conclusions, and if liner modifications or repairs are needed to continue pond operations. The performance test, technical report of results, and liner modifications may be required to be completed by or under the supervision

of an appropriately qualified professional in accordance with the California Business and Professions Code (BPC, sections 6735, 7835, and 7835.1).

- (3) Demonstrate that the existing pond is operating with minimal percolation and has not caused significant groundwater degradation using at least **5 years** of groundwater data from an active groundwater monitoring well network designed for the pond. The Discharger shall describe how the groundwater monitoring data indicate that the pond liner is suitable for continued use and whether monitoring program modifications are needed. Groundwater monitoring at the pond shall continue unless otherwise directed by the regional water board. This groundwater report may be required to be completed by or under the supervision of an appropriately qualified professional in accordance with the California Business and Professions Code (BPC, sections 6735, 7835, and 7835.1).

d. Pond Reporting (New, Expanding, or Existing Ponds)

- i. Pond Capacity Reporting – The Discharger shall submit the relevant information needed to demonstrate compliance with the pond capacity requirements in an NOI and/or technical report to the regional water board for approval. The submittal for existing ponds shall be provided within **1 year** of NOA issuance. For new or expanding ponds, the submittal shall be provided at least **120 days** prior to the start of pond construction.
- ii. Pond Hydraulic Conductivity Reporting – The Discharger shall submit the information and documentation needed to comply with the pond liner requirements in the NOI and/or technical report to the regional water board for approval. The Discharger shall also provide available information for existing ponds, such as liner characteristics (e.g., material, thickness, age, condition), prior inspection results, leak test results, and liner repairs, and other relevant information to determine pond liner integrity and suitability for continued use. The submittal for existing ponds shall be provided within **1 year** of NOA issuance. For new and expanding ponds, the submittal shall be provided at least **120 days** prior to the start of pond liner installation or retrofit.

e. Pond Performance Requirements

- i. **Tiers 3 and 4:** Ponds shall be tested for leaks at least once every **5 years** using the performance test described in this section. A technical report of the evaluation shall be submitted to the regional water board within **90 days** of test completion. This periodic leak testing shall begin **5 years** after NOA issuance, pond liner installation, a previous performance test, or decommissioning of a groundwater monitoring well network at the pond, whichever is later. The performance test, technical report of results, and associated liner modifications or repairs may be required to be completed by or under the supervision of an appropriately qualified professional in accordance with the California Business and Professions Code (BPC, sections 6735, 7835, and 7835.1).

- ii. In lieu of conducting a pond performance test, the performance test requirements may be satisfied using groundwater monitoring data from an onsite, active groundwater monitoring well network designed for the pond to demonstrate that the pond has not caused significant groundwater degradation. This evaluation shall be provided in the next regularly scheduled Annual Report.
- f. Pond Groundwater Monitoring
- i. **Tier 4:** Dischargers shall conduct groundwater monitoring using an onsite monitoring well network designed to assess the potential impact of operating the pond unless the Discharger qualifies for a groundwater monitoring exemption. The installation of any new groundwater monitoring well shall comply with the requirements in the Technical Provisions section.
 - a) Facilities may qualify for a groundwater monitoring exemption provided all of the following criteria are met:
 - (1) The facility pond system total volume is less than 1,000,000 gallons. The pond system total volume is the sum of the design capacities of all onsite process water ponds.
 - (2) The ponds are well managed and operate within the available pond capacities without process water spills (e.g., overtopping the pond, berm failures, flood inundation) and all other requirements of this General Order are met.
 - b) The Discharger shall submit the relevant information (e.g., number and location of ponds, individual pond design capacities, average and maximum operating volumes for each pond, spill compliance record, pond characteristics and operational procedures demonstrating the pond is unlikely to spill) needed to demonstrate that the ponds comply with the exemption criteria in an NOI and/or technical report to the regional water board for approval.
 - (1) For existing ponds, the submittal shall be provided within **180 days** of NOA issuance. However, the intent to request a groundwater monitoring exemption must be clearly stated in the application for General Order coverage and the Discharger must request a temporary postponement of the groundwater monitoring requirements in the MRP for regional water board approval. The temporary postponement can be for no more than **1 year** from NOA issuance unless otherwise stated by the regional water board.
 - (2) For new or expanding ponds, the submittal requesting an exemption shall be provided at the time of application for General Order coverage.
 - c) The groundwater monitoring exemption may be revoked by the regional water board if the facility no longer meets the exemption criteria; the ponds are determined to have had, or have the potential for, frequent or significant spills; or the facility has had frequent or significant General Order violations related to discharges offsite, discharges to surface waters or stormwater drainage

courses, or non-reporting of violations. If the exemption is revoked, the Discharger shall comply with the groundwater monitoring well installation requirements and compliance schedule in the Technical Provisions section.

3) Land Application Specifications

- a. Irrigation water shall be applied to the LAA with distribution uniformity, considering LAA size, site conditions, soil properties, and irrigation method.
- b. Process water and process solids shall not be applied to the LAA within **24 hours** of forecasted precipitation with a greater than 50-percent probability of occurring, during precipitation events, or when the ground is saturated.
- c. Process water shall be applied to the LAA in a manner that allows water to infiltrate within **48 hours**.
- d. Process solids applied to the LAA shall be uniformly distributed and incorporated into the soil within **72 hours**.
- e. All irrigation water and runoff shall be confined to the LAA and shall not enter any surface water drainage course or stormwater drainage system.
- f. Process water shall not be stored in low pressure and unpressurized pipelines, or ditches (e.g., to avoid vectors, odors, and erosion).
- g. **Tier 4:** Dischargers shall conduct groundwater monitoring using an onsite monitoring well network designed to assess the potential impact of applying winery waste to the LAA unless the Discharger qualifies for a groundwater monitoring exemption. The installation of any new groundwater monitoring well shall comply with requirements in the Technical Provisions section.
- i. Facilities may qualify for a groundwater monitoring exemption provided all of the following criteria are met for the siting or area-wide groundwater monitoring option:
 - a) Siting
 - (1) The LAA meets all of the following site conditions:
 - (a) The first encountered groundwater underlying the LAA is at least 25 feet below ground surface.
 - (b) The nearest drinking water well is located 0.5 mile or more from the LAA.
 - (c) The nearest surface water body is located 0.5 mile or more from the LAA.
 - (2) The LAA is well managed and operations comply with the loading limits and all other requirements of this General Order.

b) Area-wide groundwater monitoring

- (1) In lieu of using an approved onsite monitoring well network, the Discharger may elect to:
 - (a) Participate in an existing area-wide monitoring well network approved by the regional water board. The Discharger shall ensure their participating LAAs are well managed and operations comply with the loading limits and all other requirements of this General Order; or
 - (b) Participate in the development of an area-wide monitoring well network to be approved by the regional water board. The Discharger shall ensure their participating LAAs are well managed and operations comply with the loading limits and all other requirements of this General Order.
- (2) The Discharger shall submit the initial request to participate in an existing, or to develop an area-wide monitoring well network per the schedule in this Tier 2, 3, and 4 Land Application Specifications Section. The Discharger shall maintain its participation, including payment of any costs associated with developing or funding of the area-wide network, which may be offset by the incorporation of preexisting wells or monitoring networks as described in this area-wide groundwater monitoring subsection.
- (3) All area-wide monitoring well networks shall meet the Monitoring and Reporting Provisions of this General Order and specifically include the General Order groundwater monitoring constituents and frequency requirements within the MRP and schedule approved by the regional water board upon issuing the Notice of Applicability.
- (4) The Discharger shall ensure the area-wide monitoring well network plan and network(s) adhere to the following specifications:
 - (a) Implement the Technical Specification Section requirements for well installation and reporting of this General Order unless substantially similar specifications are approved by the regional water board.
 - (b) Include appropriate monitoring locations and well screen design to construct a network that effectively evaluates water quality consistent with this General Order and associated MRP. Upgradient and downgradient monitoring wells shall be located and screened at the appropriate intervals to ensure that the impacts to groundwater from winery land application areas are properly characterized.
 - (c) Number, type, and density of monitoring locations to be sampled and other aspects of the monitoring well network shall be dependent upon basin-specific conditions, particularly critical areas of a basin, and input from the regional water board.
 - (d) Water quality data incorporated from preexisting monitoring well networks or the use of preexisting networks meet the General

Specifications of this Section and the groundwater monitoring constituents and frequency within the MRP.

- (5) An area-wide monitoring well network may result in identification of winery constituent impacts to groundwater, which may lead to the review of the monitoring network or Discharger practices. The regional water board retains discretion to review a monitoring network for effectiveness or use.
- ii. The Discharger shall submit the relevant information (e.g., groundwater elevation data, sampling method and locations, sample dates, site map, drinking water well and surface water body locations, loading rate compliance record, LAA characteristics and operational procedures to demonstrate the LAA complies with discharge specifications and is unlikely to discharge offsite) needed to demonstrate that the LAA complies with the exemption criteria in an NOI and/or technical report to the regional water board for approval.
 - a) For existing LAAs, the intent to request a groundwater monitoring exemption must be clearly stated in the application for General Order coverage and the Discharger must request a temporary postponement of the groundwater monitoring requirements in the MRP for regional water board approval. The Discharger shall submit to the regional water board the technical justification demonstrating why an exemption should be granted within **180 days** of NOA issuance. The temporary postponement can be for no more than **1 year** from NOA issuance unless otherwise stated by the regional water board.
 - b) For new or expanding LAAs, the submittal requesting a groundwater monitoring exemption, temporary postponement of the groundwater monitoring requirements in the MRP, and the technical justification demonstrating why an exemption should be granted shall be provided at the time of application for General Order coverage.
 - c) For new, expanding, or existing sites that may not have sufficient LAA operational data to determine loading rates and a compliance record, the intent to request a groundwater monitoring exemption must be clearly stated in the application for General Order coverage and the Discharger must request a temporary postponement of the groundwater monitoring requirements in the MRP for regional water board approval. The Discharger shall submit to the regional water board the technical justification demonstrating why an exemption should be granted within **1 year** of NOA issuance. The temporary postponement can be for no more than **18 months** from NOA issuance unless otherwise stated by the regional water board.
- iii. The groundwater monitoring exemption may be revoked by the regional water board if the facility no longer meets the exemption criteria; LAA operations are determined to have caused, or have the potential to cause, groundwater pollution; or the facility has had frequent or significant General Order violations related to discharges offsite, discharges to surface waters or stormwater drainage courses, or non-reporting of violations. If the exemption is revoked, the Discharger shall

comply with the groundwater monitoring well installation requirements and compliance schedule in the Technical Provisions section.

- h. Dischargers with groundwater monitoring data demonstrating impacts to water quality shall be required, at a minimum, by the regional water board to develop and implement a site-specific Nitrogen Control Plan to assess winery, treatment, and disposal operations and address and mitigate groundwater quality impacts. The Discharger shall certify that the required nitrogen control measures have been implemented.
- i. In lieu of submitting a Nitrogen Control Plan, Dischargers may elect to participate in a regional SNMP and implement the regional SNMP instead. The regional SNMP must contain nitrogen control measures designed to address discharges in this General Order and must also be accepted by the regional water board. The Discharger shall certify that the required nitrogen control measures have been implemented.
- ii. **Tiers 3 and 4:** The regional water board shall direct Dischargers to submit a Nitrogen Control Plan in addition to complying with a regional SNMP and/or sustainability program measures if site-specific conditions indicate a threat to water quality that will not be adequately addressed by those programs.

4) Subsurface Disposal Specifications

- a. Dischargers who exceed the SDS nitrogen limit may be required to prepare a Nitrogen Control Plan to evaluate the site and implement facility improvements to comply with the nitrogen limit.
 - i. **Tier 2:** For effluent limit exceedances:
 - a) Existing SDSs – The Discharger shall submit a Nitrogen Control Plan if the nitrogen limit is exceeded for three consecutive samples and the Discharger is directed to do so by the regional water board if site-specific conditions indicate a threat to water quality.
 - b) New or expanding SDSs – The Discharger shall submit a Nitrogen Control Plan if the nitrogen limit is exceeded for three consecutive samples.
 - ii. **Tiers 3 and 4:** The Discharger shall submit a Nitrogen Control Plan if the nitrogen limit is exceeded for three consecutive samples.
 - iii. In lieu of submitting a Nitrogen Control Plan, Dischargers may elect to participate in a regional SNMP and implement the regional SNMP instead. The regional SNMP must contain nitrogen control measures designed to address discharges in this General Order and must also be accepted by the regional water board. The Discharger shall certify that the required nitrogen control measures have been implemented.
 - a) **Tiers 3 and 4:** The regional water board shall direct Dischargers to submit a Nitrogen Control Plan in addition to complying with a regional SNMP program if

site-specific conditions indicate a threat to water quality that will not be adequately addressed by the SNMP program.

- b. Discharge of treated wastewater from separate process water and domestic wastewater systems may be directed to the same subsurface disposal area if approved by the regional water board and provided the required conditions are met.
 - i. The Discharger shall comply with all of the following conditions:
 - a) The process water is treated separately from domestic wastewater. Untreated process water and domestic wastewater are not commingled or discharged to the subsurface disposal area.
 - b) The process water system and subsurface disposal area comply with all requirements of this General Order.
 - c) The domestic wastewater system is regulated under a separate permit through the regional water board or appropriate local agency.
 - ii. The Discharger shall provide technical justification to the regional water board for approval to demonstrate that the subsurface disposal area is appropriately sized, designed, and operated to receive and treat the separately-treated waste streams from the process water system and the domestic wastewater system.
 - a) To upgrade an existing commingled domestic wastewater and process water treatment system, the Discharger shall submit the relevant information in accordance with the compliance timeframe provided in the Technical Provisions section. New or expanding commingled domestic wastewater and process water systems are not permitted under this General Order.
 - b) Facilities that choose to install a new, or upgrade an existing, separate process water system, separate domestic wastewater system, and/or subsurface disposal area to receive the treated waste streams from the separately-treated process water and domestic wastewater systems shall submit the relevant information for regional water board approval at least **120 days** prior to the start of construction. The facility changes shall be completed within **180 days** of regional water board approval. The Discharger shall describe the completed changes and provide a copy of the domestic wastewater permit in the next regularly scheduled Annual Report.
- c. Discharge of waste to the subsurface disposal area shall be in a manner that precludes the creation of pollution, contamination, or nuisance and minimizes infiltration to groundwater.
- d. The SDS treatment, distribution, and disposal area shall be properly operated and maintained to optimize the effectiveness of the system.

- e. The lowest points of the SDS distribution and disposal systems, and their appurtenances shall be sited at least five feet above the seasonal high water table, as measured in wet weather conditions during disposal field site evaluation activities. A smaller separation (minimum two feet) may be allowed with regional water board approval if compliance with the five foot separation is infeasible and site-specific conditions indicate the smaller separation will not pose a threat to water quality; technical justification shall be provided by the Discharger.
- f. The subsurface disposal area shall be sized, designed, and operated to receive and treat the peak process water volume and have sufficient reserve area to provide for 100 percent redundancy to allow for continued operation during maintenance or in case of system failure.
- g. For subsurface disposal areas with regional water board approval to receive the separately-treated process water and domestic wastewater, the subsurface disposal area shall be sized, designed, and operated to receive and treat the peak process water volume and peak domestic wastewater volume and have sufficient reserve area to provide for 100 percent redundancy to allow for continued operation during maintenance or in case of system failure.
- h. The subsurface disposal area shall consist of multiple fields or subsections to allow discharge to alternating sections of the disposal area. Process water shall be discharged in a manner that allows for sufficient wet and dry times to maintain the assimilative capacity of the soil and preclude the creation of nuisance conditions.
- i. The SDS dosing system and discharge piping shall be designed and operated to minimize clogging and constructed with cleanouts to flush the system.
- j. Process water shall be discharged to the subsurface disposal area with distribution uniformity, considering site conditions, soil properties, and distribution method.
- k. Process water shall not be discharged to the subsurface disposal area in a manner that allows wastewater to surface at any time.
- l. All process water shall be confined to the subsurface disposal area and shall not enter any surface water drainage course or stormwater drainage system.
- m. The subsurface disposal area shall be managed to prevent disturbance or compaction. Specifically:
 - i. Crops, trees, and other vegetation shall be controlled to prevent damage to the subsurface disposal area.
 - ii. Vehicles, heavy equipment, and large animals shall be excluded from the subsurface disposal area to prevent compaction.
 - iii. The subsurface disposal area shall not be paved, covered in plastic materials, or otherwise covered in a manner or with materials that restrict oxygen transfer.
 - iv. Materials or waste shall not be applied in a manner that disturbs, damages, or compacts the subsurface disposal area.

- n. Settling tanks shall be serviced to remove accumulated solids (sludge and scum) as recommended by the manufacturer, as often as needed to maintain optimal system operations, or when any of the following conditions exist:
 - i. The combined thickness of sludge and scum exceeds one-third of the liquid depth of the tank's first compartment.
 - ii. The scum layer is within 3 inches of the outlet device.
 - iii. The sludge layer is within 8 inches of the outlet device.
 - iv. It is determined to be necessary in accordance with manufacturer recommendations.
- o. **Tier 4:** Dischargers shall conduct groundwater monitoring as specified in the MRP using an onsite monitoring well network designed to assess the potential impact of discharging process water to the SDS. The installation of any new groundwater monitoring well shall comply with requirements in the Technical Provisions section.

E. SOLIDS SPECIFICATIONS

1. Collected process solids shall be controlled and contained in a manner that minimizes leachate formation and minimizes infiltration of waste constituents into soils in a mass or concentration that will violate the Groundwater Limitations of this General Order. At a minimum:
 - a. Stored 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 runoff or runoff (e.g., bermed or graded to direct stormwater away from stockpiles) to minimize leachate formation.
 - b. 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. Onsite composting and reuse of process solids are encouraged.
 - c. 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).
2. Free draining liquid from process solids shall be managed as process water in accordance with this General Order.
3. Process solids shall be removed from sumps, tanks, ponds, and other similar systems as needed to maintain sufficient operational capacity and optimal system operations.
4. Collected process solids removed from the liquid waste, generated from crushing or processing activities, or removed from ponds, storage tanks, and SDS settling tanks that will not and/or cannot be used agronomically onsite shall be properly reused or disposed of offsite in a manner consistent with Title 27, division 2.

F. GROUNDWATER LIMITATIONS

1. Dischargers are required to comply with all applicable Basin Plan requirements, including any prohibitions and water quality objectives governing the discharge. In the event of a conflict between the requirements of this General Order and the Basin Plan, the more stringent requirement prevails unless otherwise specified in this General Order.
2. Release of waste constituents from any treatment, storage, or disposal component associated with the winery, ponds, LAA, or SDS shall not adversely affect groundwater beneficial uses or cause or contribute to an exceedance of applicable Basin Plan water quality objectives.

G. PROVISIONS

1) Technical Provisions

- a. **For existing facilities:** Within **90 days** of NOA issuance, the Discharger shall complete facility upgrades to ensure facility and treatment infrastructure are capable of complying with the sampling and monitoring requirements of the MRP. Monitoring as required in the MRP shall commence once upgrades are complete.
- b. **Tiers 2, 3, and 4:** Dischargers with existing facilities shall implement the following BPTC measures within the noted compliance timeframes. Dischargers with new or expanding facilities shall implement the following BPTC measures at the onset of facility operations; the compliance timeframes are not applicable unless specifically authorized by the regional water board.
 - i. Good housekeeping – Within **90 days** of NOA issuance, implement good housekeeping practices, such as employing dry sweeping instead of wet rinses for cleaning facility surfaces, using water conservation devices such as auto-shutoff nozzles, directing pomace and similar waste to a solids collection system instead of down process water drains, and initiating an employee education program on best practices.
 - ii. Source control – Within **90 days** of NOA issuance, isolate water softener regeneration brine and properly dispose of offsite instead of to the process water system.
 - iii. Solids management – Within **180 days** of NOA issuance, implement solids management practices to screen, filter, or otherwise minimize the amount of process solids discharged to the process water systems.
 - iv. Sodium substitution – Within **180 days** of NOA issuance, replace sodium-based chemicals with potassium-based or other non-sodium-based chemicals unless technologically or economically infeasible.
 - v. Chemical reduction – Within **180 days** of NOA issuance, implement measures to minimize chemical use, such as recovering and reusing chemical solutions.

- c. **Tiers 3 and 4:** Within **180 days** of NOA issuance, the Discharger shall prepare a Spill Prevention and Emergency Response Plan that describes onsite design features and operation and maintenance activities used to prevent the accidental release of process water. The plan shall also describe spill response and mitigation measures used to minimize the potential environmental impact. The Discharger shall have trained staff onsite familiar with the plan and its implementation. The plan shall be maintained onsite and made available upon request by the regional water board.
- d. **Tiers 2, 3, and 4:** Within **3 years** of NOA issuance, a Discharger operating an existing SDS shall have completed the necessary system changes to comply with the daily discharge flow limit stated in the Effluent Limitations section.
- e. Within **3 years** of NOA issuance, a Discharger operating an existing commingled domestic wastewater and process water treatment system shall have completed one of the following:
 - i. Obtained separate coverage from the regional water board or the local agency if accepted by the regional water board to regulate the commingled wastewater.
 - ii. Modified the system to manage the process water separately so that it is no longer commingled with domestic wastewater. The resulting process water-only system will continue to be regulated under this General Order. At least **120 days** prior to changing the existing commingled system, the Discharger shall submit a written plan to the regional water board describing the planned changes. The Discharger shall describe the completed changes in the next regularly scheduled Annual Report.
 - iii. Modified the system to treat the process water separately from domestic wastewater and also modified the subsurface disposal area so that it is sized, designed, and operated to receive and treat the waste streams from the separately-treated process water and domestic wastewater. At least **120 days** prior to changing the existing commingled system and subsurface disposal area, the Discharger shall submit a written plan of the proposed changes and the technical justification described in the Subsurface Disposal Specifications section to the regional water board for approval. The facility changes shall be completed within **180 days** of regional water board approval. The Discharger shall describe the completed changes and provide a copy of the permit authorizing the domestic wastewater system in the next regularly scheduled Annual Report.
- f. If required to prepare a Salt Control Plan, the Discharger shall submit the plan within **1 year** of exceeding the FDS threshold or of receiving a regional water board notice to prepare a plan.
 - i. The Salt Control Plan is an evaluation of the winery and land treatment and disposal operations. The plan shall identify sources of salt in the process water, evaluate existing salt control measures and their effectiveness, discuss the feasibility of meeting the FDS threshold, and identify improvements and an implementation schedule to minimize the salt loading to land. At a minimum, the plan shall include the applicable BPTCs described in the Salt Control section of this

General Order. The Salt Control Plan and/or its associated facility changes may be required to be prepared or implemented by or under the supervision of an appropriately qualified professional in accordance with the California Business and Professions Code (BPC, sections 6735, 7835, and 7835.1). The proposed changes shall be completed within **1 year** of a complete Salt Control Plan being accepted by the regional water board. The finished work shall be described in the next regularly scheduled Annual Report.

- ii. Within **90 days** of exceeding the FDS threshold or receiving regional water board notification to prepare a Salt Control Plan, the Discharger shall notify the regional water board of the intent to enroll in a sustainability program and/or comply with a regional SNMP in lieu of submitting a Salt Control Plan, submit the relevant information necessary to demonstrate that the sustainability program and/or regional SNMP contains appropriate salt control measures for the facility, and submit a written plan of the facility changes necessary to implement the sustainability program and/or regional SNMP measures. The proposed changes shall be completed within **1 year** of providing the notification of intent to the regional water board. The finished work shall be described in the next regularly scheduled Annual Report, including a certification that the required measures have been, and will continue to be, implemented.
- g. If required to prepare a Nitrogen Control Plan, the Discharger shall submit the plan within **1 year** of exceeding the SDS effluent nitrogen limit, receiving groundwater monitoring data indicating groundwater impacts at the LAA, or of receiving regional water board notice to prepare a plan.
 - i. The Nitrogen Control Plan is an evaluation of the winery and land treatment and disposal operations. The plan shall identify sources of nitrogen in the process water, evaluate existing nitrogen treatment measures and their effectiveness, and identify facility, treatment, and/or disposal improvements and an implementation schedule to meet the SDS nitrogen limit and/or address and reduce groundwater quality impacts at the LAA identified from groundwater monitoring. The Nitrogen Control Plan and/or its associated facility changes may be required to be completed or conducted by or under the supervision of an appropriately qualified professional in accordance with the California Business and Professions Code (BPC, sections 6735, 7835, and 7835.1). The proposed changes shall be completed within **1 year** of a complete Nitrogen Control Plan being accepted by the regional water board. The Discharger shall describe the completed changes in the next regularly scheduled Annual Report.
 - ii. Within **90 days** of exceeding the SDS effluent nitrogen limit, submitting a Semi-annual Monitoring Report with groundwater monitoring data demonstrating water quality impacts at the LAA, or of receiving regional water board notice to prepare a Nitrogen Control Plan, the Discharger shall notify the regional water board of the intent to enroll in a sustainability program and/or comply with a regional SNMP in lieu of submitting a Nitrogen Control Plan, submit the relevant information necessary to demonstrate that the sustainability program and/or

regional SNMP contains appropriate nitrogen control measures for the facility, and submit a written plan of the facility changes necessary to implement the sustainability program and/or regional SNMP measures. The proposed changes shall be completed within **1 year** of providing the notification of intent to the regional water board. The finished work shall be described in the next regularly scheduled Annual Report, including a certification that the required measures have been, and will continue to be, implemented.

- h. **Tier 4:** The Discharger shall comply with the following if required to install groundwater monitoring wells at the LAA, subsurface disposal area, and/or process water pond. The Monitoring Well Installation Work Plan, Groundwater Sampling and Analysis Plan, and Monitoring Well Installation Report shall be prepared by, and the well installation work shall be conducted by, or under the supervision of, a qualified California Registered Civil Engineer or Geologist.
- i. Within **180 days** of NOA issuance or regional water board notification, submit a Monitoring Well Installation Work Plan (work plan) and a Groundwater Sampling and Analysis Plan (SAP) for approval.
 - a) The work plan shall describe the upgradient and downgradient wells necessary to evaluate changes in groundwater conditions.
 - b) The work plan shall contain site information, well locations and rationale, drilling and installation activities, monitoring well design, well development details, well survey details, a soil sampling plan (if appropriate), and a schedule for completing the work. All wells shall comply with the appropriate standards as described in *California Well Standards, Bulletins 74-81 (December 1981) and 74-90 (June 1991)*, *Water Well Standards: State of California Bulletin 94-81*, any subsequent revisions, and any more stringent standards adopted by the local agency pursuant to Water Code section 13801, unless deviation is approved by the regional water board or local agency.
 - c) The SAP shall contain the groundwater sampling plan, standard operating procedures for equipment decontamination, well purging, and water level measurements, analytical methods and reporting limits, sampling techniques, sample handling and transport, and a chain of custody example.
- ii. Within **180 days** of work plan approval, complete well installation and commence groundwater monitoring in accordance with the MRP.
- iii. Within **90 days** of well installation, submit a Monitoring Well Installation Report that contains well drilling details, description of soils encountered, and boring logs; well location and construction details; well development details; well survey results; sample collection details; field and analytical data results; field notes; and, where required, county issued well construction permits. The report shall also describe and justify any deviations from the approved work plan. The Discharger shall also submit Well Completion Reports as defined in Water Code section 13751 under separate cover to the California Department of Water Resources.

2) Monitoring Provisions

- a. The Discharger shall comply with the MRP issued with the NOA and with any revisions thereto as approved by the regional water board. A model MRP is provided in Attachment G, which is hereby attached and made a part of this General Order. When issuing the NOA, the regional water board may modify the model MRP as appropriate based on site-specific conditions. The Discharger shall submit self-monitoring reports no later than the submittal dates specified in the MRP.
- b. The Discharger shall report results of any monitoring done more frequently than required by the MRP in the next regularly scheduled monitoring report. Values obtained through additional monitoring shall be used in calculations as appropriate.
- c. The Discharger shall report all noncompliance issues in a Compliance Letter and in the next regularly scheduled monitoring report in addition to any other reporting or notification requirements.
- d. The Discharger shall furnish, within a reasonable time, all information requested by the regional water board to determine whether cause exists for modifying, revoking, reissuing, or terminating Discharger coverage under this General Order.
- e. The Discharger shall retain records of all monitoring data and information, including calibration and maintenance records, original strip chart recordings of continuous monitoring instrumentation, copies of all reports required by this General Order, and records of all data used to complete the application for this General Order. Records shall be maintained for a minimum of **3 years** from the date of the sample, measurement, report, or application. This period may be extended during any unresolved litigation regarding this discharge or when requested by the regional water board. The Discharger shall furnish, upon request, to the regional water board copies of records required to be kept by this General Order.
- f. All monitoring and analysis instruments and devices used by the Discharger to fulfill the prescribed MRP shall be properly maintained and calibrated as recommended by the manufacturer to ensure their continued accuracy.

3) Reporting Provisions

- a. The Discharger shall notify the regional water board (via telephone or email) within **24 hours** from the time the Discharger has knowledge of a violation of this General Order that has occurred, or has a reason to believe that a violation may occur, due to: 1) maintenance work, power failure, or breakdown of process water system equipment, 2) accidents caused by human error or negligence, or 3) other causes such as acts of nature. The Discharger shall also notify the regional water board within **24 hours** in the event of a process water containment failure, a spill or unauthorized discharge. A Discharger causing or permitting any hazardous substance or sewage to be discharged in or on any waters of the state or discharged or deposited where it is, or probably will be, discharged in or on any waters of the state is required

to notify [California Office of Emergency Services](https://www.caloes.ca.gov/) <<https://www.caloes.ca.gov/>> (Water Code section 13271).

- i. Current regional water board office phone numbers can be found on the NOA or on the Regional Water Board Directory webpage:
<http://www.waterboards.ca.gov/about_us/contact_us/rwqcbcs_directory.shtml>
 - ii. The Discharger shall submit written notification to the regional water board within **15 days** of the incident, unless otherwise directed by the regional water board. The written notification shall include the date, time, pertinent information describing the nature and cause of the noncompliance, measures taken to correct the problem and to prevent recurrence, and a timeline for corrective actions.
- b. 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 plans and reports specified herein that contain work plans for investigations and studies, that describe the conduct of investigations and studies, or that contain technical conclusions and recommendations concerning engineering or geologic evaluations or interpretations shall be prepared by or under the direction of appropriately qualified professionals (e.g., California Registered Civil Engineer, Professional Geologist, or other registered certified specialty geologist), even if not explicitly stated. In addition, the licensee must sign and provide their registration number and stamp on the submitted plan or report.
- c. The NOI and any technical or monitoring report submitted to comply with this General Order shall be signed as follows:
- i. For a corporation: by a principal executive officer of at least the level of senior vice president.
 - ii. For a partnership or sole proprietorship: by a general partner or the proprietor.
 - iii. For a municipality, state, federal, or other public agency: by either a principal executive officer or a ranking elected or appointed official.
 - iv. For a limited liability company (LLC): either a member or manager given signing authority by the operating agreement of the LLC.
 - v. A duly authorized representative of a person described above if all of the following are completed:
 - a) The authorization is made in writing by a person described above.
 - b) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as a facility manager, superintendent, or position of equivalent responsibility. A duly authorized representative may thus be a named individual or any individual occupying a named position.
 - c) The written authorization is submitted to the regional water board.

- d. Any person signing an NOI, any technical or monitoring report, or technical document shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

- e. The Discharger shall electronically submit a copy of each monitoring report and any other reports required by this General Order to the appropriate regional water board as directed in the NOA.

4) Standard Provisions

- a. Bypass (the intentional diversion of waste streams from any portion of a treatment system) is prohibited. The regional water board may take enforcement action against the Discharger for bypass unless:
 - i. Unavoidable and/or Unscheduled Bypass
 - a) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage. (Severe property damage means substantial physical damage to property, damage to the treatment systems that causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production), and
 - b) There were no feasible alternatives to bypass, such as the use of auxiliary treatment systems or retention of untreated waste. This condition is not satisfied if adequate backup equipment or winery process water storage systems should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that would otherwise occur during normal periods of equipment downtime or preventive maintenance; or
 - ii. Scheduled Bypass
 - a) Bypass is required for essential maintenance to ensure efficient operation,
 - b) Groundwater limitations are not exceeded,
 - c) The Discharger notifies the regional water board **10 days** in advance, and
 - d) The prohibition against discharge to surface water is not violated.

- b. A Discharger that wishes to establish the affirmative defense of an upset in an action brought for noncompliance shall demonstrate, through properly signed, contemporaneous operating logs, or other evidence, that all the following is true:
 - i. An upset occurred and the cause(s) can be identified.
 - ii. The winery process water treatment system was being properly operated at the time of the upset.
 - iii. The Discharger submitted notice of the upset as required in Reporting Provisions section.
 - iv. The Discharger complied with any remedial measures required by this General Order, the NOA, or direction from the regional water board. In any enforcement proceeding, the Discharger seeking to establish the occurrence of an upset has the burden of proof.
- c. The prohibitions, requirements, limitations, and provisions of this General Order are severable. If any provision of this General Order is held invalid, the remainder of this General Order shall not be affected.
- d. A copy of this General Order and the facility NOA, including the MRP, shall be kept at the facility for reference by operating personnel. Key operating personnel shall be familiar with its contents.
- e. The Discharger shall comply with all conditions of this General Order, including timely submittal of all technical and monitoring reports and implementation of required BPTCs and facility modifications. Any noncompliance with this General Order constitutes a violation of the Water Code and may be grounds for enforcement action.
- f. If, in the opinion of the State Water Board or regional water board, the Discharger fails to comply with provisions of this General Order, the State Water Board or regional water board may refer this matter to the Attorney General for judicial enforcement, issue a complaint for administrative civil liability, or take other enforcement actions. Failure to comply with this General Order may result in significant civil liabilities and criminal penalties provided by the Porter-Cologne Water Quality Control Act. The State Water Board and regional water boards reserve their right to take any enforcement actions authorized by law.
- g. The State Water Board will review this General Order periodically and will revise requirements when necessary.
- h. After notice and opportunity for a hearing, coverage of this General Order may be terminated or modified for cause, for any of the following:
 - i. Violation of any of the terms or conditions contained in this General Order.
 - ii. Obtaining this General Order by misrepresentation, or failure to fully disclose all relevant facts.
 - iii. A change in any condition that results in either a temporary or permanent need to reduce or eliminate the authorized discharge.

- iv. A material change in the character, location, or volume of discharge.
- i. The Discharger shall promptly report to the regional water board any material change or proposed change in the character, location, or volume of the discharge. The regional water board may require the Discharger to submit an NOI and/or technical report to address the change.
- j. At least **120 days** prior to termination or expiration of any lease, contract, or agreement involving disposal, recycling, or reuse areas used to justify the capacity authorized herein and assure compliance with this General Order, the Discharger shall notify the regional water board in writing describing the situation and the measures that have been, or are being, taken to assure full compliance with this General Order and NOA.
- k. Except for material determined to be confidential in accordance with California law and regulations, all reports prepared in accordance with terms of this General Order will be available for public inspection at the regional water board offices. Data on waste discharges, water quality, geology, and hydrogeology are not considered confidential.
- l. The Discharger shall take all reasonable steps to minimize any adverse impact to waters of the state resulting from noncompliance with this General Order. Such steps shall include accelerated or additional monitoring as necessary to determine the nature and impact of the noncompliance.
- m. The Discharger shall maintain in good working order, and operate as efficiently as possible, any facility, treatment and control system, or monitoring device installed to achieve compliance with this General Order and the NOA. Proper operation and maintenance also include adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup 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 General Order.
- n. The Discharger shall employ safeguards to prevent loss of control over wastes for any electrically operated equipment at the site, where the failure would cause loss of control or containment of waste materials, or a violation of this General Order. Such safeguards may include alternate power sources, standby generators, retention capacity, operating procedures, or other means.
- o. The Discharger shall permit representatives of the State Water Board, regional water board, and local oversight agencies, upon presentation of proper credentials, to:
 - (a) enter premises where wastes are treated, stored, or disposed of or where records are kept, (b) copy any records required to be kept under the terms of this General Order, (c) inspect monitoring equipment required by this General Order, and (d) sample, photograph, and video record any discharge, waste, treatment or disposal system, or monitoring device.
- p. It shall not be a defense for a Discharger in an enforcement action that it would have been necessary to halt or reduce its activity to maintain compliance with conditions of this General Order.

- q. In the event of any change in control or ownership of the winery or process water disposal areas, the Discharger shall immediately notify the succeeding owner or operator of the existence of this General Order by letter, a copy of which shall be immediately forwarded to the regional water board.
- r. To assume operation as Discharger under this General Order, the succeeding owner or operator shall submit an NOI to the regional water board requesting transfer of General Order coverage at least **90 days** before commencing operation of the facility. The request shall contain a statement that complies with the signatory paragraph of the Reporting Provisions section and state that the new owner or operator assumes full responsibility for compliance with this General Order. Failure to submit the request shall be considered a discharge without requirements and a violation of the California Water Code. The transfer request shall be submitted to the regional water board for consideration. The regional water board will issue an NOA when coverage of this General Order has been authorized for the new owner or operator.
- s. The Discharger shall pay an annual fee to the State Water Board in accordance with the fee schedule listed in California Code of Regulations, title 23, section 2200. Fees are based on threat to water quality and complexity ratings. The fee schedule is available at the [State Water Board fees website](https://www.waterboards.ca.gov/resources/fees/):
<<https://www.waterboards.ca.gov/resources/fees/>>
 - i. Reduced fees may be available for Dischargers enrolled in a certified sustainability program accepted by the State Water Board or regional water board.
 - ii. Reduced fees may be available for Dischargers enrolled in a Local Agency Oversight Program. Such Dischargers are responsible for submitting fees to the State Water Board and any fees required by the local agency.

CERTIFICATION

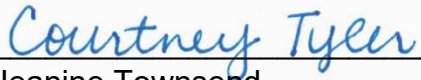
I, Jeanine Townsend, Clerk to the Board, do hereby certify that this General Order with all its attachments is a full, true, and correct copy of a General Order adopted by the State Water Board on January 20, 2021.

AYE: Chair E. Joaquin Esquivel
Vice Chair Dorene D'Adamo
Board Member Tam M. Doduc
Board Member Sean Maguire
Board Member Laurel Firestone

NAY: None

ABSENT: None

ABSTAIN: None

 for
Jeanine Townsend
Clerk to the Board

STATE WATER BOARD
GENERAL WASTE DISCHARGE REQUIREMENTS FOR
WINERY PROCESS WATER

ATTACHMENT A
GLOSSARY

24-hour composite	Samples shall be a flow-proportioned or time-proportioned composite consisting of at least eight aliquots collected within 24 hours. Collected using automated or manual composite methods and standard collection practices.
Agronomic rate	The rate of application of nutrients in amounts necessary to satisfy the plant nutrient demand (crop uptake) while minimizing the movement of nutrients below the plant root zone, considering the crop, soil, climate, irrigation method and efficiency, leaching fraction, and factors that impact plant available nitrogen (e.g., nitrogen loss from denitrification, volatilization, and soil storage). Application at an agronomic rate must account for nutrient loading from all sources, e.g., process water, supplemental water, process solids, fertilizers, compost, and soil amendments.
Annually	Samples shall be collected at least once per calendar year. Unless otherwise specified or approved, samples shall be collected in October.
Bi-weekly	Samples shall be collected at least once every two weeks.
Bypass	Intentional diversion of waste from any portion of a treatment system.
Continuous	Specified parameter shall be measured by a meter continuously.
Daily	Samples shall be collected at least once every day.
Day	Calendar day.
Existing	Facility or system was in operation on or before the adoption date of this General Order.
FDS threshold	The FDS threshold (measured in mg/L) is equal to the annual average FDS concentration (measured in mg/L) of the facility source water plus 320 mg/L. An exceedance of the FDS threshold is not a violation of this General Order, however this General Order requires the Discharger to submit a Salt Control Plan or implement salt control BPTCs in response to non-compliance with the FDS threshold.

Flow-weighted average	Average constituent concentration determined on a flow-proportioned basis. Calculated as the sum of the constituent concentration (in mg/L) multiplied by the flowrate (in gallons per day [gpd]) collected across multiple periods of time (e.g., every month), then divided by the total volume discharged across the entire period (e.g., annual total).															
General minerals	Analysis for General Minerals shall include the constituents listed, at a minimum. General Minerals analyses shall be accompanied by documentation of cation/anion balance. <table><tr><td>Alkalinity</td><td>Calcium</td><td>Nitrate</td><td>Sodium</td><td>FDS</td></tr><tr><td>Bicarbonate</td><td>Magnesium</td><td>Phosphorous</td><td>Chloride</td><td>TDS</td></tr><tr><td>Carbonate</td><td>Hardness</td><td>Potassium</td><td>Sulfate</td><td></td></tr></table>	Alkalinity	Calcium	Nitrate	Sodium	FDS	Bicarbonate	Magnesium	Phosphorous	Chloride	TDS	Carbonate	Hardness	Potassium	Sulfate	
Alkalinity	Calcium	Nitrate	Sodium	FDS												
Bicarbonate	Magnesium	Phosphorous	Chloride	TDS												
Carbonate	Hardness	Potassium	Sulfate													
Irrigation cycle	Sum of days of application plus subsequent dry days between successive applications. Also referred to as discharge cycle.															
Loading rate	The loading rate (in pounds per acre [lb/ac]) is calculated as the constituent concentration (in mg/L) multiplied by the irrigated volume in one day (in million gallons [MG]) and multiplied by the conversion factor 8.34, then divided by the irrigated area (in acres).															
Loading rate, cycle average	Average loading rate across one irrigation cycle. Calculated as the sum of the daily loading rates (in lb/ac) in an irrigation cycle divided by total duration of the irrigation cycle (in days).															
Loading rate, instantaneous	Loading rate on the day of application.															
Monthly	Samples shall be collected at least once per month.															
New or expanding	Facility or system was constructed and/or began operations after the adoption date of this General Order.															
Pond system total volume	Sum of the design capacities of all onsite process water ponds.															
Process water	Wastewater generated from the wine making process. Winery process water includes, but is not limited to, grape juice, washwater, solids leachate, cooling water, cleaning chemicals, water softener regeneration brine, and stormwater directed through the process water collection, treatment, or disposal system and/or land applied.															
Quarterly	Samples shall be collected at least once per calendar quarter. Unless otherwise specified or approved, samples shall be collected in January, April, July, and October.															
Regional SNMP	A specific area specified in the SNMP that is larger than the area of one specific Discharger.															

Regional water board	Regional water quality control board. Also refers to Regional Water Board Members or staff. All references to a regional water board include the Executive Officer, who may act for the regional water board in carrying out this General Order (Water Code, sections 13050(b) and 13223).
Semi-annually	Samples shall be collected at least twice per calendar year. Unless otherwise specified or approved, samples shall be collected in April and October.
Setback	Minimum horizontal distance between two features.
State Water Board	State Water Resources Control Board. Also refers to State Water Board Members, Executive Director, Division of Water Quality Deputy Director, or staff.
Upset	An exceptional incident in which there is unintentional and temporary noncompliance with effluent limitations due to factors beyond the reasonable control of the Discharger. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventative maintenance, or careless or improper action.
Weekly	Samples shall be collected at least once per week.
Year	Refers to calendar year unless otherwise noted.

STATE WATER BOARD
GENERAL WASTE DISCHARGE REQUIREMENTS FOR
WINERY PROCESS WATER

**ATTACHMENT B
NOTICE OF INTENT**

The State Water Board and regional water board may provide procedures for electronic submittal or modifications to the Notice of Intent (NOI) and its associated supporting information or documents.

Discharger Information

Facility owner name: _____

Street address: _____

City: _____

County: _____ State: _____ Zip: _____

Telephone: _____ Email: _____

Owner type: (mark one)

☐ Individual ☐ Corporation ☐ Partnership ☐ LLC

☐ Other (please specify): _____

Federal Tax Identification Number: _____

Secretary of State Business License Number: _____

Operator Information (if different from facility owner information)

Operator name: _____

Street address: _____

City: _____

County: _____ State: _____ Zip: _____

Telephone: _____ Email: _____

Operator type: (mark one)

☐ Individual ☐ Corporation ☐ Partnership ☐ LLC

☐ Other (please specify): _____

Disposal Area Information (if landowner different from facility owner)

Landowner name: _____

Street address: _____

City: _____

County: _____ State: _____ Zip: _____

Telephone: _____ Email: _____

Owner type: (mark one)

☐ Individual ☐ Corporation ☐ Partnership ☐ LLC

☐ Other (please specify): _____

Facility Information

Winery name: _____

Street address: _____

City: _____

County: _____ State: _____ Zip: _____

Telephone: _____ Email: _____

Facility type:

☐ Existing operation ☐ New operation

Assessor's parcel numbers

Facility: _____

Discharge point 1: _____

Discharge point 2: _____

Latitude (lat) and Longitude (long): (in degrees, minutes, seconds)

Facility: lat: _____ long: _____

Discharge point 1: lat: _____ long: _____

Discharge point 2: lat: _____ long: _____

Type of Discharge:

Type of discharge described in this application: **Waste Discharge to land**

Mark all that apply:

☐ Industrial process water

☐ Domestic wastewater treatment, disposal

☐ Waste pile

☐ Process water reclamation (reuse)

Reasons for Filing

Mark all that apply:

☐ New discharge or facility

☐ Change in design or operation

☐ Change in quantity/type of discharge

☐ Change in ownership/operator

☐ Waste discharge requirements update

☐ Other (please specify): _____

California Environmental Quality Act (CEQA)

Name of lead agency: _____

Has a public agency determined that the proposed project is exempt from CEQA?

☐ Yes

☐ No

If yes, state the basis for the exemption and name of the agency supplying the exemption:

Has a "Notice of Determination" been filed under CEQA?

☐ Yes

☐ No

If yes, enclose a copy of the CEQA document, environmental impact report (EIR), or Negative Declaration. If no, identify the expected type of CEQA document and expected completion date.

Expected CEQA documents:

☐ EIR

☐ Negative Declaration

Expected CEQA completion date: _____

Other Permits

Is the facility discharge covered by another permit, waiver, or other permitting mechanism? (e.g., NPDES Industrial Stormwater General Permit or Irrigated Lands Regulatory Permit)

☐ Yes ☐ No

For each permit, waiver, or permitting mechanism, list the type, issuing agency, date of issuance, and waste discharge or other permit identification number:

Tier Specification

☐ Tier 1 ☐ Tier 2 ☐ Tier 3 ☐ Tier 4

Current facility process water discharge flow (gallons per year): _____

Facility process water design flow (gallons per year): _____

Volume of wine produced: gallons per year: _____ cases per year: _____

Site Conditions

Process water is discharged to: (check all that apply)

☐ Pond(s) ☐ Land application area ☐ Subsurface disposal area
☐ Other (publicly owned treatment works, tanks)

Process solids are disposed of via: (check all that apply)

☐ Land application area ☐ Offsite reuse or disposal
☐ Onsite composting ☐ Offsite composting

Technical Report

Provide a complete technical report with all the information required in Attachment C of this General Order. **For Tier 1:** Only complete technical report Sections 7, 8, and 9.

The technical report includes a complete characterization of the discharge and a site map showing the location of the facility. A complete characterization includes, but is not limited to, design and actual flows, a list of constituents and the discharge concentration of each

ATTACHMENT B – NOTICE OF INTENT
GENERAL WASTE DISCHARGE REQUIREMENTS FOR
WINERY PROCESS WATER

B-5

constituent, a list of other appropriate waste discharge characteristics, a description and schematic drawing of all treatment processes, a description of any best practicable treatment or control (BPTC) measures used, and a description of disposal methods.

Filing Fee

Pursuant to Water Code section 13260 et seq., Dischargers enrolled under this General Order are required to pay an annual fee, as determined by the State Water Resources Control Board. The filing fee accompanying this NOI is the first year's annual fee. The annual fee is based on the threat to water quality and complexity of the discharge in accordance with California Code of Regulations, title 23, section 2200. Dischargers enrolled under this General Order will be assigned a threat to water quality and complexity rating as described in this General Order and will be assessed the corresponding fee, plus any applicable surcharges. The NOI is to be accompanied by a check, made out to the State Water Resources Control Board for payment of the filing fee.

Certification

"I certify under penalty of law that this document, including all attachments and supplemental information, were prepared under my direction and supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

Print Name: _____ Title: _____

Signature: _____ Date: _____

INTERNAL OFFICE USE ONLY

Date NOI received: _____ Letter to Discharger: _____

Fee amount received: _____ Check number: _____

STATE WATER RESOURCES CONTROL BOARD
GENERAL WASTE DISCHARGE REQUIREMENTS FOR
WINERY PROCESS WATER

ATTACHMENT C
TECHNICAL REPORT FOR REPORT OF WASTE DISCHARGE

Pursuant to Water Code, section 13267, Dischargers may be required to furnish, under penalty of perjury, technical or monitoring program reports as a condition of the General Order. The information presented in the technical report is required by Water Code, section 13267 and is relied upon by the regional water board to prepare the Notice of Applicability (NOA) for coverage under the General Order. The Discharger shall ensure that the information presented in the technical report is accurate. Misstatements, errors, or omissions that exist in the technical report may be included in the NOA and become enforceable.

The technical report outline presented below is intended to provide general guidance for Dischargers and consultants and should be tailored to a facility's site-specific conditions as appropriate. Submitting a technical report consistent with this format will assist the Discharger in providing the necessary information to the regional water board, expedite review of the technical report, and streamline the permitting process. It is recommended that the Discharger contact their regional water board to discuss the project before preparing the technical report. The State Water Board and regional water board may provide procedures for electronic submittal or modifications to the technical report, its associated supporting information or documents, and the issuance of the NOA.

For Tier 1: Only complete technical report Sections 7, 8, and 9.

1. FACILITY BACKGROUND

1.1. Facility Description

- 1.1.1. Describe what the facility does and any previous uses at the site. Describe major facility operations (e.g., operates vineyards, crushes grapes, receives grape juice, makes grape juice and/or wine) and whether the facility operates year-round or for specific months (e.g., crush only).
- 1.1.2. Describe all the water supply sources (e.g., onsite groundwater well, municipal connection). Describe water sources used for supplemental irrigation (e.g., irrigation canal, agricultural well).
- 1.1.3. Describe how domestic wastewater is managed (e.g., community sewer connection, portable toilets, septic system).
- 1.1.4. For facilities with existing permit coverage (e.g., waste discharge requirements, county permit), provide the permit or order number and site Waste Discharger Identification (WDID) number.

1.2. Facility Maps

- 1.2.1. Provide a location map showing the property boundaries of the facility and disposal areas relative to key features (e.g., surface water bodies, drainage features, parcel boundaries, city or county boundary, etc.).
- 1.2.2. Provide a site plan (a scaled and labeled plan view drawing) showing key site features (e.g., processing areas, crush pads, storage areas, storage tanks, loading areas, ponds, land application areas, subsurface treatment system and disposal areas, water supply wells, monitoring wells). Identify sample locations and flowmeter locations.
- 1.2.3. Provide the associated Assessor Parcel Numbers (APN), section numbers, township and range for the facility and land discharge areas.

1.3. California Environmental Quality Act (CEQA)

- 1.3.1. If a CEQA evaluation was prepared or a categorical exemption employed, provide a copy to the regional water board.

2. FACILITY TIER AND WINERY EFFLUENT FLOW

Dischargers authorized under this General Order are classified into regulatory tiers based on the permitted annual facility process water design flow, which is the total volume of process water that may be discharged from the winery, including process water generated from outdoor processing areas, and measured prior to treatment, e.g., before discharged to a pond, land application area (LAA), or subsurface disposal system (General Order Table 1). The annual total process water discharge flow (i.e., winery effluent flow) shall not exceed the permitted design flow stated in the facility Notice of Applicability (NOA).

- 2.1. Provide a table with at least **5 years** of historical annual winery effluent (process water) flow (in gallons per year), including the current year, and the design flow (in gallons per year). Describe how flows were determined (e.g., flowmeter, storage tank water balance, etc.). Provide an accurate alternative calculation and a complete description of how the flow was determined if 5 years of historical annual winery effluent flow data is not available.
- 2.2. Provide a table of the current year winery effluent flows by month (in gallons), including the days of operation for each month.
- 2.3. For new wineries, provide the estimated annual winery effluent flow and annual design flow.
- 2.4. Identify the General Order tier that is most appropriate for the facility and the rationale (e.g., tier determination based on winery process water generated).

3. PROCESS WATER GENERATION, TREATMENT, REUSE, AND DISPOSAL

- 3.1. Describe the winery processing operations and identify activities and areas that generate process water. Identify the activities (e.g., crushing, juice making, winemaking, blending, bottling) that occur during crush and/or the off-season.

3.2. Process Water Management

- 3.2.1. Describe the process water collection, treatment, reuse, and disposal systems, including use of ponds, land application, and subsurface disposal. If multiple ponds, land application sites, and/or subsurface disposal systems are used, describe how, and the proportion of, process water that is directed to each.
- 3.2.2. Provide a list of chemicals used during processing and cleaning. Include the chemical name, active ingredient, and annual volume used. Describe any chemicals that are disposed of separately from the process water and the disposal method, e.g., water softener brine discharged offsite.

3.3. Provide a process flow diagram or schematic showing the facility process water system components and the flow path from source water to final reuse or disposal. Include pretreatment (e.g., screening), chemical addition points, sampling locations, and flowmeter locations. Include the process solids generation and reuse or disposal components.

3.4. Process Water Ponds

- 3.4.1. Describe the pond system (e.g., number of ponds, types of ponds), pond treatment process (e.g., aerated and number of aerators), and how process water is discharged from the winery and between ponds. Identify the pond size and water storage capacity and describe how those were determined for each pond. Identify the relative usage (e.g., operating at 70% capacity) of each pond.
- 3.4.2. Provide normal year and wet year water balances to demonstrate that the process water ponds have sufficient capacity and meet the storm design standard. To request regional water board approval to operate a smaller pond, also provide the information described in the Pond Specifications section of the General Order.
- 3.4.3. Provide pond characteristics (e.g., age, liner material and thickness, condition) and describe significant repairs or modifications made since the pond or pond liner was installed. To request regional water board approval to operate an existing lined or unlined pond, also provide the information described in the Pond Specifications section of the General Order.

3.5. Land Application Area

- 3.5.1. Describe how process water is delivered from the winery to the land application area. Describe how supplemental irrigation water is delivered.
- 3.5.2. Describe the land application area (e.g., total and usable acreage, how it is subdivided), irrigation method and field rotation, tailwater collection and return system (if applicable), types of crops grown and harvested, typical growing season, fertilizers used, organic and inorganic soil amendments used.

3.5.3. If process solids are used as a soil amendment, describe the land application process, annual amount of solids applied, and the parcel and acreage.

3.6. Subsurface Disposal Systems

3.6.1. Describe how process water is discharged from the winery to the subsurface disposal system.

3.6.2. Describe the subsurface treatment process, treatment capacity, and relative usage (e.g., operating at 70% capacity).

3.6.3. Describe the subsurface disposal area (e.g., total and reserve acreage, how it is subdivided), subsurface distribution system, dosing method and field rotation, types of crops grown and harvested, and typical growing season.

3.6.4. If the system currently commingles process water and domestic wastewater, describe how the commingled wastewater is managed and disposed. Describe how the commingled system will be permitted outside of the General Order or modified so that the domestic wastewater and process water will be managed and separately treated to comply with the General Order, including if the separately-treated waste streams will be directed to the same subsurface disposal area.

4. WATER QUALITY

4.1. Source Water

4.1.1. Describe the facility source water supply. Provide water quality data in tabular form characterizing the source water, including the constituents listed in the Source Water Monitoring section of the Monitoring and Reporting Program (MRP).

4.2. Process Water

4.2.1. Provide water quality data in tabular form characterizing the winery effluent, including the constituents listed in the Winery Effluent Monitoring section of the MRP.

4.2.1.1 Describe how the winery effluent data compares to the FDS threshold and what salt control measures are currently employed.

4.2.2. Provide water quality data in tabular form characterizing the discharge to the land application area, including the constituents listed in the Effluent to Land Application Area Monitoring section of the MRP.

4.2.3. Provide water quality data in tabular form characterizing the discharge to the subsurface disposal area and the hydraulic loading. Include the constituents listed in the Effluent to Subsurface Disposal Area Monitoring section of the MRP.

5. SOLIDS MANAGEMENT

- 5.1. Describe how process solids are generated, stored, reused, and disposed.
- 5.2. Describe how crush pads, solids storage containers, and solids stockpiles are managed to control and contain leachate. Describe how leachate is treated and disposed. Describe if leachate and stormwater that fall on crush pads are managed differently (e.g., valving system to direct to different ponds).
- 5.3. Provide the amount of process solids (in tons) generated annually. If process solids are generated from multiple sources (e.g., process screenings, pond dredging), identify the amount (in tons) or proportion from each source. If multiple disposal methods are used, identify the amount (in tons) or proportion directed to each.
- 5.4. Provide process solids characterization data (e.g., moisture and nitrogen content) if available.

6. GROUNDWATER CHARACTERIZATION

- 6.1. Describe the groundwater monitoring well network (including well ID, location, well survey coordinates, well depth, screened interval, and whether wells are upgradient or downgradient) and when monitoring began.
- 6.2. Provide historical data in tabular form characterizing the underlying groundwater, including the constituents and parameters listed in the Groundwater Monitoring section of the MRP, if available.

7. FACILITY IMPROVEMENTS AND PROPOSED SCHEDULE

- 7.1. Describe any proposed changes to the facility (e.g., new land application areas, pond expansion), material changes to the discharge, or best practicable treatment or control (BPTC) measures required in the General Order that are not in immediate compliance and provide a proposed schedule for the changes. If any proposed completion dates exceed the compliance timeframes in this General Order, provide technical and/or economic justification to support the proposed schedule.

8. SUMMARY INFORMATION

- 8.1. Provide the following information for the facility.

a) Discharger name: _____

b) Facility name: _____

c) Proposed General Order tier: _____

d) Processing season:

Crush: Days of operations: _____ Which months: _____

Off-season: Days of operations: _____ Which months: _____

e) Winery effluent (process water) flow:

Current year (gal/yr): _____ Design flow (gal/yr): _____

f) Process solids:

Current year (ton/yr): _____ Disposal method: _____

g) Ponds:

#1: Size (gal): _____ Treatment type: _____ Liner type: _____

#2: Size (gal): _____ Treatment type: _____ Liner type: _____

#3: Size (gal): _____ Treatment type: _____ Liner type: _____

h) Land application area:

Total acres: _____ For process water: _____ For solids: _____

Crop grown: _____ Growing months: _____

Crop grown: _____ Growing months: _____

If process water directed to LAA and SDS, proportion to LAA (%): _____

i) Subsurface disposal system:

Treatment type: _____ Disposal area (acres): _____

Crop grown: _____ Growing months: _____

Crop grown: _____ Growing months: _____

If process water directed to LAA and SDS, proportion to SDS (%): _____

j) Groundwater monitoring network:

No. of wells: _____ Avg depth to GW (ft): _____

Indicate if wells are site-wide or monitor for a specific feature: _____

List features: _____

9. CERTIFICATION

"I certify under penalty of perjury that this document and all attachments were prepared under my direct supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the program or those directly responsible for gathering the information, the information submitted is, true, accurate, and complete to the best of my knowledge and belief. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. In addition, I certify that the provisions of this General Order, including the criteria for eligibility and the development and implementation of the local agency oversight program, if required, will be complied with."

Print Name: _____ Title: _____

Signature: _____ Date: _____

STATE WATER RESOURCES CONTROL BOARD
GENERAL WASTE DISCHARGE REQUIREMENTS FOR
WINERY PROCESS WATER

ATTACHMENT D
NOTICE OF TERMINATION

The State Water Board and regional water board may provide procedures for electronic submittal or modifications to the Notice of Termination (NOT) and its associated supporting information or documents.

Discharger Information

Facility owner name: _____

Street address: _____

City: _____

County: _____ State: _____ Zip: _____

Telephone: _____ Email: _____

Owner type: (mark one)

☐ Individual ☐ Corporation ☐ Partnership

☐ Other (please specify): _____

Federal Tax Identification Number: _____

Operator Information (if different from facility owner information)

Operator name: _____

Street address: _____

City: _____

County: _____ State: _____ Zip: _____

Telephone: _____ Email: _____

Operator type: (mark one)

☐ Individual ☐ Corporation ☐ Partnership

☐ Other (please specify): _____

Disposal Area Information (if landowner different from facility owner)

Landowner name: _____

Street address: _____

City: _____

County: _____ State: _____ Zip: _____

Telephone: _____ Email: _____

Owner type: (mark one)

☐ Individual ☐ Corporation ☐ Partnership

☐ Other (please specify): _____

Facility Information

Winery name: _____

Street address: _____

City: _____

County: _____ State: _____ Zip: _____

Telephone: _____ Email: _____

Assessor's parcel numbers

Facility: _____

Discharge point 1: _____

Discharge point 2: _____

Latitude (lat) and Longitude (long): (in degrees, minutes, seconds)

Facility: lat: _____ long: _____

Discharge point 1: lat: _____ long: _____

Discharge point 2: lat: _____ long: _____

Reasons for Filing

Mark all that apply:

- ☐ Operations will cease and closure activities will be completed.
☐ Operations are subject to another permit, waiver, or permitting mechanism.

Please list the type, issuing agency, and date of issuance:

- ☐ Operations are no longer subject to the General Order.

Please explain: _____

☐ Other (please specify): _____

Tier Specification

☐ Tier 1 ☐ Tier 2 ☐ Tier 3 ☐ Tier 4

Discharger Responsibilities

The Discharger is responsible for compliance with the General Order and payment of annual fees until a completed NOT is approved by the regional water board.

Certification

"I certify under penalty of law that this document, including all attachments and supplemental information, were prepared under my direction and supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

Print Name: _____ Title: _____

Signature: _____ Date: _____

INTERNAL OFFICE USE ONLY

Date Notice of Termination received: _____ Letter to Discharger: _____

STATE WATER RESOURCES CONTROL BOARD
GENERAL WASTE DISCHARGE REQUIREMENTS FOR
WINERY PROCESS WATER

ATTACHMENT E
LOCAL AGENCY OVERSIGHT PROGRAM

The State Water Board and regional water board may provide procedures for electronic submittal or modifications to the Local Agency Oversight Program application and its associated supporting information or documents.

A. INTRODUCTION

Some local agencies¹ have historically provided oversight of winery waste discharges that are often issued waste discharge requirements (WDRs) from regional water quality control boards (regional water boards). This statewide winery general order (General Order) provides an administrative procedure to formalize local agency oversight of implementing this General Order. However, a regional water board may restrict the scope of the local agency oversight program. To obtain local oversight authority, a local agency shall do the following:

1. Submit the local oversight application to the regional water board;
2. Obtain written approval from the regional water board or State Water Board; and,
3. Implement the approved local oversight program and comply with the required local agency reporting.

To apply for local oversight authority, a local agency shall fill out the attached application form and provide all additional information required and/or requested by the regional water board or State Water Board. The requirements in this attachment are issued pursuant to Water Code section 13225(c).

B. LOCAL AGENCY QUALIFICATIONS

The regional water board will evaluate the local agency's eligibility for authorization to act in the local oversight capacity. A local agency demonstrated to have the following is eligible to oversee the implementation of this General Order for their local agency's jurisdiction:

1. Governmental authority - the agency shall have the ability to develop and implement a local ordinance or similar permitting authority adequate to provide authorization, monitor performance, and compel compliance for General Order violations.

¹ A local agency may be any governmental organization that can provide oversight of implementing this General Order requirements and has the authority to develop and implement an ordinance providing administrative authority consistent with the requirements of this General Order.

2. Adequate personnel to effectively implement the local ordinance – the agency organizational structure shall provide adequate oversight including permitting, fee collection, design and technical report reviews, inspection, and enforcement activities.
3. Technical expertise in the areas of winery processes, water quality, winery process water treatment, winery process water disposal, groundwater quality assessment, and General Order requirements, including specific winery tier conditions.
4. Funding mechanisms to ensure on-going support for the technical, administrative, and overhead costs of the local oversight program.
5. Local agencies may limit their program applicability to prescribed winery size, subareas within their jurisdiction, winery process water treatment methods, or other technical criteria. For cause, a local agency may determine that a winery is not eligible for initial or continued local agency oversight and shall seek primary oversight from the regional water board.

C. LOCAL AGENCY OVERSIGHT CONDITIONS

General Provisions

1. All wineries shall be enrolled under this General Order.
2. Dischargers shall submit all technical and monitoring reports, monitoring data, notifications of General Order violations (e.g., spills, containment failures, surface water discharges), and other such correspondence related to General Order requirements concurrently to the local agency and regional water board. At the direction of the Local Agency, Dischargers shall change this concurrent submittal process if a centralized State Water Board electronic submittal process becomes available.
3. The State Water Board and regional water boards retain enforcement authority related to this General Order regardless of Discharger participation in a local agency oversight program.
4. The regional water board may limit this General Order tiers covered by a Local Agency Oversight Program.
5. The local agency acts as an administrator in implementing the requirements of this General Order. The regional water board and the local agency may establish a memorandum of understanding defining specific roles and responsibilities necessary to ensure the efficient implementation of the local program.
6. The local agency shall design the oversight program to, at a minimum, comply with the evaluation and performance requirements of this General Order.
7. The monitoring requirements and practices described in this General Order Monitoring and Reporting Program (MRP) are, generally, minimum levels of monitoring. The local agency may make requirements more stringent, including requiring additional monitoring if necessary. Additional monitoring, beyond that specified in this General Order, is

acceptable and may be necessary to ensure proper performance of the process water systems, such as in response to treatment changes or investigations of uncertainties. Results of additional monitoring conducted for monitoring stations and parameters given in the MRP shall be reported in accordance with Monitoring, Inspection, and Compliance Reporting section of Attachment E. Other additional monitoring conducted shall be explained in the monitoring reports, and the data shall be made available to the regional water board upon request.

Monitoring, Inspection, and Compliance Reporting

8. The local agency shall have a General Order compliance program including inspection and enforcement procedures. All records shall be available and provided to the regional water board upon request.
9. The local agency shall have a construction inspection program including procedures for field inspection, documentation of construction activities, and permitting. All records shall be available and provided to the regional water board upon request.
10. The local agency shall retain, for a period of at least **3 years**, either a paper or electronic copy of all Local Agency Oversight Program documentation.
11. Spill or Illicit Discharge Reporting – The local agency is required to notify (e.g., via telephone or email) the regional water board within **24 hours** of any spill or illicit discharge incidents from a facility in the Local Agency Oversight Program and provide a written follow-up of the incident within **20 days** of the occurrence.
12. Annual Reporting – The local agency is required to provide an Annual Report to the appropriate regional water board pursuant to Water Code section 13225(c) by **June 1** of the following calendar year. The local agency may submit a request with adequate technical justification to the regional water board to reduce the annual report submittal frequency if consistently demonstrating comprehensive oversight to the regional water board. The proposal shall be approved in writing by the regional water board and not exceed **3 years**. The Annual Report shall include:
 - a. A list of wineries enrolled under the Local Agency Oversight Program, including the following for each winery on the list: the winery name; facility address; General Order tier; discharge type (e.g., LAA, SDS, pond) and volumes per system, total annual process water discharge (effluent) volume for the facility, associated compliance schedules, and full compliance/end date.
 - b. A summary of General Order violations; violations found during inspections of wineries; and, corrective actions taken per enrolled winery.
 - c. A list of wineries inspected through the Local Agency Oversight Program.

D. APPLICATION

Local Agency Information

Local agency name: _____

Street address: _____

City: _____

County: _____ State: _____ Zip: _____

Contact person name: _____

Contact person title: _____

Telephone: _____ Email: _____

Alternate contact name: _____

Alternate contact title: _____

Telephone: _____ Email: _____

Local Agency Oversight Program Applicability

Describe the winery tiers, process water treatment systems, and disposal alternatives the program will address. Provide additional information as necessary. Indicate the tiers are eligible for coverage under the agency program:

___ Tier 1 ___ Tier 2 ___ Tier 3 ___ Tier 4

Application Report: Agency Description of Local Oversight Program

Include a report with the application describing each of the following items, include documentation when appropriate.

1. Documentation of the agency's legal authority to implement the Local Agency Oversight Program. Include a copy of the existing or proposed ordinance.
2. Program requirements.
3. Local agency fee schedule for enrollees.
4. Program exceptions for addressing General Order tiers.
5. List of reference links for rules, regulations, ordinances, design standards, and/or technical guidance materials used to implement the local oversight program.

6. Mark all of the following that have been developed, or in the process of development, in the local agency oversight program geographic area(s). Provide the name of the program, plan, ordinance, etc. and attach additional information as appropriate.

- ☐ Sustainable Groundwater Management Act (SGMA) Groundwater Sustainability Agency (formed)
- ☐ SGMA Groundwater Sustainability Plan
- ☐ Wellhead protection plan
- ☐ Salt and nutrient management plan(s) (SNMP)
- ☐ Winery sustainability program
- ☐ Recycled water distribution
- ☐ Tank and haul operation ordinances
- ☐ Authorization to discharge into a publicly owned treatment works
- ☐ Local Agency Management Program for onsite wastewater treatment systems

Certification

"I certify under penalty of law that this document, including all attachments and supplemental information, were prepared under my direction and supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

Print Name: _____ Title: _____

Signature: _____ Date: _____

STATE WATER RESOURCES CONTROL BOARD
GENERAL WASTE DISCHARGE REQUIREMENTS FOR
WINERY PROCESS WATER

ATTACHMENT F
TRIBAL MITIGATION MEASURES

A. Introduction

This attachment to the General Waste Discharge Requirements for Winery Process Water (General Order) describes procedures Dischargers shall comply with under specific situations to protect tribal cultural resources (TCRs) for permit coverage under this General Order. The mitigation measures outlined in this General Order are not intended to replace those that may be developed and implemented by: 1) the appropriate local land use authorities and other public agencies with permitting authority over a specific project or 2) a new winery operation subject to a site-specific project level California Environmental Quality Act (CEQA) analysis. TCRs are defined in California Public Resources Code (PRC) section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

1. Listed, or eligible for listing, in the California Register of Historical Resources;
2. Listed in a local register of historical resources as defined in PRC section 5020.1(k); or,
3. Determined to be a resource by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of PRC section 5024.1.

The Discharger shall comply with the appropriate mitigation measures described below to identify and protect TCRs at new or expanding wineries. Any information regarding TCRs obtained during tribal consultation shall comply with all applicable laws related to confidentiality and public disclosure of the information.

B. Procedures for TCR Evaluation at New or Expanding Wineries

The Discharger shall perform a Native American archaeological resources records search at the appropriate regional information center of the California Historical Resources Information System (CHRIS) before engaging in any significant ground disturbing winery activities at a new or expanding winery. Examples of significant ground disturbing activities include, but are not limited to, new deep ripping, trenching, excavation, road construction, or pond construction. The results shall be documented. The requirement to perform a CHRIS records search may be satisfied by using the results of a previous CHRIS records search completed for the specific parcel or parcels where the new or expanding winery activities are proposed to occur. The Discharger shall:

1. Contact the culturally affiliated California Native American tribes to report any Native American archaeological sites or artifacts identified in a CHRIS positive result;

2. Notify the regional water board Executive Officer if they receive a CHRIS positive result or Sacred Lands Inventory positive result; and,
3. Conduct a physical cultural resources survey for the property/area if a prior physical cultural resources survey has not been conducted.

The Discharger shall conduct the following process for a physical cultural resources survey:

1. Request a Sacred Lands Inventory for the project area from the Native American Heritage Commission;
2. Contact the local tribes about the project to inquire about TCRs in the project area;
3. Conduct a survey of the property;
4. Record potential historical and archaeological resources; and,
5. Write a report of their findings which shall be submitted to the appropriate regional information center of the CHRIS and the regional water board.

The Discharger can demonstrate CEQA compliance for the surveyed portion of the property by using previously completed survey reports or record search results if TCRs were not identified for that portion of the winery property/parcel. No further action is required by the Discharger for that portion of the property/parcel if the report or prior report finds no TCRs.

The Discharger and/or the regional water board shall develop appropriate mitigation and conservation measures in consultation with the affected California Native American tribe when the survey and research reveal a TCR or a Sacred Lands Inventory positive result. The Discharger shall:

1. Provide the proposed final conservation measures to the California Native American tribes that are potentially culturally affiliated (affected tribes) for a **30 day** comment period;
2. Demonstrate the goal of conserving TCRs with appropriate dignity by careful consideration of any comments or mitigation measure recommendations submitted by the affected tribe(s) within this **30 day** comment period;
3. Implement the proposed final conservation measures if no comments are received from the affected tribe(s) or comments from the affected tribe(s) have been addressed through mitigation measures such as avoidance of the area, fencing, soil capping, onsite burial, or other equally protective measures (see Mitigation Measures to Protect TCR Sites on Wineries below); and,
4. Provide a copy of the final mitigation and conservation measures to any affected tribe(s) identified by the Native American Heritage Commission and to the regional water board Executive Officer. Final mitigation measures are subject to approval by the regional water board Executive Officer.

New wineries will likely be subject to a project-specific CEQA analysis by a county, city, or state agency for evaluation and approval of grading, building construction, and other environmental impacts. Expanding wineries may include activities that require a project-specific CEQA analysis, depending upon the need for grading, construction, or any

other environmental impacts that may be caused by operation of the expanded winery. As such, the conclusions and development of mitigation measures by local land use authorities and other public agencies as they relate to potential environmental impacts for new or expanding wineries may be different than those determined in this General Order and its analysis of potential environmental impacts. Therefore, future lead agencies should base their findings on the site-specific information developed for the project. The Discharger shall provide the regional water board Executive Officer any findings from a project-specific CEQA analysis such as a CHRIS positive result or Sacred Lands Inventory positive result.

C. Procedures for Discovery During Significant Ground Disturbing Activities

The Discharger shall immediately cease significant ground disturbing winery activities regulated under this General Order within 50 feet (100-foot diameter circle) of any uncovered or discovered indicators of a TCR, suspected archaeological materials, or discovery of a TCR. The Discharger shall:

1. Notify the Native American Heritage Commission within **7 days** of the discovery and request a list of any California Native American tribes that are potentially culturally affiliated with the discovery (potentially affected tribes);
2. Notify any potentially affected tribe(s) of the discovery within **48 hours** of receiving the list from the Native American Heritage Commission;
3. Develop any necessary mitigation measure proposals, which may include those listed in the Mitigation Measures to protect TCR Sites on Wineries section below);
4. Submit the proposed final mitigation measures to the potentially affected tribe(s) for a **30 day** comment period;
5. Demonstrate the goal of conserving TCRs with appropriate dignity by careful consideration of any comments or mitigation measure recommendations submitted by the potentially affected tribe(s) within this **30 day** comment period;
6. Implement the proposed final conservation measures if no comments are received from the affected tribe(s) or comments from the affected tribes have been addressed through mitigation measures such as avoidance of the area, fencing, soil capping, onsite burial, or other equally protective measures (see the Mitigation Measures to Protect TCR Sites on Wineries section below); and,
7. Provide a copy of the final mitigation and conservation measures to any culturally affiliated California Native American tribes identified by the Native American Heritage Commission and to the regional water board Executive Officer.

The final mitigation measures are subject to approval by the regional water board Executive Officer. The regional water board Executive Officer shall require mitigation measures (e.g., from the list below) when the affected tribe(s) and the Discharger cannot reach an agreement. Winery activities can resume within the affected zone upon affected tribe(s)/Discharger agreement or Executive Officer approval.

D. Mitigation Measures for Treatment of Human Remains

The Discharger shall immediately comply with Health and Safety Code section 7050.5 and, if applicable, Public Resources Code section 5097.98 upon discovery of any human remains. The Discharger shall take the following actions upon the discovery of human remains:

1. Immediately cease all ground-disturbing activities in the vicinity of the discovery;
2. Immediately notify the county coroner;
3. Discontinue ground disturbing activities until the requirements of Health and Safety Code section 7050.5 and, if applicable, Public Resources Code section 5097.98 have been met; and,
4. Ensure that the human remains are treated with appropriate dignity.

The coroner has **2 working days** to examine human remains after being notified by the person responsible for the excavation, or by their authorized representative per Health and Safety Code section 7050.5, and **24 hours** to notify the Native American Heritage Commission for Native American remains. The Native American Heritage Commission will immediately notify the persons it believes to be the most likely descended from the deceased Native American per Public Resources Code section 5097.98. The most likely descendent has **48 hours** from the time they are granted access, to make recommendations to the landowner or representative for the treatment or disposition, with appropriate dignity, of the human remains and any associated grave goods.

The landowner or their authorized representative shall reinter the human remains and items associated with the Native American human remains with appropriate dignity on the property in a location not subject to further and future disturbance consistent with subdivision (e) of Public Resources Code section 5097.98 if the:

1. Native American Heritage Commission is unable to identify a descendant;
2. Mediation provided for pursuant to subdivision (k) of Public Resources Code section 5097.94, if invoked, fails to provide measures acceptable to the landowner;
3. Most likely descendent does not make recommendations within **48 hours**;
4. Most likely descendants and the landowner have not mutually agreed to extend discussions regarding treatment and disposition pursuant to subdivision (b)(2) of Public Resources Code section 5097.98; and/or,
5. Landowner does not accept the descendant's recommendations. The landowner or the descendants may request mediation by the Native American Heritage Commission pursuant to Public Resources Code section 5097.94, subdivision (k).

E. Mitigation Measures to Minimize and Avoid Significant Adverse Impacts to TCR Sites on Wineries

The following are examples of mitigation measures that, if feasible for a given site, may be used to minimize and avoid significant adverse impacts to TCR sites:

1. Avoidance of the site;
2. Confidentiality of the site location;
3. Fence off or cap-in-place areas of very high sensitivity such as burial and cemetery sites;
4. Use aboveground irrigation lines or route irrigation lines around TCR sites;
5. Avoid irrigation or waste discharge over TCR sites;
6. Provide worker training about potential TCR resources in the area;
7. Protect the cultural character and integrity of the resource; and/or,
8. Other effective mitigation measures that reduce impacts to TCR sites to a less than significant level.

Note: Not all mitigation measures will apply to individual wineries. Appropriate selection of the mitigation measures above as tailored to a project's individual impacts will reduce impacts to a less than significant level.

STATE WATER RESOURCES CONTROL BOARD
GENERAL WASTE DISCHARGE REQUIREMENTS FOR
WINERY PROCESS WATER

ATTACHMENT G
MONITORING AND REPORTING PROGRAM

This model monitoring and reporting program (MRP) contains the monitoring requirements for facilities covered by the General Waste Discharge Requirements for Winery Process Water, Order WQ 2021-0002-DWQ (General Order). This MRP is required pursuant to Water Code section 13267. The Discharger shall not implement any changes to the MRP unless and until a revised MRP is issued or adopted by the regional water quality control board (regional water board). Dischargers enrolled under this General Order and administratively supervised by a Local Agency Oversight Program shall comply with this MRP. A local agency may require additional monitoring and reporting, but the local agency program does not replace the requirements contained herein.

The Discharger owns and/or operates the winery that is subject to the Notice of Applicability (NOA) and this General Order. The reports are necessary to ensure that the Discharger complies with the NOA and General Order. Pursuant to Water Code section 13267, the Discharger shall implement this MRP and shall submit the monitoring reports described herein. Pursuant to Water Code section 13268, failure to submit technical or monitoring program reports, including but not limited to, Compliance Letters as described herein or falsifying information is guilty of a misdemeanor and may be subject to enforcement action.

The State Water Board and regional water boards have transitioned primarily to a paperless office system and may provide procedures for electronic submittal or modifications to the MRP and its associated supporting information or documents. Additional information regarding submittal of electronic reports is provided under the Reporting section of this MRP.

The Discharger may submit a request for a reduced monitoring frequency from the regional water board once adequate data have been collected to characterize the site and if monitoring consistently shows no significant variation in magnitude of a constituent concentration or parameter (e.g., typically at least **2 years** of quarterly sampling is required for adequate characterization). The proposal shall include adequate technical justification for the requested reduction in monitoring frequency and be approved in writing by the regional water board Executive Officer.

Dischargers in all tiers shall comply with all monitoring and reporting requirements described in this MRP unless otherwise noted. Acronyms used within this MRP are defined in the Acronyms and Abbreviations section of this General Order and a glossary of terms is included in Attachment A of this General Order.

QUALITY ASSURANCE AND CONTROL

All samples shall be representative of the volume and nature of the discharge or matrix of material sampled. The Discharger shall use clean sample containers and sample handling, storage, and preservation methods in accordance with approved U.S. EPA analytical methods or as recommended by the selected analytical laboratory. All analytical samples shall be labeled and records maintained to show the name of the sampler, date, time, sample location, sample type, collection method, bottle type, and any preservative used for each sample. All samples collected for laboratory analyses shall be preserved as required and submitted to the laboratory within the required holding time appropriate for the analytical method used and the constituents analyzed.

All samples submitted to a laboratory for analysis shall be identified in a properly completed and signed chain of custody form containing the sampler, date, time, sample location, sample type, collection method, bottle type, and any preservative used for each sample. The chain of custody form shall also contain custody information, including the date, time, transport method, and to whom samples were relinquished.

Consistent with Water Code section 13176, data produced and reports submitted for compliance with this General Order must be generated by a laboratory with accreditation from the State Water Board, Division of Drinking Water, Environmental Laboratory Accreditation Program (ELAP), where accreditation is specific to the analyses required, or the laboratory must hold a valid certificate of accreditation for equivalent analytical test methods validated for the intended uses and approved by the State Water Board or regional water board. The laboratory must include quality assurance/quality control data in all data reports and submit electronic data as required by the State Water Board and regional water boards. Data generated using field tests are exempt pursuant to California Water Code Section 13176. Field instruments may be used to test field parameters (such as for pH, electrical conductivity, and dissolved oxygen) provided that the operator is trained in the proper use of the instrument and each instrument is serviced and/or calibrated at the recommended frequency by the manufacturer and in accordance with manufacturer instructions. Field calibration reports shall be maintained for at least **3 years**.

All sample and analysis field logs, laboratory reports, and quality assurance/quality control data shall be reported with the sample results to which it applies. The reports shall include applicable information such as the method, equipment, analytical detection, quantitation limits, recovery rates, an explanation for any recovery rate that is outside method specifications, results of method blanks, results of matrix spikes and surrogate samples, and the frequency of quality control analysis. Sample results shall be reported unadjusted for blank results or spike recovery. In cases where contaminants are detected in the quality assurance/quality control samples (e.g., laboratory blanks), the accompanying sample results shall be appropriately flagged.

SOURCE WATER MONITORING

The Discharger shall monitor each source of water supply used for winery processing activities (water supply well, surface water, municipal source, etc.) and for supplemental irrigation (e.g., agricultural well, irrigation canal, etc.). For each source of water supply used for winery processing activities, the Discharger shall also calculate the flow-weighted annual average FDS concentration using monthly flow data and the most recent chemical analysis conducted.

Parameter	Units	Sample Type	Frequency ⁽²⁾		
			Tier 2	Tier 3	Tier 4
Flow	gpd	Metered or calculated ⁽¹⁾	Continuous, daily, or average daily flow	Continuous or daily	Continuous or daily
TDS	mg/L	Grab	Annually	Annually	Semi-annually
FDS	mg/L	Grab	Annually	Annually	Semi-annually
Flow-weighted FDS	mg/L	Computed average	Annually	Annually	Annually
Total Kjeldahl nitrogen ⁽³⁾	mg/L	Grab	Annually	Annually	Annually
Ammonia as nitrogen ⁽³⁾	mg/L	Grab	Annually	Annually	Annually
Nitrate + nitrite as nitrogen ⁽³⁾	mg/L	Grab	Annually	Annually	Annually
Total nitrogen ⁽³⁾	mg/L	Calculated	Annually	Annually	Annually
General minerals ⁽⁴⁾	mg/L	Grab	--	--	Annually

(1) Source water flowrate may be measured directly via a flowmeter or determined from customer billing information. Supplemental irrigation water flow from a canal or similar source may be determined using an accurate alternative method.

(2) Source water monitoring for water supply sources used for winery processing activities shall be collected when the facility is in operation and discharging process water. Average daily flow method means as measured or estimated during the first seven days of the discharge occurring each month.

(3) Monitoring for supplemental irrigation water sources only.

(4) The minimum constituents are listed in Attachment A.

WINERY EFFLUENT MONITORING

Winery effluent measurements and samples are required when process water is generated. The Discharger shall collect winery effluent flow measurements and samples after screening and at a point in the system where process water, including any process water generated from outdoor processing areas, discharges from the winery but before treatment in a pond, land application area, or subsurface disposal system. The Discharger shall calculate the flow-weighted annual average FDS concentration using monthly flow data and the most recent chemical analysis conducted.

Parameter	Units	Sample Type	Frequency ⁽²⁾			
			Tier 1	Tier 2	Tier 3	Tier 4
Flow	gpd	Metered or calculated ⁽¹⁾	Continuous, daily, or average daily flow	Continuous, daily, or average daily flow	Continuous or daily	Continuous or daily
Days of operation (generating process water) ⁽³⁾	day	Observation	Daily	Daily	Daily	Daily
TDS	mg/L	Grab	--	Quarterly	Monthly	Monthly
FDS	mg/L	Grab	--	Quarterly	Monthly	Monthly
Flow-weighted FDS	mg/L	Computed average	--	Quarterly	Monthly	Monthly

(1) Winery effluent flowrate shall be measured directly via a flowmeter or, for Tier 1 and Tier 2 facilities only, may be calculated using an accurate alternative method (e.g., assume effluent flow is equal to facility source water use, calculate effluent flow from a daily water balance of all effluent storage tank levels). The regional water board may specify a required flow measurement method.

(2) Winery effluent monitoring shall be conducted when process water is generated. Average daily flow method means as measured or estimated during the first seven days of the discharge occurring each month.

(3) Winery effluent observations for operating days only required when process water is being generated.

POND MONITORING

In addition to pond samples, the Discharger shall inspect the pond and note the pond berm and liner conditions in field logs, a summary of which shall be included in the monitoring reports. Process water ponds shall be monitored until dry as follows:

Parameter	Units	Sample Type	Frequency		
			Tier 2	Tier 3	Tier 4
Freeboard	0.1 foot ⁽¹⁾	Observation	Weekly	Weekly	Weekly
Berm condition ⁽²⁾	NA	Observation	Weekly	Weekly	Weekly
Liner condition ⁽³⁾	NA	Observation	When visible	When visible	When visible
DO ⁽⁴⁾	mg/L	Field	Crush: weekly Off-season: monthly	Crush: weekly Off-season: monthly	Weekly
pH	pH units	Field	Crush: weekly Off-season: monthly	Crush: weekly Off-season: monthly	Weekly
EC	µmho/cm	Field	Crush: weekly Off-season: monthly	Crush: weekly Off-season: monthly	Weekly

(1) Freeboard shall be monitored to the nearest tenth of a foot.

(2) Inspect the pond berm for evidence of burrowing animals, erosion, cracks, and other conditions that may impact berm integrity.

(3) Inspect the pond liner for evidence of damage (e.g., cracks, tears, punctures) and other conditions that may impact liner integrity.

(4) Collect dissolved oxygen (DO) samples at a depth of one foot below the surface opposite the pond inlet between the hours of 0600 and 0900.

EFFLUENT TO LAND APPLICATION AREA MONITORING

Effluent to land application area monitoring shall be conducted when there is discharge to land. The Discharger shall collect effluent samples following screening and before it is discharged to the land application area, or, if treatment is provided (e.g., in a pond), at a point in the system following treatment and before process water is discharged to the land application area. Time of collection of the sample shall be recorded. Effluent monitoring shall include the following:

Parameter	Units	Sample Type	Frequency ⁽¹⁾		
			Tier 2	Tier 3	Tier 4
Flow	Gpd	Metered or calculated ⁽²⁾	Continuous, daily, or average daily flow	Continuous or daily	Continuous or daily
pH ⁽³⁾	pH units	Field	Bi-weekly	Bi-weekly	Weekly
EC ⁽³⁾	µmho/cm	Field	Bi-weekly	Bi-weekly	Weekly
BOD	mg/L	Grab or 24-hr composite ⁽⁴⁾	Crush: bi-weekly Off-season: one-time ⁽⁵⁾	Crush: bi-weekly Off-season: monthly ⁽⁷⁾	Crush: weekly Off-season: bi-weekly or monthly ⁽⁸⁾
FDS	mg/L	Grab or 24-hr composite ⁽⁴⁾	Crush: monthly Off-season: one-time ⁽⁶⁾	Monthly	Monthly
TDS	mg/L	Grab or 24-hr composite ⁽⁴⁾	Crush: monthly Off-season: one-time ⁽⁶⁾	Monthly	Monthly
Total Kjeldahl nitrogen	mg/L	Grab or 24-hr composite ⁽⁴⁾	Monthly	Monthly	Monthly
Ammonia as nitrogen	mg/L	Grab or 24-hr composite ⁽⁴⁾	Monthly	Monthly	Monthly
Nitrate + nitrite as nitrogen	mg/L	Grab or 24-hr composite ⁽⁴⁾	Monthly	Monthly	Monthly
Total nitrogen	mg/L	Calculated	Monthly	Monthly	Monthly
General minerals ⁽⁹⁾	mg/L	Grab or 24-hr composite ⁽⁴⁾	--	--	Annually

- (1) Effluent to land application area monitoring shall be conducted when there is discharge to land. Average daily flow method means as measured or estimated during the first seven days of the discharge occurring each month.
- (2) Effluent flowrate shall be measured directly via a flowmeter or, for Tier 2 facilities only, may be calculated using an accurate alternative method. The flow measurement method must be capable of determining the discharge flow to each individual management unit. The regional water board may specify a required flow measurement method.
- (3) The pH and EC monitoring may be satisfied using pond monitoring results if the discharge to the land application area is entirely from the pond.
- (4) **Tiers 2 and 3:** Collect grab samples.
Tier 4: Collect 24-hour composite samples. Grab samples can be collected in lieu of 24-hour composite samples if collected near the outlet of a pond with at least 24-hour residence time and the discharge to the land application area is entirely from the pond.
- (5) Collect samples bi-weekly during the crush period. Collect one representative sample during the off-season.
- (6) Collect samples monthly during the crush period. Collect one representative sample during the off-season.
- (7) Collect samples bi-weekly during the crush period. Collect samples monthly during the off-season.
- (8) Collect samples weekly during the crush period; collect samples bi-weekly during the off-season. The off-season samples may be collected monthly instead of bi-weekly if the samples are collected near the outlet of a pond with at least 72-hour residence time and the discharge to the land application area is entirely from the pond.
- (9) The minimum constituents are listed in Attachment A.

LAND APPLICATION AREA MONITORING

Land application area monitoring shall be conducted when there is discharge to land. The Discharger shall perform the following routine monitoring and loading calculations for the land application area. In addition, the Discharger shall inspect the land application area and note the field conditions in field logs, a summary of which shall be included in the monitoring reports. Data shall be collected and presented in tabular format for each individual management unit and shall include the following:

ATTACHMENT G – MONITORING AND REPORTING
GENERAL WASTE DISCHARGE REQUIREMENTS FOR
WINERY PROCESS WATER

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Parameter	Units	Sample Type	Frequency ⁽¹⁾		
			Tier 2	Tier 3	Tier 4
Field conditions ⁽²⁾	NA	Observation	Weekly	Weekly	Weekly
Cropping activities ^(3,4)	NA	Observation	When it occurs	When it occurs	When it occurs
Application field number ⁽⁴⁾	NA	Observation	Daily	Daily	Daily
Application area ⁽⁴⁾	acres	Measurement	Daily	Daily	Daily
Days in irrigation cycle ^(4,5)	day	Observation	Daily	Daily	Daily
Process water flow ⁽⁴⁾	gpd	Metered or calculated ⁽⁶⁾	Continuous, daily, or average daily flow	Continuous or daily	Continuous or daily
Process water loading ⁽⁴⁾	in/ac/d ⁽⁷⁾	Calculated	--	Daily	Daily
Supplemental water flow ⁽⁴⁾	gpd	Metered or estimated	Daily or average daily flow	Daily	Daily
Supplemental water loading ⁽⁴⁾	in/ac/d ⁽⁷⁾	Calculated	--	Daily	Daily
Precipitation	0.01 inch	Rain gauge ⁽⁸⁾	Daily	Daily	Daily
Total hydraulic loading ^(4,9)	in/ac/mo ⁽⁷⁾	Calculated	--	Daily	Daily
BOD loading ⁽¹⁰⁾					
Day of application	lb/ac	Calculated or estimated	Daily	Daily	Daily
Cycle average	lb/ac/d	Calculated	Daily	Daily	Daily
Nitrogen loading ⁽¹¹⁾					
Nitrogen loading by source ⁽¹²⁾	lb/ac/mo	Calculated	Monthly	Monthly	Monthly
Cumulative nitrogen loading ⁽¹³⁾	lb/ac/yr	Calculated	Annually	Annually	Annually
Salt loading ⁽¹⁴⁾					
From process water	lb/ac/mo	Calculated	--	Monthly	Monthly
Cumulative salt loading	lb/ac/yr	Calculated	--	Annually	Annually

- (1) Land application area monitoring shall be conducted when there is discharge to land. Average daily flow method means as measured or estimated during the first seven days of the discharge occurring each month.
- (2) Inspect the land application area for evidence of erosion, field saturation, runoff, or presence of nuisance conditions (e.g., flies, ponding, etc.).
- (3) Record the cropping activities (e.g., fertilizer applied [total pounds and pounds per acre], fertilizer nitrogen content, type of crop planted or landscape irrigated, planting and harvest dates, crop harvest yield [total wet tons and wet tons per acre], and crop tissue sampling dates/analytical results (if applicable) by land application area field or individual management unit number, as appropriate.
- (4) For land application fields divided into smaller management units (e.g., subfields, subareas, checks), identify the individual management unit number, its acreage, the amounts of process water and of supplemental water applied, and the cropping or planting activities at each individual management unit.
- (5) Identify the number of wet days (i.e., days with process water irrigation) and dry days (i.e., non-irrigation days following wet days) in each irrigation cycle by individual management unit.
- (6) Process water flowrate shall be measured directly using a flowmeter or, for Tier 2 facilities only, may be calculated using an accurate alternative method. The flow measurement method must be capable of determining the discharge flow to each individual management unit. The regional water board may specify a required flow measurement method.
- (7) Report to the nearest 0.1 inches per acre per day (in/ac/d) or 0.1 inches per acre per month (in/ac/mo).
- (8) National Weather Service or California Irrigation Management Information System (CIMIS) data from the nearest weather station are acceptable.
- (9) Combined loading from process water, supplemental irrigation water, and precipitation.
- (10) The daily calculation or estimate is necessary to calculate the cycle average BOD loading rates for each individual management unit which shall be calculated using the applied volume of process water, applied acreage, and the moving average of the three most recent BOD process water results.
- (11) Nitrogen loading for each individual management unit shall be calculated using the applied volume of process water, applied acreage, and the average process water concentration for total nitrogen for that month.
- (12) Loading from each source of nitrogen applied to each individual management unit shall be shown as applicable, e.g., from process water, supplemental water, fertilizers, process solids, soil amendments, etc.
- (13) Cumulative nitrogen loading shall be shown for each individual management unit.
- (14) Salt loading for each individual management unit shall be calculated using the applied volume of process water, applied acreage, and the average process water concentration for FDS for that month.

SUBSURFACE DISPOSAL SYSTEM MONITORING

The Discharger shall conduct settling tank monitoring for the following:

Parameter	Units	Sample Type ⁽¹⁾	Frequency		
			Tier 2	Tier 3	Tier 4
Thickness of accumulated sludge and floating scum layer in each tank compartment	Inches	Staff gauge	Annually	Annually	Annually
Vertical distance between bottom of floating scum layer and top of tank outlet	Inches	Staff gauge	Annually	Annually	Annually
Vertical distance between top of accumulated sludge layer and bottom of tank outlet	Inches	Staff gauge	Annually	Annually	Annually

(1) Or an equivalent measuring method.

EFFLUENT TO SUBSURFACE DISPOSAL AREA MONITORING

Effluent to subsurface disposal area monitoring shall be conducted when there is discharge to land. The Discharger shall collect effluent samples at a point in the system following subsurface disposal system treatment and before process water is discharged to the subsurface disposal area. Time of collection of the sample shall be recorded. Effluent monitoring shall include the following:

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GENERAL WASTE DISCHARGE REQUIREMENTS FOR
WINERY PROCESS WATER

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Parameter	Units	Sample Type	Frequency ⁽¹⁾		
			Tier 2	Tier 3	Tier 4
Flow	gpd	Metered or calculated ⁽²⁾	Continuous, daily, or average daily flow	Continuous or daily	Continuous or daily
pH	pH units	Field	Bi-weekly	Bi-weekly	Weekly
EC	µmho/cm	Field	Bi-weekly	Bi-weekly	Weekly
BOD	mg/L	Grab or 24-hr composite ⁽³⁾	Crush: bi-weekly Off-season: one-time ⁽⁴⁾	Crush: bi-weekly Off-season: monthly ⁽⁶⁾	Crush: bi-weekly Off-season: bi-weekly or monthly ⁽⁷⁾
TSS	mg/L	Grab or 24-hr composite ⁽³⁾	Crush: bi-weekly Off-season: one-time ⁽⁴⁾	Crush: bi-weekly Off-season: monthly ⁽⁶⁾	Crush: bi-weekly Off-season: bi-weekly or monthly ⁽⁷⁾
FDS	mg/L	Grab or 24-hr composite ⁽³⁾	Crush: monthly Off-season: one-time ⁽⁵⁾	Crush: bi-weekly Off-season: monthly ⁽⁶⁾	Crush: bi-weekly Off-season: bi-weekly or monthly ⁽⁷⁾
TDS	mg/L	Grab or 24-hr composite ⁽³⁾	Crush: monthly Off-season: one-time ⁽⁵⁾	Crush: bi-weekly Off-season: monthly ⁽⁶⁾	Crush: bi-weekly Off-season: bi-weekly or monthly ⁽⁷⁾
Total Kjeldahl nitrogen	mg/L	Grab or 24-hr composite ⁽³⁾	Crush: bi-weekly Off-season: monthly ⁽⁶⁾	Crush: bi-weekly Off-season: monthly ⁽⁶⁾	Crush: bi-weekly Off-season: bi-weekly or monthly ⁽⁷⁾
Ammonia as nitrogen	mg/L	Grab or 24-hr composite ⁽³⁾	Crush: bi-weekly Off-season: monthly ⁽⁶⁾	Crush: bi-weekly Off-season: monthly ⁽⁶⁾	Crush: bi-weekly Off-season: bi-weekly or monthly ⁽⁷⁾
Nitrate + nitrite as nitrogen	mg/L	Grab or 24-hr composite ⁽³⁾	Crush: bi-weekly Off-season: monthly ⁽⁶⁾	Crush: bi-weekly Off-season: monthly ⁽⁶⁾	Crush: bi-weekly Off-season: bi-weekly or monthly ⁽⁷⁾
Total nitrogen	mg/L	Calculated	Crush: bi-weekly Off-season: monthly ⁽⁶⁾	Crush: bi-weekly Off-season: monthly ⁽⁶⁾	Crush: bi-weekly Off-season: bi-weekly or monthly ⁽⁷⁾

Parameter	Units	Sample Type	Frequency ⁽¹⁾		
			Tier 2	Tier 3	Tier 4
General minerals ⁽⁸⁾	mg/L	Grab or 24-hr composite ⁽³⁾	--	--	Annually

- (1) Effluent to subsurface disposal area monitoring shall be conducted when there is discharge to land. Average daily flow method means as measured or estimated during the first seven days of the discharge occurring each month.
- (2) Effluent flowrate shall be measured directly via a flowmeter or, for Tier 2 facilities only, may be calculated using an accurate alternative method. The flow measurement method must be capable of determining the discharge flow to each individual management unit. The regional water board may specify a required flow measurement method.
- (3) **Tiers 2 and 3:** Collect grab samples.
Tier 4: Collect 24-hour composite samples. Grab samples can be collected in lieu of 24-hour composite samples if collected near the outlet of a subsurface disposal system tank (e.g., storage or settling tank) with at least 24-hour residence time and the discharge to the subsurface disposal area is entirely from the tank.
- (4) Collect samples bi-weekly during the crush period. Collect one representative sample during the off-season.
- (5) Collect samples monthly during the crush period. Collect one representative sample during the off-season.
- (6) Collect samples bi-weekly during the crush period. Collect samples monthly during the off-season.
- (7) Collect samples bi-weekly during the crush period. Collect samples bi-weekly during the off-season. The off-season samples may be collected monthly instead of bi-weekly if the samples are collected near the outlet of a subsurface disposal system tank (e.g., storage or settling tank) with at least 72-hour residence time and the discharge to the subsurface disposal area is entirely from the tank.
- (8) The minimum constituents are listed in Attachment A.

SUBSURFACE DISPOSAL AREA MONITORING

Subsurface disposal area monitoring shall be conducted when there is discharge to land. The Discharger shall perform the following routine monitoring and loading calculations for the subsurface disposal area. In addition, the Discharger shall inspect the subsurface disposal area and note the field conditions in field logs, a summary of which shall be included in the monitoring reports. Data shall be collected and presented in tabular format for each individual management unit and shall include the following:

Parameter	Units	Sample Type	Frequency ⁽¹⁾		
			Tier 2	Tier 3	Tier 4
Disposal area conditions ⁽²⁾	NA	Observation	Weekly	Weekly	Weekly
Cropping activities ^(3,4)	NA	Observation	When it occurs	When it occurs	When it occurs
Disposal area field number ⁽⁴⁾	NA	Observation	Daily	Daily	Daily
Disposal area acreage ⁽⁴⁾	Acres	Measurement	Daily	Daily	Daily
Days in discharge cycle ^(4,5)	Day	Observation	Daily	Daily	Daily
Process water flow ⁽⁴⁾	gpd	Metered or calculated ⁽⁶⁾	Continuous, daily, or average daily flow	Continuous or daily	Continuous or daily
Hydraulic loading ⁽⁴⁾	gal/sqft/d ⁽⁷⁾	Calculated	Daily	Daily	Daily
Hydraulic loading ⁽⁴⁾	gal/sqft/mo ⁽⁷⁾	Calculated	Monthly	Monthly	Monthly
Precipitation	0.01 inch	Rain gauge ⁽⁸⁾	Daily	Daily	Daily

(1) Subsurface disposal area monitoring shall be conducted when there is discharge to land. Average daily flow method means as measured or estimated during the first seven days of the discharge occurring each month.

(2) Inspect the dosing system (e.g., pump controllers, valves, distribution piping) and identify maintenance and repair needs. Inspect the subsurface disposal area for evidence of erosion, deep-rooted plants, burrowing animals, field saturation, water surfacing, runoff, or presence of nuisance conditions (e.g., odors, flies, ponding, etc.).

(3) Record the cropping activities (e.g., fertilizer applied [total pounds and pounds per acre], fertilizer nitrogen content, type of crop planted or landscape irrigated, and planting and harvest dates) by subsurface disposal area field or individual management unit number, as appropriate.

- (4) For subsurface disposal area fields divided into smaller management units (e.g., subfields, subareas), identify the individual management unit number, its acreage, and the amount of process water discharged to each individual management unit.
- (5) Identify the number of wet days (i.e., days with process water discharge) and dry days (i.e., non-discharge days following wet days) in each discharge cycle by individual management unit.
- (6) Process water flowrate shall be measured directly via a flowmeter or, for Tier 2 facilities only, may be calculated using an accurate alternative method. The flow measurement method must be capable of determining the discharge flow to each individual management unit. The regional water board may specify a required flow measurement method.
- (7) Measure hydraulic loading for the individual management units in gallons per square foot of discharge trench per day (gal/sqft/d) and gallons per square foot of discharge trench per month (gal/sqft/mo). Report to the nearest 0.1 gal/sqft/d or 0.1 gal/sqft/mo.
- (8) National Weather Service or CIMIS data from the nearest weather station are acceptable.

SOLIDS MONITORING

Process solids monitoring shall be conducted when process solids are generated. Monitoring shall also include solids characterization and field monitoring when process solids are land applied. Process solids monitoring shall include the following:

Parameter	Units	Sample Type	Frequency		
			Tier 2	Tier 3	Tier 4
Solids source ⁽¹⁾	NA	Observation	Monthly	Monthly	Monthly
Solids generated ⁽¹⁾	wet tons	Estimated or measured	Monthly	Monthly	Monthly
Disposal method ⁽¹⁾	NA	Observation	Monthly	Monthly	Monthly
Land applied solids ⁽²⁾					
Amount applied by source ⁽³⁾	wet tons	Estimated or measured	Annually ⁽⁴⁾	Monthly ⁽⁴⁾	Monthly ⁽⁴⁾
Application field number ⁽³⁾	NA	Observation	Annually ⁽⁴⁾	Monthly ⁽⁴⁾	Monthly ⁽⁴⁾
Application area ⁽³⁾	acres	Observation	Annually ⁽⁴⁾	Monthly ⁽⁴⁾	Monthly ⁽⁴⁾
Total Kjeldahl nitrogen	mg/kg ⁽⁵⁾	Grab	Crush: one-time Solids cleanout: each time ⁽⁶⁾	Crush: one-time Solids cleanout: each time ⁽⁶⁾	Crush: one-time Solids cleanout: each time ⁽⁶⁾
Ammonia as nitrogen	mg/kg ⁽⁵⁾	Grab	Crush: one-time Solids cleanout: each time ⁽⁶⁾	Crush: one-time Solids cleanout: each time ⁽⁶⁾	Crush: one-time Solids cleanout: each time ⁽⁶⁾
Nitrate + nitrite as nitrogen	mg/kg ⁽⁵⁾	Grab	Crush: one-time Solids cleanout: each time ⁽⁶⁾	Crush: one-time Solids cleanout: each time ⁽⁶⁾	Crush: one-time Solids cleanout: each time ⁽⁶⁾
Total nitrogen	mg/kg ⁽⁵⁾	Calculated	Crush: one-time Solids cleanout: each time ⁽⁶⁾	Crush: one-time Solids cleanout: each time ⁽⁶⁾	Crush: one-time Solids cleanout: each time ⁽⁶⁾

- (1) Identify the source of the process solids (e.g., pomace, lees, pond dredging), the amount generated, and the solids disposal or reuse method (e.g., hauled offsite, land applied onsite).
- (2) Monitor and sample solids only when process solids are applied to the LAA.
- (3) For land application fields divided into smaller management units (e.g., subfields, subareas, checks), identify the individual management unit number, its acreage, and the estimated amount of process solids from each source applied to each individual management unit.
- (4) **Tier 2:** Record the amount of solids by source applied to each individual management unit during the year.
Tiers 3 and 4: Record the amount of solids by source applied to each individual management unit during the month.
- (5) Dry weight basis. Moisture content to be determined and reported by the laboratory.
- (6) Collect one representative sample during the crush period from each solids source (e.g., pomace stockpile). If process solids are land applied from a solids cleanout activity (e.g., a pond is dredged, settling tank is pumped out), collect one representative sample of the solids to be land applied.

GROUNDWATER MONITORING

Tier 4: Facilities required to conduct groundwater monitoring shall conduct field monitoring and groundwater characterization. After measuring water levels and prior to collecting samples, each monitoring well shall be adequately purged until pH, temperature, and EC have stabilized. Water that has been standing within the well screen, casing, and filter pack may not be chemically representative of formation water. Depending on the hydraulic conductivity of the geologic setting, the volume of water removed during purging is typically a minimum of 3 volumes of water within the well casing and screen, or additionally the filter pack pore volume. Alternatively, low flow purging and sampling techniques may be utilized. Samples shall be collected and analyzed for the following:

Parameter	Units	Sample Type	Frequency (Tier 4 only)
Depth to groundwater	0.1 foot ⁽¹⁾	Measured	Quarterly
Groundwater elevation	0.1 foot ⁽²⁾	Calculated	Quarterly
Groundwater gradient	feet/feet	Calculated	Quarterly
Groundwater flow direction	Degrees	Calculated	Quarterly
pH	pH units	Field	Quarterly
EC	µmho/cm	Field	Quarterly
FDS	mg/L	Grab	Quarterly
TDS	mg/L	Grab	Quarterly
Total Kjeldahl nitrogen	mg/L	Grab	Quarterly
Ammonia as nitrogen	mg/L	Grab	Quarterly
Nitrate + nitrite as nitrogen	mg/L	Grab	Quarterly
Total nitrogen	mg/L	Calculated	Quarterly
Iron, dissolved	mg/L	Grab	Annually
Manganese, dissolved	mg/L	Grab	Annually
General minerals ⁽³⁾	mg/L	Grab	Annually

(1) Measure to the nearest tenth of a foot.

(2) Calculate to the nearest tenth of a foot above mean sea level.

(3) The minimum constituents are listed in Attachment A.

REPORTING

Dischargers in all tiers shall submit Compliance Letters and Annual Reports. Tier 4 Dischargers shall also submit Semi-annual Reports twice a year.

A Compliance Letter shall be submitted any month in which a violation occurs. Additionally, the Compliance Letter shall serve as the transmittal letter accompanying each monitoring report. Standalone Compliance Letters are due by the **first day of the second month** after the monitoring period. For example, a Compliance Letter for January is due on March 1.

Semi-annual Reports are due by the **first day of the second month** after the reporting period. For example, the first Semi-annual Report is due on August 1. The second semi-annual monitoring results may be incorporated into the Annual Report instead of submitted as a standalone report. All groundwater monitoring reports shall be prepared by or under the supervision of a qualified California Registered Civil Engineer or Geologist.

All monitoring results for the reporting year shall be reported in the Annual Report, which is due by **April 1** after the reporting year. For example, the Annual Report for reporting year 2021 is due on April 1, 2022. An abbreviated Annual Report format is provided for Tier 1 Dischargers in the Annual Reports (Tier 1 Only) section of this Reporting category.

The reporting periods and reporting schedules are summarized in Table G-1.

Table G-1. Reporting Schedule (All Tiers)

Report	Reporting Period	Due Date	Tier 1	Tier 2	Tier 3	Tier 4
Compliance Letter ⁽¹⁾	Jan – Dec	First day of second month after reporting period	X	X	X	X
<u>Semi-annual Report</u>						X
First semi-annual	Jan – Jun	Aug 1				
Second semi-annual	Jul – Dec	Mar 1 ⁽²⁾				
Annual Report	Jan – Dec	Mar 1	X ⁽³⁾	X	X	X

(1) Submit for any month in which a violation or exceedance occurs. Also submit as the transmittal letter for each monitoring report.

(2) The second semi-annual monitoring results may be incorporated into the Annual Report instead of submitted as standalone Semi-annual Report.

(3) An abbreviated Annual Report format is provided for Tier 1 Dischargers.

In reporting monitoring data, the Discharger shall arrange the data in tabular form so that the date, sample location, constituents, concentrations, and observations are readily discernible. The data shall be summarized in such a manner that illustrates clearly whether the Discharger complies with this General Order and facility NOA. The Discharger shall include copies of analytical laboratory reports. Results of any monitoring done more frequently than specified in the MRP shall be reported in the next regularly scheduled monitoring report and shall be included in calculations as appropriate.

All monitoring reports and compliance letters shall comply with the signatory requirements in the Reporting Provisions section of this General Order.

All monitoring reports that involve planning, investigation, evaluation, or design, or other work requiring interpretation and proper application of engineering or geologic sciences, shall be prepared by or under the direction of persons registered to practice in California pursuant to California Business and Professions Code sections 6735, 7835, and 7835.1.

The State Water Board and regional water boards have transitioned primarily to a paperless office system. Unless otherwise directed, the Discharger shall submit all narrative reports in portable document format (pdf) and all data in a spreadsheet (e.g., csv, txt, xls) or Microsoft Word (e.g., doc) format via regional water board email as listed in Table G-5. The NOA will include instructions and the information to be included in the transmittal email accompanying the report.

In some regions, the Discharger will be directed to submit all reports and analytical data to the State Water Board GeoTracker database. [GeoTracker database information](http://www.waterboards.ca.gov/ust/electronic_submittal/index.shtml) is provided on the Internet <http://www.waterboards.ca.gov/ust/electronic_submittal/index.shtml>.

Table G-2. Regional Water Board Email Addresses for Electronic Report Submittal

Regional Water Board	Email Address
North Coast Regional Water Board	northcoast@waterboards.ca.gov
San Francisco Bay Regional Water Board	wdr.monitoring@waterboards.ca.gov
Central Coast Regional Water Board	centralcoast@waterboards.ca.gov
Los Angeles Regional Water Board	losangeles@waterboards.ca.gov
Central Valley Regional Water Board – Redding	centralvalleyredding@waterboards.ca.gov
Central Valley Regional Water Board – Rancho Cordova	centralvalleysacramento@waterboards.ca.gov
Central Valley Regional Water Board – Fresno	centralvalleyfresno@waterboards.ca.gov
Lahontan Regional Water Board – South Lake Tahoe	lahontan@waterboards.ca.gov
Lahontan Regional Water Board – Victorville	lahontan@waterboards.ca.gov
Colorado River Regional Water Board	rb7-wdrs_paperless@waterboards.ca.gov
Santa Ana Regional Water Board	santaana@waterboards.ca.gov
San Diego Regional Water Board	rb9paperless@waterboards.ca.gov

A. Compliance Letters (All Tiers) shall include the following:

1. Discharger name, facility name, facility tier, MRP number, Waste Discharge Identification Number, and contact information (telephone number and email).
2. A discussion of any violations or exceedances that occurred during the reporting period, all actions taken or planned for correcting the violations and preventing future violations, such as operation or facility modifications, and a time schedule for completing the corrective actions. If the Discharger previously submitted a report describing corrective actions or a time schedule for implementing the corrective actions, reference to the previous correspondence is satisfactory.
3. This penalty of perjury statement shall be included and signed by the Discharger or the Discharger's duly authorized representative in compliance with the Reporting Provisions section of this General Order.

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

B. Semi-annual Reports (Tier 4 Only) shall include the following:

Provide the information as described in the following sections of the Annual Report (Tiers 2, 3, and 4):

1. Facility Information – Items 1, 2, and 3
2. Process Water Reporting – Items 6, 7, and 8
3. Pond Reporting – Items 9 and 10
4. Land Application Area Reporting – Items 12 through 16
5. Subsurface Disposal Area Reporting – Items 19 through 23
6. Solids Reporting – Items 24 through 29
7. Compliance Summary – Items 35, 38, and 39

Dischargers required to conduct groundwater monitoring shall also provide the information as described in the following sections of the Annual Report (Tiers 2, 3, and 4):

8. Groundwater Reporting – Items 30 through 34
9. Compliance Summary – Items 37

C. Annual Reports (Tier 1 Only) shall include the following:

1. A scaled map that shows facility structures (e.g., buildings, crush pads), processing areas, process solids storage areas, ponds, land application areas, subsurface disposal areas, water supply wells, and groundwater monitoring wells, and any other relevant site features. Include identifying information, e.g., labels, well identification number, field and individual management unit numbers and acreages, etc.
2. Results of the monitoring specified in the Winery Effluent Monitoring section of the MRP. Provide the total annual process flow and total days of operation for the reporting period and compare the total annual flow to the facility design flow.
3. A discussion of any violations that occurred during the reporting year, all actions taken or planned for correcting or preventing future violations, such as operation or facility modifications, and a time schedule for completing the corrective actions.
4. A summary of any changes in processing that occurred during the reporting year or planned for the next year that might affect process water flow rates.
5. Descriptions of any facility or best practicable treatment or control (BPTC) improvements or modifications required by the facility NOA that were begun and/or completed during the reporting year or planned for the next reporting year. Include an implementation schedule.

6. Self-certification that the facility complied with the criteria to qualify as a Tier 1 facility (except as noted in Item 3) during the current reporting year and will comply with the criteria in the next reporting year.

D. Annual Reports (Tiers 2, 3, and 4) shall include the following:

Facility Information

1. Names and telephone numbers of persons to contact regarding the discharge for emergency and/or routine situations.
2. A scaled map that shows facility structures (e.g., buildings, crush pads), processing areas, process solids storage areas, ponds, land application areas, subsurface disposal areas, water supply wells, and groundwater monitoring wells, and any other relevant site features. Include identifying information, e.g., labels, well identification number, field and individual management unit numbers and acreages, etc.
3. A summary of any changes in processing that might affect waste characterization and/or discharge flowrates.
4. Copies of laboratory analytical reports and chain-of-custody forms if requested by the regional water board.

Source Water Reporting

5. Results of the monitoring specified in the Source Water Monitoring section of the MRP. Results shall include supporting calculations.

Process Water Reporting

6. Results of the monitoring specified in the Winery Effluent Monitoring section of the MRP by month for the reporting period. Results shall include supporting calculations.
7. A comparison of the flow-weighted annual average FDS results from source water supplies and winery effluent monitoring to the FDS threshold by month for the reporting period.
8. Total monthly and annual days of operation and discharge volumes for the reporting period expressed in gallons. For each month, also calculate the maximum daily flow and the monthly average flow.

Pond Reporting

9. Results of the monitoring specified in the Pond Monitoring section of the MRP.
10. A summary of pond monitoring log notations. Copies of the field logs do not need to be submitted unless requested by the regional water board.
11. If a performance evaluation was conducted during the reporting year, a description of the pond liner integrity and leak detection tests and results, and a discussion of the pond liner performance.

Land Application Area Reporting

12. Results of the monitoring and loading calculations specified in the Effluent to Land Application Area Monitoring and Land Application Area Monitoring sections of the MRP.
13. Monthly and annual process water and supplemental water volumes applied to each individual management unit expressed in gallons.
14. Calculation of the monthly and total hydraulic loading from process water and supplemental water applied to each individual management unit by month.
15. Calculation of the cycle average BOD loading rates for each individual management unit. Include the number of days in each irrigation cycle.
16. A summary of land application area monitoring log notations. Copies of the field logs do not need to be submitted unless requested by the regional water board.
17. An annual nitrogen balance showing the total annual nitrogen loading (in pounds per acre per year [lb/ac/yr]) to each land application field or individual management unit, as appropriate, as calculated from the sum of the monthly loading from all sources of nitrogen applied to the land. The nitrogen balance shall include:
 - a. Types of crops grown or landscape irrigated, planting and harvest dates, and crop harvest yield.
 - b. Nitrogen loading by source (e.g., fertilizer, process water, process solids, compost, etc.). Indicate any estimated nitrogen losses that reduced plant available nitrogen used in the nitrogen balance calculations.
 - c. Crop uptake rates for each crop grown or landscape irrigated. Provide results of representative plant tissue analysis or technical reference source of the crop uptake rate values.
 - d. A comparison of the total nitrogen applied to the nitrogen taken up by the crop harvested or removed.
18. Total annual FDS loading (in lb/ac/yr) to each land application area field or individual management unit, as appropriate, as calculated from the sum of the monthly loading.

Subsurface Disposal Area Reporting

19. Results of the monitoring and loading calculations specified in the Subsurface Disposal System Monitoring, Effluent to Subsurface Disposal Area Monitoring, and Subsurface Disposal Area Monitoring sections of the MRP.
20. Monthly and annual volumes of process water discharged to each individual management unit expressed in gallons.
21. Calculation of the daily and monthly hydraulic load applied to each individual management unit.
22. A summary of subsurface disposal area monitoring log notations. The entire contents of the log do not need to be submitted unless requested by the regional water board.
23. Types of crops grown or landscape irrigated, planting and harvesting dates, amount of fertilizer applied, and nitrogen content of fertilizer.

Solids Reporting

24. Results of the monitoring specified in the Solids Monitoring section of the MRP.
25. Total amount of process solids generated during the reporting period in tons.
26. A description of the process solids disposal or reuse method. If more than one method is used, include the percentage disposed or reused by each method. Include the name and location of the disposal site; describe the reuse or disposal of the material (e.g., land application, composting onsite, offsite reuse, offsite compost facility, landfill disposal).
27. Descriptions of any process solids generated from pond dredging, settling tank pump out, or other such solids cleanout activities conducted during the reporting period. Include a description of the activity, the amount of material removed, date, type of service, service provider, and destination of solids removed for offsite reuse or disposal.
28. If process solids are land applied, monthly and total amount of process solids applied to each land application area field or individual management unit and the applied acreage.
29. Results of process solids characterization by solids source.

Groundwater Reporting (Tier 4 Only)

30. Results of the monitoring specified in the Groundwater Monitoring section of the MRP by monitoring period. If there is insufficient water for sampling the monitoring well, the well shall be reported as dry for that quarterly monitoring period.
31. A table and graphs showing current and historical groundwater depth, elevation, and constituent concentrations through the current monitoring period for each monitoring well.

32. Groundwater contour maps by quarter for the reporting period that show the gradient and direction of groundwater flow at the facility, pond, LAA, and/or subsurface disposal area. The map shall also include the locations of the water supply wells, groundwater monitoring wells, processing areas, waste discharge areas, and any other relevant site features.
33. A discussion of the groundwater elevation and constituent concentration trends over time and any impacts the discharge is having or projected to have on groundwater quality.
34. A summary of the groundwater monitoring field log notations. Copies of the field logs do not need to be submitted unless requested by the regional water board.

Compliance Summary

35. A discussion of any violations or exceedances that occurred during the reporting period, all actions taken or planned for correcting or preventing future violations, such as operation or facility modifications, and a time schedule for completing the corrective actions.
36. If a pond liner performance evaluation was conducted during the reporting period, description of any liner maintenance, repairs, or modifications needed to maintain pond performance and provide an implementation schedule.
37. **Tier 4:** Description of any groundwater monitoring well maintenance, repairs, or modifications needed, planned, or completed during the reporting period and provide an implementation schedule.
38. Descriptions of any facility or BPTC improvements or modifications required by the facility NOA that were begun and/or completed during the reporting period and planned for the next reporting period. Include an implementation schedule.
39. Descriptions of any other notable repair or maintenance activities conducted this reporting period or planned for the next reporting period and provide the implementation schedule.

The Discharger shall implement the above monitoring program as of the NOA effective date.

Ordered by:

NAME, Executive Officer

DATE