**ATTACHMENT A**

**MONITORING AND REPORTING PROGRAM**

**FOR**

**General Waste Discharge Requirements**

**For Discharges OF WINERY WASTE to Land**

**Within The San Francisco Bay region**

**ORDER NO. R2-2017-XXXX**

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD**

**SAN FRANCISCO BAY REGION**

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# I. PURPOSE

## A. General

1. This Monitoring and Reporting Program (Monitoring Program) is for waste discharge requirements adopted by the California Regional Water Quality Control Board, San Francisco Bay Region (Regional Water Board), as Board Order No. R2-2017-XXX, General Waste Discharge Requirements for Discharges of Winery Waste to Land within the San Francisco Bay Region (Winery Order or Order).
2. The principle purposes of a monitoring program by a waste discharger (Discharger) are:
	1. To document compliance with waste discharge requirements and prohibitions established by the Regional Water Board; and
	2. To facilitate accountability and self‑monitoring by the Discharger in the prevention and abatement of pollution or potential threats to water quality arising from waste discharges.
3. Reporting responsibilities of waste dischargers are specified in Sections 13225(a), 13267(b), 13268, 13383, and 13387(b) of the California Water Code (Water Code) and this Regional Water Board's Resolution No. 73‑16.
4. The Order authorizes discharges of winery waste to land under specified conditions and subject to specified requirements. In order to ensure compliance with those requirements, Dischargers are required to conduct monitoring of the discharges and submit reports of monitoring results on a regular basis to the Regional Water Board. The Discharger is responsible for compliance with the monitoring and reporting requirements specified in this Monitoring Program.
5. As counties, water agencies, or locally-controlled groundwater sustainability agencies develop groundwater management measures such as Salt and Nutrient Management Plans, groundwater quality monitoring or loading limitations may be recommended. Through this effort, interagency collaboration will be necessary and additional or modifications to effluent or groundwater monitoring may be recommended. If new information or evidence indicates that effluent limitations or monitoring requirements are different than those prescribed herein are appropriate, the Order and the Monitoring Program will be revised to incorporate such monitoring requirements or limits.
6. All monitoring and analysis instruments and devices used by the Discharger to fulfill the prescribed Monitoring Program shall be properly maintained and calibrated as recommended by the manufacturer to ensure their continued accuracy.

## B. Applicability

1. This Monitoring Program applies to the wastewater system and associated discharges of waste to land described in the Notice of Intent Package submitted for the Discharger's coverage under the Order, and authorized in the Discharge Authorization Letter for those discharges.
2. The Discharger is subject to, and responsible for implementation of, all applicable requirements of this Monitoring Program beginning 45 calendar days after the date of the Discharge Authorization Letter.
3. Dischargers regulated under the Order shall conduct monitoring and reporting in accordance with the requirements given in this Monitoring Program, unless such requirements are modified by the Executive Officer. The monitoring requirements in this Monitoring Program are minimum requirements. Additional requirements may be added by the Executive Officer as needed to adequately assure compliance with the Order and proper wastewater system performance.
4. All discharges of waste to land must be monitored by observations and measurements sufficient to adequately characterize the location, quantity, and quality of the discharges. Wastewater sources and treatment systems also must be monitored in order to verify that adequate and reliable treatment and management of the wastewater is being provided.

## C. Program Framework

In order to prevent and/or address the potential impacts to beneficial uses associated with winery wastewater discharges to land, this Order regulates the discharge of winery wastewater to land via an approach based on discharge quantity, land disposal method(s), the location of winery in proximity to impacted groundwater areas, and the availability of an authorized county oversight program. Any Discharger that discharges winery wastewater to land in the San Francisco Bay region will fall into one of three tiers. Refer to the *Program Framework* section in the Findings of the Order for additional information on the tiers, which include the following:

Tier 1: Dischargers discharging less than 1,500 gallons per day (gpd) monthly average of winery waste during crush season and 1,500 gpd daily maximum during non-crush season.

Tier 2: All other Dischargers discharging greater than a monthly average of 1,500 gpd, except for those in Tier 3.

Tier 3: Dischargers with facilities located in a County that is authorized as program administrator, pursuant to a county oversight program that has been approved by the Regional Water Board Executive Officer.

# II. SAMPLING and ANALYTICAL METHODS

1. Sample collection, storage, and analyses shall be performed according to Code of Federal Regulations Title 40, Section 136 (40 CFR §136), or other methods approved and specified by the Executive Officer of the Regional Water Board.
2. Water and waste analyses shall be performed by a laboratory approved for these analyses by the State Water Resources Control Board Division of Drinking Water (DDW), or a laboratory waived by the Executive Officer from obtaining a DDW certification for these analyses. If a certified laboratory is not available to the Discharger, analyses performed by a noncertified laboratory will be accepted provided the laboratory and Discharger implement a Quality Assurance/Quality Control Program that conforms to U.S. EPA guidelines.
3. The director of the laboratory whose name appears on the certification, or his/her laboratory supervisor who is directly responsible for the analytical work performed shall supervise all analytical work, including appropriate quality assurance/quality control procedures in his/her laboratory and shall sign all reports of analytical results.
4. All monitoring instruments and equipment shall be properly calibrated and maintained to ensure accuracy of measurements.
5. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.

# III. DEFINITION of TERMS

The following definitions and descriptions of terms apply to the requirements of this Monitoring Program.

## A. Types of Samples

1. **Flow measurement.** Flow measurement is the accurate measurement of the flow volume over a given period of time using a properly calibrated and maintained flow measuring device. Flows calculated from properly maintained pump use records or device, such as a pump dose event counter, for an accurately calibrated pump are acceptable. Flows shall be monitored continuously, and reported as total flow volume for the identified monitoring period.
2. **Grab Sample.** A grab sample is defined as an individual sample collected in a short period of time not exceeding 15 minutes. Grab samples are used primarily in determining compliance with daily or instantaneous maximum or minimum limits, and for bacteriological limits. Grab samples represent only the condition that exists at the time the sample is collected.
3. **Composite Sample.**A composite sample is a sample composed of multiple individual grab samples collected at regular intervals throughout a given period of time. The composite sample consists of the individual grab samples mixed in proportion to the instantaneous wastewater flow rate at the time of each respective grab sample. Sample proportioning shall not vary by more than five percent of the flow rate. Typical composite sampling uses grab sample intervals of one hour and a sampling period of 24 hours. Sampling periods of less than 24 hours are acceptable, with justification, such as for characterizing waste flows during an 8-hour work cycle.
4. **Freeboard.** Freeboard is the vertical distance between the water surface of contained water (e.g., pond water) and the lowest elevation of the top of the water containment structure (e.g., pond berm).
5. **Ground water levels**. Ground water level is the vertical distance between the water surface of observed ground water and the overlying ground surface.
6. **Ground water samples.** Ground water samples are samples of ground water obtained from monitoring wells for analytical characterization. Sampling of ground water shall be conducted in accordance with current accepted standard practices for ground water sampling, sample handling, and analyses.
7. **Observations.** Observations are primarily visual observations and inspection of conditions. Observations may include recording measurements from monitoring devices such as freeboard determined from a water level staff gauge or precipitation determined from a rain gauge.

## B. Sampling Frequency

Continuous = Continuous monitoring, for the full duration of the monitored event.

Daily = One time each calendar day.

Weekly = One time per calendar week, with sampling intervals of about seven days.

Biweekly = Two times per calendar month, with sampling intervals of about fourteen days.

Monthly = One time per calendar month, with sampling intervals of about four weeks.

Quarterly = One time per calendar quarter, with sampling intervals of about three months.

Annually = One time per calendar year, with sampling intervals of about twelve months.

## C. Sampling Periods

1. **Dry Season and Wet Season.**
	1. **Dry Season.** The Dry Season is the period during which weather is characterized by little precipitation, ground conditions are generally dry, and ground water levels typically decrease. For purposes of this Monitoring Program, unless specified otherwise, the Dry Season is the six-month period of May through October.
	2. **Wet Season.** The Wet Season is the period during which most of the annual precipitation occurs, and ground conditions are typically wet and ground water levels typically increase. For purposes of this Monitoring Program, unless specified otherwise, the Wet Season is the six-month period of November through April.
2. **Crush Season.** For purposes of this Monitoring Program, the wine grape crush season (also called "crush") is the period during which wine grape crush activity occurs, extending from the date of the first delivery of grapes to the Discharger's facility, through at least seven days after the date of completion of all grape crushing activity and associated clean-up, dismantling and storage of all grape crushing equipment. In general, the crush season typically occurs between late August and December.

## D. Abbreviations

1. **Sample Types**

 Flow = Flow Measurement

 Grab = Grab Sample

2. **Monitoring Parameters**

BOD5 = Biochemical Oxygen Demand, 5-day, at 20 oC

TSS = Total Suspended Solids

TDS = Total Dissolved Solids

N = Nitrogen

NO3-N = Nitrate as nitrogen

NH4+ = Ammonium

3. **Units**

gpd = gallons per day

mg/L = milligrams per liter

ml/L-hr = milliliters per liter, per hour

## E. Statistical Parameters

1. **Average.** Average is the arithmetic mean (i.e., the sum of all values in a given data set, divided by the total number of values). A monthly average is the sum of the test result values from all samples collected in the month, divided by the number of samples.

## F. Description of Monitoring Stations

1. **Monitoring Station Definitions**. Stations to be used for sampling and observations in accordance with this Monitoring Program shall be described in each monitoring report submitted in response to this Monitoring Program. The station description shall include a description of the water, wastewater, point of the wastewater system, or land area where specified monitoring is to be conducted.
2. **Monitoring Station Changes.** Changes to the monitoring stations defined in this Monitoring Program may be authorized by the Executive Officer in order to accommodate changes in the wastewater system or wastewater system operations or to provide improved monitoring. Requests for changes to the monitoring stations must be submitted to the Regional Water Board in writing, with a detailed explanation of the purpose of the proposed station changes. Proposed changes to monitoring stations must be approved in writing from the Executive Officer prior to implementation.
3. **Site Plan Showing All Monitoring Stations.** The Discharger shall develop a scaled and legible plan view drawing of the facility site that clearly shows the locations of all major components of the wastewater system, all monitoring stations identified in this Monitoring Program, and relevant land use features such as buildings, access roads, property boundaries, and surface water drainage systems. A copy of this drawing shall be included with all reports submitted in response to this Monitoring Program.

## G. Loading Calculations

1. The mass of **biochemical oxygen demand** applied to the discharge areas on a daily basis over the duration of the cycle period, shall be calculated using the following formula:

$$M=\frac{8.345 × (C×V)}{A×t}$$

Where:

M = mass of BOD applied to an discharge area in pounds/acre/day (**lbs/acre/day**)

C = concentration of BOD in milligrams per liter (**mg/L**) based on most recent monitoring result

V = volume of wastewater applied to the discharge area in **millions of gallons**

A = area of the discharge area irrigated in **acres**

t = cycle time in days, which is the time between subsequent applications to the discharge area (days of application plus days of drying)

8.345 = unit conversion factor

1. The mass of **total nitrogen** applied to the discharge area on an annual basis shall be calculated using the following formula, which results in calculating the nitrogen loading:

$$M=\sum\_{i=1}^{12}\frac{(8.345 × \left(Ci×Vi\right))}{A}$$

Where:

M = mass of nitrogen applied to the discharge area in **lbs/acre/year**

Ci = concentration of total nitrogen for each month (i) in **mg/L**

Vi = volume of wastewater applied to the discharge area during calendar month (i) in **millions of gallons**

A = area of the discharge area in **acres**

i = number of the month (e.g. January = 1, February = 2, etc.)

8.345 = unit conversion factor

**Σ** = add the equation solution for all of the months

The equation above is calculated for each month and then the total nitrogen mass for each month is added together to determine the annual loading rate of total nitrogen. The equation for a year is as follows:

M = (8.345 x (C January x V January) (8.345 x (C February x V February)

 A + A +

 (8.345 x (C March x V March) (8.345 x (C April x V April)

 A + A +

 (8.345 x (C May x V May) (8.345 x (C June x V June)

 A + A +

 (8.345 x (C July x V July) (8.345 x (C August x V August)

 A + A +

 (8.345 x (C September x V September) (8.345 x (C October x V October)

 A + A +

 (8.345 x (C November x V November) (8.345 x (C December x V December)

 A + A

# IV. MONITORING REQUIREMENTS

## A. Standard Observations

1. **Land Discharge Area.** The following observations shall be conducted **weekly** when wastewater is being discharged to land. Refer to the Standard Observations template at the end of this Attachment.
2. Check discharge system control equipment (e.g., valves, pumps, meters, etc.) for proper functioning. Note operational status during observations (e.g., on/off; in use/not in use).
3. Check for evidence of wastewater escaping the discharge area through uncontrolled surface runoff or through airborne spray. If wastewater escape is observed, show the source and affected area on a site plan drawing.
4. Check for odor from discharge area. If nuisance odors are observed, describe the odor, indicate apparent source or cause, direction of travel, and any public use area or offsite area affected by the odors.
5. Check for evidence of wastewater breaching land surface or breaching land surface or ponding, and/or evidence of mosquitoes breeding within the discharge area due to ponded water. Note the course of action taken in response to wastewater breaching land surface or ponding.
6. Check the soil for impacts related to the accumulation of salts, which can be indicated by the following symptoms: White crust on soil surface, water-stressed plants, leaf tip burn, poor drainage, black powdery residue on soil surface, grey-colored soil, and plants showing water stress.
7. Check perimeter fence for integrity and proper closure of all gates.
8. Check that warning signs are properly posted to inform public that irrigation water is wastewater that is not safe for drinking.
9. Check all sprinklers for proper operational status (e.g., proper height, direction, and trajectory).
10. Check perimeter drainage ways, berms, and other runoff control systems for proper condition.

## B. Wine Production Monitoring – All Tiers

Wine production for all tiers shall be reported as follows:

Table : Wine Production Monitoring Requirements

|  |  |  |  |
| --- | --- | --- | --- |
| **Parameter** | **Units** | **Sample Type** | **Reporting Frequency** |
| Start and End of Crush | dates | -- | Annually  |
| Duration of Crush | days | -- | Annually |
| Grapes Crushed | tons/year | Measured | Annually |
| Wine Produced | cases/year | Measured | Annually |

## C. Land Application Monitoring – All Tiers

1. Land application monitoring shall be conducted by all Dischargers that discharge to land via surface and subsurface discharge methods during the months that a discharge occurs.
2. Hydraulic loading means the rate at which wastewater is applied to the land per unit area. Following wastewater loading, the land shall be rested to provide time to allow soil organisms to biologically decompose organic pollutants in the effluent, organic solids on the ground surface to decompose, and the soil column to reaerate. The duration of the wetting and drying cycles are to document that alternating wetting and resting is occurring.

Table : Land Application Monitoring Requirements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Parameter** | **Units** | **Sample Type** | **Monitoring Frequency** | **Reporting Frequency** |
| Land Application Area | acres | **-** | Monthly | Annually Tier 1Quarterly Tiers 2 & 3 |
| Hydraulic Loading[[1]](#footnote-1) | inches/acre/month | calculated | Monthly | Annually Tier 1Quarterly Tiers 2 & 3 |
| Wetting cycle duration | hours | **-** | Monthly | Annually Tier 1Quarterly Tiers 2 & 3 |
| Drying cycle duration | hours | **-** | Monthly | Annually Tier 1Quarterly Tiers 2 & 3 |
| Observation of land discharge area (Monitoring Plan section IV.A) | - | visual | Weekly when discharging | Annually Tier 1Quarterly Tiers 2 & 3 |
| **If Land Application Method is Irrigation** |
| Irrigated Crop | Type | visual | Quarterly | Annually Tier 1Quarterly Tiers 2 & 3 |

## D. Septic Tank Monitoring – All Tiers

1. This section’s requirements apply to all Dischargers using a septic tank or tanks as part of their discharge system.
2. All septic tanks at a winery shall be inspected **annually** to assess accumulated solids and visually assess integrity of the inlet and outlet devices. Measurements shall be made and recorded for the following:

Table : Septic Tank Monitoring

|  |  |  |  |
| --- | --- | --- | --- |
| **Parameter** | **Units** | **Sample Type** | **Inspection/ Reporting Frequency** |
| Sludge depth and scum thickness in each compartment of each septic tank | feet | Staff gauge | Annually |
| Distance between bottom of scum layer and bottom of outlet device | inches | Staff gauge | Annually |
| Distance between top of sludge layer and bottom of outlet device | inches | Staff gauge | Annually |

1. Septic tanks shall be pumped as often as necessary to ensure adequate residence time for the wastewater passing through the tank and that solids are not transported to the effluent dispersal system. Septic tanks shall be pumped when any one of the following conditions exists or are anticipated to exist before the next inspection:
2. The combined thickness of sludge and scum exceeds one-third of the tank depth of the first compartment; or,
3. The scum layer is within three inches of the outlet device; or,
4. The sludge layer is within eight inches of the outlet device.
5. Reporting for septic tank monitoring shall also include the following:
6. Date of inspection(s),
7. Inspection findings and measurements,
8. Follow-up actions taken or planned in response to inspection findings, and
9. Whether the tank was pumped. If the tank was pumped, then include the following:

1. Date of pumping,

2. Volume of water removed, and

3. Person or company that conducted the pumping.

## E. Subsurface Dispersal System (Leachfield) Monitoring – All Tiers

1. This section’s requirements are applicable to all Dischargers discharging to a subsurface dispersal system (leachfield).
2. The flow of wastewater discharged to the subsurface effluent dispersal system shall be monitored to characterize both peak and long-term average hydraulic loading. Flow monitoring requirements are specified in **Table 5**, section F. *Wastewater Flow Monitoring* below.
3. The area of the effluent dispersal system shall be visually inspected **monthly** while discharge is occurring to assess for any evidence of the following:
4. Improper functioning or hydraulic overloading, including surfacing wastewater, accumulated water on the ground surface,
5. Seepage at or downslope of the system,
6. Excessive plant growth.
7. For systems that include observation risers or tubes within or adjacent to the dispersal system, the following observations shall be made:
8. Visual inspections for absence or presence of water shall be made **quarterly**, and if present, measure the water level.
9. Water level (depth below ground surface) shall be measured at least **quarterly**.
10. For systems that include ground water monitoring wells in the vicinity of the dispersal system, ground water levels shall be measured at least **quarterly**.

Table : Subsurface Discharge Monitoring

|  |  |
| --- | --- |
| **Parameter** | **Monitoring Frequency** |
| Effluent dispersal area visual observations | Monthly when discharging |
| Observation risers or well water level (depth below ground surface) | Quarterly when discharging |

## F. Wastewater Flow Monitoring – All Tiers

1. Flow monitoring shall include flows of domestic wastewater (if present at the winery), winery process wastewater, and final treated wastewater discharged to land.
2. Flow measurement is the accurate measurement of the flow volume over a given period of time using a properly calibrated and maintained flow measuring device. Use of a properly calibrated and maintained automated pump-use recording device, such as a pump dose event counter or source-water use records is acceptable. All flow monitoring methods and equipment shall be described in the Notice of Intent Package.
3. All flows shall be monitored continuously in a manner sufficient to measure, record, and report the following:
4. Daily flow volume for each day of operation,
5. Monthly flow volume for each calendar month, and to
6. Characterize peak hydraulic loading.

Flows shall be reported as daily flow, in gallons, for each day when flow occurs, and monthly flow, in gallons, for each calendar month.

1. The following shall be recorded and reported for each calendar month:

Table : Flow Monitoring Requirements

| **Parameter** | **Units** | **Sample Type** | **Reporting Frequency** |
| --- | --- | --- | --- |
| Total monthly discharge flow | gallons/month | measured | Annually Tier 1Quarterly Tiers 2 & 3 |
| Daily volume of wastewater applied to land | gallons/day | measured | Annually Tier 1Quarterly Tiers 2 & 3 |
| Dates when discharges occur | date | - | Annually Tier 1Quarterly Tiers 2 & 3 |
| Duration of discharge | hours/day | measured | Annually Tier 1Quarterly Tiers 2 & 3 |

1. **Storage Systems** - **Tiers 2 and 3**

For Tier 2 and Tier 3 (that discharge greater than 1,500 gpd) wastewater systems that include discrete storage systems for treated wastewater (e.g., ponds or tanks), monitoring of flows into and out of storage is required. The following shall be recorded for each calendar **month** and reported quarterly:

* + 1. Total Influent Flow (gallons per month)
		2. Total Effluent flow (gallons per month)

Table : Storage Systems Monitoring

| **Parameter** | **Units** | **Reporting Frequency** |
| --- | --- | --- |
| Total monthly influent flow | gallons/month | Quarterly Tiers 2 & 3 |
| Total monthly effluent flow | gallons/month | Quarterly Tiers 2 & 3 |

## G. Effluent Quality Monitoring

The following monitoring requirements apply to the final treated wastewater (effluent), prior to discharge to land. The Discharger is responsible for compliance with all applicable conditions of the Order.

* + 1. **Increased Monitoring Frequency**

If any monitoring indicates a violation of waste discharge requirements or unstable wastewater system operation or performance, or if any specified samplings or analyses are not completed as required, then the monitoring for the parameter(s) and monitoring station(s) in concern shall immediately and henceforth be conducted at twice the frequency identified in **Tables 7 through 9** of this Monitoring Program. This increased monitoring frequency shall be maintained for at least two sampling events and until such time as the results of monitoring indicate violations are no longer occurring or the problem has been corrected and the wastewater system has returned to stable operation and performance.

* 1. **Total Coliform Sampling – All Tiers:** If treated domestic wastewater is discharged to the land surface for irrigation, then the final effluent shall be sampled **daily when a discharge to land occurs** and analyzed for total coliform. This requirement does not apply to subsurface discharges of effluent. Refer to California Code of Regulations Title 22 section 60304 for the approved uses and water quality treatment requirements of recycled water that is used for irrigation.
	2. **TIER 1 – LOW VOLUME:** Representative samples of the effluent discharged to land from Tier 1 wineries shall be collected and analyzed according to the following:

Table : Tier 1 Effluent Monitoring Requirements

| **Parameter** | **Units** | **Sample Type** | **Sampling Frequency** | **Reporting Frequency** |
| --- | --- | --- | --- | --- |
| BOD5 | mg/L | Grab | Semi-annuallyonce during crush & once during non-crush | Annually |
| Chloride | mg/L | Grab | Semi-annuallyonce during crush & once during non-crush | Annually |
| Total Fixed Solids | mg/L | Grab | Semi-annuallyonce during crush & once during non-crush | Annually |
| Nitrate Nitrogen | mg/L as N | Grab | Semi-annuallyonce during crush & once during non-crush | Annually |
| pH | s.u.[[2]](#footnote-2) | Grab | Semi-annuallyonce during crush & once during non-crush | Annually |
| **Existing Tier 1 wineries that use a conventional septic system designed for** **domestic wastewater** |
| Total Suspended Solids | mg/L | Grab | Semi-annuallyonce during crush & once during non-crush | Annually |
| **If discharging domestic wastewater to land surface as irrigation** |
| Total Coliform | MPN/100 mL or CPU/100 mL | Grab | Daily when discharging to land | Annually |

**TIERs 2 and 3 - SUBSURFACE DISCHARGE:** Representative samples of the effluent discharged to land via subsurface discharge from wineries in Tiers 2 and Tier 3 facilities that discharger greater than 1,500 gallons per day shall be collected and analyzed according to the following:

Table : Tiers 2 and 3 Effluent Monitoring Requirements – Subsurface Discharge

| **Parameter** | **Units** | **Sample Type** | **Sampling Frequency** | **Reporting Frequency** |
| --- | --- | --- | --- | --- |
| BOD5 | mg/L | Grab | Monthly | Quarterly |
| BOD5 Loading | pounds BOD / acre / day | Calculate | Monthly | Quarterly |
| Chloride | mg/L | Grab | Monthly | Quarterly |
| Total Fixed Solids | mg/L | Grab | Monthly | Quarterly |
| Total Dissolved Solids | mg/L | Grab | Monthly | Quarterly |
| Nitrate Nitrogen | mg/L as N | Grab | Monthly | Quarterly |
| Ammonium | mg/L as N | Grab | Monthly | Quarterly |
| pH | pH units | Grab | Monthly | Quarterly |
| **If the facility is located in an area of nitrate-impacted groundwater[[3]](#footnote-3)** |
| Total Nitrogen Loading | pounds N / acre / year | Calculate | Monthly | Quarterly |

a. **Total nitrogen loading**. The total nitrogen loading as a result of winery and domestic wastewater discharged to land shall be determined as an annual value. This requires adding the twelve monthly loading rates. In the quarterly report, provide the total nitrogen loading that has occurred up until that report. For example, calculate the total nitrogen loading rate for the first quarter (three months) and report the value in the first quarterly monitoring report. In the second quarterly report, report the cumulative total nitrogen loading from the first two quarters by adding the first and second quarterly total nitrogen loading quantities. The Discharger shall also report the annual total nitrogen loading at the end of the twelve‑month period as the total loading for the year. **Section III.G** of this Monitoring Program contains additional information on calculating the total nitrogen loading.

* 1. **TIERs 2 and 3 - LAND SURFACE DISCHARGE:** Representative samples of the effluent from Tier 2 and Tier 3 wineries discharging greater than 1,500 gallons per day that discharge to the land surface shall be collected and analyzed during the months that discharge to land occurs according to the following:

Table : Tiers 2 and 3 Effluent Monitoring Requirements – Land Surface Discharge

| **Parameter** | **Units** | **Sample Type** | **Sampling Frequency** | **Reporting Frequency** |
| --- | --- | --- | --- | --- |
| BOD5 | mg/L | Grab | Monthly | Quarterly |
| BOD5 Loading | pounds/ acres/day | Calculate | Monthly | Quarterly |
| Chloride | mg/L | Grab | Monthly | Quarterly |
| Sodium | mg/L | Grab | Monthly | Quarterly |
| Total Fixed Solids | mg/L | Grab | Monthly | Quarterly |
| Total Dissolved Solids | mg/L | Grab | Monthly | Quarterly |
| Nitrate Nitrogen | mg/L as N | Grab | Monthly | Quarterly |
| Ammonium | mg/L as N | Grab | Monthly | Quarterly |
| pH | s.u. | Grab | Monthly | Quarterly |
| Electrical Conductivity | µS/cm | Grab | Monthly | Quarterly |
| Nitrogen Hazard Index[[4]](#footnote-4) | unitless | Online | Once | Annual |
| **SAR Measurement Option 1: SAR Reported by the Laboratory.** **Discharger is not required to monitor for calcium or magnesium.** |
| Sodium Adsorption Ratio[[5]](#footnote-5) | unitless | Grab or Calculate | Monthly | Quarterly |
| **0SAR Measurement Option 2: Calculate SAR with Equation (1).****Discharger shall monitor for calcium and magnesium.** |
| Calcium (used to calculate SAR) | meq/L[[6]](#footnote-6) or mg/L | Grab | Monthly | Quarterly |
| Magnesium(used to calculate SAR) | meq/L or mg/L | Grab | Monthly | Quarterly |
| **If domestic wastewater is discharged to land surface as irrigation for edible crops** |
| Total Coliform | MPN/100 mL or CPU/100 mL | Grab | Daily when discharging to land | Quarterly |
| **If the facility is located in an area of nitrate-impacted groundwater** |
| Total Nitrogen Loading | pounds N / acre / year | Calculate | Monthly | Annually |

1. If the County is authorized under Tier 3 and the County’s existing winery monitoring program is different than the requirements contained herein, the Order monitoring program shall be implemented **within one year** following the effective date of the Order.
2. **Total nitrogen loading for facilities located in nitrate-impacted groundwater areas**. The total nitrogen loading as a result of winery and domestic wastewater discharged to land shall be determined as an annual value. This requires adding the twelve monthly loading rates. In the quarterly report, provide the total nitrogen loading that has occurred up until that report. For example, calculate the total nitrogen loading rate for the first quarter (three months) and report the value in the first quarterly monitoring report. In the second quarterly report, report the cumulative total nitrogen loading from the first two quarters by adding the first and second quarterly total nitrogen loading quantities. The Discharger shall also report the annual total nitrogen loading at the end of the twelve‑month period as the total loading for the year. **Section III.G** of this Monitoring Program includes the total nitrogen loading equation.
3. **Nitrogen Groundwater Pollution Hazard Index**. If the Discharger is discharging the wastewater to a discharge area that has a crop, including or other than grapes, the Discharger shall determine and report to the Regional Water Board the Nitrogen Groundwater Pollution Hazard Index via the online tool accessible at <http://ciwr.ucanr.edu/Tools/Nitrogen_Hazard_Index/>.

The tool requires that the Discharger select the crop type, soil type, and irrigation technology. The tool includes a mapping interface that will guide the Discharger in selecting the soil for the discharge area. The tool will compile a report that estimates the probability that nitrate will degrade groundwater in the field. The report also ranks the relative significance of effects from the crop, soil, and irrigation system in terms of their contribution to the overall hazard. Additionally, the website presents guidelines for management practices that minimize degradation according to the specific crop, soil, and irrigation technology.

The Discharger shall submit the Nitrogen Groundwater Pollution Hazard Index report to the Regional Water Board in the Discharger’sNOI Package.

1. **Sodium Adsorption Ratio Calculation**. The Discharger has two options for determining the sodium adsorption ratio (SAR).

**SAR Measurement Option 1**: The SAR is determined and reported by the laboratory and the Discharger is not required to sample for calcium or magnesium.

**SAR Measurement Option 2**: The Discharger shall calculate the SAR based upon the calcium, magnesium, and sodium concentrations using SAR Equation (1) below. If the Discharger calculates the SAR, calcium and magnesium shall be included in the effluent monitoring program. SAR can be calculated using the equations below.

**SAR Equation (1):** SAR = Sodium ÷ [(Calcium + Magnesium) ÷ 2] ½

or

$$SAR=\frac{Sodium}{\sqrt{(Calcium+Magnesium) / 2}}$$

The concentrations are expressed in the unit of milliequivalents per liter (meq/L).

If the sodium, calcium, and magnesium concentrations are reported in milligrams per liter (mg/L) or parts per million (ppm), convert the measurements into meq/L by using the conversion factors shown in **Table 10** and Equation 2.

To convert a concentration expressed in mg/L or ppm to a concentration with the units of meq/L, multiply the concentration in mg/L by the answer of the valence from **Table 10** divided by the atomic weight (V ÷ AW). This equation is expressed as

**Equation (2):** Concentration (mg/L) x (V / AW) = Concentration (meq/L) **[[7]](#footnote-7)**

Where:

V = valence, which relates to or denotes the electrons involved in or available for chemical bond formation.

AW = atomic weight, which is the mass of an atom of a chemical element expressed in atomic mass units. It is approximately equivalent to the number of protons and neutrons in the atom.

Table : Concentration Conversions from mg/L to meq/L

|  |  |  |  |
| --- | --- | --- | --- |
| **Element** | **Ion** | **Atomic Weight (AW)** | **Valence (V)** |
| Sodium | Na+ | 22.99 | 1 |
| Calcium | Ca2+ | 40.08 | 2 |
| Magnesium | Mg2+ | 24.31 | 2 |

## H. Pond Monitoring – All Tiers

1. For all systems that include ponds used for either treatment or storage of wastewater, the pond water shall be monitored regularly to assess freeboard, integrity, and water quality. This monitoring is in addition to Effluent Quality Monitoring specified above. All pond samples shall be collected within the top 1 foot of the water surface of the pond(s). Monitoring shall include the following:

Table : Pond Monitoring Requirements

| **Parameter** | **Units** | **Sample Type** | **Sampling Frequency** | **Reporting Frequency** |
| --- | --- | --- | --- | --- |
| Flow into pond, Average daily | gallons /day | Metered, Recorded Pumping Hours or Estimated based on water usage[[8]](#footnote-8) | Monthly | Quarterly |
| Discharge flow rate from the pond, Average daily | gallons /day | Metered, Recorded Pumping Hours or Estimated based on water usage | Daily | Quarterly |
| Freeboard | feet | Measure | Weekly | Quarterly |
| Dissolved oxygen | mg/L | Grab | Monthly | Quarterly |
| pH | s.u. | Grab | Monthly | Quarterly |
| Odor | - | Observation | Monthly | Quarterly |
| Quantity of Pond Overflows & Cause of Overflow | number of occurrences | - | Occurrences per month  | Quarterly |

1. **Dissolved Oxygen**. If dissolved oxygen is found to be less than 2.0 mg/L, then sampling for dissolved oxygen shall be conducted every other week until dissolved oxygen level returns to 2.0 mg/L or greater.
2. **Pond Standard Observations.** The following observations shall be conducted at a minimum of twice per month for any wastewater treatment system that has a pond. Refer to the Standard Observations template at the end of this Attachment.
3. For each pond, determine pond freeboard.
4. Check all aerators for operational status and note the operational status.
5. Check for evidence of seepage from the ponds or from any associated pipes, valves or other wastewater system equipment. If seepage is observed, show on a site plan drawing the apparent source and affected area, and report estimated volume or flow rate of seepage.
6. Check for odor from ponds. If nuisance odors are present, describe the odor, indicate apparent source or cause, direction of travel, and any public use area or offsite area affected by the odors.
7. Check perimeter fence for integrity and proper closure of all gates.
8. Check that warning signs are properly posted to inform public that the pond contains wastewater that is not safe for drinking.

## Solids Disposal Monitoring – All Tiers

For all wineries that dispose of winery processing waste solids to land as fertilizer, an amendment, or as compost, the following information shall be reported in the **annual report**:

1. Quantity of winery process solids applied to land for each month.
2. Days per month for each month that winery process solids were applied to land.

## J. Chemical Use Monitoring – All Tiers

1. Chemicals and additives such as caustic soda, sulfurous acid, sodium hypochlorite, soda ash, diatomaceous earth, herbicides, and pesticides may be used during or a result of winery processing, bottling, equipment cleaning, or grape washing.
2. If a chemical type changes during any year after the first year of reporting, a revised chemical inventory for each year that changes occur shall be submitted to the Regional Water Board as a part of the Discharger’s annual report. The chemical inventory shall include the following:
	1. Chemical name,
	2. Primary ingredients, including, but not limited to, chemicals that contain chloride or sodium,
	3. Where and/or how the chemical is used,
	4. Quantity of chemical used on an annual basis,
	5. Frequency of use, and
	6. Whether a clean-in-place system is being used.

## K. Groundwater Monitoring

1. **Facilities with existing wells**. Groundwater quality sampling and reporting is required to allow the Regional Water Board to assess compliance with Basin Plan water quality objectives and to assess the effectiveness of facility wastewater management. Sampling results shall be used by the Discharger to assess water quality conditions and to make informed decisions regarding management practices. Short-term groundwater well sampling is required in order to assess whether the current management measures and design criteria are protective of groundwater quality.
2. **Existing Well Sampling Frequency and Procedure**: Any existing representative wells located at facilities in Tier 2 and Tier 3 that discharge greater than 1,500 gpd, including domestic and agricultural supply wells, shall be sampled **four (4) times total**, **approximately six (6) months apart and analyzed for the constituents in Table 10**. Results of groundwater samples collected consistently with the sampling protocols and within these time frames for another purpose (e.g., for a county health department) may be submitted to the Regional Water Board staff instead of collecting additional samples. The sample must be representative of groundwater well conditions (i.e., not disinfected).

Groundwater samples from domestic wells shall be collected from the tap before the pressure tank and after water has been pumped from this tap for 10 to 20 minutes. If the sample cannot be collected prior to a pressure tank, the well must be purged at least twice the volume of the pressure tank. Groundwater samples from agricultural supply wells shall be collected after the pump has run for a minimum of 30 minutes or after at least three well volumes have been purged from the well. Groundwater samples shall be analyzed by a laboratory certified by the State Department of Health Services or a laboratory preapproved by Regional Water Board staff.

1. **Facilities in nitrate-impacted groundwater areas**. Facilities producing greater than **10,000 gpd** of process wastewater, as averaged over a calendar month, that land apply treated winery process wastewater for the purpose of reuse or disposal in areas of nitrate‑impacted groundwater, are required to monitor groundwater for the purpose of assessing compliance with the conditions of the Order. **Within one year** of the issuance of the Discharge Authorization letter, the Discharger shall begin groundwater monitoring at appropriate locations and depths to yield groundwater samples to assess whether changes in groundwater quality are occurring as a result of the discharge.
2. Groundwater samples shall be collected from at least three representative monitoring wells, one up gradient and two down gradient of the wastewater discharge area. Refer to the Order **Attachment K** for monitoring well installation requirements.
3. Groundwater monitoring shall include the following schedule of sampling and analyses:

Table : Groundwater Monitoring Requirements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Parameter** | **Units** | **Sample Type** | **Sampling Frequency** | **Reporting Frequency** |
| Depth to Groundwater | 0.1 feet | Measurement | Quarterly in nitrate impacted area | Quarterly |
| Groundwater Elevation | 0.1 feet MSL[[9]](#footnote-9) | Measurement | Quarterly in nitrate impacted area | Quarterly |
| Chloride | mg/L | Grab | Quarterly in nitrate impacted area | Quarterly |
| Nitrate as Nitrogen | mg/L as N | Grab | Quarterly in nitrate impacted area | Quarterly |
| pH | s.u. | Grab | Quarterly in nitrate impacted area | Quarterly |

1. If groundwater monitoring results indicate that the nitrate water quality objective of 10 mg/L as nitrogen, is exceeded, an increase in sampling frequency and/or additional data analysis or studies may be required by the Regional Water Board’s Executive Officer.
2. Dischargers that do not have existing wells onsite shall implement groundwater monitoring **if deemed necessary** by the Executive Officer. If groundwater monitoring is deemed necessary, the Discharger will be notified. Following notification, the Discharger will be required to submit a Groundwater Monitoring Plan within **six months** from the date of the notification letter. The Groundwater Monitoring Plan shall include a description of monitoring well locations and construction, and sampling parameters, schedules and parameters. Groundwater monitoring shall be in accordance with a Groundwater Monitoring Plan accepted by the Executive Officer. The following requirements shall apply to all groundwater monitoring, unless specified otherwise in the approved Groundwater Monitoring Plan.

# V. REPORTING REQUIREMENTS

## Modification of Monitoring Practices

Modifications of the monitoring frequencies specified in this Monitoring Program may be authorized by the Executive Officer, in consideration of acceptable accumulated data and acceptable alternate means of monitoring. Factors to be considered include: data quality, adequate characterization of the identified water or wastewater system process, consistency of system performance, compliance with waste discharge requirements for a minimum of two years, and acceptable means for providing equivalent and adequate monitoring of the identified water or wastewater system process.

Requests for modification of monitoring frequencies must be submitted to the Water Board in writing, with a technical report that includes evaluation of accumulated data, and a complete description of proposed alternate means of monitoring. Proposed modifications of monitoring practices must be approved in writing from the Executive Officer prior to implementation.

## Monitoring Reports

The Discharger shall submit to the Regional Water Board monitoring reports documenting the wastewater system operation and performance, and compliance with the waste discharge requirements, in accordance with the following:

**Report Schedule.** Monitoring reports shall be submitted for each calendar year in accordance with **Table 11**. Monitoring reports shall be submitted to the Regional Water Board no later than 30 days after the end of the report period, by the last day of the month following the monitoring period.

**Quarterly Reports**. Quarterly reports shall be submitted for each calendar quarter to the Regional Water Board by the first day of the second month following the three-month monitoring period. If a Discharger has begun Order coverage during a quarterly or annual reporting period, its report for the relevant period may cover only that portion of the period for which the Discharger had Order coverage.

**Quarterly Report Content.** Each quarterly report shall include a transmittal letter, results of monitoring analyses and observations, and a facility site plan diagram, as described below. The first quarterly report that covers the reporting period from January 1 through March 31 may be combined with or submitted separately than the annually reported data. Both the annually reported data and the first quarterly monitoring report are due by **May 1** of each year.

**Annual Reporting**. Annually reported data shall be submitted to the Regional Water Board by **May 1** of each year. The annual report can be combined with the quarterly report that covers the reporting period from January 1 through March 31.

**Annual Report Content.** Each Annual Report shall include the following components:

1. Transmittal letter,
2. Facility site plan diagram,
3. Results of the annual monitoring analyses and observations include the following:

The references in parentheses pertain to this Monitoring Program.

* Wine production (Section B, **Table 1**),
* Septic tank (Section D, **Table 3**),
* Tier 1 flow monitoring results (Section F, **Table 5**),
* Tier 1 effluent quality monitoring results (Section G.3, **Table 7**),
* Nitrogen Hazard Index (land surface application only, Section G.5.c and **Table p**),
* Solids disposal (Section IV.I), and
* Chemical use inventory (Section IV. J).
1. Winery’s significant wastewater management events for the calendar year, such as wastewater treatment system modifications, and
2. Results of the first quarter monitoring analyses and observations (if applicable).

**Transmittal Letter.** A transmittal letter shall accompany each monitoring report submitted. The letter shall include the following:

Identification of:

(1) The discharge facility by name and address;

(2) The monitoring period being reported; and

(3) The name and telephone number of a person familiar with the report and wastewater system, for follow-up discussions.

b. Discussion of wastewater system operations and observations, and any unusual conditions or problems found during the reporting period. If any observation indicates a violation of waste discharge requirements, then the following information shall be reported:

(1) Date and time of occurrence;

(2) Location of occurrence indicated on a scaled plan drawing of the facility and/or site and, if applicable, affected land areas;

(3) Description of the observed problem; and

(4) Corrective actions taken or planned to correct the problem, including but not limited to, increased monitoring, wastewater system equipment or operation modifications. If a report describing corrective actions and/or a time schedule for implementation of actions was previously submitted, reference to the report is satisfactory.

c. The transmittal letter shall be signed in accordance with the Document Signatory Requirements given in the Order (see section **VI.5.l Provisions**, *Document Signatory Requirements*).

**Results of Analyses and Observations.** The report shall include the following:

a. Tabulations of the results from all required analyses, measurements and observations specified in this Monitoring Program, including identification of:

(1) Date of sampling or observation;

(2) Location of sampling or observation (sample station);

(3) Parameter of analysis (e.g., pH, dissolved oxygen, etc.); and

(4) The result of the analysis, measurement, or observation.

b. In reporting monitoring data, the data shall be arranged in tabular form so that the data are clearly discernible. The data shall be summarized in such a manner to illustrate clearly whether the discharge is in compliance with waste discharge requirements and this Monitoring Program. Reporting shall include the maximum, minimum and average values for each parameter for which more than one sample result is obtained during the monitoring period.

c. For all sample analyses, include the following:

(1) Date of analysis

(2) Individual or contract laboratory conducting the analysis;

(3) Analytical procedure or method used, and test method detection level; and

(4) Copies of laboratory analysis result reports for any sample analyses conducted by a contract laboratory.

d. If the Discharger monitors any parameter more frequently than is required by the waste discharge requirements or this Monitoring Program, the results of such monitoring shall be included in the monitoring reports, and in any calculations of values.

1. **Facility Site Plan Drawing.**

Each report shall include a legible plan-view drawing of the Discharger's facility, showing locations of all key wastewater system components (e.g., septic tanks, treatment units, ponds, dispersal areas), and stations where sampling or observations occur.

1. All monitoring results shall be reported in the quarterly monitoring reports which are to be received by the Regional Water Board by the first day of the second month after the three-month reporting period. Therefore, monitoring reports are due as follows:

**Table 11: Quarterly Monitoring Data Reporting Schedule**

|  |  |  |
| --- | --- | --- |
| **Due Date** | **Type** | **Reporting Period** |
| May 1 | Quarterly Monitoring Data &Annually Reported Data | January 1 through March 31 |
| August 1 | Quarterly Monitoring Data | April 1 through June 30 |
| November 1 | Quarterly Monitoring Data | July 1 through September 30 |
| February 1 | Quarterly Monitoring Data | October 1 through December 31 |

1. **Electronic Reporting Format**. The monitoring reports shall be submitted to the Regional Water Board via mail **or** all reports submitted pursuant to this Ordershall be submitted as electronic files in PDF and in spreadsheet (when applicable) format. All electronic files shall be submitted via the Regional Water Board’s centralized email address: **WDR.monitoring@waterboards.ca.gov**. Should an additional electronic reporting method (e.g., report submittal via the Regional Water Boards’ electronic database Geotracker[[10]](#footnote-10)) become available, Dischargers may be required to submit reports via that method.

## B. Reports of Violations

The Discharger shall notify the Regional Water Board in accordance with part 2 below of any event where the Discharger violates, or threatens to violate, waste discharge requirements due to:

a. Maintenance work, power failure, or breakdown of wastewater system equipment;

b. Accidents caused by human error or negligence; or

c. Other causes, such as acts of nature.

The Discharger or Discharger's agent shall notify the Regional Water Board office by telephone as soon as they have knowledge of the incident. Written notification shall be submitted within **two weeks** of the date of the incident, unless directed otherwise by Regional Water Board staff. The written notification shall include pertinent information explaining reasons for the non‑compliance and shall indicate what steps were taken to correct the problem and the dates thereof, and what steps are being taken to prevent the problem from recurring.

# VI. MONITORING PROGRAM CERTIFICATION

I, Bruce H. Wolfe, Executive Officer, hereby certify that the foregoing Monitoring and Reporting Program:

1. Has been developed in accordance with the procedure set forth in this Board's Resolution No. 73‑16 in order to obtain data and document compliance with waste discharge requirements for the subject winery wastewater systems.

2. May be reviewed at any time subsequent to the effective date upon written notice from the Executive Officer or request from the Discharger, and revisions will be ordered by the Executive Officer.

3. Is effective on the following date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 BRUCE H. WOLFE

 Executive Officer

[File No.\_\_\_\_\_\_\_\_\_\_\_\_]

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

**SAN FRANCISCO BAY REGION**

**STANDARD OBSERVATIONS TEMPLATE**

TO COMPLY WITH GENERAL WASTE DISCHARGE REQUIREMENTS for

DISCHARGES OF WINERY WASTE TO LAND WITHIN THE SAN FRANCISCO BAY REGION

ORDER NO. R2-2017-XXXX

# ­­­­­

Dischargers enrolled under the Order are required to conduct monitoring and shall submit to the Regional Water Board monitoring reports documenting the wastewater system operation and performance, and compliance with the waste discharge requirements.

This template is intended to aid the Dischargers in reporting the standard observations required in **Section IV.A** of the Monitoring Program. The tables may be reconstructed and figures and additional information may be added.

**IV.A. STANDARD OBSERVATIONS**

1. **Land Discharge Area.** The following observations shall be conducted **weekly** when wastewater is being discharged to land. Indicate if the answers are not applicable by entering ‘N/A’.

| **Land Discharge Area Observations** |
| --- |
| 1. Check discharge system control equipment (e.g., valves, pumps, meters, etc.) for proper functioning. Note operational status during observations (e.g., on/off; in use/not in use).

[ ]  Inspection Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_ [ ]  Inspection Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_[ ]  Inspection Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_ [ ]  Inspection Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| 1. Date of the most recent flow meter calibration \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
 |
| 1. Check for evidence of wastewater escaping the discharge area through uncontrolled surface runoff or through airborne spray. If wastewater escape is observed, show the source and affected area on a site plan drawing.

[ ]  Inspection Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_ [ ]  Inspection Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_[ ]  Inspection Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_ [ ]  Inspection Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| 1. Check discharge system control equipment (e.g., valves, pumps, meters, etc.) for proper functioning. Note operational status during observations (e.g., on/off; in use/not in use).

[ ]  Inspection Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_ [ ]  Inspection Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_[ ]  Inspection Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_ [ ]  Inspection Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| 1. Check for odor from discharge area. If nuisance odors are observed, describe the odor, indicate apparent source or cause, direction of travel, and any public use area or offsite area affected by the odors.

[ ]  Inspection Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_ [ ]  Inspection Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_[ ]  Inspection Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_ [ ]  Inspection Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| 1. Check for evidence of wastewater breaching the land surface or ponding, and/or evidence of mosquitoes breeding within the discharge area due to ponded water. Note the course of action taken in response to wastewater breaching land surface or ponding.

[ ]  Inspection Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_ [ ]  Inspection Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_ [ ]  Inspection Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_ [ ]  Inspection Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| 1. Check the soil for impacts related to the accumulation of salts. Circle the symptoms that apply.

a. White crust on soil surface. Water-stressed plants. Leaf tip burn.b. Poor drainage. Black powdery residue on soil surface.c. Grey-colored soil. Plants showing water stress.[ ]  Inspection Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_ [ ]  Inspection Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_[ ]  Inspection Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_ [ ]  Inspection Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| 1. Check perimeter fence for integrity and proper closure of all gates.

[ ]  Inspection Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_ [ ]  Inspection Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_[ ]  Inspection Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_ [ ]  Inspection Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| 1. [ ]  Check that warning signs are properly posted to inform public that irrigation water is wastewater which is not safe for drinking.

[ ]  Inspection Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_ [ ]  Inspection Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_[ ]  Inspection Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_ [ ]  Inspection Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| 1. [ ]  Check all sprinklers for proper operational status (e.g., proper height, direction, and trajectory).

[ ]  Inspection Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_ [ ]  Inspection Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_[ ]  Inspection Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_ [ ]  Inspection Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| 1. [ ]  Check perimeter drainage ways, berms, or other runoff control systems for proper condition.

[ ]  Inspection Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_ [ ]  Inspection Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_[ ]  Inspection Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_ [ ]  Inspection Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

1. **Pond Area.** The following observations shall be conducted at a minimum of **twice per month** for any wastewater treatment system that has a pond. This checklist can be included in the monitoring report at the frequency for the corresponding Tier as stated in the Monitoring Program. If an observation requires indicating activity on a site plan, the Discharger shall submit the applicable site plan with the monitoring report. Indicate if the answers are not applicable by entering ‘N/A’.

| **Pond Observations** |
| --- |
| 1. [ ]  For each pond, determine pond freeboard.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Month** | **Measurement Date** | **Freeboard (feet)** | **Month** | **Measurement Date** | **Freeboard (feet)** |
| January |  |  | July |  |  |
| February |  |  | August |  |  |
| March |  |  | September |  |  |
| April |  |  | October |  |  |
| May |  |  | November |  |  |
| June |  |  | December |  |  |

 |
| 1. Check all aerators for operational status and note the operational status.

[ ]  Inspection Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_[ ]  Inspection Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| 1. Check for evidence of seepage from the ponds or from any associated pipes, valves or other wastewater system equipment. If seepage is observed, show on a site plan drawing the apparent source and affected area, and report estimated volume or flow rate of seepage.

Seepage detected? [ ]  Yes [ ]  No Inspection Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_Seepage detected? [ ]  Yes [ ]  No Inspection Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| 1. Check for odor from ponds. If nuisance odors are present, describe the odor, indicate apparent source or cause, direction of travel, and any public use area or offsite area affected by the odors.

Odor detected? [ ]  Yes [ ]  No Inspection Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_If yes, provide additional information requested.Odor detected? [ ]  Yes [ ]  No Inspection Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_If yes, provide additional information requested. |
| 1. Check perimeter fence for integrity and proper closure of all gates.

[ ]  Inspection Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_[ ]  Inspection Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| 6**.** Check that warning signs are properly posted to inform public that the pond contains wastewater which is not safe for drinking.[ ]  Inspection Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_[ ]  Inspection Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

1. Refer to the Order **Attachment C-2** for additional information on hydraulic loading. [↑](#footnote-ref-1)
2. s.u. denotes standard unit for the pH unit of measurement. [↑](#footnote-ref-2)
3. Figures 3 through 5 in Attachment J of the Order depict the areas of nitrate-impacted groundwater. [↑](#footnote-ref-3)
4. Refer to **Section IV.G.5.c** of this Monitoring Program for the Nitrogen Groundwater Pollution Hazard Index methodology. [↑](#footnote-ref-4)
5. Refer to **Section IV.G.5.d** of this Monitoring Program for the sodium adsorption ratio calculation methodology. [↑](#footnote-ref-5)
6. meq/L denotes milliequivalents per liter, which is a unit of concentration that is used to calculate water quality parameters that involve electrochemistry. Concentration data reported in milligrams per liter (mg/L) can be converted to milliequivalents per liter (meq/L), and vice versa. [↑](#footnote-ref-6)
7. Lesch, S. M., & Suarez, D. L. (2009). A Short Note of Calculating the Adjusted SAR Index. American Society of Agricultural and Biological Engineers, 52 (2), 493-496. [↑](#footnote-ref-7)
8. The quantified influent to the pond is the winery processing and domestic wastewater (if applicable). Indicate the method used to determine the flow rate in the report. [↑](#footnote-ref-8)
9. MSL denotes that the elevation is reported in relation to mean sea level. [↑](#footnote-ref-9)
10. Geotracker is not currently used for waste discharge requirement report submittals but the Regional Water Board will be transitioning to the use of this electronic database at a future date. At which time, the Discharger will be notified. An Electronic Submittal of Information “Beginner’s Guide” is available online in the “Getting Started” section at http://www.swrcb.ca.gov/water\_issues/programs/ust/electronic\_submittal/. [↑](#footnote-ref-10)