

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. R5-2010-_____

FOR
WILDHURST VINEYARDS
WASTEWATER TREATMENT FACILITY
LAKE COUNTY

This Monitoring and Reporting Program (MRP) incorporates requirements for monitoring of the winery wastewater, wastewater treatment ponds, land application areas, solids, and groundwater. This MRP is issued pursuant to Water Code Section 13267. The Discharger shall not implement any changes to this MRP unless and until a revised MRP is issued by the Executive Officer.

All wastewater samples should be representative of the volume and nature of the discharge. The time, date, and location of each grab sample shall be recorded on the sample chain of custody form. Winery wastewater flow monitoring shall be conducted continuously using a flow meter and shall be reported in cumulative gallons per day.

Field test instruments (such as pH and dissolved oxygen) may be used provided that:

1. The operator is trained in the proper use of the instrument;
2. The instruments are field calibrated prior to each use;
3. Instruments are serviced and/or calibrated by the manufacturer at the recommended frequency; and
4. Field calibration reports are submitted as described in the "Reporting" section of this MRP.

WINERY WASTEWATER MONITORING

Winery wastewater samples shall be collected prior to discharge into the wastewater treatment ponds. Monitoring shall include at least the following:

<u>Constituents</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
Flow	gpd	Continuous	Daily ¹	Monthly
Total Flow ¹	gpd	Continuous	Totalizer ¹	Monthly
Total Dissolved Solids	mg/L	Grab	Monthly	Monthly
Fixed Dissolved Solids	mg/L	Grab	Monthly	Monthly
Biochemical Oxygen Demand ²	mg/L	Grab	Monthly	Monthly

¹ Continuous monitoring requires daily meter reading or automated data collection using a meter equipped with a totalizer. Total flow means the cumulative total for the calendar year.

² Five-day, 20° Celsius Biochemical Oxygen Demand.

WASTEWATER TREATMENT POND MONITORING

Treated wastewater samples shall be collected from an established sampling station located in an area that will provide representative samples of the treated and/or blended wastewater in the treatment pond that will be applied to land. Note that some parameters (e.g. dissolved oxygen, freeboard, pH, electrical conductivity, and odors) are monitored in both ponds (Ponds 1 and 2). Freeboard shall be measured vertically from the surface of the pond water to the lowest elevation of the surrounding berm and shall be measured to the nearest 0.1 feet. Flow monitoring of the outflow from the treatment ponds shall be reported in the Land Application Area Monitoring section of this MRP. Monitoring of the ponds shall include, at a minimum, the following:

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
Dissolved Oxygen ^{1, 2}	mg/L	Grab	Weekly	Monthly
Freeboard ²	feet (±0.1)	Measurement	Weekly	Monthly
pH ²	pH Units	Grab	Weekly	Monthly
Electrical Conductivity ²	umhos/cm	Composite	Weekly	Monthly
Odors ²	--	Observation	Weekly	Monthly
Berm Seepage ^{2,3}	--	Observation	Weekly	Monthly
Biochemical Oxygen Demand	mg/L	Grab	Monthly	Monthly
Nitrate as Nitrogen	mg/L	Grab	Monthly	Monthly
Total Kjeldahl Nitrogen	mg/L	Grab	Monthly	Monthly
Total Dissolved Solids	mg/L	Grab	Monthly	Monthly
Fixed Dissolved Solids	mg/L	Grab	Monthly	Monthly
Sodium	mg/L	Grab	Monthly	Monthly
Chloride	mg/L	Grab	Monthly	Monthly
Standard Minerals ⁴	mg/L	Grab	Quarterly	Quarterly

¹ Samples shall be collected at a depth of one foot, opposite the inlet. Samples shall be collected between 0700 and 0900 hours.

² Parameter shall be measured in both treatment ponds (Ponds 1 and 2).

³ Containment levees shall be observed for signs of seepage or surfacing water along the exterior toe of the levees. If surfacing water is found, then a sample shall be collected and tested for total dissolved solids.

⁴ Standard minerals include the following: boron, calcium, iron, magnesium, manganese, potassium, sulfate, total alkalinity (including alkalinity series), and hardness.

LAND APPLICATION AREA MONITORING

The Discharger shall monitor treated wastewater discharged for irrigation to the land application area. Monitoring shall be conducted **daily during operation** and the results shall be included in the monthly monitoring report. Evidence of erosion, field saturation, runoff, or the presence of nuisance conditions shall be noted in the report. Loading rates for the land application areas shall be calculated using applied wastewater and any supplemental irrigation water. Monitoring of the land application areas shall include the following:

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u> ¹	<u>Reporting Frequency</u> ¹
Supplemental Irrigation				
Water Flow	gpd	Continuous ¹	Daily	Monthly
Wastewater Flow ²	gpd	Continuous ¹	Daily	Monthly
		Local Gauge		
Local Rainfall ³	Inches	Station	Daily	Monthly
Acreage Applied	Acres	Calculated	Daily	Monthly
Application Rate	gal/acre·day	Calculated	Daily	Monthly
BOD Loading Rate	lbs/acre·day	Calculated	Daily	Monthly
Total Nitrogen Loading Rate ⁴	lbs/acre·month ⁵	Calculated	Monthly	Monthly
Total Nitrogen Concentration ⁴	mg/L ⁵	Calculated	Monthly	Monthly
TDS Loading Rate	lbs/acre·month ⁵	Calculated	Monthly	Monthly
FDS Loading Rate	lbs/acre·month ⁵	Calculated	Monthly	Monthly
Crop Removal Mass	pounds	Measured	Monthly	Monthly

¹ Samples only need be collected during the irrigation season. If irrigation does not occur during a reporting period, the monitoring report shall so state.

² Continuous monitoring requires daily meter reading or automated data collection and shall define the volume of wastewater discharged to the land application areas from the wastewater treatment pond 2

³ Provide nearby Department of Water Resource gauge station data.

⁴ Total nitrogen applied from all sources, including fertilizers and supplemental irrigation water if used.

⁵ Report monthly total and cumulative annual to date.

At least **once per week** when treated wastewater is being applied to the land application areas, the entire application area shall be inspected and observations from those inspections shall be documented for inclusion in the monthly monitoring reports. If no irrigation with wastewater takes place during a given month, then the monthly monitoring report shall so state and the above monitoring is not necessary. The following items shall be documented for each check or field to be irrigated:

1. Evidence of erosion;
2. Containment berm condition;
3. Condition of each standpipe and flow control valve (if applicable);
4. Proper use of valves;
5. Soil saturation;
6. Ponding;
7. Tailwater ditches and potential runoff to off-site areas;
8. Potential and actual discharge to surface waters;
9. Odors that have the potential to be objectionable at or beyond the property boundary;
and
10. Insects.

SOLIDS MONITORING

The Discharger shall record and report monthly the quantity, drying location, storage location, disposal location, and method of disposal of solids disposed of during the processing season, as well as during the off-season, if applicable. If solid waste is shipped offsite during the reporting period, then an estimated amount and location of disposal shall be reported in the monthly report and the hauler identified.

The application and storage of any pomace or used DE shall be described. The description shall include the approximate amount generated and applied on-site as a soil amendment or disposed of off-site at an appropriate permitted facility, the material stored, approximate amount stored, locations of storage, and measures implemented to prevent leachate generation or control and dispose of any leachate that is generated.

GROUNDWATER MONITORING

Prior to construction and/or sampling of any groundwater monitoring wells, the Discharger shall submit plans and specifications to the Central Valley Water Board for approval. Once installed, all new wells shall be added to the monitoring network and shall be sampled and analyzed according to the schedule below. The current network consists of Monitoring Wells Nos. MW-1, MW-2, and MW-3. All samples shall be collected using approved EPA methods or the latest edition of *Standard Methods*. Water table elevations shall be calculated to determine groundwater gradient and direction of flow.

Prior to sampling, the groundwater elevations shall be measured and the wells shall be purged of at least three well volumes until temperature, pH, and electrical conductivity have stabilized. Depth to groundwater shall be measured to the nearest 0.01 feet. Groundwater monitoring shall include, at a minimum, the following:

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
Depth to Groundwater	±0.01 feet	Measurement	Quarterly	Quarterly
Groundwater Elevation ¹	±0.01 feet	Calculated	Quarterly	Quarterly
Gradient	feet/feet	Calculated	Quarterly	Quarterly
Gradient Direction	Degrees	Calculated	Quarterly	Quarterly
pH	pH units	Grab	Quarterly	Quarterly
Electrical Conductivity	umhos/cm	Grab	Quarterly	Quarterly
Ammonia (as NH ₄)	mg/L	Grab	Quarterly	Quarterly
Total Nitrogen	mg/L	Grab	Quarterly	Quarterly
Nitrate as Nitrogen	mg/L	Grab	Quarterly	Quarterly
Total Kjeldahl Nitrogen	mg/L	Grab	Quarterly	Quarterly
Total Dissolved Solids	mg/L	Grab	Quarterly	Quarterly
Fixed Dissolved Solids	mg/L	Grab	Quarterly	Quarterly
Standard Minerals ^{2,3}	mg/L	Grab	Annually	Annually

- ¹ Groundwater elevation shall be determined based on depth-to-water measurements from a surveyed measuring point elevation on the well.
- ² Standard Minerals shall include at least the following compounds: boron, calcium, iron (filtered sample), magnesium, manganese, potassium, sodium, chloride, sulfate, total alkalinity (including alkalinity series), and hardness.
- ³ Standard Minerals shall be analyzed in the fourth quarter of the year.

REPORTING

In reporting monitoring data, the Discharger shall arrange the data in tabular form so that the date, sample type (e.g., wastewater pond monitoring, groundwater monitoring well, etc.), and reported analytical result for each sample are readily discernible. The data shall be summarized in such a manner to clearly illustrate compliance with waste discharge requirements and spatial or temporal trends, as applicable. The results of any monitoring done more frequently than required at the locations specified in the Monitoring and Reporting Program shall be reported in the next scheduled monitoring report.

As required by the California Business and Professions Code Sections 6735, 7835, and 7835.1, all groundwater monitoring reports shall be prepared under the direct supervision of a registered professional engineer or geologist and signed by the registered professional.

A. Monthly Monitoring Reports

Monthly reports shall be submitted to the Central Valley Water Board by the **1st day of the second month** following the end of the reporting period (i.e. the January monthly report is due by 1 March). Monthly reports for the months of March, June, September, and December may be submitted as part of the Quarterly Monitoring Report, if desired. The monthly reports shall include the following:

1. Results of winery wastewater, wastewater treatment pond, land application area, solids, and groundwater monitoring.
2. A comparison of monitoring data to the discharge specifications and effluent limitations, disclosure of any violations of the WDRs, and an explanation of any violation of those requirements. Data shall be presented in tabular format. The calculations shall include the following:
 - i. On a month to month basis beginning each year in January the simple arithmetic average value shall be calculated. (The sum of all the concentration data shall be divided by the number of months data was collected). If for any reason, more than one data point is available for any month, that data shall be averaged before use in the running average calculation. No data shall be excluded from the calculation without a written explanation from the analytical laboratory.
3. If requested by staff, copies of laboratory analytical report(s);
4. A calibration log verifying calibration of all hand held monitoring instruments and devices used to comply with the prescribed monitoring program;

5. The cumulative volume of wastewater generated during the year to date;
6. The total pounds of total dissolved solids and fixed dissolved solids (year to date) that have been applied to the land application areas, as calculated from the sum of monthly loadings; and
7. The total pounds of nitrogen (year to date, from all sources including fertilizer) applied to the land application area as calculated from the sum of monthly loadings.
8. A summary of the quantity of solid waste (stems, pomace, diatomaceous earth, crops removed, etc.) generated and disposed of on-site as a soil amendment or off-site at an appropriately permitted facility.
9. If generated, a summary of the quantity of liquid waste (water softening ion exchange regeneration brine, wine treatment ion exchange regeneration brine, etc.) generated and disposed of off-site at an appropriately permitted facility. Include a description of the disposal location for the material. If not generated, a statement stating so.

B. Quarterly Report

The Discharger shall establish a quarterly sampling schedule for groundwater monitoring such that samples are obtained approximately every three months. Quarterly monitoring reports shall be submitted to the Regional Board by the **1st day of the second month after the quarter** (i.e. the January-March quarter is due by May 1st) each year. The Quarterly Report shall include the following:

1. Results of the quarterly monitoring of wastewater ponds.
2. Results of groundwater monitoring;
3. A narrative description of all preparatory, monitoring, sampling, and analytical testing activities for the groundwater monitoring. The narrative shall be sufficiently detailed to verify compliance with the WDR, this MRP, and the Standard Provisions and Reporting Requirements. The narrative shall be supported by field logs for each well documenting depth to groundwater; parameters measured before, during, and after purging; method of purging; calculation of casing volume; and total volume of water purged;
4. Calculation of groundwater elevations, an assessment of groundwater flow direction and gradient on the date of measurement, comparison of previous flow direction and gradient data, and discussion of seasonal trends if any;
5. A narrative discussion of the analytical results for all groundwater locations monitored including spatial and temporal trends, with reference to summary data tables, graphs, and appended analytical reports (as applicable);
6. A comparison of monitoring data to the groundwater limitations and an explanation of any violation of those requirements;

7. Summary data tables of historical and current water table elevations and analytical results;
8. A scaled map showing relevant structures and features of the facility, the locations of monitoring wells and any other sampling stations, and groundwater elevation contours referenced to mean sea level datum; and
9. Copies of laboratory analytical report(s) for groundwater monitoring.

C. Annual Report

An annual Report shall be prepared as the December monthly monitoring report. The Annual Report shall be submitted to the Central Valley Water Board by **1 February** each year. In addition to the data normally presented, the Annual Report shall include the following:

1. The contents of a regular December monthly monitoring report.
2. The contents of the regular quarterly monitoring report for the last quarter of the year.
3. Tabular and graphical summaries of all data collected during the year.
4. Tabular and graphical summaries of historical monthly total loading rates for wastewater generation, process water used for irrigation (hydraulic loading in gallons/acre and inches), total nitrogen (lbs/ac/yr and mg/L), total dissolved solids (lbs/ac/yr), and fixed dissolved solids (lbs/ac/yr). Tabular and graphical summaries of historical annual wastewater flow (million gallons).
5. A comprehensive evaluation of the effectiveness of the past year's wastewater application operation in terms of odor control and groundwater protection, including consideration of application management practices (e.g.: waste constituent and hydraulic loadings, application cycles, drying times, and cropping practices), and groundwater monitoring data.
6. A summary of the vegetative material (crops) removed from the LAAs. The summary shall include harvest dates, crop type, disposal area, and estimated ash content of the harvest.
7. A summary of the quantity of solid waste (lees, stems, pomace, diatomaceous earth, etc.) generated and disposed of on-site as a soil amendment or off-site at an appropriately permitted facility.
8. An evaluation of the groundwater quality beneath the land application area.
9. Updated groundwater values using data from site wells, and the data analysis methods described in Title 27.

10. A description of source control methods that have been implemented in the calendar year.
11. Estimated flows for the next calendar year.
12. A discussion of compliance and corrective actions taken, as well as any planned or proposed actions needed to bring the discharge into full compliance with the waste discharge requirements.
13. A discussion of any data gaps and potential deficiencies/redundancies in the monitoring system or reporting program.

A letter transmitting the self-monitoring reports shall accompany each report. Such a letter shall include a discussion of requirement violations found during the reporting period, and actions taken or planned for correcting noted violations, such as operation or facility modifications. If the Discharger has previously submitted a report describing corrective actions and/or a time schedule for implementing the corrective actions, reference to the previous correspondence will be satisfactory. The transmittal letter shall contain a statement by the Discharger, or the Discharger's authorized agent, under penalty of perjury, that to the best of the signer's knowledge the report is true, accurate and complete.

The Discharger shall implement the above monitoring program as of the date of this Order.

Ordered by: _____
PAMELA C. CREEDON, Executive Officer

(Date)