

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM R5-2020-0021

FOR
JAHANT WOOD CELLARS, L.P.
LANGE TWINS FAMILY WINERY AND VINEYARDS
SAN JOAQUIN COUNTY

This Monitoring and Reporting Program (MRP) for the Jahant Wood Cellars, LP (Discharger) is issued pursuant to Water Code section 13267. A glossary of terms used in this MRP is included on the last page.

All samples shall be representative of the volume and nature of the discharge or matrix of material sampled. Except as specified otherwise in this MRP, grab samples will be considered representative of water, wastewater, soil, solids/sludges, and groundwater.

The time, date, and location of each sample shall be recorded on the sample chain of custody form. All analyses shall be performed in accordance with the Standard Provisions and Reporting Requirements for Waste Discharge Requirements, 1 March 1991 ed. (SPRRs or Standard Provisions). Field test instruments (such as those used to measure pH, electrical conductivity, dissolved oxygen, wind speed, and precipitation) may be used provided that:

1. The operator is trained in proper use and maintenance of the instruments.
2. The instruments are field calibrated at the frequency recommended by the manufacturer.
3. The instruments are serviced and/or calibrated at the manufacturer's recommended frequency.
4. Field calibration reports are submitted as described in the "Reporting" section of the MRP.

Laboratory analytical procedures shall comply with the methods and holding times specified in the following (as applicable to the medium to be analyzed):

1. Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater (EPA).
2. Test Methods for Evaluating Solid Waste (EPA).
3. Methods for Chemical Analysis of Water and Wastes (EPA).
4. Methods for Determination of Inorganic Substances in Environmental Samples (EPA); Standard Methods for the Examination of Water and Wastewater (APHA/AWWA/WEF).
5. Soil, Plant and Water Reference Methods for the Western Region (WREP 125).

Approved editions shall be those that are approved for use by the U.S. Environmental Protection Agency (EPA) or the State Water Resources Control Board's Environmental Laboratory Accreditation Program (ELAP). The Discharger may propose alternative methods for approval by the Executive Officer. Where technically feasible, laboratory reporting limits shall be lower than concentrations that implement applicable water quality objectives/limits for the constituents to be analyzed.

SOURCE WATER MONITORING

Samples of source water from the on-site, agricultural supply well shall be collected. At a minimum, the Discharger shall sample the source water beginning in **2021**, prior to the start of the processing season, and analyze the samples for the following parameters:

Constituent	Units	Sample Type	Sampling and Reporting Frequency
Electrical Conductivity	µmhos/cm	Grab	Every three years
Total Dissolved Solids	mg/L	Grab	Every three years
Nitrate as Nitrogen	mg/L	Grab	Every three years

FLOW MONITORING

When water is discharged to the LAA from the Effluent Pond, the Discharger shall monitor wastewater flows from the meter location depicted on Attachment D to Waste Discharge Requirements Order R5-2020-0021 (WDRs Order) as follows:

Flow Source	Units	Sample Type	Sampling Frequency	Reporting Frequency
Flow Meter	Gallons	Meter	Daily (report as total daily flow)	Quarterly

POND MONITORING

The Discharger shall monitor wastewater Pond C, Pond D, the Effluent Pond, and Ponds A and B (if constructed) in accordance with the following. Sampling and monitoring shall be conducted from permanent locations that will provide representative samples and observations of the ponds. Freeboard shall be measured vertically from the water surface to the lowest elevation of pond berms (or spillway/overflow pipe invert) and shall be measured to the nearest 0.10 feet. Samples shall be collected at a depth of one foot, opposite the inlet. If any pond is dry, the monitoring report shall so state. Pond monitoring shall include, at a minimum, the following:

Constituent/Parameter	Units	Sample Type	Monitoring Frequency	Reporting Frequency
Presence/Absence of Water	--	Observation	Weekly	Quarterly

Constituent/ Parameter	Units	Sample Type	Monitoring Frequency	Reporting Frequency
Freeboard	0.1 feet	Measurement	Weekly	Quarterly
Odors	--	Observation	Weekly	Quarterly
Berm Conditions	--	Observation	Weekly	Quarterly
Dissolved Oxygen	mg/L	Grab	Weekly	Quarterly

WASTEWATER MONITORING

Wastewater samples shall be collected from the Effluent Pond prior to discharging to the LAA and shall be representative of wastewater quality. Sampling is only required when water is discharged to the LAAs from the Effluent Pond. Standard minerals shall include at a minimum, chloride, sodium, and dissolved manganese and iron. Manganese and iron samples shall be filtered with a 0.45-micron filter at the laboratory prior to sample preservation. Wastewater monitoring shall include the following:

Constituents	Units	Sample Type	Sample Frequency	Reporting Frequency
Electrical Conductivity	µmhos/cm	Grab	Monthly	Quarterly
BOD ₅	mg/L	Grab	Monthly	Quarterly
FDS	mg/L	Grab	Monthly	Quarterly
Total Nitrogen	mg/L	Grab	Monthly	Quarterly
Nitrate as Nitrogen	mg/L	Grab	Monthly	Quarterly
Standard Minerals	mg/L	Grab	Annually	Annually

LAND APPLICATION AREA MONITORING

A. Field Inspections

The Discharger shall inspect the LAA at least once weekly during irrigation events, and observations from those inspections shall be documented for inclusion in the quarterly monitoring reports. The following items shall be documented for field to be irrigated on that day:

1. Berm condition.
2. Condition of each standpipe and flow control valve (if applicable).
3. Condition of all ditches used for the conveyance of wastewater and tailwater.
4. Ponding.

5. Potential and actual runoff or discharge to off-site areas, including surface water; and
6. Odors that have the potential to be objectionable at or beyond the property boundary.

Temperature, wind direction, and other relevant field conditions shall also be observed and recorded. The notations shall also document any corrective actions taken based on observations made. A copy of entries made in the log shall be submitted as part of the Quarterly Monitoring Report.

B. Routine Monitoring

The Discharger shall perform the following routine monitoring and loading calculations during all months when land application occurs and shall present the data in the Quarterly Monitoring Reports.

Constituent	Units	Measurement	Measurement Frequency	Reporting Frequency
Precipitation	0.1 inch	Rain Gauge	Daily	Quarterly
Irrigation fields	--	Observation	Daily	Quarterly
Hydraulic Loading Rate (from each source)	inch	Calculated	Daily	Quarterly
BOD5 Loading Rate	lb/ac/day	Calculated	Daily	Quarterly
Total Nitrogen Loading	lb/ac/year	Calculated	Monthly	Quarterly
Flow-weighted FDS Concentration	mg/L	Calculated	Monthly	Quarterly

Note: Precipitation data obtained from the nearest National Weather Service rain gauge is acceptable. The hydraulic loading rate shall be calculated for each check within each LAA field. Volumes of each check can be estimated based on the duration of flow, the number of checks being irrigated at any one time, and the daily flow rates for each field. Calculations and assumption shall be clearly documented. Loading rates for BOD5, total nitrogen, and FDS shall be calculated for each LAA. BOD5 loading shall be calculated using the daily applied volume of wastewater, actual application area, and most recent BOD5 results for the wastewater. Total nitrogen loading rates shall be calculated using the applied volume of wastewater, actual application area, and the most recent total nitrogen results for the wastewater. Loading rates for supplemental nitrogen (including commercial fertilizers, manure from cattle, etc.) shall be calculated using the actual load and application area. FDS loading rates shall be calculated using the daily applied volume of wastewater, actual application area, and most recent FDS results for wastewater.

GROUNDWATER MONITORING

The Discharger shall maintain the groundwater monitoring well network. If a groundwater monitoring well is dry for more than four consecutive sampling events or is damaged, the Discharger shall submit to the Central Valley Water Board a workplan and proposed time schedule for its replacement, and the well shall be replaced following approval of the workplan. Alternatively, the Discharger shall submit a report with supporting evidence that a replacement well is not needed.

Prior to construction of any additional groundwater monitoring wells, the Discharger shall submit plans and specifications to the Central Valley Water Board for review and approval. Once installed, all new monitoring wells shall be appropriately incorporated into monitoring conducted under this MRP and monitored on a semiannual basis. The Discharger shall not implement any changes to this MRP unless and until the Central Valley Water Board adopts, or the Executive Officer issues a revised MRP.

The groundwater monitoring program applies to groundwater monitoring wells tabulated below and any wells subsequently installed under approval of the Central Valley Water Board. All downgradient wells, including the additional monitoring wells to be installed within the new LAA, are compliance monitoring wells.

Monitoring Well	Well Location
MW-1	Upgradient
MW-2	Downgradient (compliance well)
MW-3	Downgradient (compliance well)

Prior to sampling, depth to groundwater measurements shall be measured in each monitoring well to the nearest 0.01 feet. Groundwater elevations shall then be calculated to determine groundwater gradient and flow direction. Sampling activities shall be conducted in accordance with an approved Sampling and Analysis Plan. Samples shall be collected and analyzed using standard EPA methods. Groundwater monitoring shall include, at a minimum, the parameters and constituents listed in the table below. Groundwater elevation shall be determined based on depth-to-water measurements using a surveyed measuring point elevation on the well and a surveyed reference elevation. Samples shall be filtered with a 0.45-micron filter, at the laboratory, prior to sample preservation for standard minerals and shall include, at a minimum, dissolved iron, dissolved manganese, chloride, and sodium.

Constituent/Parameters	Units	Type of Sample	Sampling Frequency	Reporting Frequency
Depth to Groundwater	0.01 feet	Measurement	Semi-Annually	Annually
Groundwater Elevation	feet	Calculated	Semi-Annually	Annually
Gradient	feet/feet	Calculated	Semi-Annually	Annually
Gradient Direction	degrees	Calculated	Semi-Annually	Annually
EC	µmhos/cm	Grab	Semi-Annually	Annually
TDS	mg/L	Grab	Semi-Annually	Annually
Total Nitrogen	mg/L	Grab	Semi-Annually	Annually
Nitrate Nitrogen	mg/L	Grab	Semi-Annually	Annually
Standard Minerals	mg/L	Grab	Annually	Annually

GROUNDWATER LIMITATIONS

The Groundwater Limitations set forth in Section F of WDRs Order R5-2020-0021 shall apply to the specific compliance monitoring wells identified below. Groundwater quality and compliance with Groundwater Limitations will be conducted using intrawell evaluations. For numerical groundwater limitations, annual average concentrations from the specified compliance wells shall be used. For the current groundwater quality limitation, concentration trends shall be evaluated. If exceedances of numerical limitations or increasing concentrations are occurring, upgradient wells shall also be evaluated. This table is subject to revision by the Executive Officer following construction of any new compliance monitoring wells.

Constituent	Groundwater Limitation	Compliance Wells
TDS	1,000 mg/L (Secondary Maximum Contaminant Upper Level)	MW-3
Nitrate as Nitrogen	Current Groundwater Quality	MW-2, MW-3
Sodium	69 mg/L (Lowest agricultural water quality goal)	MW-3
Chloride	500 mg/L (Secondary Maximum Contaminant Level)	MW-3
TDS	1,000 mg/L or Current Groundwater Quality, whichever is greater	New monitoring wells in new LAA
Nitrate as Nitrogen	10 mg/L or Current Groundwater Quality, whichever is greater	
Sodium	69 mg/L or Current Groundwater Quality, whichever is greater	
Chloride	500 mg/L or Current Groundwater Quality, whichever is greater	

Current groundwater quality will be defined using approved statistical methods as described in an approved Groundwater Limitation Compliance Assessment Plan (Provision i.1.C).

If groundwater quality performed pursuant to this MRP shows that an exceedance of the Groundwater Limitation is occurring, as defined using approved statistical methods for intrawell evaluations described in an approved Groundwater Limitation Compliance Assessment Plan (Provision I.1.c in this Order), the Discharger shall submit a technical evaluation of the reason for the exceedance and a discussion on possible mitigation measures that could be taken, if needed. The evaluation shall also include a discussion of changes in upgradient conditions to determine if exceedances are the result of changing upgradient conditions which are likely out of the Discharger's control.

SOLIDS MONITORING

The Discharger shall monitor volumes of residual solids generated and disposed of and reported in Annual Monitoring Reports:

1. Volume of Solids Generated. Solids may include pomace, seeds, stems, screenings, and sump solids, or other material.
2. Volume Disposed of Off-site. Describe the disposal method (e.g. animal feed, land application, off-site composting, landfill, etc.); the amount disposed (tons); and the name of the hauling company.
3. Volume Disposed of On-site. Describe the amount disposed (tons); location of on-site disposal; method of application, spreading, and incorporation. The volume of ponds sediments shall be reported when sediments are removed to maintain adequate capacity in the pond.

REPORTING

All regulatory documents, submissions, materials, data, monitoring reports, and correspondence should be converted to a searchable Portable Document Format (PDF) and submitted electronically. Documents that are less than 50MB should be emailed to centralvalleysacramento@waterboards.ca.gov.

Documents that are 50 MB or larger should be transferred to a CD, DVD, or flash drive and mailed to the following address:

Central Valley Regional Water Quality Control Board
ECM Mailroom
11020 Sun Center Drive, Suite 200
Rancho Cordova, California 95670

To ensure that your submittals are routed to the appropriate staff, the following information block should be included in any correspondence used to transmit documents to this office:

MONITORING AND REPORTING PROGRAM R5-2020-0021
JAHANT WOOD CELLARS, L.P.
LANGE TWINS FAMILY WINERY AND VINEYARDS
SAN JOAQUIN COUNTY

8

County: San Joaquin
Facility: Lange Twins Family Winery and Vineyards
Program: Non-15 Compliance
Order Number: R5-2020-0021
CIWQS Place ID: 654917

In reporting monitoring data, the Discharger shall arrange the data in tabular form so that the date, sample type (e.g., effluent, pond, 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 MRP shall be reported to the Central Valley Water Board.

As required by the 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 Professional Geologist and signed by the registered professional.

A. Quarterly Monitoring Reports

Daily, weekly, and monthly monitoring data shall be reported in the quarterly monitoring report. Quarterly reports shall be submitted to the Central Valley Water Board on the **1st day of the second month following the quarter** (i.e. the January - March quarterly report is due by 1 May). The fourth quarter monitoring report may be submitted as part of the corresponding annual monitoring report. At a minimum, the report shall include:

1. Results of Flow Monitoring in tabular format for each month during the reported quarter, including calculated values for the total flow and average daily flow for each month and total annual flow to date.
2. Result of weekly pond monitoring.
3. Results of Wastewater Effluent Monitoring in tabular format for each week and month during the reported quarter.
4. Results of LAA Monitoring, including:
 - a. Methods used to irrigate the LAAs (i.e., sprinkler, flood, etc.) for each irrigation cycle.
 - b. Calculated hydraulic loading rate for each month during the reported quarter and cumulative annual loading.
 - c. Calculated mass of BOD applied to the LAA on a daily basis shall be calculated using the following formula:

$$M = \frac{8.345(CV)}{A}$$

Where:

- M = mass of BOD or FDS applied to an LAA in lb/ac/day
- C = concentration of BOD or FDS in mg/L based on the most recent monitoring result
- V = volume of wastewater applied to the LAA in millions of gallons per day
- A = area of the LAA irrigated in acres
- 8.345 = unit conversion factor

d. Calculated nitrogen loading rate for each LAA using the following formula:

$$M = \sum_{i=1}^{12} \frac{(8.345(C_i V_i) + M_x)}{A}$$

Where:

- M = mass of nitrogen applied to LAA in lb/ac/yr.
- C_i = Monthly average concentration of total nitrogen for month i in mg/L.
- V_i = volume of wastewater applied to the LAA during calendar month i in millions of gallons.
- A = area of the LAA irrigated in acres.
- i = the number of the month (e.g., Jan. = 1, Feb. = 2, etc.).
- M_x = nitrogen mass from other sources (e.g., fertilizer, manure, and compost) in pounds.
- 8.345 = unit conversion factor.

5. A comparison of monitoring data to the flow limitations, effluent limitations, and discharge specifications and an explanation of any violation of those requirements.
6. A comparison of BOD loading rates to the appropriate BOD loading limitations (100 lb/ac/day for flood irrigated acres or 150 lb/ac/day for sprinkler irrigated acres).
7. A calibration log verifying calibration of all handheld monitoring instruments and devices used to comply with the prescribed monitoring program.
8. Copies of the laboratory analytical data reports shall be maintained by the Discharger and submitted to the Central Valley Water Board.

B. Annual Monitoring Reports

An Annual Monitoring Report shall be submitted to the Central Valley Water Board by **1 February** each year and shall include the following:

Source Water Monitoring

Analytical data table showing historical and current results. A narrative description of changes in water quality over time, if any, and the potential impact on the wastewater quality.

Groundwater Monitoring

1. A narrative description of all preparatory, monitoring, sampling, handling, and analytical testing for groundwater monitoring. The narrative shall be sufficiently detailed to verify compliance with the WDRs Order R5-2020-0021, this MRP, and the SPRRs.
2. A field log for each well documenting depth to groundwater; method of purging, parameters measured before, during, and after purging; sample preparation (e.g., filtering); and sample preservation. Low or no-purge sampling methods are acceptable if described in an approved Sampling and Analysis Plan.
3. Summary data tables of historical and current water table elevations and analytical results, comparison with previous flow direction and gradient data, and discussion of seasonal trends if any.
4. 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 an appropriate datum (e.g., NGVD).
5. An evaluation of the groundwater quality beneath the site and determination of compliance with the Groundwater Limitations per WDRs Order R5-2020-0021, based on statistical analysis for each constituent monitored for each compliance well in accordance with the approved Groundwater Limitations Compliance Assessment Plan. Include all calculations and data input/analysis tables derived from use of statistical software, as applicable.
6. Copies of the laboratory analytical data reports shall be maintained by the Discharger and submitted to the Central Valley Water Board.

Solids Monitoring

1. Summary of the solids monitoring, including volumes of residual solids generated and disposed.

Additional Reporting

1. A discussion of compliance and the corrective action taken, as well as any planned or proposed actions needed to bring the discharge into full compliance with the WDRs.
2. Monitoring equipment maintenance and calibration records, as described in Section C.4 of the SPRRs, shall be maintained by the Discharger and provided upon request by the Central Valley Water Board.
3. A discussion of the following:
 - a. Waste constituent reduction efforts implemented in accordance with any required workplan.
 - b. Other treatment or control measures implemented during the calendar year either voluntarily or pursuant to the WDRs, this MRP, or any other Order.
 - c. Based on monitoring data, an evaluation of the effectiveness of the treatment or control measures implemented to date.
4. A discussion of any data gaps and potential deficiencies/redundancies in the monitoring network or reporting program.

A letter transmitting the self-monitoring reports shall accompany each report. The 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 submitting 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 the penalty of perjury statement by the submitting Discharger, or its authorized agent, as described in the Section B.3 of the SPRRs (General Reporting Requirements).

I, PATRICK PULUPA, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of the Monitoring and Reporting Program issued by the California Regional Water Quality Control Board, Central Valley Region on 16 April 2020.

PATRICK PULUPA, Executive Officer

GLOSSARY

BOD5	=	Five-day biochemical oxygen demand
EC	=	Electric conductivity at 25°C
FDS	=	Fixed dissolved solids
TKN	=	Total Kjeldahl nitrogen
TDS	=	Total dissolved solids
Daily	=	Every day except weekends or holidays
Weekly	=	Once per week
Monthly	=	Once per calendar month
Quarterly	=	Once per calendar quarter
Semiannually	=	Once every six calendar months (i.e., two times per year) during non-consecutive quarters
Annually	=	Once per year
µg/L	=	Micrograms per liter
µmhos/cm	=	Micromhos per centimeter
gpd	=	Gallons per day
mgd	=	Million gallons per day