

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

REVISED MONITORING AND REPORTING PROGRAM R5-2013-0137 REV1

FOR

YOCHA DEHE WINTUN NATION
SEKA HILLS OLIVE MILL
YOLO COUNTY

This Monitoring and Reporting Program (MRP) incorporates requirements for monitoring of olive milling wastewater, land application areas, 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 shall 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.

FLOW MONITORING

Effectively immediately, olive mill wastewater and supplemental irrigation water flow rates to all land application areas shall be monitored as follows:

Constituents	Units	Type of Sample	Sampling Frequency	Reporting Frequency
Flow from centrifuges to storage tanks ¹	Gallons	Meter Reading	Daily	Monthly
Flow from storage tanks to each LAA	Gallons	Meter Reading	Daily	Monthly
Flow from Irrigation Supply Well B2 to LAA 1	Gallons	Meter Reading	Daily	Monthly
Flow from Cache Creek to LAA 3 and LAA4	Gallons	Meter Reading	Daily	Monthly

¹ Flow total estimates from staff gauges on wastewater storage tanks allowed until March 2014.

WASTEWATER MONITORING

Effectively immediately, wastewater shall be monitored as described below. Wastewater samples shall be collected from established sampling stations immediately downstream of the solids separation system that will be representative of wastewater applied to land from the olive mill to each LAA. Wastewater monitoring is only required during periods when wastewater is applied to the land application areas. If no wastewater was discharged to the land application areas, the monitoring report shall so state. Wastewater monitoring shall include, at a minimum, the following:

Constituent	Units	Type of Sample	Sampling Frequency	Reporting Frequency
Biochemical Oxygen Demand	mg/L	Grab	Weekly ¹	Monthly
Total Nitrogen	mg/L	Grab	Weekly ¹	Monthly
Fixed Dissolved Solids	mg/L	Grab	Weekly ¹	Monthly
Metals/Inorganics ²	mg/L	Grab	Monthly	Monthly

¹ Sampling shall be conducted weekly during the first 12 consecutive months when wastewater is being generated and then monthly thereafter.

² Metals/Inorganics include the following: boron, sodium, potassium, iron, manganese, chloride, and sulfate. Samples for FDS and metals analysis shall be filtered prior to preservation, digestion, and/or analysis.

SUPPLEMENTAL IRRIGATION MONITORING

Effective immediately, supplemental irrigation water quality shall be monitored as described below during periods when supplemental irrigation water is applied to the land application areas. Grab samples of supplemental irrigation water from both the off-site irrigation well and surface water from Cache Creek shall be analyzed for, at a minimum, the following:

Constituent	Units	Type of Sample	Sampling Frequency	Reporting Frequency
Total Nitrogen	mg/L	Grab	Monthly	Monthly
Total Dissolved Solids	mg/L	Grab	Monthly	Monthly
Metals/Inorganics ¹	mg/L	Grab	Quarterly	Monthly ²

¹ Metals/Inorganics include the following: boron, sodium, potassium, chloride, iron, and manganese.

² Quarterly sampling results shall be reported in the monthly report for the month in which samples are analyzed.

LAND APPLICATION AREA MONITORING

The Discharger shall monitor the land application areas **daily during operation**, and shall submit the results in the corresponding monthly monitoring reports. Evidence of erosion, field saturation, runoff, or the presence of nuisance conditions shall be noted in the report. Loading rates for each land application area shall be calculated. Monitoring of each land application area shall include the following:

Constituent	Units	Type of Sample	Sampling Frequency	Reporting Frequency
Local Rainfall ¹	Inches	Measurement	Daily	Monthly
Wastewater Applied	Inches	Calculated	Daily	Monthly
Supplemental Irrigation Water ²	Inches	Calculated	Daily	Monthly
Cache Creek Storage	Inches	Calculated	Daily	Monthly
Well B1	Inches	Calculated	Daily	Monthly
Total Water Application Rate ³	Inches	Calculated	Daily	Monthly
Total Acreage Applied ⁴	Acres	Calculated	Daily	Monthly
BOD Loading Rate ⁵	lbs/ac/day	Calculated	Daily	Monthly
Nitrogen Loading Rate ⁶	lbs/ac/mo. ⁷	Calculated	Monthly	Monthly
LAA Soil Condition ⁸	NA	Inspection	Monthly	Monthly

¹ Rainfall may be monitored on-site or reported from a nearby rain gauge station.
² When applied.
³ Application rate monitored from all sources.
⁴ Land Application Area(s) in use shall be identified by name or number and the acreage provided. If only a portion of an area is used, then the application acreage shall be estimated.
⁵ Calculate the daily application rates, based on the most recent BOD effluent results.
⁶ Total nitrogen applied from all sources, including fertilizers, compost, and supplemental irrigation water if used.
⁷ Report monthly total and cumulative annual to date.
⁸ LAA soil conditions (saturated or not saturated) shall be determined prior to wastewater application.

At least **once per week** when wastewater is being applied to the land application areas, the entire application area shall be inspected to identify any equipment malfunction or other circumstance that might allow irrigation runoff to leave the area and/or create ponding conditions that violate the Waste Discharge Requirements. A log of these inspections shall be kept at the facility and be submitted with the monthly monitoring reports. If wastewater was not applied to the land application area, then the monthly monitoring reports shall so state.

SOLIDS MONITORING

The Discharger shall monitor the solids generated and disposed of on a monthly basis. The following shall be monitored and reported:

1. Volume of solids generated. Solids may include pomace, seeds, stems, diatomaceous earth, screenings, and sump/clarifier 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.

GROUNDWATER MONITORING

Prior to construction and/or sampling of any groundwater monitoring wells, the Discharger shall submit plans and specifications to the Board for approval. Once installed, all new wells shall be managed as one compliance monitoring network.

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.

The monitoring wells shall be purged of at least three well volumes until temperature, pH, and electrical conductivity have stabilized. Alternatively, low or no-purge sampling methods are acceptable, if described in an approved Sampling and Analysis Plan. Samples shall be filtered using a 0.45-micron filter prior to preservation or digestion as appropriate. Groundwater monitoring for all monitoring wells shall include, at a minimum, the following:

Constituent	Units	Type of Sample	Sampling Frequency	Reporting Frequency
Depth to Groundwater ¹	±0.01 feet	Measurement	Semi-annual ³	Semi-annual ³
Groundwater Elevation ¹	±0.01 feet	Calculated	Semi-annual ³	Semi-annual ³
Gradient	feet/feet	Calculated	Semi-annual ³	Semi-annual ³
Gradient Direction	Degrees	Calculated	Semi-annual ³	Semi-annual ³
pH	pH units	Grab	Semi-annual ³	Semi-annual ³
Chloride	mg/L	Grab	Semi-annual ³	Semi-annual ³
Sodium	mg/L	Grab	Semi-annual ³	Semi-annual ³
Boron ²	mg/L	Grab	Semi-annual ³	Semi-annual ³
Dissolved Iron ²	mg/L	Grab	Semi-annual ³	Semi-annual ³
Dissolved Manganese ²	mg/L	Grab	Semi-annual ³	Semi-annual ³
Sulfate	mg/L	Grab	Semi-annual ³	Semi-annual ³
Nitrate Nitrogen	mg/L	Grab	Semi-annual ³	Semi-annual ³
Total Dissolved Solids	mg/L	Grab	Semi-annual ³	Semi-annual ³

¹ Groundwater elevation shall be determined based on depth-to-water measurements from a surveyed measuring point elevation on the well.

² Samples shall be field filtered with a 0.45-micron filter prior to preservation or digestion, as appropriate.

³ Samples shall be obtained during the second and fourth quarters of each calendar year.

All samples shall be collected and analyzed using approved EPA methods within the specified holding periods. Groundwater elevations shall be calculated to determine groundwater gradient and downgradient directions.

GROUNDWATER TRIGGER CONCENTRATIONS

The following groundwater trigger concentrations are intended only to serve as a means of assessing whether the discharge might potentially cause a violation of one or more of the Groundwater Limitations of the WDRs at some later date.

Constituent	Trigger Concentration (mg/L) ¹
Nitrate Nitrogen	8.0
Boron	1.3
TDS	900
Manganese	1.7
Iron	0.2

¹ Trigger concentrations are subject to review and revision based on the approved *Background Groundwater Quality Study Report*.

If the annual evaluation of groundwater quality performed pursuant to this MRP shows that the annual average of one or more of the trigger concentrations has been exceeded in any compliance monitoring well during the calendar year, the Discharger shall submit one or both of the following technical reports (as applicable) by **1 May of the following calendar year** (e.g., if one or more trigger concentrations are exceeded for calendar year 2020, the appropriate report is due by 1 May 2021):

- a. A technical evaluation of the reason[s] for the concentration increase for each constituent and a technical demonstration that, although the concentration has increased more than expected in one or more compliance wells, continuing the discharge without additional treatment or control will not result in exceedance of the applicable groundwater limitation.
- b. An Action Plan that presents a systematic technical evaluation of each component of the facility's waste treatment and disposal system to determine what additional treatment or control is necessary and feasible for each waste constituent that exceeds a trigger concentration. The plan shall evaluate each component of the wastewater treatment, storage, and disposal system (as applicable); describe the applicability and feasibility of available treatment and/or control technologies; provide preliminary capital and operation/maintenance cost estimates for each; designate the preferred option[s] for implementation; and specify a proposed implementation schedule. The schedule for full implementation shall not exceed one year, and the Discharger shall immediately implement the proposed improvements.

REPORTING

In reporting monitoring data, the Discharger shall arrange the data in tabular form so that the date, sample type (e.g., wastewater monitoring, groundwater monitoring, 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 (e.g. the January monthly report is due by 1 March). The monthly reports shall include the following:

1. Daily flow measurements for all wastewater and supplemental irrigation water to each LAA.
2. Calculation of peak daily wastewater flows for the month, and cumulative wastewater flows for the calendar year to date.
3. Wastewater and supplemental irrigation monitoring data.
4. Calculation of flow-weighted annual FDS concentrations.
5. For each LAA, land application area monitoring data, including calculations of maximum daily BOD loading rates and total nitrogen loading rate for calendar year to date.
6. A comparison of monitoring data to the discharge specifications and effluent limitations of wastewater constituent concentrations and loading rates as required, disclosure of any violations of the WDRs, and an explanation of any violation of those requirements. Data shall be presented in tabular format.
7. If requested by staff, copies of laboratory analytical report(s).

B. Semi-annual Monitoring Reports

The Discharger shall establish a semi-annual sampling schedule for groundwater monitoring such that samples are obtained during the second and fourth quarters of each calendar year. Semi-annual monitoring reports shall be submitted to the Regional Board by the **1st day of the second month after the reporting period**. The report for the April – June monitoring period is due by 1 August each year. The report for the October – December monitoring period is due by 1 February each year.

The Semi-annual Report shall include the following:

1. Results of groundwater monitoring.
2. 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 WDRs, this MRP, and the Standard Provisions and Reporting Requirements. The narrative shall be supported by field logs for each well documenting depth to groundwater; method of purging and

parameters measured before, during, and after purging. Low or no-purge sampling methods are acceptable if described in an approved Sampling and Analysis Plan.

3. Calculation of groundwater elevations, an assessment of groundwater flow direction and gradient on the date of measurement, comparison with previous flow direction and gradient data, and discussion of seasonal trends if any;
4. Summary data tables of historical and current water table elevations and analytical results;
5. 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
6. Copies of laboratory analytical report(s) for groundwater monitoring.

C. Annual Monitoring Reports

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

1. The number, size, and type of wastewater storage tanks used during the year.
2. Comparison of wastewater flows to LAAs to applicable total annual average daily and peak daily flow limits.
3. An evaluation of crop maturity and density (i.e., account for mortality) for LAA-1, LAA-3, and LAA-4 based on published nitrogen uptake requirements (as stated in Findings 34 and 35 of the WDRs); and a determination of compliance with nitrogen loading limits. If nitrogen loading limits have been exceeded, include a plan and schedule for replanting or other measures to ensure compliance with nitrogen loading limits.
4. For each LAA:
 - a. Calculation of total nitrogen loading from all sources during the calendar year.
 - b. Comparison of total nitrogen loading with published crop demand values for the crops that were grown.
 - c. Calculation of flow-weighted annual average FDS concentration and comparison to effluent limit.
5. **Effective beginning with the 2014 Annual Monitoring Report**, concentration vs. time graphs for each monitored constituent using all historic groundwater monitoring data. Each graph shall show groundwater data trends as compared to the Groundwater Limitations and corresponding trigger thresholds specified in this MRP as horizontal lines at the applicable concentration.
6. **Effective beginning with the 2014 Annual Monitoring Report**, an evaluation of the groundwater quality beneath the site and determination of whether any trigger concentrations were exceeded in any compliance well at any time during the calendar year. This shall be determined by comparing the annual average

concentration for each well during the calendar year to the corresponding trigger concentration. If any groundwater trigger concentrations were exceeded, include acknowledgment that the technical report described in the Groundwater Trigger Concentrations section of this MRP will be submitted in accordance with the specified schedule.

7. **Effective beginning with the 2016 Annual Monitoring Report**, an evaluation of the groundwater quality beneath the site and determination of Compliance with Groundwater Limitation E.1.a of the WDRs 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.
8. A discussion of compliance and the corrective actions taken, as well as any planned or proposed actions needed to bring the discharge into full compliance with the waste discharge requirements. If any groundwater trigger concentrations were exceeded, include acknowledgment that the requirements of Provision 2 of the WDRs have been triggered, and the appropriate technical report will be submitted in accordance with that Provision.
9. 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 or any other Order; and
 - c. Based on monitoring data, an evaluation of the effectiveness of the treatment or control measures implemented to date 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).
10. 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.
11. 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: Original signed by Andrew Altevogt for
PAMELA C. CREEDON, Executive Officer

11 October 2016

(Date)

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