

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM R5-2017-0020 REV1
FOR
COLUSA INDUSTRIAL PROPERTIES
COLUSA INDUSTRIAL PROPERTIES WASTEWATER TREATMENT FACILITY
COLUSA COUNTY

This Monitoring and Reporting Program (MRP) describes requirements for monitoring the ponds, industrial process wastewater, domestic wastewater, land application areas, groundwater, and crop and food residual solids. 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 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.

Field test instruments (such as those used to test pH and electrical conductivity) may be used provided that:

1. The operator is trained in proper use and maintenance of the instruments;
2. The instruments are calibrated prior to monitoring event;
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.

Analytical procedures shall comply with the methods and holding times specified in the following: *Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater* (EPA); *Test Methods for Evaluating Solid Waste* (EPA); *Methods for Chemical Analysis of Water and Wastes* (EPA); *Methods for Determination of Inorganic Substances in Environmental Samples* (EPA); *Standard Methods for the Examination of Water and Wastewater* (APHA/AWWA/WEF); and *Soil, Plant and Water Reference Methods for the Western Region* (WREP 125). Approved editions shall be those that are approved for use by the United States Environmental Protection Agency or the California Department of Public Health's Environmental Laboratory Accreditation Program. The Discharger may propose alternative methods for approval by the Executive Officer. Where technically feasible, laboratory reporting limits shall be lower than the applicable water quality objectives for the constituents to be analyzed.

GENERAL POND MONITORING

All ponds shall be monitored as specified in **Table 1** below and meet the monitoring requirements 1 and 2 below.

1. Dissolved oxygen samples shall be collected at a depth of one foot from each pond in use, opposite the inlet. Samples shall be collected between 0700 and 0900 hours.

- 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.

Table 1- General Pond Monitoring

Constituent	Units	Type of Sample	Sample Frequency	Reporting Frequency
Dissolved Oxygen (see requirement 1 above)	mg/L	Grab	Weekly	Quarterly
Freeboard (see requirement 2 above)	0.1 feet	Measurement	Weekly	Quarterly
Odors	--	Observation	Weekly	Quarterly
Berm/levee condition	--	Observation	Monthly	Quarterly

INDUSTRIAL PROCESS WASTEWATER MONITORING

The Discharger shall monitor industrial process wastewater flows as specified in **Table 2** below and meet the monitoring requirements 1 and 2 below:

- Flow shall be representative of the volume from all waste sources including supplemental irrigation water discharged to Pond 3.
- Calculated based on total daily flows, flow rates, checks in use, and length of set time for each check.

Table 2 - Industrial Process Wastewater Flow Monitoring

Flow Source	Units	Type of Sample	Sampling Frequency	Reporting Frequency
Total process wastewater discharged to Pond 3 (see requirement 1 above)	Gallons	Meter	Daily	Quarterly
Discharge from Pond 3 to land application areas	Gallons	Meter	Daily	Quarterly
Daily subtotal to each irrigation field or check (see requirement 2 above)	gallons and inches	Calculation	Daily	Quarterly

The Discharger shall monitor process wastewater in accordance with **Table 3** below and meet the monitoring requirements 1 through 4 below.

- Grab samples shall be obtained from Pond 3 near the outlet to the land application areas.

2. Process wastewater monitoring is only required during periods when process wastewater is applied to the land application areas. If the pond is dry and/or no wastewater was discharged to the land application areas, the corresponding monitoring report shall so state.
3. BOD₅ is a five-day, 20 degrees Celsius biochemical oxygen demand.
4. A weekly sample frequency is defined as during each week that wastewater is discharged to the LAAs.

Table 3 - Industrial Process Wastewater Monitoring

Constituents	Units	Type of Sample	Sample Frequency (see requirement 4 above)	Reporting Frequency
pH	pH units	Grab	Weekly	Quarterly
BOD ₅ (see requirement 3 above)	mg/L	Grab	Weekly	Quarterly
Electrical Conductivity	µmhos/cm	Grab	Monthly	Quarterly
FDS	mg/L	Grab	Weekly	Quarterly
Chloride	mg/L	Grab	Weekly	Quarterly
Sodium	mg/L	Grab	Weekly	Quarterly
Total Nitrogen	mg/L	Grab	Weekly	Quarterly

If effluent concentrations have exceeded the effluent limitations in accordance with the WDRs, the Discharger shall notify the Central Valley Water Board within 10 business days after receiving the analytical laboratory reports.

Cannabis Wastewater Monitoring

The Discharger shall monitor process wastewater generated from each indoor cannabis cultivator as shown in **Table 4** below. Samples shall be representative of the wastewater of each cultivation operation prior to discharge to the industrial wastewater pond. Samples shall be analyzed for the following constituents listed in the table below. Monitoring shall occur in first (January – March) and third (July - September) quarter of each calendar year.

Table 4 - Cannabis Wastewater Monitoring

Constituents	Units	Type of Sample	Sample Frequency	Reporting Frequency
Organo-chlorine pesticides	mg/L	Grab	1 st and 3 rd Quarter	1 st and 3 rd Quarter

Constituents	Units	Type of Sample	Sample Frequency	Reporting Frequency
Organo-phosphorus pesticides	mg/L	Grab	1 st and 3 rd Quarter	1 st and 3 rd Quarter

In addition to collecting and analyzing samples, the Discharger shall provide a list of pesticide use from each cultivation operation in the Annual Report.

DOMESTIC WASTEWATER MONITORING

All domestic wastewater ponds shall be monitored in accordance with **Table 5** below and meet the monitoring requirements 1 and 2 below.

1. Influent flow shall be reported as an average daily flow for the calendar month for each pond.
2. Annual flow is determined as the combined flow to all domestic wastewater ponds

Table 5 - Domestic Wastewater Monitoring

Constituent	Units	Type of Sample	Sample Frequency	Reporting Frequency
Influent Flow (see requirement 1, 2 above)	gallons per day	Continuous	Daily	Quarterly
Sludge Depth	inches	Measurement	Annual	Annual

LAND APPLICATION AREA MONITORING

The Discharger shall monitor the land application areas **daily during operation** and shall submit the results in the corresponding quarterly monitoring reports. Evidence of erosion, field saturation, runoff, or the presence of nuisance conditions shall be noted in the report. The report shall also document any corrective actions taken based on observations made.

The Discharger shall perform the following routine monitoring and loading calculations for each LAA and irrigation check during all months when land application occurs, and shall present the data in the quarterly reports. The Discharger shall clearly show what crop was grown on the land application area that was irrigated with process wastewater and whether the loading limits were met for that crop. If no wastewater was land applied during a reporting period, the monitoring report shall so state.

Land application area monitoring shall be monitored in accordance with **Table 6** below and meet the monitoring requirements 1 through 7 below.

1. Supplemental irrigation flow monitoring requires daily meter reading or automated data collection and shall define the volume of supplemental water discharged to the land application areas.
2. Precipitation data obtained from the nearest National Weather Service, California Irrigation Management Information System (CIMIS), or on-site rain gauge is acceptable.
3. Designate identification numbers for discrete checks within each disposal site or area. Indicate crop in each land application areas that received process wastewater. Rate shall be calculated for each field or discrete check based on combined loading from wastewater and supplemental irrigation water.
4. BOD₅ loading rate shall be calculated using the daily applied volume of wastewater, actual application area, and most recent BOD₅ results for the wastewater.
5. Total nitrogen loading rate shall be calculated using the applied volume of wastewater, actual application area, and 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.
6. For LAAs cropped with rice.
7. For LAAs cropped with sudan grass or row crops with similar nitrate uptake demands.

Table 6 - Land Application Area Monitoring

Constituent	Units	Type of Sample	Sampling Frequency	Reporting Frequency
Supplemental Irrigation Water Flow	gallons	Meter (see requirement 1 above)	Daily	Quarterly
Precipitation	0.1 in	Rain gauge (see requirement 2 above)	Daily	Quarterly
Checks Receiving Wastewater	--	Observation	Daily	Quarterly
Hydraulic Loading Rate	in	Calculated (see requirement 3 above)	Daily	Quarterly
Flow-weighted Annual Average FDS Concentration (see requirement 6, 7 above)	mg/L	Calculated	Monthly	Annual

Constituent	Units	Type of Sample	Sampling Frequency	Reporting Frequency
Flow-weighted Annual Average BOD ₅ Concentration (see requirement 6 above)	mg/L	Calculated	Monthly	Annual
BOD ₅ Loading Rate (see requirement 7 above)	lb/ac/day	Calculated (see requirement 3, 4 above)	Daily	Annual
Total Nitrogen Loading Rate (see requirement 6, 7 above)	lb/ac	Calculated (see requirement 3, 5 above)	Monthly	Annual

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 saturated conditions, except when applied for rice straw decomposition, that violate the Waste Discharge Requirements. A log of these inspections shall be kept at the facility and summarized for submittal with the quarterly monitoring reports. If wastewater was not applied to the land application area, then the quarterly monitoring reports shall so state.

APPLICABILITY OF GROUNDWATER LIMITATIONS

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 review and approval. Once installed, all new wells shall be added to the compliance monitoring network. **Table 7** lists all existing monitoring wells and designates the purpose of each well.

Table 7 - Monitoring Well Designations

Monitoring Well	Well Function
MW1	Compliance well
MW3	Compliance well
MW4	Not suitable for use as a compliance well
MW5	Compliance well
MW6	Compliance well
MW7	Compliance well
MW8	Not suitable for use as a compliance well
MW9	Not suitable for use as a compliance well until such time when wastewater is applied to the remaining Davis Property LAAs.
MW10	Compliance well

The Groundwater Limitations set forth in Section E of the WDRs shall apply to the specific compliance monitoring wells tabulated below and meet the monitoring requirements of 1 and 2 below. **Table 8** is subject to revision by the Executive Officer following construction of any new compliance monitoring wells.

1. Compliance with the nitrate nitrogen groundwater limitation shall be determined on an intra-well basis for each of the specified wells using approved statistical methods.
2. "Current groundwater quality" means the quality of groundwater in the well as evidenced by monitoring completed during 2008 to 2012.

Table 8 - Groundwater Limitations and Specific Compliance Wells

Constituent	Groundwater Limitation	Compliance Wells to which Limitations Applies
Nitrate nitrogen	Current groundwater quality, 16 mg/L (see requirement 1, 2 above)	MW-5
All others, except for TDS, chloride, sodium, iron, and manganese	Concentrations that exceed either the Primary or Secondary MCL.	MW-1, MW-3, MW-5, MW-6, MW-7, MW-9, MW-10
All others, except for TDS, chloride, sodium, iron, and manganese	Contain taste or odor-producing constituents, toxic substances, or any other constituents in concentrations that cause nuisance or adversely affect beneficial uses.	MW-1, MW-3, MW-5, MW-6, MW-7, MW-9, MW-10

GROUNDWATER MONITORING

Prior to sampling, depth to groundwater measurements shall be measured in each compliance monitoring well (as listed in the above table) to the nearest 0.01 feet. Groundwater elevations shall then be calculated to determine groundwater gradient and flow direction.

Low or no-purge sampling methods are acceptable, if described in an approved Sampling and Analysis Plan. Samples shall be collected and analyzed using standard EPA methods. Groundwater monitoring for all monitoring wells shall be monitored in accordance with **Table 9** and meet the monitoring requirements 1 and 2 below.

1. Groundwater elevation shall be determined based on depth-to-water measurements using a surveyed measuring point elevation on the well and surveyed reference elevation.
2. Semi-annual groundwater monitoring shall occur in the first (January – March) and third (July - September) quarter of each calendar year.

Table 9 - Groundwater Monitoring Requirements

Constituent	Units	Type of Sample	Sampling Frequency	Reporting Frequency
Depth to groundwater	0.01 feet	Measurement	Semi-annual	Semi-annual
Groundwater elevation (see requirement 1 above)	0.01 feet	Calculated	Semi-annual	Semi-annual
Gradient magnitude	feet/feet	Calculated	Semi-annual	Semi-annual
Gradient direction	degrees	Calculated	Semi-annual	Semi-annual
pH	pH units	Grab	Semi-annual	Semi-annual
Electrical Conductivity	µmhos/cm	Grab	Semi-annual	Semi-annual
TDS	mg/L	Grab	Semi-annual	Semi-annual
Chloride	mg/L	Grab	Semi-annual	Semi-annual
Sodium	mg/L	Grab	Semi-annual	Semi-annual
Nitrate nitrogen	mg/L	Grab	Semi-annual	Semi-annual
Organo-chlorine pesticides	mg/L	Grab	Annual	Annual
Organo-phosphorus pesticides	mg/L	Grab	Annual	Annual

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.

Table 10 - Groundwater Trigger Concentrations

Constituent	Compliance Wells	Trigger Concentration, mg/L
Nitrate Nitrogen	MW-1, MW-3, MW-6, MW-7, MW-9, MW-10	5.0

If the annual evaluation of groundwater quality performed pursuant to this MRP shows that the annual average of the trigger concentration has been exceeded in any compliance well during the calendar year, the Discharger shall submit either of the following technical reports by **1 May of the following calendar year** (e.g., if the trigger concentration is 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[s] and a technical demonstration that, although the nitrate 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 whether additional treatment or control is 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 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.

CROP AND FOOD PROCESSING RESIDUAL SOLIDS MONITORING

The Discharger shall monitor the crop and food processing residual solids generated and disposed of on a monthly basis. The following shall be monitored and reported for each month:

1. Volume of Solids Generated. Solids may include pomace, seeds, stems, hulls, straw, 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 of disposed (tons); location of on-site disposal (e.g., land application area field); method of application, spreading, and incorporation; application rate (tons/acre); BOD (lb/ac/application) and total nitrogen (lb/ac/year) loading rates; and weekly grab sample analysis for total nitrogen.

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:

Facility: Colusa Industrial Properties Wastewater Treatment Facility, Colusa County
Program: Non-15 Compliance
Order: R5-2021-0045
CIWQS Place ID: 220844

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 Monitoring and Reporting Program shall be reported to the Central Valley Water Board.

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. Quarterly Monitoring

Daily, weekly, monthly, and quarterly monitoring data shall be reported in the Quarterly Monitoring Reports. Quarterly Monitoring Reports shall be submitted to the Central Valley Water Board as described in **Table 11** below:

Table 11 - Quarterly Monitoring Schedule

Monitoring Report	Monitoring Period	Report Due Date
First Quarter	1 January to 31 March	1 May
Second Quarter	1 April to 30 June	1 August
Third Quarter	1 July to 30 September	1 November
Fourth Quarter	1 October to 31 December	1 February

At a minimum, the reports shall include:

1. Tabulated pond monitoring data for each month of the calendar year.
2. Tabulated industrial process wastewater monitoring data, including cumulative flow to date, and comparison to the Flow Limitations and Effluent Limitations of the WDRs.
3. Tabulated domestic wastewater monitoring data for each month of the calendar year, including cumulative flow to date, and comparison to the Flow Limitations of the WDRs.
4. Tabulated land application area monitoring data, including at least the following:
 - a. Hydraulic loading rate for each disposal field.
 - b. Flow-weighted monthly average FDS concentration from all sources including supplemental irrigation.
 - c. Flow-weighted monthly average BOD concentration from all sources including supplemental irrigation.
 - d. Daily BOD₅ loading rate for each disposal field and/or irrigation check using the total volume applied on the day of application, estimated application area, and the most recent sample results for BOD₅ and comparison to the Mass Loading Limitations of the WDRs.
 - i. For LAAs cropped with sudan grass or row crops, the mass of BOD applied to each LAA as an irrigation cycle average shall be calculated using the following formula:

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

Where:

- M = mass of BOD applied to a LAA in lb/ac/irrigation cycle
- C = concentration of BOD in mg/L based on the most recent wastewater monitoring results
- V = volume of wastewater applied to the LAA field in millions of gallons during the irrigation cycle
- A = area of the LAA field irrigated in acres
- CT = Cycle time (i.e., irrigation cycle length in days)
- M_x = BOD mass from other sources (e.g., cattle manure, residual solids, etc.) in pounds
- 8.345 = unit conversion factor

- e. Total nitrogen loading rates shall be calculated for each disposal field and/or irrigation check using the total volume applied on the day of application, estimated application area, and the most recent sample results for total nitrogen and cumulative loading to date for the year.
5. Tabulated residual solids monitoring data and the required off-site and/or on-site disposal information.
6. Daily precipitation data in tabular form accompanied by starting and ending dates of irrigation for each field or check, except those cropped with rice.
7. A statement that summarizes the daily application inspection reports for each month during the reported quarter.
8. A comparison of monitoring data to the flow limitations, effluent and mass loading limitations, and discharge specifications and an explanation of any violation of those requirements.
9. If requested by staff, copies of laboratory analytical report(s).
10. Copies of current calibration logs for all field test instruments.
11. A summary of odor complaints related to wastewater reported each month to include an odor plume map; description of the frequency, intensity, duration, and offensiveness of the odor; description of the weather conditions during the odor complaint; and a description of the corrective actions taken.

B. Semi-Annual Monitoring Report

Groundwater monitoring shall be reported in the Semi-Annual Report. A sampling schedule for groundwater monitoring shall be established such that samples are obtained during the first and third quarter of each calendar year and obtained approximately every six months. Groundwater monitoring reports shall be submitted to the Central Valley Water Board by the **1st day of the second month after the reporting period** (i.e., the January-June semi-annual report is due by 1 August each year and the July-December semi-annual report is due by 1 February each year). The Semi-Annual Monitoring Report shall include the following:

1. Results of the semi-annual monitoring of the groundwater in tabular format.
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; parameters measured before, during, and after purging; method of purging; calculation of casing volume; and total volume of water purged;

3. Calculation of groundwater elevations, determination 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;
4. Summary data tables of historical and current groundwater elevations;
5. For the first Semi-Annual Report due by **1 August**, provide a description of the work conducted after the end of each rice decomposition season to prepare the fields for planting, including irrigation draining procedures of each rice land application area field and location of discharge (if any).
6. A scaled map showing relevant structures and features of the facility, land application areas and irrigation check boundaries, locations of monitoring wells and any other sampling stations, and groundwater elevation contours referenced to mean sea level datum; and
7. Copies of laboratory analytical report(s) for groundwater monitoring.

C. Annual Report

In addition to the Fourth Quarter and Second Semi-annual Reports, an Annual Report shall be prepared and submitted to the Central Valley Water Board by **1 February** each year. The Annual Report shall include the following:

1. Total annual industrial process wastewater flow to the LAAs for the calendar year and comparison to the annual maximum flow limit.
2. Total annual domestic wastewater flow to the domestic wastewater disposal pond(s) for the calendar year and comparison to the annual maximum flow limit.
3. Total annual supplemental irrigation water flow to the LAAs. Specify total flow for specific discharge location (i.e., for LAAs cropped with rice, sudan grass, or row crops).
4. Flow-weighted annual average BOD concentration (from all sources including supplemental irrigation water) discharged to the LAAs for the calendar year with supporting data and calculation and comparison to the Effluent Limitations.
 - a. For LAAs cropped with rice, the flow weighted annual average BOD concentration shall be calculated using the following formula:

$$C_a = \frac{\sum_{i=1}^{12} [(C_{Pi} \times V_{Pi}) + (C_{Si} \times V_{Si})]}{\sum_{i=1}^{12} (V_{Pi} + V_{Si})}$$

- Where: C_a = Flow-weighted average annual BOD concentration in mg/L
 i = the number of the month (e.g., January = 1, February = 2, etc.)
 C_{Pi} = Monthly average process wastewater BOD concentration for calendar month i in mg/L
 C_{Si} = Monthly average supplemental irrigation water BOD concentration for calendar month i in mg/L (considering each supplemental source separately)
 V_{Pi} = Volume of process wastewater applied to LAAs during calendar month i in million gallons
 V_{Si} = Volume of supplemental irrigation water applied to LAAs during calendar month i in million gallons (considering each supplemental source separately)

5. Flow-weighted annual average FDS concentration (from all sources including supplemental irrigation water) discharged to the LAAs for the calendar year with supporting data and calculations and comparison to the Effluent Limitations.
 - a. For all LAAs, the flow-weighted annual average FDS concentration shall be calculated using the following formula:

$$C_a = \frac{\sum_{i=1}^{12} [(C_{Pi} \times V_{Pi}) + (C_{Si} \times V_{Si})]}{\sum_{i=1}^{12} (V_{Pi} + V_{Si})}$$

- Where: C_a = Flow-weighted average annual FDS concentration in mg/L
 i = the number of the month (e.g., January = 1, February = 2, etc.)
 C_{Pi} = Monthly average process wastewater FDS concentration for calendar month i in mg/L
 C_{Si} = Monthly average supplemental irrigation water FDS concentration for calendar month i in mg/L (considering each supplemental source separately)
 V_{Pi} = Volume of process wastewater applied to LAAs during calendar month i in million gallons
 V_{Si} = Volume of supplemental irrigation water applied to LAAs during calendar month i in million gallons (considering each supplemental source separately)

6. Total hydraulic loading rate and total nitrogen loading rate applied to each LAA field for the calendar year with supporting data and calculations and comparison to crop evapotranspiration rate and nitrogen demand.
 - a. For all LAAs, the mass of total nitrogen applied to each LAA field on an annual basis shall be calculated using the following formula and compared to published crop demand for the crops actually grown within that field:

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

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 million gallons
 A = area of the LAA irrigated in acres
 i = the number of the month (e.g., January = 1, February = 2, etc.)
 M_x = nitrogen mass from other sources (e.g., fertilizer and compost) in pounds
 8.345 = unit conversion factor

7. A nitrogen mass balance (from all sources) for the calendar year with supporting data and calculations. Include description of the types of crops planted and dates of planting and harvest for each crop. If the mass balance indicates that nitrogen has been applied in excess of the agronomic rate, include a discussion of any corrective action performed during the year and a plan and schedule for additional corrective actions if needed to ensure future compliance with the land application area specifications of the WDRs.
8. In the event that additional processors begin discharging their industrial process wastewater to the LAAs, provide a description of the wastewater character, flow and date of first discharge operation.
9. In tabular format, monitoring results of the process wastewater generated from each cannabis cultivator, including a list of pesticide use.
10. Concentration vs. time graphs for each monitored constituent using all historic groundwater monitoring data. Each graph shall show the pre-discharge groundwater concentration (where applicable), the trigger concentration specified above (where applicable), and the Groundwater Limitation as horizontal lines at the applicable concentration.
11. 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 specified above. 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.
12. An evaluation of the groundwater quality beneath the site and determination of compliance with the Groundwater Limitations E.1 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.
13. 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 waste discharge requirements.

14. 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; and
- c. Based on monitoring data, an evaluation of the effectiveness of the treatment or control measures implemented to date.
- d. Evaluation of the current operations, corrective actions, and or control measures to reduce odor concerns regarding wastewater generated, stored, and disposed of on site.

15. 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. 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 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 Discharger, or the Discharger's authorized agent, as described in the Standard Provisions General Reporting Requirements Section B.3.

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

This Order is issued under authority delegated to the Executive Officer by the Central Valley Water Board pursuant to Resolution R5-2018-0057 and is effective upon signature.

for PATRICK PULUPA, Executive Officer