

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM R5-2014-__

FOR

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This Monitoring and Reporting Program (MRP) incorporates requirements for monitoring of process wastewater, wastewater storage ponds, land application areas, recovered fruit processing 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 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. Flow monitoring shall be conducted continuously using flow meters.

Field test instruments (such as those used to measure 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

Effective 1 November 2014, process wastewater and supplemental irrigation water flow rates shall be monitored as follows:

<u>Constituents</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
Wastewater flow from Solids Separation to the Wastewater Pond(s)	Gallons	Meter Reading	Daily	Monthly
Flow from Irrigation Supply well to the LAAs	Gallons	Meter Reading	Daily	Monthly
Flow from Wastewater Pond(s) to the LAAs	Gallons	Meter Reading	Daily	Monthly

WASTEWATER STORAGE POND MONITORING

All wastewater ponds shall be monitored as described below. 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. Wastewater ponds shall be monitored as follows:

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
Dissolved Oxygen ¹	mg/L	Grab	Weekly	Monthly
Freeboard	feet (±0.1)	Measurement	Weekly	Monthly
Odors	--	Observation	Weekly	Monthly

¹ Samples shall be collected at a depth of one foot, opposite the inlet.

WASTEWATER MONITORING

Wastewater shall be monitored as described below. Wastewater samples shall be collected from an established sampling station during each month that there is a discharge to the LAAs at the location shown schematically on Attachment C during each month that there is a discharge to the LAAs. If there is no discharge to the LAAs, then the monitoring report shall so state. Wastewater shall be monitored as follows:

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

¹ Metals/Inorganics include the following: arsenic, boron, calcium, iron, magnesium, manganese, potassium, total alkalinity (including alkalinity series), and hardness.

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

SUPPLEMENTAL IRRIGATION MONITORING

Supplemental irrigation water quality shall be monitored as described below during periods when supplemental irrigation water is used. Supplemental irrigation water from the onsite irrigation well shall be analyzed for, at a minimum, the following:

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
Total Nitrogen	mg/L	Grab	Monthly ¹	Monthly
Total Dissolved Solids	mg/L	Grab	Monthly ¹	Monthly
Metals/Inorganics ²	mg/L	Grab	Quarterly	Quarterly ³

- ¹ Monthly for six consecutive months, then semi-annually thereafter.
- ² Metals/Inorganics include the following: arsenic, boron, calcium, iron, magnesium, manganese, potassium, total alkalinity (including alkalinity series), and hardness.
- ³ 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 land application areas **daily during irrigation events**, 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 the land application area shall be calculated. Monitoring of the land application area shall include the following:

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Monitoring Frequency</u>	<u>Reporting Frequency</u>
Local Rainfall ¹	Inches	Measurement	Daily	Monthly
Wastewater Applied	Gallons per day	Flow Meter	Daily	Monthly
Supplemental Irrigation Water Applied ²	Gallons per day	Flow Meter	Daily	Monthly
Total Water Application Rate ³	gal/ac/day	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	Not Applicable	Inspection	Per Event	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 saturation condition (saturated or not saturated) shall be determined prior to each 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 prune pits, organic debris, wastewater screenings, and sump/clarifier solids, or other material.
2. Storage for all solids waste materials. Describe the location of storage and measures implemented to prevent leachate generation or control and disposal of any leachate that is generated.
3. 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 of any additional groundwater monitoring wells, the Discharger shall submit plans and specifications for approval. Once installed, all new wells shall be added to the compliance monitoring network except those approved for use as a background well. The following table lists all existing monitoring wells and designates the purpose of each well:

MW-1 ¹	MW-2 ¹	MW-3 ¹	MW-4 ¹
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¹ 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.

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. Groundwater monitoring for all monitoring wells 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 ¹	±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
Chloride	mg/L	Grab	Quarterly	Quarterly
Sodium ²	mg/L	Grab	Quarterly	Quarterly
Sulfate	mg/L	Grab	Quarterly	Quarterly
Nitrate as Nitrogen	mg/L	Grab	Quarterly	Quarterly

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
Total Dissolved Solids	mg/L	Grab	Quarterly	Quarterly
Metals/Inorganics ^{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 Samples shall be field filtered prior to preservation or digestion, as appropriate.
³ Metals/Inorganics include the following: arsenic, boron, calcium, iron, magnesium, manganese, potassium, total alkalinity (including alkalinity series), and hardness.

GROUNDWATER TRIGGER CONCENTRATIONS

The following groundwater trigger concentrations are intended only to serve as a means of assessing whether wastewater discharge to the LAAs might potentially cause a violation of one or more of the Groundwater Limitations of the WDRs at some later date. These trigger concentrations do not apply to monitoring wells MW-1 and MW-2.

<u>Constituent</u>	<u>Trigger Concentration (mg/L)</u> ¹	<u>Potential Water Quality Objectives</u> ³
TDS	1,100	450 ² – 1,500 ³
Chloride	250	106 ² - 600 ³
Dissolved Iron	0.1	0.3 ⁴
Dissolved Manganese	0.02	0.05 ⁴

- ¹ Trigger concentrations are subject to review and revision based on the approved *Background Groundwater Quality Study Report*.
² Lowest Agricultural Water Quality Goal
³ Upper Secondary Maximum Contaminant Level
⁴ Secondary Maximum Contaminant Level

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 LAA 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 pond 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. Results of flow monitoring, wastewater storage pond monitoring, wastewater monitoring, supplemental irrigation water, land application area, and solids monitoring. Information reported shall include monitoring calculations of total monthly flows to each land application area from all water sources (i.e. wastewater, irrigation water, etc.), the monthly average flow, and BOD and nitrogen loading rates.
2. A comparison of monitoring data to the discharge specifications and effluent limitations (including calculations) 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.
3. If requested by staff, copies of laboratory analytical report(s).

B. Quarterly Monitoring Reports

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** (e.g. the January-March quarter is due by May 1st) each year. The Quarterly Report submittal schedule is shown in the table below.

Quarter	Month	Quarterly Report Due Date
First	January – March	1 May
Second	April – June	1 August
Third	July – September	1 November
Fourth	October - December	1 February

The Quarterly 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 Report

In addition to the monthly and quarterly reports, a stand-alone annual report shall be prepared. The Annual Report shall be submitted to the Central Valley Water Board by **1 February** each year. The Annual Report shall include the following:

1. Tabular and graphical summaries of all data collected during the year.

2. Tabular and graphical summaries of total loading rates for water (hydraulic loading in gallons and inches), BOD, and total nitrogen.
3. Comparison of total nitrogen loading to the LAA with published crop demand values for the crops that were grown.
4. The maximum monthly and total annual wastewater flow (million gallons) and comparison to the flow limits of the WDRs.
5. Flow-weighted annual average FDS concentration.
6. 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.
7. **Effective beginning with the 2015 Annual Monitoring Report**, an evaluation of the groundwater quality beneath the site and determination of compliance with the groundwater limitations of the WDRs.
8. **Effective beginning with the 2017 Annual Monitoring Report**, an evaluation of the groundwater quality beneath the site and determination of compliance with the groundwater limitations of the WDRs based on an intrawell statistical analysis for each constituent monitored for each compliance well in accordance with the approved *Groundwater Limitations Compliance Assessment Plan*.
9. A description of salinity control methods that have been implemented in the calendar year and a quantification of the reductions achieved compared to previous years.
10. Estimated wastewater flows for the next calendar year.
11. **Every five years beginning in 2019**, the results of pond liner and leak detection system integrity tests, and if appropriate, a plan and schedule for leak repair shall be submitted in the Annual Monitoring Report for the preceding year.
12. **Every five years beginning in 2019**, the results of pond sludge monitoring and on details of sludge removal and disposal if required pursuant to Discharge Specifications D.14 shall be submitted in the Annual Monitoring Report for the preceding year.
13. 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.

14. 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)

SAA: 5/7/2014