CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM R5-2020-XXXX

FOR
HORIZON NUT, LLC
HORIZON NUT PISTACHIO HULLER
FRESNO COUNTY

This Monitoring and Reporting Program (MRP), which is separately issued pursuant to California Water Code section 13267 subdivision (b)(1), establishes monitoring and reporting requirements related to the waste discharges regulated under Waste Discharge Requirements (WDRs) Order R5-2020-XXXX. Each of the Findings set forth in the WDRs Order, including those pertaining to the need for submission of reports, are hereby incorporated as part of this MRP.

The Horizon Nut, LLC (Discharger) owns and operates the Horizon Nut Pistachio Huller (Facility) and the Land Application Area (LAA) that is subject to WDRs Order R5-2020-XXXX. The Discharger shall not implement any changes to this MRP unless and until the Central Valley Regional Water Quality Control Board (Central Valley Water Board) adopts, or the Executive Officer issues, a revised MRP.

The Discharger shall implement this monitoring and reporting program starting the 1st day of the second month following adoption of the MRP.

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). 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); and
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 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 and from any other sources of supplemental irrigation water shall be collected. At a minimum, the Discharger shall sample the source water beginning in **2023**, 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

Wastewater Flow Monitoring

After the flow meter is installed as required in Provision I.4.d in Order R5-2020-XXXX, when water is discharged to the LAAs, the Discharger shall monitor wastewater flows as follows:

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

Wastewater Quality Monitoring

Wastewater samples shall be collected from the concrete basin/sump prior to discharging to the LAAs and shall be representative of wastewater quality. Sampling is only required when water is discharged to the LAAs. Standard minerals shall include at a minimum, chloride, sodium, potassium, 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 LAAs 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 (cycle average)	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 BOD, total nitrogen, and FDS shall be calculated for each LAA. BOD loading shall be calculated using the daily applied volume of wastewater, actual application area, and most recent BOD 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.

Groundwater Monitoring

If groundwater monitoring is required, the Discharger shall submit plans and specifications to the Central Valley Water Board for review and approval prior to construction of any groundwater monitoring wells. Once installed, all new monitoring wells shall be appropriately incorporated into monitoring conducted under this MRP and monitored on a quarterly basis. If monitoring consistently shows no significant variation in a constituent concentration or parameter after at least 8 consecutive groundwater monitoring events, the Discharger may request this MRP be revised to reduce constituent analyses or monitoring parameters. The proposal must include adequate technical justification for a reduction in monitoring frequency. 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 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 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. Samples shall be collected and analyzed using standard EPA methods. Groundwater monitoring shall include, at a minimum, the paraments 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	Quarterly	Annually
Groundwater Elevation	feet	Calculated	Quarterly	Annually
Gradient	feet/feet	Calculated	Quarterly	Annually
Gradient Direction	degrees	Calculated	Quarterly	Annually
EC	µmhos/cm	Grab	Quarterly	Annually
TDS	mg/L	Grab	Quarterly	Annually
Total Nitrogen	mg/L	Grab	Quarterly	Annually
Nitrate as Nitrogen	mg/L	Grab	Quarterly	Annually
Standard Minerals	mg/L	Grab	Annually	Annually

Groundwater Limitations

The Groundwater Limitations set forth in Section F of WDRs Order R5-2020-XXXX shall apply to all monitoring wells. This table is subject to revision by the Executive Officer following construction of any additional monitoring wells.

Constituent	Groundwater Limitation
EC	900 µmhos/cm or Current Groundwater Quality, whichever is higher
TDS	1,000 mg/L or Current Groundwater Quality, whichever is higher
Total Nitrogen	10 mg/L or Current Groundwater Quality, whichever is higher
Sodium	69 mg/L or Current Groundwater Quality, whichever is higher
Chloride	500 mg/L or Current Groundwater Quality, whichever is higher

If groundwater monitoring is required, current groundwater quality will be defined using approved statistical methods as described in an approved *Groundwater Limitation Compliance Assessment Plan* (Provision I.4.b.iii, in WDRs Order R5-2020-XXXX).

If groundwater quality performed pursuant to this MRP shows that an exceedance of the Groundwater Limitation is occurring, as defined in an approved *Groundwater Limitation Compliance Assessment Plan*, 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. If exceedances are the result of activities outside the Discharger's control, the report shall support that determination.

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
Region 5 – Fresno Office
1685 "E" Street
Fresno, California 93706

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:

County:	Fresno
Facility:	Horizon Nut Pistachio Huller
Program:	Non-15
Order Number:	MRP R5-2020-XXXX
CIWQS Place ID:	812358

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 applied to an LAA in lb/ac/day
C = concentration of BOD 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.
Vi = 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.).
Mx = 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 [cycle average] or 150 lb/ac/day for sprinkler irrigated acres [cycle average]).
7. A calibration log verifying calibration of all handheld monitoring instruments and devices used to comply with the prescribed monitoring program; and
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 (if required)

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-XXXX, 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-XXXX, 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; and

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 XX MONTH 20XX.

_____
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