CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM R5-2020-0034
FOR
WONDERFUL PISTACHIOS & ALMONDS, LLC, WONDERFUL ORCHARDS, LLC,
WONDERFUL NUT ORCHARDS, LLC, AND
WONDERFUL POMEGRANATE ORCHARDS, LLC
WONDERFUL FIREBAUGH PISTACHIO PROCESSING PLANT
MADERA 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 Order R5-2020-0034 (WDRs Order). 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.

Wonderful Pistachios & Almonds, LLC, Wonderful Orchards, LLC, Wonderful Nut Orchards, LLC and Wonderful Pomegranate Orchards, LLC (collectively referred to as Discharger) owns and/or operates the Wonderful Firebaugh Pistachio Processing Plant (Facility) and the Land Application Areas (LAA) subject to WDRs Order R5-2020-0034. 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.

A glossary of terms used in this MRP is included on the last page.

This MRP may be separately revised by the Executive Officer, in accordance with their delegated authority under Water Code section 13223.

I. GENERAL MONITORING REQUIREMENTS

A. FLOW MONITORING

Hydraulic flow rates shall be measured at the monitoring points specified in this MRP. All flow monitoring systems shall be appropriate for the conveyance system (i.e., open channel flow or pressure pipeline) and liquid type. The measurements may be based on flow meter readings or pump run time estimate. The method of measurement must be specified. Unless otherwise specified, each flow meter shall be equipped with a flow totalizer to allow reporting of cumulative volume as well as instantaneous flow rate. Flow meters shall be calibrated at the frequency recommended by the manufacturer; typically, at least once per year and records of calibration shall be maintained for review upon request.

B. MONITORING AND SAMPLING LOCATIONS

Samples and measurements shall be obtained at the monitoring points specified in this MRP. Central Valley Water Board staff shall approve any proposed changes to sampling locations prior to implementation of the change.

The Discharger shall monitor the following locations to demonstrate compliance with the requirements of this MRP:

Table 1. Monitoring Locations

Monitoring Location	Monitoring Location Description
INF-001	Location where a representative sample of the waste stream (i.e., hulling water and equipment wash down) can be obtained prior to discharge to the settling ponds.
EFF-001	Location where a representative sample of the effluent leaving the settling ponds can be obtained after the sand filters but prior to discharge into the irrigation system and blending with irrigation water.
PND-001 through PND-004	Lined settling ponds.
SW-001	Facility's source water supply.
RSV-XXX	Reservoir locations where representative samples of the blended wastewater and irrigation water can be collected prior to application within the LAA.
LAA-001 to LAA-XXX	Specific field in the LAA where the Facility's discharge is applied.
IRG	Irrigation system.
MW-001 to MW-00X	Groundwater monitoring wells.

C. SAMPLING AND SAMPLE ANALYSIS

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.

Field test instruments (such as those used to measure pH, temperature, 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 by the manufacturer at the recommended frequency; and
4. Field calibration reports are submitted as described in the "Reporting" section of this MRP.

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

- *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 (EPA) or the State Water Resources Control Board (State Water Board), Division of Drinking Water's 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 the applicable water quality objectives for the constituents to be analyzed.

If monitoring consistently shows no significant variation in a constituent concentration or parameter after at least 12 months of monitoring, the Discharger may request this MRP be revised to reduce monitoring frequency. The proposal must include adequate technical justification for reduction in monitoring frequency. This monitoring program shall remain in effect unless and until a revised MRP is issued.

II. SPECIFIC MONITORING REQUIREMENTS

A. INFLUENT MONITORING (INF-001)

During the pistachio processing season, samples shall be collected of the waste stream immediately before it enters the wastewater settling ponds. The samples shall be representative of the volume and nature of the discharge. Time of collection of a grab sample shall be recorded. Influent monitoring shall include the following:

Table 2. Influent Monitoring (INF-001)

Constituent/Parameter	Units	Sample Type	Frequency
pH	pH Units	Grab	1/Week
EC	µmhos/cm	Grab	1/Week

B. EFFLUENT MONITORING (EFF-001)

Effluent samples shall be collected after the settling ponds and sand filters but prior to being discharged to the LAA and mixing with irrigation water. Effluent samples shall be collected during the processing season and at any time wastewater is discharged from the settling ponds. Effluent monitoring shall include at least the following:

Table 3. Effluent Monitoring

Constituent/Parameter	Units	Sample Type	Frequency
Flow	mgd	Meter (see 1 below)	Continuous
pH	pH Units	Grab	1/Week
EC	µmhos/cm	Grab	1/Week
BOD_5	mg/L	Grab	1/Week
FDS	mg/L	Grab	1/Week
Potassium	mg/L	Grab	1/Week
TKN	mg/L	Grab	1/Week
Nitrate as N	mg/L	Grab	2/Year (see 2 below)
Nitrite as N	mg/L	Grab	2/Year (see 2 below)
Total Nitrogen	mg/L	Calculation	2/Year (see 2 below)
TSS	mg/L	Grab	2/Year (see 2 below)
TDS	mg/L	Grab	2/Year (see 2 below)
General Minerals	mg/L	Grab	2/Year (see 2 below)

1. Flow measurements may be based on flow meter readings or pump run time estimates. The method of measurement must be specified.
2. Samples shall be collected twice per year in non-consecutive weeks in the middle and at the end of the processing season.

C. POND MONITORING (PND-001 TO PND-004)

The Discharger shall monitor the lined effluent ponds when wastewater is in the ponds. Samples shall be collected opposite the pond inlet at a depth of one foot and freeboard shall be measured to the nearest 0.1 foot vertically from the surface of the water to the lowest elevation of the berm. Pond monitoring shall include at least the following:

Table 4. Pond Monitoring (PND-001 to PND-004)

Constituent/Parameter	Units	Sample Type	Frequency
DO	mg/L	Grab	1/Week (see 1 and 2 below)
pH	s.u.	Grab	1/Week
Freeboard	Nearest 0.1 Feet	Grab	1/Week
Liner Condition	---	Observation	1/Year (see 3 below)

Constituent/Parameter	Units	Sample Type	Frequency
Solids Depth (see 4 below)	Feet	Grab	1/Year (see 5 below)

1. Samples for DO and pH shall be collected between 8:00 am and 10:00 am when there is more than one foot of water in the pond. If there is insufficient water in the pond no sample shall be collected, and the Discharger shall report that in the appropriate monitoring report.
2. If offensive odors are detected by or brought to the attention of the Discharger, the Discharger shall monitor the potential source pond at least daily for DO and pH until the odor issue has been resolved and the DO in the pond is greater than 1.0 mg/L.
3. In July or August prior to the start of the processing season.
4. Thickness of settled solids accumulated at the bottom of the ponds.
5. In November after the processing season.

In addition, the Discharger shall inspect the condition of the ponds on a weekly basis when wastewater is present in the ponds and record their observations. Notations shall include condition of the liner, color of the water in the pond (e.g., dark green, brown, gray, etc.) presence of odors or nuisance conditions, whether grease, dead algae, scum, or debris are accumulating in the pond, and condition of the liner. A summary of these entries shall be included in the subsequent monitoring report.

D. SOURCE WATER MONITORING (SW-001)

Samples shall be representative of the source water supplied to the Facility after treatment. If the source water is from more than one source, the results shall be presented as a flow-weighted average of all sources. At a minimum, source water shall be monitored as specified below:

Table 5. Source Water Monitoring (SW-001)

Constituent/Parameter	Units	Sample Type	Frequency
EC	µmhos/cm	Grab	1/Year (see 1 below)
General Minerals	mg/L	Grab	1/Year (see 1 below)

1. Samples shall be collected once a year in September during the processing season.

E. RESERVOIR MONITORING (RSV-XXX)

The Discharger shall collect samples of the blended wastewater and irrigation water from the various field reservoirs for use in calculating loading rates to the LAA. Samples shall be collected from the applicable reservoirs on a weekly basis when the fields are being irrigated and wastewater is being discharged into the irrigation system. Reservoir monitoring shall include at least the following:

Table 6. Reservoir Monitoring (RSV-001 to RSV-00X)

Constituent/Parameter	Units	Sample Type	Frequency
Flow (see 1 below)	mgd	Meter (see 2 below)	Continuous
pH	pH Units	Grab	1/Week
EC	µmhos/cm	Grab	1/Week
BOD_5	mg/L	Grab	1/Week
Nitrate as N	mg/L	Grab	1/Week
Nitrite as N	mg/L	Grab	1/Week
TKN	mg/L	Grab	1/Week
Total Nitrogen	mg/L	Calculation	1/Week
FDS	mg/L	Grab	1/Week
Potassium	mg/L	Grab	1/Week

1. Flow measurement shall be of the blended wastewater and irrigation water from the reservoir being applied to the LAA.
2. Flow measurements may be based on flow meter readings or pump run time estimates. The method of measurement must be specified.

F. LAND APPLICATION AREA MONITORING (LAA-001)

The Discharger shall inspect the LAA at least once daily prior to and during irrigation events. Evidence of erosion, field saturation, runoff, or the presence of nuisance conditions (i.e., flies, ponding, etc.) shall be noted in the Facility's logbook and included as part of the quarterly monitoring report. In addition, the Discharger shall perform the following routine monitoring and loading calculations for each discrete irrigation area within the LAA each day when wastewater is applied. The data shall be collected and presented in graphical (map) and/or tabular format and shall include the following:

Table 7. Land Application Area Monitoring

Constituent/Parameter	Units	Sample Type	Frequency
Fields Irrigated	acres	n/a	Daily
Irrigation flow (see 1 below)	mgd	Metered	Daily

Constituent/Parameter	Units	Sample Type	Frequency
Irrigation loading (see 1 below)	inches/day	Calculated	Daily
Precipitation	inches	Rain gage (see 2 below)	Daily
BOD Loading (see 3 and 4 below)			
cycle average loading rate	lbs/acre-day	Calculated	Cycle
Nitrogen Loading (see 3 below**)**			
from wastewater	lbs/acre	Calculated	1/Year
from fertilizer	lbs/acre	Calculated	1/Year
Salt and Potassium Loading (see 3 below)			
from wastewater	lbs/acre	Calculated	1/Year
from fertilizer	lbs/acre	Calculated	1/Year

1. Irrigation flow and Irrigation loading will be the combined flow of wastewater and irrigation water discharged from the irrigation reservoirs to the LAA.
2. National Weather Service or CIMIS data from the nearest weather station is acceptable.
3. BOD, nitrogen, salt, and potassium loading shall be calculated as specified in section III of this MRP.
4. A cycle average is calculated by taking the pounds of BOD added to the LAA in a given period divided by the sum of the total days wastewater was applied plus the number of days of rest (no application of wastewater), see section III of the MRP for the calculation.

G. IRRIGATION SYSTEM MONITORING (IRG)

Prior to the start of the pistachio processing season the Discharger shall conduct an annual inspection of its irrigation system. The inspection shall note all irrigation canals and reservoirs which will be used to transport and store wastewater. In addition, the Discharger shall note any locations where the irrigation system will cross other irrigation canals and/or surface waters that will not be used to carry wastewater and check that there are no connections between the irrigation canals used to carry wastewater and any surface waters (i.e., canals, channels, etc.) or drainage courses that leave the property. The results of the inspection as well as a map documenting the various irrigation canals and reservoirs to be used for transportation or storage of wastewater shall be included in the Annual Report.

H. GROUNDWATER MONITORING (MW-1 to MW-XX)

The Discharger shall conduct groundwater monitoring as specified in this section if a groundwater monitoring well network is installed/developed at the Facility per Provisions G.6 and G.7 of the WDRs Order.

After measuring water levels and prior to collecting samples, each monitoring well shall be adequately purged to remove water that has been standing within the well screen and casing that may not be chemically representative of formation water. Purging shall continue until pH, EC, and turbidity have stabilized. Depending on the hydraulic conductivity of the geologic setting, the volume removed during purging is typically from 3 to 5 casing volumes.

Upon installation of its monitoring well network (if required), the Discharger shall monitor the wells in its monitoring well network and any subsequent additional wells as follows:

Table 8. Groundwater Monitoring (if required)

Constituent/Parameter	Units	Sample Type	Frequency
Depth-to-water	0.01 Feet	Grab	1/Quarter
Groundwater Elevation (see 1 below)	Feet	Calculated	1/Quarter
Groundwater Gradient	Feet/foot	Calculated	1/Quarter
pH	pH Units	Grab	1/Quarter
Electrical Conductivity	µmhos/cm	Grab	1/Quarter
TDS	mg/L	Grab	1/Quarter
Nitrate as N	mg/L	Grab	1/Quarter
Ammonia as N	mg/L	Grab	1/Quarter
TKN	mg/L	Grab	1/Quarter
Total Organic Carbon	mg/L	Grab	1/Quarter
General Minerals	mg/L	Grab	1/Year (see 2 below)

1. Groundwater elevation shall be calculated based on depth-to-water measurements from a surveyed measuring point.
2. Samples to be collected in the October.

The Discharger shall maintain its groundwater monitoring well network. If a monitoring well(s) is dry for more than four consecutive sampling events or is damaged, the Discharger shall submit a workplan and proposed time schedule to replace the monitoring well(s). The monitoring wells(s) shall be replaced following Executive Officer approval of the workplan. Once installed, all new monitoring wells shall be added to the existing groundwater monitoring well network.

III. REPORTING REQUIREMENTS

All monitoring reports should be converted to a searchable Portable Document Format (PDF) and submitted electronically. Documents that are less than 50MB should be emailed to*: centralvalleyfresno@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" St.
Fresno, California 93706

To ensure that your submittal is routed to the appropriate staff person, the following information should be included in the body of the email or transmittal sheet:

Program:	Non-15,
Facility:	Wonderful Firebaugh Pistachio Processing Plant
Order:	MRP R5-2020-0034
County:	Madera
Place ID:	779282

A transmittal letter shall accompany each monitoring report. The letter shall include a discussion of all violations of this MRP during the reporting period and actions taken or planned for correcting each violation. If the Discharger has previously submitted a report describing corrective actions taken 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 certifying under penalty of perjury that the report is true, accurate and complete to the best of the signer's knowledge.

In reporting monitoring data, the Discharger shall arrange the data in tabular form so that the date, sample type (e.g., effluent, groundwater, 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.

Laboratory analysis reports shall be included in the monitoring reports. All laboratory reports must also be retained for a minimum of three years. For a discharger conducting any of its own analyses, reports must also be signed and certified by the chief of the laboratory.

Monitoring information shall include the method detection limit (MDL) and the Reporting limit (RL) or practical quantitation limit (PQL). If the regulatory limit for a given constituent is less than the RL (or PQL), then any analytical results for that constituent that are below the RL (or PQL) but above the MDL shall be reported and flagged as estimated.

All monitoring reports that involve planning, investigation, evaluation or design, or other work requiring interpretation and proper application of engineering or geologic sciences, shall be prepared by or under the direction of persons registered to practice in California pursuant to California Business and Professions Code sections 6735, 7835, and 7835.1.

A. ANNUAL MONITORING REPORTS

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

1. Names, title, and contact information for persons to contact regarding the Facility for emergency and routine situations.

2. Calibration records for all flow meters used to demonstrate compliance with the WDRs Order.

3. 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 WDRs Order.

4. Results of **Influent Monitoring** as specified in Section II.A.

5. Results of **Effluent Monitoring** as specified in Section II.B, including:

   a. Calculation of the maximum daily flow, average daily flow, and cumulative annual flow discharged from the ponds for the year.

6. Results of **Pond Monitoring** as specified in Section II.C.

7. Results of **Source Water Monitoring** as specified in Section II.D. If the source water supply is from more than one source, the Discharger shall calculate the flow-weighted average concentration for each constituent monitored (include supporting calculations).

8. Results of **Reservoir Monitoring** as specified in Section II.E, including:

   a. A map showing the location and identification of the various reservoirs sampled.

9. Results of **Land Application Area** monitoring as specified in Section II.F, including:

   a. Summary of the inspection activities conducted by the Discharger for the LAA.

   b. Calculate the cycle average BOD loading rate for the LAA.

The mass of BOD_5 applied to each discrete irrigation area within the LAA on a cycle average basis shall be calculated using the following formula:

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

Where:
- M = Mass of BOD_5 applied to an LAA in lbs/ac/day
- C = Concentration of BOD_5 in mg/L based on the average concentration for the Week
- V = Total volume of blended wastewater and irrigation water applied to discrete LAA fields during the irrigation cycle, in millions of gallons
- A = Area of the LAA irrigated in acres
- T = Irrigation cycle length in days (from the first day wastewater is applied to the last day of the drying time)
- 8.345 = Unit conversion factor.

c. Calculate the total mass loading for total nitrogen, salts (FDS), and potassium for each field within the LAA.

The mass of total nitrogen, FDS, and potassium applied to each LAA field shall be calculated using the following formula and compared to published crop demand for the crops actually grown:

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

Where:
- M = Mass of total nitrogen, FDS, or potassium applied to the LAA in lbs/ac/yr
- C_i = Average concentration of total nitrogen, FDS, and potassium for the month *i* in mg/L
- V_i = Volume of blended wastewater and irrigation water applied to the LAA during calendar month *i* in million gallons
- A = Area of the LAA (i.e., field) irrigated in acres
- I = The number of the month (e.g., January = 1, February = 2, etc.)
- M_x = Nitrogen, salt, and potassium mass from other sources (e.g., fertilizer and compost) in pounds
- 8.345 = Unit conversion factor

10. Results of the **Irrigation System Monitoring** as specified in Section II.G. Include a map showing the direction of wastewater flow through the irrigation system identifying all crossings and reservoirs used to store/contain wastewater.

11. Results of the **Groundwater Monitoring** as specified in Section II.H (if required).

12. Copies of all laboratory analytical reports.

13. A comparison of monitoring data to the flow limitations and discharge specifications in the WDRs Order and an explanation of any violation of those requirements.

14. A discussion of annual chemical usage at the Facility (e.g., chemical name, purpose, and quantity used).

15. A summary of the disposal of any solids removed from the screens, settling ponds, etc. during the calendar year.

16. A summary of any changes in processing that might affect waste characterization and/or discharge flow rates.

If, in the opinion of the Executive Officer, the Discharger fails to comply with the provisions of this Order, the Executive Officer may refer this matter to the Attorney General for judicial enforcement, may issue a complaint for administrative civil liability, or may take other enforcement actions. Failure to comply with this Order may result in the assessment of Administrative Civil Liability of up to $10,000 per violation, per day, depending on the violation, pursuant to the Water Code, including sections 13268, 13350 and 13385. The Central Valley Water Board reserves its right to take any enforcement actions authorized by law.

Any person aggrieved by this action of the Central Valley Water Board may petition the State Water Resources Control Board to review the action in accordance with California Water Code section 13320 and California Code of Regulations, title 23, sections 2050 and following. The State Water Resources Control Board must receive the petition by 5:00 p.m., 30 days after the date of this MRP, except that if the thirtieth day following the date of this Order falls on a Saturday, Sunday, or state holiday, the petition must be received by the State Water Resources Control Board by 5:00 p.m. on the next business day. Copies of the law and regulations applicable to filing petitions may be found on the internet (http://www.waterboards.ca.gov/public_notices/petitions/water_quality) or will be provided on request.

The Discharger shall implement the above monitoring program **starting 1 July 2020**.

I, PATRICK PULUPA, Executive Officer, do hereby certify the forgoing is a full, true and correct copy of the Monitoring and Reporting Program R5-2020-0034 issued by the California Regional Water Quality Control Board, Central Valley Region, on 4 June 2020.

Patrick Pulupa

Digitally signed by Patrick Pulupa
Date: 2020.06.29 15:41:44 -07'00'

PATRICK PULUPA, Executive Officer

IV. GLOSSARY

BOD_5	Five-day biochemical oxygen demand
CaCO3	Calcium carbonate
DO	Dissolved oxygen
EC	Electrical conductivity at 25° C
FDS	Fixed dissolved solids
TDS	Total dissolved solids
TKN	Total Kjeldahl nitrogen
TSS	Total suspended solids
Continuous	The specified parameter shall be measured by a meter continuously.
24-hr Composite	Samples shall be a flow-proportioned composite consisting of at least eight aliquots over a 24-hour period.
Daily	Once per day.
1/Week	Once per week.
2/Week	Twice per week on non-consecutive days.
1/Month	Once per month.
2/Month	Twice per month in non-consecutive weeks.
1/Quarter	Once per quarter.
2/Year	Samples shall be collected twice per year in non-consecutive weeks in the middle and at the end of the processing season (unless specified otherwise).
1/Year	Once per year.
mg/L	Milligrams per liter
mg/kg	Milligrams per kilogram
mL/L	Milliliters [of solids] per liter
µg/L	Micrograms per liter
µmhos/cm	Micromhos per centimeter
gpd	Gallons per day
mgd	Million gallons per day
MPN/100 mL	Most probable number [of organisms] per 100 milliliters
General Minerals	Analysis shall include; alkalinity (as $CaCO_3$), bicarbonate (as$CaCO_3$), boron, calcium, carbonate (as $CaCO_3$), chloride, iron, magnesium, manganese, nitrate as N, phosphate, potassium, sodium, sulfate, and verification that the analysis is complete (i.e., cation/anion balance).