

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

WASTE DISCHARGE REQUIREMENTS ORDER R5-2016-0052  
FOR  
ARO PISTACHIOS, INC, AND  
MEHDI ORANDI  
TERRA BELLA PROCESSING FACILITY  
TULARE COUNTY

The California Regional Water Quality Control Board, Central Valley Region (hereafter Central Valley Water Board or Board) finds that:

**Background**

1. ARO Pistachios, Inc a California corporation is re-starting operation of the Pistachio Processing Facility (Facility) at 19570 Avenue 88 in Terra Bella. The discharge from the Facility was regulated under Waste Discharge Requirements (WDRs) Order 93-061, that authorized a daily maximum flow of 0.10 million gallons and a seasonal maximum flow of 2.80 million gallons of pistachio wastewater to 72 acres of land application area (LAA).
2. On 5 September 2003, the Central Valley Water Board adopted Order R5-2003-0134, rescinding WDRs Order 93-061.
3. On 24 June 2015, Insight Environmental Consultants, Inc., (Insight) submitted a Report of Waste Discharge (RWD) and supplemental information on 2 November 2015 on behalf of ARO Pistachios to re-start the operation of the Facility and discharge 0.576 million gallons per day (mgd) (annual discharge of 26 million gallons) of pistachio wastewater to 232 acres of pistachio orchards.
4. The Facility occupies part of Assessor's Parcel Number (APN) 319-130-022-000. The 232 acres of LAA where wastewater is to be applied are tabulated in Table 1, below. The Facility and the LAA's are shown on Attachment A, which is incorporated by reference and considered a part of this Order.

Table 1. Land Application Area

| Field Name | Owner                                | Assessor's Parcel Number | Acreage |
|------------|--------------------------------------|--------------------------|---------|
| Ranch 1    | Mehdi & Ahmad Orandi Trust           | 302-260-006-000          | 120     |
| Ranch 2    | Adam Orandi                          | 319-130-022-000          | 38      |
| Ranch 2    | Mehdi Orandi                         | 319-130-023-000          | 39      |
| Ranch 7    | Mehdi Orandi & Moindakhat Doki Trust | 319-140-015-000          | 35      |

5. ARO Pistachios, Inc, and Mehdi Orandi (hereafter Dischargers) are responsible for compliance with these WDRs.

6. New WDRs reflecting the Facility are needed to ensure that the discharge will comply with Central Valley Water Board plans and policies.

### Existing Facility and Discharge

7. The existing hulling line (wet hulling) was permitted under WDRs Order 93-061 and consisted of a pre-cleaning system, peeler hoppers, pot peelers, and float tanks. Water from the onsite well is used in the hulling process and to separate the blank and closed shell pistachios. Hulling wastewater that contains pistachio hulls and minor amount of shells and skins are drained into a concrete sump where it is pumped through a parabolic screen to separate the solids from the wastewater.
8. The quality of wastewater based on historical data when the Facility was operating under WDRs Order 93-061 is summarized in Table 2.

Table 2. Historical Wastewater Quality

| Constituent/Parameter     | Units | 9/2/1997 | 9/12/1997 |
|---------------------------|-------|----------|-----------|
| Biochemical Oxygen Demand | mg/L  | 2,800    | 710       |
| Total Dissolved Solids    | mg/L  | 4,100    | 900       |
| Total Suspended Solids    | mg/L  | 380      | ---       |
| Volatile Dissolved Solids | mg/L  | ---      | 530       |
| Total Kjeldahl Nitrogen   | mg/L  | 130      | <2.0      |

### Proposed Facility and Discharge

9. The harvest season is from August to early September, lasting approximately 30 to 45 days. During the harvest season, the Facility operates 24 hours per day, 7 days a week for approximately 60 days during the harvest season. While the hulling activities are limited to the harvest season, the drying, storage, packing, and fumigation operations could be done year round. During the non-harvest season, the Facility operates 16 hours per day and 5 days a week.
10. During the harvest season, approximately 15 million pounds of pistachios are processed. The pistachios are harvested from the adjacent and nearby Orandi orchards. ARO Pistachios also process pistachios grown by other farmers in the area. The pistachios are transported to the Facility and processed in one of the two hulling lines (wet hulling or dry hulling).
11. The new hulling line (dry hulling) will be the primary hulling line and the existing hulling line (as described in Finding 7) will be run as needed. The new hulling line consists of a pre-cleaning system, dry peelers, Magnuson peelers, Magnuson loose hull remover, and a float tank. After pre-cleaning, the pistachios are hulled. During the hulling process, water is introduced to lubricate the bearings of the Magnuson peeler and help remove all the hulls that come off the dry peelers. Wastewater generated from this process contains pistachio hulls and some shells

and skins. The wastewater is collected in a concrete sump and then passed through a parabolic screen to separate the solids from the wastewater. Wastewater is then discharged to the 232 acres of LAA's. Leaves, twigs, and other debris from the pre-cleaning are collected in a truck or bin and then shipped off-site to a broker for use as compost or cattle feed. The green waste may also be transferred to a staging area at the nearby Ranch 1 where the material is removed by a commodity broker. Screened solids are collected directly into trucks or bins and shipped off-site along with the green waste from the pre-cleaning process. A process flow schematic showing the existing and new hulling lines is shown in Attachment B, which is incorporated by reference and considered a part of this Order.

12. The proposed flow rates for the Facility as described in the RWD, are tabulated below.

Table 3. Proposed Wastewater Flow Rates

|   | Process Wastewater |
|---|--------------------|
| Monthly Average (mgd)                         | 0.576              |
| Daily Maximum (mgd)                           | 0.72               |
| Total Annual (million gallons per year (mgy)) | 26                 |

13. On 24 August 2015, ARO Pistachios began their 2015 processing season using the existing hulling line. On 1 September 2015, ARO Pistachios started using the new hulling line and ran it until the season ended on 13 October 2015. Quality of hulling wastewater from the 2015 processing season is shown below.

Table 4. Quality of Pistachio Hulling Wastewater

| Constituent/Parameter           | Units    | 9/3/2015 | 9/10/2015 | 9/17/2015 | 9/23/2015 | 10/1/2015 | 10/8/2015 | Average |
|---------------------------------|----------|----------|-----------|-----------|-----------|-----------|-----------|---------|
| pH                              | pH Units | 5.01     | 6.09      | 6.33      | 5.38      | 6.2       | 6.9       | ---     |
| Electrical Conductivity         | umhos/cm | 3,420    | 2,310     | 1,790     | 1,910     | 1,380     | 423       | 1,872   |
| Biochemical Oxygen Demand (BOD) | mg/L     | 8,800    | 3,100     | 2,400     | 3,900     | 1,000     | 200       | 3,233   |
| Chemical Oxygen Demand          | mg/L     | 12,000   | 5,700     | 5,400     | 7,400     | 4,600     | 1,300     | 6,067   |
| Total Suspended Solids          | mg/L     | 3,300    | 2,200     | 1,400     | 4,800     | 960       | 160       | 2,137   |
| Total Dissolved Solids (TDS)    | mg/L     | 6,900    | 2,400     | 2,000     | 2,900     | 1,100     | 910       | 2,702   |
| Fixed Dissolved Solids (FDS)    | mg/L     | 2,500    | 590       | 780       | 1,100     | 640       | 220       | 972     |
| Total Kjeldahl Nitrogen         | mg/L     | 320      | 330       | 160       | 310       | 170       | 8.8       | 216     |
| Nitrate as Nitrogen             | mg/L     | 0.45     | 0.27      | 0.14      | 0.7       | <0.20     | <0.1      | 0.39    |
| Nitrite as Nitrogen             | mg/L     | 0.13     | 1.3       | <0.05     | 0.43      | <0.05     | 0.013     | 0.47    |
| Ammonia as Nitrogen             | mg/L     | 15       | 21        | 0.78      | 6.3       | 3.6       | 0.96      | 8       |
| Total Nitrogen                  | mg/L     | 320      | 330       | 160       | 320       | 170       | 8.8       | 218     |
| Calcium                         | mg/L     | ---      | ---       | ---       | ---       | 12        | ---       | ---     |
| Magnesium                       | mg/L     | ---      | ---       | ---       | ---       | 4.2       | ---       | ---     |
| Total Recoverable Sodium        | mg/L     | 81       | 58        | 59        | 67        | 64        | 68        | 66      |
| Total Recoverable Potassium     | mg/L     | 1,200    | 650       | 310       | 540       | 380       | 190       | 545     |
| Chloride                        | mg/L     | 48       | 32        | 26        | 35        | 26        | 26        | 32      |

| Constituent/Parameter | Units | 9/3/2015 | 9/10/2015 | 9/17/2015 | 9/23/2015 | 10/1/2015 | 10/8/2015 | Average |
|-----------------------|-------|----------|-----------|-----------|-----------|-----------|-----------|---------|
| Sulfate               | mg/L  | ---      | ---       | ---       | ---       | 27        | ---       | ---     |
| Bicarbonate           | mg/L  | ---      | ---       | ---       | ---       | 240       | ---       | ---     |
| Carbonate             | mg/L  | ---      | ---       | ---       | ---       | <2.5      | ---       | ---     |
| Hardness              | mg/L  | ---      | ---       | ---       | ---       | 49        | ---       | ---     |
| Alkalinity            | mg/L  | ---      | ---       | ---       | ---       | 110       | ---       | ---     |

14. Based on analytical data from the 2015 processing season, approximately 64 percent of the TDS is a result of organic compounds based on an average FDS of 972 mg/L and an average TDS of 2,702 mg/L. This Order requires the Dischargers to submit a Salinity Management Plan (Provision G.10) to evaluate salinity control measures.
15. A high percentage of the inorganic portion of the discharge EC is from potassium. There is no Maximum Contaminant Level (MCL) or other numeric limit for potassium except overall limits for EC and total dissolved solids, to which potassium would contribute. In addition, potassium is an important nutrient for crops, especially pistachios, and if readily available, plants will take up potassium in excess of their needs. The discharge of wastewater high in potassium to the pistachio orchard would be beneficial to the crop. Further, while potassium that is not bound to soil particles is readily soluble in water, the positively charged ion impedes transport through the soil column allowing for greater retention time within the root zone. With a vadose zone of 150 feet in depth, potassium concentrations in groundwater are not expected to increase.
16. Facility sanitation takes place at the beginning of the hulling operation, twice daily while the Facility is operating, and concludes with the final cleaning and deactivation of the Facility at the end of the harvest season. Chemical used at the Facility include: 110 gal/year of sanitizer, and 2 gal/day of LA Chemchlor.
17. Domestic wastewater is discharged separately to an existing on-site septic tank/leachfield. Domestic wastewater is not discharged to the proposed LAA. According to Insight, no other historical information is available regarding the septic tank/leachfield.

### **Land Application Area Practices**

18. Excessive application of food processing wastewater to land can create objectionable odors, soil conditions that are harmful to crops, and degradation of underlying groundwater by overloading the soil profile and causing waste constituents (i.e., organic carbon, nitrates, other salts, and metals) to percolate below the root zone. Irrigation with high-strength wastewater can result in high BOD loading on the day of application, which can deplete oxygen in the soil and lead to anoxic conditions. When insufficient oxygen is present below the ground surface, anaerobic decay of organic matter can create reducing conditions that convert metals naturally present in the soil as relatively insoluble (oxidized) forms to more soluble (reduced) forms. This condition can be exacerbated by acidic soils and/or acidic wastewater. If reducing conditions do not reverse as the percolate travels through the vadose zone, these

dissolved metals (primarily iron, manganese, and arsenic) can degrade shallow groundwater quality. Excessive organic loading can also increase groundwater bicarbonate concentrations, which cause increases in groundwater EC and total dissolved solids.

19. It is reasonable to expect some oxidation of BOD at the ground surface, within the evapotranspiration zone and below the root zone within the vadose (unsaturated) zone. The maximum BOD loading rate that can be applied to land without creating nuisance conditions or causing unreasonable degradation of groundwater can vary significantly depending on soil conditions and operation of the land application system.
20. Pollution Abatement in the Fruit and Vegetable Industry, published by the United States Environmental Protection Agency, cites BOD loading rates associated with crop irrigation in the range of 36 to 100 lbs/acre/day to prevent nuisance, but indicates that loading rates can be even higher under certain conditions. The studies that support this report did not evaluate actual or potential groundwater degradation associated with those loading rates. There are few studies that have attempted to determine maximum BOD loading rates for protection of groundwater quality. Those that have are not readily adapted to varying soil, groundwater, and climate conditions that are prevalent throughout the region.
21. The California League of Food Processors *Manual of Good Practice for Land Application for Food Processing/Rinse Water* proposes risk categories associated with particular BOD loading rate ranges as follows:
  - a. Risk Category 1: (less than 50 lbs/ac/day; depth to groundwater greater than 5 feet) indistinguishable from good farming operations with good distribution important.
  - b. Risk Category 2: (less than 100 lbs/ac/day; depth to groundwater greater than 5 feet) minimal risk of unreasonable groundwater degradation with good distribution more important.
  - c. Risk Category 3: (greater than 100 lbs/ac/day; depth to groundwater greater than 2 feet) requires detailed planning and good operation with good distribution very important to prevent unreasonable degradation, as well as use of oxygen transfer design equations that consider site-specific application cycles and soil properties and special monitoring.

The *Manual of Good Practice* recommends allowing a 50 percent increase in the BOD loading rates in cases where sprinkler irrigation is used, but recommends that additional safety factors be used for sites with heavy and/or compacted soils. The Manual of Good Practice also states that the use of surface irrigation (boarder check method) makes uniform application difficult, especially for coarse textured soils.

22. Although it has not been subject to a scientific peer review process, the Manual of Good Practice provides science-based guidance for BOD loading rates that, if fully implemented, may be considered management practices to prevent groundwater degradation due to reduced metals.

23. The 232 acres of LAA is surface irrigated via flood irrigation. The Dischargers have proposed an irrigation schedule that consists of dividing the LAA's into smaller fields. Ranch 1 with 120 acres will be divided into six-20 acre fields. Ranch 2 with 77 acres will be divided into four fields; three-20 acre fields and one-17 acre field. Ranch 7 with 35 acres will be divided into one-18 acre field and another 17 acre field. According to the irrigation schedule all fields will be irrigated for five consecutive days, the rest period between applications varies from 7 to 25 days.
24. The LAA in Ranch 2 was historically permitted under WDRs Order 93-061 and received pistachio process wastewater. The Dischargers now proposes to increase its LAA by an additional 120 acres (Ranch 1) and 35 acres (Ranch 7) of pistachio orchards not originally permitted under WDRs Order 93-061. The 120 and 35 acres of pistachio orchards have been in agricultural use since 1972 and 1986, respectively, and have never received pistachio process wastewater.
25. The annual hydraulic loading over 365 days to Ranch 1, Ranch 2, and Ranch 7 will be approximately, 2.3 feet of water, 3.3 feet of water, and 3.2 feet of water, respectively.
26. The cycle average BOD loading rate to the LAA's during the harvest season, based on a proposed monthly average flow of 0.576 mgd, and a BOD concentration of 3,233 mg/L (2015 processing season data) are shown below in Table 5.

Table 5. BOD Loading Rates

| Land Application Area (Acres) | Field (Acres) | Flow (mgd) | Irrigation Schedule       |                    | Instantaneous BOD (lbs/acre-day) | Cycle Average BOD (lbs/acre-day) |
|-------------------------------|---------------|------------|---------------------------|--------------------|----------------------------------|----------------------------------|
|                               |               |            | Application Period (Days) | Rest Period (Days) |                                  |                                  |
| Ranch 1 120                   | A 20          | 0.246      | 5                         | 25                 | 332                              | 66                               |
|                               | B 20          |            | 5                         | 25                 | 332                              | 66                               |
|                               | C 20          |            | 5                         | 25                 | 332                              | 66                               |
|                               | D 20          |            | 5                         | 25                 | 332                              | 66                               |
|                               | E 20          |            | 5                         | 25                 | 332                              | 66                               |
|                               | F 20          |            | 5                         | 25                 | 332                              | 66                               |
| Ranch 2 77                    | A 20          | 0.230      | 5                         | 15                 | 310                              | 103                              |
|                               | B 20          |            | 5                         | 15                 | 310                              | 103                              |
|                               | C 20          |            | 5                         | 15                 | 310                              | 103                              |
|                               | D 17          |            | 5                         | 15                 | 365                              | 122                              |
| Ranch 7 35                    | A 18          | 0.100      | 5                         | 7                  | 150                              | 107                              |
|                               | B 17          |            | 5                         | 7                  | 159                              | 113                              |

Total 232 0.576

27. The total nitrogen loading rate to 232 acres of LAA, based on a proposed annual flow of 26 mgy and an average total nitrogen concentration of 218 mg/L (2015 processing season data) are shown below in Table 6.

Table 6. Total Nitrogen Loading Rates

| Land Application Area (Acres) |     | Flow (mgy) | Total Nitrogen (lbs/acre-year) |
|-------------------------------|-----|------------|--------------------------------|
| Ranch 1                       | 120 | 12.22      | 185                            |
| Ranch 2                       | 77  | 9.2        | 217                            |
| Ranch 7                       | 35  | 3.8        | 198                            |
| Total                         | 232 | 25.22      |                                |

Nitrogen uptake rates for almonds which are similar to pistachios is approximately 200 lbs/acre, according to the *Western Fertilizer Handbook*, Eighth Edition. The annual total nitrogen loading rate to Ranch 2 is 217 lbs/acre, slightly over the annual nitrogen uptake for almonds of 200 lbs/acre.

28. The potassium loading rate to 232 acres of LAA, based on annual flow of 26 mgy and an average potassium concentration of 545 mg/L (2015 processing season data) are shown below in Table 7.

Table 7. Potassium Loading Rates

| Land Application Area (Acres) |     | Flows (mgy) | Potassium (lbs/acre-year) |
|-------------------------------|-----|-------------|---------------------------|
| Ranch 1                       | 120 | 12.22       | 463                       |
| Ranch 2                       | 77  | 9.2         | 543                       |
| Ranch 7                       | 35  | 3.8         | 494                       |
| Total                         | 232 | 25.22       |                           |

The University of California, Davis (Zeng et al, 2001) recommends 100 to 200 lbs/acre-year of potassium for pistachios. However, pistachios will take up potassium in excess of their needs.

29. This Order requires the Dischargers to submit a Wastewater and Nutrient Management Plan (Provision G. 11) that will detail proposed methods to evenly apply wastewater at agronomic rates to the 232 acres of LAA's based on site specific information.

### Source Water

30. The Facility receives supply water from an existing onsite well. The quality of supply water based on a sample collected on 25 January 2013 and 6 October 2015 are tabulated below.

Table 8. Source Water Quality

| Constituent/Parameter                 | Units    | 1/25/2013 | 10/6/2015 |
|---------------------------------------|----------|-----------|-----------|
| pH                                    | pH Units | 7.93      | 9.2       |
| Total Hardness as CaCO <sub>3</sub>   | mg/L     | 104       | 4.99      |
| Calcium                               | mg/L     | 35        | 2         |
| Magnesium                             | mg/L     | 4         | <1        |
| Potassium                             | mg/L     | 2         | <1        |
| Sodium                                | mg/L     | 25        | 61        |
| Boron                                 | mg/L     | <0.1      | <0.1      |
| Copper                                | mg/L     | <0.01     | <0.01     |
| Iron                                  | mg/L     | <0.05     | 0.1       |
| Manganese                             | mg/L     | <0.01     | <0.01     |
| Zinc                                  | mg/L     | 0.03      | <0.02     |
| Total Alkalinity as CaCO <sub>3</sub> | mg/L     | 90        | 90        |
| Hydroxide as OH                       | mg/L     | <10       | <10       |
| Carbonate as CO <sub>3</sub>          | mg/L     | <10       | <10       |
| Bicarbonate as HCO <sub>3</sub>       | mg/L     | 110       | 110       |
| Sulfate                               | mg/L     | 24        | 15        |
| Chloride                              | mg/L     | 30        | 12        |
| Nitrate as Nitrate                    | mg/L     | 14.6      | 2.3       |
| Fluoride                              | mg/L     | <0.1      | 0.2       |
| Electrical Conductivity               | umhos/cm | 361       | 292       |
| Total Dissolved Solids                | mg/L     | 200       | 180       |
| Nitrate as Nitrogen                   | mg/L     | ---       | 0.5       |

### Site-Specific Conditions

31. Land uses in the vicinity of the Facility and LAA's are primarily agricultural. Crops grown in the area includes pistachios, vineyards, and oranges according to the Tulare County 2007 Land Use Maps published by the Department of Water Resources.
32. The Facility and LAA's are in an arid climate characterized by dry summers and mild winters. The rainy season generally extends from November through April. Average annual pan evaporation is about 79 inches in Delano (approximately 23 miles southwest of Terra Bella) according to data in the *National Oceanic and Atmospheric Administration Technical Report NWS 34, Mean Monthly, Seasonal, and Annual Pan Evaporation for the United States*, published by the U.S. Department of Commerce National Oceanic and Atmospheric Administration. The average annual precipitation is about 11 inches in Porterville



(approximately 8 miles north of Terra Bella) according to data obtained from the Western Regional Climate Center.

33. Soils below the Facility and LAA's are predominately Flamen Loam followed by Centerville Clay, according to the Web Soil Survey published by the United States Department of Agriculture, Natural Resources Conservation Service. Flamen Loam has a land capacity classification of 2s. Soils with "Class 2" have moderate limitations that restrict the choice of plants or require moderate conservation practices. Centerville Clay has a land capacity classification of 3s. Soils with "Class 3" have severe limitations that restrict the choice of plants or require special conservation practices, or both. Both Flamen Loam and Centerville Clay have a subclass classification of "s". The subclass "s" shows that the soil has limitations within the root zone, such as shallowness of the root zone, a high content of stones, a low available water capacity, low fertility, and excessive salinity or sodicity. Overcoming these limitations is difficult.
34. According to the June 2009 Federal Emergency Management Agency maps (Map Numbers 06107C1950E and 06107C1975E). The Facility and parcels 319-130-22 (38 acres) and 319-130-23 (39 acres) are in Zone X. This area is outside the 500-year floodplain. Parcels 319-140-15 (35 acres) and 302-260-6 (120 acres) are in Zone A. In Zone A, there is a one percent annual chance of flooding (typically called the 100-year floodplain). No depth or base flood elevations are shown in the FEMA maps for this site.

#### **Basin Plan, Beneficial Uses, and Water Quality Objectives**

35. The *Water Quality Control Plan for the Tulare Lake Basin, Second Edition, revised January 2015* (hereafter "Basin Plan") designates beneficial uses, establishes narrative and numerical water quality objectives, contains implementation plans and policies for protecting all waters of the Basin, and incorporates, by reference plans and policies of the State Water Board. In accordance with Water Code section 13263 (a), these waste discharge requirements implement the Basin Plan.
36. The Facility and the 232 acres of LAA are all in Detailed Analysis Unit (DAU) No. 243, within the Tule Basin hydrologic unit. The Basin Plan identifies the beneficial uses of groundwater in the DAU as municipal and domestic supply (MUN), agricultural supply (AGR), industrial service supply (IND), industrial process supply (PRO), and wildlife habitat (WILD).
37. The Facility and the 232 acres of LAA are in the Tule Delta Hydrologic Area No. 558.20 of the South Valley Floor Hydrologic Unit, as depicted on hydrologic maps prepared by State Water Resources Control Board in August 1986. As indicated in the Basin Plan, the beneficial uses of Valley Floor Waters are: municipal and domestic supply (MUN), agricultural supply (AGR), industrial service supply (IND), industrial process supply (PRO), water contact recreation (REC-1), non-water contact recreation (REC-2), warm freshwater habitat (WARM), wildlife habitat (WILD), and groundwater recharge (GWR).

38. The Basin Plan includes narrative water quality objectives for chemical constituents that, at a minimum, require water designated as domestic or municipal supply to meet the Maximum Contaminant Levels (MCLs) specified in Title 22 of the California Code of Regulations (hereafter Title 22). The Basin Plan recognizes that the Central Valley Water Board may apply limits more stringent than MCLs to ensure that waters do not contain chemical constituents in concentrations that adversely affect beneficial uses.
39. The Basin Plan establishes narrative water quality objectives for chemical constituents, taste and odors, and toxicity in groundwater. The narrative toxicity objective, in summary, requires that groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life associated with designated beneficial uses.
40. Quantifying a narrative water quality objective requires a site-specific evaluation of those constituents that have the potential to impact water quality and beneficial uses. The Basin Plan states that when compliance with a narrative objective is required to protect specific beneficial uses, the Central Valley Water Board will, on a case-by-case basis, adopt a numerical limitation in order to implement the narrative objective.
41. The Basin Plan identifies the greatest long-term problem facing the entire Tulare Lake Basin as the increase in salinity in groundwater, which has accelerated due to the intensive use of soil and water resources by irrigated agriculture. The Basin Plan recognizes that degradation is unavoidable until there is a long-term solution to the salt imbalance. Until then, the Basin Plan establishes several salt management requirements, including:
  - a. The maximum EC in the discharge shall not exceed the EC of the source water plus 500 umhos/cm. When the source water is from more than one source, the EC shall be a weighted average of all sources.
  - b. Discharges to areas that may recharge to good quality groundwater, shall not exceed an EC of 1,000 umhos/cm, a chloride of 175 mg/L, or a boron content of 1.0 mg/L. The Basin Plan generally applies these limits to industrial discharges to land.
42. The Basin Plan authorizes an exemption to the incremental EC increase limit in Finding 41.a. for food processing industries that discharge to land and exhibit a disproportionate increase in EC of the discharge over the EC of the source water due to unavoidable concentrations of organic dissolved solids from the raw food product, provided that beneficial uses are protected. Exceptions must be based on demonstration of best available technology and best management practices that control inorganic dissolved solids to the maximum extent feasible.

### **Groundwater Considerations**

43. The Dischargers does not have a groundwater monitoring well network in the vicinity of the LAA's. Groundwater in the area is approximately 150 feet below ground surface (bgs) and flows in the southwest direction, according to the *Lines of Equal Depth to Water in Wells Unconfined Aquifer* map published by the DWR in 2010.

44. The quality of groundwater in the area based on three nearby wells, is shown in Table 9 below.

Table 9. Groundwater Quality from Nearby Wells

| Constituent/Parameter   | Units    | 23S26E12H001M | 23S26E10H001M | 23S26E03P001M |
|-------------------------|----------|---------------|---------------|---------------|
|                         |          | May-57        | May-57        | Sep-56        |
| pH                      | pH Units | 7.9           | 7.7           | 7.9           |
| Electrical Conductivity | umhos/cm | 224           | 202           | 187           |
| Calcium                 | mg/L     | 3.6           | 12            | 13            |
| Magnesium               | mg/L     | <0.1          | 1.5           | 0.4           |
| Sodium                  | mg/L     | 50            | 32            | 28            |
| Sulfate                 | mg/L     | 7.7           | 7.7           | 4.8           |
| Chloride                | mg/L     | 8             | 7.5           | 5             |
| Fluoride                | mg/L     | 0.2           | 0.2           | 0.2           |
| Nitrate                 | mg/L     | 0.3           | 1.1           | 1.1           |
| Potassium               | mg/L     | 1             | 1.8           | 1.2           |
| Silica                  | mg/L     | 22            | 21            | 25            |
| Boron                   | mg/L     | 0.21          | 0.03          | <0.1          |
| Total Alkalinity        | mg/L     | 102           | 89            | 84            |
| Total Hardness          | mg/L     | 9             | 36            | 34            |

45. Groundwater is of good quality, and meets the water quality objectives for municipal and domestic supply. This Order requires the Dischargers to monitor and quantify the quality of groundwater below the Facility and LAA's (Provision G.12).

#### **Antidegradation Analysis**

46. State Water Resources Control Board Resolution 68-16, ("Policy with Respect to Maintaining High Quality Waters of the State") (hereafter Resolution 68-16 or "Antidegradation Policy"), prohibits degradation of groundwater unless it has been shown that:
- a. The degradation will not result in water quality less than that prescribed in state and regional policies, including violation of one or more water quality objectives;
  - b. The degradation will not unreasonably affect present and anticipated future beneficial uses;
  - c. The discharger will employ Best Practicable Treatment or Control (BPTC) to minimize degradation; and
  - d. The degradation is consistent with the maximum benefit to the people of the state.

47. Constituents of concern that have the potential to degrade and pollute groundwater include organics, nutrients, and salts.
- a. This Order limits organic loading rates to 100 lbs/acre-day over an appropriate discharge cycle when wastewater is applied to minimize effluent discharges from causing reducing conditions below the LAA's. The Order requires submittal of a Wastewater and Nutrient Management Plan (Provision G.11) to ensure even application of wastewater at agronomic rates to the LAA's. In addition, this Order requires soil monitoring of the LAA's.
  - b. For Nitrogen, this Order limits the application of wastewater to agronomic rates for both nutrient and hydraulic loading. Total nitrogen loading estimates indicate the discharge will add about 185 lbs/acre-year to Ranch 1, 217 lbs/acre-year to Ranch 2, and 198 lbs/acre-year to Ranch 7. Nitrogen uptake for almonds, which are similar to pistachios is approximately 200 lbs/acre-year, according to the Western Fertilizer Handbook, Eighth Edition. The limited processing and discharge season, significant depth of vadose zone, and application of wastewater to the pistachio trees at agronomic rates should preclude degradation of groundwater by nitrogen. In addition this Order requires the Dischargers to submit a Wastewater and Nutrient Management Plan (Provision G.11) that proposes measures to evenly distribute the applied waste, ensures application of nutrients at reasonable agronomic rates, and determines an appropriate discharge cycle. This Order also requires the Dischargers to monitor and quantify the quality of groundwater (Provision G.12) to confirm that water percolating through the soil profile will not degrade groundwater beneath the LAA's.
  - c. For salinity, the EC of the discharge significantly exceeds the Basin Plan Limit of source water plus 500 umhos/cm. However, the Basin Plan allows an exception for food processing industries that discharge to land and exhibit a disproportionate increase in the EC of the discharge due to unavoidable concentrations of organic dissolved solids from the raw food product. Based on analytical data from the 2015 processing season, approximately 64 percent of the TDS is a result of organic compounds based on an average FDS of 972 mg/L and an average TDS of 2,702 mg/L. This Order requires the groundwater monitoring for at least four years to determine the quality of groundwater in the area. If results indicate the Facility's discharge is over good quality groundwater with respect to the Basin Plan's maximum limit of 1,000 umhos/cm will apply as specified in Effluent Limitations B.2 of this Order. This Order also requires the Dischargers to submit a Salinity Management Plan (Provision G.10) to evaluate salinity sources in its discharge and provide recommendations for an alternative that will add less salt to the discharge.
  - d. A high percentage of the inorganic portion of the discharge EC is from potassium, which is an important nutrient for pistachio trees. The limited processing and discharge season, significant depth of vadose zone, and limited migration of potassium in subsurface soils should preclude degradation of groundwater by potassium.
48. The Dischargers provide control of the discharge, or will provide control of the discharge, as required by this Order, that incorporates:

- a. Pre-cleaning to remove leaves, twigs, and other debris,
- b. A cycle average BOD loading rate of 100 lbs/acre/day;
- c. Soil monitoring at the LAA's;
- d. Preparation and implementation of a Salinity Management Plan to evaluate potential methods to reduce the salinity of the discharge,
- e. Preparation and implementation of a Wastewater and Nutrient Management Plan to ensure wastewater and nutrients are applied evenly at agronomic rates,
- f. Groundwater monitoring; and
- g. Groundwater limitations.

These control practices are reflective of BPTC of the discharge.

49. Economic prosperity of valley communities and associated industry is of maximum benefit to the people of the State and, therefore, sufficient reason exists to accommodate growth and limited groundwater degradation around the Facility, provided that the terms of the Basin Plan are met. The Dischargers aid in the economic prosperity of the region by the direct employment of about 50 full time employees during the harvest season and 20 employees during the non-harvest season. The Dischargers provide a tax base for local and county governments.
50. This Order establishes terms and conditions to ensure that the discharge does not unreasonably affect present and anticipated future beneficial uses of groundwater or result in groundwater quality worse than background or the water quality objectives set forth in the Basin Plan.
51. This Order is consistent with the Anti-Degradation Policy since: (a) the Dischargers have or will implement BPTC to minimize degradation, (b) the limited degradation allowed by this Order will not unreasonably affect present and anticipated future beneficial uses of groundwater, or result in water quality less than water quality objectives, and (c) the limited degradation is of maximum benefit to the people of the State.

#### **Other Regulatory Considerations**

52. In compliance with Water Code section 106.3, it is the policy of the State of California that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes. This Order promotes that policy by requiring discharges to be designed to protect human health and ensure that water is safe for domestic use.

53. Based on the threat and complexity of the discharge, the Facility is determined to be classified as 2B as defined below:

- a. Category 2 threat to water quality: "Those discharges of waste that could impair the designated beneficial uses of the receiving water, cause short-term violations of water quality objectives, cause secondary drinking water standards to be violated, or cause a nuisance."
- b. Category B complexity: "Any discharger not included in Category A that has physical, chemical, or biological treatment systems (except for septic systems with subsurface disposal), or any Class 2 or Class 3 waste management units."

54. California Code of Regulations, Title 27 ("Title 27") contains regulatory requirements for the treatment, storage, processing, and disposal of solid waste, which includes designated waste, as defined by Water Code section 13173. However, Title 27 exempts certain activities from its provisions. Discharges regulated by this Order are exempt from Title 27 pursuant to provisions that exempt wastewater discharges. The exemption, found at Title 27, section 20090, is described below:

The following activities shall be exempt from the SWRCB-promulgated provisions of this subdivision, so long as the activity meets, and continues to meet, all preconditions listed:

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(b) Wastewater – Discharges of wastewater to land, including but not limited to evaporation ponds, percolation ponds, or subsurface leachfields if the following conditions are met:

- (1) The applicable regional water quality control board has issued WDRs, reclamation requirements, or waived such issuance;
- (2) The discharge is in compliance with applicable water quality control plan; and
- (3) The wastewater does not need to be managed according to Chapter 11, Division 4.5, Title 22 of this code as a hazardous waste.

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55. The discharge of hulling wastewater authorized herein is exempt from the requirements of Title 27 in accordance with Title 27, section 20090(b) because:

- a. The Central Valley Water Board is issuing WDRs,
- b. The discharge authorized herein will comply with the Basin Plan, and;

- c. The wastewater discharged to the LAA's does not need to be managed as hazardous waste.
56. On 1 April 2014, the State Water Board adopted Order 2014-0057-DWQ (NPDES General Permit CAS000001) specifying waste discharge requirements for discharges of storm water associated with industrial activities. Order 2014-0057-DWQ supersedes State Water Board Order 97-03-DWQ (NPDES General Permit CAS000001) and became effective 1 July 2015. Order 2014-0057-DWQ requires all applicable industrial dischargers to apply for coverage under the new General Order by the effective date. The Dischargers are not enrolled under 2014-0057-DWQ (NPDES General Permit CAS000001). Storm water generated by this facility does not discharge to waters of the U.S. Coverage under Order 2014-0057-DWQ is not required at this time.
57. Water Code section 13267(b)(1) states that:

In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge waste within its region...shall furnish, under penalty of perjury, technical or monitoring program reports which the board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports.
58. The technical reports required by this Order and monitoring reports required by the attached MRP R5-2016-0052 are necessary to assure compliance with these waste discharge requirements. The Dischargers owns and operates the Facility that discharges the waste subject to this Order.
59. The California Department of Water Resources sets standards for the construction and destruction of groundwater wells (hereafter DWR Well Standards), as described in *California Well Standards Bulletin 74-90* (June 1991) and *Water Well Standards: State of California Bulletin 74-81* (December 1981). These standards, and any more stringent standards adopted by the state or county pursuant to Water Code section 13801, apply to all monitoring wells used to monitor the impacts of wastewater storage or disposal governed by this Order.
60. The issuance of this Order is exempt from the provisions of California Environmental Quality Act ("CEQA")(Pub. Resources Code, § 21000 et seq.) in accordance with California Code of Regulations, title 14, section 15301, which exempts the "operation, repair, maintenance, [and] permitting ... of existing public or private structures, facilities, mechanical equipment, or topographical features" from environmental review. This action may also be considered exempt because it is an action by a regulatory agency for the protection of natural resources (Cal. Code Regs., tit. 14, § 15307.) and an action by a regulatory agency for the protection of the environment (Cal. Code Regs., tit. 14, § 15308.).

61. Pursuant to Water Code section 13263(g), discharge is a privilege, not a right, and adoption of this Order does not create a vested right to continue the discharge.

### **Public Notice**

62. All the above and the supplemental information and details in the attached Information Sheet, which is incorporated by reference herein, were considered in establishing the conditions of discharge of this Order.
63. The Discharger(s) and interested agencies and persons have been notified of the Central Valley Water Board's intent to prescribe waste discharge requirements for this discharge, and they have been provided an opportunity to submit written comments and an opportunity for a public hearing.
64. All comments pertaining to the discharge were heard and considered in a public meeting.

**IT IS HEREBY ORDERED** that pursuant to Water Code sections 13263 and 13267, ARO Pistachios, Inc, and Mehdi Orandi, its agents, successors, and assigns, in order to meet the provisions contained in Division 7 of the Water Code and regulations adopted thereunder, shall comply with the following:

#### **A. Discharge Prohibitions**

1. Discharge of waste to surface waters or surface water drainage courses is prohibited.
2. Discharge of hazardous wastes, as that term is defined in California Code of Regulations, title 22, section 66261.1 *et seq.*, is prohibited.
3. Discharge of waste classified as 'designated', as defined in Water Code section 13173, in a manner that causes violation of groundwater limitations, is prohibited.
4. Treatment system bypass or overflow of untreated wastes is prohibited, except as allowed by Standard Provisions E.2 in *Standard Provisions and Reporting Requirements for Waste Discharge Requirements*, dated 1 March 1991.
5. Discharge of wastewater in a manner or location other than that described herein or in the RWD is prohibited.
6. Discharge of domestic wastewater to the LAA's or any surface water is prohibited.



**B. Effluent Limitations**

1. During the harvest season, the discharge from the Facility shall not exceed the following: a monthly average daily flow of 0.576 mgd, or a total annual flow of 26 mgy. **[Compliance shall be determined at EFF-001<sup>1</sup>]**
2. As determined by collecting samples from monitoring location **EFF-001<sup>1</sup>**, effluent discharged to the LAA shall not exceed the following limits in compliance with Task d of Provision G.12:

| Constituent/Parameter   | Units    | Average Monthly | Maximum Daily |
|-------------------------|----------|-----------------|---------------|
| Electrical Conductivity | umhos/cm | 1,000           | ---           |

**C. Discharge Specifications**

1. No waste constituent shall be released, discharged, or placed where it cause a violation of Groundwater Limitations of this Order.
2. Wastewater treatment, storage, and disposal shall not cause pollution or a nuisance as defined by Water Code section 13050.
3. The discharge shall remain within the permitted waste treatment/containment structures and LAA's at all times.
4. The Dischargers shall operate all systems and equipment to optimize the quality of the discharge.
5. All conveyance, treatment, storage, and disposal units shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.
6. Objectionable odors shall not be perceivable beyond the limits of the property where the waste is generated, treated, and/or discharged at an intensity that creates or threatens to create nuisance conditions.

**D. Groundwater Limitations**

Release of waste constituents from any component of any treatment, storage, delivery system, or land application area associated with the discharge shall not cause or contribute to groundwater containing constituent concentrations in excess of the concentrations specified below or natural background quality, whichever is greater:

1. Nitrate as Nitrogen of 10 mg/L.

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<sup>1</sup> Monitoring location EFF-001 is described in Monitoring and Reporting Program R5-2016-0052

2. For constituents identified in Title 22, the MCLs quantified therein.

#### **E. Land Application Area Specifications**

1. The BOD loading to the LAA calculated as a cycle average as determined by the method described in the attached Monitoring and Reporting Program, shall not exceed 100 pounds per day per acre.
2. Land application of wastewater shall be managed to minimize erosion.
3. LAA's shall be inspected periodically to determine compliance with the requirements of this Order. If an inspection reveals noncompliance or threat of noncompliance with this Order, the Dischargers shall temporarily stop irrigation with process wastewater immediately and implement corrective actions to ensure compliance with this Order.
4. Any runoff of wastewater (tailwater) shall be confined to the LAA's and shall not enter any surface water drainage course or storm water drainage system.
5. The Dischargers may not discharge process wastewater to the LAA during rainfall or when soils are saturated.
6. Crops shall be grown in the LAA. Crops shall be selected based on nutrient uptake, consumptive use of water, and irrigation requirements to maximize crop uptake of water and nutrients.
7. Application of waste constituents to the LAA's shall be at reasonable agronomic rates to preclude creation of a nuisance and degradation of groundwater, considering the crop, soil, climate, and irrigation management system. The annual nutritive loading of the LAA's, including the nutritive value of organic and chemical fertilizers and of the wastewater shall not exceed the annual crop demand.
8. Hydraulic loading of wastewater and supplemental irrigation water shall be at reasonable agronomic rates.
9. The Dischargers shall ensure that water, BOD, and nitrogen are applied and distributed uniformly across each LAA field. The Dischargers shall implement changes to the irrigation system and/or operation practices as needed to ensure compliance with this specification.
10. The LAA's shall be managed to prevent breeding of mosquitos. In particular:
  - a. All applied irrigation water must infiltrate within 48 hours;

- b. Tailwater ditches shall be maintained essentially free of emergent, marginal, and floating vegetation; and
- c. Low-pressure and unpressurized pipelines and ditches accessible to mosquitoes shall not be used to store wastewater.

#### **F. Solids Specifications**

Solids generated at the Facility consist of leaves, twigs, and other debris removed during the pre-cleaning process and pistachio hulls removed during the screening process.

1. Any drying, handling and storage of solids at the Facility shall be temporary, and controlled and contained in a manner that minimizes leachate formation and precludes the development of odor nuisance conditions and infiltration of waste constituent into soils in a mass or concentration that will violate groundwater limitations of this Order.
2. Collected screenings and other solids removed from the liquid waste shall be disposed of in a manner approved by the Executive Officer and consistent with Title 27. Removal for further treatment, disposal, or reuse at sites (i.e., landfill, composting sites, soil amendment sites) operated in accordance with valid waste discharge requirements issued by a regional water quality control board will satisfy this specification.
3. Any proposed change in solids use or disposal practice shall be reported to the Executive Officer at least 90 days in advance of the change.

#### **G. Provisions**

1. The Dischargers shall comply with the *Standard Provisions and Reporting Requirements for Waste Discharge Requirements*, dated 1 March 1991 (Standard Provisions), which are part of this Order.
2. The Dischargers shall comply with MRP R5-2016-0052, which is part of this Order, and any revisions thereto as adopted by the Central Valley Water Board or approved by the Executive Officer.
3. A copy of this Order, including its MRP, Information Sheet, Attachments, and Standard Provisions, shall be kept at the discharge facility for reference by operating personnel. Key operating personnel shall be familiar with its contents.
4. The Dischargers shall comply with all conditions of this Order, including timely submittal of technical and monitoring reports. On or before each report due date, the Dischargers shall submit the specified documents to the Central Valley Water Board or, if appropriate, a written report detailing compliance or noncompliance with the specific schedule date and task. If noncompliance is being reported, then the Dischargers shall state the reasons for such noncompliance and provide an estimate of the date when the Dischargers will be in

compliance. The Dischargers shall notify the Central Valley Water Board in writing when it returns to compliance with the time schedule. Violations may result in enforcement action, including Central Valley Water Board or court orders requiring corrective action or imposing civil monetary liability, or in revision or rescission of this Order.

5. The Dischargers shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) that are installed or used by the Dischargers to achieve compliance with the conditions of this Order. Proper operation and maintenance also include adequate laboratory controls and appropriate quality assurance procedures. This Provision requires the operation of back-up or auxiliary facilities or similar systems that are installed by the Dischargers only when the operation is necessary to achieve compliance with the conditions of this Order.
6. As described in the Standard Provisions, the Dischargers shall report promptly to the Central Valley Water Board any material change or proposed change in the character, location, or volume of the discharge.
7. At least **90 days** prior to termination or expiration of any lease, contract, or agreement involving disposal or recycling areas or off-site reuse of effluent, used to justify the capacity authorized herein and assure compliance with this Order, the Dischargers shall notify the Central Valley Water Board in writing of the situation and of what measures have been taken or are being taken to assure full compliance with this Order.
8. In the event of any change in control or ownership of the Plant, the Dischargers shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to the Central Valley Water Board.
9. To assume operation as a Discharger under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order. The request must contain the requesting entity's full legal name, the state of incorporation if a corporation, the address and telephone number of the persons responsible for contact with the Central Valley Water Board, and a statement. The statement shall comply with the signatory paragraph of Standard Provision B.3 and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the Water Code. If approved by the Executive Officer, the transfer request will be submitted to the Central Valley Water Board for its consideration of transferring the ownership of this Order at one of its regularly scheduled meetings.
10. **By 21 December 2016**, the Dischargers shall submit a Salinity Management Plan with salinity source reduction goals and implementation time schedule for Executive Officer approval. The Salinity Management Plan shall identify any additional methods that could be used to further reduce the salinity of the discharge to the maximum extent feasible. The Dischargers shall implement the plan in accordance with the approved time schedule.

11. **By 21 December 2016**, the Dischargers shall submit a Wastewater and Nutrient Management Plan for the LAA's for Executive Officer approval. The Plan must include procedures of daily monitoring of the LAA's and proposed management practices that will be implemented to ensure wastewater and the nutrients contained therein are applied evenly at agronomic rates. The objective of the Plan shall be to identify and utilize site specific data to demonstrate that wastewater loading will occur at reasonable agronomic rates that will preclude degradation of groundwater that will exceed Water Quality Objectives or adversely affect Beneficial Uses.
  
12. The Dischargers shall comply with the following time schedule to monitor groundwater beneath the LAA's and potential impacts by the discharge of pistachio process wastewater from the Facility.

|    | <u>Task</u>   | <u>Due Date</u>   |
|----|---|---|
| a. | Submit a Work Plan for Executive Officer approval that describes the measures that the Dischargers will implement to monitor the quality of groundwater in the LAA's, along with an implementation schedule. Use of existing wells may only be approved if the Discharger knows the construction details of such wells and only if such wells are capable of monitoring first-encountered groundwater to determine the effects of present and future discharges. The Work Plan shall satisfy the information needs specified in the monitoring well installation section of Attachment C, <i>Standard Requirements for Monitoring Well Installation Work Plans and Monitoring Well Installation Reports</i> . All new wells shall comply with appropriate standards as described in California Well Standard Bulletin 74-90 (June 1991) and Water Well Standards: State of California Bulletin 74-81 (December 1981), and any more stringent standards adopted by the State or county pursuant to Water Code section 13801, apply to all monitoring wells used to monitor the impacts of wastewater storage or disposal governed by this Order. | <b>22 September 2016</b>  |
| b. | Complete well installation as necessary and commence groundwater monitoring in accordance with Monitoring and Reporting Program R5-2016-0052.   | <b>In accordance with the approved Task a. time schedule but no later than 1 year following Order adoption.</b> |
| c. | As necessary, submit a groundwater monitoring well installation report that meets the requirements of Attachment C, <i>Standard Requirements for Monitoring</i>   | <b>1 month from the completion of Task b.</b>   |

|    |   |   |
|----|---|---|
|    | <i>Well Installation Work Plans and Monitoring Well Installation Reports.</i>   |   |
| d. | Submit a technical report with results, characterization, and evaluation of groundwater quality collected as required by Task b. The technical report must also determine if Effluent Limitation B.2. is applicable based on groundwater quality collected in accordance with Task b. | <b>4 years from the completion of Task b. but no later than 5 years (June 2021) following Order adoption.</b> |

13. The Dischargers shall maintain a complete groundwater monitoring well network. If monitoring well(s) go dry for more than four consecutive sampling events, the Dischargers shall replace the monitoring well(s). The new well(s) shall be constructed in a similar manner as the existing monitoring well(s). The new well(s) shall be replaced following Executive Officer approval of the work plan and time schedule. Upon installation of the monitoring well(s), the Dischargers shall submit a groundwater monitoring well installation report. The groundwater monitoring well installation report shall describe well construction details for each new well, including the location, groundwater elevation, reference point elevation, geologic log, and other details.
14. The Dischargers shall submit the technical reports and work plans required by this Order for consideration by the Executive Officer, and incorporate comments the Executive Officer may have in a timely manner, as appropriate. Unless expressly stated otherwise in this Order, the Dischargers shall proceed with all work required by the foregoing provisions by the dues dates specified.
15. In accordance with California Business and Professions Code sections 6735, 7835, and 7835.1, engineering and geologic evaluations and judgments shall be performed by or under the direction of registered professionals competent and proficient in the fields pertinent to the required activities. All technical reports specified herein that contain work plans for investigations and studies, that describe the conduct of investigations and studies or that contain technical conclusions and recommendations concerning engineering and geology shall be prepared by or under the direction of appropriately qualified professional(s), even if not explicitly stated. Each technical report submitted by the Dischargers shall bear the professional's signature and stamp.
16. The Central Valley Water Board is currently implementing the CV-SALTS initiative to develop a Basin Plan amendment that will establish a salt and nitrate management plan for the Central Valley. Through this effort the Basin Plan will be amended to define how the narrative water quality objectives are to be interpreted for the protection of agricultural use. If new information or evidence indicates that groundwater limitations are different than those prescribed herein are appropriate, this Order will be reopened to incorporate such limits.
17. The Central Valley Water Board will review this Order periodically and will revise requirements when necessary.

If, in the opinion of the Executive Officer, the Dischargers fail 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 Board to review the action in accordance with Water Code section 13320 and California Code of Regulations, title 23, section 2050 and following. The State Water Board must receive the petition by 5:00 p.m., 30 days after the date of this Order, 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 Board by 5:00 p.m. on the next business day. Copies of the law and regulations applicable to filling petitions may be found on the Internet at:

[http://www.waterboards.ca.gov/public\\_notices/petitions/water\\_quality/](http://www.waterboards.ca.gov/public_notices/petitions/water_quality/)

or will be provided upon request.

I, PAMELA C. CREEDON, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 24 June 2016.

*Original signed by:*

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PAMELA C. CREEDON, Executive Officer

Order Attachments:

- A. Facility Map
- B. Process Flow Schematic
- C. Standard Requirements for Monitoring Well Installation  
Work Plans and Monitoring Well Installation Reports  
Monitoring and Reporting Program R5-2016-0052  
Information Sheet  
Standard Provisions (1 March 1991)

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM R5-2016-0052  
FOR  
ARO PISTACHIOS, INC, AND  
MEHDI ORANDI  
TERRA BELLA PROCESSING FACILITY  
TULARE COUNTY

This Monitoring and Reporting Program (MRP) is required pursuant to Water Code section 13267.

The Dischargers 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. Changes to sample location shall be established with concurrence of Central Valley Water Board staff, and a description of the revised stations shall be submitted for approval by the Executive Officer. All samples shall be representative of the volume and nature of the discharge or matrix of material sampled. All analyses shall be performed in accordance with ***Standard Provisions and Reporting Requirements for Waste Discharge Requirements***, dated 1 March 1991 (Standard Provisions).

Field test instruments (such as pH and electrical conductivity) may be used provided that the operator is trained in the proper use of the instrument and each instrument is serviced and/or calibrated at the recommended frequency by the manufacturer and in accordance with manufacturer instructions.

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/AWWAWEF); 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 Dischargers may propose alternative methods for approval by the Executive Officer.

If monitoring consistently shows no significant variation in magnitude of a constituent concentration or parameter after at least 12 months of monitoring, the Dischargers may request this MRP be revised to reduce monitoring frequency. The proposal must include adequate technical justification for the requested reduction in monitoring frequency.

A glossary of terms used within this MRP is included on page 10.



The Dischargers shall monitor the following locations to demonstrate compliance with the requirements of this Order:

| <b>Monitoring Location Name</b> | <b>Monitoring Location Description</b>   |
|---------------------------------|--|
| EFF-001                         | The location after the concrete sump and before wastewater is discharged to the LAA's.   |
| SPL-001                         | Source water from the onsite supply well   |
| LAA-001, LAA-002, and LAA-003   | Ranch 1 (LAA-001), Ranch 2 (LAA-002), and Ranch 7 (LAA-003)  |
| SML-001 through SML-006         | Soil monitoring locations shall establish with concurrence of Central Valley Water Board staff, at least six soil profile monitoring locations within the LAA's and at least two representative background location(s) |
| GWM-001 through GWM-00X         | Groundwater monitoring wells established after the completion of Provision G.12.   |

### EFFLUENT MONITORING

Effluent samples shall be collected at EFF-001 during the harvest season. Time of collection of the sample shall be recorded. Effluent monitoring shall include the following:

| <u>Frequency</u> | <u>Constituent/Parameter</u>           | <u>Units</u> | <u>Sample Type</u> |
|------------------|--|--------------|--------------------|
| Continuous       | Effluent Flow                          | mgd          | Meter              |
| Weekly           | pH                                     | pH Units     | Grab               |
| Weekly           | Electrical Conductivity                | umhos/cm     | Grab               |
| Weekly           | Biochemical Oxygen Demand <sup>1</sup> | mg/L         | Grab               |
| Weekly           | Chemical Oxygen Demand                 | mg/L         | Grab               |
| Weekly           | Total Suspended Solids                 | mg/L         | Grab               |
| Weekly           | Total Dissolved Solids                 | mg/L         | Grab               |
| Weekly           | Fixed Dissolved Solids                 | mg/L         | Grab               |
| Weekly           | Total Kjeldahl Nitrogen                | mg/L         | Grab               |
| Weekly           | Nitrate as Nitrogen                    | mg/L         | Grab               |
| Weekly           | Nitrite as Nitrogen                    | mg/L         | Grab               |
| Weekly           | Ammonia as Nitrogen                    | mg/L         | Grab               |
| Weekly           | Total Nitrogen                         | mg/L         | Computed           |
| Weekly           | Chloride                               | mg/L         | Grab               |
| Weekly           | Sodium                                 | mg/L         | Grab               |
| Weekly           | Potassium                              | mg/L         | Grab               |
| Monthly          | General Minerals <sup>2,3</sup>        | mg/L         | Grab               |

<sup>1</sup> Five-day, 20°C biochemical oxygen demand (BOD)

2. With the exception of wastewater samples, samples must be filtered. If field filtering is not feasible, samples shall be collected in unpreserved containers and submitted to the laboratory within 24 hours with a request (on the chain-of-custody form) to immediately filter then preserve the sample.
3. See glossary on page 10 for list of general mineral constituents

### SOURCE WATER MONITORING

The Dischargers shall monitor source water SPL-001. For each source (either well or surface water supply), the Dischargers shall calculate the flow-weighted average concentrations for the specified constituents utilizing monthly flow data and the most recent chemical analysis conducted in accordance with Title 22 drinking water requirements.

| <u>Frequency</u> | <u>Constituent/Parameter</u>          | <u>Units</u> | <u>Sample Type</u> |
|------------------|---------------------------------------|--------------|--------------------|
| Quarterly        | Flow-Weighted Electrical Conductivity | umhos/cm     | Grab               |
| Annually         | General Minerals <sup>1,2</sup>       | mg/L         | Grab               |

1. With the exception of wastewater samples, samples must be filtered. If field filtering is not feasible, samples shall be collected in unpreserved containers and submitted to the laboratory within 24 hours with a request (on the chain-of-custody form) to immediately filter then preserve the sample.
2. See glossary on page 10 for list of general mineral constituents.

### LAND APPLICATION AREA MONITORING

The Dischargers shall perform the following routine monitoring and loading calculations for Ranch 1 (LAA-001), Ranch 2 (LAA-002), and Ranch 7 (LAA-003) LAA's. In addition the Dischargers shall keep a log of routine monitoring observations (e.g. areas of ponding, broken irrigation pipes, odors and/or flies within the LAA's, etc.). Data shall be collected and presented in tabular format and shall include the following:

| <u>Frequency</u>               | <u>Constituent/Parameter</u>       | <u>Units</u>            | <u>Sample Type</u>     |
|--------------------------------|------------------------------------|-------------------------|------------------------|
| Daily                          | Application Location               | n/a                     | n/a                    |
| Daily                          | Application Area                   | acres                   | n/a                    |
| Daily                          | Wastewater Flow                    | gallons                 | Metered                |
| Daily                          | Wastewater Loading                 | inches/day <sup>1</sup> | Calculated             |
| Daily                          | Supplemental Irrigation            | inches/day <sup>1</sup> | Calculated             |
| Daily                          | Precipitation <sup>2</sup>         | inches/day <sup>1</sup> | Rain gage <sup>2</sup> |
| <u>BOD Loading Rates:</u>      |                                    |                         |                        |
| Daily                          | On Day of Application <sup>3</sup> | lbs/acre                | Calculated             |
| Daily                          | Cycle Average <sup>4</sup>         | lbs/acre-day            | Calculated             |
| <u>Nitrogen Loading Rates:</u> |                                    |                         |                        |
| Monthly                        | From Wastewater <sup>5</sup>       | lbs/acre                | Calculated             |
| Monthly                        | From Fertilizer <sup>6</sup>       | lbs/acre                | Calculated             |
| <u>Salt Loading Rates:</u>     |                                    |                         |                        |
| Monthly                        | From Wastewater <sup>5</sup>       | lbs/acre                | Calculated             |
| Annually                       | Cumulative Salt Loading            | lbs/acre-year           | Calculated             |

<sup>1</sup> Report to the nearest 0.01 inch.

<sup>2</sup> National Weather Service data from the nearest weather station is acceptable.

- 3 Loading rates to be calculated using the applied volume of wastewater, applied acreage, and average of the four most recent concentrations for BOD.
- 4 The cycle average BOD loading rates shall be calculated using applied volume of wastewater, applied acreage, and average of the four most recent concentrations for BOD and divided by the number of days between applications.
- 5 Nitrogen and salt shall be calculated using the applied volume of wastewater, applied acreage, and average of the four most recent concentrations for total nitrogen and Fixed Dissolved Solids.
- 6 Additional nitrogen loading to the land application area from other sources (i.e. organic matter and manure).

## GROUNDWATER MONITORING

The Dischargers shall monitor groundwater in accordance with Provision G.12, and any subsequent additional wells.

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. Depending on the hydraulic conductivity of the geologic setting, the volume removed during purging is typically 3 to 5 volumes of the standing water within the well casing and screen, or additionally the filter pack pore volume.

| <u>Frequency</u> | <u>Constituent/Parameter</u>  | <u>Units</u> | <u>Sample Type</u> |
|------------------|-------------------------------|--------------|--------------------|
| Quarterly        | Depth to groundwater          | feet         | Measured           |
| Quarterly        | Groundwater elevation         | feet         | Computed           |
| Quarterly        | pH                            | pH units     | Grab               |
| Quarterly        | Electrical Conductivity       | umhos/cm     | Grab               |
| Quarterly        | Total Dissolved Solids        | mg/L         | Grab               |
| Quarterly        | Total Kjeldahl Nitrogen       | mg/L         | Grab               |
| Quarterly        | Nitrate as Nitrogen           | mg/L         | Grab               |
| Quarterly        | Nitrite as Nitrogen           | mg/L         | Grab               |
| Quarterly        | Ammonia as Nitrogen           | mg/L         | Grab               |
| Quarterly        | Total Nitrogen                | mg/L         | Computed           |
| Quarterly        | General Minerals <sup>1</sup> | mg/L         | Grab               |

<sup>1</sup> With the exception of wastewater samples, samples must be filtered. If field filtering is not feasible, samples shall be collected in unpreserved containers and submitted to the laboratory within 24 hours with a request (on the chain-of-custody form) to immediately filter then preserve the sample.

<sup>2</sup> See glossary on page 10 for list of general mineral constituents

## SOIL MONITORING

The Dischargers shall establish with concurrence of Central Valley Water Board staff, at least six soil profile monitoring locations within the LAA's and at least two representative background location(s) (i.e., that historically have not received process wastewater). The Dischargers shall submit a map to the Central Valley Water Board with the identified sample locations no fewer than **30 days** prior to the first sampling event in October following adoption of this Order. The samples shall be collected and analyzed for the constituents and frequencies specified below:

| <u>Frequency</u> | <u>Constituent/Parameter</u> | <u>Units</u>               | <u>Sample Type</u> |
|------------------|------------------------------|----------------------------|--------------------|
| Annually         | Moisture Content             | % volume                   | Grab <sup>1</sup>  |
| Annually         | Cation Exchange Capacity     | meq/100 grams              | Grab <sup>1</sup>  |
| Annually         | Soil pH                      | pH units                   | Grab <sup>1</sup>  |
| Annually         | Buffer pH                    | mg/kg as CaCO <sub>3</sub> | Grab <sup>1</sup>  |

| <u>Frequency</u> | <u>Constituent/Parameter</u> | <u>Units</u> | <u>Sample Type</u> |
|------------------|------------------------------|--------------|--------------------|
| Annually         | Sodium                       | mg/kg        | Grab <sup>1</sup>  |
| Annually         | Chloride                     | mg/kg        | Grab <sup>1</sup>  |
| Annually         | Potassium                    | mg/kg        | Grab <sup>1</sup>  |
| Annually         | Nitrate as Nitrogen          | mg/kg        | Grab <sup>1</sup>  |
| Annually         | Ammonia as Nitrogen          | mg/kg        | Grab <sup>1</sup>  |
| Annually         | Total Kjeldahl Nitrogen      | mg/kg        | Grab <sup>1</sup>  |

<sup>1</sup> Samples shall be collected at 6-inches, 2.5, 5, 7.5, and 10 feet below ground surface. Sample depth in any individual sampling location may be terminated at first refusal. The depth of refusal shall be noted in the results for each soil sampling location.

### REPORTING

All monitoring results shall be reported in **Quarterly Monitoring Reports** which are due by the first day of the second month after the calendar quarter. Therefore, monitoring reports are due as follows:

|                                   |                   |
|-----------------------------------|-------------------|
| First Quarter Monitoring Report:  | <b>1 May</b>      |
| Second Quarter Monitoring Report: | <b>1 August</b>   |
| Third Quarter Monitoring Report:  | <b>1 November</b> |
| Fourth Quarter Monitoring Report: | <b>1 February</b> |

**A transmittal letter shall accompany each monitoring report.** The transmittal letter shall discuss any violations that occurred during the reporting period and all actions taken or planned for correcting violations, such as operation or facility modifications. If the Dischargers has previously submitted a report describing corrective actions or a time schedule for implementing the corrective actions, reference to the previous correspondence is satisfactory.

The Central Valley Water Board has gone to a Paperless Office System. All regulatory documents, submissions, materials, data, monitoring reports, and correspondence shall be converted to a searchable Portable Document Format (PDF) and submitted electronically. Documents that are less than 50MB should be mailed to: [centralvalleyfresno@waterboards.ca.gov](mailto:centralvalleyfresno@waterboards.ca.gov). Documents that are 50MB or larger should be transferred to a disc and mailed to the appropriate regional water board office, in this case 1685 E Street, Fresno, CA, 93706.

To ensure that your submittals are routed to the appropriate staff, the following information block should be included in any email used to transmit documents to this office:

Program: Non-15, WDID: 5C54NC00323, Facility Name: ARO Pistachios, Inc., Order: R5-2016-0052

In reporting monitoring data, the Dischargers shall arrange the data in tabular form so that the date, the constituents, and the concentrations are readily discernible. The data shall be summarized in such a manner that illustrates clearly, whether the Dischargers complies with waste discharge requirements, and shall discuss any violations that occurred during the reporting period and all actions taken or planned for correcting violations, such as operation or facility modifications. If the Dischargers have previously submitted a report describing corrective actions or a time schedule for implementing the corrective actions, reference to the previous correspondence is satisfactory.

In addition to the details specified in Standard Provision C.3, 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.

Laboratory analysis reports do not need to be included in the monitoring reports; however, the laboratory reports must be retained for a minimum of three years in accordance with Standard Provision C.3.

All monitoring reports shall comply with the signatory requirements in Standard Provision B.3.

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.

In the future, the State or Central Valley Water Board may notify the Dischargers to electronically submit and upload monitoring reports using the State Water Board's California Integrated Water Quality System (CIWQS) Program Web site <http://www.waterboards.ca.gov/ciwqs/index.html> or similar system. Electronic submittal to CIWQS, when implemented, will meet the requirements of our Paperless Office System.

**A. All Quarterly Monitoring Reports** shall include the following:

**Wastewater Reporting**

1. The results of Effluent Monitoring specified on page 2 and 3.
2. For each month of the processing season, calculation of the maximum daily flow, monthly average flow, and cumulative annual flow.
3. For each month of the processing season, calculation of the monthly average effluent EC and BOD concentrations.

**Source Water Reporting**

1. The results of Source Water Monitoring specified on page 3.

**Land Application Area Reporting**

1. The results of the routine monitoring and loading calculations specified on page 3 and 4.
2. Provide a Site Map of the LAA's showing predominant features, and include field numbers (if applicable) and acreage where wastewater was applied.

3. For each month that wastewater is applied to the LAA's, calculation of the monthly hydraulic load for wastewater and supplemental irrigation water (in million gallons) to each discrete irrigation area.
4. A summary of the notations made in the LAA's monitoring log during routine observations. The entire contents of the log do not need be submitted.

### **Groundwater Reporting**

1. The results of Groundwater Monitoring specified on page 4.
2. For each monitoring well, a table showing constituent concentration for at least five previous years, if available, through the current quarter.
3. A groundwater contour map based on groundwater elevation for that quarter. The map shall show the gradient and direction of groundwater flow under/around the facility and/or effluent disposal area(s). The map shall also include the location of monitoring wells and wastewater discharge area(s).

**B. Fourth Quarter Monitoring Reports**, in addition to the above, shall include the following:

### **Facility Information**

1. The names and general responsibilities of all persons in charge of wastewater management.
2. The names and telephone numbers of persons to contact regarding the facility for emergency and routine situations.
3. A statement certifying when the flow meter and other monitoring instruments and devices were last calibrated, including identification of who performed the calibrations (Standard Provision C.4).
4. A summary of any changes in processing that might affect waste characterization and/or discharge flow rates.

### **Solids Reporting**

1. Annual production total solids (excluding trash and recyclables) in dry tons or cubic yards.
2. A description of disposal methods, including the following information related to the disposal methods used. If more than one method is used, include the percentage disposed of by each method.
  - a. For landfill disposal, include: the name and location of the landfill, and the Order number of WDRs that regulate it.

- b. For land application, include: the location of the site, and the Order number of any WDRs that regulate it.
- c. For incineration , include: the name and location of the site where incineration occurs, the Order number of WDRs that regulate the site, the disposal method of ash, and the name and location of the facility receiving ash (if applicable).
- d. For composting, include: the location of the site, and the Order number of any WDRs that regulate it.
- e. For beneficial reuse at locations and by entities not operating under a WDRs, and as approved by the Executive Officer, include: the name and location of the site where the beneficial reuse occurs and/or solids are sent for beneficial reuse.

### **Soil Reporting**

- 1. The tabulated results of Soil Monitoring as specified on page 4 and 5.

### **Land Application Area Reporting**

- 1. The type of crop(s) grown in the LAA's, planting and harvest dates, and the quantified nitrogen and fixed dissolved solids uptakes (as estimated by technical references or, preferably, determined by representative plant tissue analysis).
- 2. The monthly and annual discharge volume during the reporting year expressed in million gallons and inches.
- 3. A monthly balance for the reporting year that includes:
  - a. Monthly crop uptake
    - i. Crop water utilization rates are available from a variety of publications available from the local University of California Davis extension office.
    - ii. Irrigation efficiency – Frequently, engineers include a factor for irrigation efficiency such that the application rate is slightly greater than the crop utilization rate. A conservative design does not include this value.
      - (a) Monthly average precipitation – this data is available at  
<http://www.cimis.water.ca.gov/> or at <http://www.ncdc.noaa.gov>
      - (b) Monthly average and annual average discharge flow rates.
      - (c) Monthly estimates of the amount of wastewater percolating below the root zone (i.e., amount of wastewater applied in excess of crop requirements).

4. A summary of average and cycle BOD loading rates.
5. The total pounds of nitrogen applied to the LAA's, as calculated from the sum of the monthly loadings, and the total annual nitrogen loading to the LAA's in lbs/acre-year.
6. The total pounds of fixed dissolved solids that have been applied to the LAA's in lbs/acre-year, as calculated from the sum of the monthly loadings.

The Dischargers shall implement the above monitoring program on the first day of the month following adoption of this Order.

Ordered by: Original signed by:  
PAMELA C. CREEDON, Executive Officer

\_\_\_\_\_  
(Date)



## GLOSSARY

|                   |   |           |         |
|-------------------|---|-----------|---------|
| BOD <sub>5</sub>  | Five-day biochemical oxygen demand  |           |         |
| CBOD              | Carbonaceous BOD  |           |         |
| DO                | Dissolved oxygen  |           |         |
| EC                | Electrical conductivity at 25° C  |           |         |
| FDS               | Fixed dissolved solids  |           |         |
| NTU               | Nephelometric turbidity unit  |           |         |
| TKN               | Total Kjeldahl nitrogen   |           |         |
| TDS               | Total dissolved solids  |           |         |
| TSS               | Total suspended solids  |           |         |
| Continuous        | The specified parameter shall be measured by a meter continuously.  |           |         |
| 24-Hour Composite | Samples shall be a flow-proportioned composite consisting of at least eight aliquots.   |           |         |
| Daily             | Samples shall be collected at least every day.  |           |         |
| Twice Weekly      | Samples shall be collected at least twice per week on non-consecutive days.   |           |         |
| Weekly            | Samples shall be collected at least once per week.  |           |         |
| Twice Monthly     | Samples shall be collected at least twice per month during non-consecutive weeks.   |           |         |
| Monthly           | Samples shall be collected at least once per month.   |           |         |
| Bimonthly         | Samples shall be collected at least once every two months (i.e., six times per year) during non-consecutive months.   |           |         |
| Quarterly         | Samples shall be collected at least once per calendar quarter. Unless otherwise specified or approved, samples shall be collected in January, April, July, and October.   |           |         |
| Semiannually      | Samples shall be collected at least once every six months (i.e., two times per year). Unless otherwise specified or approved, samples shall be collected in April and October.  |           |         |
| Annually          | Samples shall be collected at least once per year. Unless otherwise specified or approved, samples shall be collected in October.   |           |         |
| mg/L              | Milligrams per liter  |           |         |
| mL/L              | milliliters [of solids] per liter   |           |         |
| ug/L              | Micrograms per liter  |           |         |
| umhos/cm          | Micromhos per centimeter  |           |         |
| mgd               | Million gallons per day   |           |         |
| MPN/100 mL        | Most probable number [of organisms] per 100 milliliters   |           |         |
| General Minerals  | Analysis for General Minerals shall include at least the following:   |           |         |
|                   | Alkalinity  | Chloride  | Sodium  |
|                   | Bicarbonate   | Hardness  | Sulfate |
|                   | Calcium   | Magnesium | TDS     |
|                   | Carbonate   | Potassium | Nitrate |
|                   | General Minerals analyses shall be accompanied by documentation of cation/anion balance. With the exception of wastewater samples, samples must be filtered. If field filtering is not feasible, samples shall be collected in unpreserved containers and submitted to the laboratory within 24 hours with a request (on the chain-of-custody form) to immediately filter then preserve the sample. |           |         |

## INFORMATION SHEET

INFORMATION SHEET-ORDER R5-2016-0052  
ARO PISTACHIOS, INC, AND  
MEHDI ORANDI  
TERRA BELLA PROCESSING FACILITY  
TULARE COUNTY

### **Background**

Waste Discharge Requirements (WDRs) Order 93-061 regulated the pistachio processing facility (Facility) at 19570 Avenue 88 in Terra Bella. The Facility and 72-acre land application area (LAA) were owned and operated by Mehdi Orandi.

On 5 September 2003, the Central Valley Water Board adopted Order R5-2003-0134, rescinding WDRs Order 93-061.

On 24 June 2015, Insight Environmental Consultants, Inc., (Insight) submitted a Report of Waste Discharge (RWD) and supplemental information on 2 November 2015 on behalf of ARO Pistachios, Inc to re-start the operation of the Facility and discharge 0.576 million gallons per day (mgd) (annual discharge of 26 million gallons) of pistachio wastewater to a total of 232 acres of pistachio orchards.

As part of re-starting the Facility, ARO Pistachios, Inc installed a new hulling line (dry hulling) that consists of a pre-cleaning system, dry peelers, Magnuson peelers, Magnuson loose hull remover, and a float tank. ARO Pistachios, Inc also increased its LAA by an additional 120 acres (Ranch 1) and 35 acres (Ranch 7) owned by Mehdi Orandi and not originally permitted under WDRs Order 93-061.

The Facility and Ranch 2 are in section 2 of Township 23 South, Range 26 East, Mount Diablo Base and Meridian (MDB&M). Ranch 1 is in section 35 of Township 22 South, Range 26 East, MDB&M. Ranch 7 is in section 12 of Township 23 South, Range 26 East, MDB&M

ARO Pistachios Inc, and Mehdi Orandi (hereafter Dischargers) are responsible for compliance with these WDRs.

### **Discharge**

The harvest season is from August to early September, lasting approximately 30 to 45 days. Wastewater at the Facility is generated from the hulling operation.

The Facility has two hulling lines, existing hulling line (wet hulling) and new hulling line (dry hulling). The existing (wet hulling) consists of a pre-cleaning system, peeler hoppers, pot peelers, and float tanks. The new hulling line (dry hulling) consists of a pre-cleaning system, dry peelers, Magnuson peelers, Magnuson loose hull remover, and a float tank. During the harvest season hulling wastewater is collected in a concrete sump from where it is pumped into parabolic screens to separate solids from the wastewater. Wastewater is discharged directly to the LAA's. The green waste from the pre-cleaning process (i.e. leaves, twigs, and other debris) and screened solids are shipped offsite and sold to a commodity broker. Quality of hulling wastewater is shown in Table 1.

Table 1. Quality of Pistachio Hulling Wastewater

| Constituent/Parameter           | Units    | 9/3/2015 | 9/10/2015 | 9/17/2015 | 9/23/2015 | 10/1/2015 | 10/8/2015 | Average |
|---------------------------------|----------|----------|-----------|-----------|-----------|-----------|-----------|---------|
| pH                              | pH Units | 5.01     | 6.09      | 6.33      | 5.38      | 6.2       | 6.9       | ---     |
| Electrical Conductivity         | umhos/cm | 3,420    | 2,310     | 1,790     | 1,910     | 1,380     | 423       | 1,872   |
| Biochemical Oxygen Demand (BOD) | mg/L     | 8,800    | 3,100     | 2,400     | 3,900     | 1,000     | 200       | 3,233   |
| Chemical Oxygen Demand          | mg/L     | 12,000   | 5,700     | 5,400     | 7,400     | 4,600     | 1,300     | 6,067   |
| Total Suspended Solids          | mg/L     | 3,300    | 2,200     | 1,400     | 4,800     | 960       | 160       | 2,137   |
| Total Dissolved Solids (TDS)    | mg/L     | 6,900    | 2,400     | 2,000     | 2,900     | 1,100     | 910       | 2,702   |
| Fixed Dissolved Solids          | mg/L     | 2,500    | 590       | 780       | 1,100     | 640       | 220       | 972     |
| Total Kjeldahl Nitrogen         | mg/L     | 320      | 330       | 160       | 310       | 170       | 8.8       | 216     |
| Nitrate as Nitrogen             | mg/L     | 0.45     | 0.27      | 0.14      | 0.7       | <0.20     | <0.1      | 0.39    |
| Nitrite as Nitrogen             | mg/L     | 0.13     | 1.3       | <0.05     | 0.43      | <0.05     | 0.013     | 0.47    |
| Ammonia as Nitrogen             | mg/L     | 15       | 21        | 0.78      | 6.3       | 3.6       | 0.96      | 8       |
| Total Nitrogen                  | mg/L     | 320      | 330       | 160       | 320       | 170       | 8.8       | 218     |
| Calcium                         | mg/L     | ---      | ---       | ---       | ---       | 12        | ---       | ---     |
| Magnesium                       | mg/L     | ---      | ---       | ---       | ---       | 4.2       | ---       | ---     |
| Total Recoverable Sodium        | mg/L     | 81       | 58        | 59        | 67        | 64        | 68        | 66      |
| Total Recoverable Potassium     | mg/L     | 1,200    | 650       | 310       | 540       | 380       | 190       | 545     |
| Chloride                        | mg/L     | 48       | 32        | 26        | 35        | 26        | 26        | 32      |
| Sulfate                         | mg/L     | ---      | ---       | ---       | ---       | 27        | ---       | ---     |
| Bicarbonate                     | mg/L     | ---      | ---       | ---       | ---       | 240       | ---       | ---     |
| Carbonate                       | mg/L     | ---      | ---       | ---       | ---       | <2.5      | ---       | ---     |
| Hardness                        | mg/L     | ---      | ---       | ---       | ---       | 49        | ---       | ---     |
| Alkalinity                      | mg/L     | ---      | ---       | ---       | ---       | 110       | ---       | ---     |

Based on analytical data from the 2015 processing season, approximately 64 percent of the TDS is a result of organic compounds based on an average FDS of 972 mg/L and an average TDS of 2,702 mg/L. This Order requires the Dischargers to submit a Salinity Management Plan to evaluate salinity control measures.

The 232 acres of LAA is surface irrigated via flood irrigation. The Dischargers have proposed an irrigation schedule that consists of dividing the LAA's into smaller fields. Ranch 1 with 120 acres will be divided into six-20 acre fields. Ranch 2 with 77 acres will be divided into four fields; three-20 acre fields and one-17 acre field. Ranch 7 with 35 acres will be divided into one-18 acre field and another 17 acre field. According to the irrigation schedule all fields will be irrigated for five consecutive days, the rest period between applications varies from 7 to 25 days.

The LAA in Ranch 2 was historically permitted under WDRs Order 93-061 and received pistachio process wastewater. The Dischargers now propose to increase its LAA by an additional 120 acres (Ranch 1) and 35 acres (Ranch 7) of pistachio orchards not originally permitted under WDRs Order 93-061. The 120 and 35 acres of pistachio orchards have been in agricultural use since 1972 and 1986, respectively, and have never received pistachio process wastewater.

This Order requires the Dischargers to submit a Wastewater and Nutrient Management Plan and meet the cycle average BOD limit of 100 lbs/acre-day.

### **Soil and Groundwater Conditions**

Soils below the Facility and LAA are predominately Flamen Loam followed by Centerville Clay, according to the Web Soil Survey published by the United States Department of Agriculture, Natural Resources Conservation Service.

The Dischargers does not have a groundwater monitoring well network in the vicinity of the LAA's. Groundwater in the area is approximately 150 feet below ground surface and flows in the southwest direction, according to the *Lines of Equal Depth to Water in Wells Unconfined Aquifer* map published by the DWR in 2010.

Based on the limited data from three nearby wells, groundwater is of good quality, and meets the water quality objectives for municipal and domestic supply with EC ranging from 187 to 224 umhos/cm, chloride ranging from 5 to 8 mg/L, and nitrate ranging from 0.3 to 1.1 mg/L.

### **Basin Plan, Beneficial Uses, and Regulatory Considerations**

The *Water Quality Control Plan for the Tulare Lake Basin, Second Edition, revised January 2015* (Basin Plan) designates beneficial uses, establishes narrative and numerical water quality objectives, contains implementation plans and policies for protecting waters of the Basin, and incorporates, by reference, plans and policies of the State Water Board.

The beneficial uses of the underlying groundwater are municipal and domestic supply.

The Basin Plan identifies the greatest long-term water quality problem facing the entire Tulare Lake Basin is increasing salinity in groundwater, a process accelerated due to the intensive use of soil and water resources by irrigated agriculture. The Basin Plan recognizes that degradation is unavoidable until there is a long-term solution to the salt imbalance. Until then, the Basin Plan establishes several salt management requirements, including:

- a. The incremental increase in salts from use and treatment must be controlled to the extent possible. The maximum EC in the discharge shall not exceed the EC of the source water plus 500 umhos/cm. When the source water is from more than one source, the EC shall be a weighted average of all sources.
- b. Discharges to areas that may recharge to good quality groundwater, the Basin Plan states that they shall not exceed an EC of 1,000 umhos/cm, a chloride content of 175 mg/L, or a boron content of 1.0 mg/L. The Basin Plan generally applies these limits to industrial discharges to land.

The Basin Plan authorizes an exemption to the incremental increase limit for food processing industries that discharge to land and exhibit a disproportionate increase in EC of the discharge over the EC of the source water due to unavoidable concentrations of organic dissolved solids from the raw food product, provided that beneficial uses are protected. Exceptions shall be based on demonstration of best available technology and best management practices that control inorganic dissolved solids to the maximum extent feasible.

### **Antidegradation**

State Water Resources Control Board Resolution 68-16, (“Policy with Respect to Maintaining High Quality Waters of the State”) (hereafter Resolution 68-16 or “Antidegradation Policy”), requires the regional water boards to maintain high quality water of the State until it is demonstrated that any change in quality will not result in water quality less than that described in State and Regional Water Board policies or exceed water quality objectives, will not unreasonably affect beneficial uses and is consistent with the maximum benefit to the people of the State.

The constituents of concern in the discharge that have the potential to degrade and pollute groundwater include organics, nutrients, and salts. The Dischargers provides control of the discharge or will provide control of the discharge that incorporates or will incorporate:

1. Pre-cleaning to remove leaves, twigs, and other debris;
2. A cycle average BOD loading rate of 100 lbs/acre-day;
3. Soil monitoring at the LAA’s;
4. Preparation and implementation of a Salinity Management Plan to evaluate potential methods to reduce the salinity of the discharge;
5. Preparation and implementation of a Wastewater and Nutrient Management Plan to ensure wastewater and nutrients are applied evenly at agronomic rates;
6. Groundwater monitoring; and
7. Groundwater limitations.

This Order establishes terms and conditions to ensure that the authorized discharge will not unreasonably affect present and anticipated future beneficial uses of groundwater or result in groundwater quality worse than background or the water quality objectives set forth in the Basin Plan.

This Order is consistent with the Anti-Degradation Policy since: (a) the Dischargers have or will implement Best Practicable Treatment or Control to minimize degradation, (b) the limited degradation will not unreasonably affect present and anticipated beneficial uses of groundwater, or result in water quality less than water quality objectives, and (c) the limited degradation is of maximum benefit to the people of the State.

### **CEQA**

The pistachio orchard on Ranch 1 was planted in 1972, Ranch 2 was planted in 1978, Ranch 7 was planted in 1986 and the Facility has been operating since 1984. The only change ARO Pistachios has made to the Facility has been the installation of a new hulling line (dry hulling) that consists of a pre-cleaning system, dry peelers, Magnuson peelers, Magnuson loose hull remover, and a float tank.

The issuance of this Order is exempt from the provisions of California Environmental Quality Act (“CEQA”)(Pub. Resources Code, §21000 et seq.) in accordance with California Code of Regulations, title 14, section 15301, which exempts the “operation, repair, maintenance, [and] permitting...of existing public or private structures, facilities, mechanical equipment, or topographical features” from environmental review. This action may also be considered exempt because it is an action by a regulatory agency for the protection of human resources (Cal. Code

Regs., tit. 14, §15307.) and an action by a regulatory agency for the protection of the environment (Cal. Code Regs., tit. 14, §15308.).

### **Title 27**

Unless the Board finds that the discharge of designated waste is exempt from Title 27 of the California Code of Regulations, the release of designated waste is subject to full containment requirements. Here, the discharge of hulling wastewater and process wastewater is exempt from the requirements of Title 27 pursuant to the wastewater exemptions found at Title 27, sections 20090 (b).

## **Proposed Order Terms and Conditions**

### **Discharge Prohibitions, Specifications and Provisions**

The proposed Order prohibits the discharge of waste to surface waters and to surface water drainage courses. The proposed Order restricts the discharge to a monthly average daily flow limit of 0.576 mgd and a total annual flow limit of 26 mgy.

This Order sets cycle average BOD loading rate limits of 100 lbs/acre-day at the LAA's over the course of any discharge cycle. The proposed Order includes Provisions requiring the Dischargers to submit a Salinity Management Plan, Wastewater and Nutrient Management Plan, and a Work Plan for the implementation of measures to monitor underlying groundwater.

The proposed Order prescribes groundwater limitations that ensure the discharge does not affect present and anticipated beneficial uses of groundwater. The limitations require that the discharge not cause or contribute to exceedances of water quality objectives or natural background water quality, whichever is greater.

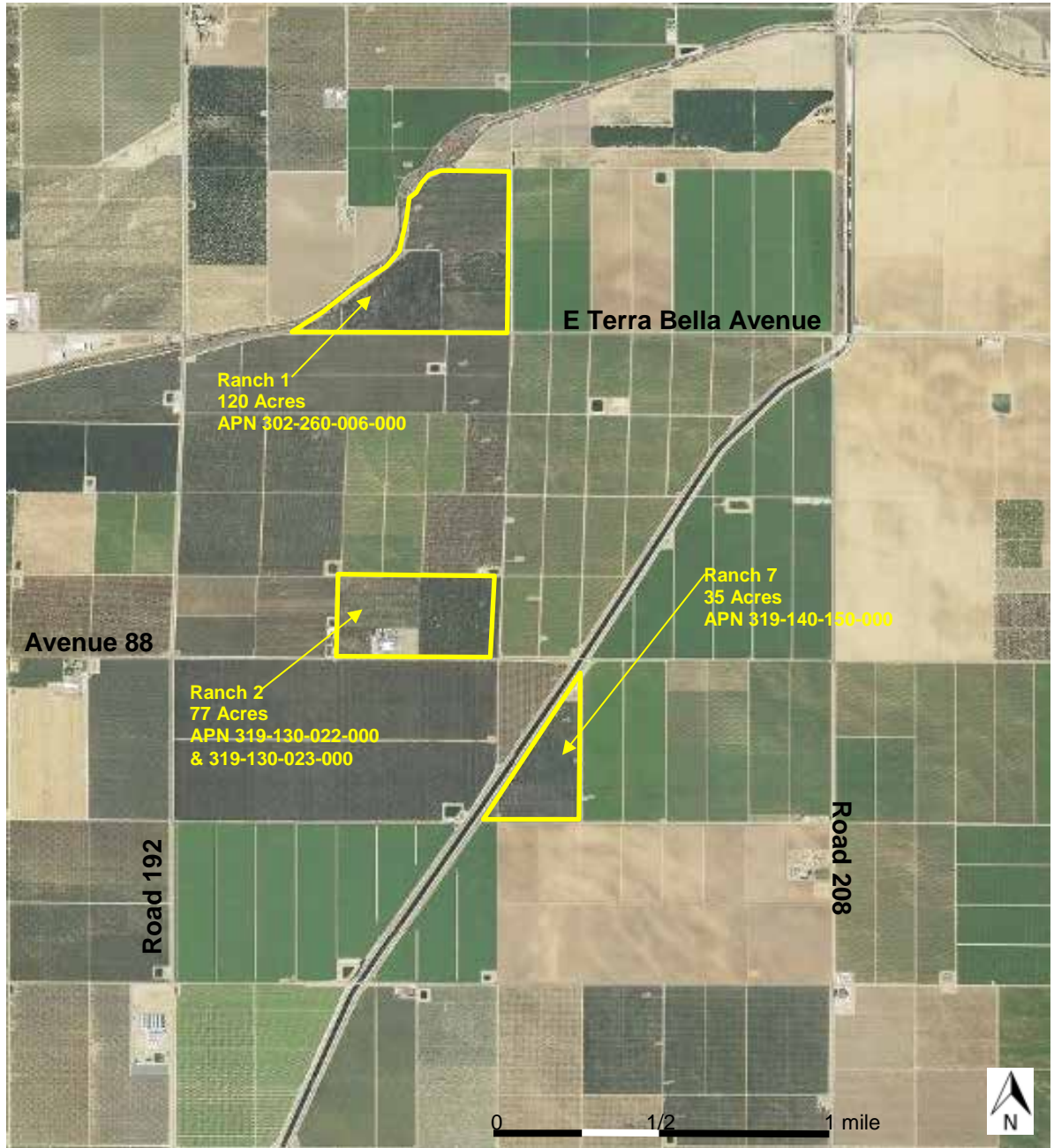
### **Monitoring Requirements**

Section 13267 of the Water Code authorizes the Central Valley Water Board to require the Dischargers to submit monitoring and technical reports as necessary to investigate the impact of a waste discharge on waters of the State.

The proposed Order includes effluent monitoring, source water monitoring, land application area monitoring, soil monitoring, and groundwater monitoring. This monitoring is necessary to characterize the discharge, evaluate compliance with effluent and mass loading limitations prescribed by the Order.

### **Reopener**

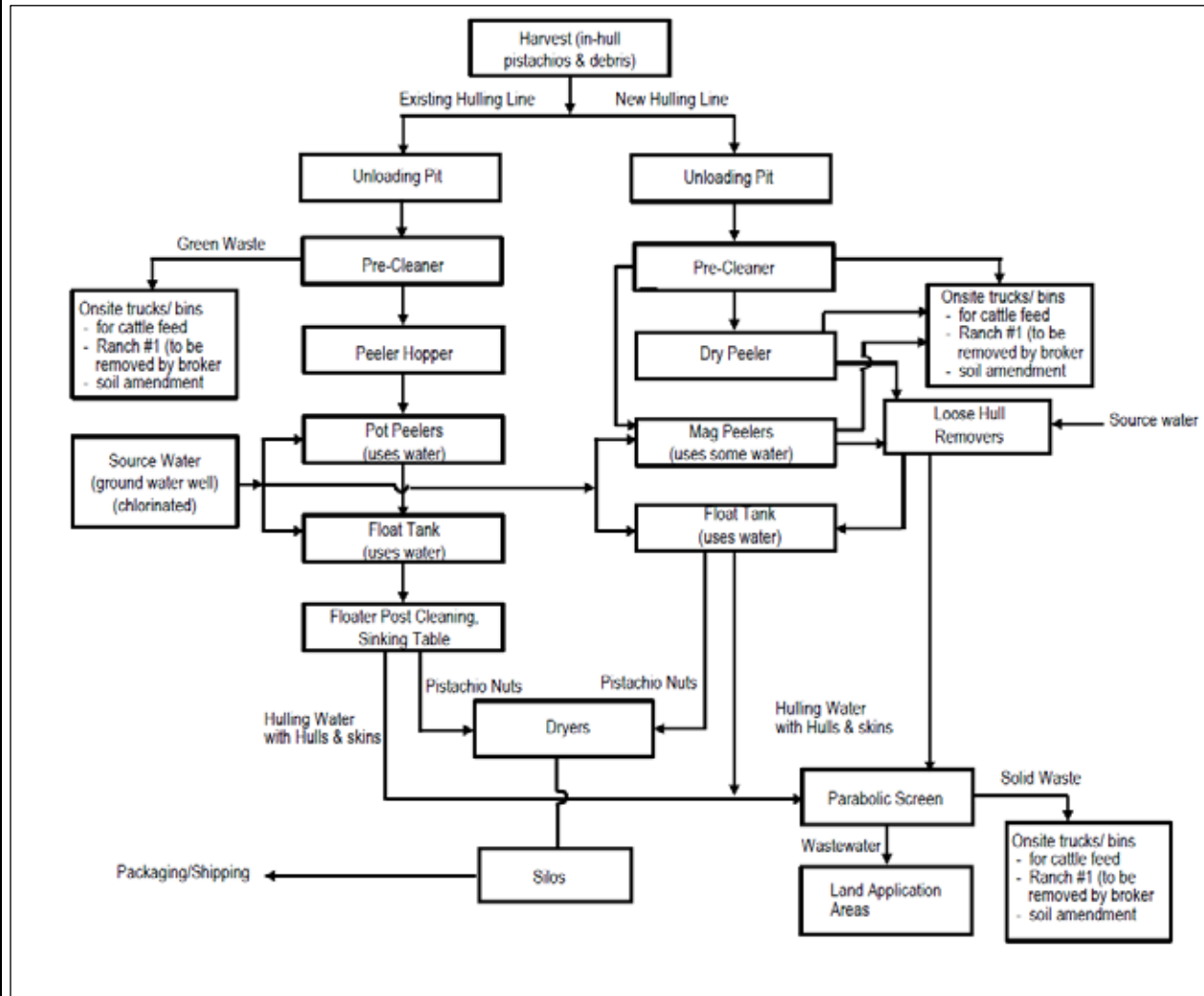
The conditions of discharge in the proposed Order were developed based on currently available technical information and applicable water quality laws, regulations, policies, and plans, and are intended to assure conformance with them. It may be appropriate to reopen the Order if new technical information is received or if applicable laws and regulations change.



**FACILITY MAP**

WASTE DISCHARGE REQUIREMENTS ORDER R5-2016-0052  
FOR  
ARO PISTACHIOS, INC, AND  
MEHDI ORANDI  
TERRA BELLA PROCESSING FACILITY  
TULARE COUNTY

**ATTACHMENT A**



**PROCESS FLOW SCHEMATIC**

WASTE DISCHARGE REQUIREMENTS ORDER R5-2016-0052  
 FOR  
 ARO PISTACHIOS, INC, AND  
 MEHDI ORANDI  
 TERRA BELLA PROCESSING FACILITY  
 TULARE COUNTY



**ORDER NO.R5-2016-0052**  
**ATTACHMENT C**  
**STANDARD REQUIREMENTS FOR**  
**MONITORING WELL INSTALLATION WORK PLANS AND**  
**MONITORING WELL INSTALLATION REPORTS**

Prior to installation of groundwater monitoring wells, the Discharger shall submit a work plan containing, at a minimum, the information listed in Section 1, below. Wells may be installed after staff approves the work plan. Upon installation, the Discharger shall submit a well installation report that includes the information contained in Section 2, below. All work plans and reports must be prepared under the direction of, and certified by, a California registered geologist or civil engineer.

**SECTION 1 - Monitoring Well Installation Work Plan and**  
**Groundwater Sampling and Analysis Plan**

The monitoring well installation work plan shall contain, at a minimum, the following information:

A. General Information:

- Purpose of the well installation project
- Brief description of local geologic and hydrogeologic conditions
- Proposed monitoring well locations and rationale for well locations
- Topographic map showing facility location, roads, and surface water bodies
- Large-scaled site map showing all existing on-site wells, proposed wells, surface water bodies and drainage courses, buildings, waste handling facilities, utilities, and major physical and man-made features

B. Drilling Details:

- On-site supervision of drilling and well installation activities
- Description of drilling equipment and techniques
- Equipment decontamination procedures
- Cuttings disposal methods
- Soil sampling intervals (if appropriate); logging methods; number and location of soil samples and rationale; and sample collection, preservation, and analytical methods

C. Monitoring Well Design (in graphic form with rationale provided in narrative form):

- Diagram of proposed well construction details
  - Borehole diameter
  - Casing and screen material, diameter, and centralizer spacing (if needed)
  - Type of well caps (bottom cap either screw on or secured with stainless steel screws)
  - Anticipated depth of well, length of well casing, and length and position of perforated interval

- Thickness, position and composition of surface seal, sanitary seal, and sand pack
- Anticipated screen slot size and filter pack

D. Well Development (not to be performed until at least 48 hours after sanitary seal placement):

Method of development to be used (i.e., surge, bail, pump, etc.)

Parameters to be monitored during development and record keeping technique

Method of determining when development is complete

Disposal of development water

E. Well Survey (precision of vertical survey data shall be at least 0.01 foot):

Identify the Licensed Land Surveyor or Civil Engineer that will perform the survey

Datum for survey measurements

List well features to be surveyed (i.e., top of casing, horizontal and vertical coordinates, etc.)

F. Schedule for Completion of Work

G. Appendix: Groundwater Sampling and Analysis Plan (SAP)

The Groundwater SAP, a guidance document that is referred to by individuals responsible for conducting groundwater monitoring and sampling activities, shall contain, at a minimum, a detailed written description of standard operating procedures for:

- Equipment to be used during sampling
- Equipment decontamination procedures
- Water level measurement procedures
- Well purging (include a discussion of procedures to follow if three casing volumes cannot be purged)
- Monitoring and record keeping during water level measurement and well purging (include copies of record keeping logs to be used)
- Purge water disposal
- Analytical methods and required reporting limits
- Sample containers and preservatives
- Sampling
  - General sampling techniques
  - Record keeping during sampling (include copies of record keeping logs to be used)
  - QA/QC samples
- Chain of Custody
- Sample handling and transport

## **SECTION 2 - Monitoring Well Installation Report**

The monitoring well installation report must provide the information listed below. In addition, the report must also clearly identify, describe, and justify any deviations from the approved work plan.

### **A. General Information:**

- Purpose of the well installation project
- Number of monitoring wells installed and identifying label(s) for each
- Brief description of geologic and hydrogeologic conditions encountered during well installation
- Topographic map showing facility location, roads, surface water bodies
- Large-scaled site map showing all previously existing wells, newly installed wells, surface water bodies and drainage courses, buildings, waste handling facilities, utilities, and other major physical and man-made features.

### **B. Drilling Details (in narrative and/or graphic form):**

- On-site supervision of drilling and well installation activities
- Drilling contractor and driller's name
- Description of drilling equipment and techniques
- Equipment decontamination procedures
- Well boring log (provide for each well)
  - Well boring number and date drilled
  - Borehole diameter and total depth
  - Total depth of open hole (i.e., total depth drilled if no caving or back-grouting occurs)
  - Depth to first encountered groundwater and stabilized groundwater depth
  - Detailed description of soils encountered, using the Unified Soil Classification System

### **C. Well Construction Details (provide for each well):**

- Well construction diagram including:
  - Monitoring well number and date constructed
  - Casing and screen material, diameter, and centralizer spacing (if needed)
  - Length of well casing
  - Length and position of slotted casing and size of perforations
  - Thickness, position and composition of surface seal, sanitary seal, and sand pack
  - Type of well caps (bottom cap either screw on or secured with stainless steel screws)

- D. Well Development (provide for each well):  
Date(s) and method of development  
How well development completion was determined  
Volume of water purged from well and method of development water disposal
- E. Well Survey (provide for each well):  
Reference elevation at the top rim of the well casing with the cap removed (feet above mean sea level to within 0.01 foot)  
Ground surface elevation (feet above mean sea level to within 0.01 foot)  
Horizontal geodetic location, where the point of beginning shall be described by the California State Plane Coordinate System, 1983 datum, or acceptable alternative (provide rationale)  
Present the well survey report data in a table
- F. Water Sampling:
- |   |                                   |
|---|-----------------------------------|
| Date(s) of sampling                                   | Sample identification             |
| How well was purged                                   | Analytical methods used           |
| How many well volumes purged                          | Laboratory analytical data sheets |
| Levels of temperature, EC, and pH at stabilization    | Water level elevation(s)          |
| Sample collection, handling, and preservation methods | Groundwater contour map           |
- G. Soil Sampling (if applicable):  
Date(s) of sampling  
Sample collection, handling, and preservation methods  
Sample identification  
Analytical methods used  
Laboratory analytical data sheets  
Present soil sampling data in a table
- H. Well Completion Report(s) (as defined in California Water Code §13751). Blank forms are available from California Department of Water Resources' website [www.water.ca.gov](http://www.water.ca.gov). Submit this section under separate cover.
- I. Appendix - include, at a minimum, copies of the following:  
County-issued well construction permits  
Registered engineer or licensed surveyor's report and field notes  
Field notes from well development