

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

ORDER NO. R5-2008-xxxx

WASTE DISCHARGE REQUIREMENTS

FOR

LAND O' LAKES, INC.  
ORLAND CHEESE PROCESSING PLANT  
GLENN COUNTY

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

1. Land O' Lakes, Inc. (hereafter Discharger) submitted a Report of Waste Discharge (RWD) dated 18 January 2008 and requested a revision to their waste discharge requirements for the Orland Cheese Processing Plant (hereafter Facility). The revised WDRs reflect changes to the process, specifically the installation of a whey ultra filter permeate evaporator to decrease the BOD and waste salt load.
2. Waste Discharge Requirements Order No. 96-023 adopted by the Board on 26 January 1996 is neither adequate nor consistent with current plans and policies of the Regional Water Board.
3. The Facility was formerly owned by the Oxford Cheese and Dairy Company, who sold the facility to Land O' Lakes, Inc. in January 1995. Land O' Lakes, Inc., incorporated in 1921, is a cooperative organization of producers (Co-op) and has about 40 producer members, most of whom are within 50 miles of the plant. The member dairies deliver milk to the facility by refrigerated tankers. The producer members collectively milk about 17,000 cows. The facility processes approximately 130,000 gallons of milk per day. Raw milk is received from the tankers 20 hours a day. The off-loading area is closed to deliveries for approximately four hours each day for clean-up. The plant operates 24 hours per day, seven days per week, 365 days per year and produces approximately 125,000 lbs of white cheddar cheese per day.
4. The Land O' Lakes Facility is on County Road C, between County Roads 25 and 28, approximately six miles southwest of Orland in Sections 11, 13 and 14, T21N, R4W, MDB&M, (Latitude 39° 40' 37.95" N, Longitude -122° 16' 18.05") as shown in Attachment A, which is attached hereto and made part of the Order by reference. The Facility, including the plant area and the application area, comprises Assessor's Parcel Numbers 24-200-11 (160 acres), 24-210-24 (300 acres), 24-210-25 (20 acres), 24-210-26 (20 acres) and 24-210-27 (140 acres).

### Existing Facility and Discharge

5. The Discharger produces approximately 125,000 lbs of cheddar cheese per day from 1.102 million pounds (127,842 gallons) of milk. A simplified narrative description of the process is as follows: Raw milk (13% solids) is delivered to the plant in refrigerated tanker trucks daily and stored in refrigerated tanks prior to coagulation in agitated vats by enzymes. The resulting slurry is pumped to drain tables where salt is added to enhance separation of the liquid whey from the cheese curd. The cheese (white cheddar) is compressed into 500 lb boxes and removed to refrigerated storage prior to sale. Whey is pasteurized and passed through a reverse osmosis (RO) membrane. The RO permeate is used as process and clean-up water within the plant and is eventually discharged to the floor drains where it flows, along with other waste streams to the first of two retention ponds. RO concentrate is passed through the ultra filtration membrane unit. The ultra filter concentrate, or whey protein concentrate (WPC) is sold as a product. The ultra filter permeate is pumped to the evaporator where water is removed. The resulting evaporator concentrate or lactose concentrate is sold as a product. A schematic of the process with approximate flow rates is shown in Attachment B of this Order, which is attached hereto and made part of this Order by reference.
6. All industrial wastewater including plant waste, cooling tower blowdown and boiler blowdown is discharged to a single line, which in turn discharges to the lower pond. Flow in the line is measured immediately before the point of discharge by sensing the level in a Palmer Bowlus flume. The meter is calibrated annually.
7. The volume of industrial wastewater flow as measured in the Palmer Bowlus Flume in the discharge line to the lower pond ranges from approximately 0.125 to 0.200 million gallons per day (mgd). A typical analysis is as follows: BOD – 6,930 mg/L, COD – 9,120 mg/L, Total N - 268 mg/L, TDS – 3,820 mg/L, Na - 294 mg/L, Cl - 228 mg/L, NO<sub>3</sub> - 268 mg/L, SO<sub>4</sub> - 22.6 mg/L, Ca - 127 mg/L, Mg - 20 mg/L and K – 144 mg/L.
8. There are two wastewater retention ponds at the Facility. Initial discharge is to the lower pond, which was constructed in 1983 when the original cheese plant and dairy were built. The lower pond is approximately 200 yards to the north of the plant site. The lower pond has a compacted clay liner and a volume of about 6.4 million gallons not including the contribution of the required two feet of freeboard. Enlargement of the lower pond from 3.3 million gallons to 6.4 million gallons was begun in the summer of 2005. The enlargement and clay lining was completed and the pond brought on-line in the winter of 2005/06. Prior to the enlargement of the lower pond the Facility had a history of wet weather discharges due to lack of holding capacity. No discharges have occurred since the enlargement of the lower pond. Wastewater is pumped from the lower pond to the upper pond where it is used, in combination with pressurized water from the Orland-Artois Irrigation District, for center pivot irrigation of the five spray fields. The upper pond, constructed in 1998, is double lined with a 40-mil HDPE secondary liner and a 60-mil HDPE primary liner. Between the two liners is a HDPE geonet drainage layer. The upper pond volume is

approximately 6.6 million gallons not including the contribution of the required two feet of freeboard.

9. At the time the upper pond was enlarged in 2005, the irrigation/transfer pump was relocated from the pond berm to a concrete sump adjacent to the lower pond. The pump, a five stage centrifugal, can be used to transfer wastewater from the plant to the upper pond or to any of the five center pivot irrigation rigs.
10. The plant and application area are on a gently rolling fan surface underlain by alluvium of the Red Bluff Formation. Near surface soils consist primarily of very stiff to hard moderately to highly plastic clay, sandy clay and gravelly clay to depths of about 3-21 feet below grade. In addition, bands of sand and silty sand run through the formation.
11. Domestic wastewater is discharged to one of two septic tank leachfield systems, one serving the office and one the plant.
12. Domestic water supply is from a 12" well located immediately to the west of the plant and drilled to a depth of 630 feet bgs (below ground surface). As would be expected, the concentration of salts in the water from this well is considerably less than in the monitoring wells. An analysis of water from the supply well is presented in the Information Sheet.
13. Drainage from the plant site and spray field is to Walker Creek, thence to Willows Creek, thence to the Colusa Basin Drain, which is tributary to the Sacramento River.

#### **Source Reduction of Salts and Organic Waste**

14. Early in 2005 the Discharger installed an evaporator for removing water from the ultra filter permeate to produce lactose concentrate. This material could be sold rather than discharged to the ponds as waste, as was done previously. The evaporator has been operating since March of 2005 and all of the evaporator (lactose) concentrate is now being sold to V and V Enterprises who use it as a spray-on additive to cattle feed. By installing the evaporator, the Discharger reduced the salts and organic waste being discharged by approximately 50% and 75% respectively. A more thorough discussion of the waste reduction achieved by the evaporator installation appears in the Information Sheet.

#### **Groundwater Quality and Conditions**

15. Groundwater beneath the plant site and spray field area is encountered at approximately 100 feet bgs (below ground surface) and flows in roughly the same direction as the fall of the surface contour, i.e. from northwest to southeast. In 1994 MW-1 was installed immediately adjacent to the east side of the lower pond. In 1996 at the request of the Central Valley Regional Water Quality Control Board, the Discharger installed two additional monitoring wells, one upgradient (MW-3) and one downgradient (MW-2) of the lower pond. MW-1 is due east and approximately 6 feet from the edge of the lower pond, MW-2 is due south and approximately 40 feet from the edge of the lower pond, while MW-3

is approximately 250 feet to the northwest. These wells were installed to monitor the effect of the lower pond on groundwater. A review of the results from quarterly sampling of these three wells indicates that there has been an increasing trend in the concentration of sodium, chloride and TDS (but not nitrates) in MW-1. There is a suggestion of the same trend in MW-3, the upgradient well, but not in MW-2, the second downgradient well. The location of the wells and the lower pond is shown in Attachment A.

16. It is unclear why MW-1 was installed immediately adjacent to the lower pond, as the lower pond has only a single compacted clay liner, and could be expected to have some permeability. (MW-1 was installed in November 1994 by the Oxford Cheese and Dairy Company, three months before being purchased by Land O' Lakes Inc.). Under these conditions it would be assumed that a well as close as MW-1 would exhibit some elevation in the concentration of soluble pond constituents. Monitoring well MW-1, therefore, will provide no useful information and in addition could act as a conduit for contamination of groundwater. For these reasons, Provision E.1.a. of these requirements requires the abandonment and destruction of MW-1 as described in the California Well Standards. An additional monitoring well further downgradient of the lower pond is also required.
17. In August 2003, three additional monitoring wells were installed, MW-4 at the assumed upgradient property boundary, and MW-5 and 6 towards the southerly downgradient property line. These well locations are shown in Attachment A. The purpose of the new monitoring well installation was to determine if any downgradient effects were detectable at the property boundary. The assumed upgradient well, MW-4, which is approximately one mile and within a few degrees of true northwest from MW-3, has been dry since installation and has produced no results. Based on elevations recorded for MW-1, MW-2 and MW-3, the direction of groundwater flow in the vicinity of the lower pond has been consistently calculated to be to the southeast.

As MW-4 is dry, the level of groundwater at the location of MW-4 can be no higher than 177.6' (calculation based on well head elevation and depth of MW-4). The average levels of water in MW-1, MW-2 and MW-3 are 180.3', 181.7' and 198.1' respectively. Therefore, it must be concluded that MW-4 is in fact downgradient of the lower pond area unless there is a confined aquifer beneath it. Monitoring wells MW-5 and MW-6 are due south and approximately 1,750' and 3,750' respectively from the lower pond. The average levels of water in MW-5 and MW-6 are 176.5' and 156.2' respectively, which indicates that that these wells are downgradient of the lower pond area as would be expected. The fact that MW-4, MW-5 and MW-6 are all downgradient of the pond area suggests that groundwater in the vicinity of the monitoring wells may be mounded as a result of the application of irrigation water and wastewater by the Discharger.

18. A review of the Discharger's quarterly monitoring for the most downgradient well, MW-6, over the last four years has revealed no definite trend in the concentration of TDS, individual ions, or nitrate. The concentration of individual ions and TDS are considerably less in this well than in MW-1 and MW-2. MW-5 contained insufficient water for purging for

approximately 75% of the sampling events. A more thorough discussion of monitoring well results and groundwater quality is presented in the Information Sheet.

19. The Discharger is required in Provision 1.b. of these waste discharge requirements to submit a *Groundwater Quality Assessment Report*, which provides a summary and analysis of all monitoring well results for eight quarters subsequent to the installation of the new downgradient monitoring well MW-7. Regional Board Staff will review the report at the time of submittal, and make a determination as to the need for a double liner with leachate collection (Class II Surface Impoundment) in the lower pond and possible further reduction in salt load to the spray field.
20. The facility is in the center of Section 11 and most of the wells in this section and adjoining sections are agricultural wells with depths of between 500 and 600 feet. The nearest domestic well to the facility for which information is available is located at the intersection of County Roads 28 and D, which is approximately 1.5 miles southeast of the facility in Section 13. This well is drilled to a depth of 200' and is screened from 60' to 120' and from 140' to 180'.

### **Spray Field**

21. The spray field consists of five individual application sites as shown in Attachment A. Total area of the five spray fields is approximately 380 acres. Pressurized water from the Orland-Artois Irrigation District is introduced into the facility's center pivot irrigation system and applied to the five individual spray fields as required. Annual irrigation water usage for the 2007 water year was 516.25 acre feet or 461,000 gallons per day. Wastewater is usually applied separately from the irrigation water by pumping wastewater from either the upper or lower pond through the same center pivot system, however, it can also be mixed in line with irrigation water if required. The irrigation pump is in a sump adjacent to the lower pond. Crops grown in the spray field area include alfalfa, forage maize, oats, rye grass and winter grains.
22. Based on a typical BOD<sub>5</sub> concentration of the wastewater of 6,930 mg/L the average BOD<sub>5</sub> loading rate to the spray field is 24.34 pounds/acre/day, which is considerably less than the USEPA recommended maximum rate of 100/lbs/acre/day (USEPA publication No. 625/3-77-0007, *Pollution Abatement in the Fruit and Vegetable Industry*).
23. The average loading rate in pounds per acre per year for individual ions over the entire spray field based on a typical analysis of flume contents is as follows: N – 343, Na – 377, Cl – 292, K – 184, Ca – 163, Mg – 25.6 and SO<sub>4</sub> – 28.9. This does not include the contribution from irrigation water.
24. The top six inches of soil in Fields 3, 4, 5, and 6 were sampled by Regional Water Board staff in March 2003. Results indicated that pH was within the optimum range, nitrogen was low, P, K, Mn, and Fe were excessive, and sodium adsorption ratio was medium to excessive. Results are tabulated in the Information Sheet. The Discharger has recently

applied lime to the spray field to improve soil permeability and general fertility. Crop yields have increased as a result.

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

25. The *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, Fourth Edition* (hereafter Basin Plan) designates beneficial uses, establishes water quality objectives, contains implementation plans and policies for protecting waters of the basin, and incorporates by reference plans and policies adopted by the State Water Resources Control Board. Pursuant to Section 13263(a) of the California Water Code (CWC), waste discharge requirements must implement the Basin Plan. Drainage from the plant site and spray field is to Walker Creek, thence to Willows Creek, thence to the Colusa Basin Drain, which is tributary to the Sacramento River.
26. The designated beneficial uses of the Colusa Basin Drain are agricultural supply; water contact recreation; warm and cold (potential) freshwater habitat; migration of warm water aquatic organisms; spawning, reproduction and/or early development of warm water aquatic organisms; and wildlife habitat.
27. The Facility is in the Colusa Basin Hydrologic Unit, Orland Hydrologic Sub Area (520.22) of the Sacramento Valley Groundwater Basin as depicted on interagency hydrologic maps prepared by DWR.
28. The designated beneficial uses of underlying groundwater are municipal and domestic supply, agricultural supply, industrial service supply, and industrial process supply.
29. The Basin Plan establishes numerical and narrative water quality objectives for surface water and groundwater that waste discharge requirements must implement. To implement narrative water quality objectives, relevant water quality criteria and guidelines are to be considered on a case-by-case basis to determine the appropriate numerical limitations.
30. The chemical constituent objective in the Basin Plan requires, at a minimum, compliance with California maximum contaminant levels (MCLs) for waters designated as municipal supply. More stringent criteria than MCLs are sometimes necessary to ensure that waters do not contain chemical constituents in concentrations that adversely affect beneficial uses.
31. The Basin Plan contains narrative water quality objectives for chemical constituents, tastes and odors, and toxicity. The toxicity objective requires that groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in humans, plants or animals associated with beneficial uses. The chemical constituent objective requires that groundwater shall not contain chemical constituents in concentrations that adversely affect beneficial uses. The tastes and odors objective requires that groundwater shall not contain taste or odor producing substances in concentrations that cause nuisance or adversely affect beneficial uses.

### Groundwater Degradation/Anti Degradation Analysis

32. State Water Resources Control Board Resolution No. 68-16 ("Policy with Respect to Maintaining High Quality Waters of the State") (hereafter Resolution 68-16) prohibits degradation of groundwater unless it has been shown that:
  - a. The degradation is consistent with the maximum benefit to the people of the State;
  - b. The degradation will not unreasonably affect present and anticipated future beneficial uses;
  - c. The degradation does not result in water quality less than that prescribed in state and regional policies, including violation of one or more water quality objectives; and
  - d. The Discharger employs Best Practicable Treatment and Control (BPTC) to minimize degradation.
33. Existing groundwater data is insufficient to determine the effect of the Discharger's installation of ultra filter permeate evaporators, which has greatly reduced the quantity and concentration of salts and BOD discharged to the lower pond and subsequently the spray field.
34. The Discharger is required in Provision 1.b. of these waste discharge requirements to submit a *Groundwater Quality Assessment Report*, which provides a summary and analysis of all monitoring well results for eight quarters subsequent to the installation of the new downgradient monitoring well MW-7. This information will be reviewed by Regional Water Board staff and a decision made as to the need for double lining of the lower pond (Class II Surface Impoundment) and possible further reduction in salt load to the spray field.
35. Constituents of concern that are discharged to the lower pond and eventually applied to the spray field area and have the potential to degrade groundwater include TDS, individual cations and anions, nutrients and organic materials (BOD/COD). As noted in Finding No. 15 above, there has been a trend toward higher Na, Cl, and TDS in MW-1 adjacent to the east side of the lower pond which has a single compacted clay liner. The same trend is not seen in MW-2, which is 40 feet to the south (primarily downgradient) of the lower pond. Constituents of concern noted above should not adversely affect groundwater quality due to the following:
  - a. The total nitrogen loading rate to the spray field area is approximately 343 lbs/acre/year, which is in line with the nitrogen uptake rates of the crops being grown. It should be noted that approximately 25% of the nitrogen is lost during spray irrigation.

- b. The BOD loading rate to the sprayfield is approximately 25 pounds/acre/day, which is considerably less than the USEPA recommended maximum rate of 100/lbs/acre/day.
- c. The Na and Cl loading rates for the sprayfield are approximately 377 and 292 lbs/acre/year respectively. Neither Na nor Cl ions are plant nutrients and in sufficient concentrations can cause adverse soil and plant reactions. Crops being grown by the Discharger are not considered sensitive species, however, to ensure that the build-up of Na and Cl does not exceed acceptable limits or inhibit crop growth, the Discharger has been required to perform appropriate soil analysis annually for each of the five individual spray field areas. In order to minimize the effects of Na on soil permeability, the Discharger has instituted a lime application program.
- d. The loading rates for the plant nutrients K, Ca, Mg, and SO<sub>4</sub> as calculated from a typical analysis of flume contents and a flume flow of 160,000 gallons per day are approximately 184, 163, 25.6 and 28.9 lbs/acre/year, respectively. These rates are within acceptable limits for the crops being grown by the Discharger.
- e. The electrical conductivity of the wastewater being applied to the spray field is approximately 3,000 µmhos/cm, which is in excess of the 700 µmhos/cm limit for a Class I Irrigation Water as defined by the U.S. Department of Agriculture. A portion of the EC in the discharge can be attributed to organic compounds that will break down in the soil profile, and will not continue to exert an osmotic pressure gradient retarding plant uptake of water. A measured volume of a 24-hour composite sample of the flume discharge was analyzed for EC, evaporated to dryness, ignited in a muffle furnace at 550 degrees C for one hour and reconstituted to the original volume with DI water. After the residue had completely dissolved, the EC was re-measured and found to be 1,600 µmhos/cm. This is a measure of the EC attributable to inorganic constituents. Wastewater applied to the sprayfield is diluted approximately 3:1 with Orland-Artois Irrigation District water, which has an EC of approximately 164 µmhos/cm. The weighted average EC of the applied water is, therefore, approximately 523 µmhos/cm, which is within the limit for a Class I irrigation water (700 umhos/cm). Additionally it should be noted that the crops being grown by the Discharger are relatively salt tolerant and would not be greatly affected by higher EC levels.

### **Treatment and Control Practices**

- 36. The Discharger provides treatment and control of the discharge that incorporates:
  - a. The use of reverse osmosis to concentrate salts in the product streams and yield a permeate that can be used at the facility as a substitute for well water.
  - b. Re-cycling of certain waste streams including salt whey skim to maximize product yield and minimize waste discharge.

- c. The installation of an evaporator to reduce the volume of ultra filter permeate, thereby creating a useable product and greatly reducing the salt and organic loading to the ponds and spray field.
  - d. Application of wastewater at plant uptake rates for the plant nutrients K, Ca, Mg, S and N.
  - e. Application of wastewater at rates well below the maximum application rate for organic loading.
  - f. Operation of a tail water recovery system in the spray field to collect and recirculate water to improve irrigation efficiency and prevent standing water.
37. This Order establishes groundwater limitations that will not unreasonably threaten present and anticipated beneficial uses or result in groundwater quality that exceeds water quality objectives set forth in the Basin Plan. This Order includes a monitoring and reporting program that contains groundwater monitoring to assure that the highest water quality consistent with the maximum benefit to the people of the State will be achieved.

### **General Findings**

38. Pursuant to CWC 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.
39. Section 13267(b) of the CWC states, in part, 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 within its region, or any citizen or domiciliary, or political agency or entity of this state who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge waste outside of its region that could affect the quality of waters of the state within its region shall furnish under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs of these reports shall bear a reasonable relationship to the need for the reports 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"*
40. The technical reports required by this Order and the attached Monitoring and Reporting Program No. R5-2008- are necessary to assure compliance with these waste discharge requirements. The Discharger owns and operates facilities that discharge wastes subject to this Order.

41. The California Department of Water Resources set standards for the construction and destruction of groundwater wells, as described in *California Well Standards Bulletin 74-90* (June 1991) and *Water Well Standards: State of California Bulletin 94-81* (December 1981). These standards, and any more stringent standards adopted by the State or county pursuant to CWC Section 13801, apply to all monitoring wells.
42. The State Water Resources Control Board adopted Order No. 97-03-DWQ (General Permit No. CAS000001), specifying waste discharge requirements for discharges of storm water associated with certain industrial activities. Cheese production is covered under the Standard Industrial Classification (SIC) of 2022- Natural, Processed, and Imitation Cheese, and would be required to obtain coverage under the General Permit if any storm water from the Facility discharged to surface waters. However, the Discharger does not discharge storm water to surface waters, and therefore is not required to obtain coverage under the General Permit.
43. The action to adopt waste discharge requirements for this existing facility is exempt from the provisions of the California Environmental Quality Act (CEQA; Public Resources Code Section 21000 et. seq.) in accordance with Title 14, CCR, Section 15301.
44. Pursuant to CWC 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**

45. The Discharger and interested agencies and persons have been notified of the intent to prescribe waste discharge requirements for this discharge, and they have been provided an opportunity for a public hearing and an opportunity to submit their written views and recommendations.
46. All comments pertaining to the discharge were heard and considered in a public meeting.

**IT IS HEREBY ORDERED** that Order No. 96-023 is rescinded and Land O' Lakes, Inc., their agents, successors, and assigns, in order to meet the provisions contained in Division 7 of the CWC and regulations adopted thereunder, shall comply with the following:

#### **A. Prohibitions**

1. Discharge of wastes to surface waters or surface water drainage courses is prohibited.
2. Bypass or overflow of untreated wastes, except as allowed by Provision E.2 of Standard Provisions and Reporting Requirements, is prohibited.
3. Discharge of waste classified as 'hazardous', as defined in Section 2521(a) of Title 23, California Code of Regulations, Section 2510 et seq., is prohibited. Discharge of waste classified as 'designated', as defined in California Water Code Section 13173, in a manner that causes violation of groundwater limitations, is prohibited.

4. Application of treated wastewater in a manner or location other than that described herein is prohibited.

**B. Discharge Specifications**

1. The monthly average dry weather discharge of all process wastewaters to the wastewater pond system shall not exceed 220,000 gpd.
2. The maximum daily discharge of process wastewater shall not exceed 270,000 gpd.
3. Neither the treatment nor the discharge shall cause a condition of nuisance or pollution as defined by the CWC, Section 13050.
4. No waste constituent shall be released or discharged, or placed where it will be released or discharged, in a concentration or in a mass that causes violation of the Groundwater Limitations.
5. The Discharger shall manage the discharge of wastewater so as to minimize the quantity of wastewater held in the lower pond. The purpose of this specification is to minimize percolation from the lower pond.
6. Objectionable odors originating at this Facility shall not be perceivable beyond the limits of the Discharger's property.
7. The wastewater treatment facilities shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.
8. The wastewater treatment facilities shall have sufficient capacity to accommodate allowable wastewater flow, inflow, and design seasonal precipitation. Design seasonal precipitation shall be based on total annual precipitation using a return period of 100 years, distributed monthly, in accordance with historical rainfall patterns.
9. Freeboard shall not be less than two feet (measured vertically to the lowest point of overflow), except if lesser freeboard does not threaten the integrity of the pond, no overflow of the pond occurs, and lesser freeboard is due to direct precipitation or storm water runoff occurring as a result of annual precipitation with greater than a 100-year recurrence interval, or a storm event with an intensity greater than a 25-year, 24-hour storm event.
10. Ponds shall be managed to prevent breeding of mosquitoes. In particular,
  - a. erosion control measures shall be implemented to minimize small coves and irregularities around the perimeter of the water surface;

- b. weeds within and around the perimeter of the pond shall be minimized; and
- c. dead algae, vegetation, and debris shall not accumulate on the water surface.

11. The discharge of domestic waste to subsurface leaching systems shall remain underground at all times.

### C. Solids Disposal Specifications

1. If not sold or beneficially reused, collected solids removed from liquid wastes shall be disposed of in a manner approved by the Executive Officer and consistent with *Consolidated Regulations for Treatment, Storage, Processing, or Disposal of Solid Waste*, as set forth in CCR, Title 27, Division 2, Subdivision 1, Section 20005, et seq.
2. Sludge and other solids shall be removed from wastewater ponds, sumps, screens, etc. as needed to ensure adequate operation and adequate hydraulic capacity.
3. Any solids removed from the upper or lower pond and applied to soil within the plant or spray field area shall be analyzed for salts and organic material and applied at appropriate agronomic rates.
4. 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.

### D. Spray field Specifications

1. The perimeter of the Spray Field Area shall be graded to prevent ponding along public roads or other public areas and prevent runoff onto adjacent properties not owned or controlled by the Discharger.
2. No physical connection shall exist between cheese processing wastewater and any domestic water supply or domestic well, or between wastewater piping and any irrigation well that does not have an air gap or reduce pressure principle device.
3. The Spray Field Area shall be managed to prevent breeding of mosquitoes. More specifically:
  - a. All applied irrigation water must infiltrate completely within a 48-hour period;
  - b. Ditches not serving as wildlife habitat should be maintained 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 recycled water.
4. The discharge shall remain within the spray field area at all times.

**F. Groundwater Limitations:**

1. Release of waste constituents from any treatment or storage component associated with the Facility shall not cause or contribute to groundwater:
  - a. Containing concentrations of constituents identified in Title 22 in excess of the MCLs quantified therein, or natural background quality, whichever is greater.
  - b. Containing taste or odor-producing constituents, toxic substances, or any other constituents in concentrations that cause nuisance or adversely affect beneficial uses.
  - c. Contain concentrations of chemical constituents in amounts that adversely affect agricultural use.

**E. Provisions**

1. All technical reports required herein 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. As required by these laws, completed technical reports must bear the signatures(s) and seal(s) of the registered professional(s) in a manner such that all work can be clearly attributed to the professional responsible for the work.
  - a. The Discharger shall destroy monitoring well MW-1 as described in California Well Standards, Bulletin 74-90, Part III, Section 19. *Requirements for Destroying Monitoring Wells and Exploration Holes.*
  - b. The Discharger shall submit a report to this office **within 90 days of Order adoption** prepared by a registered geologist or engineering geologist which determines the direction of groundwater flow in the vicinity of the lower pond, taking into account possible mounding effects from the lower pond itself, and makes a recommendation for design and placement of an additional monitoring well downgradient of, and approximately 100 to 200 feet from the lower pond. The new well (MW-7) shall be installed **within 6 months of Order adoption. Within 30 months of monitoring well installation**, the Discharger shall submit a *Groundwater Quality Assessment Report* which provides a summary and analysis of all monitoring well results since the installation of MW-7. The report should cover at least eight quarters of results and should include a discussion of the lithology of the site and the validity of making well to well comparisons. A discussion of groundwater flow throughout the area covered by the monitoring wells should be included.
2. Upon completion of tasks set forth in Provision E.1, the Regional Water Board will

consider the evidence provided and make a determination as to whether the Discharger shall be required to double line the lower pond to meet Title 27 requirements for a Class II Surface Impoundment.

3. The Discharger shall submit a report to this office **within 1 year of Order adoption** which analyzes the remaining sources of TDS and BOD/COD discharged to the flume line and makes recommendations for further reductions. In particular the report should address possible isolation and disposal/treatment of streams with high concentrations of these constituents such as vessel rinse and salt whey skim.
4. The Discharger shall comply with Monitoring and Reporting Program No. R5-2008-xxxx, which is part of this Order, and any revisions thereto as ordered by the Executive Officer.
5. The Discharger shall comply with the "Standard Provisions and Reporting Requirements for Waste Discharge Requirements" (Standard Provisions), dated 1 March 1991, which are attached hereto and a part of this Order by reference.
6. In the event of any change in control or ownership of the Facility described herein, the Discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to this office. To assume operation 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 name and address and telephone number of the persons responsible for contact with the Regional 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 CWC. Transfer shall be approved or disapproved by the Executive Officer.
7. The Discharger shall immediately notify the Regional Board by telephone whenever a violation of these WDRs or an adverse condition that may impair water quality occurs; written confirmation shall follow within two (2) weeks.
8. The Discharger shall report to the Regional Board any toxic chemical release data it reports to the State Emergency Response Commission within 15 days of reporting the data to the Commission pursuant to section 313 of the "Emergency Planning and Community Right to Know Act of 1986."
9. The Discharger shall submit to the Regional Board on or before each compliance report due date the specified document, or if appropriate, a written report detailing compliance or noncompliance with the specific schedule date and task. If noncompliance is reported, then the Discharger shall state the reasons for noncompliance and shall provide a schedule to come into compliance.

10. The Discharger shall report promptly to the Regional Board any material change or proposed change in the character, location, or volume of the discharge.
11. The Discharger must comply with all conditions of this Order, including timely submittal of technical and monitoring reports as directed by the Executive Officer. Violations may result in enforcement action, including Regional Board or court orders requiring corrective action or imposing civil monetary liability, or in revision or rescission of this Order.
12. A copy of this Order shall be kept at the discharge facility for reference by operating personnel. Key operating personnel shall be familiar with its contents.
13. The Regional Board will review this Order periodically and will revise requirements when necessary.

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 xx March 2008.

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PAMELA C. CREEDON, Executive Officer