

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. R5-2007-0122

WASTE DISCHARGE REQUIREMENTS

FOR
MOZZARELLA FRESCA, INC.

TIPTON CHEESE PROCESSING PLANT
TULARE COUNTY

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

1. Mozzarella Fresca, Inc. (hereafter Discharger) submitted a Report of Waste Discharge (RWD) dated 11 February 2004 in support of discharge to land of cheese manufacturing wastewater from its Tipton Cheese Processing Plant (hereafter Facility). Additional information to complete the RWD was received 29 March 2004, 14 April 2004, and 18 June 2004.
2. The Facility was formerly operated by the Sequoia Specialty Cheese Company, which discharged its wastewater to the Tipton Community Services District's wastewater treatment facility and was not previously regulated under Waste Discharge Requirements. After a period of inactivity, Mozzarella Fresca acquired and upgraded the Facility and commenced operation in September 2003 for specialty cheese manufacturing. The Discharger reportedly intended to resume discharging wastewater to the Community Services District's wastewater treatment facility but was not able to obtain service. The Discharger then made an agreement with Mr. Frank Mendonsa who owns and operates FM Dairy No. 2 located at 196 Olive Avenue in Tipton to discharge wastewater into the existing dairy ponds where it was commingled with dairy wastewater and used to irrigate 20 acres of farmland. The area was not sufficient to handle the combined discharge and Cleanup and Abatement Order (CAO) No. R5-2005-0702 was issued to Mozzarella Fresca Cheese Processing Plant and FM Dairy No. 2 on 4 February 2005. A requirement of the CAO was that the Discharger cease discharge of wastewater to FM Dairy No. 2.
3. In compliance with the CAO the Discharger ceased discharging to FM Dairy No. 2 on 14 April 2005. The Discharger entered into an agreement with Mr. Mike Silva, owner of Mike Silva Ranches (Reuse Area), to reuse the wastewater, combined with irrigation water, to irrigate approximately 310 acres of farmland.
4. The Facility at 615 North Burnett Road in Tipton, is at Latitude 36° 3' 52" and Longitude - 119° 19' 50", and is in the northwest quarter of Section 31, T21S, R25E, MDB&M, as shown on [Attachment A](#), which is attached hereto and made part of this Order by reference. The Facility comprises Assessor's Parcel Numbers 230-120-001, 230-110-013, and 230-110-014. The Reuse Area, owned by Mr. Silva, comprises Assessor's Parcel Numbers 232-120-011, 232-120-012, 232-120-010, 230-010-003, and 230-010-004.

- 5. For purposes of this Order, the term "Treatment System" shall refer to the wastewater treatment system, which consists of a cavitation air flotation (CAF) unit, a whey recovery system, storage tanks, and associated piping. Attachment B of this Order, which is attached hereto and made part of this Order by reference, depicts a process flow diagram of the Treatment System.

Existing Facility and Discharge

- 6. The Facility is a cheese manufacturing plant that processes milk into Italian style fresh mozzarella and ricotta cheese. According to the RWD the Facility generates approximately 0.66 gallons of wastewater per pound of cheese.
- 7. The Facility employs approximately 180 people, who contribute to the local economy of Tipton.
- 8. Domestic wastewater is handled separately and disposed of at the Tipton Community Services District Wastewater Treatment Facility.
- 9. The present volume of wastewater flow is approximately 0.11 million gallons per day (mgd). The Discharger estimates that flow will increase to approximately 0.25 mgd within the next five years.
- 10. The average values for constituents of concern for 2006 are the most representative of the discharge because of changes in the manufacturing processes to reduce the EC of the discharge. Self-monitoring data from January 2006 to December 2006 characterize the discharge as follows:

<u>Constituent</u>	<u>Units</u> ¹	<u>Average Concentration</u>
BOD ₅	mg/L	720
Total Nitrogen	mg/L	22
Chloride	mg/L	151
Potassium	mg/L	105
Phosphorus	mg/L	132
Boron	mg/L	0.09

1. umhos/cm = micromhos per centimeter. mg/L = milligrams per liter.

- 11. In 2005, the Discharger submitted a salinity reduction survey that analyzed the salinity of various discharge components and recommended best practicable treatment or control (BPTC) measures to reduce salinity. Some of the measures identified in the salinity reduction survey are being implemented, while others were found to be ineffective. In addition, the Discharger reports that it has implemented other undocumented measures. Salinity control measures include: segregating water softener regeneration brine;

substituting an anionic polymer for ferric chloride in the wastewater treatment process; reducing product leaks and spills through the addition of drip pans, piping, and flow controls; redesigning and upgrading milk receiving and transportation valves and piping; adding a drain hose to the curd incline conveyor; purging hoses after loading trucks; diverting water from the utensil washing machine to the whey tanks; and directly injecting sodium chloride into the finished product rather than soaking in a brine vat.

12. Since implementation of the above salinity reduction measures, the average EC and TDS of the discharge has been about 1,400 $\mu\text{mhos/cm}$ and 1,200 mg/L, respectively.
13. The pH of the discharge is highly variable and has ranged from 2.0 to 12.0 with a monthly average of approximately 5.0.

Water Recycling

14. Wastewater from the Facility is discharged to land owned by Mr. Mike Silva and referred to as Mike Silva Ranches (Reuse Area). The Reuse Area is divided into four fields with a total of 288 net acres used to grow feed and fodder crops such as alfalfa, cotton, and wheat/corn silage. The Reuse Area is irrigated with a combination of wastewater, groundwater, and surface water supplied by the Lower Tule River Irrigation District, which contributes water from the Lower Tule River and the Friant-Kern Canal.
15. The blended irrigation water is then applied via flood irrigation at plant uptake rates for both nutrient and hydraulic loading during the growing season. The well water to wastewater ratio is typically three to one and often higher during the summer months to meet crop demands. Based on an average total nitrogen concentration of the wastewater and irrigation water of 22 mg/L and 5 mg/L, respectively, the contribution of nitrogen to the Reuse Area is less than 5 lbs/acre/month and fertilizer is needed during the growing season to meet crop demands for nitrogen.
16. Based on an average BOD₅ concentration of the wastewater of 700 mg/L the typical loading rate to the designated disposal area would be less than 10 pounds/acre/day, which is significantly below the USEPA recommended rate of 100/lbs/acre/day according to publication No. 625/3-77-0007, *Pollution Abatement in the Fruit and Vegetable Industry*.
17. A 600,000-gallon above ground storage tank was constructed at the Reuse Area to store wastewater and allow for better regulation of the wastewater discharge to the fields.
18. Irrigation tailwater is controlled through such measures as perimeter berms and/or grading to prevent off-site drainage. Irrigation water collected in the tailwater ponds is returned to the irrigation system and re-applied to the crops.
19. Mr. Silva practices pre-irrigation during the non-growing season. In the winter of 2006 the percentage of wastewater to total water applied during November, December, and January was approximately 25%. The total hydraulic loading over the entire 288 acres was about

0.056 inches/day between November and January (of which approximately 0.014 inches/day was wastewater). Total nitrogen levels in the wastewater were reported as 31.5 mg/L, 27.5 mg/L, and 14 mg/L, respectively. With dilution the total nitrogen applied to the fields was less than 10 mg/L. In addition, Mr. Silva typically grows a winter crop of wheat and early corn in three of the four fields.

20. The RWD identifies crop nitrogen requirements for alfalfa at 480 lbs/acre and double crop of wheat/corn silage at 425 lbs/acre based on the *Western Fertilizer Handbook, 9th edition*.

Site-Specific Conditions

21. The Facility is in an arid climate characterized by hot dry summers and mild winters. The rainy season generally extends from November through March. Occasional rains occur during the spring and fall months, but summer months are dry. Average annual precipitation and evaporation in the Reuse Area are about 10.25 inches and 63.86 inches, respectively, according to information published by the California Department of Water Resources.
22. According to the USDA Natural Resources Conservation Service *Soil Survey of Tulare County, Western Part (CA 659), 2001*, the soils are Biggriz Loam (Class II through VI soils) and Colpien Loam (Class I soils). These soils are both loam in texture and have a permeability of 0.6 to 2.0 inches/hour from the surface to approximately one foot in depth.
23. According to the RWD, storm water at the Facility is generally absorbed into the open lawn and dirt areas or diverted to the process wastewater stream. The Discharger is not required to obtain coverage under a National Pollutant Discharge Elimination System general industrial storm water permit since all storm water runoff is retained onsite and does not discharge into a water of the United States.
24. According to Federal Emergency Management Agency (FEMA) maps the processing facility lies outside of the 500-year flood zone. However, the Reuse Area lies within the 100-year floodplain. Wastewater is stored in a 600,000-gallon aboveground storage tank to prevent inundation from flooding prior to being used as irrigation water.
25. Land use in the vicinity of the Reuse Area is primarily agricultural. Primary crops grown in the area include alfalfa, corn (forage), almonds, walnuts, and other row crops. Additional crops including sugar beets, cotton, grapes, plums, and hay and grain crops are typically grown in the area according to DWR land use data published in 1999. In addition there are several dairies in the immediate vicinity. Most crops grown in this area are flood irrigated, although others are sprinkler, micro-sprinkler, and drip irrigated, according to the University of California Cooperative Extension.

Groundwater Considerations

- 26. Groundwater in the vicinity of the Reuse Area is encountered at about 80 to 100 feet below ground surface (bsg) and flows west-southwest, according to information in Lines of Equal Elevation of Water in Wells in Unconfined Aquifer, published by Department of Water Resources in Spring 2004.
- 27. Source water for the Facility is provided from an on-site well and Tipton CSD. The following table lists average concentration for constituents from samples collected in 2006.

<u>Constituent</u>	<u>Units</u> ¹	<u>Source Water</u>
Electrical Conductivity (EC)	µmhos/cm	212
Total Dissolved Solids	mg/L	140
Nitrate as Nitrogen	mg/L	5
Chloride	mg/L	9.3
Sodium	mg/L	43.8
Boron	mg/L	< 0.1

1. umhos/cm = micromhos per centimeter. mg/L =milligrams per liter.

- 28. In January 2007, groundwater monitoring wells were installed in the Reuse Area. During the installation groundwater was encountered at depths ranging from 50 to 75 feet below grade. MW-1 on the northeast edge of the Reuse Area is 79 feet deep and has a 30-foot screened interval. MW-2 on the southwest corner and MW-3 on the southeast corner of the Reuse Area are 80 feet deep and constructed with a 20-foot screened interval. During the initial sampling, groundwater flow was to the south-southwest at a gradient of 5 feet/1000 feet. An irrigation well approximately 300 feet south of MW-1 and another approximately 50 feet north of MW-3 could create cones of depression that could influence groundwater depth measurements in the monitoring wells.
- 29. The following table lists average concentrations for groundwater constituents from samples collected in January and February 2007. All values are in mg/L except for EC, which is in µmhos/cm. The values for HCO₃ are as CaCO₃. Results for NO₂, NH₄, TKN, SO₄, P, and CO₃ are not included since values were low or non-detect.

Groundwater Analytical Results

<u>Constituent</u>	<u>MW-1</u>	<u>MW-2</u>	<u>MW-3</u>
Depth-to-groundwater (feet bsg)	55.6	66	67.9
Electrical Conductivity (EC)	351	410	445
Nitrate as Nitrogen	3.4	5.3	5.5
Sulfate	10.7	18.6	16.5
Total Dissolved Solids	312	310	341

Groundwater Analytical Results

<u>Constituent</u>	<u>MW-1</u>	<u>MW-2</u>	<u>MW-3</u>
Calcium	49.1	49.1	54
Magnesium	29.6	6.4	8.2
Sodium	41	42.5	41
Potassium	21.1	1.7	2.7
Bicarbonate as CaCO3	178	205	211
Chloride	23.5	18.5	18.3

30. The existing data indicates that first encountered groundwater beneath the Reuse Area is of good quality with nitrate as nitrogen concentrations below the Maximum Contaminant Level (MCLs) for nitrogen of 10 mg/L in both up-gradient and down-gradient monitoring wells and an average EC concentration of approximately 400 µmhos/cm.

Basin Plan, Beneficial Uses and Regulatory Considerations

31. The Water Quality Control Plan for the Tulare Lake Basin, 2nd Edition, (hereafter Basin Plan) designates beneficial uses, establishes **numerical and narrative** 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. Pursuant to Section 13263(a) of the California Water Code (CWC), these waste discharge requirements implement the Basin Plan.
32. The Facility is in Detailed Analysis Unit 243 of the Tule Basin. Beneficial uses of underlying groundwater are Municipal and Domestic Supply, Agricultural Supply, and Industrial Service Supply, Industrial Process Supply, and Wildlife Habitat [supply].
33. The Basin Plan includes a water quality objective for chemical constituents that, at a minimum, requires waters designated as domestic or municipal supply to meet the MCLs specified in Title 22, California Code of Regulations. The Basin Plan's incorporation of these provisions by reference is prospective, and includes future changes to the incorporated provisions as the changes take effect. The Basin Plan recognizes that the Regional 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.
34. The Basin Plan establishes narrative water quality objectives for Chemical Constituents, Tastes and Odors, and Toxicity. The 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. 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.

35. 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 a valley wide drain is constructed to carry salts out of the basin. Until the drain is available, 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 shall not exceed the EC of the source water plus 500 $\mu\text{mhos/cm}$. 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 good quality groundwaters shall not exceed an EC of 1,000 $\mu\text{mhos/cm}$, a chloride content of 175 mg/L, or a boron content of 1.0 mg/L.
36. Title 22 in Table 64449 B establishes recommended, upper, and short term ranges for EC, TDS, chloride, and sulfate. The recommended and upper ranges are 900 and 1,600 $\mu\text{mhos/cm}$ for EC, 500 and 1,000 mg/L for TDS, and 250 and 500 mg/L for chloride and sulfate, respectively.
37. The list of crops in [Finding 25](#) is not intended as a definitive inventory of crops that are or could be grown in the area affected by the discharge, but is representative. Though salt and boron sensitive crops could potentially be grown in Class I soils, which make up approximately 40% to 50% of the soils in the area (i.e., strawberries, onions, and beans) none of these crops were observed or reported as being currently grown in the area based on DWR land use maps.

Antidegradation Analysis

38. 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 BPTC to minimize degradation.

39. Constitutes of concern that have the potential to degrade groundwater include, in part, nutrients and salts. However, the discharge will likely not degrade the beneficial uses of groundwater because:
- a. For nitrogen, the loading to the Reuse Area is less than 5 lbs/acre/month or 60 lbs/year, which is significantly below the nitrogen uptake rates of 400 to 480 lbs/year for alfalfa and a double crop of corn and winter wheat.
 - b. For BOD, the loading rate to the Reuse Area is less than 10 lbs/acre/day, which is significantly below the USEPA recommended rate of 100 lbs/acre/day according to publication No. 625/3-77-007, *Pollution Abatement in the Fruit and Vegetable Industry*.
 - c. For salinity, the average EC of the wastewater (1,400 umhos/cm) exceeds the Basin Plan Limit of 1,000 umhos /cm. However, the Basin Plan does allow blending to promote beneficial reuse. The wastewater is used to supplement irrigation of existing commercial crops and is blended at a minimum of three to one to meet irrigation needs. With blending, the EC of the discharge will be below 700 umhos/cm, which meets the definition of a Class I Irrigation Water as defined by the U.S. Department of Agriculture. Although not quantified, a portion of the EC in the discharge can be attributed to organic compounds that will break down in the soil profile. In addition, the Discharger has implemented management measures proposed in various plans and reports to reduce the EC of the discharge. Therefore, any degradation would be consistent with the antidegradation policy.

Treatment and Control Practices

40. The Discharger provides treatment and control of the discharge that incorporates:
- a. Screening to remove solids and haul them offsite for disposal.
 - b. Pre-treatment using a CAF system to remove fat and suspended solids from the wastewater.
 - c. Use of drip pans, piping, and flow controls to reduce product leaks and spills.
 - d. Application of wastewater at plant uptake rates for nitrogen and organic loading.
 - e. Operation of a tail water recovery system in the Reuse Area to collect and recirculate water to improve irrigation efficiency and prevent standing water.
41. 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.

Water Recycling Criteria

42. State Water Board Resolution No. 77-1, Policy with Respect to Water Recycling in California, encourages recycling projects that replace or supplement the use of fresh water, and the Water Recycling Law (California Water Code Section 13500-13529.4) declares that utilization of recycled water is of primary interest to the people of the State in meeting future water needs.
43. The Basin Plan encourages recycling on irrigated crops wherever feasible and indicates that evaporation of recyclable wastewater is not an acceptable permanent disposal method where the opportunity exists to replace an existing use or proposed use of fresh water with recycled water.

Designated Waste and Title 27

44. CWC Section 13173 defines designated waste as either:
 - a. Hazardous waste that has been granted a variance from hazardous waste management requirements pursuant to Section 25143 of the Health and Safety Code.
 - b. Nonhazardous waste that consists of, or contains, pollutants that, under ambient environmental conditions as a waste management unit, could be released in concentrations exceeding applicable water quality objectives or could reasonably be expected to affect beneficial uses of the waters of the state contained in the appropriate state water quality control plan.
45. Release of designated waste is subject to full containment pursuant to the requirements of Title 27, CCR, Section 20005 et seq. (hereafter "Title 27"). Title 27 Section 20090(b) exempts discharges of designated waste to land from Title 27 containment standards provided the following conditions are met:
 - a. The applicable regional water board has issued waste discharge requirements, or waived such issuance;
 - b. The discharge is in compliance with the applicable basin plan; and
 - c. The waste is not hazardous waste and need not be managed according to Title 22, CCR, Division 4.5, Chapter 11, as a hazardous waste.
46. The Discharger constructed a 600,000-gallon storage tank to hold the wastewater prior to blending with irrigation water and discharge to the Reuse Area. The tank is a fully enclosed aboveground storage tank constructed of reinforced concrete and as such is exempt from Title 27, pursuant to section 20090(i).

CEQA

47. On 3 November 2004, the County of Tulare Resource Management Agency adopted Resolution No. 8078 for a Negative Declaration to allow discharge of pre-treated wastewater from an existing cheese plant to approximately 310 acres (gross) of farmland.
48. The Regional Water Board, as a responsible agency under CEQA, reviewed the Negative Declaration and concurs with the findings provided that ... "All ponds and other surface impoundments that receive cheese process wastewater shall be constructed in accordance with the standards of Title 27 of the California Code of Regulations unless the Regional Water Board finds the discharge is exempt from Title 27 and approves an alternate design". [Finding 46](#) discusses the measures taken by the Discharger to comply with the requirements of Title 27.
49. This Order implements measures necessary to mitigate any adverse impacts to groundwater from the discharge to less than significant levels, including:
 - a. [Effluent Limitation B.1](#), which restricts monthly average daily discharge flow to 0.25 mgd.
 - b. [Effluent Limitations B.2](#), which establish effluent limitations for EC, chloride, and boron.
 - c. [Discharge Specification C. 4](#), which stipulates waste constituents cannot be released or discharged in a concentration or mass that causes violation of the Order's groundwater limitations.

General Findings

50. 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.
51. CWC Section 13267(b) 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, 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 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 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."
52. The technical reports required by this Order and the attached Monitoring and Reporting Program No. R5-2007-0122 are necessary to assure compliance with these waste

discharge requirements. The Discharger operates the Facility that discharges the waste subject to this Order.

53. 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.
54. 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 following conditions of discharge.

Public Notice

55. 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.
56. All comments pertaining to the discharge were heard and considered in a public meeting.

IT IS HEREBY ORDERED that, pursuant to Sections 13263 and 13267 of the California Water Code, Mozzarella Fresca, Inc. and their agents, successors, and assigns, in order to meet the provisions contained in Division 7 of the California Water Code 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. Effluent Limitations

1. The monthly average daily discharge flow shall not exceed 0.25 mgd.
2. The discharge shall not exceed the following effluent limitations:

<u>Constituent</u>	<u>Units</u> ¹	<u>Monthly Average</u>
EC ²	µmhos/cm	1,600
Chloride	mg/L	175
Boron	mg/L	1

¹ µmhos/cm = micromhos per centimeter. mg/L = milligrams per liter.

² Electrical conductivity at 25°C

3. The average concentration of total nitrogen for the combined discharge of wastewater and irrigation water to the Reuse Area shall not exceed 10 mg/L during the non-growing season (i.e., November, December, and January).

C. Discharge Specifications:

1. 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.
2. Objectionable odors shall not be perceivable beyond the limits of the Facility or the Reuse Area at an intensity that creates or threatens to create nuisance conditions.
3. Application of waste constituents to the Reuse Area shall be at reasonable agronomic rates to preclude creation of a nuisance or degradation of groundwater, considering the crop, soil, climate, and irrigation management system. The annual nutritive loading of the Reuse Area, including the nutritive value of organic and chemical fertilizers and of the wastewater shall not exceed the annual crop demand.
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 groundwater limitations.

D. Reuse Area Specifications

1. The perimeter of the Reuse 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 Reuse 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.

E. Solids Specifications

1. Any handling and storage of solids and sludge at the Facility or in the Reuse Area shall be temporary, and controlled and contained in a manner that minimizes leachate formation and precludes infiltration of waste constituents into soils in a mass or concentration that will violate groundwater limitations of this Order.
2. Collected screenings, sludges, 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.

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.

G. Provisions:

1. The Discharger shall comply with the *Standard Provisions and Reporting Requirements for Waste Discharge Requirements*), dated 1 March 1991, which are part of this Order. This attachment and its individual paragraphs are referred to as *Standard Provisions*.
2. The Discharger shall comply with Monitoring and Reporting Program (MRP) No. [R5-2007-0122](#), which is part of this Order, and any revisions thereto as adopted by the Regional Water Board or approved by the Executive Officer. The submittal date shall be no later than the submittal date specified in the Monitoring and Reporting Program for Discharger self-monitoring reports.
3. The Discharger shall keep at the Facility a copy of this Order, including its MRP, Information Sheet, attachments, and Standard Provisions, for reference by operating personnel. Key operating personnel shall be familiar with its contents.
4. The Discharger must 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 Discharger 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 Discharger only when the operation is necessary to achieve compliance with the conditions of the Order.
5. 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. To demonstrate compliance with sections 415 and 3065 of Title 16, CCR, all technical reports must contain a statement of the qualifications of the responsible registered professional(s). As required by these laws, completed technical reports must bear the signature(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.
6. The Discharger must comply with all conditions of this Order, including timely submittal of technical and monitoring reports as directed by the Executive Officer. Accordingly, the Discharger shall submit to the Regional Water Board on or before each report due date the specified document or, if an action is specified, a written report detailing evidence of compliance with the date and task. If noncompliance is being reported, the reasons for such noncompliance shall be stated, plus an estimate of the date when the Discharger will be in compliance. The Discharger shall notify the Regional Water Board by letter when it returns to compliance with the time schedule. Violations may result in enforcement action, including Regional Water Board or court orders requiring corrective action or imposing civil monetary liability, or in revision or rescission of this Order.

7. In the event of any change in control or ownership of land or waste treatment and storage facilities presently owned or controlled by the Discharger, 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 the appropriate Regional Water Board office (currently, the Fresno office).
8. 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 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 California Water Code. If approved by the Executive Officer, the transfer request will be submitted to the Regional Water Board for its consideration of transferring the ownership of this Order at one of its regularly scheduled meetings.
9. At least **90 days** prior to termination or expiration of any agreement involving a water reuse area that may jeopardize compliance with this Order due to lack of disposal capacity, the Discharger shall notify the Executive Officer in writing of the situation and of what measures have been taken or are being taken to ensure full compliance with this Order.
10. **By 1 January 2008**, the Discharger shall submit a Final Salinity Control Plan detailing all measures taken to reduce the salinity of the discharge, and documenting that all feasible salinity reduction measures have been implemented.
11. The pH of the discharge shall not be less than 4.5 or greater than 10 pH units for more than three consecutive 24-hour composite sampling events. In the event that the pH of the discharge is outside of this range for more than three consecutive sampling events, the Discharger shall submit a technical evaluation in its monthly SMRs documenting the pH of the blended discharge to the Reuse Area, and if necessary demonstrate that the effect of the discharge on soil pH will not exceed the buffering capacity of the soil profile.
12. If the Regional Water Board determines that waste constituents in the discharge have reasonable potential to cause or contribute to an exceedance of an objective for groundwater, this Order may be reopened for consideration of addition or revision of appropriate numerical effluent or groundwater limitations for the problem constituents.

WASTE DISCHARGE REQUIREMENTS ORDER NO. R5-2007-0122
MOZZARELLA FRESCA, INC.
TIPTON CHEESE PROCESSING PLANT
TULARE COUNTY

-16-

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 14 September 2007.

PAMELA C. CREEDON, Executive Officer

Order Attachments:

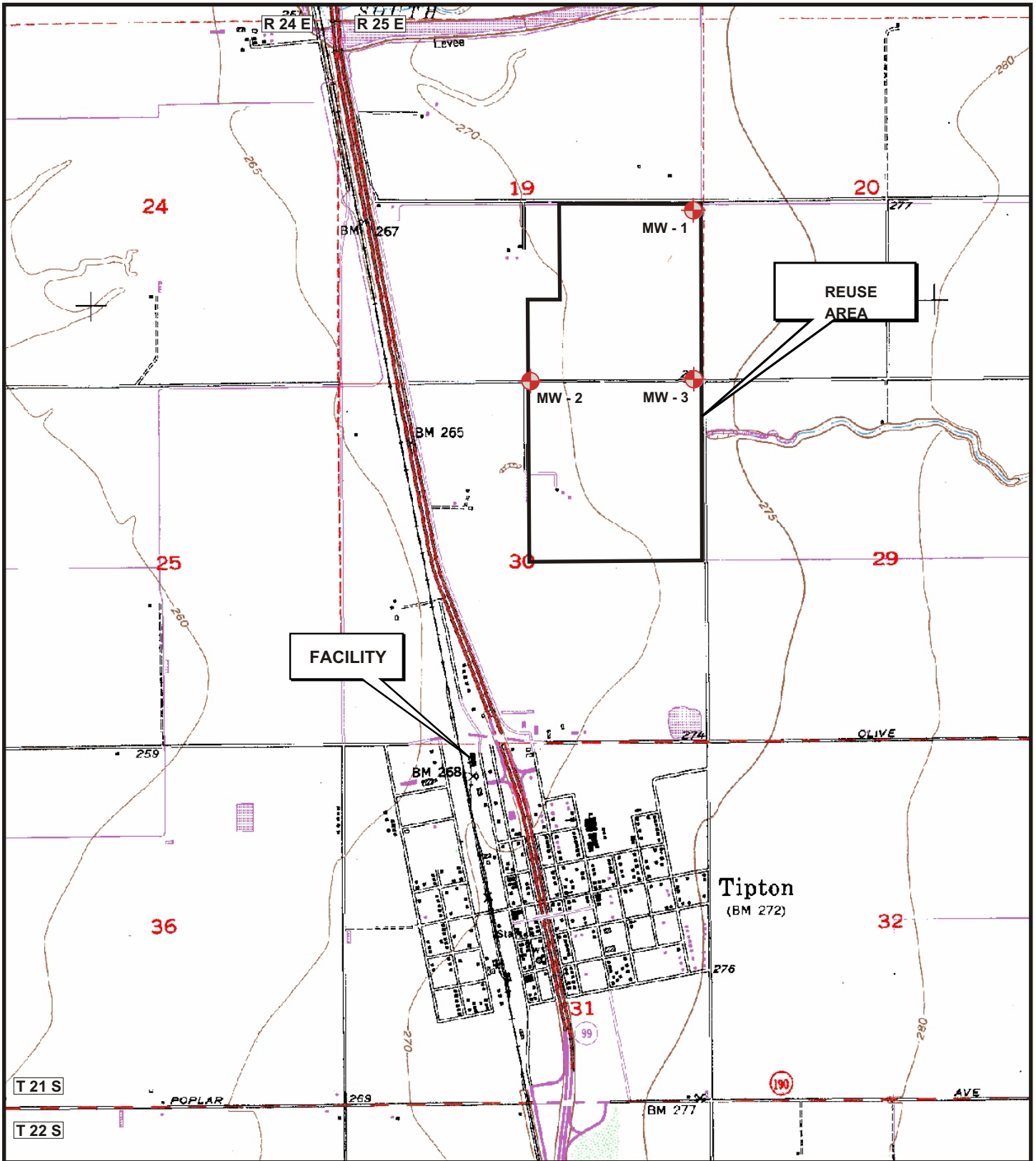
- A. Vicinity Map
- B. Cheese Processing Plant Flow Diagram

Monitoring and Reporting Program No. R5-2007-0122

Information Sheet

Standard Provisions (1 March 1991) (separate attachment to Discharger only)

kc/DKP/kes 7/03/07



Map Source:
 TIPTON 7.5 Minute USGS Quadrangle
 Sections 19 & 30, T21S, R25E, MDB&M



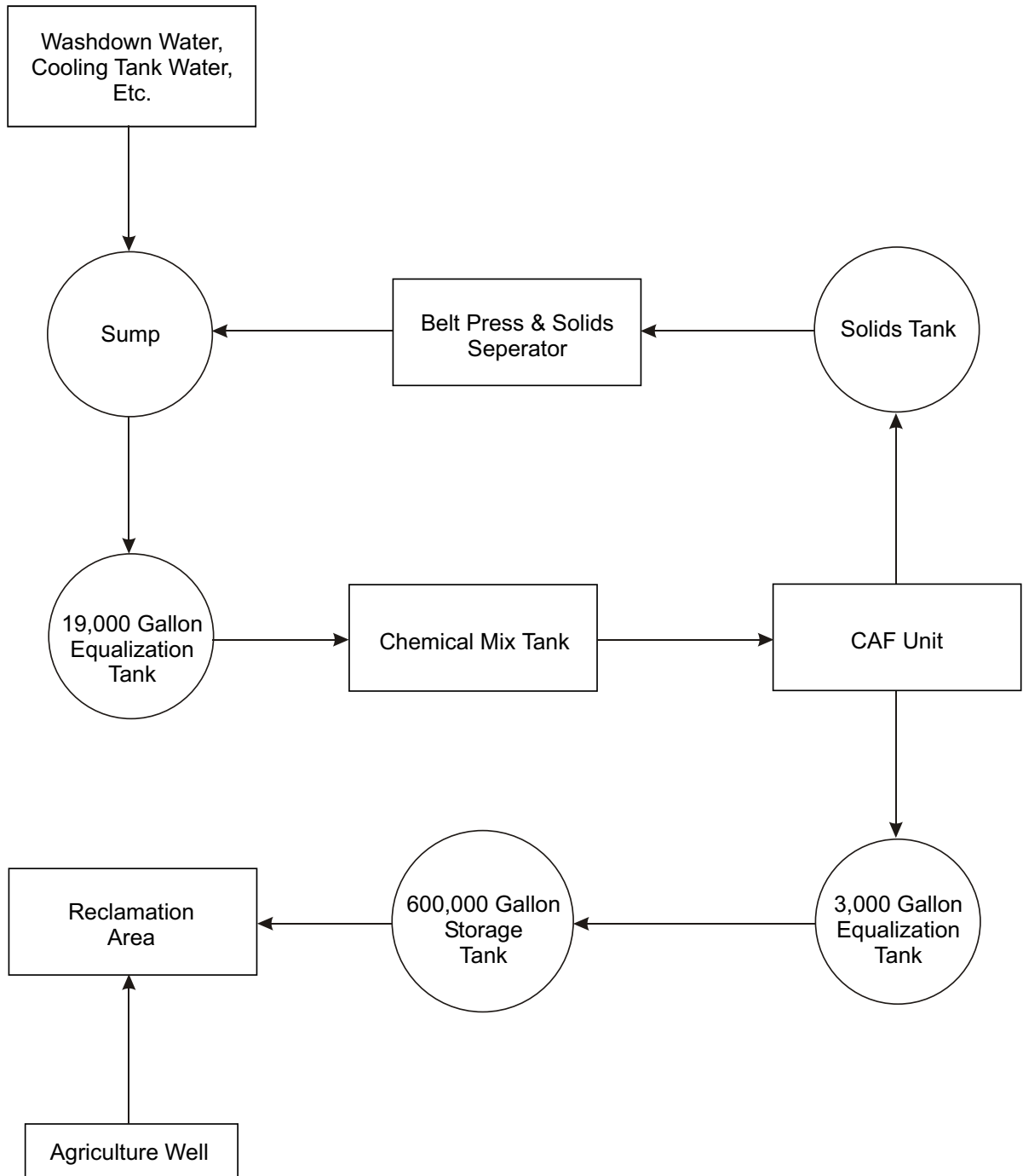
SCALE
 1 INCH = 2,000 FEET

SITE LOCATION MAP

ORDER NO. R5 -2007-0122

WASTE DISCHARGE REQUIREMENTS
 FOR
 MOZZARELLA FRESCA, INC.
 TIPTON CHEESE PROCESSING PLANT
 TULARE COUNTY

ATTACHMENT A



CHEESE PROCESSING PLANT FLOW DIAGRAM

ORDER NO. R5 -2007-0122
 WASTE DISCHARGE REQUIREMENTS
 FOR
 MOZZARELLA FRESCA, INC.
 TIPTON CHEESE PROCESSING PLANT
 TULARE COUNTY

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. R5-2007-0122

FOR
MOZZARELLA FRESCA, INC.
TIPTON CHEESE PROCESSING PLANT
TULARE COUNTY

This Monitoring and Reporting Program (MRP) is required pursuant to California Water Code (CWC) section 13267. The Discharger shall not implement any changes to this MRP unless and until the Regional Board adopts or the Executive Officer issues a revised MRP. Changes to sample location shall be established with concurrence of Regional Water Board staff, and a description of the revised stations shall be submitted for approval by the Executive Officer. All samples should be representative of the volume and nature of the discharge or matrix of material sampled. The time, date, and location of each sample shall be recorded on the sample chain of custody form. All analyses shall be performed in accordance with Standard Provisions and Reporting Requirements for Waste Discharge Requirements, dated 1 March 1991 (Standard Provisions). The results of analyses performed in accordance with specified test procedures, taken more frequently than required at the locations specified in this MRP, shall be reported to the Regional Water Board and used in determining compliance.

Field test instruments (such as pH) may be used provided that:

1. The operator is trained in the proper use of the instrument;
2. The instruments are calibrated prior to each use;
3. Instruments are serviced and/or calibrated at the recommended frequency by the manufacturer or in accordance with manufacturer instructions; and
4. Field calibration reports are submitted as described in the "Reporting" section of this MRP.

In addition to details specified in Standard Provision, Provisions for Monitoring C.3, records of monitoring information shall also include the following:

1. Method detection limit (MDL);
2. Reporting limit (RL) (i.e., a practical quantitation limit or PQL); and
3. Documentation of cation/anion balance for general minerals analysis of supply water, and groundwater samples.

All laboratory results shall be reported down to the MDL. Non-detected results shall be reported as less than the MDL (<MDL). Results above the MDL, but below the concentration of the lowest calibration standard for multipoint calibration methods or below the reporting limit for other methods shall be flagged as estimated.

All analyses shall be performed in accordance with the latest edition of Guidelines Establishing Test Procedures for Analysis of Pollutants, promulgated by EPA (40 CFR 136) or other procedures approved by the Executive Officer, provided the methods have method detection limits equal to or lower than the analytical methods specified in this MRP. In reporting data, the Discharger shall indicate whether any analysis was performed using a method not in

conformance with EPA's Guidelines. Analyses may also comply with the methods and holding times specified in: Methods for Chemical Analysis of Water and Wastes (EPA-600/4-79-020, 1983); Methods for Determination of Inorganic Substance in Environmental Samples (EPA/600/R-93/100, 1993); Standard Methods for the Examination of Water and Wastewater, 20th Edition (WEF, APHA, AWWA); and Soil, Plant and Water Reference Methods for the Western Region, 2003, 2nd Edition, 2003.

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

DISCHARGE MONITORING

Samples of the discharge shall be collected at a point after the Cavitation Air Floatation (CAF) unit. The Discharger shall monitor the discharge for the constituents and frequencies specified below:

<u>Constituent/Parameter</u>	<u>Units</u>	<u>Type</u>	<u>Frequency</u>
Daily Flow ¹	gal/day	Continuous	Daily
Electrical Conductivity	µmhos/cm	24 hr – Composite ²	Weekly
pH	pH units	24 hr – Composite	Weekly
Total Suspended Solids (TSS)	mg/L	24 hr – Composite	Monthly
BOD ₅ ³	mg/L	24 hr – Composite	Monthly
Total Kjeldahl Nitrogen (TKN)	mg/L	24 hr – Composite	Monthly
Ammonia (as NH ₃ -N)	mg/L	24 hr – Composite	Monthly
Nitrate(as NO ₃ -N)	mg/L	24 hr – Composite	Monthly
Total Nitrogen	mg/L	24 hr – Composite	Monthly
Inorganic TDS ⁴	mg/L	24 hr – Composite	Monthly
General Minerals ⁵	mg/L	24 hr – Composite	Annually ⁶

¹ Flow shall be measured using a magnetic or ultrasonic flow meter.

² Unless otherwise approved, 24-hour composite samples shall be collected using a composite wastewater sampler synchronized with flow. Samples shall be refrigerated at 4 °C (39.2 °F).

³ Five-day, 20°C biochemical oxygen demand (BOD₅)

⁴ TDS, shall be determined using EPA Test Method No. 160.1 for combined organic and inorganic TDS and EPA Method No. 160.4 for inorganic TDS.

⁵ General Minerals shall include the constituents in the General Minerals Analyte List below.

⁶ In July.

General Minerals Analyte List¹

Alkalinity (as CaCO ₃)	Carbonate (as CaCO ₃)	pH
Arsenic	Chloride	Potassium
Bicarbonate (as CaCO ₃)	EC	Sodium
Boron	Hardness (as CaCO ₃)	Sulfate
Calcium	Magnesium	TDS

^{1.} General Minerals Analyte lists may vary depending on the laboratory, but shall include at least the above analytes and properties.

GROUNDWATER MONITORING

Concurrently with groundwater quality sampling, the Discharger shall measure the water level in each well as groundwater depth (in feet and hundredths) and as groundwater surface elevation (in feet and hundreds above mean sea level). The horizontal geodetic location of each monitoring well shall be provided where the point of beginning shall be described by the California State Plane Coordinate System, 1983 datum.

Prior to collecting samples and after measuring the water level, 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 from 3 to 5 volumes of the standing water within the well casing and screen, or additionally the filter pack pore volume.

The Discharger shall include in its submittal of groundwater elevation data, a contour map based on said data showing the gradient and direction of groundwater flow under/around the facility and effluent disposal area(s). The groundwater contour map shall also include the location of the monitoring wells and active storage and land disposal areas (i.e., areas receiving treated effluent).

The Discharger shall monitor groundwater for the constituents and frequencies specified below.

<u>Constituent/Parameter</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Frequency</u>
Depth to groundwater	Feet ¹	Measured	Quarterly ²
Groundwater elevation	Feet above mean sea level	Calculated	Quarterly ²
pH	pH units	Grab	Quarterly ²
Electrical Conductivity	µmhos/cm	Grab	Quarterly ²

<u>Constituent/Parameter</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Frequency</u>
Total Dissolved Solids	mg/L	Grab	Quarterly ²
Total Organic Carbon	mg/L	Grab	Annually ⁵
Ammonia (as NH ₃ -N)	mg/L	Grab	Annually ⁵
Nitrate (as NO ₃ -N)	mg/L	Grab	Annually ⁵
TKN	mg/L	Grab	Annually ⁵
Total Nitrogen	mg/L	Calculated	Annually ⁵
General Minerals ³	mg/L	Grab	Annually ⁵
Iron ⁴	mg/L	Grab	Annually ⁵
Manganese ⁴	mg/L	Grab	Annually ⁵

¹ To the nearest hundredth of a foot.

² January, April, July and October.

³ General Minerals shall include at least the constituents listed in General Minerals Analyte List included herein in the Discharge Monitoring section. An anion/cation balance demonstrating that analyses are complete shall accompany the results.

⁴ Samples must be filtered prior to preservation.

⁵ In October.

SOURCE WATER MONITORING

The Discharger's facility supply water shall be monitored for the following:

<u>Constituent/Parameter</u>	<u>Units</u>	<u>Measurement</u>	<u>Frequency</u>
EC ¹	µmhos/cm	Grab	Annually ²
Nitrate (as NO ₃ -N)	mg/L	Grab	Annually

¹ EC shall be reported as a flow-weighted average from all supply wells. Include copies of supporting calculations with monitoring reports.

² In July.

USE AREA MONITORING

The Discharger shall perform the following routine monitoring and loading calculations for each discrete irrigation area. Data shall be collected and submitted quarterly:

<u>Constituent/Parameter</u>	<u>Units</u>	<u>Type</u>	<u>Frequency</u>
Wastewater application field number	N/A	N/A	Daily
Precipitation	inches ¹	Rain gauge ²	Daily
Wastewater application area	acres	N/A	Daily
Wastewater flow	mgd	Continuous	Daily
Wastewater loading	inches/day/acre ³	Calculated	Daily
Supplemental irrigation flow	mgd	Estimated	Daily
Supplemental irrigation flow	inches/day/acre ³	Calculated	Daily
Total hydraulic loading rate ⁴	inches/day/acre ³	Calculated	Daily
BOD ₅ loading rate ⁵			
on application day ⁶	lbs/acre/day	Calculated	Daily
averaged over application cycle ⁷	lbs/acre/day	Calculated	Daily
Monthly nitrogen loading rates ⁸			
from wastewater	lbs/acre/month	Calculated	Monthly
from fertilizers	lbs/acre/month	Calculated	Monthly
Cumulative Annual nitrogen loading rate ⁹	lbs/acre	Calculated	Monthly
Inorganic TDS loading rates ¹⁰	lbs/acre/month	Calculated	Monthly

¹ Report to the nearest 0.1 inch.

² National Weather Service data from the nearest weather station is acceptable.

³ Report to the nearest 0.001 inch.

⁴ Includes total liquid application (i.e., precipitation, wastewater, and irrigation water).

⁵ BOD₅ loading rates shall be calculated using the applied volume of wastewater, actual application area, and the average of the three most recent results of wastewater BOD₅.

⁶ Application day, as referred to in this MRP, shall be defined as a 24-hour period.

⁷ Application cycle, as referred to in this MRP, shall be defined as the period (in days) of wastewater application followed by resting interval until next wastewater application.

⁸ Wastewater nitrogen loading rates shall be calculated using the applied volume of wastewater, actual application area, and the wastewater total nitrogen.

⁹ Starting as zero each January 1

¹⁰ Inorganic TDS loading rates shall be calculated using the applied volume of wastewater, actual application area, and the average of the three most recent results of wastewater inorganic TDS.

In addition, the Discharger shall collect grab samples from the Use Area Irrigation supply wells and analyze them for the following:

<u>Constituent/Parameter</u>	<u>Units</u>	<u>Measurement</u>	<u>Frequency</u>
EC ¹	µmhos/cm	Grab	Annually ²
Nitrate (as NO ₃ -N)	mg/L	Grab	Annually

¹ EC shall be reported as a flow-weighted average from all supply wells. Include copies of supporting calculations with monitoring reports.

² In July.

REPORTING

The Discharger shall report monitoring data and information as required in this MRP and as required in the Standard Provisions.

Monitoring data and/or discussions submitted concerning the Treatment System's performance must also be signed and certified by the chief plant operator. When reports contain laboratory analyses performed by the Discharger and the chief plant operator is not in the direct line of supervision of the laboratory, reports must also be signed and certified by the chief of the laboratory.

In reporting monitoring data, the Discharger 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 Discharger complies with waste discharge requirements. If the Discharger monitors any pollutant at the locations designated herein more frequently than is required by this Order, the results of such monitoring shall be included in the discharge monitoring report.

A. Quarterly Reports

Wastewater: Daily, weekly, monthly, and quarterly monitoring data shall be reported in quarterly monitoring reports. Quarterly monitoring reports shall be submitted to the Regional Water Board **by the 1st day of the second month after the calendar quarter** (i.e., the 1st Quarter Report is due by 1 May, 2nd Quarter Report is due by 1 August, and the 3rd Quarter Report is due 1 November). At a minimum, the quarterly reports shall include:

1. Results of discharge, and use area monitoring;
2. Calculated Monthly Average Daily Flow;
3. Daily, Monthly, and Average loading calculations;
4. A comparison of monitoring data to the discharge specifications and an explanation of any violation of those requirements. Data shall be presented in tabular format;

5. Copies of laboratory analytical reports; and
6. A calibration log verifying calibration of all hand-held monitoring instruments and devices used to comply with the prescribed monitoring program.

Groundwater: Quarterly groundwater monitoring data shall be reported in the quarterly monitoring reports and submitted to the Regional Water Board as detailed in the previous section. Quarterly monitoring reports shall include all monitoring data required from quarterly groundwater monitoring events. The quarterly groundwater monitoring reports shall contain:

1. Quarterly groundwater contour maps;
2. Graphs of the laboratory analytical data for all samples taken from each well within at least the previous five calendar years. Each such graph shall plot over time for a given monitoring well the concentration of one or more waste constituents; and
3. All monitoring analytical data obtained during the quarter presented in tabular form and included with previous data obtained for the given well.

B. Annual Reports

Wastewater: An Annual Report shall be prepared as a fourth quarter monitoring report. The Annual Report will include all monitoring data required in the monthly/quarterly schedule plus the results of any annually sampled constituents (general minerals, selected metals, etc). The Annual Report shall be submitted to the Regional Board **by 1 February of the year following the year the samples were collected.** In addition to the data normally presented, the Annual Report shall include the following:

1. The names, certificate grades, and general responsibilities of all persons in charge of wastewater treatment and disposal;
2. The names and telephone numbers of persons to contact regarding 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. The results of an annual evaluation conducted pursuant to Standard Provisions E.4 and a figure depicting monthly average discharge flow for the previous five calendar years;
5. The most recent water supply report including laboratory data;
6. A summary of solids monitoring, including:
 - a. Annual solids production in dry tons and percent solids; and
 - b. A description of disposal methods. If more than one method is used, include the percentage disposed of by each method.

7. A summary and discussion of the compliance record for the reporting period. If violations have occurred, the report shall also discuss the corrective actions taken and planned to bring the discharge into full compliance with this Order.

Groundwater: An Annual Groundwater Monitoring Report shall be prepared as a fourth quarter groundwater monitoring report. The Annual Groundwater Monitoring Report will include all groundwater monitoring data required in the groundwater monitoring schedule plus the results of any annually sampled groundwater constituents (general minerals, selected metals, etc). The Annual Groundwater Monitoring Report shall be submitted to the Regional Board **by 1 February of the year following the year the samples were collected.** In addition to the data normally presented in the quarterly groundwater monitoring reports, the Annual Report shall include the following:

1. Quarterly groundwater contour maps from the previous four quarters;
2. Graphs of the analytical data for all samples collected from each monitoring well for at least five calendar years. Each such graph shall plot over time for a given monitoring well the concentration of one or more waste constituents specified herein and selected in concurrence with Regional Water Board staff. Graphs shall be plotted at a scale appropriate to show trends or variations in water quality, and shall plot each datum, rather than plotting mean values.
3. All monitoring data obtained during the previous monitoring events for at least the last five calendar years.

All technical reports required herein must be overseen and certified by a California registered civil engineer, certified engineering geologist, or certified hydrogeologist in accordance with California Business and Professions Code, sections 6735, 7835, and 7835.1.

All reports submitted in response to this Order shall comply with the signatory requirements in Standard Provision B.3.

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

MONITORING AND REPORTING PROGRAM NO. R5-2007-0122
MOZZARELLA FRESCA, INC.
TIPTON CHEESE PROCESSING PLANT
TULARE COUNTY

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

Ordered by: _____
PAMELA C. CREEDON, Executive Officer

(Date)

kc/DKP/kes 7/03/07

INFORMATION SHEET

R5-2007-0122
MOZZARELLA FRESCA, INC.
TIPTON CHEESE PROCESSING PLANT
TULARE COUNTY

Background

Prior to January 2003, the Tipton Cheese Processing Plant (Facility) was operated by the Sequoia Specialty Cheese Company. This Facility was not previously regulated under Waste Discharge Requirements. Mozzarella Fresca (Discharger) purchased and upgraded the Facility and commenced operation in September 2003 for specialty cheese manufacturing. The wastewater quantity and strength exceeded the Tipton Community Services District wastewater treatment facility's ability to treat the wastewater.

Mozzarella Fresca then made an agreement with FM Dairy No. 2 to discharge into existing dairy ponds. Cleanup and Abatement Order (CAO) No. R5-2005-0702 was issued to Mozzarella Fresca and FM Dairy No. 2 and required they cease discharging wastewater to the Dairy, which they did by 14 April 2005. Mozzarella Fresca now discharges to farmland owned by Mr. Mike Silva (Mike Silva Ranches).

The Facility is a cheese manufacturing plant that processes milk into mozzarella and ricotta cheese. The present volume of wastewater generated at the Facility is approximately 0.11 million gallons per day. The Discharger estimates that it will increase to approximately 0.25 mgd within the next five years. In 2006 approximately 90 acre-feet of wastewater was applied to the fields in the Reuse Area. At the estimated flow rate of 0.25 mgd the yearly hydraulic wastewater load to the fields would be approximately 240 acre-feet.

The Reuse Area is divided into four fields for a total of 288 net acres used to grow feed and fodder crops such as alfalfa, cotton, wheat and corn silage. Land use in the vicinity is primarily agricultural. Soils in the area consist primarily of Biggriz Loam (Class II through VI soils) and Colpien Loam (Class I soils). Other soils in the immediate area include Akers-Akers saline-sodic (Class II through VI soils) and Tagus Loam (Class I soils). Crops grown in the area include alfalfa, corn, vineyards, cotton, sugar beets and hay and grain crops along with orchard crops such as almonds, walnuts, and plums. Some of the crops (specifically almonds, grapes, and plums) are listed as sensitive to moderately sensitive to salt depending on the stage of growth. Though crops with low salt tolerances such as strawberries, onions, beans could potentially be grown in Class I soils, which make up approximately 40% to 50% of the soils in the area, none of these crops were observed or reported as being currently grown in the area based on DWR land use maps.

According to the RWD the wastewater is blended with a combination of groundwater, and surface water supplied by the Lower Tule River Irrigation District, which contributes water from the Lower Tule River and the Friant-Kern Canal to meet the irrigation demands (the RWD estimates the contribution from groundwater and surface water at 40% and 60%, respectively). The blended irrigation water is applied via flood irrigation at plant uptake rates for both nutrient and hydraulic loading during the growing season. During the non-growing season, Mr. Silva practices pre-irrigation to promote beneficial soil bacteria and to leach salts from the soil. The well water to wastewater ratio is typically three to one and often higher

during the summer months to meet crop demands. The average BOD₅ and Total Nitrogen of the wastewater is approximately 700 mg/L and 22 mg/L, respectively, which leads to loading rates of less than 10 lbs/acre/day for BOD and less than 5 lbs/acre/month for Nitrogen.

Solids Disposal

Solids removed from the wastewater by the CAF unit are dewatered prior to being hauled off-site to the local landfill for disposal. Decant water from the CAF unit is returned to the main sump.

Groundwater Conditions

Regional groundwater flows west-southwest and the depth of water occurs between 80 and 100 feet below ground surface (bgs), according to information in *Lines of Equal Elevation of Water in Wells in Unconfined Aquifer*, published by the California Department of Water Resources (DWR) in Spring 2004. During the initial sampling of three groundwater monitoring wells in the Reuse Area in January 2007 the actual depth to shallow groundwater was between 55 and 67 feet bsg and groundwater flow was to the south-southwest at a gradient of 5 feet/1000 feet. Based on the limited data from the groundwater sampling in January and February 2007 first-encountered groundwater beneath the Reclamation Area is of good quality with nitrate as nitrogen concentrations below the Maximum Contaminant Level (MCLs) for nitrogen of 10 mg/L in both up-gradient and down-gradient monitoring wells and an average EC concentration of approximately 400 µmhos/cm.

Compliance History

On 19 April 2004 the Regional Water Board adopted Monitoring and Reporting Program (MRP) No. R5-2004-0816 in accordance with the provisions of CWC section 13267. The MRP allowed the Discharger to characterize the waste discharge while operating in accordance with the provisions of CWC section 13264. The discharger submits monthly Self Monitoring reports as required by the MRP.

Basin Plan, Beneficial Uses, and Regulatory Considerations

The Basin Plan indicates the greatest long-term problem facing the entire Tulare Lake Basin is increasing salinity in groundwater, a process accelerated by man's activities and particularly affected by intensive irrigated agriculture. The Basin Plan recognizes that degradation is unavoidable until there is a long-term solution to the salt imbalance. The Regional Board encourages proactive management of waste streams by dischargers to control addition of salt through use, and has established an incremental EC limitation of 500 µmhos/cm or a 1,000 µmhos/cm, as the measure of the maximum permissible addition of salt constituents through use. Discharges to areas that may recharge good quality groundwaters shall not exceed an EC of 1,000 µmhos/cm, a chloride content of 175 mg/L, or boron content of 1.0 mg/L.

Title 22 in Table 64449 B establishes recommended, upper, and short term ranges for EC, TDS, chloride, and sulfate. The recommended and upper ranges are 900 and 1,600 $\mu\text{mhos/cm}$ for EC, 500 and 1,000 mg/L for TDS, and 250 and 500 mg/L for chloride and sulfate, respectively.

Anitdegradation

The antidegradation directives of State Water Board Resolution No. 68-16, "Statement of Policy With Respect to Maintaining High Quality Waters in California," or "Antidegradation Policy" require that waters of the State that are better in quality than established water quality objectives be maintained "consistent with the maximum benefit to the people of the State." Waters can be of high quality for some constituents or beneficial uses and not others. Policy and procedures for complying with this directive are set forth in the Basin Plan.

Constitutes of concern that have the potential to degrade groundwater include, in part, nutrients and salts. However, the discharge will likely not degrade the beneficial uses of groundwater because:

- a. For nitrogen, the loading to the Reuse Area is less than 5 lbs/acre/month or 60 lbs/year, which is significantly below the nitrogen uptake rates of 400 to 480 lbs/year for alfalfa and a double crop of corn and winter wheat.
- b. For BOD, the loading rate to the Reuse Area is less than 10 lbs/acre/day, which is significantly below the USEPA recommended rate of 100 lbs/acre/day according to publication No. 625/3-77-007, *Pollution Abatement in the Fruit and Vegetable Industry*.
- c. For salinity, the average EC of the wastewater (1,400 $\mu\text{mhos/cm}$) exceeds the Basin Plan Limit of 1,000 $\mu\text{mhos/cm}$. However, the Basin Plan does allow blending to promote beneficial reuse. The wastewater is used to supplement irrigation of existing commercial crops and is blended at a minimum of three to one to meet irrigation needs. With blending, the EC of the discharge will be about 700 $\mu\text{mhos/cm}$, which meets the definition of a Class I Irrigation Water as defined by the U.S. Department of Agriculture. Although not quantified, a portion of the EC in the discharge can be attributed to organic compounds that will break down in the soil profile. In addition, the Discharger has implemented management measures proposed in various plans and reports reducing the EC of the discharge from approximately 2,200 $\mu\text{mhos/cm}$ to approximately 1,400 $\mu\text{mhos/cm}$. Therefore, any degradation would be consistent with the antidegradation policy.

Treatment Technology and Control

The Discharger provides treatment and control of the discharge that incorporates:

- a. Screening to remove solids and haul them offsite for disposal.
- b. Pre-treatment using a CAF system to remove fat and suspended solids from the wastewater.
- c. Use of drip pans, piping, and flow controls to reduce product leaks and spills.
- d. Application of wastewater at plant uptake rates for nitrogen and organic loading.
- e. Operation of a tail water recovery system in the Reuse Area to collect and recirculate water to improve irrigation efficiency and prevent standing water.

Title 27

Title 27, CCR, Section 20005 et seq. ("Title 27"), contains regulations to address certain discharges to land. Title 27 establishes a waste classification system, specifies siting and construction standards for containment of classified waste, requires extensive monitoring of groundwater and the unsaturated zone for any indication of failure of containment, and specifies closure and post-closure maintenance requirements. Generally, no degradation of groundwater quality by any waste constituent is acceptable under Title 27 regulations.

To comply with the requirements of Title 27 the Discharger constructed a 600,000-gallon storage tank to hold cheese processing wastewater prior to blending with irrigation water and discharge to the Reuse Area. The tank is a fully enclosed aboveground storage tank constructed of reinforced concrete and as such is exempt from Title 27, pursuant to section 20090(i).

CEQA

The Regional Water Board, as a responsible agency under CEQA, has reviewed the Project Review Consultation Notice Case No. PSP 04 028, by the Resource Management Agency, Tulare County for the project relative to impacts to groundwater quality. The Regional Water Board concurred with the consultation notice about mitigation of the project's potential groundwater impacts, but requested that the County require that all ponds or other surface impoundments that receive cheese process wastewater be constructed and operated in accordance with the standards of Title 27 of the California Code of Regulations unless the Regional Water Board finds the discharge exempt from Title 27 and approves an alternative design. To meet this requirement the Discharger constructed a 600,000-gallon storage tank to hold the wastewater prior to blending with irrigation water and discharge to the irrigation fields. The tank is a fully enclosed aboveground storage tank constructed of reinforced concrete and as such is exempt from Title 27, pursuant to section 20090(i).

A Proposed Negative Declaration for Project PSP- 04-028 was approved by the Tulare County Resource Management Agency on 28 September 2004 with Preliminary Conditions of

Approval including groundwater monitoring, General Construction Activity Storm Water Permit, and the Title 27 impoundment requirements recommended by the Regional Water Board. On 3 November 2004, the Planning Commission for the County of Tulare approved a Special Use Permit, Resolution No. 8078, for Application No. PSP 04-028, to allow discharge of pre-treated wastewater from Mozzarella Fresca's Tipton Cheese Processing Plant to approximately 310 acres (gross) at Mike Silva Ranches.

Proposed Order Terms and Conditions

Discharge Prohibitions, Effluent Limitations, Discharge Specifications, and Provisions

The proposed Order prohibits discharge to surface waters and water drainage courses.

The proposed Order would set a monthly average daily flow limit of 0.25 mgd and effluent limits for EC, boron, and chloride of 1,600 $\mu\text{mhos/cm}$, 1 mg/L, and 175 mg/L, respectively.

The proposed WDRs would prescribe that the application of waste constituents to the Reuse Area shall be at reasonable agronomic rates to preclude creation of a nuisance or degradation of groundwater, considering the crop, soil, climate, and irrigation management system. The annual nutritive loading of the Reuse Area, including the nutritive value of organic and chemical fertilizers and of the wastewater shall not exceed the annual crop demand.

The proposed WDRs would prescribe groundwater limitations that implement water quality objectives for groundwater from the Basin Plan. The limitations require that the discharge not cause or contribute to exceedances of these objectives or natural background water quality, whichever is greatest.

The proposed WDRs would proscribe that the pH of the discharge shall not be less than 4.5 or greater than 10 pH units for more than three consecutive 24-hour composite sampling events. This range was established as half-way between the pH range of natural waters and hazardous concentrations, and that with blending the pH of the discharge would be within the acceptable range for agricultural purposes. In the event that the pH of the discharge is outside of this range for more than three sampling events, the Discharger shall submit a technical evaluation in its monthly SMRs documenting the pH of the blended discharge to the Reuse Area, and if necessary demonstrate that the effect of the discharge on soil pH will not exceed the buffering capacity of the soil profile.

The proposed WDRs would require the Discharger submit a Final Salinity Control Plan detailing all measures taken to reduce the salinity of the discharge, and documenting that all feasible salinity reduction measures have been implemented.

Monitoring Requirements

Section 13267 of the CWC authorizes the Regional Board to require monitoring and technical reports as necessary to investigate the impact of a waste discharge on waters of the state. In recent years there has been increased emphasis on obtaining all necessary information, assuring the information is timely as well as representative and accurate, and thereby improving accountability of any discharger for meeting the conditions of discharge. Section 13268 of the CWC authorizes assessment civil administrative liability where appropriate.

The proposed Order includes effluent monitoring requirements, Use Area monitoring, and groundwater and water supply monitoring. In order to adequately characterize wastewater, the Discharger is required to monitor for BOD₅, pH, EC, TDS, nitrogen, and other constituents.

The Discharger must monitor groundwater for waste constituents expected to be present in the discharge, and capable of reaching groundwater, and violating groundwater limitations if its treatment, control, and environmental attenuation, proves inadequate. For each constituent listed in [Section F, Groundwater Limitations](#), of the WDR, the Discharger must, as part of each monitoring event, compare concentrations of constituents found in each monitoring well (or similar type of groundwater monitoring device) to the background concentration or to prescribed numerical limitations to determine compliance.

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 applicable laws and regulations change.

kc/DKP/kes 7/03/07