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For Petitioner California Sportfishing Protection Alliance

BEFORE THE STATE WATER RESOURCES CONTROL BOARD

In the Matter of Waste Discharge Requirements)
For Hilmar Cheese Company, Inc., Reclamation)
Area Owners, Hilmar Cheese Processing Plant;)
California Regional Water Quality Control Board)
- Central Valley Region Order No. R5-2010-0008)
And Time Schedule Order No. R5-2010-0009)

PETITION FOR REVIEW

Pursuant to Section 13320 of California Water Code and Section 2050 of Title 23 of the California Code of Regulations (CCR), California Sportfishing Protection Alliance (“CSPA” or “petitioner”) petitions the State Water Resources Control Board (State Board) to review and vacate the final decision of the California Regional Water Quality Control Board for the Central

Valley Region ("Regional Board") in adopting Waste Discharge Requirements for Hilmar Cheese Company, Inc., Reclamation Area Owners, Hilmar Cheese Processing Plant, on 29 January 2010. See Orders No. R5-2010-0008 and R5-2010-0009. The issues raised in this petition were raised in timely written comments.

1. NAME AND ADDRESS OF THE PETITIONERS:

California Sportfishing Protection Alliance
3536 Rainier Avenue
Stockton, California 95204
Attention: Bill Jennings, Executive Director

2. THE SPECIFIC ACTION OR INACTION OF THE REGIONAL BOARD WHICH THE STATE BOARD IS REQUESTED TO REVIEW AND A COPY OF ANY ORDER OR RESOLUTION OF THE REGIONAL BOARD WHICH IS REFERRED TO IN THE PETITION:

Petitioner seeks review of Orders No. R5-2010-0008 and R5-2010-0009, Waste Discharge Requirements and Time Schedule Order for the Hilmar Cheese Company, Inc., Reclamation Area Owners, Hilmar Cheese Processing Plant. A copy of the adopted Order is attached as Attachment No. 1.

3. THE DATE ON WHICH THE REGIONAL BOARD ACTED OR REFUSED TO ACT OR ON WHICH THE REGIONAL BOARD WAS REQUESTED TO ACT:

29 January 2010

4. A FULL AND COMPLETE STATEMENT OF THE REASONS THE ACTION OR FAILURE TO ACT WAS INAPPROPRIATE OR IMPROPER:

CSPA submitted a detailed comment letter on 9 January 2009. Ms. Jo Anne Kipps submitted a comment letter on 3 January 2010. Those letters and the following comments set forth in detail the reasons and points and authorities why CSPA believes the Order fails to comport with statutory and regulatory requirements. The specific reasons the adopted Orders are improper are:

General Comments

The Waste Discharge Requirements (WDRs) Order for Hilmar Cheese Company, Inc. (Hilmar Cheese) and Reclamation Area Owners proposes to carry over a modified version of an effluent limitation for salinity expressed as electrical conductivity (EC) of 900 micromhos per centimeter (umhos/cm) contained in WDRs Order 97-206. This Order required Hilmar Cheese to achieve

full compliance with the EC limit effective 15 March 1999. The Regional Board had prescribed this EC limit back in 1997 to ensure that Hilmar Cheese's discharge of cheese processing wastewater did not impair the beneficial uses of shallow groundwater affected by its discharge, and to implement a mitigation measure contained in a mitigated negative declaration the Regional Board approved for Hilmar Cheese's discharge pursuant to the California Environmental Quality Act.

Hilmar Cheese did not contest the WDRs or mitigated negative declaration, and attempted to comply with the EC limit by constructing a wastewater treatment facility (WWTF) that featured a technology that was unproven for Hilmar Cheese's discharge, and which proved unsuccessful. Hilmar Cheese next implemented conventional secondary treatment followed by ultrafiltration (UF) and reverse osmosis (RO). But Hilmar Cheese also increased the Plant's cheese processing capacity and wastewater discharge flows. It did so without installing sufficient treatment capacity to process the Plant's entire wastewater flow, and continued to discharge partially-treated wastewater to land in a manner that polluted groundwater and created nuisance conditions (objectionable odors and flies). These conditions, and the accompanying complaints by Hilmar Cheese's neighbors (and – some say – the negative press coverage given the situation), prompted the Regional Board's Executive Officer to issue Hilmar Cheese Cleanup and Abatement Order R5-2004-0772 (CAO), and subsequently, Administrative Civil Liability Complaint R5-2005-0501 in the amount of four million dollars.

The March 2006 Settlement Agreement between Hilmar Cheese and the Regional Board settled the Complaint and authorized Hilmar Cheese to continue to discharge fully-treated cheese processing wastewater that met the EC limit to crop land in the Plant vicinity (Secondary Lands), and to continue to discharge partially-treated wastewater characterized by high EC and organic and nitrogen content to lands immediately adjacent to the Plant (Primary Lands). The Settlement Agreement required Hilmar Cheese to submit a Report of Waste Discharge (RWD) by October 2006. Findings 8 and 9 of the WDRs explain why Hilmar Cheese required additional time beyond October 2006 to submit an RWD that identified how it was going to conduct its discharge, and why it requires even more time to experiment with a salinity reduction treatment technology – Electrodialysis Reversal (EDR) – that remains untested for industrial discharges such as Hilmar Cheese's.

The Time Schedule Order (TSO) accompanying the WDRs allows Hilmar Cheese to still further delay implementing the type and capacity of salinity reduction treatment technology it should have implemented over 10 years ago. Because it never fully complied with the EC limit, Hilmar Cheese's discharge created nuisance (Finding 19 of the CAO) and polluted groundwater from EC, total dissolved solids, iron, and manganese (the latter two from organic overloading) and threatened to pollute groundwater from sodium, chloride, and ammonia (Findings 22 and 23 from the CAO). Since the March 2006 Settlement Agreement, Hilmar Cheese has not increased

its WWTF capacity to process the Plant's entire wastewater flow because of reported excessive operational costs, yet it found the financial resources to increase the Plant's cheese processing capacity and to build a new cheese processing plant in Texas.

Specific Comments

A. The Waste Discharge Requirements (WDRs) do not comply with California Code of Regulations (CCR) Title 27 as the discharge is not in compliance with the applicable water quality control plan (Basin Plan).

Discharges of wastewater may be exempted from CCR Title 27 requirements only if: waste discharge requirements have been issued; the discharge is in compliance with the applicable Basin Plan, and; the wastewater is not hazardous (Section 20090). The Basin Plan contains water quality objectives for groundwater. The Basin Plan *Water Quality Objectives for Groundwater* requires groundwater not exceed: 2.2 MPN/100 ml for coliform organisms; the maximum contaminant levels (MCLs) from CCR Title 22 for drinking water; taste or odor producing substances that cause nuisance or adversely affect beneficial uses, and; toxic substances that produce detrimental physiological responses in human, plant, animal or aquatic life associated with designated beneficial uses. The Basin Plan also includes the State and Regional Board Antidegradation Policy (Resolution 68-16). The Antidegradation Policy requires the maintenance of high quality waters. In accordance with the Antidegradation Policy changes in water quality are allowed only if the change is consistent with maximum benefit to the people of the state; does not unreasonable affect present and anticipated beneficial uses; does not result in water quality that exceeds water quality objectives, and; best practicable treatment and control of the discharge is provided.

The discharge has, as is detailed below, caused an exceedance of Basin Plan water quality objectives (MCL) for total dissolved solids (TDS), electrical conductivity (EC) and nitrate and therefore does not meet the test of being in compliance with requirements of the Basin Plan. The discharge has also caused salt (EC, TDS) concentrations that exceed the levels that produce detrimental physiological responses in plant life associated with the irrigated agriculture designated beneficial use. The discharge has not been shown to comply with the Basin Plan incorporated Antidegradation Policy (68-16). The Antidegradation Policy requires that an allowance for any degradation must be shown to be in the interest of the people of the state, must not exceed water quality standards and that the discharge must provide best practicable treatment and control (BPTC) of the discharge. To the contrary, the discharge has caused pollution of the underlying groundwater and has been the subject of enforcement actions.

Waste Discharge Requirements Finding No. 42 states that; *"As detailed in the CAO, the discharge has unreasonably degraded groundwater beneath the Plant's storage ponds and Primary Lands. In May and June 2008, Jacobson James collected samples from about 43*

domestic wells, seven industrial supply wells, and seven irrigation wells. The greatest impact was observed in the Upper A Zone (unconfined aquifer) in the vicinity of the Primary Lands. The maximum TDS concentration recorded during the May and June 2008 investigations by Jacobson James was 2,700 mg/L (which corresponds to an EC of about 3,800 $\mu\text{mhos/cm}$). TDS concentrations in the semiconfined and confined aquifers were significantly lower, with concentrations ranging from about 260 to 1,000 mg/L."

Waste Discharge Requirements Finding No. 43 states that; *"In an effort to establish water quality conditions upgradient (east) of the Plant, Jacobson James evaluated "ambient" groundwater quality by advancing 11 direct push or cone penetrometer borings and installing a monitoring well into shallow groundwater upgradient of the Plant. The following values characterize ambient background groundwater quality for several constituents of concern based on this investigation and are presented in the following table;*

Ambient/Background Groundwater Quality

<i>EC ($\mu\text{mhos/cm}^2$) (mg/L)</i>	<i>TDS (mg/L)</i>	<i>NO3 as N (mg/L)</i>	<i>Cl (mg/L)</i>	<i>Na (mg/L)</i>	<i>SO4 (mg/L)</i>
<i>847</i>	<i>570</i>	<i>27</i>	<i>77</i>	<i>92</i>	<i>54"</i>

Waste Discharge Requirements Finding No. 44 states that; *"Historical groundwater data is limited. The oldest data available is from 1989 when monitoring wells MW-1 and MW-2 were installed. EC values in samples collected from MW-1 in 1989 and 1990 ranged from 150 to 440 $\mu\text{mhos/cm}$, while values in MW-2 ranged from about 280 to 580 $\mu\text{mhos/cm}$. In 2008, EC values in samples from MW-1 ranged from 2,470 to 4,530 $\mu\text{mhos/cm}$, while samples from MW-2 ranged from 1,640 to 3,690 $\mu\text{mhos/cm}$." Clearly, the discharge of waste from Hilmar polluted groundwater with EC. The secondary MCL for EC begins at 900 $\mu\text{mhos/cm}$.*

Total nitrogen discharged from the facility is characterized as 20 mg/l. Nitrogen will generally convert to nitrate as it migrates to groundwater. The primary drinking water MCL for nitrates is 10 mg/l. The discharge presents a reasonable potential to contribute to already degraded groundwater conditions, which exceed the primary MCL for nitrate. The wastewater treatment facility does not nitrify and/or denitrify. The removal of nitrogen from wastewater is common practice and can be considered best practicable treatment and control of the discharge.

Waste Discharge Requirements Finding No. 71 states that; *"Unless exempt, 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 and other Title 27 requirements provided the following conditions are met:*

- a. *The applicable regional water board has issued WDRs, 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.*

The discharge of effluent and the operation of treatment or storage facilities associated with a food processing facility is exempt from Title 27, provided any resulting degradation of groundwater is in accordance with the Basin Plan and the waste need not be managed as a hazardous waste. None of the waste regulated by the proposed Order is hazardous waste nor required to be treated as hazardous waste. With treatment to remove organics and salinity, lined storage ponds, and application at agronomic rates, the discharge authorized by the Waste Discharge Requirements will not cause exceedance of groundwater quality objectives and complies with the Antidegradation Policy and is therefore exempt from Title 27. In addition, recycling effluent through application to Secondary Lands is a reuse that is exempt under Title 27, Section 20090(h)."

It is well documented that the wastewater discharge from Hilmar has polluted groundwater, as cited above. The State Water Resources Control Board (State Board) issued a Water Quality Order for the Lodi White Slough Facility, WQO-2009-0005 (Lodi Order) dated 7 July 2009. The Lodi Order includes clarifications on how to apply the Title 27 exemptions. The Lodi Order requires the Discharger to provide evidence showing that the discharge meets applicable preconditions before the Regional Board can make Findings that the discharge is exempt from Title 27. Findings are not adequate if they merely assume that the Discharger will comply with WDRs requiring the Discharger to comply with the Basin Plan. (See Guidance Memo *Applying Title 27 Exemptions after the City of Lodi Order*, from Lori Okun to Pamela Creedon, dated 28 October 2009) The WDR must find that the discharge currently complies with the Basin Plan. Without such a Finding, the Regional Board cannot legally make the Finding that the Discharger's land disposal activities meet the precondition for an exemption. In this case, the discharge still exceeds water quality standards (Finding No. 19) and the WDR is reliant on a "new" technology to be installed and operational before an expansion in flows is allowed (see accompanying compliance Order, Finding No. 57 and CEQA Finding No. 72). The Discharger does not meet the preconditions of current compliance with the Basin Plan, which is necessary to receive an exemption to CCR Title 27.

B. The Waste Discharge Requirements do not comply with the requirements of the State and Regional Board's Antidegradation Policy (Resolution 68-16).

Waste Discharge Requirements Finding No. 55 correctly states that; "*State Water 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 or control (BPTC) to minimize degradation.”*

Waste Discharge Requirements Finding No. 57 states that; *“Historically, Hilmar Cheese’s disposal of partially-treated wastewater degraded groundwater in the vicinity of the Primary Lands and affected beneficial uses. The cleanup of this is regulated by the CAO and groundwater investigations are ongoing. An accompanying Time Schedule Order requires Hilmar Cheese to fully treat all of its wastewater to the effluent limits of this Order by no later than July 2011. The CAO addresses development of remedial actions to clean up groundwater from past discharges, which will address future use of the Primary Lands.”*

The Antidegradation Policy discussion ignores the fact that groundwater at the site has been, and currently continues to be, polluted by the wastewater discharge. The wastewater discharge has and continues to degrade designated beneficial uses. The Waste Discharge Requirements Finding that providing jobs offsets any groundwater degradation, and in this case pollution, is in the best interest of the people of California is lacking any factual analysis. For instance, the WDR does not address the economical impacts of allowing California’s critical groundwater resources to be degraded. What percentage of groundwater in the state is actually usable for its designated beneficial uses and what are the impacts of “writing off” another aquifer for a specialty food processor. Is cheese in such limited quantities in California that trading the state’s groundwater quality is necessary? What would be the increased cost of a block of cheese if groundwater were not allowed to be degraded? Are there not other cheese producers that could fill the void if Hilmar were required to stop polluting immediately? Is cheese a good trade for polluted groundwater? Is cheese a rare and necessary commodity for which California is willing to trade groundwater quality? What are the impacts to the users of groundwater? What are the costs in California for treating groundwater to meet industrial requirements? What are the costs in California for treating groundwater to meet drinking water MCLs? How many people in California have been sick or died from nitrate poisoning? What are the crop yield reductions and the related costs to agriculture and consumers from excessive salt in groundwater? The WDR however addresses only one question of how many jobs does Hilmar provide. The Waste Discharge Requirements does not seriously address the best interest of the people of California. The Antidegradation Policy analysis is simply wrong and insufficient.

C. Effluent Limitations. To ensure that Hilmar Cheese consistently optimizes pretreatment for salinity removal treatment (either by RO or EDR), the WDRs should prescribe a performance-based effluent limitation for turbidity that equals the maximum turbidity values recommended by RO and EDR treatment technology manufacturers. Such a limit would serve a similar purpose to turbidity effluent limits in WDRs for discharges of tertiary disinfected recycled water, and would require Hilmar Cheese to consistently optimize pretreatment for solids removal prior to RO or EDR treatment.

D. Treatment Redundancy and/or Emergency Storage Capacity. Discharge Prohibition A.2 prohibits the bypass of untreated wastes except as allowed under certain conditions specified in Standard Provisions. Finding 24 states, "In case of short-term operational issues or equipment failures, Hilmar Cheese will construct a wastewater blending system to ensure that effluent discharged to the two storage ponds and the Reclamation Areas meets the effluent limits." The current wastewater blending proposal implies treatment bypass and, consequently, threatens to violate Discharge Prohibition A.2 as well as Provision E.5, which requires back-up or auxiliary facilities or similar systems "only when the operation is necessary to achieve compliance with the conditions of the Order."

Most dischargers subject to effluent limits for recycling of wastewater of domestic origin are required to install redundant treatment trains or emergency storage capacity to retain untreated or partially-treated wastewater until it can be run through the treatment system. The proposal described in Finding 24 implies that the Plant's WWTF will be consistently capable of generating an effluent containing waste constituents in concentrations much less than the limitations imposed in the WDRs. This does not appear to be realistic. Given that Hilmar Cheese is contemplating implementing a salinity removal technology that is untested for industrial wastewaters, it is prudent for the WDRs to require Hilmar Cheese to either install redundant treatment trains for all vital treatment units or emergency storage capacity. At a minimum, the WDRs should identify which facilities or systems in the WWTF are subject to Provision E.5.

E. Wet Weather Storage Capacity. Most WDRs for land discharges contain a finding describing the discharger's monthly water balance that demonstrates that the discharger has sufficient land disposal capacity to dispose of all the requested flow during wet years of a 100-year frequency. The WDRs indicate that the Plant's existing effluent storage ponds have a combined storage capacity of 44 million gallons, but do not indicate whether and how Hilmar Cheese plans to expand its effluent storage capacity to accommodate its requested increase in discharge flow from the 1.9 million gallons per day (mgd) authorized in the Settlement Agreement to 2.5 mgd. While the WDRs contain discharge specifications regarding hydraulic loading (C.5 – wastewater applications to the Reclamation Area shall be at reasonable agronomic rates; C.6 – wastewater shall not be discharged to the Reclamation Area during periods of heavy rain), the WDRs should

contain a finding explaining how Hilmar Cheese can increase its discharge flow without expanding its wet weather effluent storage capacity.

F. Indirect Hydraulic Connection to the San Joaquin River. Finding 38 describes how area groundwater depth is controlled by the operation of tile drain systems that discharge to canals owned and operated by the Turlock Irrigation District (TID) (e.g., Lateral No. 6 north of the Plant). The WDRs should disclose that these canals discharge ultimately to the San Joaquin River, a water of the United States that is already impaired, in part from excessive salinity and oxygen-demanding substances (as documented by total maximum daily loads under development for salinity and dissolved oxygen). The WDRs state, "Tile drains under the Primary Lands have been sealed off and no longer discharge to TID canals." However, even though Hilmar Cheese may have sealed off the tile drains under the Primary Lands, in the absence of physical barriers to restrict the offsite flow of shallow groundwater under the Primary Lands (e.g., via perimeter sheet piles), groundwater underlying the Primary Lands above the level of offsite tile drain systems will flow offsite and will be intercepted by these tile drains systems and will be pumped to TID canals that discharge to the San Joaquin River. The WDRs should disclose this, and disclose whether and which parcels comprising the Secondary Lands are underlain by or adjacent to tile drainage systems.

While the Clean Water Act exempts discharges of tile drainage water affected by agricultural activities from regulation under the National Pollutant Discharge Elimination System (NPDES), it does not specifically exempt from regulation any pollutants in tile drainage discharges released to surface waters of the United States that originate from industrial activities. A case can be made that the hydraulic connection between Hilmar Cheese's discharge and TID Lateral No. 6 warrants regulation of the discharge via an NPDES permit. At a minimum, the WDRs should require Hilmar Cheese to monitor TID Lateral No. 6 (and other TID canals receiving discharges of groundwater potentially affected by the Plant's discharge) for salinity constituents (e.g., EC, sodium, chloride), total organic carbon, total nitrogen, priority pollutants such as trihalomethanes (if chlorine is used in Plant sanitation and WWTF operations), and other pollutants of concern. The monitoring should be performed at least quarterly, both upstream and downstream from tile drainage pump systems that collect and discharge to TID canals any groundwater potentially affected by the Plant's discharge. The resulting data should be evaluated after three years to determine whether the Plant's discharge should be regulated by an NPDES permit that implements federal categorical effluent limitations.

G. Domestic Wastewater Discharge. Finding 3 states that Hilmar Cheese discharges the Plant's domestic wastewater to "septic tanks and leachfields regulated separately." The WDRs should identify the Merced County Environmental Health Department as the agency currently responsible for regulating the Plant's domestic wastewater discharge. Finding 38 describes groundwater as shallow (5 to 15 feet below ground surface) and states, "During wet periods,

water can be at the ground surface.” Regional Board guidelines for septic tank and leachfield systems (incorporated in the Basin Plan) require a minimum of five feet of vertical separation between the bottom of the leachfield trenches and highest anticipated groundwater. Merced County presumably implements and enforces these guidelines. However, since the Plant’s domestic wastewater flow from 600 employees and up to 300 banquet guests (from Finding 3) is discharged to septic tanks and leachfields to land overlying shallow groundwater that surfaces during wet periods, it appears that the Regional Board’s 5-foot vertical separation requirement has not been aggressively enforced in this discharge situation. Given the shallow groundwater conditions in the Plant vicinity and the current method of domestic waste disposal, waste constituents in the Plant’s domestic discharge threaten to cause or contribute to exceedances of Groundwater Limitations in the WDRs (e.g., for nitrate and total coliform organisms).

While many Central Valley industrial dischargers in rural areas treat and dispose of domestic wastewater via onsite septic tanks and leachfields regulated by county environmental health departments, there are some near or within urbanized areas that discharge to community sewer systems (e.g., E. & J. Gallo Winery in Fresno; Del Monte near Kingsburg; Lion Raisins near Selma). There are other industrial dischargers that treat domestic wastewater via package treatment plants prior to land disposal (e.g., Recot, Inc./Frito-Lay; Saint-Gobain; CertainTeed). If these industrial dischargers can afford to install and operate a package treatment plant for domestic wastewater, surely the Regional Board should require Hilmar Cheese to do likewise.

While the impact to groundwater from the Plant’s domestic discharge pales in comparison with that from its industrial discharge, this should not preclude the Regional Board from requiring Hilmar Cheese to implement best practicable treatment or control for the Plant’s domestic wastewater discharge, especially given the existing degraded condition of groundwater affected by the Plant’s industrial discharge. The WDRs should require Hilmar Cheese to discharge its Plant’s domestic wastewater to either (1) the sewer system serving the Hilmar community or (2) install and operate a package treatment plant capable of reducing the concentration in wastewater discharged to leachfields of total nitrogen to 10 mg/L and of total coliform organisms to Groundwater Limitation E.a(iii) (i.e., 2.2 most probable number per 100 milliliters).

H. Monitoring and Reporting Program (MRP)

The MRP should require the following:

Continuous monitoring of wastewater turbidity immediately prior to salinity removal treatment and reporting of daily average and maximum wastewater turbidity.

Continuous monitoring of effluent EC and reporting of daily average and maximum effluent EC.

Monthly monitoring of effluent for trihalomethanes if wastewater is subjected to chlorination during Plant sanitation or treatment processes (chlorine is typically used to clean UF membranes).

Quarterly monitoring of effluent for iron and manganese, since these two constituents are not included in the table of General Minerals, and groundwater underlying the Primary Lands contains elevated concentrations of these two constituents.

Reporting of monthly average effluent total nitrogen, which is used to calculate total nitrogen loading to Reclamation Area parcels.

Monthly monitoring of water impounded in the Plant's storm water ponds for, at a minimum, EC, sodium, chloride, BOD₅, and total nitrogen, to evaluate whether these ponds only receive discharges of storm water and of essentially pollutant-free wastewater.

I. Miscellaneous Comments

The WDRs contain several provisions that specify how the discharge is to be conducted (i.e., Provisions E.10 and E.11 regarding effluent storage pond capacity; E.12 regarding pond maintenance to preclude vector nuisance; E.13 regarding the grading of Reclamation Area parcels to preclude ponding along public roads; E.14 regarding management of Reclamation Area parcels to prevent vector nuisance; E.15 regarding dissolved oxygen content in effluent storage ponds; E.16 regarding the establishment of effluent pH limitations for discharges to the storage ponds; and E.17 regarding minimum pond freeboard). These discharge requirements are better placed in the "Discharge Specifications" section of WDRs or, as appropriate, in a separate, new "Reclamation Area Requirements" section. [The MRP actually refers to "Recycling Specifications" in the WDRs]. The terms and conditions pertaining specifically to the discharge of effluent to Reclamation Area parcels should be contained in a separate section to make it easy for Reclamation Area parcel owners to identify which requirements apply specifically to them.

Provision E.8 concerns changes in ownership specific to "land or waste treatment and storage facilities presently owned or controlled by the Discharger." This provision should also specify how changes in ownership of Reclamation Area parcels will be handled (e.g., will ownership transfers require Executive Officer written approval?).

Provision E.22 requires Hilmar Cheese to submit by 1 June 2010 a Nutrient Management Plan for each separately-owned parcel where Plant effluent is applied for irrigation purposes. Such plans should have been submitted as part of Hilmar Cheese's RWD to demonstrate its discharge would not impair the beneficial uses of affected groundwater. In any event, the plans should be based on actual monitoring data of dairy wastewater and manure and not rely solely on text-book values that incorporate theoretical values for nitrogen loss.

Attachment D of the WDRs should identify which Reclamation Area parcels are subject to the General Order for Existing Milk Cow Dairies.

J. Time Schedule Order (TSO)

Finding 12 incorrectly states that the effluent limitation for EC contained in the WDRs is a new limitation when, in fact, it has been in effect since 15 March 1999.

The TSO requires Hilmar Cheese to comply with effluent limitations in the WDRs by 1 February 2011 if UF/RO technology is implemented or by 1 July 2011 if anything other than UF/RO technology is implemented. Hilmar Cheese chose not to comply with the EC limit prescribed in WDRs Order 97-206 effective 15 March 1999, but increased cheese processing production at the Hilmar Plant, and constructed a new plant in Texas. Because of this history, the TSO should prescribe a civil penalty if compliance is not achieved in accordance with the TSO in accordance with CWC section 13308, which allows the Regional Board to prescribe a civil penalty of up to \$10,000 for each day in which the violation occurs (section 13308(b)). This addition to the TSO should provide a necessary financial incentive to ensure Hilmar Cheese this time will abide by its commitment to install, operate, and maintain a WWTF capable of generating an effluent that fully complies with the effluent limitations contained in the WDRs by the dates established in the TSO.

Finally, Task 2 prescribes an interim EC limit for discharges to the Primary Lands (3,600 umohs/cm) that essentially reflects the EC Limit in the Settlement Agreement (3,700 umhos/cm). The TSO should also impose interim effluent limitations for BOD₅, and total nitrogen that reflect optimum operation of the WWTF's conventional treatment trains (i.e., 80 mg/L for BOD₅ and 20 mg/L for total nitrogen). This would reduce the potential for waste discharges to the Primary Lands to create odor nuisance and exacerbate existing conditions of pollution created by Hilmar's past discharges.

The time schedule Order (TSO) should be vacated and the Discharger should be required to immediately comply with Waste Discharge Requirements.

5. THE MANNER IN WHICH THE PETITIONERS ARE AGGRIEVED.

CSPA is a non-profit, environmental organization that has a direct interest in reducing pollution to the waters of the Central Valley. CSPA's members benefit directly from the waters in the form of recreational hiking, photography, fishing, swimming, hunting, bird watching, boating, consumption of drinking water and scientific investigation. Additionally, these waters are an important resource for recreational and commercial fisheries. Central Valley waterways also provide significant wildlife values important to the mission and purpose of the Petitioners. This wildlife value includes critical nesting and feeding grounds for resident water birds, essential habitat for endangered species and other plants and animals, nursery areas for fish and shellfish and their aquatic food organisms, and numerous city and county parks and open space areas. CSPA's members reside in communities whose economic prosperity depends, in part, upon the quality of water. CSPA has actively promoted the protection of fisheries and water quality throughout California before state and federal agencies, the State Legislature and Congress and regularly participates in administrative and judicial proceedings on behalf of its members to protect, enhance, and restore declining aquatic resources. CSPA member's health, interests and pocketbooks are directly harmed by the failure of the Regional Board to develop an effective and legally defensible program addressing discharges to waters of the state and nation.

6. THE SPECIFIC ACTION BY THE STATE OR REGIONAL BOARD WHICH PETITIONER REQUESTS.

Petitioners seek an Order by the State Board to:

- A. Vacate Orders No. R5-2010-0008 and R5-2010-0009 and remand to the Regional Board with instructions prepare and circulate a new order that comports with regulatory requirements.
- B. Alternatively; prepare, circulate and issue a new order that is protective of identified beneficial uses and comports with regulatory requirements.

7. A STATEMENT OF POINTS AND AUTHORITIES IN SUPPORT OF LEGAL ISSUES RAISED IN THE PETITION.

CSPA's arguments and points of authority are adequately detailed in the above comments and our 9 January 2009 letter and Ms. Jo Anne Kipps letter dated 3 January 2010. Should the State Board have additional questions regarding the issues raised in this petition, CSPA will provide additional briefing on any such questions. The petitioners believe that an evidentiary hearing before the State Board will not be necessary to resolve the issues raised in this petition. However, CSPA welcomes the opportunity to present oral argument and respond to any questions the State Board may have regarding this petition.

8. A STATEMENT THAT THE PETITION HAS BEEN SENT TO THE APPROPRIATE REGIONAL BOARD AND TO THE DISCHARGERS, IF

NOT THE PETITIONER.

A true and correct copy of this petition, without attachment, was sent electronically and by First Class Mail to Ms. Pamela Creedon, Executive Officer, Regional Water Quality Control Board, Central Valley Region, 11020 Sun Center Drive #200, Rancho Cordova, CA 95670-6114. A true and correct copy of this petition, without attachment, was sent to the Discharger in care of: Mr. John Jeter, President and CEO, Hilmar Cheese Company, P.O. Box 910, Hilmar, CA., 95324

9. A STATEMENT THAT THE ISSUES RAISED IN THE PETITION WERE PRESENTED TO THE REGIONAL BOARD BEFORE THE REGIONAL BOARD ACTED, OR AN EXPLANATION OF WHY THE PETITIONER COULD NOT RAISE THOSE OBJECTIONS BEFORE THE REGIONAL BOARD.

CSPA presented the issues addressed in this petition to the Regional Board in our 9 January 2009 letter and Ms. Jo Anne Kipps' letter dated 3 January 2010 that were accepted into the record.

If you have any questions regarding this petition, please contact Bill Jennings at (209) 464-5067 or Michael Jackson at (530) 283-1007.

Dated: 26 February 2010

Respectfully submitted,



Bill Jennings, Executive Director
California Sportfishing Protection Alliance

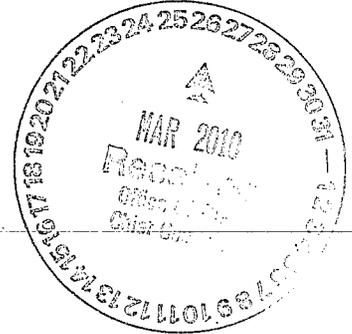
Attachment No. 1: WDR Order No. R5-2010-0008

Attachment No. 2: Time Schedule Order No. R5-2010-0009

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. R5-2010-0008

WASTE DISCHARGE REQUIREMENTS
FOR
HILMAR CHEESE COMPANY, INC.
AND
REUSE AREA OWNERS
HILMAR CHEESE PROCESSING PLANT
MERCED COUNTY



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

1. Hilmar Cheese Company, Inc. (Hilmar Cheese), a California corporation, owns and operates a Cheese Processing Plant (Plant) about one-half mile north of the unincorporated community of Hilmar. The Plant is at the northwest corner of Lander Avenue and August Road, within Section 10 of T6E, R10E, MDB&M, as shown on Attachment A, which is attached hereto and made part of this Order by reference. The Assessor Parcel Numbers (APNs) of parcels that comprise the Plant site are: 045-014-054 and 045-014-066. Hilmar Cheese discharges wastewater to two areas known as the Primary and Secondary Lands as shown on Attachment B, which is attached hereto and made part of this Order by reference. The Primary and Secondary Lands are collectively referred to as Reuse Areas. Hilmar Cheese owns some of the Primary Lands and leases the rest from others (Primary Land Owners). All of the Secondary Lands are owned by others (Secondary Land Owners). The Primary and Secondary Land Owners are collectively referred to as Reuse Area Owners. The parcels and Reuse Area Owners for this Order are shown in Attachment C and listed in Attachment D, which are attached hereto and made part of this Order by reference. Hilmar Cheese and the Reuse Area Owners are collectively referred to as Discharger. Hilmar Cheese is the primary discharger responsible for compliance with this Order. Each Reuse Area Owner is responsible for compliance with the requirements of this Order concerning discharge to its respective parcels that are included within the Reuse Area.
2. Hilmar Cheese manufactures various cheese products (white and yellow cheddar, Monterey and pepper jack, Colby and Colby jack, Muenster, some Hispanic cheeses, etc.). The Plant currently receives over 11 million pounds of milk each day from more than 150,000 cows housed in over 260 dairies. It produces over one million pounds of cheese, and over 325,000 pounds of whey protein and lactose powder each day. The Plant operates continuously year round and employs about 700 people.
3. The Plant is composed of a milk-receiving area, three cheese processing plants, a protein plant, a lactose plant, a visitor's center, a delicatessen restaurant, banquet facilities for up to 300 people, and a wastewater treatment facility (WWTF). The Plant's domestic wastewater is discharged to septic tanks and leachfields regulated separately.

4. Waste Discharge Requirements (WDRs) Order 97-206 formerly regulated the discharge of cheese processing wastewater to a 102-acre area near the Plant referred to as the Primary Lands. Order 97-206 authorized Hilmar Cheese to discharge a monthly average daily flow of up to 0.75 million gallons per day (mgd) of wastewater treated to have electrical conductivity (EC) of no greater than 900 micromhos per centimeter ($\mu\text{mhos/cm}$). In 1998, Hilmar Cheese installed salinity reduction treatment technology and began treating a portion of its Plant's wastewater flow, and initiated a discharge of wastewater treated to reduce EC to levels in compliance with the EC limit to 920 acres of agricultural land west of the Plant referred to as the Secondary Lands. Because the treatment technology did not have sufficient capacity to treat the entire wastewater flow, Hilmar Cheese continued to discharge to the Primary Lands wastewater not treated to fully reduce EC.
5. The Executive Officer of the Central Valley Water Board issued Cleanup and Abatement Order R5-2004-0772 (CAO) to Hilmar Cheese Company; Hilmar Whey Protein; and Kathy and Delton Nyman in December 2004 due to nuisance conditions and impacts to groundwater from Hilmar Cheese's disposal of wastewater to land. The CAO directs Hilmar Cheese to abate nuisance and address impacts to groundwater caused by its discharge in violation of Order 97-206. Work to address the tasks of the CAO is ongoing.
6. On 26 January 2005, the Executive Officer issued Administrative Civil Liability Complaint R5-2005-0501 to Hilmar Cheese in the amount of \$4,000,000 for chronic violations of the effluent EC limitation prescribed in Order 97-206. On 16 March 2006, the Central Valley Water Board adopted Order R5-2006-0025, which ratified a Revised Settlement Agreement with Hilmar Cheese. Order R5-2006-0025 settled Administrative Civil Liability Complaint R5-2005-0501; required Hilmar Cheese to submit a Report of Waste Discharge (RWD) by 31 October 2006; and prescribed Interim Operating Limits for discharge flow and effluent EC that would be in effect until the Central Valley Water Board issued revised WDRs for the discharge.
7. The Revised Settlement Agreement included Interim Operating Limits (Order R5-2006-0025) that prescribed discharge requirements until Hilmar Cheese could complete improvements to the WWTF. Hilmar Cheese has been operating within those limits since adoption of the Revised Settlement Agreement in March 2006, which became effective in April of 2006. The Interim Operating Limits allow for the discharge of up to 1.2 mgd of partially-treated wastewater with an EC of up to 3,700 $\mu\text{mhos/cm}$ to the Primary Lands. In 2008, the monthly average flow of partially-treated wastewater to the Primary Lands was about 0.65 mgd, with an average EC of about 3,500 $\mu\text{mhos/cm}$. In 2009, the discharge of partially-treated wastewater to the Primary Lands was about 0.57 mgd, with an average EC of about 3,300 $\mu\text{mhos/cm}$.
8. The Discharger submitted a RWD in October 2006, but also indicated that it needed additional time to complete its evaluation of WWTF improvements and effluent disposal options. Central Valley Water Board staff concurred with the Discharger's determination

that additional time was necessary to allow it to submit an RWD of sufficient detail for staff to prepare revised WDRs. The Discharger submitted two additional RWDs in November 2007 and June 2008, followed by an *Addendum to Report of Waste Discharge* (Addendum) dated 13 November 2008 prepared by Kennedy/Jenks Consultants.

9. The Addendum proposed to increase the discharge flow from 1.9 to 2.5 mgd; to fully treat all the Plant's cheese processing wastewater flow by December 2009; and provide reuse water for use as an irrigation supply to owners of about 1,200 acres of agricultural land situated generally west/northwest of the Plant. In July 2009, Hilmar Cheese reported that costs associated with its Ultrafiltration (UF) and Reverse Osmosis (RO) units may not be sustainable and that it was evaluating a new salinity-removal technology, Electrodialysis Reversal (EDR), an electrochemical separation process that removes ions and other charged species from water and other fluids. Hilmar Cheese reported the EDR system may function more effectively than UF/RO treatment and its associated costs in labor, chemicals, maintenance, and equipment would be considerably less. EDR treatment technology has been successfully employed to treat brackish water for use as drinking water, but has not been tested on industrial wastes such as those from a cheese processing plant.
10. Hilmar Cheese has incorporated several treatment and control measures to reduce the salinity of its discharge, including source control and UF/RO treatment. Because Hilmar Cheese will not immediately be able to comply with the effluent limits of this Order, a separate Time Schedule Order is appropriate to address compliance while Hilmar Cheese evaluates an EDR treatment system and installs either EDR or further UF/RO treatment systems.

Existing Wastewater Treatment Facility and Reuse

11. Wastewater is generated from sanitizing equipment and tanks, general facility wash down, assorted sources of equipment blow down, and truck washing. Wastewater is temporarily contained in three collection basins prior to the Plant's WWTF: A collection basin designated the "Cheese Basin" accepts wastewater from the milk receiving area, the three collection basins, and the protein plant (about 60 percent of the discharge). Wastewater from the lactose plant is discharged to the "Lactose Basin" (about 35 percent of the discharge), and a third sump, designated the "Wastewater Basin" accepts truck wash wastewater (about 5 percent of the discharge).
12. The WWTF consists of the collection basins; three 350,000-gallon equalization tanks with one equalization tank designated for wastewater resulting from abnormal operational conditions; two 55,000-gallon physio-chemical Dissolved Air Flotation (DAF) tanks; a heat exchanger; a granular sludge bed anaerobic digester; a 1,000,000-gallon pre-aeration tank; two 1,000,000-gallon sequencing batch reactors (SBRs); a 1,000,000-gallon surge tank; three DAF tanks, two with a capacity of 10,000 gallons and one with a capacity of 11,000 gallons; a UF membrane separation system; a two-stage RO system; and an evaporator.

13. The UF membrane system consists of a Zenon-supplied 1,000-gallon-per-minute (gpm) submerged hollow fiber UF membrane unit and four 330-gpm submerged hollow fiber UF membrane units. Permeate from the UF system is sent to the two-stage RO system for further salinity reduction, while concentrate from the UF system is currently recycled to the DAF system.
14. The RO system consists of three high-pressure primary RO units followed by two high-pressure secondary units. Permeate from the secondary RO units is discharged to the effluent storage ponds (described in greater detail in Finding 15) prior to discharge to the Secondary Lands for crop irrigation. Concentrate from the secondary RO is sent to the deep well injection system regulated by the United States Environmental Protection Agency (USEPA). Excess concentrate that cannot be discharged to the deep well is shipped offsite. In 2008, approximately 40,000 gallons per day of concentrate was sent to the East Bay Municipal Utility District (EBMUD).
15. Hilmar Cheese has a wastewater storage and application system consisting of two lined effluent storage ponds to store UF/RO treated wastewater prior to discharge to the Secondary Lands (Attachment B). The effluent storage ponds have approximately 44 million gallons of storage capacity and were constructed just north of the Plant in September 2000. The two ponds are clay lined (minimum 8-inch thickness).
16. The Primary Lands currently consist of about 95 acres that are directly adjacent the Plant and receive partially-treated wastewater (Attachment B). The APNs of parcels that comprise the Primary Lands are: 045-180-018, 045-140-030, 045-140-041, and 045-140-077.
17. The Secondary Lands consist of several interconnected individual parcels generally to the west of the Plant as shown on Attachment B. The Secondary Lands receive wastewater that has been treated by UF and RO. The acreage of the Secondary Lands was listed as about 735 acres in the 2006 RWD, about 920 acres in the Addendum, and currently consists of about 750 acres. Hilmar Cheese notifies the Central Valley Water Board in writing when new parcels are added to the Secondary Lands and assigns a specific number to discrete parcels (e.g., S-39) for identification.
18. Hilmar Cheese was issued Class I Underground Injection Control Permit No. CA1050001 by the USEPA for the installation of up to four deep injection wells. Currently, two wells have been installed. The first, WD-2, was installed in June 2006 to a depth of 4,100 feet below ground surface (bgs). The second, WD-1P, was completed to a depth of 4,125 feet bgs in January 2009. These deep injection wells are used to dispose of the concentrate from the secondary RO units.

Existing Wastewater Discharge

19. Data from Hilmar Cheese's self-monitoring reports indicates that the wastewater applied to the Primary Lands from April 2006 through 2008 had the following average characteristics.

Primary Lands Effluent Data

<u>Flow (mgd¹)</u>	<u>BOD² (mg/L³)</u>	<u>Total N⁴ (mg/L)</u>	<u>TDS⁵ (mg/L)</u>	<u>EC⁶ (µmhos/cm⁷)</u>	<u>Cl⁸ (mg/L)</u>	<u>Na⁹ (mg/L)</u>
0.73	362	187	2,217	3,532	327	631

1. million gallons per day (mgd)
2. 5-day biochemical oxygen demand (BOD)
3. milligrams per liter (mg/L)
4. Total nitrogen (Total N) equals TKN + Nitrate, as N.
5. Total Dissolved Solids
6. Electrical Conductivity (EC)
7. Micromhos per centimeter (µmhos/cm)
8. Chloride (Cl)
9. Sodium (Na)

In 2009, the wastewater applied to the Primary Lands had the following average characteristics.

2009 Primary Lands Effluent Data

<u>Flow (mgd)</u>	<u>BOD (mg/L)</u>	<u>Total N (mg/L)</u>	<u>TDS (mg/L)</u>	<u>EC (µmhos/cm)</u>	<u>Cl (mg/L)</u>	<u>Na (mg/L)</u>
0.57	119	68	2,112	3,334	391	621

20. Data from Hilmar Cheese's self-monitoring reports indicates that the wastewater applied to the Secondary Lands in from April 2006 through 2009 had the following average characteristics.

Secondary Lands Effluent Data

<u>Flow (mgd¹)</u>	<u>BOD² (mg/L³)</u>	<u>Total N⁴ (mg/L)</u>	<u>TDS⁵ (mg/L)</u>	<u>EC⁶ (µmhos/cm⁷)</u>	<u>Cl⁸ (mg/L)</u>	<u>Na⁹ (mg/L)</u>
1.06	42	18	452	817	68	145

1. million gallons per day (mgd)
2. 5-day biochemical oxygen demand (BOD)
3. milligrams per liter (mg/L)
4. Total nitrogen (Total N) equals TKN + Nitrate, as N
5. Total Dissolved Solids
6. Electrical Conductivity (EC)
7. Micromhos per centimeter (µmhos/cm)
8. Chloride (Cl)
9. Sodium (Na)

21. Comparison of the values presented in the previous tables indicates the WWTF is effective in treating the portion of wastewater that is fully-treated. From April 2006 through 2009, the full treatment system removed about 88 percent of 5-day biochemical oxygen demand (BOD), 79 percent of total dissolved solids (TDS), 80 percent of chloride, 78 percent of sodium, and reduced EC by 77 percent.

WWTF Expansion Project

22. In order to treat all of the wastewater using the UF/RO systems or alternate treatment systems to meet the Effluent Limitations of this Order, various improvements to the WWTF and to the current disposal activities have been completed or are underway.
23. Improvements to the WWTF include: installation of a second DAF system (consisting of three DAF units) to improve the ability to remove minerals and excessive biomass; conversion of the existing 1-million-gallon pre-aeration tank to a third SBR providing additional SBR retention time and improved activated sludge performance; installation of an additional UF system (consisting of four units, each rated at 350 gpm) to provide UF treatment for all of the wastewater. RO concentrate from the 2nd stage RO units will continue to be disposed of in the deep injection well system, permitted by the USEPA. Solids generated by the first and second DAF systems are dewatered and trucked offsite to the East Bay Municipal Utility District.
24. In case of short-term operational issues or equipment failures, Hilmar Cheese will construct a wastewater equalization system to ensure that effluent meets the limits before it is discharged to the two storage ponds and the Reuse Areas.
25. Secondary Lands will receive the discharge of the fully-treated effluent, with a total of approximately 1,200 acres being required to accommodate the total effluent flow authorized by this Order.
26. Hilmar Cheese provides treated wastewater to farmers to irrigate crops grown on the Secondary Lands. Secondary Lands crop irrigation is supplemented with Turlock Irrigation District (TID) canal water. Historically, irrigation has also been supplemented with up to 20 percent of its crop irrigation demand with dairy wastewater.
27. Most existing milk cow dairies in the Central Valley Region are regulated by General WDRs Order R5-2007-0035, *General Order for Existing Milk Cow Dairies* (General Order), which requires dairy waste that is blended with waste generated off-site to be regulated by a separate order. This Order authorizes Plant effluent and dairy wastewater to be applied to Secondary Lands, providing the Discharger accounts for both in its loading calculations and the facility meets the requirements for nutrient management plans, monitoring and reporting, and runoff contained in the General Order. The General Order will continue to regulate dairy operations and discharges of dairy waste to lands identified in Attachments C and D, as well as lands that do not receive Plant effluent. In

the event of any inconsistency between this Order and the General Order, the more stringent requirement shall apply.

28. The proposed treatment improvements will increase the rated treatment capacity of the WWTF to 2.5 mgd. This Order authorizes Hilmar Cheese to increase discharge flow to 2.5 mgd following satisfaction of Provisions F.18 and F.21 which require the Discharger to certify sufficient wastewater treatment, storage, and disposal capacity and submit Nutrient Management Plans for each parcel receiving Plant effluent. Following completion of the WWTF Expansion Project, all waste discharged to Primary Lands and Secondary Lands will be fully treated and meet Effluent Limitations B.1 and B.2.

Water Reuse

29. Order 97-206 incorporated specifications to allow Hilmar Cheese to implement water reuse to flood irrigate crops grown on 138 acres adjacent to the Plant (i.e., the original Primary Lands).
30. The Secondary Lands are generally cropped using a furrow and ridge irrigation system planted with silage corn in the summer and wheat, oats, or winter forage mix in the winter. Each parcel is typically planted and harvested individually to accommodate field drying cycles as well as other field activities. Values of the annual plant available nitrogen demand of alfalfa, wheat, oats, and silage corn are 480, 175, 115, and 250 lbs/acre, respectively, according to *Western Fertilizer Handbook*. Studies in the Hilmar area by University of California staff indicate that wheat and oat cropping for dairies require 294-342 lbs/acre and wheat requires 263-329 lbs/acre (Matthews, 2003. *Using Winter Forages for Dairy Nitrogen Management*. California Alfalfa and Forage Symposium). In a separate study of winter forage nitrogen uptake at eight dairy land application sites, the crop removed 202 lbs/acre (Pettygrove et. al. 2003. *Integrating Forage Production with Dairy Manure Management in the San Joaquin Valley*. Sustainable Agriculture Research Education Program Grant Final Report, University of California, Davis, CA). Accordingly, the nitrogen demand of double-cropped parcels or alfalfa ranges from 365 lbs/acre for winter forage/silage corn to over 500 lbs/acre if the cropping methods tested by Matthews for winter crops are used.

Site-Specific Conditions

31. The Hilmar area is characterized by warm, dry summers and cool, wet 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 evapotranspiration in the discharge area are approximately 12 and 53 inches, respectively, according to information published by the California Department of Water Resources (DWR). The maximum annual precipitation for a 100-year rainfall return period is estimated to be 21 inches.

32. Soils in the discharge area are classified as the Delhi sands and the Hilmar loamy sands, according to the United States Department of Agriculture Natural Resources Conservation Service (USDA/NRCS) *Soil Survey of Merced Area, 2007*. The Delhi Series is described by the USDA/NRCS as somewhat excessively drained with negligible to slow runoff and rapid permeability. The Delhi sands are reportedly used to grow grapes, peaches, truck crops, almonds and alfalfa. The USDA/NRCS describes the Hilmar Series as "somewhat poorly and poorly drained with a fluctuating water table that rises to within a foot or so of the surface during the rainy season and during the periods of heavy irrigation either on the soil or on nearby areas" and the surface soil is described as "rapidly permeable and the IIC horizon is slowly permeable." The Hilmar Series is reportedly used to grow alfalfa, grapes, row crops, almonds and irrigated pasture.
33. The Plant and the Secondary Lands are not within a 100-year floodplain according to Federal Emergency Management Agency Map 06047C0175G. Hilmar Cheese has experienced problems with standing wastewater in the Primary Lands due to poor drainage, shallow groundwater, and preferential flow of wastewater to portions of the Primary Lands where wastewater collects in areas of lower elevation. Surface water drains typically to the west/southwest in the Reuse Areas.
34. Hilmar Cheese is not required to obtain coverage under a National Pollutant Discharge Elimination System general industrial storm water permit for WWTF because all storm water runoff is retained onsite and does not discharge to a water of the United States. A storm water retention basin with an approximately 3.3 million gallon capacity is present north of the Plant that, in addition to storm water, collects non-storm water discharges such as landscape irrigation water.
35. The land use in the vicinity of the Plant is primarily agricultural with a mixture of pasture and orchard crops. Additional uses include confined livestock (there are at least six dairies within a one-mile radius of the Plant), residential (the unincorporated community of Hilmar is located about one half mile south of the Plant), and light industrial.

Groundwater Considerations

36. The Plant and Reuse Areas are within the Turlock groundwater subbasin that forms a part of the San Joaquin Valley Groundwater Basin. This Basin is reported to contain three general primary water bearing zones: an uppermost unconfined aquifer (Modesto Formation); a semi-confined aquifer (Turlock Lake Formation); and a confined aquifer that is beneath the Corcoran Clay layer.

37. Jacobson James & Associates, Inc. (Jacobson James) completed an evaluation of these zones in June 2008. Based on this evaluation, the zones are as follows:

<u>Zone</u>	<u>Units</u>	<u>Depth Intervals (feet bgs)</u>
Modesto Formation	A Zone Aquifer	~5 to 125
	A Zone Aquitard	~105 to 125
Turlock Lake Formation	B Zone Aquifer	~125 to 150
	B Zone Aquitard (Corcoran Clay)	~150 to 200
Below Corcoran Clay	C Zone Aquifer	~175 to 200
	C Zone Aquitard	~190 to 210
	D Zone Aquifer	~210 to 250

38. The direction of groundwater flow in the unconfined aquifer is generally to the west/southwest, but the direction is influenced by nearby pumping of wells and the discharge of wastewater and irrigation water. The overall direction of the flow is to the southwest. The depth to first-encountered groundwater is shallow, ranging from about 5 to 15 feet bgs. During wet periods, water can be at the ground surface. Area groundwater depth is controlled in various areas in the discharge vicinity by the operation of agricultural tile drain systems that discharge to TID canals (e.g., Lateral No. 6 north of the Plant). Tile drains under the Primary Lands were sealed off and no longer discharge to the TID canals.
39. Hilmar Cheese has a groundwater monitoring well network consisting of 23 groundwater monitoring wells. Of the 23 wells, 19 were installed to depths of 26 feet bgs or less and monitor groundwater in the Upper A Zone; two (MW-18 and MW-19) were installed to depths of about 60 feet bgs and monitor the Lower A Zone; MW-22 was installed to 125 feet bgs and monitors the B Zone; and MW-23 was installed to 195 feet bgs and monitors the C Zone.
40. Monitoring wells will be monitored as part of the Monitoring and Reporting Program for this Order. Additional groundwater monitoring wells are required as part of the Plant expansion and the CAO both upgradient and downgradient of the Plant and the Reuse Areas. Hilmar Cheese will submit a work plan listing the wells to be included in the groundwater monitoring network, as required by Provision F. 19, for approval by the Executive Officer.
41. Groundwater quality in the Hilmar area is highly variable and, in general, the concentration of mineral constituents increases from east (upgradient) to west (downgradient). It is typical for groundwater quality to decrease along the axis of its flow as it moves downgradient. Water quality appears to have been also degraded by past and current land uses (the Plant and its discharges, dairies, farming, industry, etc.) and irrigation with water of varying quality.

42. As detailed in the CAO, historic discharges from the facility unreasonably degraded groundwater beneath the Primary Lands and adjacent areas. In May and June 2008, Jacobson James collected samples from about 42 domestic wells, seven industrial supply wells, and seven irrigation wells. The greatest impact was observed in the Upper A Zone (unconfined aquifer) in the vicinity of the Primary Lands. The maximum TDS concentration recorded during the May and June 2008 investigations by Jacobson James was 2,700 mg/L (which corresponds to an EC of about 3,800 $\mu\text{mhos/cm}$) in a monitoring well. TDS concentrations in the semi-confined and confined aquifers were significantly lower, with concentrations ranging from about 260 to 1,000 mg/L.
43. In an effort to establish water quality conditions upgradient (east) of the Plant, Jacobson James collected groundwater samples over several years from 11 direct push technology borings and a monitoring well to provide preliminary data for the evaluation of ambient conditions in the Upper Aquifer (above the Corcoran Clay) upgradient (east) of the Plant. Using this data, the Central Valley Water Board evaluated upgradient groundwater quality for several constituents of concern. Those values are presented in the following table.

Upgradient Groundwater Quality

<u>EC¹ ($\mu\text{mhos/cm}^2$)</u>	<u>TDS³ (mg/L⁴)</u>	<u>NO₃ as N⁵ (mg/L)</u>	<u>Cl⁶ (mg/L)</u>	<u>Na⁷ (mg/L)</u>
847	570	18	54	76

1. Electrical Conductivity (EC)
2. Micromhos per centimeter ($\mu\text{mhos/cm}$)
3. Total Dissolved Solids (TDS)
4. Milligrams per liter (mg/L)
5. Nitrate as nitrogen (NO₃ as N)
6. Chloride (Cl)
7. Sodium (Na)

Nitrates are above the primary maximum contaminant level of 10 mg/L for nitrate as nitrogen. Nitrates in groundwater are a regional concern in the Hilmar area and likely influenced by local agricultural land uses such as nearby dairies and farmland including almond orchards. Sodium is above the lowest typical agriculture limit of 69 mg/L and likely influenced by local agricultural land uses such as nearby dairies. The remaining constituents are within water quality objectives for drinking water supplies or agriculture.

44. Historical groundwater data is limited. The oldest data available is from 1989 when monitoring wells MW-1 and MW-2 were installed. EC values in samples collected from MW-1 in 1989 and 1990 ranged from 150 to 700 $\mu\text{mhos/cm}$, while values in MW-2 ranged from about 280 to 580 $\mu\text{mhos/cm}$. In 2008, EC values in samples from MW-1 ranged from 2,470 to 4,530 $\mu\text{mhos/cm}$, while samples from MW-2 ranged from 1,640 to 3,690 $\mu\text{mhos/cm}$.

Source Water Quality

45. Source water is supplied to the Plant by three groundwater wells (IN-1, IN-2, and IN-7). Wells IN-1 and IN-2 are pumped into a storage tank and designated Water Supply No. 1, (WS-1), while water from well IN-7 is pumped into a second storage tank and designated Water Supply No. 2 (WS-2). Wells IN-1 and IN-2 are within the Plant and IN-7 is northwest of the Plant. Water quality averages for samples collected from April 2006 through 2008 are shown on the following table.

Source	Supply Well Data				
	TDS ¹ (mg/L) ²	EC ³ (µmhos/cm ⁴)	NO ₃ as N ⁵ (mg/L) ²	Cl ⁶ (mg/L ²)	Na ⁷ (mg/L ²)
WS-1	555	855	12	79	84
WS-2	887	1429	7	195	159

1. Total Dissolved Solids (TDS)
2. Milligrams per liter (mg/L)
3. Electrical Conductivity (EC)
4. Micromhos per centimeter (µmhos/cm)
5. Nitrate as nitrogen (NO₃ as N)
6. Chloride (Cl)
7. Sodium (Na)

46. Jacobson James prepared an August 2008 *Supply Well Evaluation Technical Report* that reported both IN-1 and IN-2 had been degraded by discharges of waste from the Plant. The report found that IN-7 was degraded in quality, but it was not likely that Hilmar Cheese had caused the impact. IN-7 appears to be downgradient of a dairy. Hilmar Cheese indicates IN-7 is its primary source for water. IN-1 is used as a supplemental supply and IN-2 is non operational.

Basin Plan, Beneficial Uses, and Water Quality Objectives

47. The *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, 4th Edition, revised February 2007* (hereafter Basin Plan) designates beneficial uses, establishes 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 Resources Control Board (State Water Board). Pursuant to Section 13263(a) of the California Water Code (CWC), WDRs must implement the Basin Plan.

48. The Plant and the Primary and Secondary Lands lie within the San Joaquin Basin, specifically the Turlock Hydrologic Area (No. 535.5), as depicted on interagency hydrologic maps prepared by DWR in 1986. The Basin Plan designates the beneficial uses of groundwater as municipal and domestic supply, agricultural supply, industrial process and service supply, water contact recreation supply, and wildlife habitat supply.

49. The area around the Plant and Reuse Areas regionally drains towards the San Joaquin River. The Basin Plan designates the following beneficial uses for the San Joaquin River: municipal and domestic supply, agricultural supply, industrial process supply, water contact recreation, non-contact water recreation, warm freshwater habitat, migration of warm and cold water fishes, spawning for warm and cold water fishes, and wildlife habitat.
50. The Basin Plan includes a groundwater water quality objective for chemical constituents that, at a minimum, require waters designated as municipal and municipal supply to meet the State drinking water maximum contaminant levels (MCLs) specified in Title 22, California Code of Regulations (CCR). The Basin Plan recognizes that the Central Valley Water Board may apply limits more stringent than MCLs to ensure that waters do not contain chemical constituents in concentrations that adversely affect beneficial uses.
51. 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.
52. The Basin Plan states that when compliance with a narrative objective is required to protect specific beneficial uses, the Central Valley Water Board will, on a case-by-case basis, adopt numerical limitations in order to implement the narrative objective.
53. In the absence of specific numerical water quality limits, the Basin Plan methodology is to consider any relevant published criteria. General salt tolerance guidelines, such as *Water Quality for Agriculture* by Ayers and Westcott and similar references indicate that yield reductions in nearly all crops are not evident when irrigating with water having an EC less than 700 $\mu\text{mhos/cm}$. There is, however, an eight- to ten-fold range in salt tolerance for agricultural crops and the appropriate salinity values to protect agriculture in the Central Valley are considered on a case-by-case basis. It is possible to achieve full yield potential with waters having EC up to 3,000 $\mu\text{mhos/cm}$ if the proper leaching fraction is provided to maintain soil salinity within the tolerance of the crop.
54. The list of crops in Finding 32 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. Discharge has degraded the quality of groundwater beneath the Plant to levels that could affect plant growth if used for irrigation of crops such as almonds. However, agricultural operations in the area typically irrigate with TID irrigation water, which has excellent mineral water quality. Cleanup of groundwater impacted by the Plant discharge is being addressed by the CAO, and the effluent concentrations for the discharge permitted by

this Order are consistent with water quality objectives and will not limit use for irrigation on all but the most salt-sensitive crops.

Antidegradation

55. State Water 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:
- The degradation is consistent with the maximum benefit to the people of the State;
 - The degradation will not unreasonably affect present and anticipated future beneficial uses;
 - 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
 - The Discharger employs best practicable treatment or control (BPTC) to minimize degradation.
56. Economic prosperity of valley communities and associated industry is of maximum benefit to the people of the State, and therefore sufficient reason exists to accommodate growth and limited groundwater degradation around the Plant, provided that the terms of the Basin Plan are met. Degradation of groundwater by some of the typical waste constituents released with discharge from a food processing plant after effective source reduction, treatment, and control, and considering the best efforts of the Discharger and magnitude of degradation, is of maximum benefit to the people of the State. Hilmar Cheese aids in the economic prosperity of the region by directly employing over 700 workers, it provides incomes for numerous surrounding dairies, and provides a tax base for local and county governments. The proposed Order requires treatment that constitutes best practicable treatment or control.
57. Historically, Hilmar Cheese's disposal of partially-treated wastewater degraded groundwater in the vicinity of the Primary Lands and affected beneficial uses. The cleanup of this is regulated by the CAO and groundwater investigations are ongoing. An accompanying Time Schedule Order requires Hilmar Cheese to fully treat all of its wastewater to the effluent limits of this Order by no later than July 2011. The CAO addresses development of remedial actions to clean up groundwater from past discharges, which will address future use of the Primary Lands. Discharges to the Primary Lands may cause some limited, temporary degradation. However, the discharge of partially-treated wastewater is limited in aerial extent and duration; is limited in volume by Provision F.1; and the CAO already requires the Discharger to address groundwater pollution under the Primary Lands. This Order thus ensures that existing high quality water will be maintained, and that discharges to Primary Lands will meet BPTC requirements.

58. Constituents of concern that have the potential to degrade groundwater include organic material, nitrogen, and salts (TDS, EC, chloride, and sodium).
59. Regarding organic material (BOD), the estimated average BOD loading rate to the Reuse Areas is less than 1 pound per acre per day, which is well below the USEPA maximum recommended rate of 100 pounds per acre per day (lbs/acre/day) according to USEPA Publication No. 625/3-77-007, *Pollution Abatement in the Fruit and Vegetable Industry*, which is designed to prevent impacts to groundwater under most conditions. Therefore, no degradation due to organic loading is expected to occur.
60. For nitrogen, total nitrogen concentrations in the effluent are equal to or lower than that of upgradient water quality. Additionally, the ponds used to store treated effluent are clay-lined and the effluent is used to irrigate crops that use available nitrogen. Application of the wastewater at agronomic rates of irrigation will allow crop uptake of the majority of the nitrogen in wastewater and reduce the amount reaching groundwater in the Reuse Areas. The amount of nitrogen reaching groundwater through the clay-lined storage ponds will be minimal. Therefore the discharge would not cause degradation of groundwater above background, nor above the MCL for nitrate.
61. Regarding sodium, the lowest typical agricultural limit is 69 mg/L, which is based on protection of sprinkler-irrigated, salt-sensitive crops. Review of Ayers and Westcott, *Water Quality for Agriculture*; Asano, *Wastewater Reclamation and Reuse* and land use maps showing crops grown in the region, indicates crops highly sensitive to salt are currently not grown in the discharge area.
- Ayers and Westcott indicate sodium concentrations up to 70 mg/L have no restrictions for salt-sensitive crops and concentrations from 70 to 210 mg/L have only slight to moderate restrictions. The average sodium concentration in effluent from the Plant since April 2006 has been about 145 mg/L. The discharge could cause degradation of groundwater above ambient, but would not restrict usage for the types of crops grown in the area or as a drinking water source.
62. Regarding chloride, the effluent limit of 85 mg/L is less than the lowest typical agricultural limit of 106 mg/L (from *Water Quality for Agriculture*) and less than the lowest recommended Secondary MCL of 250 mg/L.
63. Regarding salinity in general, average TDS concentrations and EC values in the fully-treated wastewater since April 2006 are less than 450 mg/L and 825 μ mhos/cm, respectively, which are less than the ambient conditions upgradient of the Plant and are less than the Recommended Secondary MCLs of 500 mg/L and 900 μ mhos/cm. Therefore, the discharge will not exceed the most stringent MCL nor cause or contribute to degradation of groundwater for salinity.
64. Kennedy/Jenks prepared a technical report to estimate the potential degradation to groundwater from the discharge and the amount of land needed for disposal. The

report's model indicated that up to 1,200 acres will be required. The model predicted the concentration of TDS in the vicinity of the proposed Secondary Lands would be approximately 700 mg/L, with or without the discharge. This value (700 mg/L) is the predicted value for ambient water quality in the vicinity of the proposed Secondary Lands. The conclusion of the report was that there would be no degradation from the discharge as it is of comparable quality to existing downgradient water quality. The model considered a combination of precipitation, Turlock Irrigation District water used for irrigation in the area, irrigation with wastewater from local dairies, and discharge of Hilmar Cheese's treated wastewater.

65. This Order establishes groundwater limits that are performance based and 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 contains requirements for a groundwater assessment for assuring that the highest water quality consistent with the maximum benefit to the people of the State will be achieved. The groundwater limits reflect relevant, applicable and appropriate information and achievable by implementing the BPTC measure currently being implemented and proposed to be implemented by the Discharger. The limits established in this Order may be revised based on additional monitoring data submitted by the Discharger from monitoring wells in the Secondary Lands that will be installed and monitored in accordance with the requirements of this Order.

Treatment and Control Practices

66. The WWTF Expansion Project described in Findings 22 through 28 provides, or will provide, treatment and control of the discharge that incorporates:
- a. Physical and biological treatment for BOD reduction that reduces organic loading to a nominal amount;
 - b. UF and RO treatment, with proposed expansion of RO or addition of EDR treatment or other applicable technology, which are the highest levels of salt removal technology available;
 - c. Storage of effluent in lined ponds that will limit any constituent of concern from reaching groundwater by percolation;
 - d. Application of wastewater (alone or blended with TID Water and dairy wastewater) on crops at rates not exceeding reasonable agronomic demand;
 - e. Application of wastewater at rates that will not allow it to stand for more than 48 hours, which is designed to preclude nuisance conditions such as mosquito breeding;
 - f. At least daily inspection of the Reuse Area during times of discharge;
 - g. Preparation of a Nutrient Management Plan to ensure nutrients are not applied to crops at greater than agronomic rates; and
 - h. Appropriate solids disposal practices.

67. These Treatment and Control Practices are reflective of best practicable treatment or control (BPTC) of the discharge.

Water Reuse

68. The Basin Plan encourages the reuse of wastewater and identifies crop irrigation as a reuse option where the opportunity exists to replace an existing use or proposed use of fresh water with recycled water.

Designated Waste and Title 27

69. 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. Non-hazardous waste that consists of, or contains, pollutants that, under ambient environmental conditions at 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 water quality control plan.

70. Unless exempt, 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 and other Title 27 requirements provided the following conditions are met:

- a. The applicable regional water board has issued WDRs, 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.

The discharge of effluent and the operation of treatment or storage facilities associated with a food processing facility is exempt from Title 27, provided any resulting degradation of groundwater is in accordance with the Basin Plan and the waste need not be managed as a hazardous waste. None of the waste regulated by the proposed Order is hazardous waste nor required to be treated as hazardous waste. With treatment to remove organics and salinity, and application at agronomic rates, the discharge of fully-treated wastewater to land will not cause exceedance of groundwater quality objectives. The discharges authorized by this Order comply with the Antidegradation Policy, as described elsewhere in this Order.

The Discharger has demonstrated that, although currently lacking the capacity to treat all of its wastewater, it has the technical ability to treat all Plant wastewater to the limits specified in this Order. Once additional equipment is installed to treat all wastewater, the

discharges to Primary Lands will meet all requirements of Title 27, Section 20090(b). The board finds that the discharges to Primary Lands will be exempt from Title 27 once the expanded treatment plant is fully operational. In the meantime, the discharge of the portion of wastewater that is not fully-treated is subject to a Time Schedule Order as required by State Water Board Order WQ-2009-0005 (City of Lodi), and this Order prohibits an increase in flow above 1.9 mgd until the Discharger achieves full compliance and meets requirements for Nutrient Management Plans. No additional interim measures are necessary for purposes of Title 27 compliance.

The discharge to effluent storage ponds will not cause an exceedance of groundwater quality objectives. Only fully-treated effluent is discharged to them and the storage ponds are lined with an engineered compacted clay liner that will preclude leakage in an amount that would cause an exceedance of groundwater quality objectives.

The discharge of wastewater to the Plant's collection basins will not cause an exceedance of groundwater quality objectives as the basins are relatively small, reinforced concrete-lined sumps for pumping wastewater to the WWTF.

The discharges to the Secondary Lands, effluent storage ponds and collection basins are therefore exempt from Title 27, under section 20090(b). In addition, effluent applied to the Reuse Areas is a reuse that is exempt under Title 27, Section 20090(h).

CEQA

71. On 2 January 2009, Merced County, as Lead Agency, circulated a draft Mitigated Negative Declaration for Hilmar Cheese's proposed Plant expansion. Central Valley Water Board staff reviewed and commented on the draft Mitigated Negative Declaration, and on 11 February 2009 the Merced County Planning Commission adopted it. Mitigation measures include a condition that construction of the WWTF is completed and that all wastewater is treated prior to an increase in flows, and a requirement for a Nutrient Management Plan.
72. This Order includes requirements to protect water quality, including:
 - a. Effluent Limitations B.1 and B.2 which establish numerical effluent limitations that are reflective of best practicable treatment for this discharge.
 - b. Discharge Specification C.2, which stipulates waste constituents cannot be released or discharged in a concentration or mass that causes violation of this Order's groundwater limitations.
 - c. Provision F.21, which requires that Hilmar Cheese submit and implement a Nutrient Management Plan by 1 December 2010.
73. The Central Valley Regional Water Board has reviewed the Mitigated Negative Declaration and concurs that all potential water quality and related nuisance impacts have been mitigated to a less-than-significant level.

General Findings

74. Based on the threat to water quality and complexity of the discharge, the facility is determined to be classified as 1-A. Section 2200 of Title 23, CCR, defines these categories to include any of the following:
- a. Category 1 threat to water quality: "Those discharges of waste that could cause the long-term loss of a designated beneficial use of the receiving water. Examples of long-term loss of a beneficial use include the loss of drinking water supply, the closure of an area used for water contact recreation, or the posting of an area used for spawning or growth of aquatic resources, including shellfish and migratory fish."
 - b. Category A complexity: "Any discharge of toxic wastes, any small volume discharge containing toxic waste or having numerous discharge points or ground water monitoring, or any Class 1 waste management unit."
75. 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.
76. The Central Valley Water Board will review this Order periodically and will revise requirements when necessary.
77. 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."
78. The technical reports required by this Order and the attached Monitoring and Reporting Program No. R5-2010-0008 are necessary to assure compliance with these WDRs. Hilmar Cheese operates the facility that discharges the waste subject to this Order.
79. DWR sets standards for the construction and destruction of groundwater wells, as described in the *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.

Public Notice

80. 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.

81. The Discharger and interested agencies and persons have been notified of the intent to prescribe WDRs for this discharge, and they have been provided an opportunity for a public hearing and an opportunity to submit their written views and recommendations.

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

IT IS HEREBY ORDERED that, Waste Discharge Requirements Order No. 97-206 is rescinded and that, pursuant to Sections 13263 and 13267 of the CWC, Hilmar Cheese Company, Inc., Reuse Area Owners, and their respective 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. Discharge Prohibitions

1. Direct discharge of wastes to surface waters or surface water drainage courses is prohibited.
2. Bypass 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 CWC Section 13173; in a manner that causes violation of groundwater limitations, is prohibited.
4. Application of wastewater in a manner or location other than that described herein is prohibited.

B. Effluent Limitations

1. The discharge from the WWTF to land (the effluent storage ponds or Reuse Areas) shall not exceed the following monthly averages for the constituents listed:

<u>Constituent/Parameter</u>	<u>Units</u>	<u>Value</u>
Electrical Conductivity	$\mu\text{mhos}/\text{cm}^1$	1,000
Total Dissolved Solids	mg/L^2	600
5-day Biochemical Oxygen Demand	mg/L^2	50
Chloride	mg/L^2	85
Total Nitrogen	mg/L^2	20

1. micromhos per centimeter ($\mu\text{mhos}/\text{cm}$)
2. milligrams per liter (mg/L)

2. The discharge from the WWTF to land (the effluent storage ponds or Reuse Areas) shall not exceed the following 12-month rolling average for the constituents listed:

<u>Constituent/Parameter</u>	<u>Units</u>	<u>Value</u>
Electrical Conductivity	µmhos/cm	900
Total Dissolved Solids	mg/L	500

C. Discharge Specifications

1. The monthly average discharge flow shall not exceed 1.9 mgd until the Discharger has satisfied Provisions F.18 and F.21, after which the monthly average flow shall not exceed 2.5 mgd.
2. 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.
3. Unless determined by the Executive Officer or the Discharger to be significant sources of pollutants, only the following non-storm waters may be discharged to the storm water retention basin:
 - a. potable water line flushing;
 - b. landscape irrigation (greenbelts and planters around Plant) drainage;
 - c. foundation/footing or other minor dewatering drainage;
 - d. potable water; and
 - e. air conditioning, refrigeration, or compressor condensate.
4. Objectionable odors shall not be perceivable beyond the limits of the WWTF, storage pond, or Reuse Area properties at an intensity that creates or threatens to create nuisance conditions.
5. Application of wastewater to the Reuse Areas shall be at reasonable agronomic rates to preclude degradation of groundwater, considering the crop, soil, climate, and irrigation management system, consistent with the Nutrient Management Plan required by Provision F.21. The annual hydraulic and nutritive loadings to the Reuse Area, including the nutritive value of organic and chemical fertilizers and of the wastewater shall not exceed the annual crop demand.
6. Wastewater shall not be discharged to the Reuse Area in a manner that causes wastewater to stand for greater than 48 hours.

7. Any irrigation runoff shall be confined to the reuse area and shall not enter any surface water drainage course or stormwater drainage system unless the runoff does not pose a public health threat and is authorized by the appropriate regulatory agencies.
8. No physical connection shall exist between 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.

D. Solids Specifications

1. Any handling and storage of solids and sludge 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, sludge, 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 WDRs issued by a regional water quality control board will satisfy this specification. The deep well injection system regulated by the United States Environmental Protection Agency also satisfies this specification.
3. Any proposed change in solids disposal practices shall be reported to the Executive Officer in writing at least 90 days in advance of the change.

E. Groundwater Limitations

Release of waste constituents from any wastewater or storm water collection, treatment, or storage component, or release of waste constituents from discharges to the Reuse Area, shall not cause or contribute to groundwater:

- a. Containing concentrations of constituents in excess of those identified below.
 - (i) Nitrate as nitrogen of 10 mg/L.
 - (ii) TDS of 700 mg/L
 - (iii) Total Coliform Organisms of 2.2 MPN/100 mL.
 - (iv) For constituents identified in Title 22, the Primary and Secondary 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.

F. 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(s).
2. The Discharger shall comply with Monitoring and Reporting Program (MRP) No. R5-2010-0008, which is part of this Order, and any revisions thereto as adopted by the Central Valley 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 self-monitoring reports.
3. Hilmar Cheese shall keep at the Plant, and each other Reuse Area Owner shall keep at its business office or residence, 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 and work plans 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 and work plans 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 Central Valley 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 Central Valley Water Board by letter when it returns to compliance with the time schedule. Violations may result in enforcement action,

including Central Valley Water Board or court orders requiring corrective action or imposing civil monetary liability, or in revision or rescission of this Order.

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 Central Valley Water Board.
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 Central Valley Water Board and a statement. The statement shall comply with the signatory paragraph of Standard Provision B.3 and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the California Water Code. If approved by the Executive Officer, the transfer request will be submitted to the Central Valley Water Board for its consideration of transferring the ownership of this Order at one of its regularly scheduled meetings.
9. Effluent storage ponds shall have sufficient capacity to accommodate allowable wastewater flow and design seasonal precipitation and ancillary inflow and infiltration during the winter. 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.
10. No later than **1 October** of each year, Hilmar Cheese will provide documentation that it has the available storage capacity in the effluent storage ponds and Reuse Areas necessary to comply with Provision F.9.
11. All ponds (i.e., effluent storage ponds, storm water ponds) shall be managed to prevent breeding of mosquitoes. In particular,
 - a. An erosion control plan should assure that coves and irregularities are not created around the perimeter of the water surface.
 - b. Weeds shall be minimized through control of water depth, harvesting, and herbicides.
 - c. Dead algae, vegetation and other debris shall not accumulate on the water surface.
 - d. Vegetation management operations in areas in which nesting birds have been observed shall be carried out either before or after, but **not during**, the April 1 to June 30 bird nesting season.

12. The Reuse Area parcels shall be graded to prevent ponding along public roads or other public areas and prevent runoff onto adjacent properties.
13. Reuse Area parcels shall be managed to prevent breeding of mosquitoes. In particular:
 - 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 reused water.
14. As a means of discerning compliance with Discharge Specification C.4, the dissolved oxygen (DO) content in the upper one foot of any wastewater pond (i.e., effluent storage ponds or storm water basins) shall not be less than 1.0 mg/L for three consecutive days. Should the DO be below 1.0 mg/L during a weekly sampling event, the Discharger shall take all reasonable steps to correct the problem and commence daily DO monitoring in all affected ponds until the problem has been resolved. If objectionable odors originating from affected ponds are noticed in developed areas, or if the Discharger receives one or more odor complaints, the Discharger shall report the findings in writing within 5 days of that date and shall submit a specific plan to resolve the low DO results to the Central Valley Water Board within 10 days of that date.
15. The pH of the discharge to effluent storage ponds shall not be less than 6.0 or greater than 9.0 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 quarterly self-monitoring reports documenting the pH of the discharge to the Reuse Area.
16. Hilmar Cheese shall maintain and operate all storage ponds sufficient to protect the integrity of containment levees and prevent overtopping or overflows. Unless a California civil engineer certifies (based on design, construction, and conditions of operation and maintenance) that less freeboard is adequate, the operating freeboard in any pond shall never be less than two feet (measured vertically). As a means of management and to discern compliance with this Provision, Hilmar Cheese shall install and maintain in each pond permanent markers with calibration that indicates the water level at design capacity and enables determination of available operational freeboard.
17. The Discharger shall submit the technical reports and work plans required by this Order for Central Valley Water Board staff consideration and incorporate comments

they may have in a timely manner, as appropriate. The Discharger shall proceed with all work required by the following provisions by the due dates specified.

18. Upon completion of the proposed WWTF Expansion Project described in Findings 22 through 28 and **at least 60 days prior** to initiating an increase in the monthly average discharge flow to greater than 1.90 mgd, Hilmar Cheese shall submit an engineering certification that it has sufficient treatment, storage, and disposal capacity to comply with the other terms and conditions of this Order. This Provision will be considered satisfied following written acknowledgement from the Executive Officer that this Provision's criteria have been met.
19. **By 15 June 2010**, Hilmar Cheese shall submit a report documenting the installation and sampling of the additional groundwater monitoring wells described in Finding 40. The report shall include a list of wells proposed to be incorporated into the final groundwater monitoring network for Executive Officer approval.
20. **By 15 June 2010**, Hilmar Cheese shall submit a report summarizing salinity minimization measures that have been implemented, and a time schedule for measures that will be implemented, to reduce the salinity in discharge to the extent feasible. Hilmar Cheese shall identify sources of salt in waste generated at the Plant, report measures to minimize salt in the waste, and certify that it has or will implement the approved measures identified to minimize salt in the waste.
21. **By 15 December 2010**, the Discharger shall, for each separately-owned parcel where wastewater is applied for irrigation purposes, develop and implement management practices that control nutrient losses and describe these in a Nutrient Management Plan. The Nutrient Management Plan must be certified, maintained at the Plant, submitted to the Executive Officer upon request, and must ultimately describe wastewater crop irrigation practices that provide for protection of both surface water and groundwater. The Nutrient Management Plan shall account for all nutrient inputs from all sources (i.e., the discharge, manure, chemical fertilizers, etc.) and shall be reviewed and updated as necessary. The Nutrient Management Plan shall be consistent with General WDRs Order R5-2007-0035, *General Order for Existing Milk Cow Dairies*, for all Reuse Area parcels that are regulated by Order R5-2007-0035. Groundwater monitoring will be used to determine if implementation of the Nutrient Management Plan is protective of groundwater quality.

22. Each Reuse Area Owner is responsible for all water quality or nuisance impacts of wastewater discharged at their Reuse Area parcels. Each Reuse Area Owner shall be responsible for compliance with General WDRs Order R5-2007-0035, *General Order for Existing Milk Cow Dairies*, for all Reuse Area parcels that are regulated by Order R5-2007-0035. A failure by Hilmar Cheese to comply with this Order or other legal requirements shall not be a defense to any action by the Central Valley Water Board to enforce any law, regulation, or other requirement against a Reuse Area Owner.

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 29 January 2010.


for PAMELA C. CREEDON, Executive Officer

Order Attachments:

- Monitoring and Reporting Program
- A Vicinity Map
- B Site Map and existing Reuse Area
- C Reuse Area Parcel Map
- D Reuse Area Owner Table
- Information Sheet
- Standard Provisions (1 March 1991)

JSP/DKP: 01/29/10