

STATE WATER RESOURCES CONTROL BOARD
RESOLUTION NO. 91-68

ACCEPTANCE OF
DAIRY WASTE TASK FORCE GUIDANCE DOCUMENTS
FOR USE BY THE
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARDS
IN REGULATING
DAIRIES AND CONFINED ANIMAL FEED LOTS

WHEREAS:

1. The Executive Office of the State Water Resources Control Board (State Board) convened a Dairy Waste Task Force consisting of State Board staff and California Regional Water Quality Control Board (Regional Board) staffs to investigate the concern of the dairy industry that there is not consistent regulation of dairies in the State.
2. The Dairy Waste Task Force has surveyed the Regional Boards relative to the regulation of dairies.
3. The Dairy Waste Task Force has written a staff report which concludes that there is consistency in the manner in which dairies are regulated on a statewide basis.
4. The Dairy Waste Task Force has determined that there is a need to provide the Regional Boards with documents which can be used in addressing dairies.
5. The Dairy Waste Task Force has developed these documents consisting of a Survey Form, a salt/nitrate loading model, and a model Waste Discharge Requirement.
6. These documents are attached to the staff report.
7. The Dairy Waste Task Force has presented the staff report, including the documents, to the dairy industry through a series of meetings held throughout the State and has solicited their comments relative to these.
8. The Dairy Waste Task Force has received industry comments and has incorporated comments where appropriate.
9. These documents are consistent with the provisions of Article 6 of Chapter 15, Division 4, Title 23, of the California Code of Regulations.

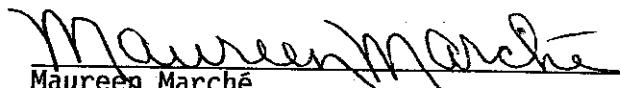
THEREFORE BE IT RESOLVED:

That the State Board approves in concept the staff report and documents, and directs State Board staff to continue to work with the Dairy Industry in resolving any outstanding issues.

That the State Board directs State Board staff to distribute these documents to the Regional Boards for use as appropriate.

CERTIFICATION

The undersigned, Administrative Assistant to the Board, does hereby certify that the foregoing is a full, true, and correct copy of a resolution duly and regularly adopted at a meeting of the State Water Resources Control Board held on July 18, 1991. .


Maureen Marché
Administrative Assistant to the Board

Staff Report
Division of Water Quality
State Water Resources Control Board

Regulation of Dairy Waste Disposal

I. Introduction

The goal of regulating the disposal of dairy waste is to minimize the effect that the disposal of the waste has on water quality.

The waste disposal practices utilized by many dairies are such that all waste water is disposed of on-site. Waste water is a combination of run-off from the dairy barn corrals, and wash water from the cows and milking barns. The waste water is usually blended with another water source, usually ground water, and is used as irrigation water for crop or pasture land at the dairy. The manure which is generated by dairies is applied to the crop or pasture land as a fertilizer to the greatest extent possible. The nitrogen requirements of the crop and pasture land determine the amount of manure that can be disposed of on-site.

This method of disposal has been a standard practice of disposal for the waste generated on-site by dairies. However, with the advent of larger herds and more compact dairies these practices are no longer adequate to protect water quality. This is due to the fact that as dairy herds get larger, more waste water and manure is generated on-site. The crop and pasture land acreage available for waste discharge at the dairies has not increased proportionately with increased herd size. Dairies are finding it difficult to dispose on-site the waste generated in a manner which will protect water quality.

In order to protect water quality, the Regional Water Quality Control Boards (Regional Boards) regulate the on-site disposal of dairy waste. All Regional Boards require compliance with specific water quality objectives contained in Basin Plans and compliance with Chapter 15 (formerly Subchapter 15) of Division 3 of Title 23 of the California Code of Regulations.

The current specific form of dairy regulation varies from Region-to-Region based on the historic water quality problems associated with dairies. Some dairies are addressed through voluntary compliance with best management

practices (BMPs) relative to the disposal of dairy waste, some dairies are issued conditional waivers of waste discharge requirements (WDRs) and some are issued formal WDRs.

Because Regional Boards appear to use various means to regulate dairies, the dairy industry has expressed a concern that the Regional Boards are not regulating dairies in a uniform manner Statewide. In order to address the concerns of the dairy industry, a Dairy Waste Task Force was convened by the Executive Office of the State Board.

II The Dairy Waste Task Force

The Dairy Waste Task Force (Task Force) is composed of State Board staff, and staff of the Regional Boards which actively regulate dairies. The function of the Task Force is to investigate the methods of regulation currently being used by the Regions and develop a consistent regulatory approach if necessary and appropriate.

All of the Regional Boards were polled to determine the current means of regulating dairies within their Region. In general, the Regional Boards use a multi-phased approach in regulating dairies. However, some Regional Boards are more stringent than others in regulating dairies due to site specific or Region-wide considerations. Regulation of dairies throughout the State has evolved and continues to evolve through a three phase regulatory approach.

The first phase of regulation is the informal implementation of dairy BMPs. The second phase is the adoption of a conditional waiver of WDRs for those dairies which do not voluntarily comply with dairy BMPs. The third phase is the adoption of WDRs for those dairies which do not comply with the conditions of waiver. It should be noted that enforcement action may be taken relative to a dairy at any time.

Regions throughout the State utilize different phases of this regulatory strategy. The specific phase used by a particular Regional Board is dependent upon past experience in regulating dairies in the Region and potential water quality problems from dairy discharges. Some Regions have elected to address dairies using voluntary best management practices in Phase I of the regulatory strategy. Other Regions, which in past years have gradually brought all dairies under waste discharge requirements, are already in Phase III of the regulatory strategy.

At a minimum, the Regional Boards ensure that dairies comply with Chapter 15 and any water quality objectives contained in the Basin Plans. However, some Regions may be more

restrictive (i.e. more stringent requirements, adoption of waste discharge requirements for all dairies instead of waivers, imposition of ground water monitoring, etc.) than others in implementing Chapter 15 or their Basin Plans due to site specific concerns regarding ground water protection or other Basin Plan considerations.

Two Regional Boards have a policy of adopting WDRs for all dairies in the Region. These Regions have well identified water quality problems associated with dairies. One of these Regions, the Santa Ana Regional Board has always issued dairies waste discharge requirements due to the concentration of dairies located in the Chino Basin and the sensitivity of the Chino Ground Water Basins. The other Region which issues waste discharge requirements to all dairies is the San Diego Regional Board. The San Diego Regional Board does so because all of the dairies within the San Diego Region are thought to overlie sensitive ground water basins and to diminish any inequities created by not regulating all dairies located within the Region in a like manner. Regulation of dairies through formally adopted WDRs is a requirement of the Basin Plans for the Santa Ana Region and San Diego Region.

The basinwide use of WDRs is most appropriate in those areas where there are well defined water quality objectives, or where there are large concentrations of dairies, or where there is a history of noncompliance on an areal basis, or where needed to meet specific Basin Plan requirements.

Regions that routinely do not issue WDRs to insure water quality protection address dairies by either voluntary compliance with BMPs or the conditional waiver of requirements. The practice of waiving WDRs for dairies is addressed in the Regional Board's waiver policy. As a condition of waiver, a dairy must implement BMPs, which are generally Region specific, in order to comply with Chapter 15. Failure by the dairy owner to comply with these minimum requirements results in the request for a report of waste discharge and the subsequent adoption of WDRs.

Failure to comply with either the conditions of waiver or WDRs will result in the Regional Board taking enforcement action against the dairy.

III Relationship to the Nonpoint Source Control Program

This phased regulatory approach is consistent with the State Board's nonpoint source control program which calls for a cooperative strategy in dealing with nonpoint sources of pollution. The cooperative strategy consists of encouraging dischargers and management agencies to implement BMPs through education, training, financial assistance, technical

assistance, and demonstration projects. If progress towards implementation of BMPs is not made, the State Board will consider taking more conventional regulatory steps such as issuance of waste discharge requirements and preparation of enforcement actions.

The cooperative strategy will not supersede a specific Regional Board's strategy of regulating all dairies through WDRs.

IV Task Force Work Products

In order to make the cooperative strategy more readily understandable by the dairy industry the Task Force has undertaken the preparation of this written summarization of the regulatory approach. In addition, the State Board's Nonpoint Source Pollution Program will identify specific BMPs which can be employed by dairies in order to protect water quality. Attached to this summarization of the phased regulatory approach are guidance documents which will be provided to the Regional Boards for use in regulating dairies. These guidance documents are:

1. A Standard Dairy Waste Discharge Questionnaire - Survey Form (Attachment 1).
2. A Standard Means of Evaluating the Standard Dairy Waste Questionnaire - Survey Form (Attachment 2).
3. A Standard Waste Discharge Requirement (Attachment 3).

The Standard Dairy Waste Discharge Questionnaire - Survey Form (Survey Form) is used to obtain information regarding the waste management practices at a particular dairy. The basis for much of the information requested in this form can be found in Chapter 15. The Survey Form also includes an introductory letter which explains why specific information is being requested, a copy of Article 6 of Chapter 15 and a map showing the Regional Boards.

The information requested in the Survey Form covers a wide range of material and it is understood that many dairymen will not be able to furnish some of the requested information, especially that dealing with local ground water conditions. What the dairyman will be able to furnish is the information regarding the herd size, and the day-to-day operation of the dairy. This information would include the size of waste ponds, where the waste water comes from, the average amount of waste water and manure generated on a daily basis, the types and amounts of crops grown, and the acreage of dedicated crop land at the dairy. The information contained in the Survey Form will be used by the

Regional Board to determine if BMPs are being successfully implemented, or whether more information is needed before this can be decided. In addition, the Survey Form will provide data for tracking individual dairy operations within a Region.

If the Regional Board is not able to determine if the BMPs utilized by the dairy are successful in protecting water quality, the Regional Board will request additional information. The specific information which the Regional Board requests will be developed on a case-by-case basis.

Regions which adopt WDRs for all dairies may elect to skip the Survey Form. Existing dairies requesting modification of a WDR due to herd size increases or changes in waste disposal area could be required to complete the Survey Form on a case-by-case basis.

Information relative to waste management practices provided by the dairyman in the Survey Form and through any other requests made by a Regional Board will be evaluated for conformance with Chapter 15 requirements and region specific Basin Plan requirements, and also for impacts on ground water. The Standard Means for Evaluating the Standard Dairy Waste Discharge Questionnaire - Survey Form (Attachment 2) will provide the Regional Boards with the means for determining a dairy's impact on ground water with respect to total dissolved solids and nitrates. The standard means of evaluation will furnish the Regional Board with a reasonable estimate of the amounts of nitrate and salts which are being applied in excess of crop uptake. An estimate of the amount of salts and nitrates percolating to the ground water will also be made at this time, using simplified models contained within the evaluation material.

Aspects of the dairy operation, other than waste disposal, such as waste pond storage design and construction or flood protection will continue to be evaluated on a site specific basis.

The standard WDR for dairies (Attachment 3) is to be considered a minimum requirement. It can be modified to take into account Region specific language regarding compliance with Basin Plan water quality objectives, waste loading, etc. In addition, where site specific conditions warrant, more stringent requirements such as ground water or vadose zone monitoring can be imposed.

These work products have been presented to leaders of the dairy industry in a series of meetings conducted throughout the State. The purpose of these meetings was to solicit input from the industry regarding these work products. Comments have been received from the dairy industry and

where appropriate, they have been incorporated. Once State Board accepts these standardized forms, they will be transmitted to the State Board's Non-Point Source Section to be integrated into an outreach program for presentation to the industry in general. These documents will also be transmitted to the Regional boards with the recommendation that to the extent possible they be used.

It is anticipated that these work products will be presented to the industry in general through an outreach program. The purpose of the outreach document is to provide an informational tool for the Regional Boards or the State Board's Nonpoint Source Program to use in explaining the State's dairy regulation program. In addition, the outreach program will be used to show the industry the advantages of voluntary compliance with best management practices where this phase of the phased regulatory approach is offered.

V Conclusion

The Dairy Waste Task Force, after surveying the Regional Boards with regard to the strategies used in regulating dairies has concluded that, while the approaches used in regulating dairies varies from Region-to-Region the strategies used are not inconsistent. The regulatory strategy which is used by the Regional Boards is a phased approach.

The first phase is the informal implementation of BMPs on a voluntary basis. The second phase is the adoption of a conditional waiver of WDRs for those dairies which do not voluntarily comply with BMPs. The third phase is the formal adoption of WDRs for those dairies which fail to comply with the conditions of waiver. No matter which phase is used by a Regional board in regulating a dairy, the waste disposal practices used by the dairy must comply with minimum standards set forth in Chapter 15 and other applicable provisions of the Basin Plan.

The specific phase used by a particular Regional Board is dependent upon the past experience that the Regional Board has had in regulating dairies, local water quality conditions and the water quality objectives and beneficial uses listed in the Basin Plans. Current conditions within a basin or a Region may warrant the Regional Board taking a more stringent approach to the regulation of dairies when compared to the regulatory strategy employed by another Regional Board.

In order to communicate to the dairy industry the fact that a consistent approach is being used by the Regional Boards in regulating dairies, the Task Force has taken the lead in developing a workshop program to explain the regulatory

program to the dairy industry. Several documents have been prepared by the Task Force for use by the Regional Boards in regulating dairies in a consistent manner. These documents are the Standard Dairy Waste Discharge Questionnaire - Survey Form, the Standard Means of Evaluating the Report of Dairy Waste Management Practices and a Standard Waste Discharge Requirement. These documents will serve as guidance to the Regional Boards. It is not staff's intent at this time to mandate the use of these forms in regulating dairies. The use of them will be encouraged in order to allow the dairy industry to know what information at a minimum will be requested by a Regional Board before a dairy begins operation in a new Region. However, the information which a Regional Board may request from a dairymen will in no way be limited to what is found in the Survey Form.

These work products have been presented to the leaders of the dairy industry, through a series of meetings, in order to solicit their input into the work products. Their comments, where appropriate, have been incorporated into the work products.

STATE OF CALIFORNIA

STATE WATER RESOURCES CONTROL BOARD

PAUL R. BONDERSOHN BUILDING
901 P STREET
P.O. BOX 100
SACRAMENTO, CALIFORNIA 95812-0100
(916) 445-9552



To Whom It May Concern:

DAIRY WASTE INFORMATION

The California Regional Water Quality Control Boards (Regional Boards) request that all dairy owners or operators complete the enclosed Survey Form (Enclosure 1). This Survey Form has been developed by the staff of the State Water Resources Control Board (State Board) with the assistance of the staff of the Regional Boards and representatives of Statewide Dairy Associations. You are asked to complete this Survey Form to the best of your knowledge. You will not be penalized for failing to respond to a specific question. However, Regional Board staff may contact you for additional information or clarification if necessary.

Background

The State Board and the Regional Boards are charged with protection of water quality in the State of California. This is accomplished by regulating activities that could affect either surface or ground waters of the State.

The minimum standards that a dairy must implement in order to protect water quality are found in the regulations contained in Article 6, Chapter 15, Title 23 of the California Code of Regulations (Enclosure 2). The information requested in this Survey Form is based on these regulations. In completing this Survey Form, you will be providing the Regional Board with the information necessary to develop a data base on the numbers of dairies, their sizes, their locations and the types of waste management practices utilized. You will also be providing the Regional Board with the information needed to determine whether your dairy is in compliance with Chapter 15. More important, completion of the Survey Form will help you determine whether your dairy is in compliance with Chapter 15.

If, after reviewing the information which you provide, the Regional Board determines that your dairy is in compliance with the requirements of Chapter 15, then in all likelihood waste discharge requirements will be waived. If the Regional Board is not able to determine your compliance with Chapter 15, you may be asked to provide more information, or the Regional Board may conduct an on-site visit to your facility.

If you have questions regarding the meaning of a question, please contact the Regional Board. Enclosure 3 is a map showing the boundaries of the Regional Boards and listing addresses and telephone numbers for each of the offices.

The following is a discussion of the questions contained in the Survey Form and the reasons why you are asked to provide this information.

Rationale for Information Requested

Question	Rationale
1, 2 & 3	General Information
4	<p>Section 2562(c)^{1/} requires that if your dairy was in operation on or before December 8, 1984, retention ponds and manured areas must be protected from inundation from stream flow during a 20-year peak storm event.</p> <p>Section 2562(d) requires that if your dairy began operation after December 8, 1984, retention ponds and manured areas must be protected from inundation from stream flow during a 100-year peak storm event.</p> <p>The County Planning Commission, the Soil Conservation Service, or the local Resource Conservation District should be able to assist you with this question.</p>
5	<p>Section 2561 requires that animals in the confined animal facility be prevented from entering surface waters. In addition, the Water Code prohibits activities which could cause pollution in waters of the State. This would include pollution due to cattle "loafing" in a surface water which has designated beneficial uses.</p>
6	<p>Section 2562(b) requires that the stormwater runoff generated by a 25-year, 24-hour storm either be diverted away from manured areas or fully retained. This requirement can be waived by the Regional Board if upstream land use changes have altered runoff patterns.</p>
7 through 14	<p>These questions all relate to the sizing of the retention ponds and the amount of nitrogen and salts contained in the wastewater and manure which require disposal.</p>

^{1/} Section numbers refer to Article 6, Chapter 15 (formerly Subchapter 15) of Title 23 of the California Code of Regulations

Section 2562(a) requires that retention ponds be adequately sized for the dairy operation. The retention ponds must be large enough to retain both wastewater and runoff from the manured areas from a 25-year, 24-hour storm.

Section 2563(a) requires that "application of manure and wastewater to disposal fields or crop lands shall be at rates which are reasonable for the crop, soil, climate, special situations, management systems, and type of manure." The Regional Board determines whether an application rate is reasonable based on the nitrogen load that requires disposal and the nitrogen consumption rate of the cropland. In some cases, the salt load may also be an important factor.

The number of cows and types of corral systems (questions 7 and 10) and the amount of time cattle spend in the corral or in a pasture (question 8), the quantity of milk barn wash water (question 9) and the size of the manured area (question 11) provide information on the amount of wastewater generated at the dairy. Based on the information which you provide, the Regional Board will estimate the size of pond required to comply with Section 2562(a). This will be compared with the size of pond you have as indicated in question 12.

The number and types of animals at your facility (question 7) and the amount of time spent in the corrals (question 8) will be used to estimate the amount of manure which is generated at your facility. Manure is assumed to be available for use as a fertilizer for crops if cropland is available. An estimate of the nitrogen available in the manure and facility-generated wastewater will be made. This will be compared with the cropping patterns (question 13) at the dairy at the time this Survey Form is completed. The Regional Board will use this information to determine whether manure and wastewater are applied at reasonable rates. The Regional Board's determination will rely on recognized documents of wide distribution such as the Western Fertilizer Handbook, or the USDA Agricultural Waste Management Field Manual. If you have other documents which you wish to have considered, please submit them with the completed Survey Form.

15

Section 2563(b) requires that disposal of dairy wastewater shall not result in surface runoff and shall be managed to minimize the percolation to ground water. The purpose of this question is to determine whether you consider these factors when scheduling irrigation applications.

- 16 Section 2562(f) requires that ponds be lined with or underlain by soils containing at least 10 percent clay and not more than 10 percent gravel, or artificial material of equivalent impermeability.
- 17 Information provided will be used to determine whether adequate retention pond capacity is maintained or whether the build-up of manure is a problem. Information regarding the removal methods will be used to determine if the pond bottom is scarified during removal of the sludge.

Additional Information

In addition to completing the Survey Form, please provide a facility plan and location map of your dairy. The map or drawing used should be of adequate size to accurately show the dairy, nearest major cross street, and town. The facility plan should contain the following:

Buildings, structures, corrals and ponds. Indicate the approximate dimensions. (use a scale such as 1 inch = 100 feet)

Operational wells on the dairy property. If information about well location, well construction or water quality is available, please provide this.

Crop land and/or pasture located at the dairy. Please identify each manure or wastewater application acre by the letter A, B, C, etc.

Location of pipes, sumps, ditches, and/or dikes involved in moving milk barn wash water and corral runoff from point of origin to application area.

Drainage patterns of the dairy. This should indicate which areas drain into which pond. This should also show the manured areas around which runoff is diverted (if this is done).

(Note: a U.S.G.S. Quad sheet would be helpful for determining the drainage pattern for the dairy.)

Your efforts in completing this Survey Form are appreciated. Should you have any questions regarding this form, please contact the Regional Board. Telephone numbers are listed on Enclosure 3.

In submitting your completed Survey Form to the appropriate Regional Board, have you included:

Requested Information

_____ Survey Form

_____ Location Map/Facility Plan (U.S.G.S. Quad preferred, if available)

Other Information, as available

_____ Flood Protection Documentation (if available)

_____ Ground water quality information

_____ Well construction information

_____ Nitrogen uptake/nitrogen demand information

Sincerely,

Jesse M. Diaz, Chief
Division of Water Quality and Water Rights

STATE WATER RESOURCES CONTROL BOARD
STANDARD DAIRY/FEED LOT WASTE DISCHARGE QUESTIONNAIRE
SURVEY FORM

Directions: Please print or type answers to all questions. If the question does not apply to your operation, use "N/A". Please attach any supporting calculations, figures, or discussions on regular 8-1/2 x 11 inch paper. Please sign this questionnaire. The words "dairy" and "feed lot" are used interchangeably in this Survey Form.

I HEREBY CERTIFY THAT THE INFORMATION HEREIN AND IN ANY ATTACHMENTS IS TRUE AND ACCURATE TO THE BEST OF MY KNOWLEDGE AND UNDERSTANDING OF THE QUESTIONS.

SIGNATURE: _____

PRINT YOUR NAME: _____ DATE: _____

1. Dairy Name: _____

2. Dairy Owner: _____

3. Principal Breed of Herd (Holstein, Jersey, etc.): _____

4. Was your dairy in operation before December 8, 1984?

Yes _____ Go to 4a

No _____ Go to 4b

4a. If your dairy was in operation on or before December 8, 1984, retention ponds and manured areas must protected from inundation or washout by overflow from any stream channel during a 20-year peak storm event.

Are yours? Circle yes no

4b. If your dairy began operation after December 8, 1984, retention ponds and manured areas must be protected from inundation or washout by overflow from any stream channel during a 100-year peak storm event.

Are yours? Circle yes no

4c. If you circled "yes" in either 4a or 4b, please provide documentation, if available.

5. Is there perennial or seasonal flow in a creek, stream, river or other open water conveyance located on your dairy facility?

Please circle yes no

5a. If you answered "yes" to No. 5, explain the measures in use to prevent your cattle or other animals from entering the creek, stream, river, or other open water conveyance device.

6. Are you able to divert the storm generated runoff away from manured areas, or retain the runoff passing over the manured areas?

Please circle yes no

6a. If it is not possible to divert or retain the tributary area runoff, explain below why it is not possible.

7. In the table below, enter the number of cattle currently at the facility for each type of corral system (freestalls with a total flush system, feed alley flush, dry lot corrals, and scraped freestalls).

TOTAL	FREESTALLS W/TOTAL FLUSH	FEED ALLEY FLUSH	SCRAPED DRY LOT	SCRAPED FREESTALLS
Milking Cows _____	_____	_____	_____	_____
Dry Cows/Bred _____	_____	_____	_____	_____
Heifers _____	_____	_____	_____	_____
Heifers, 1 year to breeding _____	_____	_____	_____	_____
Calves, 3 months to one year _____	_____	_____	_____	_____
Calves, 1 day to 90 days _____	_____	_____	_____	_____

8. If any of the animals listed in No. 7 above are moved to other locations, such as pastures, during part of the year, please complete the table below to identify the location, percent of the animals moved, and the percent of the time the animals spend at the other locations.

	LOCATION	ESTIMATED % OF ANIMALS	% TIME MOVED
Milking Cows	_____	_____	_____
Dry Cows/Bred Heifers	_____	_____	_____
Heifers, 1 year to breeding	_____	_____	_____
Calves, 3 months to	_____	_____	_____

1 year
Calves, 1 day to
90 days

9. Indicate below the average milk barn wash water production in gallons per milk cow per day.

_____ gallons/cow/day

10. If the dairy uses a flushed feed alley system or a flushed freestall system, indicate below the volume of water used to flush the corral in gallons and the frequency of corral flushes, such as daily or weekly.

_____ gallons

_____ frequency

Is the milk barn wash water recycled to flush the corrals?

Please circle yes no

If the milk barn wash water is recycled, estimate the percentage of flush water used which is fresh water and the percentage which is recycled wash water. (Should add to 100)

_____ % fresh
_____ % recycled

11. How large are the manured areas that drain into retention ponds at your dairy?

_____ acres

12. For each wastewater or storage pond please complete the following table:

Pond	Maximum Volume in Gallons, Cubic Feet, or Acre Feet
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13. Please complete the following table to indicate where the manure and waste water are used and what type of crop is grown if any. If no crops are grown on all or part of the application area, write "none" or "pasture" under CROP and AVG Yield, but complete the remainder of the table as indicated. If the average yield is not known, write "unknown" under AVG Yield. Indicate whether waste water is applied to each area for each crop. Also, indicate the amount of dry manure applied to each application area. If commercial fertilizer is used

on an area, indicate how much fertilizer is applied per acre. Each application area is denoted by a letter (in the facility plan), A, B, C, etc. If the application area is double or triple cropped, please fill in the table accordingly.

	CROP	ACRES	AVG YIELD (TONS/ACRE)	AMOUNT DRY MANURE APPLIED (TONS or CU YARDS/ACRE)	WASTEWATER (YES or NO)	AMOUNT FERTILIZER APPLIED (TONS or CU YARDS/ACRE)
A.	1st crop	_____	_____	_____	_____	_____
	2nd crop	_____	_____	_____	_____	_____
	3rd crop	_____	_____	_____	_____	_____
B.	1st crop	_____	_____	_____	_____	_____
	2nd crop	_____	_____	_____	_____	_____
	3rd crop	_____	_____	_____	_____	_____
C.	1st crop	_____	_____	_____	_____	_____
	2nd crop	_____	_____	_____	_____	_____
	3rd crop	_____	_____	_____	_____	_____

TOTAL ACRES RECEIVING MANURE ONLY _____ ACRES

TOTAL ACRES RECEIVING WASTEWATER ONLY _____ ACRES

TOTAL ACRES RECEIVING BOTH WASTEWATER AND MANURE _____ ACRES

14. If all manure generated onsite is not used on-site as a fertilizer, how is it disposed of? _____

If manure is hauled offsite, how much? _____

15. Specify the frequency and method of application of facility wastewater onto cropland.

16. Does each wastewater or storage pond meet the seepage control requirements of Chapter 15?

Please circle yes no

17. How often is the manure sludge removed from the pond(s)? What method of removal is used?

Article 6. Confined Animal Facilities

2560. Applicability

- a) This article prescribes statewide minimum standards for discharges of animal waste at confined animal facilities. These standards shall be implemented in any waste discharge requirements issued for a particular facility or made a condition to the waiver of requirements.
- b) A discharger required to submit a report of waste discharge shall provide the following general information and shall report any material changes as defined in Section 2210 of Title 23 of this Code.
 - 1) average daily volume of facility wastewater and volume or weight of manure;
 - 2) total animal population at the facility, and types of animals;
 - 3) location and size of use or disposal fields and retention ponds, including animal capacity; and
 - 4) animal capacity of the facility.
- c) A regional board may impose additional requirements, if such additional requirements are necessary to prevent degradation of water quality or impairment of beneficial uses of waters of the state.

Authority: WC 1058

Reference: WC 13140-13147, 13260, 13263

2561. General Standards

Animals at a confined animal facility shall be prevented from entering any surface water within the confined area.

Authority: WC 1058

Reference: WC 13140-13174, 13172, 13243, 13263

2562. Wastewater Management

- a) Confined animal facilities shall be designed and constructed to retain all facility wastewater generated, together with all precipitation on, and drainage through, manured areas during a 25-year, 24-hour storm.
- b) All precipitation and surface drainage outside of manured areas, including that collected from roofed areas, and runoff from tributary areas during the storm events described in Subsection (a) of this section, shall be diverted away from manured areas, unless such drainage is fully retained. Regional Boards may waive application of such requirements in specific instances where upstream land use changes have altered runoff patterns such that retention of flood flows is not feasible.

- c) Retention ponds and manured areas at confined animal facilities in operation on the effective date of this section shall be protected from inundation or washout by overflow from any stream channel during 20-year peak stream flows. Existing facilities that are protected against 100-year peak stream-flows must continue to provide such protection.
- d) New facilities shall be protected against 100-year peak stream flows.
- e) The determination of peak streamflows shall be from data provided by a recognized Federal, state, local, or other agency.
- f) Retention ponds shall be lined with or underlain by soils which contain at least 10 percent clay and not more than 10 percent gravel or artificial materials of equivalent impermeability.
- g) Facility wastewater, collected precipitation and drainage may be discharged to use or disposal fields operated according to Section 2563 of this article or to wastewater treatment facilities approved by the appropriate regional board.

Authority: WC 1058
Reference: WC 13172

2563. Use or Disposal Field Management

- a) Application of manure and wastewater to disposal fields or crop lands shall be at rates which are reasonable for the crop, soil, climate, special local situations, management system, and type of manure.
- b) Discharges of facility wastewater to disposal fields shall not result in surface runoff from disposal fields and shall be managed to minimize percolation to ground water.

Authority: WC 1058
Reference: WC 13172

2564. Management of Manured Areas

- (a) Manured areas shall be managed to minimize infiltration of water into underlying soils.

Authority: WC 1058
Reference: 13172

2565. Monitoring

- a) Regional boards may require confined animal facility operators to undertake a monitoring program as a condition to the issuance or waiver of waste discharge requirements.

Authority: WC 1058
Reference: WC 13172, 13267

STATE WATER RESOURCES CONTROL BOARD
P. O. Box 100, Sacramento, CA 95812-0100
(916)322-3132

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARDS

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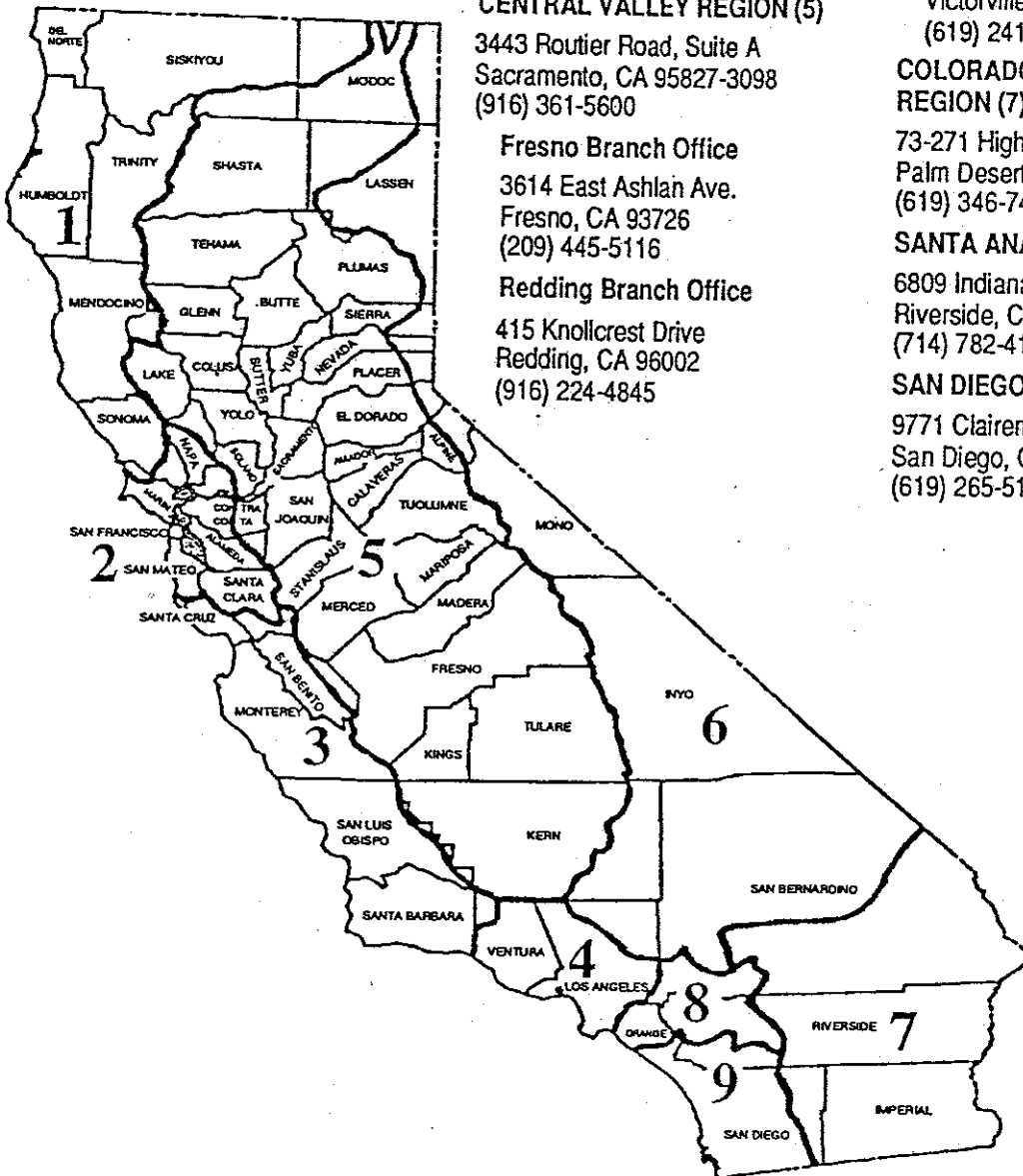
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EVALUATION OF THE REPORT OF DAIRY WASTE MANAGEMENT PRACTICES

SALT BALANCE PROCEDURE

Purpose: The purpose of the salt balance procedure is to give an approximation of the salt contribution, including nitrogen, to the ground water body by a dairy facility. The methods utilized assume little knowledge is available at the site other than animal count, the acres involved, and the crops proposed. Geologic judgement is involved in the ground water steps and assistance might be required for best estimates.

These procedures are limited to calculations of the production of total salts and nitrogen. The advantage of dealing only with nitrogen and total dissolved salts produced is that extra conversion calculations are eliminated.

The salt balance procedure includes the following three simple calculations:

- A. Develop nitrogen and total dissolved solids (TDS) deficits or excess by determining how much is produced minus losses, exports and crop needs.
- B. Develop the ground water assimilative capacity by calculating the acre-feet of ground water affected beneath the site.
- C. Determine the ground water transit time beneath the site during which time the effects will be accumulative. This is also required for the determination of the lateral spread of effects.

A more detailed explanation of how to proceed through each of these steps is attached as part of the procedure.

Step I Use the attached formulas for determination of nitrogen loading.

Step II Use the attached formulas for determination of total dissolved solids loading. Allow 5% for crop uptake.

Step III Determination of ground water quality changes.

Nota: Conversion factor - one pound of salt dissolved in one acre foot of water effects a change of 0.368 mg/l.

A. Determine Volume of Ground Water

1. The basic equation used for determination of the ground water volume is that of the porosity of the geologic material multiplied by the saturated thickness multiplied by the acres of irrigated cropland to find the volume in acre-feet.
2. Factors in the equation:

Porosity - This is a percentage value which ranges approximately from 20% for gravel to 50% for clay. The proper value must be estimated from material such as a review of well logs to determine the geologic materials or by other methods such as approximation from high or low yield wells which imply certain geologic materials.

Saturated thickness - This can be evaluated by reviewing well log reports, or other suitable methods. The saturated zone should probably not exceed 200 feet in thickness in fairly uniform sediments and might be much less in stratified sediments. Use best judgement.

Acres - Use acres of irrigated cropland. Assume the storage lagoons are self sealing.

B. Determine Nitrogen Effect

Divide the total pounds of excess nitrogen from Step I by the acre feet of water from A above to determine the dissolved nitrogen as ponds per acre foot. Multiply the result by the conversion factor 0.368 for the effect as mg/l.

C. Determine Total Dissolved Solids Effect

Follow procedure of B above.

D. Rationale

The nitrogen and total dissolved solids effects are treated as occurring immediately with no travel time through the vadose zone, and as stopping immediately upon cessation of the operation. This essentially moves the reality of a future situation to the present for ease of prediction.

Step IV Determination of Ground Water Velocity

A. Determine Permeability (K)

1. Utilize Pump Test Data if available
2. Estimate from various tables is necessary.
3. If yield/drawdown tests are available, use the following:
 - a) The well yield in gallons per minute divided by the drawdown in feet equals the specific capacity or $Q/s = S_c$
 - b) S_c multiplied by 1500 to 2000 approximates the transmissivity (T). These values are derived from various U.S. Geological Survey studies.
 - c) The transmissivity value divided by the saturated well approximates the permeability (K) in gallons per day per square feet.

Subchapter 15 contains requirements for confined animal facilities.

9. The requirements contained in this order are necessary to implement the Water Quality Control Plan and the provisions of Subchapter 15.
10. The dairy will overlie the _____ Ground Water Subbasin, the beneficial uses of which include:
 - a. _____
 - b. _____
 - c. _____
 - d. _____
11. Surface drainage in the area of the dairy is tributary to _____, the beneficial uses of which include:
 - a. _____
 - b. _____
 - c. _____
 - d. _____
12. Excessive application of manured water and manure to land can adversely affect the quality of surface water and/or the underlying ground water.
13. As part of the Report of Waste Discharge, the discharger has provided an analysis determining the maximum amount of manure that can be applied without adversely affecting ground water quality from nitrogen and total dissolved solids (TDS). The analysis indicates that TDS will be the limiting factor and that only _____ tons per acre of corral manure, in addition to the _____ tons of manure in the washwater, may be applied annually.
14. (CEQA finding)
15. The Board has notified the discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for this discharge, and has provided them with an opportunity to submit their written views and recommendations.
16. The Board, in a public meeting, held on _____ heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED that the discharger, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, shall comply with the

B. Compute Hydraulic Gradient at Site (I)

Do from maps, measure well, or estimate.

C. Determine Effective Porosity (n)

For this purpose, the effective porosity may be considered to be the same as the specific yield, which is that part of the sediment which will transmit water. The specific yield is measured as a percentage which ranges from about three percent for clay to about 30 percent for coarse sands. An acceptable value for this may be calculated from available well logs or estimated from geologic knowledge of the area.

D. Determine Ground Water Velocity

1. Using the permeability (K), gradient (I) and effective porosity (n) calculated above, velocity can be calculated using the following:

$$\text{Velocity} = KI/(n) 7.48$$

Where 7.48 is used for conversion into feet per day.

2. Multiply by 365 to find feet per year.
3. Determine the maximum ground water residence time beneath the site in the direction of the ground water gradient. This time value multiplied by the yearly nitrogen or TDS effect from Step III B or C will determine the accumulative effect. The velocity value above will also determine the rate of the advancing front, but care should be taken to not that while the calculations are based on the immediate transfer of material into the ground water body, the reality is that a delayed travel time occurs as the water is passing through the vadose zone.

This method can also be utilized to determine the total impact from other contributory dairy facilities and could be modified for use with other types of confined animal facilities as well.

In Step I, the total of solid wastes is reduced by the percentage exported from the site. A concern about the destination of the exported waste should be exercised to confirm that this material is or will not affect the basin water quality standards.

INSTRUCTIONS FOR DAIRY WASTE LOAD CALCULATIONS

1. Use the information requirements form to compile as much information as possible. Some of the questions do not directly apply to the waste load calculations but provide information for evaluating the proposed or existing waste management system.
2. Information that is needed for the waste load calculations should be transferred to the waste load calculation form.
3. In steps 1, 3 and 7, Animal Units (AU) are calculated on the basis of relative amounts of waste produced. The lactating cow, being the heaviest producer of waste, is the basis of the AU. Animal weight is also taken into consideration since nitrogen output is directly related to body weight.
4. Steps 5 and 6 take into consideration the fact that different methods of handling waste result in significantly different rates of nitrogen loss. For example, denitrification occurs in holding ponds when waste is stored as a fluid. The longer the material is held the greater the loss of nitrogen. The nitrogen that is applied to cropland in fluid waste is readily available to plants.

Waste that is stored and handled in solid form loses approximately 50% of its nitrogen content from volatilization and leaching. The nitrogen that is applied to cropland in solid waste becomes available over a period of 4-5 years and 75% is actually recovered due to gradual losses in the soil.
5. Manure or wastewater that is exported from the dairy can be calculated either on the basis of the AU that produced that amount or as a percentage of a particular category. That portion then can be subtracted from the sub total for the applicable categories (see steps 5, 6 and 7 of the calculations).
6. In step 8, list all crops grown annually and the acreage of each crop. Under total acres, indicate total cropland - do not double count land that is double cropped. Determine nitrogen requirement per crop and calculate total nitrogen requirement as indicated.
7. If animals are moved from one situation to another, the number of days the animals are in each situation can be used instead of 365 in steps 5 and 6 of the calculations.
8. At dairies where all animals are kept in dry corrals or where stalls or freestalls are scraped use section 7 to calculate nitrogen output. Typically, 10% of the waste from the milk cow is carried in the wastewater.
9. Disregard manure solids removed from the liquid waste stream by settling or separation. Most of the nitrogen is dissolved in the water; therefore, the amount of nitrogen remaining in the mostly cellulose solids is negligible.

INFORMATION REQUEST

Please provide the following information when submitting the Report of Waste Discharge:

Number of milk cows in freestalls with flush system: _____

Number of milk cows in corrals with flushed alleys: _____

Number of milk cows in corrals or freestalls with no flush: _____

Average weight of milk cows: _____

Number of dry cows and bred heifers in freestalls with flush system: _____

Number of dry cows and bred heifers in corrals with flushed alleys: _____

Number of dry cows and bred heifers in corrals or freestalls with no flush: _____

Number of heifers (1 yr. to breeding) in freestalls with flush system: _____

Number of heifers (1 yr. to breeding) in corrals with flushed alleys: _____

Number of heifers (1 yr. to breeding) in corrals or freestalls with no flush total heifers (1 yr. to breeding): _____

Number of calves (3 mo. to 1 yr.) in freestalls with flush system: _____

Number of calves (3 mo. to 1 yr.) in corrals with flushed alleys: _____

Number of calves (3 mo. to 1 yr.) in corrals or freestall with no flush: _____

Number of baby calves (under 3 mo.) over flushed floors: _____

Number of baby calves (under 3 mo.) in pens or corrals with flushed alleys: _____

Number of baby calves (under 3 mo.) in situations with no flush: _____

Crops grown and acres of each crop where manure and dairy wastewater can be applied:

<u>Crop</u>	<u>Acres</u>	<u>Average Yield</u>	<u>Manure Solids</u> (yes or no)	<u>Waste Water</u> (yes or no)
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

Average wash water production in gallons/milk cow/day: _____

Capacity of holding pond(s), total gallons: _____

Number of days of storage: _____

Is wash water recycled through freestalls or alleys? (yes or no) _____

How often is pond pumped down? Spring: _____
 Summer: _____
 Fall: _____
 Winter: _____

Are all manure solids applied to the dairy property? (yes or no): _____

If not, how much manure is removed? (tons or cubic yards): _____

If tons or cubic yards cannot be calculated, give number of head of which category of animals the manure is from: _____

Depth to ground water: _____

Soil texture (% of clay) in the bottom and sides of the wastewater holding pond: _____

Provide a map and description of the wastewater distribution system.

Attachment 1
Dairy Waste Load Calculations

	<u>No. of Head</u>		<u>AU</u>
Dry Cows & Bred Heifers	_____	x .75	_____
Heifers (1 year to Breeding)	_____	x .7	_____
Calves (3 months to 1 year)	_____	x .4	_____
Baby Calves	_____	x .25	_____
	Total AU		_____

Calculate nitrogen loading (dry waste only) lbs N/year
 AU x lbs N/AU/day (same as above) x .75 x _____
 * N retention (same as above) x 365 = _____

Total N available in dry waste _____
 Subtract amount exported (if any) _____
 Total N output for the dairy _____

8. For land under the same management as the dairy or where there is a written agreement to receive dairy waste, calculate crop nitrogen requirement:

<u>Crop</u>	<u>Acres</u>	<u>Crop Nitrogen Requirement Per Acre (Table)</u>	<u>Total Nitrogen Needed (lbs)</u>
		x	=
		x	=
		x	=
		x	=
		x	=
		x	=
		x	=

Total acres _____ Total N needed _____ lbs

If the total nitrogen needed calculated in step 8 exceeds the total nitrogen available (the sum of steps 5 and 6 or step 7), no further action is necessary. (This assumes that the wastes are being spread on the land at rates to meet crop fertilizer needs).

If available N exceeds N needed by crops, arrangements must be made to export more waste from the facility and the calculations changed accordingly or a report must be submitted to the Regional Board showing that rates of waste application are reasonable for the crop, soil, special local conditions, management system and type of waste, and will not pose a threat to water quality.

Attachment 1

DAIRY WASTE LOAD CALCULATIONS

1. Enter the number of animals (if any) which are kept in freestalls with flush system. Typically 80 percent of this waste is handled as a fluid; 20 percent is handled dry.

	<u>No. of Head</u>		<u>AU</u>
Milk Cows	_____	x 1.0	_____
Dry Cows & Bred Heifers	_____	x .75	_____
Heifers (1 year to Breeding)	_____	x .7	_____
Calves (3 months to 1 year)	_____	x .4	_____
Baby Calves (over flushed floor)	_____	x .25	_____
	Total AU		_____

2. Enter the number of animals (if any) which are kept in corrals with flushed alleys. Typically 60 percent of this waste is handled as a fluid; 40 percent is handled dry.

	<u>No. of Head</u>		<u>AU</u>
Milk Cows	_____	x 1.0	_____
Dry Cows & Bred Heifers	_____	x .75	_____
Heifers (1 year to Breeding)	_____	x .7	_____
Calves (3 months to 1 year)	_____	x .4	_____
Baby Calves	_____	x .25	_____
	Total AU		_____

3. Enter the number of animals (if any) which are kept in dry lot situations (with no flush system). 100 percent of this waste is generally handled dry. (If all dairy animals are in dry corrals or at facilities where alleys or freestalls are scraped, use only section 7 for waste load calculations).

	<u>No. of Head</u>		<u>AU</u>
Milk Cows	_____	x 1.0	_____
Dry Cows & Bred Heifers	_____	x .75	_____
Heifers (1 year to Breeding)	_____	x .7	_____
Calves (3 months to 1 year)	_____	x .4	_____
Baby Calves	_____	x .25	_____
	Total AU		_____

4. Total Animal Units at the Facility
Add AU totals from steps 1, 2, & 3

Attachment 1

Dairy Waste Load Calculations

5. Calculating nitrogen loading from fluid waste. lbs N/year
 AU (step 1) x lbs N/AU/day (table 1) x .80 x _____
 * N retention (table 2) x 365 = _____
 AU (step 2) x lbs N/AU/day (table 1) x .60 x _____
 * N retention (table 2) x 365 = _____
 Subtotal _____
 Subtract amount exported (if any) _____
 Total N available in fluid waste _____

6. Calculating nitrogen loading from dry waste. lbs N/year
 AU (step 3) x lbs N/AU/day (table 1) x .75 x _____
 * N retention (table 2) x 365 = _____
 AU (step 1) x lbs N/AU/day (table 1) x .20 x .75 x _____
 * N retention (table 2) x 365 = _____
 AU (step 2) x lbs N/AU/day (table 1) x .40 x .75 x _____
 * N retention (table 2) x 365 = _____
 Subtotal _____
 Subtract amount exported (if any) _____
 Total N available in dry waste _____

Use this section only for dairies where all animals are in dry corrals or where alleys or freestalls are scraped. Typically 10% of the waste from the milk cows is carried in the wastewater.

	<u>No. of Head</u>		<u>AU</u>
Milk Cows	_____	x 1.0	_____
Calculate nitrogen loading from fluid waste.			
AU (milk cows only) x lbs N/AU/day (table 1) x .1 x			
* N retention (Table 2) x 365 = Total N available in fluid waste			_____
Calculate nitrogen loading from dry waste			
AU (milk cows only) x lbs N/AU/day (table 1) x .9 x			<u>lbs N/Year</u>
* .75 x * N retention (table 2) x 365 =			_____

Table 3
Plant Food Utilization by Various Crops*

Crop	Yield	N	Pounds per Acre	
			P ₂ O ₅	K ₂ O
Field crops				
Barley	2 1/2 t.	175	65	175
Corn (grain)	5 t.	240	100	230
Corn silage)	30 t.	200	80	245
Cotton (lint)	1,500 lbs.	210	90	150
Grain sorghum	4 t.	250	80	200
Oats	3,200 lbs.	115	40	145
Rice	7,000 lbs.	110	60	170
Safflower	4,000 lbs.	200	50	150
Soybeans	3,600 lbs.	335	65	145
Sugar beets	30 t.	275	85	550
Wheat	3 t.	175	80	140
Vegetable Crops				
Asparagus	3,000 lbs.	95	50	120
Beans (snap)	10,000 lbs.	175	35	200
Broccoli	18,000 lbs.	80	30	75
Cabbage	35 t.	230	65	250
Celery	75 t.	280	165	750
Lettuce	20 t.	95	30	200
Potatoes (Irish)	500 cwt.	250	115	355
Squash	10 t.	85	20	120
Sweet potatoes	12 t.	115	45	230
Tomatoes	30 t.	250	80	480
Fruit and nut crops				
Almonds (in shell)	3,000 lbs.	200	75	250
Apples	15 t.	100	45	180
Cantaloupes	30 t.	190	60	340
Grapes	15 t.	105	45	125
Oranges	30 t.	120	40	175
Peaches	15 t.	95	40	120
Pears	15 t.	85	25	95
Prunes	15 t.	90	30	130
Forage crops				
Alfalfa	8 t.	450	80	480
Bromegrass	5 t.	165	65	255
Clover-grass	6 t.	200	90	360
Orchardgrass	6 t.	300	100	375
Sorghum-sudan	8 t.	325	125	475
Timothy	4 t.	150	55	250
Vetch	7 t.	390	105	320
Turf crops				
Bentgrass	2 1/2 t.	225	80	160
Bermudagrass	4 t.	225	40	160

Percentages of N utilization are proportional to crop yield and can be adjusted accordingly.

* From *Western Fertilizer Handbook*.

Attachment 1
 Dairy Waste Load Calculations

Table 1
 Daily N Excretion
 (From Livestock Waste Facilities Handbook)

<u>Live Weight of Milk Cows (AU Equivalent)</u>	<u>Pounds N/day</u>
1400 lbs	.4
1300 lbs	.37
1200 lbs	.34
1100 lbs	.31
1000 lbs	.29

Table 2'

Nitrogen Retention in Lagoon (held less than 30 days)	70%
Nitrogen Retention in Lagoon (held over 60 days)	50%
Nitrogen Retention in Lagoon (average)	50%
Nitrogen in Dry Manure (average)	50%

Salt Output and Loading

AU x lbs salt per day x 365 = lbs salt per year

lbs salt per year ÷ Acres = lbs salt per acre per year

<u>Weight</u>	<u>lbs total salt/day</u>	<u>lbs Non-N salt/day</u>
1400 # Cow	2.20	1.80
1300 # Cow	2.04	1.67
1200 # Cow	1.88	1.54
1100 # Cow	1.73	1.42
1000 # usual range for Jerseys	1.57	1.28
900 # usual range for Jerseys	1.41	1.16
800 # usual range for Jerseys	1.25	1.03

Dairy Manure, Utilization and Field Application Rates by Meyer, Rauschkolb & Olson.

Animal Waste Utilization on Cropland and Pasture by USDA.

Utilization of Manure for Nitrogen Fertilizer by Charles E. Fogg.

California Regional Water Quality Control Board
_____ Region

ORDER NO. _____

Waste Discharge Requirements
for
(Dairy Operator)
dba
(Dairy Name)
_____ County

The California Regional Water Quality Control Board, _____
Region (hereinafter Board), finds that:

1. On (date), (dairy operator) (hereinafter discharger), submitted a complete Report of Waste Discharge for the proposed discharge of wastes from the (dairy name).
2. The dairy will be located at (address) in a portion of (Section, Township, Range), (see Attachment A).
3. The dairy land owner is (owner's name).
4. The animal population of this dairy will consist of:
 - a. _____ milking cows
 - b. _____ dry cows
 - c. _____ heifers
 - d. _____ calves
5. Approximately _____ tons of manure will be generated annually from the proposed dairy herd. About 10% of the manure will be mixed with approximately _____ gallons/day of washwater (assuming 50 gallons/day of washwater per milking cow). The remainder of the manure will be removed periodically from the corrals and hauled away.
6. The washwater and stormwater runoff from the corrals will be held in on-site ponds prior to application to _____ acres of disposal/cropland. A portion of the corral manure is also proposed to be applied to the disposal/cropland.
7. A Water Quality Control Plan was adopted by the Board on _____. The Plan contains water quality objectives and beneficial uses for waters within the _____ Region.
8. Revised regulations governing the discharge of wastes to land contained in Subchapter 15 of Title 23, Chapter 3, of the California Code of Regulations became effective on November 27, 1984. Article 6 of

Subchapter 15 contains requirements for confined animal facilities.

9. The requirements contained in this order are necessary to implement the Water Quality Control Plan and the provisions of Subchapter 15.
10. The dairy will overlie the _____ Ground Water Subbasin, the beneficial uses of which include:
 - a. _____
 - b. _____
 - c. _____
 - d. _____
11. Surface drainage in the area of the dairy is tributary to _____, the beneficial uses of which include:
 - a. _____
 - b. _____
 - c. _____
 - d. _____
12. Excessive application of manured water and manure to land can adversely affect the quality of surface water and/or the underlying ground water.
13. As part of the Report of Waste Discharge, the discharger has provided an analysis determining the maximum amount of manure that can be applied without adversely affecting ground water quality from nitrogen and total dissolved solids (TDS). The analysis indicates that TDS will be the limiting factor and that only _____ tons per acre of corral manure, in addition to the _____ tons of manure in the washwater, may be applied annually.
14. (CEQA finding)
15. The Board has notified the discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for this discharge, and has provided them with an opportunity to submit their written views and recommendations.
16. The Board, in a public meeting, held on _____ heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED that the discharger, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, shall comply with the

Order No. _____ (continued)
(Dairy Operator's Name)

following:

A. Discharge Specifications

1. The discharger shall design, construct, maintain, and operate containment structures to retain all facility wastewater generated, including all of the precipitation on and drainage through manured areas which results from a 25-year, 24-hour storm.
2. All of the manured washwater discussed in Finding 5 and drainage from manured areas may be applied to the _____ acres of disposal/cropland. The disposal of more than (see Finding 13) tons annually of corral manure on the disposal/cropland is prohibited. The remaining manure shall be hauled away and properly applied or disposed so as not to adversely affect water quality.
3. Manure applied to cultivated cropland shall be incorporated into the soil soon after application or appropriate containment controls to contain the runoff from a 25-year, 24-hour storm must be provided.
4. The discharge of any facility wastewater to property not identified in the report of waste discharge is prohibited.
5. All animals at this facility shall be prevented from entering surface waters.
6. The discharge of wastes to lands not owned or controlled by the discharger or in a manner not approved by the Executive Officer is prohibited.
7. Retention ponds shall be lined with or underlain by soil which contains at least 10 percent clay and not more than 10 percent gravel or artificial materials of equivalent impermeability. These ponds shall also be sited, designed, constructed, and operated to ensure that wastes will be a minimum of five feet above the highest anticipated elevation of underlying ground water.
8. Retention ponds and manured areas shall be protected from inundation or washout from any stream channel during 100-year peak stream flows.
9. Ponding and infiltration of water within manured areas shall be minimized.

Order No. _____ (continued)
(Dairy Operator's Name)

10. Percolation of waste water to ground water shall be minimized.
11. All precipitation and surface drainage from outside of manured areas, including that collected from roofed areas, resulting from up to and including a 25-year, 24-hour storm shall be diverted away from manured areas; unless such drainage is fully contained.

B. Provisions

1. The discharger shall comply with the attached Monitoring and Reporting Program No. _____ and any subsequent amendments thereto made by the Executive Officer.
2. Neither the treatment nor the discharge of wastes shall cause a nuisance or create a condition of pollution or contamination as defined in the California Water Code.
3. The discharger shall comply with the attached Standard Provisions and Reporting Requirements, dated _____, which are made part of this order.
4. The discharger shall allow the Regional Board, or an authorized representative upon the presentation of credentials and other documents as may be required by law, to:
 - a. Enter upon the discharger's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this order;
 - b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order;
 - c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order; and
 - d. Sample or monitor at reasonable times, for the purposes of assuring compliance with this Order or as otherwise authorized by the California Water Code, any substances or parameters at any location.

Order No. _____ (continued).
(Dairy Operator's Name)

5. The requirements prescribed herein do not authorize the commission of any act causing injury to the property of another, nor protect the discharger from his liabilities under federal, state, or local laws.
6. The discharger shall notify the Regional Board by telephone within 24 hours of any off-property discharge of facility wastewater. This notification shall be followed by a written report including the following:
 - a. The approximate date and time of the discharge,
 - b. Duration of the discharge,
 - c. Type and source of the waste discharge, and
 - d. A time schedule and a plan to implement necessary corrective actions to prevent the recurrence of the discharge.
7. The discharger shall take all reasonable steps to minimize or correct any adverse impacts on the environment resulting from noncompliance with this order, including such accelerated or additional monitoring as may be necessary to determine the nature and impact of noncompliance.
8. A new Report of Waste Discharge shall be filed at least 120 days prior to any of the following:
 - a. Any change in the ownership, operation, or location or the dairy,
 - b. Any change in the character or volume of the discharge, or
 - c. An increase in the animal population resulting in a milking herd size of greater than (Finding 4 + 25%) or a total herd size of (Finding 4 + 25%), whichever occurs first.
9. This order may be revised, revoked, reissued, and/or terminated under, but not limited to, the following conditions:
 - a. A change in the ownership, operation, animal population, or location of the facility,

Order No. _____ (continued)
(Dairy Operator's Name)

- b. Violation of any terms or conditions contained in this order, and
 - c. Failure to submit any reports in the reporting program or to discharge fully all relevant facts.
10. This order is not transferable. The discharger must notify the Executive Officer in writing at least 30 days in advance of any proposed transfer of this Order's responsibility and coverage to a new discharger. The notice must include a written agreement between the existing and new discharger containing a specific date for the transfer of this Order's responsibility and coverage between the current discharger and the new discharger. This agreement shall include an acknowledgement that the existing discharger is liable for violation up to the transfer date and that the new discharger is liable from the transfer date on.
11. A copy of this order shall be maintained at the dairy and shall be available to operating personnel at all times.

I, _____, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an order adopted by the California Regional Water Quality Control Board, _____ Region, on _____.

Executive Officer

California Regional Water Quality Control Board
_____ Region

Reporting Program No.
for
Operator's Name
_____ County

1. Annually, by (Date) of each year, a technical report shall be submitted.
2. The discharger shall include in the technical report at least the following:
 - a. The date of the report,
 - b. A statement that all wastewater and manured area controls have been routinely inspected and are in good working order.
 - c. The maximum number of calves, heifers, dry cows, and milking cows that were at the dairy during the reporting period.
 - d. The disposal land and cropland acreage.
 - e. The types of crop(s) grown and whether they are double/triple-cropped.
 - f. The amount of manure that is spread on disposal land, spread on cropland, stockpiled on-site, and hauled away.
 - g. The date(s), the amount, and the destination(s) of manure hauled away, including the name(s) and address(es) of the hauler(s) for the previous year.
 - h. The current address and telephone number of the new dairy owner or operator (if known) if there is a change in ownership or operator.
 - i. Inclusion of ground water data as necessary.

- j. Any other comments relevant to these waste discharge requirements.
3. All reports shall be signed and submitted under penalty of perjury.
4. Any design changes in the operational facilities with respect to affecting waste loads should be included in the engineering plan originally submitted for the dairy.

Ordered by _____

Executive Officer

GLOSSARY

Facility wastewater-

Facility wastewater generated-

Retention pond-

Manured area-

Disposal land-

Cropland-

25-year, 24-hour storm-

100-year peak stream flow-

Surface Water - Referred to waters of the State.