

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD**  
**CENTRAL VALLEY REGION**  
**Fact Sheet No. 2 For Dairies**

**Dairy Waste Management for Protection of Water Quality**

This fact sheet provides information on dairy waste management practices that comply with state and federal laws for protection of water quality (applicable state regulations are summarized on Page 2 of this Fact Sheet). Compliance with laws and regulations for management of animal waste at dairies is usually achieved through voluntary actions by the dairy owner/operator. Essentially, the regulations require that animal wastes be contained in an appropriate storage area until they are applied to cropland at a reasonable rate. The following information is provided to help clarify those requirements.

- “Animal wastes” includes animal manure and urine and materials that have mixed with manure and urine (for example, washwater from a milk barn, rainwater runoff that has passed through a manure storage area, and irrigation tailwater that contains manure). Runoff from a silage storage area is not animal waste, but is a waste that must also be contained and managed (it can be added to a dairy wastewater storage pond).
- An “appropriate storage area” means a facility designed to prevent animal wastes from contacting surface water or groundwater or moving off the dairy property. A holding pond that meets the construction standards in the California Code of Regulations, Title 27, Subdivision 1, Chapter 7, Subchapter 2, Article 1 is appropriate for long-term storage. The holding pond should be able to contain all wastewater and stormwater generated during the rainy season (approximately 120 days) plus a 25-year 24-hour storm. A ditch or field that is blocked off for storage of wastewater is only appropriate for short-term storage in an emergency. A concrete slab is an appropriate long-term manure storage area. Unpaved soil is only appropriate for short-term storage of wet manure such as might occur for a few days when solids are removed from a holding pond. A corral is not an appropriate wastewater storage area and should not have standing water for more than three days following a heavy rain.
- Application to cropland “at a reasonable rate” means that the amount of nutrients contained in the animal wastes do not exceed the amount required by the crop(s) where the wastes are applied. Furthermore, the application should occur when the crops will use the nutrients. The application rate should be specifically determined for each dairy. However, the basic rule is that the total amount of manure produced by five Holstein dairy cows is appropriate for one acre of double-cropped land (for example, land planted in oats and then in corn). If the ratio of cows to acres exceeds 5:1, then it is probably necessary to export manure solids and/or wastewater to other cropland. If wastewater is exported, it must be done with permission of the owner of the pipeline. In general, wastewater should be applied evenly to all available cropland at a dairy rather than limiting application to one area. The application of wastes to cropland must not result in tailwater runoff containing manure odor or color. Such tailwater will contain materials that are toxic to aquatic organisms and must be captured and reused instead of being allowed to enter an area drain.

The RWQCB may issue Waste Discharge Requirements (WDRs) for a dairy if it appears that waste management practices at the dairy can adversely impact water quality. The WDRs contain monitoring and reporting requirements including submission of annual reports to the RWQCB. Failure to submit required reports or comply with other requirements in WDRs can result in enforcement action by the RWQCB (see Fact Sheet No. 3 "Enforcement of Water Quality Laws And Regulations That Apply To Dairies" for additional information).

SUMMARY OF ANIMAL WASTE MANAGEMENT REGULATIONS  
(From California Code of Regulations, Subdivision 1, Chapter 7, Subchapter 2)

***General Standards For Surface Water***

The discharger shall prevent animals at a confined animal facility from entering any surface water within the confined area.

***Wastewater Management***

- (a) **Design Storm (for Run-On/Run-Off Control)** - Confined animal facilities shall be designed and constructed to retain all facility wastewater generated, together with all prescription on, and drainage through, manured areas during a 25-year, 24-hour storm.
- (b) **Manured Area Run-On Exclusion** - 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 part (a), shall be diverted away from manured areas, unless such drainage is fully retained. RWQCBs can waive application of such requirements only in specific instances where upstream land use changes have altered surface drainage patterns such that retention of flood flows is not feasible.
- (c) **Design Storm (for Flood Protection)**
- (1) Retention ponds and manured areas at confined animal facilities in operation on or after November 27, 1984, shall be protected from inundation or washout by overflow from any stream channel during 20-year peak stream flows.
  - (2) Existing facilities that were in operation on-or-before November 27, 1984 and that are protected against 100-year peak stream flows must continue to provide such protection. Facilities, or portions thereof, which begin operating after November 27, 1984 shall be protected against 100-year peak stream flows.
  - (3) The determination of peak stream flows shall be from data provided by a recognized federal, state, local, or other agency.
- (d) **Retention Pond Design** - 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 be lined with artificial materials of equivalent impermeability.
- (e) **Discharge To Disposal/Use Fields** - The RWQCB shall allow the discharge of facility wastewater and of collected precipitation and drainage waters to use or disposal fields only if such discharge is in accordance with the regulations in the following section titled "Use or Disposal Field Management". Other allowable discharge is to wastewater treatment facilities approved by the RWQCB.

***Use or Disposal Field Management***

- (a) **Reasonable Soil Amendment Rate** - 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) **Run-Off & Percolation** - 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.

***Management of Manured Areas***

Manured areas shall be managed to minimize infiltration of water into underlying soils.