

CHANGING ENVIRONMENTAL REGULATIONS FOR DAIRY WASTE MANAGEMENT

Mark Bardolph
Florida Department of Environmental Protection
Tallahassee, FL

The Florida Department of Environmental Protection is revising existing rules for waste management at dairy farms and other animal husbandry operations. Although some details remain to be determined, the basic concepts of the proposed rules have been established. The following discussion presents a comparison of the existing and proposed rules as they pertain to dairy farms.

Existing Rules

Existing rules for dairy waste management are found in two chapters of the Florida Administrative Code (F.A.C.). The rules for protection of surface waters are in Chapter 62-670, F.A.C., Feedlot and Dairy Wastewater Treatment and Management Requirements. These rules are essentially identical to the Federal regulations for dairy waste management. Dairies with 700 or more cows are required to prevent discharges of waste pollutants to surface waters of the State for storm events up to and including the 25-year, 24-hour storm. This discharge prohibition applies to both the wastewater generated by flushing and washing of barns, milking parlors and other areas and the stormwater runoff from paved or unvegetated dirt cow lots ("feedlots"). For most of Florida, the 25-year, 24-hour storm varies from eight to ten inches in 24 hours, depending on the location.

For dairies with 200 to 699 cows, the prohibition against discharge to surface waters of the State applies only to discharges through a manmade device (e.g., ditch, pipe, or flushing system) and to direct discharges to State waters that pass through the feedlot area. These discharge prohibitions may also be applied to a dairy with fewer than 200 cows if the Department determines that the discharge causes a significant pollution problem.

Dairies that do not comply with the applicable prohibitions against discharges to surface waters of the State are required to obtain an industrial wastewater permit. Under the permit, the dairy must implement waste management system improvements necessary to eliminate prohibited discharges.

All dairies in the Lake Okeechobee Drainage Basin must have wastewater permits and implement management practices required by rules that are specific to dairies in that basin.

The existing ground water protection rules, which apply to all dairies regardless of

the number of cows, are contained in Chapter 522, F.A.C., Ground Water Permitting and Monitoring Requirements. Unlike most facilities that discharge to ground water, dairies and other animal operations are not necessarily required to have a wastewater permit to establish a zone of discharge (ZOD) for a discharge to ground water. A ZOD is an area in the ground water within which water quality standards do not apply. If a dairy complies with the prohibition against discharges to surface water and is, therefore, exempt from permitting under Chapter 62-670, F.A.C., then it automatically has a ZOD that extends 100 feet from a source of discharge to ground water or to the dairy property boundary, whichever is less. However, if a discharge to ground water threatens to violate water quality standards at the boundary of the ZOD, an industrial wastewater permit is required. Sources of discharges to ground water at a dairy may include seepage from a permeable waste storage pond and percolation of wastewater or stormwater that has contacted wastes in a feedlot, manure pile, pasture, or field used for application of waste.

Proposed Rule Revisions

As currently proposed, the new rules being developed for animal waste management will combine rules for protection of surface water and rules for protection of ground water into Chapter 62-670, F.A.C. Although the specific rules for Lake Okeechobee Basin dairies will remain unchanged, some of the statewide rule provisions will apply to these dairies.

The existing prohibition against discharges to surface waters of the State for dairies with 700 or more cows will be made applicable to existing dairies with 70 or more cows and all new dairies. The discharge prohibition will also be expanded to include stormwater runoff from all dairy land areas that receive wastes in excess of agronomic rates. To meet this requirement, pastured cows will need to be maintained at such population densities that the manure they deposit does not exceed the forage plant nutrient requirements. Application of wastes to hayland or cropland will also need to be limited to agronomic rates. Stormwater runoff from any lands that receive wastes in excess of agronomic rates will need to be contained on the dairy property for all storm events up to and including the 25-year, 24-hour storm event. The rule definition and use of the term "agronomic rate" will recognize that there are a variety of factors that influence the amount, crop availability and surface or ground water pollution potential of nutrients in animal waste.

Existing dairies with 70 or more cows and all new dairies will also need to implement management practices to protect ground water quality. The rule will identify management practices that are potential threats to ground water quality, including unlined waste storage ponds, exposed manure storage piles, excessive accumulations of waste on bare ground and waste applications in excess of agronomic rates. A dairy that employs practices that have the potential to significantly contaminate ground water will be required to install and periodically sample ground water monitoring wells to verify that unacceptable levels of ground water contamination do not occur. Much work remains to be done to establish the specific conditions under which a particular

management practice will be considered a sufficient threat to require ground water monitoring. For example, there may be dairy sites where ground water monitoring to determine impacts from unlined waste storage ponds or from waste applications in excess of agronomic rates will be unnecessary because of soil or ground water characteristics. Additionally, for areas where manure accumulates on bare ground, it may be possible to include rule provisions to establish size limits which will not require ground water monitoring.

All dairies covered by the rule will be required to obtain one of three kinds of permits, which will be renewable every five years. A dairy that both prevents prohibited discharges to surface waters and employs management practices necessary to protect ground water will be eligible for a General Permit. A General Permit is a simplified, relatively inexpensive permit. To obtain a General Permit, a dairy will submit to the Department a formal notification, certified by a Professional Engineer, that it complies with the General Permit criteria for protection of surface and ground waters.

A dairy that prevents prohibited discharges to surface waters, but employs practices that have the potential to significantly contaminate ground water, will be required to obtain a ground water discharge permit. Under the permit, the dairy will install and periodically sample monitoring wells to determine ground water quality impacts from the potential contamination sources. If the monitoring reveals unacceptable levels of ground water contamination, the dairy will be required to take action to correct the problem.

All new dairies and any existing dairy that does not prevent prohibited discharges to surface water or that does not correct a documented ground water quality problem will be required to obtain a standard industrial wastewater permit. The permit will contain conditions to eliminate the prohibited discharge to surface water or remedy the ground water problem.

The rule will establish schedules for compliance with the new requirements so existing dairies will have an opportunity to voluntarily improve any deficient waste management practices to meet the criteria for General Permit eligibility.

The Department is working closely with dairy industry representatives and experts in dairy operations, waste management, soil science and plant nutrition to ensure the proposed rule revisions will both be workable for the industry and will adequately protect surface and ground waters.