

State Compendium - Region 6

Programs and Regulatory Activities Related to Animal Feeding Operations

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CHAPTER 1. INTRODUCTION

This compendium has been developed to support the U.S. Environmental Protection Agency's (EPA) efforts to address the environmental and public health problems associated with animal feeding operations (AFOs) and concentrated animal feeding operations (CAFOs). The compendium is a compilation of AFO-related state program and state initiative information intended to illustrate how states are regulating AFOs, with a specific focus on the use of permits or similar mechanisms. This document is not intended as an evaluation of the effectiveness of individual state efforts.

Most of the State programmatic and regulatory information gathered and presented in this document pertains to controlling water quality impacts from AFOs. Although some states have designed regulatory standards to control non-water quality impacts (e.g., setback requirements for odor control), the vast majority of information presented is based on state efforts to address water quality and nutrient management issues.

The *Compendium* has been compiled from a number of publicly available information sources, including:

- Previously published research and existing surveys of State AFO and CAFO programs
- World Wide Web pages of state governments, agencies, and national agriculture organizations
- Select publicly accessible state statutes and regulations (generally accessed via the Web)
- National Pollutant Discharge Elimination System (NPDES) permits developed for CAFOs
- Summaries of State program information provided by EPA regional offices

Based on these sources of publicly available information, the *Compendium* represents a reasonable appraisal of how states are addressing AFO-related environmental problems. Nevertheless, the information presented here is subject to several important limits. First, in compiling this compendium no new formal survey of the states was conducted, nor was a comprehensive review of each state's regulations undertaken, as both were beyond the scope of this task. Thus, in some instances information presented here may be limited or minor gaps may exist. Second, state regulation of AFOs and CAFOs can be complex, involving both federal and state laws and regulations, often originating at the state level from several different agencies, with numerous variations in approaches, requirements, and jurisdiction among the different states. Consequently, different levels of information may be available among states and even between relevant agencies within a state. Finally, the various sources of publicly available information used were reviewed and compiled over a period of time during which many States were reexamining and revising their AFO regulations. As a result, this compendium is by necessity a working document that depicts reasonably current practices, but may in some instances be superseded by recent state programmatic and regulatory changes. The information presented here must be considered subject to these limits and specific regulatory requirements should be verified with state or EPA authorities as appropriate.

The *Compendium of State AFO Programs* consists of four chapters, including this introduction, and three Appendices. Chapter 2 of this document provides a national overview of State AFO initiatives based on the publicly available data. It attempts to summarize how states regulate

AFOs and highlights key aspects of State AFO programs.

Chapter 3 presents individual state profiles. Each profile includes available information addressing: background, lead regulatory agency, state regulations regarding AFO/CAFOs, types of permits, permit coverage, permit conditions, enforcement information, state voluntary programs, additional state-specific information, and references.

Finally, the *Compendium* contains three Appendices. Appendix A describe methods used to develop the *Compendium* and highlights the limits of the data collection efforts. Appendix B lists some of the more frequently used acronyms. Appendix C provides a glossary of useful terms associated with animal feedlots.

CHAPTER 2. NATIONAL SUMMARY OF STATE INITIATIVES

This chapter presents a national overview of state AFO regulatory programs and initiatives based on a review of publicly available data. The discussion begins with a brief review of the respective federal and state roles in administering the National Pollutant Discharge Elimination System (NPDES) program (Section 2.1), followed by a summary of the federal regulations addressing AFOs and CAFOs (Section 2.2). The remainder of this chapter summarizes State Programs/Initiatives (Section 2.3) and Recent State Initiatives/Trends (Section 2.4).

2.1 Overview of EPA/State Roles in NPDES Program

Under the Clean Water Act (CWA), NPDES permits may be issued by EPA or any state authorized by EPA to implement the NPDES program. Currently, 44 states are authorized to administer the base NPDES program.¹ (The base program includes the federal requirements applicable to AFOs and CAFOs, which are discussed below).² To become an authorized NPDES state, the requirements imposed under a State's NPDES program must at a minimum be as stringent as the requirements imposed under the federal NPDES program. The states, however, may impose requirements that are broader in scope or more stringent than the requirements imposed under the federal NPDES program. In states not authorized to implement the NPDES program, the appropriate EPA Regional office is responsible for implementing the NPDES program.

Regarding the regulation of AFOs, 44 of the states authorized to implement the NPDES program have some form of program requirements generally deemed to be as stringent as the federal requirements applicable to AFOs. Yet, it appears that only a handful of states rely solely on their State NPDES regulations to address CAFOs. Rather, most use their NPDES regulations as one part of their CAFO program and supplement these requirements with additional provisions.

Because the federal CAFO regulations constitute the core program requirements in many authorized states and are used for purposes of comparison and summary in this document, these regulations are briefly summarized below.

2.2 Overview of EPA AFO/CAFO Definitions and Effluent Limits, Under the Federal NPDES Program

Under the federal NPDES program, EPA has developed regulations that define which facilities constitute AFOs and which constitute CAFOs. Under these regulations, facilities that constitute CAFOs are defined as point sources for purposes of the NPDES program. No facility may discharge pollutants from a point source to waters of the United States without a NPDES permit.

¹ State NPDES authorization may be obtained for the base program, as well as for components addressing federal facilities, pretreatment, general permits, and sludge. The Virgin Islands is also authorized to administer the NPDES program.

² Alaska, Arizona, Idaho, Massachusetts, New Hampshire, and New Mexico are not authorized to implement the NPDES program. Oklahoma is delegated to implement the NPDES program, however; Oklahoma does not issue a general NPDES permit specifically for CAFOs and is in effect unauthorized to administer the CAFO portion of the NPDES program. Oklahoma CAFOs should apply for coverage under the general NPDES CAFO permit issued by U.S. EPA Region 6 (See 63 FR 53002).

The existing federal regulatory definitions of AFOs and CAFOs are provided at 40 *C.F.R.* § 122.23 and Part 122, Appendix B. These regulations define an AFO as a facility that meets the following criteria:

- Animals have been, are, or will be stabled or confined and fed or maintained for a total of 45 days or more in any 12-month period.
- Crops, vegetation, forage growth, or post-harvest residues are not sustained in the normal growing season over any portion of the lot or facility.³

Federal regulations define a CAFO generally as an animal feeding operation that:

- Confines more than 1,000 animal units (AUs)⁴, or
- Confines between 301 to 1,000 AUs and discharges pollutants:
 - ▶ Into waters of the United States through a man-made ditch, flushing system, or similar man-made device, or
 - ▶ Directly into waters of the United States that originate outside of and pass over, across, or through the facility or otherwise come into direct contact with the animals confined in the operation.

The CAFO regulatory definition also provides that facilities that discharge pollutants only in the event of a 25-year, 24-hour storm event are not defined as CAFOs.

Under existing federal regulations, the permitting authority (e.g., EPA or an authorized state) can designate an AFO as a CAFO upon determining that the operation is a significant contributor of pollution to waters of the United States. This determination, which takes a number of factors into account (e.g., slope, vegetation, and the proximity of the operation to surface waters), is based on an onsite inspection by the agency that issues the permits and is subject to certain discharge conditions.

In addition to the provisions that define AFOs and CAFOs, EPA has promulgated an effluent limitation guideline (ELG) applicable to feedlots (feedlots are defined in the same manner as CAFOs) (see 40 *C.F.R.* § 412). This regulation generally establishes that CAFOs are subject to a zero discharge standard except for discharges, resulting from a catastrophic or chronic storm event, that occur from a properly maintained and operated waste management system designed to control waste and runoff from a 25-year, 24-hour storm.

2.3 State Programs/Initiatives

³ 40 *CFR* 122.23 (b)(1).

⁴ The following examples are animal quantities equivalent to 1,000 animal units: 1,000 slaughter and feeder cattle, 700 mature dairy cattle, 2,500 swine each weighing more than 25 kilograms, 30,000 laying hens or broilers (if a facility uses a liquid manure system), and 100,000 laying hens or broilers (if a facility uses continuous overflow watering). See 40 *CFR* Part 122, Appendix B.

The national summary of state programs and initiatives is divided into four categories: (1) regulatory programs used by states, (2) State definitions of CAFO/AFO, (3) use of general versus individual permits, and (4) key permit conditions.

2.3.1 Regulatory Approach

Figure 1 provides a state-by-state depiction of the AFO permitting mechanisms available in each state. States have five categories of permitting mechanisms:

- Federally Administered NPDES Program
- Federally Administered NPDES Program and State Administered Non-NPDES Program
- State Administered NPDES Program only
- State Administered NPDES Program and State Administered Non-NPDES Program
- State Administered Non-NPDES Program only

As discussed above, 44 states are authorized to implement the base NPDES CAFO program. As illustrated in Figure 1 and summarized in Table 1, of the 44 states authorized to implement the NPDES CAFO program:

- Thirty-two states administer a State NPDES CAFO program in combination with some other state permit, license, or authorization program. Typically, this additional State authorization is a construction or operating permit.
- Seven states regulate CAFOs exclusively under their state NPDES authority (HI, NJ, NV, NY, RI, TN, WV).
- six states have chosen to solely regulate CAFOs under State non-NPDES programs (CO, MI, NC, OR, SC, VA).

Of the six states not authorized to administer the NPDES program:

- Three rely solely on federal NPDES permits to address CAFOs (AK, MA, NH).
- Three impose some form of a state non-NPDES program requirement, although EPA remains responsible for administering the NPDES CAFO requirements in these states (AZ, ID, NM).

While Oklahoma is one of the 44 NPDES-delegated states, Oklahoma does not have a general NPDES permit specific to CAFOs. In this special case, Region 6 administers the portion of Oklahoma's NPDES program that deals with CAFOs by covering Oklahoma CAFOs under the Region 6 general NPDES permit for CAFOs. Oklahoma also uses a State non-NPDES operating permit to regulate state CAFOs.

Overall, 28 states have a combination of permitting mechanisms available for addressing environmental impacts from AFOs. Eleven states exclusively regulate CAFOs under a state or federal NPDES program. Five states (CO, MI, NC, SC and OR) only regulate AFOs under a

state non-NPDES program, with Colorado and Michigan not requiring any AFOs to obtain any form of operating permit.

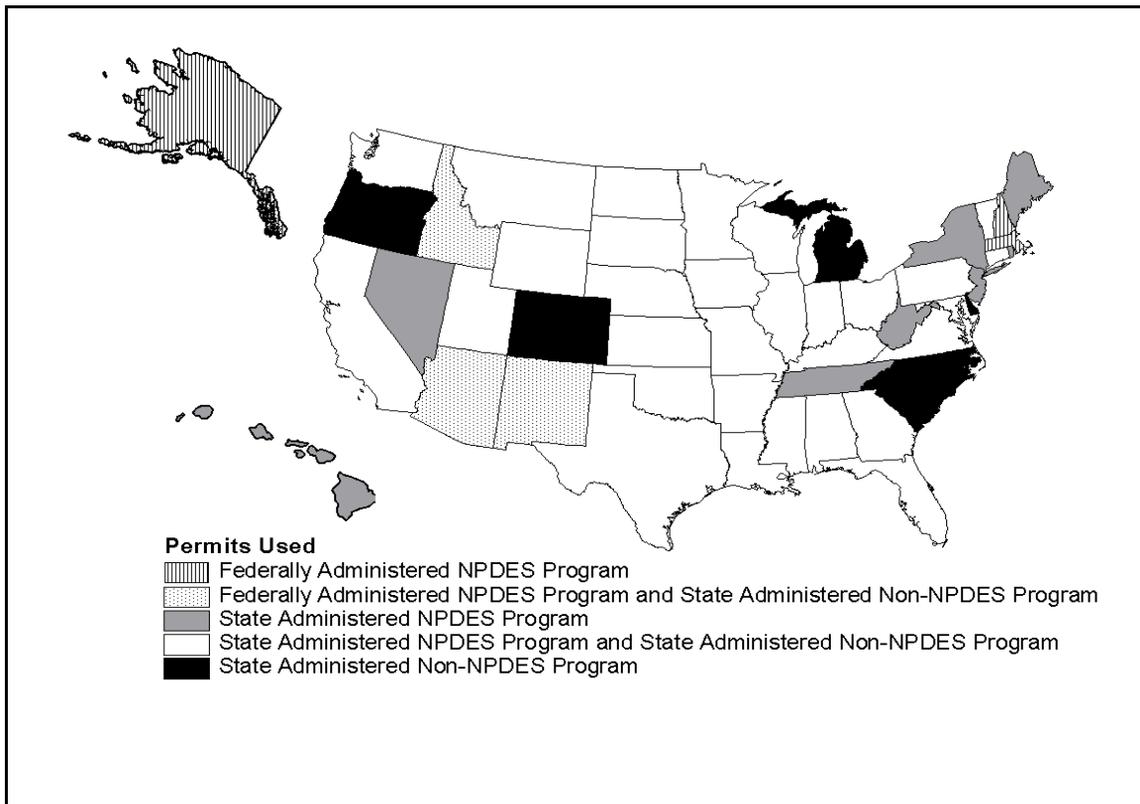


Figure 1. Regulatory Mechanisms for AFO Permitting in Each State

2.3.2 State Definitions of CAFO

EPA and state definitions of a CAFO are important because the definitions determine the scope of the existing federal and state regulatory programs. EPA's definition of a CAFO is based on the length of time animals are confined, the number of animals confined (animal units), and whether or not the facility directly discharges pollutants into waters of the United States. Virtually all state NPDES CAFO programs use the federal definition for CAFO. The vast majority of states also use the federal definition of CAFO for State non-NPDES CAFO programs. Several states, however, use a lower numeric threshold (number of animal units) for non-NPDES permitting. For example, Minnesota issues individual NPDES permits to confined feeding operations as defined by federal regulation and State feedlot permits (non-NPDES) to facilities with more than 10 animal units (calculated by using the formula used in the federal definition).

States that use the federal definition of CAFO may also increase the scope of coverage required through state NPDES programs by reducing the number of animals (number of animal units) a facility can confine before being subject to permitting.

Table 1. Identification of Permit Type and Permit Requirements Within State AFO Programs in the United States¹

State	State NPDES	State Control Mechanism ² (non-NPDES)		General/ Individual Permits				Permit Conditions ³			
		Construction	Operating	NPDES		State non-NPDES		Effluent ⁴	Management	Land Application	
				General	Individual	General	Individual			Agronomic Rates	Offsite
AL	✓	✓	✓	✓	✓			✓	✓	✓	
AK	ND ⁵										
AR	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓
AZ	ND		✓	✓		✓				✓	
CA	✓	✓	✓	✓		✓	✓	✓		✓	
CO	*	✓	✓				✓	✓	✓	✓	
CT	✓	✓			✓		✓	✓	✓	✓	
DE	✓		✓						✓		
FL	✓	✓	✓		✓			✓	✓	✓	
GA	✓		✓	✓	✓		✓		✓	✓	
HI	✓				✓						
IA	✓	✓	✓		✓		✓	✓	✓	✓	✓
ID	ND	✓	✓	✓			✓	✓	✓	✓	✓
IL	✓	✓	✓	✓	✓		✓	✓	✓	✓	
IN	✓	✓	✓		✓				✓	✓	
KY	✓	✓	✓			✓	✓	✓	✓	✓	✓
KS	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓

Information contained on this page is subject to the limitations described on page one of chapter one of this document.

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		Construction	Operating	NPDES		State non-NPDES		Effluent ⁴	Management	Land Application	
				General	Individual	General	Individual			Agronomic Rates	Offsite
LA	✓		✓		✓		✓	✓	✓		
MA	ND										
MD	✓	✓	✓	✓	✓		✓	✓	✓	✓	
ME	✓		✓		✓			✓	✓	✓	✓
MI	*										
MN	✓	✓	✓		✓		✓	✓	✓	✓	
MO	✓	✓	✓	✓	✓		✓	✓	✓	✓	
MS	✓		✓	✓	✓	✓	✓	✓			
MT	✓	✓	✓	✓	✓	✓	✓	✓		✓	
NE	✓	✓	✓		✓		✓	✓	✓	✓	
NC	*		✓			✓	✓	✓	✓	✓	
ND	✓	✓	✓		✓		✓	✓	✓	✓	
NH	ND										
NJ	✓				✓					✓	
NM	ND		✓				✓		✓	✓	
NV	✓				✓						
NY	✓			✓	✓			✓	✓	✓	

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State	State NPDES	State Control Mechanism ² (non-NPDES)		General/ Individual Permits				Permit Conditions ³			
		Construction	Operating	NPDES		State non-NPDES		Effluent ⁴	Management	Land Application	
				General	Individual	General	Individual			Agronomic Rates	Offsite
OH	✓	✓	✓	✓	✓		✓	✓	✓		
OK	✓	✓	✓	✓	✓		✓	✓	✓		
OR	*	✓	✓			✓	✓			✓	
PA	✓		✓	✓	✓			✓	✓	✓	✓
RI	✓				✓						
SC	*	✓	✓			✓	✓	✓	✓	✓	
SD	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓
TN	✓			✓	✓			✓	✓	✓	
TX	✓		✓	✓	✓		✓	✓	✓	✓	
UT	✓	✓	✓	✓	✓		✓		✓		
VA	✓		✓			✓	✓	✓	✓	✓	
VT	✓	✓					✓	✓	✓	✓	
WA	✓		✓	✓	✓	✓	✓	✓	✓	✓	
WI	✓	✓	✓	✓	✓			✓	✓	✓	
WV	✓							✓	✓	✓	
WY	✓	✓			✓		✓	✓	✓	✓	
Totals	38	27	36	20	32	12	31	35	38	40	8

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Table 1. Identification of Permit Type and Permit Requirements Within State AFO Programs in the United States¹

State	State NPDES	State Control Mechanism ² (non-NPDES)		General/ Individual Permits				Permit Conditions ³			
		Construction	Operating	NPDES		State non-NPDES		Effluent ⁴	Management	Land Application	
				General	Individual	General	Individual			Agronomic Rates	Offsite

¹ Blank data cells indicate that the program element was not a primary component of the state program or information was not sufficient to make a determination.

² State control mechanisms include all forms of formal state approval required to construct or operate an AFO, such as state issued non-NPDES permits, letters of approval, and certificates of coverage.

³ Permit conditions are requirements imposed through either NPDES or state non-NPDES programs.

⁴ Effluent limits refer to whether or not a state imposes federal effluent limits to AFOs/CAFOs (i.e., no discharge allowed except during 25 year, 24- hour storms). A check could indicate that a state imposes effluent limits that are more strict than the federal requirements (e.g., Arkansas does not allow any discharges regardless of storm events).

⁵ ND = States not authorized to administer the NPDES program.

* Although authorized to administer the NPDES program, the state chooses to use a separate program to address AFOs.

Some states have unique definitions for their livestock regulatory programs that do not follow the federal definition (See Table 2). States typically base their definition on number of animals confined, weight of animals and design capacity of waste control system, or gross income of agricultural operation. These definitions are exclusively applied to State non-NPDES programs.

Table 2. Selected State CAFO Definitions that Differ from the EPA Definition and Use of the Definition in Regulatory Control

State	Classification Scheme	Facilities Subject to State Non-NPDES Regulatory
Indiana	Number of animals	Operation with 600 swine, 300 cattle, or 30,000 birds
Iowa	Weight of animals in a confinement feeding operation	Permitting threshold for construction permit based on type of waste control system and design capacity (based on weight) of that system (e.g., an anaerobic lagoon with a design capacity of 400,000 lbs of bovine requires construction permits)
Kansas	Number of animals	Operations with 300 animal units
Maryland	Gross income and animal units	All agricultural operations with incomes of at least \$2,500 or eight animal units
North Carolina	Number of animals	Operations designed for 100 head of cattle, 75 horses, 250 swine, 1,000 sheep, or 30,000 birds

One important difference between state livestock regulatory programs and the federal program is that numerous states have addressed the issue of authority to issue permits (or other control mechanisms) to CAFOs by requiring that all or a specified subgroup of CAFOs regardless of whether they have a direct point source discharge of pollutants to U.S. waters obtain a permit.⁵ This requirement is imposed under state, not federal regulations.

For example, Arkansas requires all AFOs that use a liquid waste management system to obtain permit coverage under either the State-issued general permit or an individual permit. AFOs with dry waste management systems are not automatically required to obtain a permit; however, all facilities with more than 1,000 animal units are subject to coverage under the State’s general permit. This is an important distinction because states have opted to expand the scope of facilities that fall within the definition of a CAFO by eliminating the requirement that a facility must have a discharge before being considered a CAFO. In other words, states are requiring large facilities with a potential to discharge to abide by CAFO rules.

2.3.3 General/Individual Permits

The regulation of CAFOs is challenging, in part, because of the large number of facilities across the country. In 1995 it was estimated that 450,000 operations nationwide confined or concentrated animals, of which a very conservative estimate indicated that at least 6,600 had

⁵ Preliminary data indicate that the following states require all or a subset of CAFOs (under various definitions) to obtain permits: AL, AR, AZ, CO, DE, IA, ID, IN, KS, KY, MN, MS, NC, OH, OR, SC, WY.

more than 1,000 animal units and may have been considered CAFOs under the federal definition⁶. More recent estimates describe an AFO universe of approximately 375,700 operations of which approximately 12,600 are AFO operations with more than 1,000 AUs, 26,500 are AFO operations with 300-1,000 AUs, and 336,600 are AFO operations with fewer than 300 AUs.⁷ One way of reducing the administrative burden associated with permitting such large numbers of facilities is through general permits. Existing regulations provide that general permits may be issued to cover a category of discharges within a geographic region. Within such areas, general permits may regulate either storm water point sources or a category of point sources that involves similar operations with similar wastes. Operations subject to the same effluent limitations and operating conditions, and requiring similar monitoring, are most appropriately regulated under a general permit. EPA and the states are using general permits to regulate CAFOs, and this trend appears to be increasing. South Dakota, for example, has established two general permits for CAFOs, one to address swine operations and another for all other livestock.

Of the 44 states authorized to implement the NPDES program:

- Twenty have issued a State NPDES general permit for CAFOs (this number excludes federally issued general permits).
- Twelve have issued a state non-NPDES general permit for CAFOs.

Of the six states not authorized to administer the NPDES program (this excludes Oklahoma), four are subject to a federal general permit.⁸

2.3.4 Permit Conditions

Normally, a NPDES permit will include several types of permit conditions, including technology-based effluent limits (i.e., zero discharge except for discharges resulting from chronic or catastrophic rainfall events if a facility is designed to hold process wastewater and runoff from a 25-year, 24-hour storm for CAFOs subject to § 412), water quality-based effluent limits (if the technology-based limit will not ensure compliance with State water quality standards), monitoring and reporting conditions, special conditions (e.g., conditions that impose additional controls beyond numeric limits, such as best management practices [BMPs]), and standard conditions (e.g., duty to comply, duty to ensure proper operation, and duty to provide information).

The federal technology-based effluent limit for CAFOs is “no discharge.” The effluent limit includes an exception in the event of chronic or catastrophic rain for facilities that have been

⁶ *Animal Agriculture: Information on Waste Management and Water Quality Issues*, General Accounting Office, 1995.

⁷ 66 *FR* 2985, January 12, 2001.

⁸ CAFOs in New Mexico and Oklahoma are subject to an EPA Region 6 general permit; facilities in Idaho and Alaska are subject to an EPA Region 10 permit, although no facilities are covered under a NPDES permit in Alaska; and CAFOs in Arizona are subject to an EPA Region 9 general permit, although no facilities are covered under the general permit. New Hampshire, and Massachusetts are located in EPA Region 1, which does not have a general NPDES permit for CAFOs.

designed, constructed, and operated to contain all waste water and runoff from a 25-year, 24-hour storm. States not authorized to implement the NPDES program must use this federal effluent limit.

Authorized states generally are equally as stringent, but may be more stringent. Based on a review of available data, of the 44 states authorized to implement the NPDES program 34 use the federal effluent limitation guideline and 6 use a more stringent limit.

Some states with more stringent effluent limits may partially or totally prohibit discharges related to storm events. In Arkansas, for example, the effluent limit prohibits discharges from liquid waste management systems, including periods of precipitation greater than the 25-year, 24-hour storm event. California requires no discharges from new waste control structures even during 100-year storms. And in Iowa, confinement feeding operations (i.e., roofed AFOs) are prohibited from any direct discharge and must dispose of manure in a manner that will not cause a pollution of surface or ground water.

A key concern regarding the management of CAFO waste is ensuring appropriate land application. Land application is the primary management practice used by CAFOs to dispose of animal waste. Several estimates indicate that 90 percent of CAFO-generated waste is land applied. Where properly done, land application of CAFO waste fosters the reuse of the nitrogen, phosphorus, and potassium in these wastes for crop growth. However, where such wastes are excessively or improperly applied, land application can contribute to water quality impairment. Thirty-four states impose requirements addressing land application either through NPDES or non-NPDES programs. Typical requirements include that CAFO waste be applied at agronomic rates and that CAFO operators develop Waste Management Plans.

The breakout of state requirements is as follows:

- Forty states require that CAFO waste be land applied at agronomic rates.
- Thirty-eight states require the development and use of Waste Management Plans.
- One state, Georgia, issues land application system (LAS) permits.

Agronomic rates are typically based on the nitrogen needs of crops, although some states specify that waste be applied at agronomic rates for nitrogen and phosphorous. The determination of agronomic rates varies from state to state. Some states do not address how agronomic rates should be determined, while others, such as Colorado, require CAFO operators to complete detailed plans and field sampling to determine the appropriate amount of waste that can be land applied.

The complexity and details required in a waste management plan also vary among states. Some states do not explicitly identify what items must be addressed in a waste management plan, whereas others have detailed requirements. Typically, CAFO operators are required to address these items in a waste management plan:

- Estimates of the annual volume of waste.
- Schedules for emptying and applying wastes.
- Rates and locations for applying wastes.
- Provisions for determining agronomic rates (i.e., soil testing).

- Provisions for conducting required monitoring and reporting.
- Written agreements with landowners to accept liquid waste.

2.4 Recent State Initiatives/Trends

One clear indication that states have an increasing interest in expanding their efforts to control water quality impacts from AFOs is the promulgation of new state AFO laws, regulations and program initiatives. At least 28 states have developed new laws or regulations related to AFOs since 1996. For example, Kansas, Kentucky, North Carolina, and Wyoming passed legislation regarding swine facilities, with Kentucky and North Carolina imposing moratoriums on the expansion of swine AFOs until state management/regulatory plans could be developed. Mississippi also has imposed a 2-year moratorium on any new CAFOs.

Alabama's recent efforts include developing an NPDES general permitting rule and a Memorandum of Agreement outlining state agency responsibilities as they relate to AFOs. Washington's Dairy Law subjects all dairy farms with more than 300 animal units to permitting and requires each facility to develop NRCS-approved nutrient management plans. Indiana's Confined Feeding Control Law also requires AFOs to develop waste management plans and receive state approval for operating AFOs.

2.5 Summary

State efforts to manage AFOs are carried out through issuance of NPDES permits and state issued non-NPDES permits and/or authorizations. State AFO regulatory programs are directed in large part at controlling the potential environmental impacts on surface water, but also at protecting ground water and managing industry growth. State permits and/or authorization requirements are often imposed regardless of NPDES requirements. State non-NPDES AFO programs are often more stringent than NPDES programs and state efforts often extend coverage to smaller classes of AFOs. Further, the implementation of state non-NPDES programs often receives more agency attention than the implementation of NPDES programs, with several states actively choosing not to use NPDES permits.

While specific state efforts relating to AFOs vary, most states regulate facilities through permitting programs that require animal waste disposal systems to be constructed to prevent the discharge of animal wastes to waters of the United States. Coverage under state permitting programs depends on such criteria as facility size, potential for discharge, type of facility, and type of waste control. Information indicates that state agencies are increasing their commitment of resources to address environmental concerns from AFOs.

CHAPTER 3. STATE PROFILES

This chapter presents individual profiles of state programmatic and regulatory efforts addressing AFOs for each of the 50 states. These profiles provide a state-by-state summary of the key elements within State AFO regulatory programs. The profiles summarize existing State activities to address environmental and health impacts from AFOs. The profiles provide a comprehensive overview of each State program, including the following:

- A description of the lead regulatory agency(ies) (i.e., permitting authority) and agency(ies) responsible for directing voluntary programs.
- State regulations that address AFOs and voluntary programs that encourage regulatory compliance or the use of best management practices.
- The types of permits issued and the permitting processes for each state, the circumstances for which permits are required (i.e., permit coverage), and the requirements and responsibilities of AFO owners and operators (i.e., permit conditions).
- State enforcement activities, inspection programs, and staffing and funding levels dedicated to addressing AFOs.
- Examples of innovative or interesting state projects or programs to control the potential negative environmental impacts of AFOs.

If information on a particular program element was not readily available, or not identified, the following phrase was used: “no information was found in publicly available sources.” Figure 3.1 presents the outline used for each of the state profiles.

1.0	Background
2.0	Lead Regulatory Agency
3.0	State Regulations Regarding AFOs/CAFOs
4.0	Type of Permits <i>NPDES</i> <i>Other (general use or general agriculture permits, construction permits, and operating permits)</i>
5.0	Permit Coverage (potential nuisance and/or location)
6.0	Permit Conditions <i>Approvals (permits, letters of intent, or certificates of coverage)</i> <i>Lagoon Design and Specifications (seepage limits, etc.)</i> <i>Discharge Rules</i> <i>Waste Management Plans</i> <i>Separation Distances</i> <i>Land Application Requirements</i> <i>Other Requirements</i>
7.0	Enforcement Information <i>General Enforcement Information</i> <i>General Inspection Information</i>
8.0	Voluntary Programs
9.0	Additional State-Specific Information <i>Cooperative Extension Service</i> <i>Comprehensive Nutrient Management Plan (CNMP)</i> <i>Memorandums of Understanding/Agreement (MOUs/MOAs)</i> <i>Other Information</i>
10.0	References

Figure 3.1 Outline for Profiles of State Programs and Regulatory Activities Related to Animal Feeding Operations

Arkansas's CAFO Program

1.0 Background

Based upon information provided to EPA by USDA, there are 1,481 AFOs with 300 to 1,000 animal units and 597 AFOs with more than 1,000 animal units in Arkansas. These are primarily in the broiler sector (USDA, 1999; USDA, 2000).

Pursuant to Section 2 of Act 1219 of 1997, as of March 31, 1999, the Arkansas Department of Pollution Control and Ecology became the Arkansas Department of Environmental Quality (ADEQ). Regulation 5 and all other regulations of the Arkansas Pollution Control and Ecology Commission remain in full force (ADEQ, 2000).

The Department now known as ADEQ has been issuing permits for animal feeding operations since 1970 under the authorities contained in the Arkansas Water and Air Pollution Control Act. Most animal feeding operations in Arkansas are relatively small operations, although the number of large livestock and poultry facilities in the state has been increasing (Quinn, 1993).

2.0 Lead Regulatory Agency

ADEQ has regulatory authority over environmental aspects of livestock feeding operations and is authorized by EPA to administer the NPDES program. The NPDES program information can be found at www.adeq.state.ar.us/water/npdesbr.htm.

The Arkansas Soil and Water Conservation Commission is responsible for developing and implementing the State's Nonpoint Source Pollution Management Program. This program is a cooperative effort of many local, state, and federal agencies. Efforts are directed toward both restoring impaired waters through the watershed program and protecting all of the state's waters through categorical programs (ASWCC, 2000).

3.0 State Regulations Regarding AFOs/CAFOs

Pursuant to the Arkansas Water and Air Pollution Control Act (Act 472), ADEQ adopted Regulation No. 5-Liquid Animal Waste Management Systems (the "Regulation"). The Regulation can be found at www.adeq.state.ar.us/regspdfs/reg05.pdf.

The purpose of Regulation No. 5 is to establish the minimum qualifications, standards, and procedures for the issuance of permits for confined animal operations using liquid animal waste management systems within the state and for the issuance of permits for land application sites within the state. The regulation provides management, operational, and maintenance procedures necessary to prevent point source pollution and minimize nonpoint source pollution to the waters of the state and control to the degree practicable the generation of offensive odors by regulated confined animal operations. The siting and separation requirements in the regulation are intended to protect water quality, to protect public health, and to abate odor. To minimize odor, the Commission's policy is to encourage permittees to adopt a good neighbor policy and consider the use of chemical or biological additives or other best management practices in the operation of liquid animal waste management systems.

Confined animal operations that use a dry waste management system are not required to obtain a permit from ADEQ but are subject to enforcement actions for improper waste handling, storage,

or disposal.

4.0 Types of Permits

NPDES

ADEQ issues three types of NPDES permits for CAFOs (ADEQ, 2000).

- The NPDES general permit is a federal permit required for all *concentrated* animal feeding operations (CAFOs). A CAFO is an animal feeding operation that exceeds 1,000 animal units as defined in 40 CFR Part 122, Appendix B.
- A state general permit is available for facilities that do not satisfy the criteria for CAFO classification but still wish to be covered by a general permit. The state general permit contains conditions and requirements similar to those contained in the NPDES general permit but is issued under state authority.
- An individual state permit is issued for facilities that do not satisfy the criteria for CAFO classification and do not wish to be covered by the state general permit. An individual state permit contains conditions and requirements specific to each facility. In most cases, an individual state permit has conditions and requirements similar to those of a state general permit.

Other

Under the authority of the Arkansas Water and Air Pollution Control Act (Act 472 of 1949, as amended), the State Permits Branch also issues permits for land application of beneficial industrial process wastes. To be considered “beneficial,” land application of the waste must provide some sort of agronomic improvement, such as crop nutrients, soil conditioning, or crop irrigation (ADEQ, 2000).

The State Permits Branch, in cooperation with the Arkansas Department of Health, issues permits to facilities that use subsurface wastewater disposal such as septic tanks and leach fields. Regulatory jurisdiction of a subsurface wastewater disposal system depends on the type and volume of waste (ADEQ, 2000).

Subsurface disposal of non-domestic wastewater (regardless of flow rate) requires a permit from ADEQ. Non-domestic wastewater is any wastewater that is commercial, industrial, or agricultural in origin, excluding food establishments. The most common types of facilities permitted for subsurface disposal of non-domestic wastewater are car and truck washes, slaughterhouses, and laundromats (ADEQ, 2000).

5.0 Permit Coverage

APCEC’s Regulation No. 5 requires all confined animal operations, regardless of size, that use a liquid waste management system in Arkansas to obtain a permit from the Department. Confined animal operations that use a dry waste management system are not required to obtain a permit from the Department but are subject to enforcement actions for improper waste handling, storage, or disposal (APCEC, 2000).

Regulation No. 5 provisions are applicable to the operation of hog, poultry, or dairy farms or other confined animal operations using liquid animal waste management systems.

6.0 Permit Conditions

Approvals

No confined animal operation using a liquid waste disposal system may be constructed or operated unless the owner has first obtained a permit from the Department.

No liquid animal waste management system may be constructed, modified, or placed into operation unless in accordance with final design plans and specifications approved by the Department.

The provisions of Regulation No. 5 require all confined animal operations to be constructed in accordance with plans and specifications approved by ADEQ. Following construction and before to operation, certification that the facility was constructed in accordance with approved plans and specifications must be submitted to ADEQ. This certification must be prepared by USDA-NRCS, the University of Arkansas Cooperative Extension Service, an Arkansas Soil and Water Conservation District water quality technician, or a professional engineer registered in the state of Arkansas. Authorization to operate the facility will not be issued until the certification is received by the Department.

Lagoon Design and Specifications

Designs and waste management plans must be in accordance with Regulation No. 5 and the following NRCS technical publications:

- Field Office Technical Guide
- Animal Waste Management Field Handbook.

The subsurface investigation for earthen holding ponds, treatment lagoons, suitability, and liner requirements may consist of auger holes, dozer pits, or backhoe pits that should extend to at least 2 feet below the planned bottom of the excavation. Where this depth is not practical in the initial onsite subsurface investigation, the applicant must provide additional subsurface investigation documentation to ADEQ.

Settling basins and holding ponds must contain all process-generated wastewater and contaminated runoff from an animal feeding operation. The freeboard capacity of a holding pond must be maintained at not less than 12 inches plus the 25-year, 24-hour storm event. Holding ponds must be outside the 100-year floodplain unless the facility is protected from damage that might occur during a flood (ADPCE, 1993).

Discharge Rules

The operator of a confined animal operation constructed and operated as authorized by permit in accordance with the provisions of Regulation No. 5 must not allow or cause a point source discharge from any part of the liquid animal waste management system.

All general and individual permits are considered “no discharge” permits and prohibit the direct

discharge of any waste to waters of the state, including periods of precipitation greater than the 25-year, 24-hour storm event.

Waste Management Plans

The waste management plan must be developed in accordance with the USDA-NRCS Field Office Technical Guide and must address the timing of land application of wastes with respect to the nutrient uptake cycle of the vegetation found on the land application site(s). To the extent practicable, it also must include measures to minimize offsite obnoxious and offensive odors.

All permitted facilities must have a waste management plan for the farm and a site management plan for each land application site prepared by a professional engineer registered in the state of Arkansas, the USDA-NRCS, the University of Arkansas Cooperative Extension Service, or a water quality technician of the Arkansas Soil and Water Conservation District and approved by the Department. The Department must require proof of land ownership or of contractual agreements for use of the land as a land application site.

Waste management plans submitted in accordance with Regulation No. 5 may include composting as an alternative to land application of liquid waste. Any such plans may provide for composting at a permitted composting facility. If no such facility is referenced in the plan, it must include sufficient detail for a determination by the Department that will not result in point or nonpoint source pollution to the waters of the state.

Separation Distances

Confinement buildings, settling basins, holding ponds, and other liquid animal waste containment structures may not be constructed within 1,320 feet of the nearest existing occupied dwelling for confined animal operations in excess of the following numbers of animals: 600 beef cattle, 430 dairy cows, 1,500 finishing hogs, 600 sows, 6,000 nursery pigs, 33,000 turkeys, or 130,000 chickens. A buffer distance of 500 feet applies to all other facilities. These buffer distances do not apply if the existing dwelling is owned by owners or operators of the liquid animal waste management system or if the adjoining property owner consents in writing. Confined animal operations existing as of the effective date of the regulation and proposing to construct a liquid animal waste containment structure to reduce waste/wastewater run-off to waters of the state may be considered exempt from these buffer distances by the Director. These buffer distances do not apply to confinement buildings, settling basins, holding ponds, or other liquid animal waste containment structures existing as of the effective date of the regulation, nor do they apply to existing structures when a liquid animal waste permit modification is required due to a change in ownership.

Application of waste/wastewater must not be made within 100 feet of streams, including intermittent streams, ponds, lakes, springs, sinkholes, rock outcrops, wells, and water supplies; or within 300 feet of extraordinary resource waters as defined by the Department's Regulation No. 2. Buffer distances for streams, ponds, and lakes must be measured from the ordinary high water mark. The Department may require additional buffer distances deemed necessary to protect the waters of the state.

Application of waste/wastewater may not be made within 50 feet of property lines or 500 feet of neighboring occupied buildings existing as of the date of the permit. The restrictions regarding property lines or neighboring occupied buildings do not apply if the adjoining property is also

approved as a land application site under a permit issued by the Department or if the adjoining property owner consents in writing.

No animals from the confined facility are allowed contact with flowing surface waters (ADPCE, 1993).

Dead animals must not be disposed of within 50 feet of rock outcrops, 100 feet of property lines, 300 feet of waters of the state (including ground water conveyances and wells), 100 feet of intermittent streams, and 500 feet of neighboring occupied dwellings.

Land Application Requirements

A Waste Management Plan approved by an Arkansas registered professional engineer must accompany all applications for waste storage/land application permits. The Waste Management Plan must contain waste analyses and documentation of the potential agronomic benefit for any waste to be land applied. Additional requirements are listed in the permit application (ADEQ, 2000).

- Waste/wastewater must be evenly distributed over application sites at the rates specified in site management plans.
- Land application of waste/wastewater must not be undertaken when soil is saturated, frozen, or covered with ice or snow, or when significant precipitation is reasonably anticipated in the next 24 hours.
- Waste/wastewater may not be applied on slopes with a grade of more than 15 percent or in any manner that will allow waste to enter waters of the state or to run onto adjacent property without the written consent of the affected adjacent property owner.
- Application of waste/wastewater may not be made in areas where the land application of waste/wastewater is prohibited by Arkansas Department of Health regulations for the protection of public water supplies.
- Records must be kept of all waste/wastewater applied. These records must be kept in sufficient detail to determine the application rate. A log must be kept of all land-applied waste/wastewater. The log should include date, weight and/or volume, destination, and acreage over which the load was spread. All records and logs must be kept at the facility and provided to the Department upon request.
- A representative sample of the waste/wastewater to be land applied must be collected periodically, at least once each year, and analyzed for pH, total nitrogen, ammonium, potassium, phosphorous, and percent solids. The Department may require more frequent testing deemed necessary to protect the waters of the state.
- The soils of each field where liquid animal waste has been land applied must be sampled and analyzed annually prior to the application of wastes for: pH, potassium, phosphorous, and nitrates.
- Methods and timing of sampling and analysis described in Section 5.407 must be in accordance with University of Arkansas Cooperative Extension Service guidelines.

- Annual reports for the previous calendar year must be submitted to the Department before May 30 of each year and must include the following: waste/wastewater analyses conducted under paragraph 5.407(B); soil analyses conducted under paragraph 5.407(C); locations, volumes, and nitrogen application rates for the previous year; methods of application; and types of crops grown on each land application site. Reports must be submitted on forms provided by the Department.

A separate permit may be issued for a land application site if the owner submits an application that includes a site management plan for the land application site and a plan detailing nutrient application rates; the timing of waste application with respect to the nutrient uptake cycle of the vegetation found on the land application site(s); and waste storage and distribution method(s) prepared in accordance with the requirements of the regulation. The applicant for such a permit must notify the Department of any contractual agreement for the use of the land as a land application site by submitting a copy of the agreement. Records of waste/wastewater application must be kept as specified in Section 5.407 and must include information regarding the source of the waste, including location and permit number if applicable. Sampling, analysis, and annual reporting as specified in Section 5.407 are required.

7.0 Enforcement Information

Arkansas Department of Environmental Quality has an *Enforcement Tracking List* to record reported violations and note what corrective/punitive actions were taken against the animal feeding operation. Civil and/or criminal penalties can be assessed against any person who violates any provision of the Arkansas Water and Air Pollution Control Act. Furthermore, ADEQ can recover payment to the Arkansas Game and Fish Commission for natural resource damages (USEPA, 1993).

Criminal penalties, including imprisonment, can be imposed for up to one year and/or a fine of \$25,000 can be imposed on anyone who violates any provision of the Arkansas Water and Air Pollution Control Act. Animal feeding operations that are out of compliance with Arkansas rules and regulations may not be allowed to seek coverage under the state's general NPDES permit and could have to file for an individual permit.

Inspection Program

Inspections typically occur every two years for facilities with liquid waste management system permits (A. Senkayi, 1997). The permittee must inspect waste control structures four times a year. Under the NPDES general permit, Arkansas farmers have to maintain records of inspections completed by the permittee (USEPA, 1993).

8.0 Voluntary Programs

No information was found in publically available sources.

9.0 Additional State-Specific Information

Cooperative Extension Service

Information regarding the University of Arkansas's Division of Agriculture, Cooperative

Extension Service, is available at www.uaex.edu.

Comprehensive Nutrient Management Plan (CNMP) Certification

A certified waste management plan is required for all liquid waste disposal permits. This plan must be certified by officials established by the state and approved by ADEQ (Arkansas Pollution Control and Ecology Commission, Regulation No. 5, Liquid Animal Waste Management Systems). These professionals are permitted to certify waste management plans in Arkansas:

- Arkansas registered professional engineer
- Certified personnel from USDA-NRCS
- University of Arkansas Cooperative Extension Service
- Water quality technician of the Arkansas Soil and Water Conservation District

Arkansas's Liquid Animal Waste Management Systems Regulation requires applicants for permits to provide certification of satisfactory completion of formal education or training in waste management and odor control. CAFO operators with a permit or applying for a permit must meet certification requirements.

The operator training course content was developed March 23, 2000, under the supervision of the University of Arkansas Cooperative Extension Service. Proof of certification must be provided to ADEQ. Operator certification is required for a liquid waste disposal system permit. The certification program includes a minimum of 4 hours of individualized training and education in waste management and odor control. After one year, operators must complete annual refresher training.

Case Studies/Innovative Programs

Large swine and poultry facilities that are under contract with major processing companies usually have permits because the processing companies police their own waste control systems to ensure compliance with environmental regulations. Large contractors prefer that contracted swine and poultry facilities have liquid waste management system permits and even specify a permit as a condition of the contract.

ADEQ reports unpermitted facilities and violators to the general contractors to enlist their help in getting CAFOs to operate according to Arkansas's regulations.

10.0 References

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USEPA. 1998. *Efforts to Improve Controls on Concentrated Animal Feeding Operations (CAFOs)*. Results of June 1998 Survey of States and Regions compiled by G. Beatty. U.S. Environmental Protection Agency, Office of Water, Washington, DC.

Louisiana's CAFO Program

1.0 Background

Based on information provided to EPA by USDA, there are 245 AFOs with 300 to 1,000 animal units and 88 AFOs with more than 1,000 animal units in Louisiana. These are primarily in the broiler sector (USDA, 1999; USDA, 2000).

Animal wastes from dairy operations are a documented source of adverse water quality impacts in southeastern Louisiana. The recent growth of the poultry industry is bringing greater attention to water quality impacts from agriculture. The proper management of dairy and poultry wastes is one of the primary water quality issues in Louisiana (USEPA, 1998).

2.0 Lead Regulatory Agency

The Louisiana Department of Environmental Quality (DEQ) has primary authority for NPDES/CAFO permit issuance, inspection, and enforcement. Information about DEQ can be found at www.deq.state.la.us/.

3.0 State Regulations Regarding AFOs/CAFOs

Surface water permits are addressed in Title 33 of Louisiana's Environmental Quality Regulations, Part IX (chapters 3 and 23). These regulations are consistent with the federal regulations at 40 CFR 122.23.

4.0 Types of Permits

NPDES

Louisiana became authorized to administer permits under the NPDES program on August 27, 1996. EPA Region 6 issued a CAFO general permit in 1993 and re-proposed issuance of a CAFO general permit on June 26, 1998. The proposed general permit will not address CAFOs in Louisiana. Louisiana will begin to issue individual NPDES permits to CAFOs (Senkayi, 1997).

Other

The Louisiana Environmental Quality Act prohibits any person from conducting an activity that results in the discharge of any substance into the waters of the state (including ground water) without the appropriate permit, variance, or license (La. Rev. Stat. 2075).

5.0 Permit Coverage

Coverage under state regulations is similar to coverage under federal regulations (Title 33, §2335). Generally, any CAFO facility that discharges pollutants to waters of the state must obtain a permit. State regulations define AFOs and CAFOs in a manner similar to the federal regulations.

6.0 Permit Conditions

Approvals

The permit application process is consistent with federal NPDES requirements.

Lagoon Design and Specifications

State regulations reserve a location for CAFO effluent guidelines under Title 33, Chapter 7, Section 709(D), Miscellaneous Small Dischargers, CAFOs.

Discharge Rules

It appears that the CAFO permit is based on best professional judgement, which is likely to reflect federal feedlot effluent limitation guidelines. State regulations reserve a location for CAFO effluent guidelines under Title 33, Chapter 7, Section 709(D).

Waste Management Plans

No information was found in publicly available sources.

Separation Distances

No specific separation distances have been developed (NASDA, 1997). Site-specific buffer requirements are included in the BMP plan worked out between the farmer and the Agriculture Department.

Land Application Requirements

Land application rates are based on agronomic rates as outlined in a waste management plan (NASDA, 1997).

7.0 Enforcement Information

General Enforcement Information

No information was found in publicly available sources.

General Inspection Information

CAFOs are inspected annually; AFO inspections are complaint-driven.

8.0 Voluntary Programs

No information was found in publicly available sources.

9.0 Additional State-Specific Information

Cooperative Extension Service

Louisiana State University Cooperative Extension Service (LCES) has an agricultural center as well as an agricultural experiment station and international programs. More information about the Service can be found at www.agctr.lsu.edu/wwwac/lces.html. LCES is working with all agricultural producers in Louisiana to produce a model agricultural pollution prevention plan (PPP) that can be included in a statewide educational program. Using funds from the FY 97 Section 319 grant, LDEQ initiated a cooperative agreement with LCES to implement this educational program. This project called for LCES to work with LDEQ, the Louisiana Farm Bureau Federation (LFBF), Louisiana Department of Agriculture and Forestry (LDAF), and agriculture producer groups such as ASCL to implement PPPs for major agricultural commodities throughout Louisiana. These commodities include cotton, soybeans, rice, sugarcane, sweet potatoes, dairy, poultry, and hogs. The model PPP includes all of the BMPs reviewed and recommended by the BMP Review Committees.

LCES, in association with LDEQ, USDA's Natural Resources Conservation Service (NRCS), the Farm Service Agency and other related federal, state, and local agencies, also adopted the National Farmstead Assessment System (Farm*A*Syst) guidelines and introduced this program in Louisiana.

Comprehensive Nutrient Management Plan (CNMP) Certification

Louisiana does not have a CNMP preparer certification program.

Other Information

LDEQ shares responsibility for nonpoint source issue with the Louisiana Department of Natural Resources (USEPA, 1998). Louisiana Cooperative Extension Service and Louisiana Department of Agriculture and Forestry also play a role in managing nonpoint source pollution [The specific roles of these agencies were not identified.]

10.0 References

- NASDA. 1997. *Summary Matrix of State Survey on Waste & Manure Management Regulations*. National Association of State Agriculture Departments.
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- USEPA. 1998. *Efforts to Improve Controls on Concentrated Animal Feeding Operations (CAFOs)*. Results of June 1998 Survey of States and Regions compiled by G. Beatty. U.S. Environmental Protection Agency, Office of Water, Washington, DC.

New Mexico's CAFO Program

1.0 Background

Based on information provided to EPA by USDA, there are 81 AFOs with from 300 to 1,000 animal units and 109 AFOs with more than 1,000 animal units in New Mexico. These are primarily in the dairy livestock sector (USDA, 1999; USDA, 2000).

Because New Mexico is not authorized to issue NPDES permits, Region 6 of the U.S. Environmental Protection Agency is responsible for implementing the NPDES program. Region 6 issued a CAFO general permit in 1993 and re-proposed issuance of a CAFO general permit on June 26, 1998 (Region 6 concurrently proposed a distinct general permit for CAFOs located in impaired watersheds).

2.0 Lead Regulatory Agency

The New Mexico Environment Department (NMED) is the lead regulatory agency regarding CAFOs. Information about NMED can be found at www.nmenv.state.nm.us/. NMED's Surface Water Quality Bureau (SWQB) coordinates CAFO programs with other programs (USEPA, 1998).

3.0 State Regulations Regarding AFOs/CAFOs

Regulations regarding animal feedlots in New Mexico include the following:

- New Mexico Water Quality Act 74-6-1NMSA
- Liquid Waste Disposal 20NMAC7.3
- Ground and Surface Water Protection 20NMAC6.2

4.0 Type of Permits

NPDES

Because New Mexico is not an NPDES-authorized State, Region 6 of the U.S. Environmental Protection Agency issues NPDES permits to CAFOs in New Mexico.

Other

The state issues a ground water discharge permit under the authority of the New Mexico Water Quality Act and the New Mexico Water Quality Control Commission (WQCC) Regulations (NMED, 1999).

5.0 Permit Coverage

An NPDES permit may be issued to a facility meeting the federal definition of CAFO. In addition, a New Mexico ground water discharge permit may be required for any AFO or CAFO where there is discharge or activity that causes or could cause effluent or leachate to move into ground water directly or indirectly. Examples of potentially regulated discharges from AFOs include dairy wastewater discharges to lagoons and land application areas (NMED, 1997). Ground water discharge permits address operational aspects of the facility as well as monitoring,

nutrient management record-keeping, contingency planning, and closure. The New Mexico Water Quality Act prohibits the issuance of a ground water discharge permit if the discharge will cause or contribute to a violation of a surface water quality standard.

6.0 Permit Conditions

Approvals

A site appraisal is required before facility development (NASDA, 1997).

Lagoon Design and Specifications

No information was found in publicly available sources.

Discharge Rules

Under the state ground water discharge permit provisions, no person may cause or allow effluent or leachate to discharge so that it might move directly or indirectly into ground water unless he is discharging pursuant to a discharge plan approved by the secretary. Discharges must be consistent with the terms and conditions of the approved plan. Note that the requirement for a plan does not apply when the effluent meets specified pollutant standards (i.e., when the effluent meets all the listed numerical standards of Section 3103, has a total nitrogen concentration of 10 mg/L or less, and does not contain any toxic pollutants).

Waste Management Plans

New Mexico's ground water discharge permit requires contingency plans to address potential failures of waste management systems.

The Region 6 general NPDES permit requires the development and implementation of a Pollution Prevention Plan (NMED, 1999).

Separation Distances

There are no state standards for distance from dwellings or property lines. A 200-foot minimum distance from public water wells is required for land application (NASDA, 1997). A 100-foot minimum requirement applies for private wells.

Land Application Requirements

Land application requirements are based on nitrogen loading (NASDA, 1997).

Other Requirements

Ground water discharge permits include monitoring requirements such as sampling of ground water and effluent, flow measurements, and nutrient record-keeping (NMED, 1999).

According to the state's solid waste plan (20 NMAC, Chapter 9, Part 4), agricultural waste is solid waste of plant or animal origin and comes from the production and management of livestock, crops, vegetation, and soil. Production and management include the activities of

feeding, housing, and maintaining livestock such as cattle, sheep, and poultry. Agricultural waste includes manure, orchard and vineyard prunings, and crop residues that are removed from the site of generation. Agricultural waste is not regulated under New Mexico's Solid Waste Management Regulations.

7.0 Enforcement Information

Although New Mexico does not administer or enforce the NPDES program, NMED and SWQB act as representatives of USEPA to perform some NPDES inspections. SWQB staff document their findings and may discuss preliminary findings with the operators; however, inspection reports are sent to EPA for a determination of compliance (NMED, 1999).

Facilities in watersheds impaired by nutrients are targeted for inspection, and about 20 percent of all facilities are inspected annually (USEPA, 1998).

8.0 Voluntary Programs

The New Mexico Environment Department and the New Mexico State University Cooperative Extension Service provide education and training.

9.0 Additional State-Specific Information

Cooperative Extension Service

New Mexico State University Cooperative Extension Service is a cooperative effort between NMSU's College of Agriculture and Home Economics and New Mexico's 33 counties. It provides educational and informational outreach to all communities in the state. Information about the Service can be found at www.cahe.nmsu.edu/ces/.

Comprehensive Nutrient Management Plan (CNMP) Certification

New Mexico does not have a CNMP preparer certification program.

10.0 References

NASDA. 1997. *State Survey on Waste and Manure Management Regulation*. National Association of State Departments of Agriculture.

NMED. 1997. *Questions & Answers about CAFO Regulations*. New Mexico Environment Department. <www.nmenv.state.nm.us/>. Accessed May 1998.

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Oklahoma's CAFO Program

1.0 Background

The Oklahoma Department of Environmental Quality (ODEQ) administers the OPDES program in lieu of the NPDES program administered by EPA (EPA Region 6, 2000).

NPDES permits under ODEQ's jurisdiction will become state-administered OPDES permits and will be reissued (upon expiration) or modified by the state agency (USEPA Region 6, 2000). In accordance with the signed Memorandum of Agreement, EPA will retain temporary authority for all proposed permits until final issuance; permits contested under evidentiary hearing proceedings until those are resolved; and compliance assistance and enforcement for permits with outstanding compliance issues. ODEQ was authorized to issue general permits under the OPDES program on September 11, 1997 (EPA Region 6, 2000).

EPA retains authority for discharges in Indian Country, discharges from agricultural industries (regulated by the Oklahoma Department of Agriculture), and discharges associated with oil and gas exploration and production (USEPA Region 6, 2000).

Based upon information provided to EPA by USDA, there are 398 AFOs with from 300 to 1,000 animal units and 174 AFOs with more than 1,000 animal units in Oklahoma (USDA, 1999; USDA, 2000).

2.0 Lead Regulatory Agency

Delegation of the NPDES program to Oklahoma in 1996 excluded CAFO regulatory authority. Region 6 has primary NPDES/CAFO regulatory authority. EPA Region 6 issues general permits for discharges from CAFOs in the EPA Region 6 states of New Mexico, Oklahoma, and Texas as well as CAFOs on Indian Country lands in these states (USEPA Region 6, 2000).

The Oklahoma State Board of Agriculture has authority to promulgate rules to implement and enforce the Oklahoma CAFO Act.

3.0 State Regulations Regarding AFOs/CAFOs

The Oklahoma CAFO Act and associated rules outline the enforceable requirements of CAFOs and give the Oklahoma Department of Agriculture regulatory authority over Oklahoma's CAFO program. Oklahoma regulations may be more stringent than the federal regulations. The Oklahoma CAFO Act (§2-9-202 et seq.) protects Oklahoma's water and air supplies by restricting CAFOs. The Act requires pre-site approval from the Department of Agriculture and requires the Department to monitor the construction of facilities and their liquid waste retention structures. The Act addresses setbacks, public hearings, pre-site approval, mandatory licensing, operating and construction standards, pollution prevention plan, waste management plan, education, annual inspections of licensed facilities, mechanisms for wildlife protection, property rights, and safety checks on irrigation systems. Licensed managed feeding operations (i.e., large operations using liquid waste management systems primarily in roof-covered structures) are defined as CAFOs under the state CAFO Act.

The Registered Poultry Feeding Operations Act (§2-10-9.7 et seq.) requires poultry operations to use BMPs, have a waste management plan, and register with the Oklahoma Department of

Agriculture. The Act also provides that poultry feeding operations can be designated as CAFOs in certain circumstances, and discourages the land application of waste in nutrient-limited watersheds or in areas of nutrient-vulnerable ground water. Poultry operations licensed as CAFOs are not subject to registration requirements.

4.0 Types of Permits

NPDES

EPA Region 6 issued a general NPDES permit that covers Oklahoma CAFOs. Two versions exist, one for impaired watersheds and one for non-impaired watersheds. Oklahoma has added its own buffer zone requirement to the general permit. The Region 6 CAFO general permit was issued on March 10, 1993, and expired March 10, 1998. The Region is in the process of reissuing the general permit after revision and public comment.

Other

Legislation in 1997 and 1998 makes licensing of Licensed Managed Feeding Operations (LMFOs) (which are defined as CAFOs) mandatory. State licenses requiring the use of BMPs are required for roof-covered facilities using a liquid waste management system with more than 1,000 animal units of swine. Licenses are also required for discharges other than those related to 25-year, 24-hour storm events. Smaller facilities that are found to discharge or pollute may be required to obtain licenses as well.

5.0 Permit Coverage

The NPDES general permit issued by Region 6 covers CAFOs with 1,000 or more animal units or those with 300 to 1,000 animal units that discharge through a man-made conveyance or directly into state waters.

Oklahoma requires state CAFO licenses for facilities that fall under one of the following four categories:

Category 1

- Swine and poultry primarily housed in roof-covered structure
- Use liquid waste management system
- More than 1,000 animal units on swine farms; 100,000 laying hens or broilers (continuous overflow watering); 30,000 laying hens or broilers (liquid manure systems)
- Discharge or no discharge

Category 2

- AFO with more than 1,000 animal units *and* any discharge

Category 3

- AFO with more than 300 animal units *and* discharge with artificial device *or* discharge directly into state water on facility (diffuse flow may be exempt)

Category 4

- Designated by Oklahoma Department of Agriculture as a significant contributor to pollution

of state water (NASDA, 1997; USEPA, 1998).

To receive a state license, a facility must first be an AFO defined as a facility with no vegetation or pasture and confining animals for 90 consecutive days in a 12-month period.

Poultry facilities may be subject to regulation if

- Poultry is kept at the facility 45 days or more per year.
- Crops or vegetation are not sustained at the facility.
- The facility produces more than 10 tons of poultry waste per year.

State licenses have no effect on EPA NPDES CAFO permits (USEPA, 1998). However, any facility that holds the EPA NPDES CAFO general permit is required to obtain an Oklahoma CAFO license.

6.0 Permit Conditions

Approvals

Before the development of waste retention structures, site appraisals are required by facilities to receive coverage under the general NPDES permit and by the state. A new license is required before to expansion for LMFOs that want to expand by 5 percent or more.

Lagoon Design and Specifications

Developers must follow specific design standards. Waste retention structures must provide 21 days of storage, have a 1- to 2-foot freeboard, and control runoff from a 25-year 24-hour storm. Liners can be natural, geomembrane, or synthetic material. Allowable lagoon seepage is 10^{-7} cm/s or NRCS Technical Note 716 rates. LMFOs must provide for 180 days of storage.

Discharge Rules

The Region 6 CAFO NPDES general permit includes a 24-hour, 25-year discharge limit.

Waste Management Plans

Department of Agriculture approval of a pollution prevention plan and an animal waste management plan is required. The pollution prevention plan must include a description of potential sources of pollutants in facility runoff; site map or topographic map outlining the drainage area of the CAFO; list of significant material used, stored, or disposed of on the CAFO; sampling data; description of the management controls, including structural and nonstructural controls, retention facility capacity, and design standards; schedule for liquid waste removal; permanent marker showing the volume required for a 25-year rainfall event within containment ponds; assurance that construction and design are in accordance with good engineering practices; evidence that no significant hydrologic connection exists between surface water and ground water; identity of areas that have a high potential for erosion; periodic dates for employee training; and the name of the person responsible for inspection and record-keeping.

Poultry statutes and rules require all poultry operators producing more than 10 tons of poultry waste to obtain and implement animal waste management plans and register with the Oklahoma Department of Agriculture.

Separation Distances

The state requires waste structures to be separated 1 mile or more to 10 miles or more from occupied residences and more than 3 miles from city limits or state parks and requires a 1/4- to 2-mile setback depending on area and size. There are no standards for separation distance from property lines. Waste facilities must be at least 300 feet from public or private drinking water wells. The bottom of waste structures must be at least 10 feet from the maximum elevation of ground water (NASDA, 1997). Other setbacks are required for nonprofit camp or recreational sites, Oklahoma Scenic Rivers, Oklahoma historic property or museums, Outstanding Resource Waters, National and State Parks, and public drinking water wells and surface waters. The general NPDES permit issued in Oklahoma includes a buffer zone requirement.

Land Application Requirements

Nitrogen application is based on crop needs, not to exceed crop uptake. To protect ground water, irrigation systems must have safety check valves, an anti-syphon vent, a low-pressure escape drain, and an interlock device to prevent operation of the waste pump (NASDA, 1997).

Poultry facilities must apply at nitrogen crop uptake rates, but must not exceed USDA-NRCS Waste Utilization Standards for phosphorus.

Other Requirements

Swine facilities must develop odor abatement plans to avoid unnecessary and unreasonable odors. Annual soil and water tests are required to monitor excess accumulation of phosphate and nitrates in waste application and retention areas. Operators are required to use certain BMPs (NASDA, 1997).

Poultry statutes and rules require all operators producing more than 10 tons of poultry waste to conduct soil and litter testing. The producers must attend 9 hours of training the first year and 3 hours each year thereafter (US EPA, 1998).

7.0 Enforcement Information

Operators who violate the Oklahoma Concentrated Animal Feeding Operations Act may face fines of up to \$10,000 per day per violation or imprisonment in county jail for up to 6 months per violation. A person who is convicted of making a false statement may be found guilty of a misdemeanor and fined up to \$10,000 for each violation.

The state CAFO license provides a defense for license holders in civil nuisance suits (USEPA, 1998).

Inspection Programs

Routine onsite annual inspections, complaints, and unannounced inspections are used to identify violators. Some unpermitted CAFOs are identified through meetings and public hearings regarding permit availability. The state of Oklahoma performs regular inspections of permitted and licensed CAFOs and conducts complaint-driven inspections of other AFOs. HB 1522 and SB 1175 expressly give the Department of Agriculture the right to make annual, unannounced facility inspections.

8.0 Voluntary Programs

To achieve its goal of protecting and sustaining the environment, the Agriculture and Natural Resources section of the Oklahoma Cooperative Extension Service helps farmers to understand new CAFO regulations and offers advice on nutrient management. Some federally funded programs offered by the extension service are the Hydraulic Unit Area Demonstrations (to show the effect of BMPs), the Contaminant Loading Program, and various sediment programs (targeted at construction). The Oklahoma Farm and Ranch*A*Syst program (which protects water wells and ground water) and the Oklahoma*A*Syst program (which protects ground water) also may benefit livestock producers. They provide educational programs and demonstrations of BMPs. The state provides education and training on the proper maintenance of a facility. Where applicable, USDA EQIP funding is used as an incentive for good practices.

9.0 Additional State-Specific Information

Cooperative Extension Service

Information regarding Oklahoma State University's Cooperative Extension Service can be obtained at www.dasnr.okstate.edu/oces/.

Comprehensive Nutrient Management Plan (CNMP) Certification

Oklahoma does not have a CNMP preparer certification program for CAFOs. The Registered Poultry Feeding Operations Act (Title 35, Chapter 17, Subchapter 5) requires that every poultry operation submit an animal waste management plan (AWMP) prepared by USDA-NRCS or an entity approved by the Oklahoma State Department of Agriculture. The CAFO Act (Title 35, Chapter 17, Subchapter 3) for Licensed Managed Feeding Operations (operations using liquid animal waste management systems) also requires operations to prepare an animal waste management plan.

The Oklahoma Department of Agriculture requires education and training for poultry waste handlers and employees of LMFOs.

The Registered Poultry Act of July 1, 1998, requires that poultry operators attend educational courses on poultry waste handling. The CAFO Act for LMFOs requires that all employees of LMFOs responsible for work activities that relate to regulatory compliance must be regularly trained and informed of any information pertinent to the proper operation and maintenance of the facility and waste disposal (35:17-3-18). The CAFO Act also requires employees to provide proof to the Oklahoma Department of Agriculture that the formal education requirements were satisfactorily completed.

The Oklahoma Department of Agriculture developed the program for the training and education of the owner or operator of poultry operations and LMFOs. Course content for LMFO operator training was developed under the supervision of Oklahoma State University Cooperative Extension Service (35:17-3-18).

All poultry operators are required to attend no less than 9 hours of training during the first year of the Registered Poultry Act and no less than 3 hours each year thereafter (Oklahoma Department of Agriculture 2000).

All current and new LMFO employees responsible for treatment, storage, or application of animal waste are required to attend waste management and odor control courses. Educational requirements include 9 hours of training the first year and 3 hours of training each year thereafter. The training must include (35:17-3-18):

- Proper operation and maintenance of waste retention structures, including proper water level maintenance.
- Land application of wastes, proper operation, and maintenance of facility.
- Good housekeeping and material management practices.
- Necessary record-keeping requirements.
- Spill response and cleanup.

Case Studies/Innovative Programs

Oklahoma LMFOs are required to develop odor abatement plans and pest management plans.

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Texas's CAFO Program

1.0 Background

On September 14, 1998, EPA Region 6 approved the Texas Pollutant Discharge Elimination System (TPDES) Program pursuant to Section 402 of the Clean Water Act. The Texas Natural Resource Conservation Commission (TNRCC) administers their TPDES program and EPA ceased new permitting actions under the NPDES program. The TPDES program includes the regulation of wastewater and storm water point source discharges, the industrial pretreatment program, and sewage sludge disposal. NPDES permits under TNRCC's jurisdiction will become state-administered TPDES permits and will be reissued (upon expiration) or modified by the state agency (EPA Region 6, 2000a).

TNRCC has assumed administration of the expired EPA Region 6 CAFO general permit. However, because this is an expired permit, no new notices of intent (NOIs) will be approved. Those who submitted NOIs to EPA after the general permit expired stay under the jurisdiction of EPA until they apply for and receive TPDES coverage through TNRCC (TNRCC, January 1999b).

Based upon information provided to EPA by USDA, there are 917 AFOs with from 300 to 1,000 animal units and 679 AFOs with more than 1,000 animal units in Texas (USDA, 1999; USDA, 2000).

2.0 Lead Regulatory Agency

TNRCC Water Permits and Resource Management issues wastewater permits under the TPDES program and oversees the CAFO permit program. See www.tnrcc.state.tx.us/permitting/waterperm/wwperm/tpdes.html.

3.0 State Regulations Regarding AFOs/CAFOs

Texas Administrative Code, Title 30 (Environmental Quality), Part 1 (TNRCC), Chapter 321 (Control of Certain Activities by Rule), Subchapter B (CAFOs), includes applications for both air and water quality. These rules require all CAFO operators to collect, store, and handle animal wastes and to control dust and odor. The regulation is located at [http://info.sos.state.tx.us/pub/plsql/readtac\\$ext.ViewTAC?tac_view=5&ti=30&pt=1&ch=321&sch=B&rl=Y](http://info.sos.state.tx.us/pub/plsql/readtac$ext.ViewTAC?tac_view=5&ti=30&pt=1&ch=321&sch=B&rl=Y).

4.0 Types of Permits

Permittees do not have to apply for separate federal and state CAFO authorizations. Texas is authorized to issue a single permit that will meet both state and federal standards (TNRCC, January 1999b).

NPDES

NPDES permits under TNRCC's jurisdiction will become state-administered TPDES permits and will be reissued (upon expiration) or modified by the state agency (EPA Region 6, 2000a).

Other

TNRCC runs the Dairy Outreach Program, which targets eight counties that have been identified as having water quality problems related to nonpoint pollution from CAFOs. All dairies must register with the state and can enroll in the outreach program if their county participates in the program. Erath, Bosque, Hamilton, Comanche, Johnson, Hopkins, Wood, and Rains are the participating counties. If a new facility in one of these counties would exceed 300 animal units, then the operator must file an application for written authorization for the dairy; complete an 8-hour course on animal waste management within 12 months of beginning the operation; and complete an additional 8 hours of training every 24 months after the initial training (TNRCC, 2000b).

5.0 Permit Coverage

Animal feeding operations that confine and feed more than 1,000 animal units (AUs) for 45 days or more in a 12-month period must apply. Also, facilities that confine and feed more than 300 AUs and discharge pollutants into surface waters either through a man-made ditch or flushing system must apply (TNRCC, 2000b).

Facilities with more than 300 AUs located within the TNRCC Dairy Outreach Program Area are still required to obtain written state authorization, even though TPDES authorization may not be required. These facilities do not need TPDES permits unless they are notified by TNRCC. All other animal feeding operations must comply with the state requirements found in 30 Texas Administrative Code (TAC) Chapter 321, Subchapter B (TNRCC, 2000b).

6.0 Permit Conditions

A pollution prevention plan (PPP) must be prepared for every CAFO facility authorized to operate under Subchapter B. At a minimum the PPP must include the information required in 30 TAC, Sections 321.191–194. The PPP describes the practices necessary to keep the facility in compliance with Subchapter B regulations.

The requirements and best management practices of the PPP are detailed below and summarized at (TNRCC, 2000a): www.tnrcc.state.tx.us/permitting/waterperm/wwperm/ag/agppp.html.

Approvals

Recharge Feature Certification:

- Investigation of the site to certify
- Lack of recharge features
- Location of recharge features with a plan to prevent impacts on ground water
- Certification of the recharge feature by a licensed professional engineer and NRCS engineer, or a qualified ground water scientist

Retention Facility Embankments:

- Must be free of foreign material (e.g., trash, brush, or trees)
- Must be constructed in 6-inch lifts and compacted at optimum moisture
- Document variations by a professional engineer, a certified compaction test, or a certification that they are in accordance with NRCS specifications
- Stabilize walls to prevent erosion or deterioration

Lagoon Design and Specifications

Based on the 25-year, 24-hour rainfall event, the following volumes must be designed for:

Retention Facility Design:

- Manure-contaminated runoff from open lot surfaces and manure storage
- Runoff from areas between open lot surfaces and retention facilities
- Rainfall multiplied by the area of the retention facilities and waste basin
- Rainfall from any roofed area that is directed into the retention facilities
- All waste and process-generated wastewater produced during a 21-day or greater period
- Minimum storage for 1 year of sludge accumulation
- Storage for all wastewater and runoff during periods of low crop demand (as determined by the water balance)
- Minimum treatment lagoon volume (if air permit required)
- Any additional storage determined by the system designer

A log of the specific measurements of wastewater levels in each terminal retention facility is conducted and recorded weekly. Dewatering equipment must be available to restore freeboard for 25-year, 24-hour rainfall and accumulated wastes and wastewater.

The permanent marker should be visible from the top of the levee, have scaled measurements for 25-year, 24-hour rainfall and (applicable) treatment volume, and be located in all terminal (applicable) treatment retention facilities.

The rain gauge should be kept on-site and maintained along with a log of measurable rainfall.

Retention Facility Construction:

- Existing facilities should be properly maintained and show no signs of leakage.
- New facilities should be designed, constructed, and maintained in accordance with good engineering practices and in accordance with NRCS technical standards.

Prevention of Hydrologic Connection:

- Retention facilities have in-situ materials composed of a minimum of 1.5 feet of earthen material having 1×10^{-7} cm/sec hydraulic conductivity, or
- Retention facilities are lined in accordance with Appendix 10d of the Agriculture Waste Management Handbook, or
- The liner must be constructed to have hydraulic conductivities no greater than 1×10^{-7} cm/sec with a thickness of 1.5 feet or greater or its equivalency in other materials.
- The liner must be tested and certified by a licensed professional engineer or a qualified ground water scientist (TNRCC, 2000).

Discharge Rules

Facilities cannot discharge other than during a 25-year, 24-hour storm event. Waste structures should be designed to contain wastes during the 25-year, 24-hour storm event, but discharges that occur when catastrophic rainfall events exceed the capacity of the structure are allowed (NASDA, 1997).

Waste Management Plans

A PPP must be developed for each CAFO covered under Subchapter B. The PPP must describe the operator's implementation of practices that will ensure compliance with limitations and conditions of Subchapter B. A PPP may refer to the facility's NRCS waste management plan (WMP) when the WMP contains equivalent PPP requirements. The WMP should be included in the PPP. The PPP must be amended prior to any change in design, construction, operation, or maintenance if any change significantly affects the potential for discharge of pollutants into the waters of the state or nuisance conditions (TNRCC, 2000a).

State legislation requires all poultry facilities to develop and implement site-specific water quality management plans in conjunction with the Soil and Water Conservation Board (Saitas, 2000).

Separation Distances

The separation distance from dwellings is ½ mile for new CAFOs with more than 1,000 AUs and 1/4 mile from property lines if land application is during the nighttime hours. Distance from private water wells is 150 feet, and distance from municipal wells near the land application sites is 500 feet. Distance from ground water is determined by prevention of hydrological connection as per site design. Ground water requirements include certification of absence or presence of recharge features with a plan to prevent impacts (NASDA, 1997).

Land Application Requirements

CAFOs are required to develop and implement a nutrient management plan for land application of manure and wastewater based on soil tests and nutrients tests of the waste. Collection, storage, and handling of the waste must be addressed in the NMP (Saitas, 2000).

Wastewater Removal and Land Application—The calculations and factors used in determining land application rates, acreage, and crops must be documented. Wastewater must be land applied according to the following:

- Prohibit discharge of irrigated wastewater into or adjacent to waters of the state.
- Base application rates on the nitrogen content of the wastewater and the nitrogen requirement of the crop grown unless local water quality is threatened by phosphorus; then base application rates on phosphorus.
- Ensure that irrigation does not occur on frozen or saturated soils or during rainfall.
- Reduce or minimize ponding and puddling of irrigated wastewater.
- If a properly operated facility is in danger of imminent overflow because of chronic or catastrophic rainfall, discharge wastewater onto land application sites for filtering prior to discharging into waters of the state.
- Properly maintain all ponds, pipes, ditches, pumps, diversions, and irrigation equipment.
- Make available adequate land and equipment to maintain the retention capacity.
- Where land application sites are isolated from surface waters and ground waters and no potential exists for runoff to reach any waters in the state, application rates may exceed nutrient crop uptake rates, but only upon written TNRCC approval and without cause or contribution to a violation of water quality standards or creation of a nuisance.

Manure and Pond Solids Handling and Land Application—Storage and land application of

manure must not cause a discharge of pollutants, a water quality violation to waters of the state, or a nuisance condition. When manure is applied on land owned or operated by the facility, document the following:

- Waste handling procedures and equipment availability
- Land application rate calculations and assumptions
- Nutrient analysis data

Proper Manure Handling—Manure sold or given away (not including incidental amounts) must be recorded in a log that includes removal date, hauler's name, and amount hauled. Nutrient analysis of the manure must be available to the hauler. Proper manure handling includes the following activities (TNRCC, 2000):

- Maintain an adequate manure storage area.
- Do not store or dispose of manure in the 100-year floodplain, near water courses, or in recharge zones unless stockpiles are protected with adequate berms and land applied manure is distributed at agronomic rates.
- Ensure that stockpiled manure is steep-sloped and stored in well-drained areas without ponding of water, and that all manure-contaminated runoff is retained on-site.
- Do not apply manure on frozen or saturated soils or during rainfall.
- Apply manure on suitable land at appropriate times, at agronomic rates, and in response to crop needs. Prohibit manure runoff while considering expected precipitation and soil conditions.
- Document practices used to minimize manure transport to water courses (e.g., discing, terracing, vegetative filter strips, tail water pits, etc.).
- Use edge-of-field grassed strips to separate water courses from runoff carrying eroded soil and manure. Avoid land subject to excessive erosion.
- Where land application sites are isolated from surface waters and ground waters and no potential exists for runoff to reach any waters in the state, be aware that application rates may exceed nutrient crop uptake rates but only upon written TNRCC approval and without cause or contribution to a violation of water quality standards or creation of a nuisance.
- Scrape and/or flush wastes from lanes, pens, floors, and the like weekly.
- Design and maintain pens to ensure good drainage.
- Clean out solids-settling basins often to maintain working efficiency.

7.0 Enforcement Information

Civil penalties not to exceed \$25,000 per day of the violation may be imposed. Violators may also be sentenced to imprisonment for up to 1 year (NASDA, 1997).

Inspection Programs

The general permit requires that the permittee perform a complete inspection of the facility and prepare a report at least once a year. The parties responsible for inspection of CAFOs must be named in the PPP. Inspection documents should be kept onsite for at least 3 years. Also, farms that are within the Dairy Outreach Program Areas (eight counties in the Upper North Bosque River watershed) must undergo annual inspections (USEPA, 1998).

Based on risk factors, permittees will be selected for routine compliance. TNRCC will continue to provide advance notification to permittees before routine compliance inspections and will

advise permittees in writing of the findings of the inspections. Appropriate action will be taken to ensure that permittees address violations documented during inspections (TNRCC, 1998).

Complaint investigations result in about 20 percent of all facilities being inspected annually (USEPA, 1998). Routine onsite inspections are required (NASDA, 1997).

8.0 Voluntary Programs

TNRCC's Agriculture Team helps CAFO operators select, implement, and use the best technologies for handling animal wastes. The team also participates in the 319(h) Nonpoint Source Grant Program. Small, non-permitted AFOs are generally the responsibility of the Texas State Soil and Water Conservation Commission (since 1993). The Commission assists operators of small CAFOs with technical issues and requires them to come into compliance with the CAFO rules as expeditiously as possible without requiring a permit (Texas Center for Policy Studies, 1995).

Austin and San Antonio have Local Pollution Abatement Programs that limit impervious cover and expand zoning authority (Texas Center for Policy Studies, 1995).

9.0 Additional State-Specific Information

Cooperative Extension Service

Information regarding the Texas A&M University Agricultural Extension Service is available at <http://agextension.tamu.edu/>.

Comprehensive Nutrient Management Plan (CNMP) Certification

Texas does not have a CNMP preparer certification program. TAC Title 30, Chapter 321, Subchapter B, requires that operators of facilities with more than 1,000 animal units (AUs) located inside TNRCC Dairy Outreach Program Areas (DOPAs) complete an education and training requirement. In addition, facilities in the DOPA with greater than 700 AUs will be issued a TPDES authorization, and facilities with between 300 and 700 AUs will be issued only a state authorization (Sections 321.33 and 321.41).

The training program requires owners, operators, or designees to complete an 8-hour course on animal waste management within 12 months after beginning the operation. Operators must take an additional 8 hours of animal waste management training every 2 years and conduct a third-party audit every 5 years (Section 321.41).

Employees of operations who work in activities that are related to compliance of Subchapter B provisions must be regularly trained or informed of any information pertinent to the proper operation and maintenance of the facility and land application of waste.

Case Studies/Innovative Programs

The TNRCC established a DOPA in the Upper North Bosque River watershed. This watershed has been impacted by CAFO-related activities. All facilities within the DOPA are inspected annually. Also, a state permit is required for any facility with more than 300 AUs located in the DOPA, compared to 1,000 AUs outside of DOPA (USEPA, 1998).

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