

State Compendium - Region 7

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.

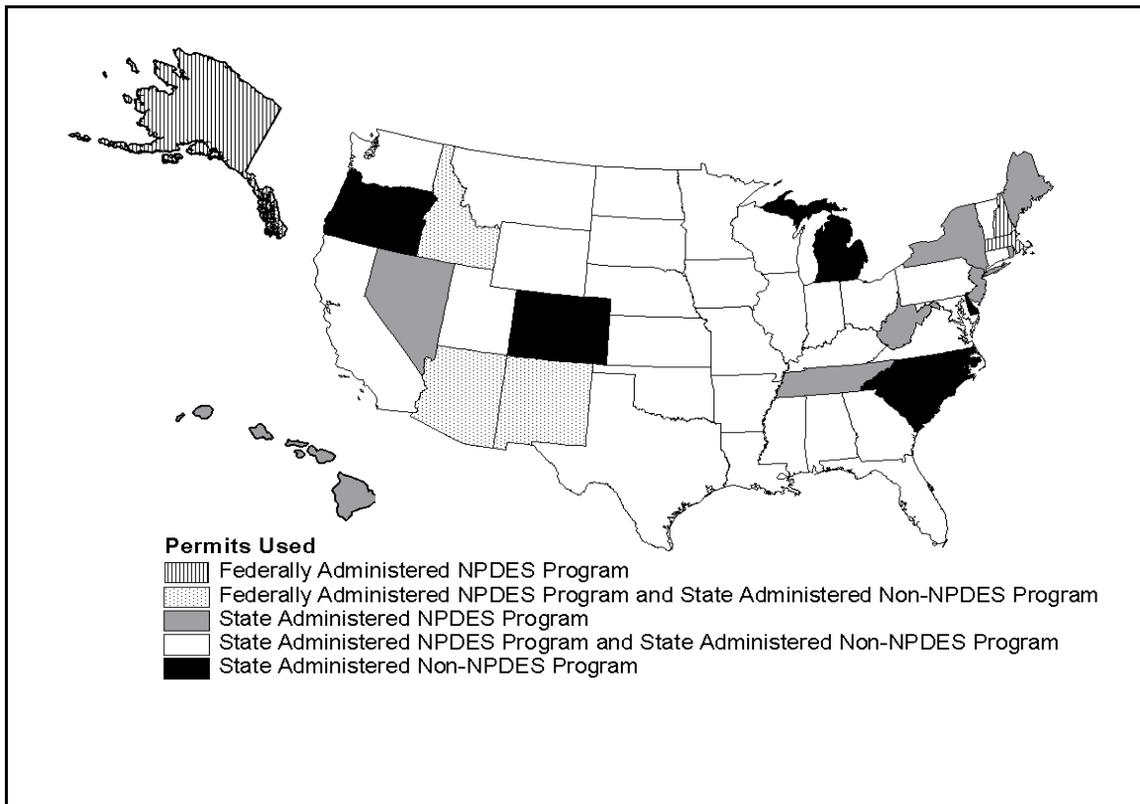


Figure 1. Regulatory Mechanisms for AFO Permitting in Each State

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

Iowa's CAFO Program

1.0 Background

Based on information provided to EPA by USDA, there are 3,160 AFOs with 300 to 1,000 animal units and 1,290 AFOs with more than 1,000 animal units in Iowa. These are primarily in the swine sector (USDA, 1999; USDA, 2000).

The Iowa Department of Natural Resources (IDNR) has had a livestock permitting program since 1972 and has administered the NPDES program since 1978 (USEPA, 1998). Iowa has 24 NPDES permits on animal feeding operations, with 11 additional permits in various stages of review (Vonk, 2000).

2.0 Lead Regulatory Agency

Iowa's Department of Natural Resources (IDNR), Environmental Protection Division (EPD), Water Quality Bureau, Wastewater Section administers state and federal laws that regulate the construction and operation of confinement feeding operations. The Wastewater Section also issues discharge or operation permits under delegation of the NPDES permit program. State operation permits rather than NPDES permits may be required for systems that land apply wastewater. Information about Iowa's program for Confinement Feeding Operations is available at: www.state.ia.us/epd/wastewtr/feedlot/feedlt.htm.

3.0 State Regulations Regarding AFOs/CAFOs

Pursuant to the authority of Iowa Code section 455B.173(12); 1995 Iowa Acts, Chapter 195, section 37; and 1997 Iowa Acts, S.F. 473, section 12, the Iowa Environmental Protection Commission adopted Chapter 65, "Animal Feeding Operations," to address waste disposal and the design of waste disposal systems for animal feeding operations. Chapter 65 provides detailed guidance on the requirements AFOs must follow when submitting applications and operating waste control systems.

Iowa's "Manure Law," passed in 1995 as the Livestock Regulation Act (House File 519), prohibits the discharge of manure directly into a water of the state or into a drain or drainage ditch that discharges directly to state waters. As such, confined feeding operations must retain all manure produced between periods of disposal and dispose of manure so as not to cause ground water or surface water pollution. The Manure Law addressed four major components that affect livestock operations:

- Financial assurance for closures
- Air quality (i.e., separation distances)
- Water quality
- Nuisance defense

4.0 Types of Permits

NPDES

Iowa has authority to issue NPDES permits.

Other

Confinement operations that meet specific criteria must obtain a construction permit from IDNR before beginning construction of the confinement buildings, construction or installation of manure storage structures, or facility modifications that increase the number of animals or change the volume or manner in which manure is stored in the operation (IDNR, 2000a). The construction permit application requires a site survey, including soil borings, soil permeability investigation, hydrology report, and information on location with respect to flood plain. IDNR requires soil directly below the base and sides of earthen basins to be thoroughly mixed and re-compacted and establishes maximum seepage standards for all earthen structures (Vonk, 2000).

Iowa requires livestock facilities (i.e., open feedlots and confinement feeding operations) that use waste control systems to obtain operating permits and construction permits. An operating permit, rather than an NPDES permit, may be required for those facilities that land apply wastes (IDNR, 1997).

5.0 Permit Coverage

Confinement Feeding Operations

Confinement feeding operations will need to obtain a construction permit if (IDNR, 2000a):

- The facility will use an anaerobic lagoon or earthen manure storage basin and the facility is designed for an animal weight capacity greater than:
 - 400,000 pounds bovine
 - 200,000 pounds for other animal species
- The facility will use formed manure storage structures (including tanks made of concrete, concrete block, wood, or steel) and the facility is designed to have an animal capacity equal to or greater than:
 - 1,600,000 pounds bovine
 - 625,000 pounds for other animal species
- The facility will store manure exclusively in a dry form and the facility is designed for an animal weight capacity equal to or greater than:
 - 4,000,000 pounds bovine
 - 1,250,000 pounds for other animal species
- The facility will use an egg washwater structure and their animal weight capacity exceeds 200,000 pounds.

Water Withdrawal Permit

If a livestock operation will be withdrawing more than 25,000 gallons of water per day, the owner must apply for a water withdrawal permit. Permitted withdrawals are subject to limitations during times of low flow to protect streams and higher priority water uses. In times of drought, other measures could apply that would further restrict the water supply of a feeding operation. If the use of water interferes with a neighbor's use of the aquifer, well interference procedures could call for restrictions on use or compensation of affected landowners (IDNR, 2000b).

Open Feedlot Requirements

IDNR defines open feedlots as unroofed or partially roofed animal feeding operations in which no crop, vegetation, or forage growth is maintained while animals are confined. These operations must obtain operating permits under the following conditions:

- An open feedlot with a capacity that exceeds 1,000 beef cattle, 700 dairy cattle, 2,500 butcher and breeding swine, 10,000 sheep and lambs, 55,000 turkeys, 500 horses, or 1,000 total animal units.
- An open feedlot that discharges wastes directly into water of the state or through a manmade conveyance and the feedlot's capacity exceeds 300 beef cattle, 200 dairy cattle, 750 butcher and breeding swine, 3,000 sheep and lambs, 16,500 turkeys, 30,000 broiler or layer chickens, 150 horses, or 300 total animal units.
- Any open feedlot that the Department of Natural Resources determines needs of an operating permit following a site inspection.

Confinement feeding operations, defined as totally roofed animal feeding operations that store or remove waste as a liquid or semi-liquid, must collect and store all wastes between periods of disposal and dispose of stored wastes by land application. Direct discharges from feeding operations are prohibited, and all wastes removed from a confinement feeding operation must be disposed of in a manner that does not cause surface water or ground water pollution. In general, confinement feeding operations do not require an operating permit unless one is specifically requested by the Department of Natural Resources (IDNR, 1992).

6.0 Permit Conditions

Approvals

Approval is required for construction and operation of animal feeding operations based on the capacity of the facility. An individual NPDES permit may also be required if the facility is considered a CAFO.

Lagoon Design and Specifications

Iowa requires that lagoons and earthen waste storage basins be constructed to prevent seepage from exceeding 1/16 inch per day and that freeboard capacity be maintained at 2 feet (NASDA, 1997). Soil borings are required prior to constructing waste lagoons. Although monitoring is not routinely required, EPD can require case-by-case monitoring for sites considered to have potential for polluting ground water.

Discharge Rules

All open feedlot facilities are prohibited from direct discharges and must control discharges from precipitation up to the largest 25-year, 24-hour storm event (IDNR, 1992).

Water pollution control requirements for animal feeding operations are given in Chapter 65 of the rules of the Iowa Department of Natural Resources. Under these rules, open feedlots meeting the operation permit application requirements of subrules 65.3(1) or 65.3(2) must also comply

with the minimum manure control requirements of subrule 65.2(2). Subrule 65.2(2) requires that all feedlot runoff and other manure flows resulting from precipitation events less than or equal to the 25-year, 24-hour rainfall event be collected and land applied.

Waste Management Plans

Iowa law requires a manure management plan for confinement feeding operations that meet any of the following criteria (IDNR, 2000d):

- There is an animal weight capacity of more than 400,000 pounds of cattle or more than 200,000 pounds of other animals and the operation was constructed or expanded after May 31, 1985.
- The operation applied for and obtained a construction permit after May 31, 1985.
- A person applies manure from a confinement feeding operation located outside of Iowa on land in Iowa (does not apply if the operation's capacity is less than 400,000 pounds for cattle or 200,000 pounds for other species).

Manure management plans are not required for open feedlots. Owners of both feedlots and confinement operations must file a manure management plan for the confinement operation if the confinement facilities have an animal weight capacity of more than 400,000 pounds for cattle or 200,000 pounds for other animal species.

Manure management plans must be kept onsite and available for inspection by Iowa officials. Inspection records must be maintained and methods for manure application and disposal must be identified (ASIWPCA, 1997).

Separation Distances

Separation distances have been established between proposed CAFOs and neighboring residences, churches, schools, businesses, and public use areas. Separation distances also exist for wells, sinkholes, lakes, rivers, and streams. These distance requirements vary with the size of the operation, type of animal, and type of manure storage facility (IDNR, 2000a).

Minimum separation distances are required between animal feeding operation structures and buildings or public use areas. These do not apply to animal feeding operation structures that store manure exclusively in a dry form. These distances apply to new construction beginning January 1, 1999. (IDNR, 2000c) (See www.state.ia.us/dnr/organiza/epd/wastewtr/feedlot/sep.htm.)

- Required Separation Distances—Swine, Sheep, Horses, and Poultry
- Required Separation Distances—Beef and Dairy Cattle
- Required Separation Distances from Wells—includes minimum separation distances required for all new or expanding storage structures built after March 20, 1996.
- Required Separation Distances from Surface Waters and Ground Water—includes minimum separation distances required for all animal feeding operation structures, regardless of size. Distances became effective for new construction January 1, 1999.

Land Application Requirements

Iowa law requires that all manure from an animal feeding operation be land applied in a manner that will not cause surface water or ground water pollution. Chapter 65 of the Iowa Administrative Code governs land application of manure, including the separation distances. Distances apply to the type of manure and the method of application (IDNR, 2000e).

Land application is not recommended on frozen or snow-covered ground unless absolutely needed and should be restricted to areas with 4 percent slopes or less. If wastes are disposed of on land subject to flooding (i.e., within the 10-year floodplain), the manure should be incorporated into the soil (IDNR, 1992). Before land application is allowed, the waste management plan must show that sufficient land is available for manure application so as not to exceed the nitrogen requirements of crops (ASIWPCA, 1997).

Self-Monitoring Requirements

Self-monitoring requirements may be imposed on AFOs with an operation permit. These requirements could require operators to measure the liquid level on a periodic basis and sample and analyze the ground water to determine the effects of wastewater application.

7.0 Enforcement Information

No information was found in publicly available sources.

8.0 Voluntary Programs

Iowa State University hosts a manure education program for manure applicators and nutrient management planning for producers. Information on the education program is available on the Iowa Manure Management Action Group (IMMAG) web site. (See <http://extension.agron.iastate.edu/immag/>.)

The IMMAG web site is provided by Iowa State University Extension Service and the College of Agriculture. It is funded by the USDA NRCS and provides information about manure management and nutrient management. The web site lists manure management planners, engineering consultants, and soil and manure testing labs, as well as a Commercial Manure Applicator Directory and contact information for the Iowa Independent Crop Consultants Association. The site also contains information on who is required to file a manure management plan and information on the permits required (IA State University Extension, 2000).

9.0 Additional State-Specific Information

Cooperative Extension Service

Information regarding the Iowa State University Extension Service can be found at www.exnet.iastate.edu. The Iowa Manure Management Action Group's web site, located at <http://extension.agron.iastate.edu/immag/>, is the predominant site for Iowa residents to obtain information regarding animal feeding operations. This site contains information such as manure plans and permits and manure education programs. The Extension Service website contains various publications such as the Design and Management of Anaerobic Lagoons in Iowa for Animal Manure Storage and Treatment.

Comprehensive Nutrient Management Plan (CNMP) Certification

Iowa does not have a CNMP preparer certification program. However, Iowa Administrative Code, Chapter 65, section 17, requires that operators submit manure management plans for CAFOs to the IDNR/EPD for approval.

Construction of CAFO manure storage structures requires a certified professional engineer to ensure that the construction permit is in accordance with design plans; it also requires that construction be supervised by a professional engineer and inspected by a professional engineer (Chapter 65, section 18).

Under Iowa Administrative Code, Chapter 65, section 19, commercial manure applicators and confinement site manure applicators cannot apply dry or liquid manure to land unless they are certified. Iowa law defines a commercial manure applicator as a person who engages in the business of and charges a fee for applying manure to the land of another person (Chapter 65, section 19). All commercial manure applicators should have been certified by July 1999. To receive and maintain the certification, an applicant must pass a written exam or attend 3 hours of continuing education each year. Commercial manure applicator certification is valid for only 1 year (IA State University Extension, 2000).

Iowa law defines a confinement site manure applicator as a person who applies manure stored at a confinement site and is not a commercial manure applicator (567-65.19). A confinement site is a site where there is a manure storage structure that is part of a confinement feeding operation. Confinement site certification is required for confinement feeding operations that exceed a weight capacity of 200,000 pounds for animals other than bovine and 400,000 pounds for bovine animals. Confinement site applicators include full-time employees of confinement feeding operations whose primary responsibility is manure application. All confinement site manure applicators should have been certified by October 1999. Certification for confinement site applicators is for 3 years. To receive and maintain certification, an applicator must take an examination every 3 years or attend 2 hours of continuing education every year (IA State University Extension, 2000).

Case Studies/Innovative Programs

Iowa law (1995 Livestock Regulation Act, House File 519) created the Manure Storage Indemnity Fund to assist with site cleanups at abandoned confinement feeding operations under county control. The fund provides money to clean up abandoned sites when other funding sources are not available. Money for the fund comes from fines collected by the Iowa Department of Natural Resources from confined feeding operations and a one-time fee associated with construction of a confined feeding operation.

Chapter 65, "Animal Feeding Operations," specifically allows for county participation in site inspections and the construction permit application review process under 65.10(455B). Construction permits for CAFOs must be sent to the county for review and a county representative may accompany state officials during an inspection.

10.0 References

Agena, Ubbo. 1994. *Animal Waste Control Programs of Iowa and Eight Other States*. Iowa Department of Natural Resources, Environmental Protection Division.

ASIWPCA. 1997. *CAFO Standards for Pork Production, Survey*. Association of State and

- Interstate Water Pollution Control Administrators. Washington, DC.
- IDNR. 1992. *Environmental Regulations and Guidelines for Animal Feeding Operations in Iowa*. Iowa Department of Natural Resources.
- IDNR. 1997. *Water Quality Wastewater Section: Confinement Feeding Operations*. Iowa Department of Natural Resources.
<www.state.ia.us/government/dnr/organiza/epd/wastewtr/.htm>. Accessed November 1997.
- IDNR. 2000a. *Confinement Feeding Operations: Building, Modifying or Expanding a Confinement Facility*. Iowa Department of Natural Resources.
<www.state.ia.us/dnr/organiza/epd/wastewtr/feedlot/build.htm>. Accessed August 2000.
- IDNR. 2000b. *Confinement Feeding Operations: Other Operations*. Iowa Department of Natural Resources. <www.state.ia.us/dnr/organiza/epd/wastewtr/feedlot/other.htm>. Accessed August 2000.
- IDNR. 2000c. *Confinement Feeding Operations: Required Separation Distances*. Iowa Department of Natural Resources.
<www.state.ia.us/dnr/organiza/epd/wastewtr/feedlot/sep.htm>. Accessed August 2000.
- IDNR. 2000d. *Manure Management Plan Forms for Confinement Animal Feeding Operations*. Iowa Department of Natural Resources.
<www.state.ia.us/dnr/organiza/epd/wastewtr/feedlot/manure.htm>. Accessed August 2000.
- IDNR. 2000e. *Separation Distances for Land Application of Manure from Open Feed Lots and Confinement Feeding Operations*. Iowa Department of Natural Resources.
<www.state.ia.us/dnr/organiza/epd/wastewtr/feedlot/sepdstb4.pdf>. Accessed August 2000.
- Iowa State University Extension. 2000. *Manure Education Programs*.
<<http://extension.agron.iastate.edu/immag/certificationFr.html>>. Accessed July 2000.
- Muehling, A. J. 1991. Livestock Environmental Regulations: Inequity Among Midwestern States? (in) *The Livestock Industry and the Environment Conference Proceedings*. October 31-November 1, 1991. Iowa State University, Ames, IA.
- NASDA. 1997. *Summary Matrix of State Survey on Waste & Manure Management Regulations*. National Association of State Departments of Agriculture.
- USDA. 1999. *1997 Census of Agriculture: Geographic Area Series*. U.S. Department of Agricultural Statistics Service, Washington, DC.
- USDA. 2000. Specific queries conducted on the 1997 Census of Agriculture published data. U.S. Department of Agriculture.
- 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.

Kansas's CAFO Program

1.0 Background

Kansas Department of Health and Environment (KDHE) reports it has more than 2,000 active permitted CAFO facilities; 407 of these facilities have more than 1,000 animal units and have been issued NPDES permits. KDHE requires pollution controls for non-federal permitted facilities that are determined to have a significant potential to pollute. Currently 1,655 state permits for animal feeding facilities with 0-999 Kansas Animal Units have been issued (Muldener, 2000). Kansas has more than 2.4 million head of cattle, making the state the 2nd in the nation. Kansas ranks 9th in the nation for total number of hogs with 1.5 million, and 23rd in the nation for dairy cows with 91,000 head (Adams, 2000).

The Kansas Department of Health and Environment (KDHE) has regulated feedlots since 1968 (USEPA, 1998). Traditionally, the program has focused on large-cattle feeding operations, but within the last few years, the emphasis has shifted to large hog operations. In 1998, the state legislature passed a swine facility environmental regulation package that required new nutrient management planning for large facilities (USEPA, 1998; KSDOA, 2000b). KDHE's program includes monitoring sensitive groundwater areas and requiring manure management plans (Muldener, 2000).

2.0 Lead Regulatory Agency

The KDHE Bureau of Water has regulatory authority over livestock operations with more than 300 animal units and any and all facilities with significant potential to pollute, regardless of animal unit capacity (KDHE, 2000f).

Pursuant to KSA 47-1503, the Kansas Animal Health Department requires an operating license for feedlot facilities. The Animal Health Department defines a feedlot as a livestock feedlot or feed yard having more than 1,000 head of livestock at one time during the license year or any other livestock feedlot whose operator elects to come under the act. The definition includes lots or pens that are not normally used for raising crops and in which no vegetation, that is intended for livestock feed, is growing. Swine and dairy confinement facilities are included (KS Department of Animal Health, 2000).

The Kansas Department of Agriculture (KSDOA) administers a nutrient management program created by the passage of HB 2950 during 1998. The law requires facilities with 1,000 or more animal units of swine to prepare a plan for the use of the generated waste. These facilities must also monitor land application of this material to protect the quality of the ground water and surface waters of Kansas and to ensure that applications are not more than the holding capacities of the soil or the abilities of the crops to utilize the nutrients (KSDOA, 2000b).

3.0 State Regulations Regarding AFOs/CAFOs

Any facility with an animal unit capacity greater than 300 or more must register with KDHE. After a facility has registered, an assessment of the facilities pollution potential will be conducted by the KDHE. This evaluation will focus on site topography, geology, hydrology, drainage, groundwater, operation, number of animals, soils, stream classifications, and other important factors. KDHE then will determine if the facility must receive a permit with specific requirements (Muldener, 2000). Any facility that presents a significant water pollution potential,

as determined by KDHE, must obtain a permit. Additionally, any facility with an animal unit capacity of 1,000 or more must obtain a Livestock Waste Management Permit (KDHE, 2000e).

New regulations require new facilities to submit plans for review and approval that must document manure management, odor control, nutrient control and utilization, and separation distance for facilities with more than 1,000 animal units. Swine facilities with greater than 3,724 animal units must also provide plans for facility closure and financial assurance. The new regulations also require a higher level of public participation for waste control permits issued to new livestock facilities (KDHE, 2000c).

Statutes applicable to the Livestock Waste Management Program can be found at www.kdhe.state.ks.us/feedlots/hb2950.htm, comprises of. KAR 28-16-56c and 56d regulate sewage permit fees and definitions and are located at www.kdhe.state.ks.us/feedlots/reg28-16.htm. Animal and related waste control is regulated by KAR 28-18-1 to -15 and can be found at www.kdhe.state.ks.us/feedlots/reg28_18.htm. Swine and related waste control is regulated by KAR 28-18a-1 to -32 and can be found at www.kdhe.state.ks.us/feedlots/reg28_18a.htm. KAR 28-29-25d regulates livestock composting and is found at www.kdhe.state.ks.us/feedlots/KAR28_29_25d.htm.

4.0 Types of Permits

NPDES

Kansas is authorized to administer the NPDES permitting program and issues individual NPDES permits to livestock facilities with capacities exceeding 1,000 animal units as defined by federal regulation (KDHE, 2000f).

Other

Construction and operating permits are required for any new or expanding livestock operations with the capacity for 300 animal units (Agena, 1994). Small facilities (less than 300 animal units) are issued certificates of compliance if they do not pose a threat to waters of the state; however, they are not required to register with the state of Kansas.

5.0 Permit Coverage

Confined feeding facilities must register with KDHE if the facility meets any of the following conditions (KDHE, 2000f):

- The facility has a capacity of 300 or more animal units.
- KDHE determined that the facility has significant water pollution potential.
- KDHE determined that the facility requires a permit.
- The operator of the facility volunteered to come under state permitting regulations.

Each operator must submit to KDHE a water pollution control permit application for a confined feeding facility that meets any of the following criteria (KDHE, 2000f):

- Determined by the secretary to present a significant water pollution potential, regardless of size.
- Has an animal unit capacity of 300 or more and is determined to present a significant water

- pollution potential.
- Has an animal unit capacity of 1,000 or more, regardless of water pollution potential.
 - Proposed construction, expansion, modification, or change in operation of an existing permitted confined feeding facility.
 - Proposed construction, expansion, modification, or change in operation of an existing certified confined feeding facility, where KDHE determined that the proposed changes in operation represent a significant water pollution potential.
 - Each sale barn, collection center, or transfer station that has an average weekly capacity of more than 300 animal units or that is utilized more frequently than once per week or is determined to have significant water pollution potential.
 - Each livestock truck wash facility. For the purpose of these regulations, only those facilities that wash trucks used to transport animals or livestock must be included.
 - Operator of an animal feeding operation that elects to obtain a permit.

6.0 Permit Conditions

Approvals

If a confined feeding facility represents a significant water pollution potential or requires a permit, as determined by the department, the operator must provide a waste management or pollution control system that should be designed in accordance with minimum standards of design, construction, and maintenance and constructed and operated in accordance with construction plans, specifications, and manure management plan approved by the department (KDHE, 2000g). A manure management plan should include how and when the facility plans to manage its waste. A list of all land application sites should also be included (Muldener, 2000).

House Bill 2219, passed during the session of 1997, stated that all plans and specifications submitted to the department for new construction or new expansion of confined feeding facilities may be, but are not required to be, prepared by a professional engineer or a consultant (KDHE, 2000a).

Lagoon Design and Specifications

Kansas has set seepage limits for lagoons and earthen basins at $\frac{1}{4}$ inch per day (Agena, 1994). KDHE is to be notified whenever the freeboard of a lagoon falls below 2 feet. The bottom of waste lagoons must be at least 10 feet above the ground water aquifer, unless measures are taken to ensure that leakage will not reach ground water (ASIWPCA, 1997). The Swine Facility Law (House Bill 2950) has reduced the allowable seepage limit for swine facilities with more than 3,725 animal units to $\frac{1}{8}$ inch per day (KDHE, 2000b). A staff gauge or marker is required for all lagoons. Liners and ground water monitoring wells may be required in various circumstances (Muldener, 2000).

Discharge Rules

Animal wastes from a waste-retention lagoon or pond or other storage structure may be discharged to surface waters of the state if a chronic or catastrophic rain event caused an overflow. The waste management or pollution control system must be designed, constructed, operated, and maintained to contain all wastes, plus the direct precipitation and runoff from a 25-year, 24-hour rainfall for the location of the confined feeding facility (KDHE, 2000f and 2000g).

Waste Management Plans

Swine facilities with a capacity of 1,000 animal units or more must submit a manure management plan and a nutrient utilization plan for a facility that applies manure or wastewater to land, as required by the Secretary of the KSDOA (KDHE, 2000g). Swine facilities with over 1,000 animal units are required to maintain an emergency response plan that identifies possible sources that could pose a problem (Muldenner, 2000).

Separation Distances

New livestock feeding operations with a capacity below 299 animal units have no separation requirements. Facilities with 300 to 999 animal units must be at least 320 feet from residences. Larger capacity feeding operations must be at least 4,000 feet from residences. Animal feeding operations must be 100 feet from property lines and water wells (ASIWPCA, 1997). Additional separation distances are cited in H.B. 2950, Section 1, at www.kdhe.state.ks.us/feedlots/hb2950.htm#sec1%20ksa.

Land Application Requirements

Land applications of livestock wastes are to be based on meeting the agronomic nitrogen needs of the crops being fertilized. If soil testing is not conducted, land application is restricted to no more than 250 pounds per acre of nitrogen. No ponding or puddling should occur, and wastes should not be applied to highly erodible land. State statutes require that irrigation be managed so as to make sure waste is not discharged from the application site (Muldenner, 2000). Application must be 100 feet from water wells, 660 feet from residences, and 200 feet from waterways. Wastes should not be applied on frozen, snow-covered, or saturated ground or during precipitation. Suitable days for dewatering and disposal should be preceded by 3 days with less than 0.05 inch of rainfall per day and average temperatures above freezing (ASIWPCA, 1997).

7.0 Enforcement Information

KDHE staff rely on reports of fish kills or complaints to conduct enforcement inspections (USEPA, 1993). While KDHE can initiate investigations and report permit violations, officials prefer to work with livestock operators to resolve problems. The State Attorney General has the authority to levy fines under the Kansas Wastewater Discharge Control Law (Section 65-167). Penalties between \$2,500 and \$25,000 will be assessed for willful or negligent discharges of sewage into state waters without a permit. Civil penalties of up to \$10,000 can be levied for violations of:

- Sewage discharge permits
- Effluent or water quality standards
- Filing requirements
- Reporting, inspection, or monitoring requirements
- Orders from the Secretary of Health and Environment

Enforcement action against those who over apply wastes to agricultural lands is unlikely to be successful unless it could be demonstrated that water quality problems were clearly attributable to over application (Agena, 1994).

KDHE requires all facilities to report all spills within 2 hours of the discovery and a written

report within 3 days of the incident (Muldener, 2000).

Inspection Programs

The permitting process requires an initial site visit by KDHE before the applicant submits an application. A post-construction inspection is required to ensure that the facility followed the approved design plans for waste structures. NPDES-permitted facilities are inspected annually. If a facility has a poor waste management record, it will be inspected every 6 months. Facilities with good waste management practices will be inspected every 2 years.

State-permitted facilities are inspected at least once during the duration of the permit. In accordance with the Swine Facility Law, KDHE must inspect facilities with more than 3,725 animal units annually. Facilities with 1,000 to 3,725 animal units must be inspected every 2 years, and facilities with less than 1,000 animal units must be inspected every 5 years. Problem facilities must be inspected every 6 months until the problems are corrected (KDHE, 1998).

KDHE is working on bio-security protocols for the Department's inspectors (Muldener, 2000).

8.0 Voluntary Programs

Within the Bureau of Water, the Nonpoint Source Section implements section 319 of the Clean Water Act and coordinates the programs designed to eliminate nonpoint source pollution.

9.0 Additional State-Specific Information

Cooperative Extension Service

The Kansas State University Research and Extension program is located at www.oznet.ksu.edu/, the College of Agriculture program at Kansas State University is located at www.oznet.ksu.edu/coa/, and the Department of Animal Sciences and Industry has information available at www.oznet.ksu.edu/dp_ansi/.

Comprehensive Nutrient Management Plan (CNMP) Certification

Kansas does not have a CNMP preparer certification program. Kansas Administrative Regulation 28-18a-13 requires a new or an existing swine facility to develop and implement a manure management plan that must be approved by KDHE. New or existing swine facilities using land application must develop a nutrient utilization plan and submit this plan to KDHE (KAR 28-18a-14).

Under Kansas Administrative Regulation, Article 28-18a-26, KDHE must adopt rules and regulations establishing standards for training and certification, along with continuing education or re-certification of swine facility operators who are maintaining or supervising a swine waste management system or a swine facility.

A swine facility operation with an animal unit capacity of 1,000 or more that is required to have a permit must also obtain a swine waste management and pollution control system operator certificate (28-18a-26). Certification is required for swine facility operators who maintain or supervise a swine waste management or pollution control system. The training program ensures that swine operators are knowledgeable about (KDHE, 2000e):

- Management of manure and wastewater
- Nutrient utilization planning and implementation
- Emergency response planning

To obtain the swine facility operator certificate, an operator must complete 6 hours of training (as approved by KDHE) and pass a written examination (28-18a-27, 28-18a-28). Certified swine facility operators should complete a minimum of 6 hours of approved training every 5 years for renewal of the certificate (28-18a-30).

Noncertified operators of swine facilities with an animal unit capacity of 1,000 or more must notify KDHE within 30 days of the startup of the facility. The operator will be designated an “operator in training.” Operators that are in training must complete 6 hours of training and must obtain certification within 1 year (28-18a-29).

Case Studies/Innovative Programs

Kansas’s Swine Facility Law regulates large swine CAFOs. Environmental protection measures beyond the NPDES requirements are mandated for CAFOs with more than 3,725 animal units, including increased inspection and additional setback requirements (KDHE, 1998).

10.0 References

- Adams, Jamie. 2000. Kansas Department of Agriculture comments on the proposed CAFO rules (Comment 202616). In *EPA/OW Concentrated animal feeding operations (CAFOs) CommentWorks*. ICF. Accessed February 2002.
- Agena, Ubbo. 1994. *Animal Waste Control Programs of Iowa and Eight Other States*. Iowa Department of Natural Resources, Environmental Protection Division.
- ASIWPCA. 1997. *CAFO Standards for Pork Production, Survey*. Association of State and Interstate Water Pollution Control Administrators. Washington, DC.
- KDHE. 1993. *Design Standards for Confined Livestock Feeding Operations*. Kansas Department of Health and Environment, Bureau of Water, Industrial Programs Section, Agricultural Waste Unit.
- KDHE. 1994. *New Legislation Impacts on Kansas Livestock Operations: Registration & Permitting, Separation Distances, and Fees*. Pamphlet describing rules and regulations regarding Senate Bill 800 effective July 1, 1994. Kansas Department of Health and Environment.
- KDHE. 1998. *KDHE Preparing to Implement Provisions of New Swine Facility Law*. Kansas Department of Health and Environment. <<http://ink2.ink.org/kdhe/news-98/9497.html>>.
- KDHE. 2000a. *House Bill No. 2219 By Committee on Environment 2-4*. Kansas Department of Health and Environment. <www.ink.org/public/legislative/bills.cgi?billNum=2219&year=1998&doc=bill>. Accessed September 2000.
- KDHE. 2000b. *House Bill No. 2950 (Swine Facility Law)*. Kansas Department of Health and Environment. <www.kdhe.state.ks.us/feedlots/hb2950.htm>. Accessed September 2000.

- KDHE. 2000c. *Kansas Environment 2000 Water*. Kansas Department of Health and Environment. <www.kdhe.state.ks.us/environment/2000/bow.html>. Accessed September 2000.
- KDHE. 2000d. *Kansas Implementation Procedures: Surface Water*. Kansas Department of Health and Environment. <www.kdhe.state.ks.us/pdf/bow/implementation_2000.pdf>. Accessed September 2000.
- KDHE. 2000e. *Livestock Waste Management Permitting System*. Kansas Department of Health and Environment. <www.kdhe.state.ks.us/feedlots>. Accessed September 2000.
- KDHE. 2000f. *Rules and Regulations: Article 18 - Animal and Related Waste Control*. Kansas Department of Health and Environment. <www.kdhe.state.ks.us/pdf/regs/28-18.pdf>. Accessed September 2000.
- KDHE. 2000g. *Rules and Regulations: Article 18a - Swine and Related Waste Control*. Kansas Department of Health and Environment. <www.kdhe.state.ks.us/pdf/regs/28-18a.pdf>. Accessed September 2000.
- KSDOA. 2000a. *License Requirements*. Kansas Department of Animal Health. <www.ink.org/public/kahd/licensing.html>. Accessed September 2000.
- KSDOA. 2000b. *Nutrient Management Program: Kansas Department of Agriculture*. Kansas Department of Agriculture. <www.ink.org/public/kda/nutrient/nutrient.html>. Accessed September 2000.
- Muldener, Karl. 2000. Kansas Departments of Health and Environment comments on the proposed CAFO rules (Comment 202366). In *EPA/OW Concentrated animal feeding operation (CAFOs) CommentWorks*. ICF. Accessed February 2002.
- USDA. 1999. *1997 Census of Agriculture: Geographic Area Series*. U.S. Department of Agricultural Statistics Service, Washington, DC.
- USDA. 2000. Specific queries conducted on the 1997 Census of Agriculture published data. U.S. Department of Agriculture.
- USEPA. 1993. *The Report of the EPA/State Feedlot Workgroup*. U.S. Environmental Protection Agency, Office of Wastewater Enforcement and Compliance, Washington, DC.
- 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.

Missouri's CAFO Program

1.0 Background

Based on information provided to EPA by USDA, there are 600 AFOs with 300 to 1,000 animal units and 315 AFOs with more than 1,000 animal units in Missouri. These are primarily in the swine sector (USDA, 1999; USDA, 2000). Based upon information provided to EPA by the Missouri Department of Natural Resources in their comments regarding the proposed CAFO rules, there are 1310 AFOs with 300 to 999 AUs and 400 operations with more than 1,000 AUs, most in the broiler and swine sector (Young, 2000).

Missouri has experienced an increase in large hog and poultry operations. In 1995 a series of spills from two of the largest hog operations in the state led to legislation in 1996 that requires the Missouri Department of Natural Resources (MDNR) to strengthen its CAFO regulatory program (USEPA, 1998).

2.0 Lead Regulatory Agency

The Missouri Department of Natural Resources (MDNR) enforces and administers the water pollution control program. Information can be found at www.dnr.state.mo.us/deq/wpcp.

3.0 State Regulations Regarding AFOs/CAFOs

Basic information regarding Missouri's Code of State Regulations can be found at <http://mosl.sos.state.mo.us/csr/>. These sections of the CSR regulate AFOs and CAFOs:

- CAFO operation, construction, and NPDES operating permits are regulated by Missouri Revised Statutes (RSMO) 644 and 640.700 through 640.750. The applicable rules are 10 CSR 20-6.010, 20-6.300, 20-8.020, 20-8.500, 20-7.015, and 20-7.031.
- Land application, construction, and NPDES operating permits are regulated by RSMO 644 under the following applicable rules: 10 CSR 20-6.010, 20-6.011, 20-6.015, 20-6.200, 20-7.015, 20-7.031, 20-8.020, and 20-8.500.
- Missouri's Clean Water Law is at RSMO 644.
- The CAFO permit rule is at 10 CSR 20-6.300.
- Certification of CAFO waste management operators is regulated by 10 CSR 20-14.020.
- CAFO design regulations are at 10 CSR20-8.020.
- CAFO effluent regulations are at 10 CSR20-7.015 (9)(g).

4.0 Types of Permits

NPDES

The state of Missouri administers the NPDES permitting program. Missouri issues individual NPDES permits to CAFOs and provides authorization under general permit G01 for CAFOs.

CAFO NPDES permits regulate no discharge waste management collection, holding, treatment and land application systems (MDNR, 2000b).

Other

Construction and operating permits are required for all CAFOs. Construction and operating permits regulate land application of liquid or solid residue from domestic or industrial operations and associated waste storage, treatment facilities, and distribution systems. Land application includes wastewater irrigation, biosolids land application, composting facilities, and similar activities (MDNR, 2000b).

5.0 Permit Coverage

CAFOs include animal feeding operations larger than 1,000 animal units and some animal feeding operations sized between 300 and 999 animal units (MDNR, 2000b).

All CAFOs must receive NPDES permits or be covered under the general permit. The state of Missouri has developed a classification scheme for concentrated animal feeding facilities based on capacity. This allows managers to develop/apply regulations based on the size and potential impact of a concentrated animal feeding facility. The classes of animal feeding operations in Missouri are:

- *Class IA* - Any concentrated animal feeding operation with a capacity of 7,000 animal units or more.
- *Class IB* - Any concentrated animal feeding operation with a capacity of at least 3,000 animal units, but fewer than 7,000 animal units.
- *Class IC* - Any concentrated animal feeding operation with a capacity of at least 1,000 animal units, but fewer than 3,000 animal units.
- *Class II* - Any concentrated animal feeding operation with a capacity of at least 300 animal units, but fewer than 1,000 animal units.

Class IB, IC, and II CAFOs are covered under Missouri's general NPDES permit. Class IA facilities must seek an individual NPDES permit. All Class I facilities are subject to state construction and operating/permitting requirements. Permits are not required for AFO operations with fewer than 300 animal units when the operation uses best management practices approved by MDNR. Permits are not required for AFOs with 300 to 999 animal units if there is no discharge.

6.0 Permit Conditions

Approvals

State construction and operating approvals are required for facilities with more than 1,000 animal units, including dry litter poultry operations (Agena, 1994). Also, public notice is required for Class IA facilities and the owner/operator must issue neighbor notices before expanding animal feeding operations. Missouri requires field, crop, soil, and management documentation for each permit application (Young, 2000). Voluntary letters of approval may be issued at a facility's

request. Operations with more than 7,000 AUs must have site-specific permits. General permits must be renewed every five years or when animal numbers or manure volume change significantly (Young, 2000).

Lagoon Design and Specifications

All animal feeding operations with lagoons that have an Operating Permit or Letter of Approval are required to maintain and operate those lagoons until they have been properly closed through a closure plan submitted for program approval (Young, 2000).

10 CSR 20-8.200 regulates wastewater treatment ponds (lagoons).

Storage structures must have between a 90- and 365-day capacity depending on the location and agronomic condition of the application site (NASDA, 1997). A site appraisal by a design engineer is required to ensure that earthen storage structures are constructed to have at least a 4-foot distance between the lagoon bottom and ground water (NASDA, 1997) and to keep lagoon seepage to 1/8 to 1/16 inch a day based on the pollution potential of the waste control facility (Agena, 1994).

Class 1A facilities with wet waste handling technologies that MDNR deems a risk to any drinking water supply or aquatic life or that are within 300 feet of an adjacent landowner must have a containment structure that can contain a minimum volume equal to maximum flushing in any 24-hour period (640.730). All wet animal waste handling facilities are required to have an automatic shutoff in the event a pipe becomes blocked (RSMO 640.725).

Discharge Rules

No discharge is allowed for Class I facilities except as a result of a 24-hour, 25-year storm event, or a storm event that is defined as a chronic wettest 1-in-10 year period of rainfall. Surface water testing is required on site-specific permits for CAFOs (Young, 2000).

Waste Management Plans

All facilities that obtain voluntary State Letters of Approval and all permitted animal feeding operations are designed to have a no-discharge manure management system (Young, 2000). Missouri requires a geologic investigation of any proposed liquid manure storage structure site. This investigation identifies soils and geologic features that would affect the likelihood of direct contact of subsurface waters with the nutrients. A seal is required in all earthen basins and a registered professional engineer must certify that the entire facility was properly constructed. For large operations, a water balance test is required (Young, 2000).

Missouri requires producers to identify the recipient of any manure sold or given away (Young, 2000).

To receive construction approval, an applicant must include a waste handling plan (RSMO 640.715 or 10 CSR 20-8.020(15)).

Separation Distances

Separation distance requirements are stated at Chapter 640, Section 640.710. This section is

available at www.moga.state.mo.us/statutes/c600-699/6400710.htm. Setback requirements vary from 50 feet for intermittent streams to 300 feet for sinkholes and domestic water supplies (Young, 2000).

All new animal waste control facilities must be 1,000 to 3,000 feet from any public building or residence depending on the facility's capacity (NASDA, 1997). Operations with at least a 1,000 animal unit capacity must be 1,000 feet from dwellings. Class IA and IB facilities must maintain a separation distance from public buildings and residences of 3,000 and 2,000 feet, respectively. A 50-foot separation distance between property lines is mandated for all storage facilities and land application (NASDA, 1997), and distances of 50 feet from intermittent streams, 100 feet from permanent flowing streams, and 150 feet from dwellings must be maintained. The animal waste control facilities and land application sites of CAFOs must be 300 feet from water wells and sink holes.

Class IA feeding operations are prohibited in Outstanding Natural Resource Water National River areas and their watersheds (ASIWPCA, 1997 and 10 CSR 20-6.300).

Land Application Requirements

Land application areas on which liquid systems are used are considered part of the CAFO (Young, 2000).

Hydraulic application rate (inch/hour) is based on soil and slope. Land application is based on agronomic nitrogen requirements, but higher rates of application are allowed if the land available for waste disposal is limited. Other limitations may be required where appropriate to protect water quality. Land treatment is regulated by 10 CSR 20-8.220.

Application rates are determined for each individual site based on topography, soils, geology, hydrology, weather, agricultural practice, adjacent land use, and application method. A balance calculation for water and each significant parameter should be prepared to show that the system performance meets the requirements of 10 CSR 20-7.031, Water Quality Standards.

Missouri highly recommends the use of proper agricultural and erosion controls. Permit BMPs require vegetation cover or erosion control measures. Soil and manure testing are recommended but are not required (Young, 2000).

7.0 Enforcement Information

Inspection Programs

Operators of any "flush" manure management system (i.e., any system that uses liquid as the primary agent for moving manure) must visually inspect the waste handling facility and lagoons for unauthorized discharges at least every 12 hours and maintain a record of each inspection (General Assembly of the State of Missouri House Bills 1207, 1288, 1408, and 1409).

In compliance with House Bills 1207, 1208, 1408, and 1409, MDNR conducts routine onsite inspections (NASDA, 1997). Class IA facilities are inspected quarterly, while other animal feeding operations receive annual inspections (USEPA, 1998). Inspections may also result from a public complaint.

8.0 Voluntary Programs

The Letter of Approval is voluntary for animal feeding operations that are not CAFOs. Voluntary approval of “no discharge” waste management systems for animal feeding operations are exempted from permitting requirements (MDNR, 2000b).

Voluntary operator certification is available for CAFO operators and supervisors at facilities that are exempt.

The Department of Natural Resources has a technical assistance program.

9.0 Additional State-Specific Information

Cooperative Extension Program

Information regarding the University of Missouri, Lincoln University, Outreach and Extension program is located at <http://extension.missouri.edu>.

Operator Training and Certification

MDNR requires waste system operators to be trained and certified (NASDA, 1997). Missouri regulations classify CAFO waste management system operators into four categories (10 CSR 20-14.010):

- CAFO supervisors
- CAFO assistant supervisors
- CAFO operator
- CAFO operator trainee

Each category is defined by level of experience and knowledge of waste management system operation. MDNR issues a certificate of competency to a CAFO operator after successful completion of course work and a passing score on a state exam.

10 CSR 20-14.020 requires certification for Class IA wet handling CAFO waste management systems. All persons performing the duties associated with operating CAFO operations defined as Class IA wet handling CAFO waste management systems must apply for CAFO waste management operator certification.

Missouri offers three levels of certification for CAFO supervisors— A, B, and C. The levels are based on the type of waste management system the number of points assigned to a waste management system.

Case Studies/Innovative Programs

Chapter 640, Section 740, established a Concentrated Animal Feeding Operation Indemnity Fund to fund the closure of abandoned CAFOs that have been placed in the control of the government due to bankruptcy or failure to pay property taxes, or that are abandoned property.

CAFO Odor Rule

On March 25, 1999, the Missouri Air Conservation Commission voted unanimously to adopt amendments to the odor regulations. This brought 19 existing Class IA CAFOs under regulation. The final version was published in the briefing document for the March 1999 Missouri Air Conservation Commission meeting along with a summary of comments and responses (MDNR, 2000a).

The rule calls for each source to submit an odor control plan by July 1, 2000. The odor control plan must identify all sources of odor and detail how the facility will address these odor emissions. An interim progress report is due on March 1, 2001. The deadline for full implementation of odor controls is January 1, 2002. After January 1, 2002, the source becomes subject to an odor standard that is similar to the odor standard applicable to other statewide industries (MDNR, 2000a).

Monitoring

The Department of Conservation and the Department of Natural Resources have put together teams of citizens to monitor the water quality in designated water bodies. The “Stream Team” alerts the departments when a pollution problem has occurred (Young, 2000).

10.0 References

- Agena, Ubbo. 1994. *Animal Waste Control Programs of Iowa and Eight Other States*. Iowa Department of Natural Resources, Environmental Protection Division.
- ASIWPCA. 1997. *CAFO Standards for Pork Production, Survey*. Association of State and Interstate Water Pollution Control Administrators, Washington, DC.
- MDNR. 2000a. *Protecting Missouri's Natural Resources Newsletter, April 1999*. Missouri Department of Natural Resources, Division of Environmental Quality.
<www.dnr.state.mo.us/deq/pmnr99_04.htm>. Accessed September 2000.
- MDNR. 2000b. *Water Pollution Control Permits*. Missouri Department of Natural Resources.
<www.dnr.state.mo.us/deq/tap/pub98.pdf>. Accessed September 2000.
- NASDA. 1997. *Summary Matrix of State Survey on Waste & Manure Management Regulations*. National Association of State Agriculture Departments.
- USDA. 1999. *1997 Census of Agriculture: Geographic Area Series*. U.S. Department of Agricultural Statistics Service, Washington, DC.
- USDA. 2000. Specific queries conducted on the 1997 Census of Agriculture published data. U.S. Department of Agriculture.
- USEPA. 1993. *The Report of the EPA/State Feedlot Workgroup*. U.S. Environmental Protection Agency, Office of Wastewater Enforcement and Compliance, Washington, DC.
- 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.

Young, J., 2000. Missouri Department of Natural Resources comments on the proposed CAFO rule (Comment 202468). In *EPA/OW Concentrated Animal Feeding Operations (CAFOs) CommentWorks*. ICF. Accessed February 2002.

Nebraska's CAFO Program

1.0 Background

Based on information provided to EPA by USDA, there are 880 AFOs with 300 to 1,000 animal units and 620 AFOs with more than 1,000 animal units in Nebraska. These are primarily in the beef and swine sectors (USDA, 1999; USDA, 2000).

Nebraska began its livestock permit program in 1972 and has issued NPDES permits to CAFOs since 1974. In April 1998 legislation was passed that established a permit fee system, a task force to review the need for financial assurance plans, and a training program for land application of wastes (USEPA, 1998). Nebraska has a mix of very large cattle farms with a large number of medium-small cattle feeding operations (USEPA, 1998). In FY 1999, the livestock permit program issued 123 construction permits and 85 state operating permits (NDEQ, 2000a).

2.0 Lead Regulatory Agency

The Nebraska Department of Environmental Quality (NDEQ) regulates the discharge of livestock wastes into the waters of the state in accordance with the NPDES Program. NDEQ also has regulatory and permitting authority over livestock waste control facilities under State Title 130, Rules and Regulations Pertaining to Livestock Waste Control. The Livestock Waste Control Program administers and enforces Title 130, which is being revised to comply with changes in statutes. This legislation was passed in April 1998, but two revisions of the Rule occurred in 1999 (NDEQ, 2000a).

3.0 State Regulations Regarding AFOs/CAFOs

Title 130 of the Nebraska Administrative Code, Rules and Regulations Pertaining to Livestock Waste Control, became effective February 28, 2000. It is available at www.deq.state.ne.us/RuleAndR.nsf/pages/130-TOC. The intent of the Livestock Waste Management Act is to prevent water pollution through better regulation of livestock waste control facilities. The major changes mandated by the Livestock Waste Management Act, implemented by the revised Title 130, are the following (NDEQ, 2000d):

- Fees for inspections and for construction and operating permits.
- A classification system for livestock operations, based on animal units.
- A requirement for all livestock operations to request an inspection by NDEQ by January 1, 2000, unless the operation previously had been permitted or exempted, had less than 300 animal units, or was a calving operation that confined livestock less than 90 days a year.
- Provisions for determining a "bad actor" a livestock producer/manager/owner who has previously violated environmental laws.
- Tighter construction requirements on larger livestock waste lagoons to reduce seepage.
- Public notices on applications from livestock operations with more than 1,000 animal units.
- A requirement for a licensed professional engineer to complete permit applications.
- Restrictions on livestock waste control facilities in cold water Class A stream watersheds.

In 1999, the 1998 Livestock Waste Management Act (LB1209) was amended by the passage of LB870 and LB822. Under LB870, livestock operations with more than 300 animal units were exempted from the act's inspection and permitting requirements unless the operation has had a confirmed discharge or the Department determines a high potential for a discharge to waters of

the state. LB870 also requires public notice of complete applications for livestock waste control facilities (LWCFs) at operations with more than 1,000 animal units, set late fees for failure to submit inspection requests, and modified professional engineering requirements. LB822 prohibits livestock operations with more than 1,000 animal units from locating in cold water Class A stream watersheds (NDEQ, 2000a). Nebraska's livestock waste control statutes require that facilities with 300 AUs or more be inspected by state officials to determine the need for livestock waste facilities (Carlson, 2000).

4.0 Types of Permits

NPDES

The Livestock Waste Control Program issues NPDES permits.

Other

Livestock operations may be required to apply for and obtain construction and operating permits for LWCF. Plans and specifications must be reviewed by livestock permit program engineers to ensure compliance with established standards. When these plans and specifications are approved by NDEQ, a construction permit can be issued. Operating permits are issued after the livestock operation certifies that the LWCF was constructed in accordance with the plans and specifications approved by the Department. Prior to issuing an operating permit, the Department conducts a post-construction inspection (NDEQ, 2000a).

Other documents may be required with the NPDES permit application form (NDEQ, 2000c):

- Sludge management plan
- Operational and maintenance plan
- Facility closure plan
- Best management practices for odor (required of all Class II, III, and IV facilities)
- Emergency response plan

5.0 Permit Coverage

The Livestock Waste Management Act established a classification system for LWCFs based on the maximum number of animal units for which a waste control facility is designed. Nebraska uses the federal definition for an animal unit. The classifications of livestock operations are as follows (NDEQ, 2000b):

- Class I: A facility designed for 1,000 animal units or less
- Class II: A facility designed for 1,001 to 5,000 animal units
- Class III: A facility designed for 5,001 to 20,000 animal units
- Class IV: A facility designed for 20,001 units or greater

Legislation passed in April 1998 included provisions that require all feedlots, regardless of size, to register with the state (USEPA, 1998).

Nebraska has a statute that exempts calving operations from the definition of a livestock operation if held for less than 90 days per year. Confinement operations that do not have any drainage area that could be impacted by rainfall are not required to obtain a NPDES permit (Ringenberg, 2000).

6.0 Permit Conditions

Approvals

Prior to permitting, a site inspection is required to determine the need for an LWCF.

Lagoon Design and Specifications

Permit applicants are required to submit design plans that meet state technical standards and facility location requirements. Permits may require operators to meet designated waste capacity requirements, design standards, disposal requirements, and monitoring requirements. A liquid manure storage pit or tank, a holding pond, or a combination of these must be designed to retain all livestock waste for a minimum of 180 days.

The Minimum Storage Requirement is the sum of the animal waste produced (or treatment volume for an anaerobic lagoon), plus the spillage, wash water, and any flush water produced in 180 days (NDEQ, 2000c).

The minimum freeboard requirement is 1.5 feet for earthen structures and at least 6 inches for vertical-walled structures (NDEQ, 2000c).

The debris basin should be designed to provide adequate solids retention as well as sufficient capacity to detain a 25-year, 24-hour storm without overtopping (such as with USDA-NRCS flood routing criteria) (NDEQ, 2000c).

The facility should be located on soils and/or constructed with materials and construction methods that will ensure that percolation does not exceed the following rates:

- 0.25 inches per day (7.35×10^{-6} cm/sec) for a Class I facility
- 0.13 inches per day (3.82×10^{-6} cm/sec) for a Class II, Class III, or Class IV facility

Where a flexible membrane liner is used, a properly compacted soil sub-base must be constructed below the liner with a minimum thickness of 6 inches.

Discharge Rules

The NPDES permit prohibits discharges to waters of the state unless the area receives precipitation in excess of the 25-year, 24-hour storm event or during a chronic wet period (NDEQ, 2000a).

Waste Management Plans

Manure management plans are required prior to construction permit approval (USEPA, 1998).

Separation Distances

Livestock waste application is restricted to within 30 feet of any streams, lakes, and impounded waters. NDEQ may require additional restrictions for waste application within 100 feet of stream, lakes, or impounded waters (NDEQ, 2000e).

Livestock waste application is restricted to within 100 feet of any well used for domestic purposes and within 1,000 feet of a public drinking water supply well.

The temporary zoning regulations may establish setbacks for new livestock operations or livestock facilities and prohibit them from being located within 1 mile of an incorporated city or village or within 0.25 mile of a concentration of 10 or more residences. Any temporary zoning regulations expired July 1, 2001 (NDEQ, 2000b).

Land Application Requirements

Land application is based on the nutrient value of the wastes and soil and site characteristics.

The minimum runoff storage requirement for open feedlots is the calculated runoff produced by a 25-year, 24-hour rainfall event plus the calculated open lot and contributing drainage area runoff for the month of June, plus the net precipitation on the holding pond surface for the month of June, plus solids accumulations of at least 0.5 inch per acre of open lot, and other sources of wastewater (NDEQ, 2000c).

If runoff is diverted, the terrace, berms, or ditch should, at a minimum, be constructed to convey runoff from the 25-year, 24-hour storm event and should not be less than 1.5 feet in channel depth (NDEQ, 2000c).

Nebraska requires an evaluation of any land application areas testing above 150 ppm for phosphorus (Ringenberg, 2000).

7.0 Enforcement Information

Inspection Program

Under the 1998 Livestock Waste Management Act, livestock operations (regardless of size) were required to submit a Request for Inspection to NDEQ prior to January 1, 2000, unless they had a permit or had been previously exempted by the Department. By the end of 1998, NDEQ had received nearly 4,500 requests for inspection. Of this number, 94 percent were from operations with fewer than 1,000 animal units. During 1999, the Department received another 1,130 requests for initial inspections (NDEQ, 2000a).

From January to July of 1999, a joint venture between the Nebraska Department of Environmental Quality and the Nebraska Department of Agriculture (NDA) assisted in performing these initial inspections. During this time the NDA inspectors performed approximately 400 site visits on behalf of DEQ, mostly on livestock operations with fewer than 300 animal units. During FY 1999 (July 1998-June 30, 1999), DEQ and NDA inspectors performed initial inspections and/or site visits on 794 livestock operations (NDEQ, 2000a).

In addition to the initial inspections of existing and proposed livestock operations, program staff also conduct complaint investigations, routine operation and maintenance inspections of livestock waste control facilities, and post-construction inspections. The total number of inspections performed during FY1999, including initial inspections, was 1,103 (NDEQ, 2000a).

8.0 Voluntary Programs

No information was found in publicly available sources.

9.0 Additional State-Specific Information

Cooperative Extension Service

Information regarding the University of Nebraska's Lincoln Institute of Agriculture and Natural Resources, Cooperative Extension can be obtained at www.ianr.unl.edu/.

Comprehensive Nutrient Management Plan (CNMP) Certification

All applications for NPDES permits must include a comprehensive nutrient management plan. Title 130, Chapter 3, 001.04H and Chapter 11 list the specific requirements. Livestock wastes are not to be applied in excess of agronomic rates for nitrogen. The requirements include sampling, testing, and record-keeping. The applicant is required to maintain these records for at least 5 years or longer, as required in the approved plan or operating permit requirements (NDEQ, 2000c).

Nebraska does not have a CNMP preparer certification program. Nebraska's Livestock Waste Control Program (Title 130, Chapter 3) requires CNMPs with each NPDES permit, but the CNMP does not need to be prepared by a certified preparer. NDEQ does not need to approve the plan (NDEQ, 2000a)

10.0 References

- Agena, Ubbo. 1994. *Animal Waste Control Programs of Iowa and Eight Other States*. Iowa Department of Natural Resources, Environmental Protection Division.
- Carlson, M., 2000. Nebraska Department of Agriculture comments on the proposed CAFO rule (Comment 235636). In *EPA/OW Concentrated animal feeding operations (CAFOs) CommentWorks*. ICF. Accessed February 2002.
- NASDA. 1997. *Environmental Laws Affecting Nebraska Agriculture*. National Association of State Departments of Agriculture Research Foundation.
- NDEQ. 2000a. *Livestock Waste Control Program*. Nebraska Department of Environmental Quality. <www.deq.state.ne.us/permitsa.nsf/pages/livestock>. Accessed September 2000.
- NDEQ. 2000b. *Fact Sheet on 1999 Livestock Legislation*. Nebraska Department of Environmental Quality. <www.deq.state.ne.us/Publica.nsf/Publications+Livestock>. Accessed September 2000.
- NDEQ. 2000c. *Sample Application for LWCF Permit*. Nebraska Department of Environmental Quality. <www.deq.state.ne.us/Publica.nsf/Publications+Livestock>. Accessed September 2000.
- NDEQ. 2000d. *Environmental Update - Spring 2000*. Nebraska Department of Environmental Quality. <www.deq.state.ne.us/Newslett.nsf/Update>. Accessed September 2000.
- NDEQ. 2000e. *Comprehensive Nutrient Management Plan*. Nebraska Department of

Environmental Quality. <[www.deq.state.ne.us/Publications+Livestock](http://www.deq.state.ne.us/Publications/Publications+Livestock)>. Accessed September 2000.

Ringenberg, J. 2000. Nebraska Department of Environmental Quality comments on the proposed CAFO rule (Comment 235596). In *EPA/OW Concentrated animal feeding operations (CAFOs) CommentWorks*. ICF. Accessed February 2002.

Summers, R. U.S. Environmental Protection Agency, Region 4. Summary of state program information sent to Ruth Much (SAIC), Fall 1997.

University of Nebraska-Lincoln, Cooperative Extension, Institute of Agriculture and Natural Resources. 1996. *Environmental Considerations for Manure Application System Selection. NebGuide*. Electronic version issued June 1996, G95-1266-A.

USDA. 1999. *1997 Census of Agriculture: Geographic Area Series*. U.S. Department of Agricultural Statistics Service, Washington, DC.

USDA. 2000. Specific queries conducted on the 1997 Census of Agriculture published data. U.S. Department of Agriculture.

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.

USEPA. 1993. *The Report of the EPA/State Feedlot Workgroup*. U.S. Environmental Protection Agency, Office of Wastewater Enforcement and Compliance, Washington, DC.