



## Archived Publication

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EPA promulgated regulations for Concentrated Animal Feeding Operations (CAFOs) in February 12, 2003 that expanded the number of operations covered by the CAFO regulations and included requirements to address the land application of manure from CAFOs. The rule became effective on April 14, 2003. NPDES-authorized states were required to modify their programs by February 2005 and develop state technical standards for nutrient management. On February 28, 2005, in response to litigation brought by various organizations, the Second Circuit court issued its decision in *Waterkeeper Alliance et al. v. EPA*, 399 F.3d 486 (2d Cir. 2005). EPA has updated the CAFO rule to reflect the changes requested by the Court. Visit [www.epa.gov/npdes/caforule](http://www.epa.gov/npdes/caforule) to view the 2008 CAFO Final Rule and supporting documents.



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## CHAPTER 1: INTRODUCTION

### A. Purpose of this Document

In early 2003, EPA issued significant revisions to its regulations for NPDES permitting of concentrated animal feeding operations (“CAFOs”) under the Clean Water Act. In December, 2003, EPA issued a guidance document for CAFO permitting titled “NPDES Permit Writers’ Guidance Manual and Example NPDES Permit for Concentrated Animal Feeding Operations,” EPA-833-B-04-001 (“Permit Guidance”). That guidance document discussed the general framework for NPDES permitting of CAFOs under the Clean Water Act and EPA’s revised regulations. It addressed such issues as when does an animal feeding operation become defined as a CAFO, when are CAFOs required to get a permit, the difference between general permits and individual permits, and what effluent limitations and standards should or must be included in NPDES permits for CAFOs.

This document, “*Managing Manure*,” is designed to supplement EPA’s previous guidance by providing additional technical information to owners, operators, technical service providers, consultants, and permit authorities on how to carry out EPA’s revised regulatory requirements for NPDES permitting of CAFOs. It also provides information on voluntary technologies and management practices that may both improve the production efficiency of CAFOs and further protect the quality of the nation’s waters. This document assumes that readers have a basic understanding of the CAFO regulations.

### B. Scope of this Document

EPA’s regulations governing CAFOs consist primarily of two different sets of regulations. First, the regulations at 40 CFR 122.23 set the framework for CAFO permitting by establishing criteria for who is defined as a CAFO and specifying whether, and when, a CAFO must apply for a permit. The second set of regulations, which are at 40 CFR Part 412, are the effluent limitations guidelines and standards (“ELGs” or “effluent guidelines”) for CAFOs, which establish discharge limits and certain management practice requirements that must be included in NPDES permits for CAFOs.

While the regulations at 40 CFR 122.23 apply to all operations, it should be noted that the ELG requirements in 40 CFR Part 412 apply only to permitting of Large CAFOs, as that term is defined in the regulations. The statements below on what is *required* under the ELGs therefore apply only to the permitting of Large CAFOs. For permitting of Medium and Small CAFOs, permitting authorities will set effluent limitations on a case-by-case basis based on site-specific conditions. Where deemed appropriate by the permitting authority, the permitting authority may set effluent limitations for those CAFOs that are similar to the ELG requirements for Large CAFOs. EPA encourages permitting authorities to consider the discussions below on the requirements and recommendations for applying the ELG to Large CAFOs when establishing permit conditions for CAFOs of any size.

### C. How To Use this Document

*Managing Manure* contains information pertinent to Large CAFOs in the *Dairy Cows and Cattle other than Veal Calves* and the *Swine, Poultry, and Veal Calves* subcategories of the final CAFO regulations (see Section E of this chapter). Permit writers, at their discretion on a case-by-case basis, may want to consider the information in this manual pertinent to small and medium CAFOs. The effluent guidelines requirements cited in this manual must be included in permits for Large CAFOs, while the permit writer may include them in permits for smaller CAFOs at the permit authority’s discretion. This manual assumes readers have a basic understanding of the CAFO regulations. Text boxes in each section provide the relevant regulatory language, additional clarifications, and examples for key concepts.

*Managing Manure* is organized into eight chapters and 15 appendices:

- Chapter 2 identifies and discusses the production area requirements of the CAFO rules, example technologies that may help a facility comply with the production area requirements, and additional voluntary practices that may benefit operators of many Large CAFOs.
- Chapter 3 identifies the requirements prior to land application of manure, litter, and process wastewater (i.e., manure sampling and recordkeeping if these wastes are transferred off site).
- Chapter 4 describes the land application area requirements of the CAFO rules (including the Nutrient Management Plan, setback requirements, and recordkeeping) example management practices that may be used to help comply with the land application area requirements, and additional voluntary practices that may benefit operators of most Large CAFOs.
- Chapter 5 describes the goals and requirements of the voluntary alternative performance standards for CAFOs, including several detailed case studies that may help CAFOs and Permit Authorities develop their own voluntary alternative performance standards.
- Chapter 6 provides guidance and case studies for the development and use of Technical Standards for land application.
- Chapter 7 describes the most common deficiencies found at CAFOs, identifies practices to help avoid them, and includes some case studies of management practices CAFOs may use to help achieve compliance with the CAFO regulations.
- Chapter 8 lists resources for additional help in complying with the regulations.
- This document also includes several appendices including the regulations found at 40 CFR, sample inspection checklists, records checklist, sample calculations, and example methods for manure sampling, and equipment calibration. These examples are not binding or required, they are examples of how some Permit

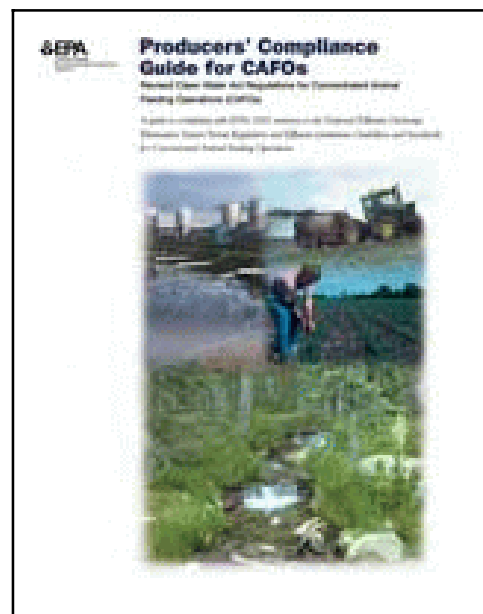
Authorities have implemented the regulatory requirements.

To further assist the user of this document, text boxes in each section provide the relevant regulatory language, additional clarifications, and examples for key concepts. Regulatory citations are provided in text boxes with a double line. Examples and clarifications are denoted by text boxes with a single line.

#### D. Other Related Documents

The *Producer's Guide (Producers' Compliance Guide for CAFOs*, EPA, 2003) gives a general description of the revised CAFO regulations and helps an animal feeding operation (AFO) determine whether they might be regulated under the revised regulations.

The *Permit Guidance (Permit Writers Guidance Manual and Sample NPDES Permit for Concentrated Animal Feeding Operations*, EPA, 2003) provides information to NPDES permit writers on the permitting



requirements for CAFOs. This *Permit Guidance* is accompanied by a series of questions and answers that reiterate the regulatory requirements and provide additional clarity by referring to corresponding sections of the CAFO final preamble.

Because they do not describe in detail the full set of federal regulatory requirements for CAFOs or the pertinent State requirements, neither the *Producer's Guide* nor the *Permit Guidance* are intended to be used to ensure that a CAFO is in compliance with all applicable requirements. Readers are further cautioned that any of these guidance documents may be revised or amended without notice.

EPA's National Agriculture Compliance Assistance Center (<http://www.epa.gov/agriculture/>) provides information on environmental requirements affecting the agriculture industry, including links to resources and publications. This web site is continually updated.

Chapter 8 of this document provides additional resources.

## E. Scope of CAFO Regulations

The federal regulatory requirements for CAFOs consist of Effluent Limitation Guidelines and Standards for the CAFOs point source category (40 CFR Part 412), and NPDES permitting requirements for CAFOs (40 CFR Part 122). In 2003, EPA revised both the effluent guidelines and NPDES permitting requirements for CAFOs. Among other things, the new regulations establish manure management performance standards for new and existing CAFOs. Any NPDES permit issued to a CAFO after April 14, 2003 must contain the revised effluent guidelines at 40 CFR Part 412. Appendix A of this document contains a copy of these final rules. CAFOs should read these federal regulations as well as any state regulations for CAFOs, and should check with the agency that regulates CAFOs in that state to determine permitting requirements. For more information on EPA's regulatory authority for the CAFO regulations, see Section 1 of the *Final CAFO Preamble* and Chapter 1 of the *Development Document for the Final Revisions to the NPDES and the Effluent Guidelines for Concentrated Animal Feeding Operations*, available at <[www.epa.gov/npdes/caforule](http://www.epa.gov/npdes/caforule)>.

The NPDES permitting regulations generally define an AFO, among other things, as an operation where livestock or poultry are confined for an extended period of time (see 40 CFR 122.23 (b)(1) for the legal definition). This definition is intended to differentiate confinement-based operations from pasture-based operations, where the latter are intended to be excluded from the CAFO regulations.

An operation is a Large CAFO if it meets the definition of an AFO **and** it confines at least:

- 700 mature dairy cows;
- 1,000 beef cattle or heifers;
- 1,000 veal calves;
- 2,500 swine (each 55 pounds or more);
- 10,000 swine (each under 55 pounds);
- 30,000 chickens (liquid manure handling systems);
- 125,000 chickens except laying hens (other than liquid manure handling systems);
- 82,000 laying hens (other than liquid manure handling systems);
- 55,000 turkeys;

### AFO Definition

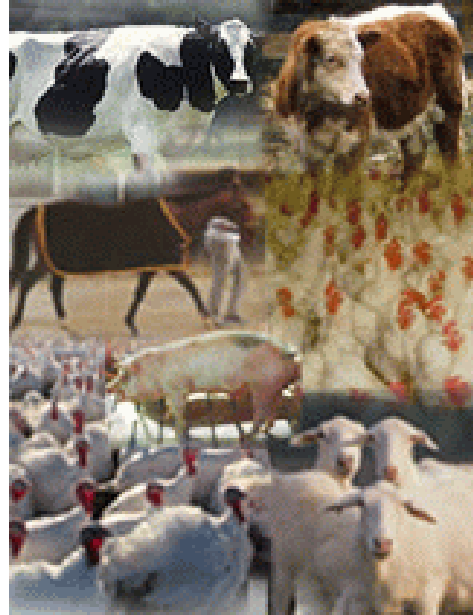
**§122.23 (b)(1)** Lot or facility (other than an aquatic animal production facility) where animals (other than aquatic animals) have been, are, or will be stabled or confined and fed or maintained for a total of 45 days or more in any 12-month period:

*AND*

Where crops, vegetation, forage growth, or post-harvest residues are not sustained in the normal growing season over any portion of the lot or facility.

- 5,000 ducks (liquid manure handling systems);
- 30,000 ducks (other than liquid manure handling systems);
- 500 horses; or
- 10,000 sheep or lambs.

The CAFO regulations also use the terminology “Medium CAFOs” and “Small CAFOs;” these terms are generally not used in this document. For more information on the definition of a CAFO, consult the *Permit Guidance* as well as Chapter 2 of the *Development Document for the Final Revisions to the National Pollutant Discharge Elimination System Regulation and the Effluent Guidelines for Concentrated Animal Feeding Operations*. Both of these documents can be found on the Internet at [www.epa.gov/npdes/caforule](http://www.epa.gov/npdes/caforule).



The effluent guidelines referred to in this document vary depending on whether the CAFO is currently operating at the time that the regulations were revised or if construction of the operation began after April 14, 2003. Newly constructed CAFOs, and certain CAFOs expanding the size of their operation may be subject to more stringent requirements known as New Source Performance Standards (NSPS). For more information consult the *Permit Guidance* as well as the guidance memorandum entitled “New Source Determinations for Direct and Indirect Dischargers” and 2004 memorandum entitled “Clarification Regarding CAFOs in 10-Year Protection Period.”

The effluent guidelines are broken into the following subparts, each addressing specific animal sectors:

- Subpart A: Horses and Sheep;
- Subpart B: Ducks;
- Subpart C: Dairy Cows and Cattle other than Veal Calves; and
- Subpart D: Swine, Poultry, and Veal Calves.

*Managing Manure* focuses only on the animal operations with new or revised effluent guidelines, specifically Subparts C and D (beef cattle, dairy cattle, veal calves, swine, chickens, and turkeys). Though the effluent guidelines for horses, sheep, and ducks have not changed, these facilities may be subject to revised or additional requirements under the revised NPDES permitting requirements for CAFOs at 40 CFR Part 122. Even for AFOs that are not regulated as CAFOs, EPA encourages all owners and operators of those AFOs to review the practices described in this guidance manual and consider adopting those practices that are applicable to their operation.

## F. CAFOs with No Potential to Discharge

The NPDES CAFO regulations require all CAFOs to apply for a permit. EPA recognizes that, although they may be infrequent, there may instances where a CAFO truly does not have a potential to discharge. Therefore, an exception is that in lieu of a permit application, Large CAFOs can request a “no potential to discharge” determination from the permitting authority where there is no potential for any CAFO manure, litter, or process wastewater to be added to waters of the United States under any circumstances or climatic condition. If the permitting authority makes a determination that the CAFO has “no potential to discharge”, the operation would not need to apply for an NPDES permit. Land application discharges from a CAFO are subject to NPDES requirements. It is important to note that the “no potential to discharge” determination applies to both the production area and land application areas under the control

of the CAFO. The “no potential to discharge” determination process may include a site visit to verify the information submitted by the CAFO operator or to gather additional information necessary to make the determination. See Figure 1-1 for an example CAFO that might be able to make a demonstration of no potential to discharge.

For more information on supporting a request for a “no potential to discharge” determination, see section 3.3.5 of the *Permit Guidance*, available on the internet at [http://www.epa.gov/npdes/pubs/cafo\\_permit\\_guidance\\_chapters.pdf](http://www.epa.gov/npdes/pubs/cafo_permit_guidance_chapters.pdf)

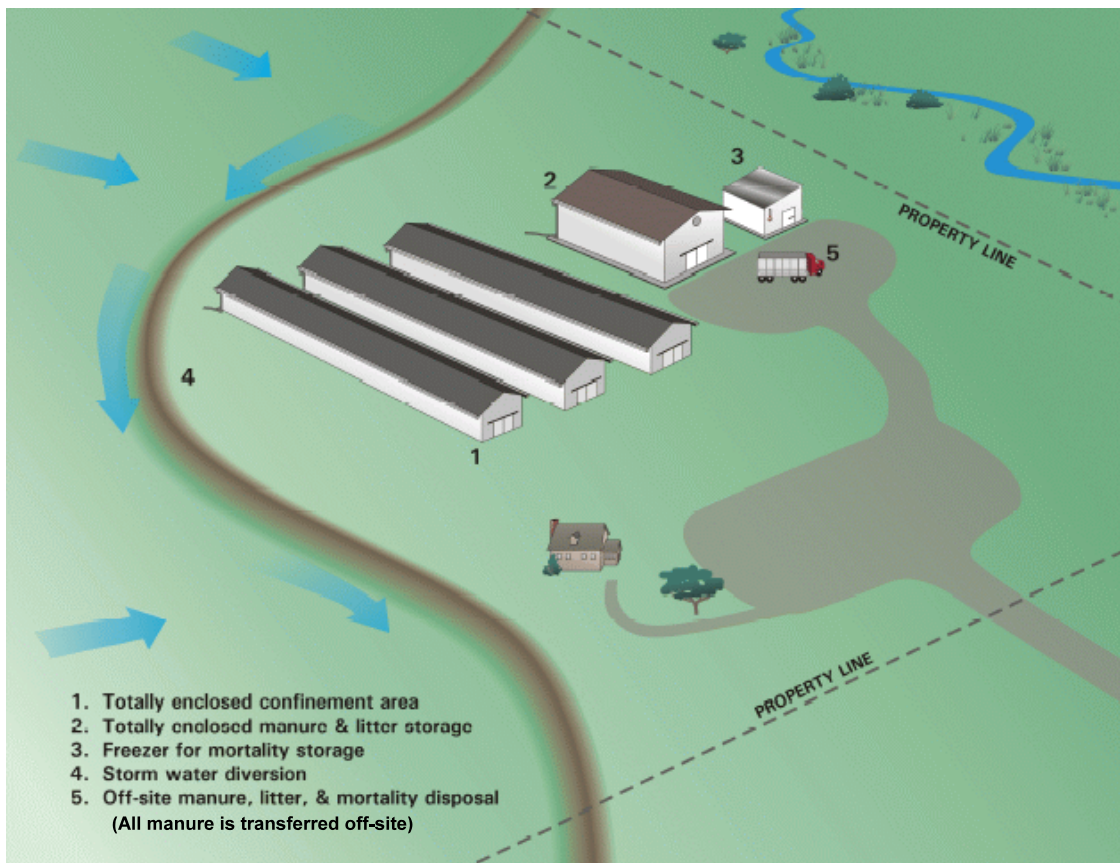


Figure 1-1. Example CAFO Potentially Demonstrating No Potential to Discharge

**G. Comments on *Managing Manure***

This document may be revised or amended periodically without public notice. EPA welcomes public comments on this document at any time, and will consider those comments in any future revision of this document. Comments, including additional helpful information, may be submitted electronically to Paul Shriner at [shriner.paul@epa.gov](mailto:shriner.paul@epa.gov), or mailed to:

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