NPDES Compliance Inspection Manual

Chapter 15

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CHAPTER 15–
CAFO PROGRAM INSPECTIONS

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A. OVERVIEW OF NPDES CAFO PROGRAM

INTRODUCTION

In addition to materials in this chapter, inspectors must be familiar with Chapter 1, "Introduction," and Chapter 2, "Inspection Procedures."

The National Pollutant Discharge Elimination System (NPDES) concentrated animal feeding operation (CAFO) inspector may encounter facilities with no NPDES permit, facilities with a state permit of some kind, and some facilities with NPDES permits. For facilities with NPDES permits, the inspector must be familiar with the requirements of a CAFO permit and know how to evaluate compliance. However, most facilities the inspector encounters will likely not have an NPDES permit.

Inspections of permitted and unpermitted CAFOs can have some similarities, but are generally very different. Throughout this chapter information relevant to each scenario is presented. If the facilities that you inspect do not have NPDES permits, you may want to focus most of your attention on the parts of the chapter dealing with unpermitted CAFOs. However, it is still important for all CAFO inspectors to have a working knowledge of NPDES CAFO permits.

BACKGROUND AND HISTORY OF THE CAFO REGULATIONS

EPA began regulating the discharges of wastewater and manure from CAFOs in the 1970s. In 2003, the Environmental Protection Agency (EPA) updated the original CAFO regulations to address changes in the animal agriculture industry sectors (Volume 68 of the *Federal Register* (FR) 7176). EPA subsequently published revisions to the CAFO Rule in 2008 to address a 2005 decision by the U.S. Court of Appeals (Waterkeeper Alliance et al. v. EPA, 2005) for the Second Circuit in litigation challenging the 2003 regulatory updates (73 FR 70418).

At the time of the 2003 revised regulations, EPA estimated that animal feeding operations (AFOs) annually produce more than 500 million tons of animal manure (U.S. DOA, 2007). The term manure as used here and throughout the Manual refers to manure, litter, and process wastewater. This manure can pose substantial risks to the environment and public health if managed improperly. EPA projected in 2003 that the revised rule would result in annual pollutant reductions of 56 million pounds of phosphorus (P), 110 million pounds of nitrogen (N), and two billion pounds of sediment.

Today, there are slightly more than one million farms with livestock in the United States.[11] EPA estimates that about 212,000 of those farms are likely to be AFOs—operations where animals are kept and raised in confinement. Although the number of AFOs has declined since 2003, the total number of animals housed at AFOs has continued to grow because of expansion and consolidation in the industry.

The NPDES regulations identify permitting requirements for AFOs that are classified as CAFOs and that discharge. If CAFOs do not seek NPDES permit coverage, discharges from their land

[11] The term manure as used here and throughout the Manual refers to manure, litter, and process wastewater.

application areas only qualify for the agricultural stormwater exemption if the CAFOs implement and document basic nutrient management practices; see Title 40 of the *Code of Federal Regulations* (CFR) Part 122.42(e)(1)(vi)–(ix). EPA generally expects that the nutrient management requirements are being followed when a CAFO has developed and is implementing a comprehensive nutrient management plan (CNMP) in accordance with the U.S. Department of Agriculture (USDA) guidance. For permitted CAFOs, nutrient management plans (NMPs) developed and implemented as a condition of an NPDES permit must be based on applicable technical standards for nutrient management established by the NPDES permitting authority (40 CFR 412.4(c)(2)).

Definition: Animal Feeding Operations (AFOs), Concentrated Animal Feeding Operations (CAFOs)

To determine if an animal facility falls under the purview of the NPDES program, it is essential to understand the definition of an AFO and a CAFO established in the regulations. This chapter reflects the current NPDES regulations and Effluent Limitation Guidelines (ELGs) applicable to CAFOs under the Clean Water Act (CWA), including revisions to the regulations that the U.S. Environmental Protection Agency (EPA) finalized and published in the *Federal Register* (FR) in 2008 (40 CFR 122.23; 73 FR 70418). As a result of a challenge to the 2008 and subsequent Fifth Circuit Court decision, EPA issued a "Compiled CAFO Final Rule" on July 30, 2012 to remove vacated elements and to consolidate the 2008 and 2003 final CAFO rules into a single document. Those requirements are collectively referred to in this chapter as *the CAFO regulations*.

This section explains the definitions of an AFO and CAFO, it describes how the NPDES regulations apply to permitted CAFOs and what those permits contain. In addition, the section explains aspects of the NPDES regulations that may apply to large CAFOs even if they do not have an NPDES permit.

When Congress passed the CWA in 1972, it specifically included the term *concentrated animal feeding operation* in the definition of *point source*. CWA section 502(14). Before EPA defined the CWA term *concentrated animal feeding operations* in the 1976 CAFO regulations, the 1974 ELGs for the Feedlots Point Source Category, formerly 40 CFR 412.11(b), defined a *feedlot* to mean "a concentrated, confined animal or poultry growing operation for meat, milk or egg production, or stabling, in pens or houses wherein the animals or poultry are fed at the place of confinement and crop or forage growth or production is not sustained in the area of confinement." Similarly, the support documentation for the ELG (see, for example, EPA's *Development Document for the Final Revisions to the National Pollutant Discharge Elimination System Regulation and the Effluent Guidelines for Concentrated Animal Feeding Operation* (EPA, 2002)) distinguished between animals grown in feedlots and those grown in non-feedlot situations. The development document defines feedlot using the following three conditions:

7. A high concentration of animals held in a small area for periods in conjunction with one of the following purposes:

    a. Production of meat.
    b. Production of milk.

c. Production of eggs.
d. Production of breeding stock.
e. Stabling of horses.

8. The transportation of feed to animals for consumption.
9. By virtue of the confinement of animals or poultry, the land or area will neither sustain vegetation nor be available for crop or forage.

The 1976 rule defined which facilities were CAFOs, and therefore point sources under the CWA, and established permitting requirements for CAFOs. EPA's 1976 definition of CAFO draws on the definition of a CAFO from the 1974 feedlot definition. Although the definition of the term CAFO was further revised in the 2003 CAFO regulations, the types of facilities covered by the definition are nearly identical to those in the original definition of a feedlot.

A facility must first meet the definition of an AFO before it can be considered a CAFO. AFOs are defined as, "operations where 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 vegetation is not sustained in the confinement area during the normal growing season." 40 CFR 122.23(b)(1). EPA interprets *maintained* to mean that the animals are confined in the same area where waste is generated or concentrated. Areas where animals are maintained can include areas where animals are fed and areas where they are watered, cleaned, groomed, milked, or medicated.

Regulatory Citation

Animal feeding operation (AFO) means a lot or facility (other than an aquatic animal production facility) where the following conditions are met:

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

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

40 CFR 122.23(b)(1)

The first part of the regulatory definition of an AFO means that animals must be kept on the lot or facility for a minimum of 45 days in a 12-month period. If an animal is confined for any portion of a day, it is considered to be on the facility for a full day. For example, dairy cows that are brought in from pasture for less than an hour to be milked are counted as being confined (i.e., on the lot or facility) for the day. In addition, the same animals are not required to remain on the lot for 45 days or more for the operation to be defined as an AFO. Rather, the first part of the regulatory definition is met if some animals are fed or maintained on the lot or facility for 45 days out of any 12-month period. The 45 days do not have to be consecutive, and the 12-month period does not have to correspond to the calendar year. For example, June 1 to the following May 31 would constitute a 12-month period. Therefore, animal operations such as stockyards, fairgrounds, and auction houses where animals may not be fed, but are confined temporarily, may be AFOs.

Definition: "Sustained in the normal growing season"

The second part of the regulatory definition of an AFO distinguishes confinement areas from pasture or grazing land. That part of the definition relates to the portion of the facility where animals are confined and where natural forage or planted vegetation does not occur during the normal growing season. Confinement areas might have some vegetative growth along the edges while animals are present or during months when animals are kept elsewhere. If a facility maintains animals in an area without vegetation, such as dirt lots with incidental vegetative growth, the facility meets the second part of the AFO definition.

True pasture and rangeland operations are not considered AFOs because animals at those operations are generally maintained in areas that sustain crops or forage growth during the normal growing season. In some pasture-based operations, animals can freely wander in and out of areas for food or shelter; that is not considered confinement. In general, an area is a pasture if vegetation is maintained during the normal growing season. However, pasture and grazing-based operations can also have confinement areas (e.g., feedlots, barns, milking parlors, pens) that meet the definition of an AFO.

Incidental vegetation in a clear area of confinement would not exclude an operation from meeting the definition of an AFO. In the case of a winter feedlot, the second part of the AFO definition (i.e., no vegetation) is meant to be evaluated during the winter, when the animals are confined. Animals from a grazing operation can be confined during winter months in a confinement area that had vegetation during other parts of the year. If the animals are confined for more than 45 days but not year-round and vegetation emerges in the spring when animals are removed, the presence of vegetation does not prevent that feedlot from being defined as an AFO because the vegetation is growing when animals are not present. In that example, the feedlot will not sustain the vegetation that had emerged in spring once the animals are moved back into the feedlot. Therefore, the facility in the example meets the definition of an AFO. See Chapter 2 of EPA's *NPDES Permit Writers' Manual for CAFOs* (EPA, 2012a) for more information and examples of animal feeding operations.

Definition: Concentrated Animal Feeding Operations (CAFOs)

An AFO is a CAFO if it meets the regulatory definition of a large or medium CAFO (40 CFR 122.23 (b)(4) or (6)) or has been designated as a CAFO (40 CFR 122.23(c)) by the NPDES permitting authority or by EPA. Note that some authorized states have adopted regulatory definitions for CAFOs that are more inclusive and, therefore, broader in scope than EPA's regulations. Those facilities are subject to requirements under state law but not under federal law. See Chapter 2 of EPA's *NPDES Permit Writers' Manual for CAFOs* (EPA, 2012a) for more information and examples of concentrated animal feeding operations.

Types of Animal Operations Covered by CAFO Regulations

The CAFO regulations define a large CAFO based on the number of animals confined. Medium CAFOs are defined as meeting specific criteria in addition to the number of animals confined, and those criteria are discussed below. The animal types with specific threshold numbers for the Large and Medium size categories identified in the regulations are cattle, dairy cows, veal calves, swine, chickens, turkeys, ducks, horses, and sheep. An AFO that meets the small or

medium size thresholds can be designated as a CAFO by the permitting authority if certain criteria are met, including that the AFO is determined to be "a significant contributor of pollutants to waters of the United States" (40 CFR 122.23(c)).

Animal Types Not Listed in CAFO Regulations

An operation confining any animal type (e.g., geese, emus, ostriches, bison, mink, alligators) not explicitly mentioned in the NPDES regulations and for which there are no ELGs is subject to NPDES permitting requirements for CAFOs if 1) it meets the definition of an AFO, and 2) if the permitting authority designates it as a CAFO.

AFOs Defined as Large CAFOs

An AFO is a large CAFO if it stables or confines equal to or more than the number of animals specified in Table 15-1 for 45 days or more in a 12-month period. The definition of a large CAFO is based solely on the number of animals confined.

Table 15-1. Large CAFOs

Number of Animals	Type of Animal
700	Mature dairy cows, whether milked or dry
1,000	Veal calves
1,000	Cattle, other than mature dairy cows or veal calves (Cattle includes but is not limited to heifers, steers, bulls and cow/calf pairs.)
2,500	Swine, each weighing 55 pounds or more
10,000	Swine, each weighing less than 55 pounds
500	Horses
10,000	Sheep or lambs
55,000	Turkeys
30,000	Laying hens or broilers, if the AFO uses a liquid-manure handling system
125,000	Chickens (other than laying hens), if the AFO uses other than a liquid-manure handling system
82,000	Laying hens, if the AFO uses other than a liquid-manure handling system
30,000	Ducks, if the AFO uses other than a liquid-manure handling system
5,000	Ducks, if the AFO uses a liquid-manure handling system

Source: 40 CFR 122.23(b)(4)

In determining whether the applicable Large CAFO threshold is satisfied, the number of animals actually maintained is considered, not the capacity of the operation.

Practices Constituting Liquid-Manure Handling at Poultry Operations

The thresholds for chicken and duck AFOs in the CAFO definitions are based on the type of litter or manure handling system being used. The two systems are either a *liquid-manure handling system* or *other-than-a-liquid-manure handling system*. The animal number thresholds that determine whether the system is a CAFO for a chicken or duck AFO using a liquid-manure handling system are lower than the thresholds for CAFOs that use other-than-liquid-manure handling systems.

An AFO is considered to have a liquid-manure handling system if it uses pits, lagoons, flush systems (usually combined with lagoons), or holding ponds, or has systems such as continuous overflow watering, where the water contacts manure and litter. In addition, operations that stack or pile manure in areas exposed to precipitation are considered to have liquid-manure handling systems. That includes operations that remove litter from the confinement area and stockpile or store it uncovered in remote locations for even one day.

However, permitting authorities may authorize some limited period of temporary storage of litter of no more than 15 days that would not result in the facility meeting the definition of a liquid-manure handling system (e.g., where time is needed to allow for contract hauling arrangements and precipitation does not occur) (EPA, 2003). If litter is stockpiled beyond that temporary period, the uncovered stockpile would constitute a liquid-manure handling system, and the lower CAFO thresholds for chickens and ducks would apply (see Table 15-1 and Table 15-2).

Wet Lot and Dry Lot Duck Operations

Duck operations are considered to use a liquid-manure handling system if 1) the ducks are raised outside with swimming areas or ponds or with a stream running through an open lot, or 2) the ducks are raised in confinement buildings where fresh or recycled water is used to flush the manure to a lagoon, pond, or other storage structure. In addition, a duck operation that stacks manure or litter as described above for other dry poultry operations is considered to have a liquid-manure handling system.

Dry-lot duck operations include those that 1) use confinement buildings and handle manure and litter exclusively as dry material; 2) use a building with a mesh or slatted floor over a concrete pit from which manure is scraped into a solid manure storage structure; or 3) use dry bedding on a solid floor. Dry-lot duck operations are generally considered to be "operations that use other than a liquid-manure handling system."

Definition: Production Area

Production area means that part of an AFO that includes the animal confinement area, the manure storage area, the raw materials storage area, and the waste containment areas. The animal confinement area includes but is not limited to open lots, housed lots, feedlots, confinement houses, stall barns, free stall barns, milk rooms, milking centers, cow yards, barnyards, medication pens, walkers, animal walkways, and stables. The manure storage area includes but is not limited to lagoons, run-off ponds, storage sheds, stockpiles, under house or pit storages, liquid impoundments, static piles, and composting piles. The raw materials storage area includes but is not limited to feed silos, silage bunkers, and bedding materials. The waste containment area includes but is not limited to settling basins, and areas within berms and diversions, which separate uncontaminated stormwater. Also included in the definition of production area is any egg-washing or egg-processing facility, and any area used in the storage, handling, treatment, or disposal of mortalities (40 CFR 122.23(b)(8)).

Definition: Land Application Area

The land application area means all land under the control of the CAFO owner or operator, including where the CAFO owns, rents, or leases the land to which manure from the production area is applied (40 CFR 122.23(e)(3)). It includes situations where a CAFO determines when and how much manure is applied to fields not owned, rented, or leased by the CAFO.

Definition: Process Wastewater

Process wastewater means water directly or indirectly used in the operation of the AFO for any or all of the following: spillage or overflow from animal or poultry watering systems; washing, cleaning, or flushing pens, barns, manure pits, or other AFO facilities; direct contact swimming, washing, or spray cooling of animals; or dust control. Process wastewater also includes any water that contacts any raw materials, products, or byproducts, including manure, litter, feed, milk, eggs, or bedding (40 CFR 122.23(b)(7)).

AFOs that Are Medium CAFOs

An AFO is a medium CAFO if it meets both parts of a two-part definition. The first part addresses the number of animals confined, and the second part includes specific discharge criteria. In addition, a medium-sized AFO can be designated a CAFO by the permitting authority or EPA. Table 15-2 lists the animal number ranges associated with the medium CAFO definition. If an AFO confines the number of animals listed in Table 15-2 for 45 days or more in a 12-month period, it meets the first part of the definition of a medium CAFO.

An AFO meets the discharge criteria for the second part of the medium CAFO definition if pollutants are discharged in one of the following ways:

- Into waters of the United States through a man-made ditch, flushing system, or another similar man-made device.
- Directly into waters of the United States that originate outside the facility and pass over, across, or through the facility or otherwise come into direct contact with the confined animals.

If the inspector identifies an unpermitted facility that is a medium CAFO, that CAFO is, by definition, discharging to a water of the United States and must either apply for an NPDES permit or permanently eliminate the source of the discharge (40 CFR 122.23(b)(6)).

Table 15-2. Medium CAFOs

Number of Animals	Type of Animal
200–699	Mature dairy cows, whether milked or dry
300–999	Veal calves
300–999	Cattle, other than mature dairy cows or veal calves (Cattle includes but is not limited to heifers, steers, bulls and cow/calf pairs.)
7502,499	Swine, each weighing 55 pounds or more

Table 15-2. Medium CAFOs

Number of Animals	Type of Animal
3,000–9,999	Swine, each weighing less than 55 pounds
150–499	Horses
3,000–9,999	Sheep or lambs
16,500–54,999	Turkeys
9,000–29,999	Laying hens or broilers, if the AFO uses a liquid-manure handling system
37,500–124,999	Chickens (other than laying hens), if the AFO uses other than a liquid-manure handling system
25,000–81,999	Laying hens, if the AFO uses other than a liquid-manure handling system
10,000–29,999	Ducks, if the AFO uses other than a liquid-manure handling system
1,500–4,999	Ducks, if the AFO uses a liquid-manure handling system

Source: 40 CFR 122.23(b)(6).

Definition: Man-Made Devices

The term *man-made device* means a conveyance constructed or caused by humans that transports wastes (manure, litter, or process wastewater) to waters of the United States (EPA, 1995). Man-made devices include, for example, pipes, ditches, and channels. If human action was involved in creating the conveyance, it is man-made even if natural materials were used to form it. A man-made channel or ditch that was not created specifically to carry animal wastes but nonetheless does so is considered a man-made device. To be defined as a medium CAFO, there must be an actual discharge of pollutants to waters of the United States. However, it is not necessary for the man-made device to extend the entire distance to waters of the United States. It is sufficient that the wastes being discharged flow through the man-made device. For example, a culvert could simply facilitate the flow of wastewater from one side of a road to another (and subsequently into a water of the United States) and is a man-made device for the purposes of this provision. Also, a flushing system is a man-made device that uses fresh or recycled water to move manure from the point of deposition or collection to another location.

Tile drains in the production area are another example of a man-made device. Tile drains are underground pipes that collect subsurface water for transport away from the site. If tile drains discharge manure to waters of the United States from the production area of a medium-sized AFO, the facility meets the discharge criterion for the medium CAFO definition and is a medium CAFO. An additional example would be the discharge to waters of the United States from a continuous-flow-through water trough system.

The medium CAFO definition addresses discharges directly into a water of the United States, which originate outside the facility and pass over, across, or through the facility or otherwise come into direct contact with the confined animals. The discharge criterion is met if animals in confinement at an AFO can come into direct contact with waters of the United States. Thus, a stream running through the area where animals are confined indicates that there is a direct

discharge of pollutants unless animals are prevented from any direct contact with waters of the United States.

Operations under Common Ownership

Under the CAFO regulations, two or more AFOs under common ownership are considered one operation if, among other things, they adjoin each other (including facilities that are separated only by a right-of-way or a public road) or if they use a common area or system for managing wastes (40 CFR 122.23(b)(2)). For example, operations generally meet the criterion where manure, litter, or process wastewater are commingled (e.g., stored in the same pond, lagoon, or pile) or are applied to the same cropland.

In determining whether two or more AFOs are under common ownership, the number of managers is not important. Two AFOs could be managed by different people but have a common owner (e.g., the same family or business entity owns both). For facilities under common ownership that either adjoin each other or use a common area or system for waste disposal, the cumulative number of animals confined is used to determine if the combined operation is a large CAFO and is used in conjunction with the discharge criteria to determine if the combined operation is a medium CAFO.

Operations with Multiple Animal Types

Under the CAFO regulations, multiple types of animals are not counted together to determine the type and size of a CAFO. However, once an operation is defined as a CAFO based on a single animal type, all the manure generated by all animals confined at the operation is subject to NPDES requirements. If wastestreams from multiple livestock species subject to different regulatory requirements are commingled at a CAFO, any NPDES permit for the facility must include the more stringent ELG requirements (2003 CAFO Rule—68 FR 7176 and 7195). In situations where immature animals (e.g., heifers and swine weighing less than 55 lbs.) are confined along with mature animals, the determination of whether the operation is defined as a CAFO depends on whether the mature or immature animals separately meet the applicable threshold. Operations that specialize in raising only immature animals (heifers, swine weighing less than 55 lbs., and veal calves) have specific thresholds under the regulations. However, once an AFO is defined as a CAFO, manure generated by all the animals in confinement would be addressed by the CAFO's NPDES permit if it is a permitted CAFO.

An operation that confines multiple animal types, where no one type meets the large or medium CAFO threshold, can be designated as a CAFO if it is found to be a significant contributor of pollutants to waters of the United States.

AFOs Designated as CAFOs

The CAFO regulations set the standards for the Director (either the Regional Administrator or the NPDES permitting authority) to designate any AFO as a CAFO if the AFO is a significant contributor of pollutants to waters of the United States (40 CFR 122.23(c)). The Director may designate any AFO as a CAFO on a case-by-case basis if he determines that the AFO is a significant contributor of pollutants to waters of the United States as specified in 40 CFR 122.23(c). AFO operations that may be considered for designation include the following:

- A medium-sized AFO that is not defined as a CAFO and is determined to be a significant contributor of pollutants to waters of the United States.
- A small AFO (i.e., confines fewer than the number of animals defined in Table 15-2) that meets one of the methods of discharge criteria in 40 CFR 122.23(c)(3)(i) and (ii) and is determined to be a significant contributor of pollutants to waters of the United States.
- An AFO that raises animals other than species identified in the regulatory definitions of large and medium CAFOs and is determined to be a significant contributor of pollutants to waters of the United States. Examples of such AFOs include geese, emus, ostriches, llamas, minks, bison, and alligators.

For an AFO to be designated as a CAFO, the Director must determine that the AFO is a significant contributor of pollutants to waters of the United States (40 CFR 122.23(c)). Once an operation is designated as a CAFO, it must seek coverage under an NPDES permit and, among other things, develop and implement an NMP.

Under the regulations at 40 CFR 122.23(c)(3), an AFO may not be designated as a CAFO until the NPDES permitting authority or EPA has determined that the operation should and could be regulated under the permit program and has conducted an inspection of the operation. In addition, a small AFO may not be designated as a CAFO unless it also meets the small AFO discharge criteria (40 CFR 122.23(c)(3)(i) and (ii)) and is determined to be a significant contributor of pollutants to waters of the United States.

CAFO Program as it Applies to Unpermitted CAFOs

When inspecting unpermitted facilities, the inspector should gather information to determine if the facility is a CAFO.[12] For a CAFO with no NPDES permit, any discharge of pollutants from a CAFO's production area to a water of the United States is a violation of the CWA, as is any discharge from the CAFO's land application areas that is not agricultural stormwater.

By definition, medium CAFOs and designated small CAFOs have discharges of pollutants to waters of the United States. These facilities must apply for an NPDES permit or eliminate the cause of the discharge.

Large Unpermitted CAFOs and the Agricultural Stormwater Exemption

Large unpermitted CAFOs may or may not have discharges to waters of the United States. If a large CAFO currently has or had in the past, discharges of pollutants from its production area to a water of the United States, those discharges are in violation of the CWA. Again, the large CAFO will need to apply for a permit or permanently remedy the cause of the discharge.

Section 502(14) of the CWA excludes from the definition of a point source **agricultural stormwater discharges**. A precipitation-related discharge of manure, litter, or process wastewater to waters of the United States from land application areas under the control of a

[12] Note that throughout this chapter, "unpermitted CAFO" refers to a CAFO without a Clean Water Act NPDES permit. This includes CAFOs that have a permit issued pursuant to state law that is not considered to be an NPDES permit.

Large **unpermitted** CAFO is a violation of the CWA **except** under certain conditions. The land application area means all land under the control of the CAFO owner or operator, including where the CAFO owns, rents, or leases the land to which manure from the production area is applied (40 CFR 122.23(e)(3)). It includes situations where a CAFO determines when and how much manure is applied to fields not owned, rented, or leased by the CAFO.

For a Large unpermitted CAFO's discharge to meet the definition of agricultural stormwater, the CAFO must land apply its manure in accordance with site-specific nutrient management practices that ensure appropriate agricultural utilization of the nutrients in the manure, litter, or process wastewater, as specified in Part 122.42(e)(1)(vi) through (ix). See Chapter 4 of EPA's *NPDES Permit Writers' Manual for CAFOs* (EPA, 2012a) for more information on the agricultural stormwater exemption.

The regulations at 40 CFR 122.42 (e)(1)(vi) through (ix) require the unpermitted large CAFO to:

- Implement appropriate site-specific conservation practices, including as appropriate buffers or equivalent practices, to control runoff of pollutants to waters of the United States.
- Follow protocols for appropriate testing of manure, litter, process wastewater, and soil.
- Follow protocols to land apply manure, litter or process wastewater in accordance with site-specific nutrient management practices that ensure appropriate agricultural utilization of the nutrients in the manure, litter or process wastewater.
- Maintain specific records that document the implementation and management of the minimum elements described above.

Inspectors should evaluate the protocols and practices implemented by the unpermitted large CAFO against all applicable state technical standards that are part of the authorized state NPDES program pursuant to 40 CFR 123.36. State technical standards may include sampling and analysis methods, prohibitions on land application during certain times of the year, or on frozen or saturated soils, etc. See Chapter 6 of the *NPDES Permit Writers' Manual for CAFOs* (EPA, 2012a) for more information on technical standards. Finally, the unpermitted large CAFO must maintain documentation of its manure land application practices either on-site or at a nearby office, and make these records available to the inspector upon request (40 CFR 122.42(e)(1)(ix)).

If a Large unpermitted CAFO does not meet these requirements it is not covered by the agriculture stormwater exemption and discharges to waters of the United States from the land application area are in violation of the Clean Water Act. Discharges occurring during dry weather can never be exempt as agricultural stormwater.

Large unpermitted CAFOs may have additional discharges not specifically addressed in the ELG or CAFO regulations, either from the production area or from outside the production area. They are also subject to industrial stormwater permitting requirements of 40 CFR 122.26. Large CAFOs, as defined in 40 CFR 122.23 and 412 are included in category (i) of facilities considered

to be engaging in industrial activity under 40 CFR 122.26 (b)(14). As a result, large CAFOs are subject to the requirements of 40 CFR 122.26 regardless of whether they are a permitted facility under 40 CFR 122.23. The requirements of 40 CFR 122.26 apply to any stormwater discharge from a large CAFO that is associated with industrial activity at a large CAFO that is not otherwise regulated under 40 CFR 122.23 and 412. CAFOs that are permitted to discharge pursuant to 40 CFR 122.23 and 122.26 may have both sets of requirements included in a single permit or in separate wastewater and stormwater permits. CAFOs subject to industrial stormwater requirements may qualify for the conditional exclusion provided in 40 CFR 122.26(g) for no exposure certifications for stormwater discharges. CAFOs may also be subject to stormwater permitting requirements for construction activity under 40 CFR 122.26(b)(14)(x) or (b)(15).

NPDES CAFO PERMITS

Applications and Notice of Intent

NPDES permitting authorities have two options for issuing NPDES permits to CAFOs: individual permits and general permits. CAFO owners and operators who seek permit coverage must either submit an application for an individual permit or submit a Notice of Intent (NOI) (or permitting authority's comparable form) for coverage under a general permit, if a general permit is available (40 CFR 122.23(d)(1)). EPA requires applicants who seek coverage under either individual or general CAFO permits to provide, at a minimum, the information listed in Table 15-3. The NPDES permitting authority may request additional information from the applicant and use other CWA information-gathering authorities, such as CWA section 308, to obtain such information.

Table 15-3. Information Required on NPDES Application Forms 1 and 2B

Form 1 (all NPDES individual permit applicants) 40 CFR 122.21 (f)
Activities conducted by the applicant that require an NPDES permit
Name, mailing address, and location of facility
Up to four Standard Industrial Classification codes that best reflect the principal products or services provided
Operator's name, address, and telephone number and ownership status
Whether the facility is on Indian lands
List of all other state or federal permits or construction approvals received or applied for under CWA, Resource Conservation and Recovery Act (RCRA), Safe Drinking Water Act (SDWA), etc.
Brief description of the nature of the business
Form 2B (CAFOs) 40 CFR 122.21 (i)
The name, address, and telephone number of the owner or operator
Whether the application is for an existing or proposed facility
Facility name, address, and telephone number
Latitude and longitude of the production area
Name and address of integrator for contract operations
Specific information about the number and type of animals, whether in open confinement or housed under roof
Total number of acres under control of the applicant available for land application of manure, litter, or process wastewater

Table 15-3. Information Required on NPDES Application Forms 1 and 2B

Estimated amounts of manure, litter, and process wastewater generated per year
Estimated amounts of manure, litter, and process wastewater transferred to other persons per year
Topographic map of the geographic area in which the CAFO is located showing the specific location of the production area
Containment and storage type and storage capacity for manure, litter, and process wastewater
A nutrient management plan that satisfies the requirements specified in 40 CFR 122.42(e), including, for all CAFOs subject to 40 CFR Part 412, Subpart C or Subpart B, the requirements of 40 CFR 412.4(c), as applicable
Indication of whether a nutrient management plan is being implemented
Date of last nutrient management plan review or revision
Description of alternative uses of manure, litter, and process wastewater
Identification of land application best management practices implemented

Source: Program Question and Answer Document Volume 1 (EPA, 1992).

Elements of a CAFO Permit

NPDES Effluent Limitations and Standards

Section 301(a) of the CWA prohibits the discharge of pollutants from a point source into waters of the United States unless the discharge complies with other provisions of the CWA, including the requirement for a discharge to be authorized under an NPDES permit. Effluent limitations serve as the primary mechanism in NPDES permits for minimizing discharges of pollutants to receiving waters. Technology-based effluent limits are included in NPDES permits to achieve a level of treatment of pollutants for point source discharges based on the applicable level of control according to technologies specific to that industry. If technology-based limits are insufficient to meet applicable water quality standards, more stringent water quality-based effluent limitations can be included in the permit (CWA section 301(b)(1)(C)).

Overview of Technology-Based Effluent Limitations and Standards

Technology-based effluent limitations and standards for CAFOs must address all discharges from a CAFO (40 CFR 122.42(e)). As discussed below, technology-based standards are established through a national ELG for some CAFO discharges. All other discharges must be addressed through technology-based effluent limitations developed on a case-by-case basis using best professional judgment, or a combination of the two methods (40 CFR 125.3). In general, CAFO permits will include limits for process wastewater discharges from the CAFO's production area and land application area.

The production area at a CAFO includes the animal confinement areas and other parts of the facility, including manure storage areas, raw materials storage areas, and waste containment areas (40 CFR 122.23(b)(8)). The land application area means all land under the control of the CAFO owner or operator, including where the CAFO owns, rents, or leases the land to which manure from the production area is applied (40 CFR 122.23(e)(3)). It includes situations where a CAFO determines when and how much manure is applied to fields not owned, rented, or leased by the CAFO. The regulation at 40 CFR 412 contains the ELG applicable to CAFOs. The CAFO ELG

establishes the technology-based effluent limitations and new source performance standards (NSPS) for those operations that meet the regulatory definition of a large CAFO.

ELG for Animal Sectors

The ELGs for CAFOs are broken into the following subparts addressing specific animal sectors shown in Table 15-4 below.

Table 15-4. Effluent Limitation Summary

Animal Sector	ELG Technology-based Limits
Large CAFOs	40 CFR Part 412
Subpart A—Horses and sheep	40 CFR 412.13
Subpart B—Ducks	40 CFR 412.22
Subpart C—Dairy cows and cattle other than veal calves	40 CFR 412.33, 412.37
Subpart D—Swine, poultry, and veal calves	40 CFR 412.45, 412.47

All four subparts include specific discharge limitations. Subparts A and B contain technology-based requirements for the production area only. Subparts C and D include technology-based requirements for both production areas and land application areas under the control of the CAFO owner or operator.

CAFOs That Are New Sources

The term *new source* is defined in 40 CFR 122.2, and the criteria for determining a new source is identified at 40 CFR 122.29(b). Only large CAFOs can be new sources subject to NSPS requirements promulgated in accordance with CWA section 306 (as provided in 40 CFR Part 412). The new source criteria in 40 CFR 122.29(b) are used to determine which large CAFOs are defined as new sources.

CAFOs That Are New Dischargers

An AFO that is 1) newly constructed; 2) implements changes so that it meets the definition of a CAFO; or 3) that is designated as a CAFO is a *new discharger* if it is not a new source. A new discharger is an AFO that becomes a CAFO either through definition or designation and is not a new source (i.e., subject to NSPS). Such operations could be a CAFO for one of the following reasons: 1) the facility is newly constructed (but not subject to NSPS and therefore not a *new source*); 2) the facility has changed some aspect of its operations such that it becomes defined as a medium CAFO or designated as a small or medium CAFO.

Technology-Based Requirements for the Production Area of Large CAFOs

Operations Covered by Subpart A— Horses and Sheep

The ELG requirements for Subpart A (40 CFR 412.10–15) address the production area only. Any additional technology-based requirements for discharges from the CAFO must be developed using BPJ.

Existing and new large CAFOs that confine horses and sheep may not discharge manure or process wastewater (which includes horse wash-down water) pollutants to waters of the United States from the CAFO (i.e., *no-discharge* standard). The only exception to the no-

discharge standard is an overflow that occurs because of a rainfall event from a permitted facility that is designed, constructed, operated, and maintained to contain all process wastewater plus the runoff from a 25-year, 24-hour rainfall event for the location of the CAFO (40 CFR 412.13 and 412.15).

Operations Covered by Subpart B—Ducks

The ELG requirements for Subpart B (40 CFR 412.20–26) address the production area only. The ELG distinguishes between two types of manure handling systems in the production area of duck operations (*wet lot* and *dry lot*). Any additional technology-based requirements for discharges from the CAFO must be developed on a BPJ basis (40 CFR 125.3(a)).

All duck operations constructed before 1974 subject to the ELG must meet specific discharge limitations established by 40 CFR 412.22. Those are the only numeric limitations in the CAFO ELGs.

OPERATIONS COVERED BY SUBPART C—DAIRY COWS AND CATTLE OTHER THAN VEAL CALVES AND BY SUBPART D—SWINE, POULTRY AND VEAL CALVES

Existing Sources—Subparts C and D

The ELG requirements for subparts C and D (40 CFR 412.30–37 and 412.40–47) address both the production area and the land application area. This section addresses the technology-based requirements associated with the production area. Subpart C includes requirements for large CAFOs that confine dairy cattle and cattle other than veal calves, and Subpart D includes large CAFOs that confine swine, poultry and veal calves. The requirements in Subpart C are identical for existing sources and new sources. The requirements in Subpart D differ for existing and new sources. The new source requirements for Subpart D are addressed below.

Existing sources subject to Subparts C and D and new sources subject to Subpart C are subject to a no-discharge requirement. Those operations may not discharge manure into waters of the United States from the production area (Subpart C—40 CFR 412.31(a), 412.32(a), and 412.33(a); Subpart D—40 CFR 412.43(a), 412.44(a), and 412.45(a)). The only exception to that no-discharge standard is when precipitation causes an overflow, provided that the production area is designed, constructed, operated, and maintained to contain all manure, litter, and process wastewater including the runoff and direct precipitation from a 25-year, 24-hour rainfall event.

To ensure that a facility meets the no-discharge standard, the CAFO must ensure that the production area has adequate storage structures that are designed, constructed, operated, and maintained to contain all manure, litter, and process wastewater including the runoff and direct precipitation from a 25-year, 24-hour rainfall event. An important consideration of whether the CAFO meets the ELG requirements is whether it has adequate storage or treatment structure capable of containing all manure, litter, and process wastewater that accumulate during the critical storage period. To comply with the ELG, the storage volume in the production area must contain all those wastes.

To meet the no-discharge requirement, the CAFO must operate the production area in accordance with additional measures and recordkeeping requirements specified in 40 CFR 412.37(a)–(b) and 412.47(a)–(b). Those include requirements for routine visual inspections of the production area, the use of depth markers for liquid impoundments, corrective action when deficiencies are identified, and mortality handling. Records must be maintained on-site, including records for each of the above measures, and records documenting the design of storage structures and any overflows that occur.

Voluntary Performance Standards

The voluntary alternative performance standards provisions in 40 CFR 412.31(a)(2) apply to existing sources subject to Subpart C and D and new sources subject to Subpart C. This provision applies only to discharges from the production area. The provision for alternative performance standards allows a CAFO owner or operator to request from the Director NPDES permit effluent limitations according to site-specific alternative technologies where the CAFO can establish that the alternative technologies will achieve a quantity of pollutants discharged from the production area equal to or less than the quantity of pollutants that would be discharged under applicable baseline effluent guidelines performance standards.

New Source Performance Standards—Subparts C and D

As discussed in the previous section, Large Subpart C beef and dairy CAFOs that are new sources have the same production area requirements as existing Subpart C operations. Large Subpart D swine, poultry, and veal calf CAFOs that are new sources are subject to the NSPS (40 CFR 412.46).

Like existing sources subject to Subpart D, new sources under Subpart D may not discharge manure, litter, or process wastewater into waters of the United States from the production area and are required to comply with the additional measures and recordkeeping requirements at 40 CFR 412.47(a) and (b).

Unlike the requirements for existing sources, 40 CFR 412.46 does not allow an exception for new sources to the no discharge requirement. Rather, a CAFO subject to the requirements of 40 CFR 412.46 must either 1) have an absolute prohibition of any discharge from its production area as a condition of its permit, or 2) request the permitting authority to "establish NPDES best management practice effluent limitations designed to ensure no discharge…" whereby the facility can satisfy the no discharge effluent limitation (40 CFR 412.46(a)(1)). See Chapter 4 in the *NPDES Permit Writers' Manual for CAFOs* (EPA, 2012a) for more information.

New sources subject to Subpart D using an open storage structure must have a depth marker to indicate the maximum volume of manure and process wastewater the structure is designed to contain (whereas existing sources and new sources subject to Subpart C must use a depth marker that indicates the 25-year, 24-hour storm event).

An important consideration of whether a CAFO meets the NSPS alternative is if it has an adequate storage or treatment structure capable of containing all manure that accumulates

during the critical storage period. To comply with the NSPS, the storage volume in the production area must contain all wastes.

The definition of a New Source and the requirements for New Sources and their applicability may be complex, depending on the circumstances at an individual facility. Refer to Chapter 4 of the *NPDES Permit Writers' Manual for CAFOs* (EPA, 2012a) for more detailed information.

Requirements for the Production Area of Large CAFOs

Even for CAFOs subject to a no-discharge, technology-based standard for the production area, situations could arise where the permit imposes more stringent requirements for allowable discharges. Specifically, more stringent discharge limitations are necessary in instances where CAFOs discharge from a production area to a waterbody listed under CWA section 303(d) as impaired due to nutrients, dissolved oxygen or bacteria, or where an analysis of frequency, duration and magnitude of the anticipated discharge (consisting of potential overflows of manure, litter, or process wastewater) indicates the reasonable potential to violate applicable water quality standards.

Technology-Based Requirements for the Land Application Area of Large CAFOs

Each CAFO subject to the ELG requirements in subparts C and D that land applies manure must do so in accordance with certain practices that constitute the technology-based effluent limitations for the land application area (40 CFR 412.4 and 412.37(c)).

A general description of the practices required by 40 CFR 412.4 follows.

- Develop and implement a field-specific NMP that fully incorporates the other requirements of 40 CFR 412.4 concerning land application.
- Land apply manure at application rates that minimize nitrogen and phosphorus transport from the field to waters of the United States in compliance with the technical standards for nutrient management established by the permitting authority. The technical standard for nutrient management must include a field-specific assessment of the potential for nitrogen and phosphorus transport from the field to waters of the United States and address the form, source, amount, timing, and method of application of nutrients on each field to achieve realistic production goals while minimizing nitrogen and phosphorus movement to waters of the United States. The standard must also include appropriate flexibility for any CAFO to implement nutrient management practices to comply with the standard such as consideration of multiyear phosphorus applications to fields that do not have a high potential for phosphorus runoff to waters of the United States and phased implementation of phosphorus-based nutrient management, as determined appropriate by the Director.
- Analyze manure at least once a year for nitrogen and phosphorus content, and analyze soil at least once every five years for phosphorus content. The results of the analyses are to be used in determining application rates for manure, litter, and other process wastewater.

- Periodically inspect equipment used for land application of manure for leaks (before each application is recommended to ensure the manure is delivered at the proper rate of application).
- Implement a minimum setback for manure application of 100 feet from surface waters and conduits to surface waters; or substitute with a 35-foot vegetated buffer, or other alternatives where the CAFO demonstrates equivalent pollutant reductions.
- Complete on-site records documenting implementation of all required best management practices (BMPs) and any additional records specified by the permitting authority.

Many states have unique requirements for developing an NMP. The EPA regulations establish the minimum requirements for NPDES permitted CAFOs. States may require more stringent requirements, and in many instances states have established additional requirements to address land application. For example, many states require more frequent soil analysis than is required by 40 CFR 412.4(c)(3). In recognition of that, 40 CFR 412.4(c)(2) requires application rates for land application of manure, litter, and process wastewater to be in compliance with technical standards for nutrient management established by the Director. The regulations at 40 CFR 123.36 require that the state's technical standards be a part of every approved state's NPDES program.

EPA has encouraged states to address water quality protection issues when determining appropriate land application practices as part of their technical standards for nutrient management. At a minimum, the permitting authority must include in the technical standard the following components:

- A field-specific assessment of the potential for nitrogen and phosphorus transport from the field to waters of the United States.
- The form, source, amount, timing, and method of application of nutrients on each field to achieve realistic production goals, while minimizing nitrogen and phosphorus movement to waters of the United States.
- Appropriate flexibility for CAFOs to implement the standard (e.g., multiyear phosphorus banking).

The state technical standards will provide additional specificity to key nutrient management provisions in the ELG. The standards should include additional information, such as soil and manure sampling and analysis protocols, application methods, and plan content requirements. The state technical standards are also considered to determine if a facility meets the requirements to be covered by the agriculture stormwater exemption. To meet the exemption requirements, a facility's nutrient management planning must meet all appropriate state technical standards (e.g., use correct sampling and analysis methods). CAFOs that land apply using nutrient management practices based on standards other than the technical standards established by the Director would have to demonstrate that such practices ensure the

appropriate agricultural utilization of the nutrients in the manure, litter, or process wastewater as specified in 40 CFR 122.42(e)(1)(viii).

Requirements for the Land Application Area of Large CAFOs

As discussed, all permitted CAFOs are required to develop and implement an NMP. When a permitted CAFO implements an NMP in accordance with its permit requirements, any remaining precipitation related discharges of manure are considered agricultural stormwater. For large CAFOs subject to the ELG, that also means that the NMP must comply with permit requirements that implement the ELG, including technical standards established by the Director for nutrient management. For facilities not subject to the ELG, it means that the NMP must comply with permit requirements that implement 40 CFR 122.42(e) and any additional nutrient management requirements developed by BPJ. As previously mentioned, by definition, the agricultural stormwater exemption applies only to precipitation-related discharges.

BEST PROFESSIONAL JUDGMENT (BPJ)

NPDES permit limitations are based on BPJ when national ELGs have not been issued pertaining to an industrial category or process. Specifically, the NPDES regulations require a permit writer to establish permit limitations on a case-by-case BPJ basis when ELGs are inapplicable, or in combination with the effluent guidelines, where the ELG apply to only certain aspects of the operation or certain pollutants (CWA section 402(a)(1); 40 CFR 122.44(k)). As explained, ELGs have been promulgated for only those operations that meet the regulatory definition of a large CAFO, and apply to the production area for subparts A, B, C, and D, and land application area for subparts C and D. For example, there is no ELG for small or medium CAFOs or for exotic animal species. Exotic animal species are those not specifically identified in the ELG, for example: llamas, geese, or ostriches. Nonetheless, just as for any other permitted facility, the CWA requires that an NPDES permit for small, medium, and exotic animal CAFOs include technology-based effluent limitations.

OTHER TECHNOLOGY-BASED LIMITATIONS THAT APPLY TO DISCHARGES FROM CAFOS

CAFOs may have additional discharges not specifically addressed in the ELG or CAFO regulations, either from the production area or from outside the production area. Those include but are not limited to the following:

- Process wastewater discharges from outside the production area, such as wash-down of equipment that has been in contact with manure, raw materials, products or by-products that occurs outside the production area.
- Discharges that do not meet the definition of process wastewater, such as domestic wastewater discharges; chiller water; discharges associated with feed, fuel, chemical, or oil spills, and equipment repair.
- Discharges of pollutants from poultry, swine, and veal calf animal confinement houses that are not covered by the ELG. Those include removal of animals and cleaning out houses, and runoff associated with fan exhaust deposits outside the houses.

A CAFO permit should address discharges such as those above and establish BAT/BCT limits developed on a BPJ basis. The determination of whether to apply the no-discharge standard to areas other than those that are covered by the ELG (animal confinement area, manure storage area, waste containment area, and so on) is a site-specific determination that must be made by the permitting authority. EPA and states can begin the BPJ analysis with an evaluation based on the no-discharge standard, because that is the applicable standard most closely related to those facilities (see discussion of BPJ-based limits in Chapter 4.1.4. of EPA's *NPDES Permit Writers' Manual for CAFOs* (EPA, 2012a)).

WATER QUALITY-BASED EFFLUENT LIMITATIONS AND STANDARDS

All NPDES permits must include technology-based effluent limitations. However, a permit must also include more stringent water quality-based limitations when such limitations are necessary to meet water quality standards (CWA sections 402(a) and 301(b)(1)(C)).

REQUIREMENTS FOR THE LAND APPLICATION AREA OF PERMITTED LARGE CAFOS

As discussed, all permitted CAFOs are required to develop and implement an NMP. When a permitted CAFO implements an NMP in accordance with its permit requirements, any remaining precipitation related discharges of manure are considered agricultural stormwater. For large CAFOs subject to the ELG, that also means that the NMP must comply with permit requirements that implement the ELG, including technical standards established by the Director for nutrient management. For facilities not subject to the ELG, it means that the NMP must comply with permit requirements that implement 40 CFR 122.42(e) and any additional nutrient management requirements developed by BPJ. As previously mentioned, by definition, the agricultural stormwater exemption applies only to precipitation-related discharges.

An NMP is a detailed planning document that identifies conservation practices and management activities that, when implemented, help to ensure that both production and natural resource protection goals are achieved. The objective of an NMP is to document those practices and activities that will help achieve the goals of the producer and protect or improve water quality.

Permitted CAFOs must comply with the terms of their NMP. As discussed above, the ELGs establish more specific nutrient management requirements for Large dairy, cattle, swine, poultry, and veal calf CAFOs. One of those requirements is that the manure application rates in those CAFOs' NMPs must minimize phosphorus and nitrogen transport to surface waters in compliance with technical standards for nutrient management established by the Director.

The CAFO regulations at 40 CFR 123.36 require states to establish technical standards for nutrient management that are consistent with 40 CFR 412.4(c)(2). The regulations include basic requirements for elements that each state's technical standards for nutrient management must include.

- The state technical standards will provide additional specificity to key nutrient management provisions in the ELG. The standards should include additional

information, such as soil and manure sampling and analysis protocols, application methods, and plan content requirements.

EPA's *NPDES Permit Writers' Manual for CAFOs* (EPA, 2012a) provides more detail on EPA's expectations for the content of state technical standards for nutrient management. It is important for inspectors to be familiar with the applicable technical standards for each inspected CAFO. The CAFO's permit will include terms of the NMP, which have been reviewed by the permit writer to ensure the NMP and associated terms are consistent with the state's technical standards for nutrient management. However, inspectors will need to understand the scope and content of the technical standards to adequately evaluate NMP implementation. In addition, for Large unpermitted CAFOs, the inspector needs to understand the state's technical standards to determine if the CAFO's nutrient management practices meet the standards and thus if the CAFO qualifies for the agricultural stormwater exemption.

Soil science and Soil Fertility

To fully understand nutrient management at a CAFO, the CAFO inspector should be aware of the basic principles of soil science and soil fertility. Key concepts include nutrient cycling in soils, the factors that influence plant availability of nutrients and crop uptake, as well as the mechanisms and factors that affect nutrient loss from agricultural soils. These concepts are used to develop and implement an NMP and some familiarity with the concepts will allow the CAFO inspector to understand and evaluate NMP implementation. See Appendix AE, "Management/Soil Science," which describes basic nutrient management and soil science concepts for CAFO inspectors. CAFO inspectors may also refer to Appendix A of EPA's *NPDES Permit Writers' Manual for CAFOs* (EPA, 2012a), which provides a more thorough introduction to basic soil science and soil fertility.

Minimum Measures that Must Be Terms and Conditions of the NPDES Permit

Certain elements of a permitted CAFO's site-specific NMP are identified as "terms of the permit." Those site-specific terms of the permit are defined as "the information, protocols, [BMPs], and other conditions" identified in a CAFO's NMP and determined by the permitting authority to be necessary to meet the requirements of 40 CFR 122.42(e)(1) (40 CFR 122.42(e)(5)). For CAFOs subject to subparts C and D of the ELG (Large dairy, beef, poultry, swine, and veal calf CAFOs), the terms of the NMP must also include the BMPs necessary to meet the land application requirements identified in 40 CFR 412.4(c). The NMP terms must be included by the permit writer in a CAFO's NPDES permit as enforceable terms and conditions of the permit. CAFO inspectors will assess whether CAFO operations are addressing these conditions and implementing the terms of their NPDES permit.

With respect to protocols for land application of manure, the NPDES regulations identify the specific information that is (and is not) considered to be terms of the NMP. CAFO inspectors should be familiar with the approach (linear or narrative rate) used to develop the terms of a CAFO's NMP as well as the terms that have been identified as enforceable permit conditions.

Many states have unique requirements for developing an NMP. The requirements of EPA regulations establish the minimum requirements for permitted CAFOs. States may require more

stringent requirements, and in many instances states have established additional requirements to address land application.

The NPDES regulations establish minimum requirements—the nine minimum measures—that must be addressed in every CAFO's NMP. As discussed above, the ELGs and the state technical standards for nutrient management include more specific requirements for some of the minimum measures that apply to certain CAFOs. The nine minimum measures that must be included, as applicable, in each CAFO's NMP are listed below (40 CFR 122.42(e)(1)(i)–(ix)). The list also identifies the more specific requirements found in the ELG for certain CAFOs.

Minimum Measures:

- Ensure adequate storage of manure, litter, and process wastewater, including procedures to ensure proper operation and maintenance of the storage facilities.
  - CAFOs subject to the ELG must meet the storage requirements associated with the applicable subpart.
  - CAFOs subject to subparts C and D of the ELG must implement additional measures and recordkeeping for the production area.
- Ensure proper management of mortalities (i.e., dead animals) to ensure that they are not disposed of in a liquid manure, stormwater, or process wastewater storage or treatment system that is not specifically designed to treat animal mortalities.
  - CAFOs subject to subparts C and D of the ELG must also handle mortalities to prevent pollutant discharges to surface water.
- Ensure that clean water is diverted, as appropriate, from the production area.
- Prevent direct contact of confined animals with waters of the United States.
- Ensure that chemicals and other contaminants handled on-site are not disposed of in any manure, litter, process wastewater, or stormwater storage or treatment system unless specifically designed to treat such chemicals and other contaminants.
- Identify appropriate site-specific conservation practices to be implemented, including as appropriate buffers or equivalent practices, to control runoff of pollutants to waters of the United States.
  - CAFOs subject to subparts C and D of the ELG must also implement 100-foot land application setbacks from down gradient surface waters or conduits to surface waters, or 35-foot vegetated buffers, or a compliance alternative.
  - The state technical standards for nutrient management may also require conservation practices to be implemented under certain land application scenarios.
- Identify protocols for appropriate testing of manure, litter, process wastewater, and soil.
  - CAFOs subject to subparts C and D of the ELG must sample soils for phosphorus at least every 5 years and manure for nitrogen and phosphorus annually.

- Establish protocols to land apply manure, litter or process wastewater in accordance with site-specific nutrient management practices that ensure appropriate agricultural utilization of the nutrients in the manure, litter or process wastewater.
  - The ELG establishes specific requirements for developing land application rates for CAFOs subject to subparts C and D, including the requirement that those CAFOs use the state technical standards for nutrient management when developing land application rates.
- Identify specific records that will be maintained to document the implementation and management of the minimum elements described above and in 40 CFR 122.42 (e)(1)(i)–(viii).
  - The ELG establishes specific recordkeeping requirements for CAFOs subject to subparts C and D.

Information on how to evaluate performance of the nine minimum measures is included in Section C, "The CAFO Inspection—Facility Tour," and Section D, "The CAFO Inspection—Record Review and the NMP."

For large CAFOs subject to the land application requirements of the ELG, in addition to the requirements of 40 CFR Part 122, the terms of the NMP must also include the BMPs necessary to meet the requirements of 40 CFR 412.4(c).

Part 412.4 requires that the NMP address the form, source, amount, timing and method of application and include a field-specific assessment of the potential for nitrogen and phosphorus transport from the field to surface waters. The Director may also allow appropriate flexibilities to implement nutrient management practices.

Part 122.42(e)(5) further elaborates on the terms of the NMP associated with protocols for land application. Those must include the fields available for land application, field-specific rates of application, and any timing limitations on when manure can be land applied. The terms for rates of application must follow one of two approaches that the regulation identifies as the linear approach and the narrative rate approach.

Changes to a Permitted CAFO's NMP

Agricultural operations modify their nutrient management and farming practices during the normal course of their operations. Such alterations might require changes to a permitted CAFO's NMP during the period of permit coverage.

Because of the way NMPs are developed and the flexibility provided by the two options for developing the terms of the NMP at 40 CFR 122.42(e)(5), most routine changes at a facility should not require changes to the permit itself. To minimize the need for revision, NMPs should account for and accommodate routine variations inherent in agricultural operations such as anticipated changes in crop rotation, and changes in numbers of animals and volume of manure resulting from normal fluctuations or a facility's planned expansion.

Typically, an NMP is developed to reflect the maximum number of animals confined at the facility; the maximum capacity for manure storage; the total number of fields available for land application and their maximum capacity for nutrient applications. Fluctuations under those maximum amounts would not necessitate changes to NMPs. EPA encourages operators to develop an NMP that includes reasonably predictable alternatives that a CAFO may implement during the period of permit coverage. However, unanticipated changes to an NMP and in some cases, permit terms, might nevertheless be necessary. In the course of the NMP review, an inspector may identify instances where a CAFO may not have complied with a permit requirement to notify the permitting authority of a change to its NMP during the period of permit coverage. The regulations at 40 CFR 122.42(e)(6) identify requirements that should be incorporated into each CAFO's permit regarding providing the permitting authority with the most current version of the NMP.

Agricultural Stormwater Exemption for Permitted CAFOs

Permitted CAFOs that land apply manure must implement practices to ensure that all precipitation-related discharges from land application are composed entirely of agricultural stormwater. Section 502(14) of the CWA excludes from the definition of a point source agricultural stormwater discharges. The CAFO regulations establish when a discharge from a land application area under the control of a CAFO is considered to be exempt agricultural stormwater, as opposed to a point source discharge from the CAFO. A precipitation-related discharge from a CAFO's land application areas is considered agricultural stormwater only when the manure was applied in accordance with site-specific nutrient management practices that "ensure appropriate agricultural utilization of the nutrients" in the manure to be applied (40 CFR 122.23(e)). For CAFOs, the agricultural stormwater exemption applies only to discharges from land application areas. Discharges occurring during dry weather can never be discharges of agricultural stormwater.

Criteria for site-specific nutrient management practices for land application are specified in 40 CFR 122.42(e)(1)(vi)–(ix). For permitted CAFOs, the permit should set forth the, "site-specific nutrient management practices" that will be implemented for each requirement of 40 CFR 122.42(e)(1)(vi)–(ix). Under 40 CFR 122.42(e)(1)(vii), all permitted CAFOs must establish field-specific application rates for manure. The site-specific land application rates must be established as enforceable terms in the facility's NPDES permit following either the linear approach described in 40 CFR 122.42(e)(5)(i), or the narrative rate approach described in 40 CFR 122.42(e)(5)(ii).

In addition to the requirements described above, permitted large CAFOs subject to the requirements of Subpart C and D of Part 412 must also meet the requirement of 40 CFR 412.4(c) to qualify for the agricultural stormwater exemption (40 CFR 122.23(e)(1) and 122.42(e)(1)). The ELG specifies requirements for implementing site-specific application rates, manure and soil sampling, and setback requirements. Additionally, it provides protocols for inspecting the land application equipment.

The site-specific application rates for manure must be developed in accordance with technical standards established by the Director (40 CFR 412.4(c)(2)). The rates must also be identified in

the facility's NPDES permit as enforceable terms following either the linear approach or narrative rate approach (73 FR 70420).

Land Application at Permitted Small and Medium CAFOs

For precipitation-related discharges from the land application area of a medium or small CAFO to qualify for the agricultural stormwater exemption, the owner or operator of the CAFO must implement an NMP that includes the practices and protocols specified in 40 CFR 122.42(e)(1)(vii)–(ix).

Effluent limitations for medium and small CAFOs are based on BPJ and could be the same as, or similar to, the effluent limitations established in the ELG for large CAFOs. Thus, a medium or small CAFO might be required to develop protocols for land application in accordance with the state technical standards for nutrient management and comply with the requirement for a 100-foot setback or a 35-foot vegetated buffer between land application areas and any down gradient surface waters or conduits to surface waters. Because the practices for ensuring appropriate agricultural utilization of the nutrients in land-applied manure at large CAFOs do not differ significantly for medium and small CAFOs, the permit may apply the requirements established in the state technical standards to land application sites at all permitted CAFOs.

MONITORING, RECORDKEEPING, AND REPORTING REQUIREMENTS OF NPDES PERMITS FOR CAFOS

The NPDES regulations identify recordkeeping, monitoring, and reporting requirements that are applicable to all CAFOs (40 CFR 122.41, 122.42(e)(2)–(4)). The CAFO ELG identify additional recordkeeping and monitoring requirements that are applicable only to large CAFOs. The recordkeeping requirements associated with the off-site transfer of manure are applicable to large CAFOs. For CAFOs not subject to the ELG, additional monitoring and recordkeeping requirements may be established as technology-based limits by the permitting authority on a case-by-case basis using BPJ.

Monitoring Requirements

NPDES permits should include monitoring requirements that address the routine operational characteristics of the facility and the minimum reporting requirements at 40 CFR 122.41(l). The ELG includes specific monitoring requirements for daily and weekly visual inspections of specific aspects of the production area and monitoring requirements associated with land application, including manure and soil analysis and land application equipment inspection (40 CFR 412.37, 412.47).

The permit may also include monitoring requirements that address non-routine activities. For example, discharges at a CAFO can occur because of an overflow during a catastrophic storm event (which may be an allowable discharge under the terms of the permit) or a leak, breach, overflow, or other structural failure of a storage facility because of improper operation, design, or maintenance (which would be an unauthorized discharge). Unauthorized discharges could also occur because of manure releases related to the improper storage or handling of liquid or solid manure, or improper land application. Where there is a discharge from the production

area to an impaired water, a permit may include more restrictive water quality-based effluent limitations and additional monitoring requirements.

Recordkeeping Requirements

Permitted CAFOs must retain copies of all required documentation. In addition, permits should require that the records be organized in a manner that inspectors can easily review during a compliance inspection, such as the use of a dedicated logbook. The required records for large CAFOs are listed in Table 15-5 and for small and medium CAFOs in Table 15-6. Records must be maintained for five years.

Table 15-5. Required Records for Permitted Large CAFOs

Regulatory Requirement for Recordkeeping	Records Required
Requirements to maintain records for the nine minimum terms of the NMP. 40 CFR 122.42(e)(2)	
Adequate storage capacity	Satisfied by requirements of 40 CFR 412.37(b) (below).
Mortality management	Satisfied by requirements of 40 CFR 412.37(b) (below).
Divert clean water	Satisfied by requirements of 40 CFR 412.37(b) (below).
Prevent direct contact with waters of United States	Identify what waters of the United States, if any, exist within the animal confinement areas and the measures, including operation, and maintenance procedures and associated records, that are implemented to prevent animals from contacting waters of the United States.
Chemical disposal	Identify chemicals used or stored (or both) on-site and document appropriate disposal methods.
Conservation practices to control runoff to waters of the United States	Identify the conservation practices used to control pollutant runoff, including location, and the protocols and procedures, including installation, operation, and maintenance, and associated records, that are implemented to ensure the practices function to control pollutant runoff.
Manure and soil testing	Satisfied by requirements of 40 CFR 412.37(c) (below).
Protocols for land application	Satisfied by requirement of 40 CFR 122.42(e)(2)(ii) and 412.37(c) requirement to maintain on-site a site-specific NMP.
Requirements to maintain records for the production area. 40 CFR 412.37(b)	
A complete copy of the information required by 40 CFR 122.21(i)(1)	The name and owner or operator.
	The facility location and mailing address.
	Latitude and longitude of the entrance of the production area.
	A topographic map of the geographic area in which the CAFO is located showing the location of the production area.
	Specific information about the number and type of animals.
	Type of confinement animals are in (open confinement or housed under a roof).
	The type of containment and storage (anaerobic lagoon, roofed storage shed, storage ponds, under floor pits, aboveground storage tanks, belowground storage tanks, concrete pad, impervious soil pad, other).
	The total capacity for manure, litter, and process wastewater storage (tons/gallons).

Table 15-5. Required Records for Permitted Large CAFOs

Regulatory Requirement for Recordkeeping	Records Required
	The total number of acres under control of the applicant available for land application of manure, litter, or process wastewater.
	Estimated amounts of manure, litter, and process wastewater generated per year (tons/gallons).
	Estimated amounts of manure, litter, and process wastewater transferred to other persons per year (tons/gallons).
	The site-specific NMP.
Requirements to maintain records for the production area. 40 CFR 412.37(b)	
Records documenting the inspections 40 CFR 412.37(a)(1)	Necessary documentation for inspections of the production area.
	Records documenting weekly inspections of all stormwater diversion devices, runoff diversion structures, and devices channeling contaminated stormwater to the wastewater and manure storage and containment structure.
	Records documenting daily inspection of water lines, including drinking water or cooling water lines.
	Records documenting weekly inspections of the manure, litter, and process wastewater impoundments.
Wastewater levels 40 CFR 412.37(b)(2)	Weekly records of the manure and wastewater level in liquid impoundments as indicated by the required depth marker.
Corrective actions 40 CFR 412.37(b)(3)	Records of any actions taken to correct deficiencies found in the visual inspections of the production area.
	An explanation of the factors preventing immediate correction of any deficiencies identified in the visual inspections of the production area that are not corrected within 30 days.
Mortality management required 40 CFR 412.37(b)(4), (a)(4)	Records must identify that mortalities were not disposed of in any liquid manure or process wastewater system. They must also identify that mortalities were handled in such a way as to prevent the discharge of pollutants to surface water, unless alternative technologies pursuant to 40 CFR 412.31(a)(2) and approved by the Director are designed to handle mortalities.
Storage structure design 40 CFR 412.37(b)(5)	Current design of any manure or litter storage structures, including volume for solids accumulation, design treatment volume, total design volume, and approximate number of days of storage capacity.
Overflows 40 CFR 412.37(b)(6)	The date, time, and estimated volume of any overflow.
Requirements to maintain records for the land application area. 40 CFR 412.37(c)	
	Expected crop yields.
	Weather conditions 24 hours before application, at time of application, and 24 hours after application.
	Explanation of the basis for determining manure application rates, as provided in the technical standards established by the Director.
	Calculations showing the total nitrogen and phosphorus to be applied to each field, including sources other than manure, litter, or process wastewater.
	Total amount of nitrogen and phosphorus applied to each field, including documentation of calculations for the total amount applied.

Table 15-5. Required Records for Permitted Large CAFOs

Regulatory Requirement for Recordkeeping	Records Required
	The method used to apply the manure, litter, or process wastewater.
	Test methods used to sample and analyze manure, litter, process wastewater, and soil (40 CFR 412.37(c), 47(c)).
	Results from manure, litter, process wastewater, and soil sampling (40 CFR 412.37(c)).
	Date(s) of manure application equipment inspection.
40 CFR Part 412.37(c)	At the discretion of the permitting authority.

Table 15-6. Required Records for Permitted Small and Medium CAFOs

Regulatory Requirement for Recordkeeping	Responsive Records or Documentation
Requirements to maintain records for nine minimum terms of the NMP. 40 CFR 122.42(e)(1)(ix)	
Adequate storage capacity	Documentation of the storage capacity required to meet permit requirements and the storage capacity available.
Mortality management	Records of practices implemented to meet the mortality disposal or management practices (or both) of the permit.
Divert clean water	Document implementation of any operation and maintenance practices used to ensure that clean water is diverted as appropriate.
Prevent direct contact with waters of the United States.	Identify what waters of the United States, if any, exist within the animal confinement areas and the measures, including operation and maintenance procedures and associated records, that are implemented to prevent animals from contacting waters of the United States.
Chemical disposal	Identify chemicals used or stored (or both) on-site and document appropriate disposal methods.
Conservation practices to control runoff to waters of the United States	Identify the conservation practices used to control pollutant runoff, including location, and the protocols and procedures, including installation, operation, and maintenance, and associated records, that are implemented to ensure the practices function to control pollutant runoff.
Manure and soil testing	Results of manure and soil tests taken to meet the requirements of the permit and NMP.
Protocols for land application	Satisfied by requirement of 40 CFR 122.42(e)(2)(ii) requirement to maintain a site-specific NMP on-site.
Additional recordkeeping requirement to satisfy the effluent limitations	
Determined by the permitting authority on a case-by-case basis.	

Reporting Requirements

Reporting requirements are generally linked to monitoring requirements and can include periodic reports, emergency reports for overflow events, and special reports. An NPDES permit will often include monitoring requirements for routine operational characteristics of the facility, including the required annual report, and the minimum reporting requirements at 40 CFR 122.41(l). The permit may also include reporting requirements that address non-routine

activities such as discharge notification (for both authorized and unauthorized discharges). In case of a discharge, the CAFO is required to provide immediate notification of the permitting authority and a follow-up report describing the specific data collection activities required for discharges (40 CFR 122.41(l)(6)). The permittee must provide a description of the discharge, describe the time and duration of the event, identify the cause(s) of the discharge, and provide the result of any required analysis(es) to the permitting authority (40 CFR 122.41(l)(6) and 122.44(g)).

Annual Reports

All NPDES permits for CAFOs must include a requirement that the permittee submit an annual report with specific information defined in the regulation (40 CFR 122.42(e)(4)). In addition to the information required by the NPDES regulations, state permitting authorities can require additional information to be included with the annual report. The 2015 Final NPDES Electronic Reporting Rule requires that NPDES regulated entities, electronically submit certain permit and compliance monitoring information instead of using paper reports. Permitted CAFOs will need to electronically submit any general permit reports (e.g., Notice of Intent (NOI)) and their Annual Reports after December 21, 2020, unless they seek and have obtained an electronic reporting waiver from the NPDES permitting authority (40 CFR 127.15).

The annual report must include the following (40 CFR 122.42(e)(4)):

- The number and type of animals confined at the CAFO.
- Estimated total amount of manure, litter, and process wastewater generated by the CAFO in the previous 12 months (tons/gallons).
- Estimated total amount of manure, litter, and process wastewater transferred to other persons by the CAFO in the previous 12 months (tons/gallons).
- Total number of acres for land application covered by the NMP.
- Total number of acres under control of the CAFO that were used for land application of manure, litter, and process wastewater in the previous 12 months.
- Summary of all manure, litter, and process wastewater discharges from the production area that have occurred in the previous 12 months, including the date, time, and approximate volume of the discharge.
- A statement indicating whether the current version of the CAFO's NMP was developed or approved by a certified nutrient management planner.
- The actual crop(s) planted and actual yield(s) for each field.
- The nitrogen and phosphorus content of the manure, litter, and process wastewater as reported on the laboratory report for the required analyses (lbs./ton, g/Kg, pounds/1,000 gallons, mg/L, ppm).
- The results of calculations conducted in accordance with the approved NMP to determine the amount of manure, litter, or process wastewater to apply.

- The amount of manure, litter, and process wastewater applied to each field during the previous 12 months.
- For any CAFO that implements an NMP that addresses rates of application in accordance with the narrative rate approach:
- The results of any soil testing for nitrogen and phosphorus conducted during the previous 12 months.
- The data used in calculations conducted in accordance with the methodology in the approved NMP to determine rates of nitrogen and phosphorus application from manure, litter, and process wastewater.
- The amount of any supplemental fertilizer applied during the previous 12 months.
- The actual crop(s) planted and actual yield(s) for each field, the actual nitrogen and phosphorus content of the manure, litter, and process wastewater, and the amount of manure, litter, or process wastewater applied to each field during the previous 12 months.

CAFOs that follow the narrative rate approach for describing rates of application in the NMP must also submit as part of their annual report:

- The results of all soil testing and concurrent calculations to account for residual nitrogen and phosphorus in the soil, all recalculations, and the new data from which they are derived.
- The amounts of manure and the amount of chemical fertilizer applied to each field during the preceding 12 months. Together with the total amount of plant-available nitrogen and phosphorus from all sources, the information that is required to be included in the annual report provides the information necessary to determine that the CAFO was adhering to the terms of its permit when calculating amounts of manure to apply.
- The narrative rate approach requires the CAFO to recalculate the projected amount of manure, to be land applied, using the methodology in the NMP, at least once a year, throughout the period of permit coverage. The recalculations and the new data from which they are derived are required to be reported in the CAFO's annual report (40 CFR 122.42(e)(5)(ii)).

The annual report requirements should reflect implementation of existing NMP provisions and changes to the NMP contemplated through flexibilities built into the NMP during the initial planning process or later modifications in accordance with 40 CFR 122.42(e)(6). Because the terms of the NMP are incorporated as enforceable terms and conditions of the permit, any change that results in a change to the terms of the NMP constitutes a change to the permit and therefore must be processed in accordance with 40 CFR 122.42(e)(6).

EPA's *NPDES Permit Writers' Manual for CAFOs* (EPA, 2012a), Appendix D, "Example Nutrient Management Plan Record Keeping Forms," and Appendix M, "Nutrient Management

Recordkeeping Calendar," includes some examples of recordkeeping forms. Those forms can help the operation meet some of the recordkeeping requirements specified in the regulations.

B. PREPARING FOR THE CAFO OR AFO INSPECTION

The primary goals of the CAFO inspection are gathering information to identify and document threats to water quality; determine status as a CAFO or AFO, determine compliance status with the statute, regulations, permit conditions and other program requirements; and verifying the accuracy of information submitted by the CAFO. Other goals of a CAFO inspection might include investigating a citizen tip or complaint, gathering evidence to support enforcement actions, collecting information to support NPDES permit development, and assessing compliance with orders or consent decrees. In addition, providing feedback to the producer on where discharge vulnerabilities may exist is important. Some problems can be remedied quickly once identified, and preventing pollutant discharges is the best outcome for water quality. Information collected depends on the type of CAFO inspection being conducted. Information collected and operational aspects evaluated during the inspection will vary by inspection type. A CAFO inspection is often categorized as a Status Determination Inspection, Permit Compliance Inspection, Reconnaissance, Settlement Agreement Inspection, or Complaint Inspection and may include sampling elements.

SELECTION OF FACILITIES FOR INSPECTION

Although specific procedures to select facilities for inspection will vary by EPA Region and by authorized state, the basic approach is similar. Some facilities are selected for inspection based on probable cause, which means that the regulatory agency has obtained specific evidence of a possible existing violation at a facility. Inspections are conducted in response to citizen complaints about a specific facility, emergency situations such as reports of ongoing spills, information about specific water quality problems or fish kills, referrals from a state, to assist a state inspection effort, or as a follow-up to prior inspections indicating violations at the same facility or at other facilities owned or operated by the same entity. Facilities are also selected through the Neutral Administrative Inspection Scheme, in which the regulatory agency does not have any prior information indicating that there are existing violations. These are routine inspections to evaluate compliance. Within the neutral scheme, priority may be given to facilities that meet one or more of the following criteria:

- Are large CAFOs.
- Are in priority watersheds impaired by runoff from AFOs or high water quality watersheds that are priorities for protection.
- Are in watersheds with high AFO or CAFO density.
- Are near surface waters.
- Have the potential for large amounts of animal waste to reach surface water.
- Are near sources of drinking water.

The NPDES Compliance Monitoring Strategy calls for the following inspection frequencies:

- CAFOs with NPDES permits should be inspected by states and regions at least once every five years to determine compliance with the permit.
- Large CAFOs without NPDES permit coverage should be inspected to determine if the facility discharges. After a determination is made, future inspections occur on an as needed basis, (e.g., to see if the facility has made changes to its operation).
- Medium AFOs should be "assessed" one-time initially to determine if the facility is discharging and is a medium CAFO.
- Small AFOs should be inspected as needed based on complaints or other information.

COMPLIANCE DETERMINATION STRATEGY

The primary role of a CAFO inspector is to gather information that can be used to determine if an AFO or CAFO is in violation of NPDES and CWA requirements. If the CAFO has an NPDES permit the inspector will evaluate compliance with permit conditions, applicable regulations, and other requirements. Because most CAFOs do not have NPDES permit coverage, the CAFO inspector will often be collecting information to determine whether an unpermitted AFO or CAFO is discharging pollutants to a water of the United States and has a duty to apply for a permit. The CAFO inspector also plays an important role in enforcement case development and support. To fulfill these roles, a CAFO inspector must know before the inspection how compliance will be evaluated and what documentation will be necessary to make and support compliance determinations. If the CAFO inspector does not know what documentation to collect, the inspection may not provide appropriate and sufficient information. A compliance determination strategy is a formal or informal plan for the information and operational characteristics that an inspector will evaluate at a facility. The compliance determination strategy should reflect the type of inspection being conducted (see the examples in Table 15-7). The inspector should have a clear idea of the purpose of the inspection and the information that will be useful in evaluating compliance. The compliance determination strategy could be a ranking of preference in terms of documents, photographs, statements, and other materials to be evaluated and used to effectively demonstrate that the facility is or is not complying with applicable requirements. The compliance determination strategy will form the basis of the CAFO Inspection Plan, discussed at the end of this section.

Table 15-7. Example Inspection Focus for Compliance Determination Strategy Based on Inspection Type

Inspection Type	Inspection Focus for Compliance Determination Strategy
Status Determination Inspection	Information needed to determine whether the facility is a CAFO; for example: • Number of animals confined • Confinement period

Table 15-7. Example Inspection Focus for Compliance Determination Strategy Based on Inspection Type

Inspection Type	Inspection Focus for Compliance Determination Strategy
	Information needed to determine if the facility is discharging or has discharged; for example: • Quantity of waste generated • Storage capacity • Potential discharge locations • Records or other evidence of discharges • Proximity to waters of the United States
Permit Compliance Inspection	All information needed to evaluate permit compliance; for example: • Evidence of discharges or water quality impacts to the receiving water(s). • Documentation of required visual inspections. • Evaluation of impoundment operation and maintenance. • Documentation of mortality management or disposal. • Land application records. • Animal feed storage and runoff management. • Evaluation of conservation practice operation and maintenance. • Documentation of compliance with all NMP nine minimum measures and associated NMP terms.
Settlement Agreement Inspection	Any information relevant to the terms of the Settlement Agreement
Complaint Inspection	Documentation and evaluation of site conditions related to the complaint

Documentation Tips

- ✓ Include a distinguishing characteristic like a unique depth marker or buildings in the background of photos.
- ✓ Impermanent items, such as vegetation, do not make good reference points as they can be easily removed.
- ✓ Photos should include an accurate date/time stamp that shows it was taken during the time period of the inspection.
- ✓ Some digital cameras include built-in global positioning system (GPS) tagging that allows an inspector to associate each photo with the geographic location where it was created.

Documentation provides a snapshot in time of the actual conditions existing at the time of inspection so that evidence can be examined objectively by compliance personnel. Documentation is a general term used here to refer to all printed information and electronic media produced, copied, or created by an inspector to provide evidence of suspected violations. Forms of documentation include the inspector's field notebook or inspection checklist, verbal statements documented by the inspector, photographs, videotapes, drawings, maps, printed matter, electronic recordings, and photocopies or photographs of on-site records. Of these, verbal statements are the least desirable as they are the easiest to refute. Documentation may also include sampling of manure, litter, and process wastewater as well as soils, surface waters or discharges and the necessary labeling and chain of custody documents associated with the samples.

EPA or state attorneys will be able to provide compliance determination strategies and documentation requirements based on prior case law and experience presenting evidence in court. For example, the inspector may want to include an obvious reference point in photographs that clearly ties the image to a specific CAFO. Documents should, ideally, have dated signatures or certification stamps (e.g., professional engineers stamp, where appropriate).

CAFO INSPECTOR RESPONSIBILITIES AND PREPARATION ACTIVITIES

In addition to the responsibilities described in EPA's *NPDES Compliance Inspection Manual* (EPA, 2016), there are a number of other items that the CAFO inspector needs to do or consider before entering the CAFO facility. The CAFO inspector needs to understand his or her role in the inspection process, determine the type of inspection to be performed and become familiar with the facility location and its geographic features. The CAFO inspector should consider his or her responsibilities prior to the CAFO inspection:

1. Professional Attitude
2. Animal Safety and Biosecurity
3. Inspector Safety and Personal Protection Equipment (PPE)
4. General Facility Information
5. Review of Permit and Facility Files
6. Facility Compliance and Enforcement History

Professional Attitude

The CAFO inspector is often the first or only contact a CAFO operator has with the EPA. In dealing with facility representatives and employees, CAFO inspectors should be professional, tactful, courteous, and diplomatic. A firm but responsive attitude will encourage cooperation and initiate professional working relationships. CAFO inspectors should always speak respectfully of any product, manufacturer, or person but not endorse anything.

Many CAFO operators reside on-site, and their office may be in their residence. As a result, portions of a CAFO inspection may take place in a non-neutral location such as the operator's residence or vehicle or in the presence of the operator's family. The CAFO inspector should be polite and respectful of the operator, family members or other facility employees, and the operator's home, vehicle, or office. Inspectors may also encounter the owner's or operator's pets and should resist the urge to touch or pet these animals. To the extent practicable, scrape mud and manure from boots (or remove boots) prior to entering buildings and vehicles, drive and park carefully, and behave in a non-confrontational manner as appropriate to the situation.

Another professional consideration unique to CAFO inspections is timing of the inspection so the operator is available. The CAFO inspector should be aware that some farm operations will take precedence over the inspection, especially animal emergencies. Dairies, for example, have established milking schedules and the operator may not be available to meet if you arrive when cows are being milked. Seasonal considerations, such as planting or harvest time, may also

determine the availability of the CAFO operator or other knowledgeable employee to participate in the inspection. Since inspectors often have to travel long distances to reach remote facilities, it may be beneficial to contact the facility operator ahead of time to schedule the inspection, if allowed by your regional or state policies. Also refer to the "Inspection Notification" section of this chapter.

Animal Safety and Biosecurity

The CAFO inspector should be familiar with all safety obligations and practices regarding basic inspections, including regional and state policies or requirements. Inspectors should ask about and follow any facility-specific safety requirements in place. In addition to the basic health and safety risks associated with inspecting facilities, CAFO inspectors have the added responsibility to avoid transporting livestock diseases between facilities. Livestock animals are susceptible to diseases from other facilities and human carriers are a risk to livestock operations. Failure to follow proper biosecurity precautions could spread livestock illnesses like foot-and-mouth disease (*Aphthae epizooticae*) or avian influenza. Without the proper precautions, CAFO inspectors might unintentionally transport diseases between facilities on contaminated clothing, equipment, or vehicles. To minimize the risk that a CAFO inspector will carry diseases or infections into or between livestock facilities, CAFO inspectors should always follow EPA's biosecurity procedures (Appendix AF, "Standard Operating Procedure (SOP): Biosecurity Procedures for Visits to Livestock and Poultry Facilities"). CAFO owners or operators may or may not ask visitors to abide by their site-specific biosecurity measures. Regardless of whether the producer makes the request, EPA inspectors should follow the Biosecurity SOP at all livestock and poultry facilities. If the visited operation has additional measures, the inspector is strongly encouraged to follow them, as appropriate, at that specific facility.

Swine and poultry are typically most susceptible to diseases as the animals have limited contact with the natural environment and humans who do not work at the facility. Swine and poultry CAFOs may operate under the authority of an Integrator that oversees numerous facility operations, with different levels of biosecurity. When visiting a facility with various age groups of one species in one day, visit the youngest animal group first. Poultry is an exception. Poultry breeding stock should be visited before other commercial birds. Be aware that most swine facilities do not allow access to any person who has been to another swine operation within the past 72 hours. In addition, many swine operations do not allow access to anyone who has visited another livestock operation of any type within the past 24 hours. Poultry operations often will deny access to anyone who has had contact with other birds, even pet birds, within the past 48 hours.

CAFO inspectors must be aware of each facility's biosecurity requirements to plan multiple inspections appropriately. Therefore, contacting the Integrator before making swine or poultry farm inspections may be helpful if the inspection plan involves making several different site inspections. The CAFO inspector might need to call in advance so that the biosecurity measures are known before the inspection and the information is accessible along with other pre-inspection information. At a minimum, inspectors should have biosecurity equipment in their vehicle should it be needed. Many CAFOs do provide biosecurity equipment for visitors but inspectors must have their own available to avoid being denied access for a lack of protective

equipment. Consult the Biosecurity SOP for a full list of personal protective equipment and supplies. If inspectors are denied access for biosecurity or any other reason, it should be noted in the inspector logbook/notes, along with the name of the facility contact who denied the access. Equipment and supplies are included in the Biosecurity SOP as well as procedures to follow (see Appendix AF, "Standard Operating Procedure (SOP): Biosecurity Procedures for Visits to Livestock and Poultry Facilities").

Some highlights of the Biosecurity SOP are included below, but these are NOT a substitute for the procedures in the Biosecurity SOP.

- When EPA personnel are planning to visit a livestock or poultry facility, they should first contact USDA's Animal and Plant Health Inspection Service (APHIS) or the state veterinarian to identify any areas with outbreaks of animal disease, where travel should be avoided.
- As a general rule, EPA will **not** conduct inspections on livestock or poultry facilities in areas with ongoing emergency foreign animal disease response activities (e.g., vaccination program, depopulation, disposal, or virus elimination).
- Do not make on-site visits to livestock operations if you have visited a foreign country and were exposed to or had contact with farm animals (with or without a known contagious disease) within 5 days before the site visit. Also, clothing and equipment (including shoes) worn or used on foreign farm visits should be cleaned before use on U.S. facilities. If appropriate cleaning is not possible, alternative clothing or equipment should be used.
- Some facilities have an established policy of requiring that their own vehicles be used for transportation purposes within the facility. An Integrator may also want to drive the inspectors from one farm to another, rather than allowing the inspector to take his or her vehicle. Inspectors may accept offers of facility-provided transportation within a facility if the total value of the transportation is $20 or less. Consult with your ethics counselor if the total value of the transportation exceeds $20, or you will be transported in non-ground transportation (e.g., aircraft or helicopter) or transported across more than one facility. For other situations, consult with your ethics counselor.
- On entering a facility, acknowledge any and all other livestock facilities visited within the previous 48 hours, including whether EPA entered any animal confinement or waste storage areas.
- EPA should only enter animal production buildings if it is essential to complete the goals of the visit, and should avoid contact with livestock, poultry or other animals (wild or domestic) on any facility.
- Use disinfectants that have been registered (or exempted) by EPA for the intended use. EPA's pesticide registration program maintains information on EPA registered disinfectants. Information can be found at https://www.epa.gov/pesticide-registration/selected-epa-registered-disinfectants.

- Keep a copy of the label and the Safety Data Sheet (SDS) for any registered disinfectant used and make both available to the facility operator upon request. Follow all label safety precautions and dispose of empty containers, unused disinfectant solution, and used disinfectant in accordance with label instructions.
- In consultation with Health and Safety staff, identify an appropriate location such as an EPA or state laboratory, or office, for disposal of soiled disposable items in case the owner/operator will not allow the waste to remain on-site.

Inspector Safety and Personal Protective Equipment (PPE)

In addition to animal safety and biosecurity, CAFO inspectors must also be aware of specific safety risks that may be encountered during a CAFO inspection. The CAFO inspector should be familiar with all safety obligations and practices, both EPA's and the facility's, to avoid unnecessary risks. Safety equipment and procedures required for a facility will be based on EPA's standard safety procedures or if used, by the CAFO's response to the 308 Letter. See Appendix AG, "Field and Personal Protective Equipment," for additional safety information. Safety requirements must be met, not only for safety reasons, but to ensure that the CAFO inspector is not denied entry to the facility or parts of it. Below are several safety issues that an inspector might encounter at a CAFO.

- **Pesticide spraying and storage.** CAFOs might store pesticides in both concentrated and dilute form. CAFO inspectors should never enter an area where pesticides are being applied. The CAFO inspector should be able to recognize a pesticide sign, and before entering an area where pesticides have been applied the inspector should determine the type of pesticide applied, the time and date of application, and whether the area is safe to enter.
- **Confined spaces.** Gases such as hydrogen sulfide, carbon dioxide, ammonia, and methane are present in all stored manure, and if not properly ventilated, can reach concentrations dangerous to humans. Covered or enclosed tanks present the greatest danger, especially when manure is being agitated or pumped out of the structures. CAFO inspectors should not enter confined spaces used to store manure or silage. If entering a confined space is necessary, the inspector must be certified for confined space entry.
- **Drowning** is a possibility where semisolid, slurry, and liquid manures are stored. Liquid or slurry manure stored in an open impoundment often forms a surface crust. The thickness of the crust depends on the moisture content and consistency of the manure. However, under no conditions is the crust solid enough to support a human being. CAFO inspectors should never step on any crusted surfaces during an inspection. Also, look out for open trenches or sumps in barns or other structures; the drop off may not be immediately visible if the storage is full or the floor is covered with bedding, litter or other wastes.

- **Electrocution.** Some CAFO operators use tractors to power pumps when transferring waste out of storage lagoons. The power sources (takeoffs) present both electrical hazards and physical hazards for CAFO inspectors wearing loose-fitting clothing. Facilities being washed present an electrocution hazard to the CAFO inspector. Wash water might conduct electricity from wiring, connections, or equipment to persons in contact with that water. CAFO inspectors are advised to stay out of facilities during wash down. Electric fencing may be in place to keep animals in designated grazing areas or exercise lots, or to keep animals out of waterways. Inspectors should avoid touching or climbing over or under a "live" wire fence to avoid an electric shock. Facility operators can usually open or disable a live fence so that inspectors can access areas as needed.
- **Equipment used for handling, transporting, and applying manure** can be hazardous to the operator and to others close by. The operator's manual for the equipment should document the potential hazards for that equipment. Common hazards include getting clothing or limbs caught in moving equipment parts; injury from escaping hydraulic fluid; and slippage of tractors, loaders, and spreaders. CAFO inspectors should exercise appropriate caution (e.g., not wearing loose-fitting clothing) around any machinery encountered during an inspection. Inspectors should also take care to alert truck drivers and equipment to their presence to prevent accidents.
- **Disease and Illness.** Very few animal diseases are of concern to humans. However, persons with low immunity can contract a specific respiratory illness from poultry called histoplasmosis. Livestock can carry bacteria, fungi, and parasites that cause illnesses such as cryptosporidiosis, ringworm, salmonella, giardiasis, leptospirosis, and complications from exposure to *E. coli.* Other illnesses, such as Q fever, anthrax, pseudocowpox, and rabies are less common, but can result from close contact with livestock. Pregnant women are at increased risk from some of these diseases (cryptosporidiosis, listeriosis, and Q fever) (Pelzer and Currin, 2009; Adams, 2012). Fortunately, many of these diseases are rare. Nevertheless, CAFO inspectors should avoid entering animal confinement areas unless necessary to adequately assess compliance. In addition, the inspector should never touch an animal at a CAFO and should follow all the biosecurity precautions in the previous section to minimize risk and exposure.

For any safety- or health-related issues not covered in this manual, CAFO inspectors should consult with their Health and Safety staff.

Health and Safety Tips for CAFO Inspections

- Always wear appropriate PPE; this includes long pants and safety boots (reinforced toe and at least ankle height), sunscreen, and mosquito repellent (containing DEET or Picaridin), as appropriate. A dust mask may be appropriate during windy or excessively dry weather. A safety vest may improve visibility to equipment operators.
- Maintain a safe distance from wastewater lagoon edges and observe from upwind, whenever possible.
- Do not enter confined or enclosed spaces where manure is being stored. Methane released by manure can be lethal. Inspectors must not enter any confined spaces without proper certification.

Health and Safety Tips for CAFO Inspections

- Do not enter fenced-in areas unless you are accompanied by the operator or can observe the entire enclosure to ensure no animals or other hazards exist.
- Be aware of snakes while walking around a CAFO. Avoid walking through areas of heavy brush where you could startle a snake and provoke a strike. Wear boots at all times. If a snake is encountered remain silent, step away slowly, and otherwise remain motionless.
- Be aware of dogs while approaching CAFOs and during your inspection. If a dog is preventing entry to the CAFO, telephone the facility contact and ask that the dog be restrained. As with all animals at a CAFO, do not pet or touch dogs.
- Keep anti-bacterial hand wash or wipes in your vehicle. Clean hands frequently and after each inspection.
- Other types of standard safety equipment may also be warranted, e. g., a hard hat if the facility has active construction underway, or ear protection where exhaust fans may be in use.

General Facility Information

Prior to the inspection, it is good practice to locate the CAFO on a topographic map and the inspector may want to obtain aerial imagery of the facility. A variety of free Internet-based tools can provide topographic maps and aerial imagery for a specific address or GPS coordinates. EPA Regions may have subscriptions to additional mapping resources, such as TerraServer, or have an in-house GIS team or contacts. Note that in rural areas the CAFO's mapped address may not correspond with the production area, for example, it may correspond to the owner's home address. In addition, older imagery may show newer operations. If the facility's production area is not specifically identifiable on aerial imagery, the CAFO inspector should print out several larger scale images that show areas near the address. The facility representative may need to identify the operation's location on these aerial images, in addition to satellite locations such as heifer farms.

The aerial image can be used to locate CAFO production areas, land application areas, and nearby surface waters. A facility diagram or aerial image should be reviewed with the CAFO representative during the inspection to label structures, storage areas, property boundaries, land application fields, and other facility characteristics. The annotated diagrams and aerial image(s) should be attached to the inspection report for reference (See Appendix AH, "Mapping Tool (Region 5)").

Facility Information That Should Be Gathered Before a CAFO Inspection

- ✓ Maps and aerial photographs of the CAFO.
- ✓ Facility's site plan.
- ✓ Names, titles, and telephone numbers of responsible CAFO officials.
- ✓ Description of animal types and agricultural processes.
- ✓ Typical livestock population and maximum capacity.
- ✓ Approximate distance to nearest surface water(s).
- ✓ Water quality/impairment status of the surface water(s).
- ✓ Closest floodplain, if available.
- ✓ Changes in CAFO conditions since previous inspection/permit application.
- ✓ Any known safety and biosecurity requirements.

Facility Information That Should Be Gathered Before a CAFO Inspection

- ✓ Permit, if the facility has permit coverage, or state requirements, including state technical standards, if the facility is unpermitted and land applies manure.
- ✓ Nutrient Management Plan, if the facility has one, or whatever nutrient management planning has been submitted if the facility is unpermitted.
- ✓ Identify any missing or incomplete information.

Locating the target facility on a topographic map is useful for measuring distances and potential flow paths to waters of the United States. The topographic map will show the natural gradient around the facility. This can be used to determine areas where stormwater may flow overland on to the site, areas that may require clean water diversions, and areas where water may drain from the site. Once the names of nearby surface waters are identified, the CAFO inspector should refer to the state's Clean Water Act section 303(d) list of impaired waters to determine if surface water segments adjacent to or downstream of the facility are impaired for nutrients, sediment, or other potential pollutants that could be discharged from the CAFO.

Useful mapping resources include:

- NRCS' Web Soil Survey maps (http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx) can be used to identify soil types expected under the CAFO's production area and their characteristics.
- Federal Emergency Management Agency (FEMA) flood maps (https://msc.fema.gov/portal/howto) can be used to estimate if the facility is in a mapped flood zone.
- EPA's Watershed Assessment, Tracking and Environmental Results System (WATERS) (https://www.epa.gov/waterdata/waters-watershed-assessment-tracking-environmental-results-system) can be used to identify impaired waters, TMDLs, provide maps of surface waters, etc.

Review of Permit and Facility Files

Collection and analysis of available facility background information are essential to the effective planning and overall success of a compliance inspection. Materials from available files and other information sources will enable CAFO inspectors to familiarize themselves with facility operations; conduct a timely, thorough and efficient inspection; clarify technical and legal issues before entry; and develop a sound and factual inspection report. The types of information that may be available for review are listed below and discussed in detail in the following sections. The CAFO inspector is responsible for determining the amount of background information necessary for the inspection and in collecting this information should focus on the characteristics unique to the permittee: site-specific NPDES permit requirements, historical wastewater and manure management practices, nutrient management, proximity to waters of the United States, compliance history, etc.

The CAFO inspector may not have much facility-specific information available prior to the inspection of an unpermitted facility. The CAFO inspector is expected to review the permit and

compliance file in advance of an inspection at a permitted CAFO. If the inspector suspects that an unpermitted CAFO or AFO may meet the criteria for permit coverage, familiarity with an available general permit, or an individual permit for a similar type of facility in that state, will be helpful in assessing conditions at the facility.

Some states may have state-issued CAFO permits that are *not* NPDES permits, though many of the objectives and provisions are similar. In addition, some states issue permits that do fulfill NPDES requirements, but may also include "above and beyond" provisions stipulated by state regulations (e.g., groundwater protection). EPA does not conduct compliance inspections for non-NPDES permits, or the non-NPDES provisions of "dual purpose" permits.

Files Checklist

- ✓ Conditions and requirements of the permit.
- ✓ Nutrient management plans/practices, NMP terms.
- ✓ Inspection notes and issues, along with any previous site entry problems.
- ✓ Prior compliance problems, enforcement actions, and correspondence.
- ✓ Prior complaints.
- ✓ Most recent and any previous annual reports.

A facility with a non-NPDES state issued permit may still need NPDES coverage; for purposes of the inspection these facilities can be considered unpermitted facilities. If conducting a joint inspection with a state inspector on a "dual purpose" permit, the state inspector should take the lead on questions and discussions about provisions and issues that are not required by the NPDES regulations.

Conditions and Requirements of the Permit

Reviewing a CAFO's NPDES permit and nutrient management plan (NMP) is useful for finding site-specific information such as facility size, number and type of animals, and manure and wastewater management practices. CAFOs covered under a general permit will also have a site-specific nutrient management plan.

While reviewing the permit, the CAFO inspector should pay special attention to the permit requirements, nutrient management plans/practices, NMP terms, including identification of site-specific records to be maintained and annual reports. If a facility has had previous individual permits, it can be useful to review them, if available, to see if there has been any operational changes or changes to the number of animals confined over time.

The inspector should give special consideration to permit requirements that are unique to that operation. CAFO general permits stipulate the same provisions for every operation, perhaps with some sector-specific or region-specific provisions; the nutrient management plans for each facility will be site-specific. Individual permits are tailored for each specific operation and may include compliance schedules that extend deadlines for the CAFO to meet certain requirements. The inspector should determine how he or she will evaluate compliance with both general and site-specific requirements before conducting the inspection.

To become familiar with a CAFO permit and NMP terms, CAFO inspectors should review the example CAFO General Permit provided in Appendix O and the example NMP in Appendix P of EPA's *NPDES Permit Writers' Manual for CAFOs* (EPA, 2012a).

Permit Conditions and Requirements Checklist

- ✓ General and site-specific or BPJ effluent limitations.
- ✓ Monitoring and reporting requirements.
- ✓ NMP terms and the NMP.
- ✓ Special exemptions, compliance schedules, and waivers, if any.
- ✓ Changes in site conditions (when compared with previous permits).

Requirements, Regulations, and Limitations

In addition to the CAFO permit, the CAFO inspector should review in detail the applicable EPA and state regulations and effluent limitation guidelines (ELGs). If the facility to be inspected is an unpermitted CAFO, state regulations may establish the bulk of the applicable requirements. For unpermitted large CAFOs the federal NPDES regulations prohibit discharges from the production area and establish certain nutrient management requirements for the land application area (See the "Overview of the NPDES Program for CAFOs" in Section A).

Requirements, Regulations, and Limitations Checklist

- ✓ Copies of regulations, requirements, and restrictions placed on CAFO discharges.
- ✓ Monitoring and reporting requirements (if not reflected in a permit).
- ✓ Special exemptions and waivers, if any.

For unpermitted large CAFOs, the inspector will review the facility's documentation and implementation of nutrient management practices to determine if the land application areas qualify for the agricultural stormwater exemption (see Section A for information on land application requirements). A large CAFO's nutrient management planning must account for appropriate site-specific best management practices, protocols for appropriate manure and soil testing, appropriate protocols for land application, and maintenance of records to document the implementation of those BMPs. In these cases, the inspector should gather records and make observations regarding:

- Nutrient recommendations and average yields for prevalent crops.
- Implementation of the permitting authority's technical standards for nutrient management such as requirements for soil and manure testing, development of manure application rates and timing restrictions on land application (e.g., prohibition on applying manure on snow covered or saturated ground).
- Standards or other guidelines for installation, operation, and maintenance of common best management practices, including for the required setbacks or vegetated buffers.

Annual Reports

All NPDES permits for CAFOs must include a requirement that the permittee submit an annual report with specific information defined in the regulation (40 CFR 122.42(e)(4)). Refer to Appendix C of EPA's *NPDES Permit Writers' Manual for CAFOs* (EPA, 2012a) for an example annual report. The CAFO's annual reports will include the following required information:

- The number and type of animals confined at the CAFO.
- Estimated total amount of manure, litter, and process wastewater generated by the CAFO in the previous 12 months (tons/gallons).
- Estimated total amount of manure, litter, and process wastewater transferred to other persons by the CAFO in the previous 12 months (tons/gallons).
- Total number of acres for land application covered by the NMP.
- Total number of acres under control of the CAFO that were used for land application of manure, litter, and process wastewater in the previous 12 months.
- Summary of all manure, litter, and process wastewater discharges from the production area that have occurred in the previous 12 months, including the date, time, and approximate volume of the discharge.
- A statement indicating whether the current version of the CAFO's NMP was developed or approved by a certified nutrient management planner. The CAFO inspector should check with the issuing agency on the status of the certification.
- The actual crop(s) planted and actual yield(s) for each field.
- The nitrogen and phosphorus content of the manure, litter, and process wastewater as reported on the laboratory report for the required analyses (lbs./ton, g/Kg, pounds/1,000 gallons, mg/L, ppm).
- The results of calculations conducted in accordance with the approved NMP to determine the amount of manure, litter, or process wastewater to apply.
- The amount of manure, litter, and process wastewater applied to each field during the previous 12 months.
- For any CAFO that implements an NMP that addresses rates of application in accordance with the narrative rate approach:
  - The results of any soil testing for nitrogen and phosphorus conducted during the previous 12 months.
  - The data used in calculations conducted in accordance with the methodology in the approved NMP to determine rates of nitrogen and phosphorus application from manure, litter, and process wastewater.
  - The amount of any supplemental fertilizer applied during the previous 12 months.
- All required records for manure transferred off-site to another entity.

Reviewing consecutive years of annual reports can reveal whether a CAFO is increasing production or changing nutrient management practices.

Discharge and Monitoring Reports

Permitted CAFOs are required to report certain information associated with discharges. CAFO permits might also include ambient stream monitoring, or other special monitoring requirements. State regulations might establish similar discharge reporting and other monitoring requirements for unpermitted CAFOs. The CAFO inspector should review all monitoring and discharge information in the facility file to get an idea of the nature and frequency of facility discharges, if any.

Considerations When Reviewing Annual Reports

- ✓ Are the reports complete? If not what information is missing?
- ✓ Have there been any significant operational changes at the CAFO over time (i.e., new construction at the facility)?
- ✓ Does reported annual manure production seem reasonable for the number of reported animals and does the CAFO use the same manure production factors each year (e.g., weight or volume of manure per animal)?
- ✓ Is the amount of manure land applied or transferred similar to the amount of manure generated?
- ✓ Does the amount of acreage available seem adequate for the amount of manure land applied?
- ✓ Are nutrient calculations consistent with the approved NMP?

Facility Compliance and Enforcement History

Previous inspection reports will document general CAFO information and site photos, as well as problems or concerns. Inspectors who have visited the CAFO for NPDES or other regulatory programs may also be contacted to provide additional information or answer questions about the facility. The CAFO inspector will find it useful to have a copy of photos from past inspections to see how the CAFO has changed and if photo-documented compliance issues have been resolved.

Facility Compliance and Enforcement History Checklist

- ✓ Previous inspection reports.
- ✓ Documentation of past compliance violations and the status of requested regulatory corrective action, if any.
- ✓ Enforcement actions such as compliance schedules and consent orders.
- ✓ Status of current and pending litigation against facility.
- ✓ Previous deficiency notices issued to facility.
- ✓ Complaints and reports, follow-up studies, findings, and remedial action.
- ✓ Correspondence between the CAFO and local, state, and federal agencies.

Other EPA staff and state personnel should be consulted regarding correspondence, inspection reports, permits, and permit applications for individual facilities. They can provide compliance, enforcement, and litigation history; special exemptions and waivers applied for and granted or denied; citizen complaints and action taken; process operational problems and solutions; pollution problems and solutions; and, other proposed or historical remedial actions.

The CAFO's history of enforcement actions and its response to them tell a story about the operator and production practices. For example, inspecting a CAFO with a history of production area discharges will likely involve extensive review of manure management records, depth marker logs, and corrective actions. The CAFO inspector will want to examine manure storage structures, the production area, and flow paths for evidence of discharge. The CAFO inspector

might also consider conducting this inspection during a storm event or at the end of a wet weather period, including snowmelt.

Sampling

If sampling is to be performed, part of the pre-inspection process will involve collecting, organizing, and preparing sampling equipment. The inspector's CAFO Inspection Plan should include whether sampling is expected and, if so, what types of sampling will be performed. The inspector should also prepare a sampling and analysis plan (SAP) or a quality assurance project plan (QAPP).

Sampling equipment will vary according to the media sampled, manure type (liquid, slurry, dry) if manure will be sampled, chemical parameters, and inspection type. Appendix AM, "Sampling Procedures and Equipment," includes a comprehensive list of field sampling equipment; the inspector should evaluate the equipment planned for use against documented sampling protocol. All equipment must be checked, calibrated, tested, logged, and packed for the inspection.

The inspector must plan for the proper preservatives and/or preservation methods (e.g., coolers with cold packs). In addition, if certain types of samples have holding times (i.e., a certain period of time that must not be exceeded before delivering the sample to the laboratory), the inspector should ensure that inspection time plus travel time do not exceed this threshold. For this reason, sampling may need to be scheduled towards the end of the inspection, and a time buffer built into the schedule to account for unanticipated delays. The inspector may have to pre-arrange to have samples delivered and analyzed at a local laboratory (near the facility) if samples cannot be delivered to an EPA laboratory within sample holding times. The inspector should also be prepared to follow the appropriate chain-of-custody procedures and provide the necessary documentation to ensure the results can be used in enforcement or other actions, as necessary. Refer to Basic Inspector Training or NPDES Inspection Manual for more information on chain-of-custody and documentation.

Quality Assurance Project Plan (QAPP)

EPA developed the QAPP as a tool for project managers and planners to document the type and quality of data needed for the agency to make environmental decisions and to describe the methods for collecting and assessing those data. The QAPP is required for all EPA projects resulting in the generation, collection, and use of primary environmental data such as water quality monitoring data. The QAPP ensures that the needed management and technical practices are in place so that environmental data used to support agency decisions are of adequate quality and usability for their intended purpose.

Prior to the start of data collection, a QAPP defining the goals and scope of the project, the need for sample collection, a description of the data quality objectives and quality assurance/quality control (QA/QC) activities to ensure data validity and usability must be developed by the project officer. Thereafter, a review by all parties to the sampling effort, such as a Quality Assurance (QA) Officer, must be conducted. Also, EPA laboratories will require a copy of an approved QAPP prior to conducting any sample analysis. This QAPP requirement

applies to both EPA staff and outside contractors. The process for approval of the QAPP and other documents related to the data collection activity should be outlined in the lead organization's Quality Management Plan (QMP) (see Appendix AN, "Sample Quality Assurance Project Plan (QAPP)").

Inspection Notification

EPA conducts both announced and unannounced inspections. Depending upon the specific circumstances and regional compliance strategies, the CAFO operator may or may not be notified in advance of the inspection. When EPA is leading the inspection, some regions notify the permittee in advance with a letter issued pursuant to Clean Water Act section 308, or "308 Letter," that the CAFO is scheduled for an inspection (see Appendix E, "Sample CWA Section 308 Information Collection Request Letter (308 Letter)"). The 308 Letter notifies the permittee that an inspection is imminent and usually requests information regarding on-site safety and biosecurity requirements. The 308 Letter may specify the exact date of the inspection, if coordination with the permittee is required. The 308 Letter also is used to inform the permittee of the right to assert a claim of confidentiality. The 308 Letter may be issued in conjunction with verbal communication with the CAFO operator to schedule an appropriate meeting time and location and to discuss biosecurity and safety procedures. The 308 Letter can also be used to obtain information prior to the inspection regarding manure storage and handling practices, not otherwise available. The CAFO inspector should consult with regional management regarding the process for developing and issuing these letters.

The CAFO inspector may also notify the appropriate state regulatory agency that an inspection will be conducted, and typically must notify an Indian country regulatory agency in advance of inspections to be conducted in their jurisdictions. The CAFO inspector should be prepared to respond to requests from state or Indian country agency staff to ride-along or participate in the inspection, whether for information exchange or training purposes. EPA policy with respect to Indian country inspections and notifying state agencies is addressed in the *NPDES Inspection Manual*; EPA Regions may have additional guidance with respect to pre-inspection notification.

CAFO INSPECTION PLAN

Developing a CAFO Inspection Plan is the final step of the pre-inspection process and will assist the CAFO inspector in performing the actual CAFO inspection. The CAFO inspector should develop a comprehensive inspection plan to define the inspection type, objectives, tasks and procedures, resources required to fulfill the objectives, tentative inspection schedule, and reporting deadlines. The following items need to be considered relative to the type of inspection (e.g., status determination, permit compliance, follow-up, settlement, or complaint inspection).

- Objectives (depends on inspection type):
  - What is the purpose of the inspection?
  - What is the compliance determination strategy?
  - What is to be accomplished on-site?
  - What is to be accomplished after leaving the site?

- Tasks (depends on purpose of inspection):
  - What specific tasks will be conducted?
  - What records will be reviewed?
  - What information must be collected (photocopies, samples, etc.)?
- Procedures (depends on activities anticipated):
  - What procedures are to be used?
  - Will the inspection require special procedures?
- Resources:
  - What personnel will be required?
  - What equipment will be required?
- Schedule:
  - What will be the time requirements and order of inspection activities?
  - When will the inspection report be sent to the facility?
- Pre-notification/coordination:
  - Will the facility be notified in advance of the inspection? If so, how many days in advance and by what method (phone, mail, email, fax, or some combination of these)?
  - Does the inspection need to be coordinated with EPA attorneys or other EPA compliance staff or regulatory programs?
  - Which other federal and state agencies need advance notice of the inspection?
  - If not done in advance, how and when will the facility be notified of the inspection?

The outline of tentative inspection objectives and records that will be reviewed should be prepared in advance and can be presented to the CAFO representative(s) during the opening conference.

Review Checklists

In addition to the specific items mentioned in this chapter, to facilitate the CAFO inspection process, a detailed National CAFO checklist based on the NPDES CAFO regulations and CAFO ELG requirements has been developed. The checklist is useful in collecting information associated with the NMP and the minimum practices. EPA Regions have developed similar checklists particular to regional issues and some have prepared sector-specific checklists (see Appendix AI, “Inspection Checklist,” and Appendix AJ, “Regional Inspection Checklists”). The CAFO inspector should select or develop a checklist appropriate to the CAFO: permitted, unpermitted, or sector-specific.

The CAFO inspector should photocopy appropriate checklist(s) to be used during the inspection and consider bringing extra copies in case the facility requests a copy during the inspection. The CAFO inspector should also consult this checklist when reviewing the CAFO's facility files.

C. THE CAFO INSPECTION—FACILITY TOUR

This section covers the CAFO site inspection facility tour including entry activities, the opening conference, limited on-site records and document review, the facility tour, and the closing conference. Section 4, "The CAFO Inspection—Records Review and the NMP," will cover how to evaluate the facility's records and implementation of the terms of the NMP.

The information presented in this section is intended to be comprehensive and broadly applicable to the majority of EPA inspections at permitted and unpermitted CAFOs; however, there will always be situations that require inspectors to rely on their best professional judgment, knowledge of the regulations, and familiarity with EPA Region-specific policies. As such, the inspector should recognize that each inspection is different and will generally involve the activities discussed below; the amount of time dedicated to each may vary. In addition, an inspection might only include a subset of the elements below as dictated by the compliance determination strategy and the CAFO Inspection Plan. Nevertheless, all inspections do share common components and the general structure and approach to an inspection will not vary significantly across facilities and inspection types.

ARRIVAL ON-SITE

CAFO inspections may be announced or unannounced; entry procedures are similar for both. However, during an announced inspection the inspector may have an easier time locating the responsible facility representative. As described in Section B, a 308 Letter may be used to notify the CAFO of an upcoming inspection. See an example 308 Letter in Appendix E. A 308 Letter can also be used to gather information important to the inspection prior to the actual announced or unannounced inspection.

The inspector should arrive at the CAFO at the scheduled time, if announced, or during normal working hours if unannounced. The owner, operator, foreman, or other responsible person should be located as soon as the inspector arrives on the premises. The inspector may want to present the CAFO representative with an official inspection introduction letter identifying the purpose of the inspection, inspection authority and contact phone numbers. See Appendix AL, "Inspection Introduction Letter." As previously mentioned, the inspector should recognize that the CAFO may be a small business with a minimal number of employees. The inspection may have to wait until a livestock truck is loaded or unloaded, cows are milked, or other routine activities are finished. In addition, the inspector may have to knock on the door of the on-site residence to locate the responsible individual, especially if the inspection is unannounced.

Credentials

When a knowledgeable CAFO representative(s) has been located, the inspectors must introduce themselves as EPA inspectors and present official EPA credentials. Inspectors should also provide a business card with contact information to the CAFO representative. The

credentials identify the holder as a lawful representative of the regulatory agency and authorized person to perform CAFO inspections. **The inspector's credential must be presented regardless of whether identification is requested**. If any EPA staff members accompanying the inspector do not have credentials, they must have their EPA identification readily available.

If the CAFO representative(s) question the inspector's credentials after the credentials have been reviewed, those individuals should telephone the appropriate state or EPA Regional Office for verification of the inspector's identification. The inspector should keep possession of the credentials at all times; credentials must never leave the sight of the inspector or be photo-copied.

Consent

Consent to inspect the premises must be given by the owner or operator at the time of the inspection. Expressed consent is not necessary; absence of an expressed denial constitutes consent. As long as the inspector is allowed to enter the CAFO, entry is considered voluntary and consensual, unless the inspector is expressly told to leave the premises.

Reluctance to Give Consent

Some CAFO representatives will be agreeable to the inspection, but others will require additional explanation and/or clarification regarding EPA's authority to inspect their operation. Inspectors may want to share EPA's fact sheet with answers to commonly asked questions to help livestock and poultry operation owners and operators understand what to expect from EPA NPDES inspections (EPA, 2014). The factsheet is available at https://www.epa.gov/compliance/fact-sheet-livestock-and-poultry-operation-inspections. Examples where entry or consent may require more time and explanation include areas with newly issued NPDES CAFO permits, CAFOs that have not previously been inspected, and inspections following well-publicized compliance settlements. In some cases, representatives may be reluctant to give entry consent because of misunderstood responsibilities, inconvenience, or other reasons that may be overcome by diplomacy and discussion. If consent to enter is denied, the inspector should follow denial of entry procedures detailed in the section below.

Whenever there is a difficulty in gaining consent to enter, inspectors should tactfully probe the reasons and work with the CAFO representative to overcome the problems. Care should be taken, however, to avoid threats of any kind, inflammatory discussions, or deepening of misunderstandings. If the situation is beyond the authority or ability of the inspector to manage, the inspector should follow contingency plans identified before the inspection. Typically, those plans include contacting the inspector's supervisor and/or the Office of Regional Counsel for further direction.

Denial of Entry or Consent

If the CAFO representative considers the inspection to be an adversarial proceeding, the legal authority, techniques, and inspector's competency may be challenged. CAFO representatives may also display antagonism toward EPA personnel. In all cases, the inspector must cordially explain the inspection authorities and the protocols followed. If explanations are not

satisfactory or disagreements cannot be resolved, the inspectors should leave and obtain further direction from their EPA supervisor or EPA's Office of Regional Counsel. Professionalism and politeness must prevail at all times.

Entry Tip

The inspector should maintain a neutral tone throughout the inspection and avoid confrontational subjects, particularly politics, animal welfare, environmental issues and livestock agriculture.

Under no circumstances should the inspector discuss potential penalties or do anything that may be construed by the facility representative as coercive or threatening.

Inspectors should use discretion and avoid potentially threatening or inflammatory situations. If inspectors are threatened or otherwise uncomfortable, they should leave the facility immediately, document the confrontation, and report it immediately to their EPA supervisor or EPA staff attorney. If feasible, statements from witnesses should be obtained and included in the documentation.

If the facility representative asks the inspector to leave the premises after the inspection has begun, the inspector should leave as quickly as possible following the procedures discussed previously for denial of entry. All activities and evidence obtained before the withdrawal of consent are valid so the inspector should carefully document the time the inspection ended. The inspector is expected to act professionally, adhere to all biosecurity requirements, and collect all personal and government equipment before leaving the facility.

If, during the inspection, the CAFO representative denies or revokes access to parts of the facility integral to evaluating compliance with the regulations, the inspector should record the circumstances surrounding the denial of access and of the portion of the inspection that could not be completed. The inspector should then complete the rest of the inspection. After leaving the CAFO, the inspectors should contact their EPA supervisor or staff attorney to determine whether a warrant should be obtained to complete the entire inspection.

Authority to Conduct Inspections

EPA has the authority to regulate and inspect CAFOs through requirements established in the CWA and its implementing regulations:

- Section 301 of the CWA prohibits the discharge of pollutants to waters of the US unless in compliance with an NPDES permit or other provisions of the CWA.
- Section 502(12) of the CWA defines "discharge of pollutants" to mean the addition of a pollutant to navigable waters from a "point source." The term "point source," in turn, specifically includes CAFOs. Section 502(14).
- Section 308 of the CWA authorizes EPA to enter any premises in which an effluent source is located. This broad authority allows EPA to inspect operations where discharges from point sources such as CAFOs are suspected or located. It also allows EPA to review and copy records and collect discharge samples or other information from effluent sources, as required, to carry out the objectives of the CWA, which includes determining whether NPDES permit conditions are being met or whether an operation is discharging without a permit.

- Section 402 of the CWA requires NPDES permittees to comply with the terms of the permit, including any specific discharge limits and operating requirements.
- The regulations at 40 CFR 122.23 and 122.42 establish the NPDES permitting requirements for CAFOs.
- The regulations at 40 CFR 123.26 establish procedures and objectives for routine inspections of NPDES-permitted facilities by state programs.

Claims of Confidentiality

The inspector should explain the permittee's right to claim material as confidential and that the inspector may examine areas related to waste production or storage even if the permittee has asserted claims of confidentiality. See the *NPDES Compliance Inspection Manual* (EPA 2016) for details on how to handle claims of confidential business information.

Waivers, Releases, and Sign-In Logs

The CAFO operator may provide the inspector with a blank sign-in sheet, log, or visitor register. The inspector should clarify what they can and cannot sign with EPA Regional Counsel prior to the inspection. However, **EPA inspectors or other EPA representatives are prohibited from signing any type of "waiver" or "visitor release" that relieves the CAFO of responsibility for injury or that would limit the rights of EPA to use data obtained from the facility**. If such a waiver or release is presented, the inspectors should politely explain that they cannot sign. They may request and sign a blank sign-in sheet.

Explaining the CAFO operator's right to claim confidentiality for certain types of information may help to alleviate concerns about use of data. If inspectors are refused entry because they do not sign the release, they should leave and immediately report all pertinent facts to the appropriate supervisor and/or legal staff. All events surrounding the refused entry should be fully documented. Problems should be discussed cordially and professionally.

OPENING CONFERENCE

Once credentials have been presented and legal entry established, the inspector can proceed to outline inspection plans with the CAFO representative(s). At the opening conference, the inspector provides names of the inspectors, the purpose of the inspection, authorities under which the inspection is being conducted, provides a copy of the NPDES regulations or other fact sheets concerning the regulation of CAFOs, and procedures to be followed. EPA encourages cooperation between the inspectors and CAFO representative to ensure that the inspection is efficient, professional, and successful.

The inspector will explain the order of activities during the inspection; records review followed by facility tour or vice versa. The inspectors should tell the operator how long they expect to be on-site. This will help to eliminate wasted time by allowing representatives to make records and personnel available. The inspector may have to be flexible to accommodate previously scheduled farm activities like milking, feeding, or unforeseen emergencies.

If not provided in advance, a written list of CAFO records needed for the inspection should be provided to the CAFO representatives. This will help the representatives to gather the records and make them available for the inspector. Commonly required records include, but are not limited to:

- NPDES permit.
- Nutrient management plan.
- Visual inspection logs (e.g., inspection of water lines, wastewater impoundments, lagoon depth recording).
- Manure transfer records.
- Laboratory soil and manure test results.
- Operator identified deficiencies and corrective actions.
- Calibration records for nutrient application equipment.
- Discharge monitoring records.
- Records of inspecting nutrient application equipment for leaks.
- Nutrient application records.
- Mortality management records.

Records Tip

Sending the CAFO a list in advance of records that may be reviewed during the inspection will expedite the on-site records review. Notifying the CAFO officials prior to the inspection will enable them to assemble the appropriate records as well as give them an idea of what to expect from the inspection.

The inspector should also identify structures and activities that need to be evaluated during the facility tour. The inspector should be prepared to answer questions about the relevancy of activities and buildings to regulatory compliance. At this point in the opening conference the inspector should ask about site-specific biosecurity equipment and procedures that need to be followed during the inspection, if the topic has not already been discussed. The biosecurity discussion should include:

- Site specific protocols that must be observed by the inspector (e.g., shower in/shower out, booties or foot wash, gloves).
- Biosecurity concerns that may dictate the order of areas visited, or areas that are accessible to the inspector. See Section B for a more detailed discussion of biosecurity.

Finally, the inspector will provide an overview of general inspection follow-up procedures. This information will be repeated at the end of the inspection. Inspectors should check with their state or EPA Regional contacts for any state or region-specific protocols.

The inspector will then turn the opening conference over to the CAFO representative(s) for an overview of the operation with a focus on manure/nutrient

Ask Basic Facility Information During the Opening Conference

- Verification of the name, address, and telephone number of the facility.
- Who is the authorized representative for the facility?
- Is the facility leased, along with contact information for lessor and lessee?
- Questions concerning the facility's history, including any discharges.

management and any questions the representative(s) may have about the inspection or the inspection process.

Before the record and document review begins, the inspector and CAFO representative(s) may review facility diagrams, maps or aerial images (e.g., Google Earth, TerraServer, or similar) and label significant structures such as the production area, feed and manure storage areas, land application areas, flow paths, property boundaries, drinking water wells, and other facility features. If aerial images are used it may be helpful to provide one close view of the production area and at least one larger scale view of the entire operation. These images can be scanned and attached to the inspection report.

RECORD AND ON-SITE DOCUMENT REVIEW

Federal CAFO regulations require both permitted and unpermitted large CAFOs to maintain records. Unpermitted large CAFOs that land apply manure are required to keep records to demonstrate that they only discharge agricultural stormwater from land application areas. See Chapter 4.1.8. of the *NPDES Permit Writers' Manual for CAFOs* (EPA, 2012a) for a detailed discussion of the agricultural stormwater exemption. Permitted CAFOs must maintain records to demonstrate compliance with their NPDES permit.

Regardless of the CAFOs permit status, the inspector should first verify basic information about the facility to identify changes in ownership or operational characteristics.

- ✓ Do EPA records correctly identify the CAFO owner, operator, and contact information?
- ✓ What is the size of the facility, both acreage (production area and non-production area) and number and type of animals?
- ✓ How does the CAFO handle and store manure?
- ✓ What are the current nutrient management practices, cropping, and location of land application sites?

The inspector should review CAFO records to see if recordkeeping requirements are being met. The review of available records and reports should answer the following questions:

- ✓ Is the CAFO collecting the required data?
- ✓ Is all the required information available?
- ✓ Is the information current?
- ✓ Is the information being maintained for the required time period?
- ✓ Do the records reviewed indicate areas needing further investigation?
- ✓ Are the records organized?
- ✓ Do the records demonstrate compliance with the CAFO's NPDES permit status (e.g., if permitted, has the CAFO submitted Annual Reports)?

Records specific to land application requirements are covered in Section D.

FACILITY TOUR

The inspector will ask the facility representative to accompany him or her on a tour of the facility. The purpose of the facility tour is to assess existing conditions, gather information to determine if the CAFO is operating in compliance with the CAFO's NPDES permit, or if the facility needs to submit a permit application or notice of intent (NOI) for NPDES permit coverage. During this phase of the inspection, the inspector will observe and photo document activities, structures and processes used to maintain the compliance with the CWA and/or the CAFO's NPDES permit. During the facility tour, the inspector should visit the following areas of the CAFO:

- Animal housing, feeding, feed storage, mortality management and maintenance areas.
- Manure and process wastewater collection, transport, storage, and treatment areas.
- Manure and process wastewater land application areas.

Documentation Tips

- ✓ Make sure photos contain a distinguishing characteristic like a unique depth marker or buildings in the background.
- ✓ Impermanent items, such as vegetation, do not make good reference points as they can be easily removed.
- ✓ Photos should include an accurate date/time stamp that shows it was taken during the time period of the inspection.
- ✓ Some digital cameras include built-in global positioning system (GPS) tagging that allows an inspector to associate each photo with the geographic location where it was created.

The inspector needs to carefully document the visual inspection with notes, photographs and/or videos. Occasionally the CAFO representative will take duplicate photos for their records. If the CAFO is discharging during the inspection or there is evidence that the facility has recently discharged, the inspector might also take samples. See Appendix AM, "Sampling Procedures and Equipment" for more information on sampling. During the facility tour, the inspector might determine that additional records or documents need review. The inspector should inform the facility representative as soon as this has been determined to facilitate the retrieval of the needed information.

CAFO Operational Overview

Many details of how CAFOs are operated are provided in Appendix AD, "Animal Industry Overview." Refer to that section for details on sector-specific confinement facilities, as well as typical manure and mortality management practices.

Identification of Discharges

Basic considerations that can lead to discharges of manure, litter and process wastewater from the production area and land application areas are included here. See additional detail below.

Production Area Discharges

Production area discharges most commonly occur at spillways, man-made ditches or pipes designed to allow overflows during storm events. These overflow features are often located on the berms of a CAFO's wastewater impoundments or in and around animal feed storage areas, such as silage bunkers. Wastewater may also exit the facility at low lying areas where there is

no berm. Additional discharge locations may include rodent holes and open tile drains that are designed to carry wastewater away from the production area. Common scenarios that may lead to wastewater discharges from the production area include:

- Undersized or no feed, manure, or mortality storage capacity.
- Poor feed, manure, mortality storage structure operation and maintenance.
- No or undersized diversion structures.
- Poorly located waste and/or material storage areas (i.e., too close to drainage ditches or waterways).
- Insufficient dewatering.
- Clogged and/or broken water lines.

Land Application Area Discharges

Common scenarios that may lead to wastewater discharges from the land application areas include:

- Clogged and/or broken manure transportation lines/hoses.
- Over-application of manure, litter or process wastewater.
- Land applying manure, litter, or process wastewater to saturated, frozen or snow-covered ground (Note: Some states have manure spreading bans in winter months; check state technical standard).
- Type, size, location and maintenance of buffers.

Note that a CAFO's land application discharges that meet the definition of "agricultural stormwater" do not require an NPDES permit.

The following list provides example factors affecting the likelihood or frequency of discharges of manure, litter, and process wastewater:

- Slope of feedlot and surrounding land
- Feedlot surfacing (e.g., concrete or soil)
- Climate (e.g., arid or wet)
- Type and condition of soils (e.g., sand, karst)
- Amount and duration of rainfall
- Volume and quantity of runoff
- High water table

The inspector should look for evidence of actual or past discharges. Moist soil or ponded water located outside of the production area may be indicative of a recent discharge. More obvious evidence that a discharge has occurred may include erosive channels and/or dead vegetation from nitrogen burns leading from the production area and/or land application areas. In addition, wastewater discharges can carry debris and deposit them on the ground. Manure

located in a water or outside the production area and eutrophication in waters adjacent to the CAFO are other signs that might indicate recent or regular discharges.

CAFO Discharges to a Water of the United States

Where evidence of an actual or past overflow or spill is observed, it is important to find out whether it enters a water of the United States. It only becomes an unauthorized discharge if it enters a water of the United States. A water of the United States determination can be a complex process and involves consideration of both facts and legal standards. The inspector should consult with regional or state program and legal experts. The inspector's role is not to make waters of the United States determinations, but to collect the evidence needed for the state or regional experts to make the determinations if point source discharges reach waters of the United States. Inspectors should contact state or EPA experts for additional information or for training opportunities.

A short review of key points relevant to discharges from CAFOs follows.

- **A permit is required for a discharge of pollutants from a CAFO to waters of the United States.** A CAFO may not discharge without an NPDES permit. NPDES permits authorize CAFOs to discharge pollutants to waters of the United States when they are in compliance with permit conditions. Enforcement actions may be taken for any discharge to waters of the United States that occurs without an NPDES permit or for violations of permit conditions.
- **Discharges from CAFOs to waters of the United States are point source discharges subject to NPDES permit requirements.** Any discharge to a water of the United States from a CAFO is a discharge from a point source and must be authorized by an NPDES permit
- **Only CAFOs that discharge pollutants to waters of the United States need NPDES permits.** Coverage under an NPDES permit is not required for a CAFO that does not discharge pollutants to waters of the United States.
- **Unexpected discharges are not exempt from permit requirements.** The CWA does not distinguish between intentional and unintentional discharges in determining whether a permit is required. The fact that an unpermitted discharge was unexpected is not a defense to an enforcement action.
- **Discharges are not limited to manure, litter or process wastewater.** CAFO discharges subject to permitting requirements include discharges of any pollutant, including but not limited to manure, litter and process wastewater, silage/feed and bedding pollutants.
- **Discharges resulting from land application of manure, litter or process wastewater require a permit, unless they qualify as agricultural stormwater.** Discharges from the land application area are exempt from NPDES permitting requirements if they consist only of agricultural stormwater discharges. Section A describes the CWA "agricultural stormwater exemption."

Discharge Pathways at CAFOs

Discharges from a CAFO to waters of the United States may originate in the CAFO's production area, land application area(s), or other parts of the CAFO not specifically included in either of those definitions. For example, discharges of process wastewater could occur when equipment used to spread manure or clean out poultry houses is rinsed at a CAFO's truck wash facility.

To identify discharges, it is necessary to look at the operation as a whole and the variety of ways in which pollutants may be discharged looking at man-made components, operational features of the CAFO, as well as natural characteristics that can cause a CAFO to discharge. Note that a CAFO itself is a point source; a discharge to a water of the United States from a CAFO must be authorized by an NPDES permit regardless of whether the discharge occurs through an additional discrete conveyance (Waterkeeper Alliance, Inc. v. EPA, 2005) or if the discharge is to land not owned by the CAFO, and then to a water of the U.S, the CAFO is discharging pollutants to waters of the United States (Sierra Club v. Abston Constr. Co., 1980).

Production Area Discharges

This section focuses on the design, construction, operation, and maintenance aspects of CAFO production areas. Characteristics of the facility's production area may significantly influence its likelihood of discharging pollutants to waters of the United States. Examining these features of a CAFO's operation will help in identifying discharge pathways.

As defined by the EPA regulations, a CAFO's production area includes the animal confinement area, the manure storage area, the raw materials storage area, and waste containment areas, as well as areas for egg washing and mortality management (40 CFR 122.23(b)(8)). Because discharges can arise from any of part of the production area, the entire production area should be evaluated when determining whether a CAFO discharges from its production area.

Production area means that part of an AFO (including CAFOs) that includes the *animal confinement area*, the *manure storage area*, the *raw materials storage area*, and the *waste containment areas*.

- The animal confinement area includes but is not limited to open lots, housed lots, feedlots, confinement houses, stall barns, free stall barns, milk rooms, milking centers, cowyards, barnyards, medication pens, walkers, animal walkways, and stables.
- The manure storage area includes but is not limited to lagoons, runoff ponds, storage sheds, stockpiles, under house or pit storages, liquid impoundments, static piles, and composting piles.
- The raw materials storage area includes but is not limited to feed silos, silage bunkers, and bedding materials.
- The waste containment area includes but is not limited to settling basins, and areas within berms and diversions which separate uncontaminated storm water.

Also included in the definition of production area is any egg washing or egg processing facility, and any area used in the storage, handling, treatment, or disposal of mortalities. 40 CFR 122.23(b)(8).

When evaluating whether a CAFO discharges, certain considerations are applicable to many CAFOs in any animal sector, while others may be specific to a certain type of facility. The sections below include both general considerations and those that may not be broadly applicable. However, the following sections are not intended to be an exhaustive discussion of every possible mechanism for production area discharges. Instead, the sections below highlight the range of potential discharge pathways to consider when evaluating whether an individual CAFO discharges from its production area.

Discharges from the Production Area: All Animal Sectors

This section describes factors relevant to determining whether a CAFO discharges that apply to all types of livestock, including animal types not specifically discussed in this guidance, such as veal calves, turkeys, ducks, horses, and goats.

The Animal Confinement Area

The animal confinement area includes but is not limited to open lots, housed lots, feedlots, confinement houses, stall barns, free stall barns, milk rooms, milking centers, cow yards, barnyards, medication pens, walkers, animal walkways and stables (40 CFR 122.23(b)(8)).

A CAFO's animal confinement area should be designed, constructed, operated, and maintained in a way that clean water diversion mechanisms, if any, are fully functional, and all process wastewater is collected and stored. Water that contacts any raw materials, products, or byproducts including manure, litter, feed, milk, eggs or bedding is process wastewater (40 CFR 122.23(b)(7)) and cannot be discharged unless authorized by an NPDES permit. Note that a discharge from animal watering systems is a discharge from the CAFO. Direct contact between confined animals and surface water flowing through the production area, often for drinking or cooling, is a discharge from the CAFO.

> *Process wastewater* means water directly or indirectly used in the operation of the AFO for any or all of the following: spillage or overflow from animal or poultry watering systems; washing, cleaning, or flushing pens, barns, manure pits, or other AFO facilities; direct contact swimming, washing, or spray cooling of animals; or dust control. Process wastewater also includes any water that contacts any raw materials, products, or byproducts including manure, litter, feed, milk, eggs or bedding (40 CFR 122.23(b)(7)).

The relevant minimum measure is to prevent direct contact of confined animals with waters of the United States (40 CFR 122.42(e)(1)(iv)).

Manure Storage and Handling

During the tour of a CAFO's production area, the inspector should visually check and note any failures to follow Minimum Measure 1: Ensure adequate storage of manure, litter, and process wastewater, including procedures to ensure proper operation and maintenance of the storage facilities (40 CFR 122.42(e)(1)(i)).

Siting, design, construction, and maintenance of storage structures are important considerations when determining whether a CAFO has an adequate waste storage and handling system in place. In addition, the number of animals and the amount of manure, litter, or process wastewater anticipated to be generated during the critical storage period[13] should be considered. All process wastewater generated at the site should be considered when determining the adequacy of the CAFO's storage capacity. Operation and maintenance factors include the frequency of regular inspections of all storage structures to ensure integrity of

[13] This term means the storage period that provides the capacity to store the maximum amount of manure and process wastewater plus precipitation events less evaporation that will be generated until optimal land application or other drawdown of storage (e.g., for transfer off-site). See also Page 2-12 of EPA's *Managing Manure Nutrients at Concentrated Animal Feeding Operations* (EPA, 2004).

berms, valves, and other control devices, and to determine the fill level of liquid impoundments.

Manure storage and handling practices differ depending on whether the CAFO operates a system for handling manure in liquid or dry form, or a combination of the two.

For liquid manure handling systems, it is important to consider whether manure storage structures are designed and constructed to eliminate the possibility of overflow and/or managed in a manner to prevent any overflow from reaching a water of the United States. Proper maintenance includes maintaining capacity for freeboard and direct precipitation and preserving the structural integrity of the pond or lagoon by managing levels of manure, wastewater and sludge appropriately. Photo 17-1 illustrates a lagoon with vegetation growing in it. Growth of vegetation on the manure inside a storage structure decreases the capacity of the system and, may be an indication that manure solids have not been removed at appropriate intervals to maintain adequate storage capacity. Factors that may lead to structural failure include erosion, growth of trees or shrubs on berms, large animals walking on lagoon berms, and burrowing wildlife. A proper maintenance plan should address those factors. Embankments of any manure storage structure should have protective vegetation such as grass, be well compacted, intact, dry, show no signs of erosion, and have sufficient access for equipment such as pumps and agitators. Pooling on the side of the pond or lagoon could be indicative of leaking. Ask the facility representative if the manure structure is lined with any material to prevent leaking such as concrete, clay, plastic, etc.

Photo 17-1. This lagoon at a dairy CAFO is upslope from a water of the United States and overflowing. In addition, cows stand on the embankments of the far side of the lagoon, which may degrade the embankments over time, and vegetation is growing in the lagoon, which indicates poor maintenance. (Source: EPA Region 6.)

Although the design of a liquid manure storage structure is critical in determining the capacity of that structure to contain manure so that a discharge will not occur, the design standard alone does not necessarily guarantee that no discharge will occur. For example, a CAFO with a liquid storage structure designed for the 25-year, 24-hour storm is not categorically excluded

from the requirement to seek permit coverage based on this design standard.[14] Larger storms and chronic rainfall events do occur, and production areas built to the 25-year, 24-hour storm design standard can and do discharge during such precipitation events. A permit is required to authorize a discharge under these circumstances. Proper operation and maintenance of the structure should also be considered as part of the objective assessment, such as steps to ensure there are no leaks or other system failures unrelated to storm events.

For permitted CAFOs, a liquid storage structure designed for the 25-year, 24-hour storm can discharge (because of overflows) during a storm event of any size so long as the facility is designed, constructed, operated, and maintained in compliance with the facility's permit terms and conditions. Further, certain other discharges may be allowed for permitted CAFOs, which are not covered by the CAFO effluent guidelines (ELGs). Such discharges are typically managed by treatment systems or best management practices (BMPs), as determined by the permit writer's best professional judgment (CWA section 402(a)(1); 40 CFR 122.44(a),(k)). For example, a CAFO's permit might allow discharges from equipment washdown facilities, chilling systems, boiler systems, and from other areas not covered by the ELGs, such as areas outside houses at total confinement facilities. For additional details on discharges from areas not covered by the effluent limitation guidelines for CAFOs, see Chapters 4.1.4, 4.1.5, and 4.1.6 of EPA's *NPDES Permit Writers' Manual for CAFOs* (EPA, 2012a). However, there are no such provisions for unpermitted CAFOs. Therefore, it is important that CAFOs whose owners or operators choose not to have an NPDES permit be designed, constructed, operated, and maintained so they do not discharge during any size precipitation event.

For dry manure handling systems, it is important to consider the practices for moving manure or litter from animal confinement areas to storage areas and whether the CAFO has sufficient capacity to store dry manure or litter in covered buildings or otherwise manage it to keep it dry or contain all runoff.

Photo 17-2. This storage structure might have inadequate capacity for the amount of litter being stored. The area around the storage shed drains to a water of the U.S. and does not have any runoff controls. (Source: EPA Region 3)

[14] In many cases the BMPs implemented by an unpermitted CAFO to ensure that it does not discharge will be more rigorous than those required for permitted CAFOs, because the operator of an unpermitted CAFO is never authorized to discharge under CWA section 301(a). Permitted CAFOs have greater flexibility because, in addition to being authorized to discharge under the circumstances prescribed by the permit, other discharges can be excused when the conditions contained in EPA's upset and/or bypass regulations are met (40 CFR 122.41(m) and (n); 73 FR 70,425).

Stockpiles of dry manure or litter are part of the production area, regardless of where they are located (40 CFR 122.23(b)(8)). Small and medium farms occasionally field-stack manure stockpiles in nearby crop or grazing fields, outside of the main production area. Discharges could occur from such stockpiles of manure or litter, whether solid or semi-solid, depending on the location of the stockpile (i.e., proximity of the stockpile to waters of the United States. and slope of land), exposure to precipitation, and presence of structural controls such as pads, berms or covers, duration of storage, and management of pile removal. Even temporary stockpiles could lead to an unauthorized discharge from an unpermitted CAFO if precipitation that contacts stockpiled manure or litter is subsequently discharged to waters of the United States.[15] Covered storage areas and concrete pads are good management practices that can reduce contact between precipitation and the stockpile, and thus prevent discharges from occurring. It is also important to prevent any discharges associated with spillage of manure or litter. Photos 17-2 and 17-3 illustrate situations where storage practices can lead to discharges to waters of the United States.

Raw Materials Storage Area

The CAFO's raw materials storage area includes but is not limited to feed silos, silage bunkers, and bedding materials (40 CFR 122.23(b)(8)). As indicated above, the definition of process wastewater includes water that contacts raw materials including feed and bedding at the CAFO. Therefore, an evaluation of whether a CAFO discharges must consider whether water from feed, silage and bedding storage areas, if that water has contacted raw materials, will be discharged to a water of the United States. The inspector should note whether raw materials are covered and evaluate storage structures for breaks, leakage and spills. In the case of silage, the evaluation should also include consideration of any leachate resulting from the stored silage.

Photo 17-3. This stockpile is up to 8 feet tall and 60 feet long without cover or containment. A creek runs through the wooded area behind the pile. Any runoff from the stockpile to waters of the U.S. would be a discharge from the CAFO. (Source: EPA Region 7)

[15] EPA has allowed poultry facilities to qualify for the higher numeric thresholds for dry manure handling systems when they have exposed stockpiles for no more than 15 days (the numeric thresholds for poultry with liquid manure handling systems are lower, and thus would cover more facilities). However, this 15 day "grace period" does not apply to whether or not a facility that is defined as a CAFO based on the dry litter numeric thresholds discharges. Regardless of whether an exposed stockpile is maintained for more than or few than 15 days, any discharge from manure or litter stockpiles is a discharge from the production area of a CAFO.

CAFOs should have adequate structures and protocols in place to ensure that any water that has contacted raw materials like feed and bedding will not be discharged to a water of the United States. Structures to prevent discharges from the raw materials storage area could include diversion structures to direct runoff or leachate to the CAFO's wastewater storage structures, or to vegetated treatment areas (VTAs), provided those areas are accounted for in the design, construction, operation, and maintenance of the structures. Where appropriate, the inspection should include evaluating the adequacy of silage leachate runoff collection and treatment. Silage management may be in the form of low flow leachate collection and land application or high flow runoff treatment in a vegetated treatment area. If a VTA system is used, it must be adequately maintained with consistent coverage of vegetation and be free of pooling liquids and kill zones.

Commodity and byproduct feed materials are stored in covered structures at many CAFOs. When handling those materials, CAFO operators should ensure that raw materials are not spilled in uncovered areas where they could be carried in runoff to a water of the United States.

Clean Water Diversion

Diverting clean water away from the production area minimizes the creation of process wastewater making it easier for a CAFO to properly manage manure, litter, and process wastewater. Diversions used to separate uncontaminated stormwater can include berms, swales, channels, ditches, barn roof drains with diversion structures or French drains around barns, or even natural topography. Berms and diversions used to prevent uncontaminated stormwater from entering a waste containment area should be designed and constructed so that they are large enough to ensure separation of clean stormwater.

During the tour of a permitted CAFO's production area, the inspector should visually check and note any failures to follow Minimum Measure 3: Ensure that clean water is diverted, as appropriate, from the production area (40 CFR 122.42(e)(1)(iii)).

Waste Containment

The waste containment area includes but is not limited to settling basins, and areas within berms and diversions which separate uncontaminated stormwater (40 CFR 122.23(b)(8)). For example, waste containment areas include areas where diversion structures are used to prevent clean stormwater from entering the containment area and contacting the waste or to keep contaminated runoff from exiting the containment area. Settling basins are also waste containment areas since they are not designed for long-term storage of manure.

Like manure storage areas, any area that is designed or operated to contain waste must be sized adequately to contain the volume of waste anticipated, thus ensuring waste will not be discharged from that area. For unpermitted CAFOs, such structures must be sized to ensure separation of uncontaminated stormwater to prevent discharge of contaminated stormwater under all conditions.

Some CAFO operators choose to use berms or other containment structures to contain accidental spills or overflows from primary storage structures in other parts of the production

area. For example, some operators may use secondary containment berms around liquid manure storage structures to prevent a discharge to waters of the United States, even in the event of an overflow from the primary storage structure. Such secondary containment areas are waste containment areas since they are not primarily intended for long-term storage of manure. Secondary containment areas help to provide additional protection against discharges to waters of the United States, particularly for unpermitted CAFOs subject to a no discharge standard.

Chemical Storage

During the tour of a permitted CAFO's production area, the inspector should visually check and note any failures to follow Minimum Measure 5: Ensure that chemicals and other contaminants handled on-site are not disposed of in any manure, litter, process wastewater, or stormwater storage or treatment system unless specifically designed to treat such chemicals and other contaminants (40 CFR 122.42(e)(1)(v)).

- ✓ Verify the description of practices implemented to ensure that chemicals and other contaminants are disposed of properly, as described during the records review portion of the inspection.
- ✓ What types (organic and inorganic) and quantities of chemicals are used and stored at the CAFO, (including pesticides, herbicides, oils, etc.)?
- ✓ Are there floor drains in the milk parlor or other areas that generate process wastewater that could be used for chemical disposal? Is wastewater collected in these drains directed to a manure storage impoundment? Is the storage structure designed to accept these wastes?
- ✓ Are chemical footbaths located by floor drains?
- ✓ Does the CAFO have a designated area for chemical storage and mixing? Are floor drains present in the chemical storage and mixing area?
- ✓ Is there a designated area for accumulating spent chemicals and other like motor oils, hydraulic fluid, etc.?
- ✓ Are chemicals labeled with accumulation dates, disposal methods, and other required information?
- ✓ Are chemical bottles out of place (e.g., around the lagoon instead of in chemical storage area)?

Mortality Management

The CAFO's production area also includes "any area used in the storage, handling, treatment, or disposal of mortalities" (40 CFR 122.23(b)(8)). Relevant factors to consider in assessing whether the CAFO discharges in connection with mortality management include the methods and locations for handling and disposal of animal mortalities, mortality rate, storage capabilities and other site-specific factors. For example, if a CAFO relies on a rendering facility to pick up carcasses, the CAFO should consider whether there is adequate storage to accommodate all

mortalities between pick-ups and whether the storage method ensures that all clean water remains clean, or captures all process wastewater generated from water coming into contact with the carcasses (i.e., nothing reaches waters of the United States). Facilities that dispose of dead animals on-site need to ensure that there are no discharges from the areas where, for example, animals are composted or buried. This may include burying carcasses immediately and making sure runoff from composting areas is contained in a proper storage structure. If composting is used, the inspector should look for any indicators of improper compost management including the presence of black leachate, exposed bones, feathers, carcasses, etc. and to see if the compost area is in an appropriate location to avoid any possible discharges to a water of the United States. Contact the state university agriculture extension office for information on composting methods for the area of the inspection. CAFOs should have a plan for dealing with catastrophic mortality events.

During the tour of a permitted CAFO's production area, the inspector should visually check and note any failures to follow Minimum Measure 2: Ensure proper management of mortalities (i.e., dead animals) to ensure that they are not disposed of in a liquid manure, stormwater, or process wastewater storage or treatment system that is not specifically designed to treat animal mortalities (40 CFR 122.42(e)(1)(ii)).

Photo 17-4. This CAFO is discharging by disposing of mortalities in a conveyance that drains to a water of the United States (Source: EPA Region 4).

Other Factors Related to the Production Area

Similar considerations apply to other parts of the production area. Key factors that might affect whether a discharge occurs from the production area of any type of CAFO include the following:

- Exposure of animal waste and feed to precipitation or other water that is subsequently discharged to waters of the United States.
- Adequacy of structural controls to divert clean water.
- Sufficiency of inspection and maintenance schedules for clean water diversion controls, such as berms, gutters, and channels.
- Design and maintenance of pumps, pipes, valves, ditches, and drains associated with the collection of manure and wastewater from the animal confinement area.
- Design, operation, and maintenance of secondary containment, if applicable.
- Type of waste storage system, and the capacity, design, construction, and maintenance of the system.
- Implementation of standard operating procedures and quality of maintenance protocols (e.g., for equipment, infrastructure, and practices associated with animal management

and waste handling), including contingency plans for extreme events (e.g., for equipment loss or failure).

- Drainage of production area and proximity to waters of the United States.
- Whether the animal confinement area prevents direct contact between animals and waters of the United States.

Land Application Area Discharges

All Animal Sectors

Inspectors at both permitted and unpermitted CAFOs with land application should identify the distance and direction from the fields used for land application to the nearest waters of the United States and look for any evidence of manure runoff from application fields towards waters of the United States.

During the tour of a permitted CAFO's land application areas, the inspector should visually check and note the following related to Minimum Measure 6: Identify appropriate site-specific conservation practices to be implemented, including as appropriate buffers or equivalent practices, to control runoff of pollutants to waters of the United States (40 CFR 122.42(e)(1)(vi)). Note Minimum measures 7 and 8 dealing with testing of manure, litter, process wastewater, and soil, and protocols for land application of manure, litter, or process wastewater are covered in Section D, "The CAFO Inspection—Records Review and the NMP."

The inspector should verify that any conservation practices such as NRCS conservation practice codes, buffers, berms, identified during the records review portion of the inspection are properly implemented on-site. The list below contains some factors an inspector might want to evaluate to determine whether a facility is implementing appropriate site-specific conservation practices:

- ✓ Is tail water from flood or furrow irrigation captured and pumped back to the head of the field or otherwise contained?
- ✓ Is wastewater ponding or infiltrating around irrigation sprinklers? Ponding could indicate over-application or leaks.
- ✓ Is manure applied to frozen, snow covered, or saturated ground or is manure land applied during a precipitation event?
- ✓ Is manure incorporated or injected?
- ✓ Is manure mechanically applied within 100 feet of waters of the United States?
- ✓ Is there evidence of manure runoff from application fields towards waters of the United States? Do any land application fields have steep slopes that might cause manure to more easily runoff from the field to waters of the United States?
- ✓ Are there no grassed, vegetated, or forested buffers between land application sites and waters of the United States? Is there evidence of manure application within the 35-foot vegetated buffer?

- ✓ Does land application equipment appear well-maintained? Are there leaks from permanently installed manure application and handling equipment, risers, or pipes?

Sector-Specific Factors Relevant to Production Area and Land Application Areas

See Appendix AD, "Animal Industry Overview," for information on typical production methods and manure management practices.

Dairy Sector

Dairy operations are complex, with various types of covered and uncovered locations for confining, housing, and milking cows, and have sector-specific design and construction considerations that are relevant to determining whether the CAFO discharges. Inspectors should be aware that dairy operations often include both dry manure handling from calves and heifers, and wet manure handling from the mature milking cows. It is important to determine whether a dairy directs wastestreams to a proper containment structure or if waste is managed in a manner causing it to be discharged from the production area, to a water of the United States. These wastestreams include wastewater from commodity barns, silage bunkers, and milking parlors. Inspectors should also consider the possibility of discharges from portions of the production area that may be uncovered, such as feed storage areas, barnyards, exercise lots, animal walkways and animal pens, including uncovered portions of calf hutches and loafing areas (See Photo 17-5).

Photo 17-5. The dairy CAFO pictured above has had discharges from the confinement area (noted by the red dashed line) to a water of the United States bypassing the waste containment storage structure. (Source: EPA Region 4)

Dairy operations in warm climates might have cooling ponds designed to cool lactating cows. A cooling pond for dairy cattle will have a means for fresh water to enter, unlike a stagnant pond, lagoon, wallow, or mud hole. Any cooling pond that is or has been in use contains process wastewater because of animal contact (40 CFR 122.23(b)(7)).[16] Relevant factors to consider in determining the likelihood of a cooling pond discharging pollutants to waters of the United States include the location of the pond relative to waters of the United States, the design of the pond, and how water removed from the pond is managed (e.g., pumped to a proper containment structure).

[16] As applicable here, process wastewater means water directly or indirectly used in the operation of the AFO for direct contact swimming, washing, or spray cooling of animals. Process wastewater also includes any water which comes into contact with manure.

For other design, construction, operation, and maintenance factors specific to dairy cattle operations, see the table titled "Summary of Sector-Specific Considerations," below and See Appendix AD, "Animal Industry Overview," for information on typical production methods and manure management practices.

Beef Cattle Sector

While some cattle are kept in confinement buildings, most beef operations are on outdoor feedlots and might have open sheds, windbreaks, or shades. When evaluating whether a beef cattle operation discharges, an important consideration is whether the feedlot has sufficient containment for all manure, wastewater and direct precipitation for the critical storage period. Because the animals and manure are typically not housed under roof at beef cattle operations, local climate and proximity to waters of the United States should be considered when evaluating whether beef cattle operations discharge, as well as the design of the animal pens. Where operations are sloped for drainage, the inspector should determine if drainage results in a discharge to waters of United States (See Photo 17-6).

Other factors that may be important to consider in this animal sector include the following:

- Management of trough water overflow.
- Management of uncovered feed/silage.
- Manure stockpiling and composting.
- Whether animals have direct contact with waters of the United States.
- Systems to manage process wastewater generated from all uncovered areas to which animals have access.

Photo 17-6. This section of the beef feedlot production area has an outlet for manure and process wastewater to a roadside ditch. If the ditch conveys process wastewater to a water of the United States, the CAFO discharges.

(Source: EPA Region 7)

For other design, construction, operation, and maintenance factors specific to beef cattle operations, see the table titled "Summary of Sector-Specific Considerations," below and Appendix AD "Animal Industry Overview," for information on typical production methods and manure management practices.

Swine Sector

In evaluating whether a swine operation discharges, relevant factors include considerations specifically related to manure handling systems that are common at these types of operations.

Some swine operations have in-house manure pits (i.e., where manure is collected in a pit below the animal confinement house) that are designed with sufficient capacity to contain all manure and wastewater generated in the house until it is pumped out to another storage

structure or for land application. This pump-out may occur between groups, when the barns are empty of animals, as swine operations rotate animals by groups until they are sent to another finisher or the processing plant.

Some operations also have pumps to help distribute manure from one section to another, for example, if the operator notices that the solids level is higher in one section. These are commonly referred to as deep-pit systems. Relevant factors to consider for CAFOs with such systems include management of wastewater and manure slurry removal from the pit, including whether the CAFO has appropriate pump-out schedules and maintenance of hoses or underground distribution lines, which can run from the pit to the land application areas. The capacity of a deep-pit system should be evaluated to ensure it can contain all manure and process wastewater between land application events.

Other swine operations have in-house pits that provide only temporary containment before removal of the manure and wastewater to a pond, lagoon, or above-ground storage tank. Operations with these smaller in-house manure pits generally pump out manure more frequently. Therefore, systems at these swine operations typically rely more heavily on pumps and pipes than at other swine operations. Some of the problems associated with these types of operations that can lead to discharges and therefore should be considered when conducting a site-specific evaluation include: pipe or hose ruptures; overflows from open channels or collection pits; and direct discharges from a waste storage structure such as a lagoon.

To prevent discharges from occurring, some swine operations construct a secondary containment system designed to capture any unanticipated pipe or hose ruptures or overflows from deep pit manure storage structures or from the confinement houses themselves. The inspector should consider how the design, operation, and maintenance of such containment systems could contribute to a discharge as the result of accumulated wastes and precipitation.

For other design, construction, operation, and maintenance factors specific to swine operations, see the table titled “Summary of Sector-Specific Considerations,” below, and Appendix AD: “Overview of the Animal Industry,” for information on typical production methods and manure management practices.

Poultry Sector

The definition of a CAFO explicitly includes four different types of poultry operations: chickens (other than laying hens), laying hens, turkeys, and ducks. Most modern CAFOs that raise poultry for meat production use predominantly “dry” manure handling systems. As a result, discharges to waters of the United States from production areas at those poultry operations generally are caused by rainfall coming in contact with dry manure (i.e., poultry litter) in exposed areas, poor housekeeping around the bird houses or litter storage areas, or poor mortality management practices. Egg production facilities typically handle larger volumes of water as a result of egg washing. Some facilities also use bird cooling spray systems and the condensate can co-mingle with manure, litter, and process wastewater. Therefore, in addition to potential discharges from litter handling practices and mortality management, laying hen CAFOs also have the potential to discharge to waters of the United States as the result of overflows from process

wastewater storage and handling structures. Moreover, poultry operations frequently have smaller "footprints," in comparison to some other livestock sectors, which may lead to large amounts of litter being generated relative to the availability of land for manure spreading. Some poultry facilities may send manure off-site by truck to an outside party for spreading or composting; these manure transfer areas should be evaluated (for example, are there storm drains in these areas?). Therefore, relevant factors to consider in assessing the likelihood of a poultry operation discharging include the following:

- Whether the operation has sufficient storage capacity to accommodate litter removed from houses between flocks and during whole-house cleanouts.
- Whether management of cleanouts, stockpiles, and litter storage sheds is done in such a way that contaminated runoff will not reach waters of the United States.
- For operations with liquid manure handling systems, whether the operation has adequate storage capacity for all egg wash water and cooling spray condensate generated, considering the facility's maximum egg production, wastewater handling capabilities, and expected dewatering frequency.
- Whether the operation has adequate available acreage for land application to use the nutrients generated at the facility or other arrangements in place (such as third-party haulers).

Photo 17-7. A poultry operation designed to have precipitation drain away from houses would discharge if contaminated runoff enters a water of the United States. (Source: EPA Region 3)

For CAFO operations with ventilated confinement houses inspectors should consider a number of relevant factors, such as the way water is drained from the site and proximity to waters of the United States, when assessing whether they discharge pollutants to waters of the United States. Some poultry facilities are designed to channel precipitation runoff from the houses away from the confinement area in a manner that may result in discharges to waters of the United States (see Photo 17-7). Although such discharges may be allowed for permitted CAFOs subject to conditions specified in the permit, for unpermitted CAFOs, these discharges would violate the CWA. For other design, construction, operation, and maintenance factors specific to poultry operations, see the table titled "Summary of Sector-Specific Considerations," below and Appendix AD, "Overview of the Animal Industry" for information on typical production methods and manure management practices.

Summary of Sector-Specific Considerations

When evaluating sources of pollutant discharges and pathways for pollutants to reach waters of the United States, EPA recommends considering the following site-specific factors:

ALL ANIMAL SECTORS

- Facility location, such as whether in a floodplain, proximity to waters of the United States, and if the CAFO is upslope from waters of the United States.
- Local climatic conditions, including whether precipitation exceeds evaporation.
- Discharge history.
- Volume of manure, litter, or process wastewater generated.
- Management of manure, litter, and process wastewater.
- Management of storage, treatment, and disposal of mortalities.
- Amount of acreage to land-apply manure, litter, or process wastewater in accordance with appropriate practices or other means of managing nutrients that prevent discharges, such as off-site transfer to other entities.
- Type and collective effect of conservation practices (e.g., setbacks and buffers employed near surface waters, ditches, and other conduits to surface waters to control the runoff of pollutants from land application areas).
- Resources and protocols for proper operation and maintenance of land application equipment (e.g., inspecting hoses and overseeing automatic shutoff valves).
- Management of feed and silage, including management/capture of silage leachate and runoff from feed and silage storage areas.

DAIRY SECTOR

- Whether animals are housed under roofs at all times, and if not, management of manure and wastewater generated in loafing areas and other outdoor areas with animal access.
- The capacity for manure and wastewater storage, including consideration of siting and management of stockpiles to avoid discharges to waters of the United States and capacity of solid settling basins to hold direct precipitation.
- Management of the calving area.
- Management of milk bottle wash water.
- Management of cooling water and footbath water.
- Storage or disposal of waste from milking parlors and milk tank cleaning.
- Management of bedding material.
- Management of manure composting areas.
- Cattle access to surface water.

BEEF CATTLE SECTOR

- The capacity for manure and wastewater storage, including consideration of siting and management of stockpiles to avoid discharges to waters of the United States and capacity of solid settling basins to hold direct precipitation.
- The capacity, siting, and operation and maintenance practices for a vegetated treatment system, where applicable.
- Management of manure composting areas.
- Cattle access to surface water.

SWINE SECTOR

- Management of pollutants from confinement houses, including conveyances designed to drain runoff from confinement areas.

Summary of Sector-Specific Considerations

- How manure and wastewater is collected and stored, such as in a deep pit under the confinement house or by a containment structure like a lagoon.
- Identification of pollutant sources, such as storage facilities, and consideration of whether pollutants from those sources contact precipitation or other water to generate process wastewater.

POULTRY SECTOR

- Identification of sources of pollutants, such as storage facilities, litter handling activities (e.g., cake-outs, crust-outs, whole house clean-outs), poultry handling, and confinement house ventilation systems, and consideration of whether pollutants from those sources contact precipitation or other water to generate process wastewater.
- For layer facilities, management of egg production and egg wash water.
- Management of pollutants generated by confinement areas, including pollutants expelled from the ventilation system and conveyances designed to drain runoff from those areas.

D. THE CAFO INSPECTION—RECORDS REVIEW AND THE NMP

Maintaining complete, current and accurate records is important for permitted CAFOs to show compliance with recordkeeping requirements and for unpermitted large CAFOs that land apply manure to quality for the stormwater exemption. Inspectors should review relevant records for both permitted CAFOs and unpermitted large CAFOs. Records may be maintained on-site at the CAFO, or may be located off-site at a nearby location.

This section explains what types of records CAFOs must maintain relating to the production area and land application, some key compliance elements that can be reviewed quickly and alerts to possible compliance issues. For more information on crops production, nutrient management and soils, refer to Appendix AE, "Nutrient Management/Soil Science" and Appendix AK, "Growth Stages of Field Crops."

The approach described in this section does not include a complete, in-depth analysis of NMP implementation. If the CAFO inspector intends to conduct such an analysis, refer to Appendix AO, "Detailed Review of Nutrient Management Plan Implementation," and Chapter 5 of EPA's *NPDES Permit Writers' Manual for CAFOs* (2012a).

UNPERMITTED LARGE CAFOS

Production Area

There are no specific recordkeeping requirements for unpermitted large CAFOs related to the production area. However, the CAFO may want to maintain records to establish and document that there have been no discharges from the production area. Section C describes what the inspector should examine to identify evidence of discharges.

Land Application Areas

As CAFOs are only required to have an NPDES permit if they are discharging to waters of the United States, non-discharging CAFOs may choose not to apply for a permit. **However, precipitation-related discharges of manure, litter or process wastewater from land areas under the control of a CAFO, such as crop fields, are subject to NPDES permitting *unless* the**

CAFOs (including unpermitted CAFOs) maintain records documenting that they have land applied in accordance with appropriate nutrient management practices. If an unpermitted CAFO does not maintain that documentation, discharges from its land application area do not qualify for the agricultural stormwater exemption from NPDES requirements. Unpermitted large CAFOs must have records indicating that they are implementing 40 CFR 122.42(e)(1)(vi)–(ix) on their land application sites to ensure appropriate agricultural utilization of land applied nutrients. These practices ensure that precipitation-related discharges from the land application areas qualify for the agricultural stormwater exemption.

Table 15-8 below, shows the types of records unpermitted large CAFOs must keep to meet the requirements of measures vi through viii dealing with land application (ix is the requirement to keep records for vi through viii).

Table 15-8. Minimum Measures *and* Associated Records Applying to Unpermitted Large CAFOs

Minimum Measure	Example Records	Potential Compliance Alerts
✓ Identify site-specific conservation practices to be implemented, including buffers or equivalent practices, to control runoff of pollutants to waters of the United States (40 CFR 122.42(e)(1)(vi)).	✓ NMP or CNMP. ✓ Engineering drawings or as built drawings showing the location and dimension of berms, buffers, setbacks, and other conservation practices between land application fields or production areas and WOUS. ✓ Narrative descriptions of conservation practices implemented to control pollutant runoff, such as NRCS conservation practice standards.	✓ The CAFO does not have documentation of buffers, setbacks, or other conservation practices to minimize nutrient runoff to nearby WOUS. ✓ Conservation practices are identified but do not include operation and maintenance protocols to ensure long-term effectiveness to control pollutant runoff.
✓ Identify protocols for appropriate testing of manure, litter, process wastewater, and soil (40 CFR 122.42(e)(1)(vii)).	✓ NMP or CNMP. ✓ A facility sampling plan that identifies sampling locations, sampling frequency, analytical methods, and laboratories for manure, litter, process wastewater, and soil analysis. ✓ Laboratory reports that identify testing procedures and results for manure, litter, process wastewater, and soil.	✓ The CAFO land applies manure or wastewater without sampling the nutrient content of manure and soil. ✓ Soil and manure analyses are not current. ✓ Manure and process wastewater analysis are not representative of all sources that are land applied. ✓ Soil analyses are not available for all fields used for land application. ✓ Soil or manure analytical results are not consistent with those used to calculate land application rates.
✓ Establish protocols to land apply manure, litter or process wastewater to ensure appropriate agricultural utilization of the nutrients in the	✓ Site map showing land application fields. ✓ NMP or CNMP. ✓ Manure spreading agreements.	✓ No documentation of manure application rates, protocols, or schedules. ✓ The CAFO land applies manure and/or wastewater without

Table 15-8. Minimum Measures *and* Associated Records Applying to Unpermitted Large CAFOs

Minimum Measure	Example Records	Potential Compliance Alerts
manure, litter or process wastewater (40 CFR 122.42(e)(1)(viii)).	✓ Manure application rate calculations in accordance with the methodology in the NMP. ✓ Land application records. ✓ Application equipment inspection logs.	agronomic rate calculations supporting the application. ✓ Manure application at rates higher than the rates calculated in accordance with the NMP. ✓ Manure is applied at a constant rate across all fields and crop types. ✓ Land application records are incomplete (e.g., do not specify manure source, amount, dates, application method). ✓ Actual amount of nutrients applied is calculated at the end of the season rather than tracked for each application event. ✓ Manure is applied to fields that are not identified in the NMP. ✓ Manure is imported to, or exported from, the CAFO for land application, and this is not documented in the NMP, (or the amounts not noted).

Permitted CAFOs

The inspector can visually observe some aspects of the permitted CAFO's implementation of its NMP during the facility tour, as described in Section C, however, the inspector may also need to review calculations, application records, laboratory test results, and other quantitative data after the inspection. To avoid a lengthy post-inspection review, if possible inspectors should familiarize themselves with the CAFO's NMP in advance of the inspection. If the inspection is announced the inspector may want to request a copy from the operator. If the NMP is not available for review prior to visiting the facility, the regulations require that a copy of the site-specific NMP be maintained and available on-site for review.

Generally, these documents do not contain trade secrets but the inspector should reaffirm the CAFO's right to identify documents as confidential business information. Depending on the CAFO staffing level, the inspector may be able to flag particular documents with sticky notes to be copied during the facility tour. The inspector should make copies of any documents that cannot be thoroughly evaluated during the site inspection for later evaluation. The inspector should create a list of documents and materials obtained during the inspection. The inspector should sign and date a copy and give the copy to the CAFO site representative. The inspector can also attach copied documents to the inspection report as reference material. It is highly recommended, regardless of the time allotted to the records review portion of the inspection, that the inspector asks the CAFO representative for copies of the following documents for

detailed review after the on-site inspection. This documentation will aid the inspector in evaluating the CAFO's NMP compliance:

- Phosphorus/Nitrogen risk assessment documentation/calculations
- Soil test results
- Manure/wastewater test results
- Nutrient application rate calculations
- Nutrient application records (organic and commercial)
- Dewatering logs
- Manure transfer records
- Others (specific to NMP terms)
  - Land application dates
  - Precipitation records
  - Timing limitations
  - Soil test P result
  - P Index calculations
  - Description and location of buffers

Substantial Changes to NMP that Require Permit Modification

- Addition of new land application areas **not** previously included in NMP
- Changes to maximum field-specific annual rates of application or to maximum amounts of N and P derived from all sources for each crop
- Addition of any crop not previously included in NMP
- Changes that increase the risk of N and P transport to Waters of the U.S.

On occasion, the CAFO may not have a photocopier, fax machine, or printer that makes useable copies. The inspector can consider taking photographs of the documents; some smartphones have applications for document scanning. Photos should be taken using EPA or state equipment, not personal cell phones. However, the inspector should identify the specific documents they are photographing to the CAFO representative to allow them to claim confidentiality if applicable. Finally, the inspector should leave the CAFO's documents in an organized manner, preferably in the same order provided to the inspector.

RECORDS FOR PERMITTED LARGE CAFOS

Pursuant to the 2008 CAFO Final Rule, all permits issued after December 22, 2008 must require a CAFO to submit its NMP to the permitting authority with its application for permit coverage. This applies to both individual permits and general permits. Since NPDES permits are issued for 5-year permit terms, most CAFO permits should currently reflect the 2008 CAFO rule revisions. In fact, there still exist some permits issued prior to 2008 that have been administratively continued. Pursuant to those 2008 regulation revisions, by the time the CAFO inspector sees the NMP, the permit writer probably will have reviewed the plan to ensure it is consistent with the state technical standards for nutrient management and to identify site-specific terms of the NMP to be incorporated into the permit. For permitted CAFOs, the inspector's job focuses on verifying that the NMP is being updated, implemented, and documented as required. The specific records that a particular CAFO will maintain to document NMP implementation should be identified in the NMP or in the permit, or both.

Permitted CAFOs are required to submit NMP revisions to the permitting authority. The first step in NMP evaluation is to check the NMP found on-site at the CAFO against the most recent version submitted to the permitting authority. Differences could indicate that NMP revisions are not being submitted as required.

If the on-site NMP has been revised from the version that was submitted to the permitting authority, the inspector should ascertain the nature of the non-reported NMP revisions. Certain types of revisions trigger a permit modification. For those revisions, the inspector should notify the permit writer. In any case, the most recent version of the NMP should be included in the permit file. If the inspector did not obtain a copy of the entire NMP, it should be requested from the operator.

Records and documentation associated with the NMP will be referenced throughout the entire inspection. The CAFO's NMP should include documentation and records showing implementation of the nine minimum measures, in addition to any applicable records and practices required by the ELG.

Production Area

Table 15-9 provides examples of the types of records that a CAFO might keep to document implementation of the first six required NMP minimum measures that deal with the production area. Table 15-9 also describes potential compliance alerts that may suggest non-compliance with those minimum measures. Please keep in mind that these are example records and compliance alerts and are not complete lists of all possible records and potential compliance problems for each measure.

The recordkeeping requirements for the nine minimum measures apply to all permitted CAFOs. Some CAFOs also must maintain additional records associated with the production and land application areas: Subpart C CAFOs (dairy and beef cattle other than veal calves) and Subpart D CAFOs (swine, poultry and veal calves) (40 CFR 122.42(e)(2)(B)). As described in Section A, these additional requirements are implemented through the documentation and maintenance of records of the minimum NMP measures. These records must be maintained on-site for a period of five years from the date they are created. The additional production area records for Subpart C and D CAFOs are also included in Table 15-9 below.

If time constraints prevent the inspector from conducting a detailed records analysis of the CAFO's implementation of its NMP, there are some aspects that can often be quickly verified. A complete list of possible documents and compliance alerts is included in Table 15-9 below. If the inspector intends to do an in-depth analysis of NMP implementation, refer to Appendix AO, "Detailed Review of Nutrient Management Plan Implementation," and Chapter 5 of *EPA's NPDES Permit Writers' Manual for CAFOs* (EPA, 2012a).

Table 15-9. Example Records and Potential Compliance Alerts Associated with NMP Minimum Measures i–v

Minimum Measure	Example Records	Potential Compliance Alerts
Ensure adequate storage of manure, litter, and process wastewater, including procedures to ensure proper operation and maintenance of the storage facilities (40 CFR 122.42(e)(1)(i)).	✓ NMP or CNMP. ✓ Engineering calculations. ✓ Engineering drawings, including as built drawings. ✓ Construction certifications. ✓ Invoices from manure or wastewater haulers. ✓ Wastewater pumping logs.	✓ No records of dewatering storage structures or protocols to pump down storage structures after a significant precipitation event or before an extended wet weather period (i.e., winter or rainy season). ✓ No drawings, calculations, or other evidence that storage structures were designed and constructed to contain wastewater and stormwater runoff over a design storage period (e.g., 6 months' storage capacity), including normal precipitation; the 25-year, 24-hour storm event; and accumulated solids.
For Subpart C and D CAFOs: Records documenting required visual inspections	✓ Weekly records identifying the impoundments, storage structures, diversion structures, channels, etc. inspected. ✓ Records identifying the water lines that were inspected daily (may be documented weekly). ✓ Description of any problems identified.	✓ Records do not identify the specific structures, water lines, etc. that are inspected. ✓ Inspections are not documented at least weekly. ✓ Operation and maintenance issues are not documented (e.g., problems identified during site tour are not reflected in records).
For Subpart C and D CAFOs: Weekly records of the depth of manure and wastewater in liquid impoundments	✓ Weekly depth records for every impoundment required to have a depth marker, including: ✓ Name of impoundment. ✓ Units (inches, feet, etc.). ✓ Pumping level (level needed to maintain storage for design storm event (e.g., 25-year, 24-hour storm).	✓ Wastewater levels are not recorded weekly for all impoundments. ✓ Records show wastewater levels routinely above pumping level (i.e., storage capacity for design storm event not maintained). ✓ Records indicated impoundments are not dewatered in a timely manner after large storm events. ✓ Operator is not aware of impoundment pumping levels.
For Subpart C and D CAFOs: Records documenting actions taken to correct deficiencies identified during visual inspections	✓ Description and date of corrective actions. ✓ For corrective actions not completed within 30 days, explanation of the factors preventing immediate correction.	✓ Records do not document corrective actions. ✓ Corrective actions are not timely.
For Subpart C and D CAFOs: Records documenting the current design of any manure or litter storage structures, including volume for solids accumulation,	✓ NMP or CNMP. ✓ Engineering calculations, including estimates for each component of the required storage volume.	✓ Design documentation does not include both 1) operating volume (e.g., wastewater produced from facility operations and runoff from "normal" precipitation); and 2) emergency storage volume (e.g.,

Table 15-9. Example Records and Potential Compliance Alerts Associated with NMP Minimum Measures i–v

Minimum Measure	Example Records	Potential Compliance Alerts
design treatment volume, total design volume, and approximate number of days of storage capacity	✓ Engineering drawings, including as built drawings. ✓ Construction certifications.	runoff and precipitation from 25-year, 24-hour storm). ✓ Design documentation for new source swine, poultry, or veal calf CAFOs do not identify or account for the design storm to ensure zero discharge.
For Subpart C and D CAFOs: Records of the date, time and estimated volume of any overflow	✓ Records of overflows (not limited to discharges). ✓ Description of the cause of the overflow and corrective actions. ✓ For overflows resulting in a discharge, records of all required sampling and notification. ✓ * It is recommended that the inspector obtain copies of records showing overflows from the production area and any corrective actions.	✓ Records of discharges that were not sampled or reported. ✓ Frequent overflows. ✓ No records of corrective actions to prevent future overflows.
Ensure proper management of mortalities (i.e., dead animals) to ensure that they are not disposed of in a liquid manure, stormwater, or process wastewater storage or treatment system that is not specifically designed to treat animal mortalities (40 CFR 122.42(e)(1)(ii)).	✓ Description of mortality disposal practices, including compost, incineration, or burial locations. ✓ Periodic certification that documented procedures are followed. ✓ Mortality logs. ✓ Invoices from mortality haulers and renderers.	✓ No written description of mortality disposal procedures. ✓ No records that written procedures are followed. ✓ Facility representative unable to confirm that runoff from mortality disposal area is contained.
For Subpart C and D CAFOs: Records of mortality management	✓ Description of mortality management practices, including storage, handling, and disposal locations and containment of runoff from those locations. ✓ Periodic certifications that documented procedures are followed.	✓ Facility representative unable to confirm that runoff from on-site mortality handling, storage, or disposal areas is contained.
Ensure that clean water is diverted, as appropriate, from the production area (40 CFR 122.42(e)(1)(iii)).	✓ Description of practices and structures to divert clean water from the production area. ✓ Topographic maps showing the production area to be at a higher elevation than the surrounding land (water drains away rather than toward the production area). ✓ Federal Emergency Management Agency (FEMA) floodplain maps	✓ The CAFO is unable to produce documentation that roof gutters and downspouts, engineered berms, and/or topography divert clean water around the production area AND wastewater storage structure calculations do not include stormwater runoff from roofs and areas outside the production area. ✓ The production area is constructed inside a delineated FEMA floodplain

Table 15-9. Example Records and Potential Compliance Alerts Associated with NMP Minimum Measures i–v

Minimum Measure	Example Records	Potential Compliance Alerts
	showing that the production area is outside of a delineated floodplain. ✓ Engineering plans for constructing adequately sized berms around the production area. ✓ Engineering drawings or NRCS conservation practice agreements to install roof gutters with downspouts draining away from the production area.	and facility records do not demonstrate that the production areas are protected from flood inundation and washout.
Prevent direct contact of confined animals with WOUS (40 CFR 122.42(e)(1)(iv)).	✓ Topographic maps that show WOUS do flow through the production area. ✓ Descriptions of practices implemented to prevent direct contact. ✓ Engineering drawings of bridges, culverts, or other structures that allow livestock to cross WOUS with coming into direct contact.	✓ Topographic maps show surface waters flowing through the production area AND the CAFO representatives are unable to discuss or produce documentation of practices to prevent direct contact of confined animals with WOUS.
Ensure that chemicals and other contaminants handled on-site are not disposed of in any manure, litter, process wastewater, or stormwater storage or treatment system unless specifically designed to treat such chemicals and other contaminants (40 CFR 122.42(e)(1)(v)).	✓ Descriptions of chemical storage areas and handling and disposal practices demonstrating that chemicals and other contaminants are not improperly disposed. ✓ Logs or invoices from chemical recycling and disposal companies.	✓ No documentation of chemical disposal practices. ✓ Facility might need a need a Spill Prevention, Control, and Countermeasure (SPCC) plan depending on quantities. ✓ Facility should have a Material Safety Data Sheet (MSDS) for all stored chemicals.

Land Application Areas

Fields Available for Land Application

The NMP will identify each field where land application is planned. The inspector should compare the land application records with the fields identified in the NMP to ensure manure, litter, or process wastewater were not applied to fields that are not covered by the plan. Use of a land application site that is not identified in the NMP constitutes non-compliance with a permit term. Also, addition of a land application site not covered by an approved NMP constitutes a substantial change to the NMP that requires a permit modification with associated permitting authority review and public notice.

Timing Limitations for Land Application

As described in Chapter 6.5.1 of EPA's *NPDES Permit Writers' Manual for CAFOs* (EPA, 2012a), this term refers to limitations described in the technical standards for when manure applications should be prohibited or delayed. The inspector should check land application records to see if the applicable timing limitations are being followed. In some cases, this will be a straightforward evaluation (e.g., prohibition on land application during specific months). Often, however, evaluating compliance will require the inspector and case officer to use professional judgment and diverse resources (e.g., prohibition on land application on "saturated soils"). For additional information and examples, refer to Appendix AO, "Detailed Review of Nutrient Management Plan Implementation."

To determine whether manure or wastewater was applied during rainfall events the inspector can compare land application dates with local precipitation records. CAFOs often maintain daily precipitation logs. Alternatively, Internet resources such as The Weather Underground (www.weatherunderground.com) and Utah Climate Center (http://climate.usurf.usu.edu/products/data.php) can be used to determine whether a rainfall event occurred, at least at a nearby weather station, on a specific date. Unless the data document the time of application and precipitation, it might not be possible to positively determine whether the two events were concurrent, but the inspector and case officer can use information such as the magnitude of the rainfall, whether rainfall occurred on the previous and/or subsequent days, the amount of manure or wastewater applied, and other circumstantial data to assess the likelihood that manure or wastewater was applied during a rainfall event.

Document Review Tip:
Spot Check Records for a Single Field

- ✓ Did the CAFO apply manure to the correct field identified in the NMP?
- ✓ Was the crop planned for the field actually the crop that was planted?
- ✓ Were the form and source of the manure applied to the field the same as those identified in the NMP (e.g., the plan called for solid manure from the settling basin to be applied)?
- ✓ Did the CAFO follow timing restrictions when applying the manure (e.g., no application between December and March)?
- ✓ Did the CAFO use the method of application identified in the NMP (e.g., injection)?

It is usually easiest and least expensive for a CAFO to apply manure to the field nearest the manure storage structures. The inspector should consider checking records for that field.

Evaluating whether wastewater was applied on frozen or saturated ground is more complex. Many variables such as season, latitude, altitude, proximity of lakes and rivers, and local landscape, can affect when soils freeze and thaw. To predict soil saturation, the inspector and case officer would need information on soil types including antecedent soil moisture, hydraulic conductivity, infiltration rate, and precipitation and irrigation history. Here again, the evaluation is time-consuming and the absence of direct observation may pose challenges to determining non-compliance. If the land application records for a facility suggest the CAFO operator is applying wastewater to frozen or snow-covered ground, it may be more effective for an inspector to visit CAFOs under those conditions to observe whether land application is occurring.

Planned Crop or Other Use

The rate calculations in the NMP are based on the crop or crop rotation planned for each field. The inspector should evaluate land application records to ensure the crops grown in the field are the same as the crops that were planned for that field during that year. The only exception would be for the use of alternative crops included in the NMP.

Form and Source of Manure that Is Land Applied

The inspector should compare the form and source of manure to be applied to each field and crop, identified in permit terms, with the land application records to see if the planned form(s) and source(s) were used.

Document Review Tip

Keep a notebook with book values for annual manure production by animal type, typical crop nutrient uptake rates, and other information to informally verify numbers used in CAFO nutrient management plans. The CAFO's input values may be different but would not be expected to differ significantly from land grant university book values. Find information on manure generation and management from the land grant universities at http://articles.extension.org/animal_manure_management or contact your state university extension office.

Timing and Method of Land Application

The inspector should compare methods and timing of manure application to the terms of the permit. The specificity of the terms will be guided by the state technical standards for nutrient management and, largely, the nitrogen availability factors that are required. For example, many states provide a single availability factor or mineralization rate for seasonal (i.e., fall or spring) application. In those states, the permit term might simply specify fall or spring application. In some cases, a permit term might be as specific as "within two weeks before planting." While the CAFO's NMP may include specific dates for planned applications (most nutrient management planning programs require specific dates) the inspector must make sure the actual nutrient applications identified in the facility records are consistent with the permit term.

The permit term for method of application will specify at least whether the surface or subsurface application is planned and may be as specific as identifying the type of equipment that will be used. The term should also reflect whether the manure is to be incorporated within a certain timeframe. The CAFO inspector should evaluate land application records to see if the actual method of application, including time to incorporation, is consistent with the planned method reflected in the permit term.

Table 15-10 provides examples of the types of records that a CAFO might keep to document implementation of minimum measures vi through viii dealing with land application. The ninth minimum measure is the requirement to keep records documenting the implementation and management of measures one through eight. Some records may be available electronically, for example, it may be possible to obtain a summary table from the CAFO's NMP planner that includes data for hundreds of fields. Table 15-10 also describes potential compliance alerts that may suggest non-compliance with those minimum measures. Please keep in mind that these are example records and compliance alerts and are not complete lists of all possible records and potential compliance problems for each measure. Inspectors should be well-versed in the common types of nutrient management practices and protocols used in their region to facilitate

the evaluation of the adequacy of NMP implementation as applied to the unique circumstances at each individual CAFO.

In addition to the recordkeeping requirements for the nine minimum measures, which apply to all permitted CAFOs, Large beef, dairy, veal calf, swine and poultry CAFOs also must maintain additional records associated with the production and land application areas. As described in Section A, these additional requirements are implemented through the documentation and maintenance of records of the minimum NMP measures. These records must be maintained on-site for a period of five years from the date they are created. The additional land application records for Subpart C and D CAFOs are also included in Table 15-10 below.

Table 15-10. Example Records and Potential Compliance Alerts Associated with NMP Minimum Measures vi–viii

Minimum Measure	Example Records	Potential Compliance Alerts
1. Identify site-specific conservation practices to be implemented, including buffers or equivalent practices, to control runoff of pollutants to waters of the United States (40 CFR 122.42(e)(1)(vi)).	✓ NMP or CNMP. ✓ Engineering drawings or as built drawings showing the location and dimension of berms, buffers, setbacks, and other conservation practices between land application fields or production areas and WOUS. ✓ Narrative descriptions of conservation practices implemented to control pollutant runoff, such as NRCS conservation practice standards.	✓ Subpart C and D CAFOs cannot document a 100-foot setback from any down-gradient surface waters, open tile intake structures, sinkholes, agricultural well heads, or other conduits to surface waters where manure, litter, and process wastewater are not applied or a 35-foot vegetated buffer where manure, litter or process wastewater is not applied. ✓ The CAFO does not have documentation of buffers, setbacks, or other conservation practices to minimize nutrient runoff to nearby WOUS. ✓ Conservation practices are identified but do not include operation and maintenance protocols to ensure long-term effectiveness to control pollutant runoff.
2. Identify protocols for appropriate testing of manure, litter, process wastewater, and soil (40 CFR 122.42(e)(1)(vii)).	✓ NMP or CNMP. ✓ A facility sampling plan that identifies sampling locations, sampling frequency, analytical methods, and laboratories for manure, litter, process wastewater, and soil analysis. ✓ Laboratory reports that identify testing procedures and results for manure, litter, process wastewater, and soil. Note for large facilities this information may be available electronically from the CAFO's NMP planner.	✓ The CAFO land applies manure or wastewater without sampling the nutrient content of manure and soil. ✓ Soil and manure analyses are not current (according to the required testing frequency). ✓ Manure and process wastewater analysis are not representative of all sources that are land applied. ✓ Soil analyses are not available for all fields used for land application. ✓ Soil or manure analytical results are not consistent with those used to calculate land application rates.

Table 15-10. Example Records and Potential Compliance Alerts Associated with NMP Minimum Measures vi–viii

Minimum Measure	Example Records	Potential Compliance Alerts
For Subpart C and D CAFOs: Manure and Soil Testing Protocols	✓ Laboratory reports that indicate manure was analyzed a minimum of once annually for nitrogen and phosphorus. ✓ Laboratory reports that indicate soil was analyzed a minimum of once every five years for phosphorus. ✓ Rate calculations that include results from laboratory.	✓ Manure not analyzed annually. ✓ Manure not analyzed for both nitrogen and phosphorus. ✓ Soil not analyzed once every five years for phosphorus. ✓ Results not used in determining application rates for manure, litter, and process wastewater.
3. Establish protocols to land apply manure, litter or process wastewater in accordance with site-specific NMP that ensure appropriate agricultural utilization of the nutrients in the manure, litter or process wastewater (40 CFR 122.42(e)(1)(viii)).	✓ Site map showing land application fields. ✓ NMP or CNMP. ✓ Manure spreading agreements. ✓ Manure application rate calculations in accordance with the methodology in the NMP. ✓ Land application records. ✓ Application equipment inspection logs.	✓ No documentation of manure application rates, protocols, or schedules. ✓ The CAFO land applies manure and/or wastewater AND commercial fertilizer without agronomic rate calculations supporting the application of both types. ✓ Manure application at rates higher than the rates calculated in accordance with the NMP methodology. ✓ Nutrient credits from irrigation water, previous legume crops, and mineralization from previous manure applications are not included in manure application rate calculations. ✓ Manure is applied at a constant rate across all fields and crop types. ✓ Land application records are incomplete (e.g., do not specify manure source, amount, dates, application method). ✓ Actual amount of nutrients applied is calculated at the end of the season rather than tracked for each application event. ✓ Manure is applied to fields that are not identified in the NMP. ✓ Manure is imported to, or exported from, the CAFO for land application, and this is not documented in the NMP, (or the amounts not noted).

Table 15-10. Example Records and Potential Compliance Alerts Associated with NMP Minimum Measures vi–viii

Minimum Measure	Example Records	Potential Compliance Alerts
For Subpart C and D CAFOs: Land application equipment inspections for leaks	✓ Application equipment inspection logs.	✓ Application equipment inspection logs do not include a section to record leak inspection information. ✓ Facility representative unable to confirm that land application equipment is periodically inspected for leaks.
For Subpart C and D CAFOs: Specific land application area recordkeeping requirements	✓ Expected crop yields. ✓ Date(s) manure, litter, or process wastewater is applied to each field. ✓ Recorded weather conditions starting 24 hours before land application and ending 24 hours after land application is finished. ✓ Test methods used to sample and analyze manure, litter, process wastewater and soil. ✓ Results from manure, litter, process wastewater, and soil sampling. ✓ Explanation of the basis for determining manure application rates, as provided in the technical standards established by the Director. ✓ Calculations showing the total nitrogen and phosphorus to be applied to each field, including sources other than manure, litter, or process wastewater. ✓ Total amount of nitrogen and phosphorus applied to each field, including documentation of calculations for the total amount applied. ✓ Method used to apply the manure, litter, or process wastewater. ✓ Date(s) and results of manure application equipment inspection.	✓ CAFO does not have records for land application fields and activities.

In addition to the above records, permitted large CAFOs, regardless of animal sector, must keep records of all manure transfers. Prior to transferring manure, litter or process wastewater to other persons, the CAFO must provide the recipient of the manure, litter or process wastewater with the most current nutrient analysis. The CAFO must also retain records of the date of the

transfer, the name and address of the recipient, and the approximate amount of manure, litter, or process wastewater transferred (tons/gallons). These records must be maintained for 5 years from the date the manure, litter, or process wastewater is transferred.

Records for Permitted Medium and Small CAFOs

Permitted medium and small CAFOs are subject to the same requirements as a Large Permitted CAFO, with the exception of the ELG. Permitted medium and small CAFOs must maintain records to document NMP development and implementation, but are not subject to the ELG (40 CFR Part 122.42(e)). Any technology-based requirements and associated records will be specified in the permit for a medium or small CAFO and may be similar to the ELG requirements for large CAFOs.

E. CLOSING CONFERENCE

CAFO representatives are usually anxious to hear and discuss the inspection findings before the inspector departs. The inspector should hold a closing meeting or conference to present and discuss preliminary inspection findings (e.g., CAFO is not recording weekly depth marker readings, impoundments had less than 1 foot of freeboard, inspections not being done, confined livestock not kept out of waters of the United States). The inspector does not make a determination of an operation's CWA compliance or noncompliance status at the time of the inspection. The inspector should characterize the post inspection closing conference feedback as preliminary, acknowledging that the inspector may identify additional issues or concerns while going through records and notes after the inspection and that compliance will be determined by the case review officer with input from the inspector after a review of all information obtained. The inspector may find it helpful to tie inspection feedback to specific regulatory requirements.

The closing conference is also an excellent time to provide the producer with compliance assistance information or refer the producer to sources of additional information. The inspector is often the only contact between EPA and the regulated industries; be aware of opportunities to promote compliance with EPA regulations. During an inspection, the inspector has first-hand knowledge of the inspection site, as well as knowledge of any specific questions or problems the site officials may have. Use this time to answer those questions and/or convey information that will move the site toward improving compliance and acting in an environmentally responsible manner. There are some limitations on the types of compliance assistance that are appropriate. The inspector should follow the guidelines described in EPA's *Final National Policy: Role of the EPA Inspector in Providing Compliance Assistance During Inspections* (EPA, 2003a).

EPA has put together a series of answers to commonly asked questions to help livestock and poultry operation owners and operators understand what to expect from EPA National Pollutant Discharge Elimination System (NPDES) inspections (EPA, 2014), available at https://www.epa.gov/compliance/fact-sheet-livestock-and-poultry-operation-inspections. Other examples of appropriate compliance assistance to a facility include:

- Providing copies of statutes, regulations, or fact sheets

- Providing guidance manuals or technical documents
- Distributing the small business information sheet
- Providing facilities with related websites
- Mentioning that state requirements may apply

Inspectors should visit EPA's Ag Center website at https://www.epa.gov/agriculture for **compliance assistance** resources that may help the CAFO facilities they inspect. Other CAFO compliance assistance resources include:

- EPA's Compliance Assistance Centers website: https://www.epa.gov/compliance/compliance-assistance-centers
- USDA Cooperative Extension Service's "eXtension" animal manure management site: http://extension.org/animal_manure_management

During this meeting or conference, the inspector should also answer final questions, prepare necessary document receipts, provide any additional information about the NPDES program, and request the compilation of data that were not available at the time of the inspection.

Inspectors should be prepared to discuss follow-up procedures, such as how results of the inspection will be used and what further communications the region, state, tribe, or locality may have with the facility.

F. AFTER THE CAFO OR AFO INSPECTION

Post-inspection activities begin when the inspector departs the facility. This includes delivering samples to the laboratory in accordance with the protocols outlined in the QAPP (see Appendix AN, "Sample Quality Assurance Project Plan (QAPP)") and any needed post-inspection biosecurity measures. This section may be brief, but the activities covered are critical to ensure that information and data collected during the inspection are accurately documented and presented in the written inspection report. The written report, along with photographs and other evidence collected during the inspection, will be used by EPA attorneys and senior compliance and enforcement managers to make legal decisions pertaining to the facility's compliance status and potential enforcement responses. The report might also document that the facility was in compliance with its NPDES permit at the time of the inspection, which could be an important factor in determining whether any future discharges are allowable, in accordance with the permit conditions (see Appendix AP, "Inspection Report Template (R7)").

Given the importance of the inspection report the inspector is strongly encouraged to begin the inspection report as soon as possible following the inspection. Particular activities that should be accomplished on the day or days following the inspection include:

- Review inspection notes and document any details that were discussed during the inspection but not recorded in the notes, particularly compliance concerns. These items should be annotated to make clear that they were added after the inspection.

- Document or highlight the potential compliance issues identified during the closing conference with the facility representative.
- Identify missing information on the checklist and contact the operator for this information.
- Download, organize and add descriptions to inspection photos, or have inspection film developed. Follow the Digital Camera Guidance for EPA Civil Inspections and Investigations.
- Place documents claimed as confidential business information (CBI) in a secure location (this must occur as soon as the inspector returns to the office).

Generally, the accuracy and quality of the inspection report is highest when the report is completed promptly.

COMMUNICATION WITH THE CAFO OPERATOR

It may be necessary to follow up with an operator after the inspection if additional information is needed or to clarify certain information obtained during the inspection. As it can be difficult to reach an operator who is busy, the inspector should use the closing conference to establish the best times and approach for post-inspection communication (e.g., mobile phone, office phone, email, or fax). Any information obtained from the operator after the inspection should be identified in the inspection notes and report.

Post Inspection NMP Records Evaluation

The records and document review portion of the CAFO inspection should provide the inspector with an opportunity to review required documentation. However, the inspector may not have adequate time to review laboratory reports, rate calculations, and land application records. As a result, the inspector may need to complete the records review back in the office. Refer to Section B for a list of records to photocopy for post inspection evaluation. Appendix AO, "Detailed Review of Nutrient Management Plan Implementation" provides more detail on reviewing NMPs and land application records.

Inspection Report Generation

After the inspector has reviewed all the information obtained during the inspection and contacted the operator, if needed for any clarifying information, an inspection report should be prepared. The inspection report will generally include the inspection checklist, documentation copied during the inspection, an explanation of findings, and supporting photographs. See NPDES Inspection Manual for detailed information on preparation of an NPDES inspection report. The inspector should follow EPA quality control/quality assurance procedures for inspection reports.

Compliance Determination and Follow-Up Action

Senior EPA compliance personnel will review the completed inspection report and evaluate whether the facility is in compliance and what type of follow-up action is appropriate. EPA

responds to noncompliance in several different ways, depending upon the nature and circumstances of the violation(s):

- No follow-up needed
- Letter notifying the facility of violation(s) (e.g., NOVs) or compliance assistance
- Administrative compliance order
- Administrative compliance order plus administrative penalty
- Civil judicial enforcement action (penalties and/or injunctive relief)
- Criminal enforcement investigation

Compliance decisions will be based on observations, data, and other evidence collected during the inspection. Thus, it is the inspector's responsibility to carefully document all aspects of the inspection process so senior compliance personnel can make an informed legal decision about the facility's compliance status and to ensure that any required follow-up action is based on sound, factual evidence.

Once finalized, EPA should send a copy of the report to the inspected facility. If it is not a region's practice to send the report to the facility, there should be some communication with the facility to transmit the results of the inspection. Note that the inspection report may be addressed to a responsible official who is different from the facility representative who participated in the inspection. The responsible official will typically be an individual authorized to make management and financial decisions which govern operation of the facility (40 CFR 122.22(a)(1)).

File Maintenance

It is important once the inspection report is complete to ensure all documents associated with the inspection, including all field notes and photographs, are properly filed in a readily identified location that corresponds with the currently used filing system (e.g., facility name, permit number). The inspector should mark all information claimed to be CBI and place it in a locked filing cabinet or a safe immediately after the inspection is completed. CBI includes information considered to be trade secrets (including chemical identity, processes, or formulation) that could damage a company's competitive position if they became publicly known. The facility representative is responsible for identifying CBI during the inspection; the inspector will have discussed this during the opening conference.

As previously mentioned, the information presented in this chapter is intended to be comprehensive and broadly applicable to the majority of EPA inspections at permitted and unpermitted CAFOs; however, there will always be situations that require the inspector to rely on their best professional judgment, knowledge of the regulations, and familiarity with EPA Region-specific policies. As such, the inspector is encouraged to periodically review the NPDES Compliance Inspection Manual and other resources referenced in this manual to remain up to date on national and regional EPA compliance inspection policies and procedures.

G. REFERENCES

The following is a list of resources providing additional information on CAFOs.

Adams, T. (2012). "What does a cattle disease look like in a human?" *Farm & Ranch Guide*. Available at: http://www.farmandranchguide.com/news/livestock/what-does-a-cattle-disease-look-like-in-a-human/article_41f0aeac-4b80-11e1-a531-0019bb2963f4.html

Pelzer, K.D. and N. Currin. (2009). *Zoonotic Diseases of Cattle*. Blacksburg, Virginia: Virginia Cooperative Extension, Virginia Polytechnic Institute and State University. Available at: http://pubs.ext.vt.edu/400/400-460/400-460.html

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U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS). (2009). *Part 304 – Comprehensive Nutrient Management Plan Technical Criteria.* Available at: http://directives.sc.egov.usda.gov/viewerFS.aspx?hid=25686.

U.S. Environmental Protection Agency. (1984). *EPA Policy for the Administration of Environmental Programs on Indian Reservations.* Available at: https://www.epa.gov/tribal/epa-policy-administration-environmental-programs-indian-reservations-1984-indian-policy

U.S. Environmental Protection Agency. (1992). *NPDES Storm Water Program Question and Answer Document, Volume 1.* EPA 833-F-93-002.

U.S. Environmental Protection Agency. (1995). *Guide Manual on NPDES Regulations for Concentrated Animal Feeding Operations.* EPA-833-B-95-001.

U.S. Environmental Protection Agency. (2001a). *Final Guidance on the Enforcement Principles Outlined in the 1984 Indian Policy.* Available at: https://www.epa.gov/enforcement/transmittal-final-guidance-enforcement-principles-outlined-1984-indian-policy-january-17

U.S. Environmental Protection Agency. (2002). *Development Document for the Final Revisions to the National Pollutant Discharge Elimination System Regulation and the Effluent Guidelines for Concentrated Animal Feeding Operation*. EPA-821-R-03-001.

U.S. Environmental Protection Agency. (2003a). *Final National Policy: Role of the EPA Inspector in Providing Compliance Assistance During Inspections*. Available at: https://www.epa.gov/compliance/policy-role-epa-inspector-providing-compliance-assistance-during-inspections

U.S. Environmental Protection Agency. (2003b). *NPDES Permit Writers' Guidance Manual and Example Permit for Concentrated Animal Feeding Operations*. EPA-833-B-04-001

U.S. Environmental Protection Agency. (2004). *Managing Manure Nutrients at Concentrated Animal Feeding Operations.* EPA 821-B-09-009.

U.S. Environmental Protection Agency. (2012a). *NPDES Permit Writers' Manual for Concentrated Animal Feeding Operations.* Office of Water, Office of Wastewater Management. EPA 833-F-12-001.

U.S. Environmental Protection Agency. (2012b). *National Pollutant Discharge Elimination System Permit Regulation for Concentrated Animal Feeding Operations: Removal of Vacated Elements in Response to 2011 Court Decision, Final Rule*. EPA-HQ-OW-2012-0142; FRL-9705-6.

U.S. Environmental Protection Agency. (2014). *Fact Sheet: Livestock and Poultry Operation Inspections.* EPA 305-F-14-0.

U.S. Environmental Protection Agency. (2016). *Biosecurity Procedures for Visits to Livestock and Poultry Facilities*. OECA-PROC-2016-010-R0. Available at: https://www.epa.gov/compliance/guidance-biosecurity-procedures-visits-livestock-and-poultry-facilities

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