

Implementation Guidance on CAFO Regulations – CAFOs That Discharge or Are Proposing to Discharge

May 28, 2010

United States Environmental Protection Agency
Office of Water
Office of Wastewater Management
Water Permits Division
Washington, D.C. 20460

EPA-833-R-10-006

Disclaimer

This guidance document does not change or substitute for any legal requirements, though it does provide clarification of some regulatory requirements. While EPA has made every effort to ensure the accuracy of the discussion in this document, the obligations of the regulated community are determined by the relevant statutes, regulations, or other legally binding requirements. This guidance document is not legally enforceable and does not confer legal rights or impose legal obligations upon any member of the public, EPA, states, or any other agency. In the event of a conflict between the discussion in this document and any statute or regulation, this document would not be controlling. The word “should” as used in this guidance document does not connote a requirement, but does indicate EPA’s strongly preferred approach to assure effective implementation of legal requirements. This guidance may not apply in a particular situation based upon the circumstances, and EPA, states and Tribes retain the discretion to adopt approaches on a case-by-case basis that differ from the recommendations of this guidance document where appropriate. Permitting authorities will make each permitting decision on a case-by-case basis and will be guided by the applicable requirements of the CWA and implementing regulations, taking into account comments and information presented at that time by interested persons regarding the appropriateness of applying these recommendations to the particular situation. In addition, EPA may decide to revise this guidance document to reflect changes in EPA’s approach to implementing the regulations or to clarify and update text.

The Office of Wastewater Management, Office of Water, U.S. Environmental Protection Agency has approved this guidance for publication. Mention of trade names, products, or services does not convey and should not be interpreted as conveying official EPA approval, endorsement, or recommendation for use.

I. Overview of regulatory requirements

The revised provision at 40 CFR 122.23(d) requires all concentrated animal feeding operations (CAFOs) that discharge or propose to discharge to seek National Pollutant Discharge Elimination System (NPDES) permit coverage. Section 40 CFR 122.23(d) also provides that a “CAFO proposes to discharge if it is designed, constructed, operated, or maintained such that a discharge will occur.” This requirement to seek NPDES permit coverage applies to all owners and operators of CAFOs¹ that discharge or propose to discharge regardless of the volume or duration of the discharge. For CAFOs that already have permit coverage, permit coverage must be maintained by applying for a new permit at least 180 days prior to expiration of the existing permit (or as provided by the permitting authority) unless the CAFO will not discharge or propose to discharge when the permit expires. 40 CFR 122.23(g). It is the responsibility of the CAFO owner or operator to seek authorization to discharge at the time they propose to discharge, if they have not already done so. 40 CFR 122.23(f). Any CAFO that is required to seek or maintain permit coverage and fails to do so may be subject to enforcement. See 73 Fed. Reg. 70,418, 70,423-25 (Nov. 20, 2008).

As discussed in the preamble to the 2008 final rule, unlike the 2003 rule, which categorically required a permit for any CAFO with a “potential to discharge,” the revised regulations call for a case-by-case evaluation by the CAFO owner or operator as to whether the CAFO discharges or proposes to discharge based on actual design, construction, operation, and maintenance. “Potential” connotes the possibility that there might—as opposed to will—be a discharge. In contrast to the 2003 rule, the 2008 revised rule involves a case-by-case assessment by each CAFO to determine whether the CAFO in question, due to its individual attributes, discharges or proposes to discharge. Therefore, 40 CFR 122.23(d)(1) requires only CAFOs that actually discharge to seek permit coverage and clarifies that a CAFO proposes to discharge if based on an objective assessment it is designed, constructed, operated, or maintained such that a discharge will occur, not simply such that it might occur. See 73 Fed. Reg. 70,423.

EPA contemplates that CAFO operators will objectively assess whether a discharge from the CAFO, including from the production area and any land application areas under the control of the CAFO, is occurring or will occur for purposes of determining whether to seek permit coverage. 73 Fed. Reg. 70,423. An operator of an unpermitted CAFO is never authorized to discharge from the CAFO under Clean Water Act § 301(a). Under 40 CFR 122.23(e), discharges from the CAFO include discharges of manure, litter, or process wastewater from land application areas under the control of the CAFO that are not exempt as “agricultural stormwater discharges.” Agricultural stormwater discharges are excluded from the definition of the term “point source” in section 504(14) of the CWA, 33 U.S.C. 1362(14). The CAFO NPDES regulations provide that precipitation-related discharges that qualify as agricultural stormwater discharges from land application areas at a CAFO are not subject to NPDES permit requirements. For discharges from the land application area to qualify as agricultural stormwater, manure and wastewater must be applied in accordance with site specific practices that ensure appropriate agricultural utilization of nutrients. 40 CFR 122.23(e).

¹ The Clean Water Act regulates the conduct of persons, which includes the owners and operators of CAFOs, rather than the facilities or their discharges. To improve readability in this document, reference is made to “CAFOs” as well as “owners” and “operators” of CAFOs. No change in meaning is intended.

Discharges from CAFOs are not limited to manure or manure nutrients, as the Clean Water Act and its implementing regulations prohibit the discharge of “any pollutant” from a point source. Pollutant means “dredged spoil, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water.” 33 U.S.C. 1362(6). See also 40 CFR § 122.2.

II. What are the key elements of an objective assessment?

EPA regulations require only CAFOs that discharge or propose to discharge to seek permit coverage and clarify that a CAFO proposes to discharge if “based on an objective assessment it is designed, constructed, operated, or maintained such that a discharge will occur.” 73 Fed. Reg. 70,423. The owner or operator of a CAFO should make an objective assessment of the operation to determine whether the CAFO will discharge based on a site-specific evaluation of the actual design, construction, operation, and maintenance of the facility. Such an objective assessment should take into account not only the manmade aspects of the CAFO itself, but climatic, hydrologic, topographic, and other characteristics beyond the operator’s control that affect whether the CAFO will discharge given the design, construction, operation, or maintenance of the CAFO. An objective assessment provides a common basis for both the CAFO and the permitting authority to determine whether the CAFO discharges or proposes to discharge.

Any objective assessment should consider the possible sources of pollutants at the CAFO, such as animal confinement areas; feed storage areas; manure, litter, and process wastewater storage areas; confinement house ventilation fan exhaust; land-applied manure, litter, or process wastewater; and other site specific sources of pollutants, as well as any pathways for pollutants from the CAFO to reach waters of the U.S.

Some factors that are relevant to a CAFO’s objective assessment include, but are not limited to:

- Proximity of the CAFO to waters of the United States, and if the CAFO is upslope from waters of the U.S.;
- Climatic conditions, including whether precipitation exceeds evaporation;
- Discharge history;
- Type of waste storage system, and the capacity, quality of construction and presence and extent of built-in safeguards of the storage system;
- Management of mortalities;
- Standard operating procedures and quality of maintenance protocols, e.g., for equipment, infrastructure, etc.;
- Drainage of production area;
- Exposure of animal waste and feed to precipitation or other water; and
- If the CAFO land applies, method for nutrient management planning and source of technical standards (e.g., technical standards established by the Director).

These are examples of factors that build an objective assessment conducted by a CAFO considering whether it discharges or proposes to discharge or by the permitting authority when evaluating whether a particular facility is required to seek coverage. When determining whether to seek permit coverage, a CAFO owner or operator should use the results of their objective assessment, relying on factual information, to make an informed decision about whether the CAFO discharges or proposes to discharge.

It may be that no one factor would lead to a conclusion that a CAFO discharges or proposes to discharge; therefore, various factors should be considered collectively. For example, an owner or operator might need to consider the following factors collectively as part of the objective assessment: (a) the proximity to a water of the U.S., (b) whether production areas are exposed to precipitation, (c) whether an open surface manure storage structure has adequate capacity for manure and wastewater generated during the critical storage period, taking into consideration the plans for manure utilization, and (d) consideration of historic chronic precipitation events.

If the CAFO has discharged, the CAFO would be a CAFO that discharges unless the circumstances giving rise to the discharge have changed and the cause of the discharge has been corrected such that the CAFO is not discharging and will not discharge based on the design, construction, operation, and/or maintenance of the facility. See 73 Fed. Reg. 70,423. This is true for CAFOs that have continuously discharged pollutants as well as those with intermittent and sporadic discharges to waters of the U.S.² However, as illustrated by the list above, a past discharge is not the only factor that permitting authorities and operators should consider in assessing whether the CAFO discharges or proposes to discharge. Even if it has never previously discharged, the CAFO could be proposing to discharge due to design and construction of the facility, management practices, or other site-specific characteristics, whether within the CAFO owner/operator's control or not.

Note: A permitted CAFO may discharge according to permit conditions and thereby would not be discharging in violation of the CWA. However, an unpermitted CAFO may not lawfully discharge under any circumstances because section 301(a) of the Clean Water Act prohibits all unpermitted discharges.

To assist CAFO operators in making an objective assessment and to provide assurance for CAFOs that determine they are not required to obtain permit coverage, the CAFO rule provides a voluntary no discharge certification option. In states and Indian Country where EPA is the permitting authority and in any authorized state that adopts the certification option,³ an unpermitted CAFO has the option to certify that it does not discharge or propose to discharge.⁴ EPA encourages CAFOs that choose not to certify, as well as CAFOs in authorized states that do

² *Gwaltney of Smithfield, Ltd. v. Chesapeake Bay Foundation*, 484 U.S. 49, 57 (1987).

³ The no discharge certification is a voluntary option for CAFOs that are not subject to NPDES permitting requirements. Therefore, states are not required to adopt the certification option into their CAFO program. States only need to adopt the certification option prior to exercising this option if they choose to make it available to CAFOs in their state. There is no specified time frame by which a state would need to adopt the certification option, except that if a state chooses to make the option available to CAFOs, it must revise its program accordingly prior to accepting certifications.

⁴ In the event of a discharge from a properly certified CAFO, the CAFO will not be liable for prior failure to seek permit coverage. The CAFO, however, remains liable for discharging without an NPDES permit. See 73 Fed. Reg. 70,426.

not adopt the certification option, to consider the criteria for certification eligibility, including a rigorous evaluation of the production area and implementation of a nutrient management plan, when deciding whether to seek permit coverage or renew existing permit coverage. The certification eligibility criteria provide one basis for making an objective assessment of whether a CAFO discharges or proposes to discharge. These criteria are provided in 40 CFR 122.23(i)(2) and described in the preamble to the 2008 CAFO rule. 73 Fed. Reg. 70,427-30.

For any unpermitted CAFO the objective assessment is an ongoing process as CAFO operations change over time. A CAFO cannot ensure compliance with the CWA by evaluating its design, construction, operation, and maintenance at one fixed point in time. As discussed above, the revised regulations require a CAFO to seek permit coverage *when it proposes to discharge*. Therefore, a CAFO may correctly conclude based on an objective assessment that it is not required to seek permit coverage, and then subsequently be subject to the requirement to seek permit coverage due to changed circumstances. EPA recommends that an unpermitted CAFO keep records of its operations and maintenance and continually assess whether current circumstances warrant NPDES permit coverage. A CAFO's records should include, among other things, drainage maps that reflect current conditions, operating procedures and inspection records, and records of nutrient management planning and how land application protocols are being implemented.

III. Which CAFOs discharge or propose to discharge?

As explained above, whether a CAFO discharges or proposes to discharge will be determined by considering separately and in combination a range of factors specific to the CAFO. The factors listed in this section do not indicate that every CAFO having one particular attribute identified here will discharge. Instead, these factors are relevant to the site-specific assessment of the CAFO's design, construction, operation, and maintenance.

Design, construction, operation, and maintenance are equally important components of a CAFO's operation and can make the difference between a CAFO that "discharges or proposes to discharge" and one that does not need to seek permit coverage. Relevant areas of consideration in making a determination of whether a CAFO discharges or proposes to discharge include:

- Animal confinement area;
- Waste storage and handling;
- Mortality management; and
- Land application practices.

Factors associated with these areas are discussed below in section III.A. In many ways there are variations among animal sectors that inform how CAFOs and permitting authorities should be evaluating which facilities discharge or propose to discharge. The discussion below also covers important design, construction, operation, and maintenance factors relating to the dairy, beef cattle, swine and poultry sectors.

A. All Animal Sectors

Factors relevant to the CAFO's determination of whether it discharges or proposes to discharge that apply to all types of livestock, including CAFOs raising animal types not specifically discussed in this guidance, such as veal calves, turkeys, ducks, horses, and goats, are discussed below.

The Animal Confinement Area

The CAFO production area includes the animal confinement area, which includes, but is not limited to, open lots, housed lots, feedlots, confinement houses, stall barns, free stall barns, milkrooms, milking centers, cowyards, barnyards, medication pens, walkers, animal walkways and stables. 40 CFR 122.23(b)(8). A CAFO's animal confinement area should be designed and operated in such a way that clean water diversion mechanisms, if any, are fully functional, and all process wastewater is collected and stored. All process wastewater generated at the site should be taken into account when determining the adequacy of the CAFO's storage capacity. Water that comes into contact with any raw materials, products, or byproducts including manure, litter, feed, milk, eggs or bedding is process wastewater and cannot be discharged unless authorized by an NPDES permit.

Factors to consider for whether a CAFO discharges or proposes to discharge based on its animal confinement area include:

- Whether there are structural controls in place to divert clean water and what condition they are in;
- Inspection and maintenance schedules for clean water diversion controls, such as berms, gutters and channels;
- Whether design and maintenance of pipes, valves, ditches, drains, etc., associated with the collection of manure and wastewater from the animal confinement area prevents spills and leakage;
- Whether secondary containment, if applicable, to manage contaminated runoff is designed, operated and maintained to handle all pollutant loads; and
- Whether the animal confinement area prevents animals from having direct contact with waters of the U.S.

Waste Storage and Handling

Siting, design and construction aspects of storage structures are important considerations when determining whether a CAFO has an adequate waste storage and handling system in place. In assessing whether a CAFO discharges or proposes to discharge, the number of animals and the amount of manure, litter, or process wastewater anticipated to be generated during the minimum

critical storage period⁵ should be considered. Operation and maintenance factors include the scheduling of regular appraisals of all storage structures to ensure integrity of berms, valves, other control devices, and the level of liquid impoundments and implementation of these schedules through a detailed up-to-date waste utilization plan, such as a nutrient management plan (NMP).

Waste storage and handling practices differ depending on whether the CAFO's waste handling system is dry, liquid, or a combination of the two. 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. Stockpiles of manure or litter are part of a CAFO's production area regardless of where they are located. 40 CFR 122.23(b)(8). Relevant factors with respect to stockpiles of manure or litter, whether dry or wet, include proximity to waters of the U.S. and slope of land, exposure to precipitation, whether there are structural controls such as pads, berms or covers, duration of storage, and management of pile removal.



Photo 1. This stockpile is up to eight feet tall and sixty 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.)

For liquid handling systems, it is important to consider whether the waste containment structure(s) is 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 U.S. This includes maintaining capacity for freeboard and direct precipitation. See photo 2, which illustrates a lagoon with vegetation growing in it. Growth of vegetation in 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 balance in the system. Important factors also include whether the CAFO maintains the structural integrity of the pond or lagoon and manages levels of manure, wastewater and sludge appropriately. Factors that may lead to structural failure include erosion, growth of trees or shrubs on berms, large animals walking on containment berms, and burrowing wildlife. A proper maintenance plan should address these factors. Embankments of any waste containment structure should be well intact, dry, 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.

⁵ This term means the minimum storage period that provides the capacity to store all manure and process wastewater plus precipitation events less evaporation until optimal land application or other drawdown of storage (e.g., for transfer off-site). See also *Managing Manure Nutrients at Concentrated Animal Feeding Operations* 2-12 (EPA, 2004).



Photo 2. This lagoon at a dairy CAFO is upslope from a water of the U.S. 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.)

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.⁶ 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.

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 or proposes to discharge in connection with mortality management include the type(s) of animal(s) maintained at the operation, methods for handling and disposal of animal mortalities, state and local laws, 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 owner or operator should consider whether the CAFO



Photo 3. This CAFO is discharging by disposing of mortalities in a conveyance that drains to a water of the U.S. (Source: EPA Region 4.)

⁶ In many cases the BMPs implemented by an unpermitted CAFO to ensure that it does not discharge or propose to 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 (see 40 CFR 122.41(m) and (n)). 73 Fed. Reg. 70,425.

has 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 U.S.). A CAFO may want to consider a plan for dealing with catastrophic mortality events.

Land Application Areas

As stated in 40 CFR 122.23(e), a discharge from a land application area under the control of a CAFO is subject to NPDES permit requirements, except where it is an agricultural stormwater discharge. The Clean Water Act definition of point source excludes discharges of agricultural stormwater and such discharges are therefore not subject to permit requirements.⁷ A CAFO does not propose to discharge if it land-applies manure, litter, or process wastewater to land under its control such that the only discharges from the CAFO are land application area discharges that qualify as agricultural stormwater.

If a CAFO does not land-apply, or relies on a combination of land application and off-site transfer, another relevant factor is the CAFO's plans for disposition of all the manure and process wastewater generated at the facility, e.g., manure broker agreements, sales contracts, etc. Below are some considerations related to whether CAFOs that land apply manure, litter, and process wastewater discharge or propose to discharge. Although not an exhaustive list, these considerations are some relevant factors to be accounted for when evaluating whether a CAFO's land application practices mean that the CAFO discharges or proposes to discharge.

Protocols for Land Application. In order for precipitation-related discharges to be exempt from NPDES permitting requirements under 40 CFR 122.23(e), CAFOs must land apply manure, litter, and process wastewater in accordance with protocols that ensure appropriate utilization of the nutrients in the manure. Over-application of manure, litter, or process wastewater is a source

Regulatory Citations - 40 CFR 122.23(e) Land application discharges from a CAFO are subject to NPDES requirements. “. . . For purposes of this paragraph, where the manure, litter or process wastewater has been applied in accordance with site specific management practices that ensure appropriate agricultural utilization of the nutrients in the manure, litter or process wastewater, as specified in §122.42(e)(1)(vi)-(ix), a precipitation-related discharge of manure, litter or process wastewater from land areas under the control of a CAFO is an agricultural stormwater discharge.”

40 CFR 122.42(e)(1) Requirements to develop and implement a nutrient management plan.

- (vi) Identify appropriate site-specific conservation practices to be implemented, including buffers or equivalent practices, to control runoff of pollutants to waters of the US;
- (vii) Identify protocols for appropriate testing of manure, litter, process wastewater, and soil;
- (viii) Establish protocols to land apply manure, litter and 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; and
- (ix) Identify specific records that will be maintained to document the implementation and management of the minimum elements described in paragraphs (e)(1)(i)-(e)(1)(viii) of this section.

⁷ 33 U.S.C 1362(14). “The term ‘point source’ means any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged. This term does not include agricultural stormwater discharges and return flows from irrigated agriculture.”

of excess nutrients in surface waters, and such practices are inconsistent with the regulatory definition of agricultural stormwater discharges from CAFOs. The technical standards established by the state permitting authority in accordance with 40 CFR 123.36 provide important benchmarks for assessing whether a CAFO's protocols for land application ensure all precipitation-related discharges from land application areas will qualify as agricultural stormwater discharges.

An important factor for assessing a CAFO's land application protocols is whether the protocols include practices to account for certain soil characteristics, such as incorporating manure into the soil where the soil, terrain or other factors indicate that incorporation would reduce pollutant transport from the field to surface water. Other relevant factors include how the protocols take into account timing restrictions for manure related to saturated soil, wet weather and frozen or snow-covered ground, and the results of regular soil and manure tests to calculate the amount of manure nutrients to be applied. In addition, site-specific conservation practices to control runoff of pollutants to waters of the U.S. (e.g., buffers or equivalent practices) are a factor for whether precipitation-related discharges qualify as agricultural stormwater (see 40 CFR 122.42(e)(1)(vi)). Benefits from conservation practices for land application include more efficient use of nutrients and reducing soil erosion.

Dry Weather Discharges. Dry weather discharges from land application areas, unlike wet weather discharges that may be exempt agricultural stormwater, are not stormwater and therefore not agricultural stormwater discharges. Therefore, if a CAFO has a dry weather discharge from its land application area, the discharge is considered a land application discharge from the CAFO subject to NPDES permit requirements (see regulatory citation in text box above). Operation and maintenance of manure application equipment, such as hoses and automatic shut-off valves, are among the factors directly related to this consideration. See photo 4.



Photo 4. This CAFO is discharging during dry weather by spraying manure/wastewater into a ditch that flows to a water of the U.S. In addition, inadequate edge-of-field conservation practices may be insufficient to control runoff (see § 122.42(e)(1)(vi)), to the extent necessary to qualify as agricultural stormwater discharges (see § 122.23(e)). (Source: EPA Region 4.)

Recordkeeping for Land Application Area(s). For discharges from CAFO land application areas to qualify for the agricultural stormwater exemption the CAFO must maintain records in accordance with 40 CFR 122.42(e)(1)(ix). (Also see § 122.23(e).) Written records of application amounts, timing, crop nutrient needs, soil and manure testing, conservation practices and other important factors are essential for an assessment of whether there are point source discharges from a CAFO's land application areas. Typical documentation of how a CAFO implements in-field and edge-of-field conservation practices could include records related to maintenance of terraces, vegetated buffers, riparian buffers or other practices.

Relationship Between Adequate Storage and Land Application. The link between adequate storage of manure, litter, and process wastewater and land application practices is one of the most critical considerations in developing and implementing nutrient management planning that ensures adequate manure storage capacity and proper agricultural utilization of manure nutrients. Different climates and terrains are relevant to this relationship as well, and should be taken into consideration when evaluating whether a CAFO has sufficient storage (or made other appropriate accommodation) for manure, litter, and process wastewater such that land application is not needed during times when either prohibited or inappropriate due to climatic or soil conditions. Tools, such as the Soil Plant Air Water (SPAW) Hydrology Tool, are available to assist in planning the frequency, intervals and quantities at which nutrients can properly be land-applied on each field taking into consideration the best available local climate data. For further discussion of SPAW, see the preamble to the 2008 CAFO rule, 73 Fed. Reg. 70,461-62.

Some states may provide under state law that agricultural operations can land-apply, perhaps on frozen or snow-covered ground, in “emergencies” under prescribed circumstances. Land application in accordance with such state laws may result in discharges that do not qualify as agricultural stormwater discharges. In some cases, land application under these same circumstances will not “ensure the appropriate agricultural utilization of nutrients” and therefore any precipitation-related discharges would not be considered “agricultural stormwater.” It is important to consider that although a practice may be authorized under state law, CAFOs adhering to that practice will nevertheless be proposing to discharge for purposes of the NPDES program if they are designed, constructed, operated, and maintained such that a discharge will occur.

See the text box on page 17 for other design, construction, operation, and maintenance factors generally applicable to all animal sectors.

B. Dairy Sector

Dairy operations have design and construction considerations that are relevant to the determination of whether the CAFO discharges or proposes to discharge. For example, a dairy operation constructed with floor drains or catch basins that outlet to a surface water is a CAFO that discharges. Therefore, it is important to consider whether a dairy directs waste streams from barns to a proper containment structure or if waste is managed in a manner causing it to be discharged from the barns, including the milking parlor, through a conveyance to a water of the U.S. Additionally, dairies should consider whether all process-generated wastewater is contained, including wastewater from commodity barns and silage bunkers and from portions of the production area that are uncovered, such as feed storage areas, animal pens and loafing areas. See photo 5.



Photo 5. The dairy CAFO pictured above has had discharges from the confinement area bypassing the waste containment storage structure (denoted by red dashed line). (Source: EPA Region 4.)

Dairy operations in warm climates typically have cooling ponds designed for the purpose of cooling 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 also contains process wastewater because of animal contact (see definition at 40 CFR 122.23(b)(7)). Relevant factors include the location relative to waters of the U.S. and the pond's design, among other factors, when assessing whether there are or will be discharges from a cooling pond. Also it is important to consider whether water intentionally removed from the cooling pond is properly managed, e.g., pumped to a retention pond (see photo 6).

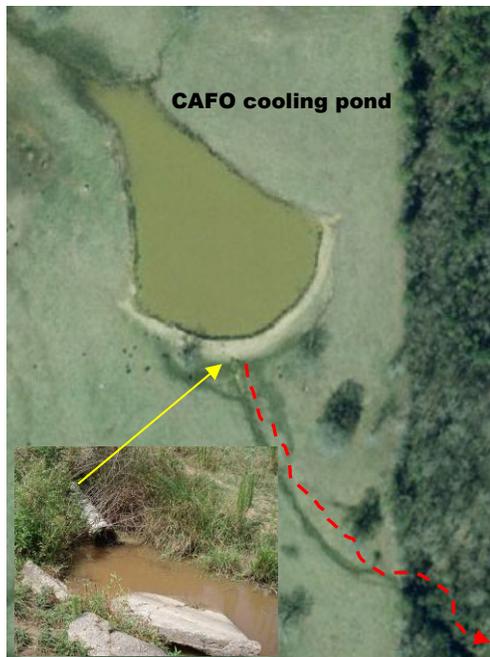


Photo 6. This dairy CAFO cooling pond is designed to have a pipe discharge via a conveyance to a water of the United States. Use of this cooling pond results in the CAFO discharging or proposing to discharge. (Source: EPA Region 4.)

See the text box on page 17 for other design, construction, operation, and maintenance factors specific to dairy operations.

C. Beef Cattle Sector

While some cattle are kept in confinement buildings, most beef operations are on outdoor feedlots and may have open sheds, windbreaks and/or shades. When determining whether a beef cattle operation discharges or proposes to discharge, an important consideration is if the feedlot has sufficient containment for all manure, wastewater and direct precipitation for the minimum critical storage period. Because the animals and manure are typically not housed under roof at beef cattle operations it is particularly important to consider climate and proximity to waters of the U.S. when evaluating whether beef cattle operations propose to discharge, as well as the design of the animal pens, which at some operations are sloped to drain to waters of U.S.



Photo 7. This section of the beef feedlot production area has an outlet for manure and process wastewater to a roadside ditch. If the ditch is, or conveys process wastewater to, a water of the U.S., then the CAFO discharges or proposes to discharge. (Source: EPA Region 7.)

Other factors that may be more common in this animal sector include:

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

See the text box on page 17 for other design, construction, operation, and maintenance factors specific to beef cattle operations.

D. Swine Sector

In evaluating whether a swine operation discharges or proposes to discharge, in addition to the factors discussed under section III.A, relevant factors include considerations specifically related to manure handling systems that are common at these types of operations, including in-house manure pits.

Some swine operations with in-house manure pits (where manure is collected in a pit below the animal confinement house) are designed with enough capacity to hold all manure and wastewater generated in the house until pumped out for land application. 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, which can run from the pit to the application field.

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. Therefore, systems at some swine operations rely more heavily on pumps and pipes than at other swine operations. Problems associated with the following aspects of manure management have been known to lead to discharges and therefore should be considered when evaluating whether an operation discharges or proposes to discharge: pipe or hose ruptures; overflows from open channels or collection pits; and direct discharges from a waste containment structure such as a lagoon. See photo 8.



Photo 8. An in-house pit in this swine barn is designed to have manure transported from the pit to an earthen storage structure through a pipe. Due to a pipe break, manure is leaking and flowing downhill from the barn. (Source: EPA Region 5.)

See the text box on page 17 for other design, construction, operation, and maintenance factors specific to swine operations.

E. Poultry Sector

Most poultry operations are located on smaller parcels of land in comparison to other livestock sectors, placing increased importance on proper management of the potentially large amounts of manure, litter, and process wastewater generated. Nutrient loads from the poultry sector to surface waters are generally caused by rainfall coming in contact with dry manure that is stacked in exposed areas, poor housekeeping (see photo 9), and land application practices that do not ensure the appropriate agricultural utilization of nutrients. Therefore, relevant factors as to whether a poultry operation discharges or proposes to discharge include:

- Whether the operation has insufficient storage capacity to accommodate litter removed from houses between flocks and during whole-house clean-outs;
- Whether management of clean-outs, stockpiles and litter storage sheds is done in such a way that contaminated runoff will reach waters of the U.S.; and
- Whether the operation does not have adequate available acreage for land application or other arrangements in place (such as third-party haulers) to utilize the nutrients generated at the facility.

CAFO operations with ventilated confinement houses should consider a number of relevant factors, such as the way water is drained from the site and proximity to waters of the U.S., when assessing whether they propose to discharge. Some poultry facilities are designed to channel precipitation runoff from the areas around the houses away from the confinement area (see photo 10). If the CAFO is designed, constructed, operated, or maintained so that pollutants from the houses will



Photo 9. This storage structure may 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.)



Photo 10. The photo shows a poultry operation that was designed to have precipitation drain away from houses through a conveyance system that discharges to a water of the U.S. If pollutants will be carried by this conveyance system to waters of the U.S., the facility is proposing to discharge. (Source: EPA Region 3.)

be transported in the runoff to a water of the U.S., the facility is proposing to discharge and must apply for an NPDES permit.

See the text box on page 17 for other design, construction, operation, and maintenance factors specific to poultry operations.

**Examples of Factors to be Considered in Assessing Whether a CAFO
Discharges or Proposes to Discharge**

ALL ANIMAL SECTORS

- Facility location, such as whether in a floodplain, slope, and proximity to waters of the U.S.
- Volume of manure, litter, or process wastewater generated
- Waste storage system and if designed, constructed, operated and maintained such that a discharge into a water of the U.S. will occur
- Management of storage, treatment and disposal of mortalities
- Amount of acreage to land-apply manure, litter, or process wastewater in accordance with appropriate practices and/or arrangements for disposing of or other means of utilizing nutrients, such as transfer off-site
- 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 at all times of land application equipment, e.g., inspecting hoses and overseeing automatic shut-off 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
- Management of the calving area
- Management of cooling water and footbath water
- Storage or disposal of production area waste, including from milking parlors
- Management of bedding material

BEEF CATTLE SECTOR

- The capacity for manure and wastewater storage, including consideration of proper siting and management of stockpiles 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 consideration of type of confinement houses , pollutants expelled and deposited outside of and around confinement houses from the ventilation system, and design of any drainage features that may relate to management of process wastewater at the CAFO (i.e., whether a conveyance routes water through part of the CAFO and into a water of the United States)
- 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 sources of pollutants, such as storage facilities and confinement house ventilation systems, and consideration of whether pollutants come into contact with precipitation or other water to generate process wastewater

POULTRY SECTOR

- Management of pollutants from confinement houses, including consideration of type of confinement houses , pollutants expelled and deposited outside of and around confinement houses from the ventilation system, and design of any drainage features that may relate to management of process wastewater at the CAFO (i.e., whether a conveyance routes water through part of the CAFO and into a water of the United States)
- Identification of sources of pollutants, such as storage facilities, litter handling activities (e.g., cake-outs, crust-outs, whole house clean-outs, etc.), poultry handling, and confinement house ventilation systems, and consideration of whether pollutants come into contact with precipitation or other water to generate process wastewater
- For layer facilities, management of egg production and egg wash water.

IV. Additional Resources

To obtain additional information about the CAFO NPDES program, contact EPA headquarters, (www.epa.gov/npdes/cafo/hqcontacts) or one of the EPA regional offices (www.epa.gov/npdes/cafo/regionalcontacts).

Updated resources for permit writers and producers will be provided on-line, as they become available, at www.epa.gov/npdes/cafo/publications.