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The 3 Most Common Environmental Compliance Challenges for Feedlots

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In what areas are feedlots most often deficient in meeting CAFO environmental requirements? I see dozens of feedlots in a given year, and occasionally I am asked this question by owners and managers. They want to know whether their challenges are the same as their industry peers. Following are the three (3) most common areas where, based on my experience, feedlots are *least* likely to be fully compliant with the environmental regulations.

3. Insufficient lagoon storage capacity. A pollutant discharge permit from the state or EPA gives your operation the right to discharge wastewater as long as the following conditions are met: 1) a precipitation event causes the discharge, 2) at the time the storm began, the feedlot's holding pond(s) had capacity available to hold the design storm runoff (usually the 25 year, 24-hour storm), and 3) certain best management practices are followed. Whether the "design storm" is the 25 year, 24-hour storm or some other precipitation amount, ponds must be maintained to hold the runoff volume from the storm. Wastewater inflows (e.g., working barns, water tanks, small runoff events) and accumulated solids reduce a pond's available wastewater storage capacity. For facilities that have minimal excess storage capacity to begin with, this is a concern. If liquids and/or solids are allowed to accumulate to a depth where the feedlot can no longer hold the design storm runoff, that feedlot becomes out of compliance with its permit until the necessary capacity is restored. In other words, a feedlot may have engineering documentation that proves its holding ponds are large enough to retain the design storm runoff, but unless those ponds are maintained (dewatered and cleaned of solids as needed), the capacity may not be there when the design storm event occurs. A discharge under these circumstances would *not* be covered by a discharge permit, and could be subject to enforcement action.

Bottom Line: Know how much volume each pond must have available to hold its share of runoff from the design storm event, and keep ponds sufficiently dewatered and free of solids to hold the required amount.

2. Nutrient Management Planning and follow-through.

Whether it is called a pollution prevention plan (PPP), nutrient management plan (NMP), or something else, the concept of managing manure and wastewater in an environmentally sound manner has been around for many years. Nearly every feedlot I have dealt with has some kind of nutrient management plan. However, in some cases, the "plan" consists of an operator's statement that goes something like "we apply 20 tons of manure per acre on our corn ground and dewater our lagoon to that field over there." I have tested soils in fields that have been managed according to "rule of thumb" application rates such as the one described above, and found total nitrogen levels in the top foot of soil in excess of 300 pounds per acre. This example underscores the importance of balancing manure and wastewater applications with the amount of nutrients needed by the crop it is applied on, and with the amount of nitrogen (and in some cases phosphorus) already in the soil. At the federal level, EPA has extended the

deadline for completing nutrient management plans, but some states already require nutrient management plans for animal feeding operations, or soon will. And in some states, such as Colorado, a CAFO may need to be following some elements of an NMP even if it doesn't have a permit.

Bottom Line: Develop and implement a nutrient management plan that complies with your state's NMP requirements.

1. Record-keeping

Most feedlot operators are not particularly surprised to learn that record-keeping is the most common type of compliance deficiency. Keeping records may be as much fun as attending a PETA convention, but good records are necessary to prove your operation is complying with the regulations. Once you've invested the capital to achieve environmental compliance, think of record-keeping as a kind of insurance on that capital. Some of the common types of records required are:

- Precipitation: Rain and snowfall can vary widely within a mile. Don't rely on the neighbor's rain gage. Maintain two gages on opposite ends of the feedlot and keep a daily record of precipitation received.
- Pond level measurements: The only way to know if ponds have enough capacity available to hold the design storm is by keeping track of pond depth levels and knowing what level in each pond must be maintained to hold the runoff event.
- Lagoon liner inspections: Rodents, wildlife, erosion, and deep rooted vegetation can each do their own kind of damage to pond liners. When checking and recording pond level measurements, take a quick look at the exposed area of each pond's liner, note any changes, and correct problems promptly.
- Test results: Manure, wastewater and land application field soil nutrient levels
- Agronomic balance calculations for each field receiving manure or wastewater
- Land applications of manure and wastewater (when, where and how much as applied)
- Transfers of manure / wastewater to third parties

Bottom Line: Be familiar with the records required by your regulatory agency and keep track.

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