Minnesota Pollution Control Agency

NPDES/SDS Permitted Feedlots

Summary of State and Federal Requirements

Water Quality/Feedlots #6.31 • June 2010

This fact sheet summarizes state and federal regulations for feedlots that are required to have a National Pollutant Discharge Elimination System (NPDES)/State Disposal System (SDS) Permit.

Permit Requirements

An individual or general NPDES/SDS permit is required from the MPCA for the construction and/or operation of a feedlot or manure storage area that:

- meets the definition of a large Concentrated Animal Feeding Operation (CAFO) as defined in Federal Regulations (40 CFR § 122.23 (b)(4))
- is capable of holding 1,000 or more animal units (AU) (as defined under Minn. R. 7020.0300, subp. 5)

Where local ordinances are more restrictive than state laws, the local ordinance must also be followed. Contact your local county feedlot officer or planning and zoning department.

Registration

All NPDES/SDS permitted feedlots are automatically registered when the permit application is submitted. Feedlot owners will be notified by the Minnesota Pollution Control Agency (MPCA) or delegated county prior to the requirement to update registration.

What is a large CAFO?

An animal feeding operation (AFO) is a large CAFO if it confines (maximum held at any one time) as many or more than the numbers of animals specified in any of the following categories:

- 700 mature dairy cattle, 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 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

Permits

NPDES and SDS permits have a five-year maximum term.

Sites with NPDES/SDS coverage

The owner of a feedlot that has coverage under the General NPDES/SDS Permit for Livestock and Poultry (MNG440000) is required to submit a permit application to the MPCA upon notification by the MPCA. This notification is generally mailed to the owner 9-12 months prior to the expiration of the general permit.

MPCA Area Offices

Rochester area:
507-285-7343
Mankato area:
507-389-5977
Marshall area:
507-537-7146
Willmar area:
320-214-3786
Detroit Lakes area:
218-847-1519
Brainerd area:
218-828-2492
Metro area:
651-296-6300
Toll-Free Number:
800-657-3864

The owner of a site that has been issued an individual NPDES/SDS permit is required to submit a permit application at least 180 days before the expiration date listed on the first page of their permit.

New construction or expansion

The owner of a feedlot is required to submit a permit application to the MPCA at least 180 days prior to the planned date of construction or expansion for new or expanding facilities.

Permit fees

All NPDES/SDS permits issued by the MPCA have both an application and annual fee. The application fee is required to be submitted with the permit application. An invoice for the annual fee will be sent to the Permittee each year.

- general NPDES/SDS permits:
  - $620 application fee
  - $345 annual fee
- individual NPDES/SDS permits:
  - $1,860 application fee
  - $1,230 annual fee

Permit application submittals

All permit applications for a NPDES/SDS permit must include:

- air emission plan
- emergency response plan
- manure management plan
- operation and maintenance plan
- animal mortality plan

Certain construction activities will require the following plans to be submitted with the NPDES/SDS permit application:

- plans and specifications prepared and signed by a registered professional engineer for construction or expansion activities involving liquid-manure storage areas; and/or
- stormwater pollution prevention plan (SWPPP) if construction will disturb three acres or more of total land area. A SWPPP is required to be developed for any site that disturbs one or more acres, but does not have to be submitted with the permit application

Mandatory environmental assessment worksheet

Minn. R. ch. 4410, states that a mandatory environmental assessment worksheet is required for:

- construction of a new feedlot having 1,000 AU or more
- expansion of an existing feedlot by 1,000 AU or more
- expansion of an existing feedlot by more than 500 AU in a sensitive area

Sensitive areas defined in Minn. R. ch. 4410 are:

- shoreland
- a delineated flood plain, except that in the flood plain of the Red River of the North the sensitive area includes only land within 1,000 feet of the ordinary high water mark
- a state or federally designated wild and scenic river district
- the Minnesota River Project Riverbend area
- the Mississippi River headwaters area
- an area within a drinking water supply management area delineated under Minn. ch. 4720 where the aquifer is identified in the wellhead protection plan as vulnerable to contamination
- within 1,000 feet of a known sinkhole, cave, resurgent spring, disappearing spring, karst window, blind valley, or dry valley

Location restrictions

New feedlots ***cannot*** be located:

- in shoreland:
  - within 300 feet of a river or stream
  - within 1,000 feet of a lake, pond, or flowage
- in a 100-year floodplain
- within 300 feet of a sinkhole
- within 100 feet of a private well for barns, 200 feet for open lots and 200 feet for most manure storage areas
- within 1,000 feet of a community water supply well or wells serving a school or licensed childcare center unless three conditions are met:
  1. the Minnesota Department of Health has approved a drinking water supply management area for the well under Minn. R. pt. 4720.5360
  2. the animal feedlot or manure storage area is not within the drinking water supply management area
  3. the animal feedlot or manure storage area is not within 200 feet of the well

Expansion limitations

An existing animal feedlot or a manure storage area located in shoreland may not expand to a capacity of 1,000 AU or more or the manure produced by 1,000 AU or more.

An existing animal feedlot or a manure storage area located in a 100-year floodplain may not expand.

Construction activities

A permit application for an NPDES and/or SDS permit is required for all construction or expansion activities. The owner must be issued the permit prior to commencing any construction and also must comply with the notification requirements for manure storage and/or poultry barn floor construction.

Notifications

Neighbors within 5,000 feet of proposed construction or expansion activities must be personally notified, sent a letter, or notified through publication in a local newspaper not less than 20 business days prior to the anticipated issuance date of the permit. The local zoning authority must be notified of all construction activities at least 30 days prior to construction. Both of these notices are to include the information found in Minn. R. ch. 7020.2000, subp. 4.A. Owners are required to notify the MPCA at least three days prior to commencement of construction and within three days of completion of construction.

Liquid manure storage area

Standards for constructing liquid manure storage structures include:

- nine-month minimum storage capacity
- seepage limits for various liner types
- plans and specifications designed by an engineer
- construction inspections
- notifications and reports
- location restrictions
- separation to bedrock restrictions

A professional engineer or Natural Resource Conservation Service staff must prepare and sign plans and specifications (except concrete-lined structures with a capacity of less than 20,000 gallons).

Pollution prohibitions

Operations with an NPDES/SDS permit are required to comply with the federal effluent limits and the state discharge standards. The federal effluent limits prohibit the discharge of manure, manure-contaminated runoff, or process wastewater from a CAFO as the result of a precipitation event unless:

- the production area is designed, constructed, and maintained for a 25-year, 24-hour storm event
- the requirements of the NPDES/SDS permit are met

The Permittee must also insure that any discharge from the feedlot does not:

- cause non-attainment of applicable state water quality standards
- flow to a sinkhole, bedrock, well, tile intake, mine, or quarry

If the feedlot does not meet the discharge standards, then requirements and timelines will be placed in an individual NPDES/SDS permit to correct the hazards. The operation may also be subject to enforcement action.

Pastures

Pastures (as defined in Minn. R. ch. 7020) are not considered feedlots and do not have to register or apply for a permit. However, pastures must be operated so that they do not pose a pollution hazard or imminent public health threat.

Manure application

Manure application requirements are specifically described in the NPDES/SDS permit. See Part II (pages 6 to 18 of the general NPDES/SDS permit (www.pca.state.mn.us/hot/feedlots.html) or, for those sites with individual NPDES/SDS permits, the requirements found in the individual permit. Manure application requirements are summarized below.

Manure application rates must be limited so that the estimated plant-available nitrogen from all nitrogen sources does not exceed expected crop nitrogen needs for non-legumes and expected nitrogen removal for legumes. The rate determinations are to be based on the most recent publications of the University of Minnesota Extension Service or another land grant college in a contiguous state (some exceptions apply for rates above these levels). The following testing, planning, and recordkeeping requirements must be met:

Manure testing

Manure from all storage areas must be tested annually for nutrient content.

Soil testing

Soil nitrogen and phosphorus testing is to be done on all fields where manure or process wastewater will be land applied. The soil sampling protocol is outlined within the manure management plan (MMP) requirements of the general or individual NPDES/SDS permit.

Phosphorus management

Manage manure additions so that soil phosphorus (P) levels do not show increases over time within 300 feet of waters, except where soil P is insufficient for crop growth.

Also, avoid manure applications onto extremely high P soils, unless a plan is submitted to the MPCA showing how water pollution will be prevented when applying manure to these soils. "Extremely high P soils" are those which exceed 150 parts per million Bray P1 or 120 parts per million Olsen, or half of these values if the land is within 300 feet of waters.

Manure management plans

A complete MMP must be submitted with a permit application. The MMP must cover the period of time from when a permit is issued to a producer until permit expiration. The types of required information for the MMP include:

- manure storage and application methods
- field locations and acreage
- amount of manure to be applied to each field
- manure nutrient testing plans
- soil nutrient testing plans
- crop nutrient needs and/or expected nutrient removal
- protective measures when applying in environmentally sensitive areas
- protective measures when applying during winter months

Changes to an MMP for an NPDES/SDS permitted feedlot must be approved by MPCA. Any changes determined to be substantial are also subject to a 30-day public notice period before final approval.

Record keeping

Records must be kept of manure-nutrient test results, field locations and acreage, rates and dates of application, available nutrients from manure and fertilizer, soil test results, and other information specified in the NPDES/SDS permit.

Transferred ownership

Where manure is sold or given away for application by others onto land that is not under control of the feedlot owner or operator, then some of the feedlot owner's requirements for MMPs and recordkeeping are different. See NPDES/SDS permit conditions for requirements related to transferred ownership.

Sensitive areas

Additional protective measures are required for application of manure in certain sensitive areas including: land within 300 feet of lakes, streams, intermittent streams (excluding grassed waterways), public waters wetlands (e.g., over ten acres), drainage ditches without protective berms, tile intakes, and other conduits to waters. Application to frozen or snow-covered soils is prohibited in these areas. Other requirements vary depending on whether there is a permanent vegetated buffer along the water or waterway, as follows:

- **Vegetated buffers**: If a permanent vegetated buffer extends 100 feet from lakes and streams, 50 feet from other waters, and 35 feet from open tile intakes, and no manure is applied to these buffers, then there are no other non-winter land application setbacks in these areas.
- **No vegetated buffer**: Without the grassed buffer described above, the producer must follow one of the setback options described in the NPDES/SDS permit. One option is to follow this set of practices: maintain a 25-foot setback, incorporate the manure within 24 hours, and apply in ways that do not result in long-term soil phosphorus accumulation where phosphorus levels are already sufficient for crop growth.
- **Manure** must also be incorporated within 24 hours when applied within 300 feet on the upslope side of a sinkhole. A 50-foot setback is required for all sinkholes, wells, mines, and quarries.

Timing restrictions

There are restrictions on the timing of manure application. Refer to your NPDES/SDS permit for the timing restrictions that may apply to your facility during:

- June, July, or August
- early autumn onto sandy soils
- winter months when soils are frozen or snow-covered
- periods of saturated soil conditions

Process wastewater and milkhouse wastes

All regulations in Minn. R. ch. 7020 governing the storage, transportation, disposal, and utilization of manure also apply to milkhouse wastes and other process wastewaters. They are defined as waters and/or precipitation, including rain or snow, which comes into contact with manure, litter, used bedding, feed stuffs or other raw material, or intermediate or final material used in or resulting from the production of animals, poultry, or direct products, such as milk or eggs.

Stockpiling

Stockpile runoff cannot discharge to waters of the state. Specific location, design, construction, operation and maintenance requirements apply based on the type of stockpile–short-term or permanent.

- **Short-term:** Manure can only be stockpiled for up to one year of the date when the stockpile was initially established. A vegetative cover must be established for at least one full growing season prior to reuse. Setbacks to waters range from 50 to 300 feet. Also avoid sandy soils, high water table soils (less than two feet), and slopes over two percent unless a clean water diversion is used and the slope is less than six percent. The stockpile size must not exceed the amount of manure needed to supply nutrient needs to the tract of land where applied.
- **Permanent:** Manure is stockpiled in the same location more than one year or the same site is used year after year. The application for a NPDES/SDS permit is to include information for any permanent stockpiles. A system to control any precipitation-related runoff is to be installed.

Air quality standards

Air quality standards for feedlots (Minn. R. ch. 7009) did not change as a result of any recent state or federal rule revisions. State law provides an exemption of up to 21 days per year while manure is being removed from barns and manure storage areas. The exemption is allowed only when the operator provides notification to the MPCA prior to manure removal.

Closure

In general, the owner/operator is responsible for closure and post-closure care of any portion of the feedlot that has been closed. Also, any manure and/or manure-contaminated soils that are removed from a barn, open lot, or manure storage area that has been closed are to be land applied to cropland according to the feedlot's NPDES permit. The general NPDES permit provides for two types of closure – temporary and permanent.

- **Temporary closure** refers to the closure of all or any part of a feedlot for one or more years with the intent of reusing the area at a future date. Within one year after ceasing operation of any part of the feedlot, the owner shall take the following measures:
  1. Remove the manure, manure-contaminated runoff, and/or process wastewater from all animal confinement and manure storage or handling areas where operation has ceased. The exception to this is that a two foot depth of manure and/or water is to be left in the bottom of any poured concrete pit to provide protection from freezing temperatures.
  2. Any liquid manure storage areas (LMSA) that has been unused for three years or more will need to be evaluated by a design engineer who is to prepare a report on the condition of the liner for MPCA review before the LMSA can be used again.
  3. Any LMSA that collects precipitation is to be prevented from overflowing and the design freeboard is to be maintained.
- **Permanent closure** refers to the closure of all or any part of the feedlot with the intent that the area will not be used at any time in the future to hold animals or as a manure or process wastewater storage area.
  1. All manure-contaminated soils are to be removed from any animal holding area with earthen floors where operation has ceased. For open lots, once the contaminated soils have been removed, alfalfa, grasses, or other perennial forages are to be grown in the area for at least five years to reduce the soil nitrogen.
  2. All manure-contaminated soils are to be removed from any LMSA that has an earthen liner, or portion of an earthen liner. After the contaminated soil has been removed, the LMSA may be filled with clean fill or left open as a duck pond or other purpose.
  3. If the discontinued area is going to be covered by fill material or another structure, the owner is required to notify the MPCA at least three business days prior to filling or covering over the area.
  4. Within 60 days after final closure, the owner is to submit a certified letter to the MPCA that the area has been closed according to the requirements in items 1 to 3 above. The letter must identify the location of the feedlot by county, township, section, and quarter section.

For more information

For more information about the MPCA feedlot rule requirements or the general NPDES/SDS permit for livestock facilities, log onto the MPCA Web site at: http://www.pca.state.mn.us/hot/feedlot.html, or call your area MPCA office listed on the first page of this fact sheet and ask for a member of the feedlot staff.