



Manure Management Plan (MMP) Requirements when Ownership of Manure is Transferred

Feedlot Program

Doc Type: Permit Information Form

Are you transferring ownership of manure?

MMP and record keeping requirements for feedlot owners are different when manure ownership is transferred. Manure ownership is not considered to be transferred (i.e., feedlot owner/operator retains ownership) when you answer “yes” to either question:

1. Yes No Is manure from the feedlot facility applied onto land that is owned, leased, or rented by the feedlot owner/operator?
2. Yes No For manure application sites not owned, leased, or rented by the feedlot owner/operator, have you as the feedlot owner/operator or employees working under your direction been given control of the crop and nutrient planning decisions, including planning for manure application rates, timing, and methods?

If you answered “Yes” to either question, you are retaining ownership of manure, and you should see the Minnesota Pollution Control Agency (MPCA) guidelines “Manure Management Plan Requirements” which describe requirements when manure ownership is not transferred (found on the MPCA website at <http://www.pca.state.mn.us/index.php/view-document.html?gid=3537>). If you answered “No” to both questions, then you are transferring ownership of your manure and the feedlot operator may use these guidelines to complete a MMP.

If only a portion of your manure is considered to have transferred ownership, then use these guidelines for the manure which has transferred ownership, and develop the more comprehensive MMP for the manure which does not have transferred ownership.

MMP development

The MMP can be developed by answering the questions below or by using other formats that include all required information in Minn. R. ch. 7020.

Name of feedlot facility or operator: _____ Registration No.: _____

1. Describe the manure storage and handling system and the expected amount of manure and nutrients that will need to be land applied.

- a) How is the manure stored and handled? What happens to the manure from the time it is generated to the time it is either sold or land applied? Where is it kept? For how long?

- b) How many months can manure be stored before the storage capacity is exceeded?

- c) When will manure be provided to the recipient? Which months do you expect that manure will be applied?

- d) How much manure is removed from barns or storage areas per year? How much manure will eventually need to be land-applied?
 Amount removed from barns or storage: _____ Tons Gallons
 Amount land applied: _____ Tons Gallons
- e) How much of this manure will be transferred ownership: _____

- f) How many pounds of nitrogen (N) and phosphorus (P₂O₅) will need to be land applied per year? (Multiply the expected nutrient content from Part 3.c) by the amount of manure land applied from Part 1.d) to get your answer.) (e.g., 77 pounds N ÷ 1,000 gallons x 1,300,000 gallons = 100,100 pounds of N **or alternatively** 45 pounds per ton x 3,000 tons = 135,000 pounds of N) (figure P₂O₅ using the same calculations)

N: _____ P₂O₅: _____

- g) For new or expanding feedlot facilities, is there enough land potentially available for spreading manure in accordance with allowable rates? Yes No

How will you ensure that enough land owners in the area are willing to purchase your manure or otherwise receive your manure? (e.g., enough land to allow spreading in accordance with state nutrient rate limits)

2. Describe the manure application methods and equipment.

- a) How will the manure be applied? What method(s) and type(s) of equipment do you expect will be used for manure application by the recipient of your manure, if known?

3. Describe your nutrient testing methods, the frequency of testing, and the expected nutrient content of the manure to be applied.

- a) How often will manure be sampled and sent to a laboratory for nutrient analysis? (Minimum state requirements are: annual sampling at NPDES-permitted facilities; annual sampling for the first three years and once every four years for other feedlots.)

- b) How will the manure samples be collected to ensure that representative samples are obtained for nutrient analysis? (e.g., How many subsamples? When collected? Where collected? University of Minnesota Extension Service publications may be referenced.)

- c) What is the expected nutrient content of manure to be collected? (e.g., What is the nitrogen and phosphorus content expected from each major type of manure storage area?)

N: _____ Pounds per Ton Pounds per 1,000 Gallons

P₂O₅: _____ Pounds per Ton Pounds per 1,000 Gallons

4. Describe how Minnesota's manure application requirements will be provided to manure recipients.

- a) Attach a copy of the state manure application requirements that you will provide to all recipients of your transferred manure. Will you be using Attachment A or another list of state requirements?

- b) How will you, as a feedlot owner/operator, maintain records associated with the manure transfer and land application sites/rates? Will you use MPCA recordkeeping forms for transferred ownership (Attachment B) or will you use a different form? **Note:** Attachments A and B can be obtained from MPCA offices or on the MPCA website at <http://www.pca.state.mn.us/hot/feedlot-management.html>.

- c) How will you provide the manure recipient with manure nutrient test results and expected manure nutrient content? You may use Attachment B or other forms which include test results.

Animal mortality management (NPDES and SDS permitted sites only)

Indicate with a check mark the anticipated method(s) of dead animal disposal.

Rendering

Carcasses at the pick-up point will comply with the following:

- Kept in an animal-proof, enclosed area.
- At least 200 yards from a neighbor's buildings.
- Picked up within 72 hours (7 days if refrigerated to less than 45 degrees).
- Other: _____

Composting

The composting area will comply with the following:

- Built on an impervious, weight-bearing pad that is large enough to allow equipment to maneuver.
Note: Class V gravel material is not considered to be impervious.
- Covered with a roof to prevent excessive moisture on the composting material, but if sawdust or other water-repelling material is used as the bulking agent, a roof may not be necessary.
- Built of rot-resistant material that is strong enough to withstand the force exerted by equipment.
- Large enough to handle each day's normal mortality through the endpoint of the composting which consists of a minimum of two (2) heat cycles.
- Other: _____

Burial

The following operational practices will be implemented:

- Stay 5 feet above seasonal high water table.
- Stay 1000 feet away from lakes and 300 feet away from rivers, streams, ditches, etc.
- Be covered immediately with enough soil to keep scavengers out (three feet is sufficient).
- Not be placed in sandy or gravelly soil types.
- Maintain at least 10 feet vertical separation between dead animals and bedrock.
- Other: _____

Incineration

The incinerator will meet the following:

- Capable of producing emissions not to exceed 20 percent opacity.
- Fitted with an afterburner that maintains flue gases at 1,200 degrees Fahrenheit for at least 0.3 seconds.
- Ash from the incinerator must be handled in such a manner as to prevent particulate matter from becoming airborne.

Other Method

The following operational practices will be implemented (describe the alternative method below):

Attachment A – Summary of state requirements for recipients of transferred manure and table for rate calculation

I. Rate limits

Match N needs - Limit rates so that estimated plant-available N from all manure and fertilizer sources combined does not exceed expected crop N needs for the upcoming crop unless rates are limited by P (see section II)

Legumes - Crop-available manure N applied to legumes can not exceed 3.5 lbs N per bushel of soybeans; 50 lbs N per ton of alfalfa; 27 lbs N per ton grass hay or pasture; 43 lbs N per ton grass/legume; 45 lbs N per ton red clover.

Base on Univ. of Minn. recommendations – Determine crop nitrogen needs and the amount of nitrogen available from manure or legumes from most recent published recommendations of the University of Minnesota Extension Service or another land grant college in a contiguous state. Contact MPCA staff if you need the most recent Univ. of Minn. recommendations.

Base rates on: crop sequence, expected yields and soil organic matter category when applicable, previous year manure credits, method of application, and manure analysis nutrient levels.

Calibrate equipment – Calibrate equipment regularly and apply evenly to ensure that the intended rates of application are consistent with actual rates of application.

Summer applications – Plant a cover crop where manure is applied in June, July or August to harvested fields that would otherwise remain without crop cover for the rest of the growing season. Use a soil nitrate test during the following spring to credit remaining nutrients.

II. Soil Phosphorus (P) management

Soil P testing – Test soils for P at least once every four years.

Avoid P build-up along waters – Manage manure additions (crop P removal can be used as a guide, don't exceed removal over time) so that soil P levels do not show increase within 300 feet of certain waters*, except where soil P is insufficient for crop growth (less than 21 Bray P-1 or 16 Olsen), or where a 50-100' vegetative buffer is established along waters.

Avoid extremely high P soils – Avoid manure application onto fields where soils exceed P levels in the table below, unless a plan is submitted to the MPCA or County Feedlot Officer that describes how water pollution will be prevented when applying manure to these soils.

Soil Test Method	Outside of 300 ft from waters*	Within 300 ft from waters* and open tile intakes
Bray P1	150 ppm	75 ppm
Olsen	120 ppm	60 ppm

* "waters" refers to lakes, streams, intermittent streams, wetlands over 10 acres, and drainage ditches without protective berms.

III. Setbacks when applying manure in sensitive areas

Feature	Surface Application	Incorporation Within 24 hrs
Lakes, Streams	300**	25'
Wetlands (10+ ac)	300**	25'
Ditches w/o Berms	300**	25'
Open Tile Intakes	300'	0'
Sinkholes w/o Berms		
Downslope	50'	50'
Upslope	300'	50'
Wells and Quarries	50'	50'

* 100' vegetated buffer can be used instead of 300' setback for non-winter applications (50' buffer for wetlands/ditches)

IV. Keeping records

The cropland manager where manure is applied must keep records for at least three years (six years if applying manure near waters):

- Manure nutrient test results (provided by feedlot owner), Field locations and acreage, Dates of application and timing of incorporation, Amount of manure applied per acre, Total N and P applied on each field, and Soil nutrient test results.
- If manure is applied in during the winter, record the land slopes, distance to nearest water, and field conservation practices in place.

V. Short-term stockpiling practices

Follow all stockpiling setbacks for waters and conduits to waters (ranging from 50 to 300 feet); avoid sandy soils and high water table soils (<2'); avoid slopes over 6%; use diversions if slopes exceed 2%; and keep records as required in Minn. R. ch. 7020.2125. The stockpile size must not exceed the amount of manure needed to supply nutrient needs to the tract of land where applied.

VI. Spills

If manure spills occur that have the potential to pollute waters, immediately contact the state duty officer at 1-800-422-0798.

VII. Manure rate calculator

If the P management requirements (see Section II) are being met, the calculator can be used at the time of application to determine the manure rate to apply at N-based rates.

Field location: Twnbsp _____ Sec ___ 1/4 ___

	N	Example
Step 1. N needs of crop (lb/acre) (base the N needs as described in Sec I)		130 lb/a
Step 2. Total N in manure (lb/ton or lb/1000 gallons)		50 lb/1000 gal
Step 3. Take step 2 value & multiply by applicable % factor from table 2 below. (% ranges from .20 to .80)		50 X .80 = 40
Step 4: Divide the number from step 1 by the number in Step 3.		130/40 = 3.25
<i>Step 4 is in tons/acre or 1000 gal/acre</i>		3,250 gal/a

Table 2. Manure nitrogen availability and loss as affected by method of application and animal species.

	Surface broadcast – incorporation ¹			Injection	
	None	< 4 days	< 12 hours	Sweep	Knife
	% Total N				
Beef					
Year 1	25	45	60	60	50
Year 2	25	25	25	25	25
Lost ²	40	20	5	5	10
Dairy					
Year 1	20	40	55	55	50
Year 2	25	25	25	25	25
Lost ²	40	20	10	5	10
Swine					
Year 1	35	55	75	80	70
Year 2	15	15	15	15	15
Lost ²	50	30	10	5	15
Poultry					
Year 1	45	55	70	NA	NA
Year 2	25	25	25	NA	NA
Lost ²	30	20	5	NA	NA

For more detailed information on these specific requirements contact MPCA or go to the link:

<http://www.pca.state.mn.us/index.php/topics/feedlots/feedlot-nutrient-and-manure-management.html?menuid=&redirect=1>

Attachment B - Records when manure ownership is transferred - 300 or more animal units
Records for feedlot owners (manure generator) and commercial applicators

Pads of triplicate carbon copies of this form, along with instructions, are available from the MPCA.

Copy 1: Kept by feedlot owner where manure is generated after completion of step #1.

Copy 2: Kept by applicator after completion of step #3.

Copy 3: Returned to feedlot owner where manure was generated after completion of step #3.

Step 1: Manure generation. Completed by feedlot owner where manure is generated.

Name of facility where manure generated: _____

Mailing address: _____

City: _____ State: _____ Zip code: _____

Phone: _____ Fax: _____ Email: _____

Date(s) of transfer (mm/dd/yyyy): _____ Total quantity transferred: _____ tons gallons

Manure analysis results (must be representative of manure transferred):

Manure source: _____ Date analyzed (mm/dd/yyyy): _____

N: _____ P₂O₅: _____ K₂O: _____ Units: lb/ton lb/1000 gallons

Name of company or individual taking manure from feedlot: _____

Mailing address: _____

City: _____ State: _____ Zip code: _____

Phone: _____ Fax: _____ Email: _____

Step 2: Short-term stockpiling. Completed by owner of the stockpile – Provide form to person applying manure.
 If no stockpile, go to step 3.

Stockpile location(s)				Quantity stockpiled (tons)	Date stockpile established	Date land applied
County	Township	Section	Quarter			

Step 3: Manure Application. Completed by individual applying the manure at the time of application. Return a copy to the feedlot owner where manure was generated within 60 days after applying manure. See the back of this form for manure spreading requirements when manure is from a facility with 300 or more animal units.

Name of company or individual that applied manure: _____

Mailing address: _____

City: _____ State: _____ Zip code: _____

Phone: _____ Fax: _____ Email: _____

Minnesota Department of Agriculture license number of commercial applicator: _____

Field ID	County	Township	Section	Application rate (tons or gallons/ac)



Record Keeping Form Instructions – Transferred Ownership of Manure

What is transferred ownership? The records listed on this form are required when manure ownership is transferred in accordance with 7020.2225 subp. 5 and 7020.2125 subp. 3. Manure ownership is considered transferred when it is applied on land that is not owned, leased, or rented by the facility that generates the manure and the manure application decisions are not under the control of the facility generating the manure.

How do these forms work? The MPCA recommends that you use this form and provide it when the MPCA or a County Feedlot Officer asks to see your records. A separate form should be used for each separate transfer of manure ownership. Alternatives to this form can be used if all required information is clearly recorded.

Step 1 - At the time of manure ownership transfer, the feedlot owner completes the information under step 1. The feedlot owner keeps the top copy and provides the manure recipient with the other two copies.

Step 2 - If the manure is hauled to another location for stockpiling prior to land application, the stockpile owner/manager completes the information in step 2, and passes the forms (both copies) to the person who is applying the manure.

Step 3 - The person applying the manure completes step 3 and keeps one copy for his/her own records and mails the other completed copy back to the feedlot owner/operator at the address listed in step 1.

How long to keep records? Records must be kept at the feedlot site or business address for a period of three years (except six years is required for NPDES permitted facility owners). Licensed commercial animal waste technicians must also keep records for a period of three years.

Step 1 – Manure Generation

Name and Address of Facility Where Manure Generated: Fill in the name of the facility that generated the manure that was transferred and the mailing address of that facility.

Date(s) and Quantity

of Transfer: List the date(s) of all transfers made that are recorded on this form. Record the total amount of manure that was transferred

for the time period recorded on this form.

Check the appropriate units for the manure (tons or gallons).



Manure Analysis Results: The feedlot owner is responsible for providing a representative analysis of the manure that is being transferred to the receiver. This information is needed, so that appropriate application rates can be determined. In the spaces provided include the results of the most recent manure analysis. Under “Manure Source” provide a name that allows identification of the manure that was analyzed.

Annual testing is required for Concentrated Animal Feeding Operations (CAFO’s). For non-CAFO operations, analysis can be reduced to once every four years if results from three consecutive years of testing show consistent nutrient content in the manure. Manure must be re-tested any time changes in management are likely to result in changes in the manure’s nutrient content.

Manure analysis is not required if the stored or stockpiled manure was produced from less than 100 animal units - average book values can be used for estimating the nutrient content of this manure. If analysis of manure is not required provide a name for the manure source and record the book values for the nutrients in the spaces provided.

Name and Address of Company or Individual

Taking Manure from Feedlot: Provide the name and address of the company or person that purchased or otherwise took the manure from the feedlot. This person may be a commercial hauler who takes the manure to another location for stockpiling, or a neighbor or commercial applicator who takes the manure directly to a field for manure application.

Step 2- Short-Term Stockpiling

Short-Term Manure Stockpile Records – If manure is stockpiled prior to being land applied, records for short-term stockpiles must also be kept. Requirements for short-term stockpile sites are described in Minn. Rules ch. 7020.2125, including stockpile size, location, soil conditions, records, and setbacks.

Short-term stockpiling records must be retained by the feedlot owner where the manure was generated. Required information is listed on the form and includes the “*Stockpile Location*”, “*Quantity Stockpiled*”, “*Date Stockpile Established*”, and “*Date Land Applied*”. In some cases, this information will not be available for several months after manure is transferred, since the date of manure application is needed to complete the record.

Step 3 – Manure Application

Name of Company or Individual that Applied

Manure: This information is requested to provide a complete record of all parties managing the manure from the time of transfer until it is land applied.

Minnesota Department of Agriculture (MDA)

License Number of Commercial Applier: Any business that land applies manure commercially must be licensed by the MDA as a Commercial Animal Waste Technician. Commercial applicators must provide the land application field information to the feedlot owner where manure was generated within 60 days of manure application.

Field Specific Information: Records of manure applications are required for each field receiving manure. The “*Field ID*” (tract # or unique name) is used to identify where manure has been applied and must be linked to available maps showing the field location. The location of the field “*County*”, “*Township*”, and “*Section*” are necessary, so the field can be located if necessary. Under “*Application Rate*” fill in the actual rate that manure was applied.

Additional Record Keeping Requirements for the Cropland Manager

The cropland manager or end-user of the manure is required to keep the same manure application records as the cropland managers at feedlots where manure ownership is not transferred. The generator of the manure may provide the manure recipient with the record keeping form “Records for 300 or More Animal Units”. This form is available at the MPCA web site: www.pca.state.mn.us/hot/feedlots.