



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

Feedlot Program

Doc Type: Permit Information Form

MMP Information on Page 5

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 (P_2O_5) 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 \div 1,000 gallons \times 1,300,000 gallons = 100,100 pounds of N **or alternatively** 45 pounds per ton \times 3,000 tons = 135,000 pounds of N) (figure P_2O_5 using the same calculations)

N: _____ P_2O_5 : _____

- 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
 P_2O_5 : _____ ☐ 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.

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: Twnsp _____ 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:** _____ **E-mail:** _____

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:** _____ **E-mail:** _____

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:** _____ **E-mail:** _____

Minnesota Department of Agriculture license number of commercial applicator: _____

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

Manure Management Plan Information

Who needs a Manure Management Plan (MMP)?

MMPs are required by the Minnesota Pollution Control Agency (MPCA) as specified in Minn. R. ch. 7020.2225 when:

- Manure from a feedlot capable of holding 300 or more animal units (AU) is applied after January 1, 2006, by someone other than a certified animal waste technician; **or**
- A permit application is submitted from an operation with 100 or more AU after October 23, 2000. Permit types include:
 - National Pollutant Discharge Elimination System (NPDES)
 - State Disposal System (SDS)
 - Interim
 - Construction Short Form (CSF)

What must be included in the MMP?

A MMP must contain the elements in Minn. R. ch. 7020.2225, subp. 4, item D. The MMP must contain additional items if the feedlot facility needs a NPDES Permit, in accordance with federal regulations and the NPDES Permit conditions. When ownership of manure is transferred, the feedlot owner must complete certain parts of the MMP. The feedlot owner is also responsible for providing the manure recipient with state requirements concerning: soil testing, rate limits, seasonal restrictions, setbacks, keeping records, and reporting spills. **A feedlot owner/operator's MMP for transferred manure can be developed by answering the questions on pages 1 and 2.** The cropland manager who receives transferred manure must conduct manure management planning and recordkeeping that is specific to the fields and crops.