

Land Application Inspections

Guidelines for MPCA Staff and CFOs

What are the three types of land application inspections?

The MPCA Land Application Team has classified land application inspections into three categories: 1) quick records check, 2) detailed records inspection, and 3) field inspection.

1. **Quick Records Check** - A quick records check (Level 1) is the minimum type of inspection conducted for routine site visits/inspections. This level of review involves a quick look at records to ensure that the producers are using the right tools for nutrient management. For producers with less than 300 animal units (AU), this review is primarily a check to see if manure is being tested and enough records are kept to properly credit nitrogen from manure. For producers with more than 300 AU, a Level 1 inspection includes checking to see that manure and soil are being tested, required manure management plans are available, and records are kept of rates and dates of application. A checklist for conducting a quick records check is available at Attachment A.
2. **Detailed records inspection** - A detailed records inspection (Level 2) is a more involved review of records to ensure that the tools are used correctly to meet specific rule and permit requirements. Level 2 reviews are conducted in high priority geographic areas and at high priority National Pollutant Discharge Elimination System (NPDES) sites. A Level 2 inspection requires more time than a Level 1 inspection, and includes an evaluation of rates of nitrogen application, soil phosphorus management, and more. In some cases, parts of the manure management plan will also need to be reviewed during a Level 2 inspection, in order to better understand the basis for the applied rates. A checklist for conducting a detailed records inspection is available at Attachment B.
3. **Field inspections** - Field inspections (Level 3) are important for checking to make sure that surface applications and winter applications are not occurring in restricted areas. This level of review is particularly important in high priority lake watersheds and priority stream corridors. Field observations during the application process can also be a good time to emphasize the importance of rate restrictions to those who are spreading the manure. Field inspections provide an opportunity to ask questions about equipment calibration, what rates are being spread, which fields are being avoided due to high phosphorus, and how the manure management plan is being used. You can also observe whether manure is being injected or incorporated sufficiently on land where this practice is required. A checklist for conducting field inspections is available at Attachment C.

Jan. 9, 2007

Which Geographic Areas are priorities?

Level 1 inspections are used in all non-priority geographic areas, wherever routine inspections are made. The highest priority areas for detailed records inspections (level 2) include the four situations noted below, which are described in more detail in Attachment D.

- Vulnerable drinking water supply management areas (DWSMAs);
- High priority lake watersheds;
- Corridors along impaired streams; and
- NPDES-permitted sites with high potential for problems.

Highest priorities for field inspections (level 3) include selected lake watersheds and stream corridors, but can also include DWSMAs and priority NPDES sites.

Whenever possible, state and county staff should work together to identify priority geographic areas and to identify feedlots and cropland managers in those areas where inspections will be completed.

Which size feedlots need land application inspections?

The recommended level of inspection for different feedlot sizes and geographic areas are shown in the table below. 1 = quick records check (level 1); 2 = detailed records inspection (level 2); 3 = field inspection (level 3).

Feedlot size	Outside of areas in right 3 columns	Vulnerable DWSMAs	High Priority Lake Watersheds	High Priority Stream Corridors
<100 AU			3	3
100-299 AU	1	2	3	3
300+ AU non-NPDES	1	2	2 & 3	3
Priority** NPDES	2*	2*	2* & 3	2* & 3
Non-priority NPDES	1* or 2	NA	NA	NA

* Based on the inspector's available time, time of year, program inspection goals, and other environmental priority considerations, detailed records inspections will be conducted on as many checklist items as feasible. First priority will be placed on detailed records inspections in the high priority watersheds identified for the region. When possible, a detailed records check should be conducted at least once every five years at NPDES sites.

** Priority NPDES sites have indications of potential problems identified through manure management plan review, complaints, previous problems, etc., or they are in a priority drinking water supply management area (DWSMA), or high priority lake watershed or stream corridor.

When to conduct detailed records inspections and field inspections?

- **Winter and summer months** – During the seasons when manure is not typically spread, focus on inspecting records in DWSMAs, lake watersheds, and at priority NPDES sites. Winter months are a good time to conduct field inspections of surface applications along stream corridors.
- **Fall and spring** – During the most popular times to apply manure, focus on field inspections of stream corridors and priority NPDES sites. At the priority NPDES sites, contact producers in early fall to find out when producers will be spreading their manure.

What to bring to a feedlot inspection?

- Checklists and tools that will help you to review the producer's information or practices in the field (i.e. the attachments to this document);
- Calculator;
- Handouts for the producer on land application requirements, nutrient management, and record keeping forms. Provide the producer with publications that may help him/her achieve compliance. Many useful handouts are found at <http://www.pca.state.mn.us/hot/feedlot-management.html> and copies of most handouts are available at MPCA offices; and
- In-field generic carbon copy letters of warning.

When to request records before the site visit?

Detailed records inspections can take over an hour, and this time increases when waiting for a producer to supply you with the necessary records. Prior to conducting a Level 2 inspection, it is a good idea to have the producer mail you their land application records for the past two to three years. We recommend that you send them a few MPCA record keeping forms or, alternatively, provide them with a list of what you are specifically looking for.

What to do when requirements are not being followed?

Options for dealing with non-compliance range from verbal discussion and assistance to taking the problem to an enforcement forum for consideration of penalties. In general, the majority of first-time violations will result in verbal warnings or written letters of warning, focusing on education and assistance. However, a notice of violation should be written for more serious first-time violations involving large feedlots and serious potential water quality threats. Where violations lead to actual water pollution problems, the case should typically be brought to an enforcement forum. Attachment F shows more specific recommended actions when state requirements are not being met.

Enforcement action can also be taken against commercial applicators. If the violation involves a commercial applicator, send a copy of all related non-compliance information to Joe Spitzmueller, Minnesota Department of Agriculture, 625 Robert Street North, St. Paul, Minnesota 55155-2538.

Follow-up.

Keep detailed records of all inspection results, including any verbal or written letters of warning. Plan to return to all feedlots where significant problems were encountered so that you can check whether practices are changing and rules are followed.

Dealing with transferred ownership of manure.

When a livestock producer sells or otherwise provides manure to other cropland farmers for use as a source of nutrients, that manure is often considered to have changed ownership. This transfer of ownership affects who is required to develop and maintain nutrient plans and records. Attachment E shows the various regulatory responsibilities for transferred ownership and provides guidelines on what is considered to be transferred ownership.

Even when manure ownership transfers occur, the recipient of the manure must still follow rule requirements on rates of application, keeping records, and maintaining setbacks. At feedlots with over 300 AU, manure recipient names and addresses can be obtained from the feedlot owner and follow-up inspections can be made of the recipient's land application records. Checklists in Attachments A, B, and C describe what to do when inspecting at sites when manure ownership is transferred.

Attachment A

Level 1 Land Application of Manure Inspection

(If facility is 100 to 299 AU AND not in a DWSMA, use questions 1, 3, 5, 8, and 9 only.)

1. **General Information:** Date of Inspection: _____ Inspector Name: _____
 Facility Name: _____ Number of Animal Units: _____
 Facility Representative: _____ Year(s) Checked: _____

2.	MMP available for the next crop year? (crop one year from now)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required ¹
	3. Recent manure analyses? <i>NOTE: CAFOs must sample each year</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required ²
	If YES, fill in Part I. at bottom of sheet.	
Transferred Ownership	4. Is all or some of the manure transferred?	<input type="checkbox"/> Yes <input type="checkbox"/> Not Applicable
	Are there manure transfer records with these items?	
	Manure amounts transferred	<input type="checkbox"/> Yes <input type="checkbox"/> No
	Dates transferred	<input type="checkbox"/> Yes <input type="checkbox"/> No
	Recipient names and addresses	<input type="checkbox"/> Yes <input type="checkbox"/> No
	Field ID (minimum: County, Township, Section)	<input type="checkbox"/> Yes <input type="checkbox"/> No
Non-Transferred Ownership	5. Are there application records with these items?	
	Field IDs and acres for each field	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Applicable
	Amounts of manure applied per acre for each field	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Applicable
	6. Are records kept of application dates?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Applicable
	7. Are soil phosphorus test results less than four years old? ³	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Applicable
	Highest P soil test _____ ppm. <input type="checkbox"/> Bray <input type="checkbox"/> Olsen Year sampled _____	
	8. Is manure incorporated within 24 hours near sensitive features? ⁴	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Applicable
	9. Are records kept of plant-available N per acre, including carry-over N, (and if >300 AU, are records also kept of plant-available P₂O₅ per acre released from manure and commercial fertilizers)? ⁵	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Applicable
If YES, fill in Part II. at bottom of sheet.		

Inspector: In box below, Explain any “No” answers and corrective actions.

Inspector: If possible, make sure facility has copy of “Applying Manure in Sensitive Areas”.

Part I. Analysis from manure storage area or stockpile with the two highest number of animal units:

Livestock species _____ N: _____ P: _____ K: _____ ☐ Solid ☐ Liquid Year of Sample: _____
 Livestock species _____ N: _____ P: _____ K: _____ ☐ Solid ☐ Liquid Year of Sample: _____

Part II. Application rate information:

Highest rate of crop available N applied: _____ lb/a Crop: _____ Previous Crop: _____
 Highest rate of crop available P₂O₅ applied: _____ lb/a Crop: _____ Previous Crop: _____

¹ MMP is not required in the following three cases:

1. Less than 100 animal units;
2. 100-299 AU, unless applying for permit; and
3. 300+ AU (non-CAFO) and ALL manure applied by certified applicator.

² Manure testing not required if 100 AU or less contribute to manure storage area or stockpile.

³ In transferred manure (from 300+ AU) cases, the facility generating manure might not have soil tests.

⁴ If can't be determined from records, ask about incorporation practices near sensitive features.

⁵ If less than 300 AU, just N records are usually required. Assumes incorporation timing records are kept. See rules (DWSMA).

Attachment B

Level 2 Land Application of Manure Records Inspection

General Information: Date of Inspection: _____ Inspector Name: _____
 Facility Name: _____ Number of Animal Units: _____
 Facility Representative: _____

Available records and plans	
1. Is MMP available for the next crop year? (see back part 1a)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not required
2. Recent manure analyses? (see back part 2a)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not required
3. For transferred ownership of manure – Do records include: a) manure amount transferred, b) dates transferred, c) recipient names/addresses, d) field I.D. and e) rates of application? (see manure recipient for 4, 6, 7, 9-15 below)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable
4. Non-transferred – do records include: a) field I.D. and acreage, b) manure rates per acre, and c) dates of application?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable
5. Are records available for all manure applications? Is total amount of manure applied in-line with expected amounts available at farm?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not determined
Minimizing nitrogen leaching	
6. Is the total N from 1st yr manure + carry-over N + fertilizer N less than or equal to limits in 7020 rules? (see back part 6a)	<input type="checkbox"/> Yes <input type="checkbox"/> No
7. Is manure application during June, July, or August only to fields with cover crops? (required if facility is required to have MMP)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable
8. NPDES sites only – Is manure applied to sandy soils only after mid-October? (or after soil temps less than 50 F)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable
Phosphorus management	
9. Soil phosphorus test results available and less than 4 years old?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable
Special protection areas: (<300 ft lake, stream, int. stream, wetland >10 acres, unbermed ditch)	
10. On soils over 21 ppm Bray or 16 Olsen, is P applied during the rotation (6 yrs) less than P removed? (see back - part 10a)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable
11. Is manure incorporated within 24 hours?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable
12. Is approved P strategy (under permit) followed for manure applied on soils over 75 ppm Bray or 60 Olsen? (300+ AU)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable
300 feet from tile intakes	
13. Is manure incorporated within 24 hours?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable
14. Is approved P strategy (under permit) followed for manure applied on soils over 75 ppm Bray or 60 Olsen? (300+ AU)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable
All other land	
15. Is approved P strategy (under permit) followed for manure applied on soils over 150 ppm Bray or 120 Olsen? (300+ AU)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable
Winter applications at approved fields	
17. NPDES sites only – using only fields approved by MPCA?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable
18. Non-NPDES sites where MMPs are required – using only those fields listed in MMP?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable

Inspector: in box below - Explain any "No" answers and actions taken by the inspector.

1a. MMP is not required in the following three cases:

1. less than 100 animal units;
2. 100-299 AU, unless applying for permit; and
3. 300+ AU (non-NPDES) **and** ALL manure applied by certified applicator.

2a. Manure testing not required if 100 AU or less contribute to the manure storage area or stockpile.
Annual sampling required at CAFOs; at least once every four years at other sites.

Note range of N and P₂O₅ content in last four years of testing:

MANURE SOURCE	NITROGEN RANGE	P ₂ O ₅ RANGE
List below each source where nutrients were tested	Lowest to Highest (lbs)	Lowest to Highest (lbs)

6a. Check “No” if total rates Exceed University of Minnesota rates by either a) >20% and are not shown to be based on recommendations from a neighboring state; or b) >5% and no justification based on unique soil conditions, cool weather, or evidence of additional N needed based on past history.

Note total N applied per acre on fields with highest total N rates (during the year which you are inspecting)

FIELD ID	N rates

10a. Note below pounds per acre P₂O₅ applied in each of last six years (where available).

FIELD with special protection area	Last year	2 yrs ago	3 yrs ago	4 yrs ago	5 yrs ago	6 yrs ago	TOTAL

Key tables for Level 2 inspections

A. 2nd year N

Carry-Over Nitrogen (N) is N that becomes available for the second crop following manure application. It is also referred to as 2nd Year N. The following formula can be used to determine the carry-over N that is available:

$$\frac{\text{Carry-Over N (lb/ac)}}{\text{N (lb/ac)}} = \frac{\text{Last Year's App. Rate}^*}{\text{Last Year's N Content}} \times \frac{\text{Carry-Over N Availability Factor}}{\text{N (lb/ac)}}$$

*Application rate must be in tons/acre or 1000 gal/acre

Carry-Over N: Availability Factors

Poultry, Beef, Dairy	.25
Swine	.15

B. 1st year N

This Year's Manure nitrogen (N) is the N available from the manure applied in the fall or spring prior to this year's crop. It can be calculated by using the following equation:

$$\frac{\text{Manure N This Year's}}{\text{N (lb/ac)}} = \frac{\text{App. Rate}^*}{\text{N Content}} \times \frac{\text{This Year's N Availability Factor}}{\text{N (lb/ac)}}$$

*Application rates must be in tons/acre or 1000 gal/acre

This Year's N Availability Factors

Method of application	Beef	Dairy	Swine	Poultry
Sweep injection	.60	.55	.80	NA
Knife injection	.50	.50	.70	NA
Broadcast – incorporate after 4 days	.25	.20	.35	.45
Broadcast – incorporate 12 hours to 4 days later	.45	.40	.55	.55
Broadcast – incorporate within 12 hours	.60	.55	.75	.70

C. Crop N needs and removal

Crop	Yield	Crop last year	Crop 2 yrs ago	Red flag N rates*
Corn	NA	Corn	No alfalfa	180
Corn	NA	Soybeans	No alfalfa	140
Corn	NA	Corn	Alfalfa	130
Corn	NA	Alfalfa	NA	80
Soybean	50 bu	NA	NA	175
Alfalfa	4 ton	NA	NA	200
Corn silage	NA	Corn silage	Corn silage	180
Grass/legume	4 ton	NA	NA	175

*High end rates in Univ. of MN guidelines for corn; recommended N rates vary with soil productivity and quality of previous alfalfa and economic considerations.

*For legumes, the listed N rates refer to N removal amounts based on the noted crop yield.

D. Soil P build-up: To determine the number of times that manure should be applied during a six year period to prevent long-term soil P build-up follow the three steps below.

Step 1. Determine average P uptake during the crop rotation (multiply expected yields by the crops' P₂O₅ removal rates as listed in the table below).

Example: Corn/soybean rotation with yields of 180 bushels of corn and 50 bushel beans

Corn – [180 * 0.34] = 61 lbs P₂O₅ removed per year

Soybeans [50 * 0.82] = 41 lbs P₂O₅ removed per year

Average = 51 lbs P₂O₅ removed per year

Crop	Average Yield	Crop P ₂ O ₅ removal from table per unit yield	Annual phosphate removal lbs per acre
Example	160 (x)	0.34 =	54
Corn	(x)	0.34 =	
Soybeans	(x)	0.82 =	
Alfalfa	(x)	10.8 =	
	(x)	=	
	(x)	=	

Step 2. Determine the amount of P₂O₅ that is typically applied in manure applications

(multiply rate times manure P₂O₅ content times 80%).

Example: 4000 gals/ac * 28 lbs P₂O₅ /1000 gals * 80%

P₂O₅ applied = 4 * 28 * 0.8 = 90 lbs

Step 3. Divide result of step 2 by result of step 1.

Example: 90/45 = 2 (i.e. manure can be applied on average once every 2 years or three times in a 6 year rotation without expecting soil P build-up).

Crop P₂O₅ removal per unit yield

Crop	Yield Units	P ₂ O ₅
Alfalfa	Tons (air dry)	10.8
Barley (grain)	Bushels	0.41
Corn (grain)	Bushels	0.34
Corn (silage)	Tons (as fed)	3.8
Edible Beans	Pounds	0.01
Grass Hay or Pasture	Tons (air dry)	8.9
Grass / Legume	Tons (air dry)	11.2
Oats (grain)	Bushels	0.25
Peas	Pounds	0.01
Red Clover	Tons (air dry)	10.8
Rye (grain)	Bushels	0.44
Soybeans	Bushels	0.82
Sunflowers	Pounds	0.01
Sweet Corn	Tons	11.0
Wheat (grain)	Bushels	0.53
Wheat (grain and straw)	Bushels	0.64

Attachment C

Level 3 Field Inspection Land Application of Manure

General Information: Date of Inspection: _____ Inspector Name: _____
 Facility Name Where Manure Originated: _____
 Inspected: ☐ During Application ☐ After Application (How long after? _____)

Surface application	
1. Is manure injected or incorporated below the soil surface within 24 hours on all land within 300 feet of: lakes, streams, intermittent streams, unbermed drainage ditches, open tile intakes, or wetlands (>10 acres)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Applicable
2. Method of application is consistent with MMP, where MMP is required?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Applicable <input type="checkbox"/> Not Determined
3. Is manure spread in a uniform pattern?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Applicable
4. Is manure prevented from entering waters, tile intakes, sinkholes, and wells during the application process?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Applicable
5. NPDES sites only – Is surface application occurring when chances of >1/2" rain are less than 50% within 24 hours?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Applicable
Winter application (also complete 1-4 above)	
6. Is manure only applied to those fields specified in the producer's MMP? For frozen or snow-covered soils?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Applicable
NPDES permitted sites only	
7. Are slopes less than 2% (liquids) and less than 6% (solids)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Applicable
8. Is the tillage direction along the contour?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Applicable
9. Is manure application during snowmelt avoided?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Applicable
Other setbacks	
10. Twenty-five foot setbacks are followed near: lakes, streams, intermittent streams, unbermed drainage ditches, open tile intakes, and wetlands (>10 acres)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Applicable
11. Fifty foot setbacks are followed near sinkholes and wells? (upslope of sinkholes, injection or incorp. is required within 300 ft)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Applicable
12. Are local ordinance setbacks followed?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Applicable <input type="checkbox"/> Not Determined
Application rates	
13. Were rates of application less than or equal to those allowed under 7020 rules?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not determined
Stockpiles	
14. Stockpiles are more than 300 feet flow distance to waters of the state and ditches flowing to waters of state?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Applicable
15. Slopes are less than 6%; and clean water diversions and erosion control is in place where slopes exceed 2%?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Applicable

Inspector: in box below - Explain any "No" answers and actions taken by the inspector.

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Attachment D

Priorities for Inspections of Detailed Records and Field Practices

Focus inspections in the following four areas. The top priority(ies) within these four areas will need to be determined in each region or local area, based on such considerations as local water resource priorities, available staff time, localized nature of manure application practices, etc. MPCA feedlot staff should consult with regional basin coordinators and watershed project managers when determining highest priority areas.

1. Drinking Water Supply Management Areas with High Vulnerability:

- a. **Goal:** minimize nitrate leaching in areas which can affect public well water quality.
- b. **Focus:** Inspection of nutrient records where manure is being applied in vulnerable wellhead protection areas. Focus on feedlots with over 100 AUs since they are required to keep nutrient management records.
http://ims.mda.state.mn.us/website/mda_dwsma/viewer.htm
- c. **Strategy:** Get word out to selected cities and counties that the MPCA considers it a high priority to inspect records of those applying manure in Drinking Water Supply Management Areas; but we would like local assistance in coordinating the inspection effort at specific farms.

2. Lake watersheds:

- a. **Goal:** Reduce lake eutrophication by minimizing phosphorus transport from land application sites throughout certain lake watersheds (including land that is in the watershed, but away from waters).
- b. **Focus:** Inspecting records of soil phosphorus testing and phosphorus application amounts to ensure soil phosphorus build-up and management is in compliance with Minn. R. 7020 and producers are managing phosphorus in a way that will prevent non-compliance in the future. Focus on feedlots with over 300 AUs, since they are the ones with soil P testing requirements, and more likely to need a manure management plan. Also conduct field inspections to ensure no violations of 300-foot manure incorporation/injection zones near waters.
- c. **Strategy:** Work proactively to identify watershed(s) to focus inspection efforts. Work with interested lake associations, watershed districts or counties to help coordinate inspections of specific feedlot and land owner records. Work with local watersheds to identify problematic surface applications of manure, so that they can report potential violations in a timely manner.

3. Surface applications along stream corridors:

- a. **Goal:** Reduce bacteria and phosphorus transport to streams resulting from surface applications of manure near waters.
- b. **Focus:** Inspect manure applications in the field to examine compliance with the 300-foot manure incorporation/injection zones near open tile intakes and other waters, especially where waters have bacteria TMDLs. All size feedlots.
- c. **Strategy:** In targeted watersheds (TMDLs or other high-priority watersheds) conduct drive-by surveys of land application sites in winter months and other times when surface applications are occurring. Follow-up with county staff and FSA office to determine who is managing the land where violations occur.

4. NPDES sites with suspected problems:

- a. **Goal:** Minimize nitrate leaching to ground water and phosphorus losses to surface waters where large amounts of manure are being applied by NPDES-permitted facilities. Goal is also to increase MPCA presence with commercial applicators so that they are more likely to pay attention to land application requirements.
- b. **Focus:** Inspect records and ongoing application at NPDES-permitted sites which have indications of potential problems identified through manure management plan review, complaints, previous problems, etc. If such sites are not available, then choose several farms in a similar geographic area, and focus on the NPDES farms and surrounding livestock farms in that area.
- c. **Strategy:** Ask producers to mail you their land application records from the previous two years. Ask producers in early fall when they expect to be applying manure and ask them to notify you within one week of application. Once on site, spend time talking with commercial applicators and examine setbacks and degree of incorporation/injection.

Attachment E

Transferred Ownership of Manure

Guidelines for determining whether manure ownership is transferred

(Dated January 28, 2005. Available at <http://www.pca.state.mn.us/publications/wq-f8-16.pdf>)

When a livestock producer sells or otherwise provides manure to other cropland farmers for use as a source of nutrients, that manure is often considered to have changed ownership. This transfer of ownership affects who is required to develop and maintain nutrient plans and records, in accordance with Minn. Rules ch. 7020.2225 and federal regulations 40CFR parts 122 and 412.

The table below summarizes the nutrient planning and record-keeping responsibilities when ownership of manure is transferred. Manure management planning is conducted prior to manure application and record keeping is done after manure application. X* indicates parts of the manure management plan not typically required as part of a permit application when manure ownership is transferred.

	Feedlot owner	Cropland manager who receives the manure (Recipient)
Manure Management Plan		
Manure storage/handling	X	
Manure nutrient testing practices	X	
Manure amounts generated	X	
Method and timing of application	X – where known	X*
Field acreage/locations	Sometimes needed (see permit application)	X*
Field specific nutrient management	Must provide state requirements to recipient	X*
Sensitive areas management	Must provide state requirements to recipient	X*
Record Keeping		
Transfer dates and amounts	X	
Manure nutrient test results	X – must provide to recipient	X
Who receives manure	X	
Stockpiling practices	X – received from stockpile owner	X – stockpile owner
Field locations/acreage for manure	X – received from applicator	X
Application rates	X – received from applicator	X
Application dates and methods		X
Soil test results		X
N and P applied		X

Is my manure considered to be transferred?

Manure ownership is not considered to be transferred (i.e. feedlot owner/operator retains ownership) for situations where the answer is “yes” to either of the following questions.

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 field and nutrient planning decisions, including planning for manure application rates, timing and methods?

For situations where you answer “Yes” to either question, manure ownership is NOT transferred, and you should see the MPCA guidelines “Manure Management Plan Requirements and checklist” which describe requirements when manure ownership is not transferred. If you answered “No” to both questions, then you are transferring ownership of your manure and you may use MPCA guidelines “Manure Management Plan Requirements when Ownership of Manure is Transferred.” Both guidelines can be found at www.pca.state.mn.us/hot/feedlot-management.html

Sometimes it can be difficult to determine who has control of the manure and nutrient planning and implementation decisions. Landowners often have other experts assisting them, including commercial applicators, crop consultants and others. In most cases, we assume that the *cropland* owner retains control of farming and nutrient management decisions, even when others are providing assistance. We have provided some examples below where ownership of manure is and is not considered to be transferred (for purposes of MMP and record-keeping responsibilities).

Examples where ownership of manure is NOT transferred:

- Manure is applied by a commercial applicator to land that is leased by the feedlot operator.
- The feedlot owner/operator or person acting as an employee of the feedlot facility applies manure onto land that is held under an access agreement with the feedlot operator. Additionally, the land owner does not have a nutrient management plan and the feedlot employee is responsible for making final decisions about the application rates, locations, and methods.
- A commercial applicator applies manure to land that is owned by a neighboring crop farmer, but the feedlot owner is ultimately responsible for the planning of manure application rates, locations and methods.
- The feedlot owner or employee is a commercial applicator who applies manure to a neighbor’s field through a recorded easement that gives the feedlot owner authority to apply manure to certain fields when determined necessary by the feedlot owner.

Examples where ownership of manure is transferred

- A commercial applicator applies manure to land that is owned by a neighbor to the feedlot, and the neighbor is responsible for nutrient planning decisions regarding the rate and method of application.
- Manure is sold to an independent manure broker who arranges access agreements to spread the manure at a rate and method directed by the receiving land owner.
- Manure is sold to an employee of the feedlot facility who is not part owner, and that employee applies it on his own land in accordance with the employees own crop nutrient management plan.
- An employee of the feedlot facility, who is a commercial applicator, applies the manure onto land that is held under an access agreement by the feedlot operator. However, the application rate, location, timing and methods of application are clearly directed by the cropland manager who receives the manure.
- The feedlot owner or employee draft a manure management plan for a neighbor or access agreement holder, and the neighbor or access agreement holder retains responsibility for final planning decisions for those fields.
- The feedlot owner or employee is a commercial applicator who applies manure to a neighbor's field (not rented by the feedlot owner) in accordance with the neighbor's field specific nutrient management plan.

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Attachment F

Non-Compliance Response Guidelines

CFOs – see also June 21, 2006, memo from Bob Finley “Referral of enforcement cases from delegated counties to the MPCA” found at the website <http://www.pca.state.mn.us/hot/feedlot-toolbox.html>.

Consider the following case-by-case situations, along with the guidelines in the table, when determining appropriate follow-up or enforcement action:

- Number of total violations that occurred.
- How many acres/fields the violation occurred on.
- The potential and actual environmental harm – for example, violations affecting nitrate or bacteria transport to ground water in drinking water supply management areas could be cause the violation to be moved to a higher category of enforcement response.
- How informed the producer should have been to requirements based on past permitting, feedlot size, time spent with feedlot officers in the past, etc.
- History of management and violations.
- How responsive and cooperative the producer is.
- Continuous repeat offenses mean third time or more, when documented minor or moderate actions were taken during the previous offenses.

	Minor - Education & Assistance, or - Warning (verbal or written) - In-field carbon copy LOW	Moderate - Letter of warning (in-field carbon or formal) - NOV - occasionally to forum	Major - MPCA takes to forum. County can escalate enforcement on own or transfer case to MPCA forum using 6/21/06 memo.
No land application records	Non-NPDES sites which indicate they will correct missing record items for future applications	NPDES sites which indicate they will correct missing record items in the future. Or, repeat occurrences at Non-NPDES sites.	Continuous repeat offenses at NPDES permitted sites
No manure management plan where a plan is required	Most first time violations.	No plan developed after previous warning. Allow minimum of 15 days to submit MMP, or more time at reviewers discretion.	No plan developed after previous warnings, combined with other violations.
Manure nutrient testing not conducted	Most first time violations at non-NPDES	Repeat violations and NPDES sites	Continuous repeat offenses
Nitrogen rates exceeded <i>If no MMP available, U of MN rec rates and analysis used as default. If MMP meets state rules, use information in MMP.</i>	First warning of exceedances of 20% or more above U of MN or neighboring states’ recommended rates that were used in the MMP; case by case BPJ needed. (feedlots over 100 AU)	Repeat occurrences of 20% or more above U of MN or neighboring state’s rec’s that were used in MMP; or a first-time extreme over- application (such as twice recommended rate); case by case BPJ needed	Continuous repeat offenses Or measurable environmental harm resulted

	Minor - Education & Assistance, or - Warning (verbal or written) - In-field carbon copy LOW	Moderate - Letter of warning (in-field carbon or formal) - NOV - occasionally to forum	Major - MPCA takes to forum. County can escalate enforcement on own or transfer case to MPCA forum using 6/21/06 memo.
CAFOs on sands prior to mid-Oct. (goal: 50 degrees F or lower at 6 inch depth)	First time issue is raised with producer	Repeat occurrences	Continuous repeat offenses
Summer applications without cover crop	First time issue is raised, or repeat occurrences in non-sensitive areas	Repeat occurrences in areas most sensitive to ground water pollution, such as sandy soils and karst areas	Continuous repeat offenses
Soil Phosphorus testing not conducted	First time occurrences at non-NPDES	Repeat occurrences, or 1 st time at NPDES sites	Continuous repeat offenses; Falsifying info. would be criminal
Excess P application over 6 yrs in special protection areas with high soil P levels (or other soil P management rule violations)	Most first time occurrences	Repeat occurrences; or NPDES not following their MMP; or >300 AU and excessive P on large acreages in P sensitive watersheds or along waters	Continuous repeat offenses
Surface applications away from waters when CAFO approved MMP indicates incorp or injection	Most first time occurrences verbal warning, <i>except for CAFOs applying in special protection areas (see below)</i>	Repeat occurrences in areas with a potential for significant environmental harm.	Continuous repeat offenses, or actual measurable environmental harm resulted
Surface applications within 300 feet of waters and intakes with required setbacks	Most first time occurrences at <300 AU facilities; first time for non-CAFOs >300 AU if low environ. risk	Repeat occurrences at smaller lots, or first time at CAFO, or if >300 AU and there is a high risk to the environment	Continuous repeat offenses, or actual measurable environmental harm resulted
Dry weather discharges that pollute waters		Low amounts enter waters and minimal environmental impact	Most dry weather discharges
Precipitation-related discharges, when all requirements were followed	Education and assistance to discuss possible options for alternative manure management	Continuous repeat offenses	

	Minor - Education & Assistance, or - Warning (verbal or written) - In-field carbon copy LOW	Moderate - Letter of warning (in-field carbon or formal) - NOV - occasionally to forum	Major - MPCA takes to forum. County can escalate enforcement on own or transfer case to MPCA forum using 6/21/06 memo.
Precipitation-related discharges, when requirements were not followed		Significant environmental harm was not measured, but where clear evidence of discharge	Continuous repeat offenses, or actual measurable environmental harm resulted at facilities where reg's should have been known
Winter application at CAFO fields not approved by MPCA or not following required mgmt.	Potential for environmental impact is low (i.e. low on P index)	Potential for environmental impact is high (i.e. medium or high on P index), or repeat occurrences	Continuous repeat offenses, or actual environmental harm resulted
Sinkhole or well setbacks are not met	Most first time occurrences, especially if smaller feedlots	Repeat occurrences, NPDES, and medium-size facilities where there is a high potential for environmental harm	Continuous repeat offenses, or actual measurable environmental harm resulted
Stockpile locations are not consistent with rules	Most first time occurrences	Repeat occurrences, NPDES, and medium-size facilities where there is a high potential for environmental harm	Continuous repeat offenses, or actual measurable environmental harm resulted