Extension
UNIVERSITY OF WISCONSIN–MADISON

NUTRIENT MANAGEMENT WORKBOOK

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For electronic material, use the QR code to access publications, training videos, class modules, contact information for professionals to assist you, and more from the Wisconsin Department of Agriculture, Trade and Consumer Protection.

Year:

Farm Narrative

Landowner/Operator Name: _____

Farm Location

County: _____ Township(s): _____ Section(s) #: _____

I have:

Plat book map showing all farm acres	Yes	No
FSA Aerial photo of all fields	Yes	No
Soils map for all fields	Yes	No
Current Conservation Plan for all fields	Yes	No
Map showing sensitive areas	Yes	No
Soil tests for each field in the last 4 years	Yes	No

Typical Crop Rotations:

_____

Current Acreage of Each Crop:

_____

Is there anything else that would be helpful to know about your farm?

_____

_____

_____

_____

_____

_____

_____

Manure Production Calculation

Year: _____

Animal Type	Animal Size lbs. or milk production factor	(A) Manure Production Per Day Per Head Solid lbs	(B) Number of Head on Farm	(C) Daily Farm Total lbs A X B	(D) Yearly Farm Total Tons C X 365	(E) Yearly Farm Total Tons D/2000	(F) Percent Collected Decimal Format	(G) Total Collected Tons E X F
Dairy								
Calf milk fed	<400	12						
Calf	<400	19						
Youngstock	400 - 800	50						
Heifer	1000	57						
Lactating Cow	50 lbs/day milk producer	123						
Lactating Cow	75 lbs/day milk producer	141						
Lactating Cow	100 lbs/day milk producer	160						
Lactating Cow	125 lbs/day milk producer	178						
Dry Cow	1000	51						
Dry Cow	1200	61						
Dry Cow	1400	71						
Dry Cow	1700	86						

Total Manure Available to Spread: _____

Beef

Stocker/Feeder	400-800	50						
Finishers	>800	64						
Cow	1,000	104						
Cow	1,200	125						
Beef Bulls	1400	115						

Total Manure Available to Spread: _____

Poultry

Broilers	2	.23						
Layers	4	.19						
Ducks	6	.36						
Turkeys	20	.47						

Total Manure Available to Spread: _____

Swine

Boars	350	7.2						
Farrow to Finish	150	9.5						
Nursery Pigs	25	2.7						
Sows	275	7.5						

Total Manure Available to Spread: _____

Other

Goat	--	6						
Sheep	--	4						
Lamb	--	1.6						
Veal	--	7.8						
Horse <500 lbs	--	27						
Horse 500-1000 lbs	--	39						
Horse 1,000-1,400 lbs	--	63						
Horse >1,400 lbs	--	80						

Total Manure Available to Spread: _____

Notes:

Manure Production Calculation

Year: _____

Animal Type	Animal Size lbs. or milk production factor	(A) Manure Production Per Day Per Head in Liquid Gallons.	(B) Number of Head on Farm	(C) Daily Farm Total (Gallons) A X B	(D) Yearly Farm Total Gallons C X 365	(E) Percent Collected Decimal Format	(F) Total Collected Gallons D X E
Dairy							
Calf milk fed	<400	4.1					
Calf	<400	2.6					
Youngstock	400 - 800	10.7					
Heifer	1000	12.2					
Lactating Cow	50 lbs/day milk producer	26.3					
Lactating Cow	75 lbs/day milk producer	30.3					
Lactating Cow	100 lbs/day milk producer	34.3					
Lactating Cow	125 lbs/day milk producer	38.2					
Dry Cow	1000	10.9					
Dry Cow	1200	13.1					
Dry Cow	1400	15.2					
Dry Cow	1700	18.4					

Total Manure Available to Spread: _____

Beef

Stocker/Feeder	400-800	19					
Finishers	>800	24.4					
Cow	1,000	39.6					
Cow	1,200	47.6					
Beef Bulls	1400	43.8					

Total Manure Available to Spread: _____

Poultry

Broilers	2	0.03					
Layers	4	0.02					
Ducks	6	0.04					
Turkeys	20	0.06					

Total Manure Available to Spread: _____

Swine

Boars	350	1					
Farrow to Finish	150	1.2					
Nursery Pigs	25	0.3					
Sows	275	1					

Total Manure Available to Spread: _____

Other

Goat	--	0.8					
Sheep	--	0.5					
Lamb	--	0.2					
Veal	--	0.9					
Horse <500 lbs	--	3.2					
Horse 500-1000 lbs	--	4.6					
Horse 1,000-1,400 lbs	--	7.5					
Horse >1,400 lbs	--	9.5					

Total Manure Available to Spread: _____

Grazing Manure Application Rate Calculator

Individual Animal Type's Total Pastured Manure Production:

(____________ x ____________) x (____________ x ____________) ÷ 2,000 = ____________

value from column A on above page | # of animals | # of Days on Pasture | % of each day spent grazing | Total Pasture Manure Production for Animal Type (Tons)

Individual Animal Type's Total Pastured Manure Production:

(____________ x ____________) x (____________ x ____________) ÷ 2,000 = ____________

value from column A on above page | # of animals | # of Days on Pasture | % of each day spent grazing | Total Pasture Manure Production for Animal Type (Tons)

Individual Animal Type's Total Pastured Manure Production:

(____________ x ____________) x (____________ x ____________) ÷ 2,000 = ____________

value from column A on above page | # of animals | # of Days on Pasture | % of each day spent grazing | Total Pasture Manure Production for Animal Type (Tons)

Individual Animal Type's Total Pastured Manure Production:

(____________ x ____________) x (____________ x ____________) ÷ 2,000 = ____________

value from column A on above page | # of animals | # of Days on Pasture | % of each day spent grazing | Total Pasture Manure Production for Animal Type (Tons)

Individual Animal Type's Total Pastured Manure Production:

(____________ x ____________) x (____________ x ____________) ÷ 2,000 = ____________

value from column A on above page | # of animals | # of Days on Pasture | % of each day spent grazing | Total Pasture Manure Production for Animal Type (Tons)

____

Total Pasture Manure (Tons)

____

÷Total Pasture Size (Acres)

____

=Pasture Manure Application Rate (Tons/Acre)

Note: This page provides a calculation of the quantity of manure produced. To determine the manure nutrient credit for these manure applications, continue to the next page.

Grazing Manure Nutrient Application Value Table

Animal Type	N content lbs/ton	P lbs/ton	K lbs/ton
Beef	3	3	7
Dairy	3	3	4
Chicken	11	11.7	12
Goat	4	2.4	9.5
Horse	2	2	2
Swine	8	5	7
Sheep	3.3	2.5	8.8
Turkey	20.6	16.3	13.5

To credit nutrients from your grazing system to pastured acreage, complete the following equation for each animal type using values from the previous page and table above.

_____	×	_____	=	_____	÷	_____	=	_____
Total pasture manure production for animal type (tons)		N content for this animal type's manure (lbs/ton)		Total N applied by these animals (lbs)		Total pasture size (acres)		Total N applied by grazing these animals (lbs/acre)

_____	×	_____	=	_____	÷	_____	=	_____
Total pasture manure production for animal type (tons)		P content for this animal type's manure (lbs/ton)		Total P applied by these animals (lbs)		Total pasture size (acres)		Total P applied by grazing these animals (lbs/acre)

_____	×	_____	=	_____	÷	_____	=	_____
Total pasture manure production for animal type (tons)		K content for this animal type's manure (lbs/ton)		Total K applied by these animals (lbs)		Total pasture size (acres)		Total K applied by grazing these animals (lbs/acre)

Year:

Manure Spreader Capacity Form

Box Type Spreader = L x W x H

Box Length _____ (ft.)
Box Width _____ (ft.)
Sidewall or _____ (ft.)
Manure Height
Length X Width X Height= _____ (cu ft.)

Slinger Type Spreader = 0.5 x (B1+B2) x H x L

Top Width _____(ft.)
Bottom Width_____(ft.)
Box Height _____ (ft.)
Box Length _____(ft.)
Length X Height X $\frac{\text{(Top Width + Bottom Width)}}{2}$
_____(cu.ft.)

Tank Type Spreader = $\pi r^2 h$

Diameter (ft.)
Length (ft.)
$\frac{\text{(Diameter)}}{2}$ X $\frac{\text{(Diameter)}}{2}$ X Length X 3.14 = (cu. ft.) ***or*** use capacity in gallons (cu. ft. x 7.48 = gals)

Spreader Capacity (tons/load) = $\frac{\text{Spreader size (cu.ft.) X Manure Density (lbs./cu. ft.)}}{2000}$

Table 1. Manure Spreader Rough Conversions

Spreader Size (Bushels)	90	110	150	180	220	260	290	320	390
Tons of Manure per Load	1.45	1.75	2.15	2.5	3	3.5	4	4.3	5.4

**For best accuracy, on-farm calibration of spreading equipment is highly recommended*

Typical Density and 1st year available nutrients (lbs/ton for solid) (lbs/1,000 gallons for liquid/slurry)

Manure Type	Average Density in lbs./cu ft	Book value N Credit Incorporated >72 Hours	Book Value N Credit Incorporated 1-72 Hours	Book Value N Credit Incorporated <1 hr or injected	Book value P Content	Book value K Content
Dairy Semi Solid	55 lbs	2	2	3	3	5
Dairy Solid	45 lbs	2	3	3	3	6
Dairy Liquid	62 lbs	4	6	7	3	11
Dairy Slurry	62 lbs	7	10	12	6	17
Beef Solid	55 lbs	3	4	5	6	10
Beef Liquid	60 lbs	5	6	8	6	12
Swine Semi-Solid	55 lbs	7	9	12	10	8
Swine: Finish (Indoor Pit)	60 lbs	17	22	28	14	22
Swine: Finish (Outdoor Pit)	60 lbs	7	9	12	6	8
Swine: (farrow- nursery, indoor pit)	60 lbs	8	10	14	6	10
Sheep	63 lbs	5	6	7	7	19
Chicken	60 lbs	24	27	29	35	26
Duck	60 lbs	6	7	7	8	7
Turkey	63 lbs	26	28	31	35	25
Horse	62 lbs	2	3	4	5	6
Goat	63 lbs	4	5	6	6	15
Veal Calf	62 lbs	3	4	4	2	13

Fertilizers and Manures Used on Farm

Name	%N	%P205	%K20	Nitrification inh?	Density lbs/gal (if applicable)	$ ton or $/gal

Storage Facilities Present on Farm

Storage Name	Max Storage Capacity	Indicate if Tons or Gallons	Maximum Storage Capacity	# of times emptied/year	Total Amount Collected Annually	Notes

Note: If manures used on your farm have been tested for nutrient content, use those test results to complete the analysis entries in the table above. Also, manures contain both inorganic and organic forms of N. Organic forms of N release slowly over time, which allows producers that apply manure on fields in consecutive years to account for 2nd and 3rd year manure N credits on non-sandy soils. To account for these credits in your plan, refer to Table 9.1 and Table 9.2 in Publication A2809 to determine the value to assign to these credits on your farm. Remember that these values should be accounted for in addition to the 1st year manure N credit received from the manure application, outlined in the table on the prior page of this workbook.

Crop Year_____ Planned Manure Application Calendar

September						October				November			
Field ID	Acres	Nutrient Source	Check if Inc.	Rate/Acre Tons/Gal	Total Used Tons/Gal	Nutrient Source	Check If Inc.	Rate/Acre Tons/Gal	Total Used Tons/Gal	Nutrient Source	Check If Inc.	Rate/Acre Tons/Gal	Total Used Tons/Gal
				Total Planned						Total Planned			

Crop Year__________ Planned Manure Application Calendar

December						January				February			
Field ID	Acres	Nutrient Source	Check if Inc.	Rate/Acre Tons/Gal	Total Used Tons/Gal	Nutrient Source	Check If Inc.	Rate/Acre Tons/Gal	Total Used Tons/Gal	Nutrient Source	Check If Inc.	Rate/Acre Tons/Gal	Total Used Tons/Gal
				Total Planned		Total Planned				Total Planned			

Crop Year__________ Planned Manure Application Calendar

March						April				May			
Field ID	Acres	Nutrient Source	Check if Inc.	Rate/Acre Tons/Gal	Total Used Tons/Gal	Nutrient Source	Check If Inc.	Rate/Acre Tons/Gal	Total Used Tons/Gal	Nutrient Source	Check If Inc.	Rate/Acre Tons/Gal	Total Used Tons/Gal
			Total Planned			Total Planned				Total Planned			

Crop Year_____ Planned Manure Application Calendar

September						October				November			
Field ID	Acres	Nutrient Source	Check if Inc.	Rate/Acre Tons/Gal	Total Used Tons/Gal	Nutrient Source	Check If Inc.	Rate/Acre Tons/Gal	Total Used Tons/Gal	Nutrient Source	Check If Inc.	Rate/Acre Tons/Gal	Total Used Tons/Gal
				Total Planned								Total Planned	

Crop Year_____ Planned Manure Application Calendar

June						*July*				*August*			
Field ID	Acres	Nutrient Source	Check if Inc.	Rate/Acre Tons/Gal	Total Used Tons/Gal	Nutrient Source	Check If Inc.	Rate/Acre Tons/Gal	Total Used Tons/Gal	Nutrient Source	Check If Inc.	Rate/Acre Tons/Gal	Total Used Tons/Gal
				Total Planned				Total Planned				Total Planned	

Total Manure Applications (Gallons):_____

Total Manure Applications (Tons):_____

Total Remaining Manure (Gallons):_____

Total Remaining Manure (Tons):_____

Fertilizer Analysis

	N	P_2O_5	K_2O	Other
Nitrogen				
Ammonium Nitrate	34	0	0	-
Ammonium Sulfate (AMS)	21	0	0	24 (S)
Ammonium Thiosulfate (ATS)	12	0	0	26 (S)
Anhydrous Ammonia	82	0	0	-
Aqueous Ammonia	20	0	0	-
Calcium Nitrate	15	0	0	17 (Ca)
Urea	46	0	0	-
28% Urea Ammonium Nitrate (UAN)	28	0	0	-
32% Urea Ammonium Nitrate (UAN)	32	0	0	-
Phosphorus				
Ammonium Polyphosphate (dry)	15	62	0	-
Ammonium Polyphosphate (liquid)	10	34	0	-
Diammonium Phosphate (DAP)	18	46	0	-
Monoammonium Phosphate (MAP)	11	52	0	-
Triple Superphosphate (TSP)	0	46	0	-
Potassium				
Potassium Chloride (muriate of potash)	0	0	60–62	-
Potassium-magnesium Sulfate	0	0	22	22 (S), 11 (Mg)
Potassium Nitrate	13	0	44	-
Potassium Sulfate	0	0	50	18 (S)

Liquid Weights
1 gallon water weighs 8.3 lbs.
1 gallon UAN 28% weighs 10.6 lbs.
1 gallon 10-34-0 weighs 11.6 lbs.
1 gallon 9-18-9 weighs 11.1 lbs.

Determining Fertilizer Rate from Soil Test

Method for using dry fertilizers

1. Using the recommendations from the soil test report *(see outlined column in Nutrient Recommendations table, below)* and the Maximum Return to Nitrogen (MRTN) tool from Fast Facts Magazine, enter this number into column A. Soil Test Recommendation.

NUTRIENT RECOMMENDATIONS

Cropping Sequence	Yield Goal	Crop Nutrient Need			Fertilzer Credit				Nutrients to Apply		
		N	P2O5	K2O	Legume N	Manure N	P2O5	K2O	N	P2O5	K2O
	per acre	lbs/a			lbs/a	lbs/a			lbs/a		
Corn, grain	131-150 bu	see below	30	85	120	45	45	108	see below	0	0
Soybean, grain	46-55 bu	0	0	130	0	15	8	14	0	0	120
Alfalfa, seeding	1-2.5 ton	0	25	155	0	8	4	7	0	25	150
Alfalfa, established	4.6-5.5 ton	0	65	350	0	0	0	0	0	65	350

The lime required for this rotation to reach pH 6.8 is 12 T/a of 60-69 lime or 9 T/a of 80-89 lime.

2. Take the analysis of the fertilizer that will be applied and divide by 100. Enter that number into column B. For example, if 0-0-60 will be used divide 60 by 100 to get .6. The .6 will be the number to use for the fertilizer analysis

$$\frac{\text{Fertilizer analysis value}}{\div\ 100} = \frac{}{\text{Enter above number in column B}}$$

3. Divide column A by B to get the number of pounds of fertilizer to apply to the field.

Nutrient	A. Soil Test Recommendation	÷	B. Fertilizer Analysis	=	C. Pounds to apply per acre
Nitrogen (N)		÷		=	
Phosphate (P2O5)		÷		=	
Potash (K2O)		÷		=	

Method for using liquid fertilizers

Step 1: determine units of fertilizer nutrients

Follow the same calculations as above to determine the units of liquid fertilizer nutrients to apply.

Nutrient	A. Soil Test Recommendation	÷	B. Fertilizer Analysis	=	C. Units of fertilizer nutrients
Nitrogen (N)		÷		=	
Phosphate (P2O5)		÷		=	
Potash (K2O)		÷		=	

Step 2: Convert from units to gallons

1. Take the units of the fertilizer (column C) from step 1 and enter that into column D in the chart below.

2. Enter the gallon weight of the fertilizer into column E. Common liquid fertilizer weights found below:
   - 4-10-10: 10.35 lbs/gal
   - 6-24-6: 11.25 lbs/gal
   - 7-21-7: 11.2 lbs/gal
   - 9-18-9: 11.1 lbs/gal
   - 10-34-0: 11.6 lbs/gal
   - 12-0-0-26S (ammonium thiosulfate): 11.1 lbs/gal
   - 32%: 11.06 lbs/gal
   - 28%: 10.6 lbs/gal

3. Divide column D by E to get the number of gallons of fertilizer to apply to the field.

Nutrient	D. Units of fertilizer nutrients	÷	E. Fertilizer gallon weight	=	F. Gallons to apply per acre
Nitrogen (N)		÷		=	
Phosphate (P_2O_5)		÷		=	
Potash (K_2O)		÷		=	

I already applied fertilizer, how do I calculate how much I applied?

To calculate for dry fertilizer applied use the below calculations:

1. Enter fertilizer rate applied in pounds per acre in column A.
2. Take the analysis of the fertilizer that was applied and divide by 100. Enter that number into column B. For example, if 0-0-60 will be used divide 60 by 100 to get .6. The .6 will be the number to use for the fertilizer analysis.

$$\frac{\text{Fertilizer analysis value}}{\div 100} = \frac{\text{Enter above number in column B}}{}$$

3. Multiply column A by column B to get the pounds/units applied per acre

Nutrient	A. Fertilizer rate applied	x	B. Fertilizer Analysis	=	C. Units applied per acre
Nitrogen (N)		x		=	
Phosphate (P2O5)		x		=	
Potash (K2O)		x		=	

To calculate for liquid fertilizer applied use the below calculations:

Step 1: Convert gallons per acre to pounds per acre

1. Enter gallons applied per acre in column A.
2. Enter the fertilizer gallon weight into column B. See list of common liquid fertilizer weights listed above.
3. Multiply column A by column B to determine the weight of fertilizer applied per acre.

Nutrient	A. Gallons applied per acre	x	B. Fertilizer gallon weight	=	C. Weight of fertilizer applied
Nitrogen (N)		x		=	
Phosphate (P2O5)		x		=	
Potash (K2O)		x		=	

Step 2: Convert pounds per acre to pounds/units applied per acre

1. Take the weight of fertilizer applied (column C) from step 1 and enter that into column D in the chart below.
2. Take the analysis of the fertilizer that will be applied and divided by 100. Enter that number into column B. For example, if 28-0-0 will be used divide 28 by 100 to get .28. The .28 will be the number to use for the fertilizer analysis.

$$\frac{\text{Fertilizer analysis value}}{\div 100} = \frac{\text{Enter above number in column E}}{}$$

3. Multiply column A by column B to get the pounds/units applied per acre.

Nutrient	D. Weight of fertilizer applied	x	E. Fertilizer analysis	=	F. Units applied per acre
Nitrogen (N)		x		=	
Phosphate (P2O5)		x		=	
Potash (K2O)		x		=	

How many units are in a gallon of my fertilizer?

1. Take the analysis of the fertilizer that was applied and divided by 100. Enter that number into column A. For example, if 28-0-0 will be used divide 28 by 100 to get .28. The .28 will be the number to use for the fertilizer analysis.
2. Enter the fertilizer gallon weight into column B. See list of common liquid fertilizer weights listed above.
3. Multiply column A and column B to determine the number of units per gallon.

Nutrient	A. Fertilizer analysis	x	B. Fertilizer gallon weight	=	C. Number of units in a gallon
Nitrogen (N)		x		=	
Phosphate (P2O5)		x		=	
Potash (K2O)		x		=	

Cheat sheet

Fertilizer Analysis

- First number %N
- Second number %P2O5
- Third number %K2O
- Remaining analysis for macro/micronutrients will be identified

Equations

For these equations, divide the analysis by 100 to convert from percent to decimal.

Determining fertilizer rate from soil test (Dry)
Nutrient to apply ÷ Fert analysis = number of pounds of fertilizer to apply

Determining fertilizer rate from soil test (Liquid)
Step 1: Nutrient to apply ÷ Fert analysis = number of pounds of fertilizer to apply
Step 2: Number of pounds of fertilizer ÷ Gallon weight = number of gallons to apply

Determining how many nutrients were applied to the field (Dry)
Pounds of fertilizer x Fertilizer analysis = units of nutrients applied

Determining how many nutrients were applied to the field (Liquid)
Step 1: Gallons applied per acre x Fertilizer gallon weight = weight of fertilizer applied
Step 2: Weight of fertilizer applied x fertilizer analysis = units of nutrients applied

Field by Field Planning Sheet

Acres Field # _____ Irrigated (Y/N)_ Contoured/Strip Cropped/None_____

Table 1. Crop sequence/rotation and year (circle current crop)						
Year						
Crop						
Tillage						
Yield						

Table 2. Current soil test levels (ppm or *lb/ac*)						
Soil Test Date	**O.M.%**	**P**	**K**	**pH**	**CEC**	**N (PPNT or PSNT Results)**

Table 3. Recommended nutrients/amendments to meet expected yield				
N	**P_2O_5**	**K_2O**	**Lime**	**Other**

Table 4. Nutrient Sources

Credits		**N**	**P_2O_5**	**K_2O**
	Units	ppm or lbs/*ac*	lbs/ac	lbs/ac
1. Nitrogen credits from previous legume crop. (other than soybeans)				
2. Manure (2nd & 3rd year credits)				
3. Prior Years Carryover = (excess P & K applied to last year's crop) or PPNT/PSNT Results				
4.	**Total credits**			
5. Additional nutrients recommended (subtract line 4 from Table 3 values.)				
Plant Available Nutrient Applications		**N**	**P_2O_5**	**K_2O**
6. Fall Solid Manure: Indicate if Inj. Surface app, or Inc.				
7. Fall Liquid Manure: Indicate if Inj, Surface app, or Inc.				
8. Winter Solid Manure: Indicate if Inj, Surface app, or Inc.				
9. Winter Liquid Manure: Indicate if Inj, Surface app, or Inc.				
10. Spring Solid Manure: Indicate if Inj. Surface app, or Inc.				
11. Spring Liquid Manure: Indicate if Inf. Surface app, or Inc.				
12. Summer Solid Manure: Indicate if Inj. Surface app, or Inc.				
13. Summer Liquid Manure: Indicate if Inj. Surface app, or Inc.				
14. Grazing Manure:				
15. Fertilizer(s)	Fall			
	Spring			
	Summer			
	Starter Fertilizer(s) (Indicate broadcasted, subsurface app with planter, or incorporated)			
16.**Supplemental Nutrient Subtotal (sum of line 6-14)**				
17. **Nutrient Status (subtract line 5 from line 15)**				

If line 17 is a negative number, this is the amount of additional nutrients needed to meet the crop recommendations.
If line 17 is a positive number, this is the amount by which the available nutrients exceed the crop requirements.

Sensitive Areas Form

Circle Yes or No following each question

Is this field's *critical slope less than 6%?

YES

Make no winter applications of manure to this field UNLESS the plan states that no other fields are accessible AND two of the follow conservation practices are used:

- Contour Buffer strips or contour stripcropping
- Leave all crop residues and no fall tillage
- Apply manure in intermittent strips on no more than 50% of the field
- Apply manure on no more than 25% of the field waiting a minimum of 14 days between applications
- Reduce manure application rate to 3,500 gal., or 30 lbs. P205, whichever is less

NO

Limit liquid winter manure applications to 7,000 gallons, and solid winter manure applications to 60 lbs. of P205/acre.

Does this field have concentrated flow channels within the boundaries of the field?

YES

Make no winter applications of manure to this field UNLESS the plan states that no other fields are accessible AND use two of the following conservation practices:

- Contour buffer strips or contour strip cropping
- Leave all crop residues and no fall tillage
- Apply manure in intermittent strips on no more than 50% of the field
- Apply manure on no more than 25% of the field, waiting a minimum of 14 days between applications
- Reduce manure application rate to 3,500 gal., or 30 lbs. P205, whichever is less
- No manure application within 200 feet of all concentrated flow channels
- Fall tillage is on the contour and slopes are lower than 6%

NO

Limit liquid winter manure applications to 7,000 gallons, and solid winter manure applications to 60 lbs. of P205/acre.

Does this field have direct conduits to groundwater within it, or within 1000' of field boundaries?

YES

Show on map any residential drinking wells, fractured bedrock, non-metallic mines, sinkholes, or depressional groundwater recharge areas. Make no applications of manure within 300' during winter, no applications within 50' during other seasons.

For non-community public wells (ie. churches, schools, restaurants) the setback for untreated manure is 100', unless it is winter, then the setback is also 300'. Community potable water wells have a year-long setback of 1,000' unless manure is treated to substantially eliminate pathogens.

The setback for irrigation wells is 8' where vegetation is not removed.

NO

Do not apply manure to areas locally delineated by the Land Conservation Committee, or in a conservation plan as areas contributing runoff to direct conduits to groundwater unless manure is substantially buried within 24 hours of application. If any of these are applicable.

** A field's critical slope is the slope of the Dominant Critical Soil Map Unit. This is the most erosion prone soil map unit that covers at least 10% of the field.*

Does this field sit within 300 feet of navigable stream or within 1,000 feet of a lake, pond, or flowage?

No → No additional action needed, remember to follow guidance from previous questions.

Yes→ If applying any nutrients on non-frozen ground, use one of the following practices:

- Maintain more than 30% cover after nutrient application.
- Effective incorporation within 72 hours of application.
- Establish crops prior to, at, or promptly following application.
- Install or maintain vegetative buffers or filter strips.
- Have at least three consecutive years no-till for applications to fields with less than 30% residue (silage) and apply nutrients within seven days of planting.

If applying manure in these areas, limit mechanical applications to 12,000 gals/acre total of unincorporated liquid manure or organic by-products with 11% or less dry matter.

Additionally, wait seven days between sequential applications AND use one or more of the practices outlined above.

Do not apply nutrients to frozen ground in these areas.

Does this field currently have P, R, or W soils mapped?*

No → No additional action needed, remember to follow guidance from previous questions.

Yes, and:

→ Rules applicable to all of the below:
Make no applications of late summer or fall commercial N fertilizer UNLESS needed for establishment of fall seeded crops OR to meet A2809 with a blended commercial fertilizer. Commercial fertilizer N applications shall not exceed 36 lbs. N/acre.

→ P and/or R, but I only apply fertilizer on these fields.
When commercial N is applied for full season crops in spring and summer, follow A2809 and apply one of the following:

- A split or delayed N application to apply a majority of crop N requirement after crop establishment.
- Use a nitrification inhibitor with ammonium forms of N.
- Use slow and controlled release fertilizers for a majority of the crop N requirement applied near the time of planting.

→ P and/or R, and I do apply manure on these fields.

Limit manure applications in late summer or fall using the lesser of A2809 recommendations or less than or equal to 120 lbs. available N/acre on all crops, except annual crops.

Additionally, applications of manure with less than or equal to 4% dry matter must wait until after soil temperatures are less than 50° or October 1, AND use either a nitrification inhibitor OR surface apply without incorporation for at least three days.

For annual crops, follow all the above rules, but limit manure applications in late summer or fall using the lesser of A2809 recommendations or less than or equal to 90 lbs available N/acre instead of 120 lbs.

→ W or combination

Limit manure applications in late summer or fall using the lesser of A2809 recommendations or less than or equal 120 lbs. available N/acre on all crops.

Additionally, applications of manure with less than or equal 4% dry matter on these soils must be reduced to less than or equal 90 lbs available N/acre instead of 120 lbs, and adopt one of the following practices:

- Use a nitrification inhibitor.
- Apply on an established cover crop, overwintering annual, or perennial crop.
- Establish a cover crop within 14 days of application.
- Surface apply and do not incorporate for at least three days.
- Wait until soil temperatures are less than 50° or October 1.

** P soils are highly permeable. R soils are within 20" to bedrock. W soils are within 12" to water table.*

Does this field sit on mapped Silurian dolomite within 20 feet of the soil surface?

No → No additional action needed, remember to follow guidance from previous questions.

Yes, and:

→ Rules applicable to fields that meet this criterion.

- Mechanical manure applications may not cause the fecal contamination of water in a well.
- Make no mechanical applications of manure on areas of cropland or pastures that have 24 inches or less or separation between the ground surface and apparent water table.
- Make no mechanical manure applications within 1,000 feet of a community water system or within 250 feet of a private water system or a non-community water system.
- Make no mechanical manure applications within 300 feet of a direct conduit to groundwater.
- Make no mechanical manure applications within 100 feet of a concentrated flow channel that leads to a water system or direct conduit to groundwater.
- Mechanical manure applications are prohibited on or within 100 feet of Silurian bedrock in a closed depression unless the manure is injected or incorporated within 24 hours or prior to precipitation capable of producing runoff, whichever comes first. This prohibition does not apply to areas following long-term no-till practices or with a perennial or established crop.
- No surface application of manure on slopes of 6% or greater in cropland and pasture areas that have concentrated flow channels that drain to a closed depression in Silurian bedrock, unless the material is incorporated within 24 hours or prior to precipitation capable of producing runoff, whichever comes first. The prohibition of surface application of manure does not apply to areas following long term no-till practices or with a perennial or established crop.
- Practices must retain land applied manure on the soil where they are applied with minimal movement to maintain setback distances specified above.

→ Within 20 feet, but not within 5 feet.

No mechanical application of liquid manure unless all of the following are met:

Pre-tillage is completed unless exempt and liquid manure is injected or incorporated within 24 hours to 6" below ground or shallower, unless exempt, and one of the following is implemented:

- Total liquid manure applications comply with UW A2809, or limited to Table 1 rates, whichever is less, to prevent hydraulic overloading of the soil.

- Liquid manure is applied in compliance with UW A2809 and within 10 days of the planting date or applied on a perennial or established crop.
- Liquid manure is treated to substantially reduce pathogen levels via practices to a fecal coliform bacteria density of less than 500,000 most probable number or colony-forming units per 100 milliliter sample.

→Within 5 feet

- Make no surface applications of liquid manure during February or March.
- Make no mechanical applications of manure to croplands or pastures until such fields are evaluated and ranked for risk of pathogen delivery to groundwater. Areas determined to have a high risk for pathogen delivery to ground water must be avoided or must be lowest priority for manure application.
- Make no mechanical applications of manure on frozen, or snow-covered soils.
- Do not headland stack manure on frozen or snow-covered soils.
- Make no mechanical applications of manure on areas of cropland or pastures when rainfall greater than one inch is forecasted within 24 hours of planned application.

→ Within 3–5 feet

No mechanical application of manure unless the following are met:

Solid Manure: Incorporate within 72 hours to no more than 6 inches underground and implement one of the following:

- Manure is applied in accordance with UW A2809 annual application rate, or at a rate of 15 tons/acre/year, whichever is less.
- Manure is applied in compliance with UW A2809 and within 10 days of the planting date or applied on a perennial or established crop.
- Manure is composted or treated to reduce pathogen levels via practices to a fecal coliform bacteria density of 500,000 colony-forming units, or most probable number per gram total solids on a dry weight basis.

Liquid manure: Conduct pre-tillage unless exempt, then inject or incorporate within 24 hours to no more than 6 inches below ground, and implement one of the following:

- Total liquid manure application is applied in compliance with UW A2809, or limited to Table 1 rates, whichever is less, to prevent hydraulic overloading of the soil.
- Liquid manure is applied in compliance with UW A2809 and within 10 days of the planting date or applied on a perennial or established crop.
- Liquid manure is treated to substantially reduce pathogen levels via practices to a fecal coliform bacteria density of less than 500,000 most probable number or colony-forming units per 100 ml sample.
- Notes:
    - Each surface application of liquid manure must not exceed 6,750 gallons per acre.
    - Pre-tillage, incorporation or injection is not required if cropland or pastures meet long term no-till or have a perennial or established crop.

    - Pre-tillage is not required if demonstrated to the department that a field cannot meet tolerable soil loss over an eight-year crop rotation using a combination of tillage, crops, contouring, filter strips, or cover crops.

→ Within 2–3 feet

No mechanical application of manure unless the following are met:

Solid Manure: Incorporate within 72 hours to 4 inches underground or shallower and implement one of the following:

- Apply at a rate no greater than 15 tons/acre/year, or the rate that supplies the crop nitrogen recommendation from UW A2809, whichever is less.
- Apply in compliance with UW A2809 and within 10 days of the planting date or applied on a perennial or established crop.
- Solid manure is composted or treated to reduce pathogen levels via practices to a fecal coliform bacteria density of less than 500,000
- colony-forming units or most probable number per gram total solids on a dry weight basis.

Liquid manure: Complete pre-tillage unless exempt and inject or incorporate within 24 hours to 4 inches underground or shallower, unless exempt, and use at least one of the following practices:

- Total liquid manure application is applied in compliance with UW A2809, or limited to Table 1, whichever is less, to prevent hydraulic overloading of the soil.
- Liquid manure is applied in compliance with UW A2809 and within 10 days of the planting date or applied on a perennial or established crop.
- Liquid manure is treated to substantially reduce pathogen levels via practices to a fecal coliform bacteria density of less than 500,000 most probable number or colony-forming units per 100 milliliter sample.
- Notes:
    - Each surface application of liquid manure must not exceed 6,750 gallons per acre.
    - Pre-tillage, incorporation or injection is not required if cropland or pastures meet long term no-till or have a perennial or established crop.
    - Pre-tillage is not required if demonstrated to the department that a field cannot meet tolerable soil loss rates over an eight-year crop rotation using a combination of tillage, crops, contouring, filter strips, or cover crops.

→ Within 2 feet

Make no mechanical applications of manure for soils with less than two feet to Silurian bedrock.

Table 1. Silurian Bedrock Maximum Liquid Manure Application Rates			
Soil Texture	**2–3 Feet Depth (gal/ac/yr)**	**3–5 Feet Depth (gal/ac/wk)**	**5–20 Feet Depth (gal/ac/wk)**
Sand	6,750	6,750	13,500
Sandy Loam	13,500	13,500	27,000*
Loam	13,500	13,500	27,000*
Silt Loam	13,500	13,500	27,000*
Clay Loam	13,500	13,500	27,000*
Clay	6,750	6,750	13,500

Wisconsin Department of Agriculture, Trade and Consumer Protection
Division of Agricultural Resource Management
Bureau of Land and Water Resources
PO Box 8911, Madison, WI 53708-8911
Phone: (608) 224-4605

NUTRIENT MANAGEMENT CHECKLIST

Use this form to check nutrient management (NM) plans for compliance with the WI NRCS 2015-590 Standard. Personally identifiable information provided may be used for purposes other than for which it is originally being collected. Wis. Stat. § 15.04(1)(m).

Wis. Admin. Code ATCP § 50.04(3) and ch. 51

COUNTY(IES):	DATE PLAN SUBMITTED:	GROWING SEASON YEAR PLAN IS WRITTEN FOR (*from harvest to harvest*):
TOWNSHIP: T. N.	RANGE: R. E., W	Check one: ☐ Initial Plan ☐ Updated Plan

NAME OF FARM OPERATOR RECEIVING NM PLAN: First Name LastName	FARM NAME (OPTIONAL):	BUSINESS PHONE: ( ) -

STREET ADDRESS:	CITY:	STATE:	ZIP CODE:

REASON THE PLAN WAS DEVELOPED *(multiple reasons may apply, select all that apply)*:

☐ Ordinance ☐ NR 243 WPDES or NOD ☐ DATCP-FP or cost share (cs) ☐ DNR-cs ☐ USDA-cs ☐ Other

CROPLAND ACRES (OWNED & RENTED) BY COUNTY:	
COUNTY: **Choose an item.** ACRES: COUNTY: **Choose an item.** ACRES: COUNTY: **Choose an item.** ACRES: COUNTY: **Choose an item.** ACRES:	Total Acres Covered by NMP: Cropland Acres Owned: Agreement or Rented Acres: Total Spreadable Acres:

RENTED FARM(S) LANDOWNER NAME(S) AND ACREAGE (*add sheet(s) if needed*):

Was the plan written in SnapPlus? ☐ Yes ☐ No	If yes, which software version, if known?

CHECK PLANNER'S QUALIFICATION (1. *NAICC-CPCC, 2. ASA-CCA, 3. SSSA-CPSS, 4. DATCP approved training course, 5. Other approved by DATCP*):

Choose an item.

CERTIFICATION OR LICENSE NUMBER:

NAME OF QUALIFIED NUTRIENT MANAGEMENT PLANNER: First Name Last Name	BUSINESS PHONE: ( ) -		
STREET ADDRESS:	CITY:	STATE:	ZIP CODE:

Use black header sections to add comments. Mark N/A in the shaded sections if no manure is applied.

1. Does the plan include the following nutrient application requirements to protect surface and groundwater? Comments:			
This section applies to fields and pastures. If no manure is applied, check N/A for 1.c., 1.h., 1.i., 1.n., 1.o., 1.q., 1.s.	**Yes**	**No**	**N/A**
a. Determine field nutrient levels from soil samples analyzed by a DATCP-**certified laboratory**.	☐	☐	☐
b. For fields or pastures with mechanical nutrient applications, determine field nutrient levels from **soil samples** collected within the last **four years** according to 590 Standard (590) and UWEX Pub. A2809, *Nutrient Application Guidelines for Field, Vegetable, and Fruit Crops in Wisconsin* (A2809) typically collecting **one sample per 5 acres** of 10 cores. Soil tests are not required on **pastures** that do not receive mechanical applications of nutrients if either of the following applies: 1. The pasture average stocking rate is one animal unit per acre or less at all times during the grazing season. 2. The pasture is winter grazed or stocked at an average stocking rate of more than one animal unit per acre during the grazing season, and a nutrient management plan for the pasture complies with 590 using an assumed soil test phosphorus level of 150 PPM and organic matter content of 6%.	☐	☐	☐

	Yes	No	N/A
c. For **livestock siting permit approval**, collect and analyze soil samples meeting the requirements above in 1. b., excluding pastures, within 12 months of approval and revise the nutrient management plan accordingly. Until then, either option below maybe used: 1. Assume soil test phosphorus levels are greater than 100 ppm soil test P; OR 2. Use preliminary estimates analyzed by a certified DATCP laboratory with soil samples representing > 5 ac/sample.	☐	☐	☐
d. **Identify all fields'** name, boundary, acres, and location.	☐	☐	☐
e. Use the field's previous year's legume credit and/or applications, predominant soil series, and realistic yield goals to determine the crop's nutrient **application rates consistent with A2809 for ALL forms of N, P, and K**.	☐	☐	☐
f. Make no **winter applications of N and P** fertilizer, except on grass pastures and winter grains.	☐	☐	☐
g. Document method used to determine **application rates**. Nutrients shall not runoff during or immediately after application.	☐	☐	☐
h. Identify in the plan that **adequate acreage** is available for manure produced and/or applied.	☐	☐	☐
i. Apply a single phosphorus (P) assessment using either the **P Index** or **soil test P** management strategy to all fields within a tract when fields receive manure or organic by-products during the crop rotation.	☐	☐	☐
j. Use **complete crop rotations** and the field's **critical soil** series to determine that sheet and rill erosion estimates will not exceed **tolerable soil loss** (T) rates on fields that receive nutrients.	☐	☐	☐
k. Use contours; reduce tillage; adjust the crop rotation; or implement other practices to **prevent ephemeral erosion**; and maintain perennial vegetative cover to **prevent reoccurring gullies** in areas of concentrated flow.	☐	☐	☐
l. Make no nutrient applications within 8 feet of **irrigation** wells or where **vegetation is not removed**.	☐	☐	☐
m. Make no nutrient applications within **50 feet of all direct conduits to groundwater**, unless directly deposited by gleaning/pasturing animals or applied as starter fertilizer to corn.	☐	☐	☐
n. Make no **untreated manure applications** to areas within 1,000 feet of a **community potable water well** or within 100 feet of a **non-community potable water well** (ex. church, school, restaurant) unless manure is treated to substantially eliminate pathogens.	☐	☐	☐
o. Make no manure applications to areas **locally delineated** by the Land Conservation Committee or in a conservation plan as areas contributing runoff to direct conduits to groundwater unless manure is substantially buried within 24 hours of application.	☐	☐	☐
p. Make no applications of **late summer or fall commercial N fertilizer** to the following areas UNLESS needed for establishment of fall seeded crops OR to meet A2809 with a blended commercial fertilizer. Commercial fertilizer N applications shall not exceed 36 lbs. N/acre on: • Sites vulnerable to N leaching **PRW Soils** (P=high permeability, R= bedrock < 20 inches, or W= wet < 12 inches to apparent water table); • Soils with depths of 5 feet or less to bedrock; • Area within 1,000 feet of a community potable water well. On **P soils, when commercial N is applied** for full season crops in **spring and summer**, follow A2809 and apply one of the following: 1. A split or delayed N application to apply a majority of crop N requirement after crop establishment. 2. Use a nitrification inhibitor with ammonium forms of N. 3. Use slow and controlled release fertilizers for a majority of the crop N requirement applied near the time of planting.	☐	☐	☐
q. Limit manure applications in late summer or fall using the lesser of A2809 or the following 590 rates on **PRW Soils.** <u>Use ≤ 120 lbs. available N/acre on:</u> **P and R soils** on *<u>all crops, except annual crops</u>*. Additionally, manure with ≤ 4% dry matter (DM) wait until after soil temp. < 50°F or Oct. 1 and use either a nitrification inhibitor OR surface apply and do not incorporate for at least three days. **W soils or combo. W soils** on *<u>all crops.</u>* Additionally, manure with ≤ 4% DM on *<u>all crops</u>* use at least one of the following: **1.** Use a nitrification inhibitor; **2**. Apply on an established cover crop, an overwintering annual, or perennial crop; **3**. Establish a cover crop within 14 days of application; **4**. Surface apply and don't incorporate for at least three days; **5**. Wait until after soil temp. < 50°F or Oct. 1. <u>Use ≤ 90 lbs. available N/acre on:</u> **P and R soils** on *<u>annual crops</u>* wait until after soil temp. < 50°F or Oct. 1. Additionally, manure with ≤ 4% DM use either a nitrification inhibitor OR surface apply and do not incorporate for at least three days. **W soils or combination W soils** receiving manure with ≤ 4% DM on *<u>all crops</u>*.	☐	☐	☐
r. Use at least one of the following practices on **non-frozen soils for all nutrient applications** within Surface Water Quality Management Area **(SWQMA) =** 1000 feet of lakes/ponds or 300 feet of rivers: **1**. Maintain > 30% cover after nutrient application; **2**. Effective incorporation within 72 hours of application; **3**. Establish crops prior to, at, or promptly following application; **4**. Install/maintain vegetative buffers or filter strips; **5**. Have at least three consecutive years no-till for applications to fields with < 30% residue (silage) and apply nutrients within seven days of planting.	☐	☐	☐
s. Limit mechanical applications to **12,000 gals/acre of unincorporated liquid manure or organic by-products** with 11% or less dry matter where **subsurface drainage** is present OR within **SWQMA**. Wait a minimum of seven days between sequential applications AND use one or more of the practice options on non-frozen soils listed in 1.r.1. through 1.r.5.	☐	☐	☐

2. When frozen or snow-covered soils prevent effective incorporation, does the plan follow these requirements for winter applications of all mechanically applied manure or organic by-products? This section doesn't apply to winter gleaning/pasturing meeting 590 N and P requirements.

Comments:

If no manure is applied, check NA for 2.a. through 2.g..	Yes	No	N/A
a. Identify **manure quantities planned to be spread during the winter**, or the amount of manure generated in 14 days, whichever is greater. *For daily haul systems, assume 1/3 of the manure produced annually will need to be winter applied.*	☐	☐	☐
b. Identify **manure storage capacity** for each type applied and stacking capacity for manure ≥ 16% DM if permanent storage does not exist.	☐	☐	☐
c. Show on map and make no applications within the **SWQMA**.	☐	☐	☐
d. Show on map and make no surface applications of liquid manure during **February and March** where **Silurian dolomite** is within 60 inches of the soils surface OR where **DNR Well Compensation** funds provided replacement water supplies for wells contaminated with livestock manure.	☐	☐	☐
e. Show on map and make no applications of manure within **300 feet** of **direct conduits to groundwater**.	☐	☐	☐
f. Do not exceed the P removal of the following growing season's crop when applying manure. Liquid manure applications are limited to **7,000 g/acre**. All winter manure applications are not to exceed **60 lbs. of P2O5/acre**.	☐	☐	☐
g. Make no applications of manure to fields with **concentrated flow channels** unless using two of the following: **1.** Contour buffer strips or contour strip cropping **2.** Leave all crop residue and no fall tillage **3.** Apply manure in intermittent strips on no more than 50% of field **4.** Apply manure on no more than 25% of the field waiting a minimum of 14 days between applications **5.** Reduce manure app. rate to 3,500 gal. or 30 lbs. P2O5, whichever is less **6.** No manure application within 200 feet of all concentrated flow channels **7.** Fall tillage is on the contour and slopes are lower than 6% Make no applications to **slopes greater than 6%** (soil map units with C, D, E, and F slopes) unless the plan documents that no other accessible fields are available for winter spreading AND two of the options 2.g.1. through 2.g.5. are used.	☐	☐	☐

3. This section applies to all crop producers and livestock producers applying manure – directly or through contract or agreement – on fields with less than 20 feet to Silurian bedrock (as defined in NR 151.075). These requirements apply *in addition to* the standard nutrient management requirements and take precedence where there's a conflict. Fields outside the Silurian area must still meet all standard nutrient management requirements.

Comments:

If no manure is mechanically applied, check NA for 3.a. through 3.p..	Yes	No	N/A
a. Mechanical manure applications may not cause the fecal contamination of water in a well.	☐	☐	☐
b. Make no mechanical applications of manure on areas of cropland or pastures that have 24 inches or less or separation between the ground surface and apparent water table.	☐	☐	☐
c. Make no mechanical applications of manure to croplands or pastures where the Silurian bedrock soil depth is less than 5 feet until such fields are evaluated and ranked for risk of pathogen delivery to groundwater. Areas determined to have a high risk for pathogen delivery to ground water must be avoided or must be lowest priority for manure application.	☐	☐	☐
d. Make no mechanical applications of manure on soils with 5 feet or less to Silurian bedrock when soils are frozen, or snow covered.	☐	☐	☐
e. Do not headland stack manure on soils with 5 feet or less to Silurian bedrock when soils are frozen, or snow covered.	☐	☐	☐
f. Make no mechanical applications of manure on areas of cropland or pastures that have Silurian bedrock soil depths less than 5 feet when rainfall greater than one inch is forecasted within 24 hours of planned application. (Producers will utilize the Runoff Risk Advisory Forecast or other weather prediction forecasts to make decisions.)	☐	☐	☐
g. Make no mechanical applications of manure for soils with less than 2 feet to Silurian bedrock.	☐	☐	☐
h. Make no mechanical applications of manure to soils with 2 to 3 feet to Silurian bedrock unless all the following requirements referenced in NR151.075 (10) (a-d) below are met: https://docs.legis.wisconsin.gov/document/administrativecode/NR%20151.075(10)	☐	☐	☐
i. Make no mechanical applications of manure to soils with 3 to 5 feet to Silurian bedrock unless all the following requirements referenced in NR151.075 (11) (a-d) below are met: https://docs.legis.wisconsin.gov/document/administrativecode/NR%20151.075(11)	☐	☐	☐
j. Make no mechanical applications of liquid manure to soils with 5 to 20 feet to Silurian bedrock unless all the following requirements referenced in NR151.075 (12) (a-c) below are met: https://docs.legis.wisconsin.gov/document/administrativecode/NR%20151.075(12)	☐	☐	☐
k. Make no mechanical manure applications within 1,000 feet of a community water system or within 250 feet of a private water system or a non-community water system.	☐	☐	☐
l. Make no mechanical manure applications within 300 feet of a direct conduit to groundwater.	☐	☐	☐

	Yes	No	N/A
m. Make no mechanical manure applications within 100 feet of a concentrated flow channel that leads to a water system or direct conduit to groundwater.	☐	☐	☐
n. Mechanical manure applications are prohibited on or within 100 feet of Silurian bedrock in a closed depression unless the manure is injected or incorporated within 24 hours or prior to precipitation capable of producing runoff, whichever comes first. The prohibition of mechanical application of manure does not apply to areas following long term no-till practices or with a perennial or established crop.	☐	☐	☐
o. No surface application of manure on slopes of 6% or greater in cropland and pasture areas that have concentrated flow channels that drain to a closed depression in Silurian bedrock, unless the material is incorporated within 24 hours or prior to precipitation capable of producing runoff, whichever comes first. The prohibition of surface application of manure does not apply to areas following long term no-till practices or with a perennial or established crop.	☐	☐	☐
p. Practices must retain land applied manure on the soil where they are applied with minimal movement to maintain setback distances specified in checklist items k., l., m., and n.	☐	☐	☐

SIGNATURE

I certify that the plan represented by the answers on this checklist complies with Wisconsin's NRCS 2015-590 NM Standard or is otherwise noted.

Qualified NM planner signature (*NAICC-Certified Professional Crop Consultant, ASA-Certified Crop Adviser, or SSSA-Soil Scientist)* Date

Signature of qualified NM farmer-planner or authorized farm operator *(receiving and understanding the plan)* Date

Signature *(if reviewed for quality assurance)* Date

Acknowledgements

The following editors contributed to the formation of this workbook as a collaborative effort between UW-Madison Division of Extension Nutrient and Pest Management Program and the Crops and Soils Program, Wisconsin Department of Agriculture, Trade, and Consumer Protection (DATCP) Nutrient Management Program, and Land Conservation Departments of Columbia, Green Lake, Marathon, and Clark Counties. State funding for staff resources was provide by DATCP to develop this workbook.

- **Landon Baumgartner**, Southwest Regional Outreach Specialist, University of Wisconsin-Madison Division of Extension Nutrient and Pest Management Program
- **Dan Marzu**, North Central Regional Outreach Specialist, University of Wisconsin-Madison Division of Extension Nutrient and Pest Management Program
- **Jordan Kampa**, Southeast Wisconsin Regional Outreach Specialist, University of Wisconsin-Madison Division of Extension Nutrient and Pest Management Program
- **Chris Clark**, Northeast Regional Outreach Specialist, University of Wisconsin-Madison Division of Extension Nutrient and Pest Management Program.
- **Matt Bolen**, Northwest Regional Outreach Specialist, University of Wisconsin Madison Division of Extension Nutrient and Pest Management Program.
- **Daniel H Smith**, Nutrient and Pest Management Program Director, University of Wisconsin-Madison Division of Extension Nutrient and Pest Management Program
- **Andrea Topper**, Nutrient Management Outreach Specialist, Wisconsin Department of Agriculture, Trade, and Consumer Protection
- **Wrangler Jones**, Conservation Agronomist, Wisconsin Department of Agriculture, Trade, and Consumer Protection
- **Cody Calkins**, Nutrient Management Policy Specialist, Wisconsin Department of Agriculture, Trade, and Consumer Protection
- **Casey Bennet**, Agricultural Outreach Specialist, Columbia County Land and Water Conservation Department
- **Anastasia Wallner**, Land & Water Resource Management Technician, Columbia County Land and Water Conservation Department
- **Kurt Calkins**, Land and Water Conservation Director, Columbia County Land and Water Conservation Department
- **Todd Rietmann**, Land & Water Resource Management Senior Specialist, Columbia County Land and Water Conservation Department
- **Todd Morris**, County Conservationist, Green Lake County Land Conservation Department
- **Olivia Fischer**, Soil Conservationist, Green Lake County Land Conservation Department
- **Kirk Langfoss**, Conservation Analyst, Marathon County Conservation, Planning, and Zoning Dept.
- **Fred Subke**, County Conservationist, Clark County Land Conservation Department
- **Jesse Susa**, Agronomist, Clark County Land Conservation Department

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