

Submitting a 'High Quality' CAFO Nutrient Management Plan

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Why are we sharing this?

- Program Process Improvements
 - The program is working on ways to improve communication and coordination to reduce permitting timelines.
 - Common pinch points with 5-year NMP reviews:
 - Incomplete submittals
 - Incomplete plan narratives
 - Inadequate soil testing and manure analyses.
- We are actively engaging with stakeholders on some of these issues including agriculture industry associations such as WAPAC, farms, consultants, and counties.





Using this resource does not guarantee that additional information will not be requested by WDNR NM plan reviewers during CAFO NMP reviews

This presentation is intended to be a resource and reminder for permittees and consultants. It is not a checklist of items required in a 5-year plan. Please reach out to a DNR NMP reviewer if you have any questions when writing a NMP



Narrative



Narrative/Checklist

- NRCS 590 checklist
 - Checklist must be filled out and signed off by a certified NM planner in Wisconsin
 - Must be scanned in and submitted (not available as fillable form on ePermitting)
- DNR 3400-25B
 - Fillable form within ePermitting site
 - Form must be filled out to submit permit application
 - Make sure information on checklist matches NMP
 - Animal units and NMP acres are most common discrepancy

DEPT. OF NATURAL RESOURCES



Narrative

- WDNR Narrative Template is available online for download
 - Narrative Template includes information needed for narrative approval
- Items recommended in Narrative
 - Current and proposed Animal Units
 - Current and proposed manure generation

**Main Farm X Number of Animals**

Year	Herd Size (Milk+Dry+1000lbHeifer+600lbHeifer+Calf)	Total Animal Units
2010	800 (600+80+50+50+20)	1041
2011	800 (600+80+50+50+20)	1041
2012	1620 (1300+200+50+50+20)	2189
2013	1620 (1300+200+50+50+20)	2189
2014	2070 (1700+250+50+50+20)	2819

Satellite Farm X Number of Animals

Year	Herd Size (Milk+Dry+1000lbHeifer+600lbHeifer+Calf)	Total Animal Units
2010	500 (0+0+200+200+100)	360
2011	500 (0+0+200+200+100)	360
2012	1100 (0+0+450+450+200)	805
2013	1100 (0+0+450+450+200)	805
2014	1350 (0+0+550+550+250)	985

Note: Add additional tables for multiple satellite farms.

Total Number of Animals from All Sites

Year	Total Herd Size (Milk+Dry+1000lbHeifer+600lbHeifer+Calf)	Total Animal Units
2010	1300 (600+80+250+250+120)	1401
2011	1300 (600+80+250+250+120)	1401
2012	2720 (1300+200+500+500+220)	3024
2013	2720 (1300+200+500+500+220)	3024
2014	2000 (1700+250+600+600+270)	3804

Manure Liquids and Solids Volumes Generated for all Sites and Sources

Year	Total Liquids	Total Solids
2010	7,300,000 gallons	8,513 tons
2011	7,300,000 gallons	8,513 tons
2012	15,946,500 gallons	17,070 tons
2013	15,946,500 gallons	17,070 tons
2014	20,730,400 gallons	20,287 tons

Volumes of Other Nutrient Sources to be Land Applied

Liquid Waste Sources	Volume of Waste Collected	Solid Waste Sources	Total Amount
Feed Storage Leachate	550,000 gallons	Waste Feed	20 tons
Solid Storage Runoff	100,000 gallons		
Septic Waste – Joes Hauling	2,000,000 gallons		
Total Liquid Waste Sources	3,650,000 gallons	Total Solid Waste Sources	20 tons

Note: Add additional rows for other sources of waste generated or received by the operation.

Total Amount of Manure, Process Wastewater and Other Sources to be Land Applied

Year	Total Liquids created	Total Liquids applied	Total Solids created	Total Solids applied
2010	9,950,000 gallons	10,500,000 gallons	8,533 tons	9,000 tons
2011	9,950,000 gallons	11,000,000 gallons	8,533 tons	9,000 tons
2012	19,596,000 gallons	20,600,000 gallons	17,090 tons	18,000 tons
2013	19,596,500 gallons	20,600,000 gallons	17,090 tons	18,500 tons
2014	24,380,000 gallons	26,000,000 gallons	20,307 tons	20,500 tons



Narrative

- Items recommended in Narrative
 - Anticipated frequency and methods of application
 - Summary of how manure is managed (Season/s applications take place, equipment used, etc.)
 - Other methods of disposal or distribution
 - Are there any offsite wastes taken by the farm?
 - Is any manure/process wastewater being distributed by the farm?
 - Any special treatment of manure used by the farm?
 - Acreage included in the NMP
 - **Total acres in plan, total spreadable acres in plan, acreage owned by farm, and acreage rented/in manure agreements**
 - General manure/process wastewater application requirements (NR 243.14(2)(b)(1-13)&(c-f))



Narrative

- Nutrient Crediting requirements (NR 243.14(3))
 - Explains how farm will use soil nutrient levels, nutrient sources, 2nd year manure credits, and other nutrient credits to make decisions on manure/process wastewater applications
- SWQMA strategies to be used by the farm
 - Select all options (1-5) that the farm will use when applying within SWQMA's
 - Make sure these are selected in SNAP Plus
- Phosphorus Delivery Methods
 - P index or Soil Test P
 - If using SNAP+ you are using P index



Narrative

- Winter Spreading Sites
 - List of fields requesting approval for Winter Spreading of Solid manure AND Emergency winter spreading of Liquid Manure
 - Farm is required to have at least 2 fields approved for Emergency spreading of liquid manure

Identification of sites for winter (frozen or snow covered ground) spreading – NR 243.14(8)

Farm X does not plan to spread manure onto fields during winter (frozen or snow covered ground) conditions.

OR

Farm X plans to spread manure onto fields in NMP during winter (frozen or snow covered ground) conditions.

For compliance with NR 243.14(8) winter spreading sites requirement, fields **X-X** have been selected for winter application(s) if application(s) of liquid or solid manure become necessary. Fields **X-X** have been evaluated by **Farm X** to meet the NR 243 criteria in Tables 4 and 5 for manure and criteria in 214.17(2) and (6) for process



Narrative

- Manure Stacking Sites
 - **List of specific site names** that are requesting approval
 - Each stacking site must have a unique indicator for tracking and approval
- Days of storage and calculation associated with the number is not required with the NMP anymore
 - Storage calculation should be submitted with the engineering portion
 - DNR engineers now do a thorough days of storage review on each permit issuance/reissuance
 - Storage calculation must have the same manure/process wastewater generation volume as NMP
 - DNR spreadsheet OR compatible calculation



Narrative

- Plans and procedures for Manure Analysis
 - 2 samples per month when applying (liquid)
 - Quarterly (solid)
- Plans and procedures for equipment calibration
 - When? How often? Procedures of how its done
- Record keeping reports (what will be used?)
 - DNR forms 3200-123 (Annual Spreading Report) and 3200-123a (Daily Log) are recommended
 - If farm specific forms are used, they must be identified in Narrative and submitted for approval



Restriction Maps



Restriction Maps

- What sets of maps are needed?
 - Non-winter set
 - Winter set
 - Only needed for fields seeking approval for winter spreading of solid manure and/or emergency liquid application approval.
 - Headland Stacking
 - Can be included on other restriction maps OR stand alone
 - Need specific polygons drawn in to show location
 - Each site needs a specific indicator that matches list in Narrative
 - Verify site selection and criteria before submitting (Web Soil Survey, SNAP Maps, NRCS 313)
 - Additional sets recommended
 - Topography maps
 - Tile line maps



1. Waste Consistencies ^{Note 1}		
	> 32% Solids	16% to 32% Solids ^{Note 2}
2. Size & Stacking Period		
Stacking Period	8 months	8 months
Maximum Volume/Stack	≤ 40,000 cu ft.	≤ 15,000 cu ft.
Maximum Number of Stacks/40 acres ^{Note 3}	–	2
Frequency of Stacking Site Use	1 year out of 2	1 year out of 3
3. Hydrologic Soil Groups		
	B or C	B or C
4. Subsurface Separation Distance		
Subsurface Saturation	≥ 3 ft.	≥ 3 ft.
Bedrock	≥ 3 ft.	≥ 5 ft.
5. Surface Separation Distance		
Wells ^{Note 4}	≥ 250 ft.	≥ 250 ft.
Lakes	≥ 1,000 ft.	≥ 1,000 ft.
Sinkholes, or other Karst Features	≥ 1,000 ft.	≥ 1,000 ft.
Quarries	≥ 1,000 ft.	≥ 1,000 ft.
Streams	≥ 300 ft.	≥ 500 ft.
Wetlands and Surface Inlets	≥ 300 ft.	≥ 500 ft.
Areas of Concentrated Flow	≥ 100 ft.	≥ 300 ft.
Land Slope Down Gradient of Stack	≤ 6%	≤ 3%
Floodplain	≥ 100 ft.	≥ 300 ft.
Tile lines	≥ 40 ft.	≥ 40 ft.



Restriction Maps

- Content required
 - Private wells (100ft setback; 300ft for winter)
 - Community wells (1,000ft setback)
 - Sub-soil restrictions
 - 'w' soils- <24 inches to groundwater
 - 'r' soils- <24 inches to bedrock
 - Fall N restricted soils (<5ft to bedrock, P, W, R)
 - Direct Conduits to GW (100ft setback; 300ft for winter)
 - Wells, sinkholes, swallets, fractured BR at surface, mine shafts, non-metallic mines, tile inlets that discharge to GW quarries, and depressional GW recharge areas over shallow fractured bedrock
 - Additional requirements for Silurian TPS fields



Restriction Maps

- SWQMA Areas
 - 300ft around perennial river/streams AND intermittent streams
 - 300ft around conduits to navigable water
 - Ditches, concentrated flow channels, sinkholes, ag well heads, tile intakes, vent pipes, and grass waterways; that lead to a navigable water
 - 1000ft around lakes/ponds
 - Farm ponds/bermed ponds still require 1000ft setback
 - SNAP Maps has an option to turn off 1000ft SWQMA's for falsely mapped areas
- Wetlands
 - DNR wetland layer turned on
 - 25ft setback (200ft setback in winter)



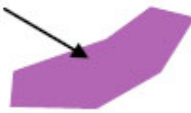
Restriction Maps

- Concentrated Flow Channels (no applications within channel, 200ft setback for winter)
 - Flow channels within the field
 - Grass Waterways
 - Road Ditches
 - Road ditches ARE concentrated flow channels
- Flow Channels that are Conduits to Navigable water
 - Flow channels that lead to a navigable water require a SWQMA designation of 300ft
 - This includes road ditches that lead to navigable water

**CAFO Surface Water
Quality Management
Area (SWQMA) Diagram**

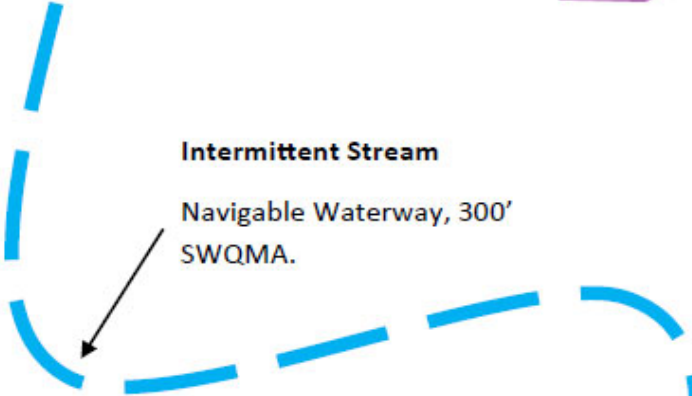
Wetland, Not Farmed

No direct manure application.
25' setback.



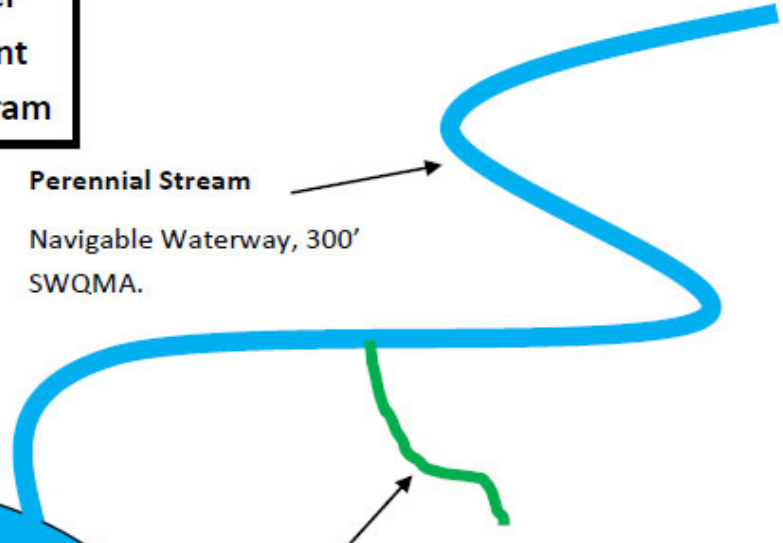
Intermittent Stream

Navigable Waterway, 300'
SWQMA.

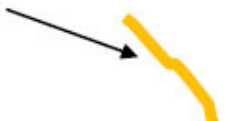


Perennial Stream

Navigable Waterway, 300'
SWQMA.

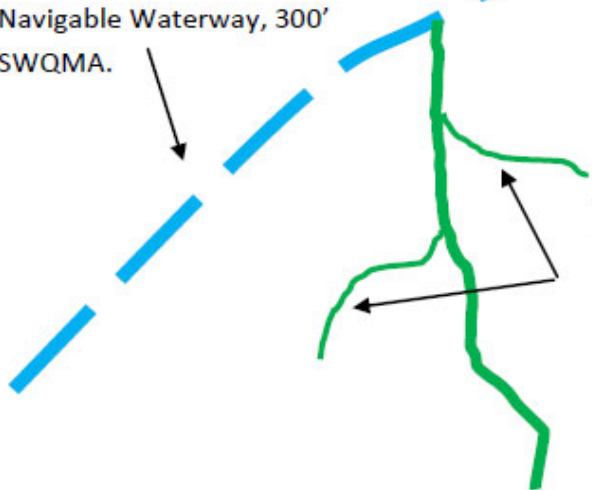


Gullies (directly connected to a navigable waterway).
Concentrated Flow Channel and Conduit to Navigable
Waterway, 300' SWQMA. Reoccurring gullies require
perennial vegetation.

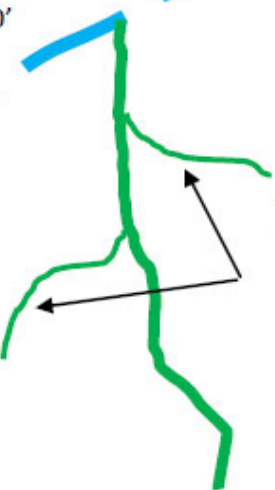


Intermittent Stream, Ditched

Navigable Waterway, 300'
SWQMA.



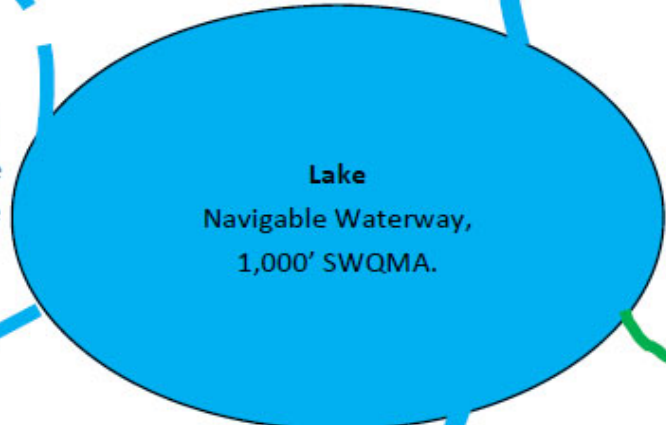
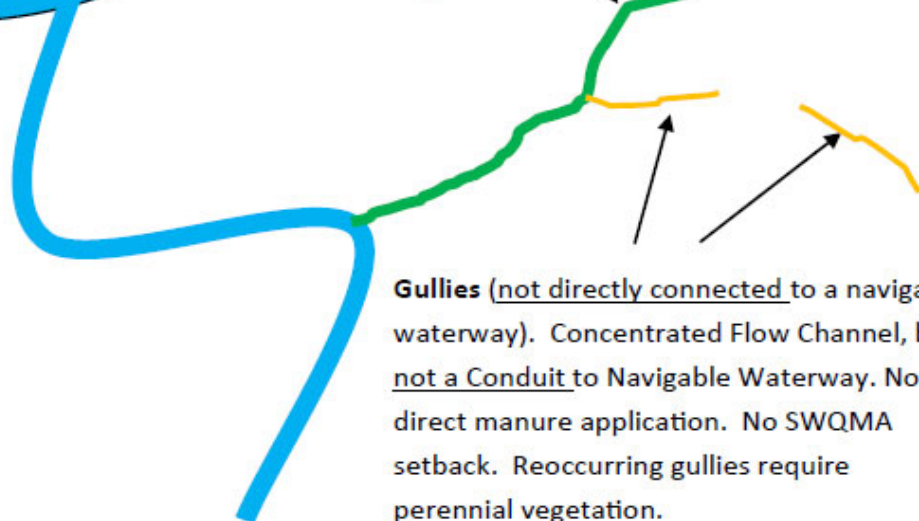
Grassed Waterways (not directly
connected to a navigable
waterway). Concentrated Flow
Channel, but not a Conduit to
Navigable Waterway. No direct
manure application. No SWQMA
setback.



Grassed Waterways (directly connected to a
navigable waterway). Concentrated Flow Channel
and Conduit to Navigable Waterway, 300' SWQMA.



Gullies (not directly connected to a navigable
waterway). Concentrated Flow Channel, but
not a Conduit to Navigable Waterway. No
direct manure application. No SWQMA
setback. Reoccurring gullies require
perennial vegetation.



Lake
Navigable Waterway,
1,000' SWQMA.



Reports



Reports

- Required SNAP+ reports (or equivalent)
 - Compliance Check Report (all permit years)
 - 590 Assessment Report (full rotation)
 - CAFO Nutrient Mass Balance Report (all permit years)
 - Spreading and NM Sorted by Crop Report (all permit years)
 - Crop Trends Report (all permit years)
 - Soil Test Summary Report
- Other Reports
 - Manure Analysis Results (if using averages, show how averages were calculated)



Reports-Common Issues

- Compliance Check Report
 - Ensure all permit years included (all years in crop rotation if different)
 - Planned overapplications are not permitted
 - Correct SWQMA options not selected can lead to many compliance messages
- 590 Assessment Report
 - Fields must meet 'T' and PI
 - Fields over 100ppm must meet rotational drawdown of P
 - Full field rotation must be included (**not just permit term**)
 - If alfalfa is in the rotation, a seeding year must be included



Field	Rotation	Tillage	Report Period	Field "T" t/ac	Rot Avg Soil Loss t/ac	SCI	Rot Avg PI	Soil Test P ppm	Rot P205 Bal lb/ac	P205 Bal Target lb/ac
	Cg-Sg7-Cg-Sg7-Cg-Sg7-Sg7-Cg	NT-NT-NT-NT-NT-NT	2014-2021	3	0.4	0.8	1	47	-233	-
	Prg-Prg-Prg-Prg	None-None-None-None	2016-2019	2	0	2.0	1	12	82	-
	Prg-Prg-Prg-Prg	None-None-None-None	2016-2019	1	0	1.9	1	14	-100	-
	Prg-Prg-Prg-Prg	None-None-None-None	2016-2019	3	0	2.0	1	49	82	-
	Prg-Prg-CsH[Rwf-Cs30]	None-None-NT-NT	2016-2019	3	0.6	1.2	2	115	-220	-195
	Prg-Prg-CsH[Rwf-Cs30]	None-None-NT-NT	2016-2019	3	0.3	1.3	1	76	-2	0



Reports- Common Issues

- Manure Analysis Reports
 - Lab analysis reports are recommended to be submitted based on permit requirements
 - Two samples per month when spreading
 - Liquid AND Solid analysis required
 - Results should match nutrient content for manure/process wastewater that are in the NMP
 - If using averages for planning, submit calculations or procedures on how they are calculated
 - Excel spreadsheets are often submitted showing each year's sample results and then the running average.
 - Helpful if sources on the analysis match source names in NMP
 - This makes it easier to verify nutrient content in the NMP



Reports- Common Issues

- Soil Test Summary Report
 - We only need the short version (most recent soil tests)
 - If lab name and lab number cannot be displayed on report; actual sample results must be provided
 - If soil samples are out of date or do not meet density requirement, soil test phosphorus must be set at 101ppm P for manure planning
 - 101ppm P insures a 50% drawdown over a rotation
 - If 101ppm P is not used, manure CANNOT be planned on that field
 - Fields will be prohibited in the NMP approval
 - Must provide updated soil tests to the department before applications take place
 - Ensure soil tests are up to date. The department may be re-evaluating this policy in the future.
 - Test density is 1 test/ 5acres.



Misc. Items

- Annual NMP Updates (Due March 31st)
 - Should include most of the information that is submitted with 5-year plan but updated
 - Update Narrative
 - Update actual applications
 - Make adjustments based off of applications
 - Include same reports but updated
 - Annual spreading report is required in Excel format
- Gathering information on fields in CAFO and 590 NMP's
 - Applications, crops, tillage, soil tests, etc. must be gathered and added to the CAFO NMP



CAFO 5-year NMP Checklist

- 5-year NMP Checklist
 - Tool for CAFO facilities and their crop consultants to assist with development of a complete 5-year Nutrient Management Plan (NMP).
 - Will support a more efficient review process.
 - The checklist is broken into 8 sections with information on what to submit for that section and tips/reminders about formatting, labeling, and other recommendations.
 - Does not have to be submitted to DNR
 - Can be found on CAFO Nutrient Management DNR website

5-YEAR NMP SUBMITTAL CHECKLIST

Yes No N/A

1. NMP Checklists			
a. NRCS 590 Checklist: Signed by certified nutrient management planner in Wisconsin; Scan in to sharepoint (not available as fillable form)			
b. DNR Form 3400-25B: Fillable form in sharepoint; Ensure form information is consistent with information within the rest of NMP			
2. NMP Narrative (Narrative template available HERE)			
a. Expected numbers of animal units currently on site, at end of first year of permit term AND through the permit term			
b. Expected amounts and types of manure/process wastewater produced currently AND through the permit term			
c. Amount of manure/process wastewater to be land applied through the permit term			
d. Anticipated frequency and methods of application: Seasons applications take place, equipment used, etc.			
e. Other methods of disposal or distribution: Offsite waste collection, distributed manure/process wastewater, special treatment of manure, etc.			
f. Acreage included in the NMP: Total acres, spreadable acres, acreage owned, acreage rented/in agreements; Do acres match 3400-25b and 590 checklist?			
g. General manure/process wastewater application requirements: NR 243.14(2)(b)(1-13)&(c-f)			
h. Nutrient crediting requirements: NR 243.14(3); Requirements from code listed			
i. SWQMA strategies to be used by the farm: Option 1-5; NR 243.14(4)			
j. Phosphorus management method used: P index or Soil Test P			
k. Winter spreading sites listed by field name: Winter spreading of solid manure AND/OR emergency winter spreading of liquid manure: At least 2			

<https://dnr.wisconsin.gov/topic/CAFO/NutrientManagementPlan.html>



Contact Information

- CAFO NMP Questions
 - Aaron O'Rourke- CAFO Nutrient Management Coordinator
(Aaron.Orourke@Wisconsin.gov)
 - 715-214-5503
 - Ashley Scheel- CAFO NMP Reviewer
(Ashley.Scheel@Wisconsin.gov)
 - 608-212-8460
- CAFO Permit Intake/Substantial Revision/ePermitting questions
 - Falon French- CAFO Intake Specialist
 - (Falon.French@Wisconsin.gov)
 - 608-228-5265



Questions??