SnapPlus

Wisconsin's Nutrient Management Software

Advanced Concepts

Reviewing a SnapPlus Nutrient Management Plan for Compliance

Using the information found in your SnapPlus farm and restriction maps, answer the following questions, making comments as necessary—especially those specific to any compliance issues with the 590 Nutrient Management Standard.

Numbers shown in parentheses at the end of some questions refer to additional information shown in the table on pages 4 & 5 (in the interactive PDF, you can access the note by rolling over the button to the left of the question). Abbreviations in the parentheses can also refer to SnapPlus reports that may be helpful in answering those questions (report abbreviations are shown on page 5).

General Plan Information			
1. Review date:			
2. Reviewed by:			
3. Reviewed in SnapPlus Version:			
4. Farm name:			
5. County:			
6. Farm contact:			
7. Plan written by **(1)** :			
8. Plan writer contact:			
	Y	**N**	**NA**
9. Complete checklist included **(2)**?			
10. Electronic SnapPlus file received?			
11. Is there a schedule of compliance for any known non-compliance issues **(3)**?			
12. If yes, explain:			

Reviewer's Overall Comments

The purpose of the following section is to understand the farm and how they manage their resources. This section can be skipped if you are already familiar with how the farm operates.

13. Type of farm and current animal numbers **(4)** :
14. Typical crop rotations **(5)** :
15. Type of fertilizers & typical rates **(6)** :
16. Type of manure, percent collected and hauling methods **(7)** **(8)** :
17. Manure hauling seasons **(8)** (check all that apply) : No manure Daily Fall Winter Spring Summer Other:

Farm name: **Review date:**

Maps	Y	N	NA	Comments
18. Are nutrient restriction & soil maps included? If **No**, a thorough review cannot be completed until these are included.				
19. Are the following restriction features correctly identified on the restriction maps **(9)**:				
a. Surface water/SWQMAs				
b. Wells (private and community)				
c. N restricted soils				
d. Slopes with winter spreading restrictions				
e. Direct conduits to groundwater (wells, sinkholes, fractured bedrock at the surface, tile inlets, nonmetallic mines)				
f. Concentrated flow channels (vegetated or cropped through)				
g. Non-harvested permanent vegetative buffers				
h. Fields exceeding "T"				
i. Non-farmed wetlands				
j. Land where vegetation is not being removed (e.g. CRP land)				
k. Local winter prohibitions				
l. Area within 50 ft of a drinking water well				

Soil Sampling	Y	N	Comments
20. Were soil tests processed by a DATCP-certified lab **(10)**?			
21. Are all fields within1 soil sample per 5 acres **(11)** ?			
22. Are soil tests less than 4 years old **(NM2)**?			

Field Information	Y	N	NA	Comments
23. Are rotations complete **(12)**?				
24. Are all fields in SnapPlus also shown on the restriction maps and soil maps with consistent acreages **(13)**?				
25. Are the correct dominant and predominant critical soils chosen **(14)**?				
26. Have the following been correctly chosen for each field in SnapPlus **(15)**:				
a. SWQMA present				
b. Drinking well within 50 feet				
c. N soils present				
d. Winter slope restrictions				
e. Local winter prohibitions				
f. Conduits to groundwater within 200 ft				
g. Field slope				
h. Slope length				
i. Below field slope to water				
j. Distance to perennial water				
27. Do future years use realistic yield goals **(16)**?				
28. Is the current state of concentrated flow channels shown on the maps or discussed in the narrative **(17)**?				
29. Have all past years been updated with actual crops, yields, manure applications, fertilizer applications, tillages, legume credits and rotation lengths **(18)**?				
30. Do all fields meet "T" **(19)**?				

Farm name: **Review date:**

Manure	Y	N	NA	Comments
31. Is all manure allocated over the rotation **(20)**?				
32. Are calibrated manure spreader rates being used in the plan **(21)**?				
33. Are manure application seasons (spring, summer, fall, winter) in the plan consistent with the farm's actual manure hauling timeline **(22)**?				
34. Are manure applications correctly applied around wells **(23)**?				
35. If fields contain N restricted soils and receive manure applications in the summer/fall is at least one of the following strategies identified to minimize N losses **(24)** **if the soil is over 50°:** 1) Nitrification inhibitor with liquid manure and a maximum N rate of 120 lbs of N/acre 2) Applications of manure occurred after Sept 15 and a maximum N rate of 90 lbs/acre 3) Fields with perennial crops or fall-seeded crops & a maximum N application rate of 120 lbs/acre or the crop N requirements, whichever is less **OR if the soil is less than 50°:** Fields will receive less than 120 lbs/acre or the following year's crop requirement, whichever is less				
36. Are appropriate conservation practices applied when manure is applied in spring, summer or fall in SWQMA areas (stabilized vegetative buffers, 30% or more residue, nutrients are incorporated within 72 hours, cover crop applied) **(NM2)**?				
37. Are surface applications of liquid manure in SWQMAs planned according to Table 1 of the 590 Standard **(NM2)**?				
38. Will any of the fields receive manure applications in the winter **(25)**?				
a. **If Yes,** are fields free of prohibitions due to slope, SWQMA, or drainage **(26)**?				
b. **If Yes,** do fields receiving winter applications of manure limit application rates to the P removal of the following growing season's crop or 7,000 gal/acre?				

Nitrogen	Y	N	NA	Comments
39. Is all N fertilizer allocated for the planned crop year **(FM8) (27)**?				
40. Is N applied without over-application **(28)**? Over-applications based on a soil (pre-sidedress, PSNT) or a tissue test showing a deficiency may be allowed **(29)**.				
41. Are appropriate legume credits being applied **(30)**?				
42. Are N applications on N restricted soils in the summer/fall limited to 30 lbs N/acre to establish fall-seeded crops **(NM2)**?				
43. If fields containing N restricted soils are being irrigated, is a strategy identified to minimize N loses: Split or delay N application until after crop establishment OR use of a nitrification inhibitor **(31)**?				

Phosphorus	Y	N	NA	Comments
44. Is all P fertilizer allocated over the rotation **(FM2) (32)**?				
45. Does the plan indicate a P strategy across the farm (soil test P or PI) **(NM2)**?				
46. Is P applied without over applications based on the strategy chosen **(33)**?				

Note #	Reference
1	Farmers can sign off on their own plan if they receive training every 4 years. Note that not all CCA's are listed on the CCA website but all certifications can be verified through the certifier. All allowable credentials can be found in ATCP 50.48.
2	Verify that all information on the checklist is filled out and complete. Note if the plan is an initial plan (and therefore all years of the rotation are future), or if the plan is an update and some of the crop years are actual.
3	NM1, NM2 or information received from the plan writer, farmer or county during conversations. Known non-compliance issues should include a schedule to come into compliance.
4	Dairy, Grain, Grazing, CAFO, etc. Figuring out the type of farm you are reviewing will frame the rest of the questions. If the farm has no manure, skip the manure section on page 3. Use NM4,NM1 or Narrative for animal numbers.
5	NM3. Review the report and Narrative to understand general rotations, tillages,etc. the farm uses. Note that eventually all years of the rotation are actual with only the current year planned or unknown (therefore it's important to know if the plan is an update and when it was started).
6	NM1, FM8, NM5. Note FM8 can be opened in Excel and sorted by fertilizer to easily see the groupings and if applications seem to be missing leave open to use later in the N & P sections.
7	NM4 shows percent of manure collected, if not 100% it should be explained where the rest is going. The estimated manure calculator should only be used in the initial plan, after that actual manure numbers should be known (from the annually updated plan with manure logs from calibrated spreaders). Grazing manure and pastures need to be included if >1 AU/acre (effective 2016) or if the pasture receives any mechanical applications (effective 2005).
8	NM1, NM4, FM8
9	These restricted features should be identified: Surface water/SWQMAs Wells N restricted soils Slopes with winter spreading restrictions Direct conduits to groundwater These features should be identified as prohibited: Concentrated flow channels Non-harvested permanent vegetative buffers Fields exceeding "T" Non-farmed wetlands Land where vegetation is not being removed Local winter prohibitions Area within 50 ft of a drinking water well If the plan uses Manure Management Advisory System maps, then only the layers that are turned on will show up in the legend when the map is printed (this way you can see if the features are not present or are simply not turned on). If the plan uses SnapMaps, all layers display in the legend. Note that direct conduits to groundwater, including wells, need to be added manually to the MMAS maps. Direct conduits to groundwater should be marked in the restriction feature box on the field screen (or NM3) as being present and the area 200 feet upslope of these features should not receive manure applications in the winter and non-winter applications should be incorporated. All direct conduits (including wells) need to be identified, regardless of ownership. If the plan uses SnapMaps, then verify on the SnapMap Field and Restriction tabs that features have been imported back to the SnapPlus Field's page.

Reference notes are intended to provide additional information but are not considered exhaustive; if you need more information or clarification, please contact Stephanie Schneider, Stephanie.schneider@wi.gov

Note #	Reference
10	DATCP certified labs: A & L Great Lakes Laboratories (Fort Wayne, IN), AgSource Soil & Forage Lab (Bonduel, WI), Dairyland Laboratories (Arcadia, WI), Rock River Laboratory (Watertown, WI), UW Soil & Forage Lab (Marshfield, WI).
11	NM2. Verify that the original soil test reports correlate to the sampled field only (note that fields managed the same (e.g. strips) can be grouped to meet the 5 acre maximum but still need to be less than 5 acres per sample; also note, that field names and acreages may not correlate exactly to the information on the soil test report). A quick check can be done by opening FM6 in Excel and then sorting by P or K levels to verify that tests are unique. If pastures do not receive mechanical applications of nutrients and are stocked at >1 AU/ac then soil tests can be assumed to be at 150 ppm P and 6% OM. Note that non-responsive fields can have more than 5 acres per sample, see A2809 for specifics.
12	NM3. Rotations can be 1 year if it is a continuous crop with the same tillage, though it's recommended to use a min of 4 years to capture the time between soil testing and manure applications. Rotations can't exceed a max of 8 years. Check that seeding years are captured for perennial crops. It's important to know if the plan was an update or an initial plan in order to check that the rotations are set to start in the appropriate year (for rotations longer than 1 year the rotation eventually is all historical except the current planned year, in other words, the rotation window should not re-start every year with the current planning year the first year of the rotation).
13	Tip: print NM3 from Excel with Field Name, Acreage, Critical Soil, N/Fld Res, Contour (if have any), Rotation, Tillage, Report Period; then check these off on the paper report as you verify the information in SnapPlus and on the maps. Verify that field sizes in SnapPlus and on the maps are consistent, as well as the checklist acreage total and the SnapPlus acreage total (NM3). Also, verify that pastures are included (do not need to be included if stocked at an average rate of ≤1 AU/ac during the grazing season AND does not receive mechanical nutrient applications). Note that Farmland Preservation participants have until 2016 to comply with the new pasture requirements.
14	NM5, FM9 show predominant soil; NM3 shows dominant critical soil; compare these to the Soils Map. Tip: Use the printed report from Note 13.
15	Run NM3 ("N/Fld Res" column) and compare to maps. This question is verifying that the information on the maps is correctly entered into SnapPlus. Field slope and slope length should be left at the default unless in-field measurements have been taken. Tip: Use the printed report from Note 13. If the plan uses SnapMaps, verify on the SnapMap Field and Restriction tabs that the necessary features have been imported back to the SnapPlus Field's page (if data is bold and italicized, then it has not been imported yet).
16	NM5, 3-5 year yield average for the farm or county plus 15% is allowable.
17	NM1 or check air photos/maps. Fields containing active gully erosion are assumed to be over T and cannot receive nutrients until after they are established in perennial vegetation.
18	If the SnapPlus database is not submitted, NM5 will need to be submitted for every year of the rotation. If it is not otherwise indicated, actual hauling logs, or other documentation, can be used to verify the SnapPlus info has been updated.

Note #	Reference
19	NM3 or NM2. Soil loss can only be checked if the above questions have been answered and are correct (rotations, tillages, soil types). If any of the components that feed into soil loss are incorrect they will need to be changed in the database, or, if you don't have the database, the planner will need to fix and resubmit. See Note 12 regarding rotation settings.
20	NM4. All manure needs to be allocated before a complete review can be done. This includes manure deposited by grazing. The manure estimator should only be used for the first year of the plan, after which the farm will have manure spreading logs and a calibrated spreader which will give a more accurate number for the farm to use when planning. If manure amounts were estimated verify the correct animal sizes were used
21	NM4 shows calibration notes that have been entered into SnapPlus, but the information may also be in NM1 or in supplemental documentation. It's important to know the minimum spreading rate and increments for the liquid manure hauling equipment. Compare FM8 or NM5 to the calibration information provided. Verify that rates less than the minimum achievable are not being used or over-applications will be unavoidable.
22	FM8 shows total amounts by season, this will need to be run for each year of the rotation and should be in-line with the General Farm Information section on pg 1. Tip: Open the report in excel to more efficiently manage the data.
23	The area 50 feet around a drinking water well is prohibited from manure applications. The area 50 feet to 200 feet upslope from a well requires incorporation within 72 hours or is also considered prohibited for surface applications of manure.
24	Maps or NM3 will show the fields that contain N soils (previously verified these were identified in SnapPlus correctly), FM8 will show the fields that received manure and when the applications occurred, as will spreading logs. Information regarding the temperature and use of a nitrification inhibitor with actual applications may be in supplemental documentation outside of SnapPlus. NM2 will show N exceedances.

Note #	Reference
25	NM2 will show any winter overapplications of nutrients. FM8 will show the fields that had manure applied to them in the winter. If all the fields are farmed on the contour then the 9-12% slopes (pink on the MMAS maps) can be turned off. Note if the farm is not winter spreading the 590 checklist should have "NA" marked under 1.d and 1.e.
26	Examples of drainage that would prohibit winter manure applications include: areas delineated in a conservation plan as contributing nutrients to direct conduits to groundwater or surface water, drainage to Outstanding/Exceptional/nutrient impaired water bodies.
27	All sources of N fertilizer (including manure if applicable) need to be applied for the crop year before question 40 can be accurately determined.
28	NM2; see the Help menu in SnapPlus for a more detailed explanation of N flags: The Cropping Screen>Restriction Flagging>Identifying Excessive Nitrogen Applications
29	FM3 shows Legume Credits. Run previous year's NM5 to see yields.
30	Should be explained in the comments NM2 and lab analyses should be included with the plan.
31	NM3 shows fields marked as "Irrigated", FM8 will show if and when manure applications are being made to those fields.
32	All sources of P fertilizer (including manure if applicable) need to be applied over the rotation before question 46 can be accurately determined.
33	NM2 or NM3 shows PI and soil test P targets and balances. PI Strategy: The planned average PI values for up to an 8-year rotation in each field shall be 6 or lower and may not exceed a PI of 12 in any individual year. Soil test P: 50-100 ppm soil test P: P application shall not exceed the total crop P removal for crops to be grown over a maximum rotation length of 8 years; >100 ppm soil test P: eliminate P applications, if possible, unless required by the highest P demanding crop in the rotation. If applications are necessary, applications shall be 25% less than the cumulative annual crop removal over a maximum rotation length of 8 years.

Report Abbreviations Used in Note's References

NM1: Narrative & Crops Report (this would also refer to a separate standalone narrative outside of SnapPlus)

NM2: Compliance Check

NM3: Field Data & 590 Assessment

NM4: Manure Tracking

NM5: Spreading & NM Sorted By Crop

NM6: DNR CAFO Annual Spreading

NM7: Animal Units

NM8: DNR Daily Log

NM9: DNR CAFO Nutrient Mass Balance

NM10: CAFO Emergency Spreading

FM1: Annual Manure Production

FM2: Applications Summary

FM3: Producers Plan

FM4: Crop Production Trends

FM5: Lime Report

FM6: Soil Test Summary

FM7: Soil Test – Sample Log

FM8: $Spreading Plan

FM9: Nutrient Management Plan

FM10: Annual PI

SL1: Soil Conservation

SL2: Annual Soil Loss

SL3: Transect Survey

WQ1: P Trade

DD1: Annual Cropping Data

DD2: Applications Data

DD3: Precision Recommendations