



# Standards Oversight Council (SOC)

Supporting Technical Standards for Urban and Rural Soil and Water Conservation

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702 E. Johnson Street, Madison, Wisconsin 53703  
(608) 441-2677 || Fax (608) 441-2676 || [soc@wlwca.org](mailto:soc@wlwca.org) || [socwisconsin.org](http://socwisconsin.org)

## 590 Nutrient Management Standard Team

### DRAFT MEETING NOTES

Wednesday, July 17, 2013 || 9:00am – 3:00pm

Attendees: Sue Porter, Laura Chern, Andrew Craig, Carrie Laboski, John Koepke, Terry Kelly, Kevin Masarik, Pat Murphy, Todd Schaumberg, Tony Smith, Gini Knight, Nikki Wagner

#### Updates

The team has been encouraged to work with dairy nutritionists to find middle ground on nitrogen management. Dairy scientists are maximizing N efficiency in the cow, which may not result in the best field practices for reducing the risk for N loss. Tom Kilcer, from Advanced Ag Systems, provides a good balance of agronomic and environmental perspective in newsletters. <http://advancedagsys.com/newsletters/>

NRCS met with WAPAC recently, and will be having a listening session with NRCS State Technical Committee meeting tomorrow regarding nutrient management. They also will be meeting with Cattleman's Association and DBA to continue discussions with other stakeholders on nutrient management.

Since it is more challenging for farmers to attend all of the meetings, the team may consider inviting another farmer to the team to make sure that at least one of them can be present at the meetings. Gini will share the list of other team applicants to consider using their expertise/feedback or possibly invite another farmer to participate on the team.

#### Review the Leaching Index in RUSLE 2 (Terry)

Terry presented a review of the LI in RUSLE2 discussion from last meeting. Terry spoke with NRCS National Agronomist regarding RUSLE2 to clarify some questions. He stated that RUSLE2 provides a very crude method of assessing potential for N leaching. He suggested that the LI should take other factors into consideration, such as N management practices.

Terry also talked to research scientist, Jorge Delgado, and discussed the Nitrogen Index 4.4 tool, initially developed in South America and used in several states in the U.S. If this tool is broadly defensible scientifically, it could have value. The current list of N restricted soils is okay for now. If this model brings a qualitative assessment of management risk, it could provide more meaningful information. The team doesn't think that this will replace DATCP's list of N-restricted soils, but maybe it could complement the list and provide us a qualitative data that includes management practices.

How do we know Delgado's Nitrogen Index 4.4 results and predictions are accurate? Management options can be most effective when we ensure the farmers understand what they are losing. Farmers can compare how much N they put on, and then how much N that they lose? That is a means to change, when it's clear how much they are losing.

NRCS request an estimate of costs for calibrating Delgado's Nitrogen Index model to Wisconsin and for long-term, on-going maintenance. NRCS will ask colleagues in other states using the model about any

criticisms, experiences, or recommendations with this tool. If updates are available, we will include a 30-minute briefing from NRCS at the next meeting.

N-Watch was discussed. Howard Brown, with Growmark, was contacted about the availability of triple super phosphate. He is already working to encourage more efficient N use. Here's his presentation on N-watch: [https://www.youtube.com/watch?v=g\\_Xf8LiYmFg](https://www.youtube.com/watch?v=g_Xf8LiYmFg). Howard is talking with manufacturers (per Sue's request) about reinstating the production of TSP, which is no longer produced in the U.S.

### **Adapt N Review**

An overview of Adapt N was provided. The tool has value, although it was recommended that it should have more research and validation with other partners before being used and referenced in the standard. Some CCAs have been excited about the model and used it, although now feel that it is too time consuming and is no longer popular. It could be useful in the future.

### **N Management BMP Table for Groundwater**

The team reviewed the draft BMP table for minimizing N loss to ground water, which was created by NRCS. The table is intended to provide a visual of practices to use based on resource concerns and the form of N applied. DNR staff provided comments on the draft practice table before the meeting. The discussion was based on this draft table and the comments provided. The team was not able to review/discuss all of DNR comments on the draft table regarding manure applications on P, R and W soils and also well setbacks and 5 year contribution zones.

The team began to make edits to draft practices for highly permeable-irrigated soils that have commercial fertilizers and manure applications. The three big management practices for nitrogen management have to do with 1) the form of N applied, 2) split applications, and 3) irrigation management. One management practice is utilizing N inhibitors with ammonium forms of N. The team agreed that the performance of N inhibitors is highly variable. The standard will state that more information on nitrification inhibitors will be found in the Tech Note, which will include references to literature, conference proceedings, etc that indicate the success of various N inhibitors instead of including a list of recommended N inhibitors. Neither NRCS nor DATCP maintain a list of recommended N inhibitors. The market will select for the successful products.

Utilizing slow release fertilizers is another management option. Carrie will consider available data and recommend some language for utilizing slow and controlled release fertilizers.

DNR recommended including the practice of using irrigation water management measures to control leaching of N to groundwater and collecting samples of irrigation water, analyzing for NO<sub>3</sub> content, and then crediting N where concentrations of NO<sub>3</sub> exceed 10ppm. Currently, there isn't sufficient data on nitrogen in irrigation water to properly credit N. UW recommendations include irrigation water, and therefore the amounts should be included in recommendations for irrigated soils and non-irrigated soils. If the data isn't available, could this be an opportunity to collect samples and estimate nitrates that exist in groundwater? Lower nitrate rates of 10ppm (18.1lbs of N per acre with 8" of recharge) are not of too much concern, but if the rates were 30ppm, then farmers could be spreading 50-90lbs of N depending on the amount of recharge. Carrie will search through research to see what else is available for data regarding nitrates in irrigation water.

Practicality is clearly an important consideration. If a farmer irrigated several times and used all of the Nitrogen they are allowed to use, then would they not be allowed to irrigate their fields because of the additional N in the

irrigated water? Or if it is a wet year and farmers do not need irrigation, do they short their crop that amount of N credited in the irrigation water?

The team reviewed and drafted new language for *B. Criteria to Minimize Entry of Nutrients to Groundwater* in the standard based the discussions above and the draft table. The team has not completed this discussion on nitrogen management, just began to debate the issues and suggest revisions to the standard. The team will continue the N management discussion and will continue to review the draft table of BMP practices at the next meeting.

Additional reports/articles regarding nitrates in groundwater from Laura:

[Addressing Nitrates in California's Drinking Water](#)

### **Review Soil Test Recommendation Revisions.**

The team reviewed the clarifications of soil testing intensity and approved the changes. In A2809, the suggested number of samples collected in a field is 1 sample per 5 acres. Ideally the sampling intensity should round to 5 acres per sample. The number of samples to collect could be calculated by dividing the field size by 5 acres/sample and rounding to the nearest sample. Grid point sampling should never have a sampling intensity >5 acres per sample. Ideally grid sizes are no more than 1 to 2 acres. The clarifications have been updated in the new version of SNAP Plus.

Soil sampling frequency will be discussed at another meeting.

### **Manure Analysis - Ammonium N**

Carrie spoke with John Peters, Director of UW Soil Testing Labs. Based on his analysis of the Manure Analysis Proficiency Program (MAP) results, he feels that NH<sub>4</sub> test is pretty good. The MN Dept of Ag certifies labs through MAP. The higher the liquid content of the manure, the more ammonium N it will have. There were questions about how critical the handling of the manure was in determining the amount of ammonium N at the time of application.

**Next Meetings:** Meeting dates with draft agenda items.

**Aug 21 at** Community Center or Town Hall near Koepke Farms. There will be a farm tour during lunch, maybe 1 hr to 1.5 hrs.

- Koepke farm is mainly a no-till operation that has to manage around multiple private wellheads. Reminder to bring restriction maps to refer to during tour/discussion. (Sue to bring maps)
- N Management continued...
- Tile Drainage, Potential for transport of nutrients to tile
- Soil sampling frequency
- Manure Land Base Estimate (Plans & Specs) – strategy if farm doesn't have adequate land base to spread manure produced on farm (*table to another meeting?*)