FRESHWATER SOCIETY

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Freshwater Society is a non-profit organization dedicated to educating and inspiring people to value, conserve and protect all freshwater resources.

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RE: Comments on Nitrogen Fertilizer Rule Draft Language

While we recognize that nitrogen is a critical input for agricultural productivity, it is also a potent pollutant in the water environment. Significant private investment is made in the former, but significant state investment is required to address the environmental degradation from excess nitrogen in water.

This rule prioritizes the agricultural producer and jeopardizes the state's groundwater resource by setting a low threshold on what is "practically [achievable]" under the non-degradation goal of the Groundwater Protection Act of 1989.

In areas where groundwater has been and continues to be contaminated by nitrate, voluntary adoption of best management practices [BMPs] alone will not be sufficient to reverse or even stabilize the trends. We therefore need to move beyond nitrogen-use efficiency and BMPs focusing exclusively on farm economics to address the broader social and environmental costs of nitrate leaching. This rule should promote cost equity and fairness for farmers and for the communities with whom they share water resources.

Fundamentally the problem is this – the water resource protection requirements enforceable under Section 1537.0080 of this rule:

1. are not enforceable until the groundwater is already contaminated and degraded by nitrate at levels high enough where costs are borne by water consumers, not water polluters;
2. protect only those private well owners within townships that have been chosen for participation in the MDA Township Testing Program, and therefore does not protect private well owners statewide;
3. fail to maintain a causal linkage between the regulation of nitrogen fertilizer and the desired goal of reducing nitrate contamination. By defining a level of required adoption of practices [i.e. 80% BMPs] that is not substantially linked to any quantitative assessment of the nitrate load reduction, this rule is not designed to reduce nitrogen in order to meet drinking water standards;
4. contain a loophole whereas a township or Drinking Water supply

Management Area [DWSMA] that is meeting the arbitrary level of nitrogen fertilizer BMP adoption **may not** be subject to water resource protection requirements regardless of the extent, severity, or community cost of groundwater contamination [Section 1573.0050 Subp. C, Section 1573.0070 Subp. C];

5. fail to define the quality and quantity of the management practices that are required to meet the arbitrary 80% threshold.

It is more expensive to clean up pollution that to prevent it, and the State or local communities will ultimately bear the cost of treating drinking water. These costs are very high for cities and their tax payers, and are not a prudent use of resources when prevention remains an option. A recent analysis from the Institute on the Environment at the University of Minnesota estimated that the cost of nitrate leaching in the State of Minnesota is $6 million per year, which includes necessary treatment for public water suppliers and private wells (Keeler et al. 2016). These costs will rise if substantial improvements in the leaky nitrogen fertilizer system are not addressed. The Minnesota Department of Health has designated 62 community public water supply systems as having elevated nitrate concentrations (i.e. above 3 mg nitrate per L), which indicates that costs to remediate nitrate contamination will increase.

Expanding on the points stated above, the proposed Nitrogen Fertilizer Rule is inadequate to accomplish the non-degradation goal of the Groundwater Protection Act of 1989 because:

<u>The Focus is on Mitigation Rather than Prevention</u>

Although the Groundwater Protection Act of 1989 defines the non-degradation goal in terms of what is "practically achievable", it does not prohibit regulatory action by the State until the groundwater is contaminated. In effect, this proposed rule operates against the spirit of the Groundwater Protection Act because there is little substantial attempt to attain the non-degradation goal.

<u>Inclusion in the Township Testing Program is Selective</u>

Sections 1573.0040 through 1573.0120 of this rule are predicated on the participation of a township in MDA's Township Testing Program [TTP]. Inclusion in this program is based on the discretion of and invitation by MDA. We recommend that the final version of this rule either provides townships the ability to directly petition MDA for inclusion in the TTP or requires MDA to provide a suitable alternative for these townships to protect drinking water resources through Part 2 of this rule. Without a process of self-inclusion this regulation selectively protects some private well owners from drinking water contamination while doing nothing to protect most private well owners in the state who are not covered by the Township Testing Program.

For example, Anoka County was historically farmed and is vulnerable to nitrate pollution owing to sandy substrates. It may not meet the threshold for farmed area to be part of the Township Testing Program. Yet many shallow wells exist in the county and are likely to have been impacted by nitrate contamination.

Requirements for Public Notification are Insufficient

The preliminary rule as written only requires public notification upon the designation of a township or DWSMA as mitigation level 2 and does not require notification upon designation of mitigation level 3 or level 4. This is not transparent enough. The public must be kept actively informed of these designations [Section 1573.0040 Subp. 3 Item B, Section 1573.0060 Subp. 3 Item B] as this would potentially affect health and property values. Additionally, when levels exceed the threshold values, all residents in the area should be notified by letter, whether they participated in the Township Testing Program or not, and be given a chance to opt in to having their drinking water tested.

Quantitative Assessment of Required Nitrate Load Reduction is Lacking

The Department of Agriculture should make a quantitative assessment of the nitrate load reductions required to achieve non-degradation goals and reduction of nitrate to levels below the health risk limit for all affected Drinking Water Source Management Areas and Townships in Mitigation Levels 1 through 4. This is akin to Total Maximum Daily Load studies required for impaired surface waters. In consideration of the inherent difficulties present in monitoring groundwater nitrate concentrations, MDA is unable to track progress towards achieving the non-degradation goal without a quantitative assessment of the necessary nitrate load reductions required.

In addition, this numerical goal must support the work of MPCA in identifying comprehensive strategies to reduce the contribution of nitrate from groundwater (both deep and shallow interflow, including tile water) to surface water. Groundwater and surface water interact and nitrate contamination to groundwater from agricultural fertilizer will become pollution in surface waters. Quantitative assessments must form the basis of water resource protection requirements.

The MDH defines Drinking Water Source Management Areas (DWSMAs) that require higher standards of care and protection. It is not unreasonable for MDA regulation to denote these areas as being unsuitable for farming methods that lose nitrogen.

Voluntary BMPs Are Not Effective in All Cases

In communities with severe groundwater contamination voluntary BMPs alone may not be sufficient to address the problem. The adoption of water resource protection requirements (WRPR) must occur where BMPs have been adopted above the designated threshold if reductions in contamination have not been or will not be achieved. This determination that the adopted practices will not be sufficient to reduce levels of nitrate contamination below acceptable thresholds should be made using monitoring data, research studies, or simulation models. In these cases, adoption of appropriate Alternative Management Tools [AMTs] must be imposed as WRPRs for these areas.

Clear Definition of BMP Adoption Criteria is Lacking

A bright-line definition of what the minimum quantity and type of practices constitute adoption of nitrogen fertilizer BMPs needs to be included in the rule, as well as a definition of what does not constitute adoption of nitrogen fertilizer BMPs.

Some BMPs are low-cost or cost-neutral to producers but have relatively low potential to reduce nitrate losses. Other BMPs are more costly to implement, but have much greater potential to reduce nitrate losses. MDA must clearly specify the criteria being used.

Further, MDA should present rational criteria to justify the 80-percent-threshold value for adoption of nitrogen fertilizer best management practices. We find no justification for 80 percent over 90 or 100, nor is there rationale given that this is the level of practice adoption that is practically achievable. The nitrogen fertilizer best management practices are by statutory definition practically achievable in consideration of "economic factors" among other criteria [MN Statue 103H.005 Subd. 4]. We recommend that the MDA use a quantitative assessment of necessary load reductions to justify the BMP threshold value.

Manure Applications Not Considered

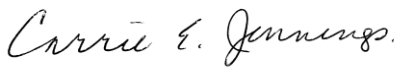
Manure applications are an important source of nitrogen into the environment. The increase in the size and number of concentrated animal feeding operations (CAFOs) across the state, especially in areas like Benson that have sufficient groundwater to support the operations, almost ensures that the groundwater will be contaminated by the disposal of manure. The rule should include, to the extent allowable, regulation of nitrogen fertilizer application considering manure applications in the same area.

Literature Cited

Keeler, B. L., Gourevitch, J. D., Polasky, S., Isbell, F., Tessum, C. W., Hill, J. D., & Marshall, J. D. (2016). The social costs of nitrogen. Science advances, 2(10), e1600219.

In closing, Freshwater Society feels that as written, this rule does not protect the groundwater resources of Minnesota from nitrate contamination from agricultural fertilizer and therefore does not support the goals of the Groundwater Protection Act of 1989.

Our comments were informed by the work of our intern, Brian Bohman, PhD candidate at the U of M, the Policy Committee at Freshwater and our Executive Director, Steve Woods. Please direct all responses and comments to me.



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