From:	Trevor Russell
To:	Gunderson, Larry (MDA)
Subject:	FMR Nitrate Fertilizer Rule Comments
Date:	Friday, January 29, 2016 4:58:17 PM
Attachments:	FMR N Fertilizer Rule Comments FINAL.pdf

Greetings Mr. Gunderson,

Please find FMR's attached comments on the MDA's proposed Nitrogen Fertilizer Rule (/Mn Rules, 1573; Revisor's ID Number R-04337./)

Best wishes,

Trevor

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January 29th, 2016

VIA EMAIL

Larry Gunderson
Minnesota Department of Agriculture
625 Robert Street North
St. Paul, MN 55155
larry.gunderson@mn.state.us

Dear Mr. Gunderson,

I am writing on behalf of Friends of the Mississippi River and our members with our responses to the request for comments on the proposed **Nitrogen Fertilizer Rule (Mn Rules, 1573; Revisor's ID Number R-04337.)**

Friends of the Mississippi River (FMR) is a non-profit organization founded in 1993 with a mission to protect, preserve and enhance the Mississippi River and its watershed in the Twin Cities metro area and beyond. FMR has long been concerned about agricultural impacts to Minnesota's surface waters and groundwater resources, and has made advancing meaningful progress toward agricultural water quality performance a priority. With over 1,600 statewide members, 22 active board members and 18 staff, FMR is a leading citizen organization working to protect and enhance water quality throughout the Mississippi River watershed.

Nitrate Pollution in Minnesota

As demonstrated by the Minnesota Pollution Control Agency's (MPCA) 2013 report on nitrogen in surface water, approximately 73% of nitrate pollution to Minnesota's surface waters is from agricultural pollution. A full 30% of this nitrate contamination is from agricultural pollution to shallow groundwater that eventually makes its way to surface waters.

Not surprisingly, groundwater contamination has increased in six out the state's seven regions over the last decade. In addition, 27% of Minnesota streams exceed 10mg/l concentrations for nitrate, and more than 40% exceed 5mg/l. Approximately 211 million pounds of excess nitrate flows downstream through the Mississippi River watershed annually from Minnesota. The MPCA's Nutrient Reduction Strategy includes interim nitrate pollution reduction goals of 20% by 2025 and 45% by 2045. The achievement of these goals, along with efforts to protect groundwater resources in Minnesota, will require significant changes to on-the-ground agricultural practices across the state, including those influenced by the MDA's proposed Nitrogen Fertilizer Rule.

The Groundwater Protection Act of 1989

The 1989 Groundwater Protection Act established the state goal that "groundwater be maintained in its natural condition, free from any degradation caused by human activities."[1] For agricultural chemicals including nitrogen fertilizer, implemented is conducted by the Minnesota Department of Agriculture (MDA).

MDA's duties under the Act include the following:

- Identify and develop best management practices (BMPS) to ensure that the goals of the Groundwater Protect Act are achieved;
- Promote BMP that are capable of preventing and minimizing degradation of groundwater;
- Evaluate the use and effectiveness of these BMPs;
- Evaluate agricultural pollutants in the groundwater resources;
- Monitor groundwater for common detection pollutants; and
- If voluntary BMPs prove ineffective, the MDA may adopt by rule Water Resource Protection Requirements (WRPRs) that are consistent with the goal of preventing and minimizing groundwater pollution to the extent practicable.

Despite comprehensive promotion of nitrogen fertilizer BMPs throughout the state, the data suggest that efforts to secure voluntary BMPs have proven insufficient to prevent groundwater contamination.

For example, the state has conducted comprehensive monitoring of groundwater throughout the state since 1985. These results indicate that rate of detection of nitrate in groundwater is between 50% - 99% of samples in all groundwater regions. Rates of detection and the share of samples in excess of the Health Risk Limit (HRL) have increased in 6 of the 7 tested groundwater regions of the state.[2]

	% Detection			% Above HRL		
Groundwater Region	**1985-1999**	**2000-2010**	**% Increase**	**1985-1999**	**2000-2010**	**% Increase**
Region 1 (Northwest)	6	50	44	0	8	8
Region 4 (Central)	73	97	24	38	62	24
Region 5 (East Central)	74	93	19	44	50	6
Region 6 (West Central)	25	56	31	8	17	9
Region 7 (Southwest)	34	56	22	6	29	23
Region 8 (South Central)	18	62	44	7	19	12
Region 9 (Southeast)	83	99	16	35	22	-13

The Groundwater Protection Act clearly states that if voluntary BMP adoption proves insufficient to achieve the goals of the Act, the MDA has authority to adopt mandatory Water Resource Protection Requirements (WRPRs) that include “design criteria, standards, operation and maintenance procedures, practices to prevent releases, spills, leaks, and incidents, restrictions on use and practices, and treatment requirements."[3]

1 Min. Stat. 103H.001 Degradation protection Goal. Available at: .https://www.revisor.mn.gov/statutes/?id=103H.001
2 Minnesota Department of Agriculture. 2015. Nutrient Fertilizer Management Plan. Page 131.
3 Minn. Stat. §§ 103H. 275, subd. 1 (b) and 103H.005, subd.14

Given the state of groundwater contamination in Minnesota, FMR concludes that voluntary BMP adoption has proven ineffective, and strongly supports the MDA's decision to establish Water Resource Protection Requirements (WRPRs) by rule.

Comments on the Proposed Nitrogen Fertilizer Rule (*Mn Rules, 1573; Revisor's ID Number R-04337)*
The MDA is proposing a two-part Nitrogen Fertilizer Rule:

- Part 1: The first part of the rule will apply to areas of the state overlying vulnerable groundwater. In these vulnerable groundwater areas, nitrogen fertilizer applications either in the fall or to frozen soils will have restrictions.

- Part 2: The second part of the rule will apply to areas where measured nitrate levels in groundwater are elevated and it has been determined that the nitrogen fertilizer Best Management Practices (BMPs) are not being adopted. Restrictions will be based on University of Minnesota Best Management Practices for Nitrogen Application.

1. **The MDA is considering using a definition of fall as after August 31st. Nitrogen fertilizer applications in vulnerable groundwater areas after August 31st would be subject to some level of restriction.**

   Comment: FMR supports the MDA's approach to defining fall as after August 31st of a given year. However, the MDA's definition of "vulnerable groundwater areas" is severely flawed and is incompatible with the goals of the Groundwater Protection Act. Please see comments below.

2. **The MDA is seeking comments on whether the cost of complying with the proposed rule in the first year after the rule takes effect will exceed $25,000 for any small business or small city.**

   Comment: FMR concludes that the cost of complying with the proposed rule in the first year after the rule takes effect will not exceed $25,000 for any small business or small city.

   The MDA has repeatedly asserted that excess application of agricultural fertilizer is incompatible with profit motives of producers; and thus farm operations can and will reduce nitrogen loss in order to maximize nitrogen efficiency and farm profit. As such, WRPRs aimed at adopted practices that will enhance farm profitability cannot reasonably be anticipated to impose additional costs on the above parties. As such, FMR concludes that the proposed rules will not impose costs in excess of $25,000 to any small business or small city.

3. **An area will be considered a vulnerable area if it meets any one of the following criteria: (A) Areas with coarse textured soils; (B) Geology defined as karst or fractured bedrock. (C) The township or Drinking Water Supply Management Areas (DWSMAs) meets the groundwater nitrate concentration criteria of mitigation level 1 or higher as indicated in the NFMP on pages 69 and 70 and in Chapter 10; (D) The MDA is also considering using the Minnesota Department of Natural Resource's Procedure for Determining Near-Surface Pollution Sensitivity as an additional criterion.**

   Comment**:** FMR has serious concerns with items (C) listed above: "an area will be considered a vulnerable area if…the township or Drinking Water Supply Management Areas (DWSMAs) meets the groundwater nitrate concentration criteria of mitigation level 1 or higher as indicated in the NFMP on pages 69 and 70 and in Chapter 10.:

Our concerns are three-fold:

I. **The MDA's proposed rules fail to achieve the clearly stated non-degradation goal of the Groundwater Protect Act.** While the MDA does acknowledge the intent of the Act is to prevent groundwater degradation, the MDA proposes only to deploy Nitrogen Fertilizer Rules once groundwater has become contaminated. This approach in incompatible with the clearly stated goals of the Act. The MDA's sole justification for this approach appears to be its interpretation that the Act's "maximum extent practicable" test limits MDA action to activities that will *"...provide for the minimum amount of nitrogen fertilizer to be used while still achieving economic profitability."*[4]

   While FMR has a stated goal of helping Minnesota achieve both clean water and farm prosperity, we strongly disagree with the MDA's assumption that maintaining producer profitability trumps the public's interest in clean, safe groundwater resources. The decision to apply a profit-driven "maximum extent practicable" threshold to short-circuit the goal of the Act violates both legislative intent of the Act and the public interest in clean water. The Nitrogen Fertilizer Management Plan and Nitrogen Fertilizer Rule should be re-drafted to address the clearly stated non-degradation goals of the Groundwater Protection Act.

II. **The MDA's proposed rule unreasonably limits application of the Groundwater Protection Act to drinking water resources instead of applying the law to protect all groundwater as directed by the Act.** The MDA has failed to provide sufficient justification for this interpenetration.

   This is of concern to FMR because of the widespread frequency of shallow groundwater contamination across the state. According to the State, 85% of shallow groundwater samples have detectable levels of nitrate contamination.[5] The MDA's approach would eliminate the application of phased mitigation criteria and the use of WRPRs in areas with significant groundwater contamination where the shallow groundwater wells are not a source of public or private well water.

   Were the Act called the "*Groundwater Used as Drinking Water Protect Act*", FMR would not object to the MDA's approach. However, that is not the case. FMR feels strongly that the MDA has a responsibility to apply the law based on clearly established legislative intent.

   The Nitrogen Fertilizer Management Plan and Nitrogen Fertilizer Rule should be re-drafted to address the Groundwater Protection Act's clearly stated goal of protecting all groundwater rather than a subset of groundwater resources. The MDA should authorize the use of WRPRs in areas with demonstrated groundwater contamination regardless of whether or not that groundwater is used as a drinking water source.

III. **The MDA's mitigation criteria fail to meet the goals of the Act.** Even when the MDA does apply the Nitrogen Fertilizer Rules to already-contaminated well water, the phase criteria are far too lenient to meet the goals of the Groundwater Protection Act or to reasonably protect either public health or local economic vitality.

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4 Minnesota Department of Agriculture. 2015. Nutrient Fertilizer Management Plan. Page 131.

5 Minnesota Environmental Quality Board. 2015. EQB Water Policy Report, Beyond the Status Quo, Appendix A: Five-year Assessment of Water Quality Degradation trends and Prevention Efforts. Page 7. Available at: https://www.eqb.state.mn.us/sites/default/files/documents/App%20A%20Five-year%20Assessment%20of%20Water%20Qual%28final%29.pdf

The draft NFMP utilizes a phased approach to determine the appropriate BMP adoption criteria and mitigation strategy, based largely on BMP adoption rates and drinking water contamination levels. The NFMP includes the following tables that summarize these mitigation phase criteria.

Table 12. Private well criteria used to determine Prevention and Mitigation modes and levels

Groundwater Nitrate Concentration Criteria	Unknown or Below Mitigation Level 1	5% wells > HRL OR 10% wells > 7 mg/L NO_3-N	10% wells > HRL	10% wells > HRL	15% wells > HRL
BMP Adoption Criteria	Unknown/ NA	Unknown or BMPs Adopted	BMPs Adopted	BMPs Not Adopted	BMPs Not Adopted
Mode	Prevention	Mitigation			
Level	NA	1	2	3	4
Status	Voluntary	Voluntary	Voluntary	Regulatory	Regulatory

NOTE: The Health Risk Limit (HRL) for nitrate-nitrogen in Minnesota is 10 mg/L.

Table 13. Public well criteria used to determine Prevention and Mitigation modes and levels

Groundwater Nitrate Concentration Criteria	Unknown or Below Mitigation Level 1	Wells > 5.4 mg/L NO_3-N	Projected to exceed 10 mg/L NO_3-N in 10 years or less		Wells > 9 mg/L NO_3-N
BMP Adoption Criteria	Unknown/NA	Unknown or BMPs Adopted	BMPs Adopted	BMPs Not Adopted	BMPs Not Adopted
Mode	Prevention	Mitigation			
Level	NA	1	2	3	4
Status	Voluntary	Voluntary	Voluntary	Regulatory	Regulatory

NOTE: The Health Risk Limit (HRL) for nitrate-nitrogen in Minnesota is 10 mg/L.

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FMR has a number of concerns with these phase criteria and how they will be applied to the determination of 'vulnerability' in the MDA's WRPRs.

a. Phase 1: For private wells, phase 1 is considered when 5% of the wells have nitrate levels greater than the HRL *or* 10% or more of the wells have groundwater concentrations greater than 7 mg/L. For public wells, phase 1 is considered wells have nitrate levels at 5.5 mg/l - greater than the 50% of the HRL.

   The thresholds for Phase 1 mitigation are far too high. Postponing even voluntary Phase 1 action until 1 in 20 private wells exceeds the HRL poses a significant threat to public health and a substantial cost burden on local residents and businesses. Likewise, postponing Phase 1 adoption for public wells until drinking water supplies are more than half way to the HRL is unwise, and poses unfair long-term risks to local communities. This approach fails to honor the spirit and intent of the Groundwater Protection Act.

   FMR's concerns are amplified by the MDA's acknowledgement that there can be a substantial lag time between in-field nutrient management choices and a response in drinking water quality.[6] As a result, waiting until groundwater is already contaminated

[6] Minnesota Department of Agriculture. 2015. Nutrient Fertilizer Management Plan. Page 80. *"The lag time can be less than a year to decades depending upon a number of factors including soil type, geology, depth to groundwater, the volume, intensity and timing of precipitation, as well as field practices such as tillage and crop type."*

to these thresholds before beginning a laborious and long-term 4-phase process of remediation presents the very real possibility that drinking water contamination at or above these levels will persist for "*years or decades*" even after WRPRs are implemented.

The Nitrogen Fertilizer Management Plan's Phase 1 criteria should apply when 5% of private wells exceed 5.4 mg/l, or public well contamination levels exceed 2.5 mg/l (25% of HRL). This level allows communities to engage in mitigation efforts before HRLs are exceeded, and long before local residents are forced to invest in bottled water, expensive new wells, or residential de-nitrification systems.

b. Phase 2: For private wells, Phase 2 is considered when 10% of the wells have nitrate levels greater than the HRL *and* BMPs are being adopted. For public wells, Phase 2 is considered wells are projected to exceed the HRL within 10 years and BMPs are being adopted.

The thresholds for Phase 2 mitigation are far too high. Postponing consideration of regulatory action until more than 1 in 10 private wells are unsafe to drink imposes significant costs on local residents and businesses. Likewise, we oppose the MDA's proposed approach of maintaining voluntary-only mitigation when public wells are still projected to exceed the HRL in the near future. Asking Minnesotans to consider substantial investments in bottled water, de-nitrification systems, or new drinking water wells absent any accountability for the agricultural businesses responsible for that contamination is profoundly unfair.

The Nitrogen Fertilizer Management Plan's Phase 2 criteria should apply when 10% of private wells exceed 7 mg/l, or when public well contamination levels exceed 5.4 mg/l. This approach will allow communities to engage in mitigation efforts before HRLs are exceeded.

The larger flaw with the Phase 2 threshold is that the MDA commits not to move beyond phase 2 voluntary mitigation if nitrogen fertilizer BMPs are being adopted, regardless of water quality conditions. According to the Nitrogen Fertilizer Management Plan:

> *"All sites will start in a voluntary level (Level 1 or 2), determined using the mitigation criteria discussed in Chapter 9, and will only move to a regulatory level (Level 3 or 4) if the BMPs are not being adopted."*[7]

This statement aligns with the MDA's October 16th, 2013 presentation on the NFMP at the Minnesota Water Resources Conference, during which staff stated: "*If growers adopt best management practices, its very unlikely that regulations will be adopted*."

This is a dangerous and absurdly flawed approach for three reasons.

i. The state is hamstringing its own ability to deploy regulatory measures in the event of a public health crisis. BMP adoption rates should not prevent the state

[7]Minnesota Department of Agriculture. 2015. Nutrient Fertilizer Management Plan. Page 75. Available at: http://www.mda.state.mn.us/~/media/Files/chemicals/nfmp/nfmp2015.pdf

from adopting Phase 3 & 4 regulatory mitigation activities to protect public health.

FMR is concerned that the MDH has failed to anticipate the justifiable public outcry that will inevitably arise when communities in crisis find that their own state agency has made itself powerless to compel polluters to take any additional action to protect drinking water supplies.

ii. The MDH is setting the state up for failure by proposing to limit regulatory action based on adoption BMPs that were simply never intended to prevent drinking water contamination in the first place. The proposed BMPs were instead created to maximize farm profit; even at application rates the state acknowledges lead to extremely high concentrations of nitrate in farm runoff.

For example, page 3 of the University of Minnesota Extension Best Management Practices for Nitrogen Use in South-Central Minnesota states that "Maximum Economic Return to N" (MRTN) rates are used to determine economically optimal fertilizer application rates. In the example used, the MRTN rate was found to be spring-applied at 120-lb/acre.

> *"Greatest yield and profit with a minimal increase in NO_3-N concentration was found with the spring-applied 120-lb N rate."*

Table 2 of that same document concludes that the recommended spring application of nitrogen fertilizer at a 120 lbs/acre would yield **nitrate loss at concentrations of 13.7 mg/l** – well above the state's Health Risk Limit for nitrate.

As this example suggests, the fertilizer application rates recommended by the UofM Extension are designed to provide the rate that ensures maximum producer profitability; even at rates that yield high levels of pollution to groundwater and surface waters.

- The MDA acknowledges this in the NFMP, noting that these nitrogen BMP recommendations focus on managing the "*agronomic risk*", and that other risks such as environmental and societal risks are not accounted for.[8]

- The NFMP also states that "*In areas with highly vulnerable groundwater, the use of nitrogen fertilizer at the recommended rate, timing, source and placement…may not be enough to decrease the amount of nitrate leaching into groundwater to meet water quality goals*."[9]

The MDA has not provided any reasonable explanation as to how nitrogen fertilization rates that yield pollution concentrations in excess of the HRL can

[8] Minnesota Department of Agriculture. 2015. Nutrient Fertilizer Management Plan. Page 41. Available at: http://www.mda.state.mn.us/~/media/Files/chemicals/nfmp/nfmp2015.pdf
[9] Minnesota Department of Agriculture. 2015. Nutrient Fertilizer Management Plan. Page 57. Available at: http://www.mda.state.mn.us/~/media/Files/chemicals/nfmp/nfmp2015.pdf

possibly comply with the goals of the Groundwater Protection Act, let alone adequately protect public health.

FMR respectfully re-states our recommendation that the MDA partner with the Minnesota Department of Health, the University of Minnesota and local stakeholders (including public and private well owners) to establish University of Minnesota Extension Sustainable Nitrogen Application Best Management Practices in prioritized communities.

These two-part, sustainability-focused BMPs would:

- Define the maximum sustainable level of nitrate loss to groundwater and surface water based on local conditions; and
- Assign tailored nitrogen fertilization management BMPs that result in nitrogen losses that do not exceed sustainable nitrogen loss levels.

In this way, BMP fertilizer application rates are localized to meet water resource goals, resulting in fair and efficient achievement of protection and restoration outcomes.

In addition, because these BMP rates are based on water quality needs (rather than crop and fertilizer prices), these application rates will not be subject to change based solely on outside market forces as is the case with the current UofM approach.

iii. When the MDA does choose to consider moving to more "stringent" regulatory measures, it does so at an alarmingly slow pace. The NFMP prescribes a 14-step mitigation phase evaluation process that takes at least 3 years if not far longer to implement. The process includes the following steps:

1. Form local Advisory Team;
2. Select a project lead and develop a work plan;
3. Establish a local nitrate monitoring network;
4. Hold a public information meeting(s);
5. Select UofM nitrogen BMPs;
6. Conduct an initial survey of BMP adoption;
7. Consider Alternative Management Tools (AMTs);
8. Assess the need for demonstration projects;
9. Develop a plan for educational activities;
10. Assist with obtaining funding for implementation;
11. Work with farmers to implement selected BMPs;
12. Conduct a follow up survey of BMP adoption after three years;
13. Evaluate BMP adoption; and
14. Determine mitigation phase.

This lengthy 14-step process simply delays the inevitable. In any area vulnerable to groundwater contamination, farm operations will eventually need to comply with basic fertilizer management recommendations as a first step toward improvement. In doing so, producers will also maximize their own farm profits. Requiring such a time-consuming and expensive 14-step process during early-

phase mitigation activities simply to further encourage farm operations to apply fertilizer at their economically optimal rate is a tremendous waste of time, money, and community goodwill.

c. Phase 3 & 4: Phase 3 is considered when 10% of the private wells have nitrate levels greater than the HRL *and* BMPs are not being adopted. For public wells, Phase 4 is considered when 15% or more of the wells exceed the HRL *and* BMPs are not being adopted. For public wells, Phase 4 mitigation is triggered when public wells are exceed 9 mg/l *and* BMPs are not being adopted.

These mitigation phase thresholds are dangerously unwise. As stated above, the MDH is proposing to hamstring its own ability to deploy regulatory measures in the event of a public health crisis simply because a given percentage of producers have adopted BMPs that were never intended to prevent drinking water contamination in the first place[10], and which the MDA acknowledges are not sufficient to meet the goals of the Act.[11]

As a result, the modest local adoption of inherently sub-optimal BMPs deprives the entire community of regulatory relief regardless of water quality conditions. This is profoundly unfair to local residents and is a serious flaw with both the Nitrogen Fertilizer Management Plan and the Nitrogen Fertilizer Rule.

FMR is concerned that the MDA has failed to anticipate the public's response to the inevitable scenario where 10-15% of private wells and an entire community drinking water supply system are contaminated in excess of the HRL, and the MDA is forced to acknowledge that it has chosen to limit its own ability to intervene.

FMR respectfully restates our recommendation that the MDA removed BMP adoption rates as a consideration in Phase 3 and Phase 4 mitigation criteria. If community and private well water is unsafe for consumption, the MDA has a responsibility to deploy regulatory intervention without restrictions.

4. **Vulnerable groundwater areas will need recognizable boundaries. The MDA is proposing to use townships and DWSMAs as these boundaries. Township boundaries would be used for mitigating private wells. DWSMA boundaries would be used for mitigating public wells. Any township with more than 50% of its land meeting the definition of vulnerable groundwater areas would have a restriction on nitrogen fertilizer application in the fall or to frozen soils.**

   Comment**:** FMR recommends that a restriction on nitrogen application in the fall or to frozen soils should extend statewide to all farm operations regardless of perceived groundwater or surface water vulnerability.

5. **The MDA is considering exceptions to the first part of the rule restricting fall application or application to frozen ground for specific crops and/or agricultural practices. Exceptions being considered are:**
   a. **Nitrogen fertilizer needed to establish cover crops.**

[10] Minnesota Department of Agriculture. 2015. Nutrient Fertilizer Management Plan. Page 41. Available at: http://www.mda.state.mn.us/~/media/Files/chemicals/nfmp/nfmp2015.pdf
[11] Minnesota Department of Agriculture. 2015. Nutrient Fertilizer Management Plan. Page 57. Available at: http://www.mda.state.mn.us/~/media/Files/chemicals/nfmp/nfmp2015.pdf

b. **Nitrogen fertilizer needed to establish small grains.**
c. **Nitrogen fertilizer needed to establish perennials in the fall.**
d. **Nitrogen needed for fall pasture fertilization.**
e. **Application of Monoammonium Phosphate (MAP) and Diammonium Phosphate (DAP) when following University of Minnesota phosphorus recommendations. .**
f. **Land application of agricultural chemical contaminated soil in accordance with Minnesota Statute 18D.1052.**

FMR has no comment on these exceptions at this time.

6. **According to the Statute 103H.275, the Commissioner of Agriculture would issue a Commissioner's Order detailing the townships or Drinking Water Supply Management Areas affected by the rule and the practices required to minimize nitrogen leaching. The Commissioner is required to provide notice to the public before the Commissioner's Order goes into effect. What reasonable methods of notification should be used to notify the affected townships and Drinking Water Supply Management Areas of the Commissioner's Order?**

Comment: Given the public health risks associated with elevated nitrate levels in both public and private drinking water supplies, it seems reasonable to notify all residential and commercial properties in effected townships and DWSMAs affected by the Commissioners Order. This includes all private well owners, community water supply systems, and non-community public water supply systems.

Notifications should be made available by direct mail to all known addresses, through local media outlets, via standard public notice procedures, and through direct consultation with local governments.

In addition, FMR feels strongly that notifications should also clarify for local residents and businesses in Phase 1-4 mitigation areas that the MDA is choosing to:

I. Limit application of regulatory mitigation criteria when profit-derived BMPs are being adopted, even if drinking water contamination levels continue to exceed the Health Risk Limit. Local residents deserve to know that the MDA's approach to rectifying drinking water contamination is not based on public health and drinking water quality but rather the rate of adoption of fertilizer management practices that the agency acknowledges are not environmentally based, but instead are designed to optimize the incomes of the very farm operations contaminating public and private drinking water sources; and

II. Limit any application mitigation criteria when groundwater that is not used as a drinking water source is contaminated, in violation of the clearly stated intent of the Groundwater Protection Act; and;

FMR feels that the MDA's proposed rules have clearly been crafted under the assumption that Minnesotans who cannot safely drink their water (or who can reasonably anticipate future contamination of their drinking water in excess of the HRL) will be satisfied with the MDA's slow-walk approach to rectifying a serious local public health risk. In addition, the MDA's approach assumes Minnesotans are comfortable with the MDA's application of the rules only to groundwater used as drinking water, despite the Groundwater Protection Act stating otherwise.

While FMR strongly disagrees with the MDA's assumptions, it is certainly fair to ask and expect that the MDA fully disclose those assumptions and the conditions under which contamination of drinking water and groundwater can and will persist absent any regulatory relief from the state.

7. **The Commissioner's Order will contain a list of activities required for mitigation that will be specific to each township or wellhead protection area. The mitigation activities would be selected from a menu of options contained in the rule. These activities would be based on region specific BMPs as well as other recommended practices such as record keeping or farmer education. A proposed list of these activities can be found on pages 81 and 82 of the NFMP.**

   Comment**:** Please see FMR's response to question 3 above. The proposed mitigation activities are dangerously insufficient and should be modified to fully protect public health and achieve the goals of the 1989 Groundwater Protection Act.

   FMR would also like to remind the MDA that WRPRs may include nitrogen fertilizer rate restrictions that are more protective than the profit-based U of M nitrogen fertilizer use rates. In addition, FMR supports the recommendations of the Minnesota Center for Environmental Advocacy in the comments to this proposed rule with regard to the menu of menu of practices that could be required by a Commissioner's order. These items include:
   - Cover crops, where effective, including in areas where they could be planted by September 1 and following sweet corn, peas, small grains and corn removed for silage.
   - Alternative cropping systems, including alfalfa and other crops with low nitrate losses.
   - Use of low nitrogen input crops such as forage crops and other vegetative cover, and other "AMTs" identified in MDA's NFMP.
   - Use of split application of N on coarse-textured soils.
   - Incorporate broadcast or inject side dress application of urea and UAN into moist soil to a minimum depth of three inches.
   - Restrict the use of U of M nitrogen fertilizer use BMPS that are "Acceptable , but with risk" if nitrate levels increase or BMPs are not used.
   - Use of nitrification inhibitors (NI's) such as N-Serve and urease inhibitors (UI's) such as Agrotain and Limus when appropriate for reducing losses of yield and N.

8. **Emergency nitrogen fertilizer treatment approved by the MDA in response to extreme weather events or other causes of crop damage, loss or failure.**

   FMR has not been able to locate information on the MDA's preferred approach to identifying conditions that would quality for approval of emergency nitrogen fertilizer treatment in response to extreme weather events or other causes of crop damage, loss or failure. Therefore we have no comment on this question at this time.

On behalf of the board, staff, volunteers and members of Friends of the Mississippi River, I thank you for the opportunity to provide comments on the MDA's proposed Nitrogen Fertilizer Rule (MN Rules, 1573; Revisor's ID Number R-04337.

We look forward to working with the MDA and all water quality stakeholders to revise the current draft to better protect groundwater resources for all Minnesotans as required by the 1989 Groundwater Protection Act.

Sincerely,

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