



Minnesota Center for Environmental Advocacy

26 East Exchange Street • Suite 206 • Saint Paul, MN 55101-1667 • 651.223.5969

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VIA EMAIL

Larry Gunderson
Minnesota Department of Agriculture
625 Robert Street North
St. Paul, MN 55101
larry.gunderson@mn.state.us

RE: MCEA Comments on MDA's Proposed Rule Governing Nitrogen Fertilizer

Dear Mr. Gunderson,

Thank you for the opportunity to submit the following comments on behalf of the Minnesota Center for Environmental Advocacy (MCEA) on the Minnesota Department of Agriculture's (MDA) Proposed Rules Relating to Water Resource Protection Requirements (WRPRs), Revisor's ID Number RD4337. MCEA is a Minnesota non-profit environmental organization whose mission is to use law, science and research to preserve and protect Minnesota's wildlife, natural resources, and the health of its people. MCEA has statewide membership. MCEA is concerned about the impacts of agricultural pollution on Minnesota's waters and has been engaged with MDA on issues related to nitrogen fertilizer management for a number of years.¹

This letter provides an introduction summarizing MDA's proposal and MCEA's concerns about it, discusses current nitrogen fertilizer use in Minnesota and its contamination of groundwater, outlines the statutory legal requirements for WRPRs, identifies where MDA's proposal falls short of these requirements, and provides MCEA's recommendations for necessary improvements to a number of the provision in the proposed rule.

¹ MDA developed the Nitrogen Fertilizer Management Plan (NFMP) in 1990, and as required by the Groundwater Protection Act, has developed and promoted nitrogen fertilizer management practices. When MDA proposed revisions to its NFMP in 2013, MCEA urged MDA to adopt WRPRs because voluntary implementation of nitrogen fertilizer use recommendations were ineffective and failed to prevent or mitigate nitrate contamination. At that time, MCEA also expressed concern with MDA's snail's pace proposal for adopting WRPRs. In late 2015, MDA responded by requesting comments on its generalized proposal to develop WRPRs for nitrogen fertilizer. In early 2016, MCEA submitted comments expressing its concern that the MDA's proposal fell short of requirements under the Groundwater Protection Act because it failed to prevent groundwater contamination and would leave existing contamination unmitigated for many years. To support this critical consideration, MCEA provided an expert report from Dr. Gyles Randall, explaining that MDA's proposal was insufficient to meet the nitrate Health Risk Limit and identifying potential WRPRs that, if required, could effectively reduce nitrate contamination.

I. Summary of MDA’s Current Proposal and MCEA Concerns and Recommendations

MDA’s proposed rule: 1) restricts the application of nitrogen fertilizer in the fall and on frozen ground in vulnerable groundwater areas; 2) identifies areas of the state where MDA will and will not seek voluntary and/or regulatory compliance with nitrogen fertilizer use recommendations; 3) develops a process for determining whether nitrogen fertilizer use recommendations will remain purely voluntary, or become mandatory; and 4) identifies a “menu” of site-specific requirements that could become WRPRs via order of the Commissioner.

MCEA objects to the proposed rule because it fails to implement the directive of the Legislature when it enacted the Groundwater Protection Act which was to *prevent* groundwater contamination and to mitigate contamination where it has occurred.² The proposed WRPRs continue to shy away from mandatory implementation of nitrogen fertilizer use recommendations, eliminate MDA’s ability to address groundwater in many areas of the state, and limit its ability to require farmers to adopt the many practices MDA knows are effective in addressing nitrate contamination.

MDA’s proposal is neither reasonable nor consistent with the Groundwater Protection Act. This proposal, without justification and inconsistent with the Act, cedes MDA authority to require necessary actions where groundwater: 1) is not a source of drinking water that is already unsafe to drink; or 2) is in an area where nitrogen fertilizer is being applied consistent with voluntary best management practices, even though groundwater in that area remains contaminated. Even in the limited areas where MDA may require WRPRs, MDA proposes that most of the agricultural practices actually needed to reduce nitrate contamination to safe levels remain purely voluntary.

MCEA recommends that MDA amend its rule proposal to:

- 1) Make its ban for application of nitrogen fertilizer in the fall and on frozen ground apply statewide;
- 2) Require immediate statewide compliance with U of M fertilizer use recommendations;
- 3) Require site-specific WRPRs in all areas with documented groundwater contamination;
- 4) Remove arbitrary constraints on the adoption of WRPRs, including the thresholds based on the percentage of contaminated drinking wells and degree of compliance with the U of M nitrogen fertilizer application rates;
- 5) Adopt a menu of WRPRs that can effectively prevent and mitigate contamination, and provide for their implementation.

II. Background

² MCEA incorporates by reference the attached expert report and recommendations of Dr. Gyles Randall, Soil Scientist and Professor Emeritus from the University of Minnesota.

A. Nitrogen Fertilizer Use and Nitrate Contamination in Minnesota

Despite MDA's years of promoting compliance with the U of M nitrogen fertilizer use recommendations, nitrogen fertilizer sales in Minnesota skyrocketed by nearly 200,000 tons/year from 1990 to 2016, including a 15% increase over the past 5 years.³ In addition the acreage of crops that "leak" nitrogen fertilizer into groundwater, corn and soybeans, are consistently expanding, with over 4 million more leaky acres today than in 1990.⁴

The result is widespread nitrate contamination of groundwater in Minnesota's agricultural landscapes.⁵ Nearly half of the wells in MDA's shallow groundwater monitoring network exceed the nitrate Health Risk Limit of 10 mg/L.⁶ Where shallow wells are contaminated, deeper wells also are likely contaminated.⁷

MDA's reliance on purely voluntary adoption of the nitrogen fertilizer use recommendations has left many Minnesotans without a consistently safe drinking water supply. Individuals throughout the state that use private and public drinking water supplies are exposed to this persistent nitrate contamination. In nearly one-third of townships participating in MDA's township testing program, more than ten percent of private wells exceed the nitrate Health Risk Limit.⁸ Even worse, in nine percent of the townships tested, 40% or more of the wells exceed the nitrate Health Risk Limit. And these numbers are expected to rise: changes to land use and cropping practices between 2007 and 2012 are expected to result in a 29% increase in private wells over the Health Risk Limit.⁹ Users of public water supplies also suffer the impacts of nitrate contamination: sixteen of the state's community public water supplies have a groundwater source above the nitrate Health Risk Limit.¹⁰

B. Statutory Requirement for WRPRs

The Groundwater Protection Act of 1989 has the goal of preventing groundwater degradation.¹¹ For agricultural chemicals, including nitrogen fertilizer, the statute is implemented by the MDA, and requires MDA to: evaluate the detection of agricultural

³ MDA Draft Nitrogen Fertilizer Rule Presentation, at slide 24, found at <http://www.mda.state.mn.us/~media/Files/chemicals/nfmp/nfrpresentation.pdf> (last visited Aug. 24, 2017).

⁴ Id. at slide 25.

⁵ 2015 Annual Monitoring Report (2015 AMR), MDA, June 2016, at 2-83, 2-84.

⁶ Id. at 2-83.

⁷ In 2010, MDA installed eight new wells in the Central Sands Region, approximately 10-15 feet deeper than existing shallow well sites. Id. at 2-75. 75% of these wells exceeded the Health Risk Limit. Id. at 2-83.

⁸ See Nitrate Testing for Private Wells, Results as of August 10, 2017, MDA, found at www.mda.state.mn.us/protecting/cleanwaterfund/gwdwprotection/~media/Files/chemicals/nfmp/allctyresults.pdf (last visited Aug. 24, 2017).

⁹ *Estimating the external costs of nitrogen fertilizer in Minnesota*, December 2014, Bonnie Keller and Jesse Gourevitch, University of Minnesota Institute on the Environment, at 17. But, a 20% reduction in annual average nitrate application could decrease the number of wells exceeding 10 mg/L by 57%. Id. at 22.

¹⁰ Minnesota Drinking Water, Annual Report for 2016, Minnesota Department of Health, June 2017, at 15.

¹¹ Minn. Stat. § 103H.001.

pollutants in the state’s groundwater;¹² monitor groundwater for pollutants found to be of “common detection” as the result of normal use of a product or practice;¹³ develop voluntary, practicable measures that are capable of preventing and minimizing degradation of groundwater from agricultural chemicals and practices, called BMPs;¹⁴ and promote and evaluate the use and effectiveness of these BMPs.¹⁵

If implementation of BMPs proves ineffective, the Act provides MDA with the 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.”¹⁶ WRPRs may be statewide or targeted, but those that are not statewide become effective only in areas designated by order of the MDA Commissioner.¹⁷ WRPRs must be intended to prevent and minimize groundwater pollution to the extent practicable; be designed to “prevent the pollution from exceeding the health risk limits;”¹⁸ and be based on “the use and effectiveness of best management practices, the product use and practices contributing to the pollution detected, economic factors, availability, technical feasibility, implementability, and effectiveness.”¹⁹

C. MDA’s Proposed Rule

Nearly 30 years after the Groundwater Protection Act was enacted, MDA is proposing draft rule language for WRPRs and the process for application of WRPRs in specified areas, including when, where, and what WRPRs the Commissioner can order agricultural producers to implement.

First, MDA proposes to ban the application of nitrogen fertilizer in the fall and on frozen ground but only in areas the Commissioner has identified as vulnerable to nitrate groundwater contamination.²⁰ This ban will also go into effect in areas where nitrogen fertilizer use recommendations have not been voluntarily implemented and over 10% of the private drinking water and monitoring wells exceed the Health Risk Limit or an exceedance of the Health Risk Limit for nitrate is imminent at a public drinking water supply.²¹

Second, MDA’s proposal creates “levels” of response to drinking water contamination based on two criteria: breadth or severity of *drinking water* contamination and the extent

¹² Minn. Stat. § 103H.251, subd. 1.

¹³ Minn. Stat. §§ 103H.251, subd. 1(b) and 103H.005, subd. 5.

¹⁴ Minn. Stat. §§ 103H.151, subd. 2 and 103H.005, subd. 4.

¹⁵ Minn. Stat. §§ 103H.151, subd. 3 and 103H.275, subd. 1.

¹⁶ Minn. Stat. §§ 103H.275, subd. 1(b) and 103H.005, subd.14

¹⁷ Minn. Stat. § 103H.275, subd. 2(c).

¹⁸ Minn. Stat. § 103H.275, subds. 1-2.

¹⁹ Minn. Stat. § 103H.275, subd. 2(a).

²⁰ Proposed Permanent Rules Relating to Water Resource Protection Requirements (“Proposed Rule”), MDA, May 24, 2017, at 5.11-6.24 (§ 1573.0030).

²¹ Id. at 24.3-24.18 (§ 1573.0090), 11.4-11.25 (§ 1573.0050), 17.9-18.14 (§ 1573.0070).

to which farmers have implemented recommended nitrogen fertilizer use practices.²² These proposed thresholds restrict MDA's broad statutory authority to require WRPRs and constrain its ability to meet the goals of the Groundwater Protection Act.

Despite its broad statutory authority to adopt WRPRs across the state, these proposed thresholds preempt the Commissioner's ability to adopt WRPRs in all but a small portion of the state—leaving the vast majority of the state subject only to voluntary adoption of nitrogen fertilizer use practices, even in areas where groundwater contamination already exists. More specifically it:

- Restricts the Commissioner's ability to require any mitigation to reduce groundwater contamination that does not impact groundwater currently used as a source of drinking water.²³
- Authorizes mandatory action only in townships where MDA's Township Testing Program identifies a significant number of contaminated private wells and limits MDA's capacity to respond to contamination of private drinking wells in all but approximately 300 townships where 20% of the land is in row crop agriculture and 30% of the township is in a vulnerable groundwater area.²⁴
- Limits the Commissioner's ability to require WRPRs a) where less than 10% of the sampled drinking wells and network monitoring wells in a township are contaminated or the exceedance of the Health Risk Limit for nitrate is not imminent in a public drinking well, and b) where nitrogen fertilizer use recommendations are being implemented on 80% of eligible land, regardless of the extent of nitrate contamination in groundwater.²⁵

In areas where BOTH 10% or more of the sampled private and monitoring network wells are contaminated and less than 80% of cropland meet nitrogen fertilizer use recommendations, MDA's regulatory response hinges on the percentage of wells that exceed the Health Risk Limit or the severity of contamination in public drinking water supplies.²⁶ Where 10-15% of drinking and monitoring network wells exceed the Health Risk Limit, or the public drinking water supply has exceeded 9 mg/L nitrate 1 or 2 times in the last 10 years, MDA's options for mitigating contamination are limited. Under MDA's proposal, MDA can only require compliance with the nitrogen fertilizer use recommendations that it previously promoted; educational and reporting activities; the development of irrigation, nutrient, and water management plans; and the use of soil and plant amendments and products delaying nitrification.²⁷ In areas with more widespread contamination, where upwards of 15% of wells exceed the Health Risk Limit, or where

²² Id. at 10.9-16.7 (§§ 1573.0050, 1573.0060).

²³ The proposed rule only authorizes mitigation in areas where nitrate contamination impacts private wells or drinking water supply management areas, see Proposed Rule, 12.18-19.5 (§§ 1573.0060-1573.0070).

²⁴ <https://www.mda.state.mn.us/protecting/cleanwaterfund/gwdwprotection/townshiptesting.aspx> (last visited Aug. 24, 2017).

²⁵ Proposed Rule, at 11.4-11.15 (§ 1573.0050), 17.9-18.14 (§1573.0070), 19.6-19.19 (§ 1573.0080).

²⁶ Id. at 24.19-25.21 (§ 1573.0010).

²⁷ Id. at 24.21-25.16 (§ 1573.0100, subp. 1).

public wells exceed 9 mg/L nitrate 3 or more times in the last 10 years, MDA may also require compliance with “specific rate requirements for crops.”²⁸

But once the nitrogen fertilizer use recommendations are implemented on 80% of cropland in any township or drinking water supply area, MDA can require nothing more, even if drinking water remains contaminated.²⁹ This severe limitation on MDA’s authority results from MDA’s incorrect belief that it lacks the legal authority to: 1) prohibit activities that cause groundwater contamination; or 2) create standards or require actions that impact cropping practices.³⁰

In addition to its too narrowly limited scope and application, MDA’s proposal is needlessly complicated, time consuming, and expensive to implement; it insulates MDA and farmers from mandatory requirements; and it places the burden of obtaining clean drinking water on those least capable of controlling the contamination and most likely to be impacted: water users.

III. Recommended Improvements To The Draft Rule

A. Impose a Statewide Ban on Application of Nitrogen Fertilizer in the Fall and on Frozen Ground.

MDA’s proposal to restrict seasonal fertilizer application only in vulnerable areas falls far short of the goals and intent of the Groundwater Protection Act. The potential for groundwater contamination from nitrogen fertilizer application is documented state-wide and not in dispute. MDA should expand its proposal to restrict application of nitrogen fertilizers in fall and on frozen ground to all areas of the state. This is necessary to accomplish the protection of drinking water quality, prevention and mitigation of groundwater contamination, and establishment of an equitable rule that places all producers on an even playing field. This seasonal restriction should apply statewide unless the U of M has identified year round application as a “recommended” practice.³¹

B. Remove Constraints on MDA’s Authority To Prevent and Remediate Groundwater Contamination In Many Areas of the State Where Such Contamination Already Exists.

MDA’s proposal unreasonably narrows the Department’s authority under the Groundwater Protection Act because it limits MDA’s ability to impose WRPRs where nitrate groundwater is contaminated but there 1) is not a drinking water source; 2) is contamination, but only in less than 10% of a voluntarily sampled private wells and monitoring network wells; 3) is not an imminent exceedance of the Health Risk Limit in public drinking water supplies; or 4) is implementation of nitrogen fertilizer use

²⁸ Id. at 25.20 (§ 1573.0100, subp. 2).

²⁹ Id. at 9.11-9.22 (§ 1573.0040), 15.6-15.23 (§ 1573.0060); Supra, note 3 at slide 39.

³⁰ NFMP, at 79-80; personal communications.

³¹ Randall, supra note 2, at 2.

recommendations on 80% of eligible land.³² These restrictions on MDA's authority thwart the goals of the Groundwater Protection Act, which is designed to prevent, as well as mitigate, nitrate contamination throughout the state, regardless of whether the contaminated groundwater is drinking water or not.

The following revisions to the draft rule are necessary to preserve MDA's broad authority to impose WRPRs wherever groundwater contamination exists.

1. MDA Must Adopt WRPRs in All Areas Where There is Groundwater Contamination.

The Groundwater Protection Act does not distinguish between groundwater currently used as a drinking water source and other groundwater. In fact, it clearly states that it is the goal of the state that *all* ground water be maintained in its natural condition, free from degradation.³³ Consistent with that goal, the Legislature provide the authority to MDA and the Pollution Control Agency to implement rules that will prevent the degradation of all groundwater. There is no statutory basis for MDA's decision to limit the application of WRPRs to areas where groundwater contamination is detected but less than 10% of drinking water and monitoring network wells exceed a Health Risk Limit or where the exceedance of a Health Risk Limit is not imminent in a public drinking well. MDA should revise its proposal to authorize the use of WRPRs in areas with groundwater contamination, regardless of the whether that groundwater is currently a drinking water source.

Concerns about nitrate contamination in shallow groundwater illustrate the necessity for taking this less restricted approach. It is common for shallow groundwater wells in agricultural areas in Minnesota to exceed the Health Risk Limit for nitrate. In 2015, 89% of shallow groundwater samples had detectable levels of nitrates and 45% of samples exceeded the Health Risk Limit.³⁴ These wells are early detectors of larger contamination problems, including deeper groundwater contamination in drinking water supplies,³⁵ but MDA's proposal prevents the application of WRPRs where contaminated shallow groundwater water is not a source of drinking water.³⁶

MCEA agrees with MDA's prioritization of efforts to mitigate groundwater contamination in areas where drinking water is impacting the human population. However such prioritization cannot be at the expense of WRPRs applied broadly enough to address nitrate contamination in shallow groundwater – which is both an early indicator of potential pollution of drinking water wells and an indicator of contamination in areas where drinking wells may have been re-drilled to deeper depths or individuals

³² *Draft Nitrogen Fertilizer Rule Factsheet*, MDA, at Part 2, found at <http://www.mda.state.mn.us/~media/Files/chemicals/nfmp/draftnfertrulefs.pdf> (last visited Aug. 24, 2017).

³³ Minn. Stat. § 103H.001.

³⁴ 2015 AMR, at 2-82-83; 2015 EQB Water Policy Report, *Beyond the Status Quo*, Appendix A: Five-year Assessment of Water Quality Degradation Trends and Prevention Efforts, at 7.

³⁵ NFMP at 21.

³⁶ See Minnesota Department of Health comments on 2013 Draft Revision to the NFMP, at 1.

have tapped into an alternative source of drinking water.³⁷ Moreover, the Groundwater Protection Act provides no basis for the excluding from protection groundwater sources that are not currently used for drinking. The purpose of the Act is to prevent pollution. That is clearly practicable both in areas where contaminants reach drinking water sources and in areas where contamination is affecting shallower groundwater resources.

For all of these reasons MCEA requests that MDA adopt WRPRs in all areas where there is groundwater contamination.

2. WRPRs Must Apply and be Implemented Regardless of the Percentage of Contaminated Wells or the Severity of Public Drinking Water Contamination.

Contrary to the goals and mandates of the Groundwater Protection Act, MDA's proposed rule allows significant drinking water contamination before any mandatory action to remedy the contamination is even contemplated. Limiting the use of WRPRs in this fashion has the consequence of also imposing significant cleanup costs on water users impacted by agricultural nitrate pollution.

As reported in the NFMP "once groundwater is contaminated, the remediation process can be extremely slow, difficult, and expensive."³⁸ According to the United States EPA, clean-up of contaminated drinking water wells costs anywhere from 10-30% more than taking steps to prevent the contamination.³⁹ The costs of treating nitrate contaminated drinking water for private well-owners ranges from an initial cost between \$250 and \$2200, with additional annual costs in the range of \$100-\$500, depending on the type of treatment chosen.⁴⁰ Private well-owners who opt to drill a new well to avoid drinking nitrate contaminated groundwater will incur costs ranging from \$7,200-16,000.⁴¹ To avoid treatment, well-owners could choose to drink bottled water, which would cost \$530-1590 annually.⁴² For users of public water supply systems forced to install treatment to remain below the Health Risk Limit, the annual costs per household ranges from \$35-305.⁴³ These significantly higher costs for remediating contamination are borne by individuals that simply live in an area where those responsible for the contamination have opted not to incur the much lower costs of preventing this contamination.

MDA's proposal will leave many of these individuals who rely on contaminated water sources to fend for themselves, without hope of mandatory pollution reductions from the sources of contamination. It does so by setting mitigation responses relative to the percentage of contaminated wells tested as part of the Commissioner's Township Testing Program. Where there is evidence of drinking water contamination in counties and townships that are not identified for testing as part of this program, the problem is

³⁷ Id.

³⁸ NFMP at 5.

³⁹ Groundwater Recommendations Report, MPCA, January 2016, at 2.

⁴⁰ Bonnie Keller & Gourevitch, *supra* note 9, at 21.

⁴¹ Id.

⁴² Id.

⁴³ Id. at 26.

ignored. For example, MDA has not collected samples in several counties in which 5 or more new private wells drilled in the last 25 years exceed the Health Risk Limit, including Cass, Crow Wing, Isanti, Anoka, and Murray counties.⁴⁴

Many other private well users are also left to fend for themselves. Voluntary monitoring simply doesn't capture the extent of drinking water contamination in many areas. For example, only 30% of the private well owners in Dakota County that were offered free well testing between 2013 and 2014 responded.⁴⁵

MDA's arbitrary threshold for requiring WRPRs also denies WRPR protection to people who live in townships where less than 10% of sampled wells exceed the Health Risk Limit for nitrates.⁴⁶ For example, 12% of individuals (471 people) with contaminated wells in Dakota County will receive no increased protections from contamination because their townships do not meet this test.⁴⁷ This gives water polluters a free pass, and places a significant financial burden on water users who are unwilling to drink contaminated water. This is not what the Groundwater Protection Act intended. To the contrary it is exactly what WRPRs under the Act were expressly designed to prevent.

In summary, requiring proof of significant nitrate contamination in private wells and monitoring network wells before adopting and implement WRPRs constitutes an inexcusable impediment to bringing drinking water supplies to nitrate levels below Health Risk Limits. It also increases cleanup costs to communities where source reduction is more cost effective than treatment at the wellhead or the purchase of bottled water. Moreover, the delay in achieving healthy drinking water for all Minnesotans will increase public taxpayer costs for unnecessary expenditures of agency time and resources.

For all of these reasons, MCEA requests MDA revise its proposal to require compliance with WRPRs both in areas of the state with confirmed groundwater contamination and areas vulnerable to such contamination.

3. MDA's WRPR Rule Must Not Include An Exemption for 80% Implementation Fertilizer Application Rates Recommended as Best Management Practices.

MDA's proposal is antithetical to the goals of the Groundwater Protection Act because it prevents MDA from establishing WRPRs where BMPs for nitrogen fertilizer use are prevalent but nitrate contamination remains. The Groundwater Protection Act does not,

⁴⁴ Compare Map of Nitrate Levels in New Private Wells (February 1991 – April 2017), Minnesota Drinking Water Annual Report for 2016, at 14, to Map of Counties with Vulnerable Townships on MDA's Township Testing Program website, found at <https://www.mda.state.mn.us/protecting/cleanwaterfund/gwdwprotection/townshiptesting.aspx> (last visited Aug. 24, 2017).

⁴⁵ <https://www.co.dakota.mn.us/Environment/WaterQuality/WellsDrinkingWater/Pages/targeted-townships-results.aspx>

⁴⁶ *Final Township Testing Nitrate Report: Dakota County 2013-2015*, MDA, at 19.

⁴⁷ *Final Township Testing Nitrate Report: Dakota County 2013-2015*, MDA, at 19.

as MDA suggests, require an analysis of BMP adoption rates before WRPRs may be imposed.⁴⁸ This turns the protection requirement on its head. MDA must adopt and enforce – not eliminate the possibility of – WRPRs where implementation of BMPs has proven to be ineffective.⁴⁹ Persistent groundwater contamination is good evidence that MDA’s voluntary BMPs have been ineffective and MDA should adopt WRPRs, not make a certain tabulation on BMP implementation be an excuse for requiring nothing more at all be done to address this substantial public health problem.

MCEA requests that MDA revise its proposed rule to require mitigation where groundwater contamination exists, regardless of whether nitrogen fertilizer use recommendations are implemented or not.

C. MDA’s WRPR Rule Must Enable WRPRs For Requirements, Standards, Practices, And Treatment Requirements the Department Has Identified As Most Likely To Be Effective In Preventing Or Mitigating Nitrate Contamination In Areas Where Crops With High Nitrogen Demand Are Grown.

MDA proposes to classify certain groundwater protection practices as purely voluntary Alternative Management Tools (“AMTs”).⁵⁰ While MDA will encourage the exploration and use of the AMTs – including utilizing new technologies, improving genetic diversity, increasing continuous cover (including diversifying crop rotation, perennial crops, and cover crops) and retiring crop land – the proposal preempts MDA’s ability to require the use of these tools as WRPRs.⁵¹ It is hardly equitable to require individuals who rely on groundwater to incur the costs of remediation because MDA will not require compliance with practices that could actually mitigate that groundwater contamination.

1. The U of M Fertilizer Use Recommendations, While not Designed to Prevent Nitrate Pollution from Exceeding Health Risk Limits, Are Foundational And Should Be Adopted as Statewide WRPRs.

The U of M nitrogen fertilizer use recommendations are not, by themselves, appropriate WRPRs because the recommendations: are based only on economics; are not designed to protect groundwater; and will result in groundwater nitrate contamination in many areas of the state.⁵² However, these recommendations are considered “foundational” and if required could reduce nitrogen fertilizer application rates by limiting the application of “insurance nitrogen” that is often recommended by retailers to ensure that “yield-limiting conditions not occur due to insufficient [Nitrogen].”⁵³ For this reason, MDA should

⁴⁸ NFMP at 49.

⁴⁹ Minn. Stat. § 103H.275, subd. 1(b).

⁵⁰ NFMP at 57-61; MDA, *supra* note 3, at slide 28; Proposed Rule, at 26.5-26.24 (§ 1573.0120).

⁵¹ Proposed Rule, at 24.19-26.24 (§§ 1573.0100-1573.0120).

⁵² NFMP at 57. Application at these rates causes high levels of nitrate pollution in tile water. Randall, *supra* note 2, at Tables 1-4. Full adoption of the use recommendations could only reduce nitrate leaching losses by 15-25%. MDA Response to Comments, at 6.

⁵³ Randall, *supra* note 2, at 8.

immediately adopt the following statewide WRPRs: 1) compliance with the U of M nitrogen fertilizer use recommendations; and 2) record-keeping requirements that support the use of the right rate for each field.⁵⁴

2. MDA Should Adopt for Site-Specific Application the Full Menu of WRPRs it Knows to be Effective at Preventing and Mitigating Nitrate Contamination in Groundwater.

MDA should include in its menu of site-specific WRPRs, practices that can effectively reduce nitrate groundwater contamination. The Groundwater Protection Act defines WRPRs broadly, so long as the WRPRs are designed to, and will, prevent and mitigate exceedances of the Health Risk Limits.⁵⁵ WRPRs may include “design criteria, standards, operation and maintenance procedures, practices to prevent releases, spills, leaks, and incidents, restrictions on use and practices, and treatment requirements.”⁵⁶ Nothing in the Groundwater Protection Act limits MDA’s authority to establish WRPRs that restrict nitrogen fertilizer rates to levels that protect groundwater (even if those rates are more restrictive than the yield based U of M rates), or require production of less nitrogen-demanding crops (including cover crops and perennials).

MDA should adopt the following WRPRs in its menu of practices that could be required by a Commissioner’s order:⁵⁷

- Cover crops, where effective, including in areas that could be planted by September 1 or following sweet corn, peas, small grains and corn removed for silage.
- Alternative cropping systems, such as 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 draft rule.
- Use of split application of N on coarse-textured soils.
- Incorporate broadcast or inject sidedress application of urea and UAN into moist soil to a minimum depth of three inches.
- Ban nitrogen fertilizer practices that the U of M finds “Acceptable, but with risk.”
- Limit nitrogen fertilizer application rates to levels shown to prevent and mitigate groundwater contamination.
- Require nitrification inhibitors and urease inhibitors to reduce losses of yield and N.
- The recommendations identified in Dr. Gyles Randall’s expert report at pages 2-5.

3. MDA Should Perform Research to Identify the Agricultural Practices that Are Most Effective in Preventing and Mitigating Groundwater Contamination and Adopt those Practices as WRPRs.

Additional research identifying practices that are most effective at preventing and mitigating groundwater contamination (including nitrogen fertilizer use

⁵⁴ Id. at 2.

⁵⁵ Minn. Stat. §§ 103H.005, subd. 15; 103H.275, subs. (1)(b) and (2)(a).

⁵⁶ Minn. Stat. § 103H.005, subd. 15.

⁵⁷ Randall, supra note 2, at 2-5.

recommendations, and viable and effective crop rotations and cover crops) is needed. MDA should research:⁵⁸

- the impacts of the U of M nitrogen fertilizer use recommendations on groundwater nitrate levels, with the goal of establishing the optimal combination of use practices that can prevent and mitigate groundwater contamination to *the greatest extent*.
- crop rotations with the potential to reduce nitrate losses to groundwater, including rotations including alfalfa or other crops.
- cover crops that could be used in corn-soybean rotations to effectively reduce or eliminate nitrate leaching to groundwater.

MDA should revise its rule to allow MDA to adopt, without any additional rulemaking, as WRPRs those practices identified to be most effective at preventing and mitigating groundwater contamination.

4. MDA Cannot Presume That MAWQCP Certified Farms Have Implemented Nitrogen Fertilizer Use Recommendations.

When identifying mitigation levels for addressing nitrate groundwater contamination, MDA's rule proposal requires the Department to presume that land certified under the MAWQCP is cropland that has implemented the U of M's nitrogen fertilizer use recommendations.⁵⁹ However, the MAWQCP does not require certified farms to either meet these recommendations, or implement any other practices that reduce nitrate contamination in groundwater.⁶⁰ Unless MDA provides evidence that a certified farm has implemented the nitrogen fertilizer use recommendations, this presumption is not justified.

5. MDA Should Clarify Its Expectations for Groundwater Monitoring Networks.

Before identifying a township as eligible for WRPRs, the draft rule appears to require potentially time consuming and expensive collection of redundant data. MDA's proposal authorizes WRPRs in townships where more than 10% of private wells AND more than 10% of wells sampled within a township's *groundwater monitoring network* exceed the Health Risk Limit.⁶¹ The rule lacks clarity on what a *groundwater monitoring network* is, other than "a network of wells used by the commissioner to monitor and test nitrate-nitrogen concentrations in groundwater pursuant to Minnesota Statutes, section 103H.251, subdivision 2."⁶² MDA has not identified the cost for such a network of an entirely new wells installed with great expense and delay. MDA should clarify that a *groundwater monitoring network* is comprised of existing wells and does not require MDA to install a new network of monitoring wells before WRPRs may be imposed.

⁵⁸ Id. at 3-4.

⁵⁹ Proposed Rule, at 8.12-8.14 (§ 1573.0030, subp. 5(B)(2)), 14.3-14.5 (§ 1573.0060, subp. 4(B)(2)).

⁶⁰ See *Minnesota Agricultural Certainty Program: Is It Working for Water Quality, An Assessment of Minnesota's Agricultural Water Quality Certification Program*, MCEA, December 2015.

⁶¹ Proposed Rule, at 7.1-7.11 (§ 1573.0040).

⁶² Id., at 1.22-1.25 (§1573.0010).

IV. Conclusion

MDA must revise its proposed Nitrogen Fertilizer Rule and adopt rules that: 1) prohibit the application of nitrogen fertilizer in the fall and on frozen ground statewide; 2) require record keeping necessary to determine appropriate rates of nitrogen fertilizer application and other WRPRs; and 3) require statewide compliance with the U of M fertilizer use recommendations statewide. MDA must also eliminate from its proposed rule any prohibitive thresholds preventing adoption of WRPRs in areas where groundwater is contaminated. Finally, MDA must commit to funding and completing research necessary to develop WRPRs that can most effectively prevent and mitigate nitrate groundwater contamination.

Sincerely,

A handwritten signature in black ink, appearing to read 'Betsy Lawton', with a stylized flourish extending to the right.

Betsy Lawton
Program Attorney

Mark Ten Eyck
Chief Program Officer