MINNESOTA MDH DEPARTMENT OF HEALTH

Protecting, maintaining and improving the health of all Minnesotans

November 1, 2013

Ms. Annie Fleix-Gerth
Pesticide and Fertilizer Management Division
Minnesota Department of Agriculture
625 Robert Street North
St. Paul, Minnesota 55155-2538

Dear Ms. Fleix-Gerth,

The Minnesota Department of Health's (MDH) mission is to protect, maintain, and improve the health of all people in the state. Safeguarding drinking water supplies is one important aspect of public health protection. It is in the context of this goal that we appreciate the opportunity to offer comments on the draft Minnesota Nitrogen Fertilizer Management Plan (NFMP).

The NFMP, as the plan describes, is "the state's blueprint for preventing or minimizing the impacts of nitrogen on groundwater". Millions of Minnesotans rely on groundwater as a source of drinking water. The MDH regulates public drinking water supplies through the implementation of the federal Safe Drinking Water Act (SDWA). Nitrate-nitrogen (nitrate) in groundwater is an established public health concern, and there are clear limits as to the levels allowed in public drinking water supplies. Accordingly, we all have an interest in preventing and reducing nitrate contamination of drinking water supplies.

Public water suppliers with nitrate contamination issues are held responsible for meeting SDWA standards for water quality. Private well owners are individually responsible for monitoring water quality and treating for nitrates if they wish to meet public health standards. Both public water suppliers and private citizens incur additional treatment cost to remove nitrates from their drinking water or find an alternate water supply when groundwater has been contaminated by nitrogen fertilizer.

In the context of our public health mission, we have developed the following areas of general comment for your consideration:

Public Water Supply (PWS) Systems Impacted by Nitrate and the State's Wellhead Protection (WHP) Program. The MDH requests that the NFMP identify the WHP Program and public water suppliers impacted by nitrates as an on-going high priority focus for plan implementation. This approach is justified based on the public health risks of larger populations served and public costs associated with remediation and treatment of nitrate contaminated drinking water. The NFMP should describe and identify how a PWWS system fits into the mitigation process and consider an accelerated approach in the implementation of the mitigation phase for WHP areas. Our experience indicates that waiting until nitrate levels reach 7mg/l in public water supply wells to promote and adopt Best Management Practices (BMPs) and Alternative Management Tools (AMTs) in WHP areas may not allow a PWS sufficient time to avoid costly mitigation or treatment. The MDH recommends that the NFMP consider including as a high priority the activities of identifying and targeting nitrogen prevention efforts in geologically vulnerable WHP areas where row crop agriculture and nitrogen use may be increasing.

Private Wells. The NFMP describes an ambitious approach to monitor and collect nitrate data in large geographic areas of Minnesota. Many central and southeast Minnesota counties have had nitrate data collected over a number of years. The plan should clarify the use of existing nitrate well data and the assessment process for identifying township areas potentially impacted by nitrogen fertilizer. The plan should consider giving priority to accelerated nitrate BMP promotion and mitigation efforts in areas where the source of nitrate contamination in groundwater is known to be from nitrogen fertilizer. The plan should also consider and identify how on-going data collection, monitoring and assessment will be balanced with the needs of implementing prevention and mitigation efforts in township or WHP areas where public health may be at risk.

The NFMP Mitigation Process and addressing nitrate contamination where BMP's do not work.
The NFMP and elements of Minnesota Statutes 103H.275 describing the development of "Water Resource Protection Requirements" (WRPRs) provide a limited scope in which to address some of the State's most impacted areas from nitrogen fertilizer use. The primary outcome of the proposed phased approach in the NFMP is verification or required adoption of existing nitrogen BMP's, which may not entirely resolve nitrogen loss or reduce nitrate levels in highly vulnerable groundwater areas. While some potential Alternative Management Tools (AMT's) may effectively reduce nitrate levels in groundwater as described in the plan, (CRP, different crop rotations or practices), there is no requirement to adopt them since they may not be practical or achievable from a landowner, grower or statutory perspective. As the state's blueprint for preventing or minimizing the impacts of nitrogen fertilizer, that NFMP should consider describing in more detail AMT's and opportunities to facilitate their adoption by growers where existing BMP's alone are not enough. Considering and identifying this issue in the NFMP may help stimulate and encourage innovation on the part of the local nitrate advisory teams, agricultural community, public water suppliers and private well owners facing this issue.

Attached, please find additional detailed comments addressing those we have summarized above. We look forward to a continued partnership with the MDA in the implementation of the NFMP and nitrogen fertilizer management efforts that protects our groundwater, drinking water supplies and public health. Thank you for considering our comments. Please contact me if you have questions.

Sincerely,

Randy Ellingboe

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RE:nkk
Attachment

Minnesota Department of Health
Agency comments and suggestions on the Nitrogen Fertilizer Management Plan (NFMP)
November 1, 2013

A. Private Well Data, Monitoring and Assessment:
   1. Clarify and describe how past private well nitrate monitoring data could be used where monitoring has been coordinated by MDA, MDH and local partners in Phase 1 of the mitigation process. Consider how accelerated promotion of BMP's through the prevention strategy in the NFMP will be accomplished in areas currently monitored and determined to be impacted from nitrogen fertilizer.
   2. Describe or provide guidance that would help local advisory teams assess well nitrate data and changes in groundwater quality from adoption of best management practices.
   3. The NFMP mitigation process does not reflect protection of shallow contaminated aquifers in situations where more deep wells have been drilled to avoid nitrate contamination.

B. Prevention:
   1. The NFMP should consider identifying geologically vulnerable wellhead protection (WHP) areas where there is potential for conversion from the federal conservation reserve program (CRP) or grassland to row crop agriculture to create awareness of nitrogen impacts and identify them as high priority areas to promote prevention.
   2. MDA describes the use of a Nitrogen Fertilizer Education and Promotion Team (NFEPT). The NFEPT may wish to focus particularly on counties / townships where: 1) land is being converted to or back into agriculture production, 2) groundwater is known to be geologically vulnerable and aquifers are not contaminated, and 3) the trend is towards increased use of crops requiring nitrogen fertilizer.

C. Public Water Supply (PWS) Systems and Wellhead Protection:
   1. The NFMP should state that it will use the MDH WHP program and approved areas as the vehicle for which to accelerate promotion of BMP's and mitigation (1st paragraph, Page 78). PWS systems impacted by nitrate nitrogen should be clearly identified as an on-going high priority focus in the NFMP as well as vulnerable WHP areas with agriculture land uses.
   2. The mitigation process does not clearly describe how a phased approach would work for a WHP area.
   3. The NFMP and mitigation process should consider using existing MDH PWS nitrate water quality monitoring data and history in evaluating if a PWS system and WHP area is in Phase 1.
   4. The NFMP should consider and identify options for nitrogen impacted WHP areas to begin Phase 1 of the mitigation process before public water supply wells reach 7 mg/L

nitrate in order to: 1) provide more time for BMP's to be promoted, adopted by growers and work, and 2) reduce the likelihood of public health / economic costs of the PWS system constructing new wells, blending or treatment.

5. The NFMP should consider options for PWS who are presently treating for nitrates and the source is known to be from nitrogen fertilizer to be able to start or quickly enter into Phase 2.
6. The NFMP could more clearly describe that the mitigation process is limited to requiring growers to adopt existing nitrogen BMP's through Water Resource Protection Requirements (WRPR's) and may not entirely resolve or significantly reduce nitrate levels in highly vulnerable groundwater or WHP areas.
7. In regards to # 6 above, the NFMP should consider describing opportunities that will help stimulate and encourage innovation in AMT's and new BMP's that may provide more immediate and long term results in reducing nitrate levels from nitrogen fertilizer in vulnerable WHP and groundwater areas.
8. The Mitigation Chapter in the NFMP should clearly describe the interpretation and use of the word "ineffective" to mean that BMP's are not adopted by growers (when used in the context of development of WRPR's).
9. The NFMP should describe or consider opportunities for promoting research or efforts that could support improvements in nitrate BMP's in highly vulnerable WHP or groundwater areas.
10. Consider expanding the discussion on the use and development of Alternative Management Tools (AMT's) in the NFMP. Describe steps, efforts and opportunities local advisory teams and agencies could take to further their development, use and adoption.
11. Guidance documents and tools should be developed to assist local advisory teams in coordinating implementation of each of the four mitigation phases of the NFMP and how assessments of BMP adoption and effectiveness will be evaluated.
12. Better define the role and level of MDA support to the local advisory teams described in the NFMP. Provide direction or ideas for financial support for the promotion and evaluation of BMP's by the local advisory teams through the mitigation process.

D. <u>Other Comments:</u>

1. More information could be presented or referenced in the NFMP on the human health risks and costs to the public of nitrate contaminated groundwater. We can assist with this at your request.
2. Part I WHP Plans and the associated delineation of wellhead protection areas and geologic data should be mentioned as a local source of geologic information in the NFMP.
3. The NFMP (page 57-63) suggests that nitrate nitrogen fertilizer impacts on groundwater may be decreasing because of the State Well Code and required new well construction

methods. While the percentage of nitrate impacted wells may be decreasing, that may primarily be due to the reduced use of shallower aquifers by well drillers in certain areas of the State.

4. Accelerated research, funding and implementation of Alternative Management Tools (AMT's) is a high priority for MDH and public water suppliers who have nitrate contaminated groundwater. We would support identifying this issue in the NFMP as a long term priority activity.
5. Consider including a definitions section in the plan that would define the meaning of a BMP, use of the word "ineffective" in developing WRPR's, etc.
6. Describe other potential options that citizens, PWS, local units of government and other state agencies could take if BMPs are adopted and nitrate levels continue to increase. (land use controls, changes to the MN Groundwater Act, etc.)