Line 1.11 – Review the definition of cropland. Is this appropriate? Should the definition be broader or more constrained relative to crop where commercial nitrogen is applied?

Line 1.17 – Is this date to define fall application appropriate? Should the date be split between southern and northern portions of the state?

Line 2.4 – The local advisory definition used the term ‘advise’. Later in the document the draft rule the advisory team role is described as ‘consult’ (7.16 & 13.10). This should be consistent. The role of the local team input is critical to the success of this plan/rule. The rule language should reflect this importance.

Line 5.18 – If greater than 50% of a section is vulnerable, then the whole section is considered vulnerable. Is there a scientific reason for the assumption? A Justification?

Line 6.1 – The vulnerable soils map is available online. The ‘beach ridge’ portion of the red river valley is particularly wide. KSAT greater than 10 is the reason shown. This doesn’t seem right in that region. A comment on this topic would be helpful. The far west and eastern portions along the beach ridge identified as ‘vulnerable’ contain much heavier topsoil then the KSAT mapping exercise illustrates. If the nitrogen rule were to support the use of coarse textured soil nitrogen BMPs in this area it may have a more detrimental impact on the groundwater resource below. The dryland coarse textured crop nitrogen rate and timing recommendations should not be applied in these areas (east and west of the beach ridge), this could reduce the health of the crop and thereby reduce the efficiency of nitrogen uptake leaving more available for loss to groundwater.

Line 6.7 – The exceptions to the fall N restriction are listed in this section. Does this cover it? Research site is limited to 20 acres. That may be too small for on-farm field scale trials that farmers want to run.

Line 7.16 – This states that the commissioner “may” form a local advisory team. This language should be much more definitive. The local input is critical.

Line 7.18 – The method of notice that a township is designated at level 2 is the legal newspaper for the township and the MDA website. How long does this run in the newspaper or on the website? Is this enough? What about direct mailing to agricultural landowners?

Line 7.22 – This states that the commissioner shall monitor nitrate-nitrogen in the groundwater, which “may” include establishing a monitoring network. This should be far more definitive. A monitoring network that considers both the place and depth of the wells within the township is critical to assessing the resource before moving to regulation (level 3). In fact, this network is referred to later (line 11.6 & 19.15) in the draft rule...if we site it there, the establishment of one should be certain.

Line 8.2 – The commissioner shall “conduct an evaluation”....this is all the description that exists in this document to describe a critically importance process that must occur. The agricultural
community deserves a clear explanation about how they will be assessed to determine whether or not regulatory action will be taken in an area. More detail is needed here.

**Line 8.4** – What is the science behind 80% of the cropland following nitrogen BMPs? Does this meet some statistical threshold more likely to provide sufficient protection to the groundwater? At the very least, what is the justification? Furthermore, how will the cropland area be determined? The definition may give direction, but where/how will the MDA actually determine the number of cropland acres in a township needing BMPs?

**Line 8.10** – This line states that the commissioner will consider the use of AMTs in the process of evaluating BMP adoption. What does this mean? Might the MDA allow more leeway in the BMP use if the producer has adopted other AMTs? (Ex: slightly higher rates in portions of the field, but that these rates are applied variably across the field based on grid soil sampling)

**Line 8.15** – If a ‘responsible party’ does not provide records of nitrogen fertilizer use when requested it is assumed that they are not using BMPs. Is that appropriate?

**Line 8.19** – Non-compliance is allowed if it is due to an agricultural emergency or extreme circumstance “as determined by the commissioner”. What about a heavy rainfall event in late June after liquid fertigation? ...Is a rescue application of nitrogen allowed in this case?

**Line 9.23** – The process of downgrading to level one (from 2, 3, or 4) is not listed exactly the same as the water quality thresholds (line 10.12-10.18) that would put an area into level one. Why? What is the science behind evaluating the 90th percentile of groundwater data?

**Line 11.19** – Why is the corn nitrogen rate prescribed at 0.10 ratio here? Other crops the guidelines are referenced. The ratio is based on nitrogen cost an market price which cannot be predicted. Is 0.10 considered more protective of the environment for some reason? Lower risk of loss? Is there any science to justify this distinction for corn? This seems inequitable when compared with other crops.

**Line 12.3** – In addition to the threshold listed above this, the commissioner will also consider “whether there has been a significant change in land used for agricultural production within a township”. Why? What bearing would this have on the mitigation level designation of a township?

**Line 12.11** – In addition to the threshold listed above this, the commissioner will also consider “other factors expected to influence nitrate-nitrogen concentration”. What does this mean? What ‘other factors’ could come into play?

**Line 20.9** – A water resource protection requirement order applies to the “responsible party”. Is this an owner, renter, fertilizer mixing plant operator, custom fertilizer applicator, fertilizer sales staff?...who is ultimately responsible?
Line 24.21 – This section lists the specific water resource protection requirements that the commissioner shall consider in mitigation level 3 areas. Is this list complete? Anything missing? Some of these are quite broad.

Line 25.21 – Within mitigation level 4 areas all the level 3 requirements are an option, plus “specific rate requirements for crops”. Is this a reference to the 0.10 ratio for corn? Again, why? If this is intended to provide more broad latitude to the commissioner to restrict nitrogen use on a crop-by-crop basis (not just corn as listed earlier) then it would be appropriate to include “specific application timing requirements for crops” under this section as well.