

Site Assessment Criteria

(a) Soil depth and direct conduits to groundwater shall be determined using the most current NRCS, WGNHS, or county maps and by in-field verification methods, whichever method or combination of methods can provide the most accurate results for 0-5 feet.

(b) Fields with sensitive areas- karst geology shall be inspected yearly to determine location(s) of sensitive areas, direct conduits to groundwater, depressional areas and any contributing channels that lead or drain to such features.

(c) Field inspections shall be completed either before spring application of manure, tillage or planting or in late summer or fall after crop harvest, but before manure application tillage or planting. Fields with perennial vegetation shall be inspected in spring, or summer before or 7-10 days after cutting/harvest to determine locations of uneven crop growth that may indicate location of sensitive areas. Inspection results shall be recorded and retained with the nutrient management plan.

(d) Fields with sensitive areas-karst geology receiving manure applications shall have a map which shows depth to bedrock determinations, direct conduits to groundwater, and any identified contributing channels that drain to direct conduits to groundwater and closed depressions. Direct conduits to groundwater identified during inspections shall be permanently marked in the field and shown on application maps.

(e) After inspection, evaluate all fields used for manure application according to the following criteria and rank them based on the risk of groundwater contamination to groundwater. Apply manure and other wastes to fields in order of lowest to highest risk.

1. Percent of restricted area based on slope and required setbacks
2. Number of karst features within or immediately adjacent to the field
3. Percent of the field area with sensitive areas-karst geology and/or fracture traces
4. Number of channels in the field that lead to sensitive areas-karst geology direct conduits to groundwater or closed depressional areas
5. Soil depth to bedrock, soil type and conditions

Kewaunee Co. recommendations

- Before manure application, inspect fields (per a-c below) for shallow depth to bedrock soils, fracture traces, groundwater conduits and contributing channels or areas that drain to groundwater conduits. Update spreading maps.

- a. Inspect annual cropped fields in spring before manure application, tillage, or planting or in late summer/fall after crop harvest and before manure application, tillage, or planting.
 - b. Inspect alfalfa and perennial cropped fields in spring and summer before or 7-10 days after cutting – look for uneven crop growth that follows distinct lines.
 - c. Use direct measurements (backhoe, probe, test pits, etc.) to verify depth to bedrock and groundwater.
- Use Kewaunee County, NRCS soils/maps or DNR CAFO maps and field verification to identify location of soils. When possible use direct measurement (e.g., test pit, probe, etc.) to verify depth to bedrock.
 - c. Within closed depressions* in fall after crop harvest unless:
 - (1) manure is injected (following tillage practice #9 below) or immediately incorporated AND
 - (2) successful establishment** of fall seeded forage crop within application area(s)

* = Closed depressions are topographical basins with no external drainage outlet. They can be located using topographic maps and visual interpretation or using ArcGIS tools that use Light Detection and Ranging (LIDAR) surveys. Consult with local county government or DNR to determine if closed depressions meets the definition of direct conduits to groundwater within NR 151 and NR 243.
 - Before applying manure, evaluate and rank fields with low, medium and high risk based upon criteria i-v., below; low risk fields are first priority for application. Avoid high risk fields or use as a last resort.
 - i. % of restricted area within field from setbacks and slope
 - ii. Number of identified karst features within or immediately adjacent to field
 - iii. % field area with identified fracture traces
 - iv. Number of channel(s) in field that lead to identified groundwater conduits or recharge areas within or adjacent to field
 - v. Evaluate soil type, soil conditions, soil depth to bedrock on fields and weather conditions
 - Use NRCS soil units/maps, County maps and field verification to identify location of soils with bedrock < 40 inches. When possible, use direct measurement (e.g., test pit, probe, etc.) to verify depth to bedrock.
 - Use current NRCS and County bedrock depth maps and field verification to identify soils location. When possible, use direct measurement (e.g., test pit, probe, etc.) to verify depth to bedrock.

- Use current NRCS or County bedrock depth maps and field verification to identify soils location
- Annually consult with local municipality for boundaries and requirements of local wellhead protection plans
- Inspect fields according to a., b., and c. below for depth to bedrock, groundwater conduits, contributing channels or areas that drain to groundwater conduits, drain tiles that may drain/discharge to groundwater conduits and evidence of fracture traces; keep inspection logs and update NMP maps with identified features.
 - a. Inspect annual cropped fields in spring before manure application, tillage, or planting or in late summer/fall after crop harvest and before manure application, tillage, or planting.
 - b. Inspect alfalfa and perennial cropped fields in spring and summer before or 7-10 days after cutting – look for uneven crop growth that follows distinct lines.
 - c. Use direct measurements* (e.g., backhoe, probe, test pits, etc.) to verify depth to bedrock and groundwater.

* = electric resistivity is not a direct measurement of bedrock depth, but may be used as a guide to make such measurement