Blue Earth River Watershed CSP Water Quality Requirements

ELIGIBLE APPLICANTS MUST BE IMPLEMENTING NUTRIENT AND PEST MANAGEMENT PLANS THAT MEET NRCS STANDARDS

TO DETERMINE IF YOU HAVE MET THESE CRITERIA, PLEASE REVIEW THE INFORMATION PROVIDED BELOW FOR NUTRIENT AND PEST MANAGEMENT REQUIREMENTS.

If you believe that your existing management is in line with these guidelines, you will need to submit your nutrient and pest management plans for the past 2 years.

If you do not have formal plans, you will need to submit field specific records that indicate the crops, yields, planting and harvest dates; manure and soil test results; and commercial fertilizer and manure applications (including rates, timing, nutrient content, and method of application and incorporation). NRCS has forms available to assist with the documentation of management actions.

NUTRIENT MANAGEMENT REQUIREMENTS

1) **Soil analyses no older than 4 years** (pH, organic matter (O.M.), phosphorus (P), and potassium (K) at a minimum). The analyses must be from a Minnesota Department of Agriculture (MDA) certified soil-testing lab. If not, new analyses must be submitted from a certified lab within 6 months of acceptance into CSP. http://www.mda.state.mn.us/appd/soilabs.htm

2) **Manure analyses no older than 1 year from a MDA certified manure-testing lab** (total N, P_2O_5 and K_2O at a minimum). http://www.mda.state.mn.us/appd/manurelabs.htm

3) **Manure and fertilizer application equipment calibrated**.

4) **Realistic yield goals utilized when determining crop nutrient needs** (take yields for the last five years, drop the lowest yield, and average the four remaining yields). Realistic yields should range from 140 to 185 bu./ac. for corn; 35 to 55 bu/ac. for soybeans; and 4-6 tons/ac. for alfalfa (depending on soil type and management).

5) **Crop N, P_2O_5 and K_2O fertilizer or manure application rates are based on and within 15 pounds per acre of University of Minnesota (UofMN) fertilizer recommendations** (BU-6240-GO Fertilizer Recommendations for Agronomic Crops in Minnesota (or analogous crop specific bulletins)). The rates account for nutrients provided by **previous legume crops and past manure applications.**

   - Total nutrient applications for corn and soybeans grown on a medium soil fertility site should approximate 120, 40 and 100 lbs./ac. respectively of commercial fertilizer or manure N, P_2O_5 and K_2O (midrange of yields described above with no manure applications in past 2 years). Applications less for high fertility soils and more for low fertility soils.

6) **Fall commercial N fertilizer applications do not occur on soils in the textural classes of loamy sand and sand.** Sidedress or split-applications are used.

7) **Fall commercial N fertilizer applications do not occur within the source water management areas for the cities of Fairmont and Mankato (maps attached)**. Spring-preplant application of anhydrous ammonia or urea is preferred.

8) **Fall commercial N applications elsewhere** are applied after soil temperature at a 6" depth is below 50° F (Approx. Nov. 1) and applied N does not contain nitrate.

9) **Areas sensitive to nutrient applications are identified (streams, lakes, public water wetlands, water supply wells, mines, quarries, sinkholes, coarse textured soils, frequently flooded soils, shallow water table and bedrock areas, and surface inlets to drainage systems).**

10) **Manure Best Management Practices (most are state law) implemented in sensitive areas.**

a) **Manure applications based on crop P_2O_5 removal** where required by Minn. state law or results of a Minnesota NRCS Phosphorus Loss Assessment. This includes fields without field edge filter strips if those fields have soil test phosphorus values greater than 21 ppm Bray 1 (16 ppm Olsen) and are within 300 feet of lakes and streams.

b) **No manure application** in road ditches; within 25 feet of lakes, perennial and intermittent streams and public water wetlands and within 50 feet of water supply wells, mines, quarries, sinkholes receiving surface runoff, or other direct conduits to groundwater. No traveling gun or center pivot manure applications within 300 feet of lakes, perennial and intermittent streams and public water wetlands.

c) **No wintertime manure applications** (ground is frozen, snow-covered, or actively thawing) within 300 feet upslope from lakes, perennial and intermittent streams and public water wetlands. Additionally no wintertime application on any field with sheet and rill soil losses greater than 4 tons/acre/year (solid manure) or greater than 2 tons/acre/year, (liquid manure).

d) **Manure is injected or incorporated within 24 hours** upslope from and within 300 feet of surface tile intakes, water supply wells, mines, quarries, sinkholes receiving surface runoff, or other direct conduits to groundwater; or on fields within 25 feet of lakes, perennial and intermittent streams and public water wetlands if those fields do not have field edge filter strips.

e) **No manure applications during usual peak flood periods on "frequently" flooded soils** (floods 50-100 times in 100 years).

f) **Fall manure applications on coarse textured soils are delayed until after November 1.**

g) **A 15 inch or greater separation is maintained** between applied manure and fractured bedrock or high water table.

11) **Farm specific records are kept when manure and other organics are land applied.** Quantity of manure and other organic products produced annually; needed and available acres for nitrogen and phosphorus based manure applications; manure removed from system for feeding, energy production or export from the operation; quantity of manure transported off-site to land not owned or controlled and name and address of commercial hauler or applicator receiving this manure.

12) **Field specific records** for the last two cropping seasons**.** Crops, yields, planting and harvest dates; manure and soil test results; and commercial fertilizer and manure applications (including rates, timing, nutrient content, and method of application and incorporation).

PEST MANAGEMENT REQUIREMENTS

1) Store, handle, transport, mix, and dispose of all pesticides, pesticide containers, unused pesticides and rinsate in accordance with state law and safe handling procedures. This includes the following:
   a) Approved anti-backsiphoning devices in place when using wells and other water supplies to fill application equipment
   b) Setbacks from sensitive areas maintained when mixing or loading pesticides or cleaning application equipment. Setbacks vary dependent on state law but are often 150 feet.
   c) Compliance with worker protection standards

2) Crop and forage tolerance to pests promoted by planting in a timely manner and providing proper nutrients, water and soil conditions that favor rapid establishment and vigorous growth.

3) Disease and weed free seed used to prevent introduction of pests into fields.

4) Plant varieties selected that are resistant to pests and adapted to growing seasons and hardiness in respective areas of the state. **Varietal Trials of Selected Farm Crops**, published annually by the Mn. Ag. Exp. Stations/UofM can be consulted for information on hardiness and resistance to certain pests.

5) Regularly scout to properly identify pest conditions, need for control and timing of control (frequency dependent on pest).

6) Economic injury levels (EIL) and economic treatment level thresholds used when available to determine if control is necessary.

7) Multiple pest control methods are utilized including effective biological, mechanical, cultural and chemical pest controls.

8) Product effectiveness or efficacy information used to help select pesticides. The Univ. of Minnesota annually publishes bulletins describing control effectiveness of various pesticides (e.g. **Cultural and Chemical Weed Control in Field Crops**).

9) All label requirements implemented when using chemical control treatments.

10) Application equipment calibrated before mixing and loading pesticides at the beginning of each season and any time nozzle type is changed. Worn nozzle tips and hoses and faulty gauges replaced.

11) Sensitive areas or features identified. Those areas or features include:
   a) shallow soils over water tables and fractured bedrock
   b) coarse textured soils and other soils with a high NRCS pesticide leaching or runoff rating
   c) wells
   d) sinkholes
   e) surface waters,
   f) tile inlets
   g) land within Source Water Assessment boundaries for the cities of Fairmont and Mankato (maps attached)

12) One or more mitigation practices used when NRCS' Windows Pesticide Screening Tool (WIN-PST) indicates a need (Intermediate, high or extra high hazard ratings). Mitigation practices also used for products containing pesticides designated as common detection by the Minnesota Department of Agriculture (MDA) (currently Acetochlor, Alachlor, Atrazine, Metolachlor and Metribuzin).
   Mitigation practices include:
   a) using low end of label rate ranges
   b) timing of applications to reduce potential for movement in runoff or leaching
   c) band applying, spot treating or variable rate applying where appropriate
   d) using companion crops, cover crops and crops residues, when appropriate, to suppress weed growth
   e) using crop cultivation and shallow tillage operations to control annual and biennial weed seedlings
   f) installing additional erosion and runoff control measures to minimize off-site movement of applied pesticides
   g) establishing vegetated buffer areas which separate normal crop production practices from sensitive features such as sinkholes, wells, streams, lakes, waterways and tile inlets.

13) Field specific detailed pest management records kept that indicate fields, soil type(s), soil test results, crops, identified pest problem, control applied, date applied and results of control. Also indicate brand name, EPA registration number, active ingredient and rates applied if pesticides are used.

Additional details on nutrient and pest management requirements are available on-line on the NRCS-Minnesota home page at: http://www.mn.nrcs.usda.gov/technical/

- NRCS-Minnesota Conservation Practice Standards "Nutrient Management" (Code 590), Waste Utilization" (Code 633), and "Pest Management" (Code 595)
- NRCS Minnesota Amendment MN19 to 180-VI National Planning Procedures Handbook, dtd. August 2003. This amendment addresses baseline, comprehensive and field specific nutrient management planning
- NRCS-Minnesota Amendment MN6 to 180-VI National Planning Procedures Handbook, dtd. 1999. This amendment describes Minnesota NRCS Pest Management Planning Policy