

## **GUIDANCE DOCUMENT 1. COMPONENTS OF A MODEL NUTRIENT MANAGEMENT PLAN**

In order to achieve compliance with the nutrient management requirements of the General Permit for Medium Farm Operations and the Large Farm Operations Rules, nutrient management plans shall provide the following information in the following format:

1. A cover page including:
  - a) The name of the farm;
  - b) The date of plan preparation and year(s) of plan, which includes the years utilized in developing erosion calculations;
  - c) Producer information including owner, manager, address, county, phone number, and email; and,
  - d) Planner information including planner's name, address, phone number, and email.
2. A general description of nutrient management including:
  - a) A statement about the relationship between nitrogen and phosphorus transport and water quality impairments including information about nitrogen leaching into ground water, potential health impacts of nitrogen in drinking water, phosphorus accumulation in soils, increased potential for phosphorus transport in soluble form, and the types of water quality impairments that result from phosphorus movement into surface water bodies;
  - b) A statement describing the relationship between soil phosphorus levels and potential for phosphorus transport from the field;
  - c) A statement about the potential for phosphorus drawdown from the production and harvesting of crops; and,
  - d) A statement regarding how the nutrient management plan is intended to prevent nitrogen and phosphorus supplied for production purposes from contributing to water quality impairment.
3. A facility description including:
  - a) A description of the farm operation, barns and other buildings, and equipment;

- b) A description of farm goals and business objectives that takes long-term goals and available land base into consideration;
  - c) A description of the farm setting and location;
  - d) The watershed the farm is located in, the watershed code, and resource concerns within the watershed.
4. An analysis of resource concerns including:
- a) A description of all farm resource concerns;
  - b) A table listing resource concerns on a per field basis; and,
  - c) Recommendations of field-specific conservation practices to mitigate resource concerns and nutrient mobility.
5. An aerial site photo detailing resource concerns such as sinkholes, streams, springs, lakes, ponds, wells, gullies, tile inlets, areas of concentrated flow, and drinking water sources, in relation to cropland and pastureland with required setbacks and buffers, and property lines (Include a map key with producer's name, the county the farm is located in, planner's name, planner's affiliation, date prepared, a scale bar, a north arrow, and a legend of features highlighted).
6. A land application map detailing all land rented or owned, field and pasture names, FSA tract and field numbers, acreages, roads, location of the farmstead, location of waste storage structures, and points of reference (Include a map key with producer's name, the County the farm is located in, planner's name, planner's affiliation, date prepared, a scale bar, a north arrow, and a legend of features highlighted).
7. A soils map detailing soil type on all land rented or owned with tract and field numbers labeled (Include a map key including producer's name, the County the farm is located in, planner's name, planner's affiliation, date prepared, a scale bar, a north arrow, and a legend of features highlighted).
8. Cropland information including:
- a) A general interpretation of soil test results;
  - b) A soil test table including date of test and nutrient content for each field (at a minimum include available phosphorus, potassium, and reactive aluminum expressed in PPM);

- c) A cropland inventory detailing whether fields are owned, rented, or leased, field names (producer identification), FSA designation, soil type, land use designation (hayland, cropland, pasture, etc.), and planned crop rotation;
- d) An animal waste application schedule to meet recommendations, based on soil test results, animal waste test results, previous crop credits, prior bio-nutrient credits, and which is consistent with results from the Vermont Phosphorus Index and Nitrogen Leaching Index assessed by field, including:
  - i) Tract number, field number, and acreage;
  - ii) Crops (and % legume for hay/haylage crops);
  - iii) Waste application rate(s), form(s), and source(s);
  - iv) Amount of N, P, and K applied (lbs/acre N, P<sub>2</sub>O<sub>5</sub>, and K<sub>2</sub>O);
  - v) Timing (month and year) of application;
  - vi) Prior crop credits;
  - vii) Prior bio-nutrient credits; and,
  - viii) Tillage and time to incorporation.
  - ix) An explanation of yield goal determination;
  - x) An explanation of application rate determination; and,
  - xi) An assessment of animal waste production in relation to spreadable land base.

9. General field information including:

- a) Tract and field number;
- b) Planned crop;
- c) Previous crop; and,
- d) Yield goal.

10.A nutrient budget for each field including:

- a) Nutrient recommendations (lbs. N, P<sub>2</sub>O<sub>5</sub>, and K<sub>2</sub>O per acre);
- b) Nutrients (lbs. N, P<sub>2</sub>O<sub>5</sub>, and K<sub>2</sub>O per acre) provided by recommended waste applications;
- c) Nitrogen (lbs. N) supplied by prior crop;
- d) Nutrients (lbs. N, P<sub>2</sub>O<sub>5</sub>, and K<sub>2</sub>O per acre) supplied from prior bio-nutrients;
- e) Fertilizer recommendations including application rate and fertilizer formulation;
- f) Nutrients (lbs N, P<sub>2</sub>O<sub>5</sub>, and K<sub>2</sub>O lbs/acre) provided by recommended fertilizer applications; and,
- g) A total nutrient budget calculated based on total crop needs and all nutrients provided.

11. Animal waste storage and handling including:

- a) Animal information;
  - i) Number, type, and weight of all livestock or domestic fowl at the MFO facility;
  - ii) Period of confinement for each animal; and,
  - iii) Housing and bedding type.
- b) Waste Storage;
  - i) Type of storage; and,
  - ii) Volume and density of each waste produced (manure, bedding, washwater, runoff water, whey, biosolids, etc.) as stored;
- c) Nutrient Content of Waste Storage;
  - i) A table detailing results from the sampling and testing of animal waste including type of wastes, location of waste storage, sample ID, date of test, waste density, total N, ammonium N (as a part of total N), organic N (as a part of total N), phosphorus (as P<sub>2</sub>O<sub>5</sub>), and potassium (as K<sub>2</sub>O).

- d) A list of any additional methods of managing waste including, but not limited to compost management details, such as the amount and type of material composted, leachate collection, and disposal methods;
- e) If excess nutrients exist alternatives presented for off-farm use of the animal waste and appropriate documentation provided; and,

Documentation on wastes exported and/or imported including the amount and form of waste exported and/or imported;

12. The farm must retain access to copies of the results (issued from the testing laboratory) from all nutrient tests of soil, plants, water, manure, or organic by-product required and/or used in the development of the nutrient management plan;

13. Highly Erodible Land (HEL) determination;

14. The results of all required risk assessments including but not limited to RUSLE2 soil loss calculations, the Leaching Index, and the Vermont Phosphorus Index;

15. All supporting information used to:

- a) Document adequate storage of manure, compost, and other wastes, including procedures to ensure proper operation and maintenance of the storage facilities;
- b) Document proper management of mortalities (i.e., dead animals) to ensure that they are not disposed of in a liquid manure, stormwater, waste storage, or treatment system that is not specifically designed to treat animal mortalities;
- c) Document that clean water is diverted, as appropriate, from the production area;
- d) Document that confined animals within the production area do not have direct contact with waters of the state; and,
- e) Document that chemicals and other contaminants handled on-site are not disposed of in any manure, compost, waste, or stormwater storage or treatment system unless specifically designed to treat such chemicals and other contaminants.

16. Procedures for annual plan updates;

17. Assistance notes (NRCS CONS-6 equivalent) showing discussions with the landowner during the development of the plan, site visits, etc.;

18. A statement that the plan was developed based on the requirements of the Vermont MFO General Permit and Rules and any applicable Federal regulations; and that a change in any of these requirements may necessitate a revision of the plan; and,
19. Guidance for implementation, operation, maintenance, and recordkeeping including blank record keeping templates as required for crop history, animal waste applications, commercial fertilizer applications, yield history, and pasture history.