

STATEMENT OF WORK
Comprehensive Nutrient Management Plan – Total Plan
Ohio (February, 2010)

This SOW is intended for a complete CNMP where engineering consultation to assess Manure & Wastewater Storage & Handling is necessary. A professional engineer is to sign the Manure & Wastewater Storage & Handling component of the CNMP.

These deliverables apply to this individual plan. For other planned practice deliverables refer to those specific Statements of Work.

PLANNING

NOTE: A comprehensive nutrient management plan (CNMP) is to address all land units that the animal feeding operation (AFO) owner and/or operator owns or has decision-making authority over and on which manure and organic by-products will be generated, handled, stored, or applied. When nutrients in excess of crop removal are generated, the plan must address Ohio NRCS criteria found in Ohio Conservation Planning section OH409.1(a), see conservation planning policy, amendment no. OH-6:

http://www.oh.nrcs.usda.gov/intranet/GenManual/180_gm_cons_plan_applic.html

Deliverables:

- 1) Provide documentation that addresses the following items (Ohio CNMP format from the Purdue MMP Program, and NRCS Animal Waste Management (AWM) program output are to be used):
 - a) Site information
 - i) Name, phone number, and address of the AFO owner(s) and/or operator(s).
 - ii) Address and Map of the production site or plat map/local proximity map:
 - iii) Farmstead sketch or map.
 - iv) Emergency action plan covering: fire, personal injury, manure storage and handling, and land application operations.
 - v) Operation procedures specific to the production site and practices.
 - vi) Existing documentation of present facility components that would aid in evaluating existing conditions, capacities, etc. (i.e., as-built plans, year installed, number of animals a component was originally designed for, etc.).
 - b) Livestock Production information (both existing stock, and planned expansion when applicable)
 - i) Animal types, phases of production, and length of confinement for each type at this site.
 - ii) Animal count and average weight for each phase of production on this site.
 - iii) Calculated manure volumes for this site.
 - iv) Manure storage type, volume, and approximate length of storage.
 - c) Additional waste production from farmstead facilities information (as applicable)
 - i) Bedding as appropriate for existing (or planned) livestock housing and manure storage
 - ii) Uncovered outdoor lots accessible to livestock; state the surface area and % of time livestock have access to the lot
 - iii) Feed storage and other areas not accessible to livestock but are potential contaminate sources from runoff or leachate production (eg., silage storage)
 - iv) Daily wastewater volume (eg, dairy milkhouse washwater or swine wastewater/ washing)
 - v) Necessary diversion of clean water from manure contact (eg., roof runoff management, up slope runoff diversion)
 - d) List all existing and/or required practices for the farm headquarters and the land application areas.
 - i) State the type (or types) of existing manure storage facilities, calculate their storage capacity using the AWM, and visually assess the integrity of these structures to continue to function as

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- designed. State when existing manure storage facilities were constructed, and whether or not the facilities were professionally designed (reference as-built drawings when applicable).
- ii) Determine if the existing manure storage interval is compatible with the field availability for nutrient utilization.
 - iii) State the type (or types) of manure storage and handling facilities recommended, and determine that the recommended facilities are constructable at the site.
 - iv) Provide risk assessment of planned manure storage facility(s) from accessing applicable on-line tools referenced in Ohio conservation practice standard 313, Waste Storage Facility.
 - v) Provide a geotechnical report following on-site exploration of proposed manure storage facilities following the procedure described in National Engineering Handbook, Part 651, Agricultural Waste Management Field Handbook, Chapter 7, Geology and Groundwater Considerations. Note: The landowner is to directly pay the cost of the geologic exploration and associated geotechnical lab analysis
 - vi) Provide a preliminary site map showing the size of the planned facility and other associated improvements necessary for the manure management system to function
 - vii) Provide preliminary cost estimate of planned practices
- 2) Provide documentation of compliance with all applicable permits or certifications
 - a) Federal, Tribal, State or local permits and/or ordinances.
 - b) Operator or manager certifications.
 - c) Manure applicator certifications.
 - d) Record of inspections or site assessments.
 - 3) Provide land application site information documentation (Ohio CNMP format):
 - a) Date plan prepared.
 - b) Written manure application agreements. (Where Applicable)
 - c) Aerial maps of land application area.
 - d) Individual field maps with road names, marked setbacks, buffers, and waterways, and environmentally sensitive areas, such as sinkholes, wells, gullies, tile inlets, etc. The Spatial Nutrient Management Planner (SNMP) is recommended as a tool to input setbacks.
 - e) Specific and unique field identification codes.
 - f) Land use designation and acreage of each field.
 - g) Soil map, with appropriate interpretations.
 - h) Risk assessments for potential nitrogen or phosphorus transport from fields. (See <http://efotg.nrcs.usda.gov/treemenuFS.aspx?Fips=39049&MenuName=menuOH.zip> Ohio eFOTG, Section 1, F. Assessment Procedures, 3. Nitrogen and Phosphorus Risk Assessment)
 - i) Soil loss calculations using RUSLE 2 for all fields where manure application is planned (See http://www.oh.nrcs.usda.gov/technical/ohio_eFOTG.html Ohio eFOTG, Section 1, F. Assessment Procedures, 1. Water Erosion, RUSLE2- Erosion Prediction)
 - j) Manure storage and associated practices, and land treatment practices, planned and applied.
 - 4) Provide manure application plans documentation (Ohio CNMP format from the Purdue MMP Program covers these items):
 - a) Crop types, 5 year yield averages, and nutrient balance.
 - b) Application equipment descriptions, times and methods of application.
 - c) Estimated application amounts per acre (volume in gallons or tons per acre, and pounds of plant available nitrogen, phosphorous as P₂O₅, and potassium as K₂O per acre).
 - d) Estimate of acres needed to apply manure generated on this site, respecting any guidelines published for nitrogen or phosphorous soil loading limits.

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- 5) Provide actual activity records (Ohio CNMP format from the Purdue MMP Program covers these items):
 - a) Soil tests not more than 5 years old.
 - b) Manure test annually for each individual manure storage containment (for new or planned facilities without manure tests, initially use book values or manure tests from like facilities).
 - c) Scheduled and applied rates, methods of application, and timing (month and year) of nutrients applied. (Include all sources of nutrients, i.e., manure, commercial fertilizers, etc.)
 - d) Current and planned crop rotation.
 - e) Weather conditions during nutrient application. (Optional)
 - f) General soil moisture condition at time of application (i.e., saturated, wet, moist, dry). (Optional)
 - g) Actual crop and yield harvest from manure application sites.
 - h) Record of internal inspections for manure system components.
 - i) Record of any spill events.
- 6) Document planned mortality disposal actions (Ohio CNMP format from the Purdue MMP Program covers these items):
 - a) Plan for mortality disposal.
 - b) Methods and equipment used to implement the disposal plan.
- 7) Operation and Maintenance requirements (Ohio CNMP format from the Purdue MMP Program covers these items)
 - a) Detailed operation and maintenance procedures for the conservation systems, manure storage facility, etc., contained in the CNMP. This would include procedures such as calibration of land application equipment, storage facility emptying schedule, soil and manure sampling techniques, etc.
- 8) Document the AFO owner's/operator's consideration of the six CNMP elements. It is recognized that a CNMP may not contain all six elements. However, all elements need to be considered by the AFO owner/operator during development of the CNMP, and the owner's and/or operator's decisions regarding each must be documented. These elements are as follows and are outlined in the "Ohio CNMP format from the Purdue MMP Program":
 - a) Manure and Wastewater Handling and Storage (use the NRCS Animal Waste Management (AWM) program to size planned storage facilities, estimate the capacity of existing facilities, and calculate volumes for MMP program "storage" & "analysis" tabs; use the MWPS option in the AWM to determine manure production)
 - b) Land Treatment Practices (conservation practices needed to meet "T" in fields where manure is applied)
 - c) Nutrient Management (recommendations conforming to Ohio Conservation Practice Standards 590 – Nutrient Management & 633 – Waste Utilization)
 - d) Record Keeping
 - e) Feed Management
 - f) Other Utilization Activities
 - i) ***NOTE: The degree to which each CNMP element is addressed is determined by the General Criteria and must meet the specific criteria provided for each element in the National Planning Procedures Handbook (NPPH), Sections 600.53 and 600.54.***

Provide a summary at the beginning of the CNMP describing the farm setting, type of operation, environmental or operational challenges identified, and the solutions the producer plans to implement.

- 9) CNMPs will contain actions that address water quality criteria for the feedlot, production area, and land on which the manure and organic by-products will be applied (i.e., as a minimum the plan would

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address CNMP elements a, b, c, and d listed in item 8 above). This includes addressing soil erosion (less than or equal to the soil loss tolerance “T”) to reduce the transport of nutrients within or off of a field to which manure is applied. For AFO owners and/or operators who do not land apply any manure or organic by-products, the CNMP would address the feedlot and production areas plus Other Utilization (i.e., address CNMP elements a, d, and f listed in item 8 above).

- 10) Document that the CNMP meets all applicable local, Tribal, State, and Federal laws and regulations. When applicable, ensure that USEPA-NPDES or State permit requirements (i.e., minimum standards and special conditions) are addressed.
- 11) Certify that the CNMP meets requirements of the NRCS Field Office Technical Guide (FOTG) conservation practice standards for all practices contained within it.
- 12) The official CNMP Planning software is the Purdue MMP (<http://www.agry.purdue.edu/mmp/>) with its associated Ohio CNMP document maker. This is the official format for CNMP in Ohio.
- 13) NRCS to be provided with electronic copies of the final AWM & MMP files written onto a CD.

REFERENCES

- NRCS National Planning Procedures Handbook (CNMP Technical Guidance) http://policy.nrcs.usda.gov/scripts/lpsiis.dll/H/lpType,toc;H_180_600_E_5.htm#CURR
- NRCS Field Office Technical Guide http://www.oh.nrcs.usda.gov/technical/ohio_eFOTG.html
- NRCS National Engineering Manual <http://www.oh.nrcs.usda.gov/intranet/directives.html#NEM>
- NRCS National Agronomy Manual http://policy.nrcs.usda.gov/scripts/lpsiis.dll/M/M_190_NAM.htm
- NRCS Environmental Compliance Handbook http://policy.nrcs.usda.gov/scripts/lpsiis.dll/H/lpType,toc;H_190_610_Content.htm#CURR
- NRCS Cultural Resources Handbook http://policy.nrcs.usda.gov/scripts/lpsiis.dll/H/lpType,toc;H_190.htm#CURR
- Ohio NRCS Conservation Planning Policy 180- [Conservation Planning and Application](http://www.oh.nrcs.usda.gov/intranet/GenManual/180_gm_cons_plan_applic.html) http://www.oh.nrcs.usda.gov/intranet/GenManual/180_gm_cons_plan_applic.html
- Purdue Manure Management Planner (current version) <http://www.agry.purdue.edu/mmp/>
- Spatial Nutrient Management Planner: <http://www.cares.missouri.edu/snmp/>
- Agricultural Waste Management Field Handbook (AWMFH) and Animal Waste Management (AWM) design program : http://www.oh.nrcs.usda.gov/technical/engineering/engineering_software.html
- National Engineering Handbook, Part 651, Agricultural Waste Management Field Handbook, Ohio Issue 1, Chapter 7, Geology and Groundwater Considerations, May, 1999 http://www.oh.nrcs.usda.gov/technical/engineering/references/awmfh_suppl.html
- Ohio Department of Agriculture - Livestock Environmental Permitting Program <http://www.ohioagriculture.gov/lepp/>
- Ohio Livestock and Manure Management Guide. <http://ohioline.osu.edu/b604/index.html>