

## **Comprehensive Nutrient Management Plan Criteria**

### **Practice Activity Code (102) (No.)**

#### **1. Definitions**

A. A Comprehensive Nutrient Management Plan (CNMP) is a component conservation plan that includes a combination of structural practices, management activities, and/or land management practices for an Animal Feeding Operation (AFO) associated with crop or livestock production that collectively ensures that the purposes of crop or livestock production and preservation of natural resources (especially the conservation of air quality, soil erosion, and water quality as related to nutrient related impacts) are compatible. A CNMP consists of the following four components:

- (1) Signature page with signatures by the Certified CNMP Planner and the client. The signature page must also include farm contact information and the dates of the plan period. See Exhibit A of this Conservation Activity Plan (CAP) 102 for sample CNMP template.
- (2) Farmstead (Production Area), including maps, Record of Decisions (planned and applied conservation practices) for the farmstead(s)/AFO (production/manure handling areas), and additional information about the AFO. Specific requirement details provided in the CNMP Criteria Section of this CAP 102.
- (3) Crop and Pasture (Land Treatment), including maps, Record of Decisions (planned and applied conservation practices) for the crop and pasture lands where the nutrients will be applied, and soil erosion predictions. Specific requirement details provided in the CNMP Criteria Section of this CAP 102.
- (4) Nutrient Management Plan (590) following the established criteria, plans and specifications, operation and maintenance, and recordkeeping. Specific requirement details provided in the CNMP Criteria Section of this CAP 102.

#### **2. CNMP Criteria**

This section establishes the minimum criteria the planner must address in the development and implementation of CNMPs.

##### **A. General Criteria**

- (1) The CNMP shall meet the Natural Resources Conservation Service (NRCS) planning criteria for water quality (nutrients, organics, and sediments in surface and groundwater), soil erosion (sheet and rill, wind, ephemeral gully, classic gully, and irrigation induced natural resource concerns on the production area and the land treatment area), and air quality (Emissions of Particulate Matter - PM and PM Precursors and Objectionable Odors).
- (2) A CNMP must comply with Federal, Tribal, State, and local laws, regulations, and permit requirements and meet the producer's objectives.
- (3) A CNMP must be designed to assist owners/operators in taking voluntary actions to minimize potential pollutants from animal confinement facilities and land application of manure and organic by-products.
- (4) Information in the CNMP must document landowner(s) decisions.
- (5) The CNMP must require evaluation and documentation of compliance with the National Environmental Policy Act, the Endangered Species Act, the National Historic Preservation Act, and other effects on the environment. This evaluation and documentation process WILL BE COMPLETED BY NRCS.
- (6) A CNMP must be developed by persons who meet NRCS certification requirements. The

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specific criteria for certification of NRCS employees and conservation partners can be found in NRCS General Manual 180 Part 409. The specific criteria for certification for Technical Service Providers (TSP) is available via the TSP website

<http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/technical/tsp>

- (7) All CNMPs must be developed and documented per the general CNMP format shown in Exhibit A of the CAP 102. (**Part 1** – Signature Page; **Part 2** – Record of Decisions for the Farmstead (Production Area(s)); **Part 3** – Record of Decision for the Crop and Pasture (Land Treatment Area); **Part 4** – Nutrient Management Plan
- (8) The nutrient management plan portion of the CNMP must be developed in accordance with the State nutrient management (590) Conservation Practice Standard.
- (9) In most situations, addressing the CNMP Criteria will require a combination of conservation practices and management activities to meet the production needs of the AFO owner/operator, and resource concerns associated with the farmstead and land treatment areas. The Field Office Technical Guide (FOTG) Section III and National Planning Procedures Handbook contain additional information and guidance.

B. Specific criteria and format for the CNMP – See Exhibit A for sample format and content.

- (1) Signature page with signatures of Certified CNMP Planner and client. The signature page must also include farm contact information and dates of plan period.
- (2) Farmstead (Production Area)
  - a) Plan map(s) showing existing and planned structures (See NPPH Title 180, part 600.31 subpart A for map requirements); Soils Map(s) for the headquarters with the appropriate soil interpretations (as needed);
  - b) Record of Decisions (planned and applied conservation practices) for the farmstead (production area(s)). This includes the documentation for all currently applied practices that will be maintained as well as all planned practices with schedule of implementation (month/year of planned implementation and amount). For practices previously planned and applied with NRCS technical assistance, documentation will be maintained in the client case folder in the local NRCS field office (engineering plans, job sheets, or implementation requirements). The engineering plans, job sheets, or implementation requirements for future planned practices are not required to be completed during the CNMP planning phase, but will be developed by the appropriate entity per the schedule of implementation.  
Sample record of decisions documentation:

**Composting Facility (Code 317)** - A composting facility is a structure or device that uses controlled aerobic decomposition to transform waste organic material into a biologically stable product that can be used as a soil amendment.

Tract	Land Unit	Planned Amount	Planned Date	Applied Amount	Applied Date
(None)	Farmstead			1	2009

**Waste Storage Facility (Code 313)** - A waste storage facility is an agricultural waste storage impoundment/containment made by constructing an embankment and/or excavating a pit or dugout, or fabricating a structure.

Tract	Land Unit	Planned Amount	Planned Date	Applied Amount	Applied Date
(None)	Farmstead	1	4/2017		

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- c) Completed Implementation Requirements or Engineering plans for planned practices and/or Reference to Implementation Requirements or Engineering plans for practices already implemented. (Plans and specifications for practices are maintained in the case file.) For structures installed prior to CNMP development which were installed without NRCS assistance, the structures should be shown on the appropriate plan map and a note in the Record of Decisions that the structures were installed without NRCS technical or financial assistance. Document whether existing structures are operated and maintained in satisfactory condition. Structural evaluations include, but are not limited to: adequate storage capacity, visually structurally sound and runoff/seepage adequately controlled.
  - d) Information about the AFO (both existing and proposed), including an Animal Inventory (type, number, average weight, number of days confined). May be found in tables printed from animal waste planning software.
  - e) Manure Storage Information (type of manure storage, existing storage volumes/sizes (when applicable) and maximum length of storage available). May be found in tables printed from animal waste planning software. If applicable, planned imports, exports, and on-farm transfers of manure;
  - f) For confinement-based livestock and poultry operations with a maximum capacity greater than or equal to 300 animal units for the following species: swine, dairy, beef, horse, broiler chickens, layer hens, and turkeys, the use of the National Air Quality Site Assessment Tool (NAQSAT) is REQUIRED for evaluating the air quality resource concerns. Use of NAQSAT for smaller operations (i.e., less than 300 animal units) of these species is encouraged, but not required. A baseline NAQSAT report (i.e., representing current management of the operation) must be provided by the producer or TSP (if not provided by NRCS). The information identified by the baseline report, in conjunction with other pertinent data for the livestock or poultry operation, will be used to identify any potential air quality resource concerns at the operation. If an air quality resource concern is identified, the TSP and producer will identify potential mitigation options to address that concern and an updated NAQSAT report must be prepared by the producer and TSP, representing the management of the operation after implementing the potential mitigation options. The NAQSAT can be accessed free of charge at <http://naqsat.tamu.edu>. *NAQSAT is not used to evaluate regulatory compliance.*
  - g) (Optional) Brief Description of, or additional information about AFO
- (3) Crop and Pasture (Land Treatment)
- a) Plan map(s) showing existing and planned structures, application fields, soils, application setbacks, existing and planned crop and pasture practices (See NPPH Title 180, part 600.31 subpart A for map requirements);
  - b) Record of Decisions (planned and applied conservation practices) for the crop and pasture lands where the nutrients will be applied. This includes documentation for all currently applied practices that will be maintained as well as all the planned practices with schedule of implementation to include: month/year of planned application and amount. For practices previously planned and applied with NRCS technical assistance those plans will be in the client case file in the local NRCS field office (engineering plans, job sheets, or implementation requirements). The engineering plans, job sheets, or implementation requirements for future planned practices are not required to be completed during the CNMP planning phase, but will be developed by the appropriate entity per the schedule of implementation. **Implementation Requirements for conservation practices necessary for completing risk assessments shall be included with the CNMP** Examples of these

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practices include: Conservation Cover (327), Conservation Crop Rotation (328), Cover Crop (340), and Residue and Tillage Management (329 or 345), Contour Farming (330), Stripcropping (585), Field Border (386) and Filter Strip (393). A Sample record of decisions documentation:

**Conservation Crop Rotation (328)** - Conservation crop rotation is growing a planned sequence of various crops on the same piece of land for a variety of conservation purposes.

Implementation Requirements Attached.

Tract	Land Unit	Planned Amount	Planned Date	Applied Amount	Applied Date
3456T	Fields 9, 10, 11	250 ac		250 ac	2015
4356T	Fields 1,2,3,4,5,6	200 ac	4/2017		

**Residue and Tillage Management, No Till (329)** - The residue and tillage management no-till practice addresses the amount, orientation, and distribution of crop and other plant residue on the soil surface year-round. Crops are planted and grown in narrow slots established in the untilled seedbed of the previous crop. Implementation Requirements Attached.

Tract	Land Unit	Planned Amount	Planned Date	Applied Amount	Applied Date
3456T	Fields 9, 10, 11	250 ac		250 ac	2015
4356T	Fields 1,2,3,4,5,6	200 ac	4/2017		

- c) Completed Implementation Requirements and/or Reference to Implementation Requirements or Engineering plans for practices already implemented. (Plans and specifications for practices are maintained in the case file.) For structures installed prior to this plan that were installed without NRCS assistance, the structures should be shown on the appropriate plan map and a note in the Record of Decisions that the structures were installed without NRCS technical or financial assistance. Document whether existing structures are satisfactory (visually appear to be structurally sound, operating as needed, and are adequately maintained).

- d) Predicted Soil Erosion

(4) Nutrient Management Plan (590)

The nutrient management plan portion of the CNMP must comply with all technical criteria contained in the state approved Nutrient Management (590) Conservation Practice Standard, and address the use and management of all nutrients applied on agricultural lands from any available nutrient source (animal manure, wastewater, commercial fertilizers, crop residues, legume credits, irrigation water, organic by-products, etc.). **All nutrient management plans must include all items listed in the Plans and Specifications and Operation and Maintenance sections of the State Nutrient Management (590) Conservation Practice Standard.** The following components (and additional components as required by the State Nutrient Management (590) Conservation Practice Standard) must be included in the nutrient management plan of the CNMP (duplicate information in other sections of the CNMP may be referenced, such as maps, setbacks, predicted soil erosion, and implementation requirements):

- Results of approved risk assessment tools for nitrogen and phosphorus
- Manure application setback distances

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- Soil test result data
- Manure nutrient analyses, as well as water, compost, organic by-product, and plant tissue sample analyses applicable to the plan
- Current and/or planned plant production sequence or crop rotation
- Planned crops and realistic yield goals for the crops
- Complete nutrient budget, including both field and plan nutrient balance for nitrogen, phosphorus, and potassium for the plant production sequence or crop rotation
- Listing and quantification of all nutrient sources, fertilizer recommendations, planned nutrient applications and form
- (Optional) Annual Summaries of Manure Inventory and of Fertilizer Material

### 3. TSP Deliverables:

- a. All items listed in the General and Specific Criteria must be included in the CNMP.
- h. The TSP shall provide the following records to the NRCS office to be retained in the client case file:
  - I. Printed and electronic copy of the complete CNMP document;
  - II. CNMP electronic document file (if using MMP, include the “.nat-cnmp.doc” file);
  - III. Nutrient Management planning tool plan electronic file (if using MMP, include the “.mmp” file);
  - IV. Current NRCS wind and water erosion prediction technologies must be used to calculate soil loss from water and wind (when wind is a resource concern). Database electronic files should be provided.
  - V. Conservation plan electronic .xml file from Customer Service Toolkit (.consplan.xml extension); or your own template for displaying the record of decision for conservation practices already applied or planned;
  - VI. If requested, the Geographic Information Systems (GIS) electronic shapefiles created for the operation;
  - VII. Client information (name, address, email, phone, and any additional information which would be helpful for future reference);
  - VIII. Client’s objectives for the AFO and farm operation;
  - IX. Geospatial layers (if available) for Planning Land Unit (PLU), practices, resource inventory, and other map features;
  - X. All maps used in CNMP development process;
  - XI. Forms and worksheets used in developing and evaluating alternatives;
  - XII. Inventory and analysis information, (this would include all resource concern assessments e.g., erosion, N leaching index, P Index, water quality assessments, air quality site assessment, livestock inventory, manure/waste estimated production, manure imports/exports, manure storage, irrigation assessments, evaluation of existing waste handling/storage structures for integrity and capacity, site feasibility data if needed (such as topographic survey, soil boring or flood zone information.) **Where the assistance of a licensed engineer was required for inventory, assessments, plans, etc. shall be signed by the respective licensed engineer;**
  - XIII. If, applicable, photographs, audio and video files or digital files of these type of

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- documents;
- XIV. Other appropriate supporting documents and local or state required documentation;
- XV. Engineering Notes, if applicable;
- XVI. Operation and maintenance agreements and plans for practices that are already existing or for practices where the implementation requirements/job sheets/engineering plans have been developed (unless already in the NRCS case file);
- XVII. Record Keeping forms and guidance, as appropriate;
- XVIII. Notes and computations to support all practice design documentation – for computations requiring an engineer’s license, the computations are to be signed by the respective licensed engineer;
- XIX. All completed Implementation Requirements/ Engineering plans;
- XX. If applicable, documentation to support the certification of applied practices;
- XXI. All electronic files or PDF files (if electronic files are not available) used for design and nutrient management planning

## **EXHIBIT A – Pennsylvania CNMP Template**

### **Pennsylvania CNMP / Conservation Activity Plan 102**

#### **Outline & Planning Guidance for FY2017**

A CNMP (CAP 102) shall consist of two documents (described in this guidance):

- **DOCUMENT I Producer CNMP** (3 sections described below) and
- **DOCUMENT II Producer CNMP Support Documentation / Office Case File** (described below).

**NOTE:**

Producer shall receive both DOCUMENT I and DOCUMENT II.

Both DOCUMENTS shall be filed in the local field office case file.

## CNMP Outline for FY2017 Pennsylvania

### DOCUMENT I. PRODUCER CNMP

#### Signature Page & Planner Checklist section

- Farm contact information
- Plan period
- Required **signatures**
  - CNMP planner
  - Decision maker
  - NRCS reviewer

#### Conservation Plan – Farmstead, Crop, Pasture, other Lands section

- Plan map(s) showing existing and planned practices and near-stream areas.
- Detail I&E maps for areas around the Farmstead/headquarters.
- Record of decisions and schedule of implementation with planned and existing practices for application on farmstead, crop, and pasture. The selected practice(s) must address the resource concerns identified in the Engineering I&E and/or required to meet soil erosion, water quality, and air quality.
- Conservation Crop Rotation (328) & Prescribed Grazing (528) for all crop and pasture land receiving manure.
- Soil Map(s) with descriptions,
- Topographic map
- Predicted Soil Erosion with RUSLE2 calculations (management and plan view)
- Completed Implementation Requirements Job sheets necessary for land treatment practices.

#### Nutrient Management Plan (590) section (Act 38 Farmer Packet-equivalent & Record keeping)

- Cover Page
- NMP Summary (including the NMP summary application chart, summary notes, manure rate calibration table, and the farm management map)
- Appendix 1: Nutrient Management Plan Agreement and Responsibilities
- Appendix 8: Importer/Broker Agreements and NBSs as needed
- Record Keeping

### DOCUMENT II. PRODUCER CNMP SUPPORT DOCUMENTATION / OFFICE CASE FILE (Separate document provided to producer and NRCS field office)

#### Engineering I&E

- Detailed report discussing existing conditions and resource concerns at the farmstead, alternatives discussed, estimated costs, and recommended conservation practices.
- Detail I&E farmstead map.
- Include any field surveys, soils information, design notes, calculations for sizing, cost estimates, photos, etc. used to support findings etc.
- Signature of Professional Engineer (PE) registered in Pennsylvania or NRCS staff with JAA.

#### Conservation Planning

- Environmental Regulation compliance documentation - CPA-52, PNDI, cultural resources
- Support documentation National Air Quality Site Assessment Tool (NAQSAT) when required
- Conservation Assistance Notes (Cons-6)

#### Nutrient Management Plan (590) section (Act 38-equivalent plan)

- Nutrient Management Plan Summary
- Manure Application Setback Distances on map
- Soil & Manure Nutrient Test Data
- Planned Crops and Fertilizer Recommendations
- P Index & Planned Nutrient Applications
- Appendix 6 Manure Management
- Field Nutrient Balance
- Manure Inventory Annual Summary
- Winter Application Matrix
- Planned Manure Exports, Imports, and on farm Transfers, if applicable
- Record Keeping

Comprehensive Nutrient Management Plan / Conservation Activity Plan 102 Criteria & Template  
January 2017

## USDA NRCS National Criteria and Pennsylvania Template for CNMP CAP 102 FY2017

**EXAMPLE: CNMP Signature Page Section (PA, FY2017)**

<b>Signature Page for Comprehensive Nutrient Management Plan CNMP Practice/Activity Code (102)</b>		
<b>Operation Identification and Location Information</b> The Comprehensive Nutrient Management Plan (CNMP) is an important part of the conservation management system for your Animal Feeding Operation (AFO). This CNMP documents the planning decisions and operation, maintenance, and record keeping for the animal feeding operation.		
Name of Owner/Operator:		
Production Facility Name:		
Mailing address		
Town	County/State	Zip code
Phone #		
FSA farm & tract numbers of all production facilities		
FSA farm & tract numbers of all treatment areas:		
<b>Plan Information</b>		
Date Plan Submitted:		
Crop year years included in plan:		
<b>CNMP Planner signature</b> – As a Certified CNMP Planner, I certify that I have reviewed both the <i>Comprehensive Nutrient Management Plan</i> and supporting documentation for technical adequacy and that the elements of the documents are technically compatible, reasonable, and can be implemented.		
Certified TSP CNMP Planner Name / Certified Conservation Planner (print name)		
<input type="checkbox"/> TSP CNMP planner: TechReg category CAP-CNMP (102); TSP#: _____		
<input type="checkbox"/> CTA planner: Certified Conservation Planner; expiration date: _____		
CNMP Planner signature & date:		(date)
<b>Client signature (required on final plan)</b>		
Producer: As the decision maker for the animal feeding operation covered by this CNMP, I have been involved in the planning process and agree that the items/practices listed in each element of the CNMP are needed and will accomplish my management and conservation objectives. I understand that I am responsible for keeping all the necessary records associated with the implementation of this CNMP and conduct manure testing every year and soil test every three years. It is my intention to implement/accomplish this CNMP in a timely manner as described in the plan.		
Producer signature & date: _____		
<b>Information below this line to be completed by NRCS following plan review</b>		
The CNMP content and level of treatment meets the Definitions, Criteria, and Deliverables required by Comprehensive Nutrient Management Plan CAP Code (102) and General Manual Title 190 Part 405 - Comprehensive Nutrient Management Plans. Plan reviewed by NRCS staff with job approval authority.		
Designated Conservationist name:		
Designated Conservationist signature & date:		
<b>Required with CNMP submission effective FY2017</b>		

## **Guidance for Maps**

The CNMP must include several required map types. Supplementary maps may also be needed to provide an accurate description of operation. All maps included in the CNMP must meet the following format requirements

### **All maps contain the following:**

- Title block showing:
  - A map title (i.e. Location Map, Conservation Plan, Soils, Topographic Map)
    - Client's name (individual or business)
    - Prepared with assistance from USDA – Natural Resources Conservation Service" and "Assisted by [planner's name]"
    - Name of Conservation District, county, and state
    - Date prepared
- Map scale, North arrow
- Road Names - Include labels for a minimum of two roads
- Appropriate map symbols and a map symbol legend on the map or as an attachment

**Required Maps** More than one of each type of map may be needed to show all required information

**Conservation Plan Map(s).** This will consist of several map documents including the farmstead (headquarters) and land where nutrients will be applied. The "Conservation Plan Map" will specifically include the following items:

- Boundary lines for the PLUs with labels (name, number, or both) (yellow)
- FSA Farm number and FSA Tract as accessible to TSP plan developer
- Land-use designation and applicable land use modifiers for each PLU
- Labels must correspond with the land use/field numbers in the Record of Decision
- Acreage for each PLU (to 1/10th acre)
- Location of all planned and applied (existing) conservation practices.
- Map legend that clearly labels all practices **using NRCS conservation practice name** and consistent with practice name used in the Record of Decision Practice Schedule.
- Road Names - Include labels for a minimum of two roads. There is no need to display roads where roads are clearly visible on imagery. Do not include label for "unnamed streets."
- Waters of the Commonwealth (shown in blue), with labels for all named tributaries (labeled in blue)

**Soils Map(s)** with appropriate interpretations (e.g. soil descriptions and land cover descriptions)

- Field and tract boundaries (yellow)
- Soils polygons and Map Unit Symbols (red)

USDA NRCS National Criteria and Pennsylvania Template for CNMP CAP 102 FY2017

- Attached Map Unit Description report with soil descriptions

**Topographic Map** including:

- Drawn to scale including all lands in the agricultural operation
- Field and tract boundaries

**Detail I&E Map(s) for areas around the Farmstead/headquarters** including labels with location of all final proposed practices and BMPs, existing and proposed buildings and structures, and land features relevant to proposed project. Scale map tight enough for relevant details to be seen. See Document II, Engineering and Evaluation for more details.

**Operator Management Map(s)** are to be included in the Nutrient Management Plan Summary section in the Nutrient Management (590) Plan to provide easy reference for the farmer and nutrient applicator. It is highly recommended to use aerial photography as map underlay and to print in color. The operator management map is to include the following:

- Farm boundary
- Field boundaries
- Field identification
- Field specific acreage (this information can be shown directly in the map for each field, or can be included as part of the map legend indicating the field acreage for each individually identified field)
- Manure application setbacks and buffers with an identification of the landscape feature that requires the setback, such as an indication of where the stream or sinkhole are, well locations, etc.)
- Location of existing and proposed structural conservation practices (including manure storage facilities)
- Location of existing or proposed emergency manure stacking areas or in-field manure stacking areas
- Roads and road names adjacent to and within the operation

**Other Resource Maps, As Needed**

**Location Map (required if more than one tract in plan)**

The Location Map clearly identifies the location of the operation, showing the intersection of at least two roads, when multiple tracts are involved in the plan (ex. Nutrient Management Plan, Grazing Plan, CSP Contract, Cover Crop Contract). Include labels for **FSA Farm and Tract number** as accessible to TSP plan developer.

## Conservation Plan section guidance

### **Record of Decisions for Farmstead (Production and Manure Handling Areas)**

- A brief description of the animal production operation (both existing and proposed), including the type of animal, number of animals, average weight, number of days confined, type of manure storage, existing storage volumes/sizes (when applicable) and maximum length of storage available. If applicable, planned imports, exports, and on-farm transfers of manure

The Record of Decisions (planned and applied conservation practices) for the farmstead(s) production/manure handling areas. This includes all currently applied practices that will be maintained as well as all the planned practices with schedule of implementation to include: month/year of planned application and amount. The engineering plans, job sheets, or implementation requirements for future planned practices are not requirements during this CNMP planning phase, but will be developed by the appropriate entity per the planned schedule of implementation.

- **Narrative Statements (Farmstead/Engineering)** are included for each practice. The narrative includes a brief description of the practice, addresses practice/activity definition, the purpose(s) of the practice/activity, and what is being done. The use of Pennsylvania Standard Narratives is encouraged. Modify these narratives to be more site-specific.
- If no management change is occurring, record the original implementation date in both the planned and applied sections of the practice schedule. Document whether existing structures are satisfactory (visually appear to be structurally sound and are adequately maintained).

Below is an example of how the record of decisions can be documented:

**Composting Facility (Code 317)** - A composting facility is a structure or device that uses controlled aerobic decomposition to transform waste organic material into a biologically stable product that can be used as a soil amendment. (Additional site specific information required.) Are schedule headings consistent with PA planning guidance?

Tract	Land Unit	Planned Amount	Planned Date	Applied Amount	Applied Date
5355T	Farmstead	1	2009	1	2009

**Waste Storage Facility (Code 313)** - A waste storage facility is an agricultural waste storage impoundment/containment made by constructing an embankment and/or excavating a pit or dugout, or fabricating a structure. (Additional site specific information required.)

Tract	Land Unit	Planned Amount	Planned Date	Applied Amount	Applied Date
5355T	Farmstead	1	4/2017		

## Record of Decisions for Land Treatment on Crop, Pasture, and Other Lands Where the Nutrients Will be Applied

- Record of Decisions (planned and applied conservation practices) for the crop, pasture, and other lands where the nutrients will be applied. This includes the documentation for all currently applied practices that will be maintained as well as all the planned practices with schedule of implementation to include: month/year of planned application and amount. CNMP planners shall include Job Sheets / Implementation Requirements for practices necessary for completing the risk assessments (P Index, RUSLE2) with the CNMP when developed. These practices generally include: (328) Conservation Crop Rotation, (329 and/or 345) Tillage Residue Management practices, (340) Cover Crop, (330) Contour Farming, (585) Strip Cropping, (393) Filter Strip, and (386) Field Border. The Nutrient Management Plan (590), due to its size and complexity, will be placed in a separate section.
- A **Narrative Statement (application land)** is included with each practice. The narrative includes a brief description of the practice, addresses practice/activity definition, the purpose(s) of the practice/activity, and what is being done. The use of **Pennsylvania Standard Narratives** is encouraged. Modify these narratives to be more site-specific.
- The **Operation and Maintenance statement** is either included in the practice narrative or its location referenced in the practice narrative. If using a Job Sheet/Implementation Requirement Document for a specific practice, include a reference to that Job Sheet/Implementation Requirement in the appropriate narrative. When guidance is provided via practice design, engineering plan, or conservation practice standard, reference these in the narrative.

Below is an example of how the record of decisions can be documented:

**Conservation Crop Rotation (Code 328)** - Plant crops as listed: (...). Generally High residue no-tilled crops such as corn, grain, or hay crops may be added to the rotation without increasing soil loss. Crops with low residues and with tillage generally cannot be added to the rotation without the additional use of conservation practices or by adding additional years of high residue no-till crops or hay to the rotation. Lime and fertilizer will be applied based on soil tests and current PSU Agronomy Guide recommendations as documented in the nutrient management plan. Pest management will be based on Pest Management Recommendations found in the current PSU Agronomy Guide. Additional information, including the cropping sequence, can be found in the attached Job Sheet/Implementation Guide for Conservation Crop Rotation. (Additional site specific information required.)

Tract	Land Unit	Planned Amount	Planned Date	Applied Amount	Applied Date
4356T	Fields 1,2,3,4,5,6	200 AC	2013	200	2013
4895T	Fields 8,9,10,11,12,13	250 AC	4/2017		

## USDA NRCS National Criteria and Pennsylvania Template for CNMP CAP 102 FY2017

**Residue and Tillage Management, No Till (Code 329)** - Use no-till planting methods for planting the crops listed below. Crops will be planted directly into prior crop residues or into a cover crop. Additional information is found on the attached Job Sheet/Implementation Requirements. (Additional site specific information required.)

Tract	Land Unit	Planned Amount	Planned Date	Applied Amount	Applied Date
4356T	Fields 1,2,3,4,5,6	200 AC	2013	200	2013
4895T	Fields 8,9,10,11,12,13	250 AC	4/2017		

**Nutrient Management (Code 590)** - Manage the amount, source, placement, form, and timing of the application of nutrients and soil amendments to minimize agricultural non-point source pollution to surface and ground water resources. All plant nutrients will be applied based on a nutrient management plan developed for the farm. Nutrients from all sources will be included. The plan will include field by field application rates and the season in which they will be applied. Nutrient management plan recommendations will integrate phosphorus considerations using the current phosphorous index. Additional guidelines and specifications are found in the attached Nutrient Management Plan. (Additional site specific information required.)

Tract	Land Unit	Planned Amount	Planned Date	Applied Amount	Applied Date
4356T	Fields 1,2,3,4,5,6	200 AC	2013	200	2013
4895T	Fields 8,9,10,11,12,13	250 AC	4/2017		

## Guidance for Soil Loss Prediction (RUSLE2) documentation

**Soil Loss Prediction (RUSLE2) Printed Management and Plan reports for all pasture and cropland.**

**Document Predicted Soil Erosion Rate (RUSLE2) for each field and cropping system except where permanent ground cover is greater than 90% and slope is less than 10%.**

Before (benchmark) and after plan implementation soil loss will be documented using RUSLE2.

### **Predicted Soil Loss (sheet and rill) RUSLE2 Management and Plan printed reports.**

Average annual soil erosion rate across the rotation (tons/acre/year) for each field and cropping system is documented. Before (baseline/benchmark) and after plan implementation soil loss will be calculated using RUSLE2 and documented with printed Plan and Management reports for each field. If before RUSLE2 soil loss calculations document that the preplanning rotation meets the Tolerable (T) soil loss level and no management change is being agreed to, no after soil loss calculation is required.

Include the following information in the printed RUSLE2 Plan report for each field:

- Soil name with mapping unit and T value for the planning slope
- Length (feet) and steepness (%) of planning slope
- Description of crop rotation and tillage system
- Estimated erosion rate (tons/acre/year)\*
- Soil Conditioning Index (SCI) value
- Soil Tillage Intensity Rating (STIR) value

Evaluating RUSLE2 results with respect to meeting T

RUSLE2 results that exceed T by less than one ton may be judged by the planner as meeting T provided producer reports no evidence of rill erosion at any time of year throughout the rotation and the planner has confidence that erosion is at or below T. Always document actual predicted soil loss rates as calculated by RUSLE2. When RUSLE2 results are less than 1 ton over T and meet the conditions above include the following statement:

***\*Per PA NRCS guidance 0.9 tons or less above T is acceptable and considered to meet T where rills are absent throughout the year and rotation and planner is confident soil loss is at or below T.***

Include a RUSLE2 printed Management report for each management (before and after) system used to calculate RUSLE2:

- Date and description of each field operation
- Description and yield of each vegetation planted
- Length of rotation, Cover material and residue addition

### **Guidance for Conservation Crop Rotation (328)**

This practice applies to all cropland where at least one annually-planted crop is included in the crop rotation. A crop rotation is defined as a planned sequence of crops grown on the same ground over a period of time (i.e. the rotation cycle).

When planning 328, crop rotation include cover crops. Use the narrative or job sheet/ implementation requirement to document the following: description of residue and tillage management for each crop, Documentation of soil loss (sheet, rill and gully), description of near stream area management (Refer to the “Planning Guidance for Treating Near Stream Cropland Areas,” found in Section III of the PA FOTG, for information on planning these areas).

The planned rotation and management should be the most restrictive option (highest predicted erosion) that meets the client’s objective. Clients may decrease tillage, substitute less erosion-prone crops or add cover crops without requiring a plan revision. Soil loss calculations for the planned crop rotation(s) are included in the producer CNMP.

### **Guidance for Forage and Biomass Planting (512)**

This practice applies when annual, biennial, or perennial crops are grown for forage, pasture, hay, or biomass production. This practice does not apply to the establishment of annual food, fiber, or oilseed crops.

This practice may be planned as part of a cropping system that includes 328. When planning 512 without planning 328, (may occur when a pasture is harvested for first cutting hay before being grazed) describe the management of near stream area(s). – Refer to the “Planning Guidance for Treating Near Stream Cropland Areas,” found in Section III of the PA FOTG, for information on planning these areas.

When planning 512, identify species, seeding rate, establishment method, and O&M required to maintain productivity over the practice lifespan.

### **Guidance for Residue and Tillage Management (329 & 345) practices**

Residue and Tillage Management practices, Reduced Till (345) and No Till (329) are annual practices and may be planned on the same field in different crop years. A crop year begins and ends at harvest. Describe mixed tillage systems in the narrative and RUSLE2 Management Report. Explain that a crop year is harvest to harvest

### **Guidance for Pasture and Prescribed Grazing (528)**

This practice applies when grazing and/or browsing animals are used primarily to harvest vegetation. When planning 528, the following information must be included in the plan:

Forage Inventory detailing quality, quantity, and species of forage. Crop fields that are harvested by livestock (i.e. grazed cover crop or pasture in rotation with annual crops) should be included in this inventory.

Seasonal availability, quality, and stability of watering locations

## USDA NRCS National Criteria and Pennsylvania Template for CNMP CAP 102 FY2017

Livestock Inventory detailing number, kind, and class of livestock, estimated forage demand, and length of grazing season

Forage Balance Calculation – Equation and supplemental information can be found in the PA 528 Practice Guide (Section IV of FOTG) or the PA Pasture Planning Tool (Section III of FOTG).

Period of grazing, deferment, rest, stockpiling and other management activities for each unit

Contingency statement explicitly describes the management of the pasture and animals during periods of drought and extreme precipitation, including winter. This statement identifies areas in which animals will be located during specific field conditions (drought, extreme precipitation, winter). It also clearly identifies sensitive areas from which livestock should be excluded or flash grazed and details the management of the confinement area following livestock occupation.

Monitoring plan with record keeping requirements. Guidance for monitoring plan and recordkeeping found in FOTG section III>Planning & Environmental Compliance Information>Pasture Guidance folder.

Paddock layout maps (if applicable)

For more information about 528 requirements refer to the 528 Standard and Specification.

## **Guidance for Nutrient Management Plan (590) section**

The nutrient management plan section (NMP) of the CNMP shall be consistent with the conservation practice standard for Nutrient Management (code 590) in the NRCS Field Office Technical Guide for Pennsylvania.

The NMP will be equivalent in technical content and format to the Pennsylvania Nutrient Management Program NMP required for CAO and CAFO operations in Pennsylvania, an Act 38-equivalent (content and format) plan. NMP content shall be consistent with applicable requirements and guidance found in *PA Code Title 25, Chapter 83, subchapter D, Sections 83.201 to 83.491* (Act 38 Regulations), the current *Pennsylvania Nutrient Management Program Technical Manual* (Act 38 Technical Manual), the current Penn State Agronomy Guide, and other *PA Nutrient Management Program* references such as newsletters and continuing education updates.

The NMP shall include nutrient budgets for three future crop years consistent with the Conservation Crop Rotation (328) standard documented in the Conservation Plan section.

The following plan elements must be provided to the farmer in the **Producer CNMP (Document I)** so the farmer can focus their attention on those plan elements most relevant to his day-to-day activities:

- Cover Page
- NMP Summary (including the NMP summary application chart, summary notes, manure rate calibration table, and the farm management map)
- Appendix 1: Nutrient Management Plan Agreement and Responsibilities
- Appendix 8: Importer/Broker Agreements and NBSs as needed
- Record Keeping Guidance

The complete 590 Nutrient Management Plan, i.e. Act 38-equivalent (content and format) plan, is required in the **Producer CNMP Support Documentation / Office Case File (Document II)**.

Nutrient Management (590) TSP planners shall meet required criteria of the TechReg category **Nutrient Management – Organic and Inorganic**.

**DOCUMENT II PRODUCER CNMP SUPPORT DOCUMENTATION / OFFICE CASE FILE REQUIREMENTS** (Separate document provided to producer and NRCS field office)

A complete copy of the **Producer CNMP** (Document I) plus

**ENGINEERING Inventory and Evaluation (I&E)**

- Report includes signature of Pennsylvania-registered Professional Engineer (PE) or NRCS staff with JAA.
- Report includes goals of the owner, identification and documentation of any resource concerns on the existing farmstead, including production areas where manure is deposited or stored, ACA's, field stacking, silage and raw materials storage areas, including ag bags, process waste handling (milkhouse/parlor), handling of mortality, etc. Include animal units, typical size, generated manure type and volume, bedding material, and size and condition of existing storage facilities, as applicable.
- Provide or discuss alternative(s) to assist applicant in decision making process. Include least cost option, if applicable. Include management changes needed to implement recommendations. Can include value added measures such as separation, manure storage covers, composting, anaerobic digestion, etc.
- Alternatives and recommendations need an engineering estimate for total implementation cost with estimated quantities.
- If the conservation plan identifies required engineering field practices, provide sufficient preliminary information to assist with proposed practices and associated implementation costs.
- Report should include recommended practice standards to address the identified resource concerns.
- Include sizing for expansion if it going to happen within the next year. NRCS will sort out the cost-share concerns at the time of contracting.

**Other Engineering support documentation**

- Any field surveys, soils information, photos, sizing calculations, design notes used to support findings for various conservation practices recommended or not recommended, etc.
- Detail I&E Map(s) for the Farmstead/headquarters – Scaled aerial view/map showing farmstead facilities labeled to include existing and proposed practices and BMPs. Show dimensions here or in narrative. Include other features such as streams, sinkholes, karst features, roads, property lines, well location, etc. that will affect recommended practices.
- Include a separate USGS Site topo or overlay 2' LIDAR contours on detailed I&E map.
- Preliminary calculations used to size various proposed practices.

USDA NRCS National Criteria and Pennsylvania Template for CNMP CAP 102 FY2017

- Use of the CNMP Engineering Inventory Worksheet (for Existing and/or Planned Facilities) located in Section III of the Pennsylvania Field Office technical Guide is recommended, but optional.

### Implementation Documentation

- When any of the practices are implemented, the engineering drawings, calculations, support document, and “As-builds” would be keep in this document. This is not part of the initial CNMP.

### Conservation Planning

- Environmental Regulation compliance documentation - CPA-52, PNDI, cultural resources
- Supporting National Air Quality Site Assessment Tool (NAQSAT) evaluation documentation when required. For confinement-based livestock and poultry operations with a maximum capacity greater than or equal to 300 animal units for the following species: swine, dairy, beef, horse, broiler chickens, layer hens, and turkeys, the use of the National Air Quality Site Assessment Tool (NAQSAT) is REQUIRED for evaluating the air quality resource concerns. Use of NAQSAT for smaller operations (i.e., less than 300 animal units) of these species is encouraged, but not required. A baseline NAQSAT report (i.e., representing current management of the operation) must be provided by the producer or TSP (if not provided by NRCS). The information identified by the baseline report, in conjunction with other pertinent data for the livestock or poultry operation, will be used to identify any potential air quality resource concerns at the operation. If an air quality resource concern is identified, the TSP and producer will identify potential mitigation options to address that concern and an updated NAQSAT report must be prepared by the producer and TSP, representing the management of the operation after implementing the potential mitigation options. The NAQSAT can be accessed free of charge at <http://naqsat.tamu.edu>. Pennsylvania guidance to help you implement air quality practices can be accessed at <https://www.nrcs.usda.gov/wps/portal/nrcs/main/pa/air/quality/>. *NAQSAT is not used to evaluate regulatory compliance.*
- Conservation Assistance Notes (Cons-6)

**Nutrient Management (590) Plan**

The complete 590 Plan, i.e. Act 38-equivalent (content and format) plan, is required. It will include but not limited to the following:

- Nutrient Management Plan Summary
- Manure Application Setback Distances on map
- Soil & Manure Nutrient Test Data
- Planned Crops and Fertilizer Recommendations
- P Index & Planned Nutrient Applications
- Appendix 6 Manure Management\*
- Field Nutrient Balance
- Manure Inventory Annual Summary
- Winter Application Matrix as needed
- Planned Manure Exports, Imports, and on farm Transfers, if applicable
- Record Keeping Guidance

\*Appendix 6 Manure Management must be completed including site evaluation, identification of inadequate manure management practices/conditions, and BMPs to address manure management problem areas. An Engineering I&E does not fulfill this requirement.