NUTRIENT MANAGEMENT PLAN

I. GENERAL INFORMATION

A. FACILITY INFORMATION

1. Facility Name: _____
2. Address (Physical Location): _____
3. City: _____ 4. State:_____ 5. Zip Code: _____
6. Owner or Operator Name: _____

B. NUTRIENT MANAGEMENT PLAN INFORMATION

1. Indicate the date the nutrient management plan was or will be implemented: _____

   Note: A current version of the nutrient management plan must be implemented at the time of permitting and must be kept on site at the permitted facility.

2. Indicate the date this nutrient management plan was most recently reviewed or revised: _____

C. TYPE AND NUMBER OF ANIMALS

1. Indicate the number and type of animals covered by this nutrient management plan.

   Note: The NMP must address the manure, litter, and process wastewater generated from all the animals confined at the permitted CAFO, not just the sector that meets the CAFO size threshold.

a. Animal Type	b. Number

D. RECORDKEEPING – GENERAL INFORMATION

The following records must be maintained on site at the permitted facility for at least five years from the date they are created. It is recommended that these records be kept with the NMP. Check the box to indicate the records that will be maintained.

1. ☐ A copy of the current site-specific NMP must be maintained on-site at the permitted facility.

II. STORAGE

NPDES requirement:
Ensure adequate storage of manure, litter, and process wastewater, including procedures to ensure proper operation and maintenance of the facilities. [40 CFR 122.42(e)(1)(i)]

ELG requirements:

- The production area [must be] designed, constructed, operated and maintained to contain all manure, litter, and process wastewater including the runoff and the direct precipitation from a 25-year, 24-hour rainfall event. [40 CFR 412.31(a)(1)(i)] OR the facility has requested and the Director has approved Voluntary Alternative Performance Standards in accordance with 40 CFR 412.31(a)(2).
- There must be routine visual inspections of the CAFO production area. At a minimum, the following must be visually inspected:
  - Weekly inspections of all storm water diversion devices, runoff diversion structures, and devices channeling contaminated storm water to the wastewater and manure storage structure;
  - Daily inspection of water lines, including drinking water or cooling water lines;
  - Weekly inspections of the manure, litter, and process wastewater impoundments; the inspection will note the level in liquid impoundments as indicated by the depth marker in paragraph (a)(2) of this section.

  [40 CFR 412.37(a)(1)]
- All open surface liquid impoundments must have a depth marker which clearly indicates the minimum capacity necessary to contain the runoff and direct precipitation of the 25-year, 24-hour rainfall event. [40 CFR 412.37(a)(2)]

A. STORAGE NEEDS

1. How much manure is generated annually by the facility? _____tons

2. How much litter is generated annually at the facility? _____tons

3. How much process wastewater is generated annually by the facility? _____gallons

4. Are nutrients imported from external sources? □ Yes □ No (If no, skip to section II.B)

   If yes, indicate the type and amount imported:

   a. □ Manure: _____ tons/year
   b. □ Litter: _____ tons/year
   c. □ Process wastewater: _____ gallons/year
   d. □ Commercial fertilizer: _____ lbs/year N, _____ lbs/year P
   e. □ Other (e.g., biosolids): _____ lbs/year N, _____ lbs/year P

5. For manure, litter, and process wastewater imported from external sources, indicate the amount stored prior to land application and the approximate storage period:

	a. amount stored	b. approximate storage period (days)
c. Manure	tons	
d. Litter	tons	
e. Process wastewater	gallons	

B. STORAGE CAPACITY

For each storage structure, list the storage structure ID, type of storage, and total capacity.

1. Storage Structure ID	2. Type of Storage	3. Total Capacity (Attach calculations for determining total capacity)	
		a. Gallons or tons	b. Number of days

4. If storage structures are covered, describe the type of cover used: _____

C. STORAGE STRUCTURE OPERATION AND MAINTENANCE

1. Describe procedures to operate and maintain storage structures to hold all wastes accumulated during the storage period, the direct precipitation and runoff from a 25-year, 24-hour storm, including visual inspections, as appropriate. Attach additional sheets if needed.
   _____
   _____
   _____

D. RECORDKEEPING – STORAGE

The following records must be maintained on site at the permitted facility for at least five years from the date they are created. It is recommended that these records be kept with the NMP. Check the box(es) to indicate the records that will be maintained.

1. □ Records of weekly visual inspections of all storm water diversion devices, runoff diversion structures, and devices channeling contaminated storm water to the wastewater and manure storage structure.
2. □ Records of daily inspection s of water lines, including drinking water or cooling water lines;
3. □ Records of weekly inspections of the manure, litter, and process wastewater impoundments
4. □ Weekly records of depth of manure and wastewater in all liquid impoundments as indicated by the depth marker.
5. □ Design documentation for all manure, litter, and wastewater storage structures.
6. □ Documentation of all overflows from manure and wastewater storage structures.
7. □ Documentation of all corrective actions.

III. SITE SPECIFIC CONSERVATION PRACTICES

NPDES requirement:
Identify appropriate site-specific conservation practices to be implemented, including as appropriate buffers or equivalent practices, to control runoff of pollutants to waters of the United States. [40 CFR 122.42(e)(1)(vi)]

ELG requirement:
Unless the CAFO exercises one of the compliance alternatives provided for in paragraph (c)(5)(i) or (c)(5)(ii) of this section, manure, litter, and process wastewater may not be applied closer than 100 feet to any down-gradient surface waters, sinkholes, agricultural well heads, or other conduits to surface waters. [40 CFR 412.4(c)(5)]

- As a compliance alternative, the CAFO may substitute the 100-foot setback with a 35-foot wide vegetated buffer where application of manure, litter, or process wastewater is prohibited. [40 CFR 412.4(c)(5)(a)]
- As a compliance alternative, the CAFO may demonstrate that a setback or buffer is no necessary because implementation of alternative conservation practices or field-specific conditions will provide pollutant reductions equivalent or better than the reductions that would be achieved by the 100-foot setback. [40 CFR 412.4(c)(5)(b)]

A. BEST MANAGEMENT PRACTICES

Please check the box next to any of the following best management practices that are being implemented at the facility to control runoff and protect water quality:

1. ☐ Buffers
2. ☐ Land Application Setbacks
3. ☐ Conservation Tillage
4. ☐ Constructed Wetlands
5. ☐ Infiltration Field
6. ☐ Vegetative Filter
7. ☐ Terrace
8. ☐ Other (specify): _____

_____

B. SETBACKS (for Large CAFOs)

1. Have you implemented 100-foot land application setbacks from all down-gradient water of the U.S., open tile line intake structures, sinkholes, agricultural well heads, or other conduits to waters of the U.S.? ☐ Yes ☐ No

2. If no, have you implemented 35-foot vegetated buffers to all down-gradient water of the U.S., open tile intake structures, sinkholes, agricultural well heads, or other conduits to waters of the U.S. where applications of manure, litter, or process wastewater are prohibited within the buffer? ☐ Yes ☐ No

3. If no, have you implemented approved alternative compliance practices to the 100-foot setback or 35-foot vegetated buffer requirement?
   ☐ Yes, please describe: ☐ No, please explain:
   _____
   _____
   _____
   _____

4. If you are using a combination of 100-foot setbacks, 35-foot vegetated buffers, and/or approved alternative compliance practices, please indicate where each is used:

a. Field ID	b. Identify down-gradient water of the U.S. or conduit to water of the U.S.	c. Identify practice used (setback, buffer, or alternative)

C. MAP

1. Attach a map(s) detailing the location of each field and waterway and each best management practice checked in III.A, above, and, for Large CAFOs, the location of setbacks identified in III.B, above.

D. RECORDKEEPING – CONSERVATION PRACTICES

The following records must be maintained on site at the permitted facility for at least five years from the date they are created. It is recommended that these records be kept with the NMP. Check the box(es) to indicate the records that will be maintained.

1. ☐ Records of inspections and activities conducted to maintain the effectiveness of BMPs implemented to control runoff of pollutants.

IV. MANURE, LITTER, PROCESS WASTEWATER AND SOIL TESTING

NPDES requirement:
Identify protocols for appropriate testing of manure, litter, process wastewater, and soil. [40 CFR 122.42(e)(1)(vii)]

ELG requirement:
Manure must be analyzed a minimum of once annually for nitrogen and phosphorus content, and soil analyzed a minimum of once every five years for phosphorus content. The results of these analyses are to be used in determining application rates for manure, litter, and other process wastewater. [40 CFR 412.4(c)(3)]

A. SAMPLING FREQUENCY AND PARAMETERS

1. Indicate t he frequency of manure, litter, and process wastewater sampling: _____

2. Indicate the frequency of soil sampling: _____

3. Indicate the form of each nutrient used for nutrient management planning.
   a. Nitrogen: _____

   b. Phosphorus: _____

   c. Other: _____

B. SAMPLING PROCEDURES AND RESULTS

1. List the procedures used for sampling each of the following (Attach additional sheets if needed):

   a. manure: _____

   b. litter: _____

   c. process wastewater: _____

   d. soil: _____

2. Book Values

   If this is the first year of NMP implementation, indicate whether book values will be used for manure, litter, and process wastewater nutrient content: □ Yes □ No

3. List the nutrient content (sample results or book values) of manure, litter, process wastewater, and soil, by field, at the CAFO. For sample results, indicate the sample date; for book values, indicate the source used to determine the values.

	i. Nutrient Content		ii. Date/Source
	(A) N (lbs/ton or gal)	(B) P (lbs/ton or gal)	
iii. Manure			
iv. Litter			
v. Process wastewater			
vi. Soil, by field (attach additional sheets if needed): Field ID: _____			
Field ID: _____			
Field ID: _____			
Field ID: _____			
Field ID: _____			

C. RECORDKEEPING – MANURE, LITTER, PROCESS WASTEWATER, AND SOIL TESTING

The following records must be maintained on site at the permitted facility for at least five years from the date they are created. It is recommended that these records be kept with the NMP. Check the box(es) to indicate the records that will be maintained.

1. ☐ Records of manure, litter, and process wastewater sampling.
2. ☐ Records of nitrogen and phosphorus analysis results for manure, litter, and process wastewater.
3. ☐ Records of soil sampling for each field where manure, litter, or process wastewater is applied.
4. ☐ Records of phosphorus analysis results for soil for each field where manure, litter, or process wastewater is applied.

V. LAND APPLICATION

Complete the information below to provide summary information on nutrient land application rates, including the source, amount, timing, and methods of land application of nutrients. In addition, complete the attached Land Application Rate Worksheet to provide detailed data to support the summary information presented below.

NPDES Requirement:
Establish protocols to land apply manure, litter or process wastewater in accordance with site specific nutrient management practices that ensure appropriate agricultural utilization of the nutrients in the manure, litter or process wastewater. [40 CFR 122.42(e)(1)(viii)]

ELG Requirements:

- Application rates for manure, litter, and other process wastewater applied to land under the ownership or operational control of the CAFO must minimize phosphorus and nitrogen transport from the field to surface waters in compliance with the technical standards for nutrient management established by the Director. Such technical standards for nutrient management shall:
  a. Include a field-specific assessment of the potential for nitrogen and phosphorus transport from the field to surface waters, and address the form, source, amount, timing, and method of application of nutrients on each field to achieve realistic production goals, while minimizing nitrogen and phosphorus movement to surface waters; and
  b. Include appropriate flexibilities for any CAFO to implement nutrient management practices to comply with the technical standards, including consideration of multi-year phosphorus application on fields that do not have a high potential for phosphorus runoff to surface water, phased implementation of phosphorus-based nutrient management, and other components, as determined appropriate by the Director.
  [40 CFR 412.4(c)(2)]
- Inspect land application equipment for leaks. The operator must periodically inspect equipment used for land application of manure, litter, and other process wastewater. [40 CFR 412.4(c)(4)]

A. NUTRIENT TRANSPORT RISK

1. Indicate the method(s) used to assess the risk of nutrient transport from the land application areas to surface waters:
   a. ☐ Phosphorus Index
   b. ☐ Nitrogen Leaching Index
   c. ☐ Soil Phosphorus Threshold Values
   d. ☐ Soil Test Recommendations
   e. ☐ Other, please specify: _____

B. LAND APPLICATION METHODS, RATES, AND TIMING

1. For each field, identify the methods used for land application of manure/litter, and process wastewater:

a. Field ID	b. Method for land application of:	
	i. Manure/Litter	ii. Process wastewater

2. Describe procedures to periodically inspect land application equipment for leaks, including the frequency and timing of inspections:
   _____
   _____

3. Equipment calibration
   a. How often is land application equipment calibrated? _____
   b. Indicate the calibration ranges or increments for each piece or type of land application equipment:

	i. Equipment type	ii. Calibration range or increments

4. For each field, indicate whether land application is nitrogen-based or phosphorus-based and provide the land application rate, as calculated in question (W)IV.D.7 (for nitrogen) or (W)IV.E.5 (for phosphorus) on the attached NMP Land Application Rate worksheet(s). Attach extra sheets if needed.

a. Field ID	b. Nutrient Basis (circle one)	c. Supplemental N source for P-based land application	d. Application Rate (tons or gallons/acre)	e. Total to be applied (lbs/acre)	
				i. N	ii. P (Indicate if multi-year P application)
	N or P		Manure/litter: Process wastewater:		
	N or P		Manure/litter: Process wastewater:		
	N or P		Manure/litter: Process wastewater:		
	N or P		Manure/litter: Process wastewater:		
	N or P		Manure/litter: Process wastewater:		
	N or P		Manure/litter: Process wastewater:		

5. Indicate the timing for land application of manure/litter and process wastewater:

	a. Daily	b. Other											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
c. Manure/ litter	i. □ All year ii. □ Growing season												
d. Process wastewater	i. □ All year ii. □ Growing season												

C. NUTRIENT BALANCE

1. Indicate the amount of each nutrient generated and/or used on the CAFO and exported annually from the CAFO:

a. Nutrient Source	b. Amount generated on the CAFO			c. Approximate amount applied to land owned or operated by the CAFO			d. Approximate amount exported from the CAFO		
	i. total	ii. N (lbs)	iii. P (lbs)	i. total	ii. N (lbs)	iii. P (lbs)	i. total	ii. N (lbs)	iii. P (lbs)
i. Manure									
ii. Litter									
iii. Process Wastewater									
iv. Compost									
v. Commercial (indicate type) _____	n/a						n/a		
vi. Commercial (indicate type) _____	n/a						n/a		

2. Total number of acres available for land application of manure, litter, and process wastewater: _____ acres

3. Indicate the minimum number of acres needed to utilize available manure, litter, and process wastewater nutrients according to realistic yield expectations and soil test recommendations (i.e., agronomic rates).

	a. Total Generated (lbs)	b. Application rate (lbs N or P/acre)	c. Minimum acres needed
c. Nitrogen			
d. Phosphorus			

4. If the minimum number of acres of land available (V.C.2) is less than the acres of land needed for nutrient utilization (V.C.3), describe how excess manure, litter, and process wastewater is utilized or disposed:

_____

_____

D. RECORDKEEPING – LAND APPLICATION

The following records must be maintained on site at the permitted facility for at least five years from the date they are created. It is recommended that these records be kept with the NMP. Check the box(es) to indicate the records that will be maintained.

1. □ Documentation of the nutrient basis for land application for each field (N- or P-based)
2. □ Documentation of the total nitrogen and phosphorus to be applied to each field including nutrients from the application of manure, litter, and wastewater and other sources.
3. □ For each application event where manure, litter, or process wastewater is applied, document the following by field:
   a. □ Date of application
   b. □ Method of application
   c. □ Weather conditions at the time of application and for 24 hours prior to and following application
   d. □ Total amount of nitrogen and phosphorus applied
4. □ Documentation of the crop and expected yield for each field
5. □ Records of periodic land application equipment inspections.
6. □ For all manure transfers, the CAFO must maintain the following records:
   a. □ date of transfer
   b. □ name and address of recipient
   c. □ approximate amount of manure, litter, and/or process wastewater transferred

VI. ANIMAL MORTALITIES

NPDES requirement:
Ensure proper management of mortalities (i.e., dead animals) to ensure that they are not disposed of in a liquid manure, storm water, or process wastewater storage or treatment system not specifically designed to treat animal mortalities. [40 CFR 122.42(e)(1)(II)]

ELG requirement:
Mortalities must not be disposed of in any liquid manure or process wastewater system, and must be handled in such a way as to prevent the discharge of pollutants to surface water, unless alternative technologies pursuant to § 412.31(a)(2) and approved by the Director are designed to handle mortalities. [40 CFR 412.37(a)(4)]

A. METHOD OF ANIMAL MORTALITIES HANDLING

1. □ Composting
2. □ Rendering
3. □ Burial
4. □ Other: _____

B. METHOD OF MORTALITY STORAGE PRIOR TO FINAL DISPOSAL

C. RECORDKEEPING – ANIMAL MORTALITIES

The following records must be maintained on site at the permitted facility for at least five years from the date they are created. It is recommended that these records be kept with the NMP. Check the box(es) to indicate the records that will be maintained.

1. □ Documentation of mortality handling practices.

VII. DIVERSION OF CLEAN WATER

NPDES Requirements:

- Ensure that clean water is diverted, as appropriate, from the production area. [40 CFR 122.42)e)(1)(iii)]
- There must be routine visual inspections of the CAFO production area. At a minimum, the following must be visually inspected:
  - Weekly inspections of all storm water diversion devices, runoff diversion structures, and devices channeling contaminated storm water to the wastewater and manure storage structure;

  [40 CFR 412.37(a)(1)(i)]

A. DIVERSION OF CLEAN WATER FROM THE PRODUCTION AREA

1. Is clean water diverted from the production area? □ Yes □ No

   a. If Yes, please describe the clean water diversion system:
   _____
   _____

   b. If No, please ensure that the attached calculations for determining total storage capacity (question II.B.3) account for all runoff, including clean water that has not been diverted from the production area.

B. RECORDKEEPING – DIVERSION OF CLEAN WATER

The following records must be maintained on site at the permitted facility for at least five years from the date they are created. It is recommended that these records be kept with the NMP. Check the box(es) to indicate the records that will be maintained.

1. ☐ Records of weekly visual inspections of all storm water diversion devices, runoff diversion structures, and devices channeling contaminated storm water to the wastewater and manure storage structure.

VIII. PREVENTION OF DIRECT CONTACT OF ANIMALS WITH WATERS OF THE UNITED STATES

NPDES Requirement:
Prevent direct contact of confined animals with waters of the United States. [40 CFR 122.42(e)(1)(iv)]

A. PREVENTION OF DIRECT CONTACT

1. Do the animals have access to waters of the United States within the production area? ☐ Yes ☐ No

B. MEASURES TO PREVENT DIRECT CONTACT

1. List the measures used to prevent direct contact (e.g. fencing) of animals with waters of the United States within the production area:
   _____
   _____

IX. CHEMICAL HANDLING

NPDES requirement:
Ensure that chemicals and other contaminants handled on-site are not disposed of in any manure, litter, process wastewater, or storm water storage or treatment system unless specifically designed to treat such chemicals and other contaminants. [40 CFR 122.42(e)(1)(v)]

A. MEASURES FOR CHEMICAL HANDLING

Check the appropriate boxes below to indicate the measures taken to prevent pesticides, commercial fertilizers, hazardous and toxic chemicals, and petroleum by-products from contaminating process wastewater or storm water storage and treatment systems:

1. ☐ Chemicals are stored in proper containers. Please describe: _____
   _____
2. ☐ Chemicals are properly disposed of that have expired or will not be used. Please describe: _____
   _____
3. ☐ Chemical containers are properly disposed. Please describe: _____
   _____
4. ☐ Chemical storage areas are self-contained (no drains or other pathways for spilled chemicals to exit the storage area). Please describe:
   _____
   _____
5. ☐ Chemical storage areas are covered to prevent contact with rain and snow. Please describe: _____
   _____
6. ☐ Emergency procedures and equipment are in place to contain and clean up chemical spills. Please describe: _____
   _____
7. ☐ Chemical handling and equipment wash areas are designed and constructed to prevent contamination of surface waters and wastewater and storm water storage and treatment systems. Please describe: _____
   _____
8. ☐ Chemicals are handled according to the label. Please describe: _____
   _____

B. RECORDKEEPING – CHEMICAL HANDLING

The following records must be maintained on site at the permitted facility for at least five years from the date they are created. It is recommended that these records be kept with the NMP. Check the box(es) to indicate the records that will be maintained.

1. ☐ Records of inspections and maintenance activities conducted to ensure that chemical and other contaminants do not enter any manure, litter, process wastewater, or storm water storage or treatment system not specifically designed to treat such chemicals and other contaminants.

X. CERTIFICATION	
I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.	
A. NAME AND OFFICIAL TITLE (PRINT OR TYPE)	**B. PHONE NO.** **( )**
C. SIGNATURE	**D. DATE SIGNED**

NMP TEMPLATE ATTACHMENT - LAND APPLICATION RATE WORKSHEET
The following information is to be provided to support the land application rate summary information included in Section V. of the NMP Template. Provide the information requested, by field, for the first year covered by the NMP. Application rates for subsequent years should be revised, as appropriate, based on annual manure, litter, and process wastewater analyses, soil analyses, and other applicable data.

Sections (W)I, (W)II, and (W)III apply to all fields. Section (W)IV is field-specific. Complete a separate section (W)IV for each field. As an alternative, data report outputs from Manure Management Planner or similar nutrient management planning software may be submitted, provided the data reports include all of the requested information.

(W)I. YEAR: _____

(W)II. CROP NUTRIENT NEEDS

A. Identify the crops that may be grown, and the yield goals and nutrient needs for each.

1. Crop	2. Yield goal	3. Crop nitrogen needs (lbs/acre)	4. Crop phosphorus needs (lbs/acre)

B. Describe the method used to estimate realistic yield goals listed in (W)I.A.2. Attach additional sheets if necessary.
_____
_____
_____

C. Identify the source of the phosphorus and nitrogen utilization data listed in (W)I.B, above:
_____
_____

(W)III. SUMMARY FIELD INFORMATION

A. Field ID	B. Acres	C. RUSLE2 Predicted Soil Loss (tons/acre) (attach calculations)	D. % Slope	E. P Index or Risk Index	
				1. Method	2. Result

(W)IV. FIELD-SPECIFIC LAND APPLICATION RATE DETERMINATION

Complete the following sections for each field. Indicate the field ID below and complete a separate set of tables B – E for each field.

A. FIELD ID: _____

B. NUTRIENT NEEDS - NITROGEN

1. Crop	2. Rotation or Season	3. Crop N Need (lbs/acre)	4. Residual N (lbs/acre)		5. Commercial Fertilizer (lbs/acre)	6. Additional N needed (lbs/acre)
			a. Manure	b. Legume		

C. NUTRIENT NEEDS - PHOSPHORUS

1. Crop	2. Rotation or Season	3. Crop P Need (lbs/acre)	4. Plant Available Soil P (lbs/acre)	5. Commercial Fertilizer (lbs/acre)	6. Additional P needed (lbs/acre)

If you have specified nitrogen-based land application in question V.B.4.b of the NMP template, complete table (W)IV.D. If you have specified phosphorus-based land application in question IV.B.4.b of the NMP template, complete table (W)IV.E.

D. APPLICATION RATES - N RECOMMENDATION

1. Crop	2. Net Lbs of N needed	3. Nitrogen Loss	4. Total Pounds of N needed	5. N Content of Manure (lbs/ton or gallon)	6. Amount of manure needed (lbs or gallons)	7. Application rate (lbs or gallons/acre)

E. APPLICATION RATES - P RECOMMENDATION

1. Crop	2. Pounds of P needed	3. P Content of Manure (lbs/ton or gallon)	4. Amount of manure needed (lbs or gallons)	5. Application rate (lbs or gallons/acre)