



Mississippi Department of Environmental Quality

Office of Pollution Control – Environmental Permits Division

POST OFFICE BOX 2261 • JACKSON, MS 39225-2261

TEL: (601) 961-5171 • FAX: (601) 354-6612

www.mdeq.ms.gov



DRY LITTER POULTRY ANIMAL FEEDING OPERATIONS GENERAL PERMIT MSG20 NOTICE OF INTENT

RECEIVED
OCT 05 2026
Dept. of Environmental Quality

INSTRUCTIONS

All questions must be answered for this notice of intent to be considered complete. If an item does not apply, enter "N/A" for not applicable to show that you considered the question. Applicant must be the owner and/or operator of the property.

RE-COVERAGE FOR FACILITIES CURRENTLY COVERED UNDER THE DLPAFO GP MSG20:

To obtain re-coverage under this general permit (GP), existing facilities shall submit a complete Dry Litter Poultry Notice of Intent (DLPNOI) to the MDEQ within 30 days of the date of the Letter of Instruction for Re-Coverage. If a current Comprehensive Nutrient Management Plan (CNMP) is not on file at MDEQ then a current plan must be submitted with the DLPNOI. The CNMP must include a map with a compass direction header, and shows property boundaries and the approximate location of each existing structure (chicken house, incinerator, dead box, land application field(s), composting area, litter storage structure, etc.).

If the previous coverage included regulated construction activities greater than 5 acres which need to be continued then a Large Construction Notice of Intent (LCNOI) must be completed and submitted to MDEQ with the DLPNOI. For construction activities disturbing 1 – 5 acres, the requirements for Small Construction Storm Water must be implemented.

If the facility is out of business or no longer active, please request termination of coverage by completing the Request for Termination (RFT) Form found in the Dry Litter Poultry Forms Package. Facilities that continue to operate without applicable permit coverage are in violation of state law. The DLPNOI is not required to be submitted if the facility is submitting a request for termination of coverage.

COVERAGE FOR NEW OR EXPANDING FACILITIES:

For new or expanding facilities, in addition to the DLPNOI, the following additional submittals may be required:

- A Storm Water Pollution Prevention Plan (SWPPP), and LCNOI for construction activities totaling five (5) acres or more
- Contiguous Land Owner Notification(s) as identified in Condition S-2, ACT 2 of the DLPAFO GP No. MSG20. The notification should include a map with a compass direction header, and shows property boundaries and the approximate location of each existing structure (chicken house, incinerator, dead box, composting area, litter storage structure, etc.).
- Buffer Zone Waiver(s)
- Appropriate Section 404 Documentation (Wetlands)

All forms must be submitted to: Chief, Environmental Permits Division, Mississippi Department of Environmental Quality, PO Box 2261, Jackson, Mississippi 39225-2261.

*For construction activities disturbing 1 -5 acres, the Small Construction Notice of Intent (SCNOI) and SWPPP must be completed, but not submitted.

The Construction Storm Water General Permits, NOI and other required forms can be found at the following link:

<https://www.mdeq.ms.gov/permits/environmental-permits-division/generalpermits/>



**DRY LITTER POULTRY ANIMAL FEEDING
OPERATION GENERAL PERMIT
NOTICE OF INTENT (DLPNOI)**



COVERAGE NUMBER: MSG20 0 2 5 3. For re-coverage, the coverage number must be completed for your specific project or this form will be considered incomplete and returned. The coverage number can be found at the bottom left corner of your previous Certificate of Coverage or in the subject heading of the Letter of Instruction for Re-coverage.

I. GENERAL INFORMATION

A. CONTACT AND FACILITY INFORMATION

Name of Owner: Timothy (Tim) Smith

Facility Name: Smith Poultry

Mailing Address:

Street or P.O. Box: 610 Campground Rd

City: Louisville State: MS Zip: 39339-9622

Physical Site Address:

Street (can not be a P.O. Box) 361 Tuck Wilkes Rd

City: Louisville State: MS Zip: 39339

County: Winston

(For new facilities) Latitude (degrees/min/sec): N/A Longitude: N/A

(For new facilities) Nearest named receiving stream: N/A

Facility Telephone No. (Include Area Code): (662) 803-0829

Facility Fax No. (Include Area Code): _____

Contact Cell Phone No. (Include Area Code): (662) 803-0829

Other Contact Phone Numbers (Include Area Code): _____

Contact Email : milkman1964@icloud.com

B. ACTIVITY TYPE (Check all that apply)

☒ Existing operation NOT proposing expansion. Number of existing houses: 8

☐ Existing operation of an incinerator(s). Number of existing incinerator(s): _____

☐ New or expanding operation. Number of proposed houses: _____ Number of proposed incinerators: _____

II. DRY LITTER POULTRY FEEDING OPERATION CHARACTERISTICS

A. TYPE AND AMOUNT OF CHICKENS

For Existing Facilities:

Has the facility changed the number of houses or animal type (ie. broilers or layers)?

☒ No ☐ Yes – Identify Changes: _____

For New Facilities:

Check type and indicate amount

☐ Broiler (SIC 0251): _____ ☐ Pullet/Breeder (0252): _____

B. CONTRACT INFORMATION

Is this facility a contract operation? ☐ No ☒ Yes- Integrator Name: Peco

C. TYPE OF DRY LITTER STORAGE AND CAPACITY

For Existing Facilities:

Has the facility changed the litter storage type or the capacity?

☒ No ☐ Yes – Identify Changes: _____

For New Facilities:

List type of dry litter storage and capacity (tons): _____

D. NUTRIENT MANAGEMENT PLAN

If you do not have a current Comprehensive Nutrient Management Plan then one must be submitted, if your CNMP is current then complete the dates below:

Development Date: 9/25/2026 Expiration Date: 8/31/2031

The comprehensive nutrient management plan (CNMP) identified above expires five years from the date it was developed and an updated nutrient management plan must be submitted to MDEQ prior to its expiration date.

III. CONSTRUCTION AND/OR OPERATION OF A POULTRY MORTALITY INCINERATOR

- ☒ No, there is no poultry mortality incineration equipment located at the facility. If at a future date you wish to construct and/or operate poultry mortality incineration equipment, you must submit an updated DLPNOI by completing Sections IA, III and IV. Constructing and operating poultry mortality incineration equipment without a modified coverage or issuance of individual permits is a violation of state law.
- ☐ Yes, there is mortality incineration equipment located at the facility. Complete section below:

MORTALITY INCINERATION EQUIPMENT

For Existing Facilities:

Has the facility changed the number or type of incinerators, or the fuel type burned?

☐ No ☐ Yes – Identify Changes: _____

For New Facilities:

Manufacturer Name: _____ Model Number: _____

Capacity (tons/hour): _____ Fuel Type: _____

IV. CERTIFICATION

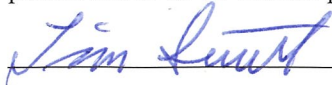
Note: This NOI shall be signed according to Conditions T-17 and T-18 found in ACT 6 of the Dry Litter Poultry Animal Feeding Operations Multimedia General Pollution Control Permit No. MSG20.

- For a corporation, by a responsible corporate officer.
- For a partnership, by a general partner.
- For a sole proprietorship, by the proprietor.

I understand that my nutrient management plan identified Section II. D. expires five years from the date it was developed and that an updated nutrient management plan must be submitted to MDEQ prior to its expiration date.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

I further certify that the project continues as described in the original notice of intent. Also, I certify that I understand when coverage is terminated I am no longer authorized to operate activities identified under this general permit and to do so without proper permit coverage is in violation of state law.



Signature of Responsible Official



Date



Printed Name



Title

Inv ID: MS-2026-00001

Comprehensive Nutrient Management Plan (CNMP)

The Comprehensive Nutrient Management Plan (CNMP) is an important part of the conservation management system (CMS) for your Animal Feeding Operation (AFO). *This CNMP documents the planning decisions and operation and maintenance information for the AFO as assessed at the time of origination for the CNMP.*

Farm/Facility: Smith Poultry
c/o Timothy Smith
610 Campground Rd
Louisville, MS 39339-9622
(662)-803-0829

Longitude/Latitude: 33°1'50"N / 89°8'4"W

Owner/Operator: Timothy Smith

Plan Period: Sep 2026 - Aug 2031

Certified Comprehensive Nutrient Management Plan (CNMP) Planner

As a Certified Comprehensive Nutrient Management Plan (CNMP) Planner, I certify that I have reviewed the Comprehensive Nutrient Management Plan and that the elements of the document are technically compatible, reasonable and can be implemented as assessed at the origination of the plan.

Signature:  Date: 9-25-2026
Name: Wallace H. Cade, (662) 361-4830
Title: Certified Nutrient Management Planner TSP Certification Credentials: 26-51313; Expires: 6/08/2029

Owner/Operator

As the owner/operator of this CNMP, I, as the decision maker, have been involved in the planning process and agree that the items/practices listed in each element of the CNMP are needed. *I understand that I am responsible for providing accurate information for the development of the CNMP and I am responsible for keeping all necessary records associated with implementation of the CNMP.* It is my intention to implement/accomplish this CNMP in a timely manner as described in the plan.

Signature:  Date: 9-25-2026
Name:

NRCS Representative/Conservation District (Optional)

As a NRCS/Conservation District employee, I have reviewed the Comprehensive Nutrient Management Plan and concur that the plan meets NRCS's/Conservation District's conservation goals.

Signature: _____ Date: _____
Name:
Title:

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- 1.8. Planned Internal Transfers of Manure
- 1.9. Brief Description of or Additional Information about Animal Feeding Operation.
Farmstead Safety and Security

Section 2. Crop and Pasture (Land Treatment)

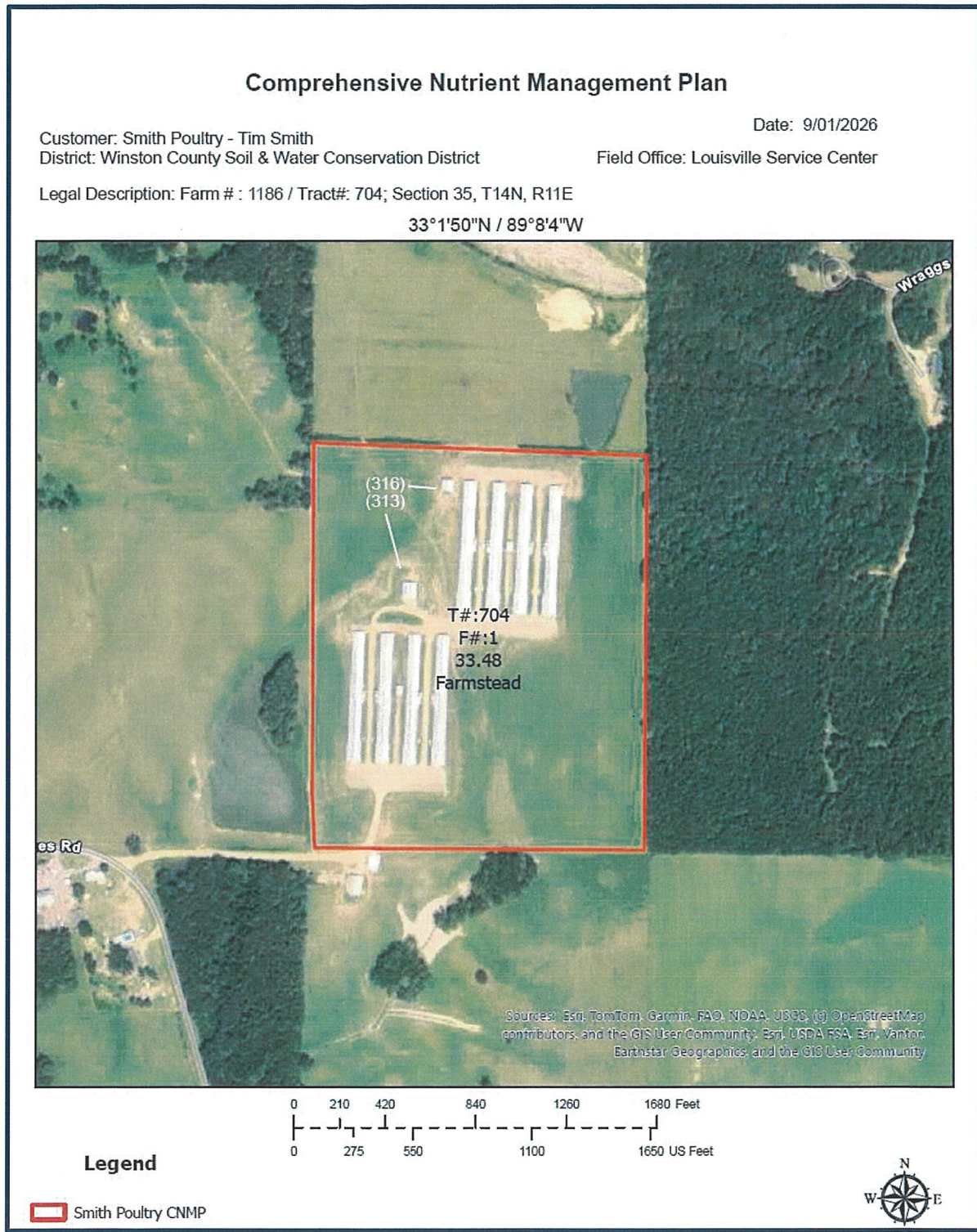
- 2.1. Maps of Fields, Soils, Application Setbacks, Existing and Planned Crop and Pasture Conservation Practices
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Section 1. Farmstead (Production Area)

1.1. Maps of Existing and Planned Farmstead Conservation Practices



Comprehensive Nutrient Management Plan

Customer: Smith Poultry - Tim Smith
District: Winston County Soil & Water Conservation District

Date: 9/01/2026
Field Office: Louisville Service Center

Legal Description: Farm #: 1186 / Tract#: 704; Section 35, T14N, R11E

Assisted by: Wallace H. Cade

33°1'50"N / 89°8'4"W



Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Ke	Kinston loam, 0 to 2 percent slopes, frequently flooded	1.9	5.0%
OrC2	Ora fine sandy loam, 5 to 8 percent slopes, eroded	14.9	44.0%
OrD2	Ora fine sandy loam, 8 to 12 percent slopes, eroded	14.7	43.0%
SwD2	Sweatman fine sandy loam, 8 to 15 percent slopes, moderately eroded	0.1	0.2%
SwF	Sweatman fine sandy loam, 15 to 35 percent slopes	2.9	7.8%
Totals for Area of Interest		33.5	100.0%

Comprehensive Nutrient Management Plan

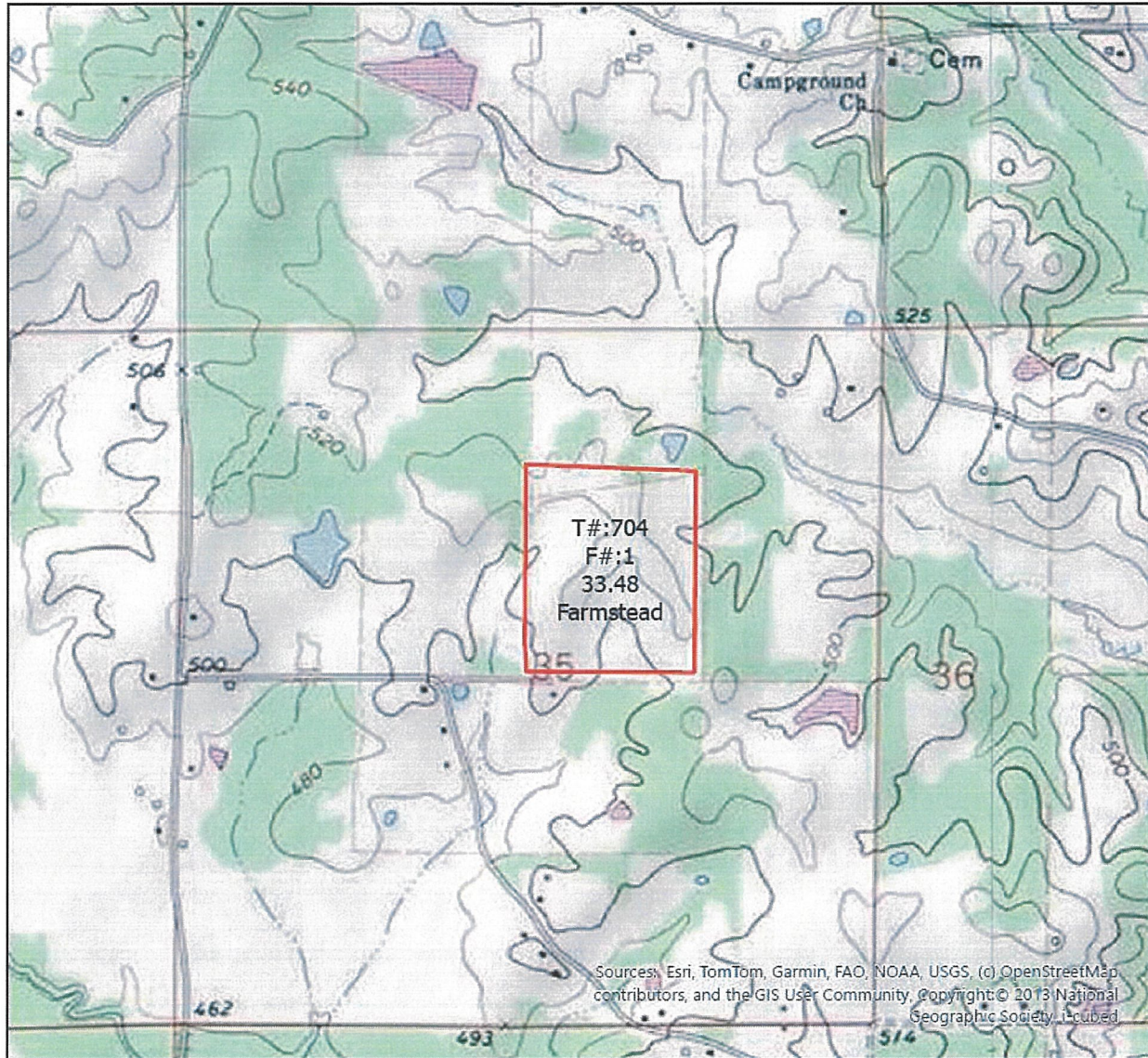
Customer: Smith Poultry - Tim Smith
District: Winston County Soil & Water Conservation District

Date: 9/01/2026

Legal Description: Farm # : 1186 / Tract#: 704; Section 35, T14N, R11E

Field Office: Louisville Service Center

33°1'50"N / 89°8'4"W



0 500 1000 2000 3000 4000 Feet
0 650 1300 2600 3900 US Feet

Legend

 Smith Poultry CNMP



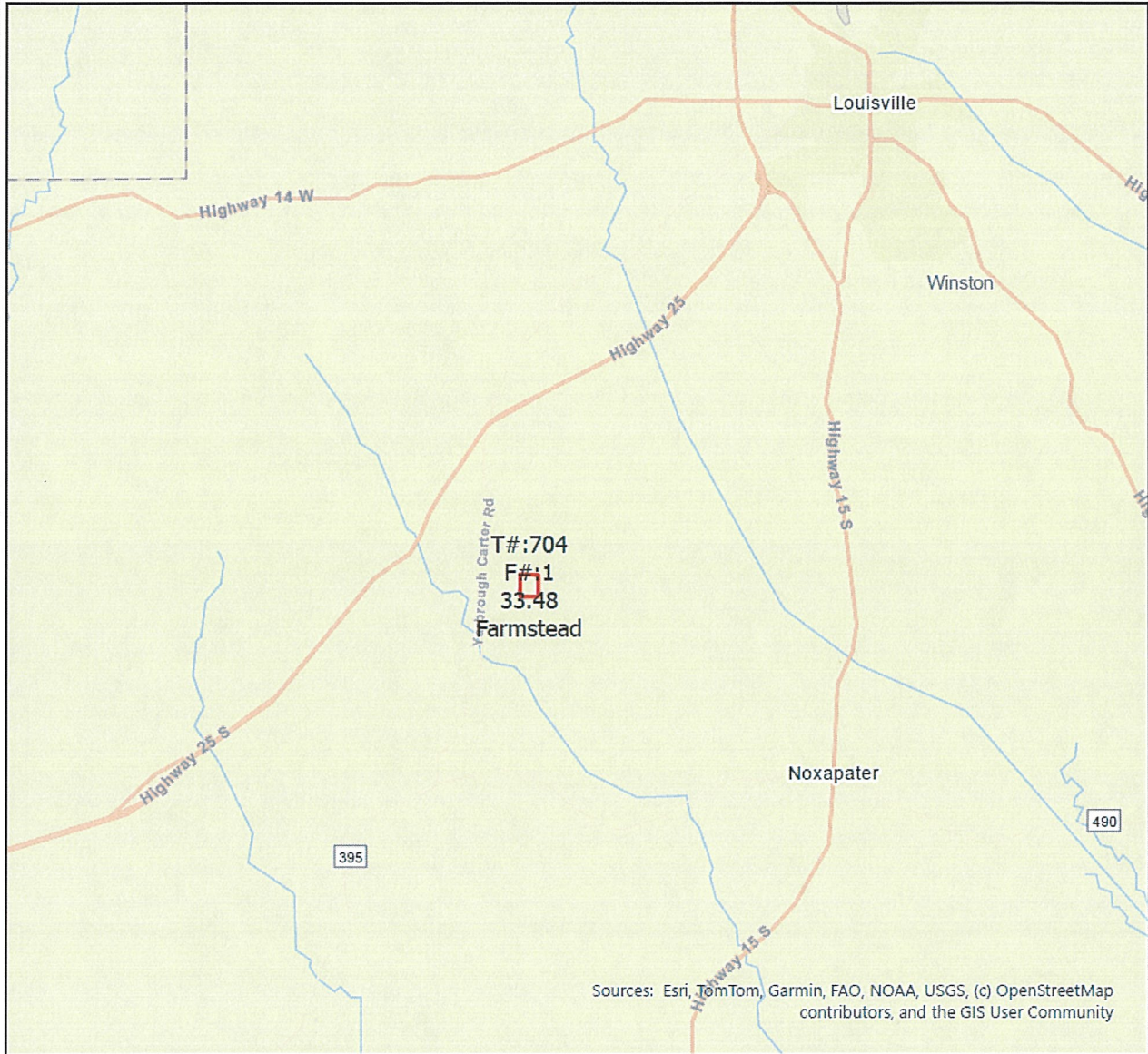
Comprehensive Nutrient Management Plan

Customer: Smith Poultry - Tim Smith
District: Winston County Soil & Water Conservation District

Date: 9/01/2026

Legal Description: Farm # : 1186 / Tract#: 704; Section 35, T14N, R11E Field Office: Louisville Service Center

33°1'50"N / 89°8'4"W



Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, (c) OpenStreetMap contributors, and the GIS User Community

Legend

 Smith Poultry CNMP

0 4700 9400 18800 28200 37600 Feet
0 6250 12500 25000 37500 US Feet



1.2. Farmstead Conservation Practices -- Record of Decisions

Conservation Plan

Comprehensive Nutrient Management Plan -Written (102)

The written site-specific Comprehensive Nutrient Management Plan will meet the planning criteria described in the Field Office Technical Guide. Existing Operation.

Tract	Field	Planned Amount	Month	Year	Applied Amount	Date
704	1	1.00 No	09	2026	1.00 No	9/01/2026
	Total:	1.00 No				

Animal Mortality Facility (316)

Install an on-farm facility for the treatment or disposal of livestock and poultry carcasses. Existing Operation. Design and Implementation records on file. Designed & certified by NRCS.

Tract	Field	Planned Amount	Month	Year	Applied Amount	Date
704	1	1.00 No	09	2026	1.00 No	9/01/2026
	Total:	1.00 No				

Waste Storage Facility (313)

Install a facility to store liquid and/or solid waste on a temporary basis. Existing Operation. Design and Implementation records on file. Designed & certified by NRCS.

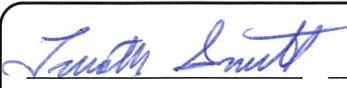
Tract	Field	Planned Amount	Month	Year	Applied Amount	Date
704	1	1.00 No	09	2026	1.00 No	9/01/2026
	Total:	1.00 No				

Waste Recycling (633)

The on-farm agricultural use of nonagricultural waste by-products, or the off-farm nonagricultural use of agricultural waste by-products. This Broiler facility utilizes a 100% off-site export strategy. The available agronomic crop requirement for this facility is zero; therefore, no localized nitrogen or phosphorus over-application will occur.

Tract	Field	Planned Amount	Month	Year	Applied Amount	Date
704	1	1.00 No	09	2026	1.00 No	9/01/2026
	Total:	1.00 No				

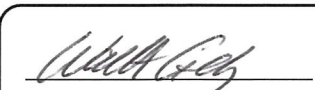
CERTIFICATION OF PARTICIPANTS



9-25-2026

TIMOTHY SMITHDATE

CERTIFICATION OF:



9-25-2026

TECHNICAL SERVICE PROVIDERDATE

DESGINATED CONSERVATIONISTDATE

CONSERVATION DISTRICTDATE

All NRCS conservation practices shall be installed, operated and maintained according to NRCS conservation practice standards and associated technical specifications.

1.3. Farmstead Conservation Practices – Implementation Requirements

MISSISSIPPI NRCS FIELD OFFICE TECHNICAL GUIDE:

Comprehensive Nutrient Management Plan (CPA 102): Existing Operation

A site specific conservation plan developed for an Animal Feeding Operation (AFO) that includes the following two components: (a) The production area including the animal confinement, feed and other raw materials storage areas, and the waste handling containment or storage areas, and (b) the land treatment area, including any land under control of the AFO owner or operator, whether it is owned, rented, or leased, and to which manure or process wastewater from the production area is, or might be, applied for crop and/or pasture production.

Practice Schedule

This planning activity applies to farmstead (production area) and crop and pastureland (land treatment areas).

The practice schedule must meet the NRCS planning criteria on both the production and land treatment areas for water quality (nutrients, organic, and sediments in surface and ground water), soil erosion (sheet and rill, wind, ephemeral gully, classic gully, and irrigation induced), and air quality (emissions of particulate matter (PM) and PM precursors and objectionable odors).

A record of the participant's decision, which includes:

1) Farmstead (Production Area):

- a) Record of Decision – Provide a table, titled “Farmstead Practice Schedule” indicating all of the following:
 - i) Tract Number to have practice(s) installed.
 - ii) PLU (Field) number to have practice(s) installed.
 - iii) Practice Code and Practice Name (Codes and Names are used for conservation practices, conservation activities, enhancements, and bundles) to be implemented.
 - iv) Brief Description of the planned conservation practices (practice narratives) or practice scenario.
 - v) Estimated Amount of each practice to be implemented, and the practice's measurement units.
 - vi) Dates (month and year) the conservation activities are intended to be installed.

The Practice Schedule is used in conjunction with a conservation plan map to document the participant's decision and vision for conservation implementation. For practices previously planned and applied with NRCS technical assistance those plans will be in the participant's case file in the local NRCS field office (engineering plans, job sheets, or implementation requirements).

- b) Evaluation of existing waste handling/storage structures for integrity and capacity, site feasibility data if needed (such as topographic survey, soil boring or flow zone information).

- i) For evaluation of existing waste handling/storage structures, use CEMA 227 Evaluation of Existing Waste Storage Facility Components.
 - ii) Date any applied practices were completed.

c) Description of Animal Feeding Operation:

- i) Information Table (As planned): Animal numbers, type, average weight, confinement period, percent confinement, and location.
 - ii) Manure storage: Must include storage identification, type of manure storage including the type and adequacy of the liner for liquid storages, existing capacity, volumes and maximum length of storage available, permanent and total storage on farm.

(1) For liquid waste storage: document freeboard, 25 yr. 24 hr. storm, available, permanent, and total storage in gallons, volume of sludge stored and available sludge storage, and an estimate of number of years till sludge cleanout will be needed.

(2) For each storage period, document the volume (where applicable): Manure collected, bedding volume, wash water volume, silage leachate, runoff, direct rainfall and total volume required for that period.

(3) Document all planned imports, exports, and on-farm transfers of manure (when applicable). Include location moved from, location moved to, and volume moved.

iii) Narrative description of waste management system and animal mortality management.

2) Land Treatment Area(s) (cropland and pasture and other lands where nutrients from the AFO will be applied):

a) Record of Decision – Provide a table, titled “Land Treatment Areas Practice Schedule” indicating all of the following: i) Tract number to have planned practices installed.

ii) PLU (field) number to have planned practice installed.

iii) Practice Code and Practice Name (Codes and Names are used for conservation practices, conservation activities, enhancements, and bundles) to be implemented.

iv) Estimated amount of each practice to be implemented, and the practice’s measurement units.

v) Scenario or brief description of the conservation practice (practice narrative).

vi) Date (month and year) the planned practice is scheduled to be implemented.

The Practice Schedule is used in conjunction with a conservation plan map to document the participant’s decision and vision for conservation implementation. For practices previously planned and applied with NRCS technical assistance those plans will be in the participant’s case file in the local NRCS field office (engineering plans, job sheets, or implementation requirements).

b) Summary of risk analyses results, including field identification, erosion estimates, nitrogen, phosphorus and any other risks assessed.

c) Manure application setback distances, including field identification, location size, and distance to water.

d) Soil test data, including field identification, date, test type, and result.

e) Manure nutrient analysis, including date, test type, location, and result.

f) Existing crop rotation, including year, crop, yield goals, nutrient requirements (N-P-K) and nutrient recommendations.

g) Develop and provide all supporting documentation, including any additional items required by the State Conservationist including any geospatial layers (if available) for the Planning Land Unit (PLU), practices, resource inventory, and another map feature(s).

Animal Mortality Facility (316): Existing / Installed facility. Existing facility is fully operational. Designed & Certified by NRCS.



United States Department of Agriculture

316-CPS-1

Natural Resources Conservation Service
CONSERVATION PRACTICE STANDARD
ANIMAL MORTALITY FACILITY
CODE 316
(no)

DEFINITION

An on-farm facility for the treatment or disposal of animal carcasses due to routine mortality.

PURPOSE

This practice is used to accomplish one or more of the following purposes:

- Reduce nutrient transport to surface water or groundwater resources.
- Reduce transport of pathogens to surface water or groundwater.
- Reduce impacts to air quality such as objectionable odors or greenhouse gas emissions

CONDITIONS WHERE PRACTICE APPLIES

This standard applies to animal carcass storage, treatment, or disposal for routine mortality in livestock and poultry operations to protect air and water quality including drinking water source protection. Routine mortality is that which occurs at the normally anticipated rate.

This standard does not apply to catastrophic animal mortality. In cases of catastrophic animal mortality, use NRCS Conservation Practice Standard (CPS) Emergency Animal Mortality Management (Code 368). This standard does not apply to disposal of animals in any liquid manure or process wastewater system.

CRITERIA

General Criteria Applicable to All Purposes

Plan, design, and construct the animal mortality facility to meet all Federal, State, Tribal and local laws, rules and regulations. Notify landowner and/or contractor of their responsibility to locate all buried utilities in the project area, including drainage tile and other structural measures. The landowner is also required to obtain all necessary permits for project installation prior to construction.

Include the facility in the agricultural waste management system plan for the operation.

Meet the structural and foundational requirements of NRCS CPS Waste Storage Facility,

NRCS reviews and periodically updates conservation practice standards. To obtain the current version of this standard, contact your Natural Resources Conservation Service State office or visit the Field Office Technical Guide online by going to the NRCS website at <https://www.nrcs.usda.gov/> and type FOTG in the search field.

USDA is an equal opportunity provider, employer, and lender.

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(Code 313) when designing slabs, walls, and support structures as appropriate.

Select the facility or management system based on cost, availability of raw material, desired quality and form of the final product, equipment, labor, time, land available, and other relevant factors. New or enhanced technologies, components and systems may be used as needed and when the technologies, components and systems meet NRCS standards and specifications.

Include provisions for closing and/or removing the facility where required.

Location

Locate the facility so that prevailing winds and landscape elements minimize odors, dust, and loss of visual resources.

Select a location for the facility that is consistent with the overall site plan for the livestock or poultry operation. Dimensions for the facility must accommodate the use of equipment to be used for loading, unloading, and any processing requirements. Locate the facility so that it is accessible by an all-weather access road with suitable ingress and egress. Avoid locations that would interfere with other travel patterns on the farm, such as livestock pathways and feed lanes.

Floodplain

Locate and design the facility such that it is outside the 100-year floodplain. If site restrictions require the location to be in the floodplain, protect the facility from inundation or damage from a 25-year flood event. Additionally, follow the policy found in the Title 190, General Manual, Part 410, Subpart B, Section 410.25, "Flood Plain Management," which may require additional protection for storage structures located within the floodplain.

Springs or Wells

Locate the facility down-gradient from springs or wells or provide appropriate protection to prevent contamination of groundwater supply sources.

Stormwater Runoff

Maximize diversion of stormwater runoff from the facility. Control any non-diverted runoff and treat contaminated runoff as appropriate.

Roofs and Covers

Where a roof or cover is an integral component of the facility (such as a bin composter that requires a cover), use NRCS CPS Roofs and Covers (Code 367) as applicable. For other facilities, where necessary, provide adequate protection of the equipment from weather elements to extend the equipment lifespan.

Surface Treatment

Seed and mulch all areas disturbed by construction as needed. Use NRCS CPS Critical Area Planting (Code 342), to revegetate any areas where conditions prevent establishment of vegetation with normal seeding methods.

Use NRCS CPS Heavy Use Area Protection (Code 561), or Access Road (Code 560) for the areas used by vehicles to turn or move compost or carcasses, as applicable.

Safety

Provide warning signs, fences, refrigeration unit locks, and other devices as appropriate, to ensure the safety of humans and livestock.

Address biosecurity concerns in all aspects of planning, installation, operation, and maintenance

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of an animal mortality facility.

Plan, design and implement all installed electrical components to meet the requirements of the National Electrical Code (NEC) and any State, local or Tribal electrical codes that are more stringent. Protect power supplies from traffic by using bollards or install other safety measures as appropriate, such as signage.

Seepage Control

Determine if seepage will create a water quality concern based on soils and subsurface conditions. Where seepage is a concern, utilize the appropriate NRCS CPS Pond Sealing or Lining such as, Compacted Soil Treatment (Code 520), Geomembrane or Geosynthetic Clay Liner (Code 521), or Concrete (Code 522).

Locate the bottom elevation a minimum of 2 feet above the seasonal high water table, to protect the integrity of the liner, unless special design features are incorporated that address buoyant forces. The water table may be lowered by use of drains to meet this requirement.

Facility Size

Size the facility using established mortality rates for the type of animal operation and mortality system. Calculate mortality rate using site specific mortality records, comparable extension publications, other Federal/State methodologies or methods provided in Title 210, National Engineering Handbook (NEH), Part 637, Chapter 2, "Composting", and 210-NEH, Part 651, Chapter 10, Section 651.1007, "Mortality Management."

Temporary Storage

Where the mortality management system depends on cyclic operation (including, but not limited to, offsite disposal such as rendering), provide adequate capacity for temporary storage of carcasses until they can be processed or picked up. The temporary storage may be implemented as a pad or bin, a refrigeration unit, or other.

Use of Final Product

Utilize final product according to NRCS CPS Nutrient Management (Code 590), or other acceptable methodology that will provide water quality and environmental protection equivalent or superior to the criteria of CPS 590. The final product should not have any visible pieces of soft tissue remaining.

Additional Criteria for Composters or Composting

Moisture Control

Provide access to water to ensure proper moisture content is maintained to facilitate the composting process. Moisture should be maintained between 40–60 percent by weight.

Temperature

The facility shall have the capacity to maintain the compost temperature greater than 130° F for at least 5 days as an average throughout the compost mass followed by a compatible time for secondary composting. Additional turning of the compost during secondary composting will reduce pathogens and weed seeds and improve the product.

Facility Size

Size the compost operation to contain the carcasses and the raw additive material needed in the composting process, based on the estimated duration of a composting cycle and the expected rate of mortality. For static pile or windrow systems, size the facility using methods provided in Title 210, NEH Part 637, Chapter 2, "Composting", and 210-NEH, Part 651, Chapter 10, Section 651.1007, "Mortality Management" or equivalent university extension

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publication. For enhanced systems which utilize forced air, rotary drum, or chopping/mixing preprocessing, size the facility based on university extension recommendations or manufacturer's recommendations supported with data collected for similar operations.

Use of Chopper or Mixers, Forced Air, or Rotary Drum

Primary composting time can be reduced by cutting/grinding carcasses and mixing them with finished compost and a carbon source using either pile forced aeration or rotary drum composting. This process can reduce primary composting time to as short as 14 days and additionally can reduce potential nitrous oxide emissions. Reduction in the composting time required will result in a reduction in the needed facility size. Use manufacturer's recommendations or university extension publications to size the unit size based on calculated [mortality rate](#).

Additional Criteria for Refrigeration Units

General

Size refrigeration units in conjunction with other animal mortality technologies such as incinerators or gasifiers based on the loading cycle to improve energy use efficiency.

Ensure refrigeration units are compatible with the emptying mechanism. Protect the refrigeration unit from precipitation and direct sunlight as deemed appropriate.

Use the manufacturer's recommendations for unit design, construction, power source and installation. Refrigeration units must be constructed of durable material, be leak proof, and have a life expectancy compatible with other aspects of the waste management system.

Place the refrigeration units on a pad of sufficient strength to withstand vehicle traffic loads during box or tray handling.

Temperature

The refrigeration units will be self-contained models designed to refrigerate or freeze animal carcasses before decomposition occurs. Maintain carcasses to be rendered between 22° and 26° F. Store carcasses that will be composted, incinerated, or gasified at 35° and 36° F which is above freezing to facilitate burning and to reduce the composting time or amount of fuel needed to incinerate or gasify the carcasses.

Alternative Power Source

Provide an alternative source of power, where available, to maintain the integrity of the freezing process during power outages. Where an alternative power source is not available, identify the contingencies for disposal of the animal carcasses in the operation and maintenance plan.

Additional Criteria for Incinerators and Gasifiers

General

Use a Type 4 Incinerator (as defined by the Incinerator Institute of America for human and animal remains) that has been approved for use within the State. Gasifiers must meet all applicable State air quality and emissions requirements. Size the unit based on manufacturer's recommendation based on the calculated mortality rate. Remove ashes daily or according to manufacturer recommendations.

Location

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Locate the incinerator/gasifier a minimum of 20 feet from any structure. Place the unit on a concrete pad appropriate to the size of the equipment with the fuel source as distant as practical. If the incinerator/gasifier is covered with a roof, provide a minimum air space between the chimney and any combustible roof part of at least 6 inches, or as recommended by the manufacturer, or as required by building codes, whichever is greater.

Capacity

Size the incinerator/gasifier to handle the average maximum daily animal mortality during a growing cycle. Refrigeration units may be used in conjunction with the incinerator/gasifier to improve the loading cycle and fuel use efficiency of the incineration/gasification unit.

Additional Criteria for Alkaline Hydrolysis and Dehydration

When either of these methods are selected, follow manufacturer's recommendations supported with data collected for similar operations. When using these methods, the carcasses must be completely processed. Liquid and bone remain from alkaline hydrolysis versus a dried carcass in dehydration. Either plan for immediate use of the resultant material or design storage in a manner that will not cause odors such as storing dehydrated material in a dry environment. The final product can be utilized according to NRCS CPS Nutrient Management (Code 590), or other acceptable methodology.

Use refrigeration temporary storage to optimize batch efficiency.

CONSIDERATIONS

Major considerations in planning animal mortality management are:

- The management capabilities of the operator.
- Available equipment and land application area at the operation.
- The economics of the available alternatives.
- The degree of pollution control required by State and local agencies.
- Effect on wildlife and domestic animals, including minimizing interactions with predators and opportunistic scavengers, some of which may be vectors, and spread disease.
- Location of the facility in relation to the source of mortality, biosecurity, and limiting facility visibility by the general public.

Consider increased level of designed treatment for sites with high priority areas for source water protection or are upstream of community drinking water withdrawal sites. Also consider increased levels of treatment in watersheds where water quality impairments have been shown to have impacted the designated use of downstream waterbodies.

For facilities that are organic producers or that sell compost to organic producers, ensure that the treated lumber used in the facility meets the requirements for organic production. The producer should consult with the organic certifier as to the use and acceptability of the lumber whether treated or not.

Additional Considerations for Composting

Use of in-vessel or bins can improve the space efficiency of composting systems. Consider the type of equipment available when siting and placing bins in the floor plan. Concrete kick walls can be used to reduce wear on boards when concrete is handled using a front end loader. Open floor or channel systems may be used to reduce labor when using automated turning equipment or when carcasses have been preprocessed shredded and mixed with carbon

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material. Use of preprocessing equipment, such as grinding and mixing can shorten the time needed to process mortality. The repeated cutting and mixing of carcasses with finished compost and a carbon source maximizes tissue exposure and batch uniformity to positively influence microbial activity overall.

Composting of any mortality will be hindered if the carcasses are allowed to freeze. Dead animals or birds should be placed in the compost mix as quickly as practical or kept in a dry, nonfreezing environment until added to the compost mix. Frozen carcasses will require more composting time and will likely require more management to ensure that adequate temperatures are reached during the composting process.

Poultry operations often experience higher rates of mortality as the birds reach maturity.

Leachate, odor, flies and scavenger issues are greatly mitigated through use of preprocessing, forced air, or rotary drum.

Maximize solar warming by aligning piles north to south configured with moderate side slopes. Orient windrows to prevent ponding of surface runoff.

Protect compost facilities from the wind in cold or dry climates. Wind protection may help prevent excess drying of the compost. Windbreak/Shelterbelt Establishment and Renovation (CPS 380) may be used for this purpose.

Minimize blown-in rain by providing roof overhang.

Impacts to visual resources can be reduced by screening the facility from view. Hedgerow Planting (CPS 422) may be appropriate for this purpose.

Additional Considerations for Greenhouse Gas Reduction

Consider the use of in-vessel composting or composting with a minimum of one turning per week for the first 5 weeks will reduce greenhouse gas emissions. Greenhouse gas emissions are increased when composting in low oxygen conditions. Low oxygen conditions facilitates the growth of microorganisms that produce methane and nitrous oxide both of which are greenhouse gases more potent than carbon dioxide. Additionally, incinerators and gasifiers typically burn fuels which result in the release of carbon dioxide.

PLANS AND SPECIFICATIONS

Prepare plans and specifications for animal mortality facilities that describe the requirements for applying the practice according to this standard. As a minimum, include in the plans and specifications—

- A plan view showing the location and extent of the practice.
- Pertinent elevations of the facility, if applicable.
- Construction drawings and specifications for the planned mortality facility.
- Quality of materials.
- Drainage/grading plan, if needed.
- Structural details of all components.
- Temporary erosion control measures during construction.
- Vegetative requirements.
- Safety measures, such as signage, physical barriers (fences, bollards, machine

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guards, etc.) or electrical cutoffs, as appropriate.

OPERATION AND MAINTENANCE

The operation and maintenance (O&M) plan developed for the animal mortality facility will become part of the overall waste management plan. The plan should document necessary actions to ensure that the practice performs adequately.

As a minimum, include the following information in the O&M plan:

- Method and procedures of mortality disposal for normal losses.
- Odor management or minimization requirements.
- Biosecurity protocols.
- Safety measures and procedures.
- Periodic inspections.
- Need for prompt repair or replacement of damaged components.
- Site references and/or manufacturer or installer for troubleshooting.

Additional Operation and Maintenance for Composters

Compost Recipe. Include a recipe of ingredients which gives the ingredient quantities and layering/mixing sequence.

Carbon-Nitrogen Ratio. The initial compost mix should result in a carbon-to-nitrogen (C:N) ratio between 25:1 and 40:1. Compost with a lesser C:N ratio can be used if nitrogen mobilization is not a concern.

Carbon Source. Store a dependable source of carbonaceous material with a high C: N ratio to mix with nitrogen-rich waste materials. Up to 50 percent of the carbonaceous material may consist of the finished compost material. If this is done, adequate blending of the carbonaceous material and the finished compost is required. Include information about recycling of finished compost as carbonaceous material if applicable for the site.

Provide an estimate of the volume of carbon source needed for proper operation of the composter as a volume per unit time to assist the producer in determining storage needs.

Bulking Materials. Add bulking materials to the mix as necessary to enhance aeration. The bulking material may be the carbonaceous material used in the mix or a nonbiodegradable material that is salvaged at the end of the compost period. Make provision for the salvage of any nonbiodegradable material used in the composting process.

Compost Mix. Develop a compost mix that encourages aerobic microbial decomposition and avoids nuisance odors.

Moisture Level. Maintain adequate moisture in the compost mix throughout the compost period within the range of 40 to 60 percent (wet basis). Prevent excess moisture from accumulating in the compost in high precipitation climatic regions. This may require the facility to be covered.

Temperature of Compost Mix. Closely monitor temperatures above 165°F. Take action immediately to cool piles that have reached temperatures above 185°F. If the pile is too hot, turn it to aerate the pile and release heat build-up.

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Turning/Aeration. The frequency of turning/aeration should be appropriate for the composting method used, and to attain the desired amount of moisture removal and temperature control while maintaining aerobic degradation and reducing potential for nitrous oxide emissions.

Monitoring. The operation and maintenance plan should state that composting is a biological process that needs monitoring and management throughout the composting period to ensure proper composting processes. The operation may need to undergo some trial and error in the start-up of a new mortality composting facility. Manage the compost piles for temperature, odors, moisture, and oxygen, as appropriate. Test the finished compost as appropriate to ensure that the required decomposition has been reached. Include the method, procedure, and record-keeping requirements for proper utilization of compost.

Scheduling. Provide a management table to assist the producer in using the appropriate bins when needed. The management table should show the days a bin is filled, in use and emptied.

Odors. To reduce offensive odors, increase the carbon-nitrogen ratio or reduce the moisture to less than 60 percent (wet basis). A carbon nitrogen ratio of 30:1 in the initial mix should have minimal odors.

Minimize odors and nitrogen loss by selecting carbonaceous material that, when blended with the nitrogenous material, provides a balance of nutrients and porous texture for aeration.

Additional Operation and Maintenance for Enhanced Composting

Mix materials in accordance with the design and the manufacturer's recommendations. Follow the maintenance plan for the equipment (including things such as greasing bearings, belt inspections, etc.).

Additional Operation and Maintenance for Incinerators and Gasifiers

Use the incinerator and gasifier only for the disposal of animal carcasses.

Operate the unit properly to maximize equipment life and minimize emission problems. Load the unit according to the manufacturer's recommendations.

Remove ashes frequently to maximize combustion and prevent damage to equipment. Include methods for collecting and disposing of the ash material remaining after incineration.

Inspect the unit periodically to ensure that all components are operating as planned and in accordance with the manufacturer's recommendations.

Additional Operation and Maintenance for Refrigeration, Alkaline Hydrolysis and Dehydration Units

Operate the unit properly to maximize equipment life and minimize potential problems.

Load the unit according to manufacturer's recommendations and do not exceed the design capacity. Use the unit only for the dead animals associated with the planned operation.

Inspect the unit periodically for leaks, structural integrity, and temperature for refrigeration units.

REFERENCES

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Field Handbook. Washington, D.C.

USDA, NRCS. National Engineering Handbook, Part 637, Chapter 2, Composting. Washington, D.C.

USDA, NRCS. Technical Note 210- EEC-1, 2013. In-Vessel Composters For Livestock Mortality Management.

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Waste Storage Facility (Code 313) Drystack: **Existing / Installed facility.** Existing facility is fully operational. Designed & Certified by NRCS.



United States Department of Agriculture

313-CPS-1

Natural Resources
Conservation Service
CONSERVATION PRACTICE
STANDARD WASTE
STORAGE FACILITY
CODE 313

(no)

DEFINITION

An agricultural waste storage impoundment or containment structure.

PURPOSE

This practice is used to accomplish one or more of the following purposes—

- Minimize or eliminate the impacts on surface water.
- Minimize or eliminate the impacts on groundwater resources.
- Minimize emissions such as greenhouse gases to improve air quality.

CONDITIONS WHERE PRACTICE APPLIES

Use where storage is needed for wastes generated by agricultural production or processing and where soils, geology, and topography are suitable for construction of the facility. For reception pits, use NRCS Conservation Practice Standard (CPS) Waste Transfer (Code 634).

For liquid waste storage facilities with an embankment, this practice applies only to low hazard structures. A low hazard structure is defined as a dam in a rural or agricultural area where failure may damage farm building, agricultural land, or township and country roads (Title 210, National Engineering Manual (NEM), Part 520, Section 520.21, "Definition and Classes").

This practice does not apply to the storage of human waste or to a facility used exclusively for routine animal mortality. Use NRCS CPS Animal Mortality Facility (Code 316), for routine animal mortality.

CRITERIA

NRCS reviews and periodically updates conservation practice standards. To obtain the current version of this standard, contact your Natural Resources Conservation Service State office or visit the Field Office Technical Guide online by going to the NRCS website at <https://www.nrcs.usda.gov/> and type FOTG in the search field.

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General Criteria Applicable to All**Purposes, Laws and Regulations**

Plan, design, and construct the waste storage facility to meet all Federal, Tribal, State and local laws and regulations.

Location

Locate the waste storage facility outside the 100-year floodplain, unless site restrictions require locating it within the floodplain. Protect the facility from inundation from a 25-year flood event and structural damage from the 100-year flood event, if located within the floodplain. Additionally, follow the policy found in Title 190 General Manual, Ecological Sciences, Part 410, Subpart B, Section 410.25 Flood Plain Management, which may require additional protection, planning, or operating measures.

Foundation

Perform surface and subsurface investigations for all waste storage facilities sufficient in detail and analysis to support the design in accordance with Title 210, National Engineering Manual, Part -531,

"Geology" (210-NEM-531). Document the soil material encountered, the location of any seeps, the depth to water table, the depth to bedrock, the presence of sink holes, karst topography, the description and location to nearest water well(s), and other conditions that might affect the suitability of the site. Additional foundation criteria are listed specific to Criteria for Liquid Waste Storage Impoundments and Additional Criteria for Fabricated Structures.

Storage Period

The storage period is the maximum length of time anticipated between emptying events. Base the storage period on the timing required for environmentally safe utilization considering climate, crops, soils, and equipment.

Design Storage Volume

Size the facility to store the following volumes:

Operational Volume

- Manure, wastewater, bedding, and other wastes accumulated during the storage period.
- Include normal monthly precipitation less evaporation, where appropriate, during the storage period for liquid or slurry storage facilities.
- Normal runoff from the facility's drainage area during the storage period.
- Planned maximum residual solids. Provide a minimum of 6 inches for residual solids in tanks unless provisions that allow for complete emptying are included.
- Additional storage to meet management goals or regulatory requirements.

Emergency Volume (liquid storages only)

- 25-year, 24-hour precipitation on the surface of the liquid or slurry storage facility.
- 25-year, 24-hour runoff from the facility's drainage area.

Freeboard Volume (for liquid or slurry waste storage exposed to precipitation)

- Minimum of 6 inches for vertical walled facilities.
- Minimum of 12 inches for all other facilities and under-floor storages that require pit ventilation.

Freeboard is not required for roofed facilities that do not receive runoff unless required for ventilation.

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Exclude non-polluted runoff from the structure where practical except where inclusion is advantageous to the operation of the facility.

Inlet Structures

Design inlet to resist corrosion, plugging, freeze damage, and ultraviolet deterioration. Design must incorporate erosion protection. For inlet structures, use NRCS CPS Waste Transfer (Code 634).

Waste Removal Components

Design components for removing waste such as gates, pipes, docks, wet wells, pumping platforms, retaining walls, or ramps in accordance with the applicable CPS, including but not limited to NRCS CPS Heavy Use Area (Code 561), Pumping Plant (Code 533) or Waste Transfer (Code 634). Account for all items that will influence the performance of the component including loading, durability, serviceability, material properties, and construction quality. Incorporate features to protect against erosion, tampering, and accidental release of stored waste. Design ramp slopes to accommodate anticipated equipment and traction. Components must be compatible with the land application methods specified in the nutrient management plan, NRCS CPS Nutrient Management (Code 590).

Accumulated Solids Removal

Preserve storage volume by including a provision for periodic removal of accumulated solids. Design the facility to accommodate the anticipated method of removing accumulated solids. This is important for determining the configuration of impoundments and the liner to be used.

Maximum Operating Level

The maximum operating level for liquid storage structures is the level that provides the operational volume.

Staff Gauge

Locate and specify the requirements for a staff gauge or other permanent marker in the liquid storage facility to clearly indicate the following elevations:

- Maximum operating level (top of the operational volume).
- Top of emergency volume.

Identify the method for the operator to measure the depth of accumulated waste in the Operation and Maintenance Plan, for facilities where the contents are not visible and a staff gauge would not be visible, such as below a slatted floor.

Safety

Include appropriate safety features to minimize the hazards of the facility (refer to American Society of Agricultural Engineers (ASAE) Standard EP470, Manure Storage Safety for guidance, as needed).

Provide appropriate warning signs, ladders, ropes bars, rails, and other safety devices. Include type, number, location, and details for installation of required safety features.

Use warning signs to identify the potential for explosion, poisoning, or asphyxiation.

Design covers and gratings over openings such that livestock or humans cannot accidentally displace them and fall into the facility. Design covers and gratings to handle expected operation loads.

Design pipelines with a water-sealed trap and vent, or similar device, if there is a potential for

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gases from the pipe to accumulate in confined spaces.

A fence is required around impoundments, excavated ponds, and uncovered tanks which have exposed walls less than 5 feet above the ground surface. Use NRCS CPS Fence (Code 382) to design a fence that will prevent accidental entry by people or animals. Post universal warning signs to prevent entry into liquid waste storage structures.

Roofs and Covers

Use NRCS CPS Roofs and Covers (Code 367) to design waste storage facility covers or roofs, as needed.

Treated Wood

Use criteria from NRCS CPS Roof and Covers (Code 367) for treated wood and fasteners.

Additional Criteria for Liquid Waste Storage Impoundments

A liquid waste storage impoundment is a waste storage facility where the stored material does not consistently stack and is either a natural topographic depression, manmade excavation, or diked area formed primarily of earthen materials (although the facility may be lined with manmade materials).

Foundation

Locate the impoundment in soils with a permeability that meets all applicable regulations or line the impoundment with suitable material. Use liners which meet or exceed NRCS CPS Pond Sealing or Lining, Compacted Soil Treatment (Code 520), Pond Sealing or Lining, Geomembrane or Geosynthetic Clay Liner (Code 521), or Pond Sealing or Lining, Concrete (Code 522). Install an engineered pond liner or ensure foundation materials meet the maximum specific discharge rate as recommended by NRCS in AWMFH Appendix 10D or meets State or local regulations, whichever is more restrictive.

Include an evaluation in the liner design of all buoyant uplift forces on the liner for sites located in a floodplain or where there is potential for uplift. Limit projected uplift head under clay liners to a gradient of less than 0.5 ft/ft in the clay liner. The gradient is determined as the difference in total head between the top and the bottom of a clay liner when buoyant forces exist (such as when the floodplain is flooded) divided by the thickness of the clay liner.

Design Bottom Elevation

Locate the bottom elevation a minimum of 2 feet above the seasonal high-water table, to protect the integrity of the liner, unless special design features are incorporated that address buoyant forces, impoundment seepage rate and non-encroachment of the water table by contaminants. The water table may be lowered by use of drains to meet this requirement.

Outlet

Do not use an outlet that can automatically release stored material except for septic tanks that feed a treatment system such as a vegetated treatment area or leaching field, or outlets leading to another storage facility with adequate capacity. Design a permanent outlet that will resist corrosion and plugging. Provide a backflow prevention measure for an outlet that pumps wastewater to secondary storage located at a higher elevation. This section does not apply to an auxiliary spillway.

Embankments

Design embankments to withstand loads associated with the waste storage structure. Increase embankment height by a minimum of 5% to allow for settling. Stabilize all embankments to prevent erosion or deterioration. Raise the embankment height where wave

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action may be a concern and protect the slope from wave action.

- Top width: Design minimum embankment top widths according to table 1.
- Side slopes: Design the combined side slopes of the settled embankment no steeper than 5-to-1. Design both side slopes no steeper than a 2-to-1 ratio, unless provisions are made for stability.
- Effective height: The difference between the bottom of the spillway crest (or the settled top of the embankment if there is no auxiliary spillway) and the lowest point on the existing ground along the embankment.
- Total embankment height is the difference between the settled top of the embankment and the lowest point on the existing ground along the embankment.

Table 1. Minimum Top Widths

Total embankment height (ft)	Top width, (ft)
Less than 15	8
15–19.9	10
20–24.9	12
25–34.9	14
35 or more	15

When effective height exceeds 20 feet, provide embankment protection by:

- Including an auxiliary spillway with the capacity to route the 25-year, 24-hour storm runoff from the facility drainage plus the 25-year, 24-hour precipitation volume on the surface of the liquid or slurry storage facility or a minimum of two feet of elevation difference between the crest of the auxiliary spillway and the top of the settled embankment, whichever is greater.
- For embankments without an auxiliary spillway raise the embankment above the design storage

volume an additional 25-year, 24-hour storm runoff from the facility drainage plus the 25-year, 24- hour precipitation volume on the surface of the liquid or slurry storage facility or one foot of freeboard whichever is greater.

Excavations

Specify excavated side slopes to meet the requirements of the type of liner selected, see NRCS CPS Pond Sealing or Lining, Compacted Soil Treatment (Code 520), Pond Sealing or Lining, Geomembrane or Geosynthetic Clay Liner (Code 521) or Pond Sealing or Lining, Concrete (Code 522).

Additional Criteria for Fabricated

Structures Foundation

Provide a foundation for fabricated waste storage structures to safely support all superimposed loads without excessive movement or settlement, based on the subsurface investigation (210-NEM-531).

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Calculate settlement based upon site-specific soil test data, where a nonuniform foundation cannot be avoided or where applied loads may create highly variable foundation loads. Index tests of site soil may allow correlation with similar soils for which test data is available. Use presumptive bearing strength values for assessing actual bearing pressures obtained from table 2 or another nationally recognized building code when site-specific soil test data is not available. Provide adequate detailing and articulation to avoid distressing movements in the structure when using presumptive bearing values.

Table 2. Presumptive Allowable Foundation and Lateral Pressure¹

Class of Materials	Vertical Foundation Pressure (psf)	Lateral Bearing Pressure (psf/ft below natural grade)	Coefficient of Friction ^a	Cohesion (psf) ^b
Crystalline bedrock	12,000	1,200	0.70	-
Sedimentary and foliated rock	4,000	400	0.35	-
Sandy gravel or gravel (GW and GP)	3,000	200	0.35	-
Sand, silty sand, clayey sand, silty gravel, clayey gravel (SW, SP, SM, SC, GM and GC)	2,000	150	0.25	-
Clay, sandy clay, silty clay, clayey silt, silt and sandy silt (CL, ML, MH and CH)	1,500	100	-	130

Class of Materials	Vertical Foundation Pressure (psf)	Lateral Bearing Pressure (psf/ft below natural grade)	Coefficient of Friction ^a	Cohesion (psf) ^b
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¹ International Building Code (IBC), 2018, International Code Council (ICC)

^a Coefficient to be multiplied by the dead load.

^b Cohesion value to be multiplied by the contact area, as limited by Section 1806.3.2 Lateral sliding resistance limit. For clay, sandy clay, silty clay, clayey silt, silt and sandy silt, the lateral sliding resistance shall not exceed one-half the dead load.

For bedrock foundations, separate the floor slab and the bedrock by:

- A minimum of 2 feet of soil or,
- A liner that meets or exceeds NRCS CPS Pond Sealing or Lining, Compacted Soil Treatment (Code 520), Pond Sealing or Lining, Geomembrane or Geosynthetic Clay Liner (Code 521), or Pond Sealing or Lining, Concrete (Code 522) or,
- Other appropriate method or alternative that achieves equal protection.

Structural Loadings

Design the waste storage structure to withstand all anticipated loads in accordance with the requirements in Title 210, National Engineering Manual, Part 536, "Structural Design" (210-NEM-536), including, as applicable, internal and external loads, hydrostatic uplift pressure, concentrated surface and impact loads, and water pressure due to seasonal high-water table, frost or ice.

Calculate loading from lateral earth pressures using soil strength values determined from the results of appropriate soil tests and procedures described in Technical Release 210-74, "Lateral Earth Pressures". ASCE or ACI criteria may be used where appropriate. Table 3 provides minimum lateral earth pressure values when soil strength tests are not available. Use an additional soil surcharge or an additional internal lateral pressure in the wall analysis when equipment will operate near the wall.

Use a minimum internal lateral pressure of 65 lb/ft²/ft of depth for stored waste that is not protected from precipitation. Use a minimum internal lateral pressure of 60 lb/ft²/ft of depth for stored waste protected from precipitation and not likely to become saturated. Use a minimum internal lateral pressure of 72 lb/ft²/ft of depth for sand-laden manure storage if the percentage of sand exceeds 20%. Designers may use lesser values if supported by measurement of actual pressures of the waste to be stored.

Table 3. Minimum Lateral Earth Pressure Values¹

Description of Backfill Material ^c	Unified Soil Classification	Design Lateral Soil Load (lb/ft ² /ft of depth) ^a	
		Active pressure	At-rest pressure
Well-graded, clean gravels; gravel-sand mixes	GW	30	60
Poorly graded clean gravels; gravel-sand mixes	GP	30	60
Silty gravels, poorly graded gravel-sand mixes	GM	40	60

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Description of Backfill Material [°]	Unified Soil Classification	Design Lateral Soil Load (lb/ft ² /ft of depth) ^a	
		Active pressure	At-rest pressure
Clayey gravels, poorly graded gravel-sand mixes	GC	45	60
Well-graded, clean sands; gravelly sand mixes	SW	30	60
Poorly graded clean sands; sand-gravel mixes	SP	30	60
Silty sands, poorly graded sand-silt mixes	SM	45	60
Sand-silt clay mix with plastic fines	SM-SC	45	100
Clayey sands, poorly graded sand-clay mixes	SC	60	100
Inorganic silts and clayey silts	ML	45	100
Mixture of inorganic silt and clay	ML-CL	60	100
Inorganic clays of low to medium plasticity	CL	60	100
Organic silts and silt clays, low plasticity	OL	Note ^b	Note ^b
Inorganic clayey silts, elastic silts	MH	Note ^b	Note ^b
Inorganic clays of high plasticity	CH	Note ^b	Note ^b
Organic clays and silty clays	OH	Note ^b	Note ^b
¹ Table 1610.1, Lateral Soil Load, International Building Code (IBC), 2018, International Code Council (ICC). ^a Design loads based on moist conditions for the specified soils at optimum density. Actual field conditions shall govern. Submerged or saturated soil pressures shall include the weight of the buoyant soil plus hydrostatic loads. ^b Unsuitable as backfill material. [°] The definition and classification of soil materials shall be in accordance with ASTM D2487.			

Structural Design

Design structures with reinforced concrete, steel, wood, or masonry materials in accordance with 210- NEM-536, Structural Engineering. Account for all items that will influence the performance of the structure, including loading assumptions, durability, serviceability, material properties and construction quality.

Ensure that the material used for a fabricated structure is compatible with the waste product to be stored.

Tanks may be designed with or without a cover. Design openings in a covered tank to accommodate equipment for loading, agitating, and emptying. Equip these openings with

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fencing, grills or secure covers for safety, and for odor and vector control as necessary.

Sensitive Environmental Settings

Classify and design the storage structure as a reinforced concrete hydraulic or environmental structure according to 210-NEM-536 where liquid-storage is to be provided in sensitive environmental settings (i.e., tanks in areas with shallow wells in surface aquifers, high-risk karst topography, or other site-specific concerns). Alternatively, use a flexible liner membrane, designed in accordance with standard engineering and industry practice, to provide secondary liquid containment for structures constructed with other methods described in 210-NEM-536.

Additional Criteria for Stacking Facilities

A stacking facility may be open, covered, or roofed and is used for wastes which behave primarily as solid. Determine the wall height using the anticipated stacking angle of repose of the waste material and any clearance height needed for containment of the stacked material. Construct a stacking facility of durable materials. Design the stacking facility with adequate safety factors to prevent failure due to internal or external pressures, including hydrostatic uplift pressure and imposed surface loads such as equipment which may be used within, on, or adjacent to the structure.

Seepage and Internal Drainage

Locate the stacking facility in soils with a permeability that meets all applicable regulations and use the appropriate NRCS CPS Pond Sealing or Lining, Compacted Soil Treatment (Code 520), Geomembrane or Geosynthetic Clay Liner (Code 521), or Concrete (Code 522) to reduce the potential for groundwater contamination.

Collect and utilize leachate in a safe manner to prevent pollution of surface or groundwater. Prevent influent seepage or surface runoff from infringing on the designed storage capacity or on the suitability of the waste being stacked and stored. Leachate control may not be needed on sites that have a roof, waste material with little seepage potential, or are located in arid climates.

Make provisions for drainage of leachate, including rainfall from the stacking area (especially those without a roof). Collect leachate and transfer to a tank, waste storage impoundment, treatment lagoon, or vegetated treatment area.

Poultry Litter Stacking Facility

For wood walled facilities, design the height of the litter stack not to exceed 7 feet, with litter to wood contact limited to 5 feet to reduce the potential for spontaneous combustion damage.

CONSIDERATIONS

General Considerations

Consider the use of textured liners or addition of features such as tire ladders, that would allow for escape from the waste storage structures, for exposed liners utilizing HDPE or similar materials that are slippery when wet.

Solid/liquid separation of runoff or wastewater entering impoundments to minimize the frequency of accumulated solids removal and to facilitate pumping and application of the stored waste.

Consider environmental concerns, economics, the overall waste management system plan, and safety and health factors.

Provide the operator with the cost to close the facility since the economics and risks associated

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with waste storage facilities are quite high. Cost should include removal of the planned sludge accumulation volume and the waste stored at the maximum operating volume.

Considerations for Siting

Consider the following factors in selecting a site:

- Proximity to the source of waste.
- Access to other facilities.
- Ease of loading and unloading waste.
- Compatibility with the existing landforms, vegetation, and prevailing winds, including building arrangement to minimize odors and adverse impacts on visual resources.
- Adequate maneuvering space for operating, loading, and unloading equipment.
- Distance to surface water, wells, non-farm residence(s), and property lines.
- Avoid locating waste storage facilities upwind of areas where heavy gasses may accumulate.

Considerations for Minimizing Impacts of Sudden Breach of Embankment or Accidental Release from the Waste Storage

Consider features, safeguards, and management measures to minimize the risk of failure or accidental release, or to minimize or mitigate impact of this type of failure when any of the categories listed below might be significantly affected.

Potential impact categories from breach of embankment or accidental release include:

- Downstream drinking water sources.
- Surface water bodies—perennial streams, lakes, wetlands, and estuaries.
- Critical habitat for threatened and endangered species.
- Riparian areas.
- Farmstead, or other areas of habitation.
- Off-farm property.
- Historical and archaeological sites or structures that meet the eligibility criteria for listing in the National Register of Historical Places.

Consider the following either individually or in combination to minimize the potential of or the consequences of sudden breach of embankments:

- An auxiliary spillway.
- Additional emergency volume.
- Additional freeboard.
- Storage for wet year rather than normal year precipitation.
- Reinforced embankment— such as, additional top width, flattened and/or armored downstream side slopes.
- Secondary containment.
- Dual liner.

Consider the following options to minimize the potential for accidental release from the waste storage facility through gravity outlets.

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Comment on noting that electronic monitoring of water levels is available.

- Outlet gate locks or locked gate housing.
- Secondary containment.
- Addition of an electronic water elevation monitoring device or alarm system.
- Another non-gravity means of emptying the waste storage facility.

Considerations for Minimizing the Potential of Storage Pond Liner Failure

Avoid sites with categories listed below unless no reasonable alternative exists. Potential impact categories for liner failure are:

- Any underlying aquifer is at a shallow depth and not confined.
- The vadose zone is rock.
- The aquifer is a domestic water supply or ecologically vital water supply.
- The site is located in an area of water-soluble bedrock such as limestone or gypsum.

Consider providing a leak detection system in conjunction with the planned liner to provide an additional measure of safety for a site with one or more of these site conditions.

Considerations for Stacking Facilities

Leachate collection within a stacking facility can be accomplished by use of a timber wall with the boards installed vertically, leaving 3/4-inch cracks. The timber wall drainage section may be included in a concrete or masonry block wall. Use the design criteria for timber walls.

Considerations for Organic Operations

Use rot-resistant or treated lumber that meets the requirements for organic production for any facility that is an organic producer or that sells manure to organic producers. The producer should consult with the organic certifier as to the use and acceptability of treated lumber for waste storage.

Considerations for Health and Safety

Consider the following options to minimize health and safety issues:

- Include adequate ventilation, especially when agitating stored manure.
- Add emergency equipment such as multi-gas monitor, buoys and self-contained breathing apparatus.
- Remove potential sources of sparks.
- Impacts of low berms around manure storage structures that can trap heavy gases and allow gases to collect above manure storages.

Considerations for Improving Air Quality

Liquid manure storage may result in emissions of volatile organic compounds, ammonia, hydrogen sulfide, methane, nitrous oxide, and carbon dioxide. Solid manure storage may result in emissions of particulate matter, volatile organic compounds, ammonia, carbon dioxide, and nitrous oxide. Consider minimizing liquid storage time to reduce emissions.

Reduce emissions of greenhouse gases, ammonia, volatile organic compounds, particulate

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matter and odor, by adding other NRCS CPSs Anaerobic Digester (Code 366), Roofs and Covers (Code 367), Waste Treatment (Code 629), Amendments for Treatment of Agricultural Waste (Code 591), Composting Facility (Code 317), and Air Filtration and Scrubbing (Code 371) to the waste management system.

Some fabric and organic covers have been shown to be effective in reducing odors.

Maintain appropriate manure moisture content for solid manure storage facilities. Excessive moisture will increase the potential for air emissions of volatile organic compounds, ammonia, and nitrous oxide, and may lead to anaerobic conditions, which will increase the potential for emissions of methane and hydrogen sulfide. Too little moisture will increase the potential for dust and other particulate matter emissions.

PLANS AND SPECIFICATIONS

Prepare plans and specifications that describe the requirements for applying the practice to achieve its intended use. As a minimum, include the following in the engineering plans and specifications:

- Plan view of system layout with relevant benchmark elevation and descriptions.
- Structural details of all components, including reinforcing steel, type of materials, and thickness.
- Locations, sizes, and type of pipelines and appurtenances.
- Requirements for foundation preparation and treatment.
- Backfill requirements: lift thickness, method of compaction, material type, material size and moisture content.
- Safety features.
- Material quantities.
- Approximate location of utilities and notification requirements.
- Vegetative requirements.

OPERATION AND MAINTENANCE

Develop an operation and maintenance plan that is consistent with the purposes of the practice, its intended life, safety requirements, and the criteria for its design. At a minimum, the plan will contain the following information where appropriate:

- Operational requirements for emptying the storage facility and the expected storage period. Begin removal of the liquid storage facility as soon as practical before the maximum operating level has been reached. Include the requirement that waste be removed from storage and utilized at locations, times, rates, and volume in accordance with NRCS CPS Nutrient Management (Code 590).
- Explanation of the staff gauge or other permanent marker to indicate the maximum operating level, for impoundments and other liquid storages. Identify the method for the operator to measure the depth of accumulated waste, for storages where the contents are not visible and a staff gauge would not be visible, such as below a slatted floor.
- Provisions for emergency removal and disposition of liquid waste in the event of an unusual storm event that may cause the waste storage structure to fill to capacity prematurely.

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- Instructions, as needed, for ventilating confined spaces according to ASABE standard S607, Ventilating Manure Storages to Reduce Entry Risk.
- Develop an emergency action plan for waste storage facilities where there is a potential for significant impact from breach or accidental release. Include site-specific provisions for emergency actions that will minimize these impacts.
- Describe the routine maintenance needed for each component of the facility. Include provisions for maintenance that may be needed as a result of waste removal or material deterioration.

REFERENCES

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Waste Recycling (Code 633): Existing Operation. *"This Broiler facility utilizes a 100% off-site export strategy. The available agronomic crop requirement for this facility is zero; therefore, no localized nitrogen or phosphorus over-application will occur."*



United States Department of Agriculture

633-CPS-1

Natural Resources Conservation
Service CONSERVATION PRACTICE
STANDARD WASTE RECYCLING

CODE 633

(no)

DEFINITION

The on-farm agricultural use of nonagricultural waste by-products, or the off-farm nonagricultural use of agricultural waste by-products.

PURPOSE

This practice is applied to:

- Improve soil health
- Reduce contamination of surface and ground water resources
- Reduce emissions of air pollutants

CONDITIONS WHERE PRACTICE APPLIES

This practice applies where waste by-products can be reused to prevent a resource problem and provide a conservation benefit. Where the intended waste recycling activity is to be used on-farm, this practice should be included in the nutrient management plan.

Waste recycling applies where there is a need to protect and improve the quality of natural resources and the environment by properly using nonagricultural waste by-product material that would otherwise be discarded, and will instead be imported into a farm operation. Proper marketing for the export of agricultural waste by-products off-farm, leads to the responsible utilization and reuse of by-products to protect natural resources.

This practice does not apply to the on-farm agricultural use of manure or waste generated by-products that are produced on that farm. For on-farm reuse of farm generated waste, use Conservation Practice Standard (CPS) Nutrient Management (Code 590).

CRITERIA

General Criteria Applicable to All Purposes

Comply with all Federal, State, Territorial, Commonwealth, Tribal, and local laws, rules, and regulations.

NRCS reviews and periodically updates conservation practice standards. To obtain the current version of this standard, contact your Natural Resources Conservation Service State office or visit the Field Office Technical Guide online by going to the NRCS website at <https://www.nrcs.usda.gov/> and type FOTG in the search field.

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The owner or operator must secure all required permits or approvals related to the waste recycling operation, and maintain components and equipment in accordance with applicable laws and regulations.

Perform at least one sample analysis of the waste by-product annually, or more frequently if needed to account for operational changes, to determine the characteristics that are critical to its use. Base the use of the waste on the analysis. Perform further analysis as needed as the waste is processed or undergoes changes. Use a laboratory certified by a State-recognized program that considers laboratory performance and proficiency to assure accuracy of testing results.

When composting is required for processing nonagricultural waste by-products for on-farm use, use the CPS criteria for Composting Facility (Code 317) and criteria for Animal Mortality Facility (Code 316) if appropriate.

Use the criteria from Conservation Practice Standard (CPS) Nutrient Management (Code 590) for any materials imported to provide plant nutrients. Sample tests must include analyses pertinent to monitoring or amending the annual nutrient budget, e.g., pH, electrical conductivity (EC) and sodicity where salts are a concern, soil organic matter, phosphorus, potassium, or other nutrients and test for nitrogen where applicable. Follow land-grant university guidelines regarding required analyses.

When nonagricultural by-product wastes are used on-farm for animal feed, use the criteria in CPS Feed Management (Code 592).

Manage residuals generated by waste processing and reuse activities in a manner that prevents degradation of natural resources and the environment.

CONSIDERATIONS

Consider alternatives to handling agricultural waste by-products to make a product that adds value for an accessible off-farm market. One example would be biodegradable seed starter pots.

Consider recycling used containers by returning them to the suppliers or manufacturers that have a recycling program.

Consider using off-farm organic by-product wastes for bedding, feed, mulch, energy production, or soil quality improvement. Criteria in CPSs Composting Facility (Code 317), Mulch (Code 484), Anaerobic Digester (Code 366), or other practices may apply.

Consider pathogen management. If the recycled product is to be used on food crops or as food for humans or animals, make sure that pathogen levels have been reduced to acceptable levels (reference Food and Drug Administration (FDA) Food Safety Modernization Act at www.fda.gov/FSMA). If the recycled product has come from another farming operation, consider biosecurity measures and the possibility of pathogen transfer that could cause plant or animal diseases.

PLANS AND SPECIFICATIONS

Prepare plans and specifications that describe the requirements for applying the practice to achieve the intended purpose. Account for the use or disposal of all by-products produced or received by the agricultural operation. For additional requirements for plans and specifications refer to the appropriate associated conservation practice standard.

OPERATION AND MAINTENANCE

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Keep records for a period of at least 5 years, and include, when appropriate—

- The dates and quantities of by-product material imported to, or exported from, the agricultural production system.
- Analysis of by-product material and test results for critical characteristics.
- A description of how the by-product materials are reused and the conservation benefit achieved.
- Include the dates of periodic inspections and maintenance of equipment and facilities required for the utilization of the by-product material. List the specific equipment to be inspected or maintained and a general time frame for preventive maintenance.

REFERENCES

None.

1.4. Animal Inventory

Animal Group	Type or Production Phase	Number of Animals ^a	Average Weight (lbs)	Confinement Period	Manure Collected (%) ^b	Manure Storage
Poultry	Broiler	220,000	5.5	Jan Early - Dec Late	67	In House

a. The average number of animals present in the production facility at any one time.

b. If manure collected is less than 100%, this indicates that the animals spend a portion of the day outside of the production facility or the production facility is unoccupied one or more times during the confinement period.

1.5. Manure Storage Information

Storage ID	Type of Storage	Pumpable or Spreadable Capacity	Annual Manure Collected	Maximum Days of Storage
In House	In-house litter storage	2,400 tons	2,634 tons	333

1.6. Planned Manure Exports

Month-Year	Manure Source	Amount	Receiving Operation	Location
Sep 2026	In House	2,520 tons	Off-Site	Location
Sep 2027	In House	2,634 tons	Off-site	Location
Sep 2028	In House	2,634 tons	Off-Site	Location
Sep 2029	In House	2,634 tons	Off-Site	Location
Sep 2030	In House	2,634 tons	Off-Site	Location

"This Broiler facility utilizes a 100% off-site export strategy. The available agronomic crop requirement for this facility is zero; therefore, no localized nitrogen or phosphorus over-application will occur."
These transfers will be documented in the Producer Log.

1.7. Planned Manure Imports

Month-Year	Manure's Animal Type	Amount	Originating Operation	Location
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(None)

1.8. Planned Internal Transfers of Manure

Month-Year	Manure Source	Amount	Manure Destination
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(None)

1.9. Brief Description of or Additional Information about Animal Feeding Operation

System Description

Broilers

This comprehensive nutrient management system is planned to accommodate waste from 220,000 birds at an average market weight of 5.5 pounds. This operation normally averages 5 flocks per year with a flock life of 49 days. *"This Broiler facility utilizes a 100% off-site export strategy. The available agronomic crop requirement for this facility is zero; therefore, no localized nitrogen or phosphorus over-application will occur."*

This is an **Existing operation** that has 8 existing poultry houses.

Nutrient Balance

The nutrients available in the waste must not exceed the agronomic requirements for the yield goals of the forages. The attached worksheets application rates based on estimated nutrient content of the waste and nutrient uptake of the plants. The Phosphorus Index was calculated for each field to determine the application rate basis. It is required that samples of the waste to be applied be taken to determine the actual nutrient content of the waste. Testing of soil samples is recommended to determine the actual needs of the plants and soils. Application rates should be adjusted accordingly. Estimated application rates for individual fields, soils, forages and cropping system can be found on the Nutrient Management Worksheets found in this CNMP. These rates shall be adjusted for changes in cropping systems, yields, and forage type.

Litter production is estimated to be 2,634 tons per year. Allowing for nitrogen losses in storage, application, and denitrification and for the amount of phosphorus that will be mineralized or bound to the soil, about 873,171 pounds of nitrogen, 629,275 pounds of phosphorus, and 861,663 pounds of potash would be available for crop uptake from the waste.

Application areas totaling 0 acres (after setbacks) are identified in this CNMP for the application of waste. The animal feeding operation will transfer an estimated 2,611 average tons per year of litter offsite. "This Broiler facility utilizes a 100% off-site export strategy. The available agronomic crop requirement for this facility is zero; therefore, no localized nitrogen or phosphorus over-application will occur." These transfers will be documented in the Producer Log.

Other Information

River Basin: Upper Pearl HUC: 031800010402 Receiving Stream: Noxapater Creek

Management of Dead Animals

Carcasses will be disposed of utilizing an MS Board of Animal Health approved method of composting, incineration or freezing (if available). Proper permits will be obtained from MSBAH (composter, freezer) or MDEQ (incinerator). The system must be operated and maintained in accordance with these permits and other laws and regulations that pertain to its operation. All personnel must be trained or informed of the safety and the operation and maintenance requirements for the system.

METHOD OF DEAD BIRD DISPOSAL PLANNED:

COMPOSTOR:

Mississippi NRCS Standards Compost CRITERIA (REQUIRES MSBAH PERMIT)

General soils. Locate composting facilities on soils having slow to moderate permeability to minimize seepage of dissolved substances into the soil profile and movement toward groundwater. Evaluate site paving needs in terms of effects of equipment operation on trafficability, soil compaction, and potential for contamination from compost and petrol products. Runoff. Divert surface runoff from outside drainage areas around the compost facility. Collect runoff from the compost facility and utilize or dispose of it properly. Evaluate the effects of changed infiltration conditions on groundwater recharge, and evaluate changes in volumes and rates of runoff caused by

the location of the operation. Properly manage movement of organic material, soluble substances, and substances attached to solids carried by runoff. The facility should not be located on a flood plain unless protected from inundation or damage from a 25-year flood event.

INCINERATOR:

Mississippi NRCS Standards Incinerator CRITERIA (REQUIRES MDEQ AIR EMISSION PERMIT)

Incinerator capacity will be based on the average daily mortality x market weight x farm capacity. Daily mortality for poultry is typically about 0.10 percent.¹ Contact the area engineer for assistance with mortality other than poultry. Any incineration disposal of dead poultry or small animals will have a plan for collecting and disposing of the ash material remaining after incineration. The plan should include an ash collection box or bucket and disposal of the ash on the land or through a community trash disposal system. A licensed electrician will do all electrical work and the appropriate certified plumbing technician will install all-natural gas or propane lines. Locate the incinerator at least 150 ft. from any well, spring, or surface water course and at least 20 ft. from any building to prevent spontaneous combustion. The placement of the propane tank with respect to the incinerator will comply with all safety regulations. The incinerator will be located on a reinforced concrete slab.

In Case of an Emergency Storage Facility Spill, Leak or Failure

Implement the following first containment steps:

- a. Stop all other activities to address the spill.
- b. Stop the flow. For example, use skid loader or tractor with blade to contain or divert spill or leak.
- c. Call for help and excavator if needed.
- d. Complete the clean-up and repair the necessary components.
- e. Assess the extent of the emergency and request additional help if needed.

In Case of an Emergency Spill, Leak or Failure during Transport or Land Application

Implement the following first containment steps:

- a. Stop all other activities to address the spill and stop the flow.
- b. Call for help if needed.
- c. If the spill posed a hazard to local traffic, call for local traffic control assistance and clear the road and roadside of spilled material.
- d. Contain the spill or runoff from entering surface waters using straw bales, saw dust, soil or other appropriate materials.
- e. If flow is coming from a tile, plug the tile with a tile plug immediately.
- f. Assess the extent of the emergency and request additional help if needed.

Emergency Contacts

Department / Agency Phone Number

Fire Local: 911
Rescue services Local: 911
State veterinarian: James Watson 1-888-646-8731
Sheriff or local police: 911

Nearest available excavation equipment/supplies for responding to emergency

Equipment Type Contact Person Phone Number

Excavation/Road Winston Board of Supervisors: 662-773-7170

Contacts to be made by the owner or operator within 24 hours Organization Phone Number

EPA Emergency Spill Hotline: 1-800-241-1754

Mississippi Emergency Agency: (601) 933-6362

Be prepared to provide the following information:

- a. Your name and contact information.
- b. Farm location (driving directions) and other pertinent information.
- c. Description of emergency.
- d. Estimate of the amounts, area covered, and distance traveled.
- e. Whether manure has reached surface waters or major field drains.
- f. Whether there is any obvious damage: employee injury, fish kill, or property damage.
- g. Current status of containment efforts

Section 2. Crop and Pasture (Land Treatment)

2.1. Maps of Fields, Soils, Application Setbacks, Existing and Planned Crop and Pasture Conservation Practices

"This Broiler facility utilizes a 100% off-site export strategy. The available agronomic crop requirement for this facility is zero; therefore, no localized nitrogen or phosphorus over-application will occur."

2.2. Crop and Pasture Conservation Practices -- Record of Decisions

"This Broiler facility utilizes a 100% off-site export strategy. The available agronomic crop requirement for this facility is zero; therefore, no localized nitrogen or phosphorus over-application will occur."

2.3. Crop and Pasture Conservation Practices – Implementation Requirements

"This Broiler facility utilizes a 100% off-site export strategy. The available agronomic crop requirement for this facility is zero; therefore, no localized nitrogen or phosphorus over-application will occur."

2.4. Predicted Soil Erosion

Average water, wind, irrigation, gully and ephemeral erosion estimates

Field	Predominant Soil Type	T Factor (t/ac/yr)	Slope (%)	Water (t/ac/yr)	Wind (t/ac/yr)	Irrigation Erosion Controlled (y/n)	Gully Erosion Controlled (y/n)	Ephemeral Erosion Controlled (y/n)	Total (t/ac/yr)
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Section 3. Nutrient Management Plan (590)

3.1. Nitrogen and Phosphorus Risk Analyses

Mississippi Phosphorus Index

Field	Crop Year	Transport Character-istics	Source Character-istics	P Index w/o P Apps	P Index w/ P Apps	P Loss Risk
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"This Broiler facility utilizes a 100% off-site export strategy. The available agronomic crop requirement for this facility is zero; therefore, no localized nitrogen or phosphorus over-application will occur."

3.2. Manure Application Setback Distances

"This Broiler facility utilizes a 100% off-site export strategy. The available agronomic crop requirement for this facility is zero; therefore, no localized nitrogen or phosphorus over-application will occur."

3.3. Soil Test Data

Field	Test Year	OM (%)	P Test Used	P	K	Mg	Ca	Units	Soil pH	Buffer pH	CEC (meq/ 100g)
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"This Broiler facility utilizes a 100% off-site export strategy. The available agronomic crop requirement for this facility is zero; therefore, no localized nitrogen or phosphorus over-application will occur."

3.4. Manure Nutrient Analyses

Manure Source	Dry Matter (%)	Total N	NH ₄ -N	Total P ₂ O ₅	Total K ₂ O	Avail. P ₂ O ₅	Avail. K ₂ O	Units	Analysis Source and Date
In House	82.0	66.3		48.2	66.0	43.4	59.4	lbs/ton	Mississippi State University: State Chemical Lab

3.5. Planned Crops and Fertilizer Recommendations

Field	Crop Year	Planned Crop	Yield Goal (per ac)	N Rec (lbs/ac)	P ₂ O ₅ Rec (lbs/ac)	K ₂ O Rec (lbs/ac)	N Removed (lbs/ac)	P ₂ O ₅ Removed (lbs/ac)	K ₂ O Removed (lbs/ac)	Custom Fert. Rec. Source
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"This Broiler facility utilizes a 100% off-site export strategy. The available agronomic crop requirement for this facility is zero; therefore, no localized nitrogen or phosphorus over-application will occur."

3.6. Planned Nutrient Applications

"This Broiler facility utilizes a 100% off-site export strategy. The available agronomic crop requirement for this facility is zero; therefore, no localized nitrogen or phosphorus over-application will occur."

3.7. Field Nutrient Balance

Year	Field	Size	Crop	Yield Goal	Fertilizer Recs ^a			Nutrients Applied ^b			Balance After Recs ^c			Balance After Removal ^d	
					N	P ₂ O ₅	K ₂ O	N	P ₂ O ₅	K ₂ O	N	P ₂ O ₅	K ₂ O	P ₂ O ₅	K ₂ O
		ac		per ac	lbs/ac	lbs/ac	lbs/ac	lbs/ac	lbs/ac	lbs/ac	lbs/ac	lbs/ac	lbs/ac	lbs/ac	lbs/ac

^a Fertilizer Recs are the crop fertilizer recommendations. The N rec accounts for any N credit from previous legume crop.

^b Nutrients Applied are the nutrients expected to be available to the crop from that year's manure applications plus nutrients from that year's commercial fertilizer applications and nitrates from irrigation water. With a double-crop year, the total nutrients applied for both crops and the year's balances are listed on the second crop's line.

^c For N, Nutrients Applied minus Fertilizer Recs for indicated crop year. Also includes amount of residual N expected to become available that year from prior years' manure applications. For P₂O₅ and K₂O, Nutrients Applied minus Fertilizer Recs *through* the indicated crop year, with positive balances carried forward to subsequent years. Negative values indicate a potential need to apply additional nutrients.

^d Nutrients Applied minus amount removed by harvested portion of crop through the indicated year. Positive balances are carried forward to subsequent years.

^e Custom fertilizer recommendation.

^f Legume crop is assumed to utilize up to 150 lbs of the supplied N.

^g Includes residual N expected to become available that year from prior years' manure applications.

"This Broiler facility utilizes a 100% off-site export strategy. The available agronomic crop requirement for this facility is zero; therefore, no localized nitrogen or phosphorus over-application will occur."

3.8. Manure Inventory Annual Summary

Manure Source	Plan Period	On Hand at Start of Period	Total Generated	Total Imported	Total Transferred In	Total Applied	Total Exported	Total Transferred Out	On Hand at End of Period	Units
In House	Sep '26 - Aug '27	2,300	2,634	0	0	0	2,520	0	2,415	tons
In House	Sep '27 - Aug '28	2,415	2,634	0	0	0	2,634	0	2,415	tons
In House	Sep '28 - Aug '29	2,415	2,634	0	0	0	2,634	0	2,415	tons
In House	Sep '29 - Aug '30	2,415	2,634	0	0	0	2,634	0	2,415	tons
In House	Sep '30 - Aug '31	2,415	2,634	0	0	0	2,634	0	2,415	tons

3.9. Fertilizer Material Annual Summary

Product Analysis	Plan Period	Product Needed Sep - Dec	Product Needed Jan - Aug	Total Product Needed	Units
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"This Broiler facility utilizes a 100% off-site export strategy. The available agronomic crop requirement for this facility is zero; therefore, no localized nitrogen or phosphorus over-application will occur."

3.10. Plan Nutrient Balance

	N (lbs)	P ₂ O ₅ (lbs)	K ₂ O (lbs)
Total Manure Nutrients on Hand at Start of Plan ^a	152,490	110,860	151,800
Total Manure Nutrients Collected ^b	873,171	634,794	869,220
Total Manure Nutrients Imported ^c	0	0	0
Total Manure Nutrients Exported ^d	865,580	629,275	861,663
Total Manure Nutrients Gained/Lost in Transfer ^e	0	0	0
Total Manure Nutrients on Hand at End of Plan ^f	160,081	116,379	159,357
Total Manure Nutrients Applied ^g	0	0	0
Available Manure Nutrients Applied (Utilized by plan's crops) ^h	0	0	0
Available Manure Nutrients Applied (Not utilized by plan's crops) ⁱ	0	0	0
Commercial Fertilizer Nutrients Applied (Utilized by plan's crops) ^j	0	0	0
Commercial Fertilizer Nutrients Applied (Not utilized by plan's crops) ^k	0	0	0
Available Nutrients Applied (Manure and fertilizer; utilized by plan's crops) ^l	0	0	0
Nutrient Utilization Potential ^m	0	0	0
Nutrient Balance of Spreadable Acres ^{n p}	0	0	0
Average Nutrient Balance per Spreadable Acre per Year ^{o p}	0	0	0

a. Total manure nutrients present in storage at the beginning of the plan.

b. Total manure nutrients collected on the farm.

c. Total manure nutrients imported onto the farm.

d. Total manure nutrients exported from the farm to an external operation.

e. Net change in total manure nutrients due to transfers between storage units with differing analyses.

f. Total manure nutrients present in storage at the end of plan.

g. Total nutrients present in land-applied manure. These values do not account for losses due to rate, timing, and method of application.

h. Manure nutrients applied and available to crops in the plan. These values are based on the total manure nutrients applied after accounting for nutrient losses due to rate, timing, and method of application. Nutrients which will not be utilized by crops in the plan are excluded from these values.

i. Manure nutrients applied that will be utilized by crops outside the plan. This usually results from Fall nutrient applications at the end of the plan intended for crops in subsequent years.

j. Nutrients applied as commercial fertilizers and nitrates contained in irrigation water. Nutrients that will not be utilized by crops in the plan are excluded from these values.

k. Nutrients applied as commercial fertilizer which will be utilized by crops outside the plan.

l. Sum of available manure nutrients applied and commercial fertilizer nutrients applied.

m. Nutrient utilization potential of crops grown. For N the value is based on the N recommendation for non-legume crops and N uptake or other state-imposed limit for N application rates for legumes. P₂O₅ and K₂O values are based on fertilizer recommendations or crop removal (whichever is greater).

n. Available nutrients applied minus crop nutrient utilization potential. Negative values indicate additional nutrient utilization potential and positive values indicate over-application.

o. Average per acre-year nutrient balance. Values are calculated by dividing nutrient balance of spreadable acres by the number of spreadable acres in the plan and by the length of the plan in years. Negative values indicate additional nutrient utilization potential and positive values indicate over-application.

p. Non-trivial, positive values for N indicate that the plan was not properly developed. Negative values for N indicate additional nutrient utilization potential which may or may not be intentional. For example, plans that include legume crops often will not utilize the full N utilization potential for legume crops if manure can be applied to non-legume crops that require N for optimum yield. Positive values for P₂O₅ and/or K₂O do not necessarily indicate that the plan was developed improperly. For example, producers may be allowed to apply N-based application rates of manure to fields with low soil test P values or fields with a low potential P-loss risk based on the risk assessment tool used by the state. Negative values for P₂O₅ and K₂O indicate that planned applications to some fields are less than crop removal rates or fertilizer recommendations.