MARYLAND DEPARTMENT OF THE ENVIRONMENT

Land and Materials Administration • Resource Management Program
1800 Washington Boulevard • Suite 610 • Baltimore Maryland 21230-171
410-537-3314 • 800-633-6101 x3314 • www.mde.maryland.gov

NOTICE OF INTENT

General Discharge Permit for Animal Feeding Operations (AFOs) (19AF, MDG01)
Land and Materials Administration – Resource Management Program
Issued Pursuant to Title 9, Environment Article, *Annotated Code of Maryland*, and Code of Maryland Regulations (COMAR) 26.08.04

Submission of this Notice of Intent (NOI) constitutes notice that the person identified in this form intends to operate under and comply with all terms and conditions of the State/NPDES General Discharge Permit for AFOs (AFO Permit). The discharge of animal waste, including manure, poultry litter, and process wastewater to waters of the State is prohibited unless an AFO has been registered under the AFO Permit by the Maryland Department of the Environment ("MDE"). A person shall hold a CAFO discharge permit issued by MDE before beginning construction on any part of a new CAFO.

Please submit this completed NOI Form to the following address:

Maryland Department of the Environment
Land and Materials Administration/AFO Division
1800 Washington Boulevard, Suite 610
Baltimore, Maryland 21230-1719

RECEIVED
AUG 27 2020
AFO DIVISION

General Information

AI Number: 68139

1. LEGAL Name of Applicant *(must match name on required plan)*:
Zachary LOLLER / William LOLLER Farm, LLC

2. AFO Type *(circle one)*: (CAFO) / MAFO

3. Applying for *(check one)*:
- ☐ New Coverage *see column 'A' in Question 4*
- ☒ Continuation of Coverage (renewal) *see column 'B' in Question 4*
- ☐ Modification of 19AF Coverage *see column 'C' in Question 4*

4. Reason for NOI *(please fill out corresponding column)*:

A. New Coverage	B. Continuation of Coverage (renewal)	C. Modification of 19AF Coverage
☐ New owner/operator ☐ Proposed operation *(NO construction may begin until permit coverage is obtained)* • Date of anticipated start of AFO operation: _____	☒ No changes in operation ☐ There has been a change in one or more of the following *(please indicate)*: o Size or number of houses o Animal number, resulting in change of size category o CAFO to MAFO, MAFO to CAFO o No-Land to Land, Land to No-Land o Conventional operation to organic	☐ Expanding ☐ Change in animal number, resulting in change of size category ☐ Change from CAFO to MAFO ☐ Change from MAFO to CAFO ☐ Change from no-land to land ☐ Change from land to no-land ☐ Change from conventional to organic operation

Applicant (Owner/Operator Information)

5. **Mailing Address of Applicant:** 312 Park Row
City: Chestertown **State:** MD **Zip Code:** 21620

6. **Telephone Number(s) of Applicant:** (Home) _____
(Cell) _____

7. **Email of Applicant:** _____

Farm Information

Please attach a topographic map including the production area as well as the land application area (if applicable)

8. **Farm Name:** ☐ Same as Legal Name
☒ Other *(please specify)*: William Loller Farm, LLC

9. **Farm Address:** 8966 Bakers Lane
City: Chestertown **County:** Kent **Zip Code:** 21620

10. **Watershed/Hydrologic Unit Code (HUC)** (12-digit): 021306110349

11. **Latitude/Longitude of Production Area** (Deg/Min/Sec): 39° - 13 - 35.31 76° - 09 - 46.5

12. **Animal Information:**

A. Animal Type(s) *(from AFO size chart)*	B. Maximum Number of Animals *at any given time* *(For poultry, please indicate bird type and number per flock)*	C. Operation Size *(consult AFO size chart)*	D. Animal Confinement Type *(e.g. house, feedlot, barn, milking parlor, pen)*
Chickens w/ dry manure	Broiler - 270,000	Large	House - poultry Access

**For poultry only (13-16):*

13. ***Number of poultry houses:** 9

14. ***Combined square footage of *all* poultry houses:** 198,000

15. ***Date(s) poultry houses constructed:** 1995

16. ***Integrator** *(check one)*:
☐ Allen-Harim ☐ Mountaire
☐ Amick ☐ Perdue
☒ Coleman ☐ Tyson
☐ Other *(please specify)*: _____

Contact Information:
Phone No.: _____
Address: _____
_____

Manure/Mortality Management

17. Total Manure/Litter/Wastewater generated *annually*: 1094 *circle one:* (tons / lbs / gallons)

18. Total Manure/Litter/Wastewater transported offsite *annually*: 700 *circle one:* (tons / lbs / gallons)

19. **Total number of acres controlled by applicant available for land application of manure/litter/process wastewater: *Owned:* 188.4 *Leased:* 0

***40 CFR Parts 122.23(b)(3) and 412.2(e) define "land application area" as all land under the control of the AFO owner/operator, whether by ownership, lease, or agreement, to which manure, litter or process wastewater is or may be applied.*

20. Manure Storage *(please list individually)*:

A. Type *(e.g. shed, lagoon, pit)*	B. Capacity *(ft^3, gal)*	C. Solid/Liquid
Manure Shed	17760 cuft	Solid

21. Mortality Management Method:

- ☒ Compost
- ☐ Freeze
- ☐ Render
- ☐ Incinerate
- ☐ Other *(please specify)*: _____

CAFOs Only - Fees

Once a completed NOI is received by MDE and processed, MDE will invoice the applicant for any permit fees owed pursuant to COMAR 26.08.04.09-1.

Required Plan

CAFO permit application requirements at 40 CFR §122.21(i)(1)(x) specify that applications for coverage (including NOIs) must include nutrient management plans (NMPs) that at a minimum satisfy the requirements specified in 40 §122.42(e). Comprehensive Nutrient Management Plans (CNMPs), as defined in the General Discharge Permit for Animal Feeding Operations (AFOs) (19AF, MDG01), satisfy these requirements. An application will not be processed until a completed NOI form and a current CNMP are received. A CNMP must be developed by a certified and licensed plan writer, and in addition to the federal requirements, must satisfy the nutrient management requirements in COMAR 15.20.07 and 15.20.08.

Certification

By signing this form, I the applicant or duly authorized representative, do solemnly affirm under the penalties of perjury that the contents of this application are true to the best of my knowledge, information, and belief. I hereby authorize the representatives of MDE to have access to the AFO and associated lots/facilities (farms) for inspection and to records relating to this application at any reasonable time. I acknowledge that depending on the type of permit applied for, other permits or approvals may be required. The personal information requested on this form is intended to be used in processing your NOI. This Notice is provided pursuant to Title 4 of the General Provisions Article, Annotated Code of Maryland. Your NOI may not be processed if you fail to provide all requested information. You have the right to inspect, amend, or correct this form. MDE is a public agency and subject to the Maryland Public Information Act (Md. Code Ann., Gen. Prov. §§ 4-101, et seq.). This form may be made available on the Internet via MDE's website and is subject to inspection or copying, in whole or in part, by the public and other governmental agencies, if not otherwise protected by federal or State law.

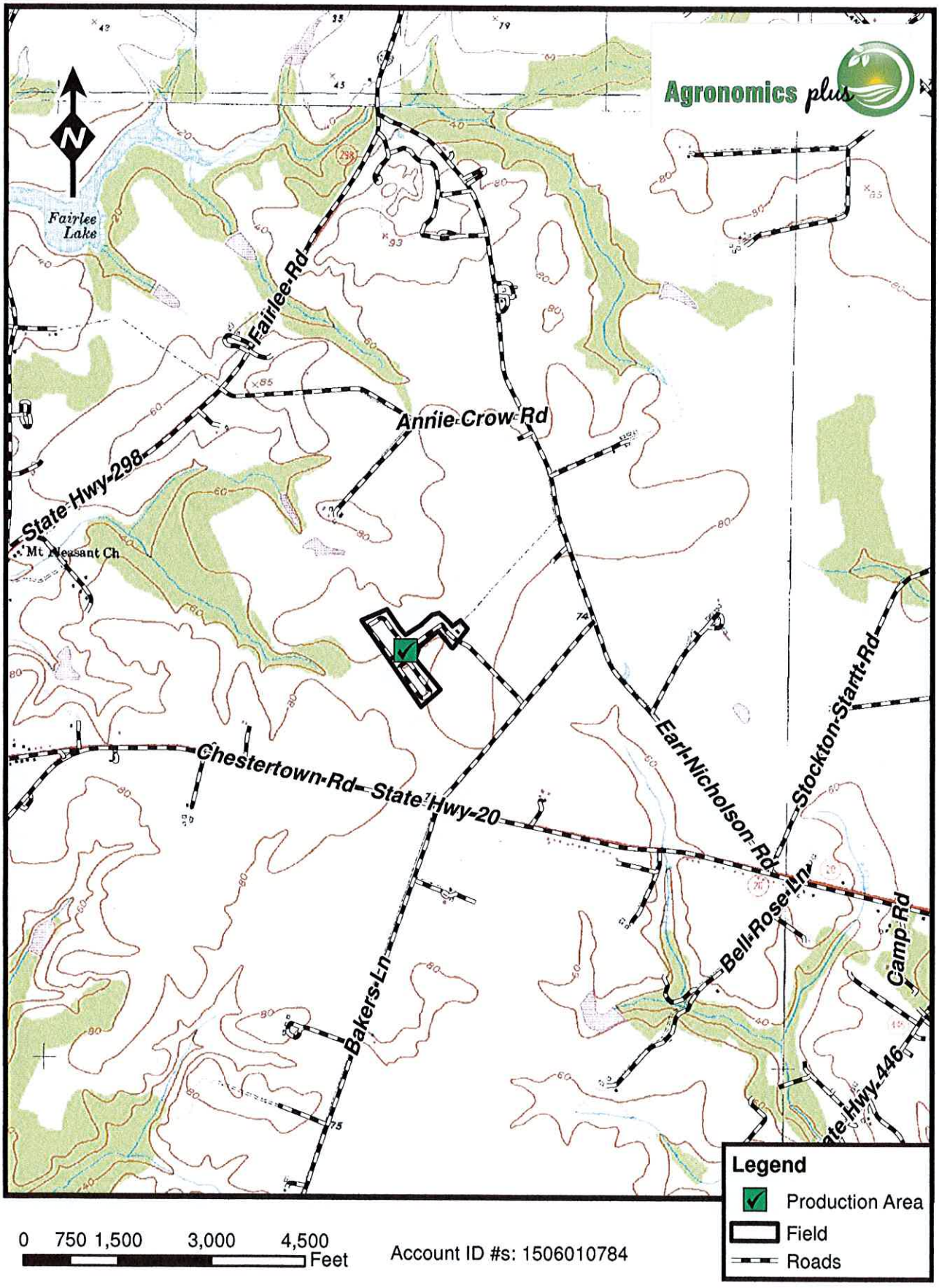
Signature of Applicant / duly authorized representative	8/24/20 **Date**
Zachary Loller **Printed Name of Applicant / duly authorized representative**	Owner **Title**

AFO Size Chart

Animal Type	Circumstances under which Animal Feeding Operations Require Permit Coverage		
	CAFO or MAFO Registration Required	**CAFO/MAFO Registration Required under Certain Circumstances**	**Registration Needed Only if Designated**
	Large	**Medium**	**Small**
Cattle (includes heifers)	1000 or more animals	300—999 animals	less than 300 animals
Dairy cattle	700 or more animals	200—699 animals	less than 200 animals
Horses	500 or more animals	150—499 animals	less than 150 animals
Veal	1000 or more animals	300—999 animals	less than 300 animals
Swine ≥ 55 pounds	2500 or more animals	750—2499 animals	less than 750 animals
Swine < 55 pounds	10,000 or more animals	3,000—9,999 animals	less than 3,000 animals
Sheep and lambs	10,000 or more animals	3,000—9,999 animals	less than 3,000 animals
Ducks with liquid manure handling+	5,000 or more animals	1,500—4,999 animals	less than 1,500 animals
Chickens with liquid manure handling	30,000 or more animals	9,000—29,999 animals	less than 9,000 animals
Ducks with dry manure handling	30,000 or more animals	10,000—29,999 animals	less than 10,000 animals
Laying hens with dry manure handling	82,000 or more animals	25,000—81,999 animals	less than 25,000 animals
Chickens (other than laying hens) with dry manure handling	125,000 or more animals or greater than or equal to total house size of 100,000 ft^2	37,500—124,999 animals *and* less than total house size of 100,000 ft^2	less than 37,500 animals
Turkeys	55,000 or more animals	16,500—54,999 animals	less than 16,500 animals

+A separate discharge permit is required for large category duck CAFOs

William Loller Farm, LLC



Comprehensive Nutrient Management Plan

William Loller Farm, LLC (AI# 68139)
312 Park Row
Chestertown, MD 21620

Farm site address: 8966 Bakers Lane, Chestertown, MD

Plan developed by:
Name: David Kann
Address: PO Box 1011
East Berlin, PA 17316
Phone: 717-792-1274 or 717-309-6247
E-mail: agplanner@comcast.net

Kent County
Soil Conservation District
122 Speer Road, Ste 4
Chestertown, Maryland 21620
410-778-5150 x3

Plan Written: 10/28/2024 (original versions: 10/12/2017)

Type: ☑ LAND ☐ NO-LAND

**Concentrated Animal Feeding Operation (CAFO) or Maryland Animal Feeding Operation (MAFO) – provide the numbers below (if applicable)

AI Number: 68139

CNMP Purpose and Agreement

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 for the AFO.

This CNMP is valid as long as there are no major changes to the operation. A CNMP plan revision will be needed when the number of animals deviates by 10% from the planned amount or when the operation changes from one type of livestock to another. Nutrient management plan revisions will be needed based on Maryland Department of Agriculture Nutrient Management regulations.

This CNMP was developed paying special attention to the USEPA's required nine minimum practices for water quality protection. This plan when implemented by the farmer will ensure clean runoff is diverted from manure storage and production areas and livestock are prevented from making direct contact with waters.

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 keeping all necessary records associated with implementation of this CNMP. It is my intention to implement/accomplish this CNMP in a timely manner as described in the plan.

Signature: _____ Date: 12/18/24

Name *(print)*: Zachary Loller

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 documents are technically compatible, reasonable and can be implemented.

Signature _____ Date: 10/28/2024

Name: David D. Kann
Title: Engineering Technician / Environmental Planner
Company: AET Consulting, Inc.

Planner Certification: PA-134

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Signature:_____ Date:_____

Name *(print)*:_____

Certified Comprehensive Nutrient Management Plan (CNMP) Planner

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Signature  Date: 10/28/2024

Name: David D. Kann
Title: Engineering Technician / Environmental Planner
Company: AET Consulting, Inc.

Planner Certification: PA-134

Purpose of the Comprehensive Nutrient Management Plan (CNMP)

A Comprehensive Nutrient Management Plan (CNMP) is a conservation system that is unique to your animal feeding operation (AFO). This plan is a grouping of conservation practices and management activities which, when implemented as part of a conservation system, will help to ensure that both production and natural resource protection goals are achieved for your operation. A CNMP incorporates practices to utilize animal manure and organic by-products as a beneficial resource. Your CNMP addresses natural resource concerns dealing with soil erosion, manure, and organic by-products and their potential impacts on water quality, which may derive from an AFO. A CNMP is developed to assist an AFO owner/operator in meeting all applicable local, tribal, State, and Federal water quality goals or regulations. For nutrient impaired stream segments or water bodies, additional management activities or conservation practices may be required to meet local, tribal, State, or Federal water quality goals or regulations.

The conservation practices and management activities planned and implemented as part of a CNMP must meet NRCS technical standards. For those elements included by an owner and/or operator in a CNMP for which NRCS currently does not maintain technical standards (i.e., feed management, vector control, air quality), producers should meet criteria established by Land Grant Universities, industry, or other technically qualified entities. Within each state, the NRCS State Conservationist has the authority to approve non-NRCS criteria established for use in the planning and implementation of CNMP elements.

Nutrient management and waste utilization manage the source, rate, form, timing, placement, and utilization of manure, rather than disposing of it as a waste residual. The goal is to effectively and efficiently use nutrient resources derived from animal waste to adequately supply soils and plants to produce food, forage, fiber, and cover while minimizing environmental impacts.

Minimum Standards of a CNMP

The Nine Minimum Standards to Protect Water Quality:

1. Ensure adequate storage capacity. Design, construct, operate, and maintain the production area and all animal waste storage structures to contain all animal waste, including any runoff or direct precipitation from a 25-year, 24-hour storm. Need to store dry manure in a way that prevents polluted runoff. Properly operate and maintain all storage facilities.

2. Ensure proper management of mortalities to prevent the discharge of pollutants into waters of the State. Do not dispose of mortalities in an animal waste or other storage or treatment system that is not specifically designed to treat animal mortalities without written permission from the Department, which may be granted if the Department determines catastrophic circumstances.

3. Divert clean water, as appropriate, from the production area to keep it separate from process wastewater. For CAFOs, conduct daily inspections of all outdoor water lines, and those located inside buildings with grated floors, on all days the CAFO is in operation. Correct any deficiencies found as a result of the inspections as soon as possible, and maintain a log of deficiencies found and corrected. The log must contain records of any deficiencies not corrected within 30 days and an explanation of the factors preventing immediate correction.

4. Prevent direct contact of confined animals with waters of the State.

5. Chemical Handling. Ensure that chemicals and other contaminants handled on-site are not disposed in

any manure, litter, process wastewater, or storm water storage or treatment system unless specifically designed to treat such chemicals and other contaminants. No pesticides, cleaning agents, or fuels shall be stored in any animal operation area, unless directly necessary for animal care and public health. These products shall not be allowed to enter waters of the State. The permittee shall notify the Department of any spills or other discharges as detailed under Part V.F. "Noncompliance Notification."

6. Conservation practices to control nutrient loss, including site-specific conservation practices.

a. An **AFO** shall maintain a setback of 100 feet or a 35 foot **vegetated filter strip** between stored **poultry litter** and **manure** and **waters of the State**, as well as field ditches. For existing permanent storage structures, an alternative to this requirement is provided in paragraph IV.A.1.b.6 of this permit.

b. For a poultry CAFO, permit condition IV.B.1. applies to the storage of poultry litter manure. In addition, poultry manure stored for more than 14 calendar days in the field, where manure may be applied as nutrients for crop growth under a nutrient management plan, shall be separated from ground water and storm water to prevent leaching or runoff of pollutants through the use of both a plastic liner and cover, at least 6 mils thick, or an equivalent method approved by the NRCS (if a standard is adopted by NRCS that meets federal requirements for CAFOs and is approved by the Department).

c. For a poultry MAFO, MDA and NRCS requirements apply to the field storage of poultry litter manure. The following additional requirements for poultry litter manure field storage areas do not include authorization to discharge pollutants to surface waters of the State:

i) **MAFO** poultry litter manure stored for more than 30 calendar days in the field shall be separated from ground water and storm water to prevent leaching or runoff of pollutants through the use of both a plastic liner and cover, at least 6 mils thick, or an equivalent method approved by the NRCS.

ii) If reputable research is performed, based on a plan approved by the Department and MDA, resulting in data that indicates that 30 calendar days is more restrictive than necessary to protect water quality, and/or other more effective approaches to controlling discharges from poultry manure stockpiles are recommended and available as a result of the study, the 30 calendar day requirement shall be automatically stayed and the permit reopened to implement appropriate permit revisions through a public process.

7. Protocols for manure and soil testing. Identify specific animal waste sample collection and analysis protocols to include at least annual analysis for phosphorus and nitrogen content. Include analysis of soil samples for pH and phosphorus content at least once every three years for all fields where animal waste may be applied. Protocols shall be consistent with Maryland's technical standards at COMAR 15.20.07 and 15.20.08.

8. Protocols for the Land Application of Manure and Wastewater. Follow protocols for development of a nutrient management plan and for the land application of animal waste in COMAR 15.20.07 and 15.20.08, which specify who is eligible to develop a NMP, determination of limiting nutrient, nutrient recommendations, acreage, and expected yield for each field. Animal waste shall not be applied at a rate higher than agronomic requirements in accordance with the Maryland Nutrient Management Manual. Animal waste shall be prevented from entering field ditches, adjacent properties, and other waters of the State, or conduits to waters of the State, except floodplains. In addition, the following requirements for setbacks shall be maintained:

a. A **setback** of at least 100 feet from waters of the State, as well as field ditches, other conduits, intermittent streams, and drinking water wells, shall be maintained; or an **approved alternative** may be substituted for the 100 foot setback.

b. A setback of at least 100 feet from property lines shall be maintained, unless an approved alternative setback for property lines is established with the consent of the adjacent property owner.

c. Alternative Setback Requirements Applicable to Poultry MAFOs. For slopes of 2% or less, a MAFO may satisfy the land application setback and buffer requirements of this permit by maintaining 1) a vegetated filter strip at least ten feet wide along field ditches and in the final 35 feet of the field ditches (applicable to ditch embankments and, to the maximum extent practicable, the channel) adjoining the receiving waters or the operation boundary, whichever occurs first, and 2) a 35 foot vegetated filter strip or a 50 foot setback from all other surface waters of the State, as defined in Part II.JJ.1. In Critical Areas, other alternative setbacks may be required by the Department.

9. Record Keeping. Maintain all records necessary to document the development and implementation of the NMP and Conservation Plan and all other requirements of Parts IV and V of this permit. These records shall be maintained for five years.

The nutrient management plan, contained in this CNMP, is a multi-year plan and will need updated before its expiration date. The plan will need revised on or before the expiration date. Any substantial changes, before this expiration date will need to be documented and revisions made by a certified consultant. A copy of this revision must be kept with your nutrient management records.

A Nutrient Management Annual Implementation Report must be submitted, each year, to the Maryland Department of Agriculture on or before March 1st.

Operator information:

Zach Loller
312 Park Row
Chestertown, MD 21620

Farm location:
8966 Bakers Lane, Chestertown, MD
(Kent County)

CNMP - Consultant information:

David D. Kann
PO Box 1011
East Berlin, PA 17316
(717) 632-5893
Certification #: PA-134
License Number: 2399

NMP – Consultant Information:
Don Moore
AET Consulting
Certification #: 1048

Date Nutrient Management Plan Developed:

February 13, 2023

Nutrient Management Plan Narrative:

Broilers are grown under an organic contract through Coleman. Outside accesses are made available for the birds to gain access under the organic standards. All the poultry litter produced is removed from the farm. The information in this plan addresses the issue of handling poultry litter and managing litter in house.

Organic poultry animal feeding operations must comply with the USDA established organic standards. These USDA required standards have been carried forward and required by MDE's CAFO permitting process for organic operations utilizing poultry pastures (PP), as defined by 19AF NPDES Permit Number MDG01.

Organic poultry operations that fall under these permit requirements must comply with the following actions and documentation to mitigate risk and ensure comprehensive compliance & monitoring:

1. To ensure that the PP has the ability to assimilate nutrients deposited by poultry, the PP must be allowed to "rest" or lie fallow for at least 3 weeks between flocks to allow for vegetative nutrient uptake.

2. The PP must maintain a minimum cover of 75% vegetation predominantly in grass or grass legume mix and legumes during the entire period that poultry have access to the PP. Soil type(s) must be identified and considered for the selection of grass or grass legume mix and legumes for the successful establishment of the vegetation and capability to assimilate nutrients in the PP.

3. Except for a tall grass type selected and managed for the purpose of providing tall shade in designated areas at 10% or less tall grass area of total area in the PP, the maximum height of the vegetation shall be maintained not to exceed 10 inches during the period that poultry have access to the PP.

4. Vegetation in the PP must never become denuded to the extent that it cannot be sustained during its normal growing season.

5. The PP must have no ponding or standing water for more than 24 hours.

6. The **permittee must maintain records** during the operating period of the poultry pasture including:

- Record of all days when the PP is in use. The record of all days when the PP is in use can be recorded on a calendar or the same calendar already in use by the producer.
- Record of weekly inspections of soil conditions in the PP, including instances of ponding or standing water, runoff or saturated soil.
- Record of weekly inspections of the vegetative conditions in the PP.
- Record of weekly inspections for any visible pollutant accumulations in the PP (such as manure, poultry litter, or process wastewater), with special attention paid to any excessive concentration of pollutants or pollutants in areas that are not vegetated.
- Record of mortality disposal from within the PP including date of mortality, number of deceased animals and method of disposal. The record of mortality disposal within the PP can be recorded on an animal mortality record sheet for the poultry houses.
- Record of laboratory soil sample analysis results for the PP to establish a nutrient baseline and monitor soil fertility values over time. Soil sampling and analysis protocols shall be consistent with Maryland's technical standards at COMAR 15.20.07 and 15.20.08 and, in following UMD guidance for soil sampling, sampling for each management unit (PP). The record of laboratory soil sample results can be contained in the Nutrient Management Plan (NMP).

7. The Comprehensive Nutrient Management Plan (CNMP) shall include a narrative that provides a description of the management and use of the PP designed to prevent the discharge of pollutants to waters of the State. A conservation plan map shall delineate the boundaries of the PP and be included in the CNMP.

8. The Nutrient Management Plan (NMP) shall include a worksheet to calculate the manure deposited on the PP on a yearly basis.

FARM OPERATION'S AVERAGE Phosphorus FIV SCORE
(Based on those fields with an FIV≥150): 372 This farm is a Tier B farm.

County Location: Kent

CODE: 0050 WS CODE: 02-13-06-11 (Still Pond - Fairlee)

Property ID	Acct ID Acres	Farm Name	Tract No.	Acres	County	Watershed
	225.0	Loller	189	180.1	Kent	0050

TOTAL ACRES UNDER PLAN ***180.1 acres***

Farm Contacts

	Name	Daytime Phone	Farm Phone	Cell Phone	Night Phone
Farm Owner	Loller				
Farm Operator	Zach Loller				
Fire or Ambulance	**911**	**911**	**911**	**911**	**911**

Agency Contacts

Contact Agency	Person / Office	Day Phone	Emergency Number
Health Department	**County Office**	**410-778-1350**	
Before you DIG, call Maryland's Miss Utility		**1-800-441-8355**	
Maryland Department of the Environment	**MDE** Animal Feeding Operation Division 1800 Washington Blvd. Suite 605 Baltimore, MD 21230	**410-537-3000**	**1-800-633-6101**
USDA Veterinary Services **State Veterinarian**	***position is currently vacant***	**1-866-536-7593** **410-841-5810**	**410-841-5971** **after hours**
Sheriff's Office	**Dennis Heckman**	**410-778-2279**	
NRCS	**County Office** 122 Speer Road, Suite 4 Chestertown, MD 21620	**410-778-5353**	
U of MD Extension	**County Office** 709 Morgnec Road Suite 202 Chestertown, MD 21620	**410-778-1661**	
MDA Nutrient Management	**Headquarters**	**410-841-5959**	**1-800-492-5590**
MDA Nutrient Management	**Regional office (Reg 5)** **Howard Callahan**	**410-822-8126**	
AET Consulting, Inc.	**David Kann**	**717-792-1274**	

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

Implement the following first containment steps and where containment material is located:

This plan will be implemented in the event that animal by-products from your operation are leaking, overflowing, running off site or there is imminent danger that such may occur from damage or failure of the system or a threatening natural occurrence, such as a hurricane. You should not wait until manure reaches surface waters or leaves your property to consider that you have a problem. You should make every effort to ensure that this does not happen. This plan should be posted in an accessible location for all employees at the facility. The following are some action items you should take in the event of an emergency:

Action Plan

In case of an emergency; including a spill, leak, or failure:

Spills from containment areas or structure failures:

1. Stop all other activities to address the problem;
2. Call for assistance, if needed;
3. Construct sand bag or earthen dike to contain or divert spills away from surface inlets, roadways, and surface water features. Add absorbent material such as pads, sawdust, straw or dry soil as needed for containment.
4. Remove spill from diked area with appropriate equipment such as: vacuum tank, front-end loader and spreader, or other method as directed by local or state authorities.
5. Complete the clean-up and repair the necessary components.
6. Initiate additional containment measures, corrective measures, or property restoration measures as directed by emergency agency officials.

Spills during transportation on public roadways:

1. Coordinate efforts with local law enforcement and emergency personnel.
2. Contain spill and divert waste away from watercourses;
3. Call for additional assistance, equipment, and supplies, as appropriate;
4. Remove spill with appropriate equipment such as: vacuum tank, front-end loader and spreader, or other method as directed by local or state authorities.

Spill area clean up:

1. Break down dike.
2. Dry out sand bags.
3. Properly discard any absorbent pads used.
4. Level any soil disturbance and incorporate residue.
5. Re-vegetate disturbed area.

In Case of an Emergency Land Application Manure/Waste Discharge

CNMP EMERGENCY RESPONSE (CONT.)

If manure is spilled directly into waters of the state, it can create an environmental or public health hazard. Contact MDE as soon as possible within 24 hours after a spill.

Provide the following information:

1. Name and identification of the farm;
2. A description of the discharge and cause, including a description of the flow path to the receiving waters, and an estimate of the volume discharged;
3. Any obvious damage, such as a fish kill or property damage;
4. The period of discharge, including exact dates and times, and, if not corrected, the anticipated time the discharge is expected to continue;
5. Describe the steps being taken to reduce, eliminate, and prevent recurrence of the discharge.

Threatening Natural Occurrences

Prevent or minimize damage caused by threatening natural occurrences, such as hurricanes or strong storms associated with approaching fronts - actions include:

1. Do not spread manure on fields just prior to an approaching storm.
2. Do not spread manure on fields that flood during high rainfall events.
3. Notify State Veterinary Office - Animal Emergency Response Coordinator (See Table below) or Local Animal Emergency Response Coordinator for relocation of animals if needed.

Personal injury

1. Stop all other activities to deal with the emergency.
2. Call for help (See Emergency Contact Information).

Catastrophic deaths – Disease Related

1. Notify State Veterinary Office.
2. Limit exposure to other animals.
3. Prevent visitation by unnecessary people.
4. Dead animals should be moved into a DHEC approved transport vehicle or a DHEC approved storage area or bin.
5. Record date of catastrophic deaths, number of deaths, method and location of disposal.

Catastrophic deaths – Disaster Related

1. Notify State Veterinary Office - Animal Emergency Response Coordinator immediately. (See Emergency Contact Information)
2. Remove mortality from the barns/houses.
3. Dispose of mortality in the manner given in this CNMP for emergency dead animal disposal.
4. Record date of catastrophic deaths, number of deaths, method and location of disposal.

Manure Removal

1. Place manure in stacking structure if available. Do not stack old manure next to new or wet manure next to dry.
2. Records should be kept for any manure which is transported off the farm site.

Fire

1. Stop all other activities to deal with the emergency.
2. Try to extinguish the fire with the appropriate rated fire extinguishers.
3. If fire cannot be contained, call for help (See Emergency Contact Information)

Assess the extent of the spill and note any obvious damages

1. Did the by-product reach any surface waters?
2. Approximately how much was released and for what duration?
3. Any damage noted, such as employee injury, fish kills, or property damage?
4. Did the spill leave the property?
5. Did the spill have the potential to reach surface waters?
6. Could a future rain event cause the spill to reach surface waters?
7. Are potable water wells in danger (either on or off of the property)?
8. How much reached surface waters?

Provide the following information when reporting an emergency

1. Your name and phone number.
2. Directions to the farm.
3. Description of emergency.
4. Estimate of the amounts, area covered, and distance traveled.
5. Has manure reached surface waters or major field drains?
6. Is there any obvious damage: employee injury, fish kill, or property damage?
7. What activities are currently in progress to contain situation?

Implement procedures as advised by MD NRCS and technical assistance agencies to rectify the damage, repair the system, and reassess the manure management plan to keep problems with release of manure from happening again.

Documentation

The following items shall be documented in writing and filed with your farm operation records for future reference and emergency response training:

1. Date and time, location of spill, affected landowners.
2. Affect of manure spill on any surface water body or potable water well.
3. Approximately how much manure was released and for what duration.
4. Amount of manure, if any, which left the farm property.
5. Any damage, such as personal injury, fish kill, property damage.
6. Cause of the spill.
7. Procedure to handle the emergency.
8. Clean up efforts.
9. List of authorities called, those that responded, and the time it took for them to respond.
10. Recommendations to prevent a reoccurrence.

In Case of a Chemical Handling Emergency

Chemical Handling

This section contains information on using pesticides safely, emergency contact information, spill information and the proper disposal of pesticide containers. For further information, please contact the Maryland Department of Agriculture Pesticide Regulation Program.

USE PESTICIDES SAFELY

1. Check the label - Be sure the pest you need to control is listed on the label.
2. Buy only enough pesticide for one or, at most, two years. Pesticides stored longer may degrade and become less active.
3. Always wear long trousers, a long-sleeved shirt, socks, and shoes when applying any pesticide. Other protective equipment, such as a respirator, goggles, impermeable gloves and boots maybe necessary or desirable for extra protection.
4. Do not wear leather shoes, boots, or gloves while handling pesticides. Leather absorbs pesticides and cannot be decontaminated easily.
5. Take care to avoid pesticides coming into contact with your eyes, mouth, or skin.
6. Wash your hands with soap and water immediately after applying a pesticide. Shower as soon as possible.
7. Stand upwind while mixing and applying pesticides.
8. Unless the label specifically allows such use, never apply a pesticide where it could contact water sources, and avoid applying to bare ground.
9. Never apply a pesticide at a higher rate than the label directs.
10. Wash all clothing worn during mixing and application separately from household laundry. Use a heavy duty detergent and hot water. Dry the clothes in a hot dryer or outside in the sun.
11. Store pesticides only in their original containers. Keep them away from food, feed, seed, and fertilizers in a locked building or cabinet.
12. Dispose of empty pesticide containers in accordance with label directions and state and local requirements. See Disposal of Pesticide Containers

DISPOSAL OF PESTICIDE CONTAINERS

Pesticides (herbicides, insecticides, fungicides, etc.) are designed to be toxic. Improper disposal of pesticides or their containers can lead to environmental contamination and may incur both civil and criminal penalties. There is usually no safe and legal way to dispose of leftover pesticide; all of the chemical must be used up on registered sites or crops according to directions on the label. The Environmental Protection Agency (EPA) has accepted certain procedures, outlined below, which are designed to remove as much residue from the container as possible. Only after following these procedures may pesticide containers be deposited in a licensed sanitary landfill.

Containers of Liquid Formulations

1. Triple rinse the container immediately after emptying it into the spray tank:
   Fill the container 1/4 full with the proper diluent (usually water or oil). Replace the closure or plug the opening. Rotate the container. Add rinsate to the spray tank. Repeat this procedure 2 more times
2. Puncture the top and bottom of the container to prevent its reuse.
3. Deposit the empty container in a licensed sanitary landfill.

Containers of Dry Formulations

1. Empty the contents into the tank, shaking the container to remove as much residue as possible. Take care not to inhale any dust.
2. Open both ends of the container to help remove residue and to prevent reuse.

3. Deposit the empty container in a licensed sanitary landfill.

If checked, the indicated measures will be taken to prevent chemicals and other contaminants from contaminating process waste water or storm water storage and treatment systems.

√	*Measure*
	All chemicals are stored in proper containers. Expired chemicals and empty containers are properly disposed of in accordance with state and federal regulations. Pesticides and associated refuse are disposed of in accordance with the FIFRA label.
	Chemical storage areas are self-contained with no drains or other pathways that will allow spilled chemicals to exit the storage area.
	Chemical storage areas are covered to prevent chemical contact with rain or snow.
	Emergency procedures and equipment are in place to contain and clean up chemical spills.
	Chemical handling and equipment wash areas are designed and constructed to prevent contamination of surface waters and waste water and storm water storage and treatment systems.
√	**All chemicals are custom applied and no chemicals are stored at the operation. Equipment wash areas are designed and constructed to prevent contamination of surface waters and waste water and storm water storage and treatment systems.**

EMERGENCY CONTACTS:

For individuals exposed to chemicals the following are the telephone numbers for emergency treatment centers and the telephone number for the nearest poison control center.

1. Maryland Poison Control Center 1-800-222-1222
2. Maryland Department of Agriculture (Pesticide Section), 410-841-2721
3. Delaware Department of Agriculture (Pesticide Section), 302-698-4570
4. CHEMTREC Emergency Hotline, 1-800-424-9300
5. Local Police/Fire 911
6. National Pesticide Information Center (NPIC), 1-800-858-7387, Monday - Friday, 6:30 a.m. to 4:30 p.m. Pacific Time

EMERGENCY SPILLS:

1. Fires, spills or other incidents of pesticide release to the environment must be reported immediately to the Maryland Department of the Environment (MDE), Emergency Response at: 1-866-633-4686 or 1-866 MDE-GOTO (24 hours a day, 7 days a week)

2. Fires, spills or other incidents of pesticide release to the environment can also be reported immediately to the State of Maryland Department of Agriculture: 1-410-841-5710 or 1-800-492-5590 (8:00 AM to 4:30 PM - Monday through Friday)

3. The 24-hour CHEMTRAC telephone number for emergency assistance is: 1-800-424-9300

Other Management related ISSUES:

****** Items in this list may not apply to every Animal Feeding Operation. ******

FARMSTEAD (Production Area)

This element addresses the components and activities associated with the production facility, feedlot or animal loafing facilities, manure and wastewater storage and treatment structures and areas, animal mortality facilities, feed and other raw material storage areas, and any areas used to facilitate transfer of manure and wastewater.

Description of Operation/Additional Information

The Nutrient Management Plan, contained in this CNMP, was meant to cover multiple years and will be updated before its expiration date.

ALL of the litter which is produced and collected will be exported off the farm. All litter is exported to Harbor View Farms. The information in this plan addresses the issue of handling poultry litter and crust-outs.

Poultry litter is contained within the broiler houses or in the Manure Shed. This poultry animal feeding operation is under an organic contract with Coleman (Perdue). Typically, when the outside target temperature is reached, birds will have opportunity to utilize the outside poultry accesses. 2 of the 4 flocks will have opportunity to use the available fenced poultry pasture (PP). 35 days, for each flock, will be the maximum time spent on the outside pasture. The annual PP usage of 70 total days, is contingent on the following parameters; bird age (3+ weeks), known predator threats, and weather conditions.

Vegetation buffers have been implemented on each production facility. Stormwater comes off the poultry house roofs and is sloped away from the buildings. In the operation, ALL of the stormwater pathways are in vigorous sod and will be properly maintained to continue their proper intended use.

Poultry pasture is not considered part of the production area, as long as the pasture area is managed to sustain grass vegetation during the normal vegetative growing season.

The information which follows, in this plan, addresses the issue of handling poultry litter and crust-outs.

Description of nearby Water Bodies

The farmstead and production area sits within the Northeast River Watershed. **The associated waterbody is a UNT of Fairlee Creek in the Stillpond – Fairlee Watershed.** All production areas, manure storage, manure cleanup - heavy use areas, and mortality management is 500’ from any Public Drainage Ditches (PDAs) and/or Streams, Creeks, or Rivers. **The farm operation is NOT in a Tier II Watershed**.

Farm Name	Name of nearest Waterbody	Distance to Waterbody	Watershed Name	12-digit Watershed number	Water Quality Status TMDL impairments (N, P, Bacteria, Sediment)
William Loller Farm	*UNT Fairlee Creek*	*500 ft*	*Stillpond - Fairlee*	*021306110349*	*Nitrogen Phosphorus Sediment*

Sensitive Environmental Areas

Briefly describe any sensitive environmental areas on the farm including streams, wetlands, HEL land, hydric soils, 100 year floodplain, and distance to regulatory waters.

No sensitive areas were being impacted or diminished by farming activities at the time of the site visits. All required setbacks are outlined in this plan. The nearest body of water is >100 feet from the production facility. The production areas are outside of the 100 year floodplain.

Environmental Justice (EJ) Score

The EJ Score is an overall evaluation of an area's environment and existing environmental justice indicators; including pollution burden exposure, pollution burden environmental effects, sensitive populations, and socioeconomic factors. **This location's score is 59.19 percentile.**

The Resource Concern Identification Worksheet is in the Appendix of this document.

Poultry

LOCATION	8966 Bakers Lane, Chestertown, MD
Bird Type	Broilers
Number of Houses - Existing	9 (41' x 550')
Number of Houses – Proposed (if applicable)	0
Total # of Birds (all houses)	270,000
Number of Flocks per year	4.5
Average Bird Weight*	8.5
Manure Generated/Produced in-house (tons/yr)*	1,094
Manure Available for Utilization/Removed (tons/yr)*	700

*See manure quantity estimation sheets in the "Nutrient Management" section of this plan.

Operators must keep records of the actual:

1. Quantity estimate of litter removed from production and/or storage facility; and
2. Date of removal of litter from production and/or storage facility.

AFO RESOURCE CONCERNS EVALUATION WORKSHEET

Name:	Zach Loller	**Agency Interest #:**	68139
Planner:	David D. Kann	**Farm # / Tract #:**	
Site Visit Date:	7/22/2020	**Total Acres:**	188.4
County:	Kent	**Production Area Acres:**	16 acres

	RESOURCE CONCERN	YES	NO	ASSESSMENT
a.	Biosecurity measures	☐	☒	All precautionary measures are in place and being followed. Visitor restrictions.
b.	Chemical handling	☐	☐	Not applicable. All chemicals are custom applied and no chemicals are stored at the operation.
c.	Cultural resources	☐	☒	
d.	Feedlot area	☐	☒	
e.	Floodplains	☐	☒	
f.	Gully erosion	☐	☒	
g.	Livestock travel lanes	☐	☒	
h.	Nutrient discharge	☐	☒	
i.	Objectionable odors	☐	☒	No unusual or excessive odors were observed during the site visit.
j.	Particulate matter emissions	☒	☐	Through ventilation fans, typical levels. Grass filters in place to capture and treat emissions.
k.	Ponding, flooding, seasonal high water table	☐	☒	
l.	Sediment	☐	☒	
m.	Streambank/shoreline erosion	☐	☒	
n.	Threatened/endangered species	☐	☒	
o.	Waste storage	☐	☒	Roofed manure shed (40' x 84') being managed appropriately.
p.	Waterways	☐	☒	In good vigorous sod
q.	Wetlands	☐	☒	

Manure Collection

Briefly describe the manure collection system, timing, and manure management methods.

Crust-out removals are not at the amounts they once were. Windrowing takes place within the house after each flock. A cut back on litter has also occurred. Windrowed material is than bladed back evenly over the house floor.

Manure Storage

Briefly describe the current storage capacity (if any exists) and whether it is adequate and/or if additional storage is needed.

With the current style of litter management and the integrator's wishes, more composting and blading of material back over the floor, the roofed manure shed is adequate.

Roofed temporary stack storages:

(1) 40' x 84'

Current/Proposed Manure Storage Conditions

Animal Type	Storage Structure	Size of Structure	Storage Capacity (cubic ft)	Date of Construction
Broiler	Manure Shed	40' x 84'	20,160 (405 ton)	11/01/1995

IMPORTANT! Manure should not be stockpiled or staged anywhere in the production area other than permanent manure storage structure for any length of time.

Animal Mortality Disposal

Animals die because of disease, injury, or other causes in any confined livestock operation. The mortality rate is generally highest for newborn animals because of their vulnerability.

Catastrophic mortality can occur if an epidemic infects and destroys a large portion of the herd or flock in a short time, or if a natural disaster, such as a flood or excessive heat strikes. There are also incidences when an entire herd or flock must be destroyed to protect human health or other farms in the area.

Methods for managing mortality include:

1. Rendering
2. Composting
3. Incineration*

*NOTE: Incineration may only be used with proper equipment and permits must be obtained by the producer.

4. Sanitary landfills
5. Burial*
6. Disposal pits*

*NOTE: Burial and Disposal pits should only be considered for catastrophic mortality if all other methods are not possible. The operator will follow local and state guidance if it is determined that burial is an acceptable means of disposal.

Typical Mortality Management

List the type of normal disposal method used on the operation.

Mortality is generally composted with a channel composter. Management flexibility is available, if conditions arise where a larger composting area is necessary, the manure storage can be utilized. A designated area in this manure shed may be used as necessary for composting dead birds. The person handling clean-outs will be made well aware of the location of this pile. This notification is to ensure that no unfinished compost is inadvertently removed from this area of the manure shed.

Current Typical Mortality Disposal Method(s)

Animal Type	Disposal Method	Capacity of Structure (# of bins, length of channels, etc.)	Location of Disposal Facility
Broiler	Composter	Bin Composter	Northside, adjacent to manure shed

Catastrophic Mortality Management

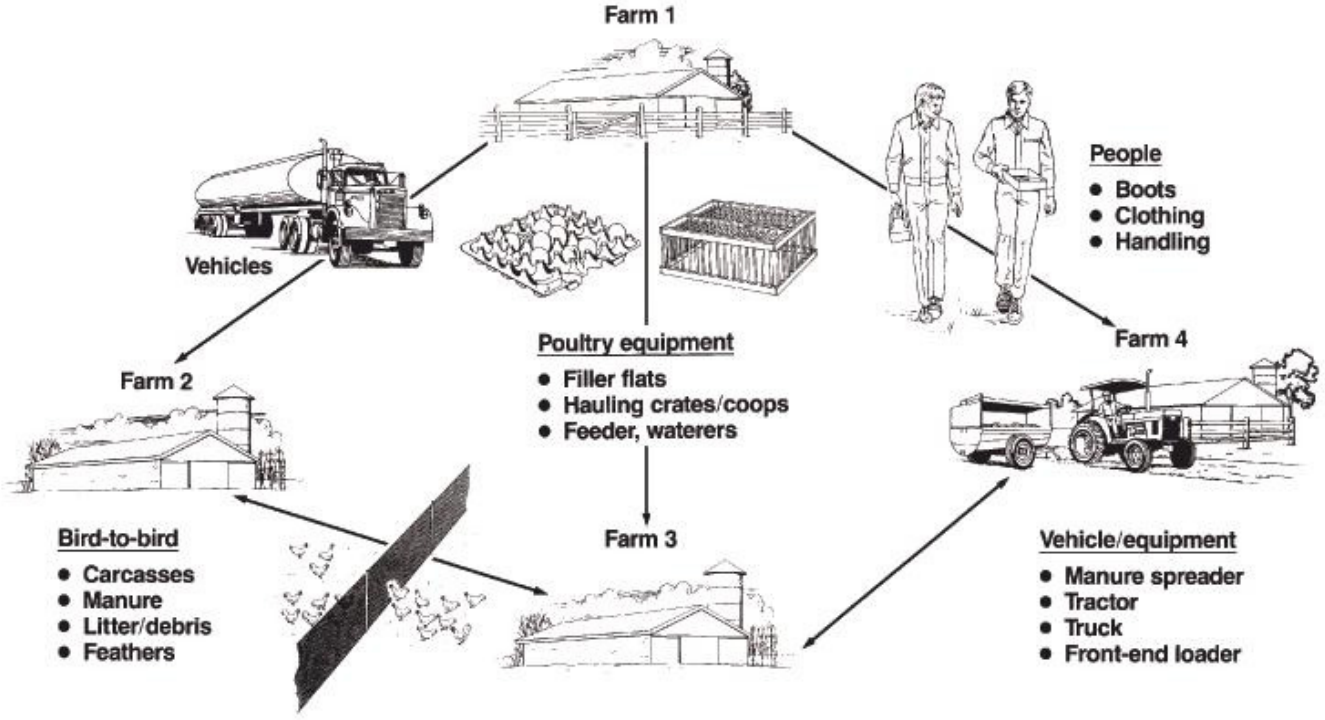
Briefly describe the type of catastrophic disposal method used on the operation.

In the event of catastrophic mortality, the operator will...use composting for normal mortality and composting for catastrophic mortality.

Biosecurity

An outbreak of animal disease could not only harm your livestock, it could affect other nearby animals and quickly spread through your area.

How Diseases Spread (Example – Poultry Operation)



Steps to Take to Avoid Disease Spread

To reduce the risk of introducing disease entering into an animal feeding operation, maintain a biosecurity barrier (physical barrier, personal hygiene, and equipment sanitation) between wildlife, animals, animal containment areas, and other commercial facilities. Some examples of good biosecurity practices include:

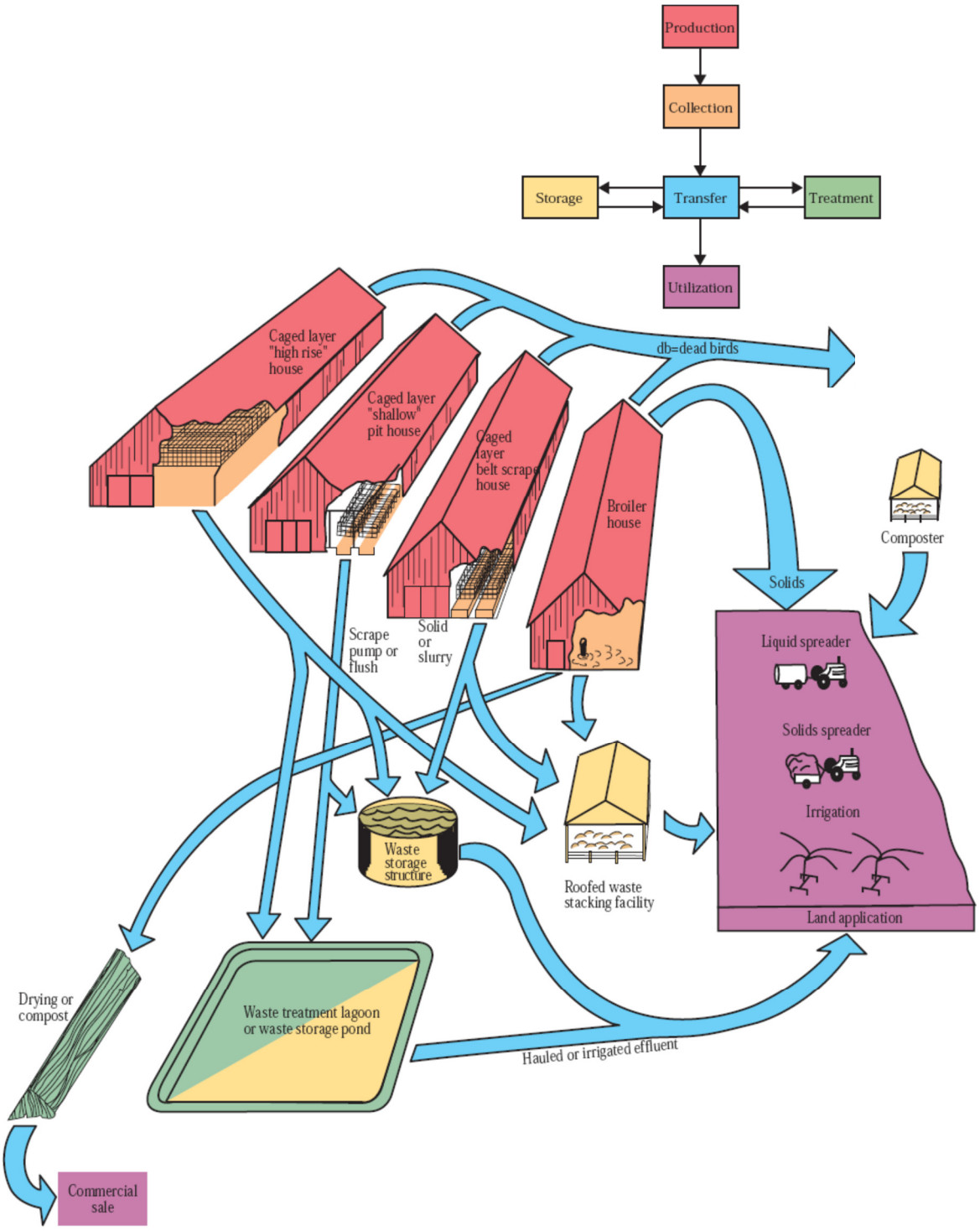
1. Permit only essential workers and vehicles on the premises.
2. Give Germs the Boot
    1. Keep a pair of shoes or boots to wear only around your animals.
    2. Clean and disinfect your shoes often.
    3. Always ask visitors and employees to clean their boots and shoes.
3. Don't Haul Home Disease
    1. Always clean and disinfect vehicles used for moving animals.
    2. Limit traffic of incoming people, products and vehicles that could bring in a disease.
    3. Clean and disinfect all equipment that comes in contact with your animals.
4. Keep Your Farm Secure
    1. Restrict access to your property and animals.
    2. Keep doors and gates locked.
    3. Have tracking records on animals.
5. Give Germs Space – Newly acquired animals should be isolated for at least two weeks to ensure you don't introduce disease to your main herd or flock.
6. Look for Signs
    1. Unusual animal health symptoms or behavior
    2. Sudden, unexplained death loss in the herd or flock
    3. Severe illness affecting a high percentage of animals
    4. Blisters around an animal's mouth, nose, teats or hooves
    5. Staggering, falling or central nervous system disorders that prevent animals from rising or walking normally.
    6. Large number of dead insects, rodents or wildlife
7. Don't Wait – Call in Signs of Disease Immediately

Do not self-diagnose. Seek veterinary services, as early detection is your best protection. If you have animals with signs of suspect disease, call your local veterinarian, extension agent or the state veterinarian. Rapid response and investigation are the only ways to control and eliminate disease and stop large numbers of casualties or damage to our economic system.

Animal Waste Management Plan

See Appendix for full Report

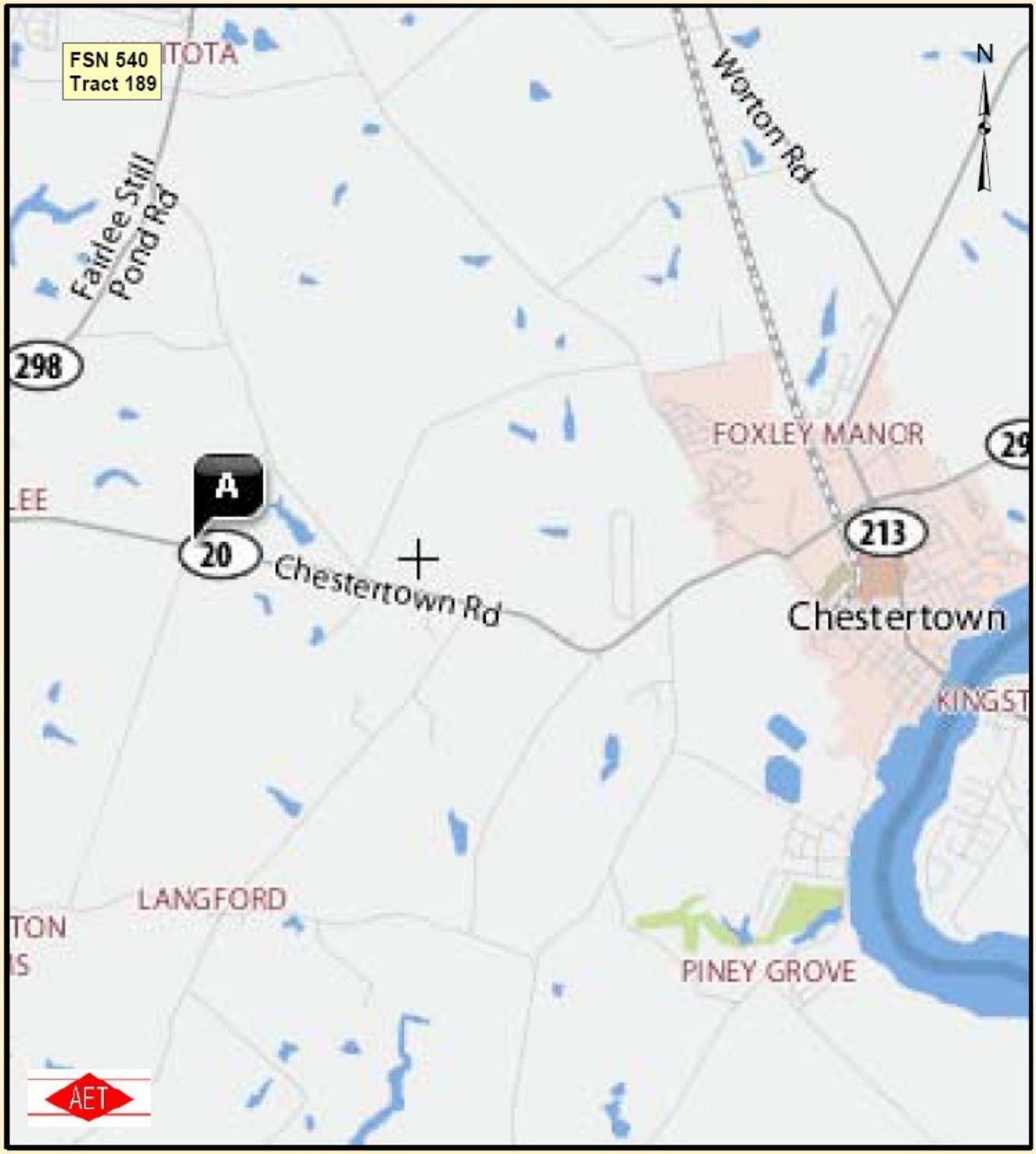
The following flow diagram depicts the manure management options and waste handling process on a typical poultry operation. This particular broiler farm operation may use some or all of the processes listed below.



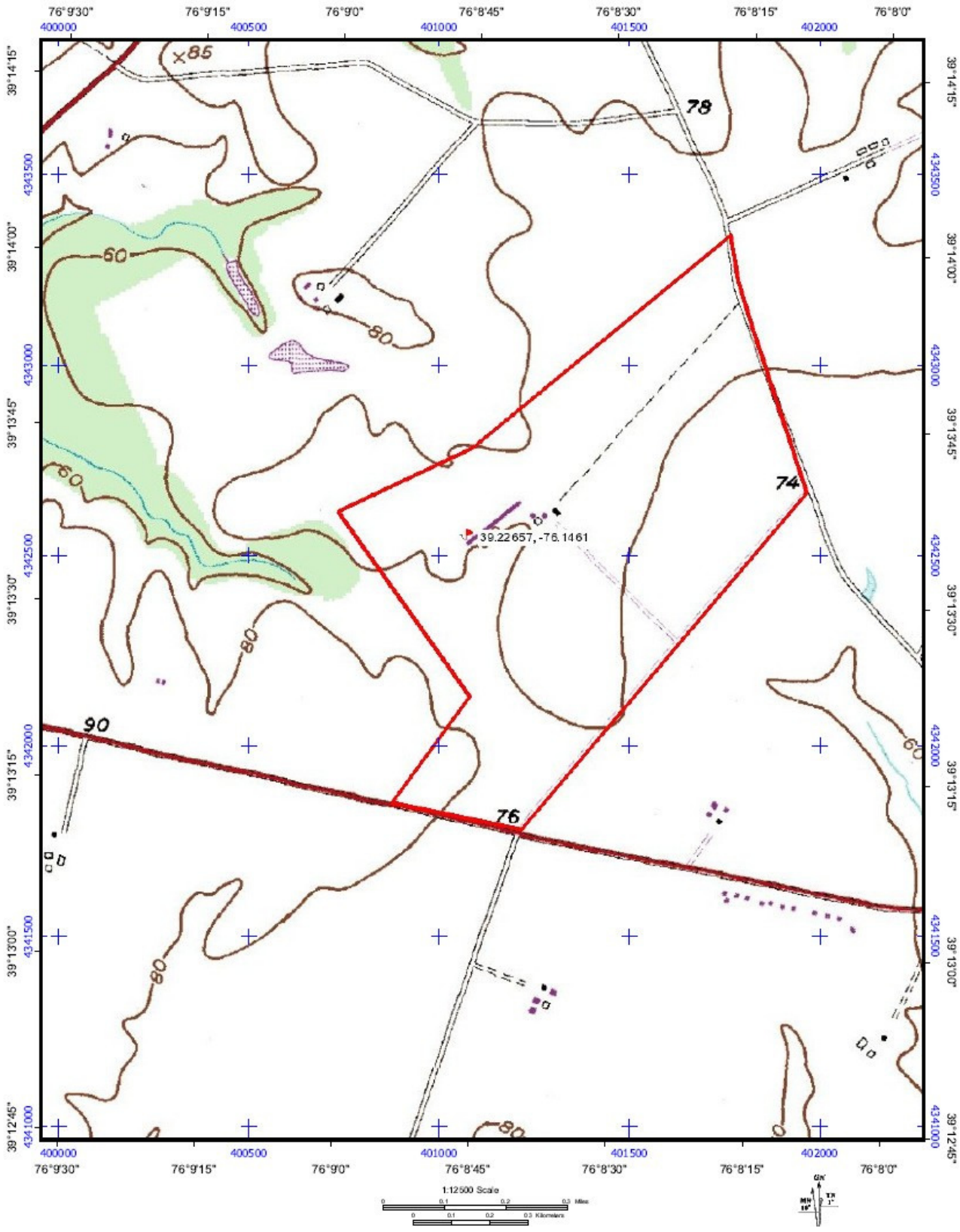
FARMSTEAD (PRODUCTION AREA):

1. PLAN MAP
2. CONSERVATION PLAN
3. WATER CONVEYANCE MAP
4. OPERATION & MAINTENANCE FOR ENGINEERING PRACTICES

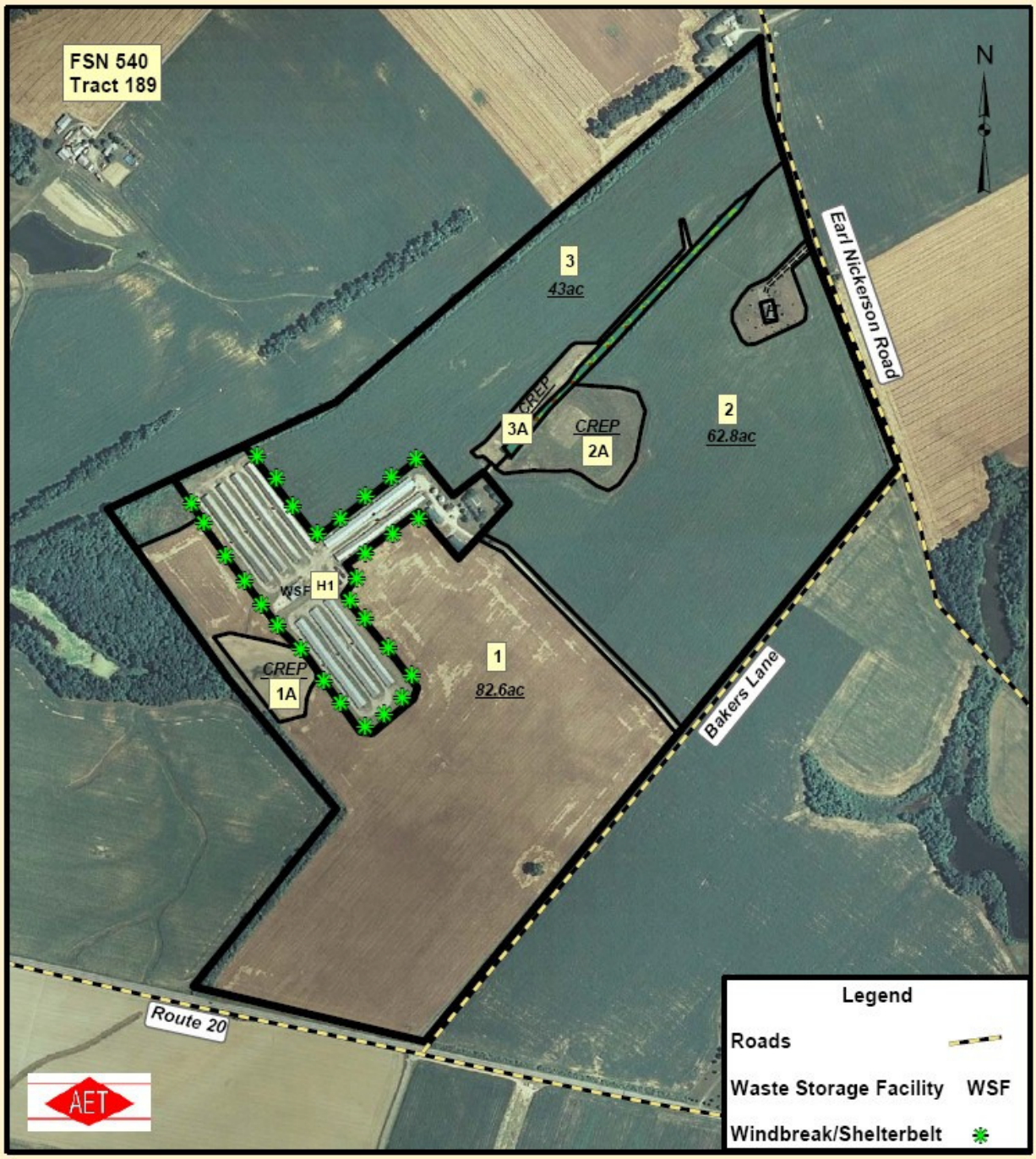
Location Map



AET Consulting, Inc. DDKann Environmental Consultant	**Judith Ann Loller** **Zach Loller** **Home Farm**	**Site: 8966 Bakers Lane** Created in ArcGIS 9 using ArcMap


76°9'30"
76°9'15"
76°9'0"
76°8'45"
76°8'30"
76°8'15"
76°8'0"
400000
400500
401000
401500
402000
39°14'15"
39°14'00"
39°13'45"
39°13'30"
39°13'15"
39°13'00"
39°12'45"
4343500
4343000
4342500
4342000
4341500
4341000
78
74
76
90
85
80
60
39.22657, -78.1461
1:12500 Scale
0 0.1 0.2 0.3 Miles
0 0.1 0.2 0.3 Kilometers

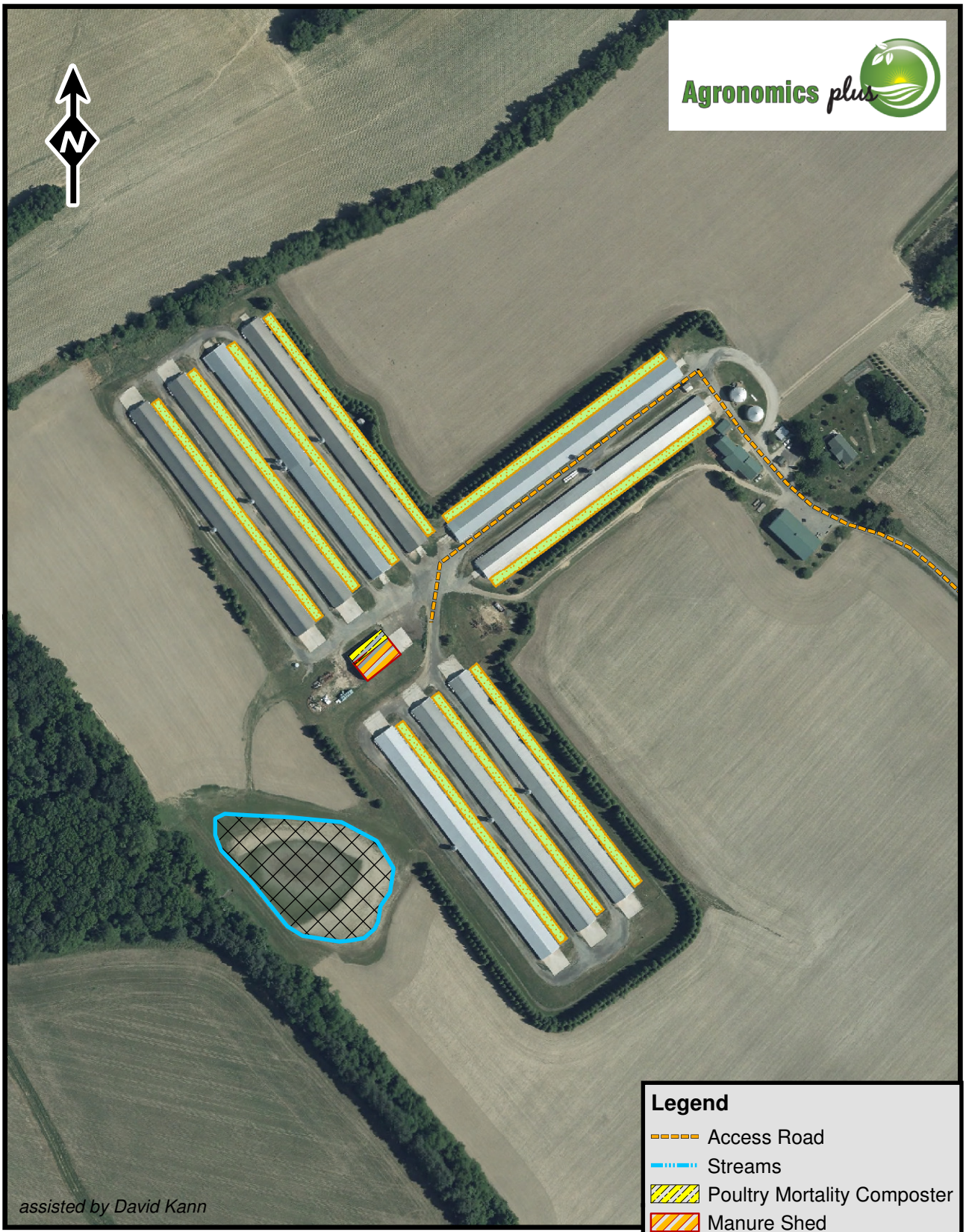
Conservation Plan Map



AET Consulting, Inc. DDKann Environmental Consultant	Judith Ann Loller Zach Loller Home Farm	Site: 8966 Bakers Lane Created in ArcGIS 9 using ArcMap

William Loller Farm, LLC

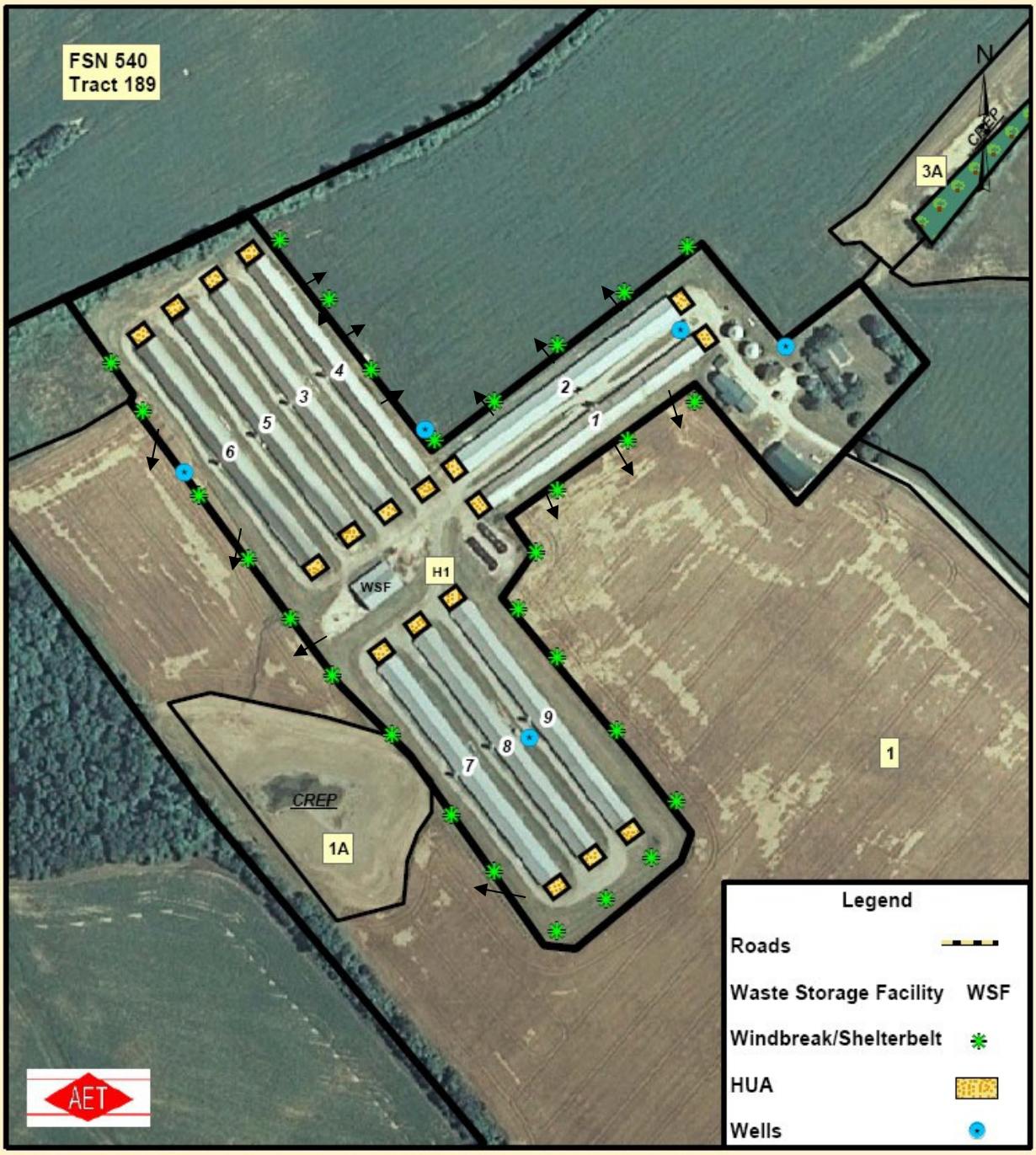
Farmstead Map



Account ID #s:

0 95 190 380 570 Feet

CONSERVATION PLAN HEADQUARTERS MAP



AET Consulting, Inc. DDKann Environmental Consultant	Judith Ann Loller Zach Loller Home Farm	Site: 8966 Bakers Lane Created in ArcGIS 9 using ArcMap

Manure Shed and Mortality Facility at the Loller Farm

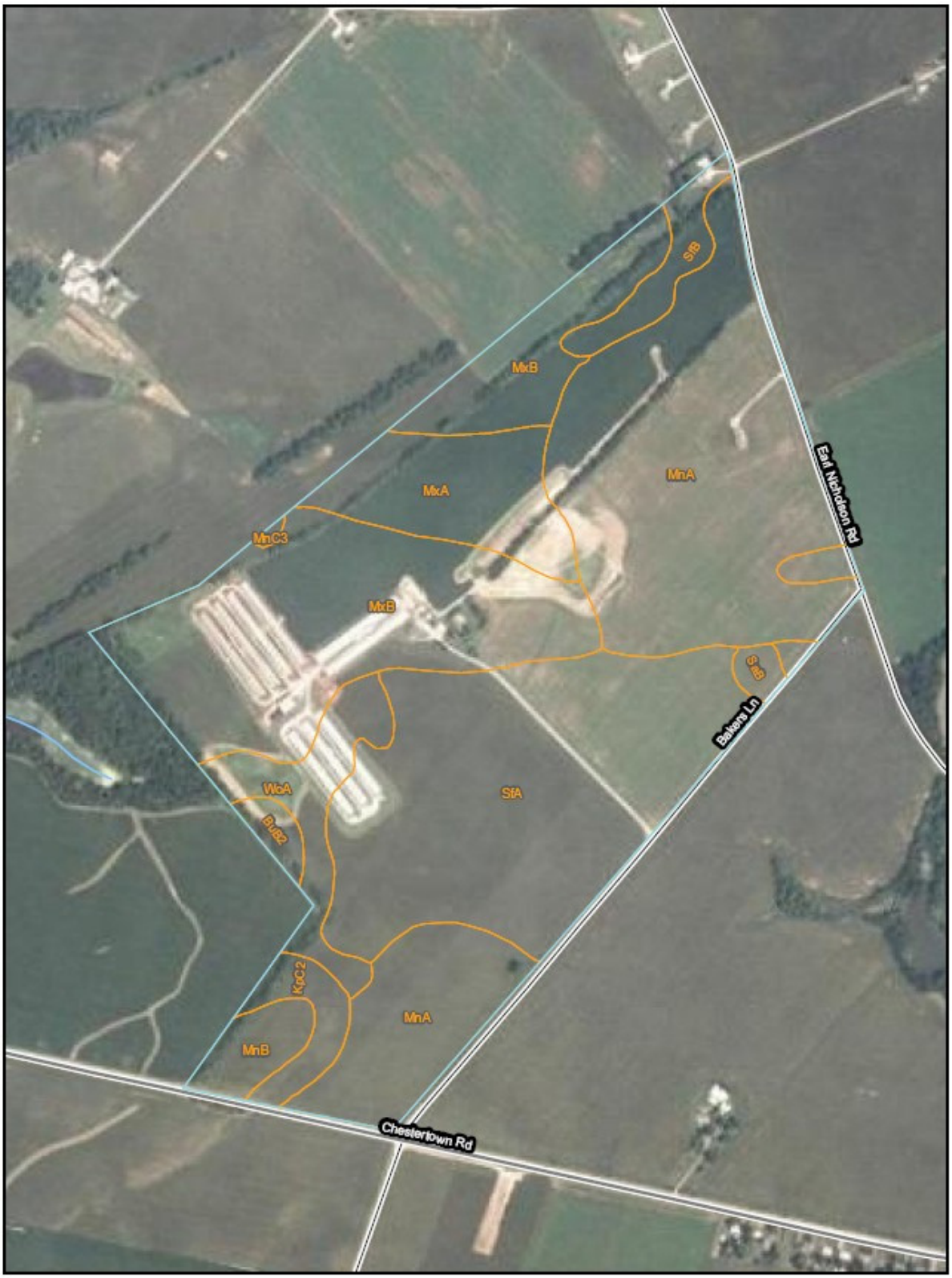
LAND TREATMENT AREA

(Crop or Pasture – **NOT APPLICABLE**)

This element addresses the evaluation and implementation of appropriate conservation practices on sites proposed for land application of manure and organic by-products from an Animal Feeding Operation (AFO). On fields where manure and organic by-products are applied as beneficial nutrients, it is essential that runoff and soil erosion be minimized to allow for plant uptake of these nutrients.

The following documents are located in this section:

1. **Soils Map**
2. **Soils Descriptions**


StB
MxB
MnA
MxA
MnC3
MxB
StB
WoA
StA
BuB2
KrC2
MnA
MnB
Earl Nicholson Rd
Bahens Ln
Chesterfown Rd

Zach Loller

Soil Descriptions

Kent County, Maryland

Map Unit: KpC2—Keyport silt loam, 5 to 15 percent slopes, moderately eroded

Component: Keyport (100%)

The Keyport component makes up 100 percent of the map unit. Slopes are 5 to 10 percent. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 33 inches during January, February, March, April, May, November, December. Organic matter content in the surface horizon is about 2 percent. This component is in the F149AY120MD Moist Clayey Upland ecological site. Nonirrigated land capability classification is 3e. This soil does not meet hydric criteria.

Map Unit: MnA—Matapeake silt loam, 0 to 2 percent slopes

Component: Matapeake (80%)

The Matapeake component makes up 80 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats, uplands. The parent material consists of silty eolian deposits over fluviomarine sediments. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. This component is in the F153CY030MD Well Drained Loess Upland ecological site. Nonirrigated land capability classification is 1. Irrigated land capability classification is 1. This soil does not meet hydric criteria.

Component: Nassawango (10%)

Generated brief soil descriptions are created for major soil components. The Nassawango soil is a minor component.

Component: Butlertown (5%)

Generated brief soil descriptions are created for major soil components. The Butlertown soil is a minor component.

Component: Mattapex (5%)

Generated brief soil descriptions are created for major soil components. The Mattapex soil is a minor component.

Map Unit: MnB—Matapeake silt loam, 2 to 5 percent slopes

Component: Matapeake (80%)

The Matapeake component makes up 80 percent of the map unit. Slopes are 2 to 5 percent. This component is on flats, uplands. The parent material consists of silty eolian deposits over fluviomarine sediments. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. This component is in the F153CY030MD Well Drained Loess Upland ecological site. Nonirrigated land capability classification is 2e. Irrigated land capability classification is 2e. This soil does not meet hydric criteria.

Component: Nassawango (10%)

Generated brief soil descriptions are created for major soil components. The Nassawango soil is a minor component.

Component: Butlertown (5%)

Generated brief soil descriptions are created for major soil components. The Butlertown soil is a minor component.

Component: Mattapex (5%)

Generated brief soil descriptions are created for major soil components. The Mattapex soil is a minor component.

Map Unit: MnC3—Matapeake silt loam, 5 to 10 percent slopes, severely

Component: Matapeake (100%)

The Matapeake component makes up 100 percent of the map unit. Slopes are 5 to 10 percent. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 2 percent. This component is in the F153CY030MD Well Drained Loess Upland ecological site. Nonirrigated land capability classification is 4e. This soil does not meet hydric criteria.

Map Unit: MqB—Mattapex-Butlertown complex, 2 to 5 percent slopes

Component: Mattapex (40%)

The Mattapex component makes up 40 percent of the map unit. Slopes are 2 to 5 percent. This component is on flats, uplands. The parent material consists of silty eolian deposits over fluviomarine sediments. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 24 inches during February. Organic

matter content in the surface horizon is about 2 percent. This component is in the F153CY020MD Moist Loess Upland ecological site. Nonirrigated land capability classification is 2e. Irrigated land capability classification is 2e. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface.

Component: Butlertown (35%)

The Butlertown component makes up 35 percent of the map unit. Slopes are 2 to 5 percent. This component is on flats on coastal plains. The parent material consists of silty eolian deposits over sandy and loamy fluviomarine deposits. Depth to a root restrictive layer, fragipan, is 25 to 39 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 26 inches during February, March. Organic matter content in the surface horizon is about 2 percent. This component is in the F153CY020MD Moist Loess Upland ecological site. Nonirrigated land capability classification is 2e. Irrigated land capability classification is 2e. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface.

Component: Pineyneck (10%)

Generated brief soil descriptions are created for major soil components. The Pineyneck soil is a minor component.

Component: Crosiadore (5%)

Generated brief soil descriptions are created for major soil components. The Crosiadore soil is a minor component.

Component: Nassawango (5%)

Generated brief soil descriptions are created for major soil components. The Nassawango soil is a minor component.

Component: Hammonton (5%)

Generated brief soil descriptions are created for major soil components. The Hammonton soil is a minor component.

Map Unit: MxA—Mattapex-Matapeake-Butlertown silt loams, 0 to 2 percent slopes

Component: Mattapex (40%)

The Mattapex component makes up 40 percent of the map unit. Slopes are 0 to 2 percent. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 27 inches during January, February, March, April. Organic matter content in the surface horizon is about 2 percent. This component is in the F153CY020MD Moist Loess Upland ecological site. Nonirrigated land capability classification is 2w. This soil does not meet hydric criteria.

Component: Matapeake (28%)

The Matapeake component makes up 28 percent of the map unit. Slopes are 0 to 2 percent. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 2 percent. This component is in the F153CY030MD Well Drained Loess Upland ecological site. Nonirrigated land capability classification is 1. This soil does not meet hydric criteria.

Component: Butlertown (27%)

The Butlertown component makes up 27 percent of the map unit. Slopes are 0 to 2 percent. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 36 inches during February, March. Organic matter content in the surface horizon is about 3 percent. This component is in the F153CY020MD Moist Loess Upland ecological site. Nonirrigated land capability classification is 2w. This soil does not meet hydric criteria.

Component: OTHELLO (5%)

Generated brief soil descriptions are created for major soil components. The OTHELLO soil is a minor component.

Map Unit: MxB—Mattapex-Matapeake-Butlertown silt loams, 2 to 5 percent slopes

Component: Mattapex (40%)

The Mattapex component makes up 40 percent of the map unit. Slopes are 2 to 5 percent. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 27 inches during January, February, March, April. Organic matter content in the surface horizon is about 2 percent. This component is in the F153CY020MD Moist Loess Upland ecological site. Nonirrigated land capability classification is 2e. This soil does not meet hydric criteria.

Component: Matapeake (35%)

The Matapeake component makes up 35 percent of the map unit. Slopes are 2 to 5 percent. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 2 percent. This component is in the F153CY030MD Well Drained Loess Upland ecological site. Nonirrigated land capability classification is 2e. This soil does not meet hydric criteria.

Component: Butlertown (20%)

The Butlertown component makes up 20 percent of the map unit. Slopes are 2 to 5 percent. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 36 inches during February, March. Organic matter content in the surface horizon is about 3 percent. This component is in the F153CY020MD Moist Loess Upland ecological site. Nonirrigated land capability classification is 2e. This soil does not meet hydric criteria.

Component: OTHELLO (5%)

Generated brief soil descriptions are created for major soil components. The OTHELLO soil is a minor component.

Map Unit: SacB—Sassafras sandy loam, 2 to 5 percent slopes, Mid-Atlantic Coastal Plain

Component: Sassafras (80%)

The Sassafras component makes up 80 percent of the map unit. Slopes are 2 to 5 percent. This component is on flats on coastal plains. The parent material consists of loamy fluviomarine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 2 percent. This component is in the F149AY170MD Well Drained Fine-Loamy Upland ecological site. Nonirrigated land capability classification is 2e. Irrigated land capability classification is 2e. This soil does not meet hydric criteria.

Component: Ingleside (10%)

Generated brief soil descriptions are created for major soil components. The Ingleside soil is a minor component.

Component: Downer (5%)

Generated brief soil descriptions are created for major soil components. The Downer soil is a minor component.

Component: Woodstown (5%)

Generated brief soil descriptions are created for major soil components. The Woodstown soil is a minor component.

Map Unit: SfA—Sassafras loam, 0 to 2 percent slopes

Component: Sassafras (80%)

The Sassafras component makes up 80 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats on coastal plains. The parent material consists of loamy fluviomarine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded.

There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 2 percent. This component is in the F149AY170MD Well Drained Fine-Loamy Upland ecological site. Nonirrigated land capability classification is 1. Irrigated land capability classification is 1 This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface.

Component: Ingleside (10%)

Generated brief soil descriptions are created for major soil components. The Ingleside soil is a minor component.

Component: Woodstown (5%)

Generated brief soil descriptions are created for major soil components. The Woodstown soil is a minor component.

Component: Downer (5%)

Generated brief soil descriptions are created for major soil components. The Downer soil is a minor component.

Map Unit: SfB—Sassafras loam, 2 to 5 percent slopes

Component: Sassafras (80%)

The Sassafras component makes up 80 percent of the map unit. Slopes are 2 to 5 percent. This component is on flats on coastal plains. The parent material consists of loamy fluviomarine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 2 percent. This component is in the F149AY170MD Well Drained Fine-Loamy Upland ecological site. Nonirrigated land capability classification is 2e. Irrigated land capability classification is 2e. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface.

Component: Unicorn (10%)

Generated brief soil descriptions are created for major soil components. The Unicorn soil is a minor component.

Component: Woodstown (10%)

Generated brief soil descriptions are created for major soil components. The Woodstown soil is a minor component.

Map Unit: WdcA—Woodstown sandy loam, 0 to 2 percent slopes, Mid-Atlantic Coastal Plain

Component: Woodstown (80%)

The Woodstown component makes up 80 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats, coastal plains. The parent material consists of loamy fluviomarine deposits. Depth

to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 24 inches during February. Organic matter content in the surface horizon is about 2 percent. This component is in the F149AY130NJ Moist Loamy Upland ecological site. Nonirrigated land capability classification is 2w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface.

Component: Hammonton (6%)

Generated brief soil descriptions are created for major soil components. The Hammonton soil is a minor component.

Component: Fallsington (6%)

Generated brief soil descriptions are created for major soil components. The Fallsington soil is a minor component.

Component: Hambrook (4%)

Generated brief soil descriptions are created for major soil components. The Hambrook soil is a minor component.

Component: Mattapex (4%)

Generated brief soil descriptions are created for major soil components. The Mattapex soil is a minor component.

Map Unit: Zk—Zekiah silt loam, 0 to 2 percent slopes, frequently flooded

Component: Zekiah, frequently flooded (80%)

The Zekiah, frequently flooded component makes up 80 percent of the map unit. Slopes are 0 to 2 percent. This component is on flood plains on coastal plains. The parent material consists of loamy alluvium over fluvial coarse-loamy alluvium. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is frequently flooded. It is not ponded. A seasonal zone of water saturation is at 3 inches during January, February, March, April, May, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 4 percent. This component is in the R149AY060DE Wet Alluvial Floodplain ecological site. Nonirrigated land capability classification is 5w. This soil meets hydric criteria. There are no saline horizons within 30 inches of the soil surface.

Component: Longmarsh, frequently flooded (10%)

Generated brief soil descriptions are created for major soil components. The Longmarsh, frequently flooded soil is a minor component.

Component: Hurlock, undrained (5%)

Generated brief soil descriptions are created for major soil components. The Hurlock, undrained soil is a minor component.

Component: Hammonton (5%)

Generated brief soil descriptions are created for major soil components. The Hammonton soil is a minor component.

Implementation Schedule for the Farm Operation

This element addresses the need for and implementation of appropriate conservation practices to meet the quality criteria for soil erosion, air and water quality.

IMPORTANT! ***The table below is your Conservation Practice and Facility Implementation Schedule.*** *The practices listed in this schedule must be implemented no later than the indicated dates.*

Practice and Facility Implementation Schedule

Complete the table below with those practices that are required to address identified resource concerns. If there are no identified resource concerns which need to be addressed, check the box indicating that there are no practices are recommended.

Identified Resource Concern	Practice Code	Description of Practice	Date to be Implemented
N/A			

** If additional space is needed to document practices, please add a separate sheet of paper.

☑ **All resource concerns have been addressed and no additional best management practices are recommended or required at this time.**

Schedule of Implementation Agreement

The schedule of conservation practices presented here has been reviewed by the person responsible for compliance with the requirements of the agricultural farm operation.

As the owner/operator, I certify that as the decision-maker, I have been involved in the planning process and agree that the items/practices listed in the table above are needed on my farm operation. I understand that I am responsible for implementing these practices according to the schedule above. Should I not be able to implement any of the above items according to the schedule, I will contact NRCS or my Technical Service Provider and have the schedule revised.

Signature: _____ Date: 12/18/24

Name (*print*):

Zachary Loller

Production Area Management Guidelines – Poultry Operations

To provide environmental benefits, conservation practices must be operated and maintained as designed. The following list describes some common problems to look for in the production area of poultry operations. **It is VERY IMPORTANT that the production area (manure storage, composters, HUA pads, etc…) be kept clean and free from ANY manure that could come in contact with surface water.** Natural Resources Conservation Service (NRCS) and Soil Conservation District staff are available to provide follow-up assistance if needed.

Manure Storage Area

Manure removed from poultry houses should be stored in a covered shed until it can be applied to crops or otherwise used. The following are potential problems you may see that MUST be addressed to keep clean water on your farm, clean:

- Manure piled outside shed.
- Manure stacked too high against walls.
- Shed contains equipment or supplies that are not easily moveable (e.g., not on wheels).
- Obvious surface water conveyance near the open ends of the shed to a drainage ditch or swale.
- Structural damage to shed.
- Evidence of water or "puddling" in the storage shed.

Composters

Properly operated composters provide an environmentally sound method for disposing of normal mortality from poultry houses.

The following are potential problems you may see:

- Leakage.
- Excessive odor or flies.
- Dead birds visible.
- Evidence of animals feeding on dead birds.
- Thermometer not readily available (DE only).
- Recipe sign not posted (DE only).
- Missing or broken boards.
- Misuse and nonuse. Composter should be used for what it was intended for.

Concrete Pads

Concrete pads at the ends of poultry houses and manure sheds can reduce erosion and protect surface and ground water from contamination.

Concrete pads should be properly installed, maintained, and kept clean of manure.

The following are potential problems you may see:

- Manure present on pads.
- Obvious surface water conveyance to a drainage ditch or swale near the open ends of poultry houses and manure sheds.
- Concrete cracking or breaking off.

Proper and maintained Vegetation Around Production Area and Between Houses

It is very important to have good grass cover around the farm buildings and between the poultry houses. Well established grasses also prevent soil erosion which in severe cases could result in damage to the

house pad or the footing and foundation of the poultry house. Grass also helps reduce reflected heat which in turn helps keep house temperatures under control in hot weather. Grass should always be kept mowed and weeds should also be kept under control. Not only are un-mowed weeds and grass unsightly, but they can encourage rodents and can also reduce the effectiveness of natural ventilation. Tall weeds and grass provide rats and mice a place to hide that is close to the building. Most rodent control programs will stress the need to keep areas around buildings mowed frequently.

Standing puddles of water encourage mosquitoes and kill vegetation, so low spots should be filled to prevent such problems. Also, drainage ditches, drainage ways, and swales should be properly mowed and maintained to give storm water an easy exit. Any trash and debris should be removed from ditches and grass and weeds kept short to encourage water flow.

Windbreak/Shelterbelt

Windbreaks, or vegetative environmental buffers, are planted around poultry houses to provide shelter from winter winds; reduce particulates, ammonia, and other odors from tunnel fans; create visual screens; and provide shade to reduce extreme summer heat.

The following are potential problems you may see:

- Trees dead, dying, or damaged (e.g., broken off, mowed over, bagworms, etc.).
- Lack of weed control around trees or insect control.
- Irrigation system not functioning (e.g., major leaks, broken lines, etc.).
- No irrigation system (newly established trees should be irrigated for the first 2-3 years).

Other Concerns

Other issues that may result in environmental concerns include, but are not limited to:

- Manure scattered around the production area on roads, along the edge of concrete pads or building foundations.
- Manure runoff visible.
- Roof runoff that is creating erosion or drainage problems.
- Lack of good vegetative cover for filtering storm runoff between waste storage structures, composters, or ends of the poultry houses, and drainage outlets.
- Overall farm appearance (a farm that “looks good” is less likely to generate complaints from neighbors).
- **Potholes in travelways or standing water in swales, near exhaust fans.**
- Maintenance of stormwater management structures or ponds.

Operation and Maintenance

Amendments for Treatment of Ag Waste

- ~ Observe all the necessary safety precautions when handling the specific chemicals or biological amendments to be used.

Animal Mortality Composting Facility

- ~ Where the operator/owner/manager has a lack of understanding of the composting process; it is a requirement for the operator to obtain mortality compost training.
- ~ The facility itself needs to be solely used for composting mortality.
- ~ Dead birds pulled from the grow-out facilities, need to be placed directly into composter.
- ~ The mix proportions, moisture requirements, and carbon sources need to be used to properly compost.
- ~ All maintenance and management of the compost facility and compost management must be done to prevent scavenging animals and leachate problems.
- ~ Manage the compost piles for temperature, odors, moisture, and oxygen, as appropriate. Make adjustments throughout the composting period to insure proper composting processes.
- ~ Closely monitor temperatures above 165oF. Take action immediately to cool piles that have reached temperatures above 185oF.

Critical Area Planting (CAP) and Filter Strips

- ~ Vegetation must be maintained in vigorous condition.
- ~ In order to keep the optimum sediment retention and other water quality benefits, mow 3-4 times annually to a height 3 to 5 inches.
- ~ Control undesirable plants by pulling, mowing, or spraying with selective herbicide. Control noxious weeds as required by state law.
- ~ Maintain sheet flow entering the filter strip. Repair all rills and small channels within this vegetative area.
- ~ Sediment that accumulates along the upper part and within the filter strip area shall be removed before it accumulates to a height that diverts runoff water away from the vegetative filter area. The area disturbed by this removal shall be re-graded and reseeded.

Heavy Use Area (HUA or Poultry Pads)

- ~ Maintain a stable, non-eroding surface for areas frequently used by vehicles or animals.
- ~ Maintain and repair adjacent companion conservation practices that handle sediment, nutrients, particulate matter, and organic matter.
- ~ After each and every manure handling or bird removal event that leaves behind, manure, litter, and or debris on the HUA surface; it must be cleaned-up. In all cases, material left behind on the HUA must be swept-up or vacuumed.
- ~ Repair any deteriorating areas.
- ~ Maintain flow into filter areas by removing accumulated solids, reconstructing waterbars, etc.

Waste Storage Facility - 313

- ~ Check walls and floors often - minimum of 2 times a year when facility is empty - for cracks and/or separations. Where concrete is used make inspections and repair as needed.
- ~ All building materials shall be kept in good working condition free from defect.
- ~ Check backfill areas around structure (concrete, steel, timber, etc) often for excessive settlement. Determine if the settlement is caused by backfill consolidation, piping, or failure of the structure walls or floor. Necessary repairs must be made.
- ~ Outlets of foundations and sub-drains should be checked frequently and kept open. The outflow from these drains should be checked when the facility is being used to determine if there is leakage from the storage structure into these drains.
- ~ Trusses/roof supports shall be examined during snowfall events.
- ~ Roof materials shall be replaced as wear/leakage occurs. Metal roofing may require periodic painting.

NUTRIENT MANAGEMENT PLAN

Nutrient Management

This element addresses the Nutrient Management component of the CNMP. The nutrient management plan is developed by a Maryland Department of Agriculture certified nutrient management consultant.

Soil Sampling and Testing

Maryland Department of Agriculture regulations require up-to-date soil analyses be included in the Nutrient Management Plan. To fulfill this requirement you must follow these guidelines:

1. Soil test(s) are required to be taken every 3 years or sooner for each management unit
2. It is recommended that soil sampling be conducted consistently at the same time of the year
3. Soil sampling depth for P and K shall be 8 inches; pH testing sampling depth for no-till is only 4 inches

Soil testing shall include analysis for any nutrients for which specific information is needed to develop the plan. The minimum analysis for Maryland is to include: pH, organic matter, phosphorus, potassium, calcium, magnesium, and CEC.

Manure and Wastewater Testing/Analysis

Maryland Department of the Environment and the Environmental Protection Agency require an analysis of manure generated on your operation be obtained to meet conditions in a General Discharge Permit for Animal Feeding Operations under CAFO regulations. If you land-apply manure, it is a required component of your NMP according to MDA regulations. To fulfill this requirement you may do one of the following:

1. collect a sample of manure and obtain an analysis, OR
2. if exported, obtain a copy of the manure analysis from one of the farmers who will be receiving the manure from your operation.

Manure should be analyzed on an annual basis from each storage structure for: % Solids or % Moisture, Total N, Organic N, NH_4 or NH_3, P_2O_5, K_2O, and pH. These analyses are part of the recordkeeping requirement.

Maryland
Nutrient Management Plan

Prepared for:

Zach Loller
553 Fey Road
Chestertown, Maryland 21620

Date
January 3, 2025

Prepared by:

Don Moore, CCA
MD Certification Number MD-1048
MD License Number MD-2175

Plan Type: Updated NMP - Grain, Poultry

Plan Period: 2025 Growing Season

AET
Agricultural Consulting

MARYLAND NUTRIENT MANAGEMENT PLAN

TABLE OF CONTENTS

(Use "N/A" where component is not applicable to the operation.)

Field or Management Unit Specific Information

1. Source and type of information used to determine crop yield _____
2. Method of tillage (moldboard, chisel, no-till, etc.) _____
3. Recommendations for calibrating application equipment 5, 7
4. Soil analysis for fields or management units 8
5. Phosphorus risk assessment: _____
   a) type of assessment and results 7
   b) recommendation for BMPs to lower risk _____
6. Residual nitrogen (legumes, past applications of past manure/biosolids/etc.) and PSNT information _____
7. ID, field or management unit identifier and acreage/growing area _____
8. Crop rotation(s), expected crop yield, and primary nutrient requirements _____

Additional Plan Content for Container or Out-of-Ground Production N/A

1. List of plants to be grown, est. greatest number of plants, and total growing area _____
2. Summary of production and respective container sizes _____
3. Month or time frame of peak production _____
4. Description of substrate, irrigation, and nutrient application method _____
5. Environmental Risk Assessment _____
6. Program and recommendations for monitoring runoff _____
7. Methods for sampling and testing runoff _____
8. Required best management practices and/or specific recommendations _____

2 Map(s) of the Agricultural Operation

1. Location & boundaries of ag operation with field or management unit boundaries _____
2. Parcel identifier, field identifier, and acreage of fields or management units _____

2 Summary of Nutrient Recommendations

1. Miscellaneous notes in regards to nutrient application _____
2. Nutrient Recommendations _____
   (A snapshot which includes parcel ID, field or management unit identifier, crop/plant yield/production goal, acreage/growing area, recommended nutrient rates necessary to meet expected crop yields (amount and type of all nutrient sources per acre or management unit), method and time frame for nutrient application and incorporation, and liming recommendations)

+ = Items which MUST be submitted to the MDA Nutrient Management Regional Office if receiving MACS cost share.

Certification and Review

Planner Declaration

I certify that this plan has been written according to the Maryland Nutrient Management Certification Regulations and that I am a certified planner in the State of Maryland.

Name of planner: Don Moore, CCA
AET Consulting, Inc.

Certification Number: MD-1048
License Number: MD-2175

Planner Signature: _____

Date: 1-5-25

Operation Record Keeping Requirements and Acknowledgement of Responsibility

1. All nutrient management plans and updates for the last 3 years.
2. A record of crops and actual yields for the last 5 years.
3. Analysis of nutrients (all forms) applied to plants and/or crop acreage.
4. Soil analysis results for the entire agricultural operation.
5. Record of timing, location, and amounts of all nutrient applications.
6. Receipts related to the purchase of nutrients.
7. Documentation to justify any changes from the Nutrient Management Plan as written.
8. **If operator is an applicator of nutrients to 10 acres or more; operator must hold a current Maryland Nutrient Applicator's Voucher.**
9. Operator is required to have a copy of a current state chemist label of any imported or exported organic fertilizer material that contains primary nutrients such as food processing waste, spent mushroom substrate, composted waste products, or other waste streams containing nutrients.

The operator has the primary responsibility for plan implementation, installation of the agreed upon Best Management Practices outlined in the plan and required by the Water Quality Improvement Act (WQIA). The operator also has the responsibility of maintaining all practices associated with the nutrient management plan and all record keeping associated with the WQIA Regulations.

Farm Owner/Operator: _____

Date: _____

Plan Identification

Operator information:

Zach Loller
553 Fey Rd
Chestertown, MD 21620

Consultant information:

Don Moore, CCA
2677 Telegraph Rd.
North East, MD 21901
410-620-0275
Certification # MD-1048
License # MD-2175

Nutrient Management Plan Narrative:

This plan covers the 2025 growing season. Commercial fertilizer is used as the main nutrient source for the crops. Crops are grown for grain. Broilers are housed on the farm, and all of the collected manure is exported to Three Lane Farm in Galena, Maryland. No irrigation is used.

Date Nutrient Management Plan Developed:

January 3, 2025
This NMP is required to be updated prior to Fall 2025 nutrient applications.

Crops:	2025	Acres
C	Corn	78.50
SB	Soybean	101.60
Total		**180.10 Acres**

Property ID	Acct ID Acres	Farm	Plan Acres	County	Watershed
1	225	Loller	180.1	Kent	0050

Plan Maintenance

This nutrient management plan was written for the 2025-growing season and will need updated for the 2026-growing season. In addition, if any of the following events occur, the plan will need to be updated before the 2025-growing season.

1. A change in the planned crop or a change in acreage of 10 percent or greater, or 30 acres, whichever is less.
2. Modification of the sidedress application of nitrogen based on PSNT results.
3. Adjustments to the nutrients applied or manure application additions.
4. A change in animal units of 10 percent or greater or changes in housing of animals.
5. New manure or soil analysis (minimum of once every 2 years).
6. New soil analysis taken.

Soil samples should be collected at least every other year to maximize utilization of soil nutrients

Crop rotation is important to prevent soil borne diseases and to use soil nutrients efficiently.

Split applications of nitrogen on environmentally sensitive sites reduce potential for runoff and leaching. Utilization of a Pre-Sidedress Nitrogen Test (PSNT) or tissue test can help determine additional N requirements during the growing season. **Fall Soil Nitrate Test (FSNT) is now required prior to fall application (September 10 through December 15) of nitrogen on wheat or barley to be harvested for grain to determine crop need.**

Each year all application equipment including the planter should be calibrated to ensure the correct rate of nutrients are applied. Application of nutrients should be timed as close as possible to crop growth or uptake and placed near the root zone for efficient crop use. Application to ground that is frozen 2 inches or greater and/or snow covered 1 inch or greater is prohibited. Application to saturated ground must be avoided. Winter applications are defined as occuring from December 16-March 1 and setbacks of 100 feet from surface waters must be maintained. Emergency winter applications may be made if the operation has inadequate storage, a non-stackable manure(greater than 75% moisture), and no other reasonable option to manage it. All applications shall be made in accordance with MDA's restrictions. The operator must obtain permission from MDA's regional office before winter application occurs. All applications of organic/manure materials should be incorporated within 48 hours unless applied to a hay crop or HEL designated ground or the ground is under long-term no-till practices.

Storage of manure and other organic waste products should be in an appropriate roofed structure or covered with an impermeable cover. If no structure is available, manure and other organic waste products must be in a 6-foot conical pile, and staged temporarily in a way that will prevent nutrient runoff. Any material that is temporarily stockpiled must be land applied the following spring, by June 30th.
When choosing a site to temporarily store manure and other organic waste products, wetlands and low lying areas should be avoided, as should any site that would allow runoff from storage to enter into any ditch, stream, or other surface water body. Locations for temporary field stockpiling should not be moved place to place. Locations should stay the same.

When choosing an area to temporarily field stockpile, these requirements must be met:

- At least 100 feet from wells, springs, and wetlands *(unless well is down gradient from stockpile, then at least 300 feet from the well)*
- 100 feet from surface waters OR 35 feet when there is 35 feet of vegetative buffer
- At least 200 feet from any residence *(outside of operators property)*
- Away from any areas that are subject to flooding or ponding
- No farther than 150 feet from the top of the slope when area is on more than a 3% grade slope, with no diversion

When the temporary field stockpiled material is applied, the ground shall be thoroughly scraped or cleaned to remove any residual material. Furthermore, the temporary stockpile area must be returned to its original condition. In order to facilitate nutrient uptake, the area may require reseeding with a grass or a crop.

Manure and other organic waste products should not be spread within the following buffer areas:

- 100 feet from wells or springs
- 100 feet from surface waters (unless injected or incorporated) OR 35 feet when there is 35 feet of vegetative buffer
- 35 feet on all sacrifice lots with less than 75% grass or grass legume mix from all streams, water bodies, and areas of water flow

- 50 feet from sinkholes
- 50 feet from limestone rock outcroppings
- 25 feet from other rock outcroppings
- 10 feet from agricultural drainage ditches (5 feet if injected or incorporated within 24 hours)
- **100 feet from occupied dwellings (unless waived in writing by the occupant)**
- **10 feet on all pasture and hay fields for both mechanical and self-applied nutrients from all streams, water bodies, and areas of water flow**

NUTRIENT APPLICATION SETBACKS FROM SURFACE WATER:

Setbacks for Nutrient Application are required in the development of nutrient management plans. Application and livestock setback regulations are contained under the Nutrient Application Requirements, Maryland Department of Agriculture 2012, COMAR 15.20.07.02, Maryland Nutrient Management Manual, 1-D1.

A minimum of a 10' vegetative setback must be in place next to surface water. The chart below indicates if surface water is present that requires a setback on any farm/operation and identifies the fields that are required to have a nutrient application setback. **An application of crop nutrients using a broadcast method either with or without incorporation requires a 35'setback. A directed spray application or the injection of crop nutrients only requires a 10'setback.** Excepting perennial forage crops grown for hay and pasture, vegetation in the 10' setback area may not include plants that would be considered part of the crop grown in the field (i.e. row crops). Pastures and hayfields are subject to a 10' and/or a 35' nutrient application setback depending on application methods. Nutrients may not be applied within the 10' setback.

Livestock on pasture are required to meet the minimum 10' setback by means of fencing unless a Best Management Practice (BMP) is approved by MDA or a Soil Conservation and Water Quality Plan is developed and implemented that prescribes an alternative to fencing animals 10' from surface water. Alternative BMP's may include stream crossings, watering facilities, pasture management, or other practices that are equally protective of water quality. Sacrifice lots for livestock require a 35' setback from surface water.

If nutrients are custom-applied, it is the operator's responsibility to inform the applicator of the setback distance based on the method of application.

			Nutrient Application Setback Requirements Indicate with "Yes" in appropriate column(s))		
Farm Name(s)	**Is Surface Water Present on the farm that requires a setback (Yes or No)**	**Field(s) requiring a Nutrient Application Setback***	**Livestock on Pasture ≥ 10 ft.**	**Directed Application ** ≥ 10 ft.**	**Broadcast Application or Sacrifice Lots *** ≥ 35 ft.**
Loller	No				

*** If a field contains multiple sources of surface water (i.e. a pond and a stream), list each separately or identify on the map.**

** **Directed Application** = Directed Spray Application (Vertical Fan or Drop Nozzle), Air Flow Application, Knifed/Injected application of Nutrients, Planter Applied nutrients

*** **Broadcast Application or Sacrifice Lots** = Spinner Spreaders (Manure or Fertilizer), High Volume Horizontal Nozzles, Manure Spreaders (Box type with beaters, Splasher plates for liquid, Side Discharge V-Type)

Manure Management

Animal Type	Number of Animals	Total Generated	Total Collected	Total Used		Total Exported
				Rate/Ac	Field	
Broiler	240,000	1,113T	1,113T	N/A	N/A	1,113T

Mr. Loller manages 9 broiler houses with a capacity of 240,000birds. The houses get an average of 4.5 flocks/year. Birds have a finish weight of about 6lbs. Cleanout schedules are dictated by the integrator. Houses have, in recent years, been cleaned out annually. An 84'X40' manure storage shed is located on site. This year all collected manure will be exported to Three Lane Farm in Galena, MD. Residual nitrogen from last year is 24lbs, and from two years ago 4 and 12lbs.

Anyone importing spent mushroom substrate, food waste products, or other organic material shall make sure imported product has a current registration with the state chemist. The generator or broker is responsible for providing a current registration. If the sender does not provide a current registration, the product shall not be imported.

Best Management Practices

Best management practices could be added to the farming operation. **Manure application equipment should always be calibrated** at the onset of application to better gage the application rate per acre. Manure should be sampled at the time manure is being removed at least every 2 years until a base line of nutrient content is established.

Immediate incorporation would make the most efficient use of nitrogen. Immediate incorporation would also reduce odor and fly problems.

Application of nutrients should be timed as close as possible to crop growth or uptake and placed near the root zone for efficient crop use. Application to saturated, frozen or snow-covered ground should be avoided unless a crop covers the ground.

Split applications of nitrogen on environmentally sensitive sites reduce potential for runoff and leaching. Utilization of a **Pre-Side Dress Nitrogen Test (PSNT)** or **tissue test** can help determine additional N requirements during the growing season. **Fall Soil Nitrate Test (FSNT) is now required prior to fall application of nitrogen on wheat or barley to determine crop need.**

Operators are responsible for sediment and erosion control of stream crossings. Livestock must travel across a stream crossing designed to prevent erosion and sediment loss. Operators must gate a crossing area wider than 12 feet.

Soil tests were taken by AET Consulting. Copies of the tests are enclosed.

Soil testing revealed 6 field(s) with Phosphorus levels above a FIV 150.

FIELDS w/ Phosphorus FIV Levels ≥150			
FARM	FIELD	FIV LEVEL	N or P Based *
Loller	L1	191	P
Loller	L1A	298	P
Loller	L1B	154	P

These fields will not receive any additional P nutrients prior to running the PMT.

Loller	L2A	262	P
Loller	L3	232	P
Loller	L3A	361	P

Soil Summary from Spectrum Labs

Farm	Field	Acres	Last Test	Crop			OM	CEC	pH	P	P	K	% Saturation		
				2023	2024	2025				ppm	FIV	ppm	K	Mg	Ca
Loller	L1	17.9	12/26/24	SB	SB	C	1.2	2.9	5.6	172	191	103	7.8	26.4	65.8
Loller	L1A	24.3	12/26/24	SB	SB	C	1.1	4.1	5.9	273	298	147	7.7	23.4	68.9
Loller	L1B	18.9	12/26/24	SB	SB	C	0.8	2.8	5.7	137	154	125	9.7	28.4	61.9
Loller	L1C	17.4	12/26/24	SB	SB	C	0.9	4.1	6.0	30	41	129	6.7	20.7	43.6
Loller	L2	17.1	12/26/24	C	C	SB	1.0	3.2	6.1	89	103	144	9.7	26.3	64.0
Loller	L2A	25.9	12/26/24	C	C	SB	1.0	3.4	5.8	239	262	130	8.3	25.1	66.6
Loller	L2B	18.2	12/26/24	C	C	SB	1.3	3.2	6.0	39	50	171	11.4	28.8	59.8
Loller	L3	19.2	12/26/24	SB	C	SB	1.5	5.8	5.6	210	232	102	3.8	14.2	40.9
Loller	L3A	21.2	12/26/24	SB	C	SB	1.5	4.5	6.1	332	361	141	6.7	17.9	75.4

Field Specific Information

Farm	Field	Acres	Crop			Yield Goal[1]	Total Nutrients Allowed (lb/ac)[2]			Residual Nitrogen (lb/ac)			Tillage
										Manure		Legume	
			2023	2024	2025		N	P_2O_5	K_2O	2023	2024	2024	
Loller	L1	17.9	SB	SB	C	210	210	0	84			20	NT
Loller	L1A	24.3	SB	SB	C	210	210	0	84			20	NT
Loller	L1B	18.9	SB	SB	C	210	210	0	84			20	NT
Loller	L1C	17.4	SB	SB	C	210	210	101	84	4		20	NT
Loller	L2	17.1	C	C	SB	65	0	0	78	12	24		NT
Loller	L2A	25.9	C	C	SB	65	0	0	78				NT
Loller	L2B	18.2	C	C	SB	65	0	118	78	12	24		NT
Loller	L3	19.2	SB	C	SB	65	0	0	78				NT
Loller	L3A	21.2	SB	C	SB	65	0	0	78				NT

1. Yield goal based onpast history provided by the operator.
2. Recs are the max nutrient tolerances (withstanding certain exceptions) handed down by the Univ of MD based on your soil test results for the prescribed crop.

Summary of Nutrient Recommendations

Farm	Field	Acres	Crop	Yield Goal[1]	Actual Nutrient Recommendations						
					Lime	Manure[2]	Nitrogen[3] Credit	Starter[4]	Additional Commercial Fertilizers		
			2025	(Bu/A)	(ton/ac)	(ton/ac)		(lb/ac)	N	P_2O_5	K_2O
Loller	L1	17.9	C	210	1T Cal		20		190	0	80
Loller	L1A	24.3	C	210	1T Cal		20		190	0	80
Loller	L1B	18.9	C	210	1T Cal		20		190	0	80
Loller	L1C	17.4	C	210			24		186	50	80
Loller	L2	17.1	SB	65			36		10	0	60
Loller	L2A	25.9	SB	65	1T Cal				10	0	60
Loller	L2B	18.2	SB	65			36		10	0	60
Loller	L3	19.2	SB	65	1T Cal				10	0	80
Loller	L3A	21.2	SB	65					10	0	60

1. Yield goal based on past history.
2. No manure applied this year.
3. Nitrogen credit includes current and past manure applications as well as previous legume crop.
4. No starter applied.
5. Additional Fertilizer-

Corn- Broadcast recommended fertilizer where indicated prior to planting. Split apply indicated nitrogen with herbicides and at sidedress.

Soybeans- Broadcast 10-0-60 where indicated prior to planting.

Alfalfa and other legumes – It is recognized by both the planner and the grower that nitrogen is not needed for these crops. The fertilizer blend used had the lowest possible nitrogen value while still providing other nutrients needed by the crop.

Summary Sheet of Plan Content

Animal Type and Number: Broiler- 240,000birds/flock, 4.5 flocks/year

Manure Quantity Generated Per Year: Broiler- 1,113T

Manure Quantity Collected Per Year: Broiler- 1,113T

Manure Imported, Type and Quantity Per Year:

Manure Exported, Type and Quantity Per Year: Broiler- 1,113T

Total Acres In Plan: 180.1 acres
Total Irrigated Acres:

Account ID information:

Consultant Name: Don Moore, CCA

Certificate Number: MD-1048

License Number: MD-2175

Summary of Nutrient Use:

Crop*	Acres	**Total Pounds** available nutrients applied from:											
		Commercial Fertilizer			**Manure**			**Biosolids (sludge)**			**Other Organic Sources (SMS)**		
		N	**P_2O_5**	**K_2O**	**N**	**P_2O_5**	**K_2O**	**N**	**P_2O_5**	**K_2O**	**N**	**P_2O_5**	**K_2O**
C	78.50	14,845	870	6,280									
SB	101.60	1,016		6,480									
Total	**180.1**	**15,861**	**870**	**12,760**									

* For small grains, specify whether nutrients were applied in spring or fall.

UNIVERSITY OF MARYLAND EXTENSION
Solutions in your community

POULTRY LITTER QUANTITY ESTIMATE

Name: **Zach Loller** Tract / Farm: Date: **1/1/2025**

Houses included: **9** **Bird type:** **Broiler**

Average Bird Market Weight (lbs): **5.5**

A.	Years between total cleanouts: Yr. next total cleanout:	**2025**
	- Yr. last total cleanout:	**2024**
	= Years in cleanout cycle:	1
B.	Total # of birds per flock (for all houses on this cleanout cycle):	**240,000**
C.	Flocks per year	**4.5**
D.	Number of flocks per cleanout cycle (A x C):	4
E.	Estimated tons of cake/crust per 1000 birds per flock: *	**0.2**
F.	Estimated tons of litter + cake/crust per 1000 birds per flock: *	**1.15985**
G.	Tons cake/crust produced per flock (B x E/1000):	48
H.	Tons cake/crust produced per cycle (G x D)	192
I.	Tons litter + cake/crust produced per cycle (B x D x F/1000):	1,113
J.	Tons of litter produced per cycle (less cakeout/crustout) (I - H):	921
K.	Tons of litter produced per year (less cakeout/crustout) (J/A):	921
L	Tons of litter + cake/crust produced per year (I/A)	1,113

* 2007 Delmarva Poultry Litter Production Estimates, George W. Malone, University of Delaware, Georgetown Delaware.

Quantity of Poultry Litter, Cake/Crust Available per Year

Year	M Tons of litter remaining in the house from last year (N-P) + (R-S) (previous year)	N Total tons of litter present in the house this year (K) + (M, this year)	O % of partial or total litter to be removed this year in excess of cakeout/crustout (enter % of N removed)	P Tons of litter removed this year (N x O)/100	Q Flocks this Year	R *** Tons Cake/Crust Produced this Year (Q x G)	S Tons Cake/Crust removed this Year	T Tons litter + cake/crust removed this year (P + S)
2025	0	921	**100**	921	4	192	192	1,113
				921	4	192	192	1,113

*** Cake/Crust not removed due to windrowing, is added with the litter remaining in the house the following year. Windrowing may likely result in actual quantities of litter being less than the estimates shown here. The actual amount of Cake/Crust removed may also be less than the estimated amounts produced due to improved drinker systems, ventilation, etc.

UNIVERSITY OF MARYLAND EXTENSION

Updated: 6-26-24

Agricultural Nutrient Management Program
Department of Environmental Science and Technology
0116 Symons Hall
7998 Regents Dr.
College Park, MD 20742
TEL 301-405-1319 | FAX 301-314-7375
www.extension.umd.edu/anmp

Estimate of Manure Deposited on Poultry Pasture For Integrated Organic Poultry Operations

You can only edit values highlighted in blue

Farm name: **Zach Loller**

Manure Production period (calculate on a yearly basis):

Starting date: **1/1/2025** Ending date: **12/31/2025**

A. Total days in manure production period: 365

Poultry Information

	1	2	3	4	5
B. Poultry Group	House 1	House 2	House 3	House 4	House 5
C. Market Weight (lbs.)	6	6	6	6	6
D. Avg. weight during pasture access period **(C + 3)/2**	4.5	4.5	4.5	4.5	4.5
E. # of birds/house	21,500	21,500	21,500	21,500	21,500
F. Percentage of birds accessing pasture	3	3	3	3	3
G. Animal units (AU) of birds accessing pasture [(**D** x **E**)/1000]	2.9025	2.9025	2.9025	2.9025	2.9025
H. Full days confined during manure production period (no access to pasture)	325	325	325	325	325
I. Days partially confined during manure production period (access to pasture)	40	40	40	40	40
J. Hours per day access to pasture	6	6	6	6	6
K. Day equivalents partially confined **(I * (24-J))/24**	30.0	30.0	30.0	30.0	30.0
L. Total day equivalents confined **(H + K)**	355.0	355.0	355.0	355.0	355.0
M. Total day equivalents unconfined on pasture **(A - L)**	10.0	10.0	10.0	10.0	10.0
N. Weight of manure/AU/day (lbs.)	57	57	57	57	57
O. Weight of manure on pasture (tons) **[(G x M x N)/2000]**	0.8	0.8	0.8	0.8	0.8

Plant Available Nitrogen (PAN) Deposited on PRA

		1	2	3	3	3
P.	Length of pasture (feet)	550.0	550.0	550.0	550.0	550.0
Q.	Width of pasture (feet)	41.0	41.0	41.0	41.0	41.0
R.	Area of pasture (acres) **[(P x Q)/43,560]**	0.52	0.52	0.52	0.52	0.52
S.	PAN applied via excreted manure (lbs/ac/yr) **[(O x 34)/R]**	54.3	54.3	54.3	54.3	54.3
T.	Nitrogen (N) recommendation for plant species in pasture (lbs/ac/yr) **(Table 1)**	130	130	130	130	130
U.	Ratio of PAN applied to N recommendation **(S / T)**	0.42	0.42	0.42	0.42	0.42

Assumptions Included in Calculations:

1)	Birds will have access to the pasture a maximum of 50 days per year, due to climate and bird age limitations. This is the default entry in row I. If your integrator has more exact data, use the integor's data instead.
2)	Birds weigh approximately 3 lbs when first allowed access to the pasture.
3)	Birds will have access to the pasture for a maximum of 6 hours per day
4)	Based on information from animal scientists, 1% of the total birds accessing the pasture at any given time is a reasonable estimate. This is the default entry in row F. If your integrator has more exact data, use the integor's data instead.
5)	These estimates are valid for all poultry houses on the operation as long as bird type/market weight, house capacity, and pasture area are all the same.
6)	Free-range broiler manure contains approximately 34 lbs PAN per ton
7)	The annual N recommendation for fine fescue turf is 65 lbs N/ac. This is the default entry in row T.

UNIVERSITY OF MARYLAND EXTENSION

Updated: 6-26-24

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Estimate of Manure Deposited on Poultry Pasture For Integrated Organic Poultry Operations

You can only edit values highlighted in blue

Farm name: Zach Loller

Manure Production period (calculate on a yearly basis):

Starting date: 1/1/2025 Ending date: 12/31/2025

A. Total days in manure production period: 365

Poultry Information

	1	2	3	4	5
B. Poultry Group	House 6	House 7	House 8	House 9	
C. Market Weight (lbs.)	6	6	6	6	
D. Avg. weight during pasture access period **(C + 3)/2**	4.5	4.5	4.5	4.5	0
E. # of birds/house	21,500	21,500	21,500	21,500	
F. Percentage of birds accessing pasture	3	3	3	3	
G. Animal units (AU) of birds accessing pasture **[(D x E)/1000]**	2.9025	2.9025	2.9025	2.9025	0
H. Full days confined during manure production period (no access to pasture)	325	325	325	325	365
I. Days partially confined during manure production period (access to pasture)	40	40	40	40	
J. Hours per day access to pasture	6	6	6	6	
K. Day equivalents partially confined **(I * (24-J))/24**	30.0	30.0	30.0	30.0	0.0
L. Total day equivalents confined **(H + K)**	355.0	355.0	355.0	355.0	365.0
M. Total day equivalents unconfined on pasture **(A - L)**	10.0	10.0	10.0	10.0	0.0
N. Weight of manure/AU/day (lbs.)	57	57	57	57	57
O. Weight of manure on pasture (tons) **[(G x M x N)/2000]**	0.8	0.8	0.8	0.8	0.0

Plant Available Nitrogen (PAN) Deposited on PRA

	1	2	3	3	3
P. Length of pasture (feet)	550.0	550.0	550.0	550.0	
Q. Width of pasture (feet)	41.0	41.0	41.0	41.0	
R. Area of pasture (acres) **[(P x Q)/43,560]**	0.52	0.52	0.52	0.52	0.00
S. PAN applied via excreted manure (lbs/ac/yr) **[(O x 34)/R]**	54.3	54.3	54.3	54.3	0.0
T. Nitrogen (N) recommendation for plant species in pasture (lbs/ac/yr) **(Table 1)**	130	130	130	130	
U. Ratio of PAN applied to N recommendation **(S / T)**	0.42	0.42	0.42	0.42	

Assumptions Included in Calculations:

1)	Birds will have access to the pasture a maximum of 50 days per year, due to climate and bird age limitations. This is the default entry in row I. If your integrator has more exact data, use the integor's data instead.
2)	Birds weigh approximately 3 lbs when first allowed access to the pasture.
3)	Birds will have access to the pasture for a maximum of 6 hours per day
4)	Based on information from animal scientists, 1% of the total birds accessing the pasture at any given time is a reasonable estimate. This is the default entry in row F. If your integrator has more exact data, use the integor's data instead.
5)	These estimates are valid for all poultry houses on the operation as long as bird type/market weight, house capacity, and pasture area are all the same.
6)	Free-range broiler manure contains approximately 34 lbs PAN per ton
7)	The annual N recommendation for fine fescue turf is 65 lbs N/ac. This is the default entry in row T.

Soil Analysis Report

AET Consulting Inc

Report To	Prepared For	
AET CONSULTING INC 2677 TELEGRAPH RD NORTH EAST, MD 21901-1207	ZACH LOLLER	Sampled 12-19-2024 Tested 12-26-2024

Sample Number	Lab Number	pH		Organic	Analysis Result* and Rating				CEC	Base Saturation			Mehlich-3 PPM and Rating						
		Soil pH	Buffer pH	Matter %	Phosphorus P	Potassium K	Magnesium Mg	Calcium Ca		K %	Mg %	Ca %	Sulfur S	Boron B	Zinc Zn	Iron Fe	Copper Cu	Mang. Mn	Alum. Al
L1	F47858	5.6	7.1	1.2	172 H	103 M	103 M	501 M	2.9	7.8	26.4	65.8							
L1A	F47859	5.9	7.0	1.1	273 V	147 G	131 G	754 G	4.1	7.7	23.4	68.9							
L1B	F47860	5.7	7.3	0.8	137 H	125 G	108 M	460 M	2.8	9.7	28.4	61.9							
L1C	F47861	6.0	6.9	0.9	30 L	129 G	117 M	482 M	4.1	6.7	20.7	43.6							
L2	F47862	6.1	7.1	1.0	89 G	144 G	114 M	543 G	3.2	9.7	26.3	64.0							
L2A	F47863	5.8	7.1	1.0	239 V	130 G	115 M	598 G	3.4	8.3	25.1	66.6							
L2B	F47864	6.0	7.2	1.3	39 M	171 G	127 M	515 G	3.2	11.4	28.8	59.8							
L3	F47865	5.6	6.8	1.5	210 V	102 M	113 M	637 M	5.8	3.8	14.2	40.9							
L3A	F47866	6.1	7.1	1.5	332 V	141 G	111 M	913 G	4.5	6.7	17.9	75.4							

* ***Results: P, K, Mg and Ca are extracted by Mehlich-3 (ICP) and are reported in ppm***
Ratings: L=Low M=Medium G=Good H=High V=Very High

Sample Number	Lab Number	P-FIV	DPS
L1	F47858	191	37
L1A	F47859	297	53
L1B	F47860	154	32
L1C	F47861	41	
L2	F47862	103	
L2A	F47863	261	47
L2B	F47864	50	
L3	F47865	231	42
L3A	F47866	360	61

Analyzed by Spectrum Analytic Inc.
www.spectrumanalytic.com

HID:0323-0395-9522-0016

Soil Analysis Report

Spectrum Analytic
1087 Jamison Road NW
Washingon Court House, OH 43160-8748
www.spectrumanalytic.com

Report To	Prepared For	
AGRONOMICS PLUS BOX 1011 EAST BERLIN, PA 17316	ZACH LOLLER CHESTERTOWN, MD	Sampled 06-05-2024 Tested 06-10-2024

Sample Number	Lab Number	pH		Organic	Analysis Result* and Rating				CEC	Base Saturation			Mehlich-3 PPM and Rating						
		Soil pH	Buffer pH	Matter %	Phosphorus P	Potassium K	Magnesium Mg	Calcium Ca		K %	Mg %	Ca %	Sulfur S	Boron B	Zinc Zn	Iron Fe	Copper Cu	Mang. Mn	Alum. Al
P1	B44240	5.7	7.0	2.6	22 L	77 M	135 G	746 G	4.0	4.2	25.0	70.8							

* **Results: P, K, Mg and Ca are extracted by Mehlich-3 (ICP) and are reported in ppm**
Ratings: L=Low M=Medium G=Good H=High V=Very High

Sample Number	Lab Number	P-FIV	
P1	B44240	32	

AET Consulting Inc

AET CONSULTING INC
2677 TELEGRAPH RD
NORTH EAST, MD 21901-1207

Prepared For
LOLLER

Sample Information			
Lab Number	FF65289	Sampled	02-07-2024
Sample	BROILER	Tested	02-15-2024
Manure Type	Poultry, Solid with litter		

Certificate of Analysis
Manure

Analysis	Result	Unit	*Nutrients lbs/Ton*	*Available 1st Yr* [3] *lbs/Ton*		
Moisture	31.12	%				
Nitrogen, Total	2.98	%	59.6	38.2 [4]		
Nitrogen, Ammonium	.31	%	6.2	6.2 [4]		
Nitrogen, Organic	2.67	%	53.4	32.0 [4]		
Phosphorus [P2O5], Total	2.54	%	50.8	50.8 [4]		
Potassium [K2O]	3.17	%	63.4	63.4 [4]		

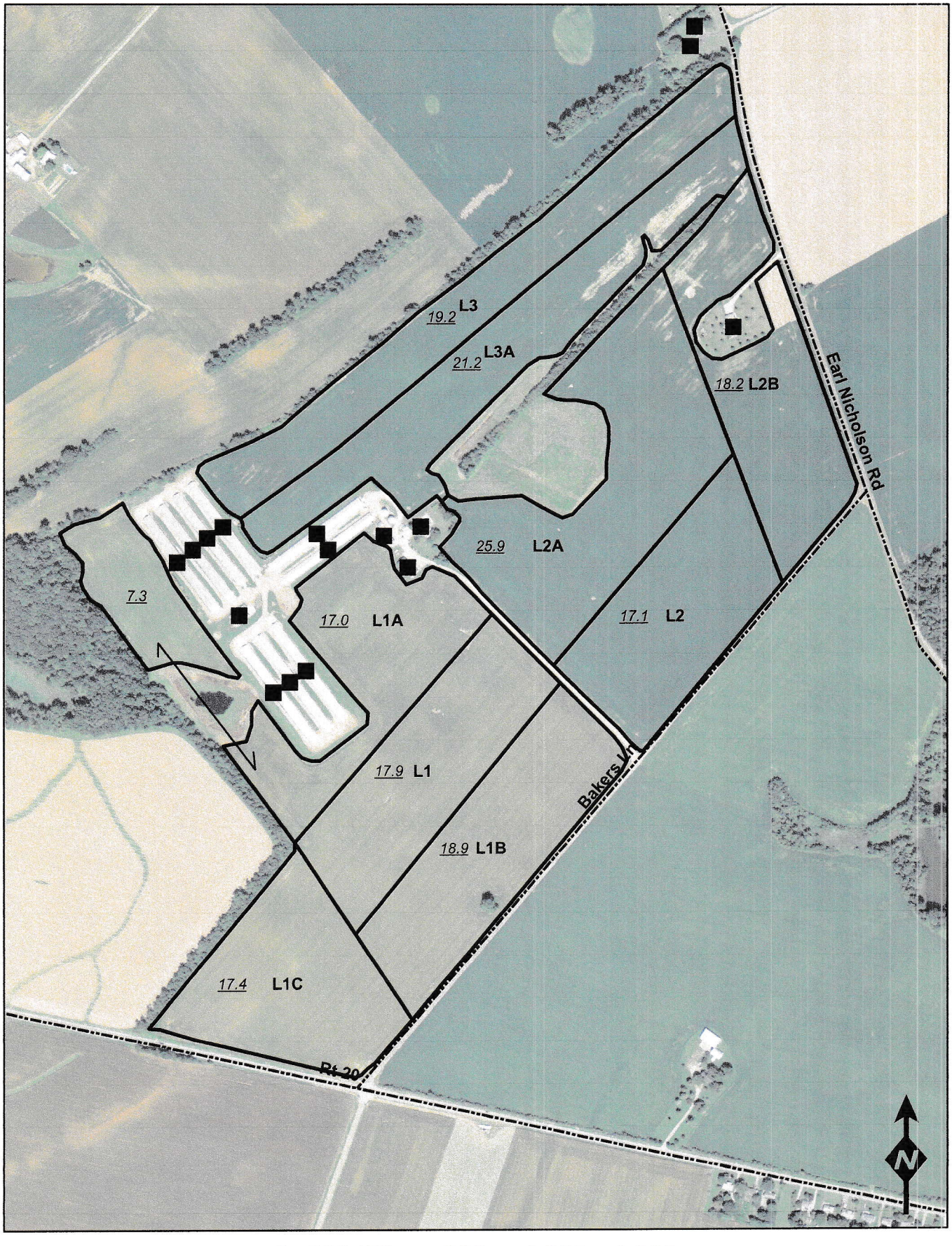
(1) Estimates of 1st year nutrient availability are unavailable if manure type is not specified.
(2) Estimates of 1st year nutrient availability of "Total Nitrogen" are unavailable if no "Ammonium Nitrogen" test is run.
(3) Estimates of 1st year nutrient availability do not take into consideration losses in handling and storage prior to incorporation. Nutrient Management Plan guidelines use 100% availability the 1st year for phosphorus and potassium. Actual 1st year availability varies from 40-90% depending on manure type, soil temperature, moisture and other factors. When using manure credits in fertility programs other than NMP, consult state publications, MWP-18, "Livestock Waste Facilities Handbook" or Spectrum Analytic for more specific 1st year availability percentages.
(4) Source: MWP-18, "Livestock Waste Facilities Handbook"
(5) Source: A3411, "Manure Nutrient Credit Worksheet", University of Wisconsin

Analyzed by Spectrum Analytic Inc.
www.spectrumanalytic.com

HID:0323-0141-1412-0014

Zach Loller
Home Farm

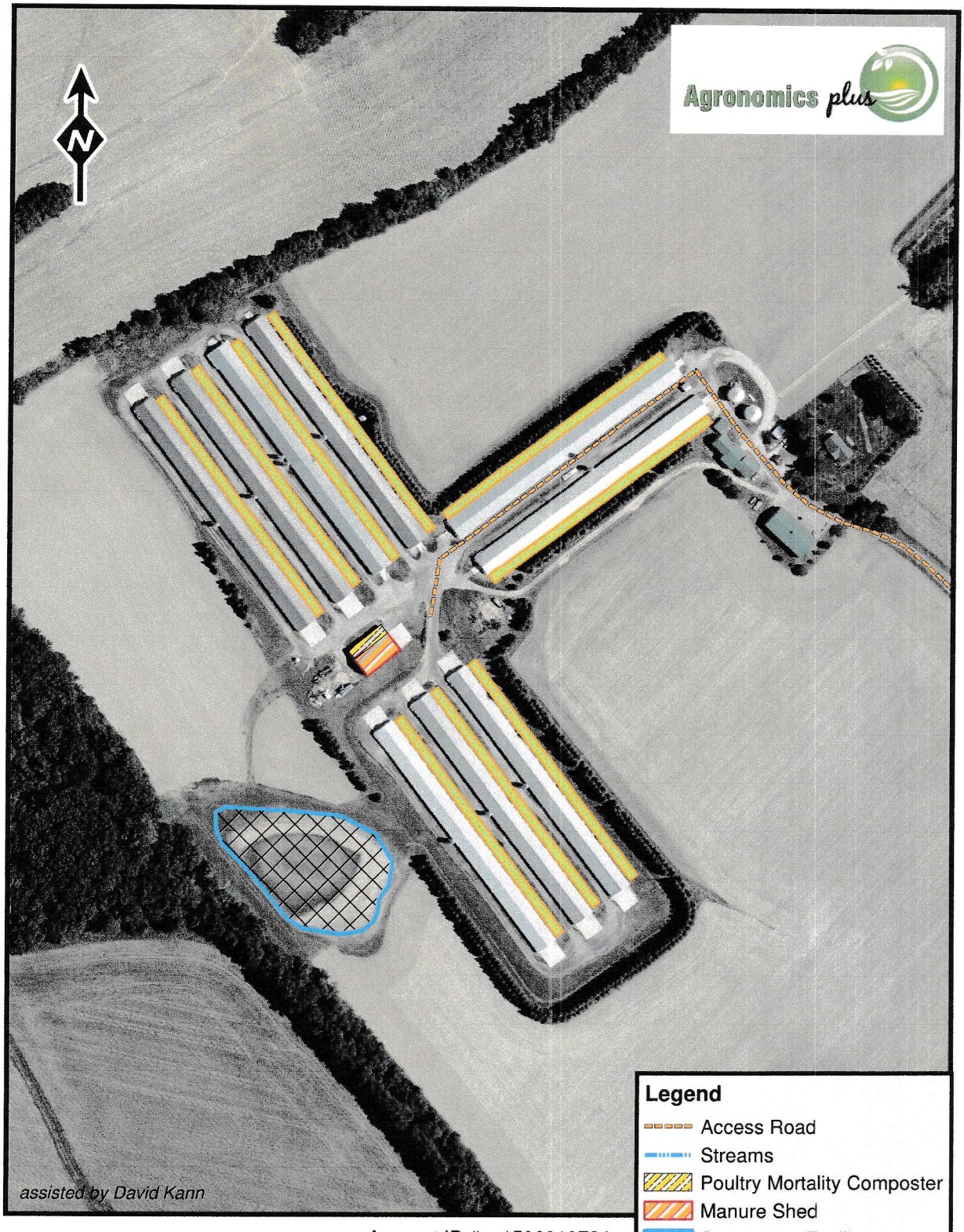
AET
Agricultural Consulting



0 225450 900 1,350 1,800
Feet

William Loller Farm, LLC

Farmstead Map



Account ID #s: 1506010784

0 95 190 380 570 Feet

REQUIRED RECORD KEEPING

(SEE THE TEMPLATES

WHICH FOLLOW)

Documentation of Records

Operators should maintain the following records to document plan implementation, as applicable.

Record	Description	Agency Requiring
Animal Mortality & Disposal	Date and number of dead animals collected and disposal method.	MDE
Documentation of Manure Storage Conditions	Design volume and days of capacity; any deficiencies in the manure handling system and actions taken to correct (for example: damage due to fire or storm, date occurred, how damage was fixed and date of repair)	MDE
Documentation of Discharges	Date, time, and estimated quantity of any discharges and steps taken to correct	MDE
Manure Available for Use and/or Removal	Estimate of removal of manure from poultry house (crust-out, total cleanout, center cut, etc) and destination (manure shed or export)	MDA/MDE
Manure Analysis	Copy of laboratory nutrient analysis of sample of manure produced on-farm (taken annually)	MDA/MDE
Animal Information	Type and number of animals kept on-farm and any changes in animal numbers	MDA/MDE
Manure Export/Transfer	Record of manure that leaves the farm – date, quantity (tons/gallons), and destination (Name/Address)	MDA/MDE
Comprehensive Nutrient Management Plan (CNMP)	Retain approved CNMP and documentation related to updates or changes to your CNMP	MDA/MDE
Nutrient Management Plan (NMP)	Retain certified Maryland NMP and documentation related to updates or changes to your NMP for a minimum of 3 years.	MDA/MDE
Calibration Record for Spreading Equipment	Time of year, calibration method used (load area, weight area). Must calibrate annually.	MDA
Soil test results	Who collected the samples and when, appropriate mgt. units	MDA/MDE
Results of Pre-Side Dress Nitrogen, Fall Nitrate Test, and/or Tissue Testing	Any alternative sampling technique used to address specific crop requirements that lead to a change in the applied amounts should be documented.	MDA
Crop records	Crops planted and planting/harvesting dates by field.	MDA
Nutrient Application Summary by Field	Nutrient Application records for each application event, including commercial fertilizers that are applied to supplement manure.	MDA
Reviews by third parties	Records associated with any reviews by NRCS, third-party consultants, or representatives of regulatory agencies.	MDE
Annual Implementation Report	Annual reports which summaries nutrient application activities	MDA/MDE

Record Keeping - Monthly Animal & Mortality Count

Animal/Type: **Year:**

Production Phase:

Month	Animal Count and Weight	Mortality	Mortality %	Comments
January				
February				
March				
April				
May				
June				
July				
August				
September				
October				
November				
December				

Daily Poultry Pasture (PP) Useage and Existing Conditions Log Sheet

Facility Name: NPDES CAFO Permit No.:

January, 20____

Day	In Use (Y or N)	If In Use, Soil & Vegetation Conditions	Animal Concentration Areas	Mortality in the PP & Method of Disposal
1				
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February, 20____

Day	In Use (Y or N)	If In Use, Soil & Vegetation Conditions	Animal Concentration Areas	Mortality in the PP & Method of Disposal
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March, 20____

Day	In Use (Y or N)	If In Use, Soil & Vegetation Conditions	Animal Concentration Areas	Mortality in the PP & Method of Disposal
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April, 20____

Day	In Use (Y or N)	If In Use, Soil & Vegetation Conditions	Animal Concentration Areas	Mortality in the PP & Method of Disposal
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May, 20____

Day	In Use (Y or N)	If In Use, Soil & Vegetation Conditions	Animal Concentration Areas	Mortality in the PP & Method of Disposal
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June, 20____

Day	In Use (Y or N)	If In Use, Soil & Vegetation Conditions	Animal Concentration Areas	Mortality in the PP & Method of Disposal
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July, 20____

Day	In Use (Y or N)	If In Use, Soil & Vegetation Conditions	Animal Concentration Areas	Mortality in the PP & Method of Disposal
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August, 20____

Day	In Use (Y or N)	If In Use, Soil & Vegetation Conditions	Animal Concentration Areas	Mortality in the PP & Method of Disposal
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September, 20____

Day	In Use (Y or N)	If In Use, Soil & Vegetation Conditions	Animal Concentration Areas	Mortality in the PP & Method of Disposal
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October, 20____

Day	In Use (Y or N)	If In Use, Soil & Vegetation Conditions	Animal Concentration Areas	Mortality in the PP & Method of Disposal
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November, 20____

Day	In Use (Y or N)	If In Use, Soil & Vegetation Conditions	Animal Concentration Areas	Mortality in the PP & Method of Disposal
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December, 20____

Day	In Use (Y or N)	If In Use, Soil & Vegetation Conditions	Animal Concentration Areas	Mortality in the PP & Method of Disposal
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Daily Water Line Inspection Log Sheet

Facility Name: _____ NPDES Permit No.:_____

Instructions:

- Initial the form *each day* after the inspection is complete
- If a leak is detected, place a check in the "leak detected" column

January, 20____		
Day	Initials	√ if Leak Detected
1		
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February, 20____		
Day	Initials	√ if Leak Detected
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March, 20____		
Day	Initials	√ if Leak Detected
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31		

April, 20____		
Day	Initials	√ if Leak Detected

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May, 20____		
Day	Initials	√ if Leak Detected
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June, 20____		
Day	Initials	√ if Leak Detected
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July, 20____		
Day	Initials	√ if Leak Detected
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August, 20____		
Day	Initials	√ if Leak Detected
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30		
31		

September, 20____		
Day	Initials	√ if Leak Detected
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29		
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October, 20____		
Day	Initials	√ if Leak Detected
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29		
30		
31		

November, 20____		
Day	Initials	√ if Leak Detected
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29		
30		

December, 20____		
Day	Initials	√ if Leak Detected
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Manure, Litter, and Wastewater Storage Structures Documentation

Facility Name: _____ NPDES Permit No.: _____

Instructions:
For each storage structure, provide the following information in the table below:

- Structure Type: the type of storage structure (e.g. roofed storage shed, storage pond, anaerobic lagoon…)
- Total Design Storage Volume: the total capacity the storage structure was designed to hold (e.g. 100 ft^3 or 1000 gallons)
- Design Treatment Volume: **(*N/A for dry manure storage)** the treatment capacity the structure was designed to treat
- Days of Storage Capacity: **(*N/A for dry manure storage)** the number of days the structure can accommodate its contents at the rate the operation places waste in it
- Volume for Solids Accumulation: the capacity of the structure available to accumulate solids

Structure Type	**Total Design Storage Volume**	**Design Treatment Volume** (N/A for dry manure storage)	**Days of Storage Capacity** (N/A for dry manure storage)	**Volume for Solids Accumulation**

Manure, Litter, and Wastewater Transfer Record Keeping Form

Facility Name: _____ NPDES Permit No.: _____

Use this sheet any time that manure or poultry litter is removed from a production or storage area and transferred to other persons (not under the control of your CAFO). Use additional sheets as necessary.

Date of Transfer (indicate whether import or export)	**Manure Type** (e.g. litter, wastewater)	**Name and Address of Person(s) Received From or Transferred To**	**Quantity Transported** (tons/gallons)

Nutrient Land Application Log Sheet

Facility Name: _____ **NPDES Permit No.:** _____

Instructions:
For each land application for each field, provide the following information in the table below:

- Date: the date you applied the manure/litter/process wastewater to the field
- Field ID: the field where you applied manure/litter/process wastewater. Use the same field identification that is used in your nutrient management plan
- Method: how you applied the manure/litter/process wastewater (e.g. surface w/incorporation, surface w/out incorporation, subsurface injection…)
- Application Rate: the number of tons or gallons *actually* applied per acre
- Acres Applied: the number of acres the manure/litter/process wastewater was applied to on the field
- Total N: the total amount of nitrogen you applied to the field from animal waste
- Total P: the total amount of phosphorous you applied to the field from animal waste

Date	Field ID	Method	Actual Application Rate	Acres Applied	Total N	Total P

Date	Field ID	Method	Actual Application Rate	Acres Applied	Total N	Total P

Weather and Soil Condition Documentation

When land applying manure/litter/process wastewater, you also need to document the **weather and soil conditions**. Please provide this information in the following table:

Date	Field ID	Weather Conditions			Soil Conditions
		24 hours before	*During*	*24 hours after*	

Maryland
Department of
the Environment

Larry Hogan, Governor
Boyd K. Rutherford, Lt. Governor

Ben Grumbles, Secretary
Horacio Tablada, Deputy Secretary

Weekly Storage and Containment Structure Inspections Log Sheet

Facility Name: _____ NPDES Permit No.: _____

Instructions:
Use this form to keep records of weekly visual inspections of the structures you use to store or contain manure/litter/process wastewater. Use a separate form for each structure.

**Any deficiencies observed must be corrected within 30 days*

Storage or Containment Structure: _____

	Date	**Initials**	**Depth Marker Reading** (N/A for dry manure handling)	**OK** (√ if no problems)	**Description of any Deficiencies Observed** (put "N/A" if none observed)	**Date Deficiency Corrected***
Week 1						
Week 2						
Week 3						
Week 4						
Week 5						
Week 6						
Week 7						

	Date	**Initials**	**Depth Marker Reading** (N/A for dry manure handling)	**OK** (√ if no problems)	**Description of any Deficiencies Observed** (put "N/A" if none observed)	**Date Deficiency Corrected***
Week 8						
Week 9						
Week 10						
Week 11						
Week 12						
Week 13						
Week 14						
Week 15						
Week 16						
Week 17						
Week 18						
Week 19						

	Date	**Initials**	**Depth Marker Reading** (N/A for dry manure handling)	**OK** (√ if no problems)	**Description of any Deficiencies Observed** (put "N/A" if none observed)	**Date Deficiency Corrected***
Week 20						
Week 21						
Week 22						
Week 23						
Week 24						
Week 25						
Week 26						
Week 27						
Week 28						
Week 29						
Week 30						
Week 31						

	Date	**Initials**	**Depth Marker Reading** (N/A for dry manure handling)	**OK** (√ if no problems)	**Description of any Deficiencies Observed** (put "N/A" if none observed)	**Date Deficiency Corrected***
Week 32						
Week 33						
Week 34						
Week 35						
Week 36						
Week 37						
Week 38						
Week 39						
Week 40						
Week 41						
Week 42						
Week 43						

	Date	**Initials**	**Depth Marker Reading** (N/A for dry manure handling)	**OK** (√ if no problems)	**Description of any Deficiencies Observed** (put "N/A" if none observed)	**Date Deficiency Corrected***
Week 44						
Week 45						
Week 46						
Week 47						
Week 47						
Week 49						
Week 50						
Week 51						
Week 52						

Weekly Wastewater Facilities Inspections Log Sheet

Facility Name: _____ NPDES Permit No.: _____

Instructions:
Use this form to keep records of weekly visual inspections of your wastewater facilities (including pumps, storm water and runoff diversion devices, and devices used to channel contaminated storm water to a wastewater storage or containment structure).

**Any deficiencies observed must be corrected within 30 days*

List the items that need to be inspected below:

_____ _____
_____ _____
_____ _____
_____ _____

	Date	**Initials**	**OK** (√ if no problems)	**Description of any Deficiencies Observed** (put "N/A" if none observed)	**Date Deficiency Corrected***
Week 1					
Week 2					
Week 3					
Week 4					
Week 5					
Week 6					

	Date	**Initials**	**OK** (√ if no problems)	**Description of any Deficiencies Observed** (put "N/A" if none observed)	**Date Deficiency Corrected***
Week 7					
Week 8					
Week 9					
Week 10					
Week 11					
Week 12					
Week 13					
Week 14					
Week 15					
Week 16					
Week 17					
Week 18					
Week 19					
Week 20					

	Date	**Initials**	**OK** (√ if no problems)	**Description of any Deficiencies Observed** (put "N/A" if none observed)	**Date Deficiency Corrected***
Week 21					
Week 22					
Week 23					
Week 24					
Week 25					
Week 26					
Week 27					
Week 28					
Week 29					
Week 30					
Week 31					
Week 32					
Week 33					
Week 34					

	Date	**Initials**	**OK** (√ if no problems)	**Description of any Deficiencies Observed** (put "N/A" if none observed)	**Date Deficiency Corrected***
Week 35					
Week 36					
Week 37					
Week 38					
Week 39					
Week 40					
Week 41					
Week 42					
Week 43					
Week 44					
Week 45					
Week 46					
Week 47					
Week 48					

	Date	**Initials**	**OK** (√ if no problems)	**Description of any Deficiencies Observed** (put "N/A" if none observed)	**Date Deficiency Corrected***
Week 49					
Week 50					
Week 51					
Week 52					

Appendix: Additional Supporting Information

Waste Management and Operation and Maintenance Plan
for
Waste Storage Facility
(Dry Stack)

Prepared for:

Zach Loller

Kent County, Maryland

By:

AET Consulting, Inc.
&
USDA - Natural Resources Conservation Service

In cooperation with

Soil Conservation District

(The original waste management plan can be found in the NRCS client file)

Table of Contents

OPERATION AND MAINTENANCE PLAN

GENERAL

Location: 8966 Bakers Lane, Chestertown, MD

Present Concerns:

1) The storage of waste generated throughout the year. Need to avoid spreading during the period when times of adverse field conditions. Availability of open acreage for spreading.
2) The potential pollution to surface and ground water from stockpiled manure and posing an opportunity for polluted runoff.

The solid manure stacking facility for the poultry operation was planned and designed at the request and with the involvement of the operator. The plan is based on decisions and choices made by the Lollers. The plans conform to all applicable USDA, NRCS standards and specifications in effect on the date of approval.

The dry-stack facility is the primary component of an animal waste management system for the poultry operation. The stacking facility will store solid waste (primarily cake-outs) collected from the buildings. This document outlines the operation, maintenance and safety requirements of the facility.

SYSTEM DESCRIPTION

The manure dry stack facility is composed of the following components:

Vegetative stabilization of all disturbed areas
Roof Runoff
Heavy Use Area(s)
Waste Storage

OWNER / OPERATOR RESPONSIBILITIES

Zach Loller is responsible for proper installation, operation and maintenance of the facility. Although the facility was designed by agencies of the Conservation Partnership (NRCS, SCD, MDA) using the best available technology, it needs to be inspected and properly operated and maintained in a safe manner if it is to function as planned and designed.

Mr. Loller is responsible for applying animal waste in accordance with their nutrient management plan. They are also responsible of keeping records on the manure exported from their poultry operation. They must properly handle the waste in an environmentally sound manner, without negative impacts on state surfacewaters, groundwater, soils and crops, grazing animals or other consumers of crops, and without adverse impacts to adjoining property owners.

An inventory of equipment related to each function will be made and checklists developed, as necessary, for preventive maintenance and inspection. Nameplate data, reference manuals, catalogs, drawings and a copy of this document will be kept on site for proper operation and maintenance of equipment used in the system.

Zach Loller is encouraged to maintain records of waste application as well as waste sample analyses and soil analyses for each field receiving waste applications. These records should be maintained and available at the farm for at least five years. The waste utilization plan, nutrient

management plan, and maps of farm fields receiving animal waste and their acreage should also be maintained. Keeping accurate records, along with the implementation of proper BMP's on the farm, is the primary method for proving to government regulators and the general public the waste management system is not causing an adverse environmental impact.

WASTE COLLECTION

The collection of waste pertains to the capture and gathering of manure so it can be further managed. The manure dry-stacking facility will be inspected periodically for damage and deterioration. Check the concrete for cracks, scaling, exposed reinforcing steel or pieces broken off. Make any necessary repairs, immediately.

HEAVY USE AREA (HUA)

A heavy use area is required which leads to each poultry house/barn. The heavy use area, at a minimum, will be reinforced concrete.

WASTE STORAGE

The storage component of the system is the manure stacking facility. The current storage volume is 340 tons. The depth of the dry stack is 5 feet, but manure may be stacked higher toward the center of the dry stack.

WASTE UTILIZATION

Utilization of waste refers to the recycling of nutrients by applying manure to actively growing crops of hay. Solid manure stored in the stacking facility will be applied using a tractor PTO-driven solid manure spreader. Waste will be applied in a uniform manner, not to exceed the recommended rates in the Nutrient Management Plan. The nutrients available in the solid waste must not exceed the agronomic requirements for the realistic yield expected for the respective crop. **Complete details of application amounts, fields, crops and timing are contained in the Nutrient Management Plan prepared for the farm.**

Dead Bird Composter

Composting is the controlled aerobic biological decomposition of organic matter into a stable, humus-like product, called compost. Decomposition is enhanced and accelerated by mixing organic waste with other ingredients in a manner that optimizes microbial growth. Composting mortality can be likened to aboveground burial in a biomass filter where most of the pathogens are killed by high temperatures.

As the microbial population consumes the most readily degradable material and grows in numbers, the temperature of the compost pile begins to rise. Efficient composting requires that the initial compost mix have:

A balance source of energy (carbon) and nutrients (primarily nitrogen), typically with a carbon-to-nitrogen (C:N) ratio of 15:1 to 35:1.

Sufficient moisture, typically 40% to 60%.
Sufficient oxygen for an aerobic environment.
A pH in the range of 6 to 8.

For proper composting, correct proportions of carbon, nitrogen, moisture, and oxygen need to be present in the mix. Common carbon sources are sawdust or wheat straw. It is desirable because of its bulking ability, which allows entry of oxygen. Other carbon sources that could be used are peanut hulls, cottonseed hulls, sawdust, leaves, etc. If lab testing of the litter or experience indicates that the carbon/nitrogen ratio is adequate (20 - 35:1 ratio), then litter alone should be sufficient for composting mortality as long as desirable bulking ability is achieved and moisture is properly managed. Moisture management is critical and must be maintained between 40 and 55 percent (40% -does not leave your hand moist when squeezed, 55% - if more than two drops drip from your hand the material is too moist).

Recipe for composting broiler mortality

INGREDIENT	VOLUME	WEIGHTS
Straw	1.0	0.10
Carcasses	1.0	1.0
Litter	1.5	1.2
Water	0.5	0.75

Maintain the moisture content at 40 to 55 percent during the composting process (40% - does not leave your hand moist when squeezed, 55% will allow about one drop of water to be released when squeezed, > 55% - if more than two drops drip from your hand the material is too moist, therefore add sawdust or dry carbon source).

Temperature is the primary indicator to determine if the composting process is working properly. A minimum temperature of 130° F shall be reached during the composting process. A temperature of 140° F is optimum; however, temperatures may range up to 160° F. If the minimum temperature is not reached, the resulting compost shall be incorporated immediately after land application or recomposted by turning and adding moisture as needed. Compost managed at the required temperatures will favor destruction of any pathogens and weed seeds.

Good carcass compost should heat up to the 140° range within a few days. Failure of the compost material to heat up properly normally results from two causes. First, the nitrogen source is inadequate (example wet or leached litter). A pound of commercial fertilizer spread over a carcass layer will usually solve this problem. Secondly, the compost fails when too much water has been added and the compost pile becomes anaerobic. An anaerobic compost bin is characterized by temperatures less than 120°, offensive odors, and black oozing compound flowing from the bottom of the compost bin. In this case a drier bulking / carbon amendment should be added to dry the mix. Then, the material should be remixed and composted.

It is possible, though unlikely, for the temperature to rise above the normal range and create conditions suitable for spontaneous combustion. If temperature rises above 170° F, the material should be removed from the bin and cooled, spread on the ground to a depth not to exceed six inches in an area away from buildings. Water should be added only if flames occur. If temperature falls significantly during the composting period and odors develop, or if material does not reach operating temperature, investigate piles for moisture content, porosity, and thoroughness of mixing.

After this first stage process, the material should be turned into a second bin and allowed to go through a second heat process. For larger birds, especially turkeys, a third turning may be necessary for complete degradation of the birds. Typically, the process can be considered "done" within 21-28 days from the time the compost is filled for broilers. For turkeys, the process usually requires about 60 days. After the heat process, curing period of one to three months is usually required before the material is stable.
Compost may be land applied after the secondary or tertiary composting. If any animal parts are still in the mix, the material must be incorporated. If immediate application is not possible the material should be stored using the same requirements as that of stored litter in the Stacking Shed O&M statement.

Inspect compost structure at least twice annually when the structure is empty. Replace any broken or badly worn parts or hardware. Patch concrete floors and curbs as necessary to assure water tightness. Examine roof structures for structural integrity and leaks. Inspections shall be documented on the attached worksheet.

Additional Considerations and Requirements

1. The collection, treatment and storage facilities shall be properly maintained and operated at all times. This also includes the land application equipment.

2. A suitable vegetative cover shall be maintained on all buffers and land application sites, in accordance with the Waste Utilization Plan. No waste may be applied on fields, not approved by, or prepared in accordance with the Nutrient Management Plan (NMP).

3. An acceptable pH of the soil shall be maintained on all land application sites to insure an optimum yield for the crop(s) being grown.

4. The plant available nitrogen (PAN) application rates and hydraulic loading rates identified in the NMP shall not be exceeded.

5. Application of animal waste on land which is used to grow crops for direct human consumption (strawberries, melons, lettuce, cabbage, etc.) shall not occur within 30 days prior to or during the planting of the crop, or at any time during the growing season. No animal waste shall be applied to fruit-bearing trees, within 30 days prior to breaking dormancy. For fiber and food crops, which undergo further processing, application of animal waste shall not occur within 30 days of harvesting. If waste is to be applied to bare soil, the waste shall be incorporated into the soil, within 24 hours after land application.

6. Domestic wastewater from showers, toilets, etc. shall not be discharged into the animal waste management system.

7. Disposal of dead animals shall be done in accordance with the rules and regulations of the State of Maryland, its agencies and local ordinances.

8. Grazing of animals on application sites shall be controlled in accordance with USDA, Natural Resources Conservation Service Standards.

9. The facility operator must have adequate animal waste application and handling equipment on site, or a contract for the purchase of such equipment. The operator may choose to lease the necessary equipment or contract with a third party applicator. In all cases, the equipment must be capable of applying the waste on sites specified in the Waste Utilization Plan and at rates not to exceed agronomic loading for the sites.

10. Animal waste shall not be applied to wetlands or surface water or shall not reach wetlands or surface waters of the state by runoff, drift, manmade conveyances (pipes or ditches), direct application, or direct discharge during operation or land application. Any discharge of waste, which reaches surface water, is prohibited.

11. Animal waste shall be applied on land eroding at less than the field's soil type tolerable level.

12. Animal waste shall not be applied to saturated soils, during rainfall events, or when the soil surface is frozen. When animal waste is to be applied on acres subject to flooding, it will be soil incorporated on conventionally tilled cropland. When applied to conservation-tilled crops or grassland, the waste may be broadcast, provided the application does not occur during a season prone to flooding.

13. Animal waste shall not be applied closer than 50 feet to surface water. This distance may be reduced for waters that are not perennial, provided adequate vegetative filter strips are present.

14. Animal waste shall not be applied closer than 100 feet to wells.

15. Animal waste shall not be applied closer than 200 feet to dwellings other than those owned by the landowner.

16. Waste shall not be applied on other property or public rights-of-way.

17. Avoid spreading animal waste on or directly adjacent to grassed waterways.

18. Waste shall be tested within 60 days of utilization and soil shall be tested at least annually at crop sites where waste products are applied. Soil test and waste analysis records should be kept for 5 years.

19. It is recommended that records of waste application shall be maintained to establish actual application rates. **The records will include date of application, amount of waste applied per acre by tract number and field number, most recent waste analysis and soil test reports.** Waste application records should be maintained for 5 years.

20. Proper calibration of application equipment should be done to ensure uniformity and accuracy of spreading rates.

21. Animal waste should be applied on actively growing crops in such a manner that the crop is not covered with waste to a depth that would inhibit growth. The potential for salt damage from animal waste should also be considered.

22. It is the responsibility of the owner of the facility to update the NMP, when there is a change in the operation, utilization methods or land availability, or the number of animals increase to greater than the planned amount.

AFO RESOURCE CONCERNS EVALUATION WORKSHEET

Name:	Zach Loller – William Loller Farm	**Agency Interest #:**	68139
Planner:	David D. Kann	**Farm # / Tract #:**	
Site Visit Date:	07/22/2020	**Total Acres:**	188.4
County:	Kent	**Production Area Acres:**	16 acres

	RESOURCE CONCERN	YES	NO	ASSESSMENT
a.	Biosecurity measures	☐	☒	All precautionary measures are in place and being followed. Visitor restrictions.
b.	Chemical handling	☐	☒	All chemicals are stored in an appropriate designated storage area.
c.	Cultural resources	☐	☒	The production area is established and there are no proposed ground disturbance activities scheduled for the area.
d.	Feedlot area	☐	☒	N/A
e.	Floodplains	☐	☒	This is an existing operation and the production area is not located in the FEMA-100 year floodplain as per online mapping resources.
f.	Gully erosion	☐	☒	No gully erosion was identified in the production area or associated water conveyances.
g.	Livestock travel lanes	☐	☒	N/A
h.	Nutrient discharge	☐	☒	There are no observable nutrient discharges occurring, at the time of the site evaluation, from the production areas.
i.	Objectionable odors	☐	☒	No unusual or excessive odors were observed during the site visit.
j.	Particulate matter emissions	☐	☒	Through ventilation fans, typical levels. Grass filters in place to harbor and treat emissions.
k.	Ponding, flooding, seasonal high water table	☐	☒	No issues were identified during the site visit.
l.	Sediment	☐	☒	No obvious and observable sediment discharges are occurring from the production areas.
m.	Streambank/shoreline erosion	☐	☒	None present.
n.	Threatened/endangered species	☐	☒	No geospatial indicators have been identified on the production area.
o.	Waste storage	☐	☒	There are no resource concerns identified with the waste storage. Roofed manure shed (40' x 84') being managed appropriately.
p.	Waterways	☐	☒	In good vigorous sod. All water conveyances are being managed appropriately.
q.	Wetlands	☐	☒	Production area and manageable prior converted cropland are either 100 feet from wetlands or skirted with vegetation and the required setbacks are in place to protect these resources.

Online References

Maryland Department of the Environment (MDE) Regulations and General Permit for Animal Feeding Operations (AFO)

http://www.mde.state.md.us/programs/Land/SolidWaste/CAFOMAFO/Pages/Programs/LandPrograms/Solid_Waste/cafo/index.aspx

Environmental Protection Agency (EPA) Concentrated Animal Feeding Operations (CAFO) - Final Rule

http://cfpub.epa.gov/npdes/afo/cafofinalrule.cfm

Crop Fertilizer Recommendations

"Soil Fertility Management," Maryland Cooperative Extension, SFM-1, Oct. 2002
http://www.anmp.umd.edu/Pubs/Pubs_Crops.cfm

Nutrient Management Information Sheets

http://www.anmp.umd.edu/Pubs/index.cfm

Manure Nutrient Availability

Maryland Department of Agriculture, COMAR 15.20.08.05
http://www.mda.state.md.us/resource_conservation/nutrient_management/manual/estimated_mineralization_rates.php

Calibrating Manure Spreaders

University of Maryland Extension Fact Sheet 416 and Worksheets
http://www.anmp.umd.edu/Pubs/Pubs_Manure.cfm
http://www.anmp.umd.edu/Pubs/Pubs_Equip.cfm

Phosphorus Assessment

"The Maryland Phosphorus Site Index: An Overview," Maryland Cooperative Extension SFM-6, April 2005
http://www.anmp.umd.edu/files/SFM-6.pdf

"The Maryland Phosphorus Site Index: Technical Users Guide," Maryland Cooperative Extension SFM-7, April 2005
http://www.anmp.umd.edu/files/SFM-7.pdf

Mid-Atlantic Nutrient Management Handbook

http://www.mawaterquality.org/Publications/pubs/manhcomplete.pdf

Maryland Pesticide Regulation

http://www.mda.state.md.us/plants-pests/pesticide_regulation/index.php

Maryland Practice Standards eFOTG Section IV — Practice Standards and Specifications

http://www.nrcs.usda.gov/technical/efotg/