

Delaware Animal Waste Management Plan

A copy of this completed document should be kept on the farm and available for review by the Delaware Department of Agriculture if requested. The Animal Waste Management should be updated anytime there is an increase in capacity of 25% or more. All poultry and livestock should be included in this Animal Waste Management Plan.

Operation Name: _____

Date prepared: _____

Date reviewed: _____

Date	reviewed:	

Date reviewed: _____

Date reviewed: _____

Who Needs an Animal Waste Management Plan in Delaware?

This template is available for poultry and livestock operations to write a Delaware Animal Waste Management Plan. Animal Waste Management Plans are required by the Delaware Nutrient Management Law for any operation that has 8 or more animal units; an animal unit is 1,000 lbs. of live weight. Individuals who are certified as a Nutrient Generator can write their own Animal Waste Management Plan, unless they meet the criteria to become a permitted CAFO (see below). Operations that apply manure or fertilizer to 10 or more acres should not use this template; these operations must have a Nutrient Management Plan written by a certified Nutrient Consultant.

The main purpose of an Animal Waste Management Plan is to estimate the amount of manure generated on an annual basis. This template will help individuals estimate the amount of manure generated by poultry, cattle, equines, swine, sheep, goats, and swine. In addition to estimating manure production, this Animal Waste Management Plan Template will help growers with record keeping. The records outlined in this template serve many purposes, such as aiding individuals in filling out the Delaware Nutrient Management Annual Report, which is due to the Delaware Department of Agriculture on March 1st of each calendar year. Animal Waste Management Plans are required to be updated when the number of animals at an operation increases by 25% or more. Updating an animal waste management plan is also strongly encouraged if there are changes made to best management practices related to manure or mortality management.

This Animal Waste Management Plan does not take the place of a Concentrated Animal Feeding Operation (CAFO) permit and related documents. Delaware CAFOs have unique requirements that do not apply to other animal operations. Requirements for CAFOs are outlined in Title 7 Delaware Code, Chapter 60 and Title 3 Delaware Code, Chapter 22. **Any operation meeting the criteria to become a permitted CAFO will need a Nutrient Management Plan written by a certified Delaware Nutrient Management Consultant.** A complete list of the criteria for CAFOs can be found on the Delaware Department of Agriculture website in the <u>CAFO Fact Sheet</u>. For guidance on all things related to CAFO permits, contact the Nutrient Management Program at the Delaware Department of Agriculture at 302-698-4458 or <u>nutrient.management@delaware.gov</u>.

Quick Reference

This Animal Waste Management Plan template is arranged in several sections. Use Table 1 to determine which sections of this template must be completed based on the type of poultry and/or livestock on the operation. Operations with more than one species of animal will need to use each section that applies to their operation. Note: It may not be necessary to complete one or more sections of this template.

Section	Page #	Poultry	Equine	Cattle	Sheep/Goats	Swine
Participant Information	4 - 5	Х	X	х	х	Х
Crust and Litter Estimation for Commercial Poultry Operation	6-10	х				
Manure Estimation for an Equine Operation	11-15		х			
Manure Estimation for a Cattle Operation	16-19			х		
Manure Estimation for Sheep and/or Goat Operation	20-24				х	
Manure Estimation for a Swine Operation	25-28					х

Table 1. Animal Waste Management Plan sections that should be completed based on the type of animals on the operation.

Participant Information

The information in this section is required for **ALL** operations that need an Animal Waste Management Plan. The participant information will also be helpful when it comes time to complete the Delaware Nutrient Annual Report. The watershed number can be found at the <u>Delaware Watershed Search</u> website by entering the physical location address of the operation and clicking in close proximity to the location on the map. It may be necessary to zoom out of the map to identify the correct watershed outline. Upon clicking on the map within the appropriate watershed, record the number next to the label "HUC-10".

Applicant Name:		
		_
Operation Name:		_
Operation Address:		_
Operation Name (if multiple):		
Operation Address (if multiple):		
Name of Delaware Nutrient Man Certification Holder for Operatio	agement on:	
Delaware Nutrient Management	Certification Number:	
Level of Certification (Please ch	eck one)	
□ Nutrient Generator	Private Nutrient Handler	

□ Commercial Nutrient Handler □ Nutrient Consultant

Watershed

Your watershed code can be found at the <u>Delaware Watershed Search.</u>

Watershed Number: _____

Percentage of Operation in Watershed: _____

Watershed Number (if in more than one watershed): _____

Percentage of Operation in Watershed: _____

Crust and Litter Estimation for a Commercial Poultry Operation

Only non-CAFO poultry operations should complete this section. **If your operation has a current CAFO Permit or you have submitted a Notice of Intent (NOI) to be covered under a CAFO permit, then you must have a plan prepared by a Delaware Certified Nutrient Consultant**. The volume of poultry manure generated on an operation is estimated in this section. Important information such as best management practices utilized, mortality management, and the destination of manure generated on the operation are also recorded in this section.

Type of Poultry Grown: _____

Total Operation Capacity/Placement (Birds) Per Flock: _____

Number of Flocks per Year: _____

Crust and Litter Estimation

Select one of the following methods to estimate the amount of crust and litter generated on your operation. The methods are listed in order of accuracy; select the most accurate method possible for your operation.

1. Weighed Crust Out, Center Cut or Total Clean Out (most accurate) – Select this method if you contract with someone who removes crust or litter from your operation, and they provide you with the weight of that crust or litter. You may input crust or litter weights from a previous year if flock management and number of flocks were the same as current practice.

Year Weight was Taken: _____

Tons of Crust Annually: _____

Tons of Center Cut Annually: _____

Tons of Total Clean Out Removed (if a total clean out year): _____

Year of Total Clean Out (if a total clean out year): _____

2. Estimate Volume Capacity – Select this method to estimate the crust and litter production on your operation when you crust out or clean out by determining the volume of the truck or spreader you are loading into and then converting that volume to weight. This estimate can be from a previous year, if the flocks were managed in a similar way to the current year and you had the same number of flocks. You can use the following figures to convert volume to the weight of litter (Rynk et al., 1992):

1 cubic foot = 30 pounds (average) 1 bushel = 35 pound (average)

Tons of Crust Annually: _____

Tons of Center Cut Annually: _____

Tons of Total Clean out Removed (if a total clean out year): _____

Year of Total Clean out (if a total clean out year): _____

3. **Manure Generation Spreadsheet** (**least accurate**) – Select this method if you do not have the information necessary to estimate manure by the other methods. Open the University of Maryland spreadsheet and fill in the blue cells to estimate the crust and litter generation on your operation. <u>https://go.umd.edu/PoultryLitterQuantity</u>

Tons of Crust Annually: _____ Tons of Center Cut Annually: _____ Tons of Total Clean Out Removed: _____ Year Material was Removed:

Poultry Manure Storage

Document the dimensions of any poultry litter storage structures on the farm. Operations who worked with NRCS or the Conservation Districts to build a manure shed can contact them to obtain the exact storage capacity of a manure storage structure.

Permanent Structure Size (length, width & height): ______ Permanent Structure Size (if multiple): ______ Permanent Structure Size (if multiple): ______ Temporary Structure Size (length, width & height): ______ Temporary Structure Size (if multiple): ______ Temporary Structure Size (if multiple): ______

Manure Receiver

Please list the contact and other information related to the receiver(s) of crust, center cut, or total clean out from your operation.

1.	Receiver Name:
	Address:
	Date Material Received:
	Crust Amount :
	Center Cut Amount:
	Total Clean Out Amount:
2.	Receiver Name:
	Address:
	Date Material Received:
	Crust Amount :
	Center Cut Amount:
	Total Clean Out Amount:
3.	Receiver Name:
	Address:
	Date Material Received:
	Crust Amount :
	Center Cut Amount:
	Total Clean Out Amount:

4.	Receiver Name:
	Address:
	Date Material Received:
	Crust Amount :
	Center Cut Amount:
	Total Clean Out Amount:

Manure Storage Best Management Practices (BMPs)

Please check all manure storage BMPs that you use on your operation.

 \Box Manure is kept dry in a manure shed

□ Manure is stockpiled by following Delaware Nutrient Management Commission guidelines

□ Manure stockpile is 100 feet from any body of water or drainage ditch

□ Manure stockpile is 100 feet from any public road

□ Manure stockpile is 200 feet from any residence not located on your property

□ Manure stockpile is 200 feet from any domestic well

□ Manure stockpile is 300 feet from a public water supply

Poultry Mortality Management

permanent structure construction

Please check all mortality management methods that you use on your operation but do not check off a BMP not currently on the farm.

Channel composter	Date Installed:
□ Bin composter	Date Installed:
 Temporary channel composter; waiting for permanent structure construction 	Date Installed:
 Temporary bin composter; waiting for 	Date Installed:

□ In-vessel composter	Date Installed:
□ Mortality freezers	Date Installed:
□ Other (please list)	Date Installed:

Best Management Practices

Please check all Best Management Practices (BMPs) that you use on your operation.

□ Heavy Use Area Pads

□ Stormwater Pond

 \Box Grassed Swales

□ Constructed Wetland

 $\hfill\square$ Vegetative Planting (grasses or trees) within 10 to 12" of tunnel fans

□ Pollinator Plantings

Other (please list):

Notes

Manure Estimation for an Equine Operation

Equine operations should complete this section. The amount of manure produced and bedding that is used on the operation is estimated in this section. Information about best management practices (BMPs) used, mortality management, and the destination of manure generated on the operation is also recorded in this section. Note: Manure that is directly deposited on pasture is not considered a nutrient application.

Animal Capacity

Total Number of Equine: ____

(this includes horses, ponies, donkeys, and mules):

Name	Horse Weight (approx.)	Name	Horse Weight (approx.)
1		8	
2		9	
3		10	
4		11	
5		12	
6		13	
7		14	

Manure Generation

Select one of the following methods to estimate the amount of manure produced and bedding generated annually on your operation. The methods are listed in order of accuracy; select the most accurate method possible for your operation.

 Weighed (most accurate) – Select this method if you contract with someone or remove manure and bedding from your operation, and you have the weight of moved manure. Enter the weight of manure (with bedding) for your operation. The values used here can be from a previous year if the number, weight, and management of the equines did not change since this weight was determined.

Year Weight was Taken: _____

Tons of Manure and Bedding: _____

 Manure Generation Spreadsheet – Select this method if you do not have the information necessary to estimate manure by the other methods. Open the University of Maryland spreadsheet and fill in the blue cells to estimate the manure generation and bedding use on your operation. https://go.umd.edu/SolidManureQuantity

Tons of Bedding Used Annually (see Table 2 in link for help): _____

Tons of Uncollected Manure Deposited on Pasture Annually: _____

Tons of Collected Manure and Bedding Annually: _____

Manure Storage

Document the dimensions of any manure storage structures on the farm. Operations who worked with NRCS or the Conservation Districts to build a manure shed can contact them to obtain the exact storage capacity of a manure storage structure.

Permanent Structure Size (length, width & height): _____ Permanent Structure Size (if multiple): _____ Permanent Structure Size (if multiple): _____ Temporary Structure Size (length, width & height): _____ Temporary Structure Size (if multiple): _____

Temporary Structure Size (if multiple):

Manure Storage Best Management Practices (BMPs)

Please check all manure storage BMPs that you use on your operation.

- $\hfill\square$ No manure is collected. All manure is deposited on pasture by the horses.
- $\hfill\square$ Manure is kept dry under a roof or tarp
- □ Manure is kept on an impervious pad (concrete or clay)
- □ Manure is kept in a dumpster for pick-up
- \Box Manure is stockpiled on high ground with a vegetative buffer surrounding it

□ Manure is stockpiled by following Delaware Nutrient Management Commission guidelines

- $\hfill\square$ Manure stockpile is 100 feet from any body of water or drainage ditch
- $\hfill\square$ Manure stockpile is 100 feet from any public road
- \square Manure stockpile is 200 feet from any residence not located on your property
- \Box Manure stockpile is 200 feet from any domestic well
- $\hfill\square$ Manure stockpile is 300 feet from a public water supply

Manure Receiver(s)

Please list the contact and other information related to the receiver(s) of manure from your operation.

1. Receiver Name: _____

Date Material Received: _____

Amount: _____

2. Receiver Name: _____

Address: _____

	Date Material Received:
	Amount:
3.	Receiver Name:
	Address:
	Date Material Received:
	Amount:

Mortality Management

Please check all mortality management methods that you use on your operation.

- \Box Cremation
- \Box Renderer
- \Box Composting
- Other (please list):

Other Best Management Practices

Please check all the other BMPs that you use on your operation.

- □ Rotational grazing
- □ Streamside/ditch fencing
- \Box Sacrifice or dry lot usage
- $\hfill\square$ Sacrifice or dry lot maintenance
- $\hfill\square$ Reseed bare ground
- \Box Soil test pasture
- \Box Control weeds
- Other (please list):

Notes

Manure Estimation for a Cattle Operation

Cattle (beef and dairy) operations should complete this section. The amount of manure produced and bedding that is used on the operation is estimated in this section. Information about best management practices (BMPs) used, mortality management, and the destination of manure generated on the operation is also recorded in this section. Note: Manure that is directly deposited on pasture is not considered a nutrient application.

Animal Capacity

Total Number of Cattle _____

Cattle Description	Total of Each
Feeder Yearling (750-1100 lbs.) – High Forage Diet	
Feeder Yearling (750-1100 lbs.) – High Energy Diet	
Calf (450-750 lbs.)	
Cow	
Bull	

Manure Generation

Select one of the following methods to estimate the amount of manure produced and bedding generated annually on your operation. The methods are listed in order of accuracy; select the most accurate method possible for your operation.

 Weighed (most accurate) – Select this method if you contract with someone or remove manure from your operation, and you have the weight of moved manure. Enter the weight of manure (with bedding) for your operation. You may obtain this weight personally or from someone who removes manure and bedding from your operation. The values used here can be from a previous year if the number, weight, and management of the cattle did not change since this weight was determined.

Year Weight was Taken: _____

Tons of Manure and Bedding: _____

 Manure Spreadsheet (least accurate) – Select this method if you do not have the information necessary to estimate manure by the other methods. Open the University of Maryland spreadsheet and fill in the blue cells to estimate the manure generation and bedding use on your operation. https://go.umd.edu/SolidManureQuantity

 Tons of Bedding Used Annually (see Table 2. in link for help):

 Tons of Uncollected Manure Deposited on Pasture Annually:

 Tons of Collected Manure and Bedding Annually:

Manure Storage

Document the dimensions of any manure storage structures on the farm. Operations who worked with NRCS or the Conservation Districts to build a manure shed can contact them to obtain the exact storage capacity of a manure storage structure.

Permanent Structure Size (length, width & height):

Permanent Structure Size (if multiple): _____

Permanent Structure Size (if multiple): _____

Temporary Structure Size (length, width & height): _____

Temporary Structure Size (if multiple): _____

Temporary Structure Size (if multiple): _____

Manure Storage Best Management Practices

Please check all manure storage BMPs that you use on your operation.

 \square No manure is collected. All manure is deposited on pasture by cattle.

- $\hfill\square$ Manure is kept dry under roof or tarp
- □ Manure is kept on an impervious pad (concrete or clay)
- □ Manure is kept in a dumpster for pick-up

□ Manure is stockpiled by following Delaware Nutrient Management Commission guidelines

 $\hfill\square$ Manure stockpile is 100 feet from any body of water or drainage ditch

 \Box Manure stockpile is 100 feet from any public road

 $\hfill\square$ Manure stockpile is 200 feet from any residence not located on your property

□ Manure stockpile is 200 feet from any domestic well

 $\hfill\square$ Manure stockpile is 300 feet from a public water supply

Manure Receiver

Please list the contact and other information related to the receiver(s) of manure from your operation.

1.	Receiver Name:
	Address:
	Date Material Received:
	Amount:
2.	Receiver Name:
	Address:
	Date Material Received:
	Amount:
3.	Receiver Name:
	Address:
	Date Material Received:
	Amount:

Mortality Management

Please check all mortality management methods that you use on your operation.

- □ Renderer
- \Box Composting
- $\hfill\square$ Cremation
- Other (please list):

Best Management Practices

Please check all the other BMPs that you use on your operation.

- □ Rotational grazing
- □ Streamside/ditch fencing
- $\hfill\square$ Sacrifice or dry lot usage
- $\hfill\square$ Sacrifice or dry lot maintenance
- $\hfill\square$ Reseed bare ground
- \Box Soil test pasture
- \Box Grow annual forages or cover crops
- \Box Control weeds
- Other (please list):

Notes

Manure Estimation for a Small Ruminant Operation

Small ruminant (sheep or goat) operations should complete this section. The amount of manure produced and bedding that is generated on the operation is estimated in this section. Information about best management practices (BMPs) used, mortality management, and the destination of manure generated on the operation is also recorded in this section. Note: Manure that is directly deposited on pasture is not considered a nutrient application.

Animal Capacity

Total Number of Goats: _____

Goats	Total Number	Average Weight	Days on Operation
Kid			
Yearling			
Mature Doe			
Mature Wether			
Mature Buck			

Total Number of Sheep: _____

Sheep	Total Number	Average Weight	Days on Operation
Lamb			
Yearling			
Mature Ewe			
Mature Wether			
Mature Ram			

Manure Generation

Select one of the following methods to estimate the amount of manure produced and bedding used annually on your operation. The methods are listed in order of accuracy; select the most accurate method possible for your operation.

 Weighed (most accurate) – Select this method if you contract with someone or remove manure from your operation, and you have the weight of moved manure. Enter the weight of manure (with bedding) for your operation. You may obtain this weight personally or from someone who removes manure and bedding from your operation. The values used here can be from a previous year if the number, weight, and management of the goats or sheep did not change since this weight was determined.

Year Weight was Taken: _____

Tons of Manure and Bedding (if applicable): _____

 Manure Generation Spreadsheet (least accurate) – Select this method if you do not have the information necessary to estimate manure by the other methods. Open the University of Maryland spreadsheet and fill in the blue cells to estimate the manure generation and bedding use on your operation. <u>https://go.umd.edu/SolidManureQuantity</u>

Tons of Bedding Used Annually (see Table 2. in link for help): _____

Tons of Uncollected Manure Deposited on Pasture Annually: _____

Tons of Collected Manure and Bedding Annually: _____

Manure Storage

Document the dimensions of any manure storage structures on the farm. Operations who worked with NRCS or the Conservation Districts to build a manure shed can contact them to obtain the exact storage capacity of a manure storage structure.

Permanent Structure Size (length, width & height):	
Permanent Structure Size (if multiple):	
Permanent Structure Size (if multiple):	
Temporary Structure Size (length, width & height):	
Temporary Structure Size (if multiple):	
Temporary Structure Size (if multiple):	

Manure Storage Best Management Practices (BMPs)

Please check all manure storage BMPs that you use on your operation.

 $\hfill\square$ No manure is collected. All manure is deposited on pasture by the goats and/or sheep.

- \Box Manure is kept dry under a roof or tarp
- □ Manure is kept on an impervious pad (concrete or clay)
- □ Manure is kept in a dumpster for pick-up
- $\hfill\square$ Manure is stockpiled on high ground with a vegetative buffer surrounding it

□ Manure is stockpiled by following Delaware Nutrient Management Commission guidelines

- □ Manure stockpile is 100 feet from any body of water or drainage ditch
- □ Manure stockpile is 100 feet from any public road
- □ Manure stockpile is 200 feet from any residence not located on your property
- □ Manure stockpile is 200 feet from any domestic well
- \Box Manure stockpile is 300 feet from a public water supply

Manure Receiver

Please list the contact and other information related to the receiver(s) of manure from your operation.

1.	Receiver Name:
	Address:
	Date Material Received:
	Amount:
2.	Receiver Name:
	Address:
	Date Material Received:
	Amount:
3.	Receiver Name:
	Address:
	Date Material Received:
	Amount:

Mortality Management

Please check all mortality management methods that you use on your operation.

 \Box Composting

□ Cremation

Other (please list):	
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Best Management Practices

Please check all the other BMPs that you use on your operation.

- \Box Rotational grazing
- □ Streamside/ditch fencing
- \Box Sacrifice or dry lot usage
- $\hfill\square$ Sacrifice or dry lot maintenance
- \Box Reseed bare ground
- □ Soil test pasture
- \Box Control weeds
- Other (please list):

Notes

Manure Estimation for a Swine Operation

Swine operations should complete this section. The amount of manure produced and bedding used on the operation is estimated in this section. Information about best management practices (BMPs) used, mortality management, and the destination of manure generated on the operation is also recorded in this section. Note: Manure that is directly deposited on pasture is not considered a nutrient application. Outdoor areas with little to no vegetative cover (pounds, dry and sacrifice lots) are not considered pasture.

Animal Capacity

Total Number of Swine: _____

Swine	Total Number	Average Weight	Days on Operation
Nursing/ Nursery Pig (0-65 lbs.)			
Sow - gestation			
Sow - lactation			
Boar			
Replacement gilt			
Grower (up to 250 lbs.)			

Manure Generation

Select one of the following methods to estimate the amount of manure produced and bedding used on your operation. The methods are listed in order of accuracy; select the most accurate method possible for your operation.

 Weighed (most accurate) – Select this method if you contract with someone or remove manure from your operation, and you have the weight of moved manure. Enter the weight of manure (with bedding) for your operation. You may obtain this weight personally or from someone who removes manure and bedding from your operation. The values used here can be from a previous year if the number, weight, and management of the swine did not change since this weight was determined.

Year Weight was Taken: _____

Tons of Manure and Bedding (if applicable): _____

 Manure Generation Spreadsheet (least accurate) – Select this method if you do not have the information necessary to estimate manure by the other methods. Open the University of Maryland spreadsheet and fill in the blue cells to estimate the manure generation and bedding use on your operation. <u>https://go.umd.edu/SolidManureQuantity</u>
 Tons of Bedding Used Annually (see Table 2. in link for help): ______
 Tons of Uncollected Manure Deposited on Pasture Annually: ______
 Tons of Collected Manure and Bedding Annually:

Manure Storage

Document the dimensions of any manure storage structures on the farm. Operations who worked with NRCS or the Conservation Districts to build a manure shed can contact them to obtain the exact storage capacity of a manure storage structure.

Permanent Structure Size (length, width & height): ______ Permanent Structure Size (if multiple): ______ Permanent Structure Size (if multiple): ______ Temporary Structure Size (length, width & height): ______ Temporary Structure Size (if multiple): ______ Temporary Structure Size (if multiple): ______

Manure Storage Best Management Practices (BMPs)

Please check all manure storage BMPs that you use on your operation.

- □ No manure is collected. All manure is deposited on pasture by swine.
- □ Manure is kept dry under a roof or tarp
- □ Manure is kept on an impervious pad (concrete or clay)
- □ Manure is kept in a dumpster for pick-up
- □ Manure is stockpiled on high ground with a vegetative buffer surrounding it

□ Manure is stockpiled by following Delaware Nutrient Management Commission guidelines

- □ Manure stockpile is 100 feet from any body of water or drainage ditch
- □ Manure stockpile is 100 feet from any public road

□ Manure stockpile is 200 feet from any residence not located on your property

 $\hfill\square$ Manure stockpile is 200 feet from any domestic well

 $\hfill\square$ Manure stockpile is 300 feet from a public water supply

Manure Receiver

Please list the contact and other information related to the receiver(s) of manure from your operation.

1.	Receiver Name:
	Address:
	Date Material Received:
	Amount:
2.	Receiver Name:
	Address:
	Date Material Received:
	Amount:
3.	Receiver Name:
	Address:
	Date Material Received:
	Amount:

Mortality Management

Please check all mortality management methods that you use on your operation.

- \Box Renderer
- \Box Composting
- \Box Cremation
- Other (please list):

Best Management Practices

Please check all the other BMPs that you use on your operation.

- □ Rotational grazing
- □ Streamside/ditch fencing
- $\hfill\square$ Sacrifice or dry lot usage
- $\hfill\square$ Sacrifice or dry lot maintenance
- $\hfill\square$ Reseed bare ground
- □ Soil test pasture
- \Box Control weeds
- Other (please list):

Notes

Resources

Delaware Department of Agriculture 2019. Delaware Nutrient Management Program CAFO Fact Sheet. Available at:

https://agriculture.delaware.gov/wp-content/uploads/sites/108/2019/02/CAFO-Fact-Sheet .pdf. Verified 25 May 2021.

- University of Maryland. University of Maryland Extension Manure Quantity Estimation (For Solid Manure). Available at: https://go.umd.edu/SolidManureQuantity. Verified 26 May 2021
- University of Maryland. University of Maryland Extension Poultry Litter Quantity Estimate. Available at: https://go.umd.edu/PoultryManureQuantity. Verified 26 May 2021

United States Department of Agriculture 1999. Natural Resources Conservation Service Delaware Local Service Centers. Available at: https://www.nrcs.usda.gov/conservation-basics/conservation-by-state/delaware. Verified 2 May 2023.

University of Delaware 2021. University of Delaware Nutrient Management Program. Available at:

https://www.udel.edu/academics/colleges/canr/cooperative-extension/environmental-ste wardship/nutrient-management/ Verified 26 May 2021

Delaware Department of Agriculture 2018.Delaware Watershed Search. Available at: https://delaware.maps.arcgis.com/apps/webappviewer/index.html?id=955c5e9053c0467 48e32d275c14e4df7 Verified 26 May 2021

Reference

Rynk, R., Kamp, M. V. D., Willson, G.B., Singley, M.E., Richard, T.L., Kolega, J.J., Brinton, W.F., 1992. On-Farm Composting Handbook. Ithaca, NY: Natural Resource, Agriculture, and Engineering Services

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