

MANURE MANAGEMENT PLAN WORKBOOK

CHECKLIST

	Manure Management Plan Page No.	Completed or Reviewed	Not Needed
Section 1 – General Information			
Date of Development	2	X	
Contact Information	2	X	
Operation Information	3	X	
Animals Worksheet	5	X	
Section 2 – Mechanical Manure Application			
Environmentally Sensitive Areas Worksheet	6	X	
Winter Application Worksheet	7	X	
Manure Management Plan Summary	8	X	
Section 3 – Operation Map			
Operation Map	9	X	
Section 4 – Manure and Agricultural Process Wastewater Storage and Stockpiling/Stacking Areas			
Agriculture Process Wastewater Worksheet	10	X	
Manure Storage Worksheet	11	X	
Section 5 – Pasture Management			
Pasture Management Worksheet	12	X	
Section 6 – Animal Concentration Areas			
ACA Worksheet	13	X	
Note: regulations require all operations with crops or ACAs to also have an Agricultural Erosion and Sediment Control Plan meeting the requirements of 25 Pa. Code Chapter 102. Additional information can be obtained from the county conservation district.			
Section 7 – Recordkeeping			
Recordkeeping Forms	14-17	X	

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Section 1 – General Information

DATE OF DEVELOPMENT

(See Workbook Instructions Page 3)

Date of Development: January 22, 2014
Date of Update(s): June 15, 2022

Note that the owner/operator is expected to evaluate the manure management plan annually and update the plan when necessary to keep the plan consistent with operation and manure management practices.

CONTACT INFORMATION

(See Workbook Instructions Page 3)

Operation Name: Sample Farm
Name of Operator: Mr. John Q. Public
Name of Landowner(s): Mrs. Jane F. Farmerson
Operation Physical Address: 3 Sample Road
City, State and Zip Code: Farm City, PA 12345
Operation Mailing Address: 3 Sample Road
City, State and Zip Code: Farm City, PA 12345
Phone Number (Home/Barn): 717-555-4567
(Cell): 717-555-3456
Email Address: samplefarm@email.com

Manure Management Plan Preparer Contact Information (if other than owner/operator)

Preparer Name: Mr. John Smith
Preparer Organization: Fertilizer Sales Company
Physical Address: 35 Spreader Lane
City, State and Zip Code: Spreader City, PA 23456
Phone Number (Business): 601-555-4567
(Cell): 601-5553456
Email Address: fertilizersales@sales.com

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OPERATION INFORMATION (See Workbook Instructions on Page 3)

a. **Crop Rotations used on the Operation (use additional sheets as necessary):** 4 years corn silage, 4 years mixed hay

b. **Acres available for mechanical application of manure (excluding pasture):**

Owned: 120 Rented: 50

The term "Mechanical application" as used in this document means the application of manure by a person through any mechanical means such as a manure spreader, irrigation system, horse-drawn equipment, or a pitchfork. The term does not include direct application of manure by animals on pastures and/or in Animal Concentration Areas. Pasture Areas should only be noted once, in letter c.

c. **Pasture Areas:** Yes No

If yes, list acres: Owned: 20 Rented: _____

If the operation contains pasture, then complete the Pasture Management Worksheet.

d. **Total acres available for manure: (b. + c.)** 190 Acres

e. **Animals on the operation:** Yes No

If animals are on the operation, complete the Animals Worksheet. Refer to Appendix 2, Agronomy Facts 54, Pennsylvania's Nutrient Management Act (Act 38) for additional information.

f. **Environmentally Sensitive Areas:**

Private or public drinking water wells Yes No

Streams, lakes, springs, or ponds Yes No

Open sinkholes Yes No

Areas of concentrated flow including swales, ditches, gullies, etc. Yes No

For winter application, above ground inlet to agricultural drainage system Yes No

If the operation contains any environmentally sensitive areas, then complete the Environmentally Sensitive Areas Worksheet and identify the environmentally sensitive areas on the Operation Map.

g. **Winter Application:** Is manure applied during the winter? Yes No

If yes, then complete the Winter Application Worksheet.

h. **Agricultural Process Wastewater:** Is any agricultural process wastewater generated on-site? Yes No

If yes, then complete the Agricultural Process Wastewater Worksheet.

i. **Manure Storage Facilities:** Is manure stored in a manure storage facility (concrete tank, metal tank, under-building structure, earthen, clay, or synthetic lined pond or lagoon, solid manure stacking pad, etc.)? Yes No

If yes, then complete the Manure Storage and Stacking Worksheet.

j. Solid Manure Stockpiling or Stacking:

Yes No

Is manure stockpiled or stacked in outdoor areas?

If yes, then complete the Manure Storage and Stacking Worksheet.

k. Animal Concentration Areas (ACAs):

Yes No

If yes: Owned: Rented:

If the operation contains any ACAs, then complete the ACA Worksheet.

l. Manure Spreader Calibration: The manure spreader used to apply all manure will be calibrated according to the recommendations in Agronomy Facts 68 found in Appendix 3 prior to manure application. Yes

NA

EXAMPLE

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ANIMALS WORKSHEET

Use Additional Sheets as Necessary
 (See Workbook Instructions on Page 4)

1. Animal Unit and Animal Equivalent Unit Calculation:

Animal Type (a)	Animal # (normal production day) (b)		Average Weight (lb.) (c)				Animal Unit (AU) (d)		Days on operation per year (e)				Animal Equivalent Unit (AEU) (f)
Dairy Cows	60	×	1,450	÷	1,000	=	87.00	×	365	÷	365	=	87.00
Broilers	10,000	×	3.55	÷	1,000	=	35.50	×	210	÷	365	=	20.42
		×		÷	1,000	=		×		÷	365	=	
		×		÷	1,000	=		×		÷	365	=	
		×		÷	1,000	=		×		÷	365	=	
Total												107.42	

Refer to page 14 and *Agronomy Facts 54, Pennsylvania's Nutrient Management Act (Act 38): Who is Affected?* found in Appendix 2 when completing the Animals Worksheet.

If the operation maintains greater than 2.00 AEU/acre and eight or more total AEUs according to Calculation 2, the operation is regulated under Pennsylvania's Nutrient Management Act (Act 38), and the operator should consult with a certified nutrient management specialist before proceeding with the remainder of the Manure Management Plan.

2. AEU/Acre Calculation:

Total AEUs (1f) = 107.42

**Total acres available for manure
 (Operation Information Page, Letter d) = 190**

Total AEUs ÷ Total Acres available for manure = AEUs/Acre

107.42 AEUs ÷ 190 Acres = .56 AEU/Acre

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MANURE MANAGEMENT PLAN SUMMARY

Use Additional Sheets as Necessary
 (See Workbook Instructions Page 8)

Crop Group and Yield (a)	Manure Group (b)	Application Season (c)	Planned Application Rate from C, NBS, PI * (d)	Incorporation Timing (e)	Commercial Fertilizer Application Rate (f)	Fields where this crop group can be used (g)
Corn Silage 23 Tons	Liquid dairy	Spring	9,000 gallons NBS	Unincorporated	110 lbs. N	1-25
Corn Silage after alfalfa 23 tons	Liquid dairy	Spring	9,000 gallons NBS	Unincorporated	4 lbs. N	1-25
Corn Silage 23 Tons	Liquid dairy	Fall	9,000 gallons NBS	Unincorporated	110 lbs. N	1-25
Corn Silage 23 Tons	Solid dairy	Fall	25 tons NBS	Unincorporated	110 lbs. N	1-25
Grass Hay 5 tons	Liquid dairy	Spring	7,000 gallons NBS	Unincorporated	190 lbs. N	1-25
Gray Hay 5 tons	Liquid dairy	Fall	7,000 gallons NBS	Unincorporated	190 lbs. N	1-25
Grass Hay 5 tons	Solid dairy	Winter	20 tons NBS	Unincorporated	150 lbs. N	22

Soil test results taken in the last three years indicate phosphorous levels (Mehlich 3-P levels) are less than 200 ppm. Yes No

If soil samples are over three years old or indicate phosphorous levels greater than or equal to 200 ppm, then base manure application rates on the phosphorous removal charts, a NBS calculated to phosphorous removal, or the Phosphorous Index developed by an authorized planner.

*C - The application rate was taken from the charts in Appendix 1. **Appendix 1 contains an explanation and example of how to use the rate charts when filling out this Manure Management Plan Summary.**

NBS - The application rate was calculated using Nutrient Balance Sheet.

PI - The application rate was calculated by a Certified Nutrient Management Planner using the Phosphorus Index.

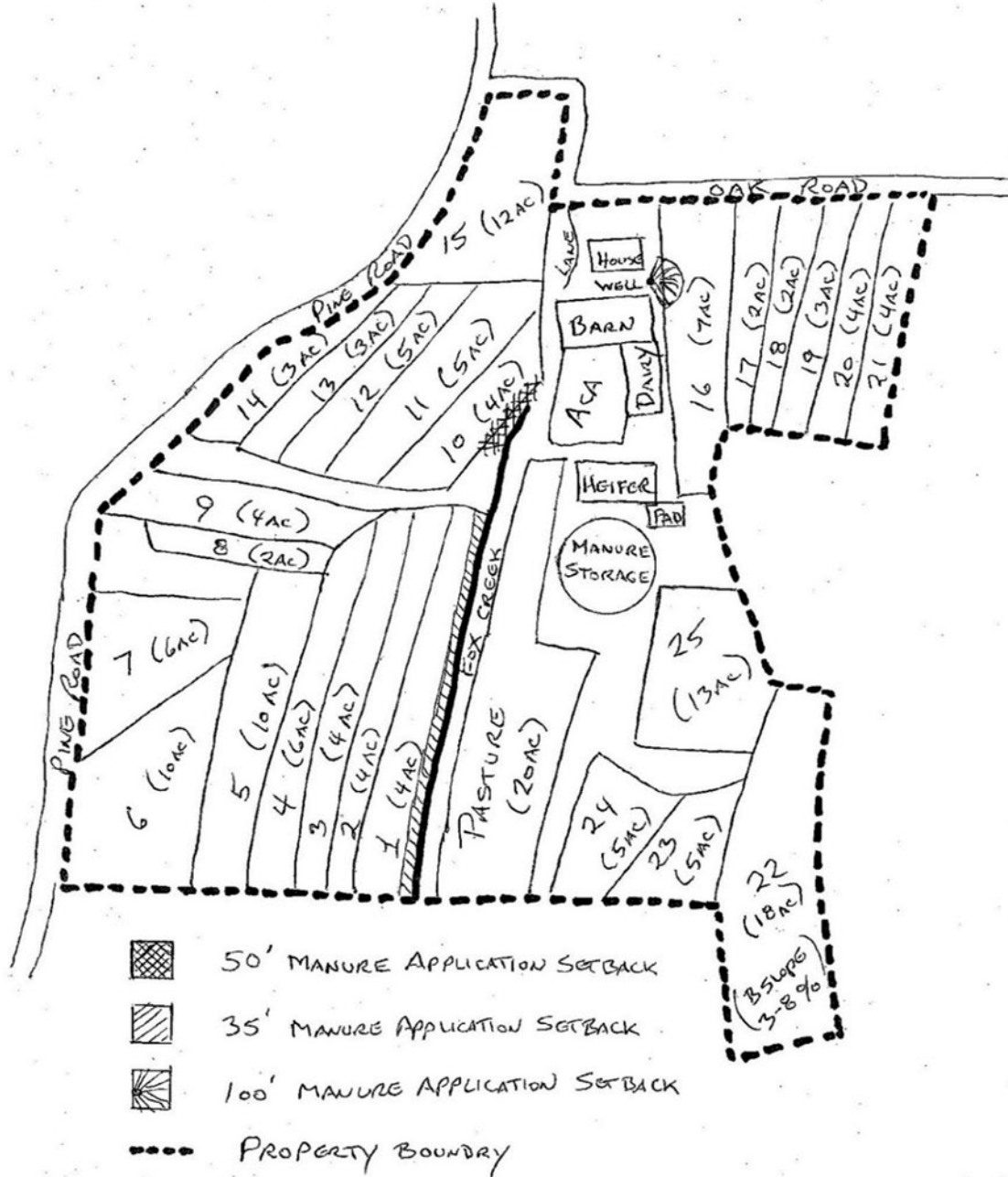
No single application can exceed 9,000 gallons unless applied in accordance with 25 Pa. Code § 83.294(e). If any application rates are greater than 9,000 gallons, then split the application into multiple applications with no evidence of pooling between applications.

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Section 3 – Operation Map

INSERT operation map
(See Workbook Instructions Page 10)

SAMPLE OPERATION MAP



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Section 4 – Manure and Agricultural Process Wastewater Storage and Stockpiling/Stacking Areas

AGRICULTURAL PROCESS WASTEWATER WORKSHEET

Use Additional Sheets as Necessary
(See Workbook Instructions Page 11)

1. Type of agricultural process wastewater generated on site (water system overflow, wash water, milkhouse wastewater, egg wash water, etc.)

Milk house wastewater

2. Agricultural process wastewater is directed to a manure or waste storage facility listed on the Manure Storage and Stacking Worksheet and land applied according to recommendations in the Manure Management Plan Summary? Yes No

a. If yes, identify the manure or waste storage facility or facilities listed on the Manure Storage and Stacking Worksheet that receive(s) the agricultural process wastewater.

N/A

b. If no, the operator should immediately contact the county conservation district, NRCS, or a private consultant for management recommendations and technical assistance. Identify the date, name, and affiliation of the contact in the space below.

Date of Contact January 27, 2022

Name and Affiliation of Contact John Brown, York County Conservation District

i. Description of management strategies for agricultural process wastewater generated on-site discussed with the county conservation district, NRCS, or private consultant.

Flouted tank & manifold waste transfer system with sized and engineered Vegetated Treatment Area

ii. Planned Implementation Date: June 15, 2022

Implemented on Date: _____

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MANURE STORAGE AND STACKING WORKSHEET

(Include Information for Each Manure Storage Facility and Stacking Area)

Use Additional Sheets as Necessary

(See Workbook Instructions Page 12)

1. Type of storage(s) and stacking area(s) (concrete or metal tank, under building structure, earthen or clay or synthetically lined pond or lagoon, exposed concrete pad, roofed solid manure stacking pad, etc.) and year(s) of construction:

Concrete circular tank constructed in 2005; Manure stacking pad constructed in 1998

- a. A copy of the professional engineer certification is kept on site for all liquid or semisolid manure storages constructed after January 29, 2000. Yes
- b. If a copy of the certification is not available, provide the date a registered professional engineer was contacted _____

2. Approximate size and volume of existing liquid and semisolid manure storages and/or the dimensions of existing stacking area(s), indicate if exposed to precipitation.

Concrete Tank 92' diameter, 11' deep (excluding freeboard of 6 inches) exposed to precipitation, 550,000 gallons capacity

Stacking pad 50' by 60', not exposed to precipitation

3. Additional materials added to the manure storage(s) or stacking area(s) including bedding, silage leachate, and/or agricultural process wastewater (see the Agricultural Process Wastewater Worksheet):

Tank - milk house water

Pad - straw bedding used for stacked manure

4. The operation maintains adequate manure storage to apply manure according to the application recommendations outlined on the Manure Management Plan Summary. Yes No

5. All manure stacking or stockpiling areas not on the farmstead meet the following criteria: Yes No

- a. At least 100 feet from environmentally sensitive areas.
- b. On properly constructed and improved stacking areas whenever possible.
- c. On the top of a hill where possible, diverting upslope water away from the areas.
- d. On less than 8% slope.
- e. Manure is dry enough to stack at least four feet in height.
- f. The volume of stacked manure is limited to the amount that can be spread on near-by fields.
- g. Covered with a water-repellant cover if it will be in place for more than 120 days.

6. Actions or best management practices needed to address identified problems related to manure storage and/or stacking and the planned implementation date (season and year) for each practice or action:

Tank - No problems found with tank

Pad - Need to direct clean water away from pad; To be completed in Spring of 2022.

MANURE MANAGEMENT PLAN WORKBOOK Section 5 – Pasture Management

PASTURE MANAGEMENT WORKSHEET (See Workbook Instructions Page 14)

List all pastures in the Manure Management Plan and identify these pastures on the operation map.

1. Identify the pasture management approach below:

- I am implementing grazing plan meeting the requirements of the Natural Resources Conservation Service Pennsylvania Technical Guide Practice Standard 528 for Prescribed Grazing.
- I am managing or will manage my pastures by the date listed below to maintain at least three (3) inches of vegetation height and 70% perennial vegetative cover when animals are present on pasture.

Date Implemented or Planned Implementation Date June 15, 2015

2. If one of the above boxes are checked and animals are excluded from streams, seeps, ponds, and other surface waters, and clean drinking water is available to all livestock meeting their daily water requirements, identify the additional information below.

Exclusion Fence Length (ft) 1,550

Average Width of Excluded Area (ft) 35

Installation Date of Fence and Watering System June 20, 2020

If any fields are overgrazed, then they must be reestablished in the next growing season or those fields should be managed as an Animal Concentration Area (See the Animal Concentration Areas Worksheet). Overgrazing means that the pasture is not meeting either of the pasture management guidelines identified in the above checkboxes.

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Section 6 – Animal Concentration Areas

ANIMAL CONCENTRATION AREAS WORKSHEET

(See Workbook Instructions Page 15)

1. Technical Assistance:

Some operations may need technical assistance to develop and implement BMPs on Animal Concentration Areas (ACAs) and/or develop a plan to minimize bare spots and maintain at least three inches of vegetation height and 70% perennial vegetative cover while animals are present on the pasture. The operator has no more than three years from the date of developing the Manure Management Plan to implement BMPs or establish pasture conditions on ACAs. DEP believes that most operations will be able to implement BMPs on a much shorter time frame but recognizes that more time may be needed for some costly BMPs.

Operators with ACAs requiring corrective actions should immediately contact the local conservation district, NRCS, or a private consultant and should document that contact and the time frame for developing and implementing BMPs.

List date contact was made to the assisting agency/party to help in these efforts: March 1, 2022

List who was contacted to assist in these efforts: John Brown, York County Conservation District

2. Describe the management strategies for any ACAs on the operation.

Installation of gutters and downspouts and heavy use area protection directing water to the concrete tank manure storage facility in the summer of 2022. Installation of fencing and stream crossing to locate congregation areas away from the stream.

3. BMP Implementation Schedule

Identify the date implemented in the "Date" row of the ACA block if BMP has been implemented. List the planned date for implementation in the "Date" row of the ACA block if the BMP is planned. Record N/A if the BMP does not apply.							
If installed, list the amount installed in the units listed in the "Amount" row of the ACA block.							
ACA Name or Location (Refer to Operation Map)	Divert clean water around ACA (Number of Systems)	Improve and stabilize the surface material of the ACA (Sq. Ft)	Direct polluted water to storage or vegetated treatment area	Limit access to streams through stabilized crossings and watering areas	Limit size of denuded areas	Locate area where animals congregate (feed areas, shade, etc.) away from streams	
ACA #1	Date	7/15/2022	7/15/2022	7/15/2022	9/15/2022	Yes	9/15/2022
	Amount	1 system	3,000 sf				
	Date						
	Amount						
	Date						
	Amount						
	Date						
	Amount						

MANURE MANAGEMENT PLAN WORKBOOK

MANURE TRANSFER RECORD JANUARY 1, 2022 THROUGH DECEMBER 31, 2022

Use Additional Sheets as Necessary
 (See Workbook Instructions Page 16)

Date	Name of Importer/Broker	Address and Phone Number Importer/Broker	Manure Group	Amount of Manure Transferred	Crop Group and Application Rate
4/20	<i>EXAMPLE</i> Bill Jones	55 Manure Road Manure Town 717-555-4567	Solid Beef	20 Tons	Unknown
4/20	Bill Jones	55 Manure Road Manure Town 717-555-4567	Solid Beef	20 tons	Unknown
10/5	Bill Jones	55 Manure Road Manure Town 717-555-4567	Solid Beef	1 tons	Unknown

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MANURE STORAGE FACILITY RECORD MONTHLY INSPECTION FORM

Use Additional Sheets as Necessary
 (See Workbook Instructions Page 16)

Storage Name	Inspection Date	Manure Depth (liquid)	Depth of Surface of Manure to Freeboard (liquid)	Leak Detection System Inspections. Are there any leaks, overflows, or seepages? Describe.	Structural Integrity. Are there cracks, erosion, slope failures, liner deterioration, rodent holes, large vegetation, excessive or lush vegetation, fencing issues, loading area issues? Describe.
<i>EXAMPLE Liquid Dairy</i>	<i>1/1/2022</i>	<i>3.5 feet</i>	<i>7.5 feet</i>	<i>None</i>	<i>No problems observed</i>
Liquid dairy	1/1/2022	3.5 feet	7.5 feet	None	No problems observed
Same	2/1/2022	5 feet	6 feet	None	Same
Same	3/1/2022	6.5 feet	4.5 feet	None	Same
Same	4/1/2022	8 feet	3 feet	None	Same
Same	5/1/2022	1 feet	10 feet	None	Same
Same	6/1/2022	2.5 feet	8.5 feet	None	Same