

Update on Actions taken by the AgBMP Technical Advisory Committee Related to WP-4 (Animal Waste Control Facilities)**Action taken by the Board on June 24, 2022**

The Virginia Soil and Water Conservation Board directs the Animal Waste Subcommittee (Subcommittee) of the AgBMP Technical Advisory Committee (TAC) to review and examine the water quality impacts of livestock manure, specifically the differences between the impact of poultry litter and livestock manures. The Subcommittee shall review the existing WP-4 standards and specifications, in addition to the Animal Waste Control Facility Needs Determination Worksheet for Livestock Waste Storage Facilities (Worksheet) provided by the Shenandoah Valley Soil and Water Conservation District, to determine the most appropriate method to evaluate the impacts of the manure. The Subcommittee shall provide their recommendation, including the standard and specification and the method used to evaluate the impacts, to the full AgBMP TAC for review and approval; the Subcommittee shall also make a recommendation on whether the revised specification and standard should be implemented during FY2023. The action and recommendation taken by the AgBMP TAC shall be presented to the Board at their December meeting.

Background

The Animal Waste Subcommittee met 5 times during this year's TAC cycle. In response to the Board's action from June, the Subcommittee focused on this item for the majority of their meetings. Significant and comprehensive discussions occurred and consensus was reached regarding the recommendations that went before the full TAC for action.

The full TAC met on October 18, 2022. The recommendations presented by the Subcommittee were approved by the TAC and these recommendations will be presented to the Board at the March 2023 meeting. The recommendations related to the WP-4 are:

- To keep the existing Risk Assessment worksheet with a few changes for the WP-4.
- To include poultry operations in the Risk Assessment. There is no technical reasons to consider poultry operations differently from other animal operations.
- To recognize that poultry operations tend to have higher nutrient loadings than other animal operations, in part due to the volume of animals on the operation.
- To amend the scoring on the Risk Assessment to increase the point value for any nutrient loads (nitrogen or phosphorus) that exceed a certain baseline load of nutrients. This more accurately accounts for the increased nutrient loads associated with poultry operations, dairies, and highly stocked feedlot type operations (beef cattle).
- Any revisions to the specification should be effective in the upcoming program year FY2024, rather than during this program year.
- Changes to the Risk Assessment will impact only the WP-4; the other animal waste practices will utilize the existing Risk Assessment with no changes.

Instruction documents were also created by the Subcommittee to assist District staff with completing the Risk Assessment. These documents will be posted on the AgBMP Tracking Module.

WP-4 Risk Assessment for Water Quality Impairment from Animal Concentrated Areas

Client's Name: _____ Farm #: _____ Tract #: _____

Livestock Type: _____ No: _____ Avg. Wt.: _____

Is the cooperator currently feeding hay or other feedstuffs from a fixed hardened location that allows for manure collection? ☐ Yes ☐ No

If yes, then describe where and how they are feeding:

If the cooperator is not feeding hay or other supplements, on a hardened location that allows for manure collection, then do not complete this form.

For those who are feeding, are alternative manure storage locations available? ☐ Yes ☐ No

Could relocation of the manure storage area reduce the risk to the water resources? ☐ Yes ☐ No

Describe the alternatives discussed with the landowner:

Describe the selected alternative:

Note: The Landowner should be informed that if the selected alternative includes manure or wastewater handling, storage, or treatment practices, a Comprehensive Nutrient Management Plan (CNMP) must be developed and implemented for the farm prior to construction of the storage facility.

Livestock Manure and Nutrient Loading Estimator

1. Manure Estimator - Input site specific data into the table below:

Select Livestock Type from the list below in Table 1:	INPUTS								OUTPUT - Waste deposited annually in concentrated area		
	A	B	C	D	E	F	G	H			
	Number of animals fed	Average animal weight (lbs)	Days in concentrated area (per year)	Portion of manure dropped in concentrated area (%)	Size of current manure storage area (ac)	Manure production rate (lbs/day per 1,000 lbs of live weight)	Total N per ton of manure	Total P ₂ O ₅ per ton of manure	Manure (tons/ac/yr)	Total N (lbs/ac/yr)	Total P ₂ O ₅ (lbs/ac/yr)
7	100	5	365	100%	0.5	16	65	52	3	192	155

2. Guidance on inputs:

Column A, B, C, D, E, are site specific and may be adjusted according to site conditions and professional judgement.

Column A: Use the number of animals on site within the Column C Days in concentrated area. For poultry production round flocks up to whole numbers.

Column D: If water is available in concentrated/feeding area, assume 60-70% drops in the area (adjust to site conditions).
If water is only available in pasture outside concentrated/feeding area, assume 40-50% drops in the area (adjust to site conditions). For confined feeding use 100% confinement.

Columns F through H (see Table 1 below) are auto-filled with appropriate values when livestock type is selected.

TABLE 1

Livestock Type	Weight	Manure lbs./day/1,000lbs.	N/ton of manure	P ₂ O ₅ /ton of manure
1: Beef Finishing	400 - 1,000	65	11	3.1
2: Beef Cow/calf	900 - 1,400	104	7	3.5
3: Non Lact. Dairy	150 - 1,500	56	10	4
4: Lactating Dairy	1100 -1,500	119	13	5.4
5: Horse	1000-1,500	52	9.6	4.2
6: Goats/Sheep	30-200	40	22.5	8
7: Chicken Broiler	3-8	16	65	52
8: Chicken Layer	7	13	48	61
9: Turkey	30	41	62	50
10: Turkey Breeder	20	6	59	61

Note: Calculation of manure weight, N, and P are associated with livestock concentrated/feeding locations. Dairy, beef, horse and sheep values are based on NRCS Agricultural Waste Management Field Handbook (AWMFH). Poultry values are based on the DCRs Virginia Nutrient Management Standards and Criteria, Revised 2014.

3. Guidance on interpreting output:

TABLE 2

Loading Rate (lbs/ac/yr) from Estimator above		Level of Concern	Water resources at risk	Loading Points
N	P2O5			
Less than 200	Less than 80	Minor	No	0
201 to 300	81-120	Moderate	Possibly	15
301 to 800	121-310	Major	Possibly	40
801 to 1000	311-390	Excessive	Possibly	80
1,001 +	390 +	Extreme	Possibly	100

	<u>Comments</u>	<u>Loading Points</u>
Loading Points:	From Table 2	100

Site Information - Receiving water feature and buffer considerations: (see exhibit 1 to determine if points are to be given in Section A below for overland flow to a vulnerable water feature or Section B below for a concentrated flow to a vulnerable water feature)

(A1) Overland Flow - Proximity to Vulnerable Water Feature:		
	<u>Comments</u>	
< 100 Feet: 40 points	<i>Distance from edge of concentrated/ feeding area to edge of a water feature which includes open sinkholes, springs, streams (perennial or intermittent), wetlands and ponds.</i>	
100- 199 Feet: 25 points		
200-300 Feet: 15 points		
>300 Feet: 0 points		
(A2) Buffer width adjacent to the selected water feature:		
	<i>A buffer is a vegetative area which effectively filters overland flow to the adjoining water feature (0-34' is not an effective buffer). Source: P Index and FOTG.</i>	
< 35 Feet: 20 points		
35 -100 Feet: 10 points		
>100 Feet: 0 points		
Sum of A1 and A2:		0

or

(B) Concentrated Flow - Does the runoff from the ACA enter a transport feature within 300 feet of the edge of the ACA?		
	<i>Transport Feature - A swale, grassed waterway, gully, or similar feature where concentrated water flow occurs. (This transport feature must flow into the vulnerable water feature in the above question)</i>	
Yes 60 points		
No 0 points		
The greater of A or B (maximum 60 points can be earned here):		0

Is the Vulnerable Water feature or Receiving Water Feature above classified as high value water?

High Value Water - A stream, lake, or estuary designated within a TMDL watershed based on the 303d Impaired Waters List, endangered species, and/or designated trout waters.

Yes = 20 points

No = 0 points

Site Information:

Scoring Boxes

Comments

Environmental Sensitivity Index:

High 15 points
Medium 10 points
Low 0 points

From DCRs *Virginia Nutrient Management Standards and Criteria, Revised 7/2014*, Table 1-4. Includes soils with leaching potential, shallow soils and poor drainage. (Use soil series at the existing HUA/ACA.)

Slope:

0-2 % 0 points
2-6% 5 points
6-15% 15 points
15-25% 25 points

General slope of the HUA/ACA from the edge of feeding area to the vulnerable water feature.

Total Score:

100

Note: If total is 120 or greater, there is a significant risk of water resource impairment. Follow the planning process to address this concern. Consider both structural and non-structural alternatives.

Definitions:

Buffer - A permanently vegetated area with a minimum width of 35 feet.

High Value Water - A stream, lake, or estuary designated within a TMDL watershed based on the 303d Impaired Waters List, endangered species, and/or designated trout waters.

Karst features - Includes sinkholes, limestone rock outcrops, and fractured limestone that are direct conduits to ground water.

Vulnerable Water Feature - An open sinkhole, stream (perennial or intermittent), spring, wetland, or pond that is receiving overland flow.

Transport Feature - A swale, grassed waterway, gully, or similar feature where concentrated water flow occurs.

HUA/ACA - Areas which have a high concentration of livestock, large amounts of waste and the inability to sustain vegetation.

Exhibit 1

