

## Glossary of Terms

**Definitions provided in this Glossary apply only to the Virginia Agricultural Cost-Share Program. Other programs or organizations may define the same terms differently.**

Acres Benefited: The number of acres on which erosion is reduced due to BMP installation and/or acreage receiving benefit from the installation of a BMP (i.e. diversions, sod waterways, etc.). See Section II of this Manual for acreage benefited for each practice.

Advisory Committee: The Virginia Agricultural Best Management Practices Technical Advisory Committee.

Agricultural Land: Defined as “land being used in a BONA FIDE program of agricultural management and engaged in the production of agricultural, horticultural or forest products for market. The real estate must consist of a minimum of five contiguous acres and have verifiable gross receipts in excess of \$1,000 per year from the production or sale of agricultural, horticultural or forest products produced on the applicant’s agricultural land for each of the past three years.

Agricultural Products: Crops, livestock and livestock products, including but not limited to: field crops, forage, fruits, vegetables, horticultural specialties, cattle, sheep, hogs, goats, horses, poultry, furbearing animals, milk, eggs and furs.

Agricultural Production: The production for commercial purposes of crops, livestock or livestock products, which includes the processing or retail sales by the producer of crops, livestock or livestock products which are produced on the parcel or in the District. For purposes of the VACS program, commercial equine operations such as breeding, boarding and training facilities are eligible for funding if they meet the necessary acreage and income requirement for each of the past three years.

Agriculturally and Forestal Significant Land: Land that has recently or historically produced agricultural and forestal products and is suitable for agricultural or forestal production or is considered appropriate to be retained for agricultural and forestal production as determined by such factors as soil quality, topography, climate, markets, farm structures, and other relevant factors.

Amount Approved by District: Determined by the District Board based on primary and secondary considerations, the cost-share rates, total estimated cost, extent approved and/or other considerations outlined in the DCR specifications.

Animal Type: The type of livestock the BMP is being installed to treat. The AgBMP Tracking Module accepts the following animal types:

Beef	Dairy	Swine	Layer	Sheep	Goat
Horse	Turkey	Broiler	Pullets	Llama	Other

Animal Unit (A.U.) or Equivalent (A.E.): One (1) A.U. or A.E. equals 1,000 lbs. of live animal weight served by the facility in a given year.

Applicant: An applicant may be a landowner, agent, or operator of record as long as the individual has control of the property and is at least 18 years of age. An applicant may be any corporation, association, partnership, or one or more individuals. Various companies, corporations, and partnership arrangements exist for farm ownership. Farm corporations (signing under Federal Tax Identification number) or partnerships operating under a farm name are classified as a single "applicant." Applicants are identified by a unique social security number and/or Federal Tax Identification number.

Application: The Virginia BMP Incentives Programs Contract (Part I – Application for Program) as generated by the VA AgBMP Tracking Module. When completed and signed, it will be considered an application to participate in the Program.

Bedded Pack: An area within the loose housing facility that provides livestock with a bedded area for resting and walking in lieu of individual stalls and concrete alleys.

CDC: Conservation District Coordinator – DCR regional staff that provide support and assistance to the Conservation Districts.

Component Cost: Cost of materials or services associated with the installation of BMPs such as fertilizer, lime, seed, obstruction removal and nitrate or soil testing.

Conservation Plan: Any DCR Conservation Plan or U.S. Department of Agriculture (USDA) Conservation Plan that addresses the soil and water quality problems of the field or site being planned. Plans for individual fields are acceptable, as are those for tracts and entire farms.

Conservation Efficiency Factor (CEF): CEF is calculated by the AgBMP Tracking Module to serve as a ranking tool and provide some guidance for ranking applications that would implement different BMPs. This tool is designed to assist Districts with the ranking of their cost share practice applications. The CEF uses eleven different components, including soil loss data that is inputted by the District, as well as the environmental information associated with the location of the practice on the property to generate a factor used to rank the proposed practice compared with other instances of the same BMPs as well as instances of other BMPs.

County Code: The Federal Information Processing Standards (FIPS) code.

District: A political subdivision of the Commonwealth organized in accordance with the provisions of the Code of Virginia contained in Chapter 5 of Title 10.1 (§ 10.1-500 et seq.) and with the powers and duties set out in Chapters 1, 5, 6, and 21 of Title 10.1 of the Code of Virginia; also referred to as a Virginia Soil and Water Conservation District.

Drainage Basin: For funding allocation purposes, the lands within the Chesapeake Bay watershed (CB - Chesapeake Bay) or the lands in the Commonwealth exclusively outside of the Chesapeake Bay watershed (OCB - Outside of the Chesapeake Bay).

Engineering Job Approval Authority (EJAA): The authority to design, inspect, or certify various BMP Practices. The level of EJAA is granted by the DCR Agricultural BMP Engineer(s) to individuals based on their training, experience and demonstrated competence.

Erosion Reduction: For all practices, except grass filter strips, animal waste facilities, and water control structures, specify reduction in tons per acre. Some practices will have sheet and rill erosion, gully erosion, or both. Any wind erosion should be added to sheet and rill.

- For Grass Filter Strips (WQ-1), use the procedure outlined starting on page **WQ-1-4**.
- For Animal Waste Facilities (WP-4), specify total tons of manure treated on an annual basis.
- For Water Control Structures (WQ-5), disregard soil loss calculations, distance and relief to stream. Extent Requested and Extent Technically Authorized should indicate acreage of drainage area behind each structure.

Erodibility Index (EI): An index calculated as part of the Virginia GIS project was used prior to program year 2009 as a priority consideration. This index calculated the effects of soil productivity on water quality. Since many of the factors involved in calculating the EI have been superseded by more recent and more accurate data, new priority considerations were identified beginning in program year 2009.

Established Vegetation: A viable stand of vegetation that is currently growing with vigor or has been vigorously growing but is now dormant (not dead). The dormant stand has a population density that makes it probable that the vegetation will result in a long-term coverage of 80% or more of the soil surface throughout the area of concern, unless otherwise noted in the DCR practice specifications. This definition should be used where established vegetation is essential for the operation and design function of a practice installed according to NRCS specifications.

Extreme Act of Nature (EAN): Some sudden and irreversible act of nature that could not have reasonably been foreseen or prevented. Examples include floods, drought, fire, and exceptional storms like hurricanes and tornados. Generally such events should be supported or documented by actions that could include a Governor's drought disaster designation or weather records that document excessive rainfall, floods, tornados or other such events.

Forestal Production: The production for commercial purposes of forestal products, and includes the processing or retail sales by the producer, of forestal products that are produced on the parcel. "Forestal products" include, but are not limited to, saw timber, pulpwood, posts, firewood, Christmas trees and other tree and wood products for sale or for farm use.

Free Stall: A structure that is divided into stalls in which individual animals rest, but are not restrained. A free stall facility is not eligible under the VACS Program.

Fully Implemented Nutrient Management Plan: For those practices requiring a "fully implemented nutrient management plan" as part of the practice specifications, a "fully implemented nutrient management plan" is defined as:

1. The plan is written by a current Virginia-certified nutrient management planner.
2. The producer agrees, by a signed document, that as the plan is written, the producer will be able to follow the crop rotation and all the nutrient recommendations on all fields signed up for this practice (at sign-up or prior to payment). The producer signature on a plan cover sheet is sufficient to meet this requirement.

Gross Erosion Reduction: Typically used to report soil lost from gullies. Determined by multiplying length, times width, times depth of the existing erosion gulley, times the specific weight of soil present, and then divided by the number of years of erosion that were required to create the gully condition. The result is reported in Tons of Soil Loss per year. Where applicable, gross annual erosion other than sheet and rill erosion may be calculated using RUSLE 2.

Hardship: A highly unusual situation (e.g. life-threatening illness, bankruptcy or some other highly unusual circumstance) where a participant desires forgiveness of the requirement to make repayment of cost-share associated with a Practice Failure.

Highly Managed Hayland: A production system in which cropland dedicated to hay production is not grazed and is managed in accordance with a Nutrient Management Plan. If grass-based, the participants must produce at least two cuttings a year of hay and may have a nitrogen application for each cutting. If legume based (e.g. alfalfa), the participant is exempt from the nitrogen application and is eligible for phosphorus management under NM-5P.

Horticultural Production: The production for commercial purposes of horticultural products, and includes the processing or retail sales, by the producer, of horticultural products that are produced on the parcel. "Horticultural products" includes, but is not limited to, fruits of all kinds, grapes, nuts, berries, and nursery and floral products for sale or for farm use.

Hydrologic Unit: Drainage areas that are delineated so as to nest into a multi-level hierarchical drainage system. Aside from the surface waters that are collected within the boundary of a hydrologic unit, it may also accept water from one or more points outside of the unit's boundary. Hydrologic units should be identified by using the four-digit alphanumeric Nation Watershed Boundary Dataset (NWBD) code found on a DCR hydrologic unit map.

Karst: A landscape occurring in areas with limestone or other soluble bedrock, characterized by features such as sinkholes, springs, sinking streams, and caves.

Land Capability: The suitability of land for use without permanent damage occurring. Land capability, as ordinarily used in the United States, is an expression of the effect of physical land conditions, including climate, on the total suitability for use without damage from crops that require regular tillage, for grazing, for woodland and for wildlife. Land capability involves consideration of: (1) the risks of land damage from erosion and other causes and (2) the difficulties in land use owing to physical land characteristics, including climate.

Land Capability Classifications: A grouping of kinds of soils into special units, classes, and subclasses according to their capability for intensive land treatments required for sustained use; USDA or other qualified Soil Scientist usually prepare such classifications.

Landowner or Owner of Land: Any person holding a fee simple interest in property but does not include the holder of an easement.

Lifespan: The number of years a BMP must be maintained in accordance with Program standards. The lifespan begins on January 1 of the calendar year following the year of certification of completion. A BMP is subject to spot check throughout the practice lifespan.

Live Stream or Live Water: A creek, stream, river or other water feature which has surface flow or creates a surface flow for a substantial portion of the year.

Loose Housing: A structure that allows animals to move freely within the structure and may include components such as a bedded pack and feed alley.

Piggyback funding: A joint cost-share procedure that allows for a percentage payment on a specific component of a BMP where the county FSA or NRCS payment is below the state VACS payment maximum or cap.

Revised Universal Soil Loss Equation (RUSLE): A soil loss equation principally used to estimate the rate that erosion is removing soil from critical parts of the landscape. Current NRCS guidance utilizes RUSLE 2 to calculate sheet and rill erosion.

Social Security Number (SSN): Recorded in the AgBMP Tracking Module and displayed on the BMP Incentives Programs Contract Part I. If an applicant is incorporated, use the Federal Employee's I.D. Number instead of the SSN. Refer to Definition of Applicant or Participant section of the BMP guidelines for further explanation.

Soil Sampling by Grid or Grid Soil Sampling: The taking of in-field soil samples based upon a grid overlay. Each grid may be no larger than four acres.

Soil Sampling by Zone or Zone Soil Sampling: The taking of in-field soil sample based upon soil type. Zones may be no larger than 20 acres in size.

Specialty Crop (for the purpose of the Virginia Agricultural Cost-Share Program only): Vegetables, tree crops, perennial vine crops, ornamentals, horticultural crops, tobacco, hemp, turf, small grain, and other similar crops.

Tons Waste Treated: Annual total of waste managed by the system expressed as tons per year. This does not refer to the design capacity of the structure, but the cumulative total of manure for a 12-month period.

Total Actual Cost: For flat rate practices, multiply the rate times the extent installed. For all other practices, the total of all eligible components as verified with receipts submitted to and reviewed by District conservation technicians or other technically competent conservation professionals. Though actual cost may exceed the amount authorized, only the authorized cost-share amount may be paid. For flat rate plus percentage of component cost practices (FR-1, FR-3, SL-1 and SL-3), enter acres technically authorized times the flat rate incentive payment PLUS the total cost of all eligible components.

Total Estimated Cost: Refers to total estimated eligible cost. Do not include estimated cost for ineligible components. The total estimated cost shall be determined by designated technically competent personnel. For flat rate practices, multiply the estimated eligible cost per unit times the extent requested at signup, then update that value to the estimated eligible cost per unit times the extent actually installed, or the actual producer cost based on receipts, if necessary. The AgBMP Tracking Module will calculate the applicable cost-share rate (e.g. 75%) for eligible components.

Total Maximum Daily Load (TMDL): A calculation of a maximum amount of a pollutant that a waterbody can receive and still meet water quality standards.

USGS Topographic Map Name: The name of the U.S. Geological Survey (USGS) 7-1/2 minute quadrangle sheet that covers the area where a BMP practice is located.

Verification: A check of the BMP's viability during the program lifespan conducted by District personnel under the guidance of the Conservation District Coordinator. Also known as "spot check".  
Water Quality Index (WQI): An index calculated as part of the Virginia GIS project that was used prior to program year 2009 as a priority consideration. The WQI calculated an erosion index with a delivery ratio to measure the effects of erosion on water quality. Since many of the factors involved in calculating the WQI have been superseded by more recent and more accurate data new priority considerations were identified beginning in program year 2009.

### **Applicant's Self-Certification of Eligibility**

For the purposes of the Virginia Agricultural BMP Cost-Share Program, agricultural land shall be defined as “land being used in a BONA FIDE program of agricultural management and engaged in the production of agricultural, horticultural or forest products for market”. The real estate must consist of a minimum of five contiguous acres and have verifiable gross receipts in excess of \$1,000 per year from the production or sale of agricultural, horticultural or forest products produced on the applicant's agricultural land for each of the past three years.

Districts may request that applicants provide proof of agricultural production. To be considered an agricultural producer, there must be an annual minimum of \$1,000 of agricultural products being produced, sold, or both from the applicant's agricultural land (non-industrial private forest lands are exempt from the \$1,000 requirement). Any financial records supplied by an applicant to verify eligibility will not be duplicated or retained by the District.

I have read, understand, and certify that I meet the above defined qualifications to participate in the Virginia Agricultural Best Management Practice Cost-Share Program.

\_\_\_\_\_  
Signature of Applicant

\_\_\_\_\_  
Date

**NUTRIENT APPLICATION FIELD RECORD SHEET**

Farm Name: \_\_\_\_\_ FSA Farm #: \_\_\_\_\_ FSA Tract #: \_\_\_\_\_ FSA Field #(s): \_\_\_\_\_  
 Manure Type: (poultry, liquid dairy, swine, etc.) \_\_\_\_\_ Crop: \_\_\_\_\_ Acres: \_\_\_\_\_

Manure/Biosolids				Commercial Fertilizer/Lime								
Date	Incorporation <sup>1</sup> Time	Acres Applied	Actual Rate/acre	Fertilizer Material						Lime		
				Date	N	P <sub>2</sub> O <sub>5</sub>	K <sub>2</sub> O	Rate/Acre	Method <sup>2</sup>	Date	Ton(s)/Acre	

<sup>1</sup> Incorporation: Immediate, greater than two days, (>2 days), >4 days, or > 7 days      <sup>2</sup> Starter=ST, Broadcast= BR, Top Dress=TD, Side Dress = SD

Farm Name: \_\_\_\_\_ FSA Farm #: \_\_\_\_\_ FSA Tract #: \_\_\_\_\_ FSA Field #(s): \_\_\_\_\_  
 Manure Type: (poultry, liquid dairy, swine, etc.) \_\_\_\_\_ Crop: \_\_\_\_\_ Acres: \_\_\_\_\_

Manure/Biosolids				Commercial Fertilizer/Lime								
Date	Incorporation <sup>1</sup> Time	Acres Applied	Actual Rate/acre	Fertilizer Material						Lime		
				Date	N	P <sub>2</sub> O <sub>5</sub>	K <sub>2</sub> O	Rate/Acre	Method <sup>2</sup>	Date	Ton(s)/Acre	

<sup>1</sup> Incorporation: Immediate, greater than two days, (>2 days), >4 days, or > 7 days      <sup>2</sup> Starter=ST, Broadcast= BR, Top Dress=TD, Side Dress = SD



**NUTRIENT APPLICATION FIELD RECORD SHEET**

Farm Name: Henry Jones FSA Farm #: 213 FSA Tract #: 5431 FSA Field #(s): 5  
 Manure Type: (poultry, liquid dairy, swine, etc.) Liquid Dairy Crop: Corn / Wheat Acres: 10

Manure/Biosolids				Commercial fertilizer/lime							
Date	Incorporation <sup>1</sup> Time	Acres Applied	Actual Rate/acre	Fertilizer Material						Lime	
				Date	N	P <sub>2</sub> O <sub>5</sub>	K <sub>2</sub> O	Rate/Acre	Method <sup>2</sup>	Date	Ton(s)/Acre
4/30/09	>7 days	10	7,200 gals.	5/12/09	15	0	15	100 lbs	ST	3/10/09	1
				6/15/09	30	0	0	300 lbs	SD		
				10/20/09	10	20	20	250 lbs	BR		

<sup>1</sup> Incorporation: Immediate, greater than two days, (>2 days), >4 days, or > 7 days      <sup>2</sup> Starter=ST, Broadcast= BR, Top Dress=TD, Side Dress = SD

Farm Name: Henry Jones FSA Farm #: 213 FSA Tract #: 5431 FSA Field #(s): 6  
 Manure Type: (poultry, liquid dairy, swine, etc.) Crop: Liquid Dairy Crop: Sudangrass/ Barley Acres: 40

Manure/Biosolids				Commercial Fertilizer/Lime							
Date	Incorporation <sup>1</sup> Time	Acres Applied	Actual Rate/acre	Fertilizer Material						Lime	
				Date	N	P <sub>2</sub> O <sub>5</sub>	K <sub>2</sub> O	Rate/Acre	Method <sup>2</sup>	Date	Ton(s)/Acre
4/25/09	>2 days	40	3,000 gals	6/15/09	30	0	0	200 lbs	TD		
				10/20/09	10	20	20	200 lbs	TD		

<sup>1</sup> Incorporation: Immediate, greater than two days, (>2 days), >4 days, or > 7 days      <sup>2</sup> Starter=ST, Broadcast= BR, Top Dress=TD, Side Dress = SD



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

Client's Name: \_\_\_\_\_ Farm #: \_\_\_\_\_ Tract #: \_\_\_\_\_

Livestock Type: \_\_\_\_\_ No: \_\_\_\_\_ Avg. Wt.: \_\_\_\_\_

Is the cooperater 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 cooperater 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

I. **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	Manure (tons/ac/yr)	Total N (lbs/ac/yr)	Total P <sub>2</sub> O <sub>5</sub> (lbs/ac/yr)
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 <sub>2</sub> O <sub>5</sub> per ton of manure				
▼	100	5	365	100%	0.5	16	65	52	<b>3</b>	<b>192</b>	<b>155</b>

### 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 <sub>2</sub> O <sub>5</sub> /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

**Comments** **Loading Points**

Loading Points: From Table 2

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)

<b>(A1) Overland Flow - Proximity to Vulnerable Water Feature:</b>		<u>Comments</u>	
<p>&lt; 100 Feet: 40 points                      100- 199 Feet: 25 points                      200-300 Feet: 15 points                      &gt;300 Feet: 0 points</p>	<p><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></p>		
<b>(A2) Buffer width adjacent to the selected water feature:</b>			
<p>&lt; 35 Feet: 20 points                      35 -100 Feet: 10 points                      &gt;100 Feet: 0 points</p>	<p><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></p>		
<b>Sum of A1 and A2:</b>			<b>0</b>

**or**

<b>(B) Concentrated Flow - Does the runoff from the ACA enter a transport feature within 300 feet of the edge of the ACA?</b>			
<p>Yes 60 points                       No 0 points</p>	<p><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></p>		
<b>The greater of A or B (maximum 60 points can be earned here):</b>			<b>0</b>

**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:**

**0**

**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.

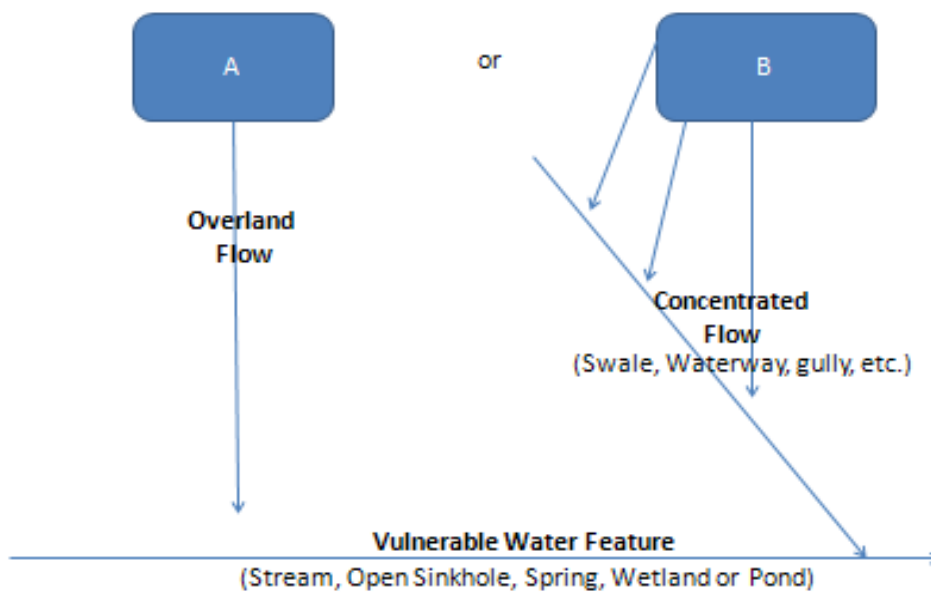
**Karst features** - Includes sinkholes, limestone rock outcrops, and fractured limestone that are direct conduits to ground water.

**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



## Risk Assessment for Water Quality Impairment from Heavy Use Areas/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 location?  Yes  No

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

If the cooperator is not feeding hay or other supplements, then do not complete this form.

For those who are feeding, are alternative concentrated feeding locations available? Could  Yes  No  
relocation of the concentrated feeding 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.**



## VA NRCS Concentrated/Feeding Livestock Area 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	Manure (tons/ac/yr)	Total N (lbs/ac/yr)	Total P <sub>2</sub> O <sub>5</sub> (lbs/ac/yr)
Number of animals fed	Average animal weight (lbs)	Days in concentrated area (per year)	Portion of manure dropped in concentrated area (%)	Size of concentrated area (ac)	Manure production rate (lbs/day per 1,000 lbs of live weight)	Total N per ton of manure	Total P <sub>2</sub> O <sub>5</sub> per ton of manure				
6 ▼	100	75	250	90%	0.25	40	22.5	8	135	3,038	1,080

### 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 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).

Column E: The concentrated feeding area includes the feeding pad plus the total surrounding area with < 60% cover.

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 <sub>2</sub> O <sub>5</sub> /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

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).

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	75
1,001 +	390 +	Extreme	Possibly	80

**Loading Points:**
Comments  
From Table 2
Loading Points

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 100- 199 Feet: 25 points 200-300 Feet: 15 points >300 Feet: 0 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>		<input style="width: 100%; height: 100%;" type="text"/>
(A2) Buffer width adjacent to the selected water feature:			
< 35 Feet: 20 points 35 -100 Feet: 10 points >100 Feet: 0 points	<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>		<input style="width: 100%; height: 100%;" type="text"/>
<b>Sum of A1 and A2:</b>			<b>0</b>

or

(B) Concentrated Flow - Does the runoff from the ACA enter a transport feature within 300 feet of the edge of the ACA?		
Yes 60 points  No 0 points	<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>	<input style="width: 100%; height: 100%;" type="text"/>
<b>The greater of A or B (maximum 60 points can be earned here):</b>		<b>0</b>

**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:**

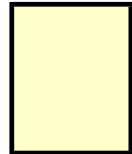
**Scoring Boxes**

Comments

**Environmental Sensitivity Index:**

High 15 points  
 Medium 10 points  
 Low 0 points

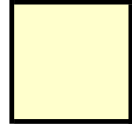
From DCRs *Virginia Nutrient Management Standards and Criteria, Revised 10/2005*, Table 1-4. Includes soils with leaching potential, shallow soils and poor drainage. (Use soil series at the existing HUA/ACA.)



**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:**

0

**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.

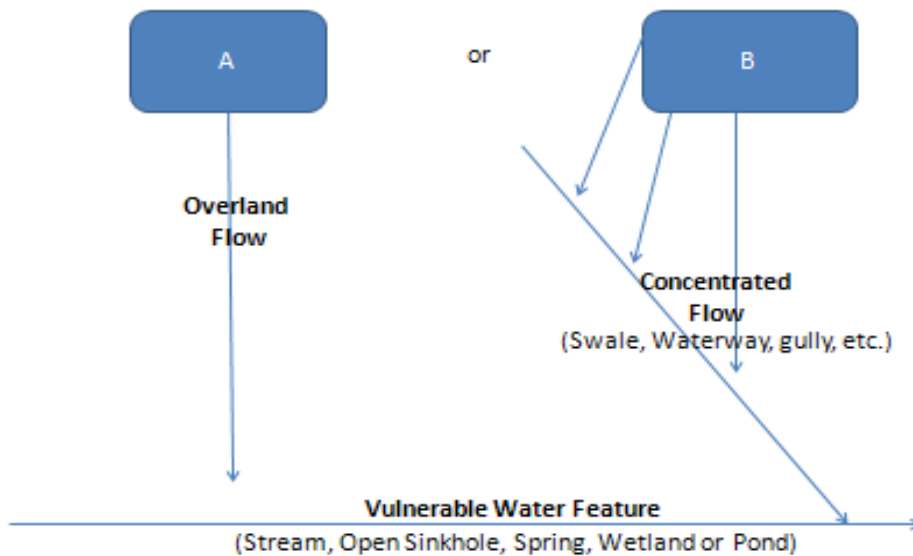
**Karst features** - Includes sinkholes, limestone rock outcrops, and fractured limestone that are direct conduits to ground water.

**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





## VIRGINIA AGRICULTURAL VOLUNTARY BEST MANAGEMENT PRACTICE (BMP) ASSESSMENT AUTHORIZATION

Land owner or manager having control of the land where BMPs are implemented:

Name: \_\_\_\_\_ Phone: (H) \_\_\_\_\_ (M) \_\_\_\_\_

Email: \_\_\_\_\_ Address: \_\_\_\_\_

Person to Contact (if different than above): \_\_\_\_\_

Phone (H): \_\_\_\_\_ (M) \_\_\_\_\_ Email: \_\_\_\_\_

I hereby authorize staff from the \_\_\_\_\_ Soil and Water Conservation District, access to the following farm(s) for purpose of conducting on site assessment(s) of BMPs that may be documented and reported to project reductions of nonpoint source pollutants that impact water quality. Check one:

- SWCD staff must contact me prior to accessing the named farm(s) and performing any site assessment(s) of one or more farms
- SWCD staff have my permission to access the named farm(s) at any time over the next 5 years to perform any site assessment(s) without contacting me

Farm #1 Name: \_\_\_\_\_, located (provide sufficient explanation to ensure the location of authorized land is clear):  
\_\_\_\_\_  
\_\_\_\_\_

Farm #2 Name: \_\_\_\_\_, located (provide sufficient explanation to ensure the location of authorized land is clear):  
\_\_\_\_\_  
\_\_\_\_\_

(Use the reverse side of this sheet if additional farms are authorized for BMP assessment and reporting)

Printed Name of Land owner or manager having control of the land where BMPs are implemented \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**I understand that my authorization remains in effect until I revoke such authorization**

Any information collected pursuant to section §2.2-220.3 of the Code of Virginia shall be exempt from the Freedom of Information Act (§2.2-3700 et seq.) Virginia Department of Conservation and Recreation programs, activities, and employment opportunities are available to all people regardless of race, color, religion, sex, age, national origin, or political affiliation. An equal opportunity/ affirmative action employer.

Farm #3 Name: \_\_\_\_\_, located (provide sufficient explanation to ensure the location of authorized land is clear):

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Farm #4 Name: \_\_\_\_\_, located (provide sufficient explanation to ensure the location of authorized land is clear):

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Farm #5 Name: \_\_\_\_\_, located (provide sufficient explanation to ensure the location of authorized land is clear):

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Farm #6 Name: \_\_\_\_\_, located (provide sufficient explanation to ensure the location of authorized land is clear):

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Farm #7 Name: \_\_\_\_\_, located (provide sufficient explanation to ensure the location of authorized land is clear):

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Farm #8 Name: \_\_\_\_\_, located (provide sufficient explanation to ensure the location of authorized land is clear):

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Farm #9 Name: \_\_\_\_\_, located (provide sufficient explanation to ensure the location of authorized land is clear):

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Any information collected pursuant to section §2.2-220.3 of the Code of Virginia shall be exempt from the Freedom of Information Act (§2.2-3700 et seq.) Virginia Department of Conservation and Recreation programs, activities, and employment opportunities are available to all people regardless of race, color, religion, sex, age, national origin, or political affiliation. An equal opportunity/ affirmative action employer.