

Attachment C

Pennsylvania Department of Environmental Protection Request for Technical Assistance from VA Tech Cooperative Agreement

In addition, Pennsylvania would like to request consideration for approximately 240 hours of technical assistance from the Virginia Tech Cooperative Agreement. Funds would be used to support the design of statistical procedures to support BMP verification protocols. The primary focus would be to employ statistics to develop verification procedures for BMPs that may involve large numbers, making review of every established BMP very difficult. For example, to verify tree planting, rather than visit possibly thousands of tree planting sites, could statistics be developed to guide obtaining a small sample that would be used to determine practice lifespan and support a process and calculations for reporting BMP numbers for progress runs?

Virginia Department of Environmental Quality Request for Technical Assistance: VA Tech Cooperative Agreement

Summary:

The Commonwealth of Virginia, in partnership with Virginia Tech, is seeking technical assistance to determine the level of verification sub-sampling that is required to implement an effective and efficient verification protocol across all source sectors.

Background:

Chesapeake Bay Program has developed a basinwide framework for strengthening verification of best management practices (BMPs) in the Bay Watershed. The framework provides the structure within which Bay Program partners, including Virginia, will develop verification protocols that improve the consistency and reliability of BMP data. Increased quality and transparency of data will bolster public confidence in local implementation efforts, ensure that Virginia receives credit for all nutrient and sediment reduction actions taken, and improve future processes to plan and target conservation practices and/or strategies.

Scope of Work:

Within the context of Virginia's BMP Verification Protocol, which is still under development, there is a need to document the procedures used to validate the continued existence of BMPs and their ongoing performance within the Bay watershed. As currently envisioned, Virginia's program would group related practices and verify a statistically appropriate sub-sample of each group by onsite inspection or another appropriate mechanism. The subsequent results would be assumed to represent the verification level of the larger pool of grouped practices.

Within each sector (Agriculture, Urban, Onsite & Forestry), Virginia has begun grouping BMPs into categories that best account for practice type, implementation processes, susceptibility of the practice to failure, and verification method. Virginia anticipates that across all sectors, there will be approximately 40 groups of BMPs.

For each group of BMPs for which sub-sampling is a viable verification approach, a level of sub-sampling that is statistically representative of the overall group must be determined. We

anticipate the determination of the sub-sampling level and frequency thereof may take into consideration the following factors: existing implementation levels and anticipated rates of future implementation, lifespan duration, proclivity to failure before and after the lifespan has expired, historical results of practice spot checks, proposed method of verification, and scale of reporting, among others. To this end, Virginia requests technical assistance in determining the rate of verification sub-sampling as it applies to each group of BMPs. Available data to support these considerations as well as others identified by the contractor will be provided along with the final BMP groups.

The matrix included below conceptually shows anticipated results of this study. This level of detail will demonstrate how Virginia's current verification procedures can be incorporated into the new verification protocol and/or how they can be adjusted to meet CBPO standards. Furthermore, new verification programs can be designed for gradual implementation towards increasing confidence levels.

		Confidence Level				
		95	90		80	
		+/- 5	+/- 5	+/- 10	+/- 5	+/- 10
Sector 1	BMP Group A	% sub-sample and frequency	% sub-sample and frequency	% sub-sample and frequency	% sub-sample and frequency	% sub-sample and frequency
	BMP Group B	% sub-sample and frequency	% sub-sample and frequency	% sub-sample and frequency	% sub-sample and frequency	% sub-sample and frequency
	BMP Group C	% sub-sample and frequency	% sub-sample and frequency	% sub-sample and frequency	% sub-sample and frequency	% sub-sample and frequency
Sector 2	BMP Group A	% sub-sample and frequency	% sub-sample and frequency	% sub-sample and frequency	% sub-sample and frequency	% sub-sample and frequency
	BMP Group B	% sub-sample and frequency	% sub-sample and frequency	% sub-sample and frequency	% sub-sample and frequency	% sub-sample and frequency
	BMP Group C	% sub-sample and frequency	% sub-sample and frequency	% sub-sample and frequency	% sub-sample and frequency	% sub-sample and frequency
Sector 3	BMP Group A	% sub-sample and frequency	% sub-sample and frequency	% sub-sample and frequency	% sub-sample and frequency	% sub-sample and frequency
	BMP Group B	% sub-sample and frequency	% sub-sample and frequency	% sub-sample and frequency	% sub-sample and frequency	% sub-sample and frequency
	BMP Group C	% sub-sample and frequency	% sub-sample and frequency	% sub-sample and frequency	% sub-sample and frequency	% sub-sample and frequency
Sector 4	BMP Group A	% sub-sample and frequency	% sub-sample and frequency	% sub-sample and frequency	% sub-sample and frequency	% sub-sample and frequency
	BMP Group B	% sub-sample and frequency	% sub-sample and frequency	% sub-sample and frequency	% sub-sample and frequency	% sub-sample and frequency
	BMP Group C	% sub-sample and frequency	% sub-sample and frequency	% sub-sample and frequency	% sub-sample and frequency	% sub-sample and frequency

Timeline:

May 1 – Statistical Sub-Sampling Analysis due to DEQ

June 1 – Draft BMP Verification Protocol due for DEQ internal review

June 23 – Draft BMP Verification Protocol due to BMP Verification Panel

September 10 - Final BMP Verification Protocol due for DEQ internal review

October 1 – Final BMP Verification Protocol due to BMP Verification Panel and EPA