

Comments related to the document entitled
“6/3/2013 Draft Review by STAC BMP Verification Subgroup”

August 16, 2013

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Background:

In early June 2013, a six member STAC BMP Verification Subgroup (the committee) was tasked with reviewing a specific section (Partnership Process for Evaluation and Oversight) of a forthcoming draft BMP Verification Framework. On June 18, 2013 Rich Batiuk met via conference call with a portion of the committee (Benham, Sample and Yagow) and provided additional background about the on-going BMP verification planning work the CBP and the Partnership has been engaged in, and helped to clarify the charge to the committee. The members of the committee that were available had additional meetings via teleconference on June 28th, again on July 30th (again with Rich Batiuk on the call), and on August 7th to further discuss our review.

On July 15, 2013, the CBP released the draft CBP BMP Verification Framework (BMP Verification Committee, 2013). The framework was developed by the Partnership over a two-year period through their participation in various goal implementation teams (GIT) and sector-specific workgroups. In the draft framework, BMP verification is defined as

“the process through which agency partners ensure practices, treatments, and technologies resulting in reductions of nitrogen, phosphorus, and/or sediment pollutant loads are implemented and operating correctly.”

The framework document also states that the purpose of BMP verification is to

“...strengthen our [the public’s] confidence in local implementation efforts to ensure they are designed to help land owners, municipalities, and facility managers take the actions necessary to protect their properties, lands, riparian habitats, and local streams.”

The BMP verification framework (BMP Verification Committee, 2013) details a set of five guiding principles (Table 1) the Partnership has committed to adhere to when developing BMP verification protocols, a few very general sector-specific BMP verification protocols, and the process by which the implementation of the BMP verification framework will be evaluated. Detailed BMP-specific protocols have yet to be developed, and under the proposed design, the detailed verification protocols will be developed by each of the Partnership’s jurisdictions using guidance from the GIT’s source-sector workgroups. As a result, the draft verification framework did not include any specific examples of BMP verification protocols, nor did it discuss in detail the process of implementing BMP verification.

Given the lack of detail and the absence of specific examples of verification protocols, the committee found it difficult to review and comment on the evaluation and oversight process. As result, the committee believed it necessary to provide an overarching recommendation as to how BMP verification protocols should be developed and implemented. That recommendation is provided below, and is used as reference when commenting on the proposed BMP verification evaluation and oversight process. The detailed BMP verification design suggestions offered by the committee are not unique. Many of these recommendations echo those already made to the Water Quality GIT Ag Workgroup (BMP Verification Committee, 2013; Appendix P) and those outlined in the December 17, 2012 letter from the CAC to the CBP. Overall, the committee supports the CBP goal that the BMP verification process should be focused on developing implementable verification protocols that are periodically and rigorously evaluated to ensure that jurisdiction-reported BMPs have been implemented and are performing as intended.

Table 1 Chesapeake Bay BMP Verification Principles (BMP Verification Committee, 2013)

Principle	Description
Practice Reporting	Affirms that verification is required for practices, treatments, and technologies reported for nitrogen, phosphorus, and/or sediment pollutant load reduction credit through the CBP partnership. This principle also outlines general expectations for verification protocols.
Scientific Rigor	Asserts that verification should assure effective implementation through scientifically rigorous and defensible, professionally established and accepted sampling, inspection, and certification protocols. Recognizes that verification shall allow for varying methods of data collection that balance scientific rigor with cost-effectiveness and the significance of or priority placed upon the practice in achieving pollution reduction.
Public Confidence	Calls for verification protocols to incorporate transparency in both the processes of verification and tracking and reporting of the underlying data. Recognizes that levels of transparency will vary depending upon source sector, acknowledging existing legal limitations and the need to respect individual confidentiality to ensure access to non-cost shared practice data.
Adaptive Management	Recognizes that advancements in Practice Reporting and Scientific Rigor, as described above, are integral to assuring desired long-term outcomes while reducing the uncertainty found in natural systems and human behaviors. Calls for verification protocols to recognize existing funding and allow for reasonable levels of flexibility in the allocation or targeting funds.
Sector Equity	Calls for each jurisdiction's program to strive to achieve equity in the measurement of functionality and effectiveness of implemented BMPs among and across the source sectors.

General comments addressing BMP verification protocol design and development:

To adhere to the Chesapeake Bay BMP Verification Principles (table 1), the committee recommend that the CBP:

- 1) Measure not only numbers of BMPs, but also appropriate indicators/outcomes of BMP adoption. Examples of indicators/outcomes might include soil P levels and more robust water quality monitoring at finer geographical scales.
- 2) Base BMP verification protocols on sound statistical sampling designs that consider, among other things, the objectives to be achieved, the populations being sampled, and the desired level of confidence/accuracy to be attributed to the data and conclusions drawn from the data.
- 3) Engage independent entities with appropriate expertise to design and implement BMP verification protocols (e.g., NASS has expertise in designing and executing producer surveys, academic partners could work with the CBP or jurisdictions in developing statistically-based monitoring designs, state agencies or USGS could perform additional water quality monitoring).
- 4) Focus verification in areas and/or towards specific BMPs that have the most impact on water quality.
- 5) Decouple BMP verification from BMP accounting for input into the CBWM (The timing of verification cycles and verification methods may not be compatible with generating data for the NEIEN system. Verification information and inferences from verification data can be used to adjust model input data if warranted.).

Specific comments addressing Section 12 "Partnership Process for Evaluation and Oversight" in the draft BMP Verification Committee report released July 15, 2013 (BMP Verification Committee, 2013):

Note: these comments address each sub-heading within Section 12. Comments 1- 7 address issues related to *Ongoing Decision-Making Roles within the CBP Partnership*. Comments 8 – 14 address issues related to *Evaluation and Oversight Procedures and Processes*.

Ongoing Decision-Making Roles within the CBP Partnership

1. CBP BMP Verification Review Panel: This panel appears to be an appropriate consensus group to assess the strengths and weaknesses in the seven jurisdictions' verification programs and whether the verification rigor is consistent across source sectors. However, since each source sector workgroup is intimately acquainted with the details of the various options within its own protocols, it seems to make sense to first have each source-sector workgroup compare verification protocols across all seven watershed jurisdictions for their sector-specific BMP verification protocols, and then make recommendations to the Panel for final evaluation. The source-sector workgroups could provide nuanced insights into the comparisons that might otherwise be overlooked by the Panel, or provide corrective recommendations for unintended applications of their protocols.
2. CBP Principals Staff Committee (PSC): The committee recommends that the PSC consult with the independent BMP verification protocol designers (see general comment # 3, previous section) before recommending changes and/or approving jurisdiction verification programs.
3. Chesapeake Bay Program Advisory Committees: Specifics about which committees will review what and when should be determined and specified in the BMP verification framework documentation. How the EPA, CBP, and jurisdictions will respond (including timeframe) to comments and critiques from the various committees should be specified.
4. Chesapeake Bay Program's Technical Workgroups: The role of the various technical workgroups appears to be consistent with current roles. The committee would, however, recommend that the expert panels, used to review and approve new and revised BMPs, not be charged with developing BMP verification protocols. The committee suggests instead that new BMP verification protocol development be performed by an independent entity with appropriate statistical and sampling design expertise, in consultation with the appropriate source-sector workgroup. It is likely that BMP verification protocols can be grouped rather than having a unique protocol for each. Given that the source-sector verification workgroups include representatives from each jurisdiction, asking the workgroups to perform this task will encourage developing BMP verification protocols that are achievable across all jurisdictions. Having said that, the committee believes it is a good idea to ask the BMP expert panels to suggest potential verification protocols as they develop their performance recommendation. The committee further recommends that the BMP expert panels be made up of those individuals with expertise relevant to the BMP and pollutant reduction mechanism being considered. Participation of state and federal program staff/managers on these panels should be limited.
5. Chesapeake Bay Program's Water Quality Goal Implementation Team (WQGIT): The role of the WQGIT appears to be consistent with the current role. Again though, the committee recommends that the WQGIT and the various workgroups not be charged with developing BMP verification protocols. The committee strongly suggests that the recommended independent entity be used to design BMP verification protocols with input from the appropriate WQGIT workgroup.
6. Jurisdictions: While the jurisdictions must be a partner in implementing BMP verification, the committee recommends that an independent entity be responsible for performing BMP verification. The entity and the tool/protocol used for BMP verification would likely be dependent on factors such as the type of BMP (structural vs. management) and the source sector (ag vs. urban vs. forest). Working with the entities

responsible for developing and executing the BMP verification protocols, the jurisdictions should be required to assemble their collection of verification protocols and determine who will execute those protocols from a suite of choices that have passed muster with the CBP Verification Review Panel.

7. U. S Environmental Protection Agency: EPA should consider holding back a portion of the Chesapeake Bay Implementation Grants and Chesapeake Bay Regulatory and Accountability Grants and use those funds to support the independent entities that have been recommended to design and implement the needed BMP verification protocols.

Evaluation and Oversight Procedures and Processes

8. Independent Review/Approval of Verification Procedures: To achieve the stated objective of obtaining a minimum threshold of BMP verification data confidence, the committee strongly suggests that an independent entity (academics or others with appropriate expertise) be involved in the design of the specific BMP verification protocols. Engaging those with appropriate expertise during the BMP verification protocol design phase will ensure that verification data will meet a desired confidence threshold standard.
9. Amended Partnership BMP Protocol to Address Verification: The committee interprets this section to mean that as new BMPs are approved, a corresponding verification protocol must be developed. As the committee understands it, the CBP proposal is to assign this task to the existing BMP expert panels who are responsible for developing BMP definitions and pollutant reduction performance efficiencies. The committee suggests instead that new BMP verification protocol development also be performed by an independent entity in consultation with the appropriate source-sector workgroup.
10. Amendments to the Chesapeake Bay Program Grant Guidance: As stated previously, EPA should consider holding back a portion of the Chesapeake Bay Implementation Grants and Chesapeake Bay Regulatory and Accountability Grants and use those funds to support the independent entities that have been recommended to design and implement the needed BMP verification protocols.
11. Annual Reviews of Progress Data Submissions: Documenting BMP verification for all BMPs on an annual basis is unrealistic. For those BMPs that are verified using techniques like remote sensing, survey tools, onsite evaluations, etc., the committee suggests verification documentation be tied to the CBP two-year milestone reporting cycle. For those BMPs that are assessed using indirect indicators/outcomes – e.g., soil or water quality monitoring – we suggest a longer time frame. This recommendation is a direct function of general comment #5 in the previous section – decouple BMP verification from BMP accounting. Verification information and inferences from verification data can be used to adjust model input data if warranted, but accounting for input into the CBWM should be separate from verification.
12. Annual Reviews of Quality Assurance Plans: If EPA holds back a portion of the Chesapeake Bay Implementation Grants/Chesapeake Bay Regulatory and Accountability Grant funds to fund independent entities to design and carry out BMP verification, as suggested, EPA would need to review the performance of the various entities rather than the jurisdictions. It would be extremely useful for the CBPO to work with the BMP Verification Review Panel and the GIT workgroups to develop a template of the required documentation/data to demonstrate that verification is actually happening, so that jurisdictions know what to expect and report.
13. Periodic Audits of Jurisdictions Verification Programs: The proposed combination of field and in-house audits to verify that the jurisdictions verification programs are working appears to be sound and time-tested in the tidal monitoring program, but additional documentation as to how this process is envisioned to work in

the BMP verification protocol context is warranted. Specifically, in the agriculture realm, the committee feels that accountability and verification will be severely compromised as long as spatially explicit information on agricultural BMPs is not publicly available. Further, if the CBP and jurisdictions are unable to find a way to ensure that a truly random sample of claimed BMP implementation can be visited by independent evaluators, then the BMP verification program can never resolve uncertainties associated with non-point source management efforts. Additionally, since many agricultural BMPs are management BMPs, as opposed to structural BMPs, the committee recommends that different approaches be used to assess the existence and performance of these management BMPs. Whereas structural BMPs are readily observable and can be evaluated on that basis, management or behavioral BMPs cannot. Management and behavioral BMPs are perhaps most readily verified through monitoring performance indicators/outcomes (e.g., water quality monitoring, soil sampling, crop yields). In this case, credit would only be given after reporting what actions had been taken.

14. Independent Evaluations: The committee agrees that periodic reviews by the various CBP advisory committees are critical to achieving the five BMP verification principles. Periodic (2-yr) evaluations would be a reasonable additional check and balance that will help assure the BMP verification framework is being adaptively managed. How the EPA, the CBP, and the jurisdictions will respond (including timeframe) to comments and critiques from the various committees should be specified.

General Recommendation:

1. Develop a flow chart that clearly defines the BMP verification oversight and evaluation process. Include the roles and responsibilities of all parties involved in BMP verification oversight and evaluation, critical activities and timelines, and data/documentation requirements.

Conclusion:

In general, the committee believes adjustments are needed to the proposed BMP verification framework and to the evaluation and oversight procedures outlined in Section 12 of the draft framework report (BMP Verification Committee, 2013). As proposed, the verification oversight appears to be focused on an initial review of the jurisdictions verification plans. While performing an initial comprehensive review is good, there needs to be a robust, independently managed, and transparent procedure by which the verification protocols are designed and implemented, and periodically, if not continually, reviewed and revised.

As presented, the BMP verification process is somewhat analogous to the nutrient management planning (NMP) BMP. While the intent of the NMP BMP is to balance nutrient inputs and crop needs, current NMP BMP accounting is based on the number of “acres planned”, not the actual “acres implemented” or, more importantly, not on the actual realized reductions in excess nutrient application to the land. Similarly, the BMP verification process should not focus on documenting the BMP verification paper trail, but rather on verifying actual observations that BMPs exist and are functioning. As proposed, the first twelve elements of Section 12 of the draft BMP framework appear to mainly address process documentation. Only the last two elements of Section 12 appear to focus on verifying on-the-ground implementation.

References:

BMP Verification Committee (CBP WQGIT BMP Verification Committee). 2013. Strengthening Verification of Best Management Practices Implemented in the Chesapeake Bay Watershed: A Basinwide Framework. July 15, 2013. Chesapeake Bay Program Partnership.

http://www.chesapeakebay.net/channel_files/20847/cbp_verification_document_7-15-2013_review_draft_full.pdf