Chesapeake Bay Program Partnership Agriculture Workgroup's Agricultural BMP Verification Guidance

REVISED DRAFT—SUBJECT TO FURTHER REVIEW AND CHANGE
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Part 1: The Need for Agricultural BMP Verification and the CBP Process

With the establishment of a Chesapeake Bay Total Maximum Daily Load (TMDL) and the importance of jurisdictions to demonstrate reasonable assurance that the TMDL goals will be met, increased attention has been given to the issues of tracking, reporting, and verification of best management practice (BMP) implementation. The need for expanding the tracking and reporting of implemented BMPs primarily from traditional agency incentive programs to private non-cost shared and resource improvement practices, all while improving public confidence in the water quality benefits being obtained from traditional and new sources of BMPs, has necessitated an new approach to verification. Although these issues have been addressed to varying degrees throughout the history of the Chesapeake Bay Program (CBP) Partnership, the Chesapeake Bay TMDL has brought new urgency to the matter, reinforced by calls for enhanced verification by:

- The Chesapeake Bay Independent Evaluation Report developed by the National Research Council's (NRC) panel identified five specific science-based conclusions. These conclusions focused on the finding that "accurate tracking of BMPs is of paramount importance because the CBP relies upon the resulting data to estimate current and future nutrient and sediment loads to the Bay."

- President Obama's Chesapeake Bay Executive Order Strategy committed relevant federal agencies, including the U.S. Department of Agriculture (USDA) and the U.S. Environmental Protection Agency (EPA), to develop and implement "mechanisms of for tracking and reporting of voluntary conservation practices and other best management practices installed on agricultural lands" by July 2012.

- EPA's Chesapeake Bay TMDL's Appendix S outlined the common elements for the jurisdictions to develop and implement trading and offset programs in conjunction with the requirements of the TMDL.

- Several of the Chesapeake Bay Program's independent advisory committees, including the Scientific and Technical Advisory Committee (STAC) and the Citizen's Advisory Committee (CAC), have consistently requested the partnership to develop and implement an open and transparent process to verify cost-share and non-cost shared BMPs being annually tracked and reported by the jurisdictions to the Chesapeake Bay Program Office (CBPO).

Consequently, in 2012 the CBP Partnership's Water Quality Goal Implementation Team requested each of the source and habitat sector workgroups, including the Agriculture Workgroup, to develop guidance

for jurisdictions as they seek to enhance verification of agricultural BMP implementation. As a part of this effort, the Agriculture Workgroup identified several key factors to consider when establishing a verification protocol.

- Were public funds used to implement the practice or was the practice entirely funded with private dollars?
- Was the practice implemented to satisfy a regulatory requirement or was it implemented voluntarily?
- Is the practice structural, with a life-span of several years, or must it be implemented annually?
- Is the practice implemented "on-the-ground" or is it a plan or other enhancement of farm management?

These factors influence the reliability of reported information and the reasonable assurance of whether the practice is implemented properly and remains functional. The remainder of this memo describes these factors in greater details and provides guidance to jurisdictions as they apply these factors in the development of a verification protocol.

Part 2: Defining and Categorizing Agricultural BMPs

Partnership approved agricultural BMPs represent the largest and most diverse of conservation practices and land use conversions. The diversity of BMPs is reflective of the corresponding diversity of agricultural production and land uses across the Chesapeake Bay watershed, a diversity not replicated by any other source or habitat sector within the CBP partnership. Consequently, to help overcome the challenge of providing verification guidance for multiple methods in a simple format, agricultural BMPs are organized into four BMP categories (Table 1). These generalist BMP categories are based on the respective life spans or permanence on the landscape, as well as their physical presence.

Annual BMPs: A practice with a limited presence in the landscape over time, lasting as short as several months to a single growing season. In order to accurately account for their nutrient and sediment load reduction benefits, this type of BMP must be verified and reported on an annual basis.

Structural BMPs: A practice with a protracted physical presence on the landscape of a few to several years when properly maintained and operated. This type of BMP typically requires intensive technical and financial resources to implement.

Management Plan BMP – Plans: A type of or enhancement to a management system, rather than a physical BMP. This class of BMP creates the most challenge to verification because it does not have a physical presence on the landscape. However, there can be considerable nutrient and sediment value in well-implemented plans that can last either a single season or through multiple years.

Management Plan BMP – Practices: This type of BMP includes management systems that have a physical component on the landscape. This category is very diverse, with a wide range of life spans and

Table 1. Example agricultural best management practices by the four categories.

Annual	Structural	Management Plan - Plans	Management Plan - Practices
Conservation Tillage	Animal Waste Management Systems	Decision/Precision Agriculture	Alternative Crops
Traditional/Commodity Cover Crops	Barnyard Runoff Control	Enhanced Nutrient Management Plans	Continuous No-Till
Dairy Precision Feeding	Bio-filters	Horse Pasture Management Plans	Grass Buffers
Manure Transport	Mortality Composters	Prescribed Grazing Plans	Stream-Side Grass Buffers
Swine Phytase	Water Control Structures	Soil Conservation and Water Quality Plans	Stream-Side Forest Buffers

Part 3: Defining Implementation Mechanisms for Agricultural BMPs

The diversity of agricultural BMPs is also reflected in the corresponding diversity of the means and funding sources supporting implementation and resultant level of oversight across the Chesapeake Bay watershed. In general, sources of BMP implementation data and their corresponding maintenance oversight can be grouped into several broad categories with potential overlaps between them on a BMP by BMP basis. As illustrated in the supporting matrices organized by the four categories of BMPs, the means by which the BMP was implemented in the first place has direct implications for how to go about verifying that the BMP is present and functioning.

Cost-Shared BMPs are implemented with public funds through programs managed by federal, state, and county agencies. Because of the common requirements of public funding programs, these BMPs typically have contractual oversight elements. The contract typically requires the involvement of certified engineers, planners and technicians who use governmentally-established design standards. These standards are established to ensure proper installation and maintenance of the BMP over the life span of the contract. Consequently, these BMPs are typically more easily tracked and reported, at least through the life of the contract.

The partnership's primary source of agricultural BMP implementation data has historically originated from publicly funded financial incentive or cost-share programs managed by federal, state, and county agencies. BMPs implemented through these programs typically have existing defined verification protocols in place during the stages of BMP implementation, and operation and maintenance under the contractual agreements with the participating landowners.

Non-Cost-Shared (Privately Funded) BMPs, also known as resource improvement practices, are implemented without public funding assistance. They are typically financed by the operator, and may or may not meet the practice standards associated with federal and state cost-share programs. These practices may lack the contractual provisions of cost-shared BMPs as well as the corresponding

implementation and maintenance oversight. As a result, more frequent verification for both presence and function may be necessary.

An emerging source of agricultural BMPs are these practices that were installed without public cost-share, and may not be part of an operational permit or regulatory oversight program. Identifying, verifying, tracking, and reporting these BMPs is more challenging than the other sources of BMP information for a number of reasons, including voluntary reporting and access by operators, potentially non-standard materials and designs, and, at times, the absence of an obligation to maintain the practice.

Regulatory Programs provide oversight of an agricultural production or management system that is covered by a legally imposed regulatory system. Some BMPs may be specifically identified as a legal requirement, while others may be the result of implementation of a legally-required management plan or system. Because regulations differ by state, there is a wide diversity of oversight by state and local agencies across the Bay watershed.

The partnership's regulatory agricultural programs represent another important source of agricultural BMP implementation data managed by state regulatory agencies. BMPs implemented under the requirements of jurisdictional regulatory programs typically have existing but varied verification protocols in place for BMP implementation, operation, and maintenance over the design lifespan of the practice.

Permit-Issuing Programs are regulatory programs which require that a farm obtain a permit in order to operate or conduct certain activities. Often, regular inspections are a condition of the permit – though sometimes those inspections are made by the regulated entity – and the permits require a periodic renewal which typically extends several years.

The Partnership's regulatory agricultural permit programs represent an important source of agricultural BMP implementation data managed by federal or state agencies. BMPs implemented under oversight of permitting programs typically have existing well defined verification protocols in place during the stages of BMP implementation, operation, and maintenance during the operational permit period.

Part 4: Agricultural BMP Verification Methods

A factor further complicating verification of agricultural BMPs, beyond their number and diversity, is overlaps that exist between the means through which BMPs may have been originally implemented. Practices that were originally cost-shared can function similarly to non-cost shared BMPs after their contractual obligations are satisfied and they become the sole responsibility of the operator. Both cost-shared and non-cost shared practices can co-exist to satisfy regulatory program requirements. There are practices financed by the operator, which and may or may not meet the practice standards associated with federal and state cost-share programs but which provides the same level of environmental protection on an annual basis. Depending on the jurisdiction, a significant population of agricultural farms can potentially legally operate outside of federal and state permitting and regulatory oversight programs.

To best meet this challenge, a wide array of verification methods are available to be tailored towards BMPs implemented with and without cost-share and within and outside of regulatory programs.

Farm inventory: A survey or listing of physical BMPs completed by trained third-parties or by the farmer themselves. The survey or listing is based on physical inspection. The reliability of the information and the level of verification is highly dependent upon the intensity and frequency of the survey, the independence and training of the person completing the survey, and whether the person completing the survey must certify to its accuracy with penalties for false information.

Office/farm records: This is similar to the farm inventory, except it applies to the evaluation of paperwork on record at the conservation district office or the farm operation itself rather than inspection of physical BMPs.

Transect survey: An inspection of a statistical-based sampling of BMPs. The reliability of this method is based on the sampling and inspection methods and the training and independence of the inspectors.

Agency-sponsored surveys: A survey of a statistical sampling of farmers. Limitations on the reliability of data are similar to those for farm inventory and office/farm records. However, governmental entities normally will have oversight within and outside the organization (Office of Management and Budget, General Accounting Office. National Agricultural Statistics Service (NASS), Conservation Effects Assessment Program (CEAP) and Natural Resources Inventory (NRI) are examples of this type of survey.

Remote sensing: A review of images or photographic signatures verified through aerial photography, satellite imagery, or similar methods to identify physical practices on the landscape. This may involve site by site imaging or statistical sampling. Implementing a sufficient land-based sampling validation protocol is critical to ensuring the analysis of the remote images or photographic signatures is calibrated to actual conditions.

Part 5: Guidance for Development of an Agricultural Practice Verification Protocol

As a jurisdiction begins the process of developing an agricultural practice verification protocol, it must acknowledge that a single protocol will not be relevant to all BMPs, or even across a single category of BMPs. Similarly, the resources needed to adequately verify one BMP may be significantly more than another BMP. Consequently, a jurisdiction must carefully evaluate the resources available for verification and the significance of the BMPs it expects to verify.

To assist with those decisions, the Agricultural Workgroup has developed a matrix for each of the four categories of agricultural BMPs described above in Part 2: Annual BMPs (Appendix A), Structural BMPs (Appendix B), Management BMPs – Practices (Appendix C), and Management BMPs – Plans (Appendix D). Each matrix is arranged by type of verification method and reliability factors such as the implementation mechanisms.

In the **first column**, the various agricultural BMP verification methods are listed based on the type of tracking assessment and the type of entity that would be collecting and verifying the data

For each verification method, there may be multiple assessment methods within a protocol type (**second column**). For example, taking a Farm Inventory assessment method approach to verification may include an assessment conducted by a trained public employee, a trained private third party, a trained farmer, an untrained farmer, or other forms of assessment. The matrix is arranged so that the assessment methods in the second column are listed in order of potentially the most reliable to the least reliable within each protocol type. This is not intended to encourage the use of one assessment method over another, but merely to illustrate that a jurisdiction may need to make special effort to overcome the inherent un-reliability of certain methods in order to develop a protocol that is sufficient. For instance, verification may have to be conducted more frequently, a larger sample size may need to be used, or advance training of the data collectors may be needed to improve the reliability of an assessment.

A rule of thumb for whether a protocol is sufficient is whether a jurisdiction can provide assurance to other CBP Partnership organizations that the BMPs reported are present and functioning. Jurisdictions should seek to maximize the reliability of a protocol as much as possible, especially for those practices with the most significance in their Watershed Implementation Plans—e.g., highest levels of planned implementation, replying on for significant levels of pollutant load reductions. When documenting its agricultural verification protocols, a jurisdiction should describe the features of the protocol that impact its reliability. Suggested verification expectations are noted in the **third column** of each matrix.

The matrices also suggest whether the matrix's category of BMPs are appropriate or "eligible" to be reliably assessed by the various types of protocols and assessment methods, depending on the BMP category (**fourth column**) and implementation mechanism (**fifth column**). The eligibility or ineligibility for a protocol is presumed, but a jurisdiction may apply a method to a "not eligible" practice if the jurisdiction can adequately justify why the protocol is appropriate in that individual case. Likewise, a protocol may not provide sufficient verification for an "eligible" practice if the jurisdiction does not adequately describe the elements of the protocol that demonstrate reliability.

It should be noted that the matrices identify performance of the BMP as one of the considerations when choosing a protocol and assessment method in the **sixth column**. This section of the verification matrix has seven underlying sub-columns:

- BMP detection
- Meets USDA/State design specifications
- Meets federal/state operation and maintenance (O&M) specifications
- Resource Improvement (non-specification)
- Non-performance equivalent (non-specification)
- Installation date
- Expiration date

Each of these sub-columns, as defined in Table 2, describes the ability of each assessment method to verify if the tracked practice meets the appropriate BMP specification, or if it represents a performance equivalent or non-performance equivalent BMP.

Table 2. Descriptions of the BMP performance measures.

BMP Performance Measure	Description
BMP detection	Can the practice be physically detected through visual or other assessment methods such as sample analysis, historic images or photographic signatures, or farm and office records.
Meets USDA/State design specifications	Those practices which are designed and implemented according to applicable federal or state standards which typically form the basis for assigning relative environmental benefits by the Chesapeake Bay Program partnership.
Meets federal/state operation and maintenance (O&M) specifications	Those practice which are being operated and maintained in accordance to applicable federal or state standards which typically form the basis for assigning relative environmental benefits by the Chesapeake Bay Program partnership.
Resource Improvement (non-specification)	Those practices which do not fully meet the applicable federal or state design specifications, and may have a shortened physical effective lifespan, but will provide equivalent environmental benefits on an annual basis.
Non-performance equivalent (non-specification)	Those practices which do not fully meet the applicable federal or state design specifications, and may not be operated or maintained to provide an equivalent environmental benefit on an annual basis to receive recognition by the Chesapeake Bay Program partnership.
Installation date	The installation date of the practice is important for determining the period of time it has provided environmental benefits, and if those benefits should be reported for credit, or have been previously accounted for in the Chesapeake Bay Program partnership's calibrated modeling tools.
Expiration date	The expiration date of the may refer to the physical effective lifespan of the practice such as the expiration of a management plan, or may refer to the expiration of the associated permit or contract, which could necessitate the use of an alternative verification assessment method for further crediting.

When evaluating practices, an individual performing a verification analysis may encounter non-cost-shared practices that may not have been implemented to the specifications of a government entity, such as the USDA Natural Resources Conservation Service (NRCS). In that case, the individual should refer to state-approved guidance (e.g. Maryland Department of Agriculture's November 2013 *Non Cost-Shared Best Management Practice Verification Procedures Manual*) to evaluate whether the performance of those BMPs is "performance equivalent or defined performance standard." Known as "resource improvement practices", these BMPs may require more frequent inspections or evaluation by trained personnel in order to be adequately verified. When describing its protocol, a jurisdiction should include a specific reference to the process for evaluating performance of non-cost-shared BMPs.

Part 6: Tailoring Agricultural Verification Protocols to the Different Implementation Mechanisms
The following guidance is provided for consideration by the jurisdictions in reviewing their existing verification procedures and development new verification protocols to ensure adequate data confidence, and equity within and amongst the four different implementation mechanisms: cost shared BMPs, non-cost shared BMPs, regulatory programs, and permit issuing programs.

Verification Methods: Appropriate verification methods will differ depending on the category of agricultural BMPs being considered. Short-term annual BMPs will require a unique approach compared to long-term structural BMPs for example. Consequently, specific verification protocols need to be developed and implemented to address each category of BMPs based on design lifespan and physical presence, and the lifespan of implementing mechanism (e.g., contract, permit, regulatory program).

Implementation Mechanism Specific Considerations:

- *Cost Shared BMPs*: factor in lifespan of contractual agreement.
- *Non-cost Shared BMPs*: focus on design lifespan and physical presence.
- *Regulatory Programs*: factor in design life span and physical presence of the practice required by a regulatory program.
- *Permit Issuing Programs*: factor in operational lifespan of the permit.

Operation and Maintenance: The correct operation and maintenance of agricultural BMPs is critical to ensuring that the estimated environmental benefits over the lifespan of the practices are realized. This is especially critical for long-term BMPs where the performance benefits might be applied over multiple years vs. months. Adequate verification protocols need to incorporate regular verification inspection intervals based on the designed lifespan, the unique characteristics of the BMP, and the contractual obligation, taking into account non-controllable factors such as floods or droughts. The principle verification objective is to ensure that BMPs are operated and maintained properly over their designed lifespan to qualify for the associated environmental benefits. Consequently, verification protocols need to define (1) the cycle and extent for field verification of BMPs, (2) the process for removing non-existing or non-operational BMPs from reporting, and (3) the process for bringing improperly maintained BMPs back into operational compliance within one year or less.

Existing Program Verification Protocols: The primary source of implemented agricultural BMPs being reported have originated from federal, state, or local public agencies through a variety of programs which incorporate differing levels of inspections and verification. These existing program verification protocols should form the foundation of a verification system for the Chesapeake Bay TMDL. In some cases, sufficient oversight and inspections may not require any or minimal adjustments to achieve the level of data confidence that is being established by the partnership. In other cases, more significant program verification adjustments may be required due to the level of uncertainty. In either case, the modification of an existing verification protocol should attempt to minimize the amount of additional administrative and financial burden expected of the affected agency.

Implementation Mechanism Specific Considerations:

- *Cost Shared BMPs*: compare across existing state, federal, and NGO programs.
- *Non-cost Shared BMPs*: The process of verifying non-cost shared BMPs is a relatively new area of piloted development by the partnership, so existing program verification protocols are currently limited in forming the foundation of a verification system for the Chesapeake Bay TMDL. In some cases, sufficient oversight and inspections may not require any or minimal adjustments to achieve the level of data confidence that is being established by the partnership. In other cases, more significant program verification adjustments or completely new protocols may be required due to the level of uncertainty or non-existence.
- *Regulatory Programs*: recognize there could be widely differing levels of prescribed compliance inspections and verification.
- *Permit Issuing Programs*: recognize there could be differing levels of prescribed permit compliance inspections and verification.

Record Reviews vs. Visual Inspections: Visual inspections for confirming that BMPs are present, appropriately maintained, and are being operated as designed is a common element found within most verification protocols. Visual inspections are vital, but are most effective when coupled with reviews of office and/or farm records. Record reviews are applicable for all BMP categories, but are especially critical for determining implementation of management plans, including nutrient application management and grazing management plans. Integrating a review of office and/or farm records in tandem with visual observations is recommended to obtain a higher confidence level of assured environmental BMP performance. Conversely, record reviews alone are not considered a sufficient verification method.

Implementation Mechanism Specific Considerations:

- *Cost Shared BMPs*: confirm visual inspections during the contractual period are a common element across all programs.
- *Regulatory Programs*: be aware the frequency and completeness of the visual inspections can vary widely between jurisdictional regulatory programs.
- *Permit Issuing Programs*: confirm visual inspections during the operational permit period are a common element across all programs.

Technical Training: The technical proficiency of public agency staff or NGO staff conducting inspections and record reviews of implemented agricultural BMPs cannot be under-rated. Ensuring that inspectors are adequately trained and technically certified for the practice they are verifying is a basic element of QA/QC protocols. Verification protocols need to address the training and qualifications of the public or private entity staff that will be engaged with the verification process to ensure quality inspections and the reporting of properly maintained and operated conservation systems.

BMP Installation Verification: Agricultural BMPs that are implemented through incentive programs with public or private funds or permit issuing programs typically, if not in all cases, incorporate inspections

during and/or after installation to ensure the practice has been correctly implemented according to appropriate standards and specifications. USDA-NRCS has established practice standards and specifications for most agricultural practices, but in some instances states may set the standard, especially in conjunction with state specific program or regulatory requirements. Chesapeake Bay Program approved BMPs may closely mirror these standards and specifications in how they are defined and the associated environmental benefits, but not in all cases. Verification protocols need to specifically address how the installation verification process will identify properly report BMPs which meet or exceed the standards and specifications of the appropriate CBP BMP if different than existing USDA or state standards.

Implementation Mechanism Specific Considerations:

- *Non-cost Shared BMPs*: Agricultural BMPs that are implemented with private funds typically will not incorporate reviews during and/or after installation to ensure the practice has been correctly implemented according to appropriate standards and specifications. An example of exception is when technical design assistance is provided by a public agency without public financial assistance.
- *Regulatory Programs*: Regulatory programs may not automatically incorporate inspections during and/or after installation. An example of when a regulatory compliance inspection would typically be implemented as part of a BMP installation would be in the case of operational complaint response or non-compliance remediation activity.

Verification Frequency Cycle: Short-term annual BMPs such as cover crops can present additional challenges to re-inspect the practices within the designed lifespan. Long-term BMPs such as engineered structures provide a designed lifespan for up to 25 years, and are associated with multi-year contractual agreements for ensuring proper operation and maintenance. Programmatic verification protocols need to incorporate compliance inspection intervals for all BMPs based on the designed lifespan, the unique characteristics of the BMP, and the contractual obligation period. The compliance inspection frequency may consequently vary from annual inspections per practice to a multi-year cycle within the contractual lifespan. The verification objective is to ensure that BMPs are being operated and maintained properly over their designed lifespan to qualify for the associated environmental performance benefits.

Implementation Mechanism Specific Considerations:

- *Cost Shared BMPs*: Public and private Incentive programs typically exhibit more variations in their existing verification protocols in regards to post-implementation design compliance during the ensuing contractual agreement period. Short-term annual BMPs such as cover crops can present additional challenges for contractual entities to re-inspect the practices within the designed lifespan, and they typically are implemented under abbreviated contractual agreement periods.
- *Non-cost Shared BMPs*: verification protocols need to incorporate review intervals for all BMPs based on the designed lifespan and the unique characteristics of the BMP.

- *Regulatory Programs*: Regulatory programs have varying verification protocols in regards to multi-year compliance inspections during the practice lifespan. Short-term annual BMPs such as cover crops can present additional challenges for regulatory agencies to inspect the practices within the designed lifespan. Regulatory verification protocols need to incorporate compliance inspection intervals for all BMPs based on the designed lifespan and the unique characteristics of the BMP.
- *Permit Issuing Programs*: Regulatory permit programs typically have existing verification protocols in regards to multi-year post-implementation design compliance during the operational permit lifespan. Short-term annual BMPs such as cover crops can present additional challenges for permitting agencies to inspect the practices within the designed lifespan.

Jurisdictional Verification Priorities: The Chesapeake Bay Program's BMP Verification Subcommittee and the BMP Verification Expert Panel have acknowledged that fully implementing the elements of this verification guidance for all BMPs could result in limited financial and technical resources being diverted away from BMP implementation. Public and private entities engaged with agricultural BMP programs are encouraged to direct their BMP verification and data validation efforts in direct proportion to the environmental benefits which a BMP contributes towards the TMDL pollutant reduction for a jurisdiction's agricultural source sector. Thus, agricultural BMPs which provide the greatest pollutant reductions for each jurisdiction's agricultural source sector should receive the highest priority for implementing statistically significant verification protocols to generate the highest confidence levels.

Jurisdictional Data Validation Oversight: Chesapeake Bay jurisdictional reporting agencies need to incorporate a process for validating county and private sources of BMP implementation data being reported to the jurisdiction. A data validation process that provides a adequate level of confidence in the verified data should include a statistically valid analysis of inspection records coupled with visual spot-checks or joint field compliance inspections to verify reported BMPs meet or exceed the standards and specifications of the appropriate CBP BMP if different than existing USDA or state standards. The data validation protocol needs to be transparent and publically accessible to so that stakeholders can be confident of the validity of the reported data.

BMP Offsets, Mitigation, and Trading: Agricultural verification protocols need to include special procedures for identifying and separately managing practices which are tied to offset, mitigation, and trading programs. BMPs which are implemented to address environmental impacts caused by other developmental activities elsewhere in the watershed. Implementing special programmatic verification procedures will prevent data reporting errors due to a "double-counting" effect with other sectors or programs. BMPs tied to offsets, mitigation, and trading programs typically have their own specific verification protocols to achieve their intended programmatic environmental objectives.

Part 7: Guidance for Development of an Agricultural Practice Verification Protocol

States should refer to the *State Protocol Component Checklist*[1] for key components of a complete state verification protocol process. Not all suggested components may be needed, but states should be able to explain the deletion of key components if deemed unnecessary to the state process.

Once states have decided which BMPs will be reported and selected the method(s)of collection, actual verification methodologies will need to be developed. Individuals with the appropriate training or qualifications should conduct both the data collection, reporting and verification process, to be able to accurately assess the presence and functioning of the reported BMP.

States will select methods of documentation that will contain enough information about the BMP that it can be independently spot-checked by individuals with the appropriate training and qualifications. States will develop an appropriate statistical selection processes with appropriate review cycles of BMP implementation in their State Quality Assurance Plan.

Independent verification of BMP reporting programs and BMP implementation data will be addressed in state verification protocols. It will be covered in State Quality Assurance Plans to guarantee that the reported data is valid and representative of BMP implementation in the state. Independent verification can be conducted with internal agency personnel or external entities, as long as they have similar qualifications to accurately assess BMP implementation data. Quality assurance personal should be independent from the original BMP reporting and not directly involved in the initial implementation of the BMPs.

All reported BMP's, whether cost shared, regulatory or non-cost shared, should have distinct, CBP-approved definitions, appropriate design standards and/or visual indicators to allow accurate and reliable reporting of the BMP to receive the commensurate credit.

States will develop a method to review data reported to the NEIEN submission system to assure that it was accurately entered and submitted according to CBP guidance documents. If BMP implementation information reported by states comes from external entities it will be subjected to appropriate validation as required by the CBP.

States will develop a methodology to determine when and how to remove data from their BMP reporting system. Long term historical BMP's should have a distinct life spans where they are either re-verified or removed from the reporting system.

[1] The full State Protocol Component Checklist is provided in Table 11 in Section 14.