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

REVISED DRAFT—SUBJECT TO FURTHER AgWG REVIEW AND CHANGE
May 9, 2014

Note: Table numbers reflect the location of the tables in the May 2014 draft CBP BMP Verification Framework Document.

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 jurisdictions' commitment to demonstrate reasonable assurance that the TMDL goals will be met, tracking, reporting, and verification of best management practice (BMP) implementation is essential. An improved approach to verification is needed to expand the tracking and reporting of implemented BMPs from agency incentive programs to private, non-cost shared and resource improvement practices in a manner that ensures public confidence that the water quality benefits from the practices are achieved. 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).

In 2012 the Chesapeake Bay Program (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 BMP implementation. As a part of this effort, the Agriculture Workgroup identified several key factors critical to building a verification protocol for agricultural BMPs.

- Were public funds used to implement the practice, or was the practice funded entirely with private dollars?

- Was the practice implemented to satisfy a regulatory requirement or was it implemented voluntarily?

- Is the practice structural, with a multi-year life-span, 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 following narrative considers these factors and the consequent guidance to jurisdictions for a science- and best professional judgment informed verification protocol.

Part 2: Defining and Categorizing Agricultural BMPs

The Partnership approved agricultural BMPs represent the largest and most diverse group of conservation practices and land use conversions across all sectors. The diversity of BMPs reflects the diversity of agricultural production and land uses across the Chesapeake Bay watershed. To address the challenge of providing verification guidance for this diverse collection of BMPs in a simple format, agricultural BMPs are organized into three categories (Table 2). The three BMP categories are based on the assessment method for their physical presence, primarily, as well as on the respective life spans or permanence on the landscape.

2a. Visual Assessment BMPs - Single Year

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

2b. Visual Assessment BMPs - Multi-Year

A practice that can be visually assessed and has a protracted physical presence on the landscape, i.e., of more than one year when properly maintained and operated. This type of BMP often requires increased technical and financial resources to implement compared with a single year practice.

2c. Non-Visual Assessment BMPs

A practice that cannot typically be visually assessed because it is a type of management system or enhanced approach, rather than a physical BMP. This class of BMPs is more challenging to verify since it does not have a physical presence on the landscape. However, considerable nutrient and sediment reductions are possible in well-implemented plans that can last either a single season or multiple years.

Table 2. Examples of agricultural BMPs by category.

2a. Visual Assessment- Single Year	2b. Visual Assessment - Multi-Year	2c. Non-Visual Assessment
Conservation Tillage	Animal Waste Management Systems	Decision/Precision Agriculture
High-Residue Minimum Disturbance Management	Barnyard Runoff Control	Enhanced Nutrient Management Plans
Traditional Cover Crops	Stream Side Grass/Forest Buffers	Poultry Litter Transport
Commodity Cover Crops	Prescribed Grazing	Precision Intensive Rotational Grazing Plans
	Water Control Structures	Soil Conservation and Water Quality Plans

Part 3: Defining Implementation Mechanisms for Agricultural BMPs

The diversity of agricultural BMPs is mirrored in the range of approaches and funding sources supporting implementation and the resultant level of oversight across the Chesapeake Bay watershed. The sources of BMP implementation data and their maintenance oversight are grouped into four broad categories with potential for mixing between categories dependent upon the specific BMP. How a BMP is funded and implemented has direct implications for how verification of presence and function is conducted:

3.a. Non-Cost-Shared (Privately Funded) BMPs

BMPs that are implemented without public funding assistance and are a source of agricultural BMPs installed without the verification benefits inherent to the other categories - public cost-share, regulatory programs, and permit-issuing programs As a result, establishment of verification programs similar to those for publically funded or regulated practices will be needed.

Non-cost share BMPs are typically financed by the operator or other non-public entity or source, and may or may not meet the practice standards associated with federal and state cost-share programs. Non-cost-shared practices may lack the contractual provisions of cost-shared BMPs as well as the corresponding implementation and maintenance oversight. Non-cost share BMPs also include BMPs which are described as "resource improvement (RI) practices." RI BMPs are practices which provide an identical annual environmental benefit for water quality but which may not fully meet all design criteria of existing governmental standards such as designed lifespan.

The minimum expectation of verification for non-cost-shared BMPs is recommended to be 100 percent of the initial identification of annual or multi-year structural BMPs and plan implementation by trained and certified technical field staff or engineers[1] with supporting documentation that it meets the governmental and/or CBP practice standards. Visual assessment for single year BMPs, such as tillage practices, can be statistically sub-

[1] Trained and certified technical field staff or engineers include those agency personnel, cooperative organization personnel, and other private- and non-governmental entities that have participated in training provided by NRCS, jurisdictions, and partnering agencies for practice implementation and assessment.

sampled utilizing scientifically accepted procedures. [2] During the course of the identified physical lifespan period of multi-year BMPs, a reoccurring annual verification that the BMPs are being maintained and operated as per the appropriate practice standards at a minimum expectation for follow-up sub-sampling of 10% for BMPs achieving greater than 5% of the jurisdiction's WIP agricultural sector goals.[3]

It is important to note that BMPs which were initially implemented and/or operated under a cost-share, regulatory, or permit program but are transitioned out of these programs and no longer are under the oversight of a cost-share agreement, regulation, or permit, will be verified by the same level of verification described for non-cost shared BMPs if they are continued to be considered for ongoing pollution reduction crediting.

3. b. Cost-Shared BMPs

BMPs that are implemented with public funds; these funds are managed by federal, state, and county agencies, and in some cases non-governmental organizations (NGOs). Cost-shared BMPs typically have contractual oversight elements such as the required involvement of certified engineers, planners and technicians who evaluate the BMPs according to governmental established design standards. These standards are intended to ensure proper installation and maintenance of the BMP over the life span of the contract and consequently so as to allow tracking and reporting on the BMPs during the life of the contract. BMPs implemented through these programs typically have existing defined verification protocols in place for the BMP during the life of the contract with the landowner dictating implementation, operation and maintenance requirements, and may provide a sufficient level of verification.

The minimum expectation of verification for cost-shared BMPs is recommended to be 100 percent of the initial physical installation of annual or multi-year BMPs and plan implementation by trained and certified technical field staff or engineers with supporting documentation that it meets the governmental and/or CBP practice standards. During the course of the contractual oversight period involving multi-year BMPs, a reoccurring annual verification that the BMPs are being maintained and operated in accordance with the funding agency standards at a minimum expectation for follow-up sub-sampling of 10% for BMPs achieving greater than 5% of the jurisdiction's WIP agricultural sector goals.

3.c. Regulatory Programs

Programs that provide oversight of a BMP through 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

[2] Statistically sub-sampled may be acceptable for visual assessment of widely-used single-year BMPs (such as conservation tillage), where 100% verification is not feasible. Sub-sampling protocols will be subject to approval by the Verification Review Panel and should utilize scientifically accepted procedures developed in consultation with statistical experts.

[3] For BMPs that constitute ≤5% of the agricultural sector load reductions in the jurisdiction's approved WIPs, 5% statistical sub-sampling of tracked and reported practices is permissible for the non-cost share and regulatory program BMP categories in this section. For cost-shared category BMPs, 5% of the active contracts is permissible, and for permit-issued BMPs, 100% sampling is required.

regulations differ by state, there are differences in oversight by federal, state and local agencies across the Bay watershed.

BMPs implemented under the requirements of governmental regulatory programs typically have existing but varied verification protocols in place for BMP implementation, operation, and maintenance over the design lifespan of the practice and may provide a sufficient level of verification.

Included within the regulatory program, understanding that offset and credit programs are continuing to evolve, are BMPs tied to offsets, mitigation, and trading. Agricultural verification protocols need to include procedures for identifying and separately managing practices which are tied to offset, mitigation, and trading programs to ensure that BMPs are not double-counted. BMPs tied to offsets, mitigation, and trading programs typically have their own specified verification protocols to achieve their intended programmatic environmental objectives.

The minimum expectation of verification for regulatory program BMPs is recommended to be 100 percent of the initial identification of annual or multi-year BMPs and plan implementation by trained and certified technical agency field staff or engineers, or compliance/enforcement staff, with supporting documentation that it meets the governmental and/or CBP practice standards. Visual assessment for single year BMPs such as tillage practices can be statistically sub-sampled utilizing scientifically accepted procedures (when allowed within the regulatory program structure). During the course of the identified physical lifespan period of multi-year BMPs, a reoccurring annual verification that the BMPs are being maintained and operated consistent with the regulatory standards at a minimum expectation for follow-up sub-sampling of 10% for BMPs achieving greater than 5% of the jurisdiction's WIP agricultural sector goals.

3.d. Permit-Issuing Programs

Regulatory programs that require an agricultural production operation to operate or conduct certain activities under a permit. Inspections conducted by the regulating authority are typically a condition of the permit. A permit may require periodic renewals for multi-year extensions. Implementation, operation and maintenance of BMPs are permit elements.

BMPs implemented under the oversight of permitting programs typically include defined verification protocols for all stages of BMP implementation, operation, and maintenance for the life of the permit, and may provide a sufficient level of verification.

The minimum expectation of verification for permit-issuing program BMPs is recommended to be 100 percent of the initial identification of annual or multi-year BMPs and plan implementation by trained and certified technical agency field staff or engineers, or compliance/enforcement staff, with supporting documentation that it meets the governmental and/or CBP practice standards. During the course of the identified physical lifespan period of multi-year BMPs, a reoccurring annual verification that the BMPs are being maintained and operated consistent with the permitting standards is recommended to be 100 percent of the total number of tracked and reported BMPs.

Part 4: Agricultural BMP Verification Methods

Depending on the jurisdiction, a significant number of agricultural operations may legally operate without oversight from federal and state permitting and regulatory programs or participation in voluntary cost-share programs. Verification of BMPs for all farms, regardless of presence or absence of cost-shared or regulatory programs can be accomplished through the following or combination of the following:

4a. Farm Inventory

A survey or listing of physical BMPs completed by certified, trained technical staff, or by the producer. The survey or listing is based on physical inspection. The reliability of the information and the level of verification depends upon the intensity and frequency of the survey, the training of the person completing the survey, and whether the person completing the survey must certify to its accuracy with penalties for false information. Producer completed inventories without third-party verification are not considered an adequate method for verification.

4b. Office/farm Records

An evaluation of paperwork on record at the conservation district office or the farm operation itself rather than an on-site inspection of physical BMPs. Records alone are not considered an adequate method for verification, but can be a critical compliment to other methods, especially when associated with non-visual assessment BMPs.

4c. Transect Survey

An inspection of a statistical-based sampling of BMPs. A transect survey is appropriate for a single year visual assessment of practices such as tillage management. The reliability of this method is based on the sampling and inspection methods and the training and independence of the inspectors. Transect surveys as a visual verification method are not considered an adequate method for verifying non-visual BMPs, or multi-year visual BMPs which require direct inspection, office/farm records, or certified training and engineering.

4d. Agency-sponsored Surveys

A survey of a statistical sampling of farms. Limitations on the reliability of data are similar to those for farm inventory and office/farm records. Periodic surveys and associated reports published by the National Agricultural Statistics Service (NASS), Conservation Effects Assessment Program (CEAP) and Natural Resources Inventory (NRI) are examples of this type of survey.

4e. Remote Sensing

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

Part 5: Agricultural BMP Verification Priorities

The CBP's BMP Verification Subcommittee and the BMP Verification Review Panel have acknowledged the potential financial and technical limitations that exist when seeking to fully implement the elements of this verification guidance. For this reason, public and private entities engaged with agricultural BMP verification are encouraged to direct their verification efforts in direct proportion to the environmental benefits that a BMP contributes towards the TMDL pollutant reduction for a jurisdiction's agricultural source sector. Agricultural BMPs that result in the highest pollutant reductions for each jurisdiction's agricultural source sector should correspondingly be the highest priority for implementing statistically significant verification protocols.

The Jurisdictional Agriculture Verification Protocol Design Table described in the following section (Tables 4-6) provides specific guidance as to identify the minimum expected levels of verification inspections by agricultural BMP category (Visual – 1 year, Visual – multi-year, and Non-Visual). Tracked and reported BMPs achieving greater than 5% of the sector's WIP reduction goals should receive the highest level of verification rigor. Those BMPs calculated to achieve ≤5 % of the sector goal), can be verified with less rigor.

Part 6: Jurisdictional Agricultural Verification Protocol Design Table and Supplementary Information

The CBP's Jurisdictional Agriculture Verification Protocol Design Table provides the jurisdictions, the CBP and public with a streamlined guidance and overview of the minimum expectations for agricultural BMP verification (Tables 4-6), supplementary to the "Chesapeake Bay Program Best Management Practice Verification Program Design Matrix" and the "State Protocol Components Checklist" provided in the draft basin-wide framework report by the CBP. The elements of the Jurisdictional Agricultural Verification Protocol Design Table follow:

6a. WIP Priority

As described within the draft basin-wide verification framework report, jurisdictions can choose to vary the level of verification based on the relative importance of a specific practice to achieving the jurisdiction's WIP nutrient and sediment pollutant load reduction targets. By clearly documenting the relative WIP priority for a BMP or group of related BMPs, a jurisdiction can target its verification investments to those BMPs which provide the greatest pollution reductions, or are employed the most often.

6b. BMP Grouping

Jurisdictions do not need to develop and document detailed protocols for individual BMPs across the universe of BMPs that they track, verify, and report for nutrient and sediment reduction load credit. Instead, jurisdictions should take their complete listing of tracked and reported BMPs and organize them by the categories that best account for the jurisdiction's relative Watershed Implementation Plan (WIP) priority, in logical groupings of the data specific to the jurisdiction, and consideration of the BMP types described in the relevant Agriculture Verification Guidance. Then, as presented within the Jurisdictional Agricultural Verification Protocol Design Table, the jurisdiction would

document the appropriate protocols and procedures followed for each logical grouping of BMPs.

6c. Initial Inspection and Follow-up Checks

The Jurisdictional Agricultural Verification Protocol Design Table illustrates the CBP Partnership's BMP Verification Review Panel's recommendation to the jurisdictions for structuring their verification programs to carry out an initial inspection for answering the question "is the BMP there?" and then follow-up checks carried out at the appropriate frequency to answer the question "is the BMP still there and operating" throughout the lifespan of the practice.

6d. Lifespan and Sunsetting Practices

The Jurisdictional Agricultural Verification Protocol Design Table prompts jurisdictions to provide documentation on procedures in place for conducting a follow-up check of a BMP at the end of its approved lifespan. **J**urisdictions would also document procedures for removing BMPs which go beyond their life spans and do not require follow-up checks to confirm the BMP is still present and operational.

6e. Data Quality Assuring, Recording, and Reporting

This section documents the systems and processes utilized by the jurisdictions to confirm that initial inspections and follow-up checks were conducted, to prevent double counting, and to ensure quality assurance of the reported data prior to acceptance by the jurisdiction. Because BMP data will likely be reported to a jurisdiction from multiple sources in addition to the state agencies, written procedures are necessary to assure the quality of the data accepted by the jurisdiction. Any additional steps taken in properly recording the accepted data prior to its reporting through the jurisdiction's NEIEN node should also be documented.

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

The guidance provided within Sections 2 – 6 above will enable the jurisdictions to select and tailor the verification for agricultural practices that best suits their respective BMP priorities while ensuring conformity in terms (definitions), choices for methods, and approaches basin-wide. Jurisdictions should refer to the *State Protocol Component Checklist*[4] for the key elements of a complete state verification protocol process. If a jurisdiction decides to eliminate a component because it is unnecessary for its state process, it should provide documentation for why that component was deleted.

Once jurisdictions have identified the WIP priorities and BMP groupings, the specific verification methodologies that the state intends to use should be established and documented including the appropriate personnel (training or qualifications) for conducting the data collection, reporting, and verification process.

Jurisdictions will select methods of documentation that provide adequate information about the BMP to enable independent spot-checks by appropriately trained individuals. Jurisdictions will also develop an appropriate statistical selection process with the recommended review cycles of BMP implementation in their State Quality Assurance Plan.

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

Independent verification of BMP reporting programs and BMP implementation data will be addressed in state verification protocols. The State Quality Assurance Plans will ensure that the reported data is valid and representative of BMP implementation in the state. Independent verification can be conducted by agency personnel or qualified third parties, as long as they are trained to accurately assess BMP implementation data. Quality assurance personnel should be independent of those involved in the original BMP reporting and not directly involved with the entities responsible for the initial implementation of the BMPs.

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

Jurisdictions will develop a method to review data reported to the NEIEN submission system to ensure 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 subject to appropriate validation as required by the CBP.

Jurisdictions 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.

Part 8: Supplemental Assistance for Development of an Agricultural Practice Verification Protocol

Because a single verification method will not be relevant to all BMPs, or even across a single category of BMPs, jurisdictions will need to carefully evaluate the resources available for verification and the relative priority or significance of the BMPs it expects to verify. To assist jurisdictions, the Agriculture Workgroup has developed detailed supplemental matrices for the categories of agricultural BMPs described in Part 2:

- Visual Assessment BMPs - Single Year (Table 4)
- Visual Assessment BMPs - Multi-Year (Table 5), and
- Non-Visual Assessment BMPs (Table 6).

The supplementary matrices are arranged by type of verification method and provide reliability factors determined by the implementation mechanisms.

Table 3. Descriptions of the BMP performance measures provided by Supplementary Matrices for Jurisdictional Use.

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/CBP 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/CBP 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.

Table 4. Jurisdictional Agriculture Verification Protocol Design Table
Chesapeake Bay Program Partnership's Agriculture Workgroup
May 9, 2014

A. WIP Priority	B. Data Grouping	C. BMP Type	D. Initial Inspection (*Is the BMP there?*)				E. Follow-up Check (*Is the BMP still there?*)			F. Lifespan/ Sunset (*Is the BMP no longer there?*)	G. Data QA, Recording & Reporting
			Method	Frequency	Who inspects	Documentation	Follow-up Inspection	Statistical Sub-sample	Response if Problem		
High / Low	Visual Assessment: Single Year	Non-Cost Shared BMPs	**On-Site Visual Assessment (Limited Statistical Sampling)**	100% of All Tracked & Reported BMPs	Trained and certified technical agency/NGO field staff or engineers	BMPs meet appropriate government and/or CBP practice standards	Single Year	**10%[1] / 5%[2] QA of All Tracked & Reported BMPs (within the year)**	Bring into compliance within one year or less, or remove from reported BMPs	Single Year	Document inspections/follow-up checks, prevent double counting, and QA reported data
High / Low	Visual Assessment: Single Year	Cost-Shared Programs	On-Site Visual Assessment Only	100% of All Tracked & Reported BMPs	Trained and certified technical agency/NGO field staff or engineers	BMPs meet appropriate government and/or CBP practice standards	Single Year	**10% / 5% QA of All Active Contractual BMPs (within the year)**	Bring into compliance within one year or less, or remove from reported BMPs	Single Year	Document inspections/follow-up checks, prevent double counting, and QA reported data

Table 5. Jurisdictional Agriculture Verification Protocol Design Table
Chesapeake Bay Program Partnership's Agriculture Workgroup
May 9, 2014

A. WIP Priority	B. Data Grouping	C. BMP Type	D. Initial Inspection (*Is the BMP there?*)				E. Follow-up Check (*Is the BMP still there?*)			F. Lifespan/ Sunset (*Is the BMP no longer there?*)	G. Data QA, Recording & Reporting
			Method	Frequency	Who inspects	Documentation	Follow-up Inspection	Statistical Sub-sample	Response if Problem		
High / Low	Visual Assessment: Multi-Year	Non-Cost Shared BMPs	**On-Site Visual Assessment (Limited Statistical Sampling)**	100% of All Tracked & Reported BMPs	Trained and certified technical agency/NGO field staff or engineers	BMPs meet appropriate government and/or CBP practice standards	Multi-Year	10%[1] / 5%[2] Annually of All Tracked & Reported BMPs	Bring into compliance within one year or less, or remove from reported BMPs	Multi-Year	Document inspections/follow-up checks, prevent double counting, and QA reported data
High / Low	Visual Assessment: Multi-Year	Cost-Shared Programs	On-Site Visual Assessment Only	100% of All Tracked & Reported BMPs	Trained and certified technical agency/NGO field staff or engineers	BMPs meet appropriate government and/or CBP practice standards	Multi-Year	**10% / 5% of All Active Contractual BMPs**	Bring into compliance within one year or less, or remove from reported BMPs	Multi-Year	Document inspections/follow-up checks, prevent double counting, and QA reported data

High / Low	Visual Assessment: Multi-Year	Permit-Issuing Programs	On-Site Visual Assessment Only	100% of All Tracked & Reported BMPs	Trained and certified technical agency field staff or engineers	BMPs meet the appropriate government and/or CBP practice standards	Multi-Year	**100% Annually of All Active Permits**	Bring into compliance within one year or less, or remove from reported BMPs	Multi-Year	Document inspections/follow-up checks, prevent double counting, and QA reported data
EXAMPLE BMP	Visual Assessment: Multi-Year	State CAFO Permit Program: Animal Waste Storage Structure	On-Site Visual Assessment: Initial CAFO Permit Inspection	100% of All Active CAFO Permits	State Agency CAFO Certified Inspector	State CAFO Permit Inspection Certification Form	On-Site Visual Assessment: State CAFO Permit Compliance Inspection	**100% of All Active CAFO Permits**	State CAFO Program Permit Compliance Policy	State CAFO Permit Lifespan: 5 Years	State CAFO Program Documentation / 5% QAQC Compliance Checks by EPA / Tracking & Reporting Protocol

Table 6. Jurisdictional Agriculture Verification Protocol Design Table
Chesapeake Bay Program Partnership's Agriculture Workgroup
May 9, 2014

A. WIP Priority	B. Data Grouping	C. BMP Type	D. Initial Inspection (*Is the BMP there?*)				E. Follow-up Check (*Is the BMP still there?*)			F. Life-span / Sunset (*Is the BMP no longer there?*)	G. Data QA, Recording & Reporting
			Method	Frequency	Who inspects	Documentation	Follow-up Inspection	Statistical Sub-sample	Response if Problem		
High / Low	Non-Visual Assessment	Non-Cost Shared BMPs	On-Site Non-Visual Assessment Only	100% of All Tracked & Reported BMPs	Trained and certified technical agency/NGO field staff or engineers	BMPs meet the appropriate government and/or CBP practice standards	Single Year	10%[1] / 5%[2] Annually of All Tracked & Reported BMPs	Bring into compliance within one year or less, or remove from reported BMPs	Single Year	Document inspections/follow-up checks, prevent double counting, and QA reported data
High / Low	Non-Visual Assessment	Cost-Shared Programs	On-Site Non-Visual Assessment Only	100% of All Tracked & Reported BMPs	Trained and certified technical agency/NGO field staff or engineers	BMPs meet the appropriate government and/or CBP practice standards	Single Year	**10% / 5% of All Active Contractual BMPs**	Bring into compliance within one year or less, or remove from reported BMPs	Single Year	Document initial inspections/follow-up checks, prevent double counting, and QA reported data

High / Low	Non-Visual Assessment	Regulatory Programs	On-Site Non-Visual Assessment Only	100% of All Tracked & Reported BMPs	Trained and certified technical agency field staff or engineers	BMPs meet the appropriate government and/or CBP practice standards	Single Year	10% / 5% Annually of All Tracked & Reported BMPs	Bring into compliance within one year or less, or remove from reported BMPs	Single Year	Document initial inspections/follow-up checks, prevent double counting, and QA reported data
High / Low	Non-Visual Assessment	Permit-issuing Programs	On-Site Non-Visual Assessment Only	100% of All Tracked & Reported BMPs	Trained and certified technical agency field staff or engineers	BMPs meet the appropriate government and/or CBP practice standards	Single Year	**100% Annually of All Active Permits**	Bring into compliance within one year or less, or remove from reported BMPs	Single Year	Document initial inspections/follow-up checks, prevent double counting, and QA reported data
EXAMPLE BMP	Non-Visual Assessment	State Regulatory Programs: Nutrient Application Management	On-Site Non-Visual Assessment: Nutrient Management Plan Implementation	100% of All Tracked & Reported Nutrient Application Management Plans	County Conservation District Technician - State Nutrient Management Program Certified	State Nutrient Management Program Certification Form	On-Site Non-Visual Assessment: Nutrient Application Management O&M Compliance	10% of All Tracked & Reported Nutrient Application Management Plans	State Nutrient Management Regulatory Compliance Policy	3 Year Plans	State Nutrient Management Program Documentation / 5% QAQC Compliance Checks by State Agency / Tracking & Reporting Protocol

[1] WIP High: Minimum expectation for follow-up sub-sampling of BMPs achieving greater than 5% of the jurisdiction's WIP agricultural sector goals.
[2] WIP Low: Minimum expectation for follow-up sub-sampling of BMPs achieving equal to/less than 5% of the jurisdiction's WIP agricultural sector goals.

Draft Agricultural BMP Verification Guidance Matrix: Version 4.1

Chesapeake Bay Program Agriculture Workgroup (AgWG)

May 9, 2014

The following BMP verification methods have been identified by the Agriculture Workgroup as representing primary pathways for BMP verification and reporting being utilized by the partnership. The associated opportunities and limitations inherent for each method and BMP category type represent the current level of confidence that a sufficient level of verification can be implemented to ensure that the BMPs have been (1) implemented, are currently operational, and are being maintained to meet the BMP definition and relevant practice standards and requirements; and (2) be in compliance with the Chesapeake Bay Program Partnership's BMP Verification Principles, including any supporting addendums.

Visual Assessment BMPs - Single Year: Conservation Tillage; High-Residue Minimum Soil Disturbance; Cover Crops; Commodity Cover Crops / **Interim BMPs-** Dairy Manure Injection; Annual No-till; Poultry Litter Injection

Agricultural BMP Verification Methods	Assessment Methods	Verification Expectations	Visual Assessment BMPs - Single Year	Cost-Sharing Information					BMP Performance					
				Federal C/S	State C/S	NGO C/S	Private Funded	Previously C/S BMPs (Expired Contract)	BMP Detection	Meets USDA/ State Design Specs	Meets Federal/State O&M Specs	Resource Improvement (Non-Spec)	Installation Date (M/Y)	Expiration Date (M/Y)
1.) Permit Issuing Programs	Verified compliance with federal NPDES (CAFO) or state agricultural operational permit program requirements.	Annual frequency of permit compliance inspections for all or sufficient statistical percentage of permitted operations during permit life span. Review of office/farm records.	Eligible	Eligible	Eligible	Eligible	Eligible	Eligible	Eligible	Eligible	Eligible	Non-Applicable	Eligible	Eligible

2.) Regulatory Programs	Verified compliance with federal or state agricultural regulatory requirements (non-operational permit).	Annual frequency of regulatory compliance inspections for all or sufficient statistical percentage of regulated operations. Review of office/farm records.	Eligible	Eligible	Eligible	Eligible	Eligible	Eligible	Eligible	Eligible	Eligible	Non-Applicable	Eligible	Eligible
3.) Financial Incentive Programs	Verified compliance with federal program contractual requirements.	Annual frequency of contractual compliance inspections for all or sufficient statistical percentage of contracted operations during contractual life span. Review of office/farm records.	Eligible	Eligible	Potentially Eligible	Potentially Eligible	Not Eligible	Not Eligible	Eligible	Eligible	Eligible	Non-Applicable	Eligible	Eligible
4.) Financial Incentive Programs	Verified compliance with state or county program contractual requirements.	Annual frequency of contractual compliance inspections for all or sufficient statistical percentage of contracted operations during contractual life span. Review of office/farm records.	Eligible	Potentially Eligible	Eligible	Potentially Eligible	Not Eligible	Not Eligible	Eligible	Eligible	Eligible	Non-Applicable	Eligible	Eligible

5.) Financial Incentive Programs	Verified compliance with NGO program contractual requirements.	Annual frequency of contractual compliance inspections for all or sufficient statistical percentage of contracted operations during contractual life span. Review of office/farm records.	Eligible	Potentially Eligible	Potentially Eligible	Eligible	Not Eligible	Not Eligible	Eligible	Potentially Eligible	Potentially Eligible	Non-Applicable	Eligible	Eligible
6.) Farm Inventory	Farm inventory by trained and certified federal, state, and/or county agency personnel.	Annual frequency of inventories for all or sufficient statistical percentage of operations during BMP life span. Review of office/farm records.	Eligible	Eligible	Eligible	Eligible	Eligible	Eligible	Eligible	Eligible	Eligible	Non-Applicable	Eligible	Eligible
7.) Farm Inventory	Farm inventory by trained and certified NGO personnel.	Annual frequency of inventories for all or sufficient statistical percentage of operations during BMP life span. Review of office/farm records.	Eligible	Eligible	Eligible	Eligible	Eligible	Eligible	Eligible	Eligible	Eligible	Non-Applicable	Eligible	Eligible
8.) Farm Inventory	Farmer completes self-certified inventory survey and trained and certified federal, state and/or county personnel verify on-site.	Annual frequency of inventories for all or sufficient statistical percentage of operations during BMP life span. Review of office/farm records.	Eligible	Eligible	Eligible	Eligible	Eligible	Eligible	Eligible	Eligible	Eligible	Non-Applicable	Eligible	Eligible

9.) Farm Inventory	Farmer completes self-certified inventory survey and trained and certified NGO personnel verify on-site.	Annual frequency of inventories for all or sufficient statistical percentage of operations during BMP life span. Review of office/farm records.	Eligible	Eligible	Eligible	Eligible	Eligible	Eligible	Eligible	Eligible	Eligible	Non-Applicable	Eligible	Eligible
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12.) Farm Inventory	Farmer with training and certification completes self-certified inventory survey.	Annual frequency of inventories for all or sufficient statistical percentage of operations during BMP life span.	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Potentially Eligible	Not Eligible	Not Eligible	Non-Applicable	Potentially Eligible	Potentially Eligible

13.) Farm Inventory	Farmer without training and certification completes self-certified inventory survey.	Annual frequency of inventories for all or sufficient statistical percentage of operations during BMP life span.	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Potentially Eligible	Not Eligible	Not Eligible	Non-Applicable	Potentially Eligible	Potentially Eligible
14.) Office Records	Review of existing office records by trained and certified federal, state and/or county agency personnel. No on-site verification.	Annual frequency of office records review and verification for all or sufficient statistical percentage of operations during BMP life span.	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Potentially Eligible	Not Eligible	Not Eligible	Non-Applicable	Potentially Eligible	Potentially Eligible
15.) Farm Records	Review of existing on-farm records by trained and certified federal, state and/or county agency personnel. No on-site verification.	Annual frequency of on-farm records review and verification for all or sufficient statistical percentage of operations during BMP life span.	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Potentially Eligible	Not Eligible	Not Eligible	Non-Applicable	Potentially Eligible	Potentially Eligible
16.) Farm Records	Review of existing on-farm records by trained and certified NGO personnel. No on-site verification.	Annual frequency of on-farm records review and verification for all or sufficient statistical percentage of operations during BMP life span.	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Potentially Eligible	Not Eligible	Not Eligible	Non-Applicable	Potentially Eligible	Potentially Eligible
17.) Transect Survey	Statistically designed and recognized transect survey completed by trained and certified federal, state and/or county personnel.	Annual frequency of statistical transect surveys for a sufficient statistical percentage of operations during BMP life span.	Potentially Eligible	Potentially Eligible	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Potentially Eligible	Potentially Eligible	Potentially Eligible	Non-Applicable	Potentially Eligible	Potentially Eligible

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19.) CEAP Survey	CEAP statistical survey conducted in-person at field-level scale following NASS verification protocols.	Non-annual frequency of statistical CEAP surveys for a sufficient statistical percentage of operations during BMP life span may limit verification.	Potentially Eligible	Potentially Eligible	Potentially Eligible	Potentially Eligible	Potentially Eligible	Potentially Eligible	Potentially Eligible	Potentially Eligible	Potentially Eligible	Non-Applicable	Potentially Eligible	Potentially Eligible
20.) NASS Survey	NASS statistical survey conducted at farm-level scale following NASS verification protocols.	Annual frequency of statistical NASS surveys for all or sufficient statistical percentage of operations during BMP life span.	Potentially Eligible	Potentially Eligible	Potentially Eligible	Potentially Eligible	Potentially Eligible	Potentially Eligible	Potentially Eligible	Potentially Eligible	Potentially Eligible	Non-Applicable	Potentially Eligible	Potentially Eligible
21.) NRI Point (NRCS) or some other statistically selected sites	Statistical survey conducted in-person at field-level with NASS trained and certified personnel.	Non-annual frequency of statistical NRI surveys for a sufficient statistical percentage of operations during BMP life span may limit verification.	Potentially Eligible	Potentially Eligible	Potentially Eligible	Potentially Eligible	Potentially Eligible	Potentially Eligible	Potentially Eligible	Potentially Eligible	Potentially Eligible	Non-Applicable	Potentially Eligible	Potentially Eligible

22.) Remote Sensing	Statistically designed and recognized remote sensing surveys with supporting field-level scale ground-truthing verification.	Annual frequency of statistical remote sensing surveys implemented by trained and certified agency personnel, for all or sufficient statistical percentage of operations during BMP life span.	Potentially Eligible	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Potentially Eligible	Not Eligible	Not Eligible	Non-Applicable	Potentially Eligible	Potentially Eligible
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Draft Agricultural BMP Verification Guidance Matrix: Version 4.1

Chesapeake Bay Program Agriculture Workgroup (AgWG)

May 9, 2014

The following BMP verification methods have been identified by the Agriculture Workgroup as representing primary pathways for BMP verification and reporting being utilized by the partnership. The associated opportunities and limitations inherent for each method and BMP category type represent the current level of confidence that a sufficient level of verification can be implemented to ensure that the BMPs have been (1) implemented, are currently operational, and are being maintained to meet the BMP definition and relevant practice standards and requirements; and (2) be in compliance with the Chesapeake Bay Program Partnership's BMP Verification Principles, including any supporting addendums.

Visual Assessment BMPs - Multi-Year: Animal Waste Management Systems; Barnyard Runoff Control; Biofilters; Continous No-Till; Forest Buffers; Grass Buffers; Land Retirement; Steam-Side Forest Buffers; Stream-Side Grass Buffers; Stream-Side Wetland Restoration; Tree Planting; Lagoon Covers; Loafing Lot Management; Mortality Composters; Non-Urban Stream Restoration: Shoreline Erosion Control; Off-Steam Watering w/o Fencing; Stream Access Control with Fencing; Prescribed Grazing; Horse Pasture Management; Pasture Alternate Watering Systems; Soil Conservation & Water Quality Plan Elements; Water Control Structures; Wetland Restoration / **Interim BMPs-** Alternative Crops; Dirt & Gravel Road Erosion & Sediment Control; Cropland Irrigation Management; Irrigation Water Capture Reuse; P-Sorbing Materials in Ag Ditches; Vegetative Environmental Buffers- Poultry

Agricultural BMP Verification Methods	Assessment Methods	Verification Expectations	Visual Assessment BMPs - Multi-Year	Cost-Sharing Information					BMP Performance					
				Federal C/S	State C/S	NGO C/S	Private Funded	Previously C/S BMPs (Expired Contract)	BMP Detection	Meets USDA/ State Design Specs	Meets Federal/State O&M Specs	Resource Improvement (Non-Spec)	Installation Date (M/Y)	Expiration Date (M/Y)

1.) Permit Issuing Programs	Verified compliance with federal NPDES (CAFO) or state agricultural operational permit program requirements.	Non-annual frequency of permit compliance inspections for all or sufficient statistical percentage of permitted operations during permit life span. Review of office/farm records.	Eligible	Eligible	Eligible	Eligible	Eligible	Eligible	Eligible	Eligible	Eligible	Not Eligible	Eligible	Eligible
2.) Regulatory Programs	Verified compliance with federal or state agricultural regulatory requirements (non-operational permit).	Non- annual frequency of regulatory compliance inspections for all or sufficient statistical percentage of regulated operations. Review of office/farm records.	Eligible	Eligible	Eligible	Eligible	Eligible	Eligible	Eligible	Eligible	Eligible	Not Eligible	Eligible	Eligible
3.) Financial Incentive Programs	Verified compliance with federal program contractual requirements.	Non- annual frequency of contractual compliance inspections for all or sufficient statistical percentage of contracted operations during contractual life span. Review of office/farm records.	Eligible	Eligible	Potentially Eligible	Potentially Eligible	Not Eligible	Not Eligible	Eligible	Eligible	Eligible	Not Eligible	Eligible	Eligible

4.) Financial Incentive Programs	Verified compliance with state or county program contractual requirements.	Non-annual frequency of contractual compliance inspections for all or sufficient statistical percentage of contracted operations during contractual life span. Review of office/farm records.	Eligible	Potentially Eligible	Eligible	Potentially Eligible	Not Eligible	Not Eligible	Eligible	Eligible	Eligible	Potentially Eligible	Eligible	Eligible
5.) Financial Incentive Programs	Verified compliance with NGO program contractual requirements.	Non-annual frequency of contractual compliance inspections for all or sufficient statistical percentage of contracted operations during contractual life span. Review of office/farm records.	Eligible	Potentially Eligible	Potentially Eligible	Eligible	Not Eligible	Not Eligible	Eligible	Potentially Eligible	Potentially Eligible	Potentially Eligible	Eligible	Eligible
6.) Farm Inventory	Farm inventory by trained and certified federal, state, and/or county agency personnel.	Non-annual frequency of inventories for all or sufficient statistical percentage of operations during BMP life span. Review of office/farm records.	Eligible	Eligible	Eligible	Eligible	Eligible	Eligible	Eligible	Eligible	Eligible	Eligible	Eligible	Eligible
7.) Farm Inventory	Farm inventory by trained and certified NGO personnel.	Non-annual frequency of inventories for all or sufficient statistical percentage of operations during BMP life span. Review of office/farm records.	Eligible	Eligible	Eligible	Eligible	Eligible	Eligible	Eligible	Eligible	Eligible	Eligible	Eligible	Eligible

8.) Farm Inventory	Farmer completes self-certified inventory survey and trained and certified federal, state and/or county personnel verify on-site.	Non-annual frequency of inventories for all or sufficient statistical percentage of operations during BMP life span. Review of office/farm records.	Eligible	Eligible	Eligible	Eligible	Eligible	Eligible	Eligible	Eligible	Eligible	Eligible	Eligible	Eligible
9.) Farm Inventory	Farmer completes self-certified inventory survey and trained and certified NGO personnel verify on-site.	Non-annual frequency of inventories for all or sufficient statistical percentage of operations during BMP life span. Review of office/farm records.	Eligible	Eligible	Eligible	Eligible	Eligible	Eligible	Eligible	Eligible	Eligible	Eligible	Eligible	Eligible
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12.) Farm Inventory	Farmer with training and certification completes self-certified inventory survey.	Non-annual frequency of inventories for all or sufficient statistical percentage of operations during BMP life span.	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Potentially Eligible	Not Eligible	Not Eligible	Not Eligible	Potentially Eligible	Potentially Eligible
13.) Farm Inventory	Farmer without training and certification completes self-certified inventory survey.	Non-annual frequency of inventories for all or sufficient statistical percentage of operations during BMP life span.	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Potentially Eligible	Not Eligible	Not Eligible	Not Eligible	Potentially Eligible	Potentially Eligible
14.) Office Records	Review of existing office records by trained and certified federal, state and/or county agency personnel. No on-site verification.	Non-annual frequency of office records review and verification for all or sufficient statistical percentage of operations during BMP life span.	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Potentially Eligible	Not Eligible	Not Eligible	Not Eligible	Potentially Eligible	Potentially Eligible
15.) Farm Records	Review of existing on-farm records by trained and certified federal, state and/or county agency personnel. No on-site verification.	Non-annual frequency of on-farm records review and verification for all or sufficient statistical percentage of operations during BMP life span.	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Potentially Eligible	Not Eligible	Not Eligible	Not Eligible	Potentially Eligible	Potentially Eligible
16.) Farm Records	Review of existing on-farm records by trained and certified NGO personnel. No on-site verification.	Non-annual frequency of on-farm records review and verification for all or sufficient statistical percentage of operations during BMP life span.	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Potentially Eligible	Not Eligible	Not Eligible	Not Eligible	Potentially Eligible	Potentially Eligible

17.) Transect Survey	Statistically designed and recognized transect survey completed by trained and certified federal, state and/or county personnel.	Non-annual frequency of statistical transect surveys for a sufficient statistical percentage of operations during BMP life span.	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Not Eligible
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19.) CEAP Survey	CEAP statistical survey conducted in-person at field-level scale following NASS verification protocols.	Non-annual frequency of statistical CEAP surveys for a sufficient statistical percentage of operations during BMP life span may limit verification.	Potentially Eligible	Potentially Eligible	Potentially Eligible	Potentially Eligible	Potentially Eligible	Potentially Eligible	Potentially Eligible	Potentially Eligible	Potentially Eligible	Potentially Eligible	Potentially Eligible	Potentially Eligible
20.) NASS Survey	NASS statistical survey conducted at farm-level scale following NASS verification protocols.	Non-annual frequency of statistical NASS surveys for all or sufficient statistical percentage of operations during BMP life span.	Potentially Eligible	Potentially Eligible	Potentially Eligible	Potentially Eligible	Potentially Eligible	Potentially Eligible	Potentially Eligible	Potentially Eligible	Potentially Eligible	Potentially Eligible	Potentially Eligible	Potentially Eligible
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Non-Visual Assessment BMPs: Dairy Precision Feeding; Swine Phytase; Poultry Litter Transport; Poultry Litter Treatment; Poultry Phytase; Decision/Precision Ag, Enhanced Nutrient Management; Nutrient Application Management; Precision Intensive Rotational Grazing; Soil Conservation & Water Quality Plans

Agricultural BMP Verification Methods	Assessment Methods	Verification Expectations	Non-Visual Assessment BMPs	Cost-Sharing Information					BMP Performance					
				Federal C/S	State C/S	NGO C/S	Private Funded	Previously C/S BMPs (Expired Contract)	BMP Detection	Meets USDA/ State Design Specs	Meets Federal/State O&M Specs	Resource Improvement (Non-Spec)	Installation Date (M/Y)	Expiration Date (M/Y)
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18.) Transect Survey	Statistically designed and recognized transect survey completed by trained and certified NGO personnel.	Annual frequency of statistical transect surveys for a sufficient statistical percentage of operations during BMP life span.	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Non-Applicable	Not Eligible	Not Eligible
19.) CEAP Survey	CEAP statistical survey conducted in-person at field-level scale following NASS verification protocols.	Non-annual frequency of statistical CEAP surveys for a sufficient statistical percentage of operations during BMP life span may limit verification.	Potentially Eligible	Potentially Eligible	Potentially Eligible	Potentially Eligible	Potentially Eligible	Potentially Eligible	Potentially Eligible	Potentially Eligible	Potentially Eligible	Non-Applicable	Potentially Eligible	Potentially Eligible
20.) NASS Survey	NASS statistical survey conducted at farm-level scale following NASS verification protocols.	Annual frequency of statistical NASS surveys for all or sufficient statistical percentage of operations during BMP life span.	Potentially Eligible	Potentially Eligible	Potentially Eligible	Potentially Eligible	Potentially Eligible	Potentially Eligible	Potentially Eligible	Potentially Eligible	Potentially Eligible	Non-Applicable	Potentially Eligible	Potentially Eligible
21.) NRI Point (NRCS) or some other statistically selected sites	Statistical survey conducted in-person at field-level with NASS trained and certified personnel.	Non-annual frequency of statistical NRI surveys for a sufficient statistical percentage of operations during BMP life span may limit verification.	Potentially Eligible	Potentially Eligible	Potentially Eligible	Potentially Eligible	Potentially Eligible	Potentially Eligible	Potentially Eligible	Potentially Eligible	Potentially Eligible	Non-Applicable	Potentially Eligible	Potentially Eligible

22.) Remote Sensing	Statistically designed and recognized remote sensing surveys with supporting field-level scale ground-truthing verification.	Annual frequency of statistical remote sensing surveys implemented by trained and certified agency personnel, for all or sufficient statistical percentage of operations during BMP life span.	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Non-Applicable	Not Eligible	Not Eligible
23.) Remote Sensing	Statistically designed and recognized remote sensing surveys with supporting field-level scale ground-truthing verification.	Annual frequency of statistical remote sensing surveys implemented by trained and certified NGO personnel, for all or sufficient statistical percentage of operations during BMP life span.	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Not Eligible	Non-Applicable	Not Eligible	Not Eligible