

12. BMP Verification for manure treatment systems

Manure Treatment Technologies represents a new suite of BMPs for the CBP modeling tools starting with Phase 6. As such, the practice is not included in the jurisdiction's verification plans that were submitted to the CBP in late 2015.¹ As with all BMPs, the jurisdictions will be expected to document their verification protocols and procedures in their Quality Assurance Project Plan (QAPP) for manure treatment technologies that are reported to the CBP for nitrogen crediting reductions under the recommended BMPs. The jurisdictions will be able to do so after this expert panel recommendation report is approved by the CBP partnership following the BMP Protocol, and before the jurisdictions are able to start submitting these BMPs in the Phase 6 modeling tools. As the states consider how to verify manure treatment technologies and as they document those procedures in their QAPP, state partners should follow the existing Agriculture Workgroup's BMP Verification guidance.

The AgWG's current verification guidance breaks BMPs into three general categories: Visual Assessment BMPs (Single Year), Visual Assessment BMPs (Multi-Year), and Non-Visual Assessment BMPs. The complete AgWG guidance is quite extensive (79 pages long, including all tables and its own appendices) and is not restated in this section. The panel is not proposing any new or unique aspects of BMP verification for purposes of the BMPs described in this report. This section simply explains how the recommended BMPs correspond to the existing BMP verification guidance.

As described in Section 3 of this report, manure treatment is part of a larger manure management system that often involves multiple physical components (e.g., a compost bin, a digester, a screw press, a storage shed, etc.) which can be visually assessed over time. Manure treatment practices also incorporate non-visual components (e.g. manure transport) in addition to management plans or other documentation as needed under applicable state or federal agricultural permits and/or programs. Thus, manure treatment systems can reasonably be verified using elements of both the Non-Visual Assessment and Visual Assessment (Multi-Year) categories described by the AgWG.

Each state will determine the most appropriate methods for verifying the various MTT systems given their specific priorities, programs, needs, and capacity. For example, one state may lean more heavily on the Visual Assessment (Multi-Year) elements by leveraging existing site visits to farms to also verify that the composting facility meets applicable state or federal standards and specifications. Or, the state may determine that available records are detailed enough to provide sufficient verification through spot-checks. Ideally the state will leverage elements of both categories to verify that the physical treatment system is operating as intended, and that the data in their records are accurate and up-to-date.

To verify the default thermochemical and composting BMPs recommended in this report for nitrogen reduction credits in the Phase 6 CBWM (level 1), jurisdictions can reasonably follow the AgWG's guidance for Non-Visual Assessment BMPs. Verification for Non-Visual Assessment BMPs depend more on oversight and checks on records or documentation rather

¹ http://www.chesapeakebay.net/about/programs/bmp/additional_resources

than visual assessment of a physical structure. The nitrogen reductions for default BMPs described in this report can be verified following the AgWG's guidance for non-visual assessment BMPs since it is an annually reported BMP, and the most important criteria (i.e. type of treatment system, animal manure type treated, amount of manure that was treated) should be documented somewhere in records available to the applicable state agency. Given the close association between manure treatment and other CBP-approved BMPs (e.g., manure transport) the state agency can potentially verify the type and amount of manure that was treated via one of the thermochemical or composting systems described by the panel. If the state agency finds that even this basic information cannot be verified through its spot-checks or other annual BMP verification procedures described in its QAPP, then the BMP cannot satisfy the definitions and expected nitrogen reductions described in this report.

When the state agency has more detailed information available for both reporting and verification purposes, then they may be able to report the given system under the defined (level 2) category. By providing a separate category for the higher nitrogen reductions (defined, level 2), the panel provides a framework with additional built-in elements of BMP verification. If records available to the applicable state agency do not document the process factors described for that technology, then the given system should be reported under the corresponding default (level 1) BMP using the more basic information that is available. By assigning lower estimated reductions when only basic information is available, it is less likely that a reported treatment system will not provide the estimated nitrogen reductions developed by the panel. This reinforces the basis of BMP verification, i.e. that the reported practice is implemented and operating as intended. With more detailed information about the process factors, verified according to the AgWG's guidance, the partnership can have more confidence that the given manure treatment system is operating more effectively to remove nitrogen from the treated manure.

Manure treatment systems reported under the data driven (Level 3) category described in Section 10 demand more rigorous record-keeping and quality control of records to determine their reported nitrogen reductions. As discussed in Section 10, state and/or federal programs already exist that may require extensive data collection, sampling and reporting by the given farm or centralized manure treatment operation as part of a permitting or regulatory program.

For more information about the CBP Partnership's BMP Verification Framework

The full CBP partnership BMP Verification Framework is available online (scroll down to October 2014 Basinwide BMP Verification Framework Document):

http://www.chesapeakebay.net/about/programs/bmp/additional_resources

The current Agriculture Workgroup's BMP Verification Guidance is included in Appendix B of the full Framework Document. For the AgWG's guidance only, go here:

<http://www.chesapeakebay.net/documents/Appendix%20B%20-Ag%20BMP%20Verification%20Guidance%20Final.pdf>