Manure Treatment Technology Subgroup Final Report

Manure Treatment Subgroup Members

- Marel Raub, Chesapeake Bay Commission
- Glenn Carpenter, USDA
- Peter Hughes, Red Barn Ag
- Ted Tesler, PA Dept. of Env. Protection
- Beth McGee, Chesapeake Bay Foundation
- Dwight Dotterer, MD Dept. of Agriculture
- Kristen Hughes Evans, Sustainable Chesapeake

Chesapeake Bay Program guidance and support by Mark Dubin and Emma Giese

Manure Treatment Subgroup Tasks

The goal of this ad hoc subgroup is to recommend a framework for an expert review panel to develop BMPs for manure treatment technologies for the Ag Workgroup's approval:

- Identify technologies for review;
- Prioritize order of review;
- Recommend ares of expertise for panel members; and
- Draft guidelines and scope of work for the review process.

Comments on Draft Report

I. "Handling of the final product is critical. Withhout a viable use of the material resulting from the technology, the technology is going to be limited in its lifespan."

Expert Panel Scope of Work, Additional Guidelines:

Consider the fate and forms of all nutrients in the treated manure. For example, consider the fate of phosphorus in the ash or biochar and potential nitrogen air emissions associated with thermally treated manure. It is important to note that the management of byproducts or co-products is often critical to achieving nutrient reductions associated with manure treatment technologies.

Comments on Draft Report

II. Clarify that the Expert Panel has flexibility to subdivide categories to account for variation between types:

Expert Panel Scope of Work:

The panel may chose to modify or subdivide the treatment technology categories, for example subdividing a treatment category depending on the availability of data and nutrient reduction performance. The panel approach may require that specific experts be engaged for evaluation of specific categories of technologies.
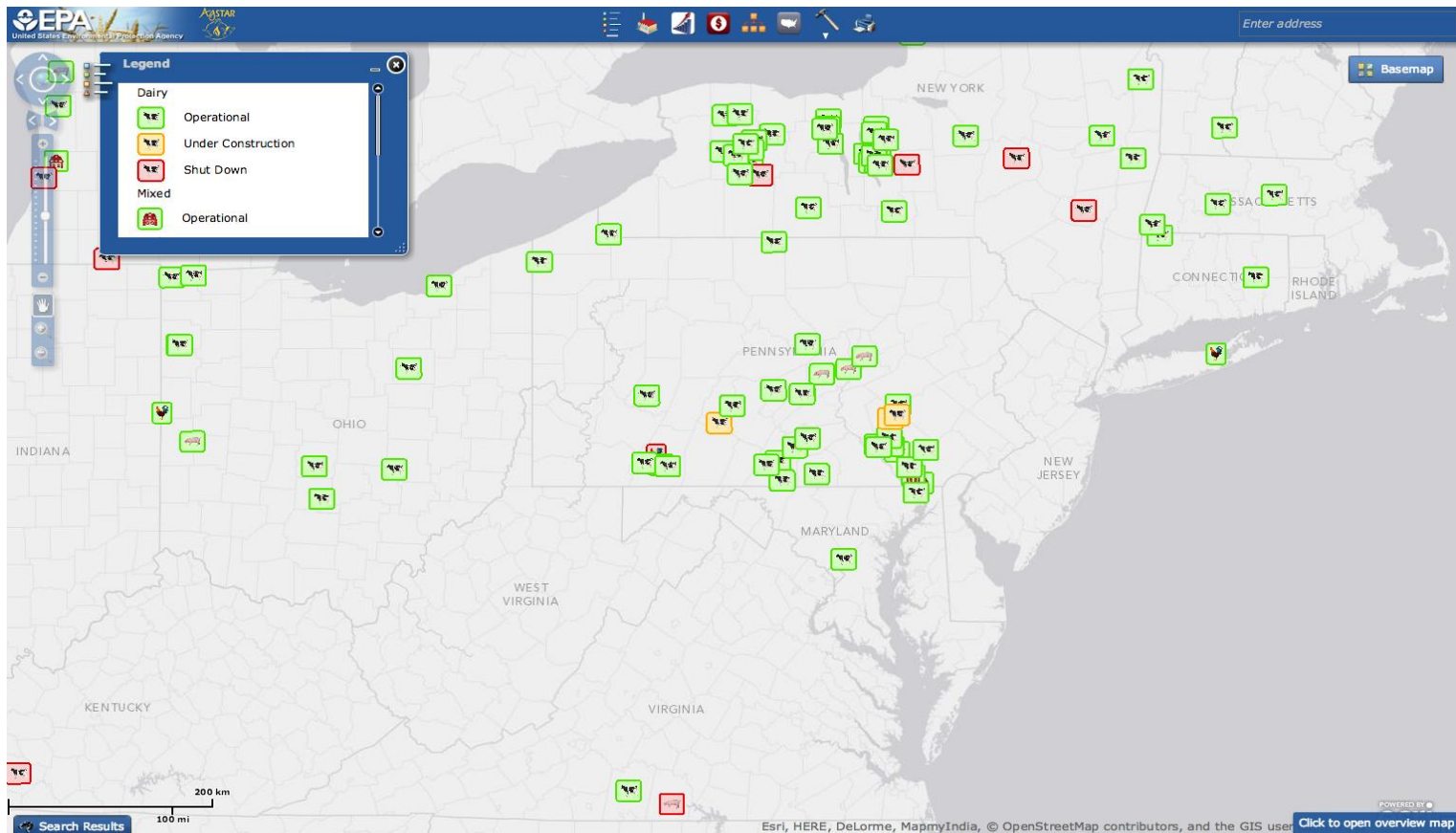
Comments on Draft Report

III. Provide citation for nitrogen transformation associated with anaerobic digestion.

   - We cited the Doug Beegle/Team Ag report evaluting nutrients in pre and post digestate.
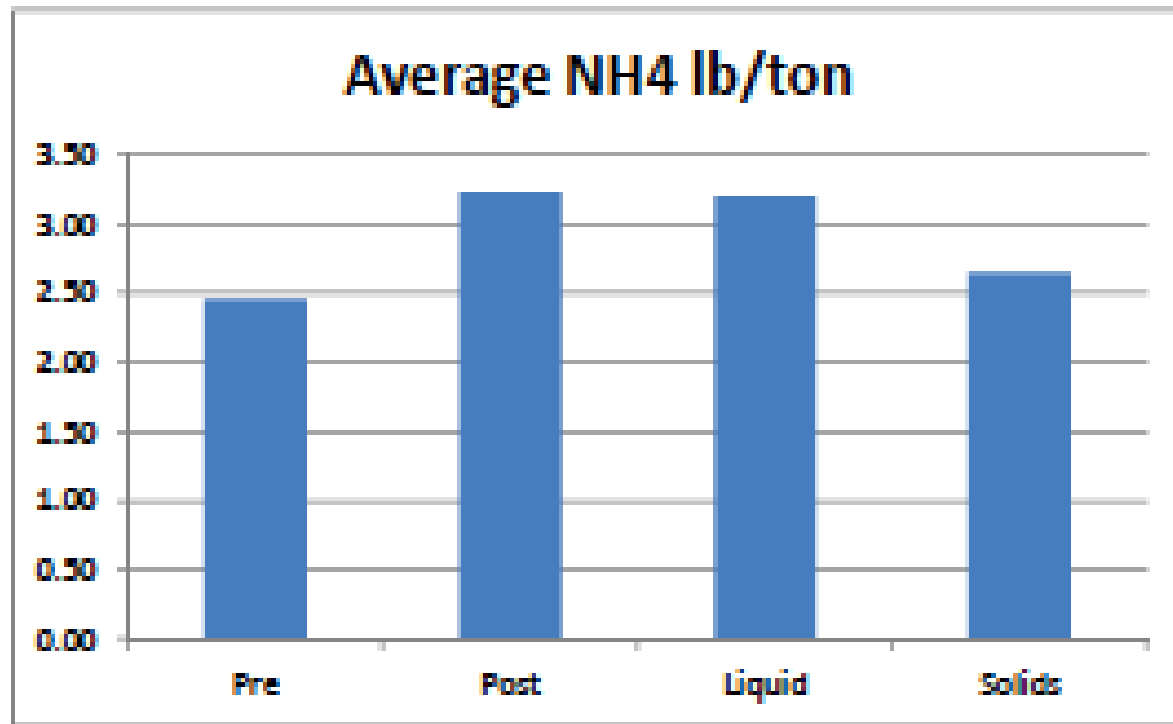
Comments on Draft Report

IV. Clarify extent of anaerobic digester adoption. Referenced EPA AgSTAR digester mapping tool....

Comments on Draft Report

V. Address issue of why biological removal of N was not given a higher priority.

> We noted that the practice is not widely utilized for manure or proposed for widespread adoption on farms in the Chesapeake Bay region.

VI. Question as to whether the scope of work is too comprehensive? Does it focus effort away from the primary task to "quantify nutrient reduction benefits of these manure treatment technologies."

- Our response to this was that the scope of work was taken almost directly from the Water Quality Goal Implementation Team Protocol for the Development, Review, and Approval of Loading and Effectiveness Estimates for Nutrient and Sediment Controls in the Chesapeake Bay Watershed Model, and as such, should not be significantly altered.

Comments on Draft Report

VII. Recommendation to capture variation across temperature, and geography and other structural, management and permitting issues. Additional question as to whether verification guidance will be included in the panel considerations.

- The WQGIT protocol addresses all of these issues.

Additional Recommendations

◆ Suggestion to consider recruiting USDA or EPA experts in atmospheric emissions from Manure Treatment Technologies to serve on the Expert Panel.

◆ The atmospheric emissions component could be captured from other external sources by the panel versus recreating information internally.

Recommendations for Final Report Approval from the Work Group?