

# Agriculture Workgroup (AgWG)

January 26<sup>th</sup>, 2017

10:00 AM – 2:00 PM

## AgWG & WTWG Joint Face-to-Face Meeting Call Summary

Meeting materials: <http://www.chesapeakebay.net/calendar/event/24860/>

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### **Actions & Decisions:**

**Decision:** The AgWG approved the following proposed methodology for setting statistical confidence standards for BMPs submitted through alternative verification methods: use of a two-step process, wherein the first step requires a sample size greater than or equal to 20, a False Hit Rate (FAR) threshold of 0.2 or below (upper 90% confidence limit value), and a Hit Rate (HR) threshold of 0.7 or greater (lower 90% confidence limit value). If the previous conditions are met, the second step of this process would correct for bias in the BMP quantity by using the ratio of Post-Agreement Rate (PAG)/Hit Rate (HR) (lower 90% confidence limit value). This recommendation will remain in place until modified by the AgWG at a future time based upon additional data to help inform these recommendations.

**Decision:** The AgWG approved representing the Cover Crops Panel Appendix A with the full suite of available cover crop practices.

**Decision:** The WTWG approved representing the Cover Crops Panel Appendix A with the full suite of available cover crop practices.

**Decision:** The AgWG made a formal recommendation to the WQGIT for no additional delineation or reporting for non-federal or federal agricultural land other than what's being reported by states currently, with clear messaging that federal agricultural practices are being reported and upheld in the Bay Model.

**Decision:** The AgWG agreed to close out the work of the Phase 6 Cover Crops Panel.

### **Welcome, introductions, roll-call, review meeting minutes**

Workgroup Chairs

- Minutes from the January 19<sup>th</sup> meeting were approved.
- Call for nominations for 1-year AgWG at-large membership positions. All nominations are due to Lindsey Gordon ([Gordon.lindsey@epa.gov](mailto:Gordon.lindsey@epa.gov)) and Mark Dubin ([mdubin@chesapeakebay.net](mailto:mdubin@chesapeakebay.net)), with resume or CV, **by January 31<sup>st</sup>**. Please note that current 1-year term members are eligible for re-nomination.

### **Statistical Confidence for Alternate BMP Verification Methods**

Mark Dubin, Tetra Tech

Representatives, USDA Representatives

Following discussions from the AgWG's January 15<sup>th</sup> meeting, the workgroup discussed a [proposal](#) to establish a new standard for statistical confidence of agricultural BMPs that are submitted through alternative BMP verification methods.

*Discussion:*

- Rich Batiuk: So you've done a sample survey, you've run the statistics, and determined your confidence levels. If a partner is low on a specific practice, then they could target that practice to collect additional samples and thereby increase the confidence. So this could be used essentially 'post-survey' to get the additional information that's needed?
  - Steve Dressing: Exactly – it becomes more of a process than a single decision point.
- Tim Sexton: This also has a lot of applications outside of BMPs, and I think Tetra Tech has done a fabulous job on this. I sent this to Wade Thomason, to get his thoughts on whether this methodology would pass muster for a PhD defense or something equivalent. Overall though, it seems like a very sound methodology.
- Ted Tesler: In the reference that you used, did they analyze the remote sensing data using manual- or computer-classified methods?
  - Jon Harcum: The paper was only focused on whether a practice was tillage or not, and I believe that it was a computer-based classification. However, I think this study could apply to both types of interpretation methodologies.
- Alisha Mulkey: So the Sullivan paper wasn't looking at structural practices, just agronomic?
  - Steve Dressing: Correct.
  - Jon Harcum: That paper was the only study we identified that actually looked at sample size and level of effort in ground-truthing.
- Mark Dubin: Dr. Lee Norfleet submitted comments on this report, and he thought there was risk for the over-estimation of practice benefits. He also thought that the number of critical practices, or sample size, is still a bit arbitrary.
  - Jon Harcum: Regarding the idea of sample size for evaluation, we proposed that a minimum of 20 is a good starting point, but more is always better. If you know from the remote sensing that you're only finding 20 practices in a state-wide program, then it's tough to evaluate and I don't know if those practices would make a significant impact on water quality anyway.
- Tim Sexton: Remember that as you move from project to project, the hit rate and false alarm rate (FAR) is going to vary. What you're hoping to find and what you actually find won't always be the same, so you might have to do more field work on a particular project than you did for a previous one.
- Tim Sexton and Rich Batiuk put forward a motion to approve the recommendations from Tetra Tech, including use of the 2-step process, a minimum sample size of 20 (up to individual project to determine where and when it is feasible to implement this), and to maintain a FAR threshold value of **0.2** and an HR threshold value of **0.7**.
- Alisha Mulkey questioned whether the results of the report are sufficiently applicable to structural practices despite the fact that the primary source informing the report recommendations did not consider structural practices.
  - Steve Dressing: These thresholds would be BMP-specific.
  - Rich Batiuk: Confidence levels combined with the two-step process makes me feel more comfortable.
- Alisha Mulkey: Would it be feasible to delay this decision in case I requested additional time to review these materials?
  - Mark Dubin: Making a decision as soon as possible would allow the PA partners additional time to do more field work and gather additional data to be completed by March.
  - Ed Kee: If something comes up that provides discomfort regarding these recommendations, could the AgWG review them at a later time?

- Mark Dubin: We could come back as a workgroup and readjust later if needed, and amend this recommendation if there's a need to do that.
- Ron Ohrel: The observed and confirmed on the ground – is that simply presence/absence, or is there a professional judgement?
  - Steve Dressing: We assume that everything's done correctly – so presence/absence.
- Chris Brosch: I'm really not sure what types of values need to be attached to this survey work in order to develop the type of confidence that is needed to feel comfortable with the results.
  - Ed Kee: That's a legitimate comment, but remember that we also hired Tetra Tech to conduct these analyses and help guide our recommendations.
- Chris Brosch: Is there a value to motioning to approve the framework, but do numbers for upper confidence limits need to be attached in order to proceed?
  - Rich Batiuk: I think we do need those confidence levels at this point – I'd like NRCS folks to report back on what they learned from this, and keep reviewing and adjusting as necessary. So we can come back, but let's come back with the survey completed. I'll work to get additional analyses on other statistics in the works.
  - Frank Schneider: So we will approve allowing NRCS to move forward with conducting additional surveys with the determined confidence levels, but only for a term until the AgWG comes back to review?
- Denise Coleman: I want to have assurance between we go back out to do this that if we hit these levels and sample sizes, that those practices for PA can be included in the model.
  - Rich Batiuk: I'm comfortable with that, and by potentially over-sampling that gives me more confidence.
- Mark Dubin: We have a quarterly meeting in March, and we'd like to invite the NRCS team back to present on the results of their additional work.
- Matt Johnston: If PA is reporting waste storage structures through this survey, would that mean they're not reporting waste storage structures through other reporting structures? I'm worried about overlap.
  - Ted Tesler: It would have to be one or the other - the value of this approach is that it's an all-encompassing snapshot, so we really are put into the position of having to use all of this and none of the other, or go back to what we know is lesser quality data.
- Denise Coleman: When our folks looked at this as a snapshot, the reviewers of the remote sensing were very cautious in what they labeled. So we found that there was more on the ground than what was reported into the model. I think there's a level of assurance that we're not over-reporting with the remote sensing.
- Tim Sexton: I would recommend using the two-step process, with the sample size  $>$  or  $=$  20, and if the FAR is 0.2 and the HR is 0.7, then I would recommend they move forward with this. And there will always be things that are not suitable for remote sensing, so you don't want to lower the standard for something to fit that is not suitable for remote sensing.
- Rich Batiuk motioned that the AgWG approve the proposed methodology to include a two-step process (including a lower confidence limit) using a sample size greater than or equal to 20, a false hit rate threshold of 0.2, and a hit rate threshold of 0.7. This recommendation will remain in place until modified by the AgWG at a future time based upon additional data to help inform these recommendations.
- Alisha Mulkey requested an update on the PA farmer survey effort and the crediting of Phase 6 nutrient management plans.
  - Rich Batiuk: The WQGIT approved language related to this, and EPA put guidance documentation together to limit the use of book values in place of manure analysis

contingent on the book values being more conservative than the manure analysis values. We have been working to put together that guidance, seeking input from the Phase 6 nutrient management panel and CBP workgroups, and I've shared a copy of this with the AgWG state leads. We are now working with PA colleagues to apply that guidance, and we had agreement in terms of a 3-part approach to review the basis for how Penn State determined their book values, to ask our PA DEP and SCC colleagues to reach out to their conservation districts to collect information on actual manure management plans, and to have documentation on how PA documents their soil analysis, management requirements, and application guidelines. Next steps include modifying our draft guidance and distributing to the AgWG.

**Decision:** The AgWG approved the following proposed methodology for setting statistical confidence standards for BMPs submitted through alternative verification methods: use of a two-step process, wherein the first step requires a sample size greater than or equal to 20, a False Hit Rate (FAR) threshold of 0.2 or below (upper 90% confidence limit value), and a Hit Rate (HR) threshold of 0.7 or greater (lower 90% confidence limit value). If the previous conditions are met, the second step of this process would correct for bias in the BMP quantity by using the ratio of Post-Agreement Rate (PAG)/Hit Rate (HR) (lower 90% confidence limit value). This recommendation will remain in place until modified by the AgWG at a future time based upon additional data to help inform these recommendations.

#### **Cover Crops Panel Technical Appendix (Appendix A)**

Matt Johnston

Two options for reporting Cover Crops BMPs in the Phase 6 NEIEN system, to be included in the technical appendix (Appendix A) of the partnership approved panel report, were presented. Option A will be similar to previous panel report technical appendices, and Option B will be a simplified version for reportable Cover Crops BMPs.

#### *Discussion:*

- Bill Keeling: It doesn't appear to me that what we do no longer matches what is defined as commodity cover crops – I suggested a possible solution that we be allowed to map what we do to something more appropriate.
  - Matt Johnston: I got an email suggesting VA work with EPA to resolve this issue – this is something that every state does through QAPP plans.
  - Bill Keeling: If that's agreeable to EPA, then I need to move on modifying the history and re-submitting it very quickly.
  - Rich Batiuk: I'm comfortable with that – so the need to resubmit would be acceptable.
- Tim Sexton: I have to make a presentation to people running our cost-share programs in regards to cover crops, and I've had conversations with Ken Staver and our cost-share program representatives. As a result, my recommendation is that we stay with the entire list (Option A).
  - Motion on the table, seconded by Chris Brosch.
- Mark Dubin: Ken Staver couldn't be here today, but he communicated to me that the panel would feel comfortable with Tim's motion as presented.
- Bill Keeling: The current NEIEN appendix A has roughly 400 cover crops. Are we proposing to add this current list to that 400 number? Or is it in lieu of that original list?
  - Matt Johnston: The Phase 6 appendix has 240 combinations states can currently report. They all map to what our list was before this panel got completed. Now we'll have a new list, and I'll have a new mapping scheme that I will present to the WTWG. In the future if states have a new practice, then we'll deal with it on a case-by-case basis.

- Keeling: So in effect it is a consolidation even though the AgWG didn't approve that. We won't have hundreds of varieties to choose from – it will be what we're looking at now.
- On behalf of the WTWG, Ted Tesler entertained a motion for the WTWG to approve the proposed Appendix A. Greg Sandi seconded, and Bill Keeling abstained from voting citing issue with rotating land uses and combining BMPs.
- James Davis-Martin asked how quickly he could see model runs to apply BMPs to the new land uses.
  - Matt Johnston replied that the model wouldn't be able to produce those scenarios until May.
  - Rich Batiuk noted that some of these model runs should be completed so that the partnership can review outputs during the fatal flaw review period.
- Matt Johnston presented information on how BMPs are combined in the Phase 6 model.

**Decision:** The AgWG approved representing the Cover Crops Panel Appendix A with the full suite of available cover crop practices.

**Decision:** The WTWG approved representing the Cover Crops Panel Appendix A with the full suite of available cover crop practices.

#### **Submitting BMPs on Federal Agriculture Land**

Sarah Diebel, Jeff Sweeney, Gary Shenk

Sarah Diebel with the US DoD, Jeff Sweeney with the EPA-CBPO, and Gary Shenk with the USGS

[presented](#) an overview on the extent of agricultural lands on Federal facilities, and the question on how to best represent the implementation of BMPs and the management of these Federal agricultural lands within the Phase 6 modeling tools. The workgroup reviewed several options to address this question, and formed a recommendation for the WQGIT to derive a decision for the Phase 6 modeling tools and Phase 3 WIP planning tools.

#### *Discussion:*

- James Davis-Martin asked the AgWG if they had made a decision on applying BMP efficiencies to all land uses – federal and non-federal. Mark Dubin and Tim Sexton replied that this decision had been made, to be able to implement efficiencies on federal versus non-federal lands.
- Mark Dubin: For ag land uses and BMPs, the AgWG did not make a distinction on the land use type.
- James Davis-Martin: I'm asking if when you set the 30 varieties of land uses for agriculture, if you decided that they could be applied to federal agriculture lands.
- Gary Shenk: So you're asking if we expected there to be park service cropland?
  - Tim Sexton: We knew there was, but we didn't see a reason to differentiate federal, state, or privately-owned land at the time. There had been an order that all federal lands would follow through on the Bay clean-up.
- Alisha Mulkey: Is the ag on federal land included in the ag census?
  - Sarah Diebel: If we're leasing land to the private farmer, the probability that they're reporting information on their management practices, regardless of the land type, is probably going to be equal to if they are reporting in the census in general. You're right that we don't know the answer, but I would hope that if they're reporting to the ag census, then they are likely reporting to the state.

- Gary Shenk: The uncertainty of the ag census is 20-30% at the county level, and this is equivalent to 0.15% of the total agricultural land in the Bay, so it doesn't make much difference.
- Alisha Mulkey: I was thinking about the non-leased federal lands.
- Mark Dubin: For that type of federal land, I would think it's unlikely they would be reporting.
- Rich Batiuk asked how to differentiate between state versus federal implementation outlined in Option 3.
  - Gary Shenk: We're asking federal partners to tell us what's being implemented on their land, and state partners would tell us what's being implemented on the non-federal portion of their land.
  - Rich Batiuk: So the federal agency would be responsible for capturing all of the information necessary to report those BMPs?
  - Gary Shenk: From the conversations I've had, that's my understanding.
  - Mark Dubin: So if you wanted to implement a practice with NRCS cost-share funding, you'd need to get permission from the land owner and get a signed agreement for management of that property.
  - Sarah Diebel: It would be easier said than done from the federal point of view.
  - Gary Shenk: I understand that process of federal partners submitting conservation practices through NEIEN is constant through all of these options except for the first one.
- Tim Sexton: I would guess the majority of federal lands in VA are either impervious land or forest, so is it worth the effort for me to worry about that small percentage of what's left over that may or may not be ag land? I'm not sure.
  - Frank Schneider: I would agree from PA's perspective.
  - Ed Kee and Chris Brosch both agreed that it likely wouldn't be worthwhile from their perspectives.
  - James Davis-Martin: But federal agriculture constitutes 10% of the herbaceous areas in federal lands. Are we going to give them a free pass? Federal agencies could write in requirements for BMPs on their leased land, but we don't do that anywhere except for state-owned land.
  - Frank Schneider: I'm just saying I don't know if the juice is worth the squeeze.
  - Sarah Diebel: We agree with Frank's point, and to add to that, we don't know what the historical record looks like for agriculture and moving forward this has provided us with a level of understanding that there is an obvious gap in what we are doing from an ag perspective. We could certainly consider requirements in our lease agreements in the future.
- Alisha Mulkey: In Prince George's county, the district has a very close working relationship with the USDA ARS Beltsville facility, so MD would want to preserve whatever option that allows the district to continue working there, and to provide the appropriate WIP credit for doing that work. So it makes a difference for us in one county, but in the grand scheme of things it's not that big of a deal. It's fine if we leave it as-is, but we would like to preserve that relationship and credit in Prince George's county.
  - Gary Shenk: If we leave it like it is, Beltsville has a perimeter, and if we put all agriculture that happens in Beltsville into the general domain of the county, the actual Beltsville site shrinks in terms of the overall land use.
  - Alisha Mulkey: I just know that people have pushed for additional federal accountability in the WIP process.

- Matt Johnston: For NEIEN purposes in Phase 6, you can report your agency. So if PA wanted to report NPS for Gettysburg, you could and there would be credit. This is just enhancing the options.
  - James Davis-Martin: So USDA's high levels of implementation in Beltsville would be spread across the rest of the county, so you wouldn't be able to differentiate effort between what's ag in the county and what's the work of the federal agency.
- Tim Sexton: Since there is no federal designation of lands, then there is no border to cross, correct? So if there is a BMP that my farmer is reporting, it's not being excluded correct?
  - Gary Shenk: Correct.
  - Tim sexton: It's just not reported as being on a federal property because we have elected not to separate them out.
- Ted Tesler: I think it would be difficult to sort them out. From the urban side, we couldn't separate them there either, so it would be tough to create the designations within existing permitting streams.
- Alisha Mulkey: Last time I saw the options, we were going to report at the county, but there was an option to run a separate CAST scenario at a later time for federal agencies to show their due diligence.
  - Gary Shenk: It's like Option 3, but Option 3 more or less requires them to submit BMPs. At the WQGIT, we discussed that you can run these in BayFAST, so you can make an assessment there. This doesn't necessarily show up directly in the progress run except to the extent that you've submitted those BMPs to the county, and then you submit them.
- Ed Kee: We're being asked to make a formal recommendation to the WQGIT, so I'll entertain any motions.
- Frank Schneider: I motion for Option 1 to have no federal agriculture.
  - Tim Sexton seconded.
- Paul Bredwell: We need to be very careful about how we share this data in terms of messaging. I don't know if the option should be no federal ag, but maybe revise to say that it will be accounted for in the ag land in some way; similar to what Alisha described.
  - Gary Shenk: Federal ag rolled into the general ag population.
- Chris Brosch: We could amend the proposal to include some type of BayFAST-produced report from the federal folks to tell us how it shakes out when they account for this.
  - Sarah Diebel: We have a federal facility target-setting protocol, which tells us how federal facilities should report planned implementation.
  - Chris Brosch: But is there an accountability piece that goes to reporting that plan?
  - Tim Sexton: There is federal accountability. How they track and report, I don't know.
  - Sarah Diebel: On an annual basis, EPA sends out a call to federal office directors and members from the FFWG. That data collection request is facilitated by EPA CBPO. Some states have both stormwater and agricultural tabs for reporting BMPs; some states do not. So there is a process established for reporting BMPs.
- Mark Dubin: Ted – do you currently get data inputs for PA federal facilities?
  - Ted Tesler: Not explicitly. Our system doesn't track federal permits to federal facilities separately.
- Tim Sexton: Does DoD or army or air force report any of their activities directly to NEIEN or any mechanism?
  - Matt Johnston: No federal agencies report directly to NEIEN. They report using templates that get reviewed by state leads. Then all of that information is combined. As

Ted described – sometimes it’s difficult because PA feels that some of those BMPs are already in their database, so it would be hard to separate that.

- Ed Kee: I hear that federal facilities have a responsibility to report practices to the appropriate state agencies. So then the states have a relationship to communicate with the federal agencies to get that data.
  - James Davis-Martin: We’re talking about having a land use to apply those BMPs too so we can separately track performance by federal facilities on lands they own with performance on non-federally owned lands. Essentially – are federal facilities doing their fair share?
- Jim Cropper: I fail to see the utility of this from the standpoint of Phase 6, especially if it won’t move the needle one way or the other. When it comes to reporting and you want to hold someone’s feet to the fire, that’s a separate issue. With the model, and all of the things we’ve done to streamline and simplify, the error in all of that is probably much greater than the 0.15% mentioned earlier.
- Dave Montali: First off, the time to add new land uses has long passed. If the AgWG is making a decision on whether to have federal ag land uses, I think those decisions have already been made. Given the amount of land we’re talking about here, there’s no fatal flaw reason to make these changes. If you’re asking more than whether there should be federal ag land uses and also asking the question of how we accommodate federal ag in our planning and reporting practices, then that’s a bigger issue. But my suggestion would be no new federal ag land uses and alternate means to accommodate federal land and WIP planning and progress reporting.
- Frank Schneider: Repeat my motion for no additional delineation or reporting for non-federal or federal ag land other than what’s being reported by states currently, with clear messaging that federal agriculture is being reported.

**Decision:** The AgWG made a formal recommendation to the WQGIT for no additional delineation or reporting for non-federal or federal agricultural land other than what’s being reported by states currently, with clear messaging that federal agricultural practices are being reported and upheld in the Bay Model.

**Wrap-Up/Review of Action and Decision Items/Announcements** Workgroup Chairs, M. Dubin, L. Gordon  
Lindsey reviewed the actions and decisions from the meeting.

**Decision:** The AgWG agreed to close out the work of the Phase 6 Cover Crops Panel.

- Ed Kee asked the AgWG to begin thinking about future panels and projects to begin work on.
  - Agriculture Workgroup members should submit their suggestions to Mark Dubin and Lindsey Gordon.

**Next meeting: Thursday, February 16<sup>th</sup> 10:00 – 12:00 Conference Call**

**Participants:**

Name	Affiliation
Ed Kee	DDA/Retired



Lindsay Thompson	DE-MD Agribusiness Assoc.
Mark Dubin	UMD
Lindsey Gordon	CRC
Chris Brosch	DDA
Clint Gill	DDA
Tyler Monteith	DNREC
Brittany Sturgis	DNREC
Lori Brown	DNREC
Alisha Mulkey	MDA
Robin Pellicano	MDE
Greg Albrecht	NYS
Frank Schneider	PA State Conservation Commission
Jill Whitcomb	PA DEP
Ted Tesler	PA DEP
Nicki Kasi	PA DEP
Dave Montali	Tetra Tech/WV DEP
Teresa Koon	WV DEP
Tim Sexton	VA DCR
Bobby Long	VA DCR
Bill Keeling	VA DEQ
Marel King	CBC
Kelly Shenk	EPA
Rich Batiuk	EPA
Joel Blanco	EPA R3
Jeff Sweeney	EPA
Bill Angstadt	Angstadt Consulting
Marilyn Hershey	Ar Joy Farms LLC
Tim Garcia	USDA
Denise Coleman	USDA
Marcy Dunn	USDA NRCS
Joe Kraft	USDA NRCS
Glenn Carpenter	USDA NRCS
Paul Bredwell	US Poultry and Egg Assoc.
Ron Ohrel	Mid-Atlantic Dairy Assoc.
Steve Dressing	Tetra Tech
Don Meals	Tetra Tech
Jon Harcum	Tetra Tech
Matt Johnston	UMD
Emily Dekar	USC
Jeremy Hanson	VT
Joe Montenegro	PA Farm Bureau
Jim Cropper	Northeast Pasture Consortium
Gary Shenk	USGS
Sarah Diebel	DoD
Adam Wright	DoD
Olivia Devereux	Devereux Consulting

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