

# Agriculture Workgroup (AgWG)

April 21<sup>st</sup>, 2016

10:00 AM – 3:00 PM

## Face-to-Face Meeting Call Summary

Meeting materials: <http://www.chesapeakebay.net/calendar/event/23293/>

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### Actions & Decisions:

DECISION: The AgWG approved of the proposed interim BMP efficiency for poultry mortality freezers.

ACTION: Lindsey Gordon will work with Mark Dubin and Ken Staver to revise the Cover Crops Panel timeline in order to more accurately reflect their decision deadlines and meeting dates with relevant panels and subgroups in the AgWG.

ACTION: The Cover Crops Panel will distribute the definitions for their BMPs in advance of the May AgWG meeting.

ACTION: The Modeling Team will run additional scenarios that have been proposed by the Nutrient Management Panel, including Kelly Shenk's request for county-level information posted in advance of the May meeting. These scenarios and documentation information will be made available to the AgWG in May.

DECISION: The AgWG approved the proposed membership for the Phase 6 Ditch Management BMP Expert panel.

DECISION: The AgWG reached consensus to hold an all-day meeting at the USGS Offices in Baltimore, MD in place of their regularly scheduled conference call on Thursday, May 19<sup>th</sup>.

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|-------|--|---------------------|
| 10:00 | <b>Welcome, introductions, roll-call, review meeting minutes</b>   | Workgroup Chairs    |
|       | <ul style="list-style-type: none"><li>• Meeting minutes from the March 17<sup>th</sup> conference call were approved.</li><li>• Mark Dubin proposed holding a follow-up face-to-face meeting for the regularly scheduled May AgWG conference call.</li></ul>   |                     |
| 10:10 | <b>AgWG Roadmap</b>  | M. Dubin, L. Gordon |
|       | <ul style="list-style-type: none"><li>• Mark and Lindsey presented the revised 2016 Roadmap to the AgWG, which will be routinely updated and housed on the <a href="#">AgWG website</a> under the 'Projects &amp; Resources' Tab.</li><li>• Maryland representatives noted that they would prefer to see a true Gantt chart be developed in order to more clearly represent the panel's decisions and deadlines, and to display how the panel schedules compare.<ul style="list-style-type: none"><li>○ Lindsey and Mark will look into developing a true Gantt chart as per MD's request.</li></ul></li></ul> |                     |

10:20 **Manure Treatment Technologies Panel Report**

J. Hanson, D. Hamilton

- Jeremy Hanson, VT, and Doug Hamilton, OK State, presented the recently released Manure Treatment Technologies Panel report, which the AgWG is asked to review in preparation for a request for approval during the May meeting. For more information, follow this [link](#).
- Marilyn Hershey: As it relates to digesters, is food waste taken into consideration, and how does that affect the P and N?
  - Hanson: The recommendations are only applied to manure nutrients. The model doesn't explicitly account for other sources like food waste. But it's unlikely that would change the overall balance in terms of nutrients, the manure is going to be the bulk of that.
  - Hamilton: For the accounting through the modeling process, they'll pass through. Co-digestion products may affect the way nutrients are transformed, but since in our recommendations we don't have a removal efficiency or a transfer efficiency for either of those nutrients, it won't affect it for the recommendations. So we couldn't see from the different co-digestion products a change in manure nutrients.
- Karl Brown: In a wet chemical treatment system, why would there be no volatilization losses considered?
  - Hamilton: It depends on the dosing, so all of our recommendations are going to fall back to either the separation process, which gets back to the processes that don't have any volatilization. The question that's come up in the settling basin – the panel isn't saying they don't think volatilization takes place, but nobody collected that data to tell us how much N came out.
- Dirk Axe: As you look at VA and up to the north, we have about 1.5 million dairy cows. In DelMarVa we have poultry. Is any of this species specific?
  - Hamilton: If you go through the report, the fourth thing in each chapter will tell you which types of manure this type of technology will be used on. I think for separation technologies, we at least break it down between swine and dairy.
  - Axe: If you take broiler litter and burn it, you'll have a 0, 20, 20 NPK product. If you burn cow manure, you'll have a 0, maybe 4, 4 NPK. Much different in terms of organic matter from those species. I know some of this is directed towards cows, but we need to look at the nature of the byproduct coming from this and the technology that's going to be used.
  - Hamilton: If you look at the body of the report, some of that is in there. If you look on a mass basis, rather than a concentration basis, it's how we determined our recommendations.
- Matt Johnston: We are tracking species and manure content separately in the model. If you are directly reporting your nutrients, it depends on what kind of animal you're treating.
- James McNoughton: The responsibility as new technology comes along – what is the panel's responsibility extended to identifying what this technology is, what category it's in, and specific to a product?
  - Hanson: This specific panel, once the report is approved, will be dismissed. There's always the opportunity for future panels to revisit these recommendations, and expand on them.

- Meisinger: On your N volatilization efficiency, you're lumping N<sub>2</sub> losses, N<sub>2</sub>O loss, and NH<sub>4</sub> loss. Could you do some separation of that into those components, because they're really different? Something to consider at a level 2.

#### 11:05 Poultry Mortality Freezer Interim BMP

M. Johnston, M. Dubin

- Matt and Mark presented [a proposed interim BMP](#) to represent poultry mortality freezers in the Phase 5.3.2 CBP modeling tools for planning purposes only.
- Kee: You mention landfill, and that is not the destination for this. This is about removing mortality and putting it back into the protein stream, eventually for pet foods, etc. For the foreseeable future, this is about poultry.
- Chris Brosch suggested looking at a Michigan State Report that was published recently, that would be helpful in defining pounds of N and P per ton of carcass.
- Bobby Long: We're talking about routine mortality? How do we deal with catastrophic mortality?
  - Dubin: We're looking at typical annual mortality. If something catastrophic happened, that's not directly pertinent to this interim BMP.
  - Johnston: Catastrophic mortality would be important if it happened during the calibration period. If it occurs this year, for example, it doesn't matter for the managers who are only concerned with the model and average conditions.
  - Lindsay Thompson: Specific to the freezers, a lot of farmers are getting cost-share for them, which accounts for the potential for a catastrophic loss.
  - Kee: But there's no expectation that if it's really catastrophic, the freezers will handle it?
- Marel King: If the intent of the freezers is for rendering, is that a non-land application end use? Composting would likely be a land application.
- James McNoughton: I assume you'd have this as an annual number, but I'd also suggest that when you start collecting data, that you don't give a choice of what that is to the person collecting the data. In other words, Jan 1 – Dec 1. The other part is catastrophic could be summertime issues with poultry, at times.

DECISION: The AgWG approved of the proposed interim BMP efficiency for poultry mortality freezers.

#### 11:20 Waste Water Treatment Workgroup Biosolids Reporting

K. Berger, M. Johnston

- Matt and Karl presented the options identified by the WWTWG for tracking and reporting biosolids sources of nutrients in the Phase 6.0 modeling tools. The AgWG will be asked to make a formal recommendation on tracking and reporting biosolids nutrient sources during the May meeting. Click [here](#) to see their presentation.
- Johnston: Big question is do we include septage?
- Brosch: Thanks for this effort that's been made. I think as long as we're looking at it as trading sectors from waste water treatment plants (WWTPs) to the non-point source realm, then it's definitely worth investing our time in. Biosolids is so regulated, and having any application exceed crop need seems like a red flag for regulators.
  - Johnston: From a modeling perspective, the application lines have to continue to 10,000% percent but never actually get that high.
  - Brosch: In a real-world situation, if there's an acre with its nutrient load delivered by one source, if I were to model that as receiving 200% of its crop need because it was pasture, that's a concern. In many cases, on a county scale

this will struggle to reach 10%. The logic where it could possible to exceed that – there doesn't seem to be a strong indication that we need to adopt that logic when it doesn't follow that regulation.

- Johnston: When you have the rate at which you can apply compared to crop need exceeding one to one, that's my concern.
- Berger: You're right. You can't, on an individual farm field basis, exceed the Nutrient Management regulations for that. But this is not a field scale model, so for the purposes of where this will be used, it'll all come out as an average rate.
- Matt Johnston suggested testing it out in the model to see if that particular instance would happen.
- Johnston: Do you all feel that it's equitable to allow DE to report septage because they have that information, and allow the other states to report what comes through the WWTPs?
- Marel King: If urban products aren't currently part of the model, are they otherwise captured in non-ag fertilizer sales? Or are those nutrients somehow otherwise captured if they're not tracked as biosolids?
  - Johnston: The applications to urban lands in Phase 6 are still up in the air. They're coming around to what the AgWG's done before, which is varied applications through time.
- Karl Brown: Why not include any biosolids that are land applied, either on ag-lands, forests, or mine reclamation sites?
  - Berger: We can track the numbers for forestry, but you can't use the same logic you use for ag land for nutrient fate and transport as you would for forest land, and there's not a huge amount of data available.
- Montali: Getting back to Matt's question – in WV we have a program for permitting land application as septage. It's minor compared to biosolids or sludge, but we stopped pursuing that when the direction came from above to just deal with POTWs. So we could get something together, and if it's a big thing for DE then I would say yes they should be able to deal with it, just make sure it stays classified as septage.
- Robin Pellicano: I'm not sure about other states, but there could be a regulation where the biosolids can't be applied to certain crops, and I don't know if that's been thought about.
  - Johnston: I'm working on a crop list, and you're right – biosolids will only be applied to certain crops.

#### 12:00 **Break for Lunch**

#### 12:40 **Preliminary BMP Expert Panel Reports**

AgWG BMP Panel Chairs

- The Phase 6.0 BMP panel chairs will present their drafted preliminary reports, which outline the proposed structure, definition, and applicable land uses for each AgWG Phase 6 BMP. The AgWG will be asked to approve these reports during their May meeting. Draft versions of the preliminary reports are available on the [calendar event page](#).
- Wade Thomason, VT Chair of the Conservation Tillage Panel, presented the panel's preliminary report.
  - Ted Tesler: I see you have four categories – have you established where there would and would not be credit for each of those categories in the model?

- Dubin: We're looking to create BMP categories that would be reflected in NEIEN for states to use in future reporting. It'll also have information from CTIC's NRI data, and the current transect surveys conducted by both PA and DE.
- Tesler: So we could have those residue values going forward into the next Phase? And could we expand credit to a 329 practice?
- Dubin: Yes. Moving to Phase 6, we no longer have conservation tillage as a land use.
- Thomason: If you meet the criteria for residue cover and the <40% disturbance for practice 329, then yes. Bill Keeling pointed that out in the appendix, the NRCS practice codes are no longer there to reference.
- Marel King: Has any thought been given to manure incorporation, and how that practice influences the soil and where the different types of incorporation practices would fall within these definitions?
  - Thomason: Short answer is yes. In the majority of these systems, the literature's telling us that our nutrient loss and sediment loss is really driven by the amount of residue cover.
- Dirk Axe: Do we understand that we're dealing in a coastal range with a CEC of about 5 or less? Essentially sand. Suggested incorporating different physiographic regions into their considerations.
  - Thomason: I think it's a good idea, so we can certainly explain why we would have differences and what physical and chemical characteristics would influence that.
- Curt Dell, USDA Chair of Manure Incorporation & Injection Panel, presented the panel's preliminary report.
  - Angstadt: How are you going to track and verify this practice?
    - Dell: For incorporation, we'll follow very closely what the tillage panel is doing.
  - Angstadt: I would say that the tracking and verification of this BMP will be very important moving forward.
    - Dell: We may need to clue into the Nutrient Management Panel for their tracking and verification as well.
  - Simpson: What's the potential for P runoff from surface events? Isn't it much like a surface application?
    - Dell: We've found that we got really good infiltration improvement with an aerator, and that helped reduce P runoff quite a bit.
- Mark Dubin presented on the Cover Crops Panel report on behalf of the panel chair, Ken Staver.
  - Keppler: If our federal partners are looking at cover crops beyond just nutrient removal, we should incorporate that into the report.
  - Angstadt: One of the reasons that we're doing these preliminary reports is for the benefit of the modelers, so that if there will be significant changes in the panels, then they have enough time to make those changes. This seems like you're reinventing this pretty extremely. Not just tweaking the efficiency. We need much more information to approve this by next month.
  - Kee: What's the status of the work that Bill correctly says needs to be done?
  - Dubin: I think the group could request seeing a timeline about when they'll have these discussions with the AMS and Modeling Team, to see that it's on the

agenda would be good. In addition, the panel will be posting their report 10 days ahead of time.

- Johnston: Ken Staver was very concerned about how winter cereals are modeled. We can come back to you and report back with where we are. We probably won't have an answer by the July calibration.
- Angstadt: What's the worst case scenario, here?
- Johnston: The April calibration is honestly the worst-case scenario.
- Cropper: What's the consideration of sediment control? Do you account for those variabilities?
- Dubin: You're looking at timing and method of planting, and species. Each factor has weightings and what the values are.
- Angstadt: I would ask that the expert panel sit down with Lindsey and revise the Gantt chart so we have shared expectations of realistically what they're going to do and when.
- Kee: When can they realistically deliver it? Here's the rub for me – If somehow we get into Phase 6 and we're still using 'ancient' data, there's a real credibility problem in the community. So we need to think about that, but if the whole process has to be moved back 3 months, then that's a better fate than having a sub-par model.
- Sexton: If you're going to revise the timeline, I'd like to be able to see what deliverables we can expect at certain times.
- Marel King: As we're thinking about extending timelines, they're still looking at final deadlines being final deadlines. I want to know what we're setting ourselves up for in terms of review periods. I want to know how much opportunity for the back and forth that we'll have.
- Dubin: By allowing us to get some of this information to the modeling team now, that will help set up the modeling team to implement these BMPs.
- Montali: There was a pretty strong consensus to try and get everything done by September, other than the new land use. I think the GIT will try very hard to hold the BMPs to the September 30 deadline, but the schedule will also include a fatal flaw review in March.
- Kee: So the bottom line for the AgWG is really getting to know what's needed from the Cover Crop Panel before the May meeting.
- Meisinger: This also involves the Nutrient Management panel and Conservation Tillage panel. So the ownership is not just on the Cover Crops Panel, but we really need some coordination between all 3 panels.

**ACTION:** Lindsey Gordon will work with Mark Dubin and Ken Staver to revise the Cover Crops Panel timeline in order to more accurately reflect their decision deadlines and meeting dates with relevant panels and subgroups in the AgWG.

**ACTION:** The Cover Crops Panel will distribute the definitions for their BMPs in advance of the May meeting.

- Frank Coale, UMD chair of the Nutrient Management Panel, presented the NMP's preliminary report.
  - Johnston: Application goal doesn't necessarily equal rate in the model – it's a flux.

- Angstadt: Isn't the pink really the no-practice nutrient balance?
  - Coale: Yes it is – acres that don't satisfy those conditions.
- Angstadt: So if you run Scenario Builder (SB) with a no-NM practice, your numbers should be the top (pink) box.
- Meisinger: This is going to be for each land use, right?
  - Coale: Right. This will have to be reported for each land use for each county.
- Simpson: All the pasture that gets less than LGU recommendations meets that?
- Angstadt: I'm still challenged – I understand the no-practice BMP efficiency, but isn't the function of N application goals a function of SB mass balance? Are we trying to do two things in one place and making it very confusing?
  - Coale: Our goal here is to say if you're managing a piece of land according to NM conditions, you get credit for a reduced application goal on those acres. If you're not, then you start out with a higher application goal on acres that are not NM credited.
- Thompson: I think the confusion is between what's in SB as the N application with a no-BMP scenario – isn't that effectively non-NM? So what does this do in addition to that?
  - Johnston: So the panel said core NM is all about the rate. So the scheme here that Frank is presenting is: in the April version, we start with a goal of getting corn to 100 lbs of N/acre. If we have an acre of NM, it will stay at 100 lbs, and non-NM would move to 120 lbs. In the end, we still have the same amount of manure, it's just helping SB explain better why it's going down where it is. And for fertilizer, it will redistribute it a little bit from that big bucket.
- Marel King: Is this that negative credit?
  - Coale: It's the negative credit turned positive. We said earlier that our expectation is that all acres would be getting NM expectations, and if you weren't doing that there would be a negative efficiency. So instead we transitioned it into a high-rate versus low-rate based on whether the acre is in NM.
- Angstadt: At some point, we have to explain this, so I think we need to keep this as simple and credible as possible.
  - Kee: I supervise the DE Nutrient Mgmt. Commission, and I don't have a clue how to explain all of this to them. But we have to get some resolution on this. We have to hone in on this somehow.
- Coale: I have a lot more ease to convey the message that one application rate is lower for NM than the other acres that are not.
- Montali: For calibration, we're using all the methods to count everything, but it accommodates the effects of NM over time. So one message I think is important is that NM is important, but it's an indirect BMP. On the manure side, it drives transport, and on fertilizer, it drives reduced use. But I think it should be used as a mechanism to predict the effects of additional or fewer NM acres after calibration.
- Thompson: So within each of those categories (rate, placement, timing), can you do 1, all, or any combination to get the efficiency?
  - Coale: You can do any assessment and any implementation within those 3 categories, to get an efficiency.

- Kee: Is it not true that to get to the efficiency, all of that is dependent on NM planning in the top half?
  - Coale: Right – planning, and the process.
- Angstadt: From a messaging standpoint, these are the right messages. From how the N and P loads and application goals work, I think we still have to see more information to make any kind of opinion or recommendation. Until we see all of these pieces together, we don't know what it's going to look like.
  - Coale: But our goal was to set up the structure of our BMP, so if the structure is sound, then that's what we're trying to achieve.
  - Johnston: The April calibration version of the top green box. What Frank and Curt and I are asking is whether you want us to test between now and May to incorporate the Pink box.
- Thompson: It seems to me that all of this is measuring nutrient changes within a single spatial scale, so I don't see what this is really changing in the model. Seems like you're just redistributing nutrients in a single area.
  - Coale: It's really for me an educational point of view and not so much a 'counting tons' point of view.
- Angstadt: I like this messaging. And I think there's a couple of challenges: one being tracking from a state standpoint. I would suggest Mark Dubin come back with an explanation of where tracking and verification would fit in this. And what would this mean for the states to try and track those? If we accept these as non-visual, is this going to be part of the annual report that they can self-certify this? And then to Matt's question – I suggest we table that idea until after the AMS update to see if we're ready to run something else.
- Shenk: I have a recommendation on the tracking piece. NRCS emphasized decision agriculture as the way of the future. We also need to get from each of the states what they're doing to track higher level NM. Just having a better understanding of federal and state tracking will help answer Bill's question.
- Dubin: We actually need the panel to provide some more information to do that. We need to set some goals for those different land use units for Matt to be able to run the numbers. I think the timeline you're talking about will fit into that.

1:50 **Agricultural Modeling Subcommittee Update**

M. Johnston, C. Dell

- Matt Johnston, UMD, and Curt Dell, USDA, in coordination with the Nutrient Management Panel Chair, Frank Coale, presented [approaches for representing nutrient spread in the Phase 6 Scenario Builder](#).
- Meisinger: If we're going to end up using fertilizer sales, how do we verify that?
  - Johnston: We can look at CEAP and see that we're less than .25% off, and also look at MD AIR data.
  - Meisinger: But NM is such a local, site-specific piece at a field scale, and we're trying to use county-level information to verify it.
  - Angstadt: But it's not a BMP, and it's not something that has to be verified.
  - Meisinger: These two approaches are very difficult to blend together.
- Kee: We need to figure out what needs to get done and by when.
- Dubin: I was thinking we could let them do some model runs and have some side-by-side comparisons by May 19<sup>th</sup>, everyone would have information to inform a decision. We'll need panel variables about their proposal, and what was in the April version.



- Angstadt: So you want to run the April Beta 2 with what additional scenarios?
  - Dubin: What the NMP is suggesting.
- Shenk: In that model run comparative analysis, is it possible to tease out how the watershed wide redistribution relates to regional loading rates in areas where you aren't applying inorganic fertilizer anymore?
  - Dubin: The one request from the AMS is for a county by county comparison.
  - Johnston: I can certainly supply application rates and changes. But if you're using the term 'loading rate', that's a different step in the calibration and we can't give you that yet.
  - Brosch: The sensitivity analysis has been run on this version, correct? In terms of change of pounds in to pounds out, the modeling workgroup has looked at that for a long time now.
- Dirk Axe: How do you integrate all of this into reality?
  - Dubin: You're looking at a model that's calibrated based on water quality monitoring data from monitoring data. When you're looking towards the future, the model is used to forecast conditions.
- Angstadt: I think we need to be more specific of what we need from here to May. So Matt will run scenarios with the caps, and you'll give us the April documentation. For the July run, you're doing a bunch of new things from crop removal to legume fixation. Could we get documentation of what you're going to do in the July run?
- Matt and Curt will also update the AgWG on the interim Scenario Builder components that have been incorporated into the Phase 6.0 beta modeling tools. This presentation will kick-off an open comment period until May 5<sup>th</sup> on the proposed changes to Scenario Builder.
- Angstadt: The modelers have asked for 30 days before model runs to lock down data elements and BMPs that we want to see, and that's what we want to see on May 19<sup>th</sup>.

ACTION: The Modeling Team will run additional scenarios that have been proposed by the Nutrient Management Panel, and with Kelly Shenk's request for county-level information posted in advance of the May meeting. These scenarios and documentation information will be made available to the AgWG in May.

2:40 **Proposed BMP Panel Memberships**

C. Brosch, C. Gill

- Chris Brosch and Clint Gill presented the [proposed membership](#) for the Phase 6 Ditch Management BMP Panel, which was distributed for partnership review on Friday, April 8<sup>th</sup>.

DECISION: The AgWG approved the proposed membership for the Phase 6 Ditch Management BMP Expert panel.

2:55 **Wrap-Up/Review of Action and Decision Items/Announcements**

Workgroup Chairs/M. Dubin/L. Gordon

- Ed Kee gave closing remarks on facilitating and working towards involving local farmers and local leadership in the decision-making and outreach process.

DECISION: The AgWG reached consensus to hold an all-day meeting at the USGS Offices in Baltimore, MD in place of their regularly scheduled conference call on Thursday, May 19<sup>th</sup>.

3:00 **Adjourn**

**Next meeting: Thursday, May 19<sup>th</sup> 10:00 – 3:00 PM at the USGS Offices in Baltimore, MD.**

**Participants:**

Lindsey Gordon, CRC

Mark Dubin, UMD

Ed Kee, Sec. of Agriculture, DDA, AgWG Chair

James McNoughton, AH Pharma Inc.

Dirk Axe, Granco Minerals

Matt Johnston, UMD

Kristen Saacke Blunk, Headwaters LLC,

Representing National Fish & Wildlife  
Foundation

Tom Simpson, Energy Works

Karl Berger, MWCOG

Jeremy Hanson, VT

Dave Montali, WV DEP

Jim Cropper, Northeast Pasture Consortium

Doug Hamilton, OK State

Jack Meisinger, USDA

Peter Thomas

Susan Marquart, NRCS

Robin Pellicano, MDE

Victor Clark, Greener Solutions

Ron Ohrel, Mid-Atlantic Dairy Assoc.

Kim Snell-Zarcone, Conservation PA

Ted Tesler, PA DEP

Patrick Thompson, EnergyWorks

Wade Thomason, VT

Gene Yagow, VT

**Signatory Membership:**

Rachel Rhodes, MDA

Jason Keppler, MDA

Chris Brosch, DDA

Clint Gill, DDA

Steve Taglang, PA DEP

Matt Monroe, WVDA

Bobby Long, VA DCR

Marel King, CBC

Greg Albrecht, NY Dept. of Ag & Markets

Matt Monroe, WV DA

Tim Sexton, VA DCR

Bobby Long, VA DCR

Marel King, CBC

Karl Brown, PA DEP

Kelly Shenk, EPA

**At-Large Membership:**

Bill Angstadt, Angstadt Consulting

Bill Chain, CBF

Frank Coale, UMD

Jennifer Reed-Harry, PennAg Industries

Lindsay Thompson, DE-MD Agribusiness Assoc.,  
AgWG Vice-Chair

Marilyn Hershey, Ar Joy Farms, LLC

Tim Garcia, USDA

Valerie Connelly, MD Farm Bureau