

# The USDA Agricultural Air Quality Task Force (AAQTF)

## Draft

### AAQTF Meeting Notes – Boise, ID – Wednesday, April 30, 2014

*(Note: Q=Question, R=Response, C=Comment)*

Dr. Greg Johnson, AAQTF Designated Federal Official (DFO), called the meeting to order at 8:05 am MT, welcomed the group, and went through initial logistics.

NRCS Chief Jason Weller made opening remarks and thanked the AAQTF for their work. He expressed excitement about the progress of the success stories so far. He reiterated that he wants the AAQTF to be action-oriented, especially in recommendations. He also wants to work more closely with the AAQTF and USDA Under Secretary for Natural Resources and Environment Robert Bonnie to move recommendations to where they can be put in front of someone who can swiftly take action.

#### **Presentation - Jeff Burwell (ID State Conservationist) – Welcome to Idaho!**

See presentation slides for details. Idaho has very diversified agriculture in two main areas – Palouse and Snake River Plain. Mr. Burwell provided an overview of NRCS projects, including air quality work: soil health, forest health, irrigation canal replacement and engine removal, water quality in rivers from irrigation runoff, sage grouse habitat improvement, conservation easements to reduce habitat fragmentation, and wildfire rehabilitation.

#### **Panel Presentation – April Leytem (AAQTF Member and USDA-ARS Research Scientist), Bruce Louks (ID Department of Environmental Quality - IDEQ), and Rick Naerebout (ID Dairymens Association) - Idaho Ag and Air Quality**

**April Leytem** – Dr. Leytem provided an overview of the Idaho dairy industry, discussed the Idaho ammonia regulation/permit-by-rule, and provided an overview of emissions monitoring and research related to agriculture. She then introduced both Mr. Louks and Mr. Naerebout.

**Bruce Louks** – See presentation slides for details. Presentation covered ID air quality, especially as related to agriculture. Also provided an overview of the ID monitoring network. Major emissions source categories – vehicles, wood combustion, wildfire, prescribed fire, biogenic, industrial, agriculture, fugitive dust – non-anthropogenic. Ag emissions affecting air quality in ID – ag burning, fugitive dust, CAFO/dairy. Crop residue burning rule – registration and per acre fee required prior to burning, pending air quality and weather considerations. Burning not allowed on weekends or holidays. Fugitive dust – current rules don't address agriculture, but is implied under "reasonable precautions" portion. IDEQ entering into negotiated rulemaking in May 2014 to address fugitive dust rules related to agriculture. Animal operations – Odor, cattle feeding, swine. Odor and cattle feeding odors are regulated under ID State Department of Agriculture (ISDA). Air quality issues related to dairies – ammonia permit-by-rule – utilization of "best management practices" (BMPs) for ammonia for particular farm types and number of animals (based on 100 tpy ammonia emissions estimate). Need 27 BMP points off of pre-established list

of 45 BMPs. Additional BMPs can be added. Annual inspections (usually 2/yr) conducted by ISDA and BMP points are confirmed by observations and inspection records. ISDA refers enforcement to IDEQ. To date, 87 permits at 46 facilities. 79 inspections with BMP points averaging 31 per facility. Summary of 2012 permits, inspections, etc. – No enforcement actions initiated. There are two PM10 nonattainment areas within ID and several areas with borderline PM2.5 nonattainment issues and one area with ozone nonattainment issues. There was a haboob event in southwest Idaho in August 2012 but this will be dealt with as an exceptional event.

Question (Q) – Eileen Fabian – Why was dairy not included in the odor regulations?

Response (R) – Louks – ISDA covers odors for dairy – likely through a nutrient management plan. IDEQ can get involved with any odor that is a public health issue.

Q – Fabian – When looking at ammonia emissions, what are the emission factors (EFs) that are used?

R – Louks – There are agreed-upon emission rates in Idaho, not specific science-based emission factors.

Q – Fabian – What are the emission rates?

R – Louks – Doesn't remember the number directly, but can look it up and supply the information to April for distribution to the AAQTF.

Q – Rick McVaigh – Has ID done any study on whether reductions in ammonia would reduce PM2.5 concentrations? The major California concern with ammonia regulation is that a lot of PM2.5 is ammonium nitrate. They have found that BMPs are a good approach. The San Joaquin Valley (SJV) did a \$30 million study and found that ammonia is in large surplus for high concentrations, so reductions in ammonia don't result in reductions in concentrations. Reductions in nitric acid (and NOx by default) are much more economically feasible. The Yakima Valley in Washington found similar results.

R – Louks – ID has not done any airshed modeling related to ammonia and not familiar with those studies. Ammonia regulation of dairies wasn't intended to necessarily target PM2.5--there are co-benefits to reducing ammonia such as odor reductions.

Q – Nichole Embertson – Are inspectors being trained? Are actual measurements being taken to evaluate BMPs?

R – Louks – ISDA does have a training program for inspectors. Original BMP development used peer-reviewed practices and work with partners to define the points. No on-site measurements are done – compliance is based on observations and record keeping.

Q – Annette Sharp – Emission factor development is a big issue for state agencies. What is ID's plan once the results of the National Air Emissions Monitoring Study (NAEMS) are published?

R – Louks – No definitive answer – likely wait and see what EPA does. ID usually uses AP-42.

C – Sharp – Understood, there have been a number of criticisms and critiques of the AP-42 data.

R – Louks – Agreed, but ID will likely wait and see.

Q – Sharp – Where did the BMPs come from?

R – Louks – Dr. Ron Sheffield compiled these while he was in ID, primarily from USDA bulletins.

C – Sharp – When NRCS works on BMPs, it usually rolls downhill.

R – Weller – Agreed.

Q – Sharp – As a state agency representative, do you consider home-based wood combustion? Are there regulations on wood-burning stoves?

R – Louks/Mary Ann (IDEQ burning coordinator) – Wood-burning stoves are not regulated by IDEQ. IDEQ works with local communities with local ordinances in the nonattainment areas for triggering a wood burning ban based on forecasts. Any bans would be issued locally.

Q – Michael Abazinge – What does IDEQ have to do when ISDA turns over enforcement (i.e. consent decree)?

R – Louks – Haven't had to deal with that yet, but in general, prior to a Notice of Violation (NOV), a consent order will be issued to producer to discuss corrective action prior to enforcement action. That has resolved all issues so far.

Q – Kevin Abernathy – Worked with Dr. Sheffield on a Conservation Innovation Grant (CIG) project and on the development of the ID BMPs. Everyone headed down that path due to a lawsuit and subsequent consent decree – litigation often generates rulemaking. Is there a procedure to develop new paths based on new knowledge or a procedure for working with citizens action groups?

R – Louks – Yes, rules can be changed. Not real sure on exactly what triggers that process, as it hasn't happened yet.

C – Abernathy – The process of constantly massaging the rule has led to significant expenditures on studies and subsequent rule changes. Lawsuits tend to put the cart way in front of the horse.

R – Louks – Can appreciate that. In any of the ID air quality improvement plans, they are not regulating outside the concepts of the rule. The ID situation is different from the California situation because it isn't related to/mandated by nonattainment. ID doesn't have those pressures to adapt so quickly to changing science.

Q – Weller – How was the 27-point BMP threshold established?

R – Louks – The ID Dairy Association went to several dairies to examine BMPs. They looked at over 40 dairies, and 27 points was the geometric mean.

Q – Weller – Is there any crosswalk between points and emissions?

R – Louks – No real correlation to suggest that any BMP will result in a certain amount of ammonia reductions.

Q – Weller – What has been the industry’s acceptance to this approach?

R – Louks – IDEQ has not received any feedback about resentment. IDEQ’s experience is that dairies have been very cooperative and wanted the rule in place to show they are in compliance and doing a good job.

Q – Hongwei Xin – What are the most popular (top 5) BMPs?

R – Louks – Would have to look that up.

R – Leytem – Feeding strategies, land application/nutrient management, harrowing the lot, and composting are popular. No one has done any synthetic lagoon covers. There is low-hanging fruit on the list with preferred practices.

**Rick Naerebout** – See presentation slides for details – Overview of dairy sizes and locations and dairy industry expenditures on research, education, and litigation. Overview of ID dairy industry view on Clean Air Act (CAA) and ID regulation.

Q – Bob Avant – Was the recent ID dairy industry growth primarily from dairies leaving California? Also mentioned the Yakima lawsuit and referenced nitrates in water.

R – Naerebout – Yes.

Q – Xin – Can you expand on the research study to verify NAEMS data in ID?

R – Naerebout – April will cover the details. The ID dairy industry wasn’t comfortable that NAEMS accurately represented the open lot dairies in ID, so they wanted their own data to compare. If a regulation comes down, they want one based on appropriate science and wanted NAEMS to have additional data sets.

C – Bill Herz – It is a misnomer to say that the “rest of ag” is not regulated like dairy. Fertilizer was specifically exempted under CERCLA for land application, and he thinks that manure should also be exempted.

R – Naerebout – The rules are under RCRA. He believes that manure is exempted under those rules and that ag should be exempted in general, too. The focus on the Yakima issues is that EPA is creative in finding a fix since the regulations don’t really fit the industry. If a regulation is good for a CAFO, it is good for all of agriculture.

C – D’Ann Williams – She is impressed with the dairy industry effort to incorporate research and encourages industry to also work with public health researchers. If it is deemed that there are no impacts, some of these litigation issues might go away.

R – Naerebout – There is a direct correlation between dollars available for research and the amount that is required to be spent on legal proceedings. Legal fees are going up, so less is available for research. Also, the research to date hasn't led to a decrease in legal proceedings.

Q – Larry Jacobson – The presentation mentioned the negotiated rulemaking process. What is the key factor in that process? Is it the limitation of good data?

R – Naerebout – Historically, it is the limitation of good data at the time of negotiation. The field approach that was taken on the ammonia BMP process points back to lack of data. If everyone is at the table, you get more immediate results.

**April Leytem** – See presentation slides for details – Overview of ID dairy emissions study. Thankful for funding and participation by dairy industry. Measured baseline data from 3 dairy operations typical to ID. The study was about \$3 million, or about \$1 million per dairy. The papers are all published. The Integrated Farm System Model (IFSM) seems to do a good job of estimating annual average emissions from dairies. Ammonia from wastewater ponds is more related to the nitrogen content of the ponds. Methane from wastewater ponds is more related to volatile solids content of the ponds. No good relations for nitrous oxide from wastewater ponds.

C – Fabian – We have standards for how to take measurements, but not for how to report measurements. Need to show error bars and express emission rates in common units. We also need to characterize what all went into those emissions and what parameters are most important. This study seemed to do that.

R – Leytem – Error bars for this data set weren't useful with the diurnal variability, but mainly wanted to show that the study got close to the right overall average number.

C – Robert Burns – Also concerned about error bars and uncertainties. One of the big issues with NAEMS was the lack of confidence intervals (CI). If data are aggregated within 95% CI then more robust relationships are revealed.

C – Cynthia Cory – Methane emissions from dairies are likely to be targeted in California. There is likely to be a push to mandate digesters in California because of that. All of these data are important.

C – Xin – We also need to look at productivity (milk output) in relation to emissions.

R – Leytem – Agree, but didn't have time in the presentation and there was a lack of ability to compare that parameter with the other studies.

Q – Lingjuan Wang-Li – What inverse dispersion model was used in the study?

R – Leytem – We used WindTrax because it is the most-tested model out there, and it is easy to use. NAEMS used the Radial Plume model, as well as WindTrax, but there was not much correlation there.

Q – Wang-Li – Did the other studies in other state use WindTrax?

R – Leytem – We tried to focus on comparing this study to ones in other states using the same model.

C – Weller – It looks like no dairy is the same and so no conservation plan should be the same either. We need to target site-specific management practices.

R – Leytem – That is correct. For ammonia, at an open lot dairy, you need to focus on the lot, but on a freestall dairy with a lagoon, you should focus on the lagoon.

Chief Weller initiated a break at 10:33 am MT.

The meeting resumed at 10:52 am MT.

**Presentation - Gary Baise – Legal Perspectives on Ammonia Regulation in the U.S.**

See presentation slides for details. Provided an overview of CAA language relevant to PM2.5, PM2.5 precursors, and ammonia. Talked about how EPA has been successful with reducing 72% of common pollutants. Trend moved toward regulating ammonia and methane. Petition filed with EPA that ammonia is a criteria pollutant that needs to be regulated in SIPs. Triggers Section 109 in the CAA to consider ammonia as a criteria pollutant. Explained Section 302g, which is the definition of an air pollutant. Is ammonia an air pollution agent? The court introduced confusion into the regulatory community whether ammonia needs to be regulated. Presented a progression of PM standards in the CAA. Part I and Part IV – Jan 2013 – EPA said Subpart 4 only refers to PM10. Subpart 1 allows extensions up to 10 years with no stringent measures. Subpart 4 requires Reasonable Available Control Measures (RACM) within 4 years after nonattainment designation when Subpart 1 requires attainment as expeditiously as possible

Q – Avant – Is there a distinction between stationary and mobile sources? Do mobile sources get a pass?

R – Baise – Title I is for stationary sources. Each area is going to be different.

Q – Abernathy – Question from Brock Faulkner – Is there a reference to the English study on catalytic converters?

R – Baise – Yes, James B. Whitehead et. al. The study was on ammonia from vehicles.

C – McVaigh – EPA is now expected to issue guidance on PM2.5 SIPs in the next few months. This could push us into developing ammonia regulations that would not result in any real benefit. There will be another presentation on atmospheric ammonia tomorrow. The Air Quality Standards Subcommittee will also present this issue.

R – Baise – Uses anhydrous ammonia fertilizer on his farm. What we don't know are the escape values – chemical process for nitrification. Can that be determined? How much of our ammonia escapes from ammonia fertilizer?

R – Lara Moody – There are papers with ammonia emission factors available for different fertilizer products. [Has literature she would be willing to share] The challenge is that they are blanket factors and don't take into account any associated practices (like method, timing, etc. of application).

R – Baise – Seems like that raises a challenge for this group. Need to show where else ammonia is coming from. It is important to convince a jury with a sound scientific report. There is a lot of research out there. EPA must do something.

Q – Ray Knighton – What about the possibility of ammonia being a precursor to NO<sub>x</sub>? He has sat in NO<sub>x</sub> review meetings, and EPA has said that they would never consider ammonia as a precursor to NO<sub>x</sub>.

R – Baise – This court case says that if EPA has that type of information, they have to do something. EPA has to take all of the literature into consideration--this group may need to compile literature supporting their case and share that with EPA.

C – Sharp – One thing to keep in mind is that the Delaware/Philadelphia area is going from (i.e., being redesignated from) nonattainment to attainment. The bulk of the work is done at the beginning when the designation happens and the plan is built initially. The availability of resources at state and local agencies will be a limiting factor. Emission factors are critical, especially because agencies are under a time crunch. It is easiest for these organizations to grab 'off the shelf' emission factors due to limited resources and time.

R – Baise - The good news is that there aren't that many areas that are nonattainment for PM<sub>2.5</sub>, and most of those likely don't have a lot of CAFOs.

Q – Abernathy – Question from Brock Faulkner – The San Joaquin Valley Air Pollution Control District (SJVAPCD) has shown that reducing ammonia won't reduce PM<sub>2.5</sub> in the SJV. Can EPA exempt sources in areas where this is the case? Does the CAA recognize voluntary reductions?

R – Baise – It's worth a shot. The lawyers don't know the science. The ammonia petition with EPA may go a different direction. You need to get these data in the hands of RTP [EPA].

Q – Abernathy – Question from Brock Faulkner – Literature is showing that PM<sub>2.5</sub> from ammonia is much less toxic than other forms of PM<sub>2.5</sub>. What would it take to open the CAA to look more closely at specific species of PM<sub>2.5</sub>?

R – Baise – Going to Congress to change the CAA isn't likely a viable option. It's best to work with EPA right now.

C – Wang-Li – Feels nervous about using CMAQ for modeling ammonia and ammonium nitrate. The model lacks validation for this purpose, and the inputs for the model aren't very good right now.

R – Baise – That's exactly what you need to bring forward--the need for additional literature.

C – Wang-Li – One of her studies was on chemical speciation. The data showed that CAFO emissions didn't contribute significantly to PM<sub>2.5</sub> formation.

Q – Bill Angstadt – In the Philadelphia area, there aren't that many agricultural operations – maybe 10 animal operations in Delaware counties. However, in Lancaster and Harrisburg, PA, there is a lot of agriculture, although it has been shown that ag only contributes about 10% of the problem. Most of the nonattainment issues there are related to mobile sources and attainment demonstrations included mobile sources' contributions. Is there an opportunity for using a threshold approach for excluding sources?

R – Baise – A precursor is “presumptively regulated”. That is to be determined by EPA guidance. In a SIP review, EPA can include costs and not address certain sectors such as agriculture.

R – Robin Dunkins – EPA will be releasing its guidance this summer.

Q – Angstadt – Can we use a percentage contribution approach to not include in the SIP?

R – Baise – The court case says that the precursor is presumptively contributing. Can't ignore smaller or less contributing sources, especially if the state can't meet the “moderate” attainment deadline.

Q – Angstadt – Do we even know how much ammonia a CAFO would need to reduce? Are there thresholds? Do we know enough about how to do BMPs on a dairy lagoon? Is more research needed?

R – Baise – There is some science, but maybe we don't know everything.

Q – Bill Norman – Thanks for the clarity. What is the reference to the paper at the end of the presentation (April 10, 2011)?

R – Baise – That was the environmental groups' petition for EPA to regulate ammonia.

Q – Burns – Is there any recognition that ammonia-based PM2.5 has much less health impacts than other metal-derived PM2.5?

R – Baise – The ammonia petition states that there are implications for ammonia from a health perspective.

Chief Weller announced that the Forest Service (FS) and ARS presentations will be after lunch.

Meeting was adjourned at 11:59 am MT for lunch.

The meeting resumed at 1:08 pm MT.

The Chief asked that each member of the Task Force briefly introduce themselves. Introductions followed.

### **Presentation – Ted Strauss (California NRCS) and Rick McVaigh (retired – SJVAPCD) – Voluntary SIP Creditability in California Update**

See presentation slides for details. Provided an overview of the status of the SIP creditability for replacing mobile agricultural engines in the SJV.

- Issue is SIP creditability – voluntary activities that result in air pollution reductions
- In SJV voluntary programs have resulted in over 100K tons of air pollution reductions
- Never been a mechanism in place to get credit for voluntary emissions reducing strategies
- MOU signed in 2010 to get credit for these emission reductions to be recognized within the SIP
- Rule developed to outline details, adopted in June 2013.
- As of right now, expect EPA to take action shortly. Rick's expectation is that EPA will propose approval of rule. Expect EPA to receive adverse comments then take final action then the process may be challenged in court. Turned the floor over to Ted Strauss.
- Ted was asked to outline how CAA requirements could be satisfied while also meeting the confidentiality requirements of Section 1619 of the Farm Bill.
- Whole project could not be completed without the help of SJVAPCD.
- Setting a precedent, really exciting, and enthusiastic about this opportunity
- Rick added – EPA recognized that voluntary reductions can achieve SIP credibility.

#### **Presentation – Charlie Walthall (USDA-ARS) – USDA-ARS Air Quality Update**

See presentation slides for details.

C – Avant – Didn't see much on ammonia or criteria pollutants in agriculture in the presentation. Cross-platform collaboration slide: one thing that didn't jump out that keyed in on criteria pollutants and row crop agriculture. How will ARS prepare the community for the near-term challenges of air pollution?

R – Walthall – The current 5-year plan has targeted GHGs. The next 5-year plan will likely increase focus on nitrogen. Panel is not set up yet.

#### **Presentation – Pete Lahm (US Forest Service) – Forest Service Air Quality Update**

See presentation slides for details.

Q – Sharp – Have you heard where things stand with the Exceptional Events Rule?

R – Lahm – It sounds like it has been sidelined temporarily. I hope that it's not sidelined for long. Expressed hope that EPA can shed some details on this topic.

#### **Presentation – Tom Powers (US EPA) – EPA Air Quality Update**

See presentation slides for details. Opening comments – EPA is sued by everyone! Remarkable progress – know more about risk assessment and health effects. Upcoming/hot-button issues: NSPS for grain handling, ozone NAAQS – awaiting CASAC recommendations on stringency, PM NAAQS – lawsuit on final PM ruling, ammonia as a PM2.5 precursor, biogenic CO2, methane strategy, power sector carbon standards, renewable fuels standards. Robin Dunkins asked Task Force members to please submit any data that would be applicable to the NAEMS.

Q – Xin – Puzzled that EPA is asking for raw data from the NAEMS but what about the emissions factors. There is much on-going work and new publications coming out. How would EPA use raw data or consider that information when compared to the NAEMS data?

R – Dunkins – EPA wants the data in the same format. EPA needs the raw data so that the Agency can develop independent emission factors and be able to crunch through the raw data. Can talk more offline.

C – Xin – Going through the raw data is a very resource intensive process.

R – Dunkins – Having the raw data may not be necessary for every study.

Q – Herz – The MACT review schedule is not yet available. Several industries attending here are covered under a MACT. What is the plan?

R – Powers – A notice was filed in relation to a lawsuit to compel EPA to review the MACT standards. A schedule has not yet been established.

Q – Herz – Is there interagency coordination across the federal government on natural gas needs for energy production and other uses (power plants, fertilizer, etc.)?

R – Powers – I think there is good coordination. The EPA Administrator and DOI are in communication at the highest level – there could be more interaction at the staff level.

C – Sharp – In working for a state agency, she has seen that agencies don't have staff to submit an exceptional event demonstration due to budget cuts. She suggests having a workgroup or similar group to work together to get a few more things done.

R – Powers – Will take this as a follow-up item.

Q – Burns – Reinforcing Hongwei's comments. If we get data for EPA, under different quality assurance plans and other issues that could not be used for estimates, how would EPA use the data like the NAEMS data for uncertainties?

R – Dunkins – I don't know if we can answer that question. We wouldn't take the data without that conversation.

Q – Burns – EPA will not likely get data without resources. Since the data were collected under a number of different QA/QC and methods, what format would those data need to be presented in and how will EPA check those data and ensure data consistency? We spent a lot of time and effort reformatting our data, and there is a cost to that. What would be the pathway to put the data in to supplement other data?

R – Dunkins – We would have to see what data are submitted.

C – Xin – We need to know that any effort to produce data to supplement NAEMS will improve the value of the study. Does the data have to come from EPA data sites?

R – Dunkins – The data used for determining emission factors would have to be based on acquired data. Any help in sharing data is appreciated. EPA will consider the data on a case-by-case basis.

Q – Sally Shaver – Are USDA and EPA talking about creating a working group on ammonia?

R – Dunkins – The next work is on practices for reducing ammonia from livestock.

Q – Shaver – USDA has a definition for temporary storage at grain elevators. Can USDA and EPA work together to make sure the definition is the same for both agencies?

R – Dunkins – She is working on the EPA definition and will work with USDA.

C – Shaver – Encourages EPA to do more outreach to the agricultural community on the RICE rule. She finally found the nine-page guidance document and thinks EPA really needs something shorter and to the point to decide whether someone is subject or not. Also, most farmers won't know about the rule unless they are specifically told.

R – Dunkins – A fact sheet was developed and posted online. EPA is finding that most people still don't know anything about it. EPA is also considering a webinar and needs support from the AAQTF to get the word out. Advertising the rule as they go. EPA agreed to work with USDA on getting the message out.

C – Abernathy - EPA's datasets and definitions of protocols under the NAEMS, data sets were requested. In CA they have heard that EFs can't be used because they can't produce the data sets. This committee would love to be part of the solutions process.

C – McVeigh – State and local background is a real asset, and we appreciate Mr. Powers being here and having that background. Seeing ammonia as a precursor is a very big issue. Tomorrow there will be more focus of this Task Force on ammonia as a precursor to PM2.5. Task Force will have some recommendations on the second day of the meeting.

C – Norman – Very good for this group to interact with EPA, and there are two high priority items – biogenic CO2 and Maximum Available Control Technology (MACT) are important. Oil seed growers are anxious to work with EPA—and there is a question about the Farm Bill language in Title XII. Title XII asks for a work group, but there is little knowledge within the group of where this language originated.

R – Dunkins –This group would operate as a FACA and have the same rules and regulation. It is a Federal mandate.

R – Weller –Agreed to look into Title XII of the Farm Bill and investigate the origins of that request.

Q – Moody- Will this be constrained to USDA and EPA or more broadly available?

R – Dunkins – Likely just EPA and USDA. EPA will be putting out ammonia proposal later this year. EPA has several petitions to regulate ammonia and the Agency is trying to figure out how to respond to

those petitions. Some petitions ask for regulation of more than ammonia and some even request direct regulation of CAFOs. EPA wants to resolve NAEMS before responding to these petitions.

**Break at 3:15 pm MT.**

**Meeting resumed at 3:35 pm MT.**

**Presentation – Bill Hohenstein (USDA-CCPO) – USDA GHG and Climate Change Update**

See presentation slides for details. Mr. Hohenstein provided an overview of new USDA Climate Hubs, as well as the status of the USDA Greenhouse Gas Inventory Methods for the Agriculture and Forest Sector, and an update on biomass feedstock greenhouse gas accounting.

Q – Cory - Bill I know you have watched closely what has been going on in California [regarding GHG regulations]. Your office is investing in a computer-assisted tool. Will this eventually result in regulations or requirements of certain practices – suggesting that growers will be required to sit in front of the quantification tool? There are not a lot of offsets available in CA for compliance--reductions in California's ag emissions need to be voluntary. Activities need to continue to be voluntary.

R - Hohenstein – Some practices make sense, others have barriers to implementation. Certain practices will not be implemented without an additional funding source such as offsets.

C – Cory – The emphasis is on voluntary and not mandatory.

Q - Avant - Everything you are doing relates to sustainability –The Walmarts out there are going with mandatory voluntary approach. This involves BMPs, as well as a volunteer program to help with sustainability metrics and initiatives. Trying to define sustainability–need USDA and NRCS assistance in defining what constitutes “sustainability”.

R - Hohenstein – This is certainly something this Task Force can work on from the air perspective.

R – Weller – This is an area where NRCS can help provide a neutral framework, and field staff have a common conservation framework to work from and there may be other uses within the context of “sustainability”. This might be something worth putting on the agenda for future Task Force meetings.

Q - Leytem – The quantification tools were originally supposed to be different than COMET–will the tool be separate, the same as, or internalized within COMET?

R - Hohenstein – This will be integrated into COMET – 90% of the methods align with COMET right now.

Q – Embertson - Who will be using the Tool?

R - Hohenstein – NRCS and producers are one user group and the offset markets would be another user group. Third group would be for farm planning outside of NRCS. A lot of this would be driven by report writers – focus on how the reports meet requirements of different users.

Q – Embertson - What keeps this from being used as a regulatory tool?

R – Hohenstein – Data remains on the farmer’s machine. This tension exists but the goal is for the producers to be able to use these data, however they voluntarily decide to use these data.

Q – Jacobson – Lots of one-way arrows on the Climate Hubs schematic – how does information flow back to the Hubs?

R – Hohenstein – CCPO is working to develop a contract with Extension – need to further build capacity, would be interested in Extension and how to build capacity on climate change from Jacobson.

Q – Norman – Had a session on Field to Market in RTP. This sustainability stuff is moving fast – learned not to claim “sustainability” but rather to show continuous improvement and collection of data and gathering of evidence “proving it”. Walmart, Unilever, etc. through Field to Market– the point is we are beyond thinking about this – must prove it. None of the commodity groups are interested in picking winners and losers. This could be considered as a topic for the next meeting.

Q – Moody – TFI received a GHG CIG in 2011. COMET-Farm is one of the quantification metrics, insensitivities tied to Source, Rate, Time, and Place. What is the plan to fill in some of those research gaps?

R – Hohenstein – You are correct to point out deficiencies of COMET. Continuing to work on improving COMET.

Q – Abazinge – When discussing hubs you did not focus specifically on research. Is research a component of the Climate Hubs?

R – Hohenstein – Research is the bedrock of the Hubs.

Q – Abazinge - Has to be a new focus on Hub areas and the regionality of Hubs

R – Hohenstein – USDA will work with NASA and NSF

Q – Abazinge - Is there a mechanism?

R – Walthall – Hubs begin to focus more regionally, catering efforts to different regions of the country. Hubs help tailor to more regional focus.

### **Presentation – Ray Knighton (USDA-NIFA) – NIFA Air Quality Update**

No presentation slides. Dr. Knighton noted a June 24-26 USDA-EPA-USGS Nitrogen workshop in Arlington VA–looking for the work of different agencies on N and map the projects on the N cascade.

## **Presentation – Greg Zwicke (USDA-NRCS) – NRCS Air Quality Update**

See presentation slides for details. Mr. Zwicke presented an overview of the 2014 Farm Bill, with an emphasis on NRCS air quality-related programs.

Chief Weller called the first day of the meeting to a close at 5:00 pm MT.

## **AAQTF Meeting Notes – Boise, ID – Thursday, May 1, 2014**

Greg Johnson opened the meeting at 7:38 am MT and turned it over to Chief Weller.

The Chief briefly reviewed logistics and deferred a discussion about the next AAQTF meeting until later in the day.

### **Discussion – Agricultural Air Quality Success Stories**

Chief Weller indicated that he wants to use these success stories in talks with stakeholders and others to spread agriculture's story. They could be electronic, and he would likely get NRCS public affairs staff to help prepare, advertise, and distribute. The AAQTF went through and discussed the list of proposed success stories.

#### **Discussion Summary:**

Rick McVaigh from the AQ Standards Subcommittee – Thinks these success stories are worthwhile. Bringing success stories to the Task Force as a test. Written up in a standard paper format but there may be an additional electronic format that would be useful. Combustion System Improvements, Cotton Gin Air Monitoring, and CMPs for PM10 reductions are prime examples of these.

Eileen Fabian - reported out from the EM2 subcommittee on Conservation Tillage, Layer Hen Housing Belt Systems for Manure Management and Prescribed Burning for Wildfire Mitigation.

Xin – Reported out on Layer-Hen Housing Belt Systems for Manure Management, explained the use of belt houses to improve worker and bird health. Since 2012 this has become the standard for new bird housing. High rises will be phased out and this will become the standard

Sharp – Sugar cane burners burn the leaves before they cut the cane. Leaf ash is then transported. LA DEQ developed a prescribed burner program and public relations have improved.

Moody – Urea is trending as a higher use, urease inhibitors being used through the 590 CPS. Lara would like to find someone that is using CPS 590 that is using urease inhibitors.

Herz - Clarified how broadly fertilizer products should go, there are other mechanisms like polymer coating that can reduce ammonia emissions.

Angstadt – Chesapeake Bay Foundation has developed a successful transaction with Sterling Energy. Bill will be following up on this item with Beth McGee.

Chief Weller asked Terry Spence and Chris Peterson, as agricultural producers, what success stories they would like to see?

Terry Spence – Enjoys seeing the focus of this Task Force evolve and an increasing emphasis on environmental improvement.

Chris Peterson – likes to see the progress that we can make when it comes, thinks it could move more rapidly on successes.

Abernathy – Asked for clarification of the process. Will the success stories be vetted through the entire Task Force prior to any releases?

Chief – Yes.

***Chief Weller assigned Adam Chambers (USDA-NRCS Air Quality and Atmospheric Change Team) to work with NRCS public affairs staff to get the success stories in circulation.*** Cynthia Cory also suggested working with Anita Brown (California NRCS public affairs). ***The subcommittees should work with their liaisons to compile the success stories and then send them on to Adam.***

Chief Weller inquired if there are other metrics we can use to help tell the story (i.e., public health improvement, number of cars taken off the road, etc.?). Rick McVaigh suggested using BenMAP. Kevin Abernathy thought that having D’Ann Williams and other public health professionals add to the existing ideas could feed a whole new suite of success stories. Bill Herz expressed caution in tying success stories and emissions reductions to public health. He thinks that we need specific success stories, like smoke abatement, that can be tied directly to public health in order to make that link.

### **Presentation – Sandi Jones (Alberta Ministry of Agriculture and Rural Development) – Agricultural Air Quality in Alberta**

See presentation slides for details. Provided an overview of agricultural production and air quality in Alberta, Canada. Agriculture accounts for about 94% of ammonia in Alberta.

Q – Herz – How has the growing oil and gas industry in Alberta impacted agriculture? Are agricultural acres being lost?

R – Jones – It is having impacts, especially in northern Alberta. Not as much ag land up that far north, but there is forest. Tracking and mapping conservation of agricultural lands via GIS and reporting back to government. Seeing fragmentation of habitat.

Q – Paul Buttner – How does the Alberta carbon credit approach work for conservation tillage?

R – Jones – There is a conservation tillage carbon credit protocol, but conservation tillage is no longer considered new or “additional”, so that protocol is not available anymore. Alberta is trying to develop

new protocols. Additionally, they are looking at sustainability verification for food, which is being driven by big grocery.

Q – Sharp – How does the enforcement system work in Alberta?

R – Jones – The legal system is different. There are no fines. The agency doesn't get sued. Instead, producers work with Ag Extension to install practices if there is a noncompliance situation.

**Presentation – Jeff Collett (Colorado State University) – Ammonia and PM<sub>2.5</sub> Atmospheric Studies**

See presentation slides for details. Dr. Collett provided an overview of his research on atmospheric ammonia, reactive nitrogen species, particulates, and associated chemistry. The research is focused on both in situ measurements as well as meteorological modeling.

Q - Leytem – What type of monitors are used for the IMPROVE network?

R - Collett – Single coated filter, gaseous and particle phases of ammonia.

Q – Leytem -Who is involved in IMPROVE network?

R - Collett – A number of federal, state, and tribal partners.

Q - Herz – Is this going require the need to learn what the sources are and how to apportion the emissions to different sources?

R- Collett – There are a number of big sources, especially in NE Colorado.

Q - Xin – Are you in a position to give an estimation of wet and dry deposition and fine particle deposition?

R – Collett – It is difficult to budget out wet, dry and fine PM due to PM transport issues.

Q- Shaver – There is a bullseye in the Midwest.

R - Collett – It is not clear what has changed within the ag sources. Not sure where the cause of the ammonia growth is occurring.

Q - Lahm – question on slide and high NO<sub>3</sub> concentrations in N Arizona?

R - Collett – IMPROVE network, not sure why this is so high.

There was some methodology clarification and technical discussions.

**Presentation – Kevin Abernathy (AAQTF Member) – Review of Paulot and Jacob Ammonia Paper**

See presentation slides for details. The discussion focused on reviewing the article prepared by Brock Faulkner and others as a rebuttal to the Paulot and Jacob ammonia paper.

C – Moody – The Fertilizer Institute also reviewed the Paulot and Jacob paper. Additional findings from their review include the assertion that the emission factors used are old and not based on current fertilizer practices and that there is no accounting for the societal benefits to having the rest of the world fed.

R – Abernathy – The rebuttal does have some discussion of societal benefits, so the group will look at the other item.

### **Public Comment Period**

- Wendell Hannigan – Not representing Yakima Nation, representing himself. Broad general comments – at one time the US was simply Indian Tribes. Because of the Doctrine of Discovery, Supreme Court has ruled unfavorably against the tribes. Property rights and ownership have looked on Tribes more favorably in recent times. Treaties were not a delegation of rights from government to Tribes but rather a delegation of rights from Tribes to the government. Cited US vs. Washington and US vs. Oregon Supreme Court cases.
- Jean Mendoza – Friends of Toppenish Creek (FOTC) in the Yakima Valley WA. Thinks science is taking a beating in the Yakima Valley. Good things done to excess can be harmful to the people. 38% of Washington’s cows are housed within the Yakima Valley. Does the Washington policy do enough to protect the air in the Yakima Valley? Animal feeding operations have to make “reasonable precautions”. Looking closely, there is no baseline. Closest air monitoring is in the city of Yakima. If CAFO were factories, they would have to address pollution emissions. In Yakima Valley they do not. There is stacking of manure in an irresponsible manner. Problem with the Yakima regulators receiving erroneous information – errors in the document, such as a statement that there is no spreading of manure between November and April due to frozen ground (contended this is not true). There are simply too many animals in too small of a place.
- Dr. Dean Effler – Works in lower Yakima Valley. He was not planning to present, something happened on Monday that inspired him to speak. An elderly woman bought a piece of property near pasture. The pasture was purchased and a dairy located on the site--now the woman and her grandchildren are unable to go outside and enjoy their property. She simply asked why she had to live this way? You all have been talking science, this is something that is real. For families that surround CAFOs, BMPs are good for dairies but not good for the neighborhood. Voluntary practices don’t work for the neighborhood. Air monitors are far away from where some of these problems are located. Guarantee – dairies know when the regulators are coming to conduct inspections.

### **Subcommittee Reports and Recommendations**

#### Air Quality Standards (AQS) Subcommittee

Recommendations in presentation slides:

- Control measures for ammonia should only be required in state implementation plans if additional reductions are found to be needed to meet health-based air quality standards, and if there is clear scientific evidence that reasonable measures to reduce ammonia emissions would be effective in significantly reducing ambient concentrations of fine particulate matter.
- When preparing implementation plans, state and local agencies should prioritize control measures that reduce particulate matter emissions that result in the most significant adverse health effects. Chemical composition, particle size, the way the materials are released, and the potential for population exposure should be considered in these analyses.
- Research should continue into the relationship between ammonia emissions and ambient concentrations of fine particulate PM, and into the proper management of agricultural ammonia emissions.

**If controls for ammonia emissions from agricultural operations are determined to be legally required under the Clean Air Act:**

- The focus of any additional efforts to control ammonia emissions from affected agricultural operations should be on developing reasonable, responsible management practices for minimizing emissions of ammonia.
- The diversity of the industry, impacts on the economy, food production and other environmental impacts (especially on water) should be fully considered before establishing any new requirements.

Q – Angstadt – Is there a distinction between agricultural sources and all sources in the first two recommendations?

R – McVaigh – In many areas, it is recognized that ammonium nitrate is an issue and a significant portion of the ammonia is from agriculture.

C – Angstadt – In Mr. Baise’s presentation, he mentioned that agriculture is responsible for about 50% of ammonia emissions in the Lancaster and Harrisburg, PA, areas, but only 10% of PM<sub>2.5</sub>, even with the contribution of ammonia.

R – Sharp – She had asked Mr. Baise about his presentation and understood that states only have to consider whether to regulate ammonia, not necessarily how. Louisiana would go after those sources they have better information on first.

R – McVaigh – Is there a specific recommendation for wording changes?

R – Angstadt – No specific changes, but he wants to make sure that it is recognized that there may be other sources or emissions that are more effective at reducing concentrations.

R – Abernathy – The goal is to let states have flexibility to demonstrate to EPA that ammonia controls may not have the overall health benefits compared to reductions in controls of other sources.

**The recommendations were accepted unanimously by the full Task Force.**

The AQS Subcommittee also made the following recommendation related to the review of the Paulot & Jacob article:

The USDA AAQTF concurs with the findings of Faulkner et al. in their article entitled “Comment on ‘Hidden Cost of U.S. Agricultural Exports: Particulate Matter from Ammonia Emissions,’” and encourages the editor of *Environmental Science and Technology* to consider the article for publication, pursuant to the journal’s standard editorial and publication policies, in order to stave off potential unintended consequences leading to development of poor air quality policy as a result of the conclusions drawn by Paulot and Jacob (2014).

**It was determined that the AAQTF members would review the recommendation and review article, and a vote on accepting this recommendation would be taken via e-mail prior to May 15, 2014.**

#### Emissions Measurement and Mitigation (EM2) Subcommittee

Dr. Fabian gave a quick update on subcommittee activities. No recommendations.

#### Climate Variability Impacts Subcommittee

Bob Avant gave a quick update of subcommittee priorities. No recommendations.

#### **Logistics and Next Steps for College Station meeting.**

Discussion centered around logistics for the tour and meeting in College Station, TX in August 2014.

Possible discussion topics were also discussed:

- Ammonia
- GHG CIG report-outs from grantees, including how CIGs functioned together
- Anaerobic digesters, including barriers to adoption and nutrient recovery
- GHG scoping plan for California
- Resource sustainability and interface with air quality – potentially approach Walmart about speaking at the next Task Force meeting.
- Environmental markets and credit trading

Chief Weller ended the meeting at 11:53 am MT, and the AAQTF Boise meeting was officially adjourned by the Designated Federal Official.