

Minutes, January 27, 2012, meeting of the Marcellus Shale Advisory Commission
Approved February 27, 2012

The Commission held its fifth meeting on January 27, 2012, in the House Office Building Room 250 in Annapolis, MD. In attendance were Chairman David Vanko and Commissioners Shawn Bender, Steve Bunker, John Fritts, Jeffrey Kupfer, Dominick Murray, James Raley, Paul Roberts, William Valentine, and Nick Weber. Senator Edwards and Secretary Summers were attending other legislative hearings, but joined the meeting late. Commissioner Roberts left the meeting early due to illness. Also in attendance were staff of state agencies and members of the public.

Chairman Vanko called the meeting to order at 1:00 pm. The draft minutes of the December 12, 2011, meeting were approved unanimously, subject to minor corrections noted by Commissioner Kupfer.

Chairman Vanko commended MDE and DNR on producing a draft work plan. Brigid Kenney from MDE briefly described the work plan, which had been made available to the Commissioners and was posted on MDE's website. Staff will continue their work, but MDE plans to enter into a Memorandum of Understanding (MOU) with the University of Maryland Center for Environmental Studies – Appalachian Laboratory to perform a study on best practices. The Department anticipates that the project manager will be Keith Eshleman, Ph.D. Dr. Eshleman is expected to assemble additional experts from the Appalachian Laboratory and Frostburg University, and to subcontract with additional experts. Dr. Eshleman is expected to brief the Commissioners during the course of the study so “mid-course corrections” can be made, if necessary, and the Commissioners will be in a position to understand and evaluate the best practices.

Staff anticipates inviting experts on topics of interest to future meetings to make presentations to the Commissioners and to answer questions. The staff would welcome suggestions of experts and topics.

The survey of best practices is due June 15th and on July 2nd a recommended suite of best practices is due. A guidance document describing the chosen best practices will be due December 3, 2012.

Chairman Vanko asked the Commission to think of this in two parts: the work plan itself and the specific “scope of work” for the best practices study. He then asked if the Commission had any questions or comments.

Commissioner Weber asked about the timeline. Ms. Kenney said the intention is that the array of best practices will be presented to the Commission and included in the report due in August. Following that, the contract calls for the preparation of a more detailed description of the best practices that would be sufficiently technical and clear to inform permittees and others what the requirements are.

Chairman Vanko then asked if the December guidance would be open to a period of public comment. Ms. Kenney said that there would likely be public comment during the study and after the submission of the report. Additional opportunities for public comment would be part of the proposal and adoption of regulations. Commissioner Roberts inquired if the writing of the actual regulations would take place in 2013. Ms. Kenney said that that is a possibility.

Commissioner Bunker suggested that the Commission do a site visit. The Chair agreed.

Commissioner Kupfer asked that since MDE has authority to issue permits with suitable provisions, would it be necessary to have the regulations adopted before any permit could be issued? Ms. Kenney answered that MDE believes it has sufficient statutory authority to impose whatever conditions are necessary, and that a permit could be issued before the regulations were in place. She said that it is possible that the best practices might include something beyond MDE's current authority, but that she didn't expect that. Commissioner Kupfer asked whether the Commission has a role in regulations. Ms. Kenney stated that the Executive Order includes a charge that the Departments recommend, in consultation with the Commission, whether changes to statute or regulation are needed.

Commissioner Kupfer noted that he was not familiar with Dr. Eshleman or the UMCES Appalachian Laboratory, and noted that it is important that they be unbiased and look at the facts and the science. Ms. Kenney noted that the Departments were satisfied that UMCES and Dr. Eshleman would perform the study in a science-based and fact-based manner. She also stated that the roles of UMCES and the Departments would probably evolve over the course of the study, and that the Departments would likely help UMCES in certain areas. The expectation is that UMCES would organize the mass of material in a way that would allow the Departments and the Commission to understand and evaluate the best practices and make decisions.

Joe Gill added that the August report is to cover best practices for all aspects of drilling, and would include a consideration of impacts and how to eliminate, minimize or mitigate them. DNR would provide information to UMCES about the resources that could be impacted by gas exploration and production to inform their work.

Commissioner Kupfer asked if UMCES and Dr. Eshleman would make recommendations or simply compile information about current practices. Ms. Kenney stated that UMCES is to make recommendations and explain the basis for them.

Commissioner Weber made note of the fact that there is no engineering or drilling expertise at UMCES. Would these be outsourced? Ms. Kenney stated that it is likely that UMCES will subcontract with other experts, and that a concerted effort will be made to identify people with the relevant expertise.

Commissioner Roberts asked if industry representatives have talked with the agencies about issuing permits before the best practices study is complete, and whether there

would be a hearing before any permit decision. Ms. Kenney responded that applications have been filed, but that none of the applications have been judged complete. Once the applications are judged complete, there would be an opportunity for a public hearing. The applicants have been advised that additional requirements could be added as a result of the work done under the Executive Order. She said that she was not aware of any meeting with the applicants since the Executive Order was signed.

Having discussed the general work plan, the Commission then turned its attention to the detailed scope of work for the best practices study. Commissioner Bender asked if the existing permit applications were available to the public. He thought it would be instructive to see what practices the applicants were proposing. Ms. Kenney answered that the documents are public, but it may be difficult to post them on a website because they are so voluminous. She agreed to check and advise the Commission. Mr. Gill added that, based upon the information in some applications, DNR has already sited some stream gauges in 2010-2011 in the vicinity of ten proposed wells.

Commissioner Weber asked what practices are required under current regulations. Dr Vanko noted that the COMAR regulations have been talked about at a previous meeting, and Ms. Kenney said she would ask MDE staff to make a presentation.

Chairman Vanko asked several specific questions for clarification. Commissioner Weber expressed concern about toxicity of fracking chemicals and flowback and their potential effect on macroinvertebrates. Ms. Kenney agreed this is an important issue, but that it may be covered in the third phase of the study rather than with best practices. Commissioner Valentine asked if we could look at alternatives to fracking with water. Chairman Vanko agreed with Commissioner Valentine and noted that this is bullet number 25 on the scope of work.

Commissioner Kupfer brought up the distinction between best practices, standards and regulations. States may adopt regulations without adopting best practices. He gave the example of a standard requiring that no wastewater be discharged to surface water - a company could meet this standard by recycling the wastewater or disposing of it by deep well injection. He thought this Commission should not get into the business of writing a 1,000 page procedural handbook that defines best practices in prescriptive detail. Ms. Kenney agreed that there was a distinction between standards and best practices. As an example, she posited that the regulations might require clean closure of wells, and a company could use the technique described in the guidance or any other method that was at least as protective. The regulations would not stifle innovation and improvement.

Commissioner Roberts asked that the study of air emissions include a consideration of fugitive emissions of methane, a significant greenhouse gas. He asked whether the current regulations contained best practices for remediation. Ms. Kenney answered that the regulations were aimed at the safety of operations under the permit and do require the permittee to have an emergency response plan; however, the regulations do not state how to clean up an accidental release, for example.

Chairman Vanko noted that there was no mention of site reclamation. Ms. Kenney said that Maryland does have regulations for site reclamation, but that it may have been an oversight to omit it from the list.

Commissioner Bunker asked for clarification of “overall development plan.” Does it mean the pad, gathering lines, main pipelines? Mr. Gill said that it was meant address the entire operations of a single company, including the locations of all the wells it intended to drill, so that landscape level impacts could be avoided. Such an approach could also speed up the permitting of individual wells. Commissioner Bunker asked if “well spacing” included the grouping of wells on a pad? Staff was not sure. He noted that there is no item for capping and closing the well. Ms. Kenney said that was an oversight.

Commissioner Weber then asked if there was any focus on compressor stations and pipelines. Will permits be required for them? Brigid Kenney responded that the EPA was proposing air regulations; some already exist if the facility is big enough. With regards to pipelines, local jurisdictions have little authority over the location if the pipes meet strength requirements; in Pennsylvania the Public Utility Commission has asserted jurisdiction over smaller intra-state pipelines. Commissioner Roberts asked if the item “overall development plan” may also address the ancillary infrastructures like pipelines and compressor stations. Mr. Gill responded yes.

Chairman Vanko addressed bullet number 28 for radiation by noting that emphasis is on radioactive flow back and drill cuttings. Should it also include radiation safety of workers? The levels of radiation aren't huge, but for workers who are frequently exposed there could be issues. Ms. Kenney replied that the intention was to look at radiation in the drill cuttings and flow back, but that she was reluctant to expand our tasks to look at worker safety, which is the responsibility of other agencies, mainly OSHA.

Commissioner Roberts mentioned that contamination of drinking water in other states has been mainly by methane, but that there are other gasses that we should look at for best practices and establish levels for safety. Commissioner Weber asked if the regulations will require pre-drilling testing of wells near pads and what constituents will be analyzed. Is there a plan to map and test aquifers in Garret County? Ms. Kenney said that the current regulations require a certain setback between gas wells and drinking water wells and that applicants for gas well permits must identify all drinking water wells within a certain distance from the proposed gas well. She said she thought the current regulations do not require pre-drilling testing, but that it will be considered in the future. Joe Gill noted that the Commission had agreed that baseline data for surface and groundwater are essential. The permittee would collect some pre-drilling data from nearby wells, but sampling could establish a regional baseline.

Commissioner Weber asked about “high quality assets.” Is the State considering designating special protection areas? How will they be protected? Mr. Gill said that a presentation on this topic would be made at the next meeting.

Following a short break, the meeting reconvened at 2:20 p.m. Bruce Michael, head of Resource Assessment Service for DNR, gave a presentation for a plan for Regional Stream and Water Monitoring. An electronic copy of the presentation will be made available to the Commissioners and posted on MDE's website.

Mr. Michael was questioned by the Commissioners after the presentation. Commissioner Valentine noted that there were two monitors on streams flowing from areas in West Virginia with operating gas wells, and asked what they showed. Mr. Michael responded that they showed nothing unusual yet. The monitors were installed in June and the data would have to be compared to data from other sites. Commissioner Bender asked if the data would be available online. Mr. Michael said yes, but only after it has been processed and checked for quality assurance. Commissioner Bunker asked if establishing these monitoring sites is dependent on the passage of the fee on leases. The answer was yes, currently there is no funding for the 50 additional sites. Commissioner Kupfer asked when the monitors were installed. Mr. Michael said they were installed around June, but there were startup problems. DNR is more confident of the data collected after September. Commissioner Kupfer also asked where other states were in terms of establishing baselines. Mr. Michael said that other states did not have the luxury of establishing baselines, but they have long-term monitoring programs that might have provided data relevant to baseline. They have ongoing monitoring of existing wells. Commissioner Kupfer asked whether the number of sites was determined by some scientific method, or was it limited by funding? Mr. Michael said that these were the minimum required for an adequate study; more funding would be required for more stations.

Chairman Vanko asked if any tests of groundwater in Maryland have found significant methane. Jeff Halka, Director of the Maryland Geological Survey answered that methane analyses have not been done to date. The Garrett County Health Department tests wells for methane by a flame test. Methane analysis is planned for the future. Commissioner Fritts asked how committed the department is to citizen monitoring. Mr. Michael responded that DNR values citizen monitoring highly and has staff to provide training. Volunteers can help fill in the gaps in the monitoring.

Commissioner Weber asked whether, if more organizations participated in the monitoring, the number of sites could be increased, from 62 to perhaps 100. Mr. Michael responded that the volunteer program monitors a subset of all the parameters sampled at the 62 sites, so volunteer data will add spatial coverage and help fill in data gaps to characterize baseline conditions. Commissioner Weber noted that Stream Waders sample just once a year. The Alliance for Aquatic Resource Monitoring (ALLARM) collects more data. Commissioner Weber mentioned that conductivity and flow have an inverse relationship and expressed some concern the sampling plan did not call for flow data. He also expressed a willingness to help in collection of data within the state. He asked about the leasing of DNR-owned land. He also expressed concern about the monitoring of surface streams. Mr. Michael mentioned that DNR was working with ALLARM to monitor streams, loan equipment, and coordinate monitoring protocols. DNR is trying to address drinking water supplies as well as it can. Chairman Vanko and Commissioner

Valentine asked about sampling in Allegany County. Mr. Michael replied that most of the applications were in Garrett County, and DNR decided to prioritize there.

Commissioner Raley noted that Garrett County is working with the watershed associations and is serious about using them for monitoring. He asked about the protocol for stream sampling and how long it would take to establish a baseline. Mr. Michael said that sampling was planned for a minimum of two years to get seasonal and annual variability. Commissioner Raley asked how much adding the 50 monitoring sites would cost. Mr. Michael said adding 50 sites with Maryland Biological Stream Survey, conductivity, data loggers, and including the groundwater component would cost \$820,000 for the first year. He could not recall the figure for year 2. Commissioner Valentine said that two years would extend beyond the work of the Commission. How will the Commission be able to use the data? Mr. Michael said that some data would become available more quickly than others, and that all the data for the first year would be available sometime in the second year.

Commissioner Kupfer suggested that DNR consult with the Groundwater Protection Council that has experience with monitoring in areas where gas extraction occurs. Commissioner Kupfer asked if the monitoring had any utility in general outside of Marcellus shale drilling. Mr. Michael answered that DNR is required by the Clean Water Act to monitor water quality. All the data will be useful for looking at long-term trends. Mr. Gill noted that DNR would not have devoted the resources to this monitoring plan in the absence of the proposed gas drilling; it would not have been a priority.

The Commission discussed dates for future meetings. The February 27 meeting will be in Hagerstown and the March meeting in Annapolis. Chairman Vanko suggested the third Friday for each month for our regular Commission meetings, starting earlier than 1:00 pm. There was no dissent.

There followed a discussion of topics and speakers for future meetings. The work plan lists some topics and organizations. Commissioner Weber suggested someone from the EPA and someone from Maryland appear together to discuss water and air regulations. He thought that Cornell University had studied habitat protection and economic and resource impacts. Chairman Vanko suggested the economic impacts would be more appropriate for the next phase of the study. Commissioner Fritts wanted to identify a topic like the ecosystems of Garrett County and invite a panel of people with different expertise to discuss the impact of drilling on habitat and wildlife. It might also be appropriate to consider the best practices and their effect on the ecosystem. Chairman Vanko suggested that if a topic were rich enough, a panel could be a good way to approach it. Commissioner Fritts also thought an industry panel with representatives of the energy sector would be informative and would allow the Commissioners to ask hard questions. Commissioner Bunker pointed out that The Nature Conservancy in Pennsylvania had done a build-out analysis of what Pennsylvania would look like if the maximum number of wells were drilled. They also were working on a list of best practices, relating mainly to habitat fragmentation. The information might be more useful to those working on the best practices study. Commissioner Kupfer mentioned

that he could assist with getting industry experts to appear. He also mentioned that API is doing a best practices workshop in Annapolis on February 27th that is open to the public. Several of the Commissioners plan to attend. Ms. Kenney noted that an attorney for Halliburton contacted her and said they would be pleased to offer a speaker on fracking additives. All ideas will be ranked and prioritized.

Moira Moynihan, legislative aide to Commissioner Mizeur, expressed the Delegate's interest in exploring best practices for controlling the release of methane and other hydrocarbons into the air from Marcellus shale gas drilling.

Commissioner Weber asked about the guidance document that is part of the work plan and what the Commission would be doing between August and December. Ms. Kenney noted that the work plan extends only to August. The scope of work for the MOU has a task that will be done between August and December; namely, to describe the best practices in sufficient detail to incorporate them into regulations. The Commissioners will be briefed on the progress and will have an opportunity to comment.

The floor was opened up to the public for comment. Four members of the public made statements. Jim "Smokey" Stanton emphasized that the voluntary component of water quality monitoring is science-focused, not advocacy-based. Their interest is in gathering the sound baseline information so as to support policy decisions. He noted that DNR had successfully integrated the data collected by the Department and different volunteer groups. Training will be offered twice before Spring. He also said that it would be appropriate for the Commission to support the funding of MDE and DNR to do the research necessary to accomplish their tasks.

David Moe noted that it will take two years to get the baseline study done, and asked if that meant that the DNR would not sign off on any drilling permits until after the study is done. Mr. Gill said no.

Howard Payne expressed concerns about the weak economy and suggested that Maryland does not have to study the issues for another two years. He said that this kind of drilling has been going on 15 years. Other states have made mistakes but learned from them. Now we know how it can be done safely. We shouldn't try to develop the perfect plan before we start issuing permits. He advocated a sense of urgency.

Andrew Gunther asked if the Commission had an idea of how much interest gas companies have in Maryland, and what sort of facilities Maryland has to process and make use of the gas. Ms. Kenney said that because there has been no drilling in Maryland we are unsure of how lucrative it will be to drill; however land has been leased and permits have been applied for. As for getting gas to market, western Maryland is well located with respect to interstate pipelines. She noted that Pennsylvania is looking to increase the use of gas as a vehicle fuel.

The meeting was adjourned at 3:00 pm. The next Commission meeting is February 27th in Hagerstown, Maryland.