

MEETING MINUTES

Oil and Gas Technical Advisory Board

May 20, 2020

[In accordance with Governor Tom Wolf's emergency disaster declaration and based on advice from the Department of Health regarding the mitigation of the spread of the novel Coronavirus (COVID-19), the Oil and Gas Technical Advisory Board (TAB) meeting was held virtually as a conference call via Skype for Business. This meeting was open to the public and persons wishing to attend the meeting could do so via registration on the DEP oil and gas website.]

TAB MEMBERS PRESENT

Voting Members: David Yoxtheimer, Ph.D., P.G. (Chair), Fred Baldassare, P.G., Casey Saunders, P.E., Jeffrey Walentosky, P.G., Robert Hendricks, P.G.

Non-voting Advisors: John Walliser, Esq., Michael Griffin, Ph.D., Susan Brantley, Ph.D.

DEP STAFF PRESENT

Scott Perry, Kurt Klapkowski, Joe Kelly, Seth Pelepko, Myron Suchodolski, Steve Brokenshire, Bruce Jankura, Crystal Magon, Michael Hueft, Ann Mathew, Shahed Noyon, Ian Quinlan, Todd Wallace, Elizabeth Davis, Joe Iole, Jennie Demjanick, Kate Cole, David Allard, Hayley Book, Ben Seiber

CALL TO ORDER

Yoxtheimer called the meeting to order at 10:05 a.m. and opened the meeting with welcoming remarks. Yoxtheimer invited the Department to share any additional opening remarks.

Klapkowski informed the Oil and Gas Technical Advisory Board (TAB) members and all individuals on the call that the meeting is recorded in its entirety and participation in the meeting conveys implied acceptance and consent for all meeting participants to be recorded. Klapkowski announced that meeting materials are accessible on the TAB website and explained that the meeting agenda includes an opportunity for public comment during the meeting. Klapkowski addressed the general rules of engagement to be followed during the meeting and reminded meeting participants that a chat feature is available and can be used to communicate with DEP staff during the meeting.

APPROVAL OF MEETING MINUTES

Yoxtheimer asked the board members if there were any general comments related to the January 15, 2020, TAB meeting minutes. Yoxtheimer offered a comment that the language under the "Call to Order" section leads the reader to believe that the meeting was conducted solely via Skype for Business. Since the meeting was held in Conference Room 105 at the Rachel Carson

State Office Building, Harrisburg, PA and was also offered via Skype for Business, Yoxtheimer suggested amending the meeting minutes to clarify this matter.

Walentosky made a motion to approve the meeting minutes as amended by Yoxtheimer. Hendricks seconded the motion and the motion passed unanimously.

STATUS OF “RADIOACTIVITY MONITORING AT SOLID WASTE PROCESSING AND DISPOSAL FACILITIES” TECHNICAL GUIDANCE DOCUMENT (TGD)

Dave Allard, Director of DEP’s Bureau of Radiation Protection, discussed this TGD and updated TAB on its current status. The comment period ended in October 2019 and staff from DEP’s Bureau of Radiation Protection prepared a draft Comment/Response Document that is undergoing internal review.

Walentosky inquired when DEP expects the Comment/Response Document to be completed. Allard responded that the Comment/Response Document should be finalized by early 2021.

Brantley asked if DEP has concerns about the current COVID-19 situation and how it could affect the monitoring for Technologically Enhanced Naturally Occurring Radioactive Material (TENORM) at solid waste processing and disposal facilities. Allard explained that operators are required to develop and adhere to Radiation Action Plans and DEP is capable of issuing permits electronically. DEP is also prepared to respond to emergency situations should they arise.

Brantley asked if there are any known gaps related to the physical inspection of solid waste processing and disposal facilities. Allard reported that current regulations require all operators to install radioactive monitoring devices at solid waste processing and disposal facilities.

REGIONAL GREENHOUSE GAS INITIATIVE UPDATE

Hayley Book, Senior Advisor on Energy and Climate, updated TAB about the proposed carbon dioxide (CO₂) budget trading program. DEP has proposed a draft regulation that provides a framework for Pennsylvania’s participation in the Regional Greenhouse Gas Initiative (RGGI).

Book explained that changing climate patterns have caused and will continue to cause impacts in Pennsylvania related to public health, infrastructure, emergency services and major economic contributors such as agriculture, tourism and recreation. Pennsylvania is experiencing increases in temperature and precipitation as a result of these changing climate patterns.

The proposed rulemaking is expected to result in a reduction of CO₂ by 188 million tons by 2030. This represents a ten-fold increase in the reduction of CO₂ compared to Pennsylvania not participating in RGGI.

The proposed rulemaking applies to fossil fuel-fired electric generating units (power plants) that emit CO₂ and have a capacity to generate greater than 25 Megawatts of electricity and send more than 10 percent of its gross electricity to the electric grid. This rulemaking does not apply to oil and gas wells.

The plugging of orphan and abandoned wells was removed from the rulemaking as an offset project option; however, well plugging activities are included as a reinvestment option for the revenues from the RGGI auction proceeds that result from participation in this program.

The next steps in the regulatory development process include presenting the proposed rulemaking to the Environmental Quality Board in late summer with the goal of finalizing the regulation by the end of 2021. DEP anticipates beginning participation in the RGGI program on January 1, 2022.

Yoxtheimer commented that he was surprised to see that DEP projections indicate that coal-fired power plants will represent only one percent of the total energy profile by 2030. Book responded that energy from coal-fired power sources has been declining steadily since about 2000 as a result of market forces and is projected to be at only one percent by 2030.

Griffin commented that DEP's projections show nuclear power generation is expected to remain relatively stable and constant through 2030. Given recent announcements of some nuclear power generation companies considering retiring reactors, Griffin asked if DEP expects energy generation to decline as a result of the loss of some nuclear power generation. Book responded that Energy Harbor, the company that owns the Beaver Valley nuclear plant, was originally expected to close its operations, but the company decided to remain open as a result of the proposed RGGI initiative. The Department expects that the benefits from the RGGI auction pricing structure is sufficient to maintain interest of nuclear power generators to remain in operation in Pennsylvania.

Griffin asked if DEP has considered whether increases in electric vehicle demand will increase the amount of CO₂ that is generated by electric generating units. Book responded that electricity demand is flat or declining and the speed at which electric vehicle usage is adopted is not expected to significantly increase overall energy demand via the electric power grid in the near term.

Brantley asked what DEP's rationale is for not including abandoned well plugging projects as part of the RGGI initiative. Book responded that given the current auction price for CO₂ (i.e., \$5.65 per ton of CO₂) when compared to the costs to plug abandoned wells, the benefit was outweighed by the costs to set up a monitoring and evaluation program to track the offset of methane from abandoned wells. Book reminded the group that DEP is considering allocating a portion of the anticipated auction revenue to promote the plugging of abandoned wells, but the plugging of abandoned wells is not included in the compliance component of RGGI.

COAL-GAS COORDINATION COMMITTEE UPDATE

Saunders and Pelepko updated TAB on the recent work being conducted by the Coal-Gas Coordination Committee. Saunders highlighted two topics that have recently been considered by the group. The first topic involves the "Risk Matrix Document" that includes examples of mine-by scenarios. The National Institute for Occupational Safety and Health (NIOSH) recently presented that they have evaluated test sites in low, medium and high cover areas. NIOSH

observed greater movement (4-5 inches) in low cover areas and much less movement (less than 1 inch) in high cover areas where wells are located in pillars that might be negatively impacted by long wall mining. The current Risk Matrix Document is conservative in terms of potential monitoring and mitigation measures that should be taken, but discussions within the committee are ongoing.

The second topic pertains to hydraulic fracturing activities that occur adjacent to coal mines and emphasizes the need for good communication between coal and natural gas operators. Saunders stated that natural gas operators should monitor the status of their drilling and completions operations and notify coal operators in the event a situation is encountered that could present a threat to individuals who work in adjacent coal mines.

Another topic pertains to the process of hydraulically fracturing wells that are proximal to active/sealed areas of coal mines. Saunders explained that the group is in the early stages of evaluating this matter and would benefit by input and participation by the natural gas industry. In particular, there is a need for additional safeguards and notification requirements. Finally, the committee has been examining deviation surveys to determine what constitutes a “safe distance” involving offsets between mining and unconventional wells.

Pelepko provided an update on the meetings of the Coal-Gas Coordination Committee that were held on April 15, 2020 and May 13, 2020. Pelepko shared that findings contained in the NIOSH multiyear study were discussed during the April 15 meeting, and he reported that NIOSH funding has been extended for the research program.

Pelepko stated that DEP intends to present the final Chain Pillar Technical Guidance Document to TAB at the Board meeting scheduled for September 17, 2020.

CORNPLANTER EMISSIONS STUDY UPDATE

Pelepko reported that DEP is collaborating with the Department of Conservation and Natural Resources (DCNR) on a \$1.9 million project to plug 62 abandoned wells on 1,600 acres of state owned land at Cornplanter State Forest. As part of this effort, DEP has conducted a study to determine the volume of methane that is emitted from a subset of all known abandoned wells located at Cornplanter State Forest. DEP staff used highly sensitive monitoring of methane leak rates using low cost methods.

The findings of this study revealed that 11 of the 62 wells were leaking low volumes of methane. DEP anticipates eventually presenting the findings of this study via a Story Map report.

Yoxtheimer asked how many abandoned wells are known to exist at Cornplanter State Forest. Pelepko responded that there are 174 active and abandoned wells.

Brantley asked if DEP considered ambient monitoring as an alternative to monitoring the 62 wells individually. Pelepko explained that the volume of methane emitted from the abandoned wells is at such low levels that ambient monitoring would not effectively detect the methane concentrations.

Hendricks asked if the 62 abandoned wells selected by DEP were based on “risk” or “general location” criteria. Pelepko responded that DEP focused on two tracts of land that included wells with no potential responsible party. Also, some of the wells appear on the DEP orphan and abandoned list, so DEP has authority to plug all of the chosen wells. This factored largely in the selection of these wells.

GRANT TO STUDY AIR TOXICS/HAZARDOUS AIR POLLUTANTS

The EPA is making \$5 million available to regulatory agencies in the form of competitive grants to promote strategies that reduce emissions of air toxics and hazardous air pollutants (HAPs). The grant cap for each project is \$750,000, and the grant period will allow work to be conducted until 2022.

Pelepko explained that the DEP Oil and Gas and Air Quality Programs jointly prepared a grant application to examine emissions for HAPs such as Benzene, Toluene, Ethylbenzene and Xylene (BTEX) at 125 abandoned oil and gas wells located in various state forests and the Allegheny National Forest. Pennsylvania is one of 33 grant applicants seeking funding, and EPA is expected to announce successful grant applications sometime this summer.

Walentosky asked Pelepko to comment on the types of wells that comprise the set of 125 wells that are referenced in the grant application. Pelepko responded that all 125 wells are abandoned wells that are not plugged and encompass shallow oil wells, shallow gas wells and deep gas wells that were historically production wells.

ALTERNATIVE METHODS FOR PLUGGING AND ABANDONMENT OF LEGACY WELLS

Yoxtheimer introduced this topic by explaining that TAB and the Pennsylvania Grade Crude Development Advisory Council (CDAC) have been working together by way of a Plugging Committee to examine the issue of reaching attainable bottom in legacy wells. The focus of the committee is to evaluate proper plugging and abandonment and alternative methods that will achieve the same effectiveness while being more cost effective. Yoxtheimer asked Walentosky to provide an update on the current status of this project. Walentosky explained that the CDAC meeting scheduled for late March was cancelled due to COVID-19 and asked the Department for any additional insight on the matter.

Perry commented that rig time is a key impact on the costs associated with plugging to attainable bottom, and the goal of DEP is to give plugging inspectors the tools required to gain predictability and consistency in answering questions about attainable bottom.

Pelepko explained that DEP gathered well records and plugging certificates for wells that DEP identified as leaking methane and other wells that maintained structural integrity and were not leaking. This information was shared with the plugging workgroup to get insights from industry stakeholders about such wells. DEP intends to conduct a more rigorous analysis to better assess failed well plugs and better understand why some wells develop leaks while others do not.

Pelepko reported that industry is creating a “planning document” that includes a checklist that could be used by industry and DEP inspectors to help present known plugging criteria and conditions prior to when well plugging operations commence. DEP is considering ways to make the “planning document” a DEP form.

Walentosky asked Pelepko when this checklist document is expected to be completed. Pelepko responded that DEP will be working on this product throughout the remainder of 2020. Perry stated that when it is completed, DEP will present the end product to TAB for review.

UIC WELL PERMITTING

Perry explained that the disposal of produced fluids from oil and gas well sites has become a very challenging matter due to limited disposal options. Currently, most produced fluid generated within Pennsylvania that is not otherwise reused or recycled is transported to neighboring states for disposal in Class IID Underground Injection Control (UIC) disposal wells.

The U.S. EPA (EPA) maintains primacy for the federal UIC program; however, DEP conducts an independent review of all Class IID UIC permit applications. Historically, EPA would initially review a UIC permit application and after their review was completed, DEP would conduct its review of the permit application. In an effort to streamline the permitting process, DEP has been in discussions with EPA about revising the process to allow a concurrent review of the permit. EPA and DEP are in the process of conducting a concurrent review on a Class IID UIC permit and DEP is hopeful that the concurrent permit review will be successful and will lead to future concurrent reviews.

Yoxtheimer asked if a recent court ruling on a case brought by Grant Township would serve as a roadblock to future Class IID UIC permit applications in Pennsylvania. Perry responded that the case brought by Grant Township is unique. One aspect of the Grant Township Home Rule Charter was invalidated at the federal level, but the Charter was not challenged by the UIC permit applicant and; therefore, was not invalidated. Perry stated that operators are encouraged to work with local governments to resolve any conflicts they might have with siting Class IID UIC disposal wells before submitting a permit application.

ESCGP-3 PRIORITIZED REVIEW WORKGROUP UPDATE

Kelly discussed the purpose of DEP transitioning to a prioritized permit review process. Innovative approaches through design and implementation of environmentally enhanced Best Management Practices (BMPs) and superior construction practices reduce environmental impacts from oil and gas operations. To incentivize these technologies and practices, the Department intends to replace the ESCGP Expedited Review process with a Prioritized Review process that will allow for voluntary participation by industry. Permit applications submitted as Prioritized Review will be given a score based on the BMPs and environmentally superior construction practices proposed. Projects that score well will be given priority to be reviewed before projects that are not submitted as Prioritized Review.

On April 23, the workgroup met for the fourth time via Skype for Business and the meeting was very productive. The workgroup developed a document that will guide the types of BMPs that operators can consider and will meet at least one more time to fine tune the document before it is presented to TAB and then published in the *Pennsylvania Bulletin* for comment.

Walentosky commended Kelly, DEP staff and the members of the workgroup for distilling many very good ideas and creating the current draft document. Walentosky stated that there were several aspects of the draft document that he was a little surprised were included in the document. First, the draft document includes two non-earthmoving/non-restoration practices (i.e., noise mitigation and air quality improvements) as superior practices. Walentosky further stated that he is not aware if the composition of the workgroup included individuals who had the technical expertise to consider noise mitigation and/or air quality issues.

Kelly responded that he appreciated the input and efforts of the workgroup members in sharing so many good ideas throughout the process. He explained that if the document was limited solely to earthmoving activities, it would not allow for broader environmental benefits, such as noise mitigation and air quality improvements. Kelly stated that several oil and gas surface activities staff have direct experience reviewing air quality permits and though no staff from the DEP Bureau of Air Quality (BAQ) participated on the workgroup, the oil and gas program sought direct input and assistance from BAQ staff in the development of the document.

Walentosky added that he had some concern that if the document requires an operator to select a minimum of five superior environmental projects out of 10 categories of projects, this could result in such a high economic cost that some operators might not be willing to pursue a prioritized review of their application. If the goal of the Department is to see as many superior environmental projects implemented as possible, this requirement could negatively impact the number of such projects that are ultimately put in place.

Kelly thanked Walentosky for his comments and explained that DEP does want to promote superior environmental practices. Kelly reported that some other states simply charge a supplemental permit fee in order to expedite permit review, but DEP prefers to see superior environmental performance implemented. Kelly explained that DEP views this document as a “living” document that could be revised in the future if necessary.

Perry commended Kelly for his leadership and commended DEP surface activities staff and all of the workgroup members for their concerted efforts over multiple workgroup meetings to develop the draft document from scratch. The end product will help achieve a better natural environment in Pennsylvania for the benefit of future generations.

NON-REGULATORY AGENDA

Klapkowski summarized the following documents that are included on the Non-Regulatory agenda:

Civil Penalty Assessments in the Oil and Gas Program – This document was originally drafted in 2004; however, with the enactment of Act 13, several civil penalty amounts for unconventional

well violations increased. DEP amended the original document to address the new civil penalty requirements and intends to publish this document for public comment later in 2020.

Guidelines for Chain Pillar Development in Longwall Mining Adjacent to Unconventional Wells – Klapkowski reminded the board members that Saunders and Pelepko discussed this topic earlier during the TAB meeting. This document was published as interim final, and comments were received on the document in 2018. The Department has made some minor changes to this document and plans to present it to TAB at the next regularly scheduled meeting in September 2020.

Policy for Erosion and Sediment Control and Stormwater Management for Earth Disturbance Associated with Oil and Gas Exploration, Production, Processing, Treatment Operations or Transmission Facilities (a.k.a., ESCGP Policy) – DEP adopted this policy in 2012 when the ESCGP-2 was published. DEP did not update this policy when ESCGP-3 was published since it was aware that the concept of prioritized review would need to be fleshed out and included as part of any update to this policy. After the Prioritized Review Workgroup considers the draft prioritized review document, DEP will bring this policy to TAB for review either in September or December. The Department hopes that this policy will be able to be published as final before the end of the fourth quarter of 2020.

Guidelines for Implementing Area of Review – Klapkowski noted that DEP adopted this policy as interim final after extensive discussions with TAB throughout 2015 and 2016. The Department has been applying this interim final guidance since the Chapter 78a regulations went final in 2016. DEP received public comments on this interim final guidance and intends to address them in the final guidance; however, the Department has currently suspended ongoing review of this document due to ongoing litigation that could affect the implementation of the current area of review requirements.

Hendricks asked whether any additional changes were made to this document since the comment period ended and it was last reviewed by TAB in 2018. Klapkowski responded that this guidance has not changed since TAB's review in 2018.

WATER SUPPLY RESTORATION TGD UPDATE

Klapkowski stated that this TGD is also listed on the Non-Regulatory Agenda. In 2016, DEP adopted this guidance as interim final in response to the passage of the Chapter 78a rulemaking. In February 2018, DEP presented this guidance as draft final to TAB with minor amendments. The Department is conducting its final review of this guidance in anticipation of publishing it as final before the end of the second quarter of 2020.

DRAFT PRESSURE BARRIER POLICY

Klapkowski stated that this is the sixth and final document that is listed on the Non-Regulatory Agenda and invited Pelepko to provide an update to TAB on the status of this policy. Pelepko reported that this policy was submitted to TAB for review in February 2018 at which point DEP received TAB's endorsement to proceed with this policy as draft. Since this time, two

significant factors emerged that delayed this policy from moving forward as originally planned. First, a significant well control incident occurred in 2019, and DEP worked with TAB's Coal-Gas Coordination Committee to reassess this policy in light of the lessons learned in response to this well control incident. Secondly, a new version of the American Petroleum Institute (API) RP 53 Recommended Practices (RP) related to blowout preventer testing was published, and DEP was required to enter into a contractual agreement to gain access to the provisions of this revised RP. As a result, the draft Pressure Barrier Policy was amended to include a new appendix in the form of a Frequently Asked Questions (FAQ) component. Now that the policy has been updated to address these two issues, DEP plans to proceed with publishing this policy for public comment.

Saunders asked when DEP would like to receive comments from TAB on the draft policy. Pelepko responded that comments would be appreciated within a 2 to 4 week timeframe, if possible. TAB committed to provide a consolidated list of comments on the draft TGD by June 19.

Brantley asked Pelepko if the Department maintains a list of all well control incidents and whether this list is available on the DEP website. Pelepko responded that all violations are available via the DEP Compliance Report, which is on the DEP website. The Department does not maintain a separate compilation of all well control incidents at this time.

PUBLIC COMMENT

Yoxtheimer asked if any person had registered to provide public comment at today's TAB meeting. Magon responded that no person registered to provide public comment.

NEW BUSINESS

Federal Suspension of Enforcement of Environmental Laws

Brantley stated that it was reported by the press in late March 2020 that the Administration of the President was suspending the practice of enforcement of federal laws especially where COVID-19 caused an inability for industries to comply with federal law; or it could pertain to the ability of industries to manage the treatment and disposal of produced fluids. Brantley asked Perry if DEP has any concerns with respect to this matter.

Perry stated that environmental regulation of the oil and gas industry in Pennsylvania is primarily driven by state laws. At the onset of COVID-19, a process was put in place at the state level for companies operating in Pennsylvania to request a waiver from state regulations or permit conditions. Perry reported that no waiver requests were received from the oil and gas industry.

Klapkowski reported that a link is available on the main DEP webpage (i.e., red banner that includes update on COVID-19 related information) that includes a list of companies that have been approved to receive a waiver from compliance with a specific environmental regulation or permit condition.

Spill Policy Update

Walentosky reported that industry stakeholders continue to develop a draft unconventional spill policy for consideration by the Department. This effort was delayed as a result of COVID-19; however, it has been picked back up by the stakeholder workgroup and significant progress has been made. It is anticipated that a draft version of the spill policy will be presented to the Department within a month or so.

ADJOURNMENT

Yoxtheimer asked if there was a motion to adjourn the meeting. Walentosky made a motion to adjourn the meeting and Hendricks seconded. Motion passed unanimously, and the meeting was adjourned at 1:17 pm.

DRAFT