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From: ecomment@pa.gov
Sent: Friday, August 7, 2020 12:49 PM
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Cc: c-jflanaga@pa.gov
Subject: Comment received - Proposed Rulemaking: Control of VOC Emissions from Oil and Natural Gas Sources (#7-544)

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Re: eComment System

The Department of Environmental Protection has received the following comments on Proposed Rulemaking: Control of VOC Emissions from Oil and Natural Gas Sources (#7-544).

Commenter Information:

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Comments entered:

No text comments were provided as part of this comment submittal. Please refer to attachments below.

These links provide access to the attachments provided as part of this comment.

Comments Attachment: [Cline PIPP Comments.pdf](#)

Please contact me if you have any questions.

Sincerely,
Jessica Shirley

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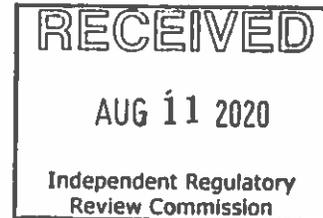
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July 27, 2020

Submitted by e-mail to ecomment@pa.gov
Policy Office
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Re: Comments on Proposed Rule "Control of VOC Emission from Oil and Natural Gas Sources"
(#7-544)
IRRC #3256

Comments of The Pennsylvania Independent Petroleum Producers Association, Inc.

The Pennsylvania Independent Petroleum Producers (PIPP) respectfully submits the following comments regarding the Pennsylvania Environmental Quality Board (EQB) Notice published in the Pennsylvania Bulletin on May 23, 2020. That Notice solicits public comments on the proposed rule "Control of Volatile Organic Compound (VOC) Emissions from Oil and Gas Sources."

PIPP is a nonprofit trade association, with approximately 300 small Conventional Oil and Gas producers. PIPP members are subject to provisions of the Clean Air Act (CAA), the Pennsylvania Air Pollution Control Act, the Pennsylvania Oil and Gas Act (Act 13 of 2012, Chapter 32), the Pennsylvania Clean Streams Law, and other environmental statutes and implementing regulations relevant to oil and gas operations in Pennsylvania. The Association and our members, therefore, have a direct interest in the proposed rule "Control of VOC Emissions from Oil and Natural Gas Sources" (CTG O&G Rule).

The vast majority of PIPP members are small, family run operations that have been in business for generations. Production from Conventional Oil wells has been happening for over 160 years and Conventional gas wells have been producing for about 138 years. EQB's recognition that there are over 71,000 known existing conventional wells in operation in Pennsylvania. All our members are small businesses under the Small Business Regulatory Enforcement Fairness Act of 1996. PIPP emphasizes that the imposition of the "one-size-fits-all" regulatory approach proposed by the CTG O&G Rule for existing conventional and unconventional oil and gas operations in Pennsylvania, which blindly reflects the recommendations of the U.S. Environmental Protection Agency (EPA) 2016 document "Control Techniques Guidelines for the Oil and Natural Gas" ("CTGs"), is: a) inappropriate; b) disproportionately impacts conventional operations and small businesses in

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Pennsylvania; and c) more fundamentally, fails to comply with the clear directives of Act 52 of 2016, by which the General Assembly – for the second time – rejected the “one-size-fits-all” regulatory approach for conventional and unconventional oil and gas operations in Pennsylvania.

Comment No. 1: EQB must revise the rule to exclude owners and operators of conventional wells because EQB has failed to comply with the plain, clear directives of Act 52 of 2016.

Section 7(b) of Act 52 of 2016, effective June 23, 2016, states:

Any rulemaking concerning conventional oil and gas wells that the Environmental Quality Board undertakes after the effective date of this act shall be undertaken separately and independently of unconventional wells or other subjects and shall include a regulatory analysis form submitted to the Independent Regulatory Review Commission that is restricted to the subject of conventional oil and gas wells.

The EQB has failed to comply with Act 52:

Do these Act 52 directives apply to this matter? This question raises the following questions:

- *Is this a rulemaking? Yes.*
- *Does this rulemaking concern conventional oil and gas wells? Yes.* DEP/EQB’s response to Regulatory Analysis Form (RAF) (# 16) includes owners and operators of the specified oil and natural gas sources of VOC emissions associated with both conventional and unconventional oil and natural gas wells as persons, groups or entities that will be required to comply with the regulation.
- *Has the EQB undertaken this rulemaking after June 23, 2016? Yes.* Section 5 of the Pennsylvania Air Pollution Control Act requires the EQB to adopt regulations to implement the CAA, and DEP states that this rulemaking is required to implement the CAA. Accordingly, EQB undertook this rulemaking when, after review of the reasonable available control technology (RACT) recommendations included in the EPA’s 2016 O&G CTG, DEP determined that more stringent RACT requirements are necessary in two cases and began developing the necessary rulemaking for adoption by the EQB. According to the RAF prepared by and submitted to the Independent Regulatory Review Commission (IRRC) by DEP, EQB’s undertaking of this rulemaking began, at the latest, with DEP’s December 14, 2017 presentation to AQTAC (RAF #14) to begin developing the rulemaking.
- *Did the EQB undertake this rulemaking concerning conventional oil and gas wells separately of unconventional wells or other subjects? No,* as plainly shown by the rulemaking itself.
- *Did the EQB undertake this rulemaking concerning conventional oil and gas wells independently of unconventional wells or other subjects? No,* again, as plainly shown by the rulemaking itself.
- *Did the EQB submit a RAF to IRRC that is restricted to the subject of conventional oil and gas wells? No – again – as shown by the RAF itself.*

As this Q&A shows, EQB's undertaking this rulemaking concerning conventional oil and gas wells has not complied with the plain, clear directives of Section 7(b) of Act 52.

This is, frankly, unbelievable for two primary reasons: *First*, in 2016 the General Assembly specifically rejected the "one-size-fits-all" regulatory approach (re Chapter 78 regulations) for conventional and unconventional oil and gas operations in Pennsylvania by an amendment to the Fiscal Code. While the lawsuit alleging non-compliance with those Fiscal Code directives was dismissed as premature because of the meaning of a statutorily defined term ("promulgate"),¹ the Act 52 directives are substantively different than the Fiscal Code directives: Act 52's directives are based upon plain language rather than a statutorily defined term that is both broader in scope and more prescriptive in how the General Assembly's second rejection of the "one-size-fits-all" regulatory approach for conventional wells is to be carried out. No doubt the Act 52 language was informed by the result of the legal challenge to the 2016 Fiscal Code language. Unlike in the Fiscal Code litigation, the time for EQB's compliance with Act 52's directives with respect to this "rulemaking concerning conventional oil and gas wells" has already passed. The reference in Act 52 only to "EQB" and not to "DEP" is clearly because EQB is the entity that by statute promulgates DEP's regulations but, as DEP admitted in discovery in the Chapter 78a litigation,² DEP actually does EQB's work in undertaking the development of rulemakings and writing the regulations for EQB to adopt and promulgate.³

At a CDAC meeting in Jan. 2019 (CDAC was formed in Act 52, with a duty to explore the development of a regulatory scheme that provides for environmental oversight and enforcement specifically applicable to the conventional oil and gas industry) a Dep representative stated that his understanding was that this rule would not apply to the conventional industry because our wells typically do not cross the thresholds in place for methane emissions. He agreed to procure additional information for the Council to evaluate. Dep never provided any information to CDAC. The Dep continued to developing the rule making in violation of Act 52, by not doing it separately and independently of the unconventional industry.

As there can be no reasonable dispute that the EQB has failed to comply with the plain, clear directives of Act 52, the EQB has no choice but to revise the rule to exclude from its scope owners and operators of the specified oil and natural gas sources of VOC emissions associated with conventional wells.

Comment No. 2

¹ *Pennsylvania Independent Petroleum Producers Association v. Com., DEP; EQB; IRRC*, No. 219 M.D. 2016, Memorandum Opinion, Colins, J., April 15, 2016 ("If the Final Form Regulations are promulgated as final regulations, PIPP and its members may seek declaratory and injunctive relief at that time raising the claim asserted here, that the regulations were promulgated in violation of Section 1741.1-E(a) of the Fiscal Code and are therefore invalid.").

² *The Marcellus Shale Coalition v. DEP and EQB*, No. 573 MD 2016 (Commonwealth Court).

³ PIPP notes that the Secretary of DEP is the Chairperson of the EQB, and that DEP submitted this proposed rulemaking and the RAF prepared by DEP to the Legislative Reference Bureau for publication in the Pennsylvania Bulletin and to IRRC and the Chairpersons of the House and Senate Environmental Resources and Energy Committees.

While the Pennsylvania EQB published the notice related to the CTG O&G Rule in the Pennsylvania Bulletin on May 23, 2020, the underlying data “supporting” the proposal is outdated and insufficient. A large majority of the data is circa 2012. The primary supporting document for the proposed controls is the CTGs. The document was finalized October 27, 2016 – a little less than two weeks prior to the last presidential election. Politics aside, the CTGs rely heavily on the Regulatory Impact Analysis finalized in April 2012 to support the controls on VOCs for various segments of the oil and natural gas industry at 40 CFR Part 60, Subpart OOOO. A cursory review of the citations to the 2016 CTGs demonstrate that most of the data is from 2012 or earlier. Perhaps the single most concerning aspect of relying on 2012 (or earlier) data is that the economic analysis conducted by EPA assumes the cost of natural gas at \$4.00 per thousand cubic foot (Mcf) [equivalent to \$3.89 per million British thermal units (MMBTU)]. The average wholesale price for natural gas at the Henry Hub was \$4.20 per MMBTU in 2011. In 2012 it dropped to \$2.77 per MMBTU. The current price for gas at the Henry Hub is \$1.70 per MMBTU. The price for Pa. Crude Oil was at \$ 103.01 per barrel on Jan. 3, 2012. The current price is at \$ 39.60 per barrel.

This is not a new complaint to EPA and is one that EPA has failed to address. The Independent Petroleum Association of America (IPAA), wrote in their comments filed on December 4, 2015 on the September 18, 2015 Release of Draft Control Technique Guidelines for the Oil and Natural Gas Industry (“IPAA Comments”).⁴ A copy of those comments is attached as Exhibit A to these comments. Aside from limited data collection in the 2012-2013 time period on storage vessels from unconventional operations, the Pennsylvania DEP has done little to update the data set relied upon by EPA in the CTGs. There is no excuse for relying on a dated and insufficient data set when DEP has had nearly 5 years to conduct its own independent analysis of RACT for oil and gas sources in Pennsylvania.⁵

This is especially true in light of a fundamental split between Pennsylvania and EPA in terms of characterizing groups of sources that will be affected by the proposed rule. The NSPS and CTGs focus on “affected facilities” and start with a requirement of a “hydraulically fractured” oil or natural gas well. EPA makes no distinction on whether the hydraulically fractured well has horizontal legs or on which geographic formation the well is drilled into. EPA does not recognize the Pennsylvania-specific terms “conventional” or “unconventional.” For DEP to conduct little-to-no additional research to account for the extreme differences between conventional and unconventional oil and gas sources in Pennsylvania only exacerbates the shortcomings of this rule.

Comment No. 3: RACT ≠ BSER.

⁴ (cite)As IPAA Comments point out at page 3, in EPA’s rush to publish the proposal, EPA failed to timely make available key supporting documents. Ultimately EPA provided the document.

⁵ DEP cannot claim additional relevant data existed. For example, such studies include the “EDF/Allen Study” which illustrates the regional differences in emission rates (Measurements of methane emissions at natural gas production sites in the United States); David T. Allen, Vincent M. Torres, James Thomas, David W. Sullivan, Matthew Harrison, Al Hendler, Scott C. Herndon, Charles E. Kolb, Matthew P. Fraser, A. Daniel Hill, Brian K. Lamb, Jennifer Miskimins, Robert F. Sawyer, and John H. Seinfeld, Proceedings of the National Academy of Sciences October 29, 2013 110 (44) 17768-17773;

It is not disputed that the controls suggested in EPA's final CTGs and DEP's CTG O&G Rule are remarkably similar to EPA's 2016 NSPS for the oil and natural gas sector.⁶ As the title implies, the requirements were promulgated for "new sources" or existing source that were "modified" (as defined by EPA). Part of the process of establishing the standards for the new or modified sources is generally referred to as the "Best System of Emissions Reduction" or BSER. BSER is not a "defined" term but is discussed in the CAA Section 111(h)(1):

For purposes of this section, if in the judgment of the Administrator, it is not feasible to prescribe or enforce a standard of performance, he may instead promulgate a design, equipment, work practice, or operational standard, or combination thereof, which reflects the best technological system of continuous emissions reduction which (taking into consideration the cost of achieving such emission reduction, and any non-air quality health and environmental impact and energy requirements) the Administrator determines has been adequately demonstrated.⁷

Ostensibly, EPA went through this process in promulgating the 2016 NSPS.⁸ The focus of the new source performance standards promulgation process is on establishing standards for new sources stands in stark contrast to the process of establishing emission limitations that are contained in State Implementation Plans (SIPs) for existing sources in nonattainment areas. The CAA requires state SIPs to include "RACT for existing sources. EPA defines RACT as "the lowest emission limitation that a particular source is capable of meeting by the application of control technology that is reasonably available considering technology and economic feasibility."⁹ The CAA Section 182(b)(2)(A) requires that SIPs for certain states, including Pennsylvania, include RACT for each category of VOC sources covered by CTGs. To help better define what is economically feasible, in a 2006 memorandum, EPA determined a VOC cost threshold at approximately \$2,000 per ton in 1980 dollars¹⁰ (accounting for inflation, that is about \$6,620 per ton of VOCs controlled in 2020 dollars¹¹). The CAA is clear – NSPS are focused on new sources; CTGs and RACT are supposed to be focused on accounting for the significant differences associated with applying controls to existing sources versus engineering for the controls before the equipment is built.

The remarkable similarities between the 2016 NSPS and the CTGs did not go unnoticed.¹² The IPAA stated in their comments.

⁶ See: https://www.ecfr.gov/cgi-bin/text-idx?SID=d279cd4acfbe03141c166a97874d664f&mc=true&node=sp40.8.60.0000_0a&rtn=div6

⁷ U.S. Code Title 42, Chapter 85, Subchapter I, Part A, Section 7411(h)(1) (emphasis added).

⁸ The 2016 NSPS were challenged by various entities in 2016, including PIOGA as a member of a large coalition of trade associations. Significant changes to the 2016 NSPS were proposed and are pending, with final regulations expected in August of 2020. One significant aspect of the proposal was to eliminate any and all controls to the transmission and storage segment of the source sector. PIOGA recommends that DEP evaluate its CTG O&G Rule in light of the final changes to the 2016 NSPS as the factual underpinnings of its rule may be called into question.

⁹ 44 FR 53761 (Sept. 17, 1979).

¹⁰ <http://www3.epa.gov/ttn/caaa/t1/memorandum/ractqana.pdf>.

¹¹ http://bls.gov/data/inflation_calculator.htm. It appears that DEP has adopted the thresholds utilized in the 2016 CTG and not adjusted the thresholds for 2020 dollars.

¹² [cite] IPAA/AXPC Comments and API comments.

- EPA has failed to create a record that demonstrates it made a thoughtful analysis of the technologies it is proposing in the CTGs as RACT – particularly in the context of considering technological and economic feasibility.
- EPA fails to appropriately adjust the economic analysis from the NSPS materials to reflect the different circumstance of existing operations.
- EPA bases much of its cost-effectiveness determinations on average VOC emissions, but RACT needs to be considered by each state for each nonattainment area.
- Different oil and natural gas formations produce unique vapor compositions including significantly different fractions of VOC in the vapor.
- EPA bases much of its analysis on “model” facilities, but facilities differ depending on the nature of their operations.¹³

EPA produced a Response to Comments document in October 2016.¹⁴ EPA acknowledged that its CTGs were similar to BSER determinations in its 2016 NSPS but simply stated “the CTG are based on a separate analysis.”¹⁵ EPA provided no further discussion of the separate supporting analysis – no citations to the record – just a bold face statement for stakeholders to discover or find for themselves. In a similar manner, EPA tries to undercut stakeholder comments on this by stating “the commenter fails to specify any particular deficiency in EPA’s analysis that resulted in the RACT presumptive norm included in the CTG and instead relies on a general, unsupported assertion that RACT cannot be the same as BSER.” The response is remarkable in that it is equivalent to the “kettle calling the pot black.” Earlier in the response, EPA speaks in generalities and stated the analysis was based on “existing sources and not new sources (e.g. we included retrofit cost adjustment *where information was available*).”¹⁶ In the same paragraph stated “[b]ased on existing requirements and *available information and data* we provided recommendations for RACT for select oil and natural gas industry emission sources . . .”¹⁷ No citations, no sources – merely references to “where information was available.” The obligation is first on the regulatory agency to justify its controls, not put it back on industry to point out the flaws. The reality is there was very little information on existing sources available when EPA rushed to judgment in a presidential election year to finalize the 2016 NSPS and CTGs. While the EPA has proposed to withdrawal the CTGs, the flaws remain and EPA has not adequately addressed the comments made by PIOGA, IPAA, and the American Petroleum Institute (API).¹⁸ DEP relies almost exclusively on the CTGs. DEP still needs to adequately address the comments of PIOGA, IPAA, API on the CTGs – two wrongs do not make a right

Comment No. 4: Neither EPA nor DEP have demonstrated the CTG O&G Rule necessary

IPAA Comments provide a lengthy discussion of why the CTGs are not necessary or will be ineffective at assisting states in achieving the applicable National Ambient Air Quality Standards (NAAQS) for Ozone. DEP adopts much of EPA’s rational for the CTGs. It then acknowledges that EPA has proposed to withdrawal the CTGs. The current structure in place in Pennsylvania to regulate unconventional oil and gas operations as stationary sources of air pollution is functioning

¹³ Id.

¹⁴ [cite]

¹⁵ Id. at 2.

¹⁶ Id. at 3 (emphasis added).

¹⁷ Id (emphasis added).

¹⁸ PIOGA incorporates by reference the comments of the American Petroleum Institute, Docket No. EPA-HQ-OAR-2015-0216-0157.

effectively. Given that the EPA has taken a position that questions the efficacy of 40 CFR Part 60, Subpart OOOOa and is looking to revise its requirements regarding methane emissions, PIOGA questions the need to unnecessarily impose requirements on existing oil and gas operations that are generally equivalent to 40 CFR Part 60, Subpart OOOOa. The proposed CTG O&G Rule will greatly increase the administrative burden on regulated entities as well as the DEP.

Because of the nature of oil and natural gas production, the application of controls on new sources through the 2016 NSPS will achieve the DEP air quality objectives without the need to create extensive existing source regulations. Oil and natural gas production operations differ from other types of manufacturing. After the period of initial production, wells begin to decline, generally referred to as the “production decline curve.” As the production of the well declines, its ability to emit VOC also declines. Emissions from these older (i.e., conventional) wells likely represent only a very small fraction of VOC emissions from oil and gas operations in Pennsylvania, yet the proposed CTG O&G Rule will subject tens of thousands of existing Pennsylvania conventional wells to new regulations that were developed for new or modified affected sources. PIOGA questions the cost effectiveness of the proposed requirements to existing Pennsylvania sources, especially conventional operations. The additional administrative burden that will affect DEP by exposing tens of thousands of existing conventional oil and gas sources is completely overlooked in the proposed rule¹⁹. PIOGA suggests that the current air quality regulatory structure for existing unconventional oil and gas operations be retained and that the proposed CTG O&G Rule be withdrawn.

Comment No. 5: The CTG O&G Rule disproportionately impacts conventional sources.

As proposed, the CTG O&G Rule will have a disproportionate and devastating impact on conventional oil and gas operations within the state due primarily to the sheer numbers of existing conventional oil and gas wells, storage vessels, gathering and boosting stations, and natural gas driven pneumatic controllers. The DEP admits the CTG O&G Rule has the potential to impact over 71,000²⁰ oil and natural gas wells in Pennsylvania. DEP also indicates that its data suggests that only 303 of those conventional wells exceed the regulatory threshold of 15 barrels of oil equivalent (BOE) per day production, and thus make them subject to the fugitive emission provisions of the proposed rule. If DEP is truly concerned with minimizing the regulatory impact to the industry, PIPP recommends that DEP inform the operators of the 303 wells that they believe exceed the 15 BOE of their obligation to comply with the fugitive emissions requirements. Why force the operators of the other 70,500 wells spend thousands of dollars merely to determine rule applicability? Another option would be to build in a margin of “safety” and internally determine which wells DEP believes produces 12 BOE or more a day and contact those owners? The slightly lower screening threshold would give DEP a degree of confidence they are identifying all sources that may need to comply.

Additionally, there are multiple conventional operators in Pennsylvania that operate over 1,000 conventional wells. Each well site is likely to have at least one storage vessel and one natural gas driven pneumatic controller. Considering *only* the equipment costs associated with retrofitting

¹⁹ Adopted from IPAA and the American Exploration and Production Council (AXPC) comments December 4, 2015 in response to Draft Control Technique Guidelines for the Oil and Natural Gas Industry (80 Fed. Reg. 56,577).

²⁰ While the EQB acknowledges that over 71,000 conventional oil and gas wells exist in Pennsylvania, that number is believed to be conservatively low.

existing natural gas driven pneumatic controllers with low-bleed pneumatic controllers, and assuming that half of the existing controllers would be replaced, the costs alone for the new controllers would be over 1.3 million dollars, using the average cost of a low-bleed controller from the 2016 CTG (e.g., \$2,698 based on 2012 dollars). That cost does not include cataloging and tagging all pneumatic controllers and the associated labor to replace 500 existing pneumatic controllers. The technical comments provided below document several additional cost burdens of the rule associated with conventional operators in Pennsylvania.

Another fundamental flaw in EPA and DEP's analysis is failing to account the unique aspect of the oil and natural industry. It is well documented that the production from oil and natural gas wells typically decline steeply after the initial few years of production. RACT determinations borrowed from BSER determinations fail to account that the averaging of the cost versus the benefit over the life of well or the equipment associated with wells ignores the "front loading" of the benefits inherent in oil and gas wells. During the initial few years of production, wells will typically produce exponentially more gas or oil compared to the average production of the well excluding those initial years of production or a short period of time after a well is refractured. The standard cost-effective/RACT analysis fails to account for the significant decline in production overtime – especially when it comes to conventional wells in Pennsylvania. PIPP also notes that fewer than 2,041 conventional wells have been developed in Pennsylvania since August 10, 2013 indicating that the proposed rule will primarily impact conventional wells that are long past their prime production years and are in decline.

EPA and the industry often refer to "marginal wells" and the 15 BOE threshold as utilized in certain EPA regulations and the Internal Revenue Service (IRS) code. While the term marginal is in reference to their level of production, the reality is that the term marginal also refers to their economic viability. Fifteen barrels of oil per day is approximately equivalent to 90 Mcf per day (MCFD) of natural gas. Most marginal wells and conventional wells in Pennsylvania produce considerably less gas than that per day. At the current price of \$1.70 per Mcf, a well producing 90 MCFD will gross \$153. An extremely efficient marginal well will net approximately \$0.28 for every Mcf (again assuming the conservative assumption of 90 MCFD – most marginal wells are considerably lower than the threshold, therefore generating considerably less money). Based on these conservative assumptions, a very efficiently run marginal, conventional well might be clearing about \$25 a day – in 2020 dollars. EPA and DEP suggesting that controls that cost in the range of \$6,600 per ton of VOC removed are somehow economically justified is ludicrous. EPA's 2016 NSPS were not designed or cost-justified to control conventional sources in Pennsylvania. The regulations were in response to and targeted at the large, unconventional large volume hydraulically fractured wells with horizontal legs. The production from these wells in their initial years of production were beyond anything the industry had ever seen and to factor those levels of production into the cost-effectiveness analysis over the life of the well seriously front loads the benefits. EPA and DEP would argue, based on the CTGs and CTG O&G Rule that the cost of one new pneumatic device costing \$3,000 would be cost-effective. Assuming the conservative assumptions set forth above, it would take an operator 119 days to break even on that single device. The proposed rule justification also completely ignores the costs to operators associated with simply determining if the rule applies and the associated extensive recordkeeping and reporting requirements for the operator. A typical conventional operator in Pennsylvania faced with the prospect of these exorbitant costs while recovering perhaps \$25 a day from a well will most likely shut-in the well.

Comment No. 6: The proposed rule does not reflect RACT for Pennsylvania sources.

Because the proposed rule relies on the recommendations of the 2016 CTG, it fails to comply with DEP's responsibility for developing RACT rules for existing oil and gas operations *in Pennsylvania*. RACT is defined at 25 Pa Code §121.1 as "*The lowest emission limit for VOCs or NOx that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility.*" In this instance, the particular sources are "existing" oil and gas sources in Pennsylvania (e.g., wells, storage vessels, gathering/boosting stations, compressors, continuous bleed pneumatic controllers, and pneumatic pumps). The 2016 CTGs, and therefore the proposed CTG O&G Rule, basically apply the same requirements associated with Subpart OOOOa for new sources to existing sources, with no consideration to whether the proposed rule requirements for new sources are economically appropriate as RACT for existing sources in Pennsylvania.

Comment No. 7: Conventional and unconventional wells are fundamentally different.

The vast majority of the sources that will be affected by the proposed CTG O&G Rule are affiliated with operators of conventional wells in Pennsylvania. There are fundamental differences between the emissions profiles of conventional and "unconventional" wells²¹ and affiliated operations in Pennsylvania. The proposed CTG O&G Rule is based on the recommendations provided in the 2016 CTGs. However, the emissions information used to establish the recommendations in the 2016 CTGs are not representative of the majority of affected sources (i.e., conventional operators) in Pennsylvania. Because of the fundamental differences between conventional and unconventional wells and their affiliated operations in Pennsylvania and their associated emissions profiles, PIPP questions the cost effectiveness bases for the proposed rule as applied to conventional wells and associated affected operations. Rather than rely on the recommendations of the 2016 CTGs, PIPP believes that a more accurate assessment of the emissions profile of conventional wells within the Appalachian Basin in Pennsylvania and associated VOC control costs would result in vastly different cost-effectiveness values and RACT determinations. PIPP also notes that DEP was not required to rely on the recommendations of the 2016 CTGs to establish the proposed CTG O&G Rule and could have developed a RACT rule that reflects the emissions profiles and economics of the vast majority of sources that will be affected by the proposed rule. Section 1 of the 2016 CTGs includes the following language:

- *This CTG provides recommendations to inform state, local, and tribal air agencies (hereafter, collectively referred to as air agencies) as to what constitutes RACT for select oil and natural gas industry emission sources. Air agencies can use the recommendations in the CTG to inform their own determination as to what constitutes RACT for VOC for the emission sources presented in this document in their Moderate or higher ozone nonattainment area or state in the OTR. The information contained in this document is provided only as guidance.*

²¹ See generally EDF/Allen Study referenced earlier.

- The CTG ...provides only recommendations for air agencies to consider in determining RACT. Air agencies may implement other technically-sound approaches that are consistent with the CAA, the EPA's implementing regulations, and policies on interpreting RACT.
- The recommendations contained in this CTG may not be appropriate for every situation based upon the circumstances of a specific source (e.g., VOC content of the gas, safety concerns/reasons).

Technical Comments:

Comment No. 8: EPA did not collect any significant data to identify the emissions profile of low production wells and DEP relied on EPA data as compiled in the 2016 CTGs to support the proposed CTG O&G Rule.

A significant shortcoming of the proposed CTG O&G Rule is the reliance of DEP on the data provided in the 2016 CTGs, which is largely reliant on data developed in support of Subpart OOOO and Subpart OOOOa. The data developed by EPA are not representative of the vast majority of the sources that will be impacted by the proposed CTG O&G Rule; the conventional operators of Pennsylvania, which are almost universally characterized as low production or stripper wells. The IPAA addressed this concern in its 2018 comments:

*"The EPA's reliance on approximately 25 potentially low production wells in one play -- the Barnett Shale in Texas -- to define its Model Low Production Well is inadequate. This action is flawed for several reasons. First, there is no reason to believe that Barnett Shale is representative of all low production wells in various plays across the country. Second, the data that was collected in the Fort Worth Study was not intended to address low production wells specifically and is simply a subset of wells incidental to a larger study. Third, even these well selections appear flawed; some wells do not appear to be low production wells. Fourth, and perhaps most importantly, trying to establish a Model Low production Well on the basis of 25 single basin wells will lead to ineffective results and unproductive, inefficient use of resources."*²²

Comment No. 9: DEP has not provided the basis for population of conventional wells in Pennsylvania cited in the preamble.

DEP estimates that the CTG O&G Rule will affect 71,229 conventional wells currently in production in Pennsylvania, of which 303 will be subject to leak detection and repair (LDAR) requirements under the proposed rule.²³ By DEP's own estimates, this equates to only 0.42% of conventional wells in production. For those owners/operators that do not own the 303 affected wells, the costs associated with an applicability determination (e.g., administrative costs, lost man hours, costs for environmental consultants) to conclude that they are exempt is overly burdensome considering DEP has already made the determination. As such, DEP should justify or otherwise

²² From November 25, 2019 comments from The Independent Producers to U.S. EPA regarding "Emission Standards for New, Reconstructed, and Modified Sources Review at 84 Federal Register 50,244 (September 24, 2019). It's unclear if EPA or DEP even took this limited data set into consideration when proposing the CTG O&G Rule.

²³ Section D – Background and Purpose, PA Bulletin, Doc. No. 20-684, 50 Pa.B. 2633, Saturday, May 23, 2020.

make available the calculations used to derive the estimated number of wells subject to LDAR requirements under the CTG O&G Rule.

Comment No. 10: There are significant differences associated with new storage vessels versus existing storage vessels²⁴.

A new vessel can be designed to accommodate a vapor collection system whether it is for recovery or combustion. Once built, both the vessel and the system can be maintained to assure that they are operating effectively and safely. Because the proposed rule and its basis (i.e., 2016 CTGs) addresses existing facilities, there is no certainty that the affected storage vessels will be capable of accepting the equipment retrofits, if needed, to capture vapors. Vessels deteriorate over time despite maintenance, and if the structural integrity is compromised by the additional equipment, a safety issue arises, rendering the retro-fit impractical. Under DEP inspection rules, mechanical integrity must be certified, and the retrofits required under the CTG O&G Rule could cause such tanks to be uncertifiable, and in turn would require their replacement.

In this context, and more generally, the basis of the proposed rule (i.e., EPA's 2016 CTG cost estimates) must be scrutinized. EPA suggests in the 2016 CTG that vapor recovery units (VRU) or combustors can be considered RACT for vessels with VOC emissions of 6 tons/year or more. However, if a storage vessel cannot safely operate with additional equipment, the entire vessel would have to be replaced, if storage vessel replacement is even economically feasible. EPA did not consider this situation in calculating its cost effectiveness, but should have because the consequences would considerably alter the determination of RACT. For example, at some facilities and under current economic conditions, the cost of a new storage vessel would not be economically feasible based on the facility's production rates and realized low natural gas commodity prices.

Most conventional oil producers do not have access to commercial power. In order to collect the VOC's from oil tanks, you would need a vacuum pump and compressor. These units would require electric to operate. If you don't have commercial electric, you would need a generator capable of producing the needed electric. Let's think about this scenario. Electric components installed around flammable materials would require OSHA approved units. In the event, you would need a generator, it would have to operate 24/7. The cost of the generator and OSHA approved components would cost approximately \$ 60,000/tank. The generator would need diesel fuel or natural gas to operate. The cost for fuel would be approximately \$6,000/year. Keep in mind, either fuel source will have emissions. Will this solve any problems for the amount of VOC.s? In the event, you do have commercial electric, you could save cost on the generator, but you will pay for the commercial electric. Making commercial electric has adverse consequences as well! Conventional oil wells have been producing for over 150 years, why now, is there a problem? PLEASE, exercise common sense

Comment No. 11: Storage vessels associated with conventional well operations should not be regulated under the proposed rule.²⁵

PIPP asserts that conventional well associated facilities (e.g., storage vessels) should be excluded from the scope of the proposed rule, but nonetheless provides the following comments. Clearly,

²⁴ Adopted from Independent Petroleum Association of America (IPAA) and the American Exploration and Production Council (AXPC) comments December 4, 2015 in response to Draft Control Technique Guidelines for the Oil and Natural Gas Industry (80 Fed. Reg. 56,577)

²⁵ Ibid

the burden of adding capture equipment – and certainly the burden of replacing storage vessels – cannot be readily borne by marginal (i.e., conventional) well operations. In the 2016 CTGs, EPA relates storage vessel VOC emissions to well production rates²⁶. The information provided in the CTG indicates that marginal (i.e., conventional) well operations (e.g., less than 15 BOE) fall well below even EPA’s presumed RACT threshold of 6 tons/year for both oil and gas wells. Rather than deliberate on storage vessel emissions estimates or requiring conventional operators in Pennsylvania to assess storage vessel emissions and rule applicability, the straightforward approach to defining the scope of the proposed storage vessel rule requirement would be to exclude marginal (i.e., conventional) well operations from the proposed storage vessel provisions. Similarly, when a facility’s production levels fall to the point where it inevitably becomes a marginal or stripper well operation, it should no longer be required to operate any vapor capture system. Beyond the proposed exclusion of storage vessels associated with conventional wells, there should also be the opportunity for operators to demonstrate that their uncontrolled storage vessel VOC emissions are below 4 tons/year to obtain an exclusion from applicability to the storage vessel provisions of the proposed rule.

As production decreases over time, there should also be an “off-ramp” for controlled tanks that would allow reconfiguration of control equipment. At lower levels, control technology will not only become impracticable, but it also will cause more environmental impact than direct emissions. For example, combustion of vapors at low and intermittent flow will require a gas pilot and assist gas. Depending on the size of the burner and gas quality, we estimate that for a 2” gas combustor that as much as 500 Mcf gas per year would be required to obtain stoichiometric flow and combustion conditions meeting required destruction efficiencies. The comparable gas flow rate from a tank emitting 6 tons/year would be approximately 44 Mcf, *making the required assist gas approximately 11 times more gas than the tank vapors*. The combustion of large quantities of assist gas to maintain the minimum requirements of maintaining the control equipment not only releases additional products of combustion emissions, it requires the consumption of the facility’s product (natural gas).

Comment No. 12: Fuel for pilot flame to combust VOC results in excess emissions of other regulated New Source Review (NSR) pollutants.

As provided under Technical Comment No. 11, the potential vapors available from a tank emitting 6 tons/year are marginal in comparison to the natural gas required to maintain the control device’s gas pilot and assist gas. As a result, approximately 11 times more gas would be combusted than the vapors controlled. The environmental impacts of combusting excess gas to maintain a control device should be considered as it will increase emissions of other regulated pollutants, swapping one environmental problem for another.

Comment No. 13: Cost of evaluating applicability to storage vessel requirements.

Determining applicability to the storage vessel requirements of the proposed rule requires employing “generally accepted methods” to determine the emissions rate from each tank. Typically, this is done using the calculation methodologies from EPA for Organic Liquid Storage Tanks and/or using a commercially-available emissions modelling software. Setting up an emissions model and/or emissions calculations for a single tank is time consuming and costly; either through lost man hours or through the use of consultants or test firms, which could run on the order of \$1,000 per tank. Further, with the recent amendments to EPA’s AP-42 Chapter 7:

²⁶ 2016 Control Techniques Guidelines for the Oil and Natural Gas Industry p 4-5, Table 4-2

Liquid Storage Tanks, many commercially-available software programs are no longer supported or do not meet the new calculation methodologies. Considering the tens of thousands of existing storage vessels in Pennsylvania that will require an applicability analysis, the administrative and economic burdens of running tanks emissions calculations is immense.

Comment No. 14: Small gathering and boosting compressors should be exempt from the proposed rule.

DEP has not established an exemption for compressors based on size or operating conditions. Reciprocating compressors can be rated as low as two horsepower (hp) and may be equipped with blow-by gas recycle with no leakage to the atmosphere. In addition, many small compressors associated with gathering and boosting operations are electric. Small reciprocating compressors do not have rod packings and have not been identified as having appreciable emissions beyond very low fugitives. Given the administrative costs of compliance documentation, and reduced emissions associated with smaller compressors, such sources should be exempted. Without an exemption, the industry would be faced with a huge administrative burden for a compressor that has no ability to leak.

The costs associated with required maintenance of small gathering and boosting operations is also cost prohibitive. As a real-world example, a group of four, 6 MCFD wells feed a small 10 hp electric powered reciprocating compressor (a very common configuration). The realized profit on the four wells and one compressor is \$0.28 per MCFD, based on the current gas price of \$1.70/Mcf and a \$1.42 breakeven level. For the total 24 MCFD produced for the four wells, there is a daily profit of \$6.72. Because there are no exemptions for this compressor, the proposed compressor rules would apply. The cost of documenting and tracking compliance in this system is estimated to be a minimum of \$1,000 per compressor. It would therefore take 148 days of operation to pay for the compliance documentation alone.

Comment No. 15: The proposed rule does not differentiate between continuous bleed natural gas driven pneumatic controllers and intermittent pneumatic controllers.

The proposed rule incorrectly characterizes all pneumatic controllers as affected facilities. The proposed rule should be revised to clearly reflect that intermittent or snap-action pneumatic controllers are not affected facilities under Subpart OOOOa²⁷ or the 2016 CTGs²⁸ and should not be affected facilities under the proposed rule.

Comment No. 16: PIPP believes that the proposed rule requirements for pneumatic controllers and pneumatic pumps should not apply to marginal (i.e., conventional) well facilities.

PIPP asserts that conventional well associated facilities should be excluded from the scope of the proposed rule, but nonetheless provides the following comments concerning the pneumatic controller and pneumatic pump requirements. Clearly, the burden of cataloging and labeling all existing pneumatic devices, evaluating their applicability to the proposed rule, and replacing affected pneumatic controllers with new, compliant pneumatic controllers represents a capital cost

²⁷ 2016 Small Entity Compliance Guide Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources 40 CFR Part 60, Subpart OOOOa p. 32

²⁸ 2016 Control Techniques Guidelines for the Oil and Natural Gas Industry p.6-3

that most conventional well operators in Pennsylvania will not be able to bear. As mentioned in Comment No. 4, the capital equipment costs associated with retrofitting existing continuous bleed natural gas driven pneumatic controllers with low-bleed pneumatic controllers, would be approximately \$2,698 per unit, based on 2012 dollars and pneumatic controller costs from the 2016 CTGs. That cost does not include the administrative cost of evaluating rule applicability to each controller and cataloging/tagging each controller. Considering that several controllers could be present at each well site, operators with 500 active wells could be looking at compliance costs of \$1,000,000 or more.

Comment No. 17: Pneumatic pump tracking to document exemption is impractical based on current technology.

The proposed CTG O&G Rule provides a categorical exemption for natural gas-driven diaphragm pumps located at a well site which operate less than 90 days per calendar year, so long as the owner or operator maintains records of the operating days. However, there is no cost-effective, commercially available technology available [e.g., supervisory control and data acquisition (SCADA) systems] available that are capable of tracking the pump operating days. As such, this exemption will likely not be utilized, and operators are forced to default to complying with the rule for pumps which would otherwise be exempt. The requirement to track actual operating data should, therefore, be removed and instead a one-time applicability determination of worst-case actual operation is appropriate to document a pump's exemption status.

Comment No. 18: The proposed exclusion of LDAR requirements for low production wells (i.e., less than 15 BOE per well per day) should be extended to gathering and boosting compressor stations servicing conventional operators.

PIPP asserts that conventional well associated facilities should be excluded from the scope of the proposed rule, but nonetheless provides the following comments concerning the LDAR requirements for low production conventional wells. On average in Pa. a conventional stripper well produces ½ barrel of oil per day. Net revenue after royalty payment and operating costs will be approximately \$ 5.63 per barrel. The conventional industry can not afford to pay for another regulation that is truly not needed in our industry. PIPP supports the proposed rule provisions that exempt low production wells from the LDAR requirements associated with the proposed rule. EPA states in the 2016 CTGs (i.e., the basis for the proposed rule) that *"It is our understanding that fugitive emissions at a well site with low production wells are inherently low and that many well sites are owned and operated by small businesses. We are concerned about the burden of the fugitive emissions recommendation on small businesses, in particular where there is little emission reduction to be achieved."*²⁹ EPA is correct in its assertion that the ongoing costs associated with LDAR inspections at low production wells will create an unnecessary financial burden on small business while simultaneously creating a huge administrative burden on both operators and DEP.

Comment No. 19: The economic viability of many conventional operators is at stake.

PIPP asserts that conventional well associated facilities should be excluded from the scope of the proposed rule, but nonetheless provides the following comments that show the wisdom of Act 52's

²⁹ U.S. Environmental Protection Agency, Control Techniques Guidelines for the Oil and Natural Gas Industry (Draft), (Aug. 2015) available at http://www3.epa.gov/airquality/oilandgas/pdfs/og_ctg_draft_081815.pdf.

directives and why the General Assembly has twice directed regulations concerning conventional wells to be developed separately from unconventional wells or other subjects. Considering the tens of thousands of individual pieces of equipment for which rule applicability will need to be determined (e.g., thousands of units that qualify as storage vessels, pneumatic devices), there is considerable cost associated with the initial compliance determination for, and ongoing compliance with, the proposed CTG O&G Rule. For many small conventional operators, the costs of such administrative burdens for applicability determination and rule compliance could be catastrophic. Such cost items that should be considered include:

- Cataloging of equipment, applicability determinations, and associated recordkeeping
- Compliance monitoring, recordkeeping and reporting
- Administrative costs
- Support staff
- Consultants/test firms

Given the aforementioned costs of this rule for performing compliance assessments, documenting compliance, coupled with the costs of upgrading tanks, many wells will be deemed uneconomic to operate. Ceasing operation of existing wells causes many issues, including:

- Depriving royalty owners of income
- Loss of a natural resource with sunk costs and reduced environmental impact
- Loss of direct and indirect jobs
- Loss of commonwealth income tax from lost jobs
- Dependence on out-of-state gas and energy, and increased energy costs for consumers

The costs of ceasing operations are considerable and includes restoration of the site and plugging of the well. Well plugging costs can range from \$7,000 to \$300,000 depending on the well type. Many conventional operators cannot bear this burden, and the rules could leave the Commonwealth with the burden of dealing with well plugging and abandonment.

Conclusion

For the reasons set forth in Comment No. 1 above, PIPP respectfully requests that the EQB do the right and lawful thing, and revise the rule to exclude from its scope owners and operators of the specified oil and natural gas sources of VOC emissions associated with conventional wells.

Respectfully submitted,

Mark L. Cline