



November 23, 2015

U.S. Environmental Protection Agency
EPA Docket Center (EPA/DC)
Mail Code: 2822IT
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Attn: Docket ID Numbers: EPA-HQ-OAR-2010-0505, EPA-HQ-OAR-2015-0216 and EPA-HQ-OAR-2013-0685

Re: Comments on EPA's Proposed Oil and Natural Gas Sector: Emission Standards for New and Modified Sources; Source Determination Proposed Rule, and Draft Control Techniques Guidelines for the Oil and Natural Gas Industry (80 FR 56593, 56579 and 56577, September 18, 2015)

To Whom It May Concern:

The Pennsylvania Department of Environmental Protection (DEP) appreciates the opportunity to submit comments on the U. S. Environmental Protection Agency's (EPA) proposed rules published in the *Federal Register* on September 18, 2015, pertaining to the "Oil and Natural Gas Sector: Emission Standards for New and Modified Sources," published at 80 FR 56593, and "Source Determination for Certain Emission Units in the Oil and Natural Gas Sector" (Source Determination Rule) published at 80 FR 56579. The enclosed comments also address EPA's September 18, 2015, notice of the "Release of Draft Control Techniques Guidelines for the Oil and Natural Gas Industry" published at 80 FR 56577.

EPA has determined that the oil and natural gas source category (i.e., production, processing, transmission and storage) is currently one of the largest emitters of methane, a potent greenhouse gas (GHG), in the United States. The proposed new source performance standards (NSPS) for the oil and natural gas sector are designed to reduce volatile organic compound (VOC) and methane emissions from sources, processes and activities in oil and natural gas operations. The NSPS proposal will also regulate sources that were not covered under EPA's Subpart OOOO provisions adopted on August 16, 2012, for the oil and natural gas sector. Under the NSPS proposal, leak detection and repair (LDAR) surveys would be conducted semi-annually or annually, depending on the percent of the fugitive emission components during a survey. The DEP recommends that EPA require quarterly LDAR surveys to reduce VOC and methane emissions, as required under the DEP General Plan Approval/General Operating Permit for Natural Gas Compression and/or Processing Facilities (GP-5 or General Permit).

When EPA promulgates final NSPS provisions for the oil and natural gas sector, the federal provisions will automatically be adopted and incorporated by reference in their entirety in the *Pennsylvania Code* at 25 *Pa. Code* § 122.3 (relating to adoption of standards). These Subpart OOOO amendments will take effect automatically in Pennsylvania on the same date the final NSPS are published in the *Federal Register*. The amended NSPS provisions codified in

Secretary

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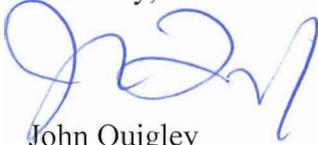
40 CFR Part 60 would be implemented and enforced by the DEP under its “automatic delegation of authority” to implement the federal NSPS Program in the Commonwealth of Pennsylvania (50 FR 34140; August 23, 1985).

The DEP supports EPA’s proposals to achieve additional VOC and methane emission reductions from the oil and natural gas sector to the extent that the provisions are at least as stringent or more stringent than the requirements currently being implemented in Pennsylvania under the Air Pollution Control Act, 35 P.S. §§ 4001 – 4015 and implementing provisions in Title 25, Subpart C, Article III (relating to air resources) of the *Pennsylvania Code*. The DEP is concerned, however, that further reductions in methane emissions from natural gas sources located in “dry gas” areas of the Commonwealth (i.e., north central and central regions) may not be achieved under the proposed rules and guidelines. The DEP recommends that EPA explicitly define a “leak” in terms of methane and VOCs to address natural gas operations in “dry gas” areas in the Marcellus Shale Play; the natural gas from the “dry gas” areas in the northeast and north central regions of the Commonwealth is mainly methane.

Thank you for the opportunity to comment on the proposed measures to reduce VOC and methane emissions from the oil and natural gas industry. To this end, detailed comments on the proposed rulemakings and guidelines are enclosed for your consideration.

Should you have questions or need additional information, please contact Joyce E. Epps, Director of the Bureau of Air Quality, by e-mail at jeepps@pa.gov or by telephone at 717.787.9702.

Sincerely,



John Quigley
Secretary

Enclosure

ENCLOSURE

Pennsylvania Department of Environmental Protection's Comments on EPA's Proposed Oil and Natural Gas Sector: Emission Standards for New and Modified Sources, Source Determination Rule and Control Techniques Guidelines for the Oil and Gas Industry

Docket ID Numbers: EPA-HQ-OAR-2010-0505, EPA-HQ-OAR-2015-0216, and EPA-HQ-OAR-2013-0685

General Comments

The DEP has a comprehensive permitting program which authorizes reductions of air contaminants including methane, volatile organic compounds (VOCs) and nitrogen oxides (NO_x) from sources at natural gas production, compression, processing, and transmission facilities. The DEP's conditional exemption criteria for sources at well sites and General Permit for sources at natural gas compression and processing facilities require source owners and operators to comply with stringent requirements including a Leak Detection and Repair (LDAR) program for any type of leaking air contaminant. The DEP LDAR criteria and permit conditions specifically target methane emission reductions from the oil and natural gas sector. The NSPS proposal excludes from the fugitive emissions requirements the well sites that contain only wellheads. The preamble states that areas with very "dry gas" tend to be the well sites with only wellheads. Thus, several well sites in dry gas areas would be exempt from LDAR program requirements. However, the DEP requires the LDAR program at all well sites, including well sites EPA has proposed to exempt from regulation. The DEP believes that the final rulemaking should require fugitive methane emission reductions at all well sites.

Proposed NSPS Leak Detection and Repair Program Requirements

As specified in § 60.5397a (j) (2) (ii) (A) of EPA's proposed NSPS, "a fugitive emissions component is repaired when the Method 21 instrument indicates a concentration of less than 500 ppm above background." However, the proposed provision does not indicate whether the less than 500 ppm standard should be expressed as VOC, Methane, or total hydrocarbon emissions. The DEP recommends that EPA clarify in the final rule, which pollutant (methane, VOCs, or total hydrocarbons) must be less than 500 ppm above background.

Under the NSPS proposal, LDAR surveys would be conducted semi-annually or annually. However, the LDAR survey frequency would decrease from semiannually to annually for the owners or operators of sites that find fugitive emissions from less than one percent of their fugitive emission components during a survey. The proposal specifies that the frequency of LDAR surveys would increase from semiannually to quarterly at sites where fugitive emissions increase to three percent or more of the fugitive emission components during a survey.

The DEP recommends that EPA require quarterly LDAR surveys to reduce VOC and methane emissions, as required under the DEP General Plan Approval/General Operating Permit for Natural Gas Compression and/or Processing Facilities (GP-5 or General Permit). Within 180

calendar days after the initial startup of a source, the owner or operator of the facility must, at a minimum on a quarterly basis, use forward looking infrared (FLIR) cameras or other leak detection monitoring devices approved by the DEP for the detection of fugitive leaks. GP-5 further provides that the DEP may grant an extension for use of a FLIR camera upon receipt of a written request from the owner or operator of the facility documenting the justification for the requested extension. Since the issuance of GP-5 in 2013, the DEP has issued 510 authorizations to use the General Permit. The DEP urges the EPA to adopt LDAR provisions at least as stringent as the requirements being implemented in the Commonwealth for the oil and natural gas sector.

During the development of GP-5, the DEP performed independent cost-effectiveness analyses for LDAR and leak quantification surveys for sources at natural gas compressor station, processing plant and transmission station facilities. Based on the cost information received from two vendors for the LDAR surveys, DEP estimated the cost-effectiveness for 5 percent leaking components at \$41.96 per ton of methane reduced and \$2.10 per ton of methane reduced for 100 percent leaking components.

Additionally, according to an economic analysis conducted by ICF International (ICF) for the Environmental Defense Fund in March 2014, more frequent inspections result in greater emission reductions.¹ The ICF report, which cites research conducted by EPA and Colorado, concludes that annual inspections will reduce emissions by 40 percent; quarterly inspections will reduce emissions by 60 percent and monthly inspections reduce emissions by 80 percent. ICF also estimates that the cost of reduction (\$/Mcf methane reduced) for quarterly LDAR surveys ranges from \$4.10 to \$7.60 without gas credit.² Based on these cost estimates and the implementation of DEP's existing LDAR program, quarterly LDAR survey requirements should be imposed nationally for the oil and natural gas sector. This cost-effective strategy would significantly reduce methane and VOC emissions including hazardous air pollutants.

Fugitive Emission Monitoring. EPA is proposing in § 60.5397a (k) (6) (ii) that an owner or operator maintain documentation of each source of fugitive emissions (i.e., fugitive emissions component) one or more digital photographs of each required monitoring survey being performed. However, the proposed regulation does not specify if optical gas imaging equipment should be used for the digital photographs – a digital image from any camera could be used as documentation of fugitive emissions. The DEP recommends that EPA clarify in the final rule if an optical imaging camera should be used for digital photographs to document each source of fugitive emissions.

The DEP's permitting criteria require the owner or operator of well sites and natural gas compression facilities to maintain records of only leaking components by taking digital photographs using an optical imaging camera. The photographs must be imbedded with date, longitude and latitude information followed by another digital photograph of the same component after it has been repaired to assure that the component was repaired within 15 days. Therefore, DEP recommends that EPA require the owner or operator to maintain records of only

¹ Economic Analysis of Methane Emission Reduction Opportunities in the U.S. Onshore Oil and Natural Gas Industries (March 3, 2014).

² *Ibid*, 3-10; 3-12

leaking components by taking digital photographs imbedded with the date, longitude and latitude information. The final rule must also explicitly require that the digital photographs be taken using an optical imaging camera.

Leak Repairs. For certain types of sources including centrifugal compressors and reciprocal compressors, pneumatic pumps, and storage vessel affected facilities, EPA is proposing that a leak or defect must be repaired as soon as practicable, but no later than 15 calendar days after it is detected. The first attempt at repairing the leak must occur within five calendar days of detection.

The DEP supports EPA's proposed requirement that a first attempt must be made by an owner or operator to repair the leak within five calendar days after the leak is detected; the repair of the leak should be completed no later than 15 calendar days after detection. However, the final LDAR provisions must ensure that any gaseous hydrocarbon leak including methane should be repaired within 15 calendar days of detection of the leak, if possible.

Delay of Repair. EPA has proposed that the repair of a closed vent system or cover may be delayed for leaks or defects if the repair is technically infeasible without a shutdown, or if the owner or operator determines that emissions resulting from immediate repair would be greater than the fugitive emissions likely to result from delay of repair. As proposed, the repair of the equipment must be completed by the end of the next shutdown.

While DEP recognizes that delays in the repair of equipment may be necessary, the proposal allows leaks to continue indefinitely at an owner or operator's discretion until the next shutdown. At a minimum, the final rule should require an owner or operator to provide notice of the next scheduled shutdown to State and local agencies if leaks are not repaired within 15 calendar days after detection. The notice should also include the anticipated repair date. Records concerning leaks, repair methods, repair dates, and shutdowns should be recorded and maintained for at least five years.

Truck Load-Out Operations

Produced water and natural gas condensate are stored in storage tanks and transported off-site from production operations via truck. These "truck load-out" operations are a significant source of VOC emissions during the loading of liquids. EPA's proposed NSPS amendments do not require any measures to reduce VOC emissions from truck load-out operations. In Pennsylvania, VOC emissions from truck load-out operations must be controlled by at least 95 per cent. Therefore, DEP recommends that EPA adopt truck load-out requirements consistent with DEP's permitting conditions, requiring at least a 95 percent level of control for VOC emissions from truck load-out operations.

Pigging and Blowdown Operations

Vented emissions from the natural gas production, compression, and transmission operations include pipeline pigging and blowdown operations, which can account for significant methane and VOC emissions depending on the frequency of a pigging operation and the type of natural gas (i.e., “wet gas”). However, EPA’s proposed NSPS amendments do not include measures to reduce methane and VOC emissions from pigging and blowdown operations.

The DEP recommends that EPA establish requirements for the control or recovery of methane and VOC emissions from pigging and blowdown operations in the oil and gas industry. Vapor recovery systems or vapor control units should be required to control the release of methane and VOC that would otherwise be vented to the atmosphere. The DEP strongly urges EPA to address methane leaks directly – not as a co-benefit of VOC reductions in the final rulemaking.

EPA Must Update NO_x Emission Standards for the Oil and Natural Gas Sector

The DEP requires owners and operators of unconventional natural gas production and processing operations to report emissions data by March 1st each year for the previous calendar year. For the 2013 calendar year, NO_x emissions, expressed in tons per year (tpy), from sources including well completions (6,369 tpy), drill rigs (5,553 tpy), engines (4,834 tpy), and heaters (827 tpy) accounted for the majority of the 17, 659 tons of NO_x emissions from this sector. While the NO_x emissions from natural gas operations represent less than 10 percent of Pennsylvania’s total point source emissions inventory, advances in technology warrant amendments to existing NO_x requirements for the oil and natural gas sector.

The DEP understands that the proposed rulemaking is designed to reduce methane and VOC emissions from the oil and natural gas sector. However, EPA must update the Standards of Performance for Stationary Spark Internal Combustion Engines and Stationary Combustion Turbines in 40 CFR Part 60, Subparts JJJJ and KKKK, respectively. The NSPS for Non-Emergency Stationary Spark Ignition Internal Combustion Engines currently require compliance with NO_x emission limits set at 1.0 to 2.0 grams per horsepower hour (gm/bhp-hr), depending on the engine size and the manufacture date. Engine technology has advanced significantly since the federal standards were promulgated in 2008 and 2006, respectively. Certain engine vendors are providing guarantees that their lean burn engines can meet NO_x emission limits of 0.5 gm/bhp-hr, and rich burn engines with a non-selective catalytic reduction system are capable of meeting NO_x limits of less than 0.2 gm/bhp-hr.

The DEP acknowledges that EPA may not be able to address NO_x emission reduction measures when the methane and VOC rulemakings are finalized. However, the DEP recommends that EPA promulgate amendments to reduce NO_x emissions from sources such as stationary spark internal combustion engines, simple cycle turbines, heaters, and re-boilers in a subsequent rulemaking. At a minimum, EPA must reassess the NO_x emission standards included in NSPS Subparts JJJJ and KKKK, as expeditiously as practicable.

Methane Emissions from Oil Wells

The proposed NSPS amendments do not include requirements for the control of methane emissions from oil wells after the well completion has been performed and the well is put into production.

The DEP recommends that EPA address methane emissions from oil wells after the wells are put into production by requiring owners or operators to capture the methane gas or flare it if capturing the gas is technically infeasible. Enclosed combustion devices such as enclosed flares should be required for all permanent flaring operations at a wellhead or facility, when feasible.

Comments on the Proposed Source Determination Rule

In the “Source Determination for Certain Emission Units in the Oil and Natural Gas Sector” proposed rulemaking, EPA is proposing to clarify how properties in the oil and natural gas sector are determined to be “adjacent” for purposes of major source permitting actions in attainment and nonattainment areas. To this end, EPA is proposing to clarify the term “adjacent” in the definitions of: (1) “building, structure, facility or installation” used to determine the “stationary source” for purposes of the Prevention of Significant Deterioration (PSD) and Nonattainment New Source Review (NNSR) programs; and (2) the “major source” definition in the Title V program as applied to the oil and natural gas sector.

EPA has further defined these terms to mean activities or sources which belong to the same industrial grouping, are located on one or more contiguous or adjacent properties, and are under the control of the same person (or persons under common control). Although there is no regulatory definition of the term “adjacent” for PSD, NNSR and Title V permitting purposes, the EPA has previously issued guidance on how to assess “adjacency” for the oil and natural gas industry. However, the use of the guidance has been challenged successfully in certain parts of the country, resulting in uncertainty for the regulated community and for permitting authorities. EPA is proposing for public comment two options to clarify the term “adjacent.” EPA has proposed a “preferred option” to define “adjacent” for the oil and natural gas sector in terms of the proximity of sources. The alternative option would consider activities “adjacent” “in terms of proximity or functional interrelatedness.” The agency has never established a “bright-line” distance for determining whether operations in the oil and natural gas sector would be considered separate sources.

There are significant natural gas exploration and extraction activities occurring in Pennsylvania within the Marcellus Shale formation and other formations. As a result, the DEP issued a technical guidance document entitled, “Guidance for Performing Single Stationary Source Determinations for Oil and Gas Industries”(Document ID No. 270-0810-006) on October 6, 2012, to address how the air emissions from exploration, extraction, or production activities should be aggregated to determine whether the emissions from oil and natural gas sources qualify as a “major stationary source” or “major facility” for purposes of the PSD, NNSR and Title V permitting programs. The document is available on the DEP website.³ Prior

³ <http://www.elibrary.dep.state.pa.us/dsweb/View/Collection-8617>

to issuance, the proposed technical guidance document was subject to a 60-day public comment period; DEP received comments on the proposed technical guidance document from 366 commentators.

Under Pennsylvania's technical guidance document for single source determinations, properties located a quarter mile or less apart are considered adjacent. Sources within this quarter-mile distance should be aggregated as long as they meet the other two regulatory criteria (same industrial grouping and common control) for PSD and Title V permitting purposes. Emission units on two or more separate, but nearby, properties and separated by an intervening railroad, road, or other obstacle may be considered adjacent.

Properties located beyond a quarter-mile range may only be considered adjacent on a case-by-case basis. While functionality or interdependence may be considered when conducting a single source determination in accordance with Pennsylvania's technical guidance document, the plain meaning of the term "adjacent" should be the dispositive factor when determining whether stationary sources are located on adjacent properties.

To date, DEP has made dozens of single source determinations using the methodology prescribed in the technical guidance document and believes it is a sound approach that approximates the "common sense notion of 'plant'" and avoids aggregating pollutant-emitting activities that, as a group, would not fit within the ordinary meaning of "building," "structure," "facility," or "installation."

In February 2015, the DEP's Single Source Determination Technical Guidance Document was validated by the U.S. District Court for the Middle District of Pennsylvania. In *PennFuture v. Ultra Resources* (4:11-CV-1360), 2015 U.S. Dist. LEXIS 21357, the U.S. District Court for the Middle District of Pennsylvania upheld a DEP determination not to consider eight compressor stations and associated natural gas wells as a single source. The specific question that the Court examined was whether the air contamination sources are "adjacent," making Ultra Resources' facilities ineligible for general permits and requiring the company to meet the more stringent permitting requirements under the New Source Review program. Ultra Resources urged the Court to look exclusively at the plain meaning of the term "adjacent," while PennFuture asked the Court to look at the functional interdependency of those facilities when making its determination as to whether they are "adjacent." After examining *Summit Petroleum Corp. v. U.S. Environmental Protection Agency*, 690 F.3d 733 (6th Cir. 2012) and DEP's technical guidance document on single source determinations, the Court found that the plain meaning of the term "adjacent" should control as to whether two or more facilities should be aggregated for single source purposes. Despite the Court's finding that the plain meaning of "adjacent" should control a determination of whether two or more facilities should be aggregated, the Court declined to hold that functional interrelatedness can never lead to, or contribute to, a finding of adjacency. Justice Mariani also provided the following general policy considerations:

- 1) "The Court recognizes the risk that a strict application of the plain meaning of the term 'adjacent' may allow oil and gas exploration and production companies to manipulate or structure their wells and compressors in such a technical way as to avoid being deemed a 'major' source, including by avoiding the aggregation of their wells and compressors."

- 2) The Court also said that “to strictly limit that determination so as to never consider functional interrelatedness would run afoul of the PA DEP’s Guidance and could very likely lead to the anomalous situation wherein emitting sources which are clearly functionally related are able to avoid the more stringent standards applicable to ‘major’ sources under the Clean Air Act and state law because of a wooden and inflexible definition of adjacency.”

As a result, the Court departed from the Sixth Circuit's interpretation of “adjacent” to the extent that it prohibits any consideration of interrelatedness or interdependence, and emphasized the importance of the DEP’s Guidance recommending that a “case-by-case determination is needed to determine if sources are considered contiguous or adjacent.”

Based on the DEP’s Technical Guidance Document, DEP’s experience in applying that Guidance, and the Court’s rationale in the *Ultra Resources* decision, the DEP believes that EPA’s alternative option is the more appropriate choice for making single source determinations for the oil and gas industry. That is, in making single source determinations, EPA should consider activities adjacent if they are either close together or are related by function. Under this option, properties located a quarter mile or less apart are considered adjacent. Properties located beyond this quarter-mile range may only be considered adjacent on a case-by-case basis. In making a case-by-case determination, interdependence or function may be considered when conducting a single source determination, but the plain meaning of the term “adjacent” should be the dispositive factor. EPA has a body of determinations stretching back to 1981 that can assist States in making their fact-specific case-by-case decision as to whether two or more sources should be considered a single source for NNSR and Title V purposes.

From a policy perspective, EPA should not lose sight of the fact that the primary consideration in deciding how to define the stationary source for oil and natural gas operations is the environmental protection that is achieved by aggregating multiple pollutant-emitting activities into a single source. As the Court noted in the *Ultra Resources* decision, there is a risk that a strict application of the plain meaning of the term “adjacent” may allow oil and natural gas exploration and production companies to manipulate or structure their wells and compressors in such a technical way as to avoid being deemed a “major” source, thus eliminating opportunities to further reduce emissions from wells and compressors.

Consistent with DEP’s guidance for single source determinations and the recent *Ultra Resources* decision, the DEP supports EPA’s alternative option that would allow permitting agencies to consider activities adjacent if they are either close together or are related by function.

EPA’s Draft Control Techniques Guidelines for the Oil and Natural Gas Industry

EPA’s draft Control Techniques Guidelines (CTG) for reducing VOC emissions from existing sources in the oil and natural gas industry provide recommendations for consideration by State, local agencies and tribes as reasonably available control technology (RACT) for the oil and natural gas sector. The draft CTG includes: LDAR provisions; limits on the natural gas bleed rate from some pneumatic controllers; a 95 percent reduction of VOC emissions from certain

pneumatic pumps if an existing control device is on site; a 95 percent reduction of VOC from each storage tank with a potential to emit ≥ 6 tons per year; a 95 percent reduction from centrifugal compressors with a wet seal system; and replacement of rod packing or the routing of rod packing emissions to a process via a closed vent system under negative pressure for reciprocating compressors.

EPA's draft CTG which applies solely to VOC leaks would not address methane leaks at dry gas drilling, compression and processing operations. DEP believes that the final rulemaking should not rely solely on collateral methane emission reductions from one of the largest sources of methane in the country – the oil and natural gas sector. The DEP urges EPA to address methane emission leaks consistent with the DEP's GP-5 requirements. The performance of LDAR surveys on a quarterly basis and the adoption of requirements to repair leaks within 15 calendar days following detection, would significantly reduce the emission of methane and VOC emissions to the atmosphere; the first attempt at repairing the leaks should be required within five calendar days as proposed in the NSPS for the oil and natural gas sector.

Storage Vessels

EPA is proposing to require at least a 95 percent reduction in VOC emissions from a storage vessel with a potential to emit equal to or greater than 6 tons per year annually. Consistent with Pennsylvania's Category No. 38 of Exemption Criteria, DEP requires a VOC emission control minimum of at least 95 percent from a storage vessel if combined VOC emissions from all sources at the well site are equal to or greater than 2.7 tons per year on a 12-month rolling basis.

The DEP recommends that EPA's final CTG for the oil and gas sector specify a 95 percent reduction of VOC emissions from the storage vessel with VOC emission equal to or greater than 2.7 tons per year on a 12-month rolling basis.

Continuous Bleed Natural Gas-Driven Pneumatic Controllers Located from the Wellhead to the Natural Gas Processing Plant or Point of Custody Transfer to an Oil Pipeline

The EPA is proposing that each single continuous bleed natural gas-driven pneumatic controller located from the wellhead to the natural gas processing plant or point of custody transfer to an oil pipeline must have a natural gas bleed rate less than or equal to 6 scfh (unless there are functional needs, including but not limited to response time, safety, and positive actuation, requiring a bleed rate greater than 6 scfh).

The DEP recommends that, wherever electricity is available, the owner or operator of the facility should be required to install and operate electrical pneumatic controllers.

Equipment Leaks at Natural Gas Processing Plants

EPA is proposing the implementation of an LDAR program equivalent to what is required under 40 CFR Part 60, Subpart VVa for equipment components (with the exception of compressors) in VOC service. Methane emissions at natural gas processing plants will only be reduced as a “co-benefit” of VOC emission reductions from the oil and natural gas industry. The DEP recommends that EPA directly regulate methane emissions from existing sources, as appropriate, under the existing framework of the CAA.

The DEP’s conditional exemption criteria for sources at well sites and GP-5 require source owners and operators to comply with stringent requirements including an LDAR program for any type of leak. DEP’s LDAR requirements specifically target the reduction of methane emissions. The DEP Category No. 38 of conditional exemption criteria specifies the following:

A leak is considered repaired if one of the following can be demonstrated:

- 1) No detectable emissions consistent with Method 21 specified in 40 CFR Part 60, Appendix A;*
- 2) A concentration of 2.5% methane or less using a gas leak detector and a VOC concentration of 500 ppm or less;*
- 3) No visible leak image when using an optical gas imaging camera;*
- 4) No bubbling at leak interface using a soap solution bubble test specified in Method 21 or a procedure based on the formation of bubbles in a soap solution that is sprayed on a potential leak source may be used for those sources that do not have continuously moving parts and that do not have a surface temperature greater than the boiling point or less than the freezing point of the soap solution;*
or
- 5) Any other method approved by the Department.*

The DEP believes that EPA’s final CTG for the oil and gas industry should establish LDAR requirements to reduce methane emissions and, consistent with the DEP’s GP-5 requirements, LDAR surveys should be performed on a quarterly basis.

Fugitive Emissions from Well Sites and Compressor Stations

EPA is proposing a monitoring plan for the collection of fugitive emission components at oil and natural gas well sites with wells that produce, on average, greater than 15-barrel equivalents per day per well and compressor stations in the production segment (located from the wellhead to the point of custody transfer to the natural gas transmission and storage segment or oil pipeline) that includes: (1) semiannual monitoring using an Optical Gas Imaging (OGI) camera and repair of components that are found to be leaking at well sites and compressor stations no later than within 15 days of finding fugitive emissions; and (2) each fugitive emissions component repaired or replaced be resurveyed by the use of either Method 21 or OGI to ensure that there is no leak after the owner or operator completes the repair.

EPA has acknowledged that although Pennsylvania has a General Permit which specifies quarterly monitoring at a compressor station, EPA believes that quarterly monitoring could cause a burden on small businesses in the United States and many operators would need to hire contractors due to the cost of the specialized equipment needed to perform the monitoring survey and the training necessary to properly operate the equipment whether OGI or Method 21 is used. For that reason, EPA recommends that RACT for this sector is semiannual monitoring at well sites and gathering and boosting compressor stations.

The DEP's GP-5, in effect since February 1, 2013, requires source owners and operators to comply with stringent requirements including an LDAR program for any type of leak. LDAR surveys must be conducted on a quarterly basis. The quarterly LDAR program for sources at natural gas compression and processing facilities in Pennsylvania has been implemented successfully for more than two years. To this end, DEP urges that EPA's final rule require LDAR surveys to be performed on a quarterly basis.

Produced Water and Natural Gas Condensate – Impoundments

The DEP also recommends that EPA address VOC and HAP emissions from Produced Water and Natural Gas Condensate impoundments in the final CTG for the oil and natural gas industry. Tanks used to store produced water and natural gas condensate must be controlled with at least a 95 percent VOC and HAP emission control efficiency.

Conclusion

The DEP supports EPA's proposals for the adoption and implementation of cost effective strategies to reduce methane and VOC emissions from the oil and gas industry. DEP strongly urges EPA, in the final rules, to directly regulate emissions of methane and VOCs; and to require that LDAR surveys should be performed on a quarterly basis. EPA's final NSPS and CTG must also address emissions from pigging and blow down operations, truck load-out operations, and central impoundments of produced water and natural gas condensate. DEP also recommends that EPA issue a final Source Determination Rule that would allow agencies to consider interdependence and the "functional interrelatedness" of sources on a case-by-case basis.