

**BEFORE
THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**

PETITION FOR RULEMAKING AND
INTERPRETIVE GUIDANCE ENSURING
COMPREHENSIVE COVERAGE OF METHANE
SOURCES UNDER SUBPART W OF THE
GREENHOUSE GAS REPORTING RULE –
PETROLEUM AND NATURAL GAS SYSTEMS

Respectfully Submitted by Clean Air Task Force, Environmental Defense Fund, Natural
Resources Defense Council, and Sierra Club

March 19, 2013

Pursuant to 5 U.S.C. § 553(e), Clean Air Task Force, Environmental Defense Fund (“EDF”), Natural Resources Defense Council, and Sierra Club petition EPA fulfill its obligations under the Clean Air Act to collect greenhouse gas emissions data from several large sources of methane in the petroleum and natural gas sector that are currently not included in Subpart W or other Subparts of the Mandatory Reporting Rule (“MRR”).¹ Specifically, we respectfully request that the agency:

- Clarify that oil wells that co-produce natural gas (“co-producing wells”) located in tight-oil formations are required to report emissions from venting and flaring associated with well completions;
- Require reporting of well-completion emissions from any co-producing well currently excluded by the Rule’s focus on “gas wells”;
- Require reporting from facilities and pipelines in the gathering and boosting segment of the natural gas industry, and from transmission pipeline blowdown events.

Likewise, to promote better understanding of the facilities covered by the 25,000 metric ton CO₂ equivalent (CO₂e) threshold, we ask that EPA require reporters to include API well

¹ This does not represent an exhaustive list of all potential areas for strengthened coverage.

identification numbers along with their submissions.² Reports from the oil and gas industry for 2011 methane emissions under Subpart W are at least 51% lower than national estimates from EPA, due to a combination of missing source categories (those mentioned above and others) and excluded emissions from smaller facilities that are not required to report due to the 25,000 ton CO₂e threshold.³ Including API well identification numbers along with facilities' submissions will help the public and policymakers understand which sources are reporting and how the threshold may be adjusted to most effectively provide emissions information.⁴

Finally, regarding the Subpart W data generally, we respectfully reiterate our request to phase out the use of best available monitoring methods ("BAMM"), which will further help to ensure Subpart W data are rigorous, and comprehensive.⁵ We also ask that the agency consider including Advanced Innovative Monitoring Methods ("AIMM") as a way to accelerate development and deployment of real-time continuous methane emission monitoring in the oil and natural gas sector.

I. SUBPART W MUST PRODUCE COMPREHENSIVE, HIGH-QUALITY DATA

Emissions data are the foundation of rigorous, effective, and informed air quality planning and management. EPA's MRR declared that "[a]ccurate and timely information on GHG emissions *is essential* for informing some future climate change policy decisions."⁶ Emissions data enables policy-makers to develop, design, and assess policies, and effective emissions reporting programs also "raise awareness of emissions among reporters and other

² API well numbers are critical addition to well counts because they will allow cross-reference to production data and other important information.

³ Subpart W reported methane emissions for 2011 were 83 million metric tons CO₂e (*see*: EPA, "Petroleum and Natural Gas Systems: 2011 Data Publication" (February 2013), *available at*: http://www.epa.gov/ghgreporting/documents/pdf/2012/documents/subpart_W_2011_data_publication_fact_sheet.pdf, at 3). EPA's draft 2013 edition of their annual US Greenhouse Gas Inventory reports methane emissions from natural gas systems and petroleum production as 139.6 and 31.0 million metric tons CO₂e, respectively (*see*: U.S. EPA, Draft Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2011 (Feb. 2013), *available at* <http://www.epa.gov/climatechange/Downloads/ghgemissions/US-GHG-Inventory-2011-Chapter-3-Energy.pdf>). The 2012 inventory reported even higher emissions from the sector; EPA is proposing to reduce that estimate somewhat. By citing the 2013 draft, we do not necessarily endorse its emissions figures; instead, we emphasize that both inventory estimates suggest that Subpart W is failing to address a significant amount of emissions.

⁴ We incorporate by reference comments on the Subpart W proposal, in which Petitioners outlined difficulties associated with the 25,000 mt CO₂e threshold and requested a lower threshold. EPA Doc. No. EPA-HQ-OAR-2009-0923-3545 (Comments of Clean Air Task Force, Colorado Environmental Coalition, Environmental Defense Fund, Natural Resources Defense Council, Sierra Club, and Wilderness Workshop on Subpart W).

⁵ *See* EPA Doc. No. EPA-HQ-OAR-2011-0417-0013 (Comments of EDF on Subpart W proposed BAMM extension).

⁶ 74 Fed. Reg. 16,448, 16,455 (Apr. 10, 2009) (emphasis added).

stakeholders, and thus contribute to efforts to identify reduction opportunities and carry them out.”⁷

These functions are especially important for sources in the petroleum and natural gas sector, which EPA’s latest greenhouse gas inventory recognizes as the largest source of U.S. methane emissions, placing this industry among the top greenhouse gas emitters overall. In the final Subpart W rule, the agency noted that the data “will inform EPA’s implementation of CAA section 103(g) regarding improvements in sector based non-regulatory strategies and technologies for preventing or reducing air pollutants, and inform policy on possible regulatory actions to address GHG emissions.”⁸

EPA echoed the importance of Subpart W data in its recently finalized (though still incomplete) New Source Performance Standards for the Oil and Natural Gas Sector:

The data submitted under [Subpart W] will provide important information on the location and magnitude of GHG emissions from petroleum and natural gas systems and will allow petroleum and natural gas facilities to track their own emissions, compare them to similar facilities and aid in identifying cost effective opportunities to reduce emissions in the future [Through collection of Subpart W data] EPA will be in a better position to characterize (1) the extent of methane emissions from these sources that will remain after imposition of controls required by [the NSPS]; and (2) whether additional measures are available and appropriate for addressing such emissions.⁹

The collection and reporting of additional emissions data from sources not currently required to report will help ensure these important clean air benefits occur.

The Subpart W data will likewise help in understanding top-down emissions inventory analyses, which have identified widely varying methane leak rates for the petroleum and natural gas sector. These range from slightly under 2 percent [of production]¹⁰ to as much as 9 percent in a recent NOAA study of the Uintah Basin in Utah.¹¹ Subpart W data will help characterize the

⁷ *Id.* at 16,456.

⁸ 75 Fed. Reg. 74,458, 74,460 (Nov. 30, 2010).

⁹ 77 Fed. Reg. 49,490, 49,513-14 (Aug. 16, 2012). We do not agree with EPA that it lacks the information it needs to determine that it is appropriate to regulate methane from the sector, or that controls are available to do so. EPA must move forward. Further improving Subpart W will support those required efforts, and should not delay them.

¹⁰ Jeffrey Logan, *et al.*, Natural Gas and the Transformation of the U.S. Energy Sector ES-2 (2012).

¹¹ A. Karion *et al.*, "Estimate of methane emissions from oil and gas operations in the Uintah Basin using airborne measurements and Lidar wind data," Presentation A21J-01, Fall 2012 American Geophysical Union meeting (San Francisco, 4 December 2012); *see also*: A. Karion *et al.*, "Top-down estimation of CH₄ emissions from oil and natural gas operations in the Denver and Uintah oil and gas Basins," Presented at Stakeholder Workshop on Natural

drivers behind these wide-ranging emissions estimates and, in turn, will allow states to calibrate additional policy priorities that optimize methane reductions.

Finally, ensuring Subpart W produces rigorous and comprehensive data will help to fulfill a recent recommendation from EPA’s Office of Inspector General, which suggested that EPA “develop and implement a comprehensive strategy for improving air emissions data for the oil and gas production sector.”¹² The report notes that EPA considers Subpart W as its main GHG emissions data collection strategy from the oil and natural gas industries, but that the Subpart W program is not a “coordinated cross-office strategy for improving the collection of all types of air emissions data for oil and gas production sources commensurate with recent and projected growth in this industry sector.”¹³ For Subpart W data to function as part of a comprehensive strategy for improving oil and gas air emissions data, as the Inspector General recommends, the Rule must include reporting requirements for all significant sources of methane from the petroleum and natural gas sector.

Section 114 of the CAA, which is the source of EPA’s authority to promulgate the MRR for Title I sources, provides the agency with plenary authority to collect methane emissions information from sources in the petroleum and natural gas sector. Moreover, Section 111 of the Act creates a duty to review and, if appropriate, revise standards of performance for certain source categories, including the oil and natural gas sector. Subpart W can play an important role in informing EPA’s obligatory revision of these standards, as EPA has acknowledged. Yet the Rule currently omits several potentially significant sources of methane in this sector, yielding an incomplete picture of emissions from petroleum and natural gas operations.¹⁴ Accordingly, we respectfully urge EPA to expand the scope of Subpart W to include data gathering requirements for the significant emissions sources we describe below.

II. GREENHOUSE GAS EMISSIONS FROM OIL AND GAS CO-PRODUCING WELLS

The Subpart W well completion reporting requirements apply only to “gas wells” and not to “oil wells.” This distinction creates potential confusion for co-producing oil and gas wells that

Gas in the Inventory of U.S. Greenhouse Gas Emissions and Sinks, Washington DC, 13 Sept. 2012, *available at*: http://www.epa.gov/climatechange/Downloads/ghgemissions/2012Workshop/NOAA_Karion.pdf (describing methodology used in the Uintah Basin study); *see also*: Jeff Tollefson, *Methane Leaks Erode Green Credentials of Natural Gas*, NATURE (Jan. 2, 2013), *available at* <http://www.nature.com/news/methane-leaks-erode-green-credentials-of-natural-gas-1.12123?nc=1359235303992>.

¹² US EPA Office of Inspector General, EPA NEEDS TO IMPROVE AIR EMISSIONS DATA FOR THE OIL AND NATURAL GAS PRODUCTION SECTOR – REPORT 13-P-0161 (20 February 2013); *available at* <http://www.epa.gov/oig/reports/2013/20130220-13-P-0161.pdf>.

¹³ *Id.* at 12.

¹⁴ Notwithstanding these omissions, the agency possesses sufficient information to determine that methane performance standards for the oil and natural gas sector are appropriate and has a duty to make such a determination.

fall within the Rule’s definition of “gas well,” while excluding emissions from co-producing wells the Rule classifies as “oil wells.” Regardless of their classification, completion emissions from these co-producing wells can be significant. Accordingly, we respectfully request that EPA clarify that wells in tight-oil formations like the Bakken and Eagle Ford are subject to the completion reporting requirements as currently written. In addition, we urge the agency to expand the well completion reporting requirements to all wells, ensuring co-producing wells in any formation type are required to report completion emissions.

A. Subpart W Must Address Greenhouse Gas Emissions from Co-producing Wells

EPA’s Subpart W regulations require onshore production facilities to report greenhouse gas emissions from certain processes. Because of gaps or ambiguities within the rule, reporters are not fully reporting emissions from all oil and gas wells. Specifically, Subpart W requires reporting of completion emissions from “gas wells” but does not specifically require such reporting from oil wells. It provides:

“(c) For an onshore petroleum and natural gas production facility, report CO₂, CH₄, and N₂O emissions from only the following source types on a single well-pad or associated with a single well-pad: . . .

(6) *Gas well venting* during well completions with hydraulic fracturing

(8) *Gas well venting* during well workovers with hydraulic fracturing”¹⁵

There is no similar reporting requirement to report oil well venting greenhouse gas emissions during well completions or workovers with hydraulic fracturing.

Although Subpart W defines some oil-producing wells within its broad definition of “gas well,” certain oil wells are likely not covered, creating potential confusion for reporters. Subpart W includes definitions for both “gas wells” and “oil wells.” “Gas wells” are defined to include “[w]ells that produce from high permeability gas, shale gas, coal seam, or other tight reservoir rock”¹⁶ Importantly, this definition does not specify that gas wells must produce a particular type of hydrocarbon, instead requiring only that such wells “produce” from certain reservoir formations. Conversely, an “oil well” is a well that produces “hydrocarbon liquids and do[es] not meet the definition of a gas well.”¹⁷

¹⁵ 40 C.F.R. § 98.232(C)(6), (8) (emphasis added); *see also* 75 Fed. Reg. 74,458, 74,463 (Nov. 30, 2010).

¹⁶ 40 C.F.R. § 98.238.

¹⁷ *Id.*

Certain co-producing wells, like those in the Bakken and Eagle Ford formations, are located in tight-oil formations. These wells “produce” from “other tight reservoir rock” and therefore fall within the Rule’s requirements to report gas well venting during well completions and workovers with hydraulic fracturing. Notwithstanding this requirement, there are very few facility reports from wells in these basins, leading us to infer that the owners or operators of these wells may not believe they are subject to Subpart W reporting. Accordingly, we respectfully request that EPA undertake rulemaking or issue guidance, as appropriate, to clarify that co-producing wells in tight-oil formations are required to report well completion emissions under Subpart W and to provide any necessary emission equations.

To the extent other co-producing wells fall outside of the current Subpart W definition of “gas well,” we respectfully petition EPA to undertake a rulemaking to ensure that the Rule covers all of these significant emissions. Subpart W covers other emissions from oil wells, and this expansion will help ensure complete coverage. In particular, Subpart W’s requirement to report emissions from associated venting and flaring already applies to all wells, recognizing that oil wells can vent significant amounts of natural gas during ongoing production activities.¹⁸ Similarly, the completion reporting requirements should cover all wells, ensuring the Rule addresses these important emissions.

B. Methane Emissions from Co-producing Wells can be Significant

Ensuring Subpart W addresses emissions from co-producing wells is critical because drilling in co-producing basins is rapidly expanding and, both individually and collectively, these wells account for significant amounts of methane emissions.

Rapidly shifting market fundamentals have sparked swift development of co-producing wells. The relatively high price of oil and natural gas liquids has made these co-producing wells attractive investments and has shifted development away from areas that principally produce dry gas. Indeed, Shell has planned a \$1 billion investment to target liquids-rich plays like the Eagle Ford,¹⁹ which Marathon Oil Chief Operating Officer David Roberts described as “the top basin we have in the world today.”²⁰

Overall rig deployment and oil and gas production numbers reflect this shift: from February 2011 to February 2012, rigs increased 61% in the oil and liquids-rich Eagle Ford and 23% in the Bakken, while during the same period dry-gas plays experienced significant declines,

¹⁸ See 40 C.F.R. §§ 98.232(c)(13) & 98.233(m).

¹⁹ *Shell to Focus on Liquids-Rich Assets, Leverage Gas*, NGI’S SHALE DAILY, (Feb. 6, 2012).

²⁰ *Texas Top Finds From Brazil to Bakken as Best Prospect: Energy*, BLOOMBERG (Mar. 23, 2011), <http://www.bloomberg.com/news/2012-03-23/texas-tops-finds-from-brazil-to-bakken-as-best-prospect-energy.html>.

including a 43% reduction in rigs in the Haynesville shale.²¹ Moreover, this shift will likely persist far into the future -- over the next 20 years, some industry executives predict that Bakken production will increase from the approximately 5,000 existing wells to a projected 48,000.²² Similarly, in 2010 there were 293 active wells in the Eagle Ford and industry projects that by 2020, 4,890 new wells will be drilled.²³

Methane emissions from these wells can be significant. EPA recently issued a proposed and final Federal Implementation Plan for oil and gas wells on the Fort Berthold Indian Reservation (“FBIR FIP”), requiring pollution control measures at co-producing wells.²⁴ As EPA recognized in the FBIR FIP, oil from certain unconventional oil, such as the Bakken and the Eagle Ford, contain relatively high amounts of lighter, more volatile hydrocarbons.²⁵ In these lighter-hydrocarbon oil fields, the agency noted that the process associated with producing light crude oil “has greater potential to produce natural gas in addition to oil,” and explicitly characterized the oil production methods on the FBIR as “similar to natural gas well production” involving “the separation of the produced liquid into hydrocarbon liquids (oil), natural gas and water.”²⁶

EPA’s analysis of 154 synthetic minor permits²⁷ from the FBIR found that uncontrolled production emissions (including both well completion emissions and ongoing production

²¹ Unconventional Rig Count for the Week Ending February 10, 2012, NGI’S SHALE DAILY (on file with author).

²² Clifford Krauss, *In North Dakota, Flames of Wasted Natural Gas Light the Prairie*, N.Y. TIMES (Sept. 26, 2011), available at September 26, 2011, http://www.nytimes.com/2011/09/27/business/energy-environment/in-north-dakota-wasted-natural-gas-flickers-against-the-sky.html?_r=1&ref=energy-environment.

²³ *Economic Impact of the Eagle Ford Shale*, AMERICA’S NATURAL GAS ALLIANCE (Feb. 2011), <http://www.anga.us/media/195472/utsa%20eagle%20ford.pdf> at 8, 21.

²⁴ See EPA, Approval and Promulgation of Federal Implementation Plan for Oil and Natural Gas Well Production Facilities; Fort Berthold Indian Reservation (Mandan, Hidatsa, and Arikara Nations), 77 Fed. Reg. 48,878, 48,885 (August 15, 2012) [hereinafter “FBIR FIP”] (defining applicable facility as “oil and natural gas production facilit[ies] producing from the Bakken Pool and located on the FBIR”) (emphasis added).

²⁵ *Id.* at 48,883.

²⁶ *Id.*

²⁷ In the Technical Support Document for the FBIR FIP, EPA describes the full scope of its analysis:

We evaluated data from 154 synthetic minor permit applications containing 533 production wells among five of the main operators on the FBIR. From the applications, we were able to obtain the uncontrolled and controlled VOC emissions for each of the 154 facilities. Additionally, the data was analyzed to determine average emission rates for an individual well basis. Due to the variability in the production rates and product composition among the operators, we believe the mean value per well is an appropriate method for obtaining annual emissions. Average VOC emissions per well were evaluated against operating scenarios to determine cost impacts associated with the FIP.

EPA, TECHNICAL SUPPORT DOCUMENT: FEDERAL IMPLEMENTATION PLAN FOR OIL AND NATURAL GAS WELL PRODUCTION FACILITIES; FORT BERTHOLD INDIAN RESERVATION (MANDAN, HIDATSA, AND ARIKARA NATIONS), NORTH DAKOTA 17 [hereinafter “FBIR FIP TSD”].

emissions) from FBIR wells are approximately 1,610 tons of VOCs per year per well.²⁸ Though the agency did not report methane emissions from these wells, applying EPA's conversion factors in the Subpart W Technical Support Document (TSD) to these wells yields a value of 1,922 tpy of methane.²⁹ EDF obtained a separate analysis from Stratus Consulting supporting the FBIR FIP's conclusions with respect to co-production VOC and methane emissions.³⁰ Further, if associated gas is flared during well completion, the carbon dioxide emissions from the flares will also be significant and must be addressed by Subpart W. These analyses confirm that greenhouse gas emissions from co-producing wells can be significant and must be included in Subpart W.

III. GREENHOUSE GAS EMISSIONS FROM FACILITIES AND PIPELINES IN THE GATHERING AND BOOSTING SEGMENTS OF THE NATURAL GAS INDUSTRY AND GAPS IN REPORTING REQUIREMENTS FOR TRANSMISSION PIPELINES

The natural gas sector extends well beyond the wellhead – after production, natural gas is transported through gathering lines, processed to remove impurities, compressed, and transmitted at high pressures to storage facilities and/or distributors nationwide.

EPA explicitly excluded gathering lines and boosting stations from coverage under both the natural gas processing segment and the natural gas transmission compression segment, stating that it “require[d] further analysis to ensure an effective coverage of emissions from this source in order to appropriately inform future policy decisions.”³¹ In addition to the pipelines and compressors explicitly excluded, emissions from many types of ancillary equipment in the gathering and boosting segments of the natural gas industry, such as pneumatic devices and pumps, dehydrators, and storage tanks are also excluded from Subpart W. Important methane sources in the transmission segment of the natural gas industry, such as transmission venting (“blowdowns”) and leaks, are also not covered.

The exclusion of gathering and boosting facilities means that Subpart W does not require the natural gas sector to report a significant volume of emissions. The Pipeline and Hazardous Materials Safety Administration has estimated that there are approximately 230,000 miles of gas

²⁸ *Id.* at 18. EPA calculated controlled produced natural gas heater/treater emissions based on 90% destruction efficiency for 90 days and 98% destruction efficiency for the remaining 9 months of the year.

²⁹ EPA, OIL AND NATURAL GAS SECTOR: STANDARDS OF PERFORMANCE FOR CRUDE OIL AND NATURAL GAS PRODUCTION, TRANSMISSION, AND DISTRIBUTION: BACKGROUND TECHNICAL SUPPORT DOCUMENT FOR PROPOSED STANDARDS TECHNICAL SUPPORT DOCUMENT at Table 4-2 (July 2011) [hereinafter “Subpart W TSD”]. The TSD assumes 0.1459 lb VOC /lb methane for natural gas wells and 0.8374 lb VOC/lb methane for oil wells. The conversion in the text assume the oil factor applies.

³⁰ See EPA Doc. No. EPA-HQ-OAR-2010-0505-4490. We hereby incorporate this analysis by reference.

³¹ 75 Fed. Reg. 74,458, 74,462 (Nov. 30, 2010) (“This source category does not include reporting of emissions from gathering lines and boosting stations”).

gathering lines in the United States,³² and EPA's draft 2013 Inventory of US GHG Sources and Sink ("US GHG Inventory") reports that there are over 430,000 miles of such lines in service.³³ That inventory reports that leaks from gathering pipelines constitute slightly more than 2.5% percent of the total GHG emissions from the natural gas industry.³⁴ Boosting compressors in gathering and boosting systems and their associated equipment are also significant sources of methane emissions.³⁵ Failing to include leaks from gathering lines and emissions associated with boosting stations can therefore result in substantially underreporting the emissions from the oil and gas sector.

Additionally, in its current form, Subpart W does not include emissions from transmission pipeline venting (i.e., blowdowns) and leaks outside the boundaries of transmission compressor stations. Subpart W covers only venting and fugitives from compressor stations even though EPA's draft 2013 Inventory reports that pipeline venting alone accounts for approximately 2% of the entire petroleum and natural gas GHG inventory and over 6% of emissions from the transmission and storage segment. Indeed, the Subpart W TSD indicates that pipeline venting is among the largest sources of methane emissions from the transmission segment, rivaling in scale several other categories of emissions (such as combustion emissions from compressors and fugitive emissions from centrifugal compressors) for which reporting is currently required.³⁶ Further, pipeline operators are or should be able to track intentional blowdown events, and can readily estimate emissions for each such event based on the dimensions of the evacuated pipe. Accordingly, Petitioners believe it is both desirable and eminently feasible to require reporting of these emissions.³⁷

Furthermore, Petitioners note that large leaks and ruptures are reported to PHMSA. A recent PHMSA-commissioned study indicates that the volume of natural gas released through

³² Pipeline Safety: Safety of Gas Transmission Pipelines, 76 Fed. Reg. 53086, 53,101 (ANPRM, Aug. 25, 2011).

³³ EPA, Draft Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2011 at A-176-81 (Feb. 2013), available at <http://www.epa.gov/climatechange/ghgemissions/usinventoryreport.html>.

³⁴ EPA, Draft Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2011 at A-188 (Feb. 2013), available at <http://www.epa.gov/climatechange/ghgemissions/usinventoryreport.html>.

³⁵ See, e.g., DAVID ALLEN ET. AL., NATURAL GAS INDUSTRY METHANE EMISSION FACTOR IMPROVEMENT STUDY 37 (Dec. 2011), available at http://www.utexas.edu/research/ceer/GHG/files/FReports/XA_83376101_Final_Report.pdf.

³⁶ Subpart W TSD, *supra* note 17, at 75 (pipeline venting equivalent to approximately 3.8 million metric tons CO₂-e per year).

³⁷ As the Subpart W TSD indicates, defining a "facility" in the context of transmission pipeline segments may pose technical challenges. *Id.* at 18. However, EPA overcame similar challenges for the distribution segment by requiring corporate-level reporting and referencing relevant definitions applied by the Pipeline and Hazardous Materials Safety Administration (PHMSA). See *id.* at 105. A similar approach may be available for transmission pipelines, which PHMSA also regulates. Indeed, EPA noted that company-level reporting based on PHMSA requirements would be a feasible approach for gathering pipelines, which present definitional challenges similar to transmission pipelines. See *id.* at 18, 108.

large leaks and ruptures along transmission pipelines is approximately 1.9 billion standard cubic feet per year – nearly 11.5 times the level indicated in the Subpart W TSD.³⁸ Indeed, accidental leaks of large magnitude can be a major source of methane leaking into the atmosphere, even if relatively short in duration. Emissions can be very high for leaks in remote locations that are not noticed or repaired immediately.

To ensure that Subpart W robustly reports all major sources of emissions from the oil and gas sector, Petitioners respectfully request that EPA amend the language of 40 C.F.R. § 98.230 to explicitly include gathering lines, boosting stations, and pipeline venting and blowdowns. In addition, Petitioners recommend that EPA coordinate with PHMSA to ensure that the annual GHG inventory includes, at a minimum, those pipeline leaks and ruptures that are reported to Federal regulators, and to seek synergies, as appropriate, in data collection requirements.

IV. BEST AVAILABLE MONITORING METHODS

Facilities initially qualifying for alternative reporting under the best available monitoring methods (“BAMM”) provision of Subpart W have had ample time to transition to the methods otherwise required under Subpart W. Petitioners thus respectfully urge EPA to eliminate BAMM as it currently exists after calendar year 2013. Furthermore, because real-time continuous emissions monitoring technologies are rapidly evolving, we ask EPA to provide opportunities in Subpart W for use of “advanced innovative monitoring methods.”

When EPA finalized Subpart W in November of 2010, the agency included certain non-standardized procedures that oil and gas operators could use while coming into full compliance with the rule.³⁹ The agency limited these methods, known as BAMM, to situations in which regulated facilities were unable to install the proper monitoring equipment and allowed facilities to use BAMM until June 30, 2011. Facilities requesting BAMM past that date were required to submit a written petition to EPA requesting an extension,⁴⁰ and no facility could request an extension beyond December 31, 2011 except “under extreme and unique circumstances, which include safety, or a requirement being technically infeasible or counter to other local, State or Federal regulations.”⁴¹ The only facilities authorized to utilize BAMM were gas well workovers

³⁸ See David Shaw, Martin Phillips, Ron Baker, Eduardo Munoz, Hamood Rehman, Carol Gibson, Christine Mayernik, *Final Report: Leak Detection Study -- DTPH56-11-D-000001* at 3-27, PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION (Dec. 10, 2012) (multiplying average release volume by total number of onshore leak and rupture incidents, and adjusting for 12-month time period), *available at* <http://primis.phmsa.dot.gov/meetings/FilGet.mtg?fil=430>; compare Subpart W TSD, *supra* note 17, at 75 (estimating 166 million standard cubic feet per year in pipeline fugitive emissions).

³⁹ 75 Fed. Reg. 74,458, 74,471 (Nov. 30, 2010).

⁴⁰ *Id.*

⁴¹ *Id.*

using hydraulic fracture, gas well completions using hydraulic fracture, and well testing and flaring.⁴²

In response to a petition for reconsideration, on June 27, 2011, EPA published a proposed revision to Subpart W, proposing three key changes to the original BMM rules. First, it would allow a presumptive extension of BMM reporting techniques through December 31, 2011.⁴³ Second, it would extend the sources eligible to use BMM to include the entire oil and gas sector (by adding Leak Detection and Measurement and “all other sources not previously listed”).⁴⁴ Finally, the agency would replace the original Rule’s ban on extending the use of BMM beyond 2011 except under “extreme and unique circumstances” with a provision allowing an extension under “unique or unusual circumstances such as data collection methods that do not meet safety, technical, or legal issues rendering them unable to meet the requirements of Subpart W.”⁴⁵ EPA finalized the proposed rule, including all three changes, on September 27, 2011.⁴⁶

Expanding the BMM provisions in this way transformed the program from a limited, transitional bridge to full compliance into a permanent fixture of the MRR. Facility level BMM reports now available demonstrate that approximately 70 percent of facilities are currently using BMM, further indicating that BMM has far outgrown its remedial intent. EPA has recently proposed revisions to the BMM provisions for Subpart W⁴⁷ that would create earlier deadlines for submitting BMM requests but otherwise leaving the program unchanged. While this Rule will allow EPA to more closely evaluate and scrutinize the BMM requests it is receiving, it does not provide a pathway for transitioning away from the program. Accordingly, these potentially permanent BMM provisions threaten to undermine the quality of data the MRR produces, making it difficult to determine whether differences among sources are due to different reporting methodologies or actual differences in emissions. This is especially challenging for Subpart W sources, where emissions are highly variable across sources due to technology and operator practices.

Facilities have been able to use BMM for the first two years of reporting (2011 and 2012), and they have had ample time to transition to the methods required under Subpart W. As such, EPA should eliminate the use of BMM as it currently exists after calendar year 2013. As part of the notice-and-comment process on that action, stakeholders will have the opportunity to

⁴² *Id.*

⁴³ 76 Fed. Reg. 37,300, 37,303 (June 27, 2011).

⁴⁴ *Id.* at 37,304.

⁴⁵ *Id.*

⁴⁶ 76 Fed. Reg. 59,533, 59,536-38 (Sept. 27, 2011).

⁴⁷ 78 Fed. Reg. 11,619 (Feb. 19, 2013).

identify any remaining areas where different measurement methodologies might be required. In the narrow circumstances in which operators may require flexible measurement methodologies on account of worker safety, we ask the agency to explicitly incorporate these flexibilities through rulemaking instead of through ongoing BAMM requests. Moreover, to ensure full transparency for the public and policymakers, we request that the agency provide information on every facility that has requested BAMM in 2011 and/or 2012, the data elements for which they have made the request, and the agency's response to the BAMM request. We also ask the Agency to provide this type of information on the use of BAMM in 2013 and any subsequent years.

Finally, real-time continuous emissions monitoring technologies are rapidly evolving in the oil and natural gas sector as well as in many other industrial applications. To encourage facilities to deploy these innovative technologies, we recommend that EPA provide opportunities for use of "advanced innovative monitoring methods (AIMM)." As such, we recommend that EPA add a new provision to the MRR providing a mechanism under which the Agency will consider requests which rely on real-time continuous monitoring techniques that the Agency determines are more accurate than those ordinarily required by EPA procedure. By doing so, AIMM can serve as a laboratory for innovation, allowing the agency to gain experience with modern measurement methodologies while laying the groundwork for continuous improvement in monitoring methods over time. Petitioners expect that this approach will be useful both in the oil and natural gas sector, and in other sectors of the MRR.

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