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August 12, 2021

Lanelle Wiggins
U.S. Environmental Protection Agency
Office of Policy
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460

VIA E-MAIL

Re: SER Comments to Oil and Natural Gas NSPS to SBAR Panel

Dear Ms. Wiggins,

The following comments are submitted on behalf of the Gas and Oil Association of WV, Inc. (GO-WV), the Independent Petroleum Association of America (IPAA) and Texas Independent Producers and Royalty Owners Association (TIPRO). Representatives of GO-WV, IPAA and TIPRO served as Small Entity Representatives (SERs) in the Small Business Advocacy Review Panel Process (SBAR Process) participating in the Pre-Panel Outreach Meeting on June 29, 2021; Panel Outreach Meeting on July 29, 2021 (SBAR Panel), and submitting certain comments after the June meeting. These comments are in response to information provided during both meetings. GO-WV, IPAA, and TIPRO appreciate the opportunity to serve as SERs, hopefully reducing the economic impact of the revisions to Subpart OOOO and/or Subpart OOOOa. A significant number of GO-WV, IPAA and TIPRO members not only qualify as “small entities” under the Regulatory Flexibility Act, but would also be characterized as “mom and pop” or family businesses. It is these smaller businesses that stand to lose the most by the regulations to be proposed at the end of September.

GO-WV was formed in January 2021, through the merger of the West Virginia Oil and Natural Gas Association (WVONGA) and the Independent Oil and Gas Association of West Virginia, Inc. (IOGA). GO-WV is a statewide trade association that represents companies engaged in the extraction, production and delivery of natural gas and oil in West Virginia and those businesses that support these extraction, production, and transmission activities. GO-WV was formed to promote and protect all aspects of the West Virginia oil and natural gas industry while protecting and improving both the environment and business climate of West Virginia.

IPAA represents the thousands of independent oil and natural gas explorers and producers, as well as the service and supply industries that support their efforts, that will be the most significantly affected by the actions resulting from this regulatory proposal. Independent producers drill about 90 percent of American oil and gas wells, produce 54 percent of American oil and produce 85 percent of American natural gas.

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TIPRO is a trade association representing the interests of nearly 3,000 independent oil and natural gas producers and royalty owners throughout Texas. As one of the nation's largest statewide associations representing both independent producers and royalty owners, members include small businesses, the largest, publicly-traded independent producers, and mineral owners, estates, and trusts. TIPRO membership provides networking and educational forums, marketing opportunities, industry intelligence, and extensive legislative and regulatory resources. A large percentage of TIPRO members are dependent, either directly as an operator or indirectly as a royalty owner, on low production wells or conventional operations and the pending proposals will have particular significance to these members.

Summary of Key Points:

- EPA continues to lack emissions data on low production wells to support regulatory decisions – but more data is close at hand.
- Exploring subcategorization of sources is warranted, if not obligated, and perhaps represents the most appropriate means to protect the environment while permitting and supporting small business which support rural communities and our country's energy independence.
- Don't "fix" what is not broken/don't let "perfection" be the enemy of the good: EPA and the oil/gas industry have worked together for at least a decade on New Source Performance Standards (NSPS) focused on volatile organic compounds (VOCs) and/or methane emissions from the industry and progress has been made.

Wait on the Data:

TIPRO, IPAA, and GO-WV and many other "Independent Producers"¹ have worked with EPA since 2011 to help EPA better understand the oil and natural gas industry – with particular focus on the extraction and production segment of the industry. Subpart OOOO and Subpart OOOOa were driven by the technological advances in mid to late 2000s associated with high volume, hydraulically fractured oil and/or natural gas wells with horizontal legs and the potential emissions associated with the new technology. EPA defines "hydraulic fracturing" as "the process of directing pressurized fluids containing any combination of water, proppant, and any added chemicals to penetrate tight formations, such as shale or coal formations, that subsequently require high rate, extended flowback to expel fracture fluids and solids during completions." 40 CFR 60.5430. As defined, hydraulically fractured wells could be argued to include most if not all oil and natural gas wells drilled back to the mid-nineteenth century Drake Well on the banks of the Oil Creek in western Pennsylvania.

Given the broad range of "hydraulic fracturing" it is not an appropriate definition for distinguishing types of "affected facility[ies]" because both conventional and unconventional wells

¹ The Independent Petroleum Association of America ("IPAA"), Domestic Energy Producers Alliance ("DEPA"), Eastern Kansas Oil & Gas Association ("EKOGA"), Illinois Oil & Gas Association ("IOGA"), Independent Oil and Gas Association of West Virginia, Inc. ("IOGA-WV"), Indiana Oil and Gas Association ("INOGA"), International Association of Drilling Contractors ("IADC"), Kansas Independent Oil & Gas Association ("KIOGA"), Kentucky Oil & Gas Association ("KOGA"), Michigan Oil and Gas Association ("MOGA"), National Stripper Well Association ("NSWA"), North Dakota Petroleum Council ("NDPC"), Ohio Oil and Gas Association ("OOGA"), The Petroleum Alliance of Oklahoma ("The Alliance"), Pennsylvania Independent Oil & Gas Association ("PIOGA"), Texas Alliance of Energy Producers ("Texas Alliance"), Texas Independent Producers & Royalty Owners Association ("TIPRO"), and West Virginia Oil and Natural Gas Association ("WVONGA") (collectively, "Independent Producers").

engage in hydraulic fracturing. GO-WV, IPAA, and TIPRO and the Independent Producers have worked with EPA from 2011 to explain the difference between “unconventional wells” and “conventional wells” and their respective operations/activities. Representatives from TIPRO, IPAA, and GO-WV were encouraged by the substantive conversations with the SBAR Panel regarding the differences between “conventional” and “unconventional” wells.

TIPRO, IPAA, GO-WV and others have consistently represented that “low production wells” should be exempt from Subpart OOOO/Subpart OOOOa. We believe that EPA has resisted this because it has no, or the wrong emissions data on low production wells. Environmental non-governmental-organizations (ENGOs) have submitted various “studies” attempting to show low production wells are a significant source of methane emissions and must be regulated. We believe those studies are flawed. In 2018, the Department of Energy (DOE) initiated a study to quantify emissions from low production/marginal wells. The COVID pandemic delayed the collection of data from various regions/basins, but the DOE has re-initiated its study and its results are due the end of 2021. We encourage EPA to wait for completion of the DOE’s study.

While the current Administration has decreed that regulatory action to address emissions from the oil and natural gas industry must be proposed in September of 2021, the scope of those proposals is within EPA’s discretion. There is no statutory deadline requiring EPA to regulate low production wells. There is no court ordered deadline requiring EPA to promulgate regulations on low production wells. There is no shortage of other opportunities to regulate emissions from the oil and natural gas industry that EPA can address in order to comply with the President’s Executive Order requiring proposed regulatory action by the end of September. It makes sense to wait, as more data on low production wells is around the corner.

This Administration and Congress’ actions to reinstate regulation of methane from the oil and natural gas industry has placed many small businesses in a dangerous place. To avoid unnecessarily damaging them, the most prudent course of action is for EPA to effectively stay the relevant provisions of Subpart OOOOa as they pertain to low production wells pending the outcome of the DOE study. Once the DOE study is complete, EPA will have considerably more data on which to make informed policy decisions. The data necessary for EPA to make more informed regulatory decisions is not years away – it’s a few months. To those within the DC Beltway, regulation of low production wells may not be of much concern. To the mom and pop/small businesses across the country, excessive regulation of low production wells could unnecessarily sound the death knell for many businesses that fuel the country’s economy. EPA should wait on the data from the DOE.

Subcategorization of Sources Makes Sense:

As EPA acknowledged to the SERs in its “Supplemental Materials” in July 2021, “appropriate subcategorization” is an acceptable regulatory alternative that can “still accomplish the objectives of the Clean Air Act.” As was discussed at length with the SBAR Panel, the definition of “hydraulic fracturing” encompasses both “conventional” and “unconventional wells.” Admittedly, conventional wells are hydraulically fractured. However, the world changed when industry figured out how to make a steel pipe take a “righthand turn” thousands of feet below the earth’s surface and run horizontally for up to a few miles. Conventional wells do not penetrate and produce from “tight formations, such as shale or

coal formations.” Conventional wells do not “require high rate, extended flowback . . .” Most conventional wells, being shorter and having a shorter profile in producing strata, produce methane at lower rates than horizontal, nonconventional wells. Conventional wells are simply different than unconventional wells.

Most importantly, from an environmental perspective, nonconventional and conventional wells’ emissions profiles are different. The physics associated with conventional wells and unconventional wells is on a different scale. The hydraulic fracturing associated with conventional wells involves thousands of gallons of water – unconventional wells involve millions of gallons of water. The flowback period of those liquids for conventional wells is measured in terms of hours whereas unconventional well flowback is measured in weeks or months. This is explained by the permeability of the geological strata each type of well usually operates within. In terms of permeability, the Darcy scale essentially measures the ability of fluids to flow through rock. The permeability of the rock formations where conventional wells are drilled is statistically different than that of the rock where unconventional wells are drilled in to (permeability of conventional wells in the Illinois Basin is 0.01-0.5 Darcie; shale formations typically 0.000000.1-0.00001 Darcie).

Recognizing that conventional wells tend to generate lower production, such low production wells are ripe for subcategorization and have tremendous potential to reduce the burden on small entities. If SERs were afforded a more realistic time frame to provide comments, appropriate parameters could be better defined and established. EPA has the ability (and we believe the obligation) to consider subcategorization in the rules scheduled for proposal in September. EPA can and should bifurcate its regulatory activity between low production wells, which require more study, and nonconventional wells, about which there is more information. We are disappointed that appears to be beyond consideration by EPA. SERs asked EPA multiple times during the two meetings whether there was anything requiring regulatory action by the end of September for the proposed methane regulations, and we were never given any justification for such quick action. We hope that EPA will take this opportunity to reconsider its haste in proposing regulations.

Continue to Improve Existing Regulations – Don’t Regress:

- Low Production Wells: reinstating the applicability of the 2016 Subpart OOOOa regulations to low production wells is no more justified now than it was in 2016. As discussed above, EPA lacks sufficient emissions data to justify regulation of low production wells. More/better data is on its way. Emissions at low production wells are a function of various factors including but not limited to volumetric flow, pressure and component count. All these factors effectively reduce low production wells “potential to emit” (PTE) when compared to wells producing gas above the 15 BOE/day threshold. The 15 BOE/day threshold was borrowed from the IRS regulations for various reasons. In reality, the average “low production well” is significantly below 15 BOE/day, e.g. about 2.5 bbl/day and 22 mcf/d. Based on the PTE alone, low production wells warrant different treatment and such differential treatment would have tremendous benefit to small businesses/entities. Preliminary information from the DOE study is also indicating that the majority of emissions from low production wells is coming from relatively few sources. For example, preliminary data from the DOE study indicates that, in the Appalachian Basin, the “top 10% of emission sources contributed 72% of the total measured emissions, and the top two

emissions source alone accounted for 40%.”² These sources/leakers are often referred to as “fat tail” sources. These sources/leaks do not require sophisticated and expensive equipment to detect – one can generally see, hear and/or smell the leak upon arrival at the site. It is generally obvious that there is a problem, and the problem is generally obvious, e.g., a hatch is stuck open; there is a hole in a pipe or connection; or a tree fell on a piece of equipment and its emitting to the atmosphere. GO-WV, IPAA, TIPRO and Independent Producers have consistently argued that while EPA views methane as a pollutant, it is also our “product” and operators have a pure economic motivation to capture every molecule of methane that they can affordably recover. These fat-tail/super emitters do not only harm the environment, they also threaten the economic viability of many small businesses.

- Recordkeeping and Reporting: the 2020 revisions to recordkeeping and reporting were very beneficial. Inconsistencies between the 2016 regulations and 2020 revisions should be resolved in favor of the 2020 revisions. EPA acknowledged certain state recordkeeping and reporting as “equivalent” to Subpart OOOOa and provided some regulatory relief for operators in those states. Even in these states, though, EPA continues to require additional recordkeeping and reporting that provides little to no benefit to the environment. If a state’s program is deemed equivalent to Subpart OOOOa, then nothing more should be required above what the state requires. Additionally, EPA should continue to evaluate ways to streamline recordkeeping and reporting that provides no/little environmental benefit while increasing the regulatory burden and cost on operators.
- “Wellhead Only” Exemption: operators appreciate EPA’s efforts to reduce the regulatory burden on the industry by exempting “wellhead only” sources from certain requirements. TIPRO, IPAA, and GO-WV suggest that this exemption be re-evaluated to allow a drop-tank/separator at the well site. The drop-tank/separator is often necessary for safety and operational considerations while having minimal emissions. The benefit to small business of the wellhead only exemption would be greatly increased if the certain additional equipment would be permitted.
- Liquids Unloading: emissions associated with liquids unloading is being revisited by EPA. The emissions associated with these processes were evaluated in 2015-2016 during the promulgation of Subpart OOOOa. EPA ultimately concluded that the processes/practices associated with liquids unloading were too diverse and not well enough understood to promulgate regulations to control the emissions. GO-WV, IPAA, and TIPRO respectfully ask if anything has changed that warrant promulgation of controls now. SERs reported to EPA that the practices continue to be, essentially, “site-specific.” A “one-size fits all” is inappropriate in terms of mandating a particular control strategy. By its very nature, liquids unloading is undertaken to remove liquids that are prohibiting gas from coming up the well and entering the gathering line. As soon as enough liquid is removed to allow the gas to flow again, the system is returned to “normal” and the gas is routed back to the product line. Releasing a certain amount of gas is inherent in the process. The equipment that would be required to capture the relatively small amount of gas would need to be brought on site, for a very limited time period, at a considerable cost. The change in flow and pressure during the unloading is highly variable

² See attached exhibit from DOE/GSI.

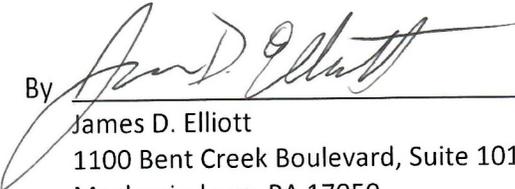
which often makes it technically infeasible to utilize control equipment to capture the gas. The physical characteristics associated with liquids unloading that made it impractical/uneconomical to promulgate regulations in 2015/2016 have not changed -- liquids unloading remains more of an art than a science.

GO-WV, IPAA, and TIPRO appreciate the opportunity to serve as SERs. While it understandable that EPA desires to implement the President's executive order by regulating all industry sources of methane, EPA should not apply an arbitrary deadline on low producers at the expense of small businesses and sound public policy. The extremely truncated SBAR Panel process still has the potential to benefit small businesses and TIPRO, IPAA, and GO-WV look forward to reviewing the final report to EPA. GO-WV, IPAA, and TIPRO acknowledge EPA's position that the "guidelines" for existing sources pursuant to Section 111(d) of the Clean Air Act do not directly regulate its members. TIPRO, IPAA, and GO-WV respectfully request that EPA see past the technicalities of certain aspects of the CAA; fulfill the intent of the Regulatory Flexibility Act; and engage the SBAR Panel process for the "guidelines" EPA intends to propose in September. All stakeholders and regulators understand and appreciate that the greatest impact to the oil and natural gas industry of directly regulating methane emissions is enabling EPA to regulate existing sources. One only need review the legal briefs by environmental interests seeking stays and emergency relief before the Court of Appeals for District of Columbia Circuit to understand that the direct regulation of methane by EPA is about EPA regulating existing sources. Regardless of what one calls the requirements EPA intends to promulgate pursuant to section 111(d) of the CAA, EPA is establishing the bar by which controls on existing source are measured and ultimately controlled. The impact of the section 111(d) "guidelines" on small entities clearly has the potential to dwarf the impact of the reconsideration rulemaking to Subpart OOOOa.

TIPRO, IPAA, and GO-WV look forward to working with EPA to promulgate regulations and/or guidelines that protect the environment while permitting small entities to making a significant contribution to America's energy independence.

Respectfully submitted,

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By 

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DOE NETL: Methane Emissions Quantification

Project Award: DE-FE0031702



Quantification of Methane Emissions from Marginal (Low Production Rate) Oil and Natural Gas Wells

BACKGROUND

PROBLEM STATEMENT

There are more than 1.1 million oil and natural gas wells in the U.S., of which about 770,000 (~70%) are considered marginal. Debate continues among concerned stakeholders regarding whether marginal well sites should be subject to or exempt from fugitive emissions monitoring and associated leak detection and repair (LDAR) requirements.

PROJECT OBJECTIVE

Collect and evaluate representative, defensible and repeatable data and draw quantifiable conclusions on the extent of methane emissions from marginal wells across oil and gas producing regions of the U.S., and to compare these results to published data available on the emissions from non-marginal wells.

DATA SOURCE STATUS ASSESSMENT

Key data gaps were identified based on a thorough review of published sources and partially addressed by information derived from a broad survey of oil and gas well operators.

■ **Literature Review.** Findings of previous studies indicate that existing site-level emissions measurements and “activity data” (i.e., related to operations) from previous studies largely underrepresent and are not enough to accurately characterize marginal well emissions.

■ **Confidential Production Operator Survey.** Survey responses representing over 86,000 sites across 29 basins in 23 states indicate that *site characteristics most likely to relate to methane emissions* include i) the *main product* generated at the site, ii) the *production rate* of oil and/or natural gas, iii) the “*size*” of the site defined in terms of the total equipment count (wells, tanks, separators, etc.), and iv) the *frequency of liquids unloadings*. Figure 1 depicts the geographic distribution of **48 site categories** distinguishing the variability of these factors, as represented in the results of the operator survey, where each color represents a unique category and similar (but distinct) colors visually represent more closely related categories.

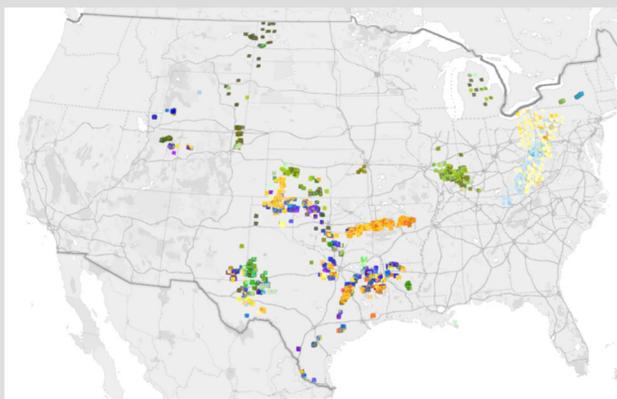


Figure 1. Marginal well sites represented in operator survey results
Sites primarily producing dry gas are shown in colors ranging from yellow to red, wet gas sites in purple/blue, and oil sites in shades of green. Within each product category, distinct colors represent differences in equipment count and production rate.

REGIONAL FIELD CAMPAIGNS

Field campaigns to detect, measure, and characterize oil and gas well site emissions are being performed in multiple regions/basins to capture the variability and diversity of both physical and operational conditions, especially in areas with large numbers or a high density of marginal wells, or where marginal wells account for a large percentage of regional production. Up to a 200 total well sites will be assessed within each of three field campaigns.

■ **Field Campaign 1.** Completed in October-December 2019 in the *Appalachian, Illinois, and Forest City Basins*. The Appalachian Basin is largely dominated by natural gas production, whereas oil production is predominant in the Illinois, and Forest City Basins. Site populations in other regions are much more diverse and not well represented by sites in these basins.

■ **Field Campaign 2.** Originally planned for April-May 2020 in the Permian and Anadarko Basins and postponed due to Covid-related travel and site access restrictions. Two weeks of field work in the *Upper Green River, Piceance, and Anadarko Basins* were completed in Nov 2020. Tentative plans call for additional sampling in the *Permian and Palo Duro Basins* in early 2021.

■ **Field Campaign 3.** Tentatively planned for Spring 2021 to include additional coverage of the Rocky Mountains region, such as the *Uintah and Denver-Julesburg Basins*, and, if possible, *additional portions of the Permian and Anadarko Basins* not reachable in the second field campaign. Other regions may be studied, pending availability of site access.

There is broad consensus among scientists with DOE, EPA, industry, and environmental stakeholders that, due to the diversity and extensive geographic distribution of marginal wells across the U.S, there is a strong need for the full scope of the regional field campaigns to be carried out.



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FIELD CAMPAIGN 1 SUMMARY

■ **Visited Field Sites.** Facilities were selected for measurement using *geographically clustered, random sampling*. Escorted access to sites was provided by participating host operators, whose identities and site locations remain confidential, per signed access agreements.

146 natural gas sites and 87 oil sites were visited. In all, 228 of the sites exhibited marginal production at an average rate of 2.5 BOE per day of combined oil and gas. Five non-marginal sites producing 96 MCFD (16 BOE/day, “marginally non-marginal”) to 4,000 MCFD (667 BOE/day) of dry gas were visited in the Appalachian Basin. No non-marginal oil production sites were available in any of the visited regions. Besides emissions screening and measurements, *detailed activity data*, including major equipment counts and oil and gas production rates, were documented at each visited site.

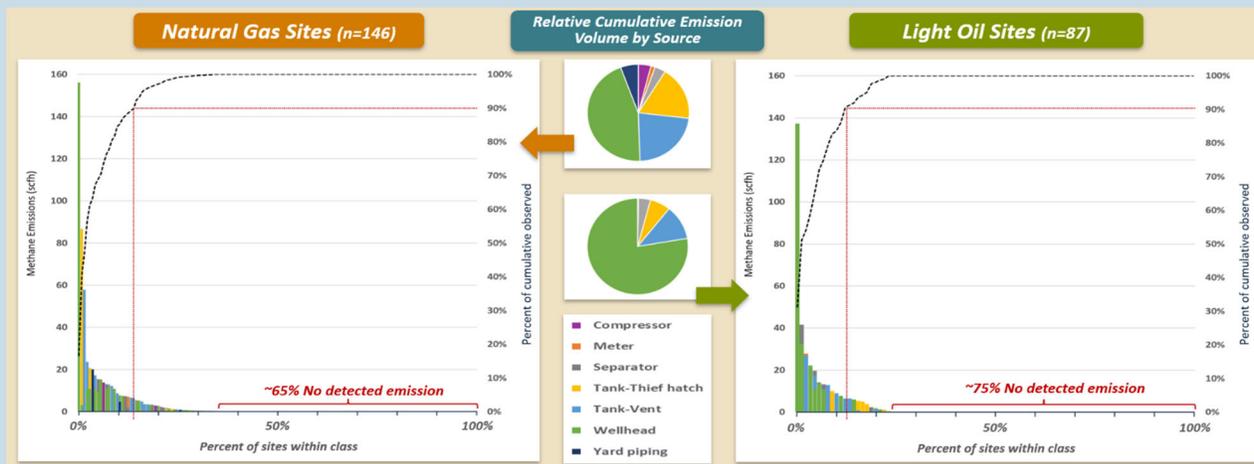


Figure 2. Site-wide methane emissions

■ **Emissions Screening and Measurements.** Gas emissions were detected using an *optical gas imaging* camera and quantified, where possible, using a *high flow sampler* in conjunction with gas composition-specific analyses. One emission was measured using the *downwind tracer flux method*.

■ **Frequency of Detected Emissions.** Table 1 summarizes the frequency of detected emissions, which varied widely and exhibited *no discernable pattern relative to observed equipment types or type of production*. On a site-wide basis, no emissions were detected at ~65% of natural gas sites and ~75% of oil sites (see Figure 2). Approximately 90% of the cumulative detected emissions detected are attributable to ~12% of the visited sites for both types of production.

■ **Magnitude of Detected Emissions.** The emission rate measurements exhibit the long-tail behavior commonly observed in air emissions studies. Approximately 90% of observed emissions were less than 13 standard cubic feet per hour (scfh).

Table 1. Summary of observed equipment and detected emissions

| Equipment Category | Natural Gas Sites (n=146) | | | Light Oil Sites (n=87) | | |
|--------------------|---------------------------|---------------------|--------------------|------------------------|---------------------|--------------------|
| | #Equipment Observed | #Emissions Detected | Emission frequency | #Equipment Observed | #Emissions Detected | Emission frequency |
| Wellheads | 165 | 32 | 19% | 97 | 13 | 13% |
| Meters | 157 | 3 | 2% | 7 | 2 | 29% |
| Compressors | 4 | 3 | 75% | 2 | 0 | 0% |
| Separators | 130 | 4 | 3% | 28 | 4 | 14% |
| Dehydrators | 1 | 0 | 0% | 0 | 0 | - |
| Tanks | 157 | - | - | 68 | - | - |
| Thief hatches | - | 4 | 3% | - | 8 | 12% |
| Vents | - | 16 | 10% | - | 14 | 21% |

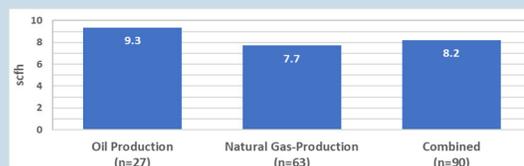


Figure 3. Average detected methane emission rates

The top 10% of emission sources contributed 72% of the total measured emissions, and the top two emission sources alone accounted for 40%. Figure 3 summarizes the overall average measured methane emission rates.

PENDING COMPREHENSIVE DATA EVALUATION

Once qualified datasets from all regional field campaigns are fully developed, comprehensive exploratory and statistical data analyses will be performed to identify *key groupings of sites in the studied regions and their distinguishing characteristics and emission profiles* (see Figure 4). Data analyses are ongoing; therefore, the limited analysis and representations of data shown here, and any interpretation of the same, should be considered preliminary. It is important to recognize that the results presented here represent only a small fraction of the diversity of marginal well site characteristics present around the country (see Figure 1). Further investigation of sites exhibiting a broader range of product types, production rates, and site equipment counts in the remaining two field campaigns will provide more representative results and more meaningful conclusions upon completion of this project.

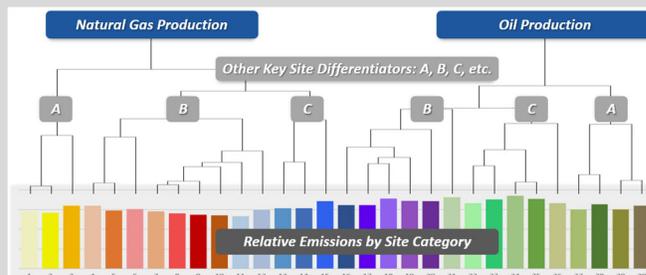


Figure 4. Conceptual example of data analysis
Besides product type, other key differentiators may include “size” (equipment count), production rate, or other factors.

A Technical Advisory Steering Committee (TASC), consisting of stakeholders from industry, academia, regulatory agencies, and non-governmental organizations, provides recommendations and feedback on project activities, such as strategy development, field implementation, data analysis, and study conclusions, throughout the project.