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EPA Issues Methane Rule for Oil and Gas Sector: Practical Takeaways for Industry

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An overview of key technical provisions and practical takeaways for regulated parties from EPA's final methane rule. On December 2, 2023, the U.S. Environmental Protection Agency (EPA) announced its finalized rule targeting methane emissions from the oil and gas sector. In this regulatory action, EPA enacted (i) new source performance standards (NSPS) for methane and volatile organic compounds (VOCs) from new or modified oil and gas sources and (ii) emissions guidelines for states to follow in designing and executing implementation plans to cover existing sources. This final rule is one of the Biden Administration's signature actions to address climate change. In finalizing the rule, EPA included measures designed to decrease flaring and fugitive emissions from oil and gas production facilities and also moved forward with its novel "Super Emitter" program that allows third parties to track large emissions events. But the final rule also included additional flexibility for industry and states compared to EPA's proposal, such as more time for states to submit compliance plans for existing facilities, more time for certain requirements, and flexibility for industry to use advanced monitoring technologies to detect methane leaks. This client alert summarizes the key technical provisions for oil and gas production and practical takeaways for regulated parties.[1] ***Who is subject to the rule?*** The rulemaking applies to new and existing oil and gas facilities involved in (i) **production and processing**, including equipment and processes at well sites, storage tank batteries, gathering and boosting compressor stations, and natural gas processing plants, and (ii) **natural gas transmission and storage**, including compressor stations and storage tank batteries. ***What are the key takeaways?*** Leveraging EPA's existing VOC rules governing oil and gas production, EPA's new rule requires frequent monitoring and repair of methane leaks at well sites, centralized production facilities, and compressor stations using established inspection technologies or, at an operator's election, novel advanced detection technologies. Similarly, storage vessels at production facilities are regulated in largely the same manner under this final rule as existing VOC requirements. However, storage vessels that previously were unaffected by regulation, including both new and existing facilities, may now be subject to NSPS based upon updated definitions and the addition of a new applicability trigger. Finally, the rule aims to phase out venting and flaring of gas coming from oil wells. Agency officials said the most significant emissions reductions created by the final rule come from this directive for new oil wells to eliminate routine gas flaring as well as requiring continuous operation of flares on storage tanks. Unique to this rule is EPA's creation of the "Super Emitter" program for identifying and addressing significant methane leaks from production facilities, including an avenue for qualified third parties to alert EPA of owners and operators exceeding the emissions standards and for EPA, in turn, to require owners/operators to investigate such alerts. In addition, the rule imposes a number of new requirements on reciprocating compressors, centrifugal compressors, pneumatic pumps and controllers (even prohibiting using natural gas in all but a few circumstances) and sweetening units, as well as the completion process and liquids unloading process. ***How has EPA structured the legal framework?***[2] The new rule establishes a role for both federal and state standards. First, new federal NSPS, added at 40 C.F.R. part 60, subpart OOOOb, apply to sources that commenced construction, modification, or reconstruction after December 6, 2022. Second, existing sources will be regulated by emissions guidelines implemented as part of state programs that are equivalent to federal NSPS. These emissions guidelines – which essentially serve as model rules for states to implement – are set forth in a new subpart, OOOOc. States can either adopt presumptive standards set forth in the OOOOc emissions

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guidelines for existing sources or develop their own standards that are as strict as the federal standards, and they must conduct meaningful public engagement during their development of these standards. EPA must approve all state emissions standards, and if a state's standards are not as strict as the federal standards, EPA can then promulgate a rule for that state.[3] ***What is the applicability date?*** The final rule's "applicability date" is December 6, 2022. Sources constructed, modified or reconstructed after December 6, 2022 will need to comply with the new source performance standards in OOOOb. Sources constructed prior to December 6, 2022 will be considered existing sources and will have later compliance dates under state plans. For this category of existing sources, states have two years to propose these standards, and operators have three years after that submission deadline to comply. For that reason, the deadline for compliance for existing sources will vary based on location, but could be up to five years. ***What are the key differences in obligations for new and existing sources?*** Both subpart OOOOb and subpart OOOOc include new requirements to address methane emissions from oil and gas operations using the "best system of emission reduction" (BSER) as summarized below. With the exception of requirements governing new wells and well completions (and particularly the flaring requirements), the final NSPS subpart OOOOb requirements for new affected facilities and the presumptive standards for existing facilities under subpart OOOOc are largely the same as it relates to methane. The key differences between the two programs are (i) the timeframe for compliance, (ii) the additional requirements for new wells, particularly as it relates to flaring, and well completions, and (iii) the additional requirements for VOC control for new sources.[4] ***What are the key elements of the new requirements?*** **Eliminating Routine Flaring From Oil Wells.** EPA's new rule phases out flaring of gas coming from new oil wells under subpart OOOOb. It phases in flaring restrictions by dividing wells into three categories based on construction date. For new wells constructed after future dates set by the rule, routine flaring will be prohibited after the phase-in period; ultimately, absent a safety concern or defined malfunctions, gas from these wells must be routed to a sales line, used as an onsite fuel source or another useful purpose that a purchased fuel, chemical feedstock, or raw material would serve, or reinjected into the well or into another well upon start-up. Under subpart OOOOc, for preexisting wells with documented methane emissions of 40 tons per year or less, flaring is permitted provided that the gas is routed to a flare or control device that achieves 95.0 percent reduction in methane. For existing wells with documented methane emissions of 40 tons per year or more, flaring is prohibited absent a showing of technical infeasibility with alternative options. These alternatives include routing the gas to a sales line, using it as an onsite fuel source or for another useful purpose, or injecting it back into the same well or another well. If all of these options are technically infeasible, then these existing wells (producing associated gas with more than 40 tpy of methane) can route associated gas to a flare or control device that achieves 95.0 percent reduction in methane. **Third-Party Monitoring of Super Emitters**. EPA's rule establishes the Super Emitter Program. Under this program, certain third-parties can seek agency authorization to detect "super emitter" events at operators' sites and report those events to EPA. A super emitter event is defined by the rule as emissions of 100 kilograms (220.5 pounds) of methane per hour or larger. To qualify, these third parties must be credentialed by EPA. Third parties must submit any super emitter detections to EPA, which then verifies them and notifies the operator. Upon receiving such a notification, an operator is required to investigate the alleged super emitter event within five days and report the results of the investigation to EPA within 15 days of the notification. Additionally, incidents that trigger this program may also trigger the Department of Transportation's upcoming Pipeline and Hazardous Materials Safety Administration rule, which will likely impose reporting and remediation requirements in the event of a major leak (a term that has yet to be defined). In response to industry comments, the final rule takes a different approach from the proposed rule in that EPA, and not third parties, will notify an identified owner or operator after reviewing third-party notifications of the presence of a super emitter event at or near its oil and gas. Also, in response to comments, the final rule provides that certified third parties only will be authorized to use remote sensing technologies such as satellites or aerial surveys—the program does not authorize third parties to enter well sites or other oil and gas facilities. **Storage Vessel Applicability Changes.** In the regulation, EPA has retained the preexisting control and operational requirements governing storage tanks used in oil and

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gas production under NSPS Subparts OOOO and OOOOa, including the requirement to reduce emissions by 95 percent, but it has added methane into the VOC framework, changed the trigger governing when the federal requirements apply, and added requirements for determining when state permit limits are legally and practicably enforceable limits. These applicability changes potentially impact both new and existing operations. For purposes of the NSPS applicability trigger governing new or modified facilities, EPA's rule adds storage tank batteries (i.e. groups of tanks that are adjacent and receive fluids from the same source) to the existing definition of storage vessel. A tank battery is an affected facility under the rule if the aggregate potential methane emissions from the group of storage vessels is greater than or equal to 20 tons per year. This is a change from EPA's preexisting approach under NSPS Subpart OOOO and OOOOa, which evaluates applicability based on emissions from individual storage tanks (as opposed to batteries). If owners or operators of new or modified facilities trigger NSPS Subpart OOOOb applicability under this new criteria, then the owners/operators of tanks or batteries qualifying as affected facilities must reduce VOC and methane emissions by 95 percent (as previously required by NSPS Subpart OOOO and OOOOa). The NSPS rule also updates the definition of "modification" to cover the occurrence of an increase in potential emissions of a tank battery such that its potential to emit (PTE) exceeds the 6 tons of VOC per year or 20 tons of methane per year thresholds following any of these four specified physical or operational changes: (i) adding a storage vessel to an existing battery; (ii) increasing the cumulative storage capacity of the battery by replacing one or more storage vessels; (iii) for well sites or centralized production facilities: an existing battery receives additional crude oil, condensate, intermediate hydrocarbons, or produced water throughput (e.g. as a result of hydraulic fracturing or hydraulic refracturing); (iv) for compressor stations or onshore natural gas processing plants: an existing battery receives additional fluids which cumulatively exceed the throughput used in the most recent determination of the potential for VOC or methane emissions. Owners/operators of existing tanks or tank batteries also will need to evaluate a new applicability trigger under the emissions guidelines set forth in Subpart OOOOc (as incorporated into state plans). Under the presumptive standard, for existing storage tanks or tank batteries with a PTE of 20 tons of methane per year or greater, owners/operators will have to reduce their emissions by 95 percent. In other words, under the rule, existing tank systems can now trigger NSPS requirements if their potential methane emissions exceed 20 tons per year. Finally, EPA finalized criteria that must be met for a permit limit or other requirement to qualify as a legally and practicably enforceable limit for purposes of determining whether a tank battery is an affected facility or designated facility under NSPS OOOOb. A legally and practicably enforceable limit must include a quantitative production limit and quantitative operational limit(s) for the equipment, or quantitative operational limits for the equipment; an averaging time period for the production limit, if a production-based limit is used, that is equal to or less than 30 days; established parametric limits for the production and/or operational limit(s), and where a control device is used to achieve an operational limit, an initial compliance demonstration (i.e., performance test) for the control device that establishes the parametric limits; ongoing monitoring of the parametric limits that demonstrates continuous compliance with the production and/or operational limit(s); recordkeeping by the owner or operator that demonstrates continuous compliance with the limit(s) in; and periodic reporting that demonstrates continuous compliance. **New Methane Leaks Requirements.** EPA's new rule restructures leak detection and repair (LDAR) requirements based upon the type of facility involved in order to address methane and VOC leaks. In general, affected facilities are well sites, centralized production facilities, and compressor stations where components with the potential to emit fugitive emissions of methane or VOC are present. Well sites are broken into several regulatory categories.

- Single wellhead only well sites require quarterly audible, visual, and olfactory (AVO) inspections. Owners and operators have 15 days from detecting a leak to initiate repairs and must complete those repairs within 15 days after the first repair.
- Multi-wellhead only well sites require semiannual optical gas imaging (OGI) inspections (or optional EPA Method 21 inspections) and quarterly AVO inspections. Repairs of any leaks must commence within 30 days of detection and

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be completed 30 days after the first repair attempt.

- Well sites with major production and processing equipment, including one or more controlled storage vessels or tank batteries, control devices, or natural gas-driven process controllers or pumps, and centralized production facilities require quarterly OGI inspections (or optional EPA Method 21 alternative inspections) and bimonthly AVO inspections. Leak repairs must commence within 30 days and be completed 30 days after the first repair attempt.

At compressor stations, the rule requires quarterly OGI inspections (or EPA Method 21 alternative inspections) and monthly AVO inspections. Leaks detected using AVO inspections must be repaired within 15 days after detection and concluded within 15 days after that, while leaks detected using OGI or EPA Method 21 inspections must be repaired beginning 30 days after detection and finalized 30 days later. The rule provides the opportunity for regulated parties to replace traditional leak detection programs (*i.e.* using Method 21 and OGI) with advanced measurement technologies such as on-site sensor networks and aerial flyovers using remote sensing technology. These technologies need to be approved by EPA in advance when an owner or operator submits a monitoring plan. The frequency at which these alternative technologies must be used in order to satisfy the traditional OGI/Method 21 requirements varies depending upon the capabilities of the technology itself. For example, if the technology has an aggregate detection threshold of 15 kilograms per hour, periodic screenings must be conducted monthly. **Well Closure.** The rule requires that fugitive emissions monitoring continue until the closure of any well pursuant to a well closure plan. Once a well is closed, a final OGI survey must be performed. If any emissions are detected in this final survey, they must be eliminated. Then, the results of the OGI survey, along with other details of the well closure, must be submitted to EPA. **Pneumatic Pump And Controller Requirements.** The new rule requires that all pneumatic pump affected facilities in the oil and gas industry have zero emissions. In other words, the rule prohibits natural gas-driven pumps except at facilities with fewer than three natural gas-driven diaphragm pumps in areas where other power sources are inaccessible. EPA's new rule also requires pneumatic controllers (now called process controllers) outside of Alaska to have zero methane and VOC emissions. The rule provides a one-year period for operators and owners to come into compliance. **Well Liquids Unloading.** The rule requires that affected gas wells that unload liquids minimize or eliminate venting of emissions during liquids unloading events to the maximum extent possible using best management practices. Alternatively, such wells can comply by reducing methane and VOC emissions from gas well liquids unloading events by 95 percent using a closed vent system (CVS) to route emissions to a control device. **Well Completions.** The rule also regulates well completion of hydraulically fractured or refractured wells. During completion of most non-wildcat and non-delineation wells, owners or operators must route all flowback to a storage or completion vessel and separator. They must then utilize any salable gas (for example, as fuel on-site) and route all liquid to a storage or well completion vessel, a collection system, or another well. During completion of wildcat and delineation wells (and non-wildcat and non-delineation low pressure wells), owners or operators must either route all flowback to a completion combustion device or well completion vessels and use a separator. **Centrifugal Compressors.** Centrifugal compressors with wet seals at new affected facilities other than well sites must reduce methane and VOC emissions from their fluid degassing systems by 95 percent by routing emissions to a control device or process. Some new centrifugal compressors such as centrifugal compressors with dry seals must instead meet work practice performance-based volumetric flow rate standards. At existing facilities located at non-well sites, the requirement will be monitoring and repair to maintain volumetric flow rate at or below 3 standard cubic feet per minute per seal. **Reciprocating Compressors.** Reciprocating compressors must meet a performance-based emissions standard of 2 standard cubic feet per minute per cylinder. **Covers, Closed Vent Systems and Combustion Control Devices.** Similar to the existing VOC rules, covers and CVSs must demonstrate their ability to comply with the no identifiable emissions standard through OGI or EPA Method 21 monitoring and AVO inspections conducted at the same frequency as the fugitive emissions monitoring for the type of site where the cover and

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CVS are located. Combustion control devices being used to meet a 95 percent emission reduction standard must demonstrate a continuous level of control of emissions through performance tests every 5 years. **Equipment Leaks at Natural Gas Processing Plants**. Equipment located at onshore natural gas processing plants, defined as pumps, pressure relief devices, open-ended valves, and flanges and other connectors, must be inspected either (i) bimonthly using OGI monitoring or (ii) according to EPA Method 21 monitoring at the corresponding frequencies of each type of equipment. The rule also includes specific requirements for each piece of equipment. For example, open-ended valves must all be equipped with closure devices. **Sweetening Units.** Affected facilities with a sulfur production rate of at least 5 long tons per day must reduce sulfur dioxide emissions by 99.9 percent. For affected facilities with a design capacity of less than 2 long tons per day of hydrogen sulfide in acid gas, recordkeeping and reporting are required but emissions controls are not. These rules only apply to new and modified sources. ***How Does the Rule Intersect with Other Climate Change Laws and Programs*?** EPA's final methane rule is part of a larger effort by the Biden Administration to address climate change. Related laws and proposals include:

- In August 2022, Congress passed the Inflation Reduction Act (IRA) creating a phase-in schedule for a methane fee that commences in 2024. In 2024, the fee will be levied on methane emissions in excess of the allowance at a rate of $900 per metric ton. That rate will rise to $1200 in 2025, and it will remain at $1500 from 2026 on. Importantly, this fee applies only to facilities that are out of compliance with EPA's methane emissions requirements and do not fall under another exemption.
- In July 2023, EPA proposed key changes to the greenhouse gas emissions reporting requirements for the oil and gas sector. If finalized, most of the proposed changes would be reflected in reports for Reporting Year 2025, due by March 31, 2026.This proposed regulatory action would (i) newly require reporting for emissions from maintenance or other abnormal emission events (including planned releases from maintenance activities), (ii) revise existing calculation methodologies, (iii) expand reporting requirements for certain emissions sources, and (iv) clarify ownership transfer rules and reporting responsibility for assets sold or purchased during the reporting year.

_____ [1] To see a chart explaining how the 2023 rule compares to the 2012 and 2016 emissions rules with regard to specific facilities, go to https://www.epa.gov/system/files/documents/2023-12/epas-oil-and-natural-gas-final-rule-.table-of-covered-sources.pdf. [2] In order to buoy the rule against potential legal challenges by states and other actors, the rule is self-described as severable with regard to each of its categories of actions and with regard to each emissions source it regulates. [3] Two additional categories in the regulatory framework are edits to reconcile inconsistencies created by Congress's repeal of 2020 methane rules and an appendix, appendix K, that establishes a protocol for the use of optical gas imaging inspections. [4] A table summarizing the translation of BSER into concrete requirements for new and existing regulated sources can be found at https://www.epa.gov/system/files/documents/2023-12/summary-of-key-requirements-table.pdf.

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