



EPA’s Supplemental Proposal to Reduce Pollution from Oil and Natural Gas Operations: Key Changes Since the November 2021 Proposal and Areas Where EPA is Seeking Comment

November 11, 2022 – The U.S. Environmental Protection Agency (EPA) is proposing to update, strengthen and expand its November 2021 proposal to secure major climate and health benefits for all Americans by reducing emissions of methane and other harmful air pollution from both new and existing sources in the oil and natural gas industry.

EPA’s supplemental proposal promotes innovation, reflecting input and information the Agency received from a diverse range of perspectives during the public comment period on the November 2021 proposal. EPA received more than 470,000 written comments on the proposal, held government-to-government consultation with several tribal nations and held a three-day public hearing.

EPA is seeking comment on the entire supplemental proposal. The Agency will accept comment on the supplemental proposal for 60 days after it is published in the Federal Register. A virtual public hearing will begin 21 days after publication.

This fact sheet outlines some examples of key changes since the November proposal, along with related key areas where EPA is seeking comment and information. [EPA also has posted a more detailed “comment solicitation” document on its website.](#)

EPA will respond to all comments it received on the November proposal and the supplemental proposal in the final rule. The Agency expects to issue a final rule in 2023.

Changes to Proposed Emissions Standards

Finding and fixing leaks (fugitive emissions) at well sites and centralized production facilities, and ensuring wells are monitored until they are properly closed.

Key changes since the November proposal:

- EPA is proposing a monitoring approach that will ensure all well sites are regularly monitored for leaks, also known as “fugitive emissions.” Wellhead-only well sites would no longer be excluded.
- The supplemental proposal would base the type and frequency of monitoring on the amount and types of equipment at a site, rather than on estimated emissions, which EPA had proposed in November.
- Control devices would be subject to continuous monitoring and regular inspections to ensure continuous operation rather than being considered “fugitive emissions components.”

- For sites that must be monitored using optical gas imaging (OGI), EPA is proposing to require owners/operators conducting OGI monitoring to follow procedures in the proposed regulatory text for the NSPS, or according to EPA Method 21.
- The proposed Appendix K would apply only if a rule specifies that Appendix K should be used. Under the supplemental proposal for the oil and natural gas industry, it would apply to OGI surveys used to detect leaks at onshore natural gas plants.

Key areas where EPA is seeking comment:

- EPA is seeking:
 - Comments on the proposed monitoring requirements;
 - Comments and additional data on the costs and other potential causes of emissions on a single wellhead that could easily be identified using audio, visual and olfactory (“AVO”) inspections; and
 - Comments on the definition of small well site.

Preventing Abandoned and Unplugged Wells

Key changes since the November proposal

- In the November proposal, EPA sought comments and information on idled and unplugged wells based on the Agency’s understanding and concerns that non-producing oil and natural gas wells are generally unmanned, that many are in disrepair, and that these wells can be large sources of emissions.
- EPA is proposing to require monitoring at all well sites to continue for the life of the site, until the wells are properly plugged, and a final monitoring survey using OGI shows there are no emissions.
- Well site owners/operators would also have to submit a well closure plan that includes the necessary steps to close the wells, including plugging all wells, documenting financial assurance to complete the well closure, and scheduling for completing closure activities. They would also have to submit annual reports documenting ownership.

Key areas where EPA is seeking comment:

- The Agency is seeking comment on the proposed requirements for owners/operators to monitor well sites until they are properly closed, along with the requirement to conduct a final monitoring survey using OGI.
- In addition, EPA is seeking comment on a proposed requirement that well site owners/operators submit annual reports documenting ownership, along with information on other mechanisms for obtaining that information.

Embracing and encouraging innovation in methane detection technology

Key changes since the November proposal

- The supplemental proposal would allow the use of a broader range of advanced technologies as an alternative to optical gas imaging (OGI) or EPA Method 21.
 - Rather than setting a fixed frequency for all monitoring surveys, EPA is proposing a matrix approach that ties the frequency of required monitoring surveys to the detection capability of the technology used and sets deadlines for repairs that are tied to the type of monitoring used. The Agency sought comment on this approach in the November proposal.
 - The matrix approach provides clear goals for technology developers who want to seek approval for using advanced technologies to monitor for methane.
 - Once the Agency approves a technology and technique, owners and operators would be able to use it without the need for additional approval.
- The supplemental proposal would also give owners and operators a pathway to use continuous monitoring technologies that operate around the clock to check for methane leaks.
 - Owners or operators using continuous technologies would be required to determine the cause of a leak and take corrective action whenever emissions exceed either of two proposed action levels at the boundary of a facility.
 - Continuous monitoring approaches would be subject to the same EPA approval as other advanced technologies.

Key areas where EPA is seeking comment:

- EPA is seeking comment on:
 - The proposed matrices for the alternative periodic monitoring approach;
 - The action levels for continuous monitoring systems;
 - How continuous monitoring systems that do not quantify site-level emissions could fit within the continuous monitoring approach or whether a different type of approach should be used for those systems;
 - The appropriate deadline for completing all corrective actions;
 - The Agency’s proposed approach to approving alternative technologies through performance test requirements rather than requiring owners and operators to request approval through site-specific monitoring plans;
 - Proposed pre-qualifications for those requesting approval of their technology; and
 - The proposed deadline (270 days) for EPA to review and make a decision on alternative test method requests.

Creating a Super Emitter Response Program

Key changes since the November proposal

- EPA is proposing a Super-Emitter Response Program to quickly identify large leaks known as “super emitters” for mitigation. The proposed program would leverage sophisticated expertise and data from regulatory agencies or EPA-approved, qualified third parties with access to EPA-approved remote methane detection technology.
- The Super-Emitter Response Program would enable EPA-approved entities that properly document a super emitter “event” to notify owners and operators and provide them the data about the event. The owners and operators would be required to determine the cause of the event and correct it if needed. EPA would post the complete notices, including data about the event, and the owner or operator’s response, to a public website for transparency.
- The proposed Super-Emitter Response Program reflects comment EPA received in response to a request in the November proposal for comment on how to evaluate, design, and implement a program in which communities and others who identify large emission events could provide credible information about the event to owners and operators for subsequent investigation and remediation of the event.

Key areas where EPA is seeking comment:

- EPA is seeking comments on all aspects of the proposed Super-Emitter Response Program, including:
 - The technologies that would be approved to identify super-emitters,
 - Approval criteria for third-party notifiers, including whether additional criteria would be appropriate;
 - Required elements for the notification, including whether additional information should be required to help verify the credibility of the information;
 - The amount of time notifiers would have to provide the notification after identifying a super emitter;
 - The mechanism for owners and operators to receive the notification;
 - Whether EPA should establish a procedure for owners and operators to suggest that the Agency reconsider the approval granted to a third-party notifier; and
 - Deadlines for owners and operators to conduct a root cause analysis and complete corrective actions.

Strengthening Requirements for Flares

Key changes since the November proposal

- EPA is proposing to limit the use of flares for eliminating venting of associated gas from oil wells. The supplemental proposal would require owners or operators to route associated gas to a sales line, use the gas for fuel or another beneficial purpose, or reinject it into a well for enhanced oil recovery. While the November proposal also would have allowed owners

and operators to route associated gas to a flare that reduces methane and VOC by 95 percent, the supplemental proposal would allow flaring of the gas only if the owner or operator submits a demonstration, certified by a professional engineer or other qualified individual, that a sales line is not available and other beneficial uses are not feasible for technical or safety reasons.

- Separately, the Agency is proposing additional compliance requirements to ensure that flares used in oil and natural gas operations meet all requirements for good flare performance, including requirements to continuously monitor the flare to ensure that a pilot flame burns at all times.
- In addition, under the proposed Super-Emitter Response Program, owners and operators would be required to take immediate corrective actions to bring that flare into compliance if a super-emitter emissions event is caused by a flare.

Key areas where EPA is seeking comment and information:

Associated gas

- EPA is seeking additional information on potential emerging technologies that provide additional beneficial uses of associated gas, along with comment on more specific technologies that have been proven viable in the field to utilize associated gas and avoid venting or flaring.
- The Agency also is seeking comment on what information should be included in a demonstration that flaring is needed for safety or technical reasons, and who could be considered a “qualified individual” for certifying the demonstration.
- EPA is seeking comment on whether emerging technologies should be required to be addressed in a demonstration that flaring is necessary because routing associated gas to a sales line or using it for another beneficial use is not feasible for technical or safety reasons, and if so, what specific emerging technologies should be listed in the rule.
- EPA is seeking comment on whether it would be appropriate to require more rigorous consideration of alternatives to flaring after a set threshold is reached (e.g., after a set time of flaring (such as 2 years) or after a set volume of gas has been flared).
- The Agency is taking comment on steps that could be considered to disallow the indefinite continuation of routine flaring.

Requirements for good flare performance

- EPA is seeking comment on a requirement that owners and operators install a back pressure regulator or continuously monitor the vent gas flow rate to ensure it is above a minimum level when vent gas is sent to a flare or enclosed combustion device, including whether there are situations where monitoring the vent gas flow is unnecessary.

Strengthening Requirements for Pneumatic Pumps

Key changes since the November proposal

- Based on comments and information received during the public comment period on the November 2021 proposal, EPA is proposing a zero-emissions standard for all “pneumatic pump affected facilities.” This means that pumps used at an affected facility should not be driven by natural gas. EPA sought comment on this issue as part of the November proposal.
- At sites that do not have access to electricity, owners/operators would be allowed to use natural gas-driven pneumatic pumps if they demonstrate that it is not technically feasible to use pneumatic pumps that are not driven by natural gas. In these cases, owners/operators would have to use the emissions from the gas-driven pumps by routing them to a process on site. If routing emissions to a process is not feasible, owner/operators would have to control emissions, with the requirement depending on the number of pumps on site.

Key areas where EPA is seeking comment and information:

- EPA is seeking information on several aspects of collecting emissions from natural gas-driven pumps and routing them to a process, including:
 - Information describing specific situations where owners have captured gas from pneumatic pumps and routed it to a beneficial use;
 - Information on the specific processes and types of equipment needed to capture and route the emissions, along with the costs.
 - Information related to the Agency’s understanding that routing emissions to a process reduces emissions by 100 percent; and
 - Information about situations where a vapor recovery unit would be needed to enable the use of emissions from a pneumatic pump, along with the costs of those units.

Strengthening Requirements for Pneumatic Controllers

Key changes since the November proposal

- The supplemental proposal would update the definition of “affected facility” for pneumatic controllers to be the collection of all natural gas-driven controllers at a well site, centralized production facility, onshore natural processing plant, or compressor station.
- Like the November proposal, the supplemental proposal would require pneumatic controller affected facilities to have zero methane and VOC emissions, with the exception of sites in Alaska that do not have access to grid electricity. At those sites, owners and operators would be required to use low-bleed controllers, and allowed to use high-bleed controllers only upon a showing of functional needs.

- The supplemental proposal would remove exemptions for natural gas-driven controllers with emissions that are routed to a process, as well as for self-contained controllers. The proposal clarifies that these controllers, which should not emit methane and VOCs if they are properly maintained, can be used to meet a zero-emissions standard.

Key areas where EPA is seeking comment and information:

- EPA is seeking:
 - Information on the frequency of use of self-contained controllers and controllers that route to a process, as well as confirmation of related limitations and costs;
 - Information to support the Agency’s understanding that self-contained controllers and controllers that route to a process achieve a 100 percent reduction in emissions when they are properly maintained and operated; and
 - Information that may dispute EPA’s conclusion that for all sites in all segments of the oil and natural gas industry, there is a technically feasible option for use of pneumatic controllers that do not emit methane or VOCs.

Adding Presumptive Standards for Liquids Unloading

Key changes since the November proposal

- The supplemental proposal no longer considers all liquids unloading at existing wells to be a modification, and instead solicits comments on what actions should be considered a modification.
- EPA is proposing a presumptive standard of zero methane emissions for liquids unloading events at existing wells, which aligns with the standard for liquids unloading at new and modified wells. That standard would require liquids unloading to be conducted with zero methane and VOC emissions.
- Where it is technically infeasible or not safe to meet the zero emissions standard, the Agency is proposing to require that owners and operators employ best management practices to minimize venting of emissions to the maximum extent possible.
- In addition, the Agency is proposing reporting requirements for well liquids unloading operations. Owners and operators who use methods that vent to the atmosphere would have to document why it is not feasible to use a non-venting method for technical, safety or economic reasons, along with the best management practices used to minimize emissions during each liquids unloading operation.

Key areas where EPA is seeking comment and information:

- EPA is seeking comment on whether several operational scenarios that involve well liquids unloading events could constitute a modification:

- The first time well liquids unloading occurs in the life of the well;
 - The first time that well liquids unloading occurs after a well is fractured or refractured;
 - A change in the type or method of well liquids unloading; or
 - Ongoing liquids unloading as part of a regular operational schedule.
- While EPA is proposing to apply the proposed standards to all well liquids unloading operations to make implementation easier, the Agency is seeking comment on an option co-proposed in November, which would apply standards only to wells with liquid unloading operations that cause vented emissions.

Updating Proposed Requirements for Centrifugal Compressors

Key changes since the November proposal

Dry seal centrifugal compressors

- In the November 2021 proposal, EPA sought comment on whether the Agency should consider developing standards for dry seal compressors. Based on information the Agency received, EPA is proposing standards for new and existing dry seal compressors, which previously have not been regulated.
- Owners or operators of dry seal compressors would be required to maintain the volumetric flow rate at or below 3 standard cubic feet per minute to prevent emissions.

Wet seal centrifugal compressors

- EPA also is proposing to require that emissions from new, modified and reconstructed wet seal centrifugal compressors reduce methane and VOC emission by 95 percent. This can be achieved by capturing and routing emissions from the wet seal degassing system to a combustion device. As a compliance alternative, EPA is proposing to allow owners and operators to meet the 95 percent reduction requirement by routing the emissions to a process.
- For existing wet seal compressors, EPA is proposing a presumptive standard of a volumetric flow rate of 3 standard cubic feet per minute. As a compliance alternative, EPA is proposing to allow owners and operators to reduce methane emissions by 95 percent or greater by routing emissions to a control device or to a process.
- Self-contained wet seal centrifugal compressors would have to comply with the standard for dry seal compressors.

Key areas where EPA is seeking comment and information:

- EPA is seeking comment on a number of aspects of the proposed requirements for centrifugal compressors, including:

- The assumption that capturing gas and routing it to a process reduces emissions by 95 percent or more; and
- The prevalence of owners and operators currently complying with rules by routing emissions from a wet seal fluid degassing system to a process, and the need for a vapor recovery unit to route the emissions.
- EPA is requesting comments on whether incorporating the compliance options for wet seal compressors from its 1984 NSPS for natural gas processing plants into the current rulemaking would provide more regulatory consistency for owners, operators and air agencies than the proposed compliance option to route emissions to a control or process (for new, modified and reconstructed compressors) or the proposed 3 standard feet per cubic minute emissions limit (for existing compressors) for centrifugal compressors located at natural gas processing plants.
- EPA also is seeking additional information on compressors using mechanical wet seal designs and other wet seal compressor designs that are inherently low-emitting, along with the related emissions information.

Changes to Proposed Requirements for State and Tribal Plans

Key changes since the November proposal

- EPA’s supplemental proposal includes more detailed requirements for states as they develop plans to reduce emissions from existing oil and natural gas sources. These include:
 - Criteria for determining whether existing state programs can be considered equivalent to the presumptive standards, and
 - Requirements for the types of information and evidence states must provide if they want to apply a less-stringent standard to a particular facility or type of facility, based on factors such as the source’s age or the physical impossibility of installing emissions control equipment. Those requirements include considering communities most affected by and vulnerable to the impact of the emissions from those facilities.
- The supplemental proposal also adds detail to a requirement in the November 2021 proposal that states conduct meaningful public engagement during development of their existing source plans. EPA would evaluate states’ demonstrations of meaningful engagement in determining whether their plans are complete.
 - EPA is proposing to require meaningful engagement with “pertinent stakeholders.” The supplemental proposal would define those stakeholders as including, but not being limited to, industry, small businesses, and communities most affected by and/or vulnerable to the impacts of a state plan or plan

revision. States also would be required to reach out to Tribal nations affected by and or/vulnerable to the impacts of a plan or plan revision.

- EPA is proposing to require states to submit their plans to EPA for review within 18 months after the final Emissions Guidelines are published in the Federal Register.
- States would be required to impose a compliance deadline on existing sources that is no later than 36 months after the state plan is due to EPA.

Key areas where EPA is seeking comment and information:

- EPA is seeking comments on several aspects of the supplemental proposal, including:
 - A proposed requirement that states demonstrate that an existing source cannot reasonably apply a standard as stringent as the presumptive standard EPA has proposed, a proposed framework for the states' development of less stringent standards, and proposed requirements for making conditions justifying the less stringent standard federally enforceable;
 - Proposed requirements that states consider communities most affected by and vulnerable to the impact of the emissions from those facilities in determining a less-stringent standard for a source;
 - The proposed definitions of "meaningful engagement" and "pertinent stakeholders," along with examples or models of states' meaningful engagement, including best practices and challenges;
 - How meaningful engagement should apply to pertinent stakeholders inside and outside the borders of the state that is developing the plan (for example, whether the state should contact affected communities in another state directly, or coordinate with the neighboring state or tribes);
 - Comment on the proposed 18-month state plan submission deadline and EPA analysis supporting that; and
 - Whether states would need additional time, and how much time, in plan development to account for instances where they consider a source's remaining useful life and other factors.

[Changes to Protocol for using Optical Gas Imaging for Leak Detection \(Appendix K\)](#)

Key changes since the November proposal

- EPA is proposing several updates to “Appendix K,” the protocol for using optical gas imaging (OGI) that EPA included in the November 2021 proposal. Appendix K would apply only if a rule specifies that it should be used. For the oil and natural gas rules, it would apply to OGI surveys used to detect leaks at onshore natural gas plants.
- EPA made changes to several aspects of training requirements in response to comments. For example, under the supplemental proposal:
 - Classroom refresher training would be required every two years instead of annually. EPA is clarifying that “classroom” can be online or in person;
 - On the final field test, trainees would be allowed to miss up to 10 percent of leaks on the survey test if the senior OGI camera operator finds more than 10 leaks during the final field test;
 - EPA has also proposed separate requirements for retraining so an operator who must retrain does not have to repeat the initial training.
 - EPA is proposing to add some grandfathering requirements for current OGI camera operators.
- The supplemental proposal would classify a person as a “senior OGI camera operator,” if they have logged 1,400 survey hours during their career, including 40 hours in the past 12 months, and have developed or completed the classroom training. Senior OGI operators who performed monitoring as part of initial field training, retraining, or while auditing other operators could include those monitoring hours in determining senior OGI camera operator classification.
- EPA also is proposing to reduce the length of quarterly audits from four hours to two hours and to allow operators to miss up to 10 percent of leaks if the senior OGI camera operator finds more than 10 leaks during the audit.
- The supplemental proposal would update The schedule for rest every 30 minutes.
- The supplemental proposal also would update some proposed technical requirements for OGI use, such as dwell time and camera requirements.

Key areas where EPA is seeking comment and information:

- EPA is seeking comment on:
 - Ways that an OGI camera operator can ensure an adequate delta-T exists during monitoring surveys for cameras that do not have a built-in delta-T check function;
 - How dwell time could be based on the scene while still accounting for the differences in the complexity of scenes or ways to ensure that OGI camera operators survey a scene for an adequate amount of time without specifying a dwell time;
 - Whether audit frequency should be reduced, what a reduced frequency should

be; and the basis for the reduced frequency; and

- Empirical data on the necessity of rest breaks when conducting OGI surveys, or the link between operator performance and the length of the survey.

For more information

- [To read an overview of the proposal, please see the overview fact sheet.](#)
- [For a more detailed list of areas where the Agency is requesting comment, please see the “Comment Solicitation” memo and spreadsheet.](#)