U.S. ENVIRONMENTAL PROTECTION AGENCY

OFFICE OF INSPECTOR GENERAL

Improving air quality

EPA Should Conduct More Oversight of Synthetic-Minor-Source Permitting to Assure Permits Adhere to EPA Guidance

Report No. 21-P-0175 **July 8, 2021**

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Abbreviations

CAA	Clean Air Act
CAA CMS	Clean Air Act Stationary Source Compliance Monitoring Strategy
CDPHE	Colorado Department of Public Health and Environment
C.F.R.	Code of Federal Regulations
ECD	Enclosed Combustion Device
EPA	U.S. Environmental Protection Agency
ICIS	Integrated Compliance Information System
NSPS	New Source Performance Standards
OAQPS	Office of Air Quality, Planning, and Standards
OAR	Office of Air and Radiation
ODEQ	Oklahoma Department of Environmental Quality
OIG	Office of Inspector General
TPY	Tons Per Year
VOC	Volatile Organic Compounds

Cover Photos: Enclosed combustion devices, a type of pollution control equipment often covered by synthetic-minor-source permitting limitations, at natural gas extraction facilities. (EPA photos)

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U.S. Environmental Protection Agency
Office of Inspector General

21-P-0175
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At a Glance

Why We Did This Audit

We conducted this audit to determine whether the U.S. Environmental Protection Agency and state and local agencies provide sufficient oversight to assure that synthetic-minor sources of air emissions comply with the limits in their air permits.

Synthetic-minor sources are facilities that agree to restrictions in their permits to reduce their actual emissions below major-source thresholds to avoid being major sources of air pollution under Clean Air Act permitting programs. Major sources are the largest emitters of air pollution and are subject to stringent permitting and compliance requirements.

This audit addresses the following:

- *Improving air quality.*

This audit addresses a top EPA management challenge:

- *Overseeing states implementing EPA programs.*

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EPA Should Conduct More Oversight of Synthetic-Minor-Source Permitting to Assure Permits Adhere to EPA Guidance

What We Found

While the EPA oversees state and local compliance monitoring for synthetic-minor-source permits, the EPA conducts only limited oversight of the permits themselves. The EPA has issued guidance to state and local agencies to develop enforceable permit limitations in synthetic-minor-source permits, but the Agency does not review permits to assure the agencies meet this guidance.

Without clear and enforceable limitations in synthetic-minor-source permits, facilities may emit excess pollution that would otherwise subject them to the more stringent requirements of the Clean Air Act major-source permitting programs.

We reviewed 16 natural gas extraction industry synthetic-minor-source permits from Colorado and Oklahoma and found that many of the permit limitations did not adhere to the EPA's guidance. For example, in those permits, we found that 102 of 529 permit limits did not have sufficient information within the permit or the permit's supporting documentation to determine whether the limits were technically accurate. We also found that 26 limits did not specify the method for assessing compliance. In addition, 55 limits did not have sufficient monitoring requirements to determine whether the facility's assumed pollution reduction from pollution control devices was being achieved. This could result in a synthetic-minor facility emitting pollutants at or above major-source levels without being detected.

In addition, we found that the EPA had not communicated several key expectations for synthetic-minor-source permitting to state and local agencies via guidance. Further, Oklahoma does not allow the public to participate in its permitting process for certain synthetic-minor-source permits, as required by EPA regulations. EPA staff said this may be the case in other states as well.

Recommendations and Planned Agency Corrective Actions

We recommend that the EPA (1) develop and implement an oversight plan for synthetic-minor-source permitting; (2) update its practical enforceability guidance; (3) assess EPA studies and other relevant information on enclosed combustion devices during its next review of applicable regulations to determine whether revisions to monitoring, record-keeping, and reporting requirements are needed; (4) develop and issue new guidance that includes key EPA expectations for synthetic-minor-source permitting; and (5) take steps to assure that all states adhere to public participation requirements for synthetic-minor permits. All recommendations are resolved with corrective actions pending.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

THE INSPECTOR GENERAL

July 8, 2021

MEMORANDUM

SUBJECT: EPA Should Conduct More Oversight of Synthetic-Minor-Source Permitting to Assure Permits Adhere to EPA Guidance
Report No. 21-P-0175

FROM: Sean W. O'Donnell

TO: Joseph Goffman, Acting Assistant Administrator
Office of Air and Radiation

This is our report on the subject audit conducted by the Office of Inspector General of the U.S. Environmental Protection Agency. The project number for this audit was OA&E-FY19-0093. This report contains findings that describe the problems the OIG has identified and corrective actions the OIG recommends. Final determinations on matters in this report will be made by EPA managers in accordance with established audit resolution procedures.

The Office of Air and Radiation is responsible for the recommendations presented in this report.

In accordance with EPA Manual 2750, your office provided acceptable planned corrective actions in response to all five OIG recommendations. All recommendations are resolved, and no final response to this report is required. If you submit a response, however, it will be posted on the OIG's website, along with our memorandum commenting on your response. Your response should be provided as an Adobe PDF file that complies with the accessibility requirements of Section 508 of the Rehabilitation Act of 1973, as amended. The final response should not contain data that you do not want to be released to the public; if your response contains such data, you should identify the data for redaction or removal along with corresponding justification.

We will post this report to our website at www.epa.gov/oig.

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Chapter 1
Introduction

Purpose

The Office of Inspector General for the U.S. Environmental Protection Agency conducted this audit to determine whether the EPA and state and local agencies provide sufficient oversight to assure that synthetic-minor sources of air emissions comply with the limits in their air permits. Specifically, we focused on emission, operational, and production limits in the permits.

Top Management Challenge

This audit addresses the following top management challenge for the Agency, as identified in OIG Report No. 20-N-0231, *EPA's FYs 2020–2021 Top Management Challenges*, issued July 21, 2020:

- Overseeing states implementing EPA programs.

Background

The Clean Air Act, or CAA, permitting programs cover three types of facilities:

- **Major sources**, which are facilities that emit regulated pollutants over certain levels measured by tons per year or TPY, referred to as major-source thresholds. Major-source thresholds differ by permitting program and type of pollutant.
- **True-minor sources**, which are facilities that have the potential to emit regulated pollutants below major-source thresholds.
- **Synthetic-minor sources**, which are facilities that have the potential to emit regulated pollutants at or above major-source thresholds but that agree to enforceable restrictions to limit their emissions below these thresholds to avoid being subject to more stringent major-source requirements.[1] Such enforceable restrictions, also called limitations, are included in a facility's air permit.

Enforceable restrictions or limitations are conditions in air permits. If a facility does not adhere to its limitations, the state, local, or tribal permitting agency or the EPA may take administrative, civil, or criminal enforcement actions. This includes issuing a notice of violation, an order for the facility to come into compliance, or a fine. Citizens may also file a civil action suit against a facility for permit limitations violations.

[1] Synthetic-minor sources are referred to as "synthetic" because they would be major sources if not for their enforceable permit restrictions. Thus, they have "synthetically" become a minor source by accepting those restrictions.

Examples of enforceable restrictions are limiting a facility's operating hours or operating pollution control equipment to reduce emissions to a specified level. Figure 1 illustrates how a potential major source may choose to accept enforceable permit restrictions to avoid major-source permitting requirements.

Figure 1: New facility chooses to accept enforceable restrictions to avoid major-source-permitting requirements

Source: EPA OIG analysis of enforceable permit restrictions. (EPA OIG image)

By implementing enforceable permit restrictions on their potential to emit regulated pollutants, synthetic-minor sources can avoid certain costly requirements of CAA permitting programs that apply to major sources. These programs include Title V, Nonattainment New Source Review, and Prevention of Significant Deterioration. Appendix A summarizes these permitting programs and the corresponding levels of emissions that make a facility a major source under each program.

Based on data in the EPA's Integrated Compliance Information System for Air, known as ICIS-Air, there were 27,498 synthetic-minor sources and 12,282 major sources operating in the United States in 2019. The ratio of synthetic-minor sources to major sources has changed slightly over the last decade, with the proportion of synthetic-minor sources being 2 percent higher in 2019 than in 2011 and major sources being 2 percent lower.

State and local agencies conduct most permitting and oversight activities of synthetic-minor sources through permitting programs that have been approved by the EPA. This includes developing or writing facilities' specific permit limitations, as well conducting activities such as inspections to assure that facilities are in compliance with their permit limitations. The EPA is responsible for overseeing state and local agencies' permitting programs through support and evaluation activities by clearly describing objectives and expectations, such as

through guidance documents, to increase state and local agencies' ability to successfully implement program requirements.

Some synthetic-minor sources operate under a general permit rather than an individual, facility-specific permit. A general permit is a single permit that establishes terms and conditions that all facilities subject to that permit must comply with. The establishment of a general permit provides for emission limitations in a one-time permitting process and thus avoids the need to issue separate permits for each facility operating under the general permit. A state or local agency may develop general permits for a specific industry when there are a large number of facilities within that industry that need to be permitted.

Types of Synthetic-Minor-Permit Limitations

There are several types of limitations that can be used in a permit to restrict a synthetic minor's potential to emit below major-source thresholds. These include:

- **Emission limits**, which are restrictions over a given period of time on the amount of a pollutant that may be emitted from a source into the outside air.

- **Production limits**, which are restrictions on the amount of final product that can be manufactured or otherwise produced at a source.

- **Operational limits**, which include all other restrictions on the manner in which a source is run, including hours of operation, amount of raw material consumed, fuel combusted, or conditions that specify that the source must install and maintain add-on controls that operate at a specified emission rate or efficiency.

It is important to assure that the limitations in synthetic-minor-source permits are clear and enforceable and that synthetic-minor sources comply with these limitations. If a synthetic-minor-source permit did not have permit limitations, the facility would be considered a major source and subject to the more stringent requirements of the major-source permitting programs. Although these facilities are not major sources, they may still be significant emitters of regulated pollutants. This is particularly the case for synthetic minors considered to be SM-80 sources, which are a subset of synthetic-minor facilities that emit or have the potential to emit pollutants at 80 percent or more of major-source thresholds.

EPA Guidance on Synthetic-Minor Sources

The EPA has issued guidance for state agencies to use in developing synthetic-minor-source permits. Of particular importance in the guidance are two related concepts:

- **Federal enforceability** refers to whether the limitations placed on a source's potential to emit are enforceable by the EPA and private citizens as a legal and practical matter, thereby providing the public with credible assurances that otherwise major sources are not avoiding applicable CAA requirements.

- **Practical enforceability** refers to whether the permit provisions readily allow regulators to assess a facility's compliance with its permit limitations.

The EPA has also issued guidance for conducting compliance monitoring activities at synthetic minors considered to be SM-80 sources. The EPA's 2016 *Clean Air Act Stationary Source Compliance Monitoring Strategy*, known as the *CAA CMS*, describes the recommended frequency of full compliance evaluations at SM-80 sources, as well as the activities that inspectors should complete to assess compliance during full compliance evaluations.

Responsible Offices

Within the Office of Air and Radiation, or the OAR, the Office of Air Quality, Planning, and Standards, known as the OAQPS, is responsible for developing regulations and guidance related to air permitting, as well as providing high-level oversight of state and local air permitting programs. The Office of Enforcement and Compliance Assurance is responsible for developing guidance for state and local agencies to use in conducting compliance monitoring at permitted sources of air pollution and for overseeing state and local compliance monitoring programs. The EPA regions are also responsible for overseeing state and local air permitting and compliance monitoring programs.

Scope and Methodology

We conducted this performance audit from November 2019 to April 2021 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objective. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objective.

As detailed in Appendix B, we assessed the internal controls necessary to satisfy our audit objective.[2] In particular, we assessed the internal control components and underlying principles—as outlined in the U.S. Government Accountability

[2] An entity designs, implements, and operates internal controls to achieve its objectives related to operations, reporting, and compliance. The U.S. Government Accountability Office sets internal control standards for federal entities in GAO-14-704G, *Standards for Internal Control in the Federal Government* (also known as the Green Book), issued September 10, 2014.

Office's Green Book—significant to our audit objective. Any internal control deficiencies we found are discussed in this report. Because our audit was limited to the internal control components and underlying principles deemed significant to our audit objective, our audit may not have disclosed all internal control deficiencies that may have existed at the time of the audit.

To address our objective, we reviewed EPA policies and guidance related to synthetic-minor-source permitting and compliance monitoring. We also interviewed staff and managers in the OAQPS and the Office of Enforcement and Compliance Assurance.

We also reviewed synthetic-minor facilities in the natural gas extraction sector to assess whether synthetic-minor-source permit limitations and provisions adhered to EPA guidance and whether the facilities' inspections were consistent with EPA guidance. Specifically, we reviewed eight facilities in Oklahoma in Region 6 and eight facilities in Colorado in Region 8. We selected these states because they have among the highest number of synthetic-minor facilities in the natural gas extraction industry, according to the 2017 National Emissions Inventory. For each of the 16 facilities, we reviewed each active permit and the associated technical support documentation, referred to as the permit record, to assess whether permit limitations and associated provisions adhered to EPA guidance on synthetic-minor-source permitting. This included a total of 30 permits covering the 16 facilities. In total, we reviewed 523 limits, including:

- 310 unit-specific emission limits.
- 42 facilitywide emission limits.
- 171 production and operation limits.

For each of the 16 facilities, we also reviewed documentation related to full compliance evaluations conducted at the facilities to determine whether the facilities were inspected in accordance with EPA guidance on compliance monitoring activities.

We interviewed staff and managers from the OAQPS; the Office of Enforcement and Compliance Assurance; Regions 6 and 8; the Colorado Department of Public Health and Environment, known as CDPHE; and the Oklahoma Department of Environmental Quality, known as ODEQ.

Appendix C provides more details on our scope and methodology. Appendix D provides background information on the natural gas extraction industry.

Chapter 2
EPA Should Conduct Additional Oversight to Assure That Synthetic-Minor-Source Permits Meet Guidance

While the EPA oversees compliance monitoring activities at synthetic-minor facilities to assure that facilities comply with their permits, the EPA conducts minimal oversight of the permits themselves. The EPA has issued guidance for state and local agencies to use in developing synthetic-minor-source permit limitations to assure that the limits are enforceable as a practical matter, but the EPA does not assess whether state and local agencies have developed permit limits in accordance with this guidance. We found that 23 of the 30 synthetic-minor-source permits we reviewed in the natural gas extraction industry did not adhere to all elements of the EPA's guidance on practical enforceability. In cases where practical enforceability guidance was not met due to insufficient monitoring requirements, it could be more difficult to detect when a synthetic-minor source has violated its permit limitations or is actually emitting pollutants at a major-source level. The EPA should increase its oversight of synthetic-minor-source permits to better assure that limits adhere to EPA guidance and are practically enforceable.

EPA Policy Requires Oversight of Permitting Programs

Under the 1984 *EPA Policy on Oversight of Delegated Environmental Programs*, the Agency is responsible for overseeing state and local programs. The policy states that EPA oversight of delegated state programs should, among other things, enhance state capabilities to administer sound environmental protection programs through increased communication and a combination of support and evaluation activities. In addition, the policy calls for the EPA to clearly describe objectives and expectations for state environmental programs to increase the ability of state agencies to successfully implement program requirements and to increase the EPA's ability to provide appropriate assistance and evaluation. Examples of tools provided in the EPA's policy include detailed, up-front guidance on how program work should be performed.

In December 2020, the EPA issued its *National Permitting Oversight Policy*. The policy states that the EPA is responsible for ensuring permits and permitting programs conform with applicable laws and regulations. Additionally, the policy states that the EPA's regular oversight of permits and permitting programs is designed to identify and resolve emerging issues collaboratively with the permitting authority, such as a state or local agency, long before the issues pose a significant risk to the effectiveness of the program. This way, the EPA can avoid invoking procedures to withdraw program delegation, authorization, or approval.

EPA Conducts Oversight of Compliance Monitoring Activities at Synthetic-Minor Sources to Assure Facilities Comply with Permits

The Office of Enforcement and Compliance Assurance oversees state and local compliance monitoring activities including at SM-80s. According to the *CAA CMS*, states should conduct a full compliance evaluation of each SM-80 source once every five fiscal years and report the data to the ICIS-Air database.

Office of Enforcement and Compliance Assurance staff said that the EPA regional offices meet regularly with state and local agencies, and one of the issues they discuss is whether state and local agencies are having any problems meeting the requirements of the *CAA CMS*. Further, Office of Enforcement and Compliance Assurance staff receive a monthly *CAA CMS* report that identifies sources that are overdue for a compliance evaluation and contact the responsible EPA regional office for resolution.

The EPA regional offices audit state performance against *CAA CMS* goals through the State Review Framework reviews, which are completed every five years for each state. The following State Review Framework metrics are relevant to overseeing synthetic-minor sources: full compliance evaluation coverage of SM-80s, documentation of full compliance evaluation elements, and timeliness of high-priority violation determination and identification.

We found that Colorado and Oklahoma conducted compliance monitoring activities at the synthetic-minor natural gas production facilities we reviewed in accordance with the *CAA CMS*. All the facilities we reviewed had at least one full compliance evaluation conducted by the state between fiscal years 2015 and 2020, in accordance with the *CAA CMS*. In addition, reports from states' full compliance evaluations show that the CDPHE and the ODEQ generally included all activities that are supposed to be conducted during such evaluations. Further, compliance monitoring reports contained all the elements required by the *CAA CMS*.

EPA Conducts Limited Oversight of Synthetic-Minor-Source Permits

The EPA developed numerous guidance documents in the late 1980s and throughout the 1990s for state and local agencies to use in developing synthetic-minor-source permit limits so that the limits are practically enforceable. The guidance, however, has not been consolidated and lacks clarity on how to effectively limit facilities' potential to emit air pollution. In fiscal year 2020, the OAQPS issued training slides, titled "Setting Enforceable Potential to Emit Limits in Permits," that present important criteria from various EPA guidance documents. These slides were intended to promote consistency in how state and local agencies develop synthetic-minor-source permit limits, but they are not considered to be official guidance.

Neither EPA headquarters nor regional offices conduct regular or routine evaluations or review synthetic-minor-source permits and the limitations adopted by facilities to avoid major source status. The OAQPS only reviews synthetic-minor-source-permit limitations in cases where a Title V permit under review contains such limitations. This may occur when the Agency receives a petition to review a specific Title V permit. Title V permits are issued for major sources and some minor sources of air pollution and impose certain record-keeping and reporting requirements on facilities. Synthetic-minor limitations may be included in some Title V permits if the facility is a major source for some pollutants and a synthetic-minor source for other pollutants. Beyond Title V permits, OAQPS staff stated that they do not review synthetic-minor limitations, and the office does not receive synthetic-minor-source permits from the state and local agencies.

Region 8 staff told us that they do not oversee minor sources, synthetic or otherwise, because that is not considered to be one of their responsibilities. According to Region 8 staff, EPA headquarters has directed regions to focus their oversight activities on major sources. The only Region 8 responsibilities that relate to synthetic-minor oversight are (1) reviewing State Implementation Plans to modify state permitting programs and (2) assisting states with problems or issues, such as ones brought up during a permit's public comment period or in the media.

A State Implementation Plan is an EPA-approved plan that is made up of various air pollution control measures and activities that a state will implement to meet certain air quality standards.

Region 6 staff told us that the region does not routinely review synthetic-minor-source permits but that states notify the region when a synthetic-minor-source permit is released for public comment. Region 6 does not focus on synthetic-minor permits but may review a permit if the media reports a problem with the permit, the state received a significant comment on the permit, or a citizen complains about the permit.

Many Permits Reviewed Did Not Adhere to EPA Guidance on Practical Enforceability

EPA guidance on practical enforceability states that a permit's provisions should specify:

- A technically accurate limitation and the portions of the source subject to the limitation.
- The time period for the limitation, such as hourly, daily, monthly, or annually. A rolling annual limit, for example, is based on 12 consecutive months rather than a calendar year. When the month changes, the most recent prior 12 months, regardless of the calendar year, are used to determine compliance.

- The method to determine compliance, including appropriate monitoring, record-keeping, and reporting. Examples of this include monitoring and maintaining records on a facility's hours of operation and the amount of product produced.

We identified instances for each of these three elements where permits did not adhere to the EPA's guidance. Practical enforceability is key to permitting because it helps assure that a permit's provisions are written in such a way that regulators and citizens can assess a facility's compliance with its permit limitations. This helps assure that synthetic-minor-source facilities are not actually emitting pollution at major-source levels.

Many Synthetic-Minor-Source Permits or Permit Records Reviewed Did Not Include Sufficient Documentation to Verify Technical Accuracy of Limitations

To assure a synthetic-minor-source permit is practically enforceable, the state or local agency must establish technically accurate permit limitations that include the portions of the facility subject to the limitation. A technically accurate permit limitation is one that is "sound," "appropriate," and based on the most representative data available. We have concluded, based on EPA guidance and interviews with EPA staff, that in order for a reviewer to determine whether a limit is technically accurate, the permit or permit record should include information that supports the different elements that are relied upon to determine the limitation.

The technical accuracy of emission limits that rely on pollution control equipment, such as an enclosed combustion device—known as an ECD—or an engine catalyst system, is verifiable when the permit or permit record includes supporting information about the specific control equipment used. ECDs are intended to reduce volatile organic compounds, known as VOC, and hazardous air pollutant emissions that are known or suspected to cause cancer and other serious health problems. Engine catalyst systems are intended to reduce nitrogen oxides and carbon monoxide emissions.

These pollution control devices are included in air permits with an associated control efficiency, which can vary depending on the specific equipment and pollution control device used. The control efficiency is the percent of pollution emission reduction obtained from pollution control equipment. For example, the CDPHE generally assumes that ECDs reduce VOC and hazardous air pollutant emissions with a 95 percent control efficiency. For the technical accuracy of emission limits that rely on ECDs and engine catalysts to be verifiable, the assumption that the device obtains a specific control efficiency should be supported in the permit or permit record. Based on EPA guidance and interviews, such support could include emissions data from compliance tests, other source tests, or equipment vendor emissions data and guarantees.

Limits Reviewed Lacked Sufficient Supporting Documentation

In the permits we reviewed, 96 of the 523 limits were not adequately supported by documentation, such as underlying information about pollution control equipment with an assumed control efficiency, in the permit or permit record. This lack of critical supporting information prevented us from determining whether the limits contained errors and properly prevented the synthetic-minor source from operating at major-source levels.

Of the 96 limits that lacked adequate support, 35 relied on assumed control efficiencies from pollution control equipment designed to restrict emissions, such as ECDs and engine catalysts. In 20 of these 35 cases, the assumed control efficiency was 95 percent or greater, but neither the permit nor permit record provided documentation to support this assumption. Specifically, the permit and permit record did not include a manufacturer's guarantee of control efficiency, testing data, model inputs, or other information that could be used to validate this control efficiency assumption. Staff and managers from the CDPHE told us that the 95 percent control assumption efficiency for ECDs is based on the manufacturer's guaranteed control efficiency and anecdotal field testing in Colorado, but we found no support in the permit or permit record for that assumption in these cases.

We found that 41 of the 96 limits could not be verified because there was insufficient underlying support for the basis of the emission factor used. An emission factor is a representative value designed to relate the quantity of a pollutant released to the atmosphere with an activity associated with the release of that pollutant. Such factors facilitate the estimation of emissions from various sources of air pollution. For example, one permit simply cited "Conservative [Texas Commission on Environmental Quality] … emission factors" as the source of the emission factor, but there was no other citation in the permit or permit record that would allow a third party to identify what the emission factor is based on or where to find that information.

Information on which permit limits are based needs to be as complete and transparent as possible so that permit writers, the public, and the EPA can assess whether pollution reductions are likely to occur as intended. Not providing sufficient underlying support for what permit limits are based upon undermines the ability to conduct such an assessment.

Instruction on Documentation Has Not Been Clearly Communicated in EPA Guidance

EPA guidance from the 1980s and 1990s does not provide permitting authorities with instruction on what supporting information should be included in the permit or permit record. The guidance is decades old, not specific to any particular industry or synthetic-minor-source permitting,

contained within multiple discrete documents, and, in one case, only available in draft form. The training slides that the EPA developed in fiscal year 2020 present criteria from various guidance documents. It also provides information and examples of technically accurate limitations that are not included in prior guidance. The EPA, however, has not updated its guidance documents to include, or expand upon, the information in the training.

In addition, we found that OAQPS permitting staff and managers have expectations for assuring limits are practically enforceable, but those expectations have not been clearly communicated to state agencies. For example, during one interview, OAQPS staff and managers told us that supporting documentation, such as a manufacturer specification sheet for an ECD, should be contained within the permit record. This expectation is not stated in any formal guidance document.

Some Synthetic-Minor-Source Permit Limits Did Not Include Time Period That Was Consistent with EPA Guidance

To assure a synthetic-minor-source permit is practically enforceable, the permit must specify a time period for the limitation—generally, hourly, daily, or monthly—but not exceed an annual limit on a 12-month rolling basis. The time periods for all limits should readily allow for demonstration of compliance.

The time periods associated with 25 of the 523 permit limits we reviewed did not adhere to EPA guidance. Of the 25 permit limits, 11 were for facilities in Colorado. We found nine emission limits in one permit that were annual limits with no rolling monthly averages. The CDPHE told us that this was a permit-writer error rather than a systemic issue in Colorado permitting. We agree with that assessment, given that we did not find any evidence to contradict this explanation. Separate from this permit-writer error, two Colorado permits contained an operational limit for which the time period did not adhere to EPA guidance.

We found that 14 of the annual emission limits in the Oklahoma permits we reviewed did not adhere to EPA guidance on time periods. In these cases, the permits did not clearly state that the emission limits were to be based on a 12-month rolling total or provide corresponding short-term limits, such as pounds per hour, that would make the limit easier to enforce. The permit writers used a template that labeled annual emission limits as TPY rather than on a rolling annual basis.

It is more difficult for inspectors to determine compliance with limits that have longer time periods. For example, EPA guidance explains that an inspector could not verify compliance for an emissions unit with only monthly and annual production, operational, or emission limits if the inspection occurred at any time except at the end of a month. Further, if there is a compliance problem, such as

excess emissions from a particular piece of equipment, longer time periods could mean that the issue is not detected by the facility or an inspector until months after the problem began. The sooner a violation is identified, the less likely excess emissions will occur.

Some Synthetic-Minor-Source Permits Did Not Specify Method to Determine Compliance with Certain Limitations or Lacked Sufficient Monitoring Requirements

The final component of establishing a practically enforceable limit requires the permit writer to specify the method to determine compliance, including appropriate monitoring, record-keeping, and reporting requirements, for each limit in the permit. Based on 1990 draft EPA guidance, limitations must be easily measurable and allow no subjectivity in their compliance determinations. In particular, when permits include a requirement to operate a control device at a particular control efficiency level, the permits should also contain monitoring requirements for the specific parameters cited in the permit or those which ensure the efficiency of the unit as required in the permit. A parameter, such as temperature, is a key indicator of system performance that is correlated with the control efficiency obtained by the pollution control device. Such requirements allow a permitting agency to instantaneously verify a source's compliance with its limits.

In Oklahoma, 26 Permit Limits Lacked Specified Method to Determine Compliance

For 26 of the 230 limits we reviewed in Oklahoma permits, the permits did not specify a method for determining compliance. The majority of these 26 limits are VOC emission limits associated with engines in a permit that does not require VOC emissions testing. Other limits are based, in part, on production limits, such as limits on throughput. The production limits are required to be tracked and monitored monthly, but the permits did not clearly explain how monthly tracking of production limits demonstrates compliance with emission limits. In these instances, the connection between the production limits and the emission limits were not described.

Vague permitting conditions, such as unclear or missing statements on the method for determining compliance, can allow facilities unintended flexibility. For example, a facility may discover that its typical method for determining compliance with an emission limit generates emissions estimates in excess of the emission limit during a compliance period. If the method of compliance is not stated, the facility has the option to use a more favorable estimation technique that may not show the facility has exceeded its permit limit.

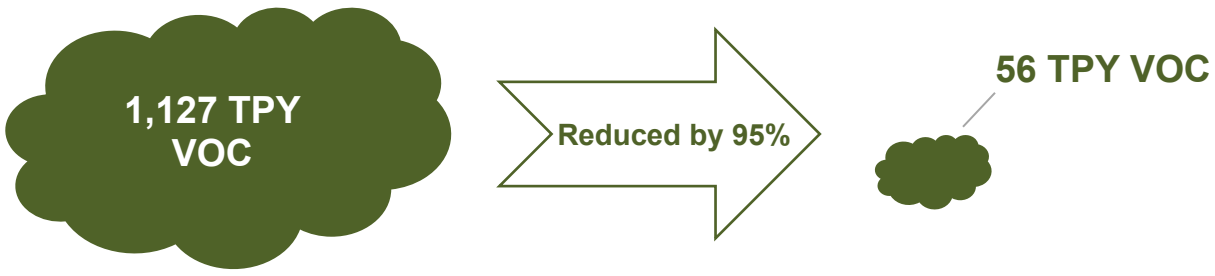
Fifty-Five Limits Did Not Contain Sufficient Monitoring Requirements to Assure That Assumed Control Efficiency Was Being Met

Based on the permits we reviewed, synthetic-minor-source permits often rely on the assumed control efficiencies of add-on control devices, such as an ECD or engine catalyst system, to achieve emission reductions below major-source thresholds. For 55 of the 523 permit limits we reviewed, we found that the permit lacked sufficient direct testing or parametric monitoring to assure that the assumed control efficiency of control devices was being met.

Parametric monitoring measures key indicators of system performance that are correlated with the control efficiency obtained by the pollution control device. These parameters are generally operational or design parameters of the process or the air pollution control device that are known to affect the emissions levels from the process or the control. An example of a potential way to conduct parametric monitoring for ECDs is measuring combustion chamber temperature, as this is considered to be a design parameter that impacts ECD combustion efficiency. Examples of parametric monitoring for engine catalysts include measuring temperature, changes in pressure, and the presence of oxygen.

Figure 2 shows how the assumed control efficiency of a control device, such as an ECD, reduces a facility's potential to emit below major-source thresholds, based on one of the permits we reviewed. In this example, a facility emits 1,127 tons of VOC if it operates for an entire year, which would subject the facility to major-source requirements. Facility management may choose to install an add-on control with an assumed 95 percent VOC control efficiency, which would theoretically reduce the facility's emissions to 56 tons of VOC per year. If the facility emits less than 100 tons of VOC per year, it would be considered a synthetic-minor-source and would not have to follow major-source requirements. If the ECD did not achieve 95 percent VOC control efficiency, the facility could be emitting at major-source levels without having to follow major-source requirements.

Figure 2: How permitting authorities may use a 95 percent control efficiency assumption for an emissions control device to reduce potential emissions



Source: OIG analysis of potential VOC emission reduction from a pollution control device. (EPA OIG image)

Fifty emission limits we reviewed were established based on an ECD operating at a 95 percent or greater control efficiency. Most of the applicable permits included requirements to periodically verify that a pilot light was operating and to check for visible emissions. The pilot light is necessary to combust waste gas flowing to the combustion device and is the difference between achieving a 0 percent (no pilot) and potential 95 percent control. Visible emissions indicate incomplete combustion and demonstrate that the device is not operating correctly. Verifying that the pilot light is operating and checking for visible emissions may indicate whether an ECD is operating properly, but we conclude that these are not parametric measures that accurately show what control efficiency the device is actually achieving. Thus, these measures do not assure that the device is continuously meeting its assumed control efficiency of 95 percent.

In addition, many emission limits we reviewed were established based on an engine catalyst operating at a specific control efficiency. While reviewing Colorado permits containing engine catalysts, we found that facilities were required to conduct daily, weekly, or monthly parametric monitoring, depending on the parameter being monitored and the facilities' permitted emissions. This was in addition to quarterly or semiannual engine emissions testing. Therefore, these facilities were subject to emissions testing and frequent parametric monitoring to help assure the assumed control efficiency of the catalyst was being met.

Facilities operating under Oklahoma's general permit, on the other hand, were required to conduct quarterly testing and to install parametric monitoring equipment, but the general permit did not require frequent parametric monitoring. The Oklahoma individual permits we reviewed did not contain monitoring or record-keeping requirements beyond quarterly testing. While quarterly testing assures that catalyst systems are operating as intended four times per year, the lack of frequent parametric monitoring means that short-term excess emissions from engines may go undetected.

Challenges Exist to Parametric Monitoring

Significant challenges exist to direct testing and parametric monitoring of ECDs. Natural gas extraction facilities tend to be in remote, unmanned locations and may be far from an adequate power source necessary to run monitoring equipment. Further, testing and monitoring can be expensive, difficult, and unsafe given the design of ECDs and their placement at natural gas extraction facilities. The EPA is aware of these challenges and is studying alternatives to existing compliance methods in EPA Region 8.[3] In the meantime, the EPA has pointed to the New Source Performance Standards,

[3] The study Region 8 is conducting is called *Measuring Enclosed Combustion Device Emissions Using Portable Analyzers - Phase 1: Test Summaries*. The EPA is conducting this research in conjunction with the Wyoming Department of Environmental Quality.

known as the NSPS, that cover sources in the natural gas extraction industry as containing visible emissions and pilot light monitoring as the existing requirements for assuring compliance with the assumed control efficiency.[4] EPA staff stated that they would not expect states to have more stringent requirements than what is in EPA regulations.

The standards reflect the "best system of emission reduction" which the EPA determines has been adequately demonstrated. They are subject to revisions given the potential for process improvements and technology advances that would alter the best system of emission reduction. CAA Section 111(b)(1)(B) requires the EPA to review and, if appropriate, revise the NSPS at least every eight years unless the EPA administrator determines that the review is not appropriate in light of readily available information on the efficacy of the standard.

The NSPS in 40 C.F.R. Part 60 Subpart OOOO were due for review under CAA section 111(b)(1)(B) in 2020. The Agency has not reviewed the standards because it has been engaged in reconsideration and revisions of Subparts OOOO and OOOOa standards. EPA staff also told us that the EPA has until 2024 to review the standards in Subpart OOOOa and that, since the types of sources regulated by Subparts OOOO and OOOOa are within the same industry sector, a review of Subpart OOOOa could be planned and executed to also include review of Subpart OOOO.

Lack of Parametric Monitoring Could Result in Unidentified Violations of Permit Limitations

Ultimately, when there is no monitoring associated with a limitation or when the monitoring is insufficient to describe the actual control efficiency of a control device, the state may not be able to obtain sufficient evidence to determine whether a limitation is being violated. In addition, depending on the severity of a violation, the facility could unknowingly be operating as a major source.

Region 8, in conjunction with the Wyoming Department of Environmental Quality, is conducting a study to better understand ECDs and develop an alternative method for demonstrating compliance with permitted control efficiency requirements. Preliminary results from this ongoing study, along with results from a 2014 EPA study, indicate that the control efficiency of these devices can vary and that the devices may fall far below their assumed 95 percent efficiency for unknown periods of time.[5] In the 2014 study, EPA

[4] 40 C.F.R. Part 60 Subparts OOOO and OOOOa. The title of 40 C.F.R. Part 60 Subpart OOOO is "Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution for which Construction, Modification or Reconstruction Commenced After August 23, 2011, and on or before September 18, 2015." The title of 40 C.F.R. Part 60 Subpart OOOOa is "Standards of Performance for Crude Oil and Natural Gas Facilities for which Construction, Modification or Reconstruction Commenced After September 18, 2015."

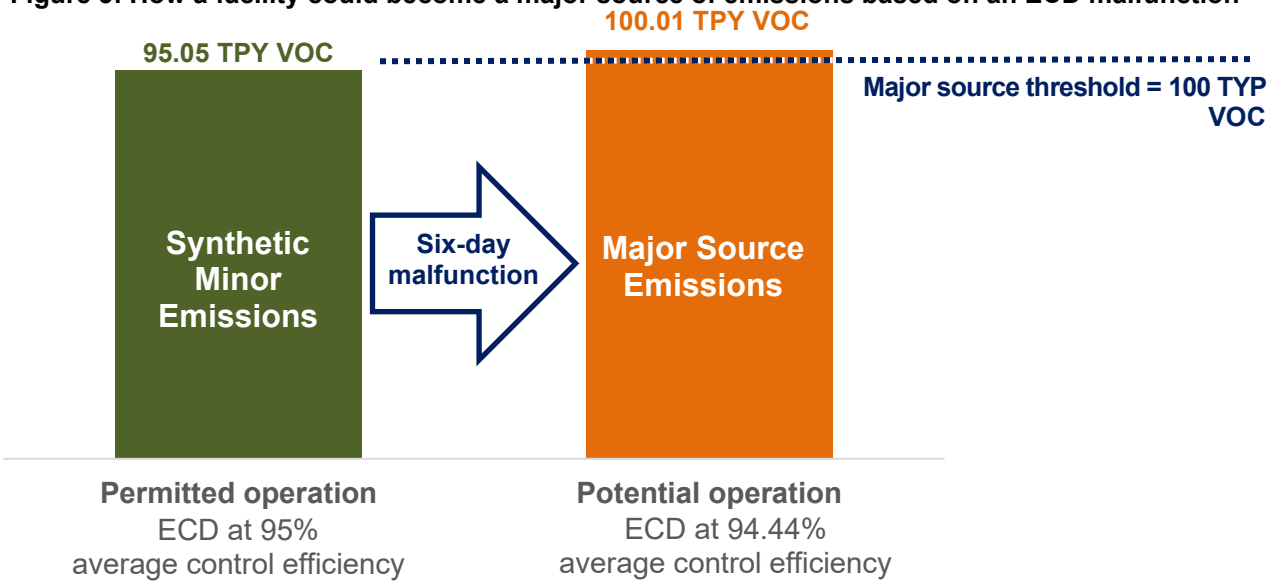
[5] The title of the 2014 study is *Advancing Understanding of Emissions from Oil and Natural Gas Production Operations to Support EPA's Air Quality Modeling of Ozone Non-Attainment Areas*.

researchers found that an ECD at one of the eight sites they studied was operating at a 60 percent control efficiency.

If a facility's actual control efficiency falls below the assumed control efficiency, it could cause the facility to unknowingly exceed its permit limits and become a major source of emissions. As an example, for one facility we reviewed, if only one of the four permitted ECDs malfunctioned and achieved a maximum 60 percent control efficiency for approximately six days, the facility would violate its permit limits and become a major source of emissions. The violation may not be detected without sufficient monitoring. This is depicted in Figure 3.

If the facility experiences a small malfunction, such as a 94 versus a 95 percent control efficiency over the majority of the compliance period, the facility could become a major source of emissions, perhaps without being detected. The CDPHE told us that facility-conducted field testing in Colorado shows ECDs meet a 95 percent control efficiency most of the time.

Figure 3: How a facility could become a major source of emissions based on an ECD malfunction[a]



Source: OIG analysis of potential VOC emission increases due to a short-term ECD malfunction. (EPA OIG image)

[a] Example is based on a hypothetical situation where a short-term malfunction at one of the facilities we reviewed could result in an ECD control efficiency of 60 percent and cause the facility to release major-source levels of emissions. Values are rounded. Emissions presented in the above columns are based on multiple pieces of permitted equipment, with a malfunction at only one piece of permitted equipment.

Appendix E provides a case study of the wood biomass industry, in which synthetic-minor facilities without sufficient monitoring requirements were found to be emitting pollution over major source thresholds.

Conclusions

The EPA is responsible for overseeing state and local permitting and compliance monitoring activities. The EPA oversees state and local compliance monitoring activities for synthetic-minor sources through the *CAA CMS* and State Review Framework reviews, but it conducts limited oversight of state and local synthetic-minor-source permitting. Neither EPA headquarters nor EPA regional offices regularly review synthetic-minor-source permitting. Existing guidance for establishing synthetic-minor-source permits is dated, scattered across numerous documents, and lacks clarity on how to effectively limit the potential to emit.

In our reviews of Colorado and Oklahoma synthetic-minor-source permits, we found that state and local agencies are largely meeting EPA expectations for compliance monitoring, but many synthetic-minor-source permit limits do not adhere to EPA guidance on practical enforceability. In particular, the Agency should provide better guidance on how state and local agencies can establish limits that are technically accurate. For synthetic-minor-source permits in the natural gas extraction sector, the Agency should place additional emphasis on how state and local agencies can assure that assumed control efficiencies from pollution control devices are being achieved.

Recommendations

We recommend that the assistant administrator for Air and Radiation:

1. Update Agency guidance on practical enforceability to more clearly describe how the technical accuracy of a permit limit should be supported and documented. In updating such guidance, the Office of Air and Radiation should consult and collaborate with the Office of Enforcement and Compliance Assurance, the Office of General Counsel, and the EPA regions.

2. In consultation with the EPA regions, develop and implement an oversight plan to include:

    a. An initial review of a sample of synthetic-minor-source permits in different industries that are issued by state, local, and tribal agencies to assess whether the permits adhere to EPA guidance on practical enforceability, including limits that are technically accurate; have appropriate time periods; and include sufficient monitoring, record-keeping, and reporting requirements.

    b. A periodic review of a sample of synthetic-minor-source permits to occur, at a minimum, once every five years.

c. Procedures to resolve any permitting deficiencies identified during the initial and periodic reviews.

3. Assess recent EPA studies of enclosed combustion device performance and compliance monitoring and other relevant information during the next statutorily required review of 40 C.F.R Part 60 Subparts OOOO and OOOOa to determine whether revisions are needed to monitoring, record-keeping, and reporting requirements for enclosed combustion devices to assure continuous compliance with associated limits, and revise the regulatory requirements as appropriate.

Agency Response and OIG Assessment

The Agency agreed with all three recommendations and provided acceptable corrective actions and completion dates. The recommendations are resolved with corrective actions pending. The Agency's full response is in Appendix F.

For Recommendation 1, the OAR will update Agency guidance on the practical enforceability of permit limitations, including, but not limited to, the EPA's June 13, 1989 *Guidance on Limiting Potential to Emit in New Source Permitting*, to describe how the technical accuracy of a permit limit should be supported and documented. In updating its guidance, the OAR will consult and collaborate with the Office of Enforcement and Compliance Assurance, the Office of General Counsel, and the EPA regions. We agree that these planned actions address our recommendation. Recommendation 1 is resolved with corrective actions pending.

For Recommendation 2, the OAR, in consultation with EPA regional offices, will develop and implement an oversight plan for synthetic-minor-source permits in accordance with statutory and EPA regulatory requirements. The OAR's plan will include the specific elements identified in Recommendation 2. We agree that these planned actions address our recommendation. Recommendation 2 is resolved with corrective actions pending.

For Recommendation 3, we initially recommended that the OAR develop technical support information for natural gas production facilities that includes defining the parameters upon which the control efficiency for ECDs is based and methods for measuring those specific parameters so that permitting authorities can verify compliance with permit limits. The OAR agreed that monitoring, record-keeping, and reporting requirements associated with synthetic-minor permit emission limitations serve to ensure that the established enforceable limits are being met and are important to meet the ongoing compliance requirement in EPA regulations. The OAR also agreed that facilities under synthetic-minor status should generate records to demonstrate continuous compliance with permit emission limits.

The OAR disagreed with the OIG's implication in the original recommendation that inadequate technical information regarding monitoring, record-keeping, and

reporting for ECDs was an impediment to verifying emission limits associated with the oil and gas industry. The OAR pointed to federal regulations in 40 C.F.R Part 60 Subparts OOOO and OOOOa and 40 C.F.R Part 63 Subpart HH as evidence that properties related to effective combustion are well-understood and depend on gas composition, gas flow, residence time in the combustion zone, and the continuous presence of a pilot light to ensure ignition. The OAR further pointed to Subpart OOOOa requirements for initial testing of ECDs by the owner or operator—or a certification test by the manufacturer—for continuously monitoring for a pilot flame, for monthly visible emissions testing, and for continuously monitoring gas flow to the unit for certain ECDs.

The OAR was amenable to revising the existing monitoring, record-keeping, and reporting requirements for pollution control equipment at oil and gas facilities if new data and information warrant changes. The OAR cited the statutorily mandated technology review for the NSPS under Subpart OOOOa, to occur by 2024, as an appropriate time to determine whether additional or different monitoring requirements for ECDs are necessary, practicable, and cost-effective.

After reviewing the cited regulations, we still believe that the EPA has not presented adequate technical information to assure that permitting authorities can continuously verify compliance with ECD-related emission limitations. As noted in our report, verifying that the pilot light is operating and checking ECDs periodically for visible emissions are not compliance actions that accurately demonstrate the assumed control efficiency is being met on a continuous basis. In addition, monitoring the flow rate does not guarantee the assumed control efficiency is being met.

We acknowledge that there may be cost and logistical constraints, such as a lack of electricity at some oil and gas production facilities, which make continuous compliance monitoring difficult. Further, the Region 8 study is ongoing, and it may be inappropriate for the EPA to issue supplemental technical information or guidance prior to obtaining complete data or when the applicable NSPS is not under review. Therefore, we agree with the EPA that the upcoming review of standards under Subparts OOOO or OOOOa is an appropriate time to reconsider the monitoring, record-keeping, and reporting requirements for ECDs. As such, we have revised Recommendation 3 to focus on the EPA's review of EPA studies and other relevant information during the statutorily mandated review in 2024.

The Agency concurred with our revised recommendation and provided an acceptable proposed corrective action plan and planned completion date. The planned completion date is the date by which the Agency plans to initiate its statutorily required review of 40 C.F.R Part 60 Subparts OOOO and OOOOa. The Agency's full response to the revised recommendation is in Appendix G. Recommendation 3 is considered resolved with corrective actions pending.

Chapter 3
EPA Has Not Clearly Communicated Key Synthetic-Minor-Source Permitting Expectations in Official Guidance

We found that the EPA has several key expectations for synthetic-minor-source permitting that are not clearly communicated in official guidance. EPA policy requires the Agency to clearly describe objectives and expectations for state environmental programs, such as permitting. Without clear guidance, states may develop their own practices that do not align with EPA expectations.

Key Expectations Have Not Been Clearly Communicated in Official Guidance

The *EPA Policy on Oversight of Delegated Environmental Programs* states that the EPA must clearly describe objectives and expectations for state environmental programs to increase the ability of state agencies to successfully implement program requirements and to increase the ability of the EPA to provide appropriate assistance and evaluation. One way this can be accomplished is by providing detailed, up-front guidance on how program work should be performed. We found through discussions with OAQPS staff and managers that the EPA has key expectations for synthetic-minor-source permitting that it has not clearly communicated to state and local agencies in official guidance, such as:

- The terms of a synthetic-minor limitation, such as the limit itself and the methods for demonstrating compliance with the limit, should be in the permit itself. These terms, along with calculations necessary to demonstrate compliance with synthetic-minor limits, need to be included in the permit or incorporated by reference from another source. It would also be appropriate to include calculations and model inputs used to estimate the potential to emit or to set an emission limit in the permit record, such as the permit's technical support documentation.

- Regarding the technical accuracy of limits that depend on pollution control equipment, the vendor or manufacturer information and specifications for the control equipment should be part of the permit record. One way to better assure that a pollution control device obtains its intended pollution reductions over time is to require a source to follow the manufacturer specifications.

- Synthetic-minor-source permits for facilities with emergency generators, which are devices that are intended to serve solely as backup sources of power in the event of a loss of the normal power source, should include a

limitation for the emergency generator as part of the permit. OAQPS staff stated that an emergency generator would be expected to operate approximately 500 hours under worst-case conditions. Permitting authorities should include this figure when assessing the facility's potential to emit calculations. For a synthetic-minor source permit that contains emission sources other than the emergency generator, the permitting authority should include the emergency generator in the permit itself and establish corresponding limits, such as an emission limit and an operational limitation. For example, the facility may not operate the emergency generator for more than 500 hours per year.

These expectations have not been clearly communicated in official guidance, in part because the EPA has not prioritized revising guidance documents to include the Agency's expectations. The 2020 training slides discussed in Chapter 2 include most aspects of the first two expectations, but they are not official guidance.

Without Clear Guidance, States May Adopt Their Own Practices

In the absence of clear, national guidance, state and local permitting programs may develop their own practices for addressing these issues, which do not align with EPA expectations. For example, based on the permits we reviewed and discussions with CDPHE staff, Colorado does not include emergency generators in the permits themselves or establish corresponding emission or operational limits unless the generator's potential emissions put the facility over the major source threshold.

Conclusions

As part of its oversight of state and local environmental programs, the EPA should clearly describe objectives and expectations so that state and local agencies can successfully implement program requirements. During our audit, EPA staff and managers described to us expectations regarding three important aspects of synthetic-minor-source permitting that are not currently reflected in EPA guidance documents. Rather than updating guidance from the 1980s and 1990s to formalize these expectations, the EPA has developed training materials for state and local agencies. Given the importance of establishing effective limits on the potential to emit—that is, limits that are both federally and practically enforceable—the EPA should communicate all key expectations through formal guidance. Without clear guidance, states may adopt their own practices that do not adhere to EPA expectations or assure synthetic-minor-source permit enforceability.

Recommendation

We recommend that the assistant administrator for Air and Radiation:

4. Revise the Agency's guidance to communicate its key expectations for synthetic-minor-source permitting to state and local agencies.

Agency Response and OIG Assessment

The Agency agreed with Recommendation 4 and provided an acceptable corrective action and completion date. The OAR will revise the Agency's guidance to include the key expectations above and may, at least in part, integrate this work with the updates to guidance on practical enforceability in response to Recommendation 1. The recommendation is resolved with corrective actions pending. The Agency's full response is in Appendix F.

Chapter 4
ODEQ Does Not Currently Include Synthetic-Minor-Source Permits in Its Public Participation Process

The ODEQ does not currently issue its individual synthetic-minor-source permits for public comment before they are finalized, as required by EPA regulations. Staff in the EPA's OAQPS told us that this may be the case for other state and local agencies as well. ODEQ staff told us that Oklahoma's legislature passed new state rules that will require public comment on synthetic-minor-source permits and that these rules will go into effect in September 2021. Although this deficiency is being addressed in Oklahoma, the EPA has not ensured that all states include public participation in their synthetic-minor-source permitting process.

Without the opportunity to review permit materials and provide comments on proposed synthetic-minor-source permits, citizens are deprived of the ability to assess information and provide input on facilities that may impact air quality where they live. The EPA should regularly confirm that states adhere to requirements on public participation for synthetic-minor-source permits.

EPA Regulations Require Opportunity for Public Review and Comment on Synthetic-Minor-Source Permits

EPA regulations require certain permitting information to be available to the public for review and comment, generally for 30 days. Per 40 C.F.R. § 51.161, permitting authorities must make the following information public:

- Information submitted by owners and operators.
- An analysis of the effect of the construction or modification of the facility on ambient air quality.
- The permitting authority's proposed approval or disapproval of the permit.

Staff from both Region 6 and the OAQPS told us that these requirements apply to synthetic-minor-source permits, and EPA guidance states that public participation is a central tenet of federal enforceability.

ODEQ Does Not Currently Provide Opportunity for Public Review and Comment on Individual Synthetic-Minor-Source Permits

The ODEQ does not currently issue its individual, facility-specific synthetic-minor-source permits for public comment before they are finalized because Oklahoma's current regulations lack such a requirement. Region 6 staff told us that the region is aware of this issue and has communicated with the ODEQ about the need to revise this in Oklahoma's state permitting rules. In November 2020,

ODEQ staff told us that the state's air advisory council had approved new state rules to require an opportunity for public comment. In June 2021, ODEQ staff told us that the rules had been passed by the state legislature and will be going into effect on September 15, 2021. OAQPS staff told us that they are aware that lack of public participation for synthetic-minor sources may be a problem in other states as well.

Lack of Public Participation Precludes Citizen Input on Facility Permits

Synthetic-minor permit limitations are intended to limit emissions from facilities and, as such, have an impact on local air quality. Public participation requirements are intended to assure that citizens have the ability to provide input on the permit limitations, the pollutants that are emitted, and the quantity of emissions that will affect their communities. Not providing the opportunity to review permit materials and provide comments on proposed synthetic-minor-source permits hinders citizens' ability to weigh in on facilities that may impact air quality where they live.

Conclusions

The ODEQ is not currently adhering to EPA regulations that require state and local environmental programs to allow public review of and comment on proposed synthetic-minor-source permits, and this may be the case in other states as well. These requirements were established by the EPA to allow citizens the opportunity to analyze and understand environmental impacts in their communities. Individual synthetic-minor-source permits were approved by the ODEQ without any forewarning or input from the citizens who may be impacted by the permitted emissions. This lack of public participation can undermine permit quality and limits the opportunity for citizens to weigh in on facilities that may be located in their communities. The EPA should work with all state, local, and tribal agencies that do not provide the opportunity for public comment on synthetic-minor-source permits to assure opportunities for public participation, as required by law.

Recommendation

We recommend that the assistant administrator for Air and Radiation:

5. Identify all state, local, and tribal agencies in which Clean Air Act permit program implementation fails to adhere to the public participation requirements for synthetic-minor-source permit issuance and take appropriate steps to assure the identified states adhere to the public participation requirements.

Agency Response and OIG Assessment

The Agency agreed with Recommendation 5 and provided acceptable corrective actions and completion dates. The OAR, with EPA regional office support, will identify state, local, and tribal agencies whose program regulations do not meet the public participation requirements contained in the applicable EPA regulations and guidance with respect to synthetic-minor-source permitting. For the identified agencies, the OAR will take appropriate corrective steps, potentially to include informal engagement. The recommendation is resolved with corrective actions pending. The Agency's full response is in Appendix F.

Status of Recommendations and Potential Monetary Benefits

RECOMMENDATIONS

Rec. No.	Page No.	Subject	Status[1]	Action Official	Planned Completion Date	Potential Monetary Benefits (in $000s)
1	17	Update Agency guidance on practical enforceability to more clearly describe how the technical accuracy of a permit limit should be supported and documented. In updating such guidance, the Office of Air and Radiation should consult and collaborate with the Office of Enforcement and Compliance Assurance, the Office of General Counsel, and the EPA regions.	R	Assistant Administrator for Air and Radiation	10/31/23	
2	17	In consultation with the EPA regions, develop and implement an oversight plan to include: a. An initial review of a sample of synthetic-minor-source permits in different industries that are issued by state, local, and tribal agencies to assess whether the permits adhere to EPA guidance on practical enforceability, including limits that are technically accurate; have appropriate time periods; and include sufficient monitoring, record-keeping, and reporting requirements. b. A periodic review of a sample of synthetic-minor-source permits to occur, at a minimum, once every five years. c. Procedures to resolve any permitting deficiencies identified during the initial and periodic reviews.	R	Assistant Administrator for Air and Radiation	10/31/24	
3	18	Assess recent EPA studies of enclosed combustion device performance and compliance monitoring and other relevant information during the next statutorily required review of 40 C.F.R Part 60 Subparts OOOO and OOOOa to determine whether revisions are needed to monitoring, record-keeping, and reporting requirements for enclosed combustion devices to assure continuous compliance with associated limits, and revise the regulatory requirements as appropriate.	R	Assistant Administrator for Air and Radiation	12/31/24	
4	22	Revise the Agency's guidance to communicate its key expectations for synthetic-minor-source permitting to state and local agencies.	R	Assistant Administrator for Air and Radiation	10/31/24	
5	24	Identify all state, local, and tribal agencies in which Clean Air Act permit program implementation fails to adhere to the public participation requirements for synthetic-minor-source permit issuance and take appropriate steps to assure the identified states adhere to the public participation requirements.	R	Assistant Administrator for Air and Radiation	12/31/23	

[1] C = Corrective action completed.
R = Recommendation resolved with corrective action pending.
U = Recommendation unresolved with resolution efforts in progress.

CAA Major-Source-Permitting Programs

The CAA major-source-permitting programs are Title V, Nonattainment New Source Review, and Prevention of Significant Deterioration. The requirements and major-source thresholds vary by program, and Nonattainment New Source Review and Prevention of Significant Deterioration permitting depend upon whether the area in which the source is located complies with National Ambient Air Quality Standards. These health-based standards are set by the EPA for certain pollutants so that the level of the pollutant in the air is protective of human health and the environment. Areas that comply with these standards are known as attainment areas, while areas that do not comply are known as nonattainment areas. The table below summarizes these permitting programs and the corresponding levels of emissions that make a facility a major source under each program.

Table A-1: CAA programs and their corresponding major-source thresholds of air emissions

	Title V permitting	NNSR permitting	PSD permitting
Summary of program and requirements*	Permitting program for all operating major sources of air pollution. Title V permits contain all CAA requirements to which a facility is subject and impose certain monitoring, reporting, and record-keeping requirements.	Permitting program for new or modified major sources in areas that are in nonattainment with the NAAQS. NNSR permits require sources to install control equipment that obtains the lowest achievable emission rate to reduce emissions.	Permitting program for new or modified major sources in areas that are in attainment with the NAAQS. PSD permits require sources to use the best available control technology to limit emissions.
Major-source threshold	100 TPY of a regulated pollutant, but can be lower in nonattainment areas for the pollutant for which the area is in nonattainment; 25 TPY of total hazardous air pollutants; and 10 TPY of a single hazardous air pollutant.	100 TPY of a regulated pollutant, but can be lower depending on the severity of the air quality problem in the nonattainment area.	250 TPY of a regulated pollutant, except for facilities within 28 specific industries for which the threshold is 100 TPY.
Pollutants covered	VOC, NO_x, CO, SO_2, NO_2, $PM_{2.5}$, and PM_{10}, lead, and hazardous air pollutants, such as benzene, formaldehyde, and n-hexane.	Ozone (including VOC and NO_x, which react in the atmosphere to form ozone), CO, SO_2, NO_2, $PM_{2.5}$, PM_{10}, and lead.	Ozone (including VOC and NO_x, which react in the atmosphere to form ozone), CO, SO_2, NO_2, $PM_{2.5}$, PM_{10}, lead, hydrogen sulfide, and sulfuric acid.

Source: OIG summary of EPA information. (EPA OIG table)

* This table is intended for summary purposes and does not include all requirements of the permitting programs.

Note: CO is carbon monoxide, NAAQS is National Ambient Air Quality Standards, NNSR is Nonattainment New Source Review, NO_2 is nitrogen dioxide, NOx is nitrogen oxides, PM is particulate matter, PSD is Prevention of Significant Deterioration, and SO_2 is sulfur dioxide.

Appendix B

Internal Control Assessment

This table identifies which internal control components and underlying principles are significant to our audit objective.

Which internal control components are significant to the audit objective?		Which internal control principles are significant to the audit objective?	
X	**Control Environment** The foundation for an internal control system. It provides the discipline and structure to help an entity achieve its objectives.		1. The oversight body and management should demonstrate a commitment to integrity and ethical values.
		X	2. The oversight body should oversee the entity's internal control system.
			3. Management should establish an organizational structure, assign responsibilities, and delegate authority to achieve the entity's objectives.
			4. Management should demonstrate a commitment to recruit, develop, and retain competent individuals.
			5. Management should evaluate performance and hold individuals accountable for their internal control responsibilities.
X	**Risk Assessment** Management assesses the risks facing the entity as it seeks to achieve its objectives. This assessment provides the basis for developing appropriate risk responses.	X	6. Management should define objectives clearly to enable the identification of risks and define risk tolerances.
		X	7. Management should identify, analyze, and respond to risks related to achieving the defined objectives.
			8. Management should consider the potential for fraud when identifying, analyzing, and responding to risks.
		X	9. Management should identify, analyze, and respond to significant changes that could impact the internal control system.
X	**Control Activities** The actions management establishes through policies and procedures to achieve objectives and respond to risks in the internal control system, which includes the entity's information system.	X	10. Management should design control activities to achieve objectives and respond to risks.
			11. Management should design the entity's information system and related control activities to achieve objectives and respond to risks.
		X	12. Management should implement control activities through policies.
X	**Information and Communication** The quality information management and personnel communicate and use to support the internal control system.		13. Management should use quality information to achieve the entity's objectives.
			14. Management should internally communicate the necessary quality information to achieve the entity's objectives.
		X	15. Management should externally communicate the necessary quality information to achieve the entity's objectives.
X	**Monitoring** Activities management establishes and operates to assess the quality of performance over time and promptly resolve the findings of audits and other reviews.	X	16. Management should establish and operate monitoring activities to monitor the internal control system and evaluate the results.
		X	17. Management should remediate identified internal control deficiencies on a timely basis.

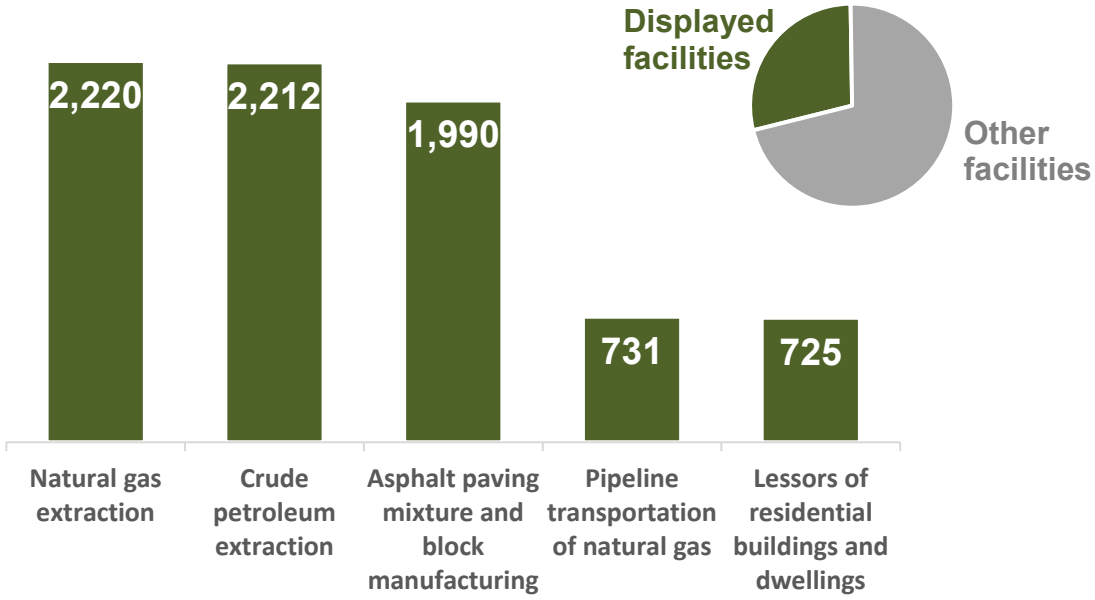
Source: Based on internal control components and principles outlined in GAO-14-704G, *Standards for Internal Control in the Federal Government* (also known as the "Green Book"), issued September 10, 2014.

Details on Scope and Methodology

To address our objective, we reviewed EPA policies and guidance related to synthetic-minor-source permitting and compliance monitoring. We also interviewed staff and managers in the OAQPS and the Office of Enforcement and Compliance Assurance.

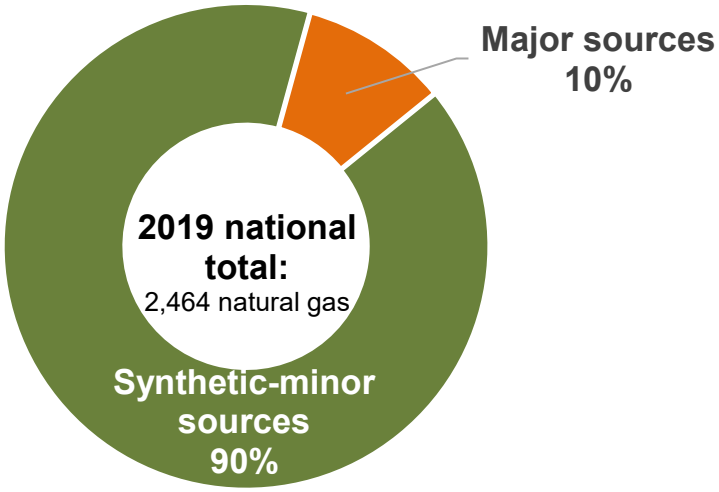
We reviewed synthetic-minor facilities in the natural gas extraction sector to assess whether synthetic-minor-source permit limitations and provisions adhered to EPA guidance and whether the facilities' inspections were consistent with EPA guidance. The natural gas extraction sector is covered by the North American Industry Classification System Code 211130 and involves activities related to the production of natural gas. To select this industry, we used data from the EPA's ICIS-Air database and the National Emissions Inventory. This selection was based on the natural gas extraction sector's disproportionally high (1) cumulative emissions from synthetic-minor sources, (2) number of synthetic-minor facilities within the industry, and (3) prevalence of synthetic minor emissions in areas with relatively poor air quality. Anecdotal statements from permitting and compliance subject matter experts also supported the selection of this industry. Background information on the natural gas extraction industry is included in Appendix D. Figures C-1 and C-2 provide more information about the selection of the natural gas extraction sector for review.

Figure C-1: Top five industries with the most permitted synthetic-minor sources in 2019



Source: OIG analysis of data from ICIS-Air and the EPA's Enforcement and Compliance History Online database. (EPA OIG image)

Figure C-2: Percentage of synthetic-minor sources compared to major sources in natural gas extraction industry[a]

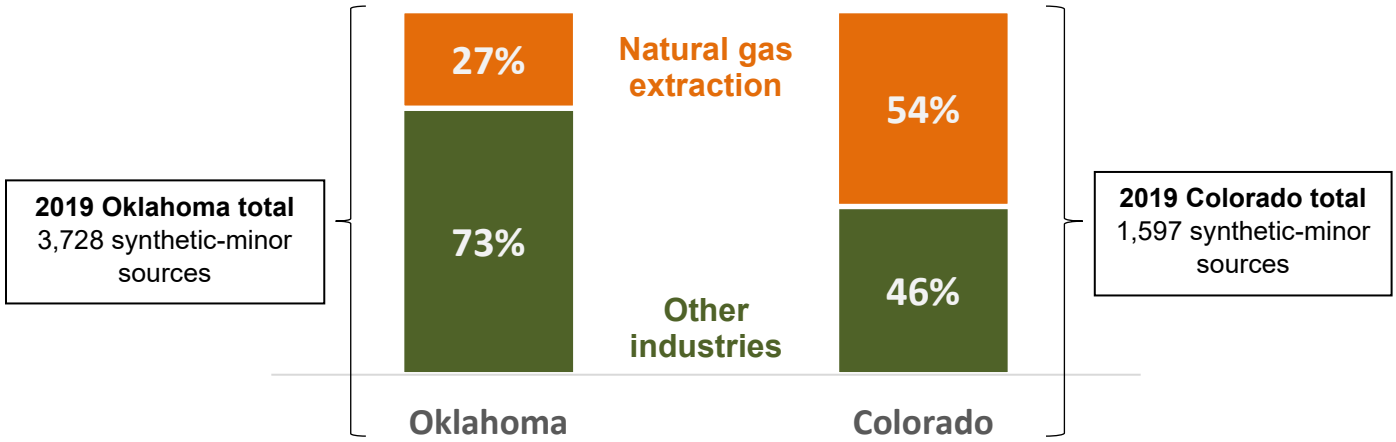


Source: OIG analysis of data from ICIS-Air and the EPA's Enforcement and Compliance History Online database. (EPA OIG image)

[a] Analysis does not include true-minor sources because those data are not required to be submitted to the EPA.

We selected a judgmental sample of two states from which to review natural gas extraction permits. Specifically, we selected to review permits in Colorado and Oklahoma because these states have among the highest number of synthetic-minor facilities in the natural gas extraction industry, according to the 2017 National Emissions Inventory. These states also contain among the most synthetic-minor facilities with actual emissions that potentially exceed major-source thresholds, according to the 2017 National Emissions Inventory. According to ICIS-Air and the EPA's Enforcement and Compliance History Online database, Colorado had 859 facilities identified as synthetic-minor sources in the natural gas extraction industry in 2019, and Oklahoma had 999. Figure C-3 shows the percentage of synthetic-minor sources in Oklahoma and Colorado that are in the natural gas extraction industry compared to other industries.

Figure C-3: Percentage of Oklahoma and Colorado synthetic-minor sources in natural gas extraction industry compared to other industries



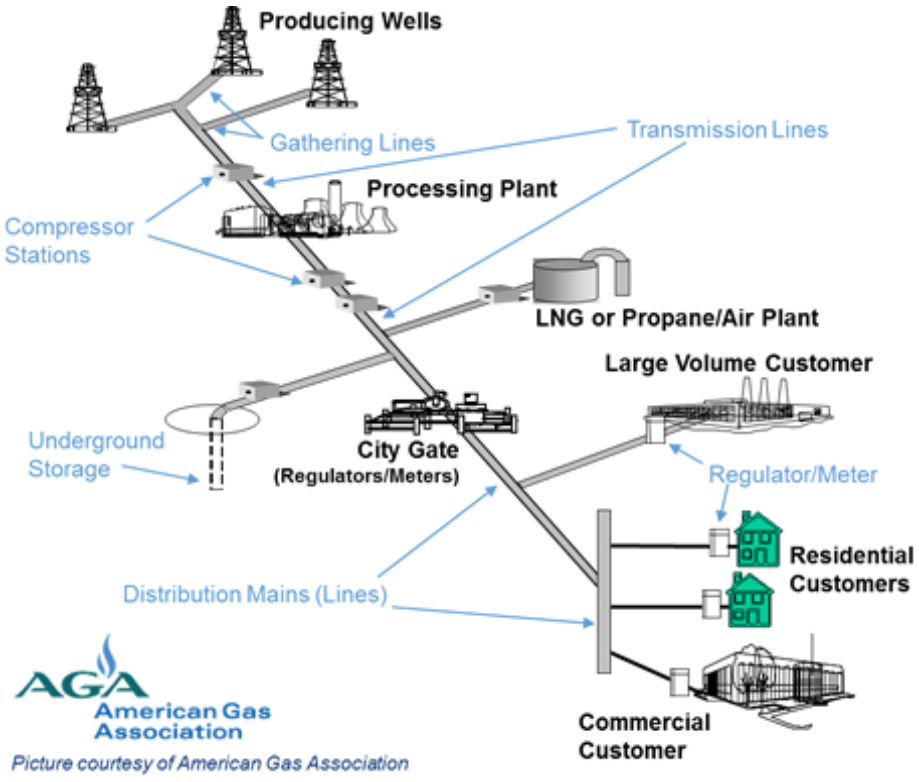
Source: OIG analysis of data from ICIS-Air and the EPA's Enforcement and Compliance History Online database. Data are based on state-submitted information. (EPA OIG image)

In each of these states, we randomly selected eight natural gas extraction facilities that are characterized as SM-80s in ICIS-Air for in-depth review. In Colorado, we selected facilities operating in the Denver and Northern Front Range—located north of Denver and east of the Rocky Mountains—metropolitan areas where the air does not meet EPA air quality standards for ozone. Natural gas extraction facilities contribute to ground-level ozone formation by emitting VOC and nitrogen oxides, which react in sunlight to form ozone. Breathing elevated concentrations of ozone can trigger a variety of health problems, including chest pain, coughing, throat irritation, and airway inflammation. It also can reduce lung function and harm lung tissue. Ozone can worsen bronchitis, emphysema, and asthma, leading to the need for increased medical care. Oklahoma does not have any areas where the air does not meet the EPA's standards for ozone.

Background on Natural Gas Extraction Industry

The natural gas extraction industry includes the production of natural gas. This includes well-production sites, where natural gas is extracted from the ground. It also includes compressor stations, which help maintain the pressure of the gas and move the gas from the individual well-production sites to natural gas processing plants and ultimately the end user. The facilities we reviewed include both well-production sites and compressor stations. Figure D-1 shows where well-production sites and compressor stations are located within the overall natural gas lifecycle—from extraction to distribution to the end user.

Figure D-1: Natural gas industry from production to distribution



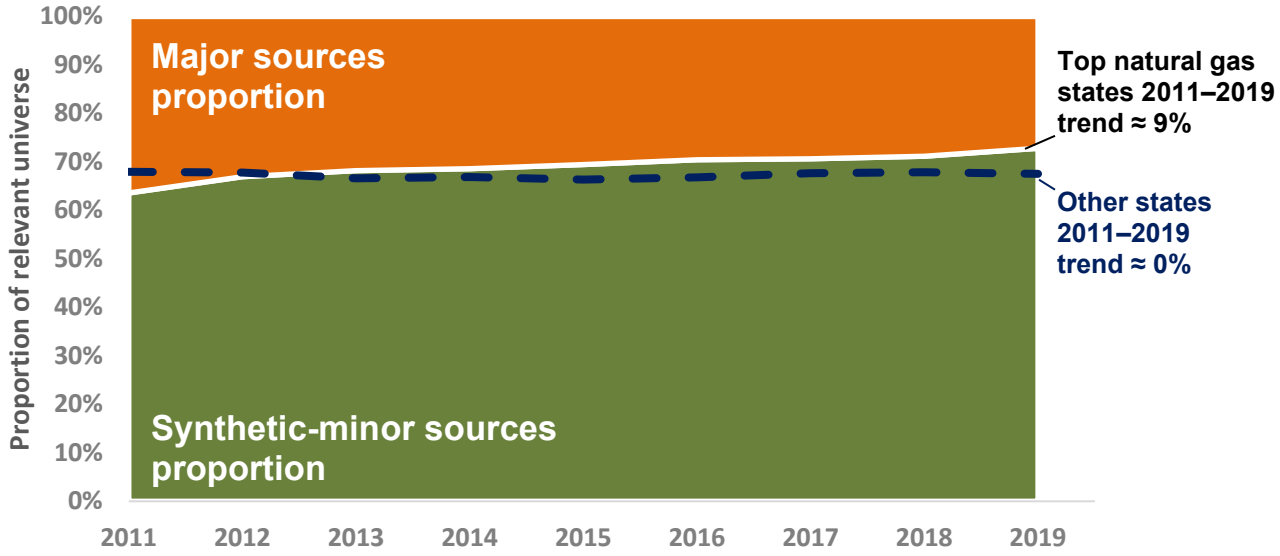
Source: American Gas Association. (American Gas Association image)

Natural gas production facilities emit several types of pollutants, including VOC, nitrogen oxides, carbon monoxide, and hazardous air pollutants. VOC and nitrogen oxides interact in sunlight to form ground-level ozone. Breathing elevated concentrations of ozone can trigger a variety of health problems, including chest pain, coughing, throat irritation, and airway inflammation. It also can reduce lung function and harm lung tissue. Ozone can worsen bronchitis, emphysema, and asthma, leading to a need for increased medical care. Hazardous air pollutants are toxic pollutants known or suspected to cause cancer or other serious health problems.

Colorado and Oklahoma are both among the ten states with the highest amount of natural gas extraction and production. In 2019, Colorado produced 1,988,714 cubic feet of natural gas, while Oklahoma produced 3,175,008 cubic feet.

Based on EPA data, the proportion of synthetic-minor sources compared to major sources in top natural gas producing states was 9 percent higher in 2019 than in 2011, while it remained relatively constant in states that are not top producers of natural gas. This is shown in Figure D-2. This shift could be an indication that more facilities in the natural gas production industry are choosing to implement synthetic-minor limits to avoid major-source permitting requirements than in other industrial sectors.

Figure D-2*:* Proportion of synthetic-minors and major-sources in top natural gas producing states versus all other states between 2011 and 2019[a]

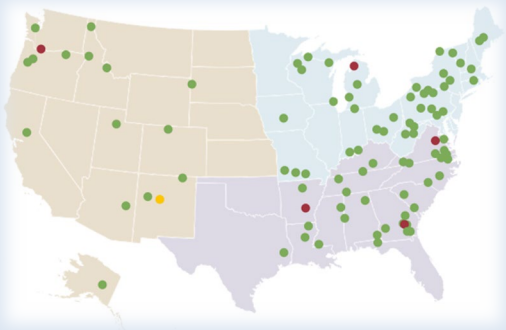


Source: OIG analysis of data from ICIS-Air and the U.S. Energy Information Agency. (EPA OIG image)

[a] The top ten natural gas producing states, based on our analysis of data from the U.S. Energy Information Administration, include Alaska, Arkansas, Colorado, Louisiana, New Mexico, Ohio, Oklahoma, Pennsylvania, West Virginia, and Wyoming. The analysis does not cover states or U.S. territories that have no synthetic-minor sources identified in ICIS-Air. Although Texas is a top natural gas producing state, it was not included in the analysis for this reason.

Case Study: Synthetic-Minor-Source Permitting in Wood Biomass Industry

As detailed in its 2018 report, *Dirty Deception: How the Wood Biomass Industry Skirts the Clean Air Act*, the nonprofit organization Environmental Integrity Project examined air permits and emission information in federal and state records for 21 wood pellet plants in the United States. Wood pellet facilities convert trees into pellets to be burned for electricity. The Environmental Integrity Project found that seven out of 21 facilities violated their permit limits by releasing too much pollution, while another four plants had state-issued permits that failed to require necessary pollution-control equipment. The report explains that most wood pellet facilities are permitted as synthetic-minor sources under the EPA's Prevention of Significant Deterioration permitting program, but they only have a blanket emission limit in their permits, such as "the facility shall emit less than 249 TPY of VOCs," rather than an actual production limit that is directly associated with emissions. An EPA guidance document from 1989 cites a 1988 court decision, *United States vs. Louisiana-Pacific Corporation,* which found that blanket limits are not enforceable as a practical matter. The Environmental Integrity Project concluded that many large wood pellet plants were in fact exceeding their 249 TPY limits because many units emitted much more VOC than states and the industry anticipated.



Source: Biomass manufacturing in the United States as of August 2020, including facilities operating (green), under construction or planned (yellow), and temporarily not in operation (red). (U.S. Energy Information Administration image)

OAQPS and EPA regional staff confirmed to us that there are potential problems with permitting wood biomass sources and that the industry is under increased scrutiny on a national level. OAQPS staff explained that the wood pellet industry is an emerging industry, so the emissions and emissions sources are not well understood. For example, a Region 6 branch chief explained that an issue with these facilities has been the use of unproven emission factors to characterize emissions from pellet coolers. The branch chief said that Louisiana's Department of Environmental Quality reprocessed two permits after further testing and is requiring the facilities to obtain major-source permits. One OAQPS staff person suggested that states could make synthetic-minor permits, including those for wood pellet facilities, more enforceable by requiring source-specific stack testing to confirm expected emissions. In order for a reviewer to know whether the permitted emission limit is enforceable, the staff person said, the permit must include a way to measure emissions.

Wood pellets. (U.S. General Services Administration photo)

Agency Response to Draft Report

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

May 28, 2021

OFFICE OF
AIR AND RADIATION

MEMORANDUM

SUBJECT: EPA Response to OIG Draft Report titled: "EPA Should Conduct More Oversight of Synthetic-Minor-Source Permitting to Assure Permits Adhere to EPA Guidance" - Project No. OA&E-FY19-0093, April 29, 2021

FROM: Joseph Goffman
Acting Assistant Administrator
Office of Air and Radiation

TO: Renee McGhee-Lenart
Acting Air Director
Office of the Inspector General

The Office of Air and Radiation (OAR) welcomes the opportunity to provide comment on the draft report titled: "*EPA Should Conduct More Oversight of Synthetic-Minor-Source Permitting to Assure Permits Adhere to EPA Guidance"* and its recommendations. Based on our review, we find the draft report to be factually accurate overall. Our responses to the draft report recommendations are provided below.

OIG Recommendation 1: Update Agency guidance on practical enforceability to more clearlydescribe how the technical accuracy of a permit limit should be supported and documented. In updating such guidance, the Office of Air and Radiation should consult and collaborate with theOffice of Enforcement and Compliance Assurance, the Office of General Counsel, and the EPA regions.

Response 1: OAR concurs with this recommendation. OAR will update Agency guidance on the practical enforceability of limitations, including but not limited to EPA's June 13, 1989 *Guidance on Limiting Potential to Emit in New Source Permitting*, to describe how the technicalaccuracy of a permit limit should be supported and documented. Specifically, the updated guidance will address the practical enforceability of limitations on potential to emit. In updating our guidance, we will consult and collaborate with the Office of Enforcement and Compliance Assurance, the Office of General Counsel, and the EPA regions.

Planned Completion Date: October 2023

OIG Recommendation 2: In consultation with the EPA regions, develop and implement an oversight plan to include:

- An initial review of a sample of synthetic-minor-source permits in different industries that are issued by state, local, and tribal agencies to assess whether the permits adhere toEPA guidance on practical enforceability, including limits that are technically accurate; have appropriate time periods; and include sufficient monitoring, recordkeeping, and reporting requirements.
- A periodic review of a sample of synthetic-minor-source permits to occur, at a minimum,once every five years.
- Procedures to resolve any permitting deficiencies identified during the initial and periodicreviews.

Response 2: OAR concurs with this recommendation. In consultation with EPA Regional offices, OAR will develop and implement an oversight plan in accordance with current statutoryand EPA regulatory requirements and, as appropriate, including the specific elements identified.

Planned Completion Dates:

1. Develop plan: April 2024
2. Complete initial review: October 2024

OIG Recommendation 3: Develop technical support information for natural gas production facilities that includes defining the parameters upon which the control efficiency for enclosedcombustion devices is based and methods for measuring those specific parameters so that permitting authorities can verify compliance with permit limits.

Response 3: We agree with the OIG that monitoring, recordkeeping and reporting requirements(MRR) associated with synthetic minor permit emission limitations serve to ensure that the established enforceable limits are being met and are important to meet the ongoing compliance requirement in the CAA. We also agree with the OIG that facilities under synthetic minor statusshould generate records to demonstrate continuous compliance with permit emission limits.

However, the OIG's recommendation implies that the impediment to verifying compliance with emission limits associated with the oil and gas industry is inadequate technical information regarding MRR permit conditions for pollution control equipment for use by permitting authorities. We disagree that permit authorities do not have the technical tools to effectively establish appropriate MRR in synthetic minor permits. As described below, the technical supportinformation in existing air rules fully addresses the need identified by the OIG.

Federal regulations covering air emissions from oil and gas facilities (40 CFR part 60 subparts OOOO and OOOOa (NSPS OOOO and OOOOa) and 40 CFR part 63 subpart HH (NESHAP HH)) contain provisions requiring control of VOC and HAP at these facilities.

Combustion, including enclosed combustors for the natural gas production segment, is a common control option to meet these provisions. As we discussed with the OIG during interviews and reiterated in our written response to the initial draft report, the properties related to effective combustion are well-understood and depend on gas composition, gas flow, residence time in the combustionzone, and the continuous presence of a pilot light to ensure ignition. These parameters are not unique to the natural gas production sector and are standard across multiple rules in a number ofindustries. To ensure proper use and efficacy of combustion control devices by oil and gas facilities, each subpart covering the industry contains targeted MRR requirements. For example,to ensure high combustion efficiency, NSPS OOOOa requires initial testing of enclosed combustion devices by the owner or operator or a certification test by the manufacturer; periodically, the combustor must be retested by the owner, or the owner may continuously monitor the gas flow to the unit. Additionally, owners and operators must continuously monitorfor the presence of a pilot flame and ensure residence time in the combustion zone through design analysis. On a monthly basis, the operator must perform a visible emissions test with Method 22 of appendix A-7 to part 60 to detect smoke, which would indicate less than 95 percent control efficiency.

Continuous Monitoring Systems (CMS), consisting of both continuous emissions monitoring systems and continuous parameter monitoring systems, create continuous electronic data recordsthat can be used to verify continuous compliance. These systems rely on site infrastructure such as shelters, electricity on site, and data acquisition systems. In the oil and gas industry, not all production sites are electrified for support equipment. Well pads and related sites are often powered by the gas itself, through pneumatic pumps and pneumatic controllers. This lack of electrification of all sites limits the blanket use of CMS for continuous compliance.

Looking ahead, OAR is open to revising the existing MRR requirements and adding others if future data demonstrate a need for further action. EPA is currently reviewing NSPS OOOOa under Executive Order 13990. The scope of the action and the timeline for compliance with this EO foreclose EPA's ability to consider additional monitoring provisions in this NSPS to address enclosed combustor compliance assurance issues beyond existing MRR requirements. However, as more data and information become available, and the required technology reviews for both NSPS OOOOa and NESHAP HH approach, EPA may receive data and information that can be analyzed to determine whether additional or different monitoring requirements for these devices are necessary, practicable, and cost effective. In the meantime, by maintaining enforcement of existing MRR requirements and addressing other recommendations stated in the draft report, EPA will be assisting permitting authorities to establish permit parameters that meet the practicalenforceability requirements for synthetic permit limitations.

OIG Recommendation 4: Revise the Agency's guidance to communicate its key expectationsfor synthetic-minor-source permitting to state and local agencies.

Response 4: OAR concurs with this recommendation. OAR will revise the Agency's guidance tocommunicate its key expectations for synthetic-minor-source permitting to state and local agencies. This will include an expectation that synthetic minor permit terms and conditions

ensure that the potential to emit of the source is less than the applicable major source threshold by meeting legal and practical enforceability criteria. Our work related to this recommendation may, at least in part, be integrated with the updated guidance on practical enforceability in response to OIG Recommendation 1.

Planned Completion Date: October 2024

OIG Recommendation 5: Identify all state, local and tribal agencies in which state Clean Air Act permit program implementation fails to adhere to the public participation requirements for synthetic-minor-source permit issuance and take appropriate steps to assure the identified states adhere to the public participation requirements.

Response 5: OAR concurs with this recommendation. With EPA Regional office support, OAR will identify state, local and tribal agencies whose program regulations, including but not limited to minor new source review and federally enforceable state operating permit program regulations and corresponding practices, do not meet the public participation requirements contained in the applicable EPA regulations, e.g., 40 CFR 51.161, and guidance with respect to synthetic minor source permitting. For the identified agencies, OAR will take appropriate corrective steps, which may include constructive, informal engagement.

Planned Completion Dates:
1. Identify target agencies and program regulations with public participation requirement deficiencies: July 2022
2. Take appropriate steps to resolve identified deficiencies: December 2023

If you have any questions regarding this response, please contact JoLynn Collins, OAQPS Audit Coordinator, at (919) 541-5671.

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Agency Response to Revised Recommendation 3

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

June 21, 2021

OFFICE OF
AIR AND RADIATION

MEMORANDUM

SUBJECT: EPA Revised Response to OIG Draft Report titled: "EPA Should Conduct More Oversight of Synthetic-Minor-Source Permitting to Assure Permits Adhere to EPA Guidance" - Project No. OA&E-FY19-0093, April 29, 2021

FROM: Joseph Goffman
Acting Assistant Administrator

TO: Renee McGhee-Lenart
Acting Air Director
Office of the Inspector General

The Office of Air and Radiation (OAR) welcomes the opportunity to provide comment on the revised recommendation 3 found in the draft report titled: "*EPA Should Conduct More Oversight of Synthetic-Minor-Source Permitting to Assure Permits Adhere to EPA Guidance"*. Based on our review, we find the revisions to the draft report to be factually accurate overall. Our response to the revised recommendation 3 is provided below.

OIG Revised Recommendation 3: Assess recent EPA studies of enclosed combustion device performance and compliance monitoring and other relevant information during the next statutorily-required review of 40 C.F.R part 60 subparts OOOO and OOOOa to determine whether revisions are needed to monitoring, record-keeping and reporting requirements for enclosed combustion devices to assure continuous compliance with associated limits, and revise the regulatory requirements as appropriate.

OAR Revised Response: OAR concurs with this revised recommendation. OAR will assess EPA studies of enclosed combustion device performance and compliance monitoring and other relevant information during the next statutorily-required review of 40 C.F.R part 60 subparts OOOO and OOOOa and determine whether revisions are needed to monitoring, record-keeping and reporting requirements for enclosed combustion devices to assure continuous compliance with associated limits, and revise the regulatory requirements as appropriate.

Planned Completion Date: EPA intends to initiate review of subparts OOOO and OOOOa, in accordance with our statutory obligations under CAA section 111(b)(1)(B), by no later than 2024.

Distribution

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