



**ZERO**2

The logo for ZERO, with the word "ZERO" in a bold, black, sans-serif font. The letter "O" is stylized with a circular graphic element that is split into green and red segments. A small "2" is positioned to the right of the "O".

## PERMITTING BRIEF

OVERVIEW OF AIR PERMITTING  
AT OIL AND GAS PRODUCTION SITES

October 2020

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## **OPTIMIZING OPERATIONS IN A COMPLEX AIR PERMIT ENVIRONMENT**

In addition to federal regulations, several oil and gas producing state governments have imposed regulated targets for emissions of volatile organic compounds (VOC) and nitrous oxides (NOx) that impact field development, operations and economics. The largest source of these regulated substances at oil and gas production sites are from the oil or condensate storage tanks. Operators are using a variety of methods to capture this vapor in order to lower emissions and to operate under a more flexible air permit.

Co-locating multiple wells on a single pad minimizes surface impacts, reduces capital expenditures and provides for greater operational efficiencies. A site with multiple horizontal wells, however, will necessarily have a higher potential to emit VOC and NOx (PTE), likely resulting in more costly, complex and time-consuming permits. Understanding how federal and state regulations interact and impact air permitting is essential to achieving objectives related to operations, economics and ESG (Environmental, Sustainability and Governance).

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## **TYPES OF EMISSIONS SOURCES**

In general, there are “minor” sources and “major” sources of emissions, the latter subject to Federal Title V permitting – often costing tens of thousands of dollars to prepare, the approval process can take anywhere between four to six months and once approved, require ongoing detailed recordkeeping and audits. In some states, minor sources are classified as “True Minors” and “Synthetic Minors” – the latter requiring control equipment to lower emissions to below local Major Source thresholds.

The Major Source permit limits for producers differ from state to state, and these thresholds can be further reduced as a region grapples with ozone levels that exceed the limits set by the EPA. VOC and NOx are precursors for ozone, i.e., compounds that can form ozone in the presence of sunlight. If a region exceeds Federal ozone levels for three years, the Major Source threshold, above which a Title V permit is required, is reduced by the EPA. This reduction in Major Source threshold levels recently occurred in the populous Front Range region of Colorado, the San Antonio area and is a potential issue in southeast New Mexico.

## PERMITTING DIFFERENCES BY STATE

The table below summarizes the current air permit requirements by state for three major oil and gas states.

| State          | Emission Source          | Permit Type     | Level             |
|----------------|--------------------------|-----------------|-------------------|
| Colorado (NAA) | Major                    | Title V         | >=50 tpy          |
|                | True or Synthetic Minor* | General Permit  | <50 tpy           |
| New Mexico     | Major                    | Title V         | >=250 tpy**       |
|                | True or Synthetic Minor* | General Permit  | <250 tpy**        |
| Texas          | Major                    | Title V         | >=100 tpy         |
|                | Minor                    | Standard Permit | >=25 and <100 tpy |
|                | True Minor               | Permit by Rule  | <25 tpy           |

\* A site is considered a True Minor if emissions are below the local Major Source threshold without needing Control equipment, such as flares or enclosed combustors. If Control equipment is required to keep emissions below that level, then it is considered a Synthetic Minor site.

\*\* Classification as non-attainment for ozone would lower this figure to 100 tpy

**Colorado.** For example, with the “serious non-attainment” status on ozone in Colorado, the emission levels requiring a Federal Title V permit were reduced to 50 tpy of VOC or NOx from 100 tpy. Below this level, production sites are considered True or Synthetic Minor sources, depending as to whether control equipment (i.e., combustors) are required to reduce total emissions below the 50 tpy level.

**New Mexico.** For comparison, the Title V threshold in New Mexico is now 250 tpy of VOC or NOx as ozone levels in both the Permian and San Juan Basin areas are currently classified as being acceptable. That is likely to change and Major Source thresholds will be reduced to 100 tpy if ozone levels continue to increase, as expected. Drastic reductions in PTE thresholds can require operators to reduce well counts per pad and/or modify production facilities to avoid becoming Major Sources and becoming subject to Title V requirements. While some operators flare these low-pressure vapors to comply, state regulators and increasingly ESG-minded investors are strongly encouraging operators to capture and sell Btu-rich tank vapor instead of burning it. Capture can provide up to a 95% reduction in estimated permit emissions.

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**Texas.** The Texas Commission on Environmental Quality (TCEQ) approaches the situation in a different manner. If PTE is less than 25 tpy of VOC or NOx then the operator can obtain a “Permit by Rule,” the least restrictive permitting regime and one allowing the operator to begin operation without prior permit approval. If PTE is above 25 tpy and less than 100 tpy, an operator is required to file a Standard Permit requiring state review and approval. Somewhat like New Mexico, the TCEQ provides a 95% credit against PTE with the use of a compressor to capture the vapor. This credit can be increased to a 100% offset of vapor emissions if additional criteria are met, including monitoring of tank pressure and methods to mitigate oxygen ingress in the vapor system.

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## **SUMMARY – THE BENEFITS OF REDUCING EMISSIONS**

Bottom line – reducing emissions from oil and gas facilities is becoming a necessity, not a convenience. Some states like Colorado have very tight emission limits, while other states like New Mexico are changing rapidly. Operators in Texas and other states are being pressured by activist groups, ESG investors and even some major operators, including Shell, BPX and Pioneer, to reduce flaring.

Forward-thinking operators are increasingly adopting new technologies and methods that not only reduce emissions and ease permitting, but also deliver other important benefits, including:

- Increased revenues – Converting waste into cash
- Faster permit approvals – Lower emissions equate to simpler, faster permits
- More wells per pad – Less money on infrastructure and more invested in the wells
- Focus – Well site personnel remain focused on improving production
- Safety – Lower tank pressures reduce potential venting and improve well site safety profiles

**For questions relating to permitting, contact us today at  
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