

Why Focus on Big Leaks First?

What does the science tell us about methane emissions?

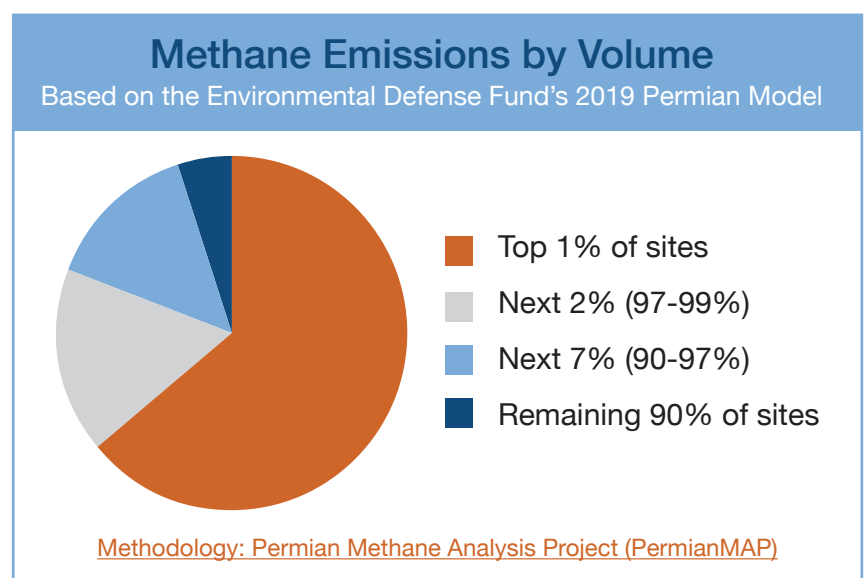
Most methane comes from a relatively small number of sites. There is a clear consensus about this from the scientific community. Different studies arrive at different estimates, but they all agree that a majority of methane comes from a very small percentage of sites.

The largest 5% of leaks typically contribute over 50% of the total leakage volume¹

50% of emissions are due to 6.6% of the highest emitting well pads and 80% from the 22% highest emitting well pads⁴

A small percentage of sites — commonly labeled super-emitter — account for a majority of emissions²

58% of emissions came from 0.06% of possible sources³



What does this look like in the real world?

Of the hundreds of sites surveyed by Kairos Aerospace in this field, just two are contributing most of the emissions.



How do these large leaks compare to other sources of emissions?

88 MCF/day

Average leak size in the Permian Basin

*as measured by Kairos

In two weeks, eliminating one 88 MCF/day leak saves as much gas as a pneumatic controller replacement would over five years.

0.7 MCF/day.¹
Average amount saved by retrofitting a pneumatic controller



268 MCF/day

Size of a typical gathering line leak

Fixing one 268 MCF/day gathering line leak reduces emissions at the same rate as spending \$700,000 to replace 382 pneumatic controllers.

Eliminating an Unlit flare

2-day gas reduction

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Compressor Station from Wet Seals to Dry Seals

1 year gas reduction

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Switching a compressor to dry seals is a proven and effective way to reduce emissions. However, unlit flares detected by Kairos emit far more. An unlit flare emits as much gas in two days as a converted compressor station would save in an entire year. Finding and fixing these major emitters is a faster and less expensive way to reduce emissions.

Conclusion

When it comes to methane leaks, they are not created equally. The largest leaks are responsible for most of the methane emissions and are therefore the best place to start when reducing emissions. Most operators could reduce their emissions by 50% or more by finding and fixing a very small number of their largest leaks.

1: www.epa.gov/sites/production/files/2016-06/documents/II_pneumatics.pdf

2: www.epa.gov/sites/production/files/2016-06/documents/II_wetseals.pdf