



# National Fuel Gas Midstream Co., LLC

Gathering & Boosting  
BMP Commitment Option  
Methane Challenge Partner Since 2018

OMB Control No. 2060-0722  
Approval expires 08/31/2021



National Fuel Gas Midstream

## Background

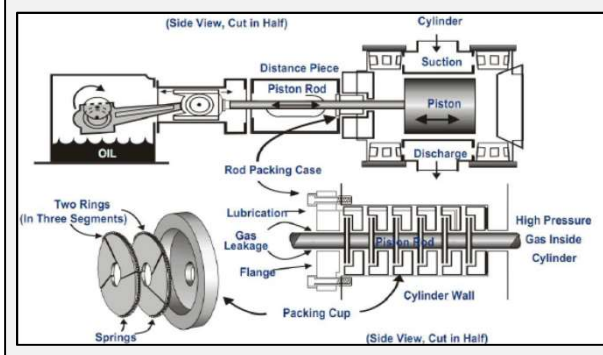
National Fuel Gas Midstream Company, LLC's primary business is to build, own and operate natural gas processing and pipeline gathering facilities in the Appalachian region. As one of National Fuel Gas system companies, Midstream shares in more than 100 years of experience in gathering and processing natural gas. Midstream works with producers confidentially to develop a tailored project to collect locally produced gas at or near the wellhead, to create outlets, to maximize throughput, to reduce operating costs, and to improve reliability while ensuring compliance and safety. For years Midstream has engaged in methane reduction BMPs, some of which are highlighted below from the last five years. Please visit our website for more information on Midstream's continued commitment toward environmental stewardship.

## Historical Highlights

### Compressor Rod Packing

Monitoring and replacing compressor rod packing systems on a regular basis can greatly reduce methane emissions to the atmosphere. Midstream has implemented interval based rod packing changes for reciprocating compressors. This practice has resulted in methane reductions of approximately 200,000 Mscf for the past 5 years.

#### Typical Compressor Rod Packing System



### Flash Tanks

Dehydrators utilize triethylene glycol (TEG) to remove water from natural gas. In addition to absorbing water, TEG also absorbs methane. The TEG is recycled via a reboiler, which vents absorbed water and methane into the atmosphere. Flash tanks are an emission reducing technology that recovers entrained methane before the TEG is routed to the reboiler and reduces methane emissions. Midstream incorporates flash tanks on all of the dehydrators system-wide. By utilizing flash tanks, methane emissions have been reduced by approximately 130,000 Mscf over 5 years.



Footnotes: Historical emissions savings were calculated utilizing site specific data, estimated emission reductions as listed in EPA's Background Technical Support Document for 40 CFR Part 60, Subpart OOOOa, estimated emission reductions as in EPA's Natural Gas STAR Partner Reported Opportunities (PRO) Fact Sheets and rely on methodology outlined in 40 CFR Part 98. Some images and figures belong to Midstream and the rest were borrowed from EPA's Natural Gas STAR PRO Fact Sheets and vendor documentation. The look back period was from 2014-2018.

# National Fuel Gas Midstream Co., Historical Fact Sheet



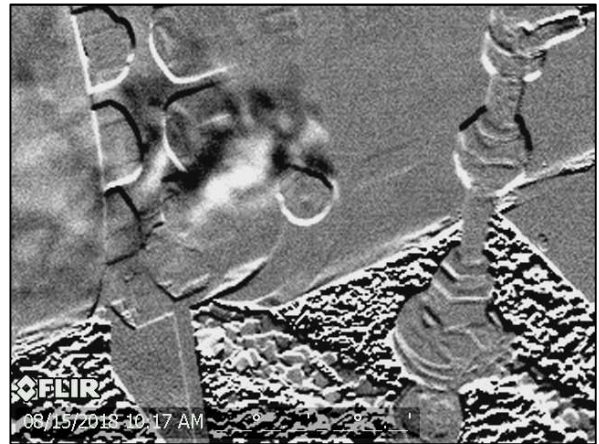
## Capped ESD Testing

Midstream is committed to testing emergency shut down (ESD) systems at natural gas compressor stations on an annual basis. To minimize gas vented to the atmosphere, Midstream adopted the acceptable DOT alternate of utilizing blind flanges. The blind flanges prevent entire station blowdowns, while allowing ESD testing in order to ensure facility safety. Over the last 5 years approximately 52,000 Mscf of methane has not been vented while utilizing this alternative practice.



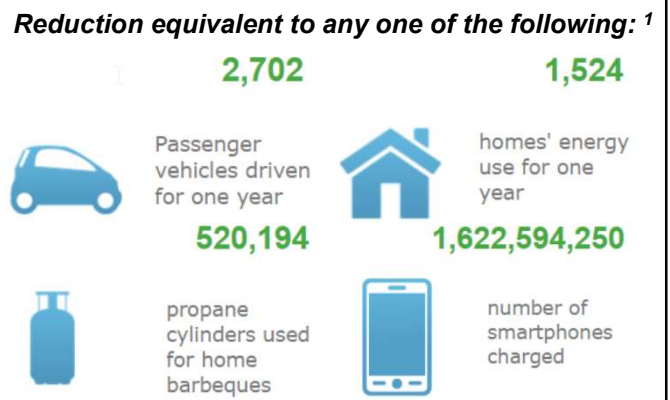
## Leak, Detection, & Repair (LDAR)

LDAR is a leak monitoring program in combination with a repair program and reduces fugitive methane emissions. Midstream utilizes an Optical Gas Imaging (OGI) camera to detect leaks. Over the past 5 years Midstream has reduced approximately 23,000 Mscf of methane with the implementation of LDAR.



## Air-Fuel Ratio (AFR)

Automated air-to-fuel control systems optimize compressor engine fuel efficiency which also reduces fuel use. Within the past 5 years, Midstream has saved approximately 233 MMscf of natural gas due to AFR fuel efficiency gains. This has resulted in decreased combustion emissions by approximately 12,725 CO<sub>2</sub>e metric tons.



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<sup>1</sup> Source: United States Environmental Protection Agency's Greenhouse Gas Equivalencies Calculator, October 4, 2019, <https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator>