

## **SUMMARY OF REQUIREMENTS FOR PROCESSES AND EQUIPMENT AT NATURAL GAS WELL SITES**

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On May 12, 2016, EPA issued final updates to its New Source Performance Standards (NSPS) for the oil and gas industry to reduce emissions of greenhouse gases – most notably methane – along with smog-forming volatile organic compounds (VOCs) from new, modified and reconstructed sources in the oil and natural gas industry. At natural gas well sites, the updates add new requirements for detecting and repairing leaks, and requirements to limit emissions from pneumatic pumps.

### **Finding and Repairing Leaks (Fugitive Emissions)**

- Leaks, also known as “fugitive emissions,” can occur at a number of points at a natural gas well site when connections are not properly fitted, hatches are not properly weighted and sealed, or when seals and gaskets start to deteriorate. Leaks can be a significant source of methane and VOC emissions in the oil and gas industry.
- The updated NSPS requires that owners/operators of natural gas well sites develop and implement a leaks monitoring plan. Owners/operators must use a technology known as optical gas imaging to conduct a leaks survey. Optical gas imaging equipment uses a special camera to “see” emissions of methane and VOCs.
  - Owners/operators may use “Method 21” as an alternative to optical gas imaging. Method 21 is an EPA method for determining VOC emissions from process equipment. The method is based on using a portable VOC monitoring instrument, such as an organic vapor analyzer (sometimes referred to as a “sniffer”).
- For new and modified well sites, owners/operators must conduct the initial survey one year after the final rule is published in the Federal Register, or within 60 days of the startup of production, whichever is later. After the first survey, leaks monitoring surveys must be conducted twice a year.
- The survey covers a number of components, including valves, connectors, pressure-relief devices, open-ended lines, flanges, closed vent systems, compressors and thief hatches on controlled storage tanks, among others.
- Any leaks found during the surveys must be repaired within 30 days, unless the repair would require shutting down production, which could lead to significantly greater emissions releases. In that case, owners/operators are required to fix the leak at the next shutdown, or within two years.
  - Equipment that vents natural gas as part of normal operation is not considered to be leaking and is not covered by this requirement; however, leaks surveys can also help

operators detect malfunctions in these venting devices, such as pneumatic controllers.

- The final rule exempts some well sites that contain only wellheads (known as “Christmas trees”) from the leak detection and repair requirements.
- After considering public comment on the proposed rule, and based on available data, EPA is not exempting low-production well sites (those with an average combined oil and natural gas production of less than 15 barrels of oil equivalent per well per day), from the requirements to find and repair leaks. Available data indicate that methane and VOC emissions from these sites could be similar to emissions from well sites that are not low-production. As a result, low-production well sites must meet the requirements of the leaks monitoring program.
- The final rule also creates a pathway for EPA to approve the use of emerging alternative leaks monitoring technology, which is developing rapidly. The rule outlines the information owners/operators must submit to demonstrate that using the alternative technology is capable of achieving methane and VOC reductions equivalent to those that can be achieved by using optical gas imaging or Method 21 to find leaks, and then repair them.

### **Pneumatic Pumps**

- Pneumatic pumps use gas pressure to drive fluids. These pumps are used at natural gas production sites where electricity is not readily available. At natural gas well sites, pneumatic diaphragm pumps are used to transfer fluids or to circulate glycol “heat trace medium,” which is used to keep pipes and equipment from freezing, for example.
- The final rule requires owners/operators of diaphragm pumps at natural gas well sites to route methane and VOC emissions from the pumps to a control device or process that is available on site, such as a device to control emissions from other equipment. Limited-use pneumatic pumps – those at a well site that operate for less than a total of 90 days per year – are exempt from the requirements. Owners/operators must meet these requirements within 180 days after the final rule is published in the Federal Register.
- Limited-use pneumatic pumps – those at a well site that operate for less than a total of 90 days per year – are exempt from the requirements. In addition, the rule clarifies that lean glycol circulation pumps are not covered by the pneumatic pumps standards.
- EPA is not finalizing requirements that owners/operators reduce emissions from natural gas-driven piston pumps, which are used to inject small amounts of chemicals to limit production problems and protect equipment. After analyzing currently available data and considering public comments on the proposed rule, EPA determined that these pumps are low-emitting and should not be subject to the final rule requirements.

- The final rule encourages owners/operators to use pumps that are not driven by natural gas where technically feasible. These pumps include solar-powered, electrically-powered and air driven pumps, and are exempt from requirements of the rule.

### **Compressors**

- EPA did not establish requirements for compressors at natural gas well sites, because these compressors are typically small and low emitting. However, compressors at natural gas well sites are included in the equipment covered by the leaks survey and repair requirements.

### **Requirements for Equipment Covered by the 2012 Rules**

- The final updates to the NSPS add greenhouse gas standards, in the form of limitations on methane, for some the types of equipment and processes that were covered in the 2012 NSPS for VOCs. EPA's analyses have determined that best systems for reducing methane and VOC emissions are the same. As a result, the requirements for completions of hydraulically fractured natural gas wells and pneumatic controllers, remain the same as in the 2012 rule.
- In addition, the 2012 rules included requirements for storage tanks across the oil and gas sector. The 2016 final NSPS does not change those requirements.

### **MORE INFORMATION**

- To read the final rule and summary information on requirements for other types of facilities in the oil and gas industry, visit [www.epa.gov/airquality/oilandgas](http://www.epa.gov/airquality/oilandgas)