

History of Air Quality Regulation for the Oil and Gas Industry in Colorado

- ▶ Prior to early 2000's oil and gas exploration and production sites were considered insignificant emitters
- ▶ Analysis of storage tank flash emissions showed that these sites were by far the largest source of VOC emissions in the state
- ▶ Series of rulemakings to address emissions from oil and gas sources
 - ▶ 2004
 - ▶ Focused on reducing emissions from condensate tanks in non-attainment area
 - ▶ 2006
 - ▶ First state-wide oil and gas regulations
 - ▶ 2008
 - ▶ Expanded tank controls, first requirements for pneumatic controllers

History of Air Quality Regulation for the Oil and Gas Industry in Colorado

- ▶ More rulemakings ...

- ▶ 2014

- ▶ First in the nation oil and gas methane regulations
 - ▶ IR camera LDAR
 - ▶ Tank capture requirements

- ▶ 2017

- ▶ New and enhanced control requirements for ozone non-attainment area
 - ▶ Directed establishment of State-Wide Hydrocarbon Emission Reduction (SHER) Team, and Pneumatic Controller Task Force to identify and evaluate state-wide emission reduction strategies for the oil and gas industry, and make recommendations to the AQCC in early 2020

History of Air Quality Regulation for the Oil and Gas Industry in Colorado

- ▶ Prior rulemakings established control requirements for a large number of emission sources at well production facilities, compressor stations, and gas processing plants
 - ▶ Storage tank controls
 - ▶ Storage tank design and operational requirements
 - ▶ Glycol natural gas dehydrators
 - ▶ Control requirements for centrifugal and reciprocating compressors
 - ▶ Pneumatic pumps

History of Air Quality Regulation for the Oil and Gas Industry in Colorado

- ▶ More Controls ...
 - ▶ Methane emission reductions from oil and gas facilities
 - ▶ Leak Detection and Repair for Gas Processing Plants, Compressor Stations, and Well Production Facilities
 - ▶ First regulatory standards requiring infra-red camera inspections
 - ▶ Control requirements and emission standards for stationary and portable engines
 - ▶ Maintenance standards for combustion equipment

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- ▶ More Controls ...
 - ▶ Require use of Best Management Practices to limit emissions during well-unloading activities
 - ▶ Emission limits for natural gas actuated controllers (pneumatic controllers)
 - ▶ Requirements that pneumatic controllers throughout the state be low-bleed
 - ▶ No-bleed/no emission controllers required at new gas processing plants in non-attainment area
 - ▶ No-bleed/no emission controllers required at new sites state-wide where technically feasible and electric grid power is available
 - ▶ First of its kind inspection and maintenance program for pneumatic controllers in the non-attainment area

Proposed Regulatory Provisions: Leak Detection and Repair

- ▶ Require semi-annual leak detection and repair (LDAR) using an approved instrument monitoring method at facilities statewide with VOC emission greater than 2 tons per year (tpy)
 - ▶ SB-181 is limited to well production facilities but this proposal includes compressor stations
- ▶ Maintain existing LDAR quarterly and monthly LDAR requirements for facilities in the non-attainment area and statewide
- ▶ Allow operators to utilize an alternative LDAR program if they can establish it is as or more effective than semi-annual inspections
 - ▶ Could include program utilizing continuous monitoring devices or other monitoring methods (aerial surveys, long path monitoring, etc.)

Proposed Regulatory Provisions: Transmission Sector

- ▶ Regulatory requirements based on emission reduction program developed by SHER Team
- ▶ Requires companies to develop and implement company specific Best Management Practices statewide
 - ▶ Annual compliance certification
 - ▶ Annual company-wide emissions report for third party verification
- ▶ Establishes Steering Committee consisting of environmental/local government, industry and division representatives
 - ▶ Develop system-wide emission intensity target, which will be periodically evaluated with a goal of achieving on-going emission reduction improvements
- ▶ Includes accountability

Proposed Regulatory Provisions: Pneumatic Devices

- ▶ Proposal will include regulatory provisions to achieve additional emission reductions from pneumatic devices statewide
- ▶ Statewide Hydrocarbon Emission Reduction team (SHER) and Pneumatic Controller task force (PC) continuing to discuss specifics of potential strategies
- ▶ Division proposal will be informed by SHER/PC discussions in early August

Proposed Regulatory Provisions: Statewide Exploration and Production Facility Permitting

- ▶ Remove existing regulatory provision allowing operators of new oil and gas exploration and production facilities up to 90 days to apply for a permit

Proposed Regulatory Provisions: Storage Tanks

- ▶ Increase stringency of hydrocarbon liquid storage tank controls statewide (condensate, oil, produced water)
- ▶ Require all tanks statewide with VOC emissions equal to or greater than 2 tpy to have controls (reduction in control threshold from 6 tpy)
 - ▶ New controls in non-attainment area required by May 1, 2020
 - ▶ Replace existing control program in non-attainment area with new, more stringent 2 tpy control threshold requirement
 - ▶ New controls outside the non-attainment area required by March 1, 2021
- ▶ Require new tanks to install auto-gauging devices to eliminate emissions when liquid levels are checked

Proposed Regulatory Provisions: Truck Loadout

- ▶ Require new and existing well production facilities statewide to control hydrocarbon emissions from loadout of tanks to trucks by using submerged fill and routing vapors to:
 - ▶ Vapor collection and return system or
 - ▶ Enclosed combustion device
- ▶ Existing facilities required to have control systems in place by May 1, 2021
- ▶ Inspection and recordkeeping requirements to ensure compliance

Proposed Regulatory Provisions: Well Unloading

- ▶ Expand statewide Best Management Practice requirements to include emissions during plugging and abandonment activities
- ▶ Enhance recordkeeping requirements

Proposed Regulatory Provisions: Statewide Annual Emission Report

- ▶ Require operators to provide a comprehensive annual emission report for their oil and gas facilities in Colorado
- ▶ Pollutants
 - ▶ Methane (first ever methane reporting rule in Colorado), ethane, VOC, NO_x
- ▶ Emission points, intended to be comprehensive inventory including:
 - ▶ Drilling/fracing/completion, separator venting, flaring, storage tanks, dehydrators, engines, component leaks, pneumatic devices, equipment blow-downs, well unloading, produced water handling