



Revisions to Colorado's Air Quality Control Commission Regulation No. 7

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Presentation Overview

- Regulatory history and goals for recent revisions to AQCC Regulation No. 7
- Estimated Costs and Benefits of rule revisions
- Overview of Adopted Strategies
- Outreach and Compliance Assistance
- Oversight by the Air Pollution Control Division
- Online Resources



Regulation No. 7 History

- ▶ Colorado has been a national leader in regulating air emissions from the oil and gas production sector
- ▶ 2004 rulemaking to reduce VOC emissions from O&G sources in the Denver Metro/North Front Range as part of Early Action Compact with US EPA
- ▶ 2006 update to rules and adoption of new requirements with statewide applicability
- ▶ 2008 Ozone Action Plan to address non-compliance with the federal ozone standard

Rationale for 2014 Revisions to Regulation No. 7

- Directive from Governor Hickenlooper to find ways to reduce leakage from natural gas production
 - Responsible development
 - Reduce waste
 - Maximize climate change benefits of natural gas usage

- Proactively address non-compliance with ozone National Ambient Air Quality Standard *while also reducing methane emissions which contributes to global climate change*



Rulemaking Effort Goals

- Identify and implement strategies that improve the effectiveness and efficiency of Colorado's air quality program
- Address the growth in oil and gas development through the adoption of reasonable emission reduction strategies
- Lay the groundwork for ongoing efforts to reduce oil and gas emissions while minimizing burdens that don't provide environmental value

Costs and Benefits of New Rules

- ▶ Estimated annual cost of new rules for industry is approximately \$42 million
- ▶ State administers the rule using existing resources
- ▶ Significant reduction of volatile organic compounds and methane
 - ▶ Approximately 94,000 tpy of VOC
 - ▶ Approximately 64,000 tpy of methane
 - ▶ Overall cost effectiveness for the entire package is approximately \$450 per ton of VOC reduced



Overview of Adopted Strategies

- 7
- Establishes leak detection and repair requirements for well production facilities and compressor stations
 - Expands control requirements for storage tanks
 - Improves capture of emissions at controlled tanks
 - Expands control requirements for glycol dehydrators
 - Establishes requirements to minimize emissions during well maintenance
 - Expands pneumatic controller requirements statewide
 - Requires auto-igniters on all combustion devices

Well Production Facilities

8

- ▶ Leak Detection and Repair requirements - the plumbing around the gas wells, separators, and ancillary piping is subject to "LDAR"
 - ▶ Establishes the most comprehensive leak detection and repair program for oil and gas facilities in the nation
- Frequent monitoring using Method 21 or infra-red (IR) cameras (or alternative approach approved by APCD)
- Tiered monitoring schedule focuses on the highest emitting facilities and reduces the burdens on smaller facilities



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Infra-Red Camera Imaging

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1 Repairing Leaks & Recordkeeping

- First attempt at repair required within 5 working days with provisions for good cause (parts availability or full shut-down)
- Instrument monitoring following the repair(s) are required within 15 working days to determine effectiveness
- Operators must maintain records
 - Initial approved instrument monitoring method
 - List of leaking components and monitoring method used to determine the leak
 - Date of first repair attempt and if necessary additional attempts, and many other records
- Annual LDAR reporting May 31, 2015 (publicly available)



Natural Gas Compressor Stations

- Existing natural gas compressor stations must be inspected within 30 to 90 days after January 1, 2015 for leaks (>50 tpy and 0-50 tpy respectively)
- Subsequent LDAR inspection frequency depends on the emissions from the facility



Well Unloading Requirements

3

- “Beginning May 1, 2014, owners or operators must use best management practices to minimize hydrocarbon emissions and the need for well venting associated with downhole well maintenance and liquids unloading.”
- Division is currently working with operators to develop guidance around best practices.
- Several operators are currently testing various control technologies and practices to reduce/eliminate emissions during well unloading.



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Storage Tank Controls

4

- ▶ All storage tanks statewide - air pollution control requirements *reduced* from 20 tpy to 6 tpy of VOCs
 - ▶ *Includes crude oil and produced water storage tanks*
 - ▶ Control device must achieve an average control efficiency of at least 95%



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Storage Tank Inspections

5

- Improve capture of emissions at controlled tanks
 - Controlled tanks must be operated without venting to the atmosphere
 - Establishes requirements for Storage Tank Emission Management systems (STEM)
 - Emissions associated with the top of the storage tank (pressure relief valves, thief hatches, control devices/piping) are addressed through STEM
 - Certified design to minimize emissions
 - Extensive instrument based and AVO monitoring
 - Again, a tiered monitoring schedule focuses on the highest emitting facilities and reduces the burdens on smaller facilities



- Some inspections begin Jan. 1, 2015



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Glycol Dehydrators

6

- ▶ Glycol Dehydrators - air pollution control requirements *lowered* from 15 tpy to 6 tpy of VOCs
- ▶ 2 tpy requirement for dehy's located within 1320' of building unit or designated outside activity
- ▶ Control device must achieve an average control efficiency of 95%



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Natural Gas Pneumatic Controllers

7

- ▶ After May 1, 2014, sources must reduce VOCs emitted equal to or less than a low bleed pneumatic controller
- ▶ No-bleed controllers required where onsite electrical power is used
- ▶ Existing high-bleed controllers must be replaced or retrofitted by May 1, 2015



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Outreach & Compliance Assistance

- Extensive outreach to operators and trade associations including technical workshops, Frequently Asked Questions documents, guidance documents, online tools, stakeholder meetings, etc.
- Significant compliance assistance to operators including in field training, work group meetings, one on one meetings with operators, communications to trade groups, etc.



Oversight by the Air Pollution Control Division

- Eight inspectors dedicated to O&G, plus periodic assistance from the Division's Field Services Unit for stack testing, complaint response, report reviews, etc.
- Four additional dedicated IR camera staff
- Partnering with COGCC (extensive field staff), joint agency training
- Partnering with EPA (special studies, investigations)
- Partnering with local agencies

Summary of Key Points

- Expands Colorado's existing program and establishes innovative new strategies that address each of the most significant sources of hydrocarbon emissions from the oil and gas production sector
- Maintains Colorado's leadership role in regulating air emissions from oil and gas production
- Establishes a rigorous set of requirements to ensure responsible development of Colorado's oil and gas resources



Online Resources

- <https://www.colorado.gov/pacific/cdphe/summary-oil-and-gas-emissions-requirements>
- <https://www.colorado.gov/pacific/cdphe/emissions-requirements-oil-and-gas-industry>



Questions??



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