

CDPHE's Oil and Gas Regulatory Authority

- Water
- Solid & Hazardous Waste
- Air



Regulation of State Waters

- In 1989, S.B. 181 amended the Water Quality Control Act to define the responsibilities of state agencies to implement water quality protection of state waters.
 - CDPHE Water Quality Control Commission (WQCC)- adopts water quality standards
 - COGCC- implements groundwater standards
 - CDPHE Water Quality Control Division (WQCD)- issues surface water discharge permits
 - 2000 MOA Between WQCD and COGCC: Response to Spills/Releases to Surface Water

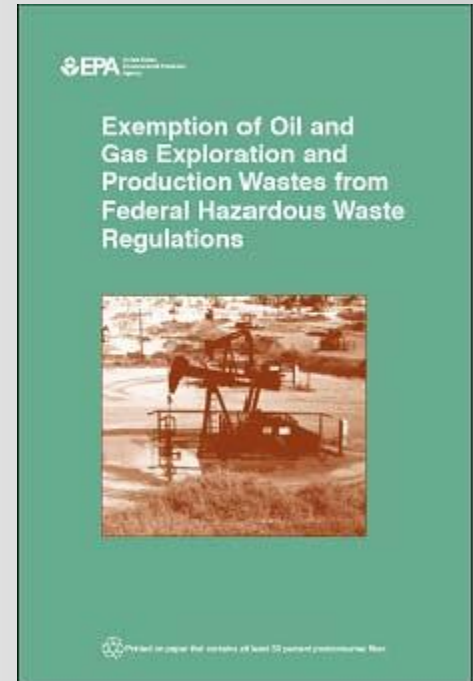
Stormwater Management

- Stormwater construction permits are issued by WQCD
- COGCC rules complement the WQCD stormwater construction permit
- Rules require the use of BMPs to control stormwater discharges after the WQCD permit has expired



Regulation of Solid and Hazardous Waste

- Exploration and Production (E&P) wastes are considered solid wastes due to the EPA study completed in 1988
- Commercial Centralized E&P Waste Management Facilities are regulated by CDPHE's Hazardous Materials and Waste Management Division (HMWMD)
- Non-Commercial Centralized E&P Waste Management Facilities are regulated COGCC



Regulation of Air Quality

- The APCD develops air quality regulations, issues permits, implements the air quality monitoring program, conducts inspections and enforces air quality regulations
- Colorado has 60 air quality monitoring sites throughout the state to monitor air quality and identify emerging trends



Regulation of Air Quality, Cont.

- Air Quality Control Commission oil and gas rules
 - Regulation 1- Opacity (e.g. smoke and dust)
 - Regulation 2- Odor
 - Regulation 3- Statewide Permitting Requirements
 - Regulation 6- New Source Performance Standards (NSPS)
 - E.g. NSPS Kb (Storage tanks) and NSPS KKK (Fugitive VOC emissions)
 - Regulation 7- Control of Ozone Precursors and Oil and Gas Hydrocarbon Emissions
 - Regulation 8- Maximum Achievable Control Technology (MACT) Standards
 - E.g. MACT HH (Oil and natural gas production facilities) and MACT HHH (Natural gas transmission and storage facilities)

Air Permitting 101

- Air Pollution Emission Notice (APEN)
- Permit
 - Authorizes legal emissions of air pollutants
 - Defines what pollutants can be emitted
 - Identifies emission reduction measures
 - Specify how emissions must be measured and reported
- Small Business Assistance Program



Senate Bill 181 Air Quality Provisions

- ▶ Directs Air Quality Control Commission (AQCC) to minimize emissions from oil and gas facilities
 - ▶ Broad definition of facilities to include exploration and production sites through the transmission sector
 - ▶ Methane, hydrocarbon, volatile organic compound (VOC), hazardous air pollutants (HAPs) and nitrogen oxide (NO_x) emissions



SB19-181: Highlights

- Additional Public Welfare Protections Regarding Oil & Gas Operations
 - Adopt rules to minimize methane and other hydrocarbons, VOC and NOx from oil & gas
 - Review rules & consider more stringent oil & gas provisions for well production facilities and compressor stations
 - Semi-annual leak detection & repair (LDAR) at well production facilities or use of alternative approved instrument monitoring method
 - Regular inspection and maintenance of transmission pipelines & compressor stations
 - Continuous methane emissions monitoring at facilities with large potential emissions, multi-well facilities and facilities in close proximity to occupied dwellings
 - Reduce emissions from pneumatic devices, including devices that do not vent natural gas



SB19-181: Highlights

- **Additional Public Welfare Protections Regarding Oil & Gas Operations**
 - Clarifies AQCC authority to regulate emissions from pre- production activities, drilling and completion
 - May phase in requirements for increased inspections until continuous emission monitoring is achieved
 - Consult with COGCC in their adoption of rules (evaluate and address potential cumulative impacts of oil & gas development)



Next Steps

- Hire (8 new FTE by 2021)
- Leverage past & current collaborative efforts
 - State-wide Hydrocarbon Reduction Team
 - Pneumatic Controller Task Force
 - Ozone Reduction Strategies
 - Regional Haze
 - Rocky Mountain National Park Initiative
 - Clean Power Plan/Affordable Clean Energy
 - Others



Next Steps

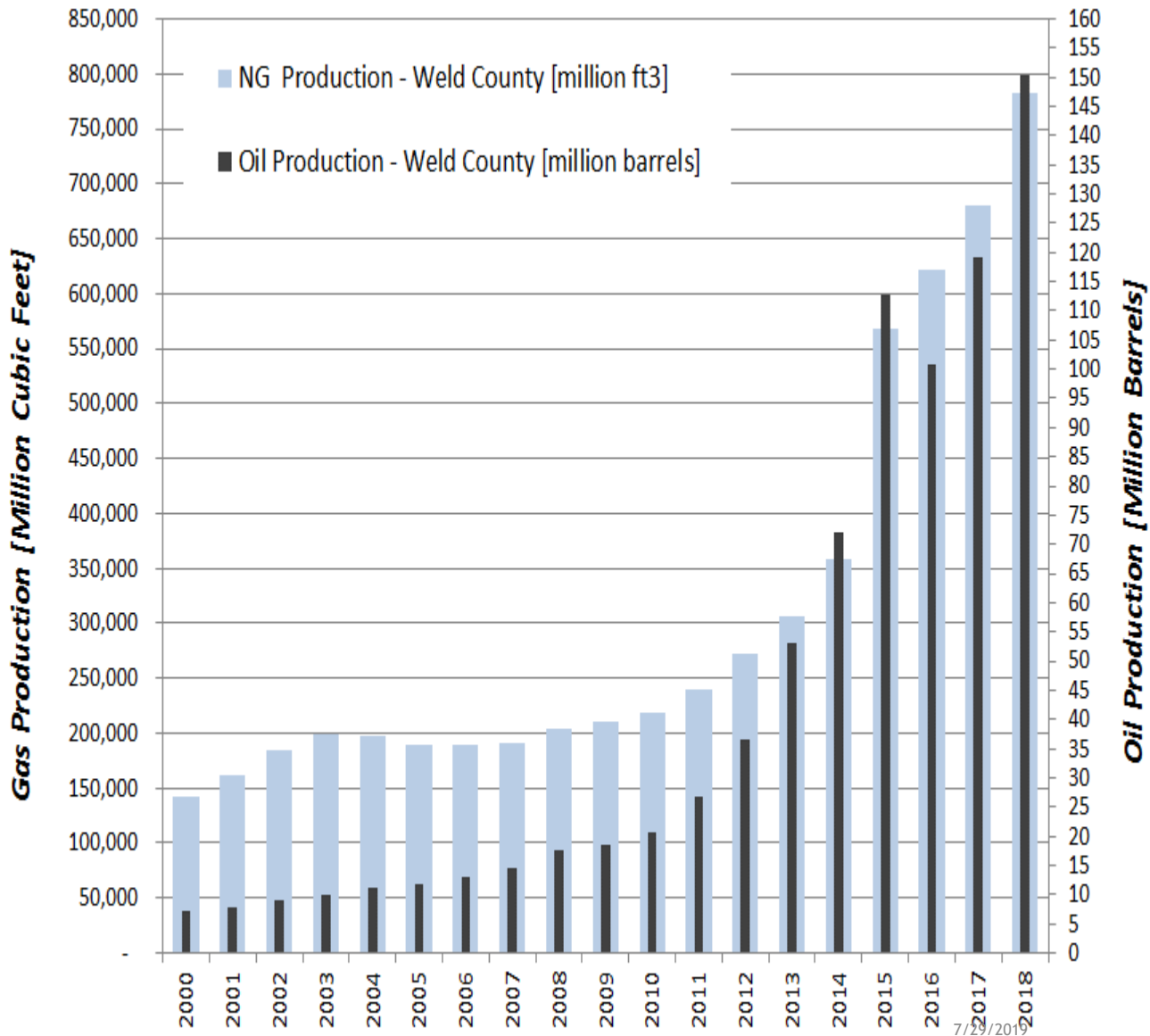
- Provide opportunities for broader input
- Look for co-benefits given multiple related directives
- Coordinate between agencies and commissions
 - Data gathering
 - Stakeholder engagement
 - Emission reduction strategy development (regulatory and non-regulatory)



“Iterative and Multi-faceted Process”

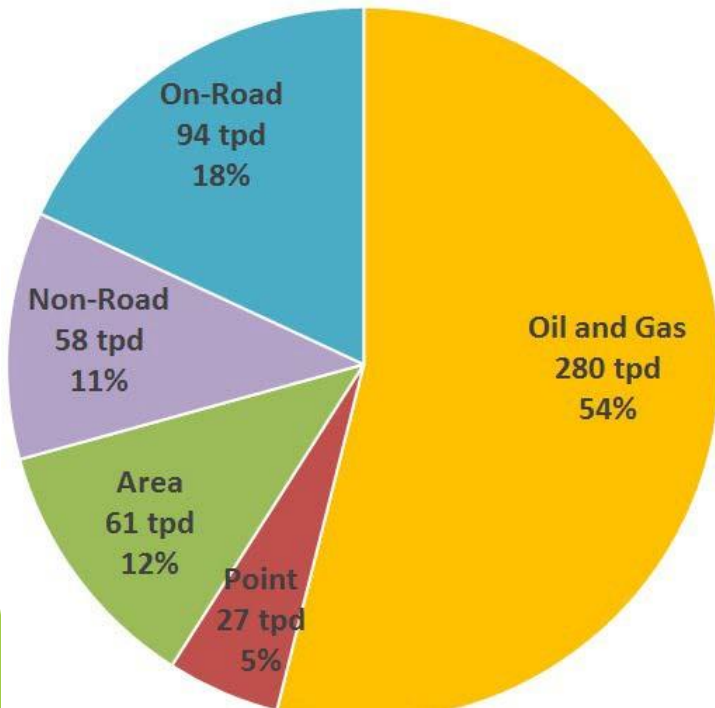
- Colorado is still in the process of mapping out the overall process for realizing the provisions from 2019 bills (SB19-181, Sb 19-096, 19-236, HB19-1261)
- First steps include:
 - Fall 2019 AQCC rulemaking
 - Spring 2020 AQCC rulemaking
 - Summer 2020 AQCC rulemaking
 - Fall 2020 AQCC rulemaking
- Much more coming
- Working to:
 - connect with stakeholders outlining processes and venues
 - educate stakeholders on how to effectively engage in the different venues

Weld County Annual Oil and Gas Production

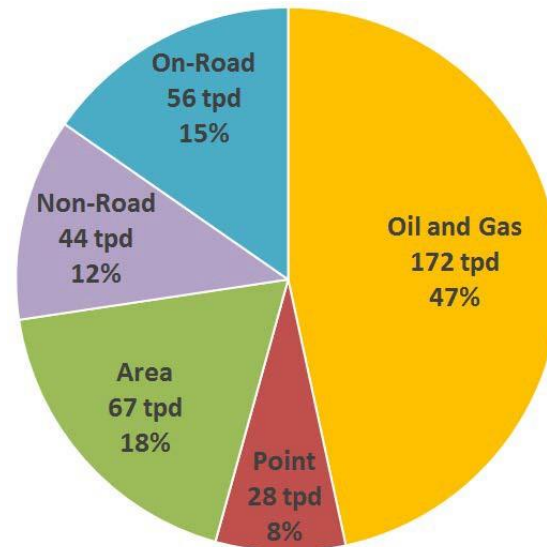


DMNFR VOC Emissions - 2011 to 2017

2011
518.8 tons/day

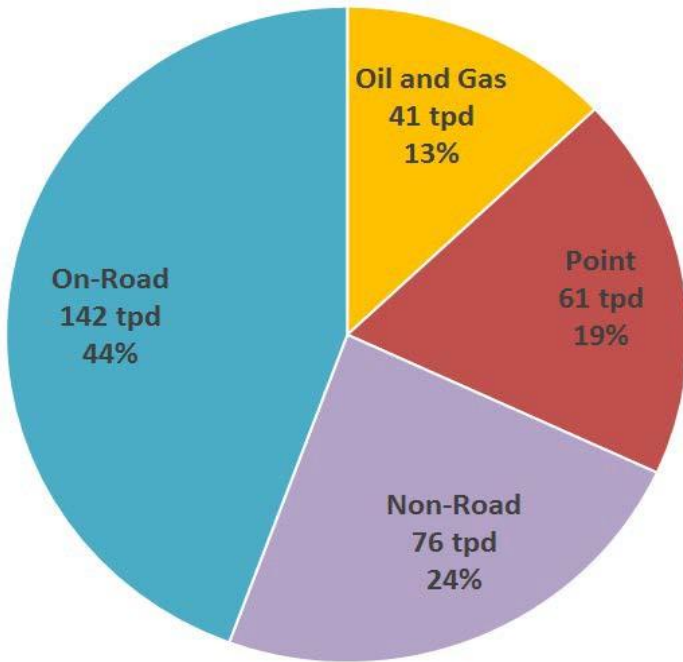


2017
368.2 tons/day

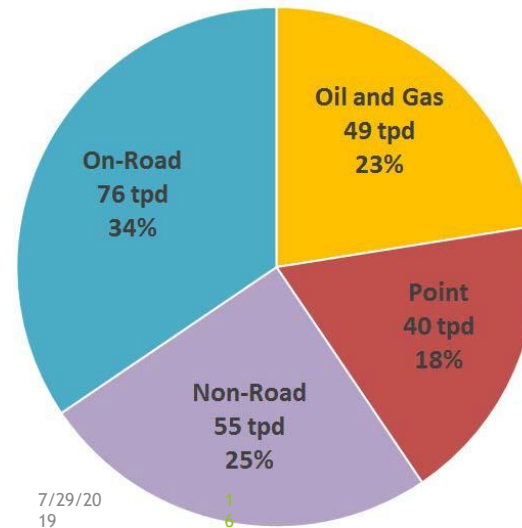


DMNFR NOx Emissions - 2011 to 2017

2011
320.8
tons/day



2017
219.7
tons/day



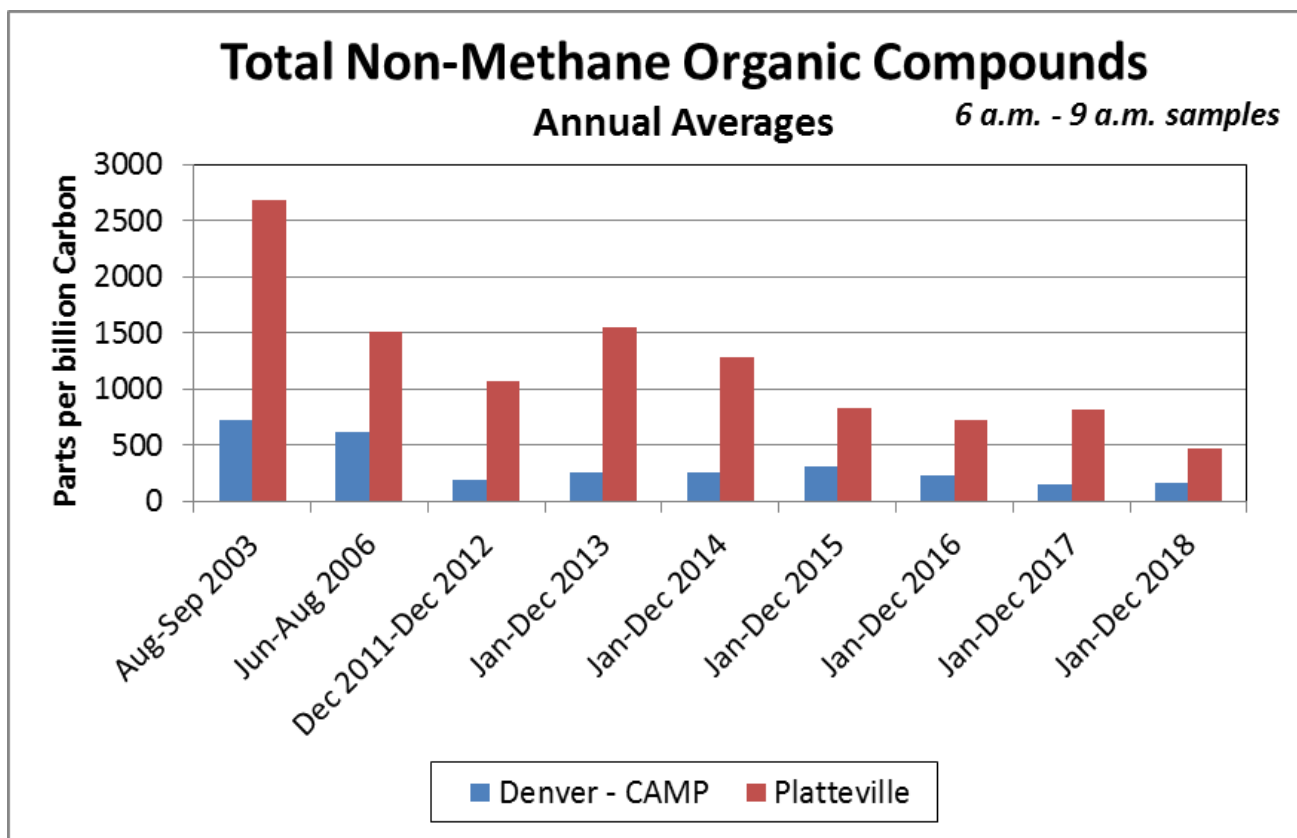
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Emission Leaks at Oil and Gas Facilities

Individual Facility Emissions Issue Rate by Inspection Year (October - September)	
Inspection Year	Issue Rate
2014	28%
2015	17%
2016	16%
2017	12%
2018	13%

Total Non-Methane Organic Compound Comparison (2003 - 2018)



Summary of S.B. 181 Rulemaking

Measure	New	Enhanced
Transmission Sector	X	
Leak Detection and Repair		X
Pneumatic Devices		X
Storage Tanks		X
Truck Loadout	X	
Well Unloading		X
Exploration and Production Facility Preconstruction Permit	X	
Annual Emission Report	X	

Emission Control Requirements Under Consideration in the Future

- ▶ Continuous methane emissions monitoring (especially for large emitting facilities, multi-well facilities, and facilities in close proximity to occupied structures)
- ▶ Minor source offset program or other system-wide reduction approaches
- ▶ Enhanced control requirements based on proximity to homes and businesses
- ▶ NO_x controls (engines etc.)
- ▶ Enhance well-unloading requirements
- ▶ Alternative LDAR requirements (aerial inspections, remote sensing, other technologies)
- ▶ Increase capture of gas and reduce flaring
- ▶ Tankless production
- ▶ Associated mobile-source emissions
- ▶ Others

Planned Future Rulemakings During the Next Year that Could Touch on Oil and Gas

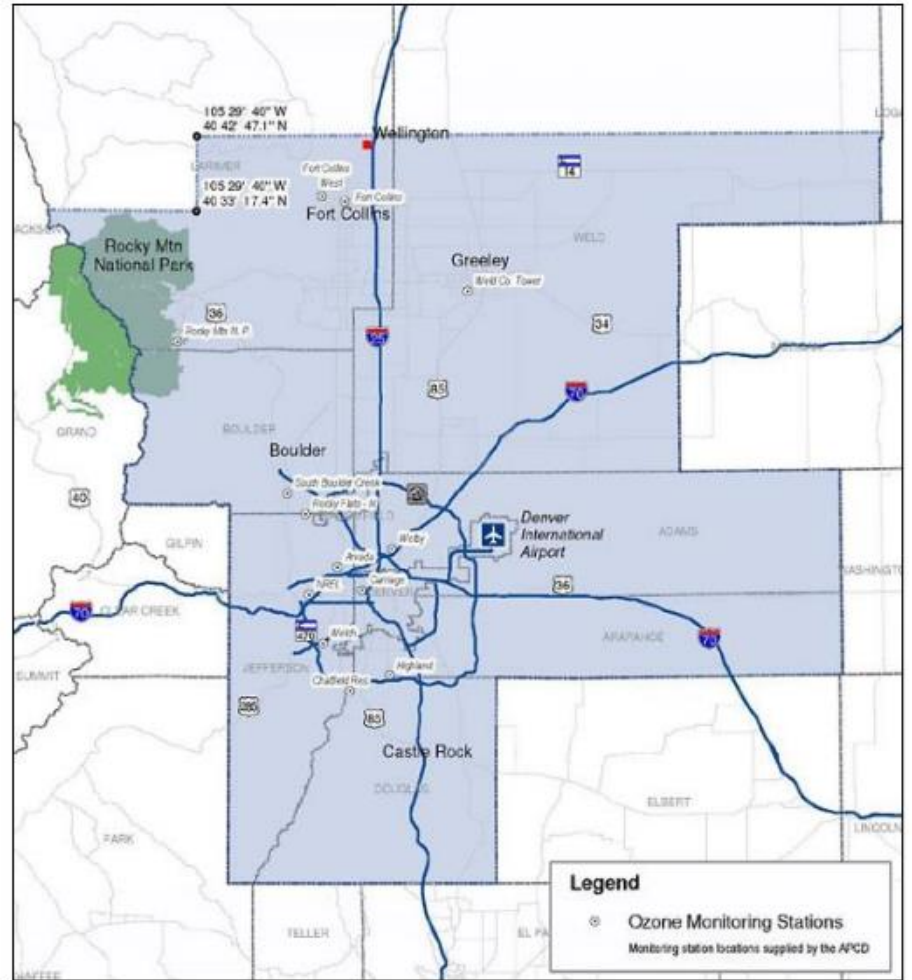
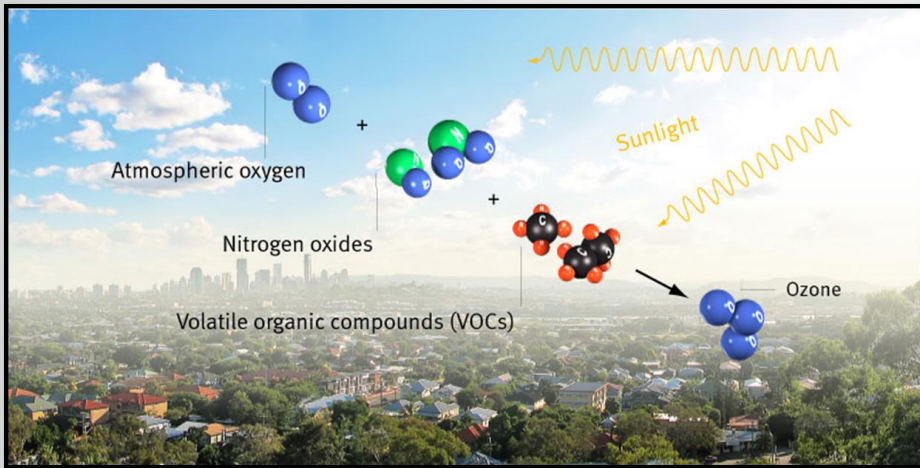
- ▶ Engines/ Regional Haze Part 1: December 2019 Request for Hearing, March 2020 Hearing
- ▶ Initial Rulemaking under SB19-096, February 2020 Request for Hearing, May 2020 Hearing
 - ▶ Will include greenhouse gas reporting requirements
 - ▶ Could also include GHG reduction requirements (if reduction requirements not included, separate emission reduction rulemaking under SB 19-096 will be proposed in May 2020)
- ▶ Regional Haze Part 2, August 2020 Request for Hearing, November 2020 Hearing
- ▶ SB 19-181 Round 2, TBD/Fall 2020?
- ▶ Serious Ozone Non-Attainment State Implementation Plan, TBD

Stakeholder Engagement Schedule

- ▶ August 22, 2019, CDPHE Sabin Cleere Room, 8:30-11:00 AM
 - ▶ Discuss first draft of regulatory language
- ▶ September 4, 2019, Broomfield Library Auditorium, 6:00-8:00 PM
 - ▶ Discuss rulemaking process and how to most effectively engage
- ▶ September 10, 2019, Grand Junction City Hall Auditorium, 4:00- 7:00 PM
 - ▶ Western Slope public meeting to discuss rulemaking and take public comment
- ▶ Sign up to receive e-mail notifications @ <https://Colorado.gov/pacific/cdphe/air-mailing-lists>

Ozone Nonattainment

Ozone Formation



Nonattainment Area Map

APCD Data Availability

- Continuous data posted hourly and forecasting posted daily on APCD Technical Services website
 - <http://www.colorado.gov/airquality>

Example: No Action Day & No Advisory



Example: Action Day & Advisory



Oil and Gas Health Information and Response Program

- Launched in Fall of 2015 at recommendation of Oil and Gas Task Force
- Collaboration between Disease Control and Environmental Epidemiology Division and Air Pollution Control Division
 - Health concern investigator, toxicologists, consulting physician, air quality scientists
- Tracks and investigates health concerns
- Provides citizens with health science information



Investigation Process

- Track and investigate health concerns
 - Reported via CO HELP (303-389-1687) or online at www.colorado.gov/oghealth
- Coordinate with stakeholders
 - COGCC, APCD, Operators, local govt.
- Conduct air quality sampling
 - Screening- summa canisters and sorbent tubes
 - Comprehensive- mobile laboratory
- Evaluate potential health risks
- Generate report and post to online information clearinghouse

Investigation Results

- Over 650 concerns reported to OGHIR since Oct 2015
- Northern Front Range counties account for 76% of reported concerns to the OGHIR Program
- 10 community exposure investigations, including 6 with the Colorado Air Monitoring Mobile Lab (CAMML)
 - One exposure investigation conducted near OG site through multiple phases of development (drilling, hydraulic fracturing, flowback)
 - Multiple single samples (SUMMA canister)
 - Quarterly evaluations of ongoing air monitoring in Battlement Mesa

To date, we have not found any concentrations above short or long-term health guideline values (*conclusions are only relevant to the time period and location in which samples were collected)



Questions?

Tom Butts MSc

Larimer County Department of Public Health
and Environment

Buttstj@co.larimer.co.us

Sean Hackett

CDPHE Energy Liaison

303-692-3662

sean.hackett@state.co.us