

# Colorado AIMM / ITRC Methane Team

Gas Technology Institute - CH4 Connections

September 25, 2018

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9/25/18



**COLORADO**

**Air Pollution Control Division**

Department of Public Health & Environment





# Colorado Regulation 7

- Regulates hydrocarbon emissions including methane from upstream oil & gas operations
- Primary purpose is for protection of health & environment
- Includes leak or emissions monitoring requirements for components, storage tanks and pneumatic controllers using an Approved Instrument Monitoring Method (AIMM)
  - EPA Method 21
  - Optical Gas Imaging (OGI) instrument
  - Other Division-Approved instrument based monitoring method or program (Alternative AIMM)



# Alternative AIMM

- Review and Approval Criteria (Regulation 7 Section XII.L.8.)
  - Qualitative or Quantitative Detection (and how emissions quantified)
  - Commercially Available (ready for deployment; not in development or testing or a prototype)
  - Approved by other regulatory authorities and for what purpose or application?
  - Leak detection capabilities, reliability, and limitations
  - Frequency of measurements and data logging capabilities



# Alternative AIMM

- Review and Approval Criteria (Regulation 7 Section XII.L.8.)
  - Data quality indicators for precision and bias
  - Quality control and quality assurance procedures necessary to ensure proper operation
  - Description of where, when and how will be used
  - Documentation (e.g., field or test data, modeling) adequate to demonstrate the proposed Alternative AIMM is capable of achieving emission reductions that are at least as effective as the emission reductions achieved using OGI or EPA Method 21 at prescribed monitoring frequencies



# Evaluation of Innovative Methane Detection Technologies

- The Interstate Technology & Regulatory Council (ITRC) is a state-led coalition working to advance the use of innovative environmental technologies and approaches.
- ITRC Methane Team formed in early 2015
- Context & Challenge
  - State, federal and international regulations addressing methane from oil and gas with options for alternative technologies
  - New detection technologies and applications being developed and introduced into the market
  - No standard methodology or guidelines to evaluate performance and equivalence of new or innovative methane detection technologies to existing approved technologies or methods



# Evaluation of Innovative Methane Detection Technologies

- ITRC Methane Detection Technologies Technical-Regulatory Guidance Document
  - Will be published September 28, 2018 (ITRCweb.org)
  - Collaborative effort from 60+ individuals representing State, Federal and International Regulators, Private Industry, Public Stakeholders, Academia and Others
  - Provides a centralized reference for oil & gas methane emission sources, leak monitoring regulations, detection technologies, evaluation guidelines and principles, and relevant case studies summaries/links



# Evaluation of Innovative Methane Detection Technologies

- Characterizes various methane emission sources along the entire oil and gas supply chain
- Summarizes existing and proposed methane and leak detection regulations for each segment of the oil and gas supply chain, including regulations that allow for approval of alternative detection technologies
- Identifies regulatory barriers and opportunities to the use of new or innovative methane detection technologies



# Evaluation of Innovative Methane Detection Technologies

- Overview of existing and emerging methane detection technologies and their applications
- Guidance regarding performance characteristics and parameters to consider in technology evaluation
- Provides a starting point and framework for evaluation of detection technologies

**Evaluation of Innovative Methane Detection Technologies**

Search this website...

**5 Evaluation Guidelines and Principles**

- 5.1 Definition System Objectives and Goals
- 5.2 Design Elements
- 5.3 Data Quality Diagnosis and Monitoring, Reporting, and Remediation
- 5.4 Guidelines

**6 Lessons Learned**

**7 Stakeholder Perspectives - Additional Information**

**Welcome**  
Evaluation of Innovative Methane Detection Technologies (Methane-1)

**How to Use This Document**

The ITRC guidance provides an overview of existing and emerging methane detection technologies and their applications. Although oriented for use in the oil and gas industry chain, certain technologies may be applicable in other areas as well. Items the document does not cover. The document provides the framework for industry and the regulatory community to evaluate and select the best methods to identify leaks or reduce emissions.

This document is intended for a wide audience including regulatory staff, technology developers and vendors, oil and gas producers, transmission companies, distribution utilities, and others to:

- Enable users to evaluate, compare, and select suitable technologies to detect quantify methane emissions from equipment in the oil and gas (O&G) supply chain to:
  - Comply with existing and forthcoming leak regulations
  - Assist with inventory monitoring and reporting, and
  - Enhance safety
- Identify regulatory barriers and opportunities for new or innovative technologies.

If you are visiting this site for the first time, please review the [Positive Summary](#) of this guidance. All users may find [Navigating this Website](#) helpful.

**Introduction** **Characterization** **Regulations**

**CH4 Technology** **Evaluation**