

# Alternative Fugitive Emissions Management Program (Alt-FEMP) & Enabling Technology

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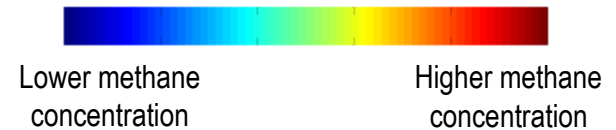
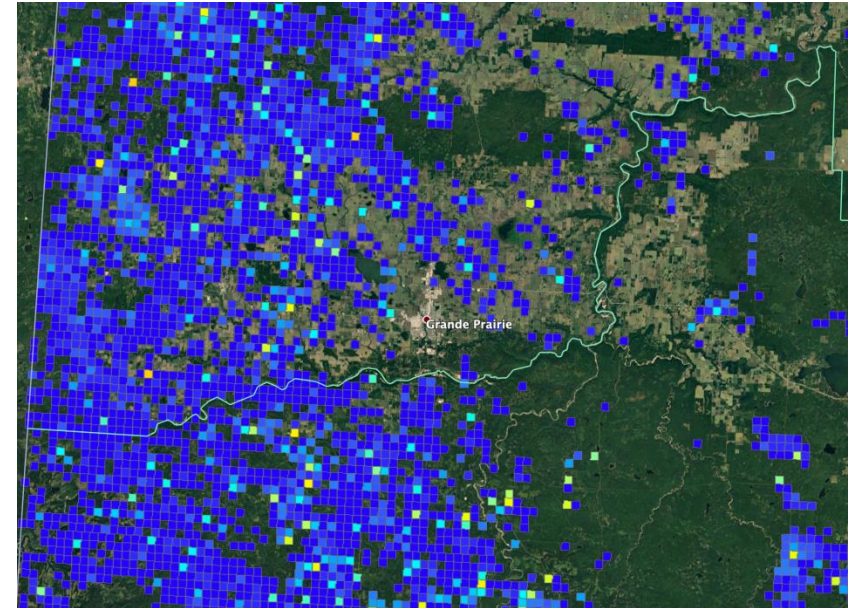
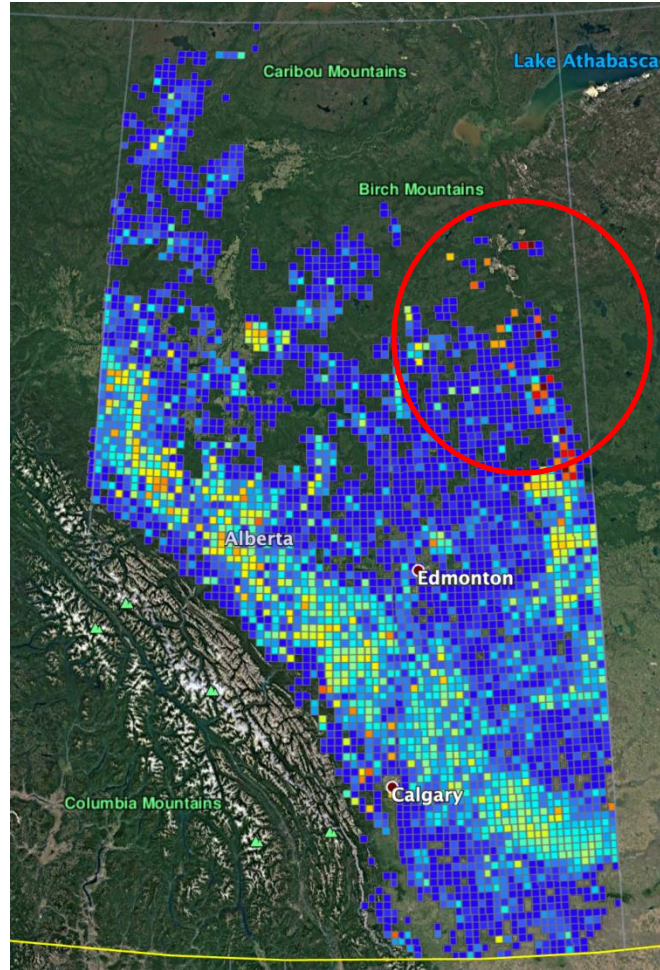
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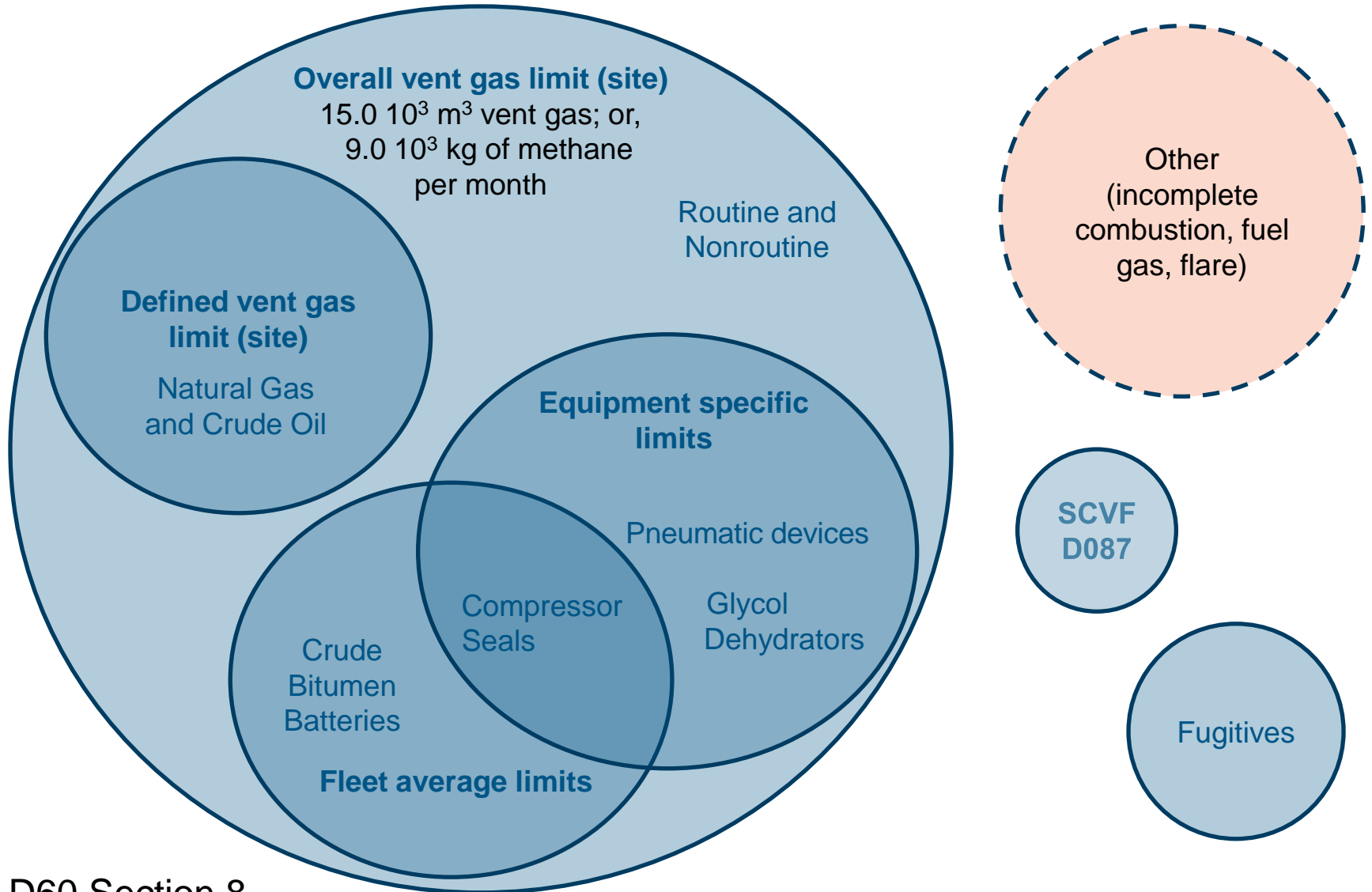


# Reported Emissions Inventories



» Industry activity based on reported emissions volumes

# AB Vent Gas - Regulations



# Fugitive Emissions - Surveys

**Table 4. Frequency of fugitive emissions surveys by equipment or facility type**

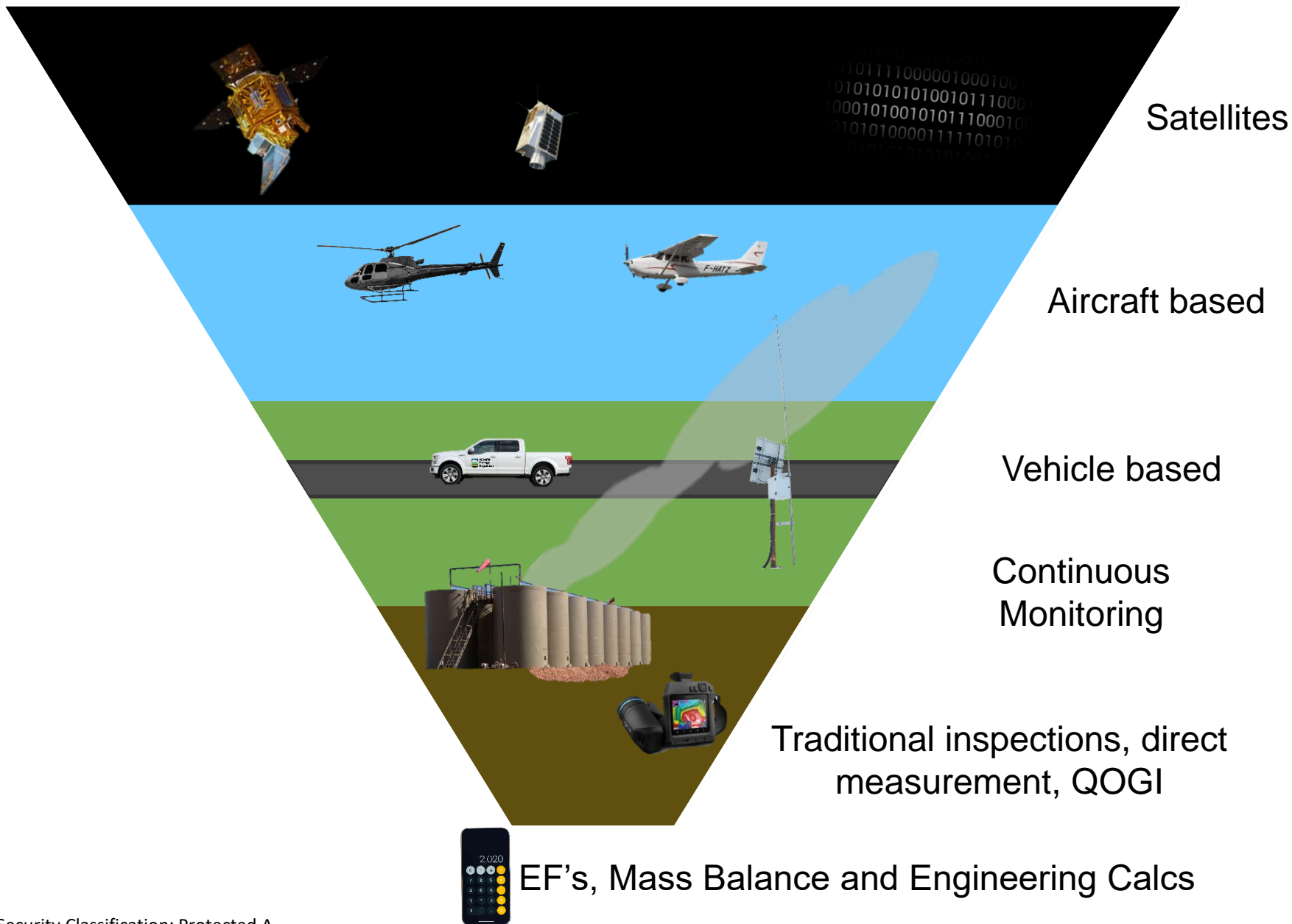
Equipment or facility type	Facility subtype codes <sup>1</sup>	Frequency
Sweet gas plants	401	Triannually
Compressor stations ( $<0.01$ mol/kmol H <sub>2</sub> S in inlet stream)	601, 621 <sup>2</sup>	
Liquid hydrocarbon storage tanks with vent gas control	N/A	
Produced water storage tanks with vent gas control	N/A	
Gas plants	402, 403, 404, 405	Annually
Straddle and fractionation plants	406, 407	
Compressor stations ( $\geq 0.01$ mol/kmol H <sub>2</sub> S in inlet stream)	601, 621 <sup>2</sup>	
Battery and associated satellite facilities <sup>3</sup>	311, 321, 322, 331, 341, 342, 344, 345, 351, 361, 362, 363, 364	
Custom treating facilities	611, 612	
Terminals	671, 673	
Injection/disposal facilities	501, 502, 503, 504, 505, 506, 507	

# AER Emissions Requirements & Guidance

- 》 Directive 60: Upstream Petroleum Industry Flaring, Incinerating, and Venting
  - Requirements
- 》 Manual 015: Estimating Methane Emissions
  - Guidance on Estimating Methane Emissions
- 》 Manual 016: How to Develop a Fugitive Emissions Management Program

<https://www.aer.ca/protecting-what-matters/protecting-the-environment/methane-reduction/air-emissions-modules>

# Methane Detection and Quantification



# **D60 8.10.6 Alternative Fugitive Emissions Management Program (alt-FEMP)**

The AER will consider innovative and science-based alternatives to the fugitive emissions management program prescribed in this directive. Alternative programs may incorporate the use of various technologies such as unmanned aerial vehicles, vehicle-mounted sensors, and continuous monitoring devices to detect, track, repair, and report fugitive emissions.



# General Program Designs

## 》 Screening Technologies

- **Satellite**
- **Airplane / Helicopter**
- UAV
- **Truck**
- **Fixed Sensors**

## 》 Work Practice

- Comprehensive follow-up with OVA or OGI
- Rate based or % site

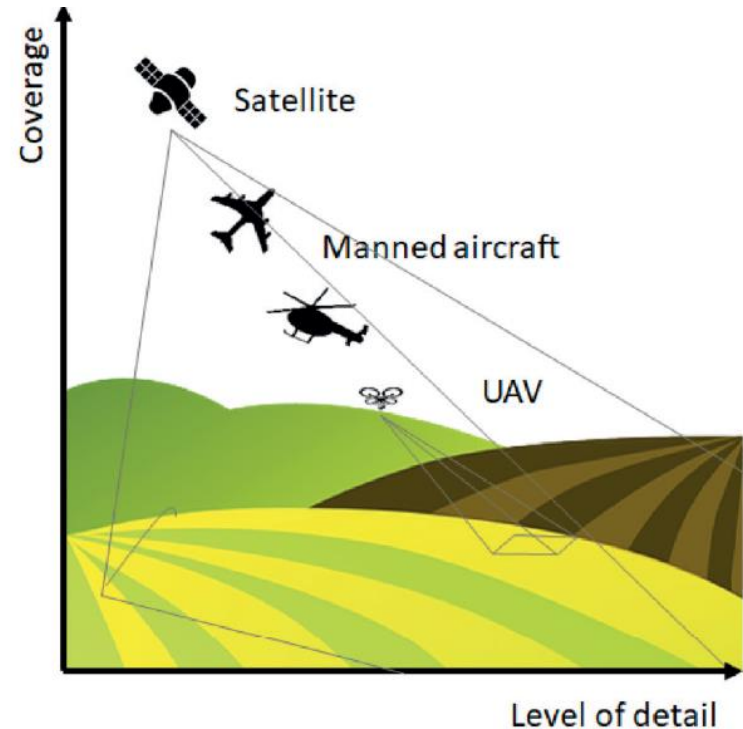


Image source: Environmental sampling and monitoring from airborne and satellite remote sensing, IOGP 2020 report

# Alternative Fugitive Emission Management Program (alt-FEMP) Approvals

[Home](#) | [Protecting What Matters](#) | [Holding Industry Accountable](#) | [Industry Performance](#) | [Methane Performance](#)

[Alternative Fugitive Emission Management Program \(alt-FEMP\) Approvals](#)

## Methane Performance

Updated November 2023

[Emissions Data](#)
[Operator Performance](#)
[Alternative Fugitive Emission Management Program Approvals](#)
[Audits and Inspections](#)
[Improving Performance](#)

Alt-FEMPs use different technologies or monitoring frequencies or both than that prescribed in [Directive 060](#). Below is a summary of alt-FEMPs approved by the AER:

Submitted By	Detection Technologies	Approx. # of Sites	Approval Issued & Program Start Date	Program End Date	Status	Executive Summary	Final Performance Report
ARC Resources	Baseline OGI survey and aerial methane sensor with OGI follow-up	200	08-Jul-20	31-Dec-23	Complete	<a href="#">PDF</a>	
Baytex Energy Corp.	Aerial and truck methane sensor with OGI follow-up	185	21-Jun-23	31-Dec-24	Active	<a href="#">PDF</a>	
Bonavista Energy Corp.	Aerial and truck methane sensor with OGI follow-up	700	1-May-21	31-Mar-23	Complete	<a href="#">PDF</a>	<a href="#">PDF XLSX</a>

<https://www.aer.ca/protecting-what-matters/holding-industry-accountable/industry-performance/methane-performance/alternative-fugitive-emission-management-program-approvals>



Technical Report

# Alternative Methane Detection Technologies Evaluation Alternative Technology Equivalency Matrix Analysis Update

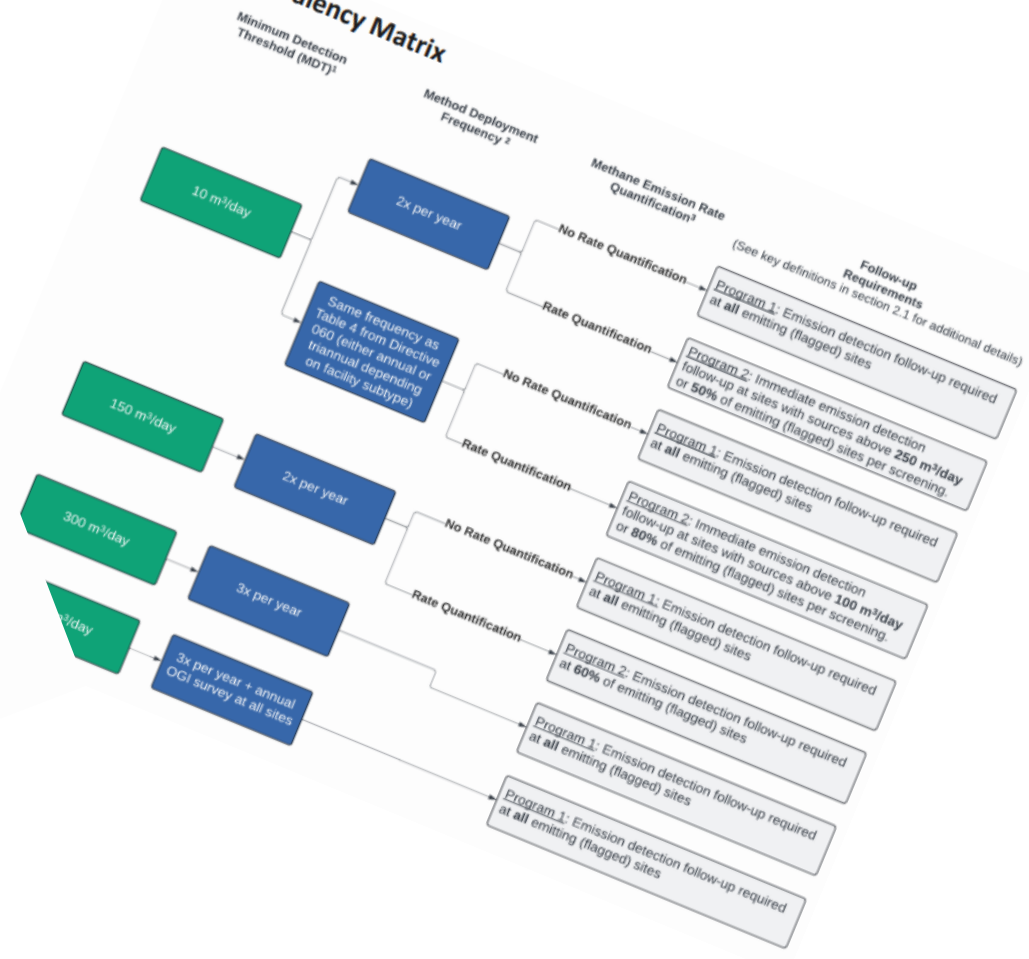
**Focus**  
This report includes Alternative Technology Equivalency Matrix updates based on a second round of modelling.

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September 2024

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## 2.2. Equivalency Matrix



[https://static.aer.ca/prd/documents/reports/Alternative\\_methane\\_detection\\_tech\\_evaluation.pdf](https://static.aer.ca/prd/documents/reports/Alternative_methane_detection_tech_evaluation.pdf)

# Methane Performance Portal

## » Information on:

- Methane data
- Alt-FEMP approvals
- Improving performance

### **Methane Performance**

Methane Data

Alternative FEMP Approvals

Improving Performance

Maps

To meet the methane emission reduction goal set out by the Government of Alberta, we developed methane requirements in [Directive 060: Upstream Petroleum Industry Flaring, Incinerating, and Venting](#) and [Directive 017: Measurement Requirements for Oil and Gas Operations](#). For background on the methane requirements and additional resources, please see our [methane](#) page.

<https://www.aer.ca/protecting-what-matters/holding-industry-accountable/industry-performance/methane-performance>