



Featured Technical Topic Summary

FGI Monthly Members Meeting

Friday, March 8, 2024



TOPIC: Methane Containment and Detection

Each month Tim Stark introduces a new technical topic for discussion and possible action. This month's topic is: **"Methane Containment and Detection"**. This topic generated significant discussion with the main "take-aways" listed below:

Methane Detection Applications

- Landfills
- Biodigesters
- Oil and gas production
- Common in Europe

Methane Detection

- Unmanned Aerial Vehicles (UAVs) – Attend May, 2024 FGI Webinar by Art Mohr
- Hand-held gas meter – FLIR GF320
- Neighbors are best detectors – of other gases b/c methane is odorless but usually accompanies landfill odors
- Larger issue in eastern portion of USA than western portion, e.g., Colorado
- Newer drones detecting other contaminants besides Methane
- Satellites also being used to detect methane–
- Safety issues – H₂S gas
- Infrared gas meters in Europe – FLIR GF320 in Europe -
<https://www.flir.com/discover/instruments/gas-detection/biogas-facilities/> or [Gas Detection Cameras | FLIR Industrial | Teledyne FLIR](#)

Methane Containment

- Manufacturers investigating geomembrane durability subjected to Methane and other factors – see GRI GM-35 material specification
- Use temporary geomembrane covers to control methane release – significant leakage around gas wells, i.e., final cover penetrations
- Also use temporary geomembrane covers for leachate control as well as methane capture
- Methane capture is proving lucrative, so temporary covers are gaining interest
- Should FGI develop test method and criterion for methane/odor transmission through flexible geomembranes? Decided that methane geomembrane transmission is small compared to current leakage points so focus on leakage points -
<https://www.fabricatedgeomembrane.com/articles/methane-gas-migration-through-geomembranes>
- EVOH based geomembrane appear more effective than HDPE based geomembranes in containing landfill odors and methane
- European regulations on methane control are available at
https://energy.ec.europa.eu/topics/oil-gas-and-coal/methane-emissions_en