

Alt-FEMP Executive Summary

Company	Program start	Program end	# of sites
Bonavista Energy Corp.	June 9, 2023	December 31, 2024	846

Once an alternative fugitive emissions management program is approved, AER staff draft this executive summary. This is a summary only, published to help interested stakeholders understand what has been approved. These summaries are found on our website, www.aer.ca > Protecting What Matters > Holding Industry Accountable > Industry Performance > Methane Performance > [Alternative Fugitive Emission Management Program Approvals](#). For additional information on these approvals, contact methane.reduction@aer.ca.

Summary

Bonavista Energy Corporation (Bonavista) is a Western Canadian upstream oil and gas producer that owns and operates 846 active facilities in Alberta, located on 625 legal subdivisions (LSDs). As of 2021, Bonavista has implemented an approved alternative fugitive emissions management program (alt-FEMP) in accordance with federal and provincial regulations. Bonavista was also a participating producer in the Sunde Petroleum Operators Group (SPOG) Collaborative Alt-FEMP project, which has enabled the company to become familiarized with select alternative technologies. Bonavista is implementing a full-scale alternative alt-FEMP across all 846 facilities. The alt-FEMP will operate until December 2024.

The alt-FEMP for this program involves deploying aerial-based gas mapping LiDAR (a-LiDAR) screenings in Q2 2023, an OGI survey in Q3 2023 at 152 triannual facilities, another OGI survey in Q1 2024 at 152 triannual facilities, a-LiDAR screenings in Q2 2024, and a final a-LiDAR screenings in Q3 2024 throughout the pilot program for 840 facilities. Fugitive emissions reductions will occur at a top fraction of the sites ranked by emissions rate. For the remaining six facilities, Bonavista will deploy metal oxide-continuous measurements system (MOCMS) devices at each of these facilities and continuously measure for CH₄. The selected alternative program is estimated to achieve comparative emissions reductions to the *Directive 060* default approach at a decreased cost. This will also decrease safety risk by limiting the number of subcontractor hours in the field, which is a priority for Bonavista.

The alt-FEMP methodology for 840 facilities is as follows:

Step 1	Screen	Conduct site-level screening. The selected alternative program will deploy three screening campaigns plus two OGI survey campaigns throughout the program: <ol style="list-style-type: none"> 1) a-LiDAR screening, Q2 2023 2) OGI, Q3 2023 at 152 triannual facilities 3) OGI, Q1 2024 at 152 triannual facilities 4) a-LiDAR screening, Q2 2024 5) a-LiDAR screening, Q3 2024
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		The screening technologies will capture both vented and fugitive emissions. Screening campaigns will occur more than three months apart, and a-LiDAR will be deployed in snow-free months.
Step 2	Rank	<p>Following each a-LiDAR screening campaign, emissions will be attributed to an LSD and the LSDs will be ranked highest to lowest by their total emissions. The follow-up threshold percentage determines the top number of LSDs to be visited for emissions localization and repair. The selected program has the following follow-up requirements after each designated screening event:</p> <ul style="list-style-type: none"> • Screening campaign 1 (Q2, 2023): 40% follow-up • Screening campaign 4 (Q2, 2024): 40% follow-up • Screening campaign 5 (Q3, 2024): 40% follow-up <p>40% follow-up means the emissions localization will occur on the ground at the top 40% of screened LSDs ranked by total emission rate. So, after receiving a-LiDAR screening data the top 250 LSDs (625 * 0.4) will be followed up on using an OGI camera. All facilities sharing the same LSD will be surveyed. If an emission rate of 500 m³/day or greater is detected and the corresponding LSD (which must be surveyed and repaired according to <i>Directive 060</i>) is identified as being in the 40% of LSDs with the highest emissions, its survey will count toward the follow-up total.</p>
Step 3	Follow-Up	Follow-up emissions localization will occur on the ground at the LSDs outlined in Step 2. Here, fugitive emissions will be differentiated from vented emissions. Fugitive emissions will be tagged and recorded for repair, while vented emissions will be recorded for potential future reduction programs.
Step 4	Repair	At the follow-up sites, all fugitive repairs will be made according to <i>Directive 060</i> timelines once a fugitive leak has been localized.