

Project Summary, Milestones, Payment Schedule and Quarterly Update Reports

Report Date: Q4 2024

Project Summary

Project Title:	Controlled Methane Injection Pilot Demonstration of a Biocover Concept for Mitigating Leaking Oil and Gas Wells
Lead Investigator:	Millennium EMS Solutions Ltd
AUPRF Managed Funds Award Amount:	\$40,000
PTAC Technical Champion:	Wade Hartzell, CNRL
GL #:	AUPRF2022-000126
Project Total Cost (all years)	\$240,000
Leveraged Cash Funding (all years)	
Leveraged In-Kind Funding (all years)	\$60,000 (in-kind contributions from Ian Hers, Aaron Cahill, Ian Mitchell; \$20,000 lease discount from Alberta Innotech)
Start Date:	Q3 2023
Completion Date:	Q1 2025
Final Report Due Date:	Q1 2025

Provide a brief description of the challenges this project aims to address and how industry and others will benefit, including what the anticipated impact is. (i.e., cost reductions, improved environmental performance, impact on regulation, enhanced access to resources). (Maximum 150 words or less)

Well integrity failure is an expensive historic and ongoing issue associated with a subset of oil and gas wells. Failure manifests as surface casing vent flow (SCVF; inside casing leakage) and/or gas migration (GM; outside casing leakage) whereby natural gas (comprised primarily of methane) is potentially emitted to atmosphere causing greenhouse gas (GHG) emissions. Remediation of integrity failure is challenging and expensive. Currently, to attain a certificate of restoration, there is no practical alternative to full abandonment or re-abandonment for a well exhibiting integrity failure and emitting where GHG emissions may be minimal with full re-abandonment carrying a greater potential risk to the environment and generating greater levels of GHG emissions. As a result, there is need for cost effective alternative options for mitigation of leaking oil and gas wells, particularly for marginal leakage, where emissions pose a low risk to the environment and are contributing only minimally to GHG emissions.

List scope key milestones with invoicing schedule. Include quarterly estimates.

Milestone	Planned Expenditures ¹	Actual Expenditures	Status
Q2 (Jul 1 – Sep 30) insert year			
1. Biocover operation and monitoring	\$5,000	\$15,000	
2.	\$	\$	
3.	\$	\$	
4.	\$	\$	
Q3 (Oct 1 – Dec 31) 2024			
1. Biocover operation and monitoring	\$10,000	\$15,000	Complete
2. Data analysis and modelling	\$	\$10,000	Complete (ahead of schedule)
3. Reporting	\$	\$1,000	In progress (ahead of schedule)
4.	\$	\$	
Q4 (Jan 1 – Mar 31) 2025			
1. Biocover monitoring + take-down	\$10,000	\$	Take-down remains
2. Data analysis and modelling	\$10,000	\$	Complete (December)
3.	\$	\$	
4.	\$	\$	
Q1 (Apr 1 – Jun 30) insert year			
1. Reporting	\$5,000	\$	In progress (ahead of schedule)
2.	\$	\$	
3.	\$	\$	
4.	\$	\$	
Total			

¹ All expenditures in Canadian dollars and must exclude GST and other applicable taxes.

Quarterly Update

Exception Highlight for the Quarter:

(any exceptions to the original project scope, timelines, payment schedule / amount(s) OR early significant findings) – this can be left blank if no changes are needed, and do not include exceptions already reported.

1. Monitoring and modelling/analysis completed December 2024 (ahead of schedule) to allow progress to next phase (field implementation) on 2025 PTAC proposal
2.
3.

Update on scope, key questions, gap analysis and work performed this quarter (include any requests for assistance to PTAC or the committees)

Final monitoring event completed in December 2024. Based on results, discussions initiated with Technical Champion/CNRL on field implementation.