# The Plains $CO_2$ Reduction Partnership Program: Addressing $CO_2$ Storage Through EOR

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PCQR Partnership

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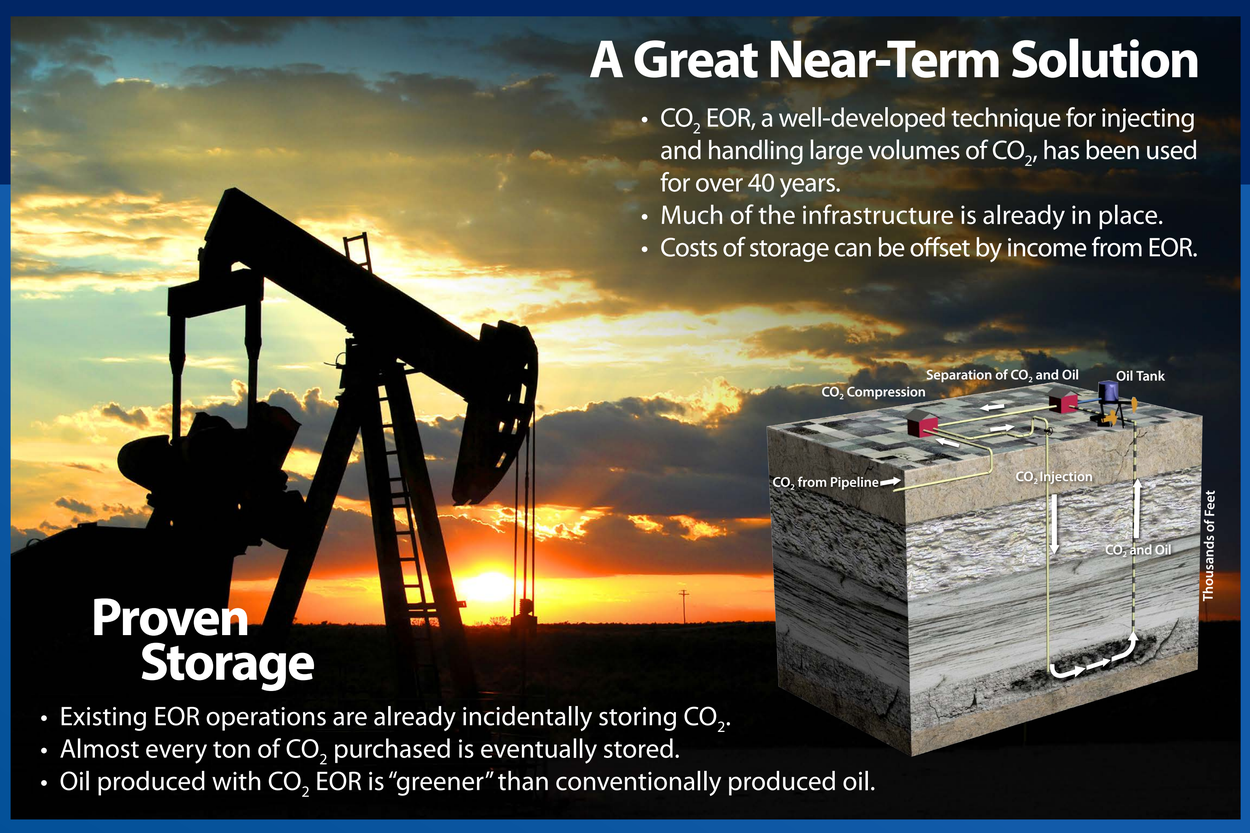
**The Plains $CO_2$ Reduction (PCOR) Partnership**, one of seven regional partnerships established by the U.S. Department of Energy National Energy Technology Laboratory's Regional Carbon Sequestration Partnership Program, is identifying the most suitable carbon dioxide ($CO_2$) storage strategies and technologies, aiding in regulatory development, educating the general public, and investigating appropriate infrastructure for carbon capture and storage (CCS) commercialization within its region. This region includes all or part of nine U.S. states and four Canadian provinces.

Partnering with several industry leaders in $CO_2$ enhanced oil recovery (EOR), the PCOR Partnership has been working to use this technology as a means for commercial-scale deployment of CCS.


## Why $CO_2$ EOR?



### A Great Near-Term Solution

- $CO_2$ EOR, a well-developed technique for injecting and handling large volumes of $CO_2$, has been used for over 40 years.
- Much of the infrastructure is already in place.
- Costs of storage can be offset by income from EOR.

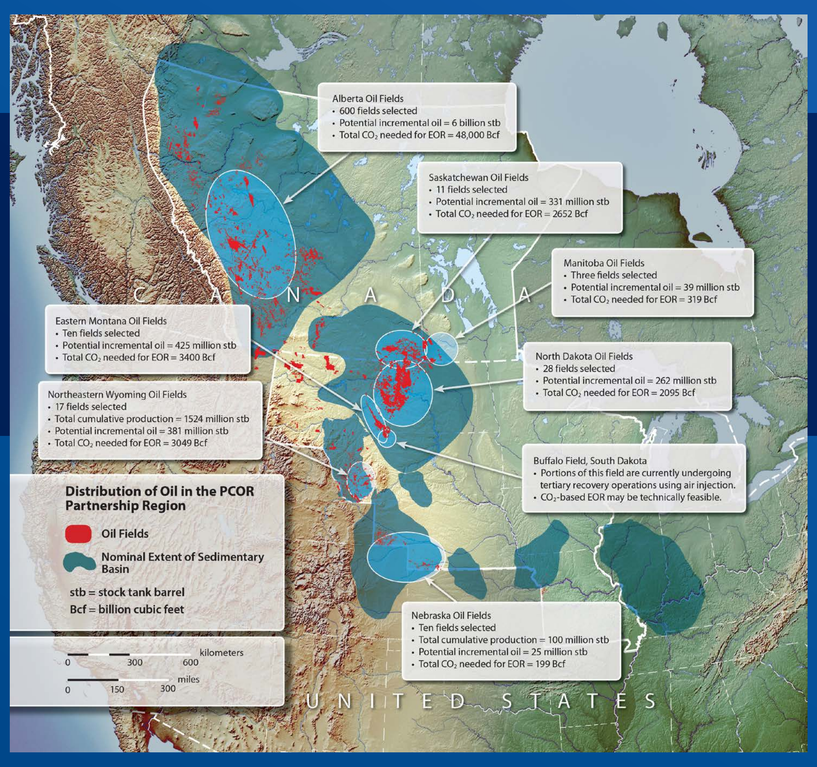



### Proven Storage

- Existing EOR operations are already incidentally storing $CO_2$.
- Almost every ton of $CO_2$ purchased is eventually stored.
- Oil produced with $CO_2$ EOR is "greener" than conventionally produced oil.

## PCOR Partnership $CO_2$ EOR Potential

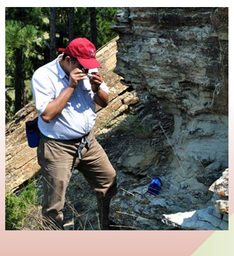
**EOR could increase domestic oil production by 25% in two decades.**




## Adaptive Management Approach

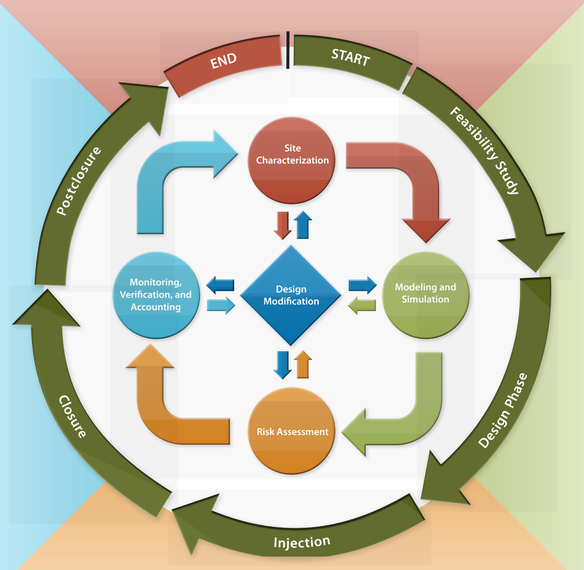
### Site Characterization

- Well data integration
- Outcrop investigations
- Core data analysis
- Geophysical surveys
- Existing infrastructure evaluation



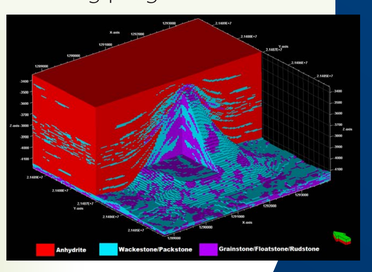
### Monitoring, Verification, and Accounting (MVA)

- Guided by site characterization, modeling, simulation, and risk assessment.
- Compatibility with commercial project.
- Opportunity to supplement MVA program with commercial data.
- Two components:
  - Surface and near-surface
  - Reservoir

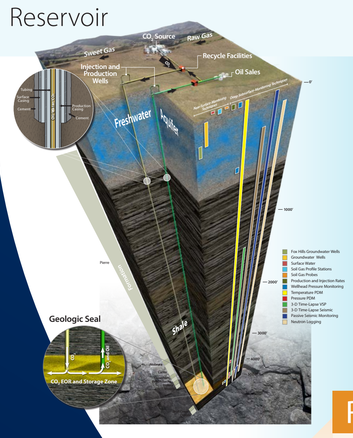



### Modeling and Simulation

- Use fit-for-purpose modeling and simulation to answer specific questions.
- Incorporate appropriate site characterization data.
- Inform risk assessment and monitoring programs.

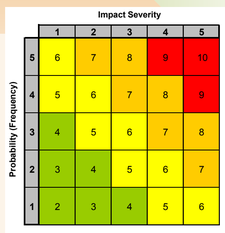



The PCOR Partnership is employing a philosophy that integrates site characterization, modeling and simulation, and risk management to design a comprehensive monitoring plan for $CO_2$ storage and EOR. Elements of any of these activities are crucial for understanding or developing the others and evolve over the project phases.




### Risk Assessment

- Identify relevant risks.
- Rank the relative likelihood of occurrence and potential magnitude of impact.
- Identify critical risks.
- Implement strategies to reduce the likelihood and/or impact of unacceptable risks.
- Evaluate, monitor, and mitigate relevant hazards.
- Evaluate remediation strategies based on cost-effectiveness.




**Oil and gas reservoirs have already demonstrated their ability to hold oil for millions of years.**

**Regionally, over 3.5 billion tons of $CO_2$ storage potential in the oil and gas fields and 7 billion stb of incremental oil.**

For more information regarding the PCOR Partnership, visit our Web site at www.undeerc.org/PCOR. To request a complimentary copy of one of the many informational and educational products featured on our Web site, including the *PCOR Partnership Atlas, 4th Edition, Revised*, contact:

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