THE PLAINS CO_2 REDUCTION (PCOR) PARTNERSHIP: CARBON CAPTURE AND STORAGE DEMONSTRATION ACTIVITIES

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ABSTRACT

The PCOR Partnership is one of seven regional partnerships established by the U.S. Department of Energy National Energy Technology Laboratory to assess and develop carbon sequestration opportunities. The PCOR Partnership covers an area of over 1.4 million square miles in the central interior of North America and includes all or parts of nine states and four Canadian provinces. The PCOR Partnership is characterizing the region's stationary CO_2 sources and sinks and evaluating the efficacy of CO_2 capture and storage (CCS) in our region.

The PCOR Partnership has conducted four field validation tests thus far: 1) Apache Canada Ltd. hosted a combined enhanced oil recovery (EOR)/sequestration activity that injected acid gas from the Zama, Alberta, gas plant into a pinnacle reef structure for use as a miscible flood agent; 2) an EOR project in the Williston Basin demonstrated the potential of using CO_2 in a tertiary oil recovery operation in a carbonate formation at depths of approximately 8000 feet; 3) the potential for simultaneous CO_2 sequestration and enhanced coalbed methane production in Williston Basin lignite was investigated; and 4) a terrestrial field validation test developed carbon offsets from the use of alternative land management of wetlands in the Prairie Pothole Region.

The PCOR Partnership has teamed with industrial partners to conduct two commercial-scale (greater than 1 million tons per year) CCS demonstrations in the region. One of the large-scale tests will demonstrate CO_2 storage in a saline formation, while the other will be a combined CCS and EOR demonstration.