

## **CO<sub>2</sub> STORAGE PILOT STUDY FOR LIGNITE COAL**

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### **ABSTRACT**

The United States possesses abundant unminable lignite resources that have potential as storage sites for carbon capture and storage (CCS). However, feasibility of CO<sub>2</sub> storage in lignite coal has yet to be proven. The Plains CO<sub>2</sub> Reduction (PCOR) Partnership has developed a lignite field validation test in Burke County, North Dakota, to investigate the feasibility of carbon dioxide storage in unminable lignite seams. The PCOR Partnership is one of seven regional partnerships investigating CCS funded by the U.S. Department of Energy and commercial sponsors.

This paper will present methodology and results from the Energy & Environmental Research Center's lignite field validation test. The results include crosswell seismic imaging of injected CO<sub>2</sub>, downhole sensor measurements, and monitoring. The technical feasibility and economics of carbon storage in lignite coal largely depend on adequate CO<sub>2</sub> trapping, adsorption, storage capacity of the reservoir, injectivity, and land surface access. The work presented provides a greater understanding of injectivity, trapping, adsorption, and storage capacity for lignite coal.