



Plains CO₂ Reduction (PCOR) Partnership
Energy & Environmental Research Center (EERC)

FORT NELSON TEST SITE – GEOCHEMICAL OBSERVATIONS

Plains CO₂ Reduction (PCOR) Partnership Phase III Task 4 – Deliverable D41 (Update 1)

Prepared for:

Andrea T. McNemar

National Energy Technology Laboratory
U.S. Department of Energy
3610 Collins Ferry Road
PO Box 880
Morgantown, WV 26507-0880

DOE Cooperative Agreement No. DE-FC26-05NT42592

Prepared by:

James A. Sorensen
Lisa S. Botnen
Charles D. Gorecki
Edward N. Steadman
John A. Harju

Energy & Environmental Research Center
University of North Dakota
15 North 23rd Street, Stop 9018
Grand Forks, ND 58202-9018

EERC DISCLAIMER

LEGAL NOTICE This research report was prepared by the Energy & Environmental Research Center (EERC), an agency of the University of North Dakota, as an account of work sponsored by the U.S. Department of Energy (DOE). Because of the research nature of the work performed, neither the EERC nor any of its employees makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement or recommendation by the EERC.

ACKNOWLEDGMENT

This material is based upon work supported by the DOE NETL under Award Number DE-FC26-05NT42592.

DOE DISCLAIMER

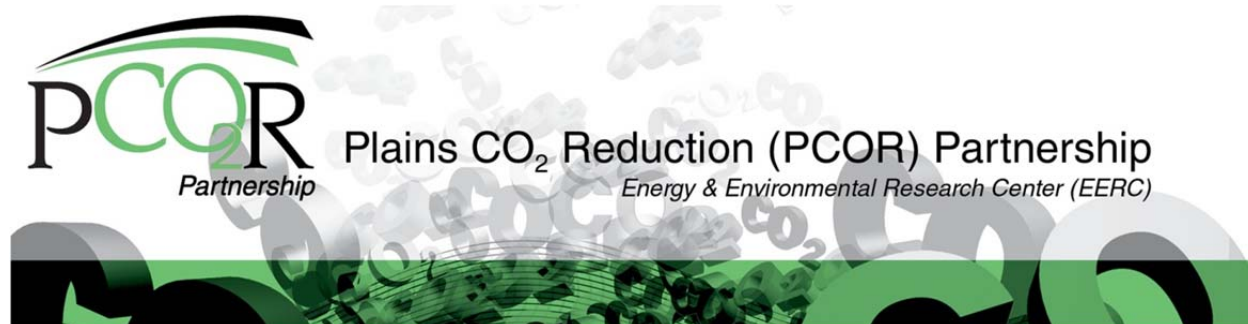
This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government, nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.

NDIC DISCLAIMER

This report was prepared by the EERC pursuant to an agreement partially funded by the Industrial Commission of North Dakota, and neither the EERC nor any of its subcontractors nor the North Dakota Industrial Commission (NDIC) nor any person acting on behalf of either:

- (A) Makes any warranty or representation, express or implied, with respect to the accuracy, completeness, or usefulness of the information contained in this report or that the use of any information, apparatus, method, or process disclosed in this report may not infringe privately owned rights; or
- (B) Assumes any liabilities with respect to the use of, or for damages resulting from the use of, any information, apparatus, method, or process disclosed in this report.

Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the North Dakota Industrial Commission. The views and opinions of authors expressed herein do not necessarily state or reflect those of the North Dakota Industrial Commission.



FORT NELSON TEST SITE – GEOCHEMICAL OBSERVATIONS

BACKGROUND

Spectra Energy Transmission (SET) is working with the Energy & Environmental Research Center (EERC)-led Plains CO₂ Reduction (PCOR) Partnership to determine the feasibility of long-term storage of sour carbon dioxide (CO₂) in a saline formation near Fort Nelson, British Columbia, Canada. The EERC prepared a report on the observations from preliminary geochemistry evaluations in June 2012. That report described the results of a series of geochemistry-related experimental activities that used geologic materials from the Fort Nelson site. The activities investigated the theorized and potential effects of the injection of 100% CO₂ and sour CO₂ (i.e., a mixture of CO₂ and H₂S ranging from 86.5% CO₂ and 13.5% H₂S to 95% CO₂ and 5% H₂S) on the cap rock, transition-zone rock, and reservoir rock from an exploratory well drilled by SET in 2009.

A hard copy version and flash drive with an electronic copy of the initial Fort Nelson Test Site – Preliminary Geochemical Observations Report were hand-delivered to SET on September 12, 2012, during the PCOR Partnership Annual Meeting in Milwaukee, Wisconsin. SET has been busy compiling data in order to make a successful business case for commercial-scale CO₂ injection at Fort Nelson.

STATUS OF CURRENT ACTIVITIES

SET's review of the 2012 geochemistry report is ongoing. SET and the EERC are in the process of developing new technical work plans for the Fort Nelson carbon capture and storage project to be conducted in 2013. While future modeling efforts may include a geochemistry component, there are no plans to conduct new geochemistry laboratory testing on Fort Nelson materials.

NEXT UPDATE: DECEMBER 2013

The next update to the simulation report is scheduled for December 15, 2013. The 2013 report will include any changes to the 2012 report.