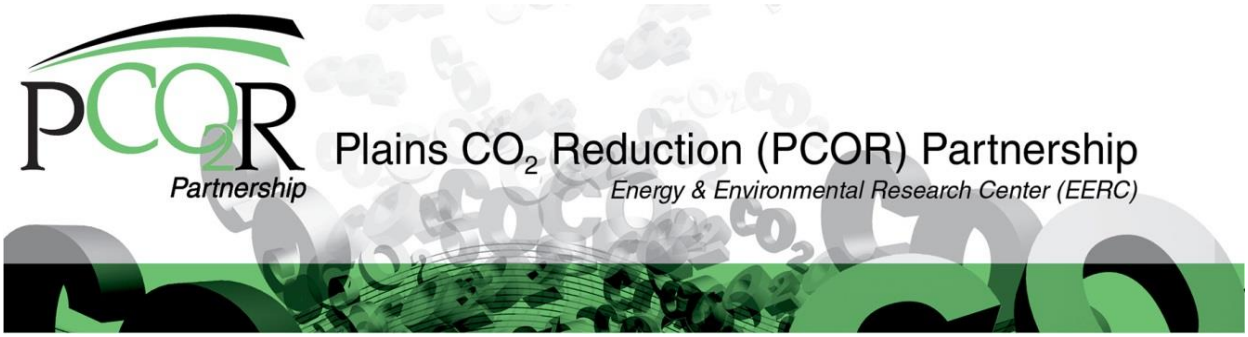

SUBMISSION OF DRAFT PAPERS ON ASSOCIATED STORAGE TO SPECIAL ISSUE OF INTERNATIONAL JOURNAL OF GREENHOUSE GAS CONTROL

Plains CO_2 Reduction (PCOR) Partnership Phase III
Task 13 – Milestone M66

Prepared for:

William Aljoe

National Energy Technology Laboratory
U.S. Department of Energy
626 Cochrans Mill Road
PO Box 10940
Pittsburgh, PA 15236-0940

DOE Cooperative Agreement No. DE-FC26-05NT42592

Prepared by:

Neil Wildgust
Charles D. Gorecki

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

March 2018
2018-EERC-04-12
Approved

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 DOE National Energy Technology Laboratory under Award No. 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.

TABLE OF CONTENTS

LIST OF TABLES

SUBMISSION OF DRAFT PAPERS ON ASSOCIATED STORAGE TO SPECIAL ISSUE OF *INTERNATIONAL JOURNAL OF GREENHOUSE GAS CONTROL*

BACKGROUND

The Plains CO_2 Reduction (PCOR) Partnership is one of seven Regional Carbon Sequestration Partnerships (RCSPs) competitively awarded by the U.S. Department of Energy (DOE) National Energy Technology Laboratory (NETL) in 2003 as part of a national plan to mitigate greenhouse gas emissions. The PCOR Partnership is led by the Energy & Environmental Research Center (EERC) at the University of North Dakota and includes stakeholders from the public and private sectors. The PCOR Partnership region includes all or part of nine U.S. states and four Canadian provinces.

Phase III, the development phase, extends the characterization (Phase I) and validation (Phase II) phases. Currently, the Phase III efforts of the PCOR Partnership include a large-volume demonstration test in the United States (the Bell Creek project). The demonstration test focuses on injecting commercial-scale volumes of carbon dioxide (CO_2) into deep geologic formations for CO_2 storage. The PCOR Partnership, since inception in 2003, has had over 120 member organizations (partners), with these partners supporting the efforts of the PCOR Partnership in various ways.

DISCUSSION

A special issue of the International Journal of Greenhouse Gas Control (IJGGC) journal will be published, with select papers covering various aspects of the technical assessment of associated storage undertaken by the PCOR Partnership. Topics covered include characterization, modeling and simulation, monitoring, and life cycle analysis of CO_2 EOR operations.

The special issue will comprise 11 papers and an editorial introduction. Eight of the papers have been prepared recently (Table 1) and are being submitted into the IJGGC peer review system by March 31, 2018. EERC staff will serve as editors to manage the peer review process. Three papers have already been published in regular editions of the IJGGC journal.

The deadline for final acceptance of papers by the peer review process has been set as August 31, 2018, with publication of the special issue due by the end of November.

Table 1.Prepared Journal Papers for the Special Issue of the IJGGC

Title of Paper	Lead Author
PCOR Partnership Assessment of CO_2 Geologic Storage Associated with EOR	Neil Wildgust
Statistical Analysis of Pulsed-Neutron Well Logs (PNLs) in Monitoring Injected Carbon Dioxide (CO_2)	Nicholas A. Azzolina
Laboratory Determination of Oil Draining CO_2 Hysteresis Effects During Multiple Floods of a Conventional Clastic Oil Reservoir	Steven A. Smith
Evaluation of Recycle Gas Injection on CO_2 Enhanced Oil Recovery and Associated Storage Performance	Lu Jin
Lessons Learned and Best Practices Derived from Environmental Monitoring at a Large-Scale CO_2 Injection Project	Kerryanne Leroux
Effects of Gas Relative Permeability Hysteresis and Solubility on Associated CO_2 Storage Performance	Lu Jin
4-D Seismic Amplitude Interpretation Improves Understanding of Reservoir Heterogeneity at a Mature Oil Field Undergoing CO_2 Enhanced Oil Recovery and Associated Storage	Olarinre Salako
Implementing Adaptive Scaling and Dynamic Well-Tie for Quantitative 4-D Seismic Evaluation of a Reservoir Subjected to CO_2 Enhanced Oil Recovery and Associated Storage	Olarinre Salako
Life Cycle Analysis: Case Study of Associated Storage with Enhanced Oil Recovery	Melanie D. Jensen