



**Plains CO<sub>2</sub> Reduction (PCOR) Partnership Monthly Update  
July 1–31, 2007**

**Task 1 – Project Management and Reporting (Edward N. Steadman/John A. Harju)**

Highlights

- Revisions for Phase III Renewable Application were sent to the U.S. Department of Energy (DOE) on July 3 and 23, 2007.
- Submitted the 2007 Carbon Sequestration Peer Review of the PCOR Partnership Carbon Sequestration Program to DOE on July 31, 2007. The Peer Review meeting is scheduled for September 17–20, 2007.
  - PCOR Partnership representatives at the meeting will likely be John Harju (Energy & Environmental Research Center [EERC]), Ed Steadman (EERC), Stefan Bachu (Alberta Energy and Utilities Board), and Lynn Helms (North Dakota Industrial Commission Department of Mineral Resources, Oil and Gas Division).
- Submitting the Phase II Continuation Application for Years 3–4 on July 31, 2007.
- Completed the Quarterly Report on July 25, 2007.
- Participating in upcoming Air Quality VI Conference (September 24–26, 2007, Arlington, Virginia).

Travel/Meetings

- July 10, 2007: Phase III discussions with Encore Acquisition Company, North Dakota Petroleum Council, Air Products, and Westmoreland Coal Company in Grand Forks, North Dakota.
- July 24, 2007: Met with North Dakota Industrial Commission and North Dakota Geological Survey to discuss the gas analysis project in Bismarck, North Dakota.
- August 4, 2007: Anticipated drilling date for Lignite Field Demonstration in Burke County, North Dakota.
- August 14, 2007: Office of Science Review in Washington, D.C.
- August 16–20, 2007: American Petroleum Institute Meeting in Dickinson, North Dakota.
- September 10–14, 2007: 24th Pittsburgh Coal Conference in Johannesburg, South Africa.
- September 18–20, 2007: North Dakota Petroleum Council 26th Annual Meeting in Medora, North Dakota.
- September 24–26, 2007: Air Quality VI in Arlington, Virginia.
- October 14–17, 2007: Gasification Technologies Council in San Francisco, California.
- November 16–20, 2007: Greenhouse Gas Technology Conference (GHGT-9) in Washington, D.C.
- January 27–30, 2008: 11th Annual Conference on Clean Air, Mercury, Global Warming & Renewable Energy, Electric Utilities Environmental Conference in Tucson, Arizona.

## **Task 2 – Field Validation Test at a Williston Basin Oil Field, North Dakota (James A. Sorensen)**

### Highlights

- Development of petrophysical model of the Beaver Lodge oil field continued.

### Travel/Meetings

- Nothing to note at this time.

## **Task 3 – Field Validation Test at Zama, Alberta (Steven A. Smith)**

### Highlights

- Received draft report entitled “Roadmap of Reservoir Characterization for Integrated CO<sub>2</sub> Enhanced Oil Recovery and Sequestration” is currently under review.
- Received Regional Geological Report on Zama subbasin from Alberta Energy & Utilities Board. This report was provided on behalf of Alberta Environment and is considered its contribution to the program. Will begin working on creating topical reports from each of the deliverables we have received.
- Working through the methodologies from the Regional Partnership Working Group for CO<sub>2</sub> Sequestration Capacity Meeting to determine the best methods available to present the capacity of geological reservoirs as storage opportunities. The Capacity Working Group will discuss again in August to finalize the methodologies and plan the steps forward for the National Atlas II.
- Currently reviewing literature to determine best methods to analyze decline curves as a means of obtaining the ultimate cumulative recovery from oil and gas reservoirs. This is a method to determine storage capacity for CO<sub>2</sub>.

### Travel/Meetings

- June 21–23, 2007: Attended the Regional Partnership Working Group for CO<sub>2</sub> Sequestration Capacity Estimation in Pittsburgh, Pennsylvania.
- September 6, 2007: Zama Meeting and site visit in Zama, Alberta, Canada.

## **Task 4 – Field Validation Test of Lignite Coal in North Dakota (Lisa S. Botnen)**

### Highlights

- The applicability of various monitoring, mitigation, and verification (MMV) technologies (tiltmeter survey, gravity survey, tracer study, and seismic survey) to the lignite test continues to be researched and evaluated.
- Baseline characterization is continuing.
- Completed an initial draft of a CO<sub>2</sub> flood design for the Lignite Field Validation test. This will be revised as more data become available.
- Agreements are being finalized with various service providers, including those completing various field tests and logging services.
- Drilling is anticipated for early August.

#### Travel/Meetings

- August 4–10, 2007: Tentatively scheduled to supervise pad construction, drilling, and coring at lignite test site in Burke County, North Dakota.
- August 7, 2007: Public Information Meeting (tentative) in Bowbells, North Dakota.

#### **Task 5 – Terrestrial Validation Test (Barry Botnen)**

##### Highlights

- Continue to sample at South Dakota sites; this was initiated in late March 2007.
- Completed seven sample events to date.
- Grazing study and vegetation study are ongoing.
- Grassland samples from 2006 are currently being analyzed.
- 2007 grassland sampling under way in Minnesota. South Dakota sampling began in July.
- The Business Requirements Document for the carbon-tracking database is being reviewed by Ducks Unlimited, Inc. (DU).
- Best management practices fact sheet is in final draft form.
- Completed a prospectus for grassland carbon offset sale in the Prairie Pothole Region.
- Completed a carbon sequestration fact sheet for investors.
- Completed a private carbon/easement document.
- Working on a draft Landowner Agreement document for carbon marketing.
- Working on a draft legal document to transfer carbon rights from landowner to aggregator.
- Completed a business model and term sheet for packaged carbon offsets.
- Working on draft topical reports for providing a primer on carbon market basics and an overview of the business flow process for terrestrial offsets from private lands. We anticipate submitting this report next quarter.
- Evaluating other state and regional greenhouse gas (GHG) or cap-and-trade programs' rules and policies.
- Evaluating DOE Guidelines for Aggregators and terrestrial offset providers.
- Overview of voluntary carbon market, active players, certification standards, market activity, etc.
- Three outreach brochures are currently at the press. They can be distributed as a stand-alone resource for landowners or investors interested in terrestrial carbon offset opportunities. The final brochures will also be distributed as appropriate for the PCOR Partnership regional and national Outreach Action Plan.
- Continuing to update DU–PCOR Partnership terrestrial project Web site.
- Reviewing of DOE technical guidelines (1605b) is ongoing.
- Working on characterization inputs and the terrestrial portion of the Decision Support System<sup>®</sup> (DSS).

#### Travel/Meetings

- Travel to Bismarck to meet with DU in July.

## **Task 6 – Continued Characterization of Regional Sequestration Opportunities (Erin M. O’Leary)**

### Highlights

#### **Characterization**

- Held a Geologic Characterization Group Meeting and outlined plans for Phase II and Phase III activities.
- Received several spreadsheets of source-related data from NatCarb. This information will be used to rectify differences in CO<sub>2</sub> source location and magnitudes in the areas shared by the Southwest, Big Sky, and PCOR Partnerships.
- A list of CO<sub>2</sub> sources that have coincident locations with other partnerships’ data sets has been compiled from information received from NatCarb. This list and a Google Earth file have been provided for review.

#### **Class II Wells Project**

- Working on the final report.
- A review meeting was held on the progress thus far and identified path forward activities.

#### **DSS**

- Working on license manager issues with Neuralog and Eclipse applications.

#### **Other**

- The second edition of the PCOR Partnership Regional Atlas was sent to the printers.
- Progress was made on the efforts to upgrade the DSS system to the latest version of the geographic information system server technology.

### Travel/Meetings

- July 24, 2007: Met with the North Dakota Industrial Commission and the North Dakota Geological Survey to discuss the gas analysis project in Bismarck, North Dakota.

## **Task 7 – Research, Safety, Regulatory, and Permitting Issues (Lisa S. Botnen)**

### Highlights

- Reviewed the Integrated Environmental Control Model CO<sub>2</sub> Task Force model regulations and statute after comments had been taken into consideration.
- Reviewed a portion of the Farm Bill that gives the government authority to set performance standards for carbon credits from agriculture and forestry.
- Analyzed the regulatory requirements that are involved in designing a CO<sub>2</sub> flood for enhanced resource recovery.
- Continue to follow the developments of various state and regional initiatives.
- Continued analysis of carbon market strategies.
- Continue to follow legislative actions occurring in Congress.
- Continued review of recent publications relating to regulating CO<sub>2</sub> sequestration and MMV issues.

#### Travel/Meetings

- Nothing to note at this time.

### **Task 8 – Public Outreach and Education (Daniel J. Daly)**

#### Highlights

##### **Documentaries**

- Carl Bauer, DOE, will be interviewed at National Energy Technology Laboratory (NETL) on August 21, 2007.
- Prairie Public Television (PPTV) has interviewed the remaining EERC personnel.
- An updated list of animation has been given to PPTV.
- NETL approved an extension of the Carbon Market video to September 30, 2007.

##### **Outreach Action Plan – Lignite Field Verification Test**

- Approved as final by NETL on July 30, 2007.

##### **Public Web Site**

- Continue to revise as needed.

##### **Outreach Action Plan – Task 2**

- Waiting for information to determine schedule and focus projects.

##### **Outreach Booth**

- Approved as final by NETL on July 30, 2007.

##### **Fact Sheet 9 – Lignite Field Verification Test**

- Approved as final by NETL on July 30, 2007.

#### Travel/Meetings

- Nothing to note at this time.

### **Task 9 – Identification of Commercially Available Sequestration Techniques Ready for Large-Scale Deployment (Melanie D. Jensen/Michael L. Jones)**

#### Highlights

- Task 9 is on schedule and budget.
- Estimated cost of capture, compression, and pipeline transportation for North Dakota's power plants to enable an assessment of the potential increase in cost of electricity that would result from CO<sub>2</sub> sequestration.
- Reviewed minutes and prepared executive summary from the Capture and Transportation Working Group Workshop.

#### Travel/Meetings

- Nothing to note at this time.

## **Task 10 – Regional Partnership Program Integration (Edward N. Steadman)**

### Highlights

- Second edition of the PCOR Partnership Regional Atlas is in final stages. Anticipate October for distribution.

### Travel/Meetings

- September 17–20, 2007: Peer Review of the Carbon Sequestration Program in Pittsburgh, Pennsylvania.
- October 18–19, 2007: PCOR Partnership Annual Meeting at the EERC in Grand Forks, North Dakota.