

PLAINS CO₂ REDUCTION PARTNERSHIP (PHASE III)

Quarterly Technical Progress Report

(for the period January 1 – March 31, 2008)

Prepared for:

Industrial Commission of North Dakota
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Bismarck, ND 58505

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PLAINS CO₂ REDUCTION PARTNERSHIP (PHASE III)
Quarterly Technical Progress Report
January 1 – March 31, 2008

INTRODUCTION

The Plains CO₂ Reduction (PCOR) Partnership has been established as a U.S. Department of Energy (DOE) National Energy Technology Laboratory (NETL) Regional Carbon Sequestration Partnership (RCSP). The PCOR Partnership is managed by the Energy & Environmental Research Center (EERC) at the University of North Dakota (UND) in Grand Forks, North Dakota. The PCOR Partnership region includes all or part of nine states (Iowa, Minnesota, Missouri, Montana, Nebraska, North Dakota, South Dakota, Wisconsin, and Wyoming) and four Canadian provinces (Alberta, British Columbia, Manitoba, and Saskatchewan).

The EERC was awarded a contract for Phase III activities in late September 2007. Phase III is a 10-year project, in three budget periods, running from October 1, 2007, to September 30, 2017. This progress report summarizes the activities for the reporting period (January 1 – March 31, 2008) for Phase III.

The activities for Phase III of the PCOR Partnership include two large-volume sequestration demonstration tests (Figure 1) along with continued regional characterization and outreach. Thirteen tasks will be implemented; see Table 1 for the responsibility matrix.

Table 1. Phase III Responsibility Matrix

| Phase III Task Description | Responsible Party |
|--|--------------------------|
| Task 1 – Regional Characterization | Erin O’Leary |
| Task 2 – Public Outreach and Education | Dan Daly |
| Task 3 – Permitting and NEPA Compliance | Lisa Botnen |
| Task 4 – Site Characterization and Modeling | Jim Sorensen |
| Task 5 – Well Drilling and Completion | TBA |
| Task 6 – Infrastructure Development | Melanie Jensen |
| Task 7 – CO ₂ Procurement | John Harju |
| Task 8 – Transportation and Injection Operations | TBA |
| Task 9 – Operational Monitoring and Modeling | TBA |
| Task 10 – Site Closure | TBA |
| Task 11 – Postinjection Monitoring and Modeling | TBA |
| Task 12 – Project Assessment | Stephanie Wolfe |
| Task 13 – Project Management | Ed Steadman |



Figure 1. PCOR Partnership Phase III demonstration test sites.

SUMMARY OF SIGNIFICANT PHASE III ACCOMPLISHMENTS

Task 1 – Regional Characterization

The first PCOR Partnership Geologic Working Group meeting was organized and facilitated following the 2007 PCOR Partnership Annual Meeting. Partners and prospective partners, such as the geological surveys of Missouri, Iowa, Minnesota, and North Dakota, as well as partners from British Columbia, discussed geologic characterization activities occurring in their respective regions. The group decided to hold similar meetings twice a year. The next meeting is scheduled for April 17, 2008, in Minneapolis, Minnesota. Representatives from Iowa, Missouri, Minnesota, Saskatchewan, and North Dakota have indicated they will attend.

The Phase III subcontract for the Missouri Department of Natural Resources (Missouri Geology Survey) is now in place.

Task 2 – Public Outreach and Education

During this reporting period, the Phase III Outreach Action Plan (deliverable D11) was submitted to DOE for review on March 31, 2008. The documentary “Nature in the Balance: CO₂ Sequestration” was updated for use by Canadian stakeholders. Work was initiated on the Outreach Information System, and discussions continued with educators regarding materials to use in the classroom.

Task 3 – Permitting and NEPA Compliance

During this reporting period, the IOGCC report entitled “Storage of Carbon Dioxide in Geologic Structures, A Legal and Regulatory Guide for States and Provinces” was reviewed. Knowledge of this comprehensive document has facilitated and will continue to facilitate numerous discussions with our partners and others as to the development of a regulatory framework for carbon sequestration activities.

Work began on the NEPA documents for the Fort Nelson and Williston Basin demonstration tests. Once these documents are completed, the next required steps can be determined before field work on the tests begins.

Task 4 – Site Characterization and Modeling

During this quarter, there were no significant developments associated with either site activities that advance the state of the art with respect to CO₂ flood EOR operations, sequestration in brine-saturated formations, or the measurement, mitigation, and verification (MMV) of such projects.

Task 5 – Well Drilling and Completion

This task has not begun (Quarter 1 – BP3 [BP3]; Year 2). Once activities are initiated, the information will be communicated and detailed in the quarterly progress report.

Task 6 – Infrastructure Development

There were no significant accomplishments on this task during the reporting period.

Task 7 – CO₂ Procurement

Numerous discussions with potential CO₂ suppliers have taken place. Because of the sensitive nature of negotiations, specifics cannot be shared at the present time.

Task 8 – Transportation and Injection Operations

This task has not begun (Quarter 1 – Budget Period 4; Year 3). Once activities are initiated, the information will be communicated and detailed in the quarterly progress report.

Task 9 – Operational Monitoring and Modeling

This task has not begun (Quarter 1 – Budget Period 4; Year 3). Once activities are initiated, the information will be communicated and detailed in the quarterly progress report.

Task 10 – Site Closure

This task has not begun (Quarter 1 – Budget Period 5; Year 9). Once activities are initiated, the information will be communicated and detailed in the quarterly progress report.

Task 11 – Postinjection Monitoring and Modeling

This task has not begun (Quarter 1 – Budget Period 5; Year 9). Once activities are initiated, the information will be communicated and detailed in the quarterly progress report.

Task 12 – Project Assessment

This task has not begun (Quarter 1 – BP3; Year 2). Once activities are initiated, the information will be communicated and detailed in the quarterly and annual progress reports.

Task 13 – Project Management

Phase III of the PCOR Partnership started October 1, 2007. There are currently 23 partners specifically supporting Phase III activities in the reporting period January 1 – March 31, 2008. The membership, as of March 31, 2008, is listed in Table 2. Please note that Phase II members in good standing are automatically members of Phase III for the first budget period that overlaps with the last two years of Phase II (October 1, 2007 – October 1, 2009).

On March 13, 2008, Basin Electric Power Cooperative announced that it has selected the Powerspan Corporation's CO₂ capture technology for the Phase III Williston Basin demonstration test at its Antelope Valley Station. Powerspan's technology (ECO2™) is a post-combustion scrubbing process that uses an ammonia-based solution to capture CO₂ from the flue gas.

Table 2. PCOR Partnership Team, Phase III

| | | |
|--------------------------------------|------------------------------------|------------------------------------|
| UND EERC | Melzer Consulting | North Dakota Industrial |
| ALLETE | Minnkota Power Cooperative, Inc. | Commission Oil and Gas Research |
| Basin Electric Power Cooperative | Natural Resources Canada | Council |
| BNI Coal, Ltd. | North American Coal Corporation | Otter Tail Power Company |
| British Columbia Ministry of Energy, | North Dakota Industrial Commission | Prairie Public Broadcasting |
| Mines and Petroleum Resources | Department of Mineral Resources, | Ramgen Power Systems, Inc. |
| Encore Acquisition Company | Oil and Gas Division | Spectra Energy |
| Great Northern Power Development, LP | North Dakota Industrial Commission | U.S. Department of Energy National |
| Great River Energy | Lignite Research, Development and | Energy Technology Laboratory |
| Lignite Energy Council | Marketing Program | Westmoreland Coal Company |
| Montana-Dakota Utilities Co. | | |

The PCOR Partnership took part in the Office of Science Basic Energy Sciences Annual Geosciences Symposium, March 12–14, 2008. The PCOR Partnership submitted an abstract on February 7, 2008, and had two poster presentations (Phases II and III) on exhibit. A request to review a science protocol document on the PCOR Partnership RCSP Phase III Initiative was received in February, to which we responded with comments.

PHASE III PROGRESS OF WORK

Task 1 – Regional Characterization

The Regional Characterization task entails the review, characterization, and update of the PCOR Partnership region's CO₂ sinks and sources for inclusion in the DSS. Activities in this reporting period include the following:

- The conversion of the DSS site to a .NET framework continues. This development platform will allow for greater functionality and a more robust user experience in the GIS portion of the DSS.
- The Missouri Geological Survey (MGS) began work to compile GIS coverages of known oil/gas pools in Missouri. A preliminary summary of the 14 principal coal seams of Missouri has also been initiated. This summary will include the creation or update of several coal resource maps and the extraction of coal data from the National Coal Resources Data System.
- The MGS has also started the compilation of structural geology information for their state. To date, 434 maps have been examined and over 258 named structures have been identified.
- The PCOR Partnership Sharepoint Web site was released to the PCOR Partnership staff at the EERC. The site will be used for the storage and retrieval of images and photos that are used by EERC staff and partners in many presentations and papers. The site has the potential to become a data warehouse and information site for Phase III data of many formats including documents, spreadsheets, and modeling output. It also has the capability of facilitating communication with built-in discussion boards and calendaring tools.
- The milestone entitled “M1: Task 1 – Three Target Areas Selected for Detailed Characterization” was submitted to DOE for approval on March 31, 2008.

Task 2 – Public Outreach and Education

Task 2 will provide stakeholders and the general public with information on sequestration methods, opportunities, and developments, including updates on the demonstration projects.

The Phase III Outreach Action Plan (deliverable D11) was submitted for review on schedule on March 31, 2008. The plan focused on regional outreach, as well as developed plans for site outreach as negotiations are completed for the commercial-scale demonstration projects. The report included information on demographics, audiences and messages, outreach materials, and outreach methods and protocols.

Discussions continued with educators in the region regarding the development of activities utilizing PCOR Partnership outreach products. Feedback was also received from teachers regarding potential products.

“Nature in the Balance,” the first documentary produced by Prairie Public Broadcasting and the PCOR Partnership, was updated with respect to the PCOR Partnership region, partnership members, and select map products in order to support partner outreach efforts in the Canadian portion of the PCOR Partnership region.

Initial efforts were made to develop formats and populate the Outreach Information System that will contain a record of outreach activities as well as provide a basis for assessing audience exposure to outreach activities.

Task 3 – Permitting and NEPA Compliance

The goal of Task 3 is to obtain all the permits and approvals that are needed to comply with state, provincial, and federal requirements. Activities for the reporting period included the following:

- Analysis of carbon market strategies continued.
- PCOR Partnership staff continued to follow legislative actions occurring in Congress.
- Review continued of recent publications relating to regulating CO₂ sequestration and MMV issues.
- The commitments made by the United States at the Bali conference were reviewed.
- A report on Canadian carbon CCS opportunities by the ICO₂N group of companies was reviewed.
- The deliverable entitled “D27: Task 3 – Environmental Questionnaire – Fort Nelson Test Site” was submitted to DOE for approval on March 31, 2008.
- PCOR Partnership staff met with representatives from Spectra Energy and the British Columbia government to discuss regulatory issues in British Columbia, Canada, and in the United States.

Task 4 – Site Characterization and Modeling

Task 4 is focused on evaluating the effectiveness of large-scale CO₂ sequestration in geological formations at two different sites. The first site will examine CO₂ sequestration in conjunction with EOR operations in a deep carbonate reservoir in the Williston Basin. The second will examine CO₂ sequestration in a carbonate brine-saturated formation Basin in northwestern Canada.

Throughout this reporting period characterization activities on the project have continued. An experimental design package describing the baseline geological, geochemical, and geomechanical characterization activities that will be conducted for the site over the course of Task 4 was finalized. A site has been selected by Spectra Energy Transmission (SET) but has not been formally announced and must remain confidential until an official announcement of the project has been made by SET and the provincial government. Geological and hydrogeological

investigations of the study area continue. This work provides in-depth knowledge of the likely study region and will ultimately give insight into the long-term movement of fluids through this system.

The deliverable entitled “D38: Task 4 – Fort Nelson Test Site – Geomechanical Experimental Design Package” was submitted to DOE for approval on January 31, 2008. The milestone entitled “M18: Task 4 – Fort Nelson Test Site Geochemical Work Initiated” was submitted to DOE for approval on March 19, 2008. The deliverable entitled “D30: Task 4 – Williston Basin Test Site – Geomechanical Experimental Design Package” was submitted to DOE for approval on March 19, 2008.

Task 5 – Well Drilling and Completion

Task 5 will develop the engineering designs for the installation of necessary injection, production, and monitoring wells. This task has not begun (Quarter 1 – BP3; Year 2). Once activities are initiated, the information will be communicated and detailed in the quarterly progress report.

Task 6 – Infrastructure Development

Task 6 will develop the infrastructure associated with the capture, dehydration, compression, and pipeline transportation required to move the CO₂ from the source to the oil field. Activities included:

- Verifying the locations of each of the stationary sources contained in the PCOR Partnership CO₂ source emission database using Google Earth. Verification of the locations of the sources in Wisconsin has been completed, while the locations of a considerable number of the sources in Iowa have also been verified.
- The subcontract for the Ramgen Power Systems portion of this task was prepared.
- Task 6 staff interfaced with EERC researchers who are setting up a CO₂ capture technology test bed/demonstration capability. It is hoped that the lessons learned from the CO₂ technology testing on the demonstration facility can inform some of the efforts on the Phase III, Task 6 work.

Task 7 – CO₂ Procurement

This task involves the documentation of the procedures to procure CO₂ for EOR activities. Numerous discussions with potential CO₂ suppliers have taken place. Because of the sensitive nature of negotiations, specifics cannot be shared at the present time.

Task 8 – Transportation and Injection Operations

This task will consist of monitoring and documenting commercial partner activities related to the CO₂ pipeline for leaks and corrosion, as well as performing inspections and security checks. This task has not begun (Quarter 1 – Budget Period 4; Year 3). Once activities are initiated, the information will be communicated and detailed in the quarterly progress report.

Task 9 – Operational Monitoring and Modeling

Task 9 will develop site characterization, modeling, and monitoring for the Williston Basin and the Fort Nelson test sites. This task has not begun (Quarter 1 – Budget Period 4; Year 3). Once activities are initiated, the information will be communicated and detailed in the quarterly progress report.

Task 10 – Site Closure

Task 10 will require research to be conducted with regard to those site closure practices and procedures that would be applicable for this type of operation. This task has not begun (Quarter 1 – Budget Period 5; Year 9). Once activities are initiated, the information will be communicated and detailed in the quarterly progress report.

Task 11 – Postinjection Monitoring and Modeling

Postinjection monitoring and modeling will use the data generated by the site characterization and monitoring activities to provide the technical basis for the formal establishment of carbon credits that are directly linked to the volume of CO₂ injected into the site and a third-party carbon-trading entity to validate and ultimately monetize the credits derived for the Phase III tests. This task has not begun (Quarter 1 – Budget Period 5; Year 9). Once activities are initiated, the information will be communicated and detailed in the quarterly progress report.

Task 12 – Project Assessment

This task has not begun (Quarter 1 – BP3; Year 2). Once activities are initiated, the information will be communicated and detailed in the quarterly and annual progress reports. Future activities include the Project Assessment Annual Report due December 31, 2008, and the Risk Assessment Plan due within BP3. An initial draft has been started for the Risk Assessment Plan.

Task 13 – Project Management

Project management involves the development and distribution of required project reports, as well as overall project management duties. The project manager (PM) and task leaders meet on a monthly basis to report the progress of their tasks and discuss any issues and corrective actions necessary. Each task leader is also responsible to communicate and keep track of any subcontractors they may have in their respective tasks. Task leaders are also responsible to provide the PM with written weekly updates. These updates should include highlights (including trip reports), issues (i.e., budget, staffing, technical issues, etc.), opportunities, and travel plans. The monthly updates can be found on the PCOR Partnership DSS homepage.

Preparations for the 2008 PCOR Partnership Annual Meeting continue. The tentative dates will be September 16–18, 2008 in Minneapolis, Minnesota. The Partnership for CO₂ Capture, an 18-month project that complements PCOR Partnership activities and will examine the feasibility

of different CO₂ capture technologies, is being run simultaneously with and will complement various PCOR Partnership activities. The Partnership for CO₂ Capture kickoff meeting took place on March 26, 2008, at the EERC.

The deliverable entitled “D58/D59: Task 13 – Quarterly Progress Report/Milestone Quarterly Report” was submitted to DOE for approval on January 31, 2008.

PHASE III COST STATUS

The approved BP3 budget along with actual costs incurred and in-kind cost share reported are shown in Table 3. An expected spending plan by quarter of cash funds for BP3 is provided in Figure 2 and Table 4.

Table 3. Phase III Budget

| Organization | Approved Budget | Actual Costs Incurred |
|----------------------------|-----------------|-----------------------|
| DOE Share – Cash | \$5,300,000 | \$407,704 |
| Nonfederal Share – Cash | \$2,808,847 | \$0 |
| Nonfederal Share – In-Kind | \$5,577,212 | \$0 |
| Total | \$13,686,059 | \$407,704 |

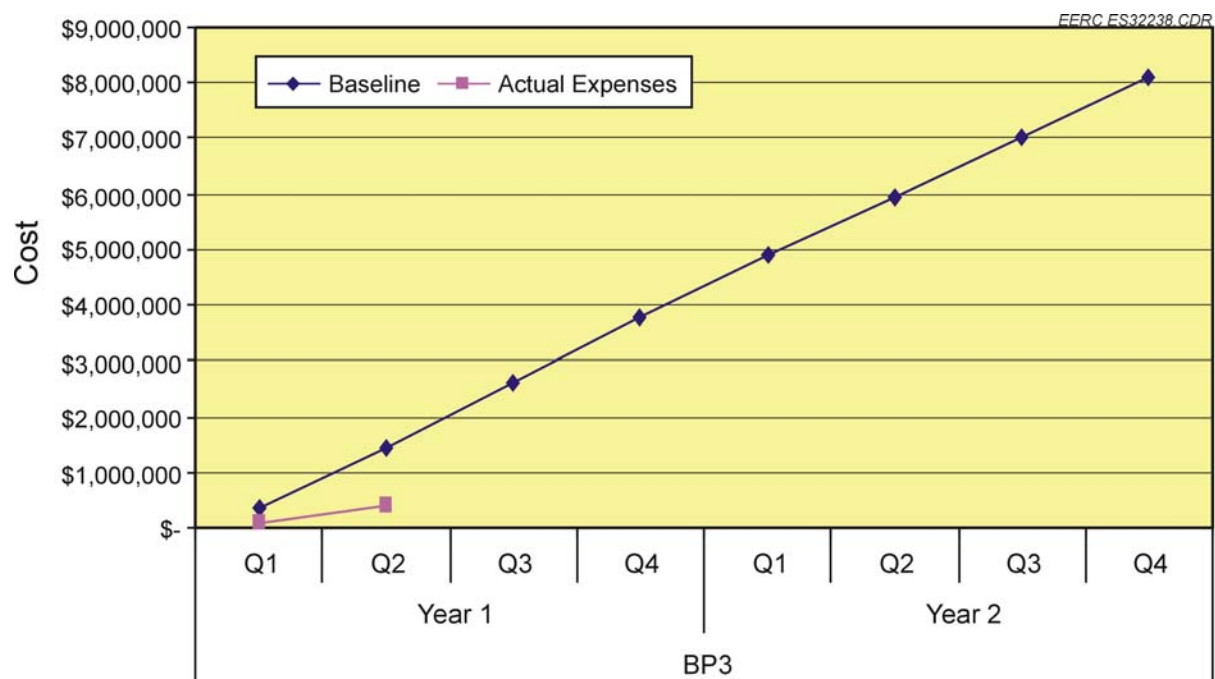


Figure 2. PCOR Partnership Phase III BP3 funding.

Table 4. BP3 Spending Plan

| Baseline Reporting Quarter | Year 1 | | | | | | | | Year 2 | | | | | | | |
|-----------------------------|------------|---------------|--------------|---------------|--------------|---------------|--------------|---------------|--------------|---------------|--------------|---------------|--------------|---------------|--------------|---------------|
| | Q1 | | Q2 | | Q3 | | Q4 | | Q1 | | Q2 | | Q3 | | Q4 | |
| | Q1 | Cum. BP Total | Q2 | Cum. BP Total | Q3 | Cum. BP Total | Q4 | Cum. BP Total | Q1 | Cum. BP Total | Q2 | Cum. BP Total | Q3 | Cum. BP Total | Q4 | Cum. BP Total |
| Baseline Cost Plan | | | | | | | | | | | | | | | | |
| Federal Share | \$ 358,125 | \$ 358,125 | \$ 596,875 | \$ 955,000 | \$ 716,250 | \$ 1,671,250 | \$ 716,250 | \$ 2,387,500 | \$ 746,875 | \$ 3,134,375 | \$ 721,875 | \$ 3,856,250 | \$ 721,875 | \$ 4,578,125 | \$ 721,875 | \$ 5,300,000 |
| Non-Federal Share | \$ - | \$ - | \$ 467,179 | \$ 467,179 | \$ 467,180 | \$ 934,359 | \$ 467,180 | \$ 1,401,539 | \$ 351,827 | \$ 1,753,366 | \$ 351,827 | \$ 2,105,193 | \$ 351,827 | \$ 2,457,020 | \$ 351,827 | \$ 2,808,847 |
| Total Planned | \$ 358,125 | \$ 358,125 | \$ 1,064,054 | \$ 1,422,179 | \$ 1,183,430 | \$ 2,605,609 | \$ 1,183,430 | \$ 3,789,039 | \$ 1,098,702 | \$ 4,887,741 | \$ 1,073,702 | \$ 5,961,443 | \$ 1,073,702 | \$ 7,035,145 | \$ 1,073,702 | \$ 8,108,847 |
| Actual Incurred Cost | | | | | | | | | | | | | | | | |
| Federal Share | \$ 88,728 | \$ 88,728 | \$ 318,976 | \$ 407,704 | | | | | | | | | | | | |
| Non-Federal Share | \$ - | \$ - | \$ - | \$ - | | | | | | | | | | | | |
| Total Incurred Cost | \$ 88,728 | \$ 88,728 | \$ 318,976 | \$ 407,704 | | | | | | | | | | | | |
| Variance | | | | | | | | | | | | | | | | |
| Federal Share | \$ 269,397 | \$ 269,397 | \$ 277,899 | \$ 547,296 | | | | | | | | | | | | |
| Non-Federal Share | \$ - | \$ - | \$ 467,179 | \$ 467,179 | | | | | | | | | | | | |
| Total Variance | \$ 269,397 | \$ 269,397 | \$ 745,078 | \$ 1,014,475 | | | | | | | | | | | | |

PHASE III SCHEDULE STATUS

Table 5 contains all the Phase III deliverables and milestones and the submission dates for the reporting period. Because negotiations are ongoing and still uncertain for our partners in the Williston Basin demonstration, various deliverable and milestone submission dates have been extended and are shown in Table 6.

See Table 7 for a listing of all deliverables and milestones by quarter, with completion dates, for the duration of the project. See Table 8 for a listing of deliverables and milestones by quarter for BP3.

Table 5. Phase III Deliverables and Milestones for January 1 – March 31, 2008

| Product | Date Submitted |
|---|-----------------------|
| D58/D59: Task 13 – Quarterly Progress Report/Milestone Quarterly Report | 1/31/08 |
| D38: Task 4 – Fort Nelson Test Site – Geomechanical Experimental Design Package | 1/31/08 |
| M1: Task 1 – Three Target Areas Selected for Detailed Characterization | 3/31/08 |
| M18: Task 4 – Fort Nelson Test Site Geochemical Work Initiated | 3/31/08 |
| D11: Task 2 – Outreach Plan | 3/31/08 |
| D30: Task 4 – Williston Basin Test Site – Geomechanical Experimental Design Package | 3/31/08 |
| D27: Task 3 – Environmental Questionnaire – Fort Nelson Test Site | 3/31/08 |

Table 6. Revised Due Dates for Selected Phase III Deliverables and Milestones

| Title/Description | Original Due Date | Revised Due Date |
|---|--------------------------|-------------------------|
| M3: Task 3 – Start Environmental Questionnaire for Williston Basin Test Site | 3/28/08 | 6/30/08 |
| M4: Task 4 – Williston Basin Test Site Selected | 3/28/08 | 6/30/08 |
| D28: Task 3 – Environmental Questionnaire – Williston Basin Test Site | 6/30/08 | 7/31/08 |
| D12: Task 2 – Demonstration Web Pages on the Public Site | 6/30/08 | 7/31/08 |
| D31: Task 4 – Williston Basin Test Site – Geological Characterization Experimental Design Package | 6/30/08 | 8/29/08 |
| M8: Task 4 – Williston Basin Test Site Wellbore Leakage Data Collection Initiated | 9/30/08 | 11/28/08 |

Table 7. Phase III Milestones and Deliverables

| Title/Description | Due Date | Actual Completion Date |
|--|-----------------|-------------------------------|
| Year 1 – Quarter 1 (October–December 2007) | | |
| M17: Task 4 – Fort Nelson Test Site Selected | 12/31/07 | 12/28/07 |
| D37: Task 4 – Fort Nelson Test Site – Site Geological Characterization Experimental Design Package | 12/31/07 | 12/28/07 |
| D63: Task 13 – Project Management Plan | 12/31/07 | 12/28/07 |
| Year 1 – Quarter 2 (January–March 2008) | | |
| D58/D59: Task 13 – Quarterly Progress Report/Milestone Quarterly Report | 1/31/08 | 1/31/08 |
| D38: Task 4 – Fort Nelson Test Site – Geomechanical Experimental Design Package | 1/31/08 | 1/31/08 |
| M1: Task 1 – Three Target Areas Selected for Detailed Characterization | 3/31/08 | 3/20/08 |
| M18: Task 4 – Fort Nelson Test Site Geochemical Work Initiated | 3/31/08 | 3/19/08 |
| D11: Task 2 – Outreach Plan | 3/31/08 | 3/31/08 |
| D30: Task 4 – Williston Basin Test Site – Geomechanical Experimental Design Package | 3/31/08 | 3/31/08 |
| D27: Task 3 – Environmental Questionnaire – Fort Nelson Test Site | 3/31/08 | 4/2/08 |
| Year 1 – Quarter 3 (April–June 2008) | | |
| D58/D59: Task 13 – Quarterly Progress Report/Milestone Quarterly Report | 4/30/08 | |
| D14: Task 2 – General Phase III Fact Sheet | 4/30/08 | |
| D17: Task 2 – General Phase III Information PowerPoint Presentation | 5/30/08 | |
| M3: Task 3 – Start Environmental Questionnaire for Williston Basin Test Site | 6/30/08 | |
| M4: Task 4 – Williston Basin Test Site Selected | 6/30/08 | |
| M5: Task 4 – Data Collection Initiated for Williston Basin Test Site | 6/30/08 | |
| M6: Task 4 – Williston Basin Test Site Geochemical Work Initiated | 6/30/08 | |
| M7: Task 4 – Williston Basin Test Site Geological Characterization Data Collection Initiated | 6/30/08 | |

Continued...

Table 7. Phase III Milestones and Deliverables (continued)

| Title/Description | Due Date | Actual Completion Date |
|---|-----------------|-------------------------------|
| Year 1 – Quarter 4 (July–September 2008) | | |
| D58/D59: Task 13 – Quarterly Progress Report/Milestone Quarterly Report | 7/31/08 | |
| D12: Task 2 – Demonstration Web Pages on the Public Site | 7/31/08 | |
| D28: Task 3 – Environmental Questionnaire – Williston Basin Test Site | 7/31/08 | |
| D31: Task 4 – Williston Basin Test Site – Geological Characterization Experimental Design Package | 8/29/08 | |
| M2: Task 1 – Demonstration Project Reporting System (DPRS) Prototype Completed | 9/30/08 | |
| D1: Task 1 – Review of Source Attributes | 9/30/08 | |
| D29: Task 3 – Permitting Action Plan | 9/30/08 | |
| D67: Task 4 – Fort Nelson Test Site – Simulation Report | 9/30/08 | |
| Year 2 – Quarter 1 (October–December 2008) | | |
| D58/D59: Task 13 – Quarterly Progress Report/Milestone Quarterly Report | 10/31/08 | |
| M8: Task 4 – Williston Basin Test Site Wellbore Leakage Data Collection Initiated | 11/28/08 | |
| D20: Task 2 – Video Support to PowerPoint and Web Site | 12/31/08 | |
| D57: Task 12 – Project Assessment Annual Report | 12/31/08 | |
| Year 2 – Quarter 2 (January–March 2009) | | |
| D58/D59: Task 13 – Quarterly Progress Report/Milestone Quarterly Report | 1/31/09 | |
| D15: Task 2 – Williston Basin Test Site Fact Sheet | 2/28/09 | |
| D2: Task 2 – First Target Area Completed | 3/31/09 | |
| D24: Task 2 – PCOR Partnership Region Sequestration General Poster | 3/31/09 | |
| D66: Task 4 – Williston Basin Test Site – Simulation Report | 3/31/09 | |
| Year 2 – Quarter 3 (April–June 2009) | | |
| D58/D59: Task 13 – Quarterly Progress Report/Milestone Quarterly Report | 4/30/09 | |
| D18: Task 2 – Williston Basin Test Site PowerPoint Presentation | 4/30/09 | |
| D16: Task 2 – Fort Nelson Test Site Fact Sheet | 5/29/09 | |
| M9: Task 4 – Williston Basin Test Site B-Version Geological Model Development Initiated | 6/30/09 | |
| M10: Task 4 – Williston Basin Test Site Wellbore Leakage Data Collection Completed | 6/30/09 | |

Continued...

Table 7. Phase III Milestones and Deliverables (continued)

| Title/Description | Due Date | Actual Completion Date |
|---|-----------------|-------------------------------|
| Year 2 – Quarter 4 (July–September 2009) | | |
| D58/D59: Task 13 – Quarterly Progress Report/Milestone Quarterly Report | 7/31/09 | |
| D19: Task 2 – Fort Nelson Test Site PowerPoint Presentation | 7/31/09 | |
| D40: Task 4 – Fort Nelson Test Site – Geomechanical Final Report | 7/31/09 | |
| D42: Task 5 – Williston Basin Test Site – Injection Experimental Design Package | 8/31/09 | |
| M11: Task 4 – Williston Basin Test Site Baseline Hydro Data Collection Completed | 9/30/09 | |
| M12: Task 4 – Williston Basin Test Site Geochemical Work Completed | 9/30/09 | |
| M19: Task 6 – Capture, Dehydration, and Compression Technology Selected | 9/30/09 | |
| D9: Task 1 – Updated DSS | 9/30/09 | |
| D1: Task 1 – Review of Source Attributes | 9/30/09 | |
| D3: Task 1 – Permitting Review – One State and One Province | 9/30/09 | |
| D43: Task 5 – Williston Basin Test Site – Monitoring Experimental Design Package | 9/30/09 | |
| D47: Task 6 – Topical Report on the Preliminary Design of Advanced Compression Technology | 9/30/09 | |
| D60: Task 13 – Site Development, Operations, and Closure Plan | 9/30/09 | |
| D61: Task 13 – Site Commercialization Plan | 9/30/09 | |
| D64: Task 4 – Williston Basin Test Site – Site Characterization Report | 9/30/09 | |
| D65: Task 4 – Fort Nelson Test Site – Site Characterization Report | 9/30/09 | |
| Year 3 – Quarter 1 (October–December 2009) | | |
| D58/D59: Task 13 – Quarterly Progress Report/Milestone Quarterly Report | 10/31/09 | |
| M13: Task 4 – Williston Basin Test Site B-Version Geological Model Development Completed | 12/31/09 | |
| M14: Task 4 – Williston Basin Test Site Geological Characterization Data Collection Completed | 12/31/09 | |
| M15: Task 4 – Williston Basin Test Site Baseline Hydro B-Model Completed | 12/31/09 | |
| D41: Task 4 – Fort Nelson Test Site – Geochemical Final Report | 12/31/09 | |
| D71: Task 9 – Williston Basin Test Site – Quarterly Summary of Operations | 12/31/09 | |
| D72: Task 9 – Fort Nelson Test Site – Quarterly Summary of Operations | 12/31/09 | |
| D57: Task 12 – Project Assessment Annual Report | 12/31/09 | |

Continued...

Table 7. Phase III Milestones and Deliverables (continued)

| Title/Description | Due Date | Actual Completion Date |
|---|-----------------|-------------------------------|
| Year 3 – Quarter 2 (January–March 2010) | | |
| D58/D59: Task 13 – Quarterly Progress Report/Milestone Quarterly Report | 1/31/10 | |
| D11: Task 2 – Outreach Plan | 3/31/10 | |
| D32: Task 4 – Williston Basin Test Site – Geomechanical Final Report | 3/31/10 | |
| D71: Task 9 – Williston Basin Test Site – Quarterly Summary of Operations | 3/31/10 | |
| D72: Task 9 – Fort Nelson Test Site – Quarterly Summary of Operations | 3/31/10 | |
| Year 3 – Quarter 3 (April–June 2010) | | |
| D58/D59: Task 13 – Quarterly Progress Report/Milestone Quarterly Report | 4/30/10 | |
| D13: Task 2 – Public Site Updates | 6/30/10 | |
| D17: Task 2 – General Phase III Information PowerPoint Presentation | 6/30/10 | |
| D18: Task 2 – Williston Basin Test Site PowerPoint Presentation | 6/30/10 | |
| D19: Task 2 – Fort Nelson Test Site PowerPoint Presentation | 6/30/10 | |
| D25: Task 2 – Williston Basin Test Site Poster | 6/30/10 | |
| D33: Task 4 – Williston Basin Test Site – Geochemical Final Report | 6/30/10 | |
| D34: Task 4 – Williston Basin Test Site – Baseline Hydrogeological Final Report | 6/30/10 | |
| D71: Task 9 – Williston Basin Test Site – Quarterly Summary of Operations | 6/30/10 | |
| D72: Task 9 – Fort Nelson Test Site – Quarterly Summary of Operations | 6/30/10 | |
| Year 3 – Quarter 4 (July–September 2010) | | |
| D58/D59: Task 13 – Quarterly Progress Report/Milestone Quarterly Report | 7/31/10 | |
| D70: Task 4 – Fort Nelson Test Site – Best Practices Manual – Simulation Report | 8/31/10 | |
| M16: Task 4 – Williston Basin Test Site Final Geological Model Development Completed | 9/30/10 | |
| D1: Task 1 – Review of Source Attributes | 9/30/10 | |
| D10: Task 1 – Demonstration Project Reporting System Update | 9/30/10 | |
| D26: Task 2 – Fort Nelson Test Site Poster | 9/30/10 | |
| D35: Task 4 – Williston Basin Test Site – Best Practices Manual – Site Characterization | 9/30/10 | |
| D36: Task 4 – Williston Basin Test Site – Wellbore Leakage Final Report | 9/30/10 | |
| D48: Task 7 – Procurement Plan and Agreement Report | 9/30/10 | |

Continued...

Table 7. Phase III Milestones and Deliverables (continued)

| Title/Description | Due Date | Actual Completion Date |
|--|-----------------|-------------------------------|
| Year 3 – Quarter 4 (July–September 2010), continued | | |
| D50: Task 9 – Williston Basin Test Site – Site Characterization, Modeling, and Monitoring Plan | 9/30/10 | |
| D52: Task 9 – Fort Nelson Test Site – Site Characterization, Modeling, and Monitoring Plan | 9/30/10 | |
| D68: Task 4 – Fort Nelson Test Site – Best Practices Manual – Site Characterization | 9/30/10 | |
| D69: Task 4 – Williston Basin Test Site – Best Practices Manual – Simulation Report | 9/30/10 | |
| D71: Task 9 – Williston Basin Test Site – Quarterly Summary of Operations | 9/30/10 | |
| D72: Task 9 – Fort Nelson Test Site – Quarterly Summary of Operations | 9/30/10 | |
| Year 4 – Quarter 1 (October–December 2010) | | |
| D58/D59: Task 13 – Quarterly Progress Report/Milestone Quarterly Report | 10/31/10 | |
| M20: Task 6 – Capture, Dehydration, and Compression Technology Design Completed | 10/31/10 | |
| D71: Task 9 – Williston Basin Test Site – Quarterly Summary of Operations | 12/31/10 | |
| D72: Task 9 – Fort Nelson Test Site – Quarterly Summary of Operations | 12/31/10 | |
| D57: Task 12 – Project Assessment Annual Report | 12/31/10 | |
| Year 4 – Quarter 2 (January–March 2011) | | |
| D58/D59: Task 13 – Quarterly Progress Report/Milestone Quarterly Report | 1/31/11 | |
| D71: Task 9 – Williston Basin Test Site – Quarterly Summary of Operations | 3/31/11 | |
| D72: Task 9 – Fort Nelson Test Site – Quarterly Summary of Operations | 3/31/11 | |
| Year 4 – Quarter 3 (April–June 2011) | | |
| D58/D59: Task 13 – Quarterly Progress Report/Milestone Quarterly Report | 4/30/11 | |
| D21: Task 2 – Williston Basin Test Site 15-minute Video | 6/30/11 | |
| D17: Task 2 – General Phase III Information PowerPoint Presentation | 6/30/11 | |
| D18: Task 2 – Williston Basin Test Site PowerPoint Presentation | 6/30/11 | |
| D19: Task 2 – Fort Nelson Test Site PowerPoint Presentation | 6/30/11 | |
| D71: Task 9 – Williston Basin Test Site – Quarterly Summary of Operations | 6/30/11 | |
| D72: Task 9 – Fort Nelson Test Site – Quarterly Summary of Operations | 6/30/11 | |

Continued...

Table 7. Phase III Milestones and Deliverables (continued)

| Title/Description | Due Date | Actual Completion Date |
|--|-----------------|-------------------------------|
| Year 4 – Quarter 4 (July–September 2011) | | |
| D58/D59: Task 13 – Quarterly Progress Report/Milestone Quarterly Report | 7/31/11 | |
| D1: Task 1 – Review of Source Attributes | 9/30/11 | |
| D4: Task 1 – Permitting Review – Two Additional States | 9/30/11 | |
| D9: Task 1 – Updated DSS | 9/30/11 | |
| D45: Task 6 – Topical Report on the Integrated Capture Plant and Its Shakedown | 9/30/11 | |
| D46: Task 6 – Topical Report on Pipeline Route Selection, Design, and Construction | 9/30/11 | |
| D71: Task 9 – Williston Basin Test Site – Quarterly Summary of Operations | 9/30/11 | |
| D72: Task 9 – Fort Nelson Test Site – Quarterly Summary of Operations | 9/30/11 | |
| Year 5 – Quarter 1 (October–December 2011) | | |
| D58/D59: Task 13 – Quarterly Progress Report/Milestone Quarterly Report | 10/31/11 | |
| D71: Task 9 – Williston Basin Test Site – Quarterly Summary of Operations | 12/31/11 | |
| D72: Task 9 – Fort Nelson Test Site – Quarterly Summary of Operations | 12/31/11 | |
| D57: Task 12 – Project Assessment Annual Report | 12/31/11 | |
| Year 5 – Quarter 2 (January–March 2012) | | |
| D58/D59: Task 13 – Quarterly Progress Report/Milestone Quarterly Report | 1/31/12 | |
| D5: Task 1 – Second Target Area Completed | 3/31/12 | |
| D71: Task 9 – Williston Basin Test Site – Quarterly Summary of Operations | 3/31/12 | |
| D72: Task 9 – Fort Nelson Test Site – Quarterly Summary of Operations | 3/31/12 | |
| Year 5 – Quarter 3 (April–June 2012) | | |
| D58/D59: Task 13 – Quarterly Progress Report/Milestone Quarterly Report | 4/30/12 | |
| D13: Task 2 – Public Site Updates | 6/30/12 | |
| D22: Task 2 – Fort Nelson Test Site 15-minute Video | 6/30/12 | |
| D17: Task 2 – General Phase III Information PowerPoint Presentation | 6/30/12 | |
| D18: Task 2 – Williston Basin Test Site PowerPoint Presentation | 6/30/12 | |
| D19: Task 2 – Fort Nelson Test Site PowerPoint Presentation | 6/30/12 | |
| D71: Task 9 – Williston Basin Test Site – Quarterly Summary of Operations | 6/30/12 | |
| D72: Task 9 – Fort Nelson Test Site – Quarterly Summary of Operations | 6/30/12 | |

Continued...

Table 7. Phase III Milestones and Deliverables (continued)

| Title/Description | Due Date | Actual Completion Date |
|---|-----------------|-------------------------------|
| Year 5 – Quarter 4 (July–September 2012) | | |
| D58/D59: Task 13 – Quarterly Progress Report/Milestone Quarterly Report | 7/31/12 | |
| D1: Task 1 – Review of Source Attributes | 9/30/12 | |
| D10: Task 1 – DPRS Update | 9/30/12 | |
| D44: Task 5 – Williston Basin Test Site – Drilling and Completion Activities Final Report | 9/30/12 | |
| D71: Task 9 – Williston Basin Test Site – Quarterly Summary of Operations | 9/30/12 | |
| D72: Task 9 – Fort Nelson Test Site – Quarterly Summary of Operations | 9/30/12 | |
| Year 6 – Quarter 1 (October–December 2012) | | |
| D58/D59: Task 13 – Quarterly Progress Report/Milestone Quarterly Report | 10/31/12 | |
| D14: Task 2 – General Phase III Fact Sheet | 12/31/12 | |
| D71: Task 9 – Williston Basin Test Site – Quarterly Summary of Operations | 12/31/12 | |
| D72: Task 9 – Fort Nelson Test Site – Quarterly Summary of Operations | 12/31/12 | |
| D57: Task 12 – Project Assessment Annual Report | 12/31/12 | |
| Year 6 – Quarter 2 (January–March 2013) | | |
| D58/D59: Task 13 – Quarterly Progress Report/Milestone Quarterly Report | 1/31/13 | |
| D15: Task 2 – Williston Basin Test Site Fact Sheet | 3/31/13 | |
| D71: Task 9 – Williston Basin Test Site – Quarterly Summary of Operations | 3/31/13 | |
| D72: Task 9 – Fort Nelson Test Site – Quarterly Summary of Operations | 3/31/13 | |
| Year 6 – Quarter 3 (April–June 2013) | | |
| D58/D59: Task 13 – Quarterly Progress Report/Milestone Quarterly Report | 4/30/13 | |
| D16: Task 2 – Fort Nelson Test Site Fact Sheet | 6/30/13 | |
| D17: Task 2 – General Phase III Information PowerPoint Presentation | 6/30/13 | |
| D18: Task 2 – Williston Basin Test Site PowerPoint Presentation | 6/30/13 | |
| D19: Task 2 – Fort Nelson Test Site PowerPoint Presentation | 6/30/13 | |
| D71: Task 9 – Williston Basin Test Site – Quarterly Summary of Operations | 6/30/13 | |
| D72: Task 9 – Fort Nelson Test Site – Quarterly Summary of Operations | 6/30/13 | |
| Year 6 – Quarter 4 (July–September 2013) | | |
| D58/D59: Task 13 – Quarterly Progress Report/Milestone Quarterly Report | 7/30/13 | |
| D1: Task 1 – Review of Source Attributes | 9/30/13 | |
| D6: Task 1 – Permitting Review – Three States and Two Provinces | 9/30/13 | |

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Table 7. Phase III Milestones and Deliverables (continued)

| Title/Description | Due Date | Actual Completion Date |
|---|-----------------|-------------------------------|
| Year 6– Quarter 4 (July–September 2013), continued | | |
| D9: Task 1 – Updated DSS | 9/30/13 | |
| D71: Task 9 – Williston Basin Test Site – Quarterly Summary of Operations | 9/30/13 | |
| D72: Task 9 – Fort Nelson Test Site – Quarterly Summary of Operations | 9/30/13 | |
| Year 7 – Quarter 1 (October–December 2013) | | |
| D58/D59: Task 13 – Quarterly Progress Report/Milestone Quarterly Report | 10/31/13 | |
| D71: Task 9 – Williston Basin Test Site – Quarterly Summary of Operations | 12/31/13 | |
| D72: Task 9 – Fort Nelson Test Site – Quarterly Summary of Operations | 12/31/13 | |
| D57: Task 12 – Project Assessment Annual Report | 12/31/13 | |
| Year 7 – Quarter 2 (January–March 2014) | | |
| D58/D59: Task 13 – Quarterly Progress Report/Milestone Quarterly Report | 1/31/14 | |
| D24: Task 2 – PCOR Partnership Region Sequestration General Poster | 3/31/14 | |
| D71: Task 9 – Williston Basin Test Site – Quarterly Summary of Operations | 3/31/14 | |
| D72: Task 9 – Fort Nelson Test Site – Quarterly Summary of Operations | 3/31/14 | |
| Year 7 – Quarter 3 (April–June 2014) | | |
| D58/D59: Task 13 – Quarterly Progress Report/Milestone Quarterly Report | 4/30/14 | |
| D13: Task 2 – Public Site Updates | 6/30/14 | |
| D17: Task 2 – General Phase III Information PowerPoint Presentation | 6/30/14 | |
| D18: Task 2 – Williston Basin Test Site PowerPoint Presentation | 6/30/14 | |
| D19: Task 2 – Fort Nelson Test Site PowerPoint Presentation | 6/30/14 | |
| D71: Task 9 – Williston Basin Test Site – Quarterly Summary of Operations | 6/30/14 | |
| D72: Task 9 – Fort Nelson Test Site – Quarterly Summary of Operations | 6/30/14 | |
| Year 7 – Quarter 4 (July–September 2014) | | |
| D58/D59: Task 13 – Quarterly Progress Report/Milestone Quarterly Report | 7/31/14 | |
| D1: Task 1 – Review of Source Attributes | 9/30/14 | |
| D7: Task 1 – Third Target Area Completed | 9/30/14 | |
| D10: Task 1 – Demonstration Project Reporting System Update | 9/30/14 | |
| D71: Task 9 – Williston Basin Test Site – Quarterly Summary of Operations | 9/30/14 | |
| D72: Task 9 – Fort Nelson Test Site – Quarterly Summary of Operations | 9/30/14 | |

Continued...

Table 7. Phase III Milestones and Deliverables (continued)

| Title/Description | Due Date | Actual Completion Date |
|---|-----------------|-------------------------------|
| Year 8 – Quarter 1 (October–December 2014) | | |
| D58/D59: Task 13 – Quarterly Progress Report/Milestone Quarterly Report | 10/31/14 | |
| D75: Task 3 – Updated Permitting Action Plan | 10/30/14 | |
| D25: Task 2 – Williston Basin Test Site Poster | 12/31/14 | |
| D71: Task 9 – Williston Basin Test Site – Quarterly Summary of Operations | 12/31/14 | |
| D72: Task 9 – Fort Nelson Test Site – Quarterly Summary of Operations | 12/31/14 | |
| D57: Task 12 – Project Assessment Annual Report | 12/31/14 | |
| Year 8 – Quarter 2 (January–March 2015) | | |
| D58/D59: Task 13 – Quarterly Progress Report/Milestone Quarterly Report | 1/31/15 | |
| D71: Task 9 – Williston Basin Test Site – Quarterly Summary of Operations | 3/31/15 | |
| D72: Task 9 – Fort Nelson Test Site – Quarterly Summary of Operations | 3/31/15 | |
| Year 8 – Quarter 3 (April–June 2015) | | |
| D58/D59: Task 13 – Quarterly Progress Report/Milestone Quarterly Report | 4/30/15 | |
| D17: Task 2 – General Phase III Information PowerPoint Presentation | 6/30/15 | |
| D18: Task 2 – Williston Basin Test Site PowerPoint Presentation | 6/30/15 | |
| D19: Task 2 – Fort Nelson Test Site PowerPoint Presentation | 6/30/15 | |
| D26: Task 2 – Fort Nelson Test Site Poster | 6/30/15 | |
| D71: Task 9 – Williston Basin Test Site – Quarterly Summary of Operations | 6/30/15 | |
| D72: Task 9 – Fort Nelson Test Site – Quarterly Summary of Operations | 6/30/15 | |
| Year 8 – Quarter 4 (July–September 2015) | | |
| D58/D59: Task 13 – Quarterly Progress Report/Milestone Quarterly Report | 7/31/15 | |
| D1: Task 1 – Review of Source Attributes | 9/30/15 | |
| D8: Task 1 – Permitting Review – Three States and One Province | 9/30/15 | |
| D9: Task 1 – Updated DSS | 9/30/15 | |
| D49: Task 8 – Transportation and Injection Operations Final Report | 9/30/15 | |
| D51: Task 9 – Williston Basin Test Site – Monitoring for CO ₂ , EOR, and Sequestration Best Practices Manual | 9/30/15 | |
| D53: Task 9 – Fort Nelson Test Site – Monitoring for CO ₂ Sequestration in a Brine Formation Best Practices Manual | 9/30/15 | |

Continued...

Table 7. Phase III Milestones and Deliverables (continued)

| Title/Description | Due Date | Actual Completion Date |
|---|-----------------|-------------------------------|
| Year 8 – Quarter 4 (July–September 2015), continued | | |
| D71: Task 9 – Williston Basin Test Site – Quarterly Summary of Operations | 9/30/15 | |
| D72: Task 9 – Fort Nelson Test Site – Quarterly Summary of Operations | 9/30/15 | |
| Year 9 – Quarter 1 (October–December 2015) | | |
| D58/D59: Task 13 – Quarterly Progress Report/Milestone Quarterly Report | 10/31/15 | |
| D14: Task 2 – General Phase III Fact Sheet | 12/31/15 | |
| D23: Task 2 – Sequestration in Carbon Management – 30-minute Video | 12/31/15 | |
| D57: Task 12 – Project Assessment Annual Report | 12/31/15 | |
| Year 9 – Quarter 2 (January–March 2016) | | |
| D58/D59: Task 13 – Quarterly Progress Report/Milestone Quarterly Report | 1/31/16 | |
| D11: Task 2 – Outreach Plan | 3/31/16 | |
| D15: Task 2 – Williston Basin Test Site Fact Sheet | 3/31/16 | |
| D55: Task 11 – Report on Cost-Effective Long-Term Monitoring Strategies for the Williston Basin Test Site | 3/31/16 | |
| D56: Task 11 – Report on Cost-Effective Long-Term Monitoring Strategies for the Fort Nelson Test Site | 3/31/16 | |
| Year 9– Quarter 3 (April–June 2016) | | |
| D58/D59: Task 13 – Quarterly Progress Report/Milestone Quarterly Report | 4/30/16 | |
| D13: Task 2 – Public Site Updates | 6/30/16 | |
| D16: Task 2 – Fort Nelson Test Site Fact Sheet | 6/30/16 | |
| D17: Task 2 – General Phase III Information PowerPoint Presentation | 6/30/16 | |
| D18: Task 2 – Williston Basin Test Site PowerPoint Presentation | 6/30/16 | |
| D19: Task 2 – Fort Nelson Test Site PowerPoint Presentation | 6/30/16 | |
| Year 9 – Quarter 4 (July–September 2016) | | |
| D58/D59: Task 13 – Quarterly Progress Report/Milestone Quarterly Report | 7/31/16 | |
| D1: Task 1 – Review of Source Attributes | 9/30/16 | |
| D10: Task 1 – Demonstration Project Reporting System Update | 9/30/16 | |

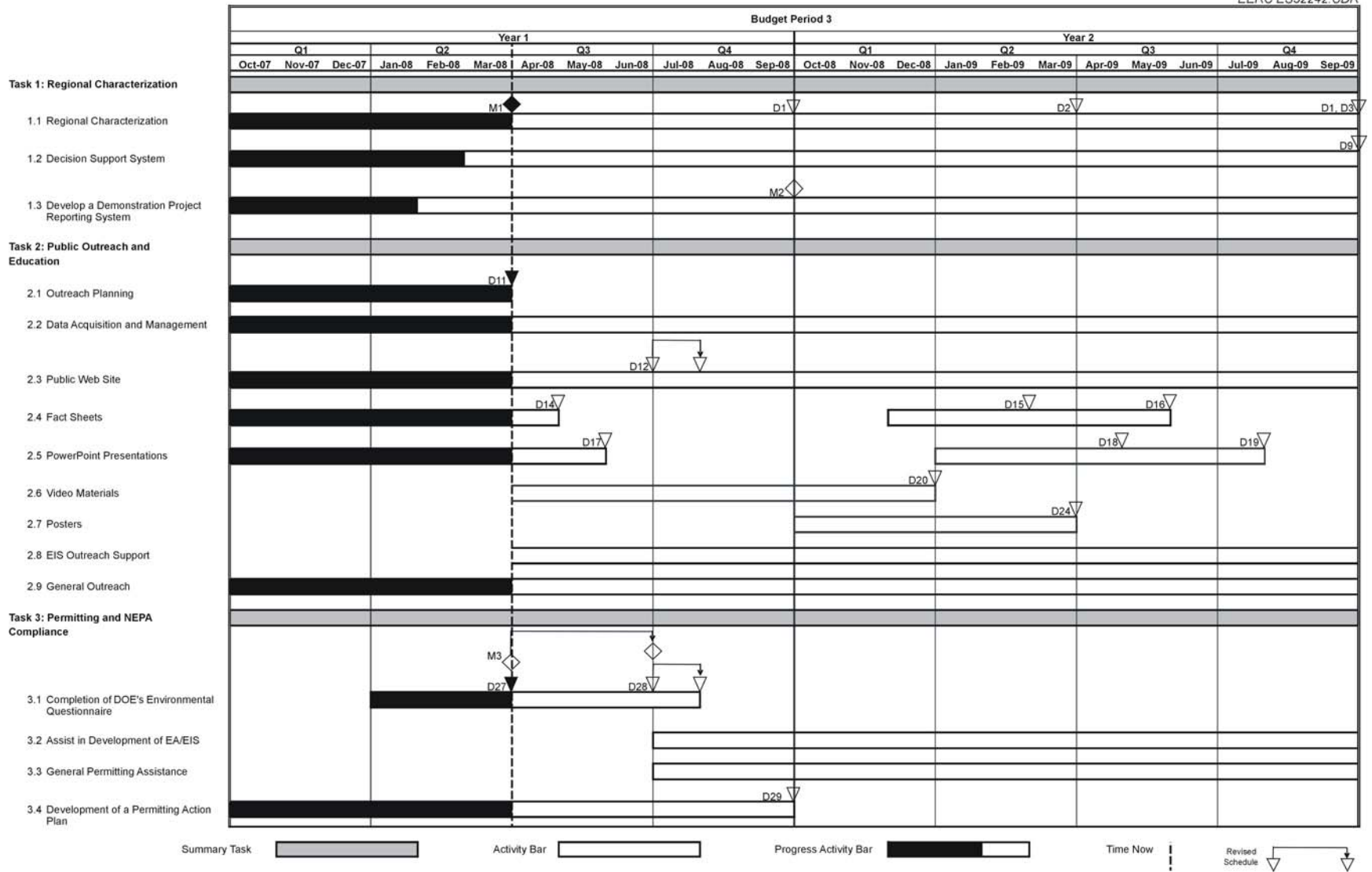
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Table 7. Phase III Milestones and Deliverables (continued)

| Title/Description | Due Date | Actual Completion Date |
|---|-----------------|-------------------------------|
| Year 9 – Quarter 4 (July–September 2016), continued | | |
| D73: Task 11 – Williston Basin Test Site – Progress Report on Monitoring and Modeling Fate of CO ₂ | 9/30/16 | |
| D74: Task 11 – Fort Nelson Test Site – Progress Report on Monitoring and Modeling Fate of CO ₂ | 9/30/16 | |
| Year 10 – Quarter 1 (October–December 2016) | | |
| D58/D59: Task 13 – Quarterly Progress Report/Milestone Quarterly Report | 10/31/16 | |
| D57: Task 12 – Project Assessment Annual Report | 12/31/16 | |
| Year 10 – Quarter 2 (January–March 2016) | | |
| D58/D59: Task 13 – Quarterly Progress Report/Milestone Quarterly Report | 1/31/17 | |
| Year 10 – Quarter 3 (April–June 2017) | | |
| D58/D59: Task 13 – Quarterly Progress Report/Milestone Quarterly Report | 4/30/17 | |
| D17: Task 2 – General Phase III Information PowerPoint Presentation | 6/30/17 | |
| D18: Task 2 – Williston Basin Test Site PowerPoint Presentation | 6/30/17 | |
| D19: Task 2 – Fort Nelson Test Site PowerPoint Presentation | 6/30/17 | |
| Year 10 – Quarter 4 (July–September 2017) | | |
| D58/D59: Task 13 – Quarterly Progress Report/Milestone Quarterly Report | 7/31/17 | |
| D54: Task 10 – Site Closure Report | 9/30/17 | |
| D73: Task 11 – Williston Basin Test Site – Progress Report on Monitoring and Modeling Fate of CO ₂ | 9/30/17 | |
| D74: Task 11 – Fort Nelson Test Site – Progress Report on Monitoring and Modeling Fate of CO ₂ | 9/30/16 | |
| D76: Task 3 – Best Practices Manual – Permitting | 9/30/17 | |
| D62: Task 13 – Final Report | 9/30/17 | |
| D58/D59: Task 13 – Quarterly Progress Report/Milestone Quarterly Report | 10/31/17 | |

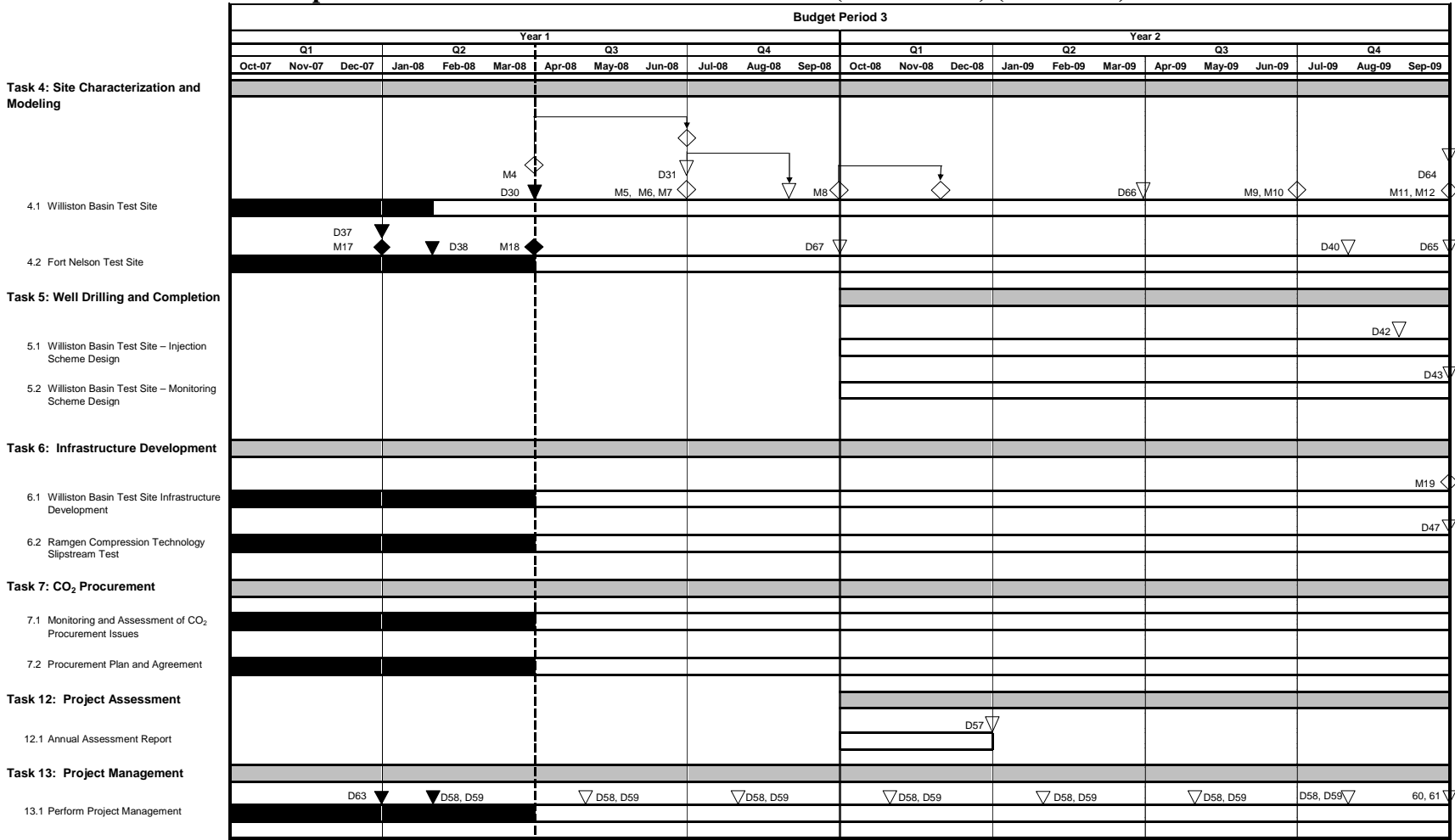
Table 8. PCOR Partnership Phase III BP3 Milestones and Deliverables (Gantt chart)

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Table 8. PCOR Partnership Phase III BP3 Milestones and Deliverables (Gantt chart) (continued)



Summary Task  Activity Bar  Progress Activity Bar  Time Now  Revised Schedule 

Continued...

Table 8. PCOR Partnership Phase III BP3 Milestones and Deliverables (Gantt chart) (continued)

| Key for Phase III Deliverables (D) ▼ | | Key for Phase III Milestone (M) ◆ | |
|--------------------------------------|---|-----------------------------------|--|
| D1 | Review of Source Attributes | M1 | Three Target Areas Selected |
| D2 | First Target Area Completed | M2 | DPRS Prototype |
| D3 | Permitting Review – One State and One Province | M3 | Start Environmental Questionnaire for WB Test Site |
| D9 | Updated DSS | M4 | WB Test Site Selected |
| D11 | Outreach Plan | M5 | Data Collection Initiated for WB Test Site |
| D12 | Demonstration Web Pages on the Public Site | M6 | WB Test Site Geochemical Work Initiated |
| D14 | General Phase III Fact Sheet | M7 | WB Test Site Geological Characterization Data Collection Initiated |
| D15 | Williston Basin (WB) Test Site Fact Sheet | M8 | WB Test Site Wellbore Leakage Data Collection Initiated |
| D16 | Fort Nelson Test Site Fact Sheet | M9 | WB Test Site B-Version Geological Model Development Initiated |
| D17 | General Phase III Information PowerPoint Presentation | M10 | WB Test Site Wellbore Leakage Data Collection Completed |
| D18 | WB Test Site PowerPoint Presentation | M11 | WB Test Site Baseline Hydro Data Collection Completed |
| D19 | Fort Nelson (FN) Test Site PowerPoint Presentation | M12 | WB Test Site Geochemical Work Completed |
| D20 | Video Support to PowerPoint and Web Site | M17 | FN Test Site Selected |
| D24 | PCOR Region Sequestration General Poster | M18 | FN Test Site Geochemical Work Initiated |
| D27 | FN Test Site – Environmental Questionnaire | M19 | Capture, Dehydration, and Compression Technology Selected |
| D28 | WB Test Site – Environmental Questionnaire | | |
| D29 | Permitting Action Plan | | |
| D30 | WB Test Site – Geomechanical Experimental Design Package | | |
| D31 | WB Test Site – Site Geological Characterization Experimental Design Package | | |
| D37 | FN Test Site – Site Geological Characterization Experimental Design Package | | |
| D38 | FN Test Site – Geotemechanical Experimental Design Package | | |
| D40 | FN Test Site – Geomechanical Final Report | | |
| D42 | WB Test Site – Injection Experimental Design Package | | |
| D43 | WB Test Site – Monitoring Experimental Design Package | | |
| D47 | Topical Report on the Preliminary Design of Advanced Compression Technology | | |
| D57 | Project Assessment Annual Report | | |
| D58 | Quarterly Progress Report | | |
| D59 | Milestone Quarterly Report | | |
| D60 | Site Development, Operations, and Closure Plan | | |
| D61 | Site Commercialization Plan | | |
| D63 | Project Management Plan | | |
| D64 | WB Test Site – Site Characterization Report | | |
| D65 | FN Test Site – Site Characterization Report | | |
| D66 | WB Test Site – Simulation Report | | |
| D67 | FN Test Site – Simulation Report | | |

ACTUAL OR ANTICIPATED PHASE III PROBLEMS OR DELAYS

Task 1 – Regional Characterization

Nothing to note at this time.

Task 2 – Public Outreach and Education

Work on critical Phase II outreach deliverables continued to impact Phase III activity during this reporting period although significant progress was made in rectifying the situation. As stated in the Schedule Status section of this report, the PCOR Partnership is still seeking a specific location for the Williston Basin demonstration site and is currently waiting for information from a participating partner. Since this situation is beyond the PCOR Partnership's immediate control and it will affect information that is provided on the public Web site, it would be beneficial to submit deliverable D12 (Demonstration Web Pages on the Public Site) by July 31, 2008.

Task 3 – Permitting and NEPA Compliance

As stated in the Schedule Status section of this report, because negotiations are ongoing and still uncertain for PCOR Partnership partners in the Williston Basin demonstration, it would be beneficial to submit deliverable D28 (Environmental Questionnaire – Williston Basin Test Site) by July 31, 2008, and milestone M3 (Start Environmental Questionnaire for Williston Basin Test Site) by June 30, 2008.

Task 4 – Site Characterization and Modeling

The selection of a site for the Williston Basin Phase III demonstration has been delayed for one quarter. This will also cause delays in other site-specific activities, such as the development of a NEPA document, site-specific characterization activities, site-specific MMV planning, and site-specific public outreach activities.

As stated in the Schedule Status section of this report, because negotiations are ongoing and still uncertain for our partners in the Williston Basin demonstration, it would be beneficial to submit deliverable D31 (Williston Basin Test Site – Geological Characterization Experimental Design Package) by August 29, 2008, milestone M4 (Task 4 – Williston Basin Test Site Selected) by June 30, 2008, and milestone M8 (Williston Basin Test Site Wellbore Leakage Data Collection Initiated) by November 29, 2008.

Task 5 – Well Drilling and Completion

Nothing to note at this time.

Task 6 – Infrastructure Development

Work on this task has been delayed while the plans for the CO₂ capture and geologic sequestration for the demonstration projects are finalized. Once the specific carbon capture and

sequestration strategy for the demonstration project has been finalized, planned task activities related to CO₂ capture, compression, and pipeline design and routing can begin.

Task 7 – CO₂ Procurement

Nothing to note at this time.

Task 8 – Transportation and Injection Operations

Nothing to note at this time.

Task 9 – Operational Monitoring and Modeling

Nothing to note at this time.

Task 10 – Site Closure

Nothing to note at this time.

Task 11 – Postinjection Monitoring and Modeling

Nothing to note at this time.

Task 12 – Project Assessment

Nothing to note at this time.

Task 13 – Project Management

Nothing to note at this time.

PHASE III PRODUCTS OR TECHNOLOGY TRANSFER ACTIVITIES

Task 1 – Regional Characterization

PCOR Partnership staff organized and facilitated the first PCOR Partnership Geologic Working Group meeting, following the 2007 PCOR Partnership Annual Meeting. Partners and prospective partners, such as the geological surveys of Missouri, Iowa, Minnesota, and North Dakota as well as partners from British Columbia, discussed geologic characterization activities occurring in their regions. The group decided to hold similar meetings twice a year. The next meeting is scheduled for April 17, 2008, in Minneapolis, Minnesota. Representatives from Iowa, Missouri, Minnesota, Saskatchewan, and North Dakota have indicated they will attend.

The milestone entitled “M1: Task 1 – Three Target Areas Selected for Detailed Characterization” was submitted to DOE for approval on March 31, 2008.

Task 2 – Public Outreach and Education

- The Phase III action plan was submitted on schedule March 31, 2008. Presentations were given February 28 to a student seminar group at Minnesota State University Moorhead, Moorhead, Minnesota, and on March 28, 2008, at the North Dakota State Science Teachers Association spring meeting in Minot, North Dakota.

Task 3 – Permitting and NEPA Compliance

Activities included the following:

- PCOR Partnership staff met with representatives from SET and the British Columbia government to discuss regulatory issues in British Columbia and the United States.
- PCOR Partnership staff met with a representative from Blue Source, LLC, to discuss CO₂ sequestration market and regulatory activities in the region.
- Development of a permitting flowchart was completed for PCOR Partnership Phase II field validation tests. Once the flowcharts are finalized, they will be incorporated in the DSS system.
- The deliverable entitled “D27: Task 3 – Environmental Questionnaire – Fort Nelson Test Site,” was submitted to DOE for approval on March 31, 2008.

Task 4 – Site Characterization and Modeling

The deliverable entitled “D38: Task 4 – Fort Nelson Test Site – Geomechanical Experimental Design Package” was submitted to DOE for approval on January 31, 2008. The milestone entitled “M18: Task 4 – Fort Nelson Test Site Geochemical Work Initiated” was submitted to DOE for approval on March 19, 2008. The deliverable entitled “D30: Task 4 – Williston Basin Test Site – Geomechanical Experimental Design Package” was submitted to DOE for approval on March 19, 2008.

Task 5 – Well Drilling and Completion

This task has not begun (Quarter 1 – BP3; Year 2). Once activities are initiated, the information will be communicated and detailed in the quarterly progress report.

Task 6 – Infrastructure Development

Task members assisted in the preparation of a detailed overview of CO₂ capture technologies that can serve as the basis for future presentations. New information that was used in the presentation will be very useful when working with the company that will provide the CO₂ for the Phase III demonstration in the Williston Basin.

Task 7 – CO₂ Procurement

Numerous discussions with potential CO₂ suppliers have taken place. Because of the sensitive nature of negotiations, specifics cannot be shared at the present time.

Task 8 – Transportation and Injection Operations

This task has not begun (Quarter 1 – Budget Period 4; Year 3). Once activities are initiated, the information will be communicated and detailed in the quarterly progress report.

Task 9 – Operational Monitoring and Modeling

This task has not begun (Quarter 1 – Budget Period 4; Year 3). Once activities are initiated, the information will be communicated and detailed in the quarterly progress report.

Task 10 – Site Closure

This task has not begun (Quarter 1 – Budget Period 5; Year 9). Once activities are initiated, the information will be communicated and detailed in the quarterly progress report.

Task 11 – Postinjection Monitoring and Modeling

This task has not begun (Quarter 1 – Budget Period 5; Year 9). Once activities are initiated, the information will be communicated and detailed in the quarterly progress report.

Task 12 – Project Assessment

This task has not begun (Quarter 1 – BP3; Year 2). Once activities are initiated, the information will be communicated and detailed in the quarterly and annual progress reports.

Task 13 – Project Management

The deliverable entitled “D58/D59: Task 13 – Quarterly Progress Report/Milestone Quarterly Report” was submitted to DOE for approval on January 31, 2008.

MEETINGS/TRAVEL

Representatives from the PCOR Partnership participated in and/or presented at the following meetings and conferences in this reporting period:

- January 30, 2008: Presented at the Energy Generation Conference in Bismarck, North Dakota.
- February: Presented to a group of college science students at the campus of Minnesota State University in Moorhead, Minnesota.
- February 14, 2008: Missouri River Energy Services Board Meeting.
- February 25–27, 2008: Attended the Environmental Systems Research Institute GIS Petroleum Users Group meeting in Houston, Texas.
- February 25–27, 2008: ESRI Petroleum User’s Group Meeting in Houston, Texas.
- February 26–27, 2008: U.S. Environmental Protection Agency’s second public workshop to discuss the development of proposed regulations for the underground injection of

carbon dioxide for geologic sequestration under the Safe Drinking Water Act in Arlington, Virginia.

- February 26–29, 2008: Attend a training class for developing GIS applications using .NET in GIS Server 9.2 in Phoenix, Arizona.
- February 27, 2008: EmPower North Dakota Meeting in Minot, North Dakota.
- February 29, 2008: Industrial Commission Meeting (to vote on PCOR Partnership Phase III funding request) in Bismarck, North Dakota.
- March 3–4, 2008: The Edison Foundation’s Carbon Capture and Storage: Key Issues and Challenges in Washington, D.C.
- March 12–13, 2008: World Resources Institute CCS Stakeholder Workshop in Washington, D.C.
- March 12–14, 2008: Office of Science Basic Energy Sciences Annual Geosciences Symposium, Courtyard Marriott Gaithersburg Washingtonian Center, Maryland, located northwest of Washington, D.C.
- March 25–28, 2008: 2008 RCSP Peer Review (IEA GHG Review) in Washington, D.C.
- March 28, 2008: North Dakota Science Teacher Meeting in Minot, North Dakota.

Materials presented at these meetings are available to partners on the PCOR Partnership DSS Web site (<http://gis.undeerc.org/website/pcorp/>).

REFERENCES

None.