



Carbon Sequestration Newsletter

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one mile underground into a deep saline formation. The injection, which will occur over a three-year period and is slated to start in early 2010, will compress up to 1 million metric tonnes of CO₂ from the ADM ethanol facility into a liquid-like, dense phase. The targeted rock formation, the Mt. Simon Sandstone, is the thickest and most widespread saline reservoir in the Illinois Basin, with an estimated CO₂ storage capacity of 27 to 109 billion metric tonnes. A comprehensive monitoring program, which will be evaluated yearly, will be implemented after the injection to ensure the injected CO₂ is stored safely and permanently. The RCSP Program was launched by the Office of Fossil Energy (FE) in 2003 to determine the best approaches for the permanent capture and storage of greenhouse gases (GHGs). MGSC is the first of the RCSPs to begin drilling a Development Phase injection well. The drilling is expected to take approximately two months to complete. To view the MGSC website, go to: <http://sequestration.org/>. To visit the National Energy Technology Laboratory's (NETL) RCSP website, click: <http://www.fossil.energy.gov/programs/sequestration/partnerships/index.html>. February 17, 2009, [http://www.fossil.energy.gov/news/techlines/2009/09008-CO₂_Injection_Well_Drilling_Begins.html](http://www.fossil.energy.gov/news/techlines/2009/09008-CO2_Injection_Well_Drilling_Begins.html).

Fossil Energy Techline, "DOE Partner Begins Injecting 50,000 Tons of Carbon Dioxide in Michigan Basin."

INTRODUCTION

This Newsletter is created by the National Energy Technology Laboratory and represents a summary of carbon sequestration news covering the past month. Readers are referred to the actual article(s) for complete information. It is produced by the National Energy Technology Laboratory to provide information on recent activities and publications related to carbon sequestration. It covers domestic, international, public sector, and private sector news.

HIGHLIGHTS

Fossil Energy Techline, "Carbon Sequestration Partner Initiates Drilling of CO₂ Injection Well in Illinois Basin."

The Midwest Geological Sequestration Consortium (MGSC), one of the U.S. Department of Energy's (DOE) seven Regional Carbon Sequestration Partnerships (RCSPs), has begun drilling the injection well for their large-scale carbon dioxide (CO₂) injection test in Decatur, Illinois. The large-scale project will capture CO₂ from the Archer Daniels Midland (ADM) Ethanol Production Facility and inject it more than

DOE's Midwest Regional Carbon Sequestration Partnership (MRCSP), led by Battelle, has begun injecting 50,000 tons of CO₂ into the Michigan Basin near Gaylord, Michigan. The activity builds upon an initial injection project of 10,000 metric tons of CO₂ in the same formation and will take place in a deep saline formation, the Silurian-age Bass Island dolomite. The project is expected to last six months, with injections happening at an average rate of 250 tons per hour up to a maximum rate of 600 tons. The first test will take place at an existing oil and gas field, which would also allow for continued enhanced oil recovery (EOR) operations. This area is ideal for the injection test as it already contains CO₂ compressors, injection systems, existing wells, pipelines, and other needed infrastructure. During the injection process, the team will record geochemical changes to the system and the distribution of the CO₂ along the wellbore. The CO₂ will be transported to the well via an eight-mile pipeline. As the depth of the injection is 3,500 feet, the injection will occur well below the 1,000-foot level of drinking water sources. When complete, the total 60,000-metric ton injection will mark the largest deep saline reservoir injection in U.S. history. The 6-month project and related activities are expected to create more than 230 jobs and 2,900 total project job years. To view the MRCSP website, click: www.mrcsp.org. February 27, 2009, [http://www.fossil.energy.gov/news/techlines/2009/09012-DOE_Partners_Begin_CO₂_Injection.html](http://www.fossil.energy.gov/news/techlines/2009/09012-DOE_Partners_Begin_CO2_Injection.html).



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HIGHLIGHTS (CONTINUED)

Fossil Energy Techline, "DOE Regional Partnership Initiates CO₂ Injection in Lignite Coal Seam."

The Plains CO₂ Reduction Partnership (PCOR) has begun injecting CO₂ into a deep lignite coal seam in North Dakota to demonstrate the economic and environmental viability of geologic CO₂ storage in the U.S. Great Plains Region. PCOR's Lignite Field Validation Test, one of four tests PCOR is conducting under the Validation Phase of the RCSP program, will inject approximately 400 tons of CO₂ into a 10-foot thick lignite seam approximately 1,100 feet deep. In 2007, a five-spot well configuration was drilled in collaboration with Eagle Operating Inc., consisting of a center injection well surrounded by four monitoring wells. In addition to evaluating the lignite seam's CO₂ storage potential, the project will also study coalbed methane extraction. The results of PCOR's Phase I characterization activities, which showed that the region's low-rank coal seams have the capacity to store up to 8 billion tons of CO₂, also suggested that more than 17 trillion cubic feet of methane could be produced from low-rank coal seams. This will be the first field study conducted on the ability of lignite coal seams to store CO₂. To view the PCOR website, go to: <http://www.undeerc.org/pcor/>. March 10, 2009, http://www.fossil.energy.gov/news/techlines/2009/09015-CO2_Injection_Begins.html.

Fossil Energy Techline, "DOE Releases Report on Techniques to Ensure Safe, Effective Geologic Carbon Sequestration."

NETL has prepared and released a comprehensive report describing existing and emerging monitoring, verification, and accounting (MVA) techniques for CO₂ stored in geologic formations. The report, titled, "Monitoring, Verification, and Accounting of CO₂ Stored in Deep Geologic Formations," was prepared with input from the seven RCSPs in order to provide an overview of MVA techniques in use and under development; summarize DOE's MVA research and development

(R&D) program; and ensure the safety and effectiveness of carbon storage projects. (See *Recent Publications* section in this newsletter to view a portion of the Introduction and a link to DOE's "Monitoring, Verification, and Accounting of CO₂ Stored in Deep Geologic Formations.") For more information on DOE's Carbon Sequestration Research Program, visit: <http://www.fossil.energy.gov/programs/sequestration/index.html>. March 17, 2009, http://www.fossil.energy.gov/news/techlines/2009/09016-DOE_Releases_MVA_Report.html.



