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# DOE Partner Begins Carbon Storage Test

## Field Test to Advance Geological Carbon Storage While Enhancing Domestic Oil Supply

**Washington, D.C.** — A Department of Energy sponsored project in Hopkins County, Kentucky has begun injecting carbon dioxide (CO<sub>2</sub>) into a mature oil field to assess the region's CO<sub>2</sub> storage capacity and feasibility for enhanced oil recovery.

The project is part of DOE's Regional Carbon Sequestration Partnership (RCSP) program and is being conducted by The Midwest Geological Sequestration Consortium (MGSC). The project is part of the RCSP's "validation phase," where field tests are being conducted nationwide to assess the most promising sites to deploy carbon capture and storage technologies.

This project is expected to create 13 full time jobs which will be supported throughout the project's life of more than two years.

The Kentucky test is designed to inject up to 8,000 tons of CO<sub>2</sub> over a period of 6-8 months into an existing brine-water injection well at depths of about 1,900 feet. At this depth, the CO<sub>2</sub> will remain in a gaseous state and will only partially mix with the oil it encounters.

This type of enhanced oil recovery, termed an "immiscible" CO<sub>2</sub> flood, can recover an additional 5–10 percent of a reservoir's original oil-in-place. Following injection, the oil, gas, and water produced will be measured to evaluate the field's enhanced oil recovery characteristics.

To monitor the fate of the CO<sub>2</sub>, the MGSC, with technical support from the Kentucky Geologic Survey, will implement a monitoring program at the site. The program will consist of tracking the rate and volume of injected CO<sub>2</sub>, and the pressures and temperatures within the well. These measurements will provide an indication of how efficiently the CO<sub>2</sub> displaces oil within the

reservoir and how efficiently the reservoir stores the CO2.

Ambient air quality around the wells will also be continuously monitored to ensure worker safety, as will groundwater quality to ensure that injected CO2 is not leaking from the oil reservoir.

MGSC is one of seven partnerships in DOE's RCSP program. Led by the University of Illinois, Illinois State Geological Survey, Indiana Geological Survey, and the Kentucky Geological Survey, MGSC investigates CO2 storage options for the 60,000-square-mile Illinois Basin, which underlies most of Illinois, western Indiana, and western Kentucky. Annual CO2 emissions in this area exceed 335 million tons.

The Office of Fossil Energy initiated the RCSP program in 2003. The partnerships comprise a nationwide network that is researching and testing the best approaches for capturing and permanently storing CO2, a greenhouse gas which can contribute to global climate change.

The program's validation phase began in 2005 and is now nearing completion. It consists of 22 nationwide field tests conducted in saline formations, depleted oil and gas fields, and unmineable coal seams. At present, five field tests have completed injection operations and seven are currently in the injection phase. The remaining projects will initiate injection operations before the end of 2009.

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