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SUCCESS MARKS CO₂ INJECTION INTO MT. SIMON SANDSTONE

*MRCSP demonstration validates promising CO₂ storage
candidate in Ohio Valley region*

COLUMBUS, OH—The most recent demonstration of injecting carbon dioxide deep underground provides yet another step in proving that this technology (known as carbon capture and sequestration) can be an answer to the challenge of curbing greenhouse gases that are vented into Earth's atmosphere.

The injection of 1,000 tons of carbon dioxide (CO₂) into the ground at [Duke's](#) East Bend power station near the town of Rabbit Hash, KY was completed in September. Predictions of the geological structure and injectivity potential at the site proved to be largely consistent with field observations from drilling and injection rates. The predictions were made by geologists from the [Midwest Regional Carbon Sequestration Partnership](#) (MRCSP), led by [Battelle](#), the world's largest independent R&D organization. The MRCSP is one of seven partnerships in the [U.S. Department of Energy's](#) (DOE's) Regional Carbon Sequestration Partnership Program, managed by the National Energy Technology Laboratory (NETL).

Injection rates of about 45 metric tons per hour of CO₂ (equivalent to over 1,000 metric tons per day) were sustained in the short-term test. These rates, limited by the capacity of the injection equipment at the site, indicate good injectivity into this segment of the [Mount Simon Sandstone](#), a geologic deep saline formation that's widespread under much of the Midwestern United States. The Mt. Simon Sandstone is believed to have large storage potential.

This DOE Phase II validation phase demonstration was the first-ever such injection into the Mt. Simon. When incorporated into the MRCSP's regional maps and computer simulations, the test results will add much to the understanding of the CO₂ storage potential in the Mt. Simon.

"This test bodes well for the potential of long-term carbon dioxide storage in the Mt. Simon reservoir in this area," said Chuck McConnell, Battelle's Vice President of Carbon Management. "We predicted good things and good things happened."

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One way to combat global climate change is to limit greenhouse gas (such as CO₂) emissions from such large-scale emitters as coal burning power plants. Carbon capture and sequestration seeks to capture CO₂ as it goes up smokestacks, pressurize it then inject it deep beneath the ground (in this case, 3,230 to 3,530 feet), far below drinking water levels and under non-porous rock that will trap the gas.

This recently completed test in Kentucky follows the footsteps of two other MRCSP injection tests that have taken place in the region—the Appalachian Basin Test at the R.E. Burger Power Plant in Shadyside, OH and the Michigan Basin test near Gaylord, MI, where over 60,000 tons of CO₂ have been safely injected into a deep saline formation called the Bass Islands Dolomite.

Duke, one of the 30-plus members of the MRCSP, volunteered its East Bend station as the test site and assisted the MRCSP in conducting the demonstration, which was completed in less than four months from start of drilling operations.

“We are pleased that this demonstration was successful and believe carbon capture and storage technology will be an important component for the future operation of our coal-fired generating stations,” said Julie Janson, President of Duke Energy Ohio and Kentucky. “Our partnership in this test injection further demonstrates Duke Energy’s leadership and willingness to explore and understand new emission control technologies.”

The collection of water quality data from about 11 shallow groundwater wells on the site will continue for approximately the next two years to confirm that the CO₂ does not migrate into drinking water supplies.

Duke Energy is the third largest electric power holding company in the United States, based on kilowatt-hour sales. Its regulated utility operations serve approximately 4 million customers located in five states—North Carolina, South Carolina, Indiana, Ohio, and Kentucky—representing a population of approximately 11 million people. Duke Energy’s commercial power and international business segments operate diverse power generation assets in North America and Latin America, including a growing portfolio of renewable energy assets in the United States.

Headquartered in Charlotte, N.C., Duke Energy is a Fortune 500 company traded on the New York Stock Exchange under the symbol DUK. More information about the company is available on the Internet at: www.duke-energy.com.

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Battelle also is one of the nation's leading charitable trusts focusing on societal and economic impact and actively supporting and promoting science, technology, engineering and math (STEM) education.

Contact Public Relations Manager Katy Delaney at (614) 424-7208 or delaneyk@battelle.org or T.R. Massey, media relations specialist, at (614) 424-5544 or masseytr@battelle.org for more information.

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