

In re Core Energy LLC  
Appeal No. UIC 07-02  
U.S. EPA Region 5  
Response to Petition

## ATTACHMENT 1

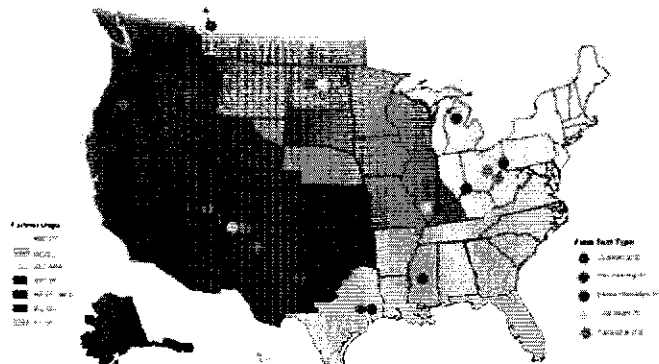
### Executive Summary Core Energy Permit Application

## EXECUTIVE SUMMARY

This report was prepared in support of a Class V Underground Injection Control (UIC) permit for the Midwest Regional Carbon Sequestration Partnership (MRCSP) carbon dioxide (CO<sub>2</sub>) injection test at the State-Charlton #4-30 well in Otsego County, Michigan. The material conforms to Region 5 U.S. Environmental Protection Agency (U.S. EPA) Underground Injection Control (UIC) permit application forms and the Safe Drinking Water Act (SDWA) Sections 1421, 1422, 40 Code of Federal Regulation (CFR) 144. In addition, the report follows guidance provided in the draft document *Using the Class V Experimental Technology Well Classification for Pilot Carbon Geologic Sequestration Projects-UIC Program Guidance* (U.S. EPA, 2006.) The objective of the project is to perform and monitor a CO<sub>2</sub> injection test in deep saline rock formations in the State-Charlton #4-30 well.

Geologic carbon sequestration is the term used to describe a broad class of technologies for permanently sequestering, or storing, CO<sub>2</sub> in geologic environments. Affordable and environmentally safe sequestration approaches could offer a way to help stabilize atmospheric levels of CO<sub>2</sub>. The MRCSP is one of seven partnerships in a nationwide effort to determine regionally-appropriate carbon sequestration options and opportunities. These partnerships are part of an overall effort by the U.S. Department of Energy's (DOE) National Energy

Technology Laboratory (NETL) to develop robust strategies for mitigating CO<sub>2</sub> emissions. The MRCSP covers eight states: Indiana, Kentucky, Maryland, Michigan, New York, Ohio, Pennsylvania, and West Virginia. The partnership is led by Battelle and includes over 30 organizations from the research community, energy industry, non-government organizations, and government.



DOE National Carbon Sequestration Partnerships

The CO<sub>2</sub> injection tests for the Michigan Basin site are planned at the Charlton 30/31 oil and gas field in Otsego County, Michigan. A test well, named State-Charlton #4-30, was drilled at the Charlton 30/31 field in November 2006. Full rock coring, rotary sidewall coring, and wireline logging were completed in the borehole to define the sequestration target reservoir and confining layers. This information was used to define specifications of the injection tests.

The objective at the Charlton 30/31 field site is to inject up to 10,000 metric tons of supercritical CO<sub>2</sub> into deep saline rock formations over a period of 60 to 90 days. The target storage zone includes the Bois Blanc to Bass Island formations at a depth of 3,190-3,515 ft below ground surface (bgs). The primary confining layer is carbonate and evaporate rocks in the Amherstburg formation with the Lucas formation a secondary

confining layer. These formations have a combined thickness of 952 ft. During and after injection, the CO<sub>2</sub> will be monitored to demonstrate that it is permanently sequestered in the target zone.

All tests associated with the MRCSP are research-oriented projects. Two other geologic sequestration tests are planned in Belmont County, Ohio, and Boone County, Kentucky, as part of the MRCSP. In addition, several terrestrial sequestration tests are part of the program. While many companies are partners of the MRCSP, there is no direct commercial interest in the projects. The projects have a strong emphasis on advancing CO<sub>2</sub> sequestration technology through public outreach and education on many levels. In addition, the tests are designed to protect human health and the environment by being limited in duration and scale with a thorough monitoring program. Attachments to be submitted with permit application for Class I, II, III and other wells are presented as follows.