

**AAPG Annual Convention  
Salt Lake City, Utah  
May 11-14, 2003**

S. Julio Friedmann<sup>1</sup>, Dag Nummedal<sup>2</sup>, Carrick Egleston<sup>2</sup>, Mark Sonnenfeld<sup>3</sup>, Hai-Ziu Meng<sup>3</sup>, Peigui Yin<sup>4</sup>, Donna Anderson<sup>5</sup>  
(1) University of Maryland, College Park, MD (2) University of Wyoming, P.O. Box 4068 Laramie, WY (3) iReservoir, Inc, Littleton, CO (4) University of Wyoming, Laramie, WY (5) Colorado School of Mines, Golden, CO

**A Large-Scale Geological CO<sub>2</sub> Sequestration Project in the Northern Rocky Mountains: Feasibility, Economics, and Scientific Gain**

The enormous scale of anthropogenic greenhouse gas emissions requires development of mitigation strategies at matching scales. In the case of geological sequestration, many hundreds of sites would be required nationwide at or near annual injection volumes of 1 MM tons of C. The northern U.S. Rocky Mountains are uniquely situated to begin large-scale carbon sequestration pilot injections. Such experiments are critical to understanding the limitations of computer models and laboratory tests. They could also gauge the merits of different sequestration targets within a portfolio of options.

The northern Rockies, particularly Wyoming, N. Colorado, and E. Utah, contain an abundance of sequestration targets. These include thick Tertiary and Cretaceous coal seams; large active and abandoned oil and gas fields; saline aquifers of differing composition, depositional environments, trapping configuration, and dynamic hydrology; and Tertiary oil shale accumulations. There is an abundance of private and public data available for the evaluation of potential targets. Most importantly, there are many large-volume point sources (> 2 MM tons C/year) from power plants and gas fields. Extant CO<sub>2</sub> pipelines could carry sequestration gases from these point sources to injection sites. Some of these experiments would provide an economic incentive in the form of EOR and ECBM. Others would extend the economic life of otherwise marginal fields through trading of carbon credits. Finally, just from carbon credits, there exists the potential for an entire new industry. If just 10% of Wyoming's annual CO<sub>2</sub> flux underwent sequestration, this could generate carbon credit revenues upwards of \$100 million/year within a decade.