

**AAPG International Conference
Barcelona, Spain
September 21-24, 2003**

Nancy J. House¹, D. D. Faulder¹, G. L. Olson¹, J. R. Fanchi¹ (1) Colorado School of Mines, Golden, CO

Simulation Study of CO₂ Sequestration in a North Sea Formation

Two similar Tertiary gas fields in the North Sea produce relatively rich gas condensate with a high proportion (4.5%-9%) of carbon dioxide (CO₂) in the gas. The objective of this study was to evaluate the potential for CO₂ sequestration in high permeability sandstone above the main reservoirs, estimate the ultimate storage capacity of the reservoir, and assess the risk of reservoir leakage. Only published data was used to create the hypothetical models discussed in this paper.

Note: A great deal of information is in the public domain on the CO₂ sequestration project underway since 1998 in the Sleipner field area in the North Sea. What follows is an investigation of two different models: the first model is a model of a homogeneous sand with properties of the Utsira sand in the Sleipner area; and the second model is a hypothetical faulted anticlinal model with high vertical permeability to the fault. Both models use reservoir properties from the available literature of the Utsira sand reservoir and gas-water properties from the literature.