

Miller, R.D., J.A. Hunter, W.E. Doll, B.J. Carr, R.L. Good, R.A. Burns, D.R. Laflen, M. Douma, and T.S. Collett, 2003, High-resolution seismic imaging of the hydrate stability zone: Mallik, Canada; poster presented at the annual meeting of the American Association of Petroleum Geologists, Salt Lake City, Utah, May 11-14: Kansas Geological Survey Open-file Report 2003-36.

High-resolution seismic reflection data acquired at the Mallik gas hydrate research site on the northeastern edge of the Mackenzie Delta, Northwest Territories, Canada, demonstrated the feasibility and utility of imaging distinct layers within the gas hydrate stability zone. High-resolution seismic techniques were able to resolve horizontal and vertical variations in gas hydrate layers 800 - 200 m deep, with a three-fold improvement in vertical and horizontal resolution as compared to conventional reflection data. The nearly 300 m thick gas-hydrate-rich zone appears continuous across the entire study area, and layering within the zone varies significantly. Vertical changes in seismic character within the gas hydrate stability zone seem to correlate with concentration of gas hydrate derived from well logs. Gas hydrate layer thicknesses appear to vary by as much as 30% across distances of less than 50 m.