

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

Travis W. Hobbs¹, James A. MacEachern² (1) Simon Fraser University, Burnaby, BC (2) Simon Fraser University, Burnaby,

Integrated Ichnological, Sedimentological and Sequence Stratigraphic Analysis of Along-Strike Variations in the Albian Falher A Member, Northwest Alberta and Northeast British Columbia, Canada

This subsurface study integrates ichnological, sedimentological, petrophysical and sequence stratigraphic analyses of the Albian Falher A member in a NW-SE trending study area. Ninety-six kilometers of along-strike analysis in the deep basin gas reservoirs encompasses the Noel Field in British Columbia, through the Elmworth and Wapiti fields of Alberta. The Falher cycles and overlying Notikewin Member comprise a series of roughly east-west trending, northward prograding sand- and gravel-prone shorelines. Assessment of along-strike variations in facies style helps to identify contemporaneous shoreline trends within each cycle.

Marine flooding surfaces, locally associated with transgressive surfaces of erosion, bound the Falher A. The lowermost caps the Falher B shoreline cycles, and the uppermost initiates the transgressive basal Notikewin. The Falher A succession is interpreted as coarse-grained, storm-dominated strandplains and associated wave-dominated deltaic lobes, deposited during a period of pronounced progradation. Conglomerates are distributed as lower delta-plain channels, wave-reworked, proximal delta front barrier bars, and strandplain upper shoreface/foreshores. Storm-dominated offshore, lower/middle shoreface and associated prodelta and distal delta front deposits are separated from overlying wave-dominated upper shoreface/foreshore and adjacent proximal delta front deposits by a sharp erosional autocyclic contact. Detailed ichnological and sedimentological analyses in the context of lateral (along-strike) facies variability within the same shoreline trends assist in resolving contrasts in previously published stratigraphic models, by helping to differentiate autocyclic sharp facies contacts from allocyclic stratigraphic discontinuities. Along-strike analysis also helps to resolve some complexities in the distribution and stratigraphic interpretations of the reservoir conglomerates along the Wapiti -Elmworth - Noel reservoir trend.