



“Heading to Deeper Water”

Abstract: Dr. Mark Deptuck, Canada-Nova Scotia Offshore
Petroleum Board

Geology of the eastern Scotian Slope: using seismic stratigraphic approaches to unravel margin evolution in the NS14-1 Call for Bids area

Stratigraphic layers on the eastern Scotian Slope – the area of the NS14-1 Call for Bids – have only been calibrated by one well (Tantallon M-41, drilled in 1986) in an area that covers more than 22 000 km². Tantallon M-41 terminates in Early Cretaceous strata. Age constraints away from this well and for older slope strata must be based on other indirect lines of evidence like seismic stratigraphic relationships or landward correlation of seismic reflectors across poorly imaged growth faults onto the shelf where additional well control is available. As such, unravelling the structural and stratigraphic evolution of the eastern Scotian Slope – to better understand its exploration potential – necessarily relies heavily on reflection seismic profiles and the use of a wide variety of seismic stratigraphic approaches. In this talk I will describe some of the approaches used to produce our most recent Call for Bids package and what the results suggest about the hydrocarbon potential on this under-explored part of the margin. Specifically, I will contrast two very different salt tectonic provinces on the eastern Scotian Slope, and highlight four time periods when major changes in the slope stratigraphic record took place. These changes are believed to record important external (allogenic) controls like tectonic uplift of the hinterland or long-term sea level rise, that prompted major changes in slope sedimentation and deformation style in the Callovian, latest Kimmeridgian, early Albian, and Turonian. The results have important implications for the areas exploration potential.