

Mark Deptuck

Biography

Mark Deptuck is a geological advisor at the Canada-Nova Scotia Offshore Petroleum Board. He graduated from Saint Mary's University with his BSc honours degree in 1998, with a major in geology and a minor in geography. He subsequently graduated from Dalhousie University in 2003 with his PhD degree in marine geology. While in university, Mark benefitted from close ties with the GSC Atlantic, where he completed 4 co-op work terms and where he spent most of his time as a PhD candidate. After he graduated, Mark joined Shell's "Turbidite Research Team" in Houston Texas, where he stayed for 4 years. He has been back in Nova Scotia for the past 5 years, where he has primarily focused his efforts on unravelling the complex structural and stratigraphic history of the Scotian Basin.

Presentation Abstract: Structural setting and potential prospectivity of the NS11-1 Call for Bids parcels

With work expenditure bids totaling just under \$1 billion, Shell Canada Ltd. was awarded four large parcels along the southwestern Scotian margin. This largely unexplored part of the margin can be subdivided into four proximal to distal postrift structural provinces. From landward to seaward they are referred to as the LaHave Platform (LP), Slope Detachment (SD), Allochthonous Salt and Minibasin (ASM), and Outer East Coast Magnetic Anomaly (ECMA) provinces, as described in the CNSOPB NS11-1 Call for Bids package. Their postrift deformation styles were probably controlled by variations in the symmetry and magnitude of postrift basement subsidence, preconditioned in part by the distribution of salt in the synrift autochthonous salt basin. Shell's Exploration Licenses are located principally above the ASM province in a region where the synrift autochthonous salt layer was probably thickest. Today the geology of this area is dominated by well-developed minibasins and intervening salt bodies with variably developed salt tongues. There are numerous untested, mostly salt-related, structures in this area. In addition to salt flank plays, primary targets may include turtle structures formed during passive loading, and various kinds of contractional structures (e.g. detachment folds, fault propagation folds, and reverse faults) formed in response to up-slope extension in the SD province. Oil-prone source rocks could include both earliest postrift successions (described in the PFA) and the synrift to prerift succession below the autochthonous salt layer. Reservoir possibilities are wide ranging, but given the water depths, Cenozoic submarine fans may be the primary targets.