The ‘Glaustracod’ Geological and Geophysical Exploration Story

Patrick Elliott* and Petra Buziak
EnCana Corp., 150 9th Ave. S.W., P.O. Box 2850, Calgary, AB, T2P 2S5
patrick.elliott@encana.com

ABSTRACT

Introduction

This case study describes the Geological, Geophysical, stratigraphic and structural interpretive evolution of a Cretaceous aged channel play in the Western Canadian Sedimentary Basin.

Interpretation Evolution

A previously undefined exploration channel trend was identified and mapped regionally over 150 km in central Alberta. The channel trend is described as a costal plain incised valley whoes sediments are estuarine in nature and the extent of the marine influence is seen throughout the valley trend. An inversion structure was interpreted while mapping a pool for a development project within the valley. The structural inversion was thought to have formed a favourable set up for both trap and reservoir and the concept was then applied to the regional exploration program. Through the interpretation of reprocessed higher resolution 3d seismic an exploration opportunity materailzed that utitlized inversion structure concepts. Reservoir mapping using amplitudes was reevaluated using synthetic modelling of well log data tied to seismic. The final drilling results suggested that reservoir characteristics were enhanced and hydorcarbon traps were created by the process of syn-extension sedimentation followed by folding and faulting in the compression phase.

Conclusion

An underexplored channel trend was successfully exploited by applying Geological, Geophysical, stratigraphic and structural interpretations to create a successful exploration model. The project demonstrates that sediments and hydrocarbon traps can be strongly influenced by structural events occurring on the plains east of the disturbed belt.