

# DEPOSITIONAL FACIES AND STRATIGRAPHY OF THE UPPER DEVONIAN CARBONATES IN THE OBED AREA, WEST-CENTRAL ALBERTA

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An understanding of the stratigraphic framework and the associated depositional facies of the Frasnian carbonates of the Obed area, west-central Alberta, is necessary for the understanding of their reservoir characteristics. The Obed field has a hydrogen sulfide content of 20 to 30%. Reservoir facies include dolomitized grainstone to fossil floatstone/rudstone of the back-reef, reef crest and reef slope environments in the Leduc Formation (Woodbend Group) and Lower Blueridge Member (Winterburn Group) of the Graminia Formation. Dominant porosity types are intercrystalline, moldic and vuggy porosity.

The stratigraphy of the Obed area is complex. Mapping and reconstruction of the stratigraphy with the use of core descriptions has resulted in the recognition of seven westward prograding, shallowing upwards cycles in the Lower Blueridge Member, representative of reef to basin transitions. The stratigraphy in the subsurface of the Obed area is compared to that of Jasper Basin outcrops. As well as being trapped stratigraphically, hydrocarbons in the Obed area are trapped structurally in both the Winterburn and Woodbend reefal carbonates.