

Estimating Reservoir Oil Volume and its Likelihood from 3C-3D Seismic Data, Well Logs, and Geostatistics

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Abstract

Defining the volume of hydrocarbons in a reservoir is a key aspect of resource estimation. Determining the likelihood of this volume is critical for reserve evaluation. We outline a geophysical framework using 3C-3D seismic data, well logs, and geostatistics to assist in this assessment. This proposed procedure is applied to the Blackfoot oilfield, Alberta. The predicted original oil in place and its likelihood (a P90 of 4.5MMbbl computed from 1995 data) compares reasonably well with that inferred from actual cumulative production up to 2011 (5.5MMbbl).