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Pemodelan Lingkungan Pegendapan 3d Pada Reservoir "C" Interval Fs-6 - Fs-7, Lapangan "Challis", Sub-Cekungan Vulcan, Cekungan Bonaparte, Australia Utara
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INTISARI

Penelitian ini bertujuan membangun model distribusi fasies tiga dimensi (3D) sebagai dasar interpretasi distribusi *reservoir* pada interval FS-7 - FS-6, Formasi Challis, menggunakan data log sebelas sumur. Hasil analisis mengonfirmasi keterdapatan empat asosiasi fasies dimana *distributary channel* (66,87%), *mouth bar* (17,91%), deltafront heterolithics (11,91%), dan *interdistributary bay* (3,31%) yang diendapkan pada sistem delta plain hingga delta front. Korelasi stratigrafi menunjukkan interval target berada pada Low System Tract dengan pola log cylindrical sebagai *reservoir* terbaik. Secara lateral, fasies berubah sistematis dari *distributary channel* di bagian proksimal (timur laut) menuju *mouth bar* di bagian distal (barat daya), sesuai model penipisan delta ke arah distal. Pemodelan fasies 3D menggunakan metode *Object Modeling* yang dikontrol peta trend modelling terintegrasi dengan peta probability menghasilkan distribusi fasies yang konsisten dengan data sumur, variogram, dan konsep geologi, menunjukkan tren penyebaran berarah timur laut-barat daya dari asosiasi fasies proksimal menuju distal. Model ini selanjutnya menjadi dasar interpretasi distribusi *reservoir* pada interval FS-7 - FS-6.

Kata kunci: Distribusi Fasies, *Object Modeling*, Sistem Delta, Formasi Challis

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ABSTRACT

This research aims to construct a three-dimensional (3D) facies distribution model as a basis for reservoir distribution interpretation in the "C" reservoir interval, Challis Formation, using well log data from eleven wells. The analysis confirms the presence of four facies associations distributary channel (66.87%), mouth bar (17.91%), deltafront heterolithics (11.91%), and interdistributary bay (3.31%) deposited within a delta plain to delta front depositional system. Stratigraphic correlation indicates that the target interval is located within the Low System Tract, characterized by a cylindrical log pattern representing the best reservoir quality. Laterally, facies exhibit a systematic change from distributary channel in the proximal (northeast) segment toward mouth bar in the distal (southwest) segment, consistent with the deltaic thinning model toward the distal direction. Three-dimensional facies modeling was performed using the Object Modeling method, constrained by a trend modelling map integrated with a probability map, resulting in a facies distribution consistent with well data, variogram analysis, and geological concepts. The model shows a northeast-southwest facies distribution trend, from proximal facies associations toward distal facies associations. This model subsequently serves as the basis for reservoir distribution interpretation within the "C" reservoir interval.

Keywords: Facies Distribution, Object Modeling, System Delta, Challis Formation