

ABSTRAK

Analisis Fasies Seismik dan Sekuen Stratigrafi Berdasarkan *Relative Geological Time Model* dan Atribut Seismik pada Lapangan “BDG”, Cekungan Kutai, Kalimantan Timur

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Lapangan “BDG” merupakan suatu lapangan eksplorasi hidrokarbon yang terletak di WK Mahakam, Cekungan Kutai, Kalimantan Timur. Pada penelitian ini difokuskan pada interval *Sepinggan Carbonate Sequence* (SCS) yang terbentuk mulai dari *middle – late miocene*. Interval SCS merupakan suatu interval yang baru dieksplorasi, dikarenakan kegiatan eksplorasi sebelumnya cenderung difokuskan pada interval *Sepinggan Deltaic Sequence* (SDS).

Penelitian dilakukan berdasarkan analisis sekuen stratigrafi yang didasarkan kepada korelasi eletrofasies berdasarkan log sinar gamma untuk mengetahui suatu *system tract* pada interval SCS. Selain itu, dilakukan pula suatu analisis fasies seismik berdasarkan atribut seismik untuk mengetahui pola *channel* hidrokarbon serta batuan penyusunnya. Penelitian tersebut didasarkan pada data 3D seismik *post – stack* dengan jumlah 3 sumur, yaitu *Glory – MP*, *Champions – IMP* dan *Infinity – 2MD*.

Hasil analisis sekuen stratigrafi didapatkan bahwa pada interval SCS terdiri dari 3 *system tract*, yaitu *Lowstand System Tract* (LST), *Transgressive System Tract* (TST) dan *Highstand System Tract* (HST). Batuan karbonat mengalami perkembangan paling optimal pada fase TST, namun pada fase HST terdapat suatu material sedimen klastik yang memiliki indikasi kehadiran fluida hidrokarbon. Hasil analisis sekuen stratigrafi tersebut dilakukan korelasi terhadap fasies seismik yang berkembang untuk menentukan arah pengendapan sedimen serta arah migrasi dan jebakan hidrokarbon. Sehingga, dihasilkan zonasi terkait *area of interest* (AOI) pada penelitian ini. Zona tersebut terbagi atas Zona AOI 1 dan AOI 2 yang memiliki jenis *stratigraphical trap* dan zona AOI 3 yang memiliki jenis *structural trap*.

Kata Kunci : Cekungan Kutai, Karbonat, Sekuen stratigrafi, Fasies seismik

ABSTRACT

Analysis of Seismic Facies and Stratigraphic Sequences Based on Relative Geological Time Models and Seismic Attributes in the “BDG” Field, Kutai Basin, East Kalimantan

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The "BDG" field is a hydrocarbon exploration field located in the Mahakam Working Area, Kutai Basin, East Kalimantan. In this research, the focus is on the Sepinggan Carbonate Sequence (SCS) interval which is formed from the middle to late Miocene. The SCS interval is a new area to be explored, because previous exploration activities tended to focus on the Sepinggan Deltaic Sequence (SDS) interval.

The research is carried out by stratigraphic sequence analysis based on eletrofacies correlation from gamma ray log to determine a system tract at the SCS interval. In addition, a seismic facies analysis based on seismic attributes is also carried out to determine the pattern of the hydrocarbon channel and its constituent rocks. The research uses post-stack seismic cube data with a total of 3 wells, namely Glory - MP, Champions - 1MP and Infinity - 2MD.

The results of the stratigraphic sequence analysis found that the SCS interval consist of 3 system tracts, namely the Lowstand System Tract (LST), Transgressive System Tract (TST) and Highstand System Tract (HST). Carbonate rocks are most optimally formed in the TST phase, but in the HST phase there is a clastic sedimentary material as an indication of the presence of hydrocarbon fluids. The results of the stratigraphic sequence analysis is correlated to the seismic facies to determine the direction of sediment deposition as well as the direction of migration and hydrocarbon traps. Then, this area is relate to the Area of Interest (AOI). The zone is divided into Zones AOI 1 and AOI 2 which have a stratigraphical trap type and AOI 3 zone which has a structural trap type.

Keywords : Kutai Basin, Carbonate, Stratigraphic sequence, Seismic facies