

SARI

Pemodelan Reservoir Batupasir *x* Berdasar Data Seismik dan Sumur,
Lapangan XVII, Blok Sanga-sanga, Cekungan Kutai, Kalimantan Timur

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Pemodelan reservoir batupasir *x*, interval dalam, Lapangan XVII, Blok Sanga-sanga, Cekungan Kutai, Kalimantan Timur telah dilakukan. Cekungan Kutai merupakan cekungan yang telah terbukti menghasilkan migas. Saat ini, usaha pencarian migas di lapangan-lapangan Cekungan Kutai masih dilakukan. Batupasir *x* merupakan batupasir Formasi Balikpapan, berumur *Middle Miocene* yang berada di bawah batas dalam VICO (pada interval dalam). Sedangkan pada interval dangkal, terbukti telah menghasilkan minyak.

Data yang tersedia pada penelitian ini terbatas pada kelengkapan dan kualitas. Identifikasi fasies dilakukan dengan analisa bentuk elektrofases log sinar gamma dan potensi diri. Peta distribusi reservoir diperoleh dari proses inversi impedansi akustik berbasis model, sehingga lebih terkontrol oleh sumur. Reservoir batupasir *x* dimodelkan menggunakan metode stokastik.

Fasies interval *x* terdiri dari batupasir *distributed channel*, batupasir *delta mouth bar*, batulempung *interdistributed channel*, batupasir *prodelta*, dan batubara. Lingkungan pengendapannya adalah *prodelta-delta front* hingga *delta plain*. Fasies reservoirnya berupa batupasir *distributed channel* dan batupasir *delta mouth bar*.

Dari dua fasies reservoir batupasir yang dianalisis, batupasir kompleks *channel* memiliki potensi yang lebih baik dalam hal porositas efektif (11-22%) dan permeabilitas (1-10 mD). Sedangkan batupasir *mouthbar* memiliki porositas (5-12%) dan permeabilitas (1-0.1 mD) lebih rendah.

Pada sekuen awal pengendapan interval *x* daerah telitian, berarah dari barat laut ke tenggara oleh tiga kompleks *channel*, namun demikian kompleks *channel* sebelah selatan merupakan sumber pengendapan utama. Sehingga area barat daya berada pada kedudukan yang lebih dangkal dibanding area timur laut. Sekuen selanjutnya pengendapan tetap berarah ke tenggara, dengan kompleks *channel* yang menyebar.

Kata kunci : Sanga-sanga, Cekungan Kutai, Inversi Impedansi Akustik *Model Based Model* Reservoir Batupasir.

ABSTRACT

*Modeling of x Sandstone Reservoir from Seismic dan Well Log Data,
Sanga-sanga Block, Field XVII, Kutai Basin, East Kalimantan*

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Reservoir sandstone x was modeled for deep interval Field XVII, Sanga-sanga Block, Kutai Basin, Kalimantan Timur. Kutai Basin has been known as developed field of significant oil and gas producers. Study to find oil and gas has been conducting until recent, in Kutai Basin's fields. X-sandstone is Middle Miocene sandstone of Balikpapan Formation, was located under deep margin of VICO (as deep interval). In the other side, shallow interval is notable producing oil.

Data availability in this study is limited, particularly in completeness, and quality. Facies identification has done by electrofacies shape of gamma ray and self potential curves. Reservoir distribution map is generated by model based acoustic impedance inversion, controled by wells in a purpose. Reservoir modeling is generated by stochastic method.

Facies in x interval consist of distributary channel sandstone, mouth bar delta sandstone, interdistributary channel shale, prodelta sandstone, and coal. Sedimentary environment in x interval consist of prodelta to delta front until delta plain. Meanwhile, reservoir facies itself consist of distributary channel sandstone and delta mouth bar sandstone.

From two analyzed reservoir facieses, channel complex sandstone has more potential in porosity (11-22%) and permeability (1-10mD). Mouthbar sandstone has less potential in porosity (5-12%) and permeability (1-0.1 mD).

The earlier stage of sequence in interval x in studying area, deposition was heading from northwest toward southeast by three channel complexes, where southern complex was the main. Consequently, northwestern area was at shallower position than northeastern area. In the next sequence, the deposition is stable in southeast ward with broadly channel complex.

Keywords : *Sanga-sanga, Kutai Basin, Acoustic Impedance Model Based Inversion, Sandstone Reservoir Model.*