

SARI

Lapangan Minas merupakan lapangan yang cukup tua dan merupakan salah satu lapangan minyak yang paling banyak memberikan kontribusi dalam sejarah produksi minyak di Indonesia. Lebih kurang 2000 sumur sudah dibor di lapangan Minas dan perlu dilakukan peningkatan produksi dengan *secondary recovery* atau *tertiary recovery* seperti *water flooding* dan metode *Enhance Oil Recovery* (EOR). Dalam merencanakan *secondary recovery* dan EOR perlu didahului dengan menentukan konektifitas batupasir. Salah satu cara yang dapat dilakukan untuk menentukan konektifitas batupasir adalah studi stratigrafi sikuen.

Studi stratigrafi sikuen diawali dengan mengenali fasies sedimentasi dan lingkungan pengendapan berdasarkan data batuan inti dan data sumur. Untuk melihat persebaran batupasir dilakukan analisa seismik dan korelasi kronostratigrafi antar sumur. Analisa seismik akan menunjukkan geometri batupasir secara umum sedangkan korelasi kronostratigrafi akan menunjukkan kemenerusan suatu batupasir secara detail.

Berdasarkan analisa data batuan inti, fasies litologi dikelompokkan menjadi empat fasies litologi yaitu fasies batupasir silangsiur, batulempung lentikular, fasies batupasir konglomeratan dan fasies batupasir bioturbasi. Fasies dengan potensi reservoir paling tinggi adalah batupasir konglomeratan dengan harga porositas 24% dan volume lempung 14%. Batupasir silang siur memiliki harga porositas 16% dan volume lempung 34%. Fasies batupasir konglomeratan disebut sebagai batupasir “Golan 1”, batupasir silang siur sebagai batupasir “Golan 2”.

Fasies batupasir konglomeratan terlihat menipis karena adanya perubahan sublingkungan pengendapan dan relatif menipis ke arah baratdaya. Batupasir silang siur yang merupakan produk dari lingkungan pengendapan *Mouth Bar* memperlihatkan bentukan *isolated bar*. Beberapa sumur yang memiliki konektifitas batupasir “Golan 1” adalah sumur 702 dan 704, 623 dan 679, 670 dan 403. Beberapa sumur yang memiliki konektifitas batupasir “Golan 2.1” adalah sumur 625, 626, 402 dan 653 sedangkan batupasir “Golan 2.2” memiliki konektifitas pada sumur 024, 627 dan 670. Batupasir “Golan 2.3” terkoneksi pada sumur 544, 624, dan 623.

ABSTRACT

Minas field is a mature field and one of the field that has greatest contribute to history of oil production in Indonesia. Around 2000 wells have been drilled on the field that also raise the needs of enhancing production with secondary or tertiary recovery like water flooding and enhance oil recovery (EOR) method. Before constructing the secondary recovery and EOR, we need to determine sandstone connectivity. One of the way to determine sandstone connectivity is by doing sequence stratigraphy study.

Study of sequence stratigraphy starts with identifying the sedimentary lithofacies and sedimentation environment based on core description and log analysis. The distribution of sandstone identified from seismic data analysis and well-to-well chronostratigraphic correlation. Seismic analysis will show the sandstone geometry generally; meanwhile the chronostratigraphic correlation will show the continuity of the sandstone specifically.

Based on core description, lithofacies are grouped into 4 lithofacies as cross-lamination sandstone, lenticular claystone, conglomeratic sandstone, and bioturbation sandstone. Facies with higher potential to be a reservoir is conglomeratic sandstone with porosity 24% and clay volume 14%. Cross-lamination sandstone has the porosity 16% and clay volume 34%. In this research, conglomeratic sandstone called as "Golan 1" sandstone, cross-lamination sandstone as "Golan 2" sandstone.

"Golan 1" sandstone has continuously founded and relatively become thinly because change of depositional environment and this sandstone has the characteristic of relatively thinning to southwest. "Golan 2" sandstone as the product of Mouth Bar environment show the isolated bar features. Some well that has connected by "Golan 1" sandstone are well 702 and 704, 623 and 679, 670 and 403. Some well that has connected by "Golan 2.1" sandstone are well 625, 626, 402, and 653 while "Golan 2.2" sandstone has connected in well 024, 627, and 670. "Golan 2.3" sandstone connected in well 544, 624, and 623.