ABSTRACT

Layer-A is one of the layers contained in the "MGT" Field located in the southern part of the Kampar Block, Central Sumatra Basin, in this layer there has been a decrease in the production rate curve. Layer-A Field “MGT” has been producing since November 1970 with a total of 21 active wells. Layer-A "MGT" field has an OOIP of 18.62 MMSTB with cumulative oil production up to January 2019 of 4.63 MSTB and a recovery factor of 24.9%. Judging from the small cumulative value of production and recovery factor, it is estimated that in this layer there are still residual oil reserves, so it is necessary to calculate the reserve at Layer-A Field "MGT".

The calculation of reserves is carried out using the decline curve analysis method, the results of which will be used as a consideration in determining the scenario for the development of a field. The estimation of residual oil reserves using the decline curve method begins with grouping production data, selecting the declining trend from the production rate over time, and determining the type of decline curve using the X2 Chi-Square Test method. After that, predict the production rate to qlimit, calculate the production life of the layer, Estimate Ultimate Recovery (EUR), Recovery Factor (RF), and Estimate Remaining Reserves (ERR) or residual oil reserves. By knowing a large number of residual oil reserves and the potential for the field to be developed, several field development scenarios can be made to increase the amount of oil production gain in Layer-A of the “MGT" Field.

The results of the decline curve analysis on Layer-A "MGT" Field are obtained exponential Decline curve type with layer-A qlimit of 10 BOPD, layer production age up to June 1, 2030, EUR 4,850,581 MMSTB, RF 26.04%, ERR 212.436 STB. Because the RF value is still too small, a scenario for developing infill drilling is carried out to increase oil recovery. The development plan for Layer-A Field “MGT” is carried out by making 2 scenarios of infill drilling development. Based on the results of the recovery factor for each scenario, scenario 2 has a recovery factor greater than the recovery factor for the other scenarios, which is 36.12%. Therefore, scenario 2 is chosen as the best scenario that can be used as a basis for consideration in the "MGT" Field Layer-A development plan.