

RINGKASAN

PENENTUAN ZONA PROSPEK HIDROKARBON PADA SUMUR *IDLE* “NYN-05” DAN “NYN-06” LAPANGAN “ASRI” BERDASARKAN DATA *LOG* DAN DATA *TEST*

Oleh

Nayan Canda Asri

NIM : 113200144

(Program Studi Sarjana Teknik Perminyakan)

Sumur “NYN-05” dan “NYN-06” merupakan sumur *idle* pada Lapangan “Asri” dan merupakan dua dari delapan sumur yang terletak di lapangan “ASRI” yang termasuk dalam cekungan Sumatera Tengah. Kedua sumur tersebut berstatus sumur *Long Term Close* (LTC). Kedua sumur ini merupakan sumur produksi yang ditutup sementara karena adanya penurunan produksi dan karena masih terdapat zona produktif yang belum terkuras (*bypassed oil*), pada penelitian ini akan dicari zona prospek hidrokarbon yang kemudian akan direkomendasikan *workover* sehingga diharapkan dapat meningkatkan produksi Sumur “NYN-05” dan “NYN-06”.

Analisa ini dilakukan dengan dua cara, yaitu analisa kuantitatif untuk menentukan *cut-off resistivity* dan *permeability* dan analisa kualitatif untuk menentukan lapisan berpotensi dari analisis *Lithology*, *Porosity*, *Resistivity*, dan *Permeability Log*. Hasil analisa kuantitatif akan didapatkan nilai *cut-off resistivity* dan *permeability* yang kemudian dapat dilanjutkan dengan analisa kualitatif untuk menentukan karakteristik batuan juga fluida yang terdapat dibawah permukaan. Hasil Analisa yang didapatkan perlu dikuatkan dengan memvalidasi data *log* dengan data *test*, karena jika analisa hanya dengan data *log* maka hasil yang didapatkan tidak valid atau kurang tepat. Selanjutnya, akan diketahui lapisan berpotensi pada Sumur “NYN-05” dan “NYN-06” Lapangan “Asri” dan dapat merekomendasikan *workover*.

Berdasarkan analisa kuantitatif pada Sumur “NYN-05” dan Sumur “NYN-06” diperoleh *cut off permeability* pada *unit sand* BKA, BKB, dan BKC sebesar 70 mD, *cut off resistivity* pada *unit sand* BKA dan BKB sebesar 4 ohmm, dan pada *unit sand* BKC sebesar 6 ohmm. Kemudian, berdasarkan analisa kualitatif terhadap *lithology tools*, *resistivity tools*, dan *permeability log* dan validasi dengan korelasi struktur dan data *test*. Didapatkan hasil pada sumur “NYN-05” terdapat 4 (empat) zona dan pada sumur “NYN-06” terdapat 3 (tiga) zona prospek hidrokarbon. Kemudian, didapatkan juga hasil pada sumur “NYN-05” terdapat 8 (delapan) zona dan pada sumur “NYN-06” terdapat 6 (enam) zona yang akan direkomendasikan *work over*.

Kata kunci : hidrokarbon, zona prospek, *workover*

ABSTRACT

DETERMINATION OF HYDROCARBON PROSPECT ZONE IN THE IDLE WELLS "NYN-05" AND "NYN-06" FIELD "ASRI" BASED ON LOG DATA AND TEST DATA

By

Nayan Canda Asri

NIM : 113200144

(Petroleum Engineering Undergraduated Program)

Wells "NYN-05" and "NYN-06" are idle wells in the "Asri" field and are two of eight wells located in the "ASRI" field located in the Central Sumatra basin. Both wells have the status of Long Term Close (LTC). These two wells are production wells that are temporarily closed due to a decrease in production and because there are still productive zones that have not been depleted (bypassed oil), in this study a hydrocarbon prospect zone will be sought which will then be recommended workover so that it is expected to increase the production of "NYN-05" and "NYN-06" wells.

This analysis is carried out in two ways, namely quantitative analysis to determine cut-off resistivity and permeability and qualitative analysis to determine potential layers from Lithology, Porosity, Resistivity, and Permeability Log analysis. The results of quantitative analysis will obtain cut-off resistivity and permeability values which can then be continued with qualitative analysis to determine the characteristics of rocks and fluids contained below the surface. The results of the analysis obtained need to be strengthened by validating log data with test data, because if the analysis is only with log data, the results obtained are invalid or inaccurate. Furthermore, it will be known the potential layers on the "NYN-05" and "NYN-06" Wells of the "Asri" Field and can recommend workover.

Based on quantitative analysis on the "NYN-05" Well and "NYN-06" Well, the cut off permeability on the BKA, BKB, and BKC sand units was 70 mD, the cut off resistivity on the BKA and BKB sand units was 4 ohmm, and the BKC sand unit was 6 ohmm. Then, based on qualitative analysis of lithology tools, resistivity tools, and log permeability and validation with structural correlation. Results were obtained in the well "NYN-05" there are 4 (four) zones and in the well "NYN-06" there are 3 (three) hydrocarbon prospect zones. Then, results were also obtained in the well "NYN-05" there are 8 (eight) zones and in the well "NYN-06" there are 6 (six) zones that will be recommended workover.

Keywords : hydrocarbon, prospect zone, workover