

ANALISIS KURVA IPR DENGAN METODE KLINS-CLARK PADA SUMUR R122 DI LAPANGAN RAYA

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ABSTRAK

Lapangan Raya merupakan lapangan yang memiliki sumur-sumur tua sehingga memiliki fluida multi fasa (minyak, air dan gas) dengan *water cut* yang tinggi mencapai rata-rata 98%, maka perlu dilakukan evaluasi potensi sumur. Untuk evaluasi potensi sumur digunakan kurva IPR. Kurva IPR yang digunakan yaitu kurva IPR Klins-Clark.

Kurva IPR metode Klins-Clark merupakan peramalan kurva IPR yang serupa dengan Vogel, untuk mendapatkan hasil yang lebih teliti Klins-Clark menambahkan exponent baru (d) pada persamaanya dan metode ini juga memperhitungkan tekanan *bubble point* (P_b) sehingga pada metode kita bisa mengetahui laju alir fluida ketika mencapai *bubble point* (P_b) dan sebelum mencapai *bubble point* (P_b).

Hasil perhitungan metode Klins-Clark pada sumur R122 di lapangan Raya didapatkan laju alir maksimum fluida (q_{fmax}) sebesar 2015,494 BFPD. Grafik IPR metode Klins-Clark menunjukkan awalnya linier karena masih dalam kondisi satu fasa liquid dan ketika mencapai titik *bubble point* (P_b) mengalami lengkungan karena sumur produksi R122 memiliki gas terlarut dalam minyak sehingga pada saat mencapai *bubble point* (P_b) grafiknya melengkung karena adanya gas yang terlepas yang di indikasikan fluida multi fasa (minyak dan gas). Kurva IPR metode Klins-Clark bisa dijadikan acuan dalam peramalan laju alir produksi fluida pada sumur R122 di lapangan Raya karena dilihat dari grafiknya cenderung linier ketika sebelum melewati titik *bubble point* hal ini karena sumur produksi R122 masih dalam kondisi satu fasa dan sudah memiliki *water cut* yang cukup tinggi, dimana *water cut* aktual lapangannya sebesar 91%.

Kata kunci: *water cut, bubble point pressure, Inflow Performance Relationship.*

IPR CURVE ANALYSIS OF KLINS-CLARK METHOD AT R122 WELL IN RAYA FIELD

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ABSTRAK

Field Raya is a field that has old wells so that it has a multi-phase fluid (oil, water and gas) with a high water cut reaching an average of 98%, it is necessary to evaluate the potential of the well. To evaluate the well potential, the IPR curve is used. The IPR curve used is the Klins-Clark IPR curve.

IPR curve method klins-Clark is forecasting IPR curve similar to vogel, to get the results more thoroughly klins-Clark adds exponent new (d) the persamaanya and this method also takes into account the pressure bubble point (P_b) so that the methods we can determine the pace fluid flow when it reaches the bubble point (P_b) and before reaching the bubble point (P_b).

The results of the calculation method klins-Clark wells in the field R122 Kingdom maksimum fluid flow rate obtained (q_{fmax}) amounted to 2015.494 BFPD. While the calculation of the Klins-Clark method was obtained q_{max} of 2015,494 BFPD. Graph IPR methods klins-Clark showed initially a linear because it is still in a state of single phase liquid and when it reaches the point of bubble point (P_b) underwent arch for production wells R122 has dissolved gases in the oil so that upon reaching the bubble point (P_b) graph is curved for their gas which is released which is indicated by multi-phase fluid (oil and gas). The Klins-Clark IPR curve can be used as a reference in forecasting the flow rate of fluid production in the R122 well in the Raya field because it is seen from the graph that it tends to be linear when it passes through the bubble point because the R122 production well is still in a single phase and has sufficient water cut. high, where the actual water cut of the field is 91%.

Key word: water cut, bubble point pressure, Inflow Performance Relationship.