

ABSTRACT

EVALUASI DAN OPTIMASI *ELECTRIC SUBMERSIBLE PUMP* (ESP) PADA SUMUR “EP-05” LAPANGAN “R.E”

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The EP-05 well in the “RE” Field is equipped with an Electric submersible pump (ESP), using an EJP IND-1300 pump, pump setting depth 2067 ft. The results of the fluid flow rate (qt) of the “EP-05” Well in 2019 were 896.26 bfpd with an oil flow rate (qo) of 66.01 bopd and a water flow rate (qw) of 830.24 bwpd, and a high watercut of 92.6%. The “EP-05” well experienced a decline in production performance in 2022, the production flow rate was 684.55 bfpd with an oil flow rate (qo) of 21.45 bopd and a water flow rate (qw) of 663.40 bwpd and had a watercut of 96.9%. Optimization and planning carried out on the "EP-05" well to increase the production flow rate to match the optimum value on the pump.

Optimization and planning of the Electric Submersible Pump (ESP) begins with the sensitivity of the installed pump frequency to match the Optimum operating range. Furthermore, sensitivity is carried out on the Pump Setting Depth installed in the "EP-05" well to determine the optimum PSD depth. The final step is to select the type of pump that matches the Optimum operating range.

The results of the pump optimization that match the optimum rate on the "EP-05" well are the IND-1300 type with a frequency of 45 Hz and a Pump Setting Depth of 1960 ft with a fluid flow rate of 760.80 bfpd, oil flow rate (qo) 23.50 bopd and water flow rate (qw) 737.49 bwpd

Keywords: Planning and optimization of Electrical Submersible Pump, Production Rate, Optimum operating range.