

ABSTRACT

IDENTIFICATION ANALYSIS OF THE ADDITION OF INFILL WELL USING PETREL RE SIMULATOR AND ECONOMIC ANALYSIS IN THE "JF" FIELD

The "JF" field is a field that has been in production since 1973, has 4 wells with an OOIP value of 72.89 MMSTB with cumulative oil production of 34.37 MMSTB with a current recovery factor of 48.61%. To obtain additional RF value from the "JF" Field, further field development will be carried out using the method of adding infill wells.

Scenario Field development using infill drilling. This scenario is divided into 3 based on the distance between wells and divided into 3 again based on the optimum number of wells at each distance, taking into account the OPU distribution map, Flowrate Capability, Oil Producing Potential, HCPV, and drain radius of existing wells. The division of scenarios based on distance is 300m, 225m and 150m. Meanwhile, the division of scenarios is based on the number of wells, namely 11 wells, 13 wells and 17 wells. From this scenario, the one that provides an increase in the recovery factor is selected and then an economic analysis is carried out using the gross split method.

From the reservoir simulation analysis, the best scenario is scenario 3-A (Basecase + 11 development wells with a distance of 150m) with an Np value of 46.95 MMSTB and a Recovery Factor of 64.41%, resulting in an increase in recovery factor of 17.25%, and a final pressure of 936.86 psi. From the economic analysis carried out using gross split, scenario 3-A is feasible because it has the largest NCF and NPV@10% values, namely a positive NCF value of 52.26 MMUSD, and an NPV@10% value of 16.54 MMUSD, has PIR and DPIR values the largest, namely 0.95 times and 0.30 times, and the smallest POT, namely 3.14 years. Supported by an ROR value which is also greater, namely 32.92%, where the price is greater than MARR by 20%.

Keywords: Reservoir Simulation, Economic Analysis ,Recovery factor, Infill