

ABSTRACT

SIMULASI RESERVOIR SUMUR GAS “STJ-02” LAPISAN BRF LAPANGAN “STJ” DENGAN MENGGUNAKAN DATA & HASIL ANALISA PBU

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The "STJ" field is a new field under exploration, featuring three existing wells, one of which is the gas well "STJ-02." In this well, a Drill Stem Test (DST) has been successfully conducted on the BRF layer at depths ranging from 7544' to 7613' MD, yielding a gas production rate of 4.49 MMSCFPD. The reservoir model employed is a homogeneous reservoir model with a circular faults boundary. From well test data, the P^ value is determined to be 2342 Psia, skin is +21, average permeability is 13.3, and the Absolute Open Flow (AOF) is 8.5 MMSCFPD, with a critical rate (Q critical) of 1.21 MMSCFPD. Logging results include depth vs. permeability, porosity, and water saturation. Based on this data, the author decides to perform a reservoir simulation analysis using a single-well model to predict the future production rate of the gas well.*

The initial stage involves processing RCAL, SCAL, and PVT data. Subsequently, these data are input into the single-well model using CMG software. The next step is to conduct history matching for rate and pressure during the drill steam test. Following this, forecasting is carried out, and scenarios are created with predetermined parameters.

The predictions for the "STJ-02" well in the BRF layer are as follows scenario I Production with a Q critical of 1.21 MMSCFD with a plateau time of 28 years, scenario II production rates of 1.5 MMSCFD with a plateau for 25 years 1 month, 2.00 MMSCFD with a plateau for 17 years 3 months, 2.5 MMSCFD with a plateau for 12 years 6 months, scenario III production at 30% AOF, with a rate of 2.55 MMSCFD and a plateau time of 12 years 3 months.

Keywords: Reservoir Simulation, Single Well Model, Gas Well.