



Capturing Uncertainty for New Field Development Plan Influenced by Pressure Depletion

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Abstract:

Dealing with subsurface uncertainties in formulating a new field development plan will always be a challenge especially with the absence of data. This paper will discuss on subsurface approach in integrating limited reservoir and appraisal wells data with nearby field performance and regional geological understanding to address the pressure depletion uncertainty observed in the field despite no production. This paper demonstrates a structured workflow from reservoir pressure calibration in the dynamic model during initialization up to multiple prediction runs for depletion strategy evaluation. It started with in-depth analysis of available data recorded from exploration/appraisal wells and nearby field performance. Then, a tank model was built to predict baseline pressure depletion trend by establishing pressure communication with nearby field. The forecasted pressure depletion was then transferred into dynamic model, in which pseudo-water producers were introduced to calibrate the reservoir pressure, and subsequently generate range of possible reservoir pressure depletion trends. This variable was then captured in Uncertainty Analysis workflow and followed by probabilistic production forecast.

Biography: Mr. Fairuz Azman is a Staff Reservoir Engineer at Center of Excellence, PETRONAS, the national oil company of Malaysia. He graduated with a First Class Degree in Mechanical Engineering (specialized in Petroleum Engineering) from Universiti Teknologi PETRONAS, where he received the University Chancellor Gold Award for his excellence.



Publications:

1. Tualang honey attenuates noise stress-induced memory deficits in aged rats
2. d-Galactose-induced accelerated aging model: an overview
3. Goat milk enhances memory of d-galactose-induced aging rats
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[World Congress on Oil and Gas Engineering, Webinar, September 28-29, 2020](#)

Abstract Citation: [Mr. Fairuz Azman, Capturing Uncertainty for New Field Development Plan Influenced by Pressure Depletion, Oil Gas 2020, World Congress on Oil and Gas Engineering, Webinar, September 28-29, 2020](#)