



Comparison of Different Method for Estimating Average Reservoir Pressure, Using Analytical & Numerical Techniques

Misagh Mansoori Ghanavati¹, Ali Gharbanian², Hamid Kavian³

Ahvaz, Brumi, Marun oil and gas Production Company
Mansoori.misagh@yahoo.com

Abstract

A knowledge of the average reservoir pressure (p) and its changes as a function of time or cumulative production is essential to determine the oil-in-place (OIP) or original gas-in-place (OGIP), to estimate reserves and to track and optimize reservoir performance. The average reservoir pressure is required in many reservoir engineering calculations such as: Material balance studies; Water influx; Pressure maintenance projects; Secondary recovery; Degree of reservoir connectivity. This project aims to calculate of average reservoir pressure for a sample reservoir, with analytical and numerical approaches, by means of Eclipse 100 and Ecrin and will compare the results. For that sample reservoir pressure versus time data are generated from the ECLIPSE 100 and Ecrin will use them to analyze the results of the buildup test and we can get average reservoir pressure. Eclipse 100 also gives us the average reservoir pressure too. our simulation on the reservoir have very good results with error of just 0.56 percent. it shows good similarity between the analytical methods that we use and numerical methods that we use in simulators, also It is better to getting p-t data from field well testing to generating them from simulator, it can improve our results. For estimating average reservoir pressure, it is better to having single phase because of the multiphase complexities.

Key words: OIP, OGIP, Eclipse 100, Ecrin, Material balance

¹Engineer, National Iranian South Oil Company

²Engineer, National Iranian South Oil Company

³Process engineering's head, National Iranian South Oil Company