— University of Mosul —
College of Petroleum & Mining Engineering

"Reservoir modelling and simulation"

Reservoir Modelling

Lecture …(1)….

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LECTURE CONTENTS

- Introduction.
- Static reservoir model.
- Dynamic reservoir model.
- The Uses of Reservoir Modelling.
- Reservoir Modeling According to the Stages the Reservoir Life Cycle.
- Properties of Reservoirs.

A reservoir model is a digital representation of a subsurface reservoir using geological, geophysical, and engineering data. Simulation refers to the process of running numerical models on these representations to predict fluid flow behavior within the reservoir.

1- Evaluation of rock volumes and the original hydrocarbons in place.

2- Representation of geological and petrophysical descriptions of the reservoir for input to reservoir simulation.

3- Increase profitability through better reservoir management, including development plans for new fields and depletion strategies for mature fields.

4- Prediction of the fluid volume (oil, gas, and water), decline analysis, secondary or tertiary recovery option injection strategies, and well and completion designs.

5- Observation of fluid movement contacts and pressures.

6- Analysis of fault seal and transmissibility in addition to calculating the displacement of the fault vertically and laterally.