IHS ENERGY

IHS Petra Advanced Volumetrics Module

Quickly perform volumetric and fluid recovery calculations for both oil and gas reservoirs.

The IHS Petra® Advanced Volumetrics Module provides you with both deterministic and probabilistic methods to calculate hydrocarbon recoveries based on well-established industry correlations and models.

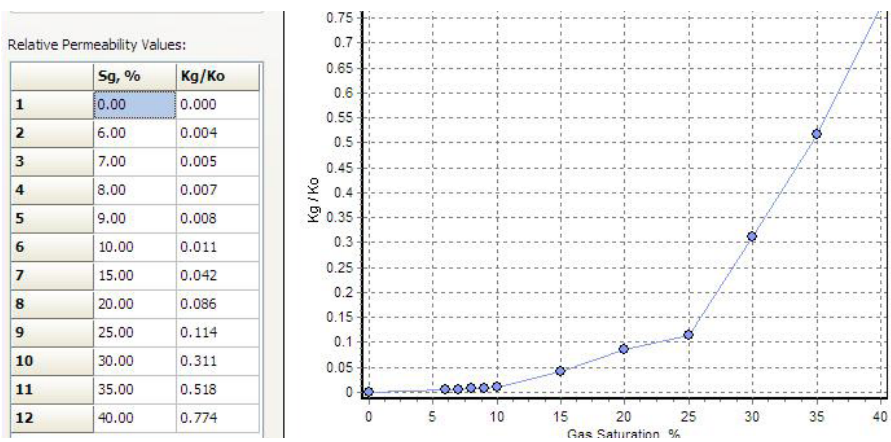
With Petra, you can quickly perform volumetric computations and calculate recovery efficiencies using deterministic and probabilistic models. Deterministic models are based on average reservoir and fluid properties, while probabilistic reserves are calculated using Monte Carlo simulation, which outputs statistical reports and probability graphs based on various distributions of reservoir parameters.

Determine Oil & Gas Recoveries

Oil and gas recoveries are provided in Petra's Oil Volumetric Models. Relative permeability input is provided for all models, with the exception of the water drive model. Gravity drainage is neglected in all drive types.

Gas Cap Drive Model

Account for oil recovery with gas cap and solution gas expansion. Gravity is not taken into account, which can significantly increase oil recovery in steeply dipping reservoirs.



Relative Permeability Values:

	Sg, %	Kg/Ko
1	0.00	0.000
2	6.00	0.004
3	7.00	0.005
4	8.00	0.007
5	9.00	0.008
6	10.00	0.011
7	15.00	0.042
8	20.00	0.086
9	25.00	0.114
10	30.00	0.311
11	35.00	0.518
12	40.00	0.774

Perform volumetric computations and calculate recovery efficiencies using deterministic and probabilistic models in Petra's Advanced Volumetrics Module.

Solution Gas Drive Model

Production from initial to bubble point pressure is determined by liquid expansion, and often results in a rapid decline in reservoir pressure. Below the bubble point, gas liberates in the reservoir pore space.

Water Drive Model

Perform water drive calculations on reservoirs in which no pressure loss occurs with production. Total pressure maintenance by the aquifer is provided in this model.

Combination Drive Model

The combination drive mechanism allows you to specify any combination of the water drive, solution drive, and gas cap drive for a complete and unique recovery calculation.

Determine Gas & Condensate Recoveries

Gas and condensates recoveries are provided in Petra's Gas Volumetric Models. Gas Volumetrics uses a fixed-composition gas/condensate production stream over the life of the reservoir. Changes in fluid phase-behavior are not made as the reservoir is produced.

Volumetric Drive Model

Calculate recovery using the volumetric drive model, which calculates the formation-volume factor at initial and abandonment pressures.

Water Drive Model

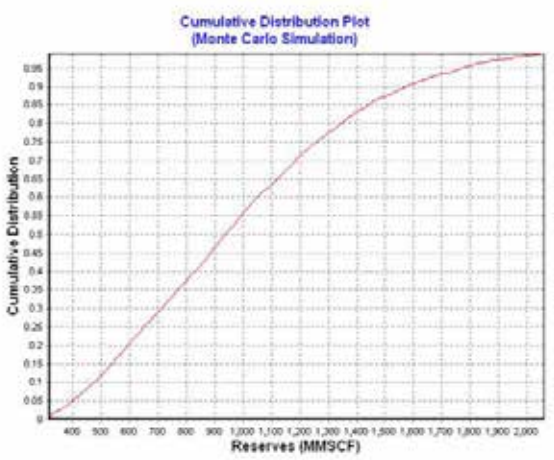
Water drive calculation is suited for reservoirs in which no pressure loss occurs with production. Total pressure maintenance by the aquifer is provided in this model.

Partial Water Drive Model

At initial pressure, the entire reservoir undergoes volumetric depletion to abandonment pressure. At abandonment pressure, additional recovery in the water-swept zone accounts for the effect of water influx.

Perform Monte Carlo Simulations

The Monte Carlo Simulation technique outputs a probability distribution of reserves for both oil and gas reservoirs based on probability distributions entered by the user.



Quickly produce cumulative distribution plots using the Monte Carlo Simulation tool in Petra's Advanced Volumetrics module.

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