

Displacement Efficiency (ED)

Displacement efficiency defines the fraction of the initial pore-saturating fluid displaced in a the piston sweep by invaded fluid

$$E_D = 1 - \frac{V_{FLUID, INITIAL} - V_{FLUID, INVADDED}}{V_{FLUID, INITIAL}}$$

Water-Oil Displacement Efficiency (E_{DOW})

$$E_{DOW} = 1 - \frac{V_{o, LEFT}}{V_{o, INITIAL}} = \frac{1 - s_{wi} - s_{orw}}{1 - s_{wi}}$$

where s_{wi} – initial water in oil pay, s_{orw} – residual oil to water sweep.

Gas-Oil Displacement Efficiency (E_{DOG})

$$(1) \quad E_{DOG} = 1 - \frac{V_{o, LEFT}}{V_{o, INITIAL}} = \frac{1 - s_{wi} - s_{org}}{1 - s_{wi}}$$

where s_{wi} – initial water in oil pay, s_{org} – residual oil to gas sweep.

See also

[Petroleum Industry / Upstream / Subsurface E&P Disciplines / Petrophysics](#)

[[Permeability](#)] [[Absolute permeability](#)] [[Relative permeability](#)]