

Dr. Pooladi-Darvish: Original Base and Sensitivity Cases

Primary Parameter that is changed	Match of Pressure	Final Day Flow Rate	Match of Collection Rates	Cum Oil Released, MMSTB
BOP Diameter = 2 inch	✓	34,100	Bad	3.32
Skin = 50	✓	34,800	Bad	3.39
Permeability = 170 mD	X	42,900	Bad	4.14
Pay thickness = 25 ft	✓	44,400	Bad	4.3
Permeability = 360 mD	✓	46,900	Bad-Med	4.53
Wellbore Roughness = 0.02 inch	✓	48,700	Mediocre	4.7
Error of hydrostatic pressure = +150 psi	✓	50,700	Mediocre	4.85
Pay thickness = 50 ft	✓	51,100	Med.-Good	4.93
Error of CS pressure = -10 & -30 psi	✓	51,600	Good	4.99
Porosity = 22%	✓	51,800	Good	5.00
Error of CS pressure = +10 & +30 psi	✓	52,200	Good	5.03
Base Case	✓	52,400	Good	5.03
Error of BOP pressure = -10 psi	✓	52,400	Good	5.03
Error of BOP pressure = +74 psi	✓	52,400	Good	5.03
Oil viscosity: high	✓	52,400	Good	5.05
Permeability = 850 mD	✓	52,500	Good	5.07
Oil viscosity: low (0.16 cp)	✓	53,300	Good	5.13
Aquifer: Yes	✓	53,300	Good	5.14
Rock compressibility = 12 μ sips	✓	53,400	Good	5.15
Error of hydrostatic pressure = -150 psi	✓	54,200	Good	5.27
Number of reservoir layers = 3	✓	55,400	Good-Med	5.33
BOP Diameter = 3.5 inch	✓	56,000	Good-Med	5.40
Skin = 0	✓	56,300	Mediocre	5.44
BOP Diameter = 4 inch	✓	58,100	Mediocre	5.59
Wellbore Roughness = 0.0006 inch	✓	59,800	Bad	5.78