BASIN DAKOTA
SECTION 16-T27N-R10W
1ST SAND

Fluid Properties

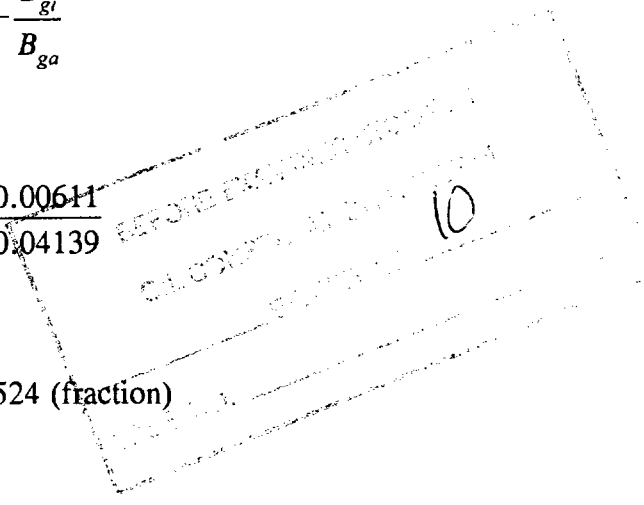
Gas Gravity	=	0.646	Gas Analysis
T_c	=	365°R	Standing's Correlation
P_c	=	678 psi	Standing's Correlation
T_r	=	150 °F	Log Measurement
P_{ri}	=	2,400 psi	Public Data
P_{ra}	=	400 psi	Estimate
B_{gi}	=	0.00611 ft^3/SCF	Standing & Katz's Correlation
B_{ga}	=	0.04139 ft^3/SCF	Standing & Katz's Correlation

Calculate Theoretical Recovery Factor:

$$RFt = 1 - \frac{B_{gi}}{B_{ga}}$$

$$RFt = 1 - \frac{0.00611}{0.04139}$$

$$RF_t = 0.8524 \text{ (fraction)}$$



Rock Properties

Acre - Feet	=	9,934	Planimetered from net sand thickness maps
Average Porosity	=	0.10	(Fraction) $\varnothing_{dn}$ Avg. of offsets
Water Saturation	=	0.40	(Fraction) Avg. of offsets

Calculate GIP, Theoretical and Actual EUR:

$$GIP = \frac{.04356 A h_{\phi} (1 - S_w)}{B_{gi}} MMCF$$

$$GIP = \frac{.04356(9{,}934)(0.10)(1-0.40)}{0.00611} MMCF$$

GIP = 4,249 MMCF

EUR_t = RF_t x GIP

EUR_t = (0.8524)(4,249)

EUR_t = 3,622 MMCF

CROSS TIMBERS OIL COMPANY
Barry Voigt
11/13/00

BASIN DAKOTA
SECTION 16-T27N-R10W
2nd SAND

Fluid Properties

Gas Gravity	=	0.646	Gas Analysis
T_c	=	365°R	Standing's Correlation
P_c	=	678 psi	Standing's Correlation
T_r	=	150 °F	Log Measurement
P_{ri}	=	2,400 psi	Public Data
P_{ra}	=	400 psi	Estimate
B_{gi}	=	0.00611 ft^3/SCF	Standing & Katz's Correlation
B_{ga}	=	0.04139 ft^3/SCF	Standing & Katz's Correlation

Calculate Theoretical Recovery Factor:

$$RF_t = 1 - \frac{B_{gi}}{B_{ga}}$$

$$RF_t = 1 - \frac{0.00611}{0.04139}$$

$$RF_t = 0.8524 \text{ (fraction)}$$

Rock Properties

Acre - Feet	=	6,036	Planimetered from net sand thickness maps
Average Porosity	=	0.13	(Fraction) $\varnothing_{dn}$ Avg. of offsets
Water Saturation	=	0.45	(Fraction) Avg. of offsets

Calculate GIP, Theoretical and Actual EUR:

$$GIP = \frac{.04356 A h_{\phi} (1 - S_w)}{B_{gi}} MMCF$$

$$GIP = \frac{.04356(6{,}036)(0.13)(1 - 0.45)}{0.00611} MMCF$$

GIP = 3,077 MMCF

EUR_t = RF_t x GIP

EUR_t = (0.8524)(3,077)

EUR_t = 2,623 MMCF

CROSS TIMBERS OIL COMPANY
Barry Voigt
11/13/00

BASIN DAKOTA
SECTION 16-T27N-R10W
3rd SAND

Fluid Properties

Gas Gravity	=	0.646	Gas Analysis
T_c	=	365°R	Standing's Correlation
P_c	=	678 psi	Standing's Correlation
T_r	=	150 °F	Log Measurement
P_{ri}	=	2,400 psi	Public Data
P_{ra}	=	400 psi	Estimate
B_{gi}	=	0.00611 ft^3/SCF	Standing & Katz's Correlation
B_{ga}	=	0.04139 ft^3/SCF	Standing & Katz's Correlation

Calculate Theoretical Recovery Factor:

$$RFt = 1 - \frac{B_{gi}}{B_{ga}}$$

$$RFt = 1 - \frac{0.00611}{0.04139}$$

$$RF_t = 0.8524 \text{ (fraction)}$$

Rock Properties

Acre - Feet	=	25,978	Planimetered from net sand thickness maps
Average Porosity	=	0.09	(Fraction) $\varnothing_{dn}$ Avg. of offsets
Water Saturation	=	0.39	(Fraction) Avg. of offsets

Calculate GIP, Theoretical and Actual EUR:

$$GIP = \frac{.04356 A h_{\phi} (1 - S_w)}{B_{gi}} MMCF$$

$$GIP = \frac{.04356(25{,}978)(0.09)(1 - 0.39)}{0.00611} MMCF$$

GIP = 10,168 MMCF

EUR_t = RF_t x GIP

EUR_t = (0.8524)(10,168)

EUR_t = 8,667 MMCF