

YPC - Federal GC #1, 660/S 660/E, Sec 32-17S-25E

These calculations are supplementary to the Strawn-Morrow commingling calculations submitted 8-30-77.

Strawn Perfs: 7854-7864

Porosity feet, $\phi h = 0.98$ ft, $S_w = 0.142$, Remaining Reserves = 13.7 mme of gas.

Orig. SITP = 2351 psig, Present SITP = 1175 psig, Terminal SITP = 80 psig.

$$\text{Present State of Depletion} = \frac{P_{1/2} - P_{a/2a}}{P_{1/2} - P_{a/2a}} = \frac{\frac{1182}{.856} - \frac{93}{.989}}{\frac{2364}{.794} - \frac{93}{.989}} = \frac{1388 - 94}{2977 - 94} = f = .4488.$$

$$\text{Allocatable Reserve factor} = f \cdot \phi \cdot h (1 - S_w) = .4488(0.98)(.858) = .3774 \text{ ft.}$$

Atolca Perfs: 8056-8092

Porosity feet, $\phi h = 1.43$ ft, $S_w = .283$, No depletion, $f = 1$

Orig. SITP = 2560 psig $P_c = 672, T_c = 361, R = 3.83, T_r = 1.654, Z_o = .837$

allocatable Reserve factor relative to Strawn Completion =

$$f \cdot \phi \cdot h (1 - S_w) \frac{P_{1/2} \text{ Atolca}}{P_{1/2} \text{ Strawn}} = 1(1.43)(.717) \frac{\frac{2573}{.837}}{\frac{2364}{.794}} = 1.0587$$

Morrow Perfs: 8202-8232

Porosity feet, $\phi h = 2.256$ ft, $S_w = .175$, Remaining Reserves = 11.4 mme of gas

Propose to Apportion future commingled production as follows:

Gas:

Eagle Creek-Strawn - - - - - 13.7 mme = 22%

Richard Knob - Atolca = $13.7 \frac{1.0587}{0.3774} = 38.4$

Richard Knob - Morrow = $\frac{11.4}{49.8 \text{ mme}} = \frac{78}{100}\%$

Total future Gas Production = 63.5 100%

Condensate:

Eagle Creek-Strawn - - - - none

Richard Knob - Atolca Morrow - 100%

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