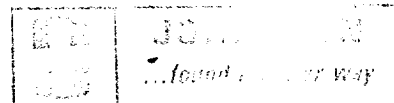


Reservoir Engineering Data



Recorder No. J-100

Field Report No. C1803 C

Estimated Damage Ratio	EDR		Effective Transmissibility	$Kh/\mu B$	1869.1	Md-ft. Cp.
Maximum Reservoir Pressure	P	P.S.I.G.	Effective Transmissibility	$Kh/\mu B$		Md-ft. Cp.
Slope of Shut-In Curve	M	PSI log cycle	Flow Rate	Q	1320	Bbl. day
Potential Surface (Datum Plane, Sea Level)	PS	ft.	Pressure Gradient		2.8388	PSI ft.
Productivity Index	PI	Bbl. day PSI	Gas Oil Ratio (see "MFE" Samples)	GOR	1650	CF Bbl.
Radius of Investigation		ft.	K (Effective to)		13.02	Md.

$$1.869 \times 10^{-4} = \frac{1.869 \times 10^{-4} \times 1.869 \times 10^{-4}}{1.869 \times 10^{-4} \times 1.869 \times 10^{-4}} \quad 1.869 \times 10^{-4} = 1.869 \times 10^{-4} \times 1.869 \times 10^{-4} = 1.869 \times 10^{-4}$$

Assumptions made for Calculations for Liquid Recoveries

- Q is averaged at a constant rate.
- P_i is formation flowing pressure at a constant rate.
- Formation flow is taken as single phase flow.
If gas is produced at surface, phase separation is assumed to have occurred in drill pipe.
- Radial flow is assumed.
- For the purpose of calculating EDR where specific reservoir parameters are not available it is assumed that:

Effective permeability, K _r will fall between	1 to 200 md
Formation porosity, n _f will fall between	0.1 to 0.3
Fluid compressibility, c _f will fall between	10 ⁻⁶ to 10 ⁻⁴
Fluid viscosity, μ, will fall between	0.05 to 50 cp.
Well bore radius, r _w , will fall between	3" to 4"

Which gives an average value for the function $\log \frac{K}{\mu \phi c r_w^2}$ of 5.5

- Other standard radial flow, equilibrium assumptions.

Empirical Equations:

- EDR = $\frac{P_i - P_r}{M(\log T + 2.65)}$ where M = $\frac{P_i - P_r}{\text{Log Cycle}}$
- Transmissibility $\frac{Kh}{\mu B} = \frac{152.6 Q}{M}$
- DST J = $\frac{Q}{P_c - P_r}$ Theoretical J = $\frac{7.08 \times 10^{-3} Kh}{\mu B \ln(r_e/r_w)}$ Assumed ln(r_e/r_w) = 7.60
- P.S. = $[P_o + 2.309 \text{ ft. PSI}] - [\text{Recorder depth to sea level.}]$
- Radius of investigation, r_i = $\sqrt{\frac{Kt}{40\phi\mu c}}$ where t = time in days

In making any interpretation, our employees will give Customer the benefit of their best judgment as to the correct interpretation. Nevertheless, since all interpretations are opinions based on inferences from electrical, mechanical or other measurements, we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not be held responsible for any errors or omissions in the data or process or results, negligence or otherwise, for any loss, costs, damages or expenses incurred or sustained by Customer resulting from any interpretation made by any of our agents or employees.