Reservoir Engineering Data

Recorder No. [illegible] Field Report No. [illegible]

Estimated Damage Ratio	EDR	[illegible]		Effective Transmissibility [illegible]	$\frac{Kh}{\mu B}$	1969.1	Md-ft. Cp.
Maximum Reservoir Pressure [illegible]	P	[illegible]	P.S.I.G.	Effective Transmissibility	$\frac{Kh}{\mu B}$		Md-ft. Cp.
Slope of Shut-In Curve [illegible]	M	[illegible]	PSI log cycle	Flow Rate [illegible]	Q	1320	Bbl. day
Potentiometric Surface (Datum Plane, Sea Level)	PS	[illegible]	ft.	Pressure Gradient		.3888	PSI ft.
Productivity Index	PI	[illegible]	Bbl. day PSI	Gas Oil Ratio [illegible] "MFE" Sampler	GOR	1650	CF Bbl.
Radius of Investigation		[illegible]	ft.	K (Effective to [illegible])		13.09	Md.

[illegible] = 1632 − 1514 = 118

Assumptions made for Calculations for Liquid Recoveries

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

Effective permeability, K, will fall between	1 to 200 md
Formation porosity, ϕ, will fall between	0.1 to 0.3
Fluid compressibility, c, will fall between	10^{-5} 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 $\log \frac{K}{\phi \mu c r_w^2}$ of ... 5.5

6. Other standard radial flow, equilibrium assumptions.

Empirical Equations:

1. EDR $= \frac{P_o - P_f}{M(\log T + 2.65)}$ where $M = \frac{P_1 - P_2}{\text{Log Cycle}}$
2. Transmissibility $\frac{Kh}{\mu B} = \frac{162.6\ Q}{M}$
3. DST J $= \frac{Q}{P_o - P_f}$ Theoretical J $= \frac{7.08 \times 10^{-3}\ Kh}{\mu B \ln(r_e/r_w)}$ Assumed $\ln(r_e/r_w)$ = 7.60
4. P.S. $= \left[P_o \times 2.309 \text{ ft./PSI}\right] - \left[\text{Recorder depth to sea level.}\right]$
5. Radius of investigation, $r_i = \sqrt{\frac{Kt}{40 \phi \mu c}}$ where t = time in days