

PAGE 2
Gas Reservoir Engineering Data



Instrument No. J-069

Field Report No. 11327 C

Damage Ratio	DR	8.61	Effective Transmissibility	$\frac{Kh}{\mu Z}$	4773.4	$\frac{Md-ft.}{Cp.}$
Maximum Reservoir Pressure INITIAL SHUT-IN	P_o	3800 P.S.I.G.	Flow Rate	Q_g	1320	MCF day
Slope of Shut-in Curve FINAL SHUT-IN	M_g	279,757 PSI ² /log cycle	Flow Rate	Q	-	
Potentiometric Surface (Datum Plane, Sea Level)	PS	- ft.	Pressure Gradient		.413	PSI/ft.
Radius of Investigation		161 ft.	K (Effective to GAS)		4.11	Md.

$$SLOPE M_G = (3799)^2 - (3762)^2 = 279,757$$

Assumptions made for Calculations for Gas Recoveries

1. Q_g is taken as steady state flow and unless stated otherwise at standard conditions 14.7 P.S.I. and 60°F.
2. P_f is final formation flowing pressure at steady state flow.
3. Formation flow is taken as single phase flow. If liquid (condensate) is produced at surface, condensation is assumed to have occurred in drill pipe.
4. Radial flow is assumed.
5. Unless given, gas specific gravity is assumed to be 0.7 (air 1.0) and having pseudo critical temperature at 385 Rankin and pseudo critical pressure of 666 P.S.I.A.
6. Other standard radial flow, steady state assumptions.

Empirical Equations:

$$1. EDR = \frac{P_o^2 - P_f^2}{M_g(\log T + 2.65)} \text{ where } M_g = \frac{P_o^2 - P_{io}^2}{\log \text{ Cycle}}$$

$$2. \text{ Transmissibility } \frac{Kh}{\mu Z} = \frac{1637^\circ T_f Q_g}{M_g}$$

$$3. P.S. = [P_o \times 2.309 \text{ ft./PSI}] - [\text{Recorder depth to sea level.}]$$

$$4. \text{ Radius of Investigation, } r_i = \sqrt{\frac{Kt}{40\phi(1 - S_w)\mu c}} \text{ where } t = \text{time in days}$$

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 or any interpretations, and we shall not be liable or responsible, except in the case of gross or wilful negligence on our part, for any loss, costs, damages or expenses incurred or sustained by Customer resulting from any interpretation made by any of our agents or employees.