

OPEN FLOW TEST DATA

Date: AUGUST 23, 1960

Operator: WESTERN NATURAL GAS CO. Lease: GRAHAM # 1 (PC)

Location: H 9 - 27 - 8 County: SAN JUAN State: N.MEX.

Formation: PICTURED CLIFF Pool: So. BLANCO P.C.

Casing: 5 1/2 " Set @ 4370 ' Tubing: 2 1/2 " Set @ 4189

Pay Zone: 2133 ' To: 2151 ' Total Depth: 2151

Choke Size: .750 " Choke Constant = C = 12.3650

Stimulation Method: S W F Flow Through: Casing X Tubing

Shut-in Pressure Casing: 856 psig / 12 = 868 psia (Shut-in 15 days)

Shut-in Pressure Tubing: _____ psig / 12 = _____ psia

Flowing Pressure: P : 84 psig / 12 = 96 psia

Working Pressure: P_w : _____ psig / 12 = CALCULATED psia

Temperature: T : 62 °F / 460 = 522 °Absolute

F_{pv} (from tables) : 1.000 Gravity .650 (EST) n .850

$$\text{Choke Volume} = Q = C \times P_t \times F_t \times F_g \times F_{pv}$$

$$12.365 \times 96 \times .9981 \times .9608 \times 1.000 = \underline{1138} \text{ MCF/D}$$

$$\text{Open Flow} - Aof = Q$$

$$Aof = \left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = \frac{753.424}{753.424 - 9.792} = \frac{753.424}{743.632} = 1.0132 = 1.0111 \times 1138$$

$$Aof = \underline{1151} \text{ MCF/D}$$

Tested By: WAYNE SMITH

Witnessed By: [Signature]

GEOLECTRIC, INC.

[Signature]