

|                                         |                      |                                   |                           |
|-----------------------------------------|----------------------|-----------------------------------|---------------------------|
| Operator<br>El Paso Natural Gas Company |                      | Lease<br>Hardie "A" No. 1 (O/FIO) |                           |
| Location<br>990 S, 1350 W, S26-T29N-R6W |                      | County<br>San Juan                | State<br>New Mexico       |
| Formation<br>Mesa Verde                 |                      | Pool<br>Blanco                    |                           |
| Casing: Diameter<br>4.500               | Set At: Feet<br>5552 | Tubing: Diameter<br>2.375         | Set At: Feet<br>5327      |
| Pay Zone: From<br>4670                  | To<br>5464           | Total Depth:<br>5552              | Shut In<br>7-17-69        |
| Stimulation Method<br>Sand Water Frac   |                      | Flow Through Casing               | Flow Through Tubing<br>XX |

|                                       |                    |                             |                                              |                    |                        |
|---------------------------------------|--------------------|-----------------------------|----------------------------------------------|--------------------|------------------------|
| Choke Size, Inches<br>0.750           |                    | Choke Constant: C<br>12.365 |                                              |                    |                        |
| Shut-In Pressure, Casing, PSIG<br>810 | + 12 = PSIA<br>822 | Days Shut-In<br>20          | Shut-In Pressure, Tubing PSIG<br>801         | + 12 = PSIA<br>813 |                        |
| Flowing Pressure: P PSIG<br>250       | + 12 = PSIA<br>262 |                             | Working Pressure: P <sub>w</sub> PSIG<br>685 | + 12 = PSIA<br>693 |                        |
| Temperature:<br>T = 77 °F             | n =<br>0.750       |                             | F <sub>pv</sub> (From Tables)<br>1.028       | Gravity<br>.700    | F <sub>g</sub> = .9258 |

CHOKE VOLUME = Q = C x P<sub>t</sub> x F<sub>t</sub> x F<sub>g</sub> x F<sub>pv</sub>

Q = 12.365 x 262 x .9340 x 1.028 x .9258 = 3034 MCF/D

OPEN FLOW = Aof = Q  $\left( \frac{P_c^2}{P_c^2 - P_w^2} \right)^n$

Aof =  $\left( \frac{675684}{183480} \right)^n = (3.5849)^{.75} 3034 = 2.6052 \times 3034$

Note: Made light spray of light hydrocarbons throughout test.

Aof = 7904 MCF/D

TESTED BY RFH

Calculated

WITNESSED BY RES

RECEIVED

AUG 8 1969

OIL CON. COM.

DIST. 3

H. E. McNally