St. File

Form C-122
Revised 9-1-65

# NEW MEXICO OIL CONSERVATION COMMISSION
## MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

122 file

RECEIVED
JAN 9 1978
O. C. C.
ARTESIA, OFFICE

| | | | | | |
|---|---|---|---|---|---|
| Type Test: [X] Initial ✓ [ ] Annual [ ] Special | | | | Test Date: 12-13-77 | |
| Company: Holly Energy, Inc. | | Connection: To Air | | | |
| Pool: Loco Hills Morrow, So. (Gas) | | Formation: Morrow | | | |
| Completion Date: 12-13-77 | Total Depth: 11,400' | Plug Back TD: 11,287' | Elevation: 3637 GR, | Farm or Lease Name: W. D. McIntyre "A" | |
| Csg. Size: 5½" / Wt.: 17# / d: 4.892" / Set At: 11,287' | | Perforations: From 11,101' To 11,128' (129) | | Well No.: 7 | |
| Tbg. Size: 2 3/8" / Wt.: 4.7# / d: 1.995" / Set At: 10,963' | | Perforations: From OPEN ENDED | | Unit: K / Sec.: 20 / Twp.: 17S / Rge.: 30E | |
| Type Well – Single – Bradenhead – G.G. or G.O. Multiple: SINGLE | | Packer Set At: 10963' | | County: EDDY | |
| Producing Thru: TUBING | Reservoir Temp. °F: 185 @ 11,140' | Mean Annual Temp. °F: 60 | Baro. Press. – $P_a$: 13.2 | State: NEW MEXICO | |

| L | H | Gg | % $CO_2$ | % $N_2$ | % $H_2S$ | Prover | Meter Run | Taps |
|---|---|---|---|---|---|---|---|---|
| 11,140 | 11,140 | .717 | 2,069 | 6,645 | -0- | | 3" | FLANGE |

| | FLOW DATA | | | | | TUBING DATA | | CASING DATA | | |
|---|---|---|---|---|---|---|---|---|---|---|
| NO. | Prover Line Size | X Orifice Size | Press. p.s.i.g. | Diff. $h_w$ | Temp. °F | Press. p.s.i.g. | Temp. °F | Press. p.s.i.g. | Temp. °F | Duration of Flow |
| SI | | | | | | 3026 | | | | 72 HRS |
| 1. | 3" | x 1.00" | 500 | 7 | 55 | 2392 | 63 | | | 1 HR |
| 2. | 3" | x 1.00" | 440 | 14 | 83 | 1955 | 70 | | | 1 HR |
| 3. | 3" | x 1.00" | 480 | 18 | 100 | 1530 | 70 | | | 1 HR |
| 4. | 3" | x 1.00" | 500 | 18 | 120 | 952 | 70 | | | 1 HR |
| 5. | | | | | | | | | | |

### RATE OF FLOW CALCULATIONS

| NO. | Coefficient (24 Hour) | $\sqrt{h_w P_m}$ | Pressure $P_m$ | Flow Temp. Factor Ft. | Gravity Factor Fg | Super Compress. Factor, Fpv | Rate of Flow Q, Mcfd |
|---|---|---|---|---|---|---|---|
| 1 | 4.789 | 59.94 | 513.2 | 1.0050 | 1.181 | 1.069 | 364 |
| 2. | 4.789 | 79.65 | 453.2 | 0.9786 | 1.181 | 1.051 | 463 |
| 3. | 4.789 | 94.22 | 493.2 | 0.9636 | 1.181 | 1.048 | 538 |
| 4. | 4.789 | 96.11 | 513.2 | 0.9469 | 1.181 | 1.044 | 537 |
| 5. | | | | | | | |

| NO. | $P_t$ | Temp. °R | $T_r$ | Z |
|---|---|---|---|---|
| 1. | .77 | 515 | 1.30 | .875 |
| 2. | .68 | 543 | 1.37 | .906 |
| 3. | .74 | 560 | 1.42 | .910 |
| 4. | .77 | 580 | 1.47 | .918 |
| 5. | | | | |

Gas Liquid Hydrocarbon Ratio: 79,250 Mcf/bbl.
A.P.I. Gravity of Liquid Hydrocarbons: 58.3 @ 60 Deg.
Specific Gravity Separator Gas: .717 XXXXXXXXX
Specific Gravity Flowing Fluid: XXXXX GMIX .753
Critical Pressure: 668 P.S.I.A. 667 P.S.I.A.
Critical Temperature: 395 R 408 R

$P_t$ 4300.2 $P_t^2$ 18491.7

| NO | $P_t^2$ | $P_s$ | $P_s^2$ | $P_t^2 - P_s^2$ |
|---|---|---|---|---|
| 1 | | 3556.2 | 12646.6 | 5845.1 |
| 2 | | 2925.2 | 8556.8 | 9934.9 |
| 3 | | 2238.2 | 5009.5 | 13482.2 |
| 4 | | 1409.2 | 1985.8 | 16505.9 |
| 5 | | | | |

(1) $\frac{P_t^2}{P_t^2 - P_s^2} = 3.164$ (2) $\left[\frac{P_t^2}{P_t^2 - P_s^2}\right]^n = 1.779$

AOF = Q $\left[\frac{P_t^2}{P_t^2 - P_s^2}\right]^n = .647$

Point Test back

Absolute Open Flow: 647 Mcfd @ 15.025 Angle of Slope θ: 63.5 Slope, n: .500

Remarks: BOTTOM HOLE PRESSURES MEASURED WITH AMERADA BOMB @ 11,140 FEET. WELL MADE A TOTAL OF 1 BBL OF CONDENSATE DURING TEST. POINT ALIGNMENT TO STEEP, A SLOPE OF 63.5° WAS DRAWN THROUGH LOW RATE OF FLOW.

| Approved By Commission: | Conducted By: | Calculated By: | Checked By: |
|---|---|---|---|
| | J.A.B. | R.R. | J.W.W. |