NEW MEXICO OIL CONSERVATION COMMSSION

# MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Form C-122
Revised 9-1-65

| | | | | | |
|---|---|---|---|---|---|
| Type Test: 4-POINT ☐ Initial ☐ Annual ☒ Special | | | Test Date: 5-16-86 | | |
| Company: READ & STEVEN, INC. | | Connection: TO AIR | | | |
| Pool: NORTH LEA PENN | | Formation: MORROW | | Unit | |
| Completion Date | Total Depth: 13800 | Plug Back T.D.: 13600 | Elevation | Farm or Lease Name: NORTH LEA FEDERAL | |
| Csg. Size: 7.0 / Wt.: 29.00 / d / Set At: 13600 | | Perforations: From 12998 To 13156 | | Well No.: 1-Y | |
| Tbg. Size: 2.375 / Wt.: 4.70 / d / Set At: 12910 | | Perforations: From To | | Unit: — Sec.: 10 Twp.: 20S Rge.: 34E | |
| Type Well – Single – Bradenhead – G.G. or G.O. Multiple: SINGLE | | Packer Set At: 12881 | | County: LEA | |
| Producing Thru: TUBING | Reservoir Temp. °F: 248 @ 13077 | 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 |
|---|---|---|---|---|---|---|---|---|
| 13077 | 13077 | 0.689 | 0.76 | 0.78 | 0 | 0 | 4.0 | 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 | | | | | 4007 | | 6129 | 248 | 48.0 |
| 1. | 4.03 X 2.000 | 215 | 3.8 | 95 | 3867 | | 5959 | 248 | 1.0 |
| 2. | 4.03 X 2.000 | 225 | 9.0 | 82 | 3710 | | 5789 | 248 | 1.0 |
| 3. | 4.03 X 2.000 | 230 | 25.0 | 78 | 3472 | | 5531 | 248 | 1.0 |
| 4. | 4.03 X 2.000 | 240 | 56.0 | 76 | 3059 | | 5123 | 248 | 1.0 |
| 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 | 19.81 | 29.45 | 228.2 | 0.9680 | 1.2047 | 1.0207 | 695 |
| 2 | 19.81 | 46.30 | 238.2 | 0.9795 | 1.2047 | 1.0230 | 1107 |
| 3 | 19.81 | 77.97 | 243.2 | 0.9831 | 1.2047 | 1.0239 | 1874 |
| 4 | 19.81 | 119.08 | 253.2 | 0.9850 | 1.2047 | 1.0251 | 2870 |
| 5 | | | | | | | |

| NO. | $P_t$ | Temp. °R | $T_t$ | Z |
|---|---|---|---|---|
| 1 | 0.34 | 555 | 1.45 | 0.960 |
| 2. | 0.36 | 542 | 1.42 | 0.956 |
| 3. | 0.36 | 538 | 1.40 | 0.954 |
| 4. | 0.38 | 536 | 1.40 | 0.952 |
| 5 | | | | |

Gas Liquid Hydrocarbon Ratio: 9.682 Mcf/bbl.
A.P.I. Gravity of Liquid Hydrocarbons: 52.6 Deg.
Specific Gravity Separator Gas: 0.689 XXXXXXXXX
Specific Gravity Flowing Fluid: XXXXX 0.944
Critical Pressure: 670 P.S.I.A. 657 P.S.I.A.
Critical Temperature: 383 R 463 R

$P_c$ 4119.4 $P_c^2$ 16969

| NO | $P_t^2$ | $P_w$ | $P_w^2$ | $P_c^2 - P_w^2$ |
|---|---|---|---|---|
| 1 | | 3968 | 15746 | 1223 |
| 2 | | 3818 | 14576 | 2394 |
| 3 | | 3591 | 12897 | 4072 |
| 4 | | 3239 | 10491 | 6478 |
| 5 | | | | |

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 2.6194$ (2) $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 2.2774$

AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 6536$

Absolute Open Flow: 6536 Mcfd @ 15.025 | Angle of Slope @: 49.5 | Slope, n: 0.855

Remarks:

| Approved By Commission: | Conducted By: | Calculated By: | Checked By: |
|---|---|---|---|
| | BENNETT & CAHTEY | RICHARD TOWNLEY | |