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

Form C-122
Revised 9-1-65

| | | | | | |
|---|---|---|---|---|---|
| Type Test: [X] Initial [ ] Annual [ ] Special | | | Test Date: 5/3/85 | | |
| Company: SPENCE ENERGY CORP. | | Connection: NONE | | | |
| Pool: | | Formation: MORROW | | Unit: | |
| Completion Date: 4/28/85 | Total Depth: 11,115 | Plug Back TD: 11,084 | Elevation: | Farm or Lease Name: STATE 14 | |
| Csg. Size: 5½ / Wt.: 17 / d: 4.892 / Set At: 11,115 | | Perforations: From 10,030 To 10,036 | | Well No.: 1 | |
| Tbg. Size: 2 7/8 / Wt.: 6.5 / d: 2.441 / Set At: 9979 | | Perforations: From OPEN To END | | Unit: M / Sec.: 14 / Twp.: 9S / Rge.: 32E | |
| Type Well – Single – Bradenhead – G.G. or G.O. Multiple: SINGLE | | Packer Set At: 9979 | | County: LEA | |
| Producing Thru: TBG. | Reservoir Temp. °F: 174 @ 9979 | Mean Annual Temp. °F: 60 | Baro. Press. – $P_a$: 13.2 | State: N. MEX. | |
| L: 9979 / H: 9979 | Gg: .7263 | % $CO_2$: .523 | % $N_2$: 1.975 | % $H_2S$: | Prover: | Meter Run: 3" | Taps: Flg. |

| | 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 | | | | | 1760 | | | | |
| 1. | 2.900 X 1.250 | 100 | 4 | 80 | 1560 | | | | 1 HR. |
| 2. | 2.900 X 1.250 | 100 | 8 | 83 | 1385 | | | | 1 HR. |
| 3. | 2.900 X 1.250 | 100 | 12 | 84 | 1155 | | | | 1 HR. |
| 4. | 2.900 X 1.250 | 100 | 18 | 77 | 1000 | | | | 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 | 7.615 | 21.28 | 113.2 | .9813 | 1.174 | NIL | 187 |
| 2 | 7.615 | 30.09 | 113.2 | .9786 | 1.174 | NIL | 263 |
| 3 | 7.615 | 36.86 | 113.2 | .9777 | 1.174 | NIL | 322 |
| 4 | 7.615 | 45.14 | 113.2 | .9840 | 1.174 | NIL | 397 |
| 5 | | | | | | | |

| NO. | $P_t$ | Temp. °R | $T_r$ | Z |
|---|---|---|---|---|
| 1 | .17 | 540 | 1.38 | NIL |
| 2 | .17 | 543 | 1.39 | NIL |
| 3 | .17 | 544 | 1.39 | NIL |
| 4 | .17 | 537 | 1.37 | NIL |
| 5 | | | | |

Gas Liquid Hydrocarbon Ratio: 16.236 Mcf/bbl.
A.P.I. Gravity of Liquid Hydrocarbons: 60 @ 60 Deg.
Specific Gravity Separator Gas: .726 XXXXXXXXXX
Specific Gravity Flowing Fluid: XXXXX GMIX .891
Critical Pressure: 665 P.S.I.A. 659 P.S.I.A.
Critical Temperature: 392 R 448 R

$P_c$ 1773.2 $P_c^2$ 3144.2

| NO | $P_t^2$ | $P_w$ | $P_w^2$ | $P_c^2 - P_w^2$ |
|---|---|---|---|---|
| 1 | | 1573.3 | 2475.3 | 668.9 |
| 2 | | 1398.4 | 1955.6 | 1188.6 |
| 3 | | 1168.7 | 1365.8 | 1778.4 |
| 4 | | 1014.1 | 1028.4 | 2115.8 |
| 5 | | | | |

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 1.486$ (2) $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 1.297$

AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = .515$

Absolute Open Flow: 515 Mcfd @ 15.025 Angle of Slope θ: 56.75 Slope, n: .656

Remarks: WELL MADE 3 BBLS OF CONDENSATE DURING TEST

| Approved By Commission: | Conducted By: | Calculated By: | Checked By: |
|---|---|---|---|
| | DUKE SERVICES, INC. | R. RESTON | |