

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

Form C-122  
Revised 9-1-65

RECEIVED

|                                                                                                                           |  |                                     |  |                                   |  |
|---------------------------------------------------------------------------------------------------------------------------|--|-------------------------------------|--|-----------------------------------|--|
| Type Test<br><input checked="" type="checkbox"/> Initial <input type="checkbox"/> Annual <input type="checkbox"/> Special |  | Test Date<br>10-4-81                |  | <b>NOV 23 1981</b>                |  |
| Company<br>Yates Petroleum Corp.                                                                                          |  | Connection<br>Transwestern Pipeline |  |                                   |  |
| Pool<br>Undesignated Abo                                                                                                  |  | Formation<br>Abo                    |  | Unit<br>O. C. D.                  |  |
| Completion Date<br>5-28-81                                                                                                |  | Total Depth<br>4440    K-13         |  | Elevation<br>3791 KB              |  |
| Casing Size<br>4 1/2"    9.5#                                                                                             |  | Set At<br>4440                      |  | Perforations<br>From 3873 To 3940 |  |
| Tubing Size<br>2 3/8"    4.7#                                                                                             |  | Set At<br>3875'                     |  | Perforations<br>From        To    |  |
| Type Well - Single - Bordenhead - G.G. or G.O. Multiple<br>single                                                         |  |                                     |  | Packer Set At<br>---              |  |
| Producing thru<br>Tubing                                                                                                  |  | Reservoir Temp. °F<br>99 @ 3906     |  | Mean Annual Temp. °F<br>62        |  |
| Baro. Press. - P <sub>a</sub><br>13.2                                                                                     |  | State<br>New Mexico                 |  | County<br>Chaves                  |  |
| L<br>3,900'                                                                                                               |  | H<br>3,900'                         |  | C <sub>g</sub><br>.653            |  |
| % CO <sub>2</sub><br>1.21%                                                                                                |  | % N <sub>2</sub><br>5.67%           |  | % H <sub>2</sub> S<br>0           |  |
| Prover<br>---                                                                                                             |  | Meter Run<br>2"                     |  | Tape<br>Flanged                   |  |

| FLOW DATA |                  |   |              |                 |                      |          | TUBING DATA     |          | CASING DATA     |          | Duration of Flow |
|-----------|------------------|---|--------------|-----------------|----------------------|----------|-----------------|----------|-----------------|----------|------------------|
| NO.       | Prover Line Size | X | Orifice Size | Press. p.s.i.g. | Diff. h <sub>w</sub> | Temp. °F | Press. p.s.i.g. | Temp. °F | Press. p.s.i.g. | Temp. °F |                  |
| SI        |                  |   |              |                 |                      |          | 1000            |          |                 |          | Days             |
| 1.        | 2.067            | X | 1.000        | 315.0           | 78.0                 | 65       | 730.0           | 73       |                 |          | 2 hrs.           |
| 2.        | 2.067            | X | 1.000        | 310.3           | 57.4                 | 63       | 809.0           | 73       |                 |          | 2 hrs.           |
| 3.        | 2.067            | X | 1.000        | 305.6           | 41.0                 | 61       | 854.0           | 73       |                 |          | 2 hrs.           |
| 4.        | 2.067            | X | 1.000        | 302.4           | 25.1                 | 59       | 912.0           | 73       |                 |          | 2 hrs.           |
| 5.        |                  |   |              |                 |                      |          |                 |          |                 |          |                  |

| RATE OF FLOW CALCULATIONS |                       |                  |                         |                                  |                               |                                        |                      |
|---------------------------|-----------------------|------------------|-------------------------|----------------------------------|-------------------------------|----------------------------------------|----------------------|
| NO.                       | Coefficient (24 Hour) | $\sqrt{h_w P_m}$ | Pressure P <sub>m</sub> | Flow Temp. Factor F <sub>t</sub> | Gravity Factor F <sub>g</sub> | Super Compress. Factor F <sub>pv</sub> | Rate of Flow Q, Mcfd |
| 1                         | 4.946                 | 160.0            | 328.2                   | .9952                            | 1.237                         | 1.029                                  | 1002                 |
| 2                         | 4.946                 | 136.3            | 323.5                   | .9971                            | 1.237                         | 1.029                                  | 855                  |
| 3                         | 4.946                 | 114.3            | 318.8                   | .9990                            | 1.237                         | 1.029                                  | 719                  |
| 4                         | 4.946                 | 89.0             | 315.6                   | 1.001                            | 1.237                         | 1.029                                  | 561                  |
| 5                         |                       |                  |                         |                                  |                               |                                        |                      |

| NO. | P <sub>r</sub> | Temp. °R | T <sub>r</sub> | Z    | Gas Liquid Hydrocarbon Ratio          | Mcf/bbl.     |
|-----|----------------|----------|----------------|------|---------------------------------------|--------------|
| 1   | .50            | 525      | 1.47           | .945 | A.P.I. Gravity of Liquid Hydrocarbons | Deq.         |
| 2   | .49            | 523      | 1.46           | .944 | Specific Gravity Separator Gas .653   | XXXXXXX      |
| 3   | .48            | 521      | 1.46           | .945 | Specific Gravity Flowing Fluid XXXXX  | .653         |
| 4   | .48            | 519      | 1.45           | .944 | Critical Pressure 663                 | 663 P.S.I.A. |
| 5   |                |          |                |      | Critical Temperature 357              | 357 R        |

| P <sub>r</sub> 1013.2    P <sub>c</sub> 1026 |                             |                |                                                           |
|----------------------------------------------|-----------------------------|----------------|-----------------------------------------------------------|
| NO.                                          | P <sub>r</sub> <sup>2</sup> | P <sub>w</sub> | P <sub>r</sub> <sup>2</sup> - P <sub>w</sub> <sup>2</sup> |
| 1                                            | 552.3                       |                | 566.4                                                     |
| 2                                            | 676.0                       |                | 686.2                                                     |
| 3                                            | 752.0                       |                | 759.1                                                     |
| 4                                            | 856.0                       |                | 860.3                                                     |

(1)  $\frac{P_c^2}{P_r^2 - P_w^2} = 2.232$       (2)  $\left[ \frac{P_c^2}{P_r^2 - P_w^2} \right]^n = 1.584$

AOF = Q  $\left[ \frac{P_c^2}{P_r^2 - P_w^2} \right]^n = 1587$

|                         |  |                               |  |                               |  |               |  |
|-------------------------|--|-------------------------------|--|-------------------------------|--|---------------|--|
| Absolute Open Flow 1587 |  | Mcf @ 15.025                  |  | Angle of Slope θ              |  | Slope, n .573 |  |
| Remarks:                |  |                               |  |                               |  |               |  |
| Approved By Commission: |  | Conducted By:<br>David Weaver |  | Calculated By:<br>Al Springer |  | Checked By:   |  |