

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

Form C-122  
Revised 9-1-65

|                                                                                                                           |             |                                  |                           |                                    |                           |                                             |                |                                           |             |
|---------------------------------------------------------------------------------------------------------------------------|-------------|----------------------------------|---------------------------|------------------------------------|---------------------------|---------------------------------------------|----------------|-------------------------------------------|-------------|
| Type Test<br><input checked="" type="checkbox"/> Initial <input type="checkbox"/> Annual <input type="checkbox"/> Special |             |                                  |                           |                                    |                           | Test Date<br>10-3-80                        |                |                                           |             |
| Company<br>Yates Petroleum Corporation                                                                                    |             |                                  |                           |                                    |                           | Connection<br>Transwestern Pipeline Company |                |                                           |             |
| Pool<br>Boyd Morrow                                                                                                       |             |                                  |                           |                                    |                           | Formation<br>Morrow                         |                |                                           |             |
| Completion Date<br>8-28-80                                                                                                |             | Total Depth<br>9300 KB           |                           | Plug Back TD<br>9280 KD            |                           | Elevation<br>3461 KB                        |                | Farm or Lease Name<br>Rio Penasco KD Com. |             |
| Cas. Size<br>5 1/2"                                                                                                       | Wt.<br>17#  | d<br>4.892                       | Set At<br>9300 KB         | Perforations:<br>From 9186 To 9196 |                           | Well No.<br>2                               |                |                                           |             |
| Tubg. Size<br>2 7/8"                                                                                                      | Wt.<br>615# | d<br>2.441                       | Set At<br>9185            | Perforations:<br>From 9176 To 9179 |                           | Unit<br>F                                   | Sec.<br>2      | Twp.<br>19S                               | Rge.<br>25E |
| Type Well - Single - Bradenhead - G.G. or G.O. Multiple<br>Single                                                         |             |                                  |                           |                                    |                           | Packer Set At<br>9173 KB                    |                | County<br>Eddy                            |             |
| Producing Thru<br>Tubing                                                                                                  |             | Reservoir Temp. °F<br>154 @ 9191 |                           | Mean Annual Temp. °F<br>62         |                           | Baro. Press. - P <sub>a</sub><br>13.2       |                | State<br>New Mexico                       |             |
| L<br>9185                                                                                                                 | H<br>9185   | G <sub>g</sub><br>0.590          | % CO <sub>2</sub><br>0.59 | % N <sub>2</sub><br>0.27           | % H <sub>2</sub> S<br>N.1 | Prover<br>----                              | Meter Run<br>4 | Taps<br>Flanged                           |             |

  

| FLOW DATA |                        |   |                 |                    |                         | TUBING DATA |                    | CASING DATA |                    | Duration<br>of<br>Flow |             |
|-----------|------------------------|---|-----------------|--------------------|-------------------------|-------------|--------------------|-------------|--------------------|------------------------|-------------|
| NO.       | Prover<br>Line<br>Size | X | Orifice<br>Size | Press.<br>p.s.i.g. | Diff.<br>h <sub>w</sub> | Temp.<br>°F | Press.<br>p.s.i.g. | Temp.<br>°F | Press.<br>p.s.i.g. |                        | Temp.<br>°F |
| SI        |                        |   |                 |                    |                         |             | 3041               | 66          |                    |                        | Weeks       |
| 1.        | 4.026 x 2.500          |   |                 | 358                | 16                      | 72          | 3003               | 70          |                    |                        | 1 hour      |
| 2.        | 4.026 x 2.500          |   |                 | 360                | 32                      | 72          | 2795               | 73          |                    |                        | 1 hour      |
| 3.        | 4.026 x 2.500          |   |                 | 363                | 58                      | 71          | 2666               | 75          |                    |                        | 1 hour      |
| 4.        | 4.026 x 2.500          |   |                 | 366                | 91                      | 71          | 2517               | 76          |                    |                        | 1 hour      |
| 5.        |                        |   |                 |                    |                         |             |                    |             |                    |                        |             |

  

| RATE OF FLOW CALCULATIONS |                          |                  |                            |                                        |                                     |                                               |                         |
|---------------------------|--------------------------|------------------|----------------------------|----------------------------------------|-------------------------------------|-----------------------------------------------|-------------------------|
| NO.                       | Coefficient<br>(24 Hour) | $\sqrt{h_w P_m}$ | Pressure<br>P <sub>m</sub> | Flow Temp.<br>Factor<br>F <sub>t</sub> | Gravity<br>Factor<br>F <sub>g</sub> | Super<br>Compress.<br>Factor, F <sub>pv</sub> | Rate of Flow<br>Q, Mcfd |
| 1                         | 32.64                    | 77.07            | 371.2                      | .9887                                  | 1.305                               | 1.0284                                        | 3338                    |
| 2                         | 32.64                    | 109.28           | 373.2                      | .9887                                  | 1.305                               | 1.0287                                        | 4734                    |
| 3                         | 32.64                    | 147.71           | 376.2                      | .9896                                  | 1.305                               | 1.0290                                        | 6407                    |
| 4                         | 32.64                    | 185.76           | 379.2                      | .9896                                  | 1.305                               | 1.0292                                        | 8059                    |
| 5                         |                          |                  |                            |                                        |                                     |                                               |                         |

  

|     |                |          |                |       |                                       |        |              |
|-----|----------------|----------|----------------|-------|---------------------------------------|--------|--------------|
| NO. | P <sub>i</sub> | Temp. °R | T <sub>r</sub> | Z     | Gas Liquid Hydrocarbon Ratio          | 1107.7 | Mcf/bbl.     |
| 1   | 0.551          | 532      | 1.513          | .9455 | A.P.I. Gravity of Liquid Hydrocarbons | 53.0   | Deg.         |
| 2   | 0.554          | 532      | 1.513          | .9450 | Specific Gravity Separator Gas        | 0.587  | XXXXXXX      |
| 3   | 0.558          | 531      | 1.511          | .9445 | Specific Gravity Flowing Fluid        | XXXXX  | 0.590        |
| 4   | 0.563          | 531      | 1.511          | .9440 | Critical Pressure                     | 674    | P.S.I.A. 674 |
| 5   |                |          |                |       | Critical Temperature                  | 351.5  | R 352.5      |

  

|                                                            |                             |                |                             |                                                           |
|------------------------------------------------------------|-----------------------------|----------------|-----------------------------|-----------------------------------------------------------|
| P <sub>c</sub> 3761.2    P <sub>c</sub> <sup>2</sup> 14147 |                             |                |                             |                                                           |
| NO.                                                        | P <sub>i</sub> <sup>2</sup> | P <sub>w</sub> | R <sub>w</sub> <sup>2</sup> | P <sub>c</sub> <sup>2</sup> - R <sub>w</sub> <sup>2</sup> |
| 1                                                          |                             |                | 13924                       | 1223                                                      |
| 2                                                          |                             |                | 12265                       | 1882                                                      |
| 3                                                          |                             |                | 11432                       | 2715                                                      |
| 4                                                          |                             |                | 10545                       | 3602                                                      |
| 5                                                          |                             |                |                             |                                                           |

$$(1) \frac{P_c^2}{R_w^2 - P_w^2} = 3.9275$$

$$AOF = Q \left[ \frac{P_c^2}{R_w^2 - P_w^2} \right]^n = 24580$$

$$(2) \left[ \frac{R_w^2}{R_c^2 - R_w^2} \right]^n = 3.0498$$

  

|                    |       |               |                  |           |          |        |
|--------------------|-------|---------------|------------------|-----------|----------|--------|
| Absolute Open Flow | 24580 | Mcfd @ 15.025 | Angle of Slope @ | 50.8 deg. | Slope, n | 0.8151 |
|--------------------|-------|---------------|------------------|-----------|----------|--------|

Remarks: Static pressures by Bennett Wireline Co. Flowing pressures by D.W.T.  
Calculations worksheet C1220 attached.

|                         |                             |                                 |             |
|-------------------------|-----------------------------|---------------------------------|-------------|
| Approved By Commission: | Conducted By:<br>Don Weaver | Calculated By:<br>Eddie Mahfood | Checked By: |
|-------------------------|-----------------------------|---------------------------------|-------------|