

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><b>RETEST</b> <input checked="" type="checkbox"/> Initial <input type="checkbox"/> Annual <input type="checkbox"/> Special |                    |                                        |                                  |                                                  |                                | Test Date<br><b>8/4/75</b>                   |                        |                                                    |                   |
| Company<br><b>Amoco Production Company</b>                                                                                               |                    |                                        |                                  | Connection<br><b>Northern Natural Gas</b>        |                                |                                              |                        |                                                    |                   |
| Pool<br><b>Eumont</b>                                                                                                                    |                    |                                        |                                  | Formation<br><b>Penrose Queen</b>                |                                |                                              |                        | Unit                                               |                   |
| Completion Date<br><b>1-9-75</b>                                                                                                         |                    | Total Depth<br><b>3760'</b>            |                                  | Plug Back TD<br><b>3714'</b>                     |                                | Elevation<br><b>3515'</b>                    |                        | Farm or Lease Name<br><b>Gillully "B" Fed R/AB</b> |                   |
| Csg. Size<br><b>5-1/2"</b>                                                                                                               | Wt.<br><b>15.5</b> | d<br><b>1.995</b>                      | Set At<br><b>3760'</b>           | Perforations:<br>From <b>3521</b> To <b>3640</b> |                                | Well No.<br><b>15</b>                        |                        |                                                    |                   |
| Tbg. Size<br><b>2-3/8</b>                                                                                                                | Wt.<br><b>4.7</b>  | d<br><b>1.995</b>                      | Set At<br><b>3619</b>            | Perforations:<br>From To                         |                                | Unit<br><b>H</b>                             | Sec.<br><b>33</b>      | Twp.<br><b>20</b>                                  | Rge.<br><b>37</b> |
| Type Well - Single - Bradenhead - G.G. or G.O. Multiple<br><b>Single-Gas</b>                                                             |                    |                                        |                                  |                                                  |                                | Packer Set At<br><b>3426</b>                 |                        | County<br><b>Lea</b>                               |                   |
| Producing Thru<br><b>Tubing</b>                                                                                                          |                    | Reservoir Temp. °F<br><b>102° 3500</b> |                                  | Mean Annual Temp. °F<br><b>60°</b>               |                                | Baro. Press. - P <sub>a</sub><br><b>13.2</b> |                        | State<br><b>New Mexico</b>                         |                   |
| L<br><b>3619'</b>                                                                                                                        | H<br><b>3619'</b>  | Gg<br><b>0.695</b>                     | % CO <sub>2</sub><br><b>3.24</b> | % N <sub>2</sub><br><b>1.52</b>                  | % H <sub>2</sub> S<br><b>-</b> | Prover                                       | Meter Run<br><b>4"</b> | Taps<br><b>Pipe</b>                                |                   |

  

| 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        |                  |   |              |                 |                      |          | 311.1           |          | Packer          |           | 20 Days          |
| 1.        | 4" X 1.00        |   |              | 133             | 0.5                  | 79       | 245.5           | 81       |                 |           | 1.5 Hrs.         |
| 2.        | 4" X 1.00        |   |              | 131.8           | 1.5                  | 82       | 232.5           | 81       |                 |           | 1.5 Hrs.         |
| 3.        | 4" X 1.00        |   |              | 133.8           | 2.8                  | 84       | 219.0           | 81       |                 |           | 1.5 Hrs.         |
| 4.        | 4" X 1.00        |   |              | 144             | 5.0                  | 87       | 201.5           | 81       |                 |           | 1.5 Hrs.         |
| 5.        | 4" X 1.00        |   |              | 143             | 13.5                 | 74       | 148.0           | 81       |                 | WIDE OPEN |                  |

  

| RATE OF FLOW CALCULATIONS |                       |                  |                         |                       |                   |                             |                      |
|---------------------------|-----------------------|------------------|-------------------------|-----------------------|-------------------|-----------------------------|----------------------|
| NO.                       | Coefficient (24 Hour) | $\sqrt{h_w P_m}$ | Pressure P <sub>m</sub> | Flow Temp. Factor Ft. | Gravity Factor Fg | Super Compress. Factor, Fpv | Rate of Flow Q, Mcfd |
| 1                         | 4.939                 | 8.55             | 146.2                   | 0.9822                | 1.200             | 1.013                       | 50.42                |
| 2                         | 4.939                 | 14.75            | 145                     | 0.9795                | 1.200             | 1.013                       | 86.73                |
| 3                         | 4.939                 | 20.29            | 147                     | 0.9777                | 1.200             | 1.013                       | 118.74               |
| 4                         | 4.939                 | 28.04            | 157.2                   | 0.9750                | 1.200             | 1.014                       | 164.28               |
| 5                         | 4.939                 | 45.92            | 156.2                   | 0.9868                | 1.200             | 1.015                       | 272.60               |

  

| NO. | P <sub>t</sub> | Temp. °R | T <sub>t</sub> | Z    | Gas Liquid Hydrocarbon Ratio _____ Mcf/bbl.         |  |
|-----|----------------|----------|----------------|------|-----------------------------------------------------|--|
| 1   | .215           | 539      | 1.42           | .974 | A.P.I. Gravity of Liquid Hydrocarbons _____ Deg.    |  |
| 2   | .213           | 542      | 1.43           | .975 | Specific Gravity Separator Gas .695 X X X X X X X X |  |
| 3   | .216           | 544      | 1.43           | .974 | Specific Gravity Flowing Fluid X X X X X            |  |
| 4   | .231           | 547      | 1.44           | .973 | Critical Pressure 679.5 P.S.I.A. _____ P.S.I.A.     |  |
| 5   | .229           | 534      | 1.40           | .970 | Critical Temperature 380.25 R _____ R               |  |

  

| NO. | P <sub>t</sub> <sup>2</sup> | P <sub>w</sub> | P <sub>w</sub> <sup>2</sup> | P <sub>c</sub> <sup>2</sup> - P <sub>w</sub> <sup>2</sup> |
|-----|-----------------------------|----------------|-----------------------------|-----------------------------------------------------------|
| 1   | 66.93                       |                | 66.97                       | 38.23                                                     |
| 2   | 60.37                       |                | 60.49                       | 44.71                                                     |
| 3   | 53.92                       |                | 54.14                       | 51.06                                                     |
| 4   | 46.10                       |                | 46.52                       | 58.68                                                     |
| 5   | 25.99                       |                | 27.15                       | 78.05                                                     |

P<sub>c</sub> 324.3    P<sub>c</sub><sup>2</sup> 105.2

(1)  $\frac{P_c^2}{P_c^2 - P_w^2} = \frac{105.2}{78.05}$       (2)  $\left[ \frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 1.35$

AOF = Q  $\left[ \frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 368$

  

|                                             |                                    |                   |
|---------------------------------------------|------------------------------------|-------------------|
| Absolute Open Flow <b>368</b> Mcfd @ 15.025 | Angle of Slope $\theta$ <b>45°</b> | Slope, n <b>1</b> |
|---------------------------------------------|------------------------------------|-------------------|

Remarks: **n of dotted line is greater than 1. Used n = 1**

  

|                         |                                                  |                                       |                                        |
|-------------------------|--------------------------------------------------|---------------------------------------|----------------------------------------|
| Approved By Commission: | Conducted By:<br><b>Hamen &amp; Welsch (NNG)</b> | Calculated By:<br><b>Dave Johnson</b> | Checked By:<br><b>J. A. Dettterick</b> |
|-------------------------|--------------------------------------------------|---------------------------------------|----------------------------------------|