

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

Form C-122  
Revised 9-1-65

|                                                                                                                        |            |                                   |                          |                                     |                         |                                       |                 |                                    |  |
|------------------------------------------------------------------------------------------------------------------------|------------|-----------------------------------|--------------------------|-------------------------------------|-------------------------|---------------------------------------|-----------------|------------------------------------|--|
| Type Test <input checked="" type="checkbox"/> Initial <input type="checkbox"/> Annual <input type="checkbox"/> Special |            |                                   |                          |                                     |                         | Test Date<br>1-11-82                  |                 |                                    |  |
| Company<br>ARCO Oil and Gas Company                                                                                    |            |                                   |                          | Connection                          |                         |                                       |                 |                                    |  |
| Pool<br>Undesignated                                                                                                   |            |                                   |                          | Formation<br>Devonian               |                         |                                       |                 | Unit                               |  |
| Completion Date<br>1-7-82                                                                                              |            | Total Depth<br>12964              |                          | Plug Back TD<br>9594                |                         | Elevation<br>3239.1' GR               |                 | Farm or Lease Name<br>Custer Wells |  |
| Csg. Size<br>7"                                                                                                        | Wt.<br>26  | d<br>6.276                        | Set At<br>12651          | Perforations:<br>From 9435 To 9482  |                         | Well No.<br>1                         |                 |                                    |  |
| Tbg. Size<br>2.875                                                                                                     | Wt.<br>6.5 | d<br>2.441                        | Set At<br>9412           | Perforations:<br>From Open To Ended |                         | Unit Sec. Twp. Rge.<br>F 6 25S 37E    |                 |                                    |  |
| Type Well - Single - Bradenhead - G.G. or G.O. Multiple<br>Single                                                      |            |                                   |                          |                                     |                         | Packer Set At<br>9381                 |                 | County<br>Lea                      |  |
| Producing Thru<br>Tbg.                                                                                                 |            | Reservoir Temp. °F<br>145 @ 12620 |                          | Mean Annual Temp. °F<br>60          |                         | Baro. Press. - P <sub>a</sub><br>13.2 |                 | State<br>New Mexico                |  |
| L<br>9412                                                                                                              | H<br>9412  | Gg<br>.7334                       | % CO <sub>2</sub><br>.87 | % N <sub>2</sub><br>.85             | % H <sub>2</sub> S<br>0 | Prover                                | Meter Run<br>4" | Taps<br>Flg.                       |  |

  

| 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        |                  |   |              |                 |                      |             | 2335            |             | Pkr.            |                  | 91.5 Hrs. |
| 1.        | 4 x 2.250        |   |              | 380             | 15.0                 | 116         | 2258            | 55          | Pkr.            |                  | 1 Hr.     |
| 2.        | 4 x 2.250        |   |              | 378             | 40.0                 | 99          | 2198            | 56          | Pkr.            |                  | 1 Hr.     |
| 3.        | 4 x 2.250        |   |              | 500             | 70.0                 | 80          | 2102            | 59          | Pkr.            |                  | 1 Hr.     |
| 4.        | 4 x 2.250        |   |              | 755             | 86.0                 | 83          | 1840            | 50          | Pkr.            |                  | 1 Hr.     |
| 5.        |                  |   |              |                 |                      |             |                 |             |                 |                  |           |

  

| 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, F <sub>pv</sub> | Rate of Flow Q, Mcfd |
| 1                         | 25.64                 | 76.80            | 393.2                   | .9501                | 1.168             | 1.036                                   | 2263.9               |
| 2                         | 25.64                 | 125.09           | 391.2                   | .9645                | 1.168             | 1.039                                   | 3754.1               |
| 3                         | 25.64                 | 189.53           | 513.2                   | .9813                | 1.168             | 1.060                                   | 5904.0               |
| 4                         | 25.64                 | 241.62           | 768.2                   | .9786                | 1.168             | 1.088                                   | 7704.2               |
| 5                         |                       |                  |                         |                      |                   |                                         |                      |

  

|     |                |          |                |      |                                                                 |
|-----|----------------|----------|----------------|------|-----------------------------------------------------------------|
| NO. | P <sub>r</sub> | Temp. °R | T <sub>r</sub> | Z    | Gas Liquid Hydrocarbon Ratio _____ 9.5 _____ Mcf/bbl.           |
| 1.  | .59            | 576      | 1.45           | .932 | A.P.I. Gravity of Liquid Hydrocarbons _____ 59 @ 60° _____ Deg. |
| 2.  | .58            | 559      | 1.41           | .927 | Specific Gravity Separator Gas _____ X X X X X X X X            |
| 3.  | .76            | 540      | 1.36           | .890 | Specific Gravity Flowing Fluid _____ X X X X X                  |
| 4.  | 1.14           | 543      | 1.37           | .845 | Critical Pressure _____ 671 _____ P.S.I.A. _____ P.S.I.A.       |
| 5.  |                |          |                |      | Critical Temperature _____ 397 _____ R _____ R                  |

  

|                                                             |                             |                  |                             |                                                           |
|-------------------------------------------------------------|-----------------------------|------------------|-----------------------------|-----------------------------------------------------------|
| * P <sub>c</sub> 3196.2 P <sub>c</sub> <sup>2</sup> 10215.7 |                             |                  |                             |                                                           |
| NO.                                                         | P <sub>r</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                                                           |                             | 3155.2           | 9955.3                      | 260.4                                                     |
| 2                                                           |                             | 3102.2           | 9623.6                      | 592.1                                                     |
| 3                                                           |                             | 3010.2           | 9061.3                      | 1154.4                                                    |
| 4                                                           |                             | 2894.2           | 8376.4                      | 1839.3                                                    |
| 5                                                           |                             |                  |                             |                                                           |

$$(1) \frac{P_c^2}{P_c^2 - P_w^2} = 5.554 \quad (2) \left[ \frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 3.100$$

$$AOF = Q \left[ \frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 23,887.7$$

  

|                                                       |  |                                  |                     |
|-------------------------------------------------------|--|----------------------------------|---------------------|
| Absolute Open Flow _____ 23,887.7 _____ Mcfd @ 15.025 |  | Angle of Slope @ _____ 56° 34.5' | Slope, n _____ .660 |
|-------------------------------------------------------|--|----------------------------------|---------------------|

  

Remarks: \*BHP at mid-point of perforations 9458  
via bottom hole pressure bomb. Prod. 86 BO and 10 BW.

  

|                         |                                |                                    |                             |
|-------------------------|--------------------------------|------------------------------------|-----------------------------|
| Approved By Commission: | Conducted By:<br>J. D. Cogburn | Calculated By:<br>T.D. McCallister | Checked By:<br>J. V. Curfew |
|-------------------------|--------------------------------|------------------------------------|-----------------------------|