

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

Form C-122  
Revised 9-1-65

**RECEIVED**

|                                                                                                                        |  |                                  |  |                            |  |                                       |  |
|------------------------------------------------------------------------------------------------------------------------|--|----------------------------------|--|----------------------------|--|---------------------------------------|--|
| Type Test <input checked="" type="checkbox"/> Initial <input type="checkbox"/> Annual <input type="checkbox"/> Special |  |                                  |  | Test Date<br>9-2-81        |  | SEP 21 1981                           |  |
| Company<br>Mesa Petroleum Co.                                                                                          |  |                                  |  | Connection<br>Unconnected  |  | Unit<br>O. C. D.                      |  |
| Pool<br>Undesignated Abo                                                                                               |  |                                  |  | Formation<br>ABO           |  | Unit<br>ARTESIA, OFFICE               |  |
| Completion Date<br>9-2-81                                                                                              |  | Total Depth<br>4200'             |  | Plug Back TD<br>4161'      |  | Elevation<br>3795                     |  |
| Csg. Size<br>4 1/2                                                                                                     |  | Wt.<br>10.5#                     |  | Set At<br>4200             |  | Perforations:<br>From 3476 To 3737    |  |
| Thq. Size<br>2 3/8                                                                                                     |  | Wt.<br>4.7#                      |  | Set At<br>3387             |  | Perforations:<br>From Open Ended      |  |
| Type Well - Single - Bradenhead - G.G. or G.O. Multiple<br>Single                                                      |  |                                  |  | Packer Set At<br>None      |  | County<br>Chaves                      |  |
| Producing Thru<br>Tubing                                                                                               |  | Reservoir Temp. °F<br>103°@ 4200 |  | Mean Annual Temp. °F<br>60 |  | Baro. Press. - P <sub>a</sub><br>13.2 |  |
| L<br>3387                                                                                                              |  | H<br>3387                        |  | G <sub>g</sub><br>.65      |  | % CO <sub>2</sub><br>1                |  |
|                                                                                                                        |  |                                  |  | % N <sub>2</sub><br>2      |  | % H <sub>2</sub> S<br>choke           |  |
| Prover<br>choke                                                                                                        |  |                                  |  | Meter Run                  |  | Taps                                  |  |

| 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        |                  |   |              |                 |                      |             | 880             |             | 820             |                  | 72 hr. SI |
| 1.        | Choke            |   | 16/64        | 845             |                      | 75          | 845             | 75          | 785             |                  | 1 hr.     |
| 2.        | Coeff.           |   | 20/64        | 760             |                      | 78          | 760             | 78          | 720             |                  | 1 hr.     |
| 3.        |                  |   | 24/64        | 640             |                      | 82          | 640             | 82          | 630             |                  | 1 hr.     |
| 4.        |                  |   | 28/64        | 500             |                      | 84          | 500             | 84          | 580             |                  | 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 F <sub>g</sub> | Super Compress. Factor, F <sub>pv</sub> | Rate of Flow Q, Mcfd |
| 1                         | 1.050                 | Choke            | 858                     | .9859                 | 1.240                         |                                         | 1101                 |
| 2                         | 1.645                 | Choke            | 773                     | .9831                 | 1.240                         |                                         | 1550                 |
| 3                         | 2.388                 | Choke            | 653                     | .9795                 | 1.240                         |                                         | 1894                 |
| 4                         | 3.231                 | Choke            | 513                     | .9777                 | 1.240                         |                                         | 2009                 |
| 5                         |                       |                  |                         |                       |                               |                                         |                      |

|     |                |          |                |   |                                                      |
|-----|----------------|----------|----------------|---|------------------------------------------------------|
| NO. | P <sub>r</sub> | Temp. °R | T <sub>r</sub> | Z | Gas-Liquid Hydrocarbon Ratio _____ Mcf/bbl.          |
| 1.  |                |          |                |   | A.P.I. Gravity of Liquid Hydrocarbons _____ Deg.     |
| 2.  |                |          |                |   | Specific Gravity Separator Gas _____ X X X X X X X X |
| 3.  |                |          |                |   | Specific Gravity Flowing Fluid _____ X X X X X       |
| 4.  |                |          |                |   | Critical Pressure _____ P.S.I.A. _____ P.S.I.A.      |
| 5.  |                |          |                |   | Critical Temperature _____ R _____ R                 |

|                    |                                 |                                            |                                                             |
|--------------------|---------------------------------|--------------------------------------------|-------------------------------------------------------------|
| P <sub>c</sub> 833 | P <sub>c</sub> <sup>2</sup> 694 | (1) $\frac{P_c^2}{P_c^2 - P_w^2} = 2.0292$ | (2) $\left[ \frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 1.4245$ |
| NO.                | P <sub>r</sub> <sup>2</sup>     | P <sub>w</sub> <sup>2</sup>                | P <sub>c</sub> <sup>2</sup> - P <sub>w</sub> <sup>2</sup>   |
| 1                  |                                 | 798                                        | 637                                                         |
| 2                  |                                 | 733                                        | 537                                                         |
| 3                  |                                 | 643                                        | 413                                                         |
| 4                  |                                 | 593                                        | 352                                                         |
| 5                  |                                 |                                            |                                                             |

|                                        |  |                        |             |
|----------------------------------------|--|------------------------|-------------|
| Absolute Open Flow 2,900 Mcfd @ 15.025 |  | Angle of Slope @ 63.5° | Slope, n .5 |
|----------------------------------------|--|------------------------|-------------|

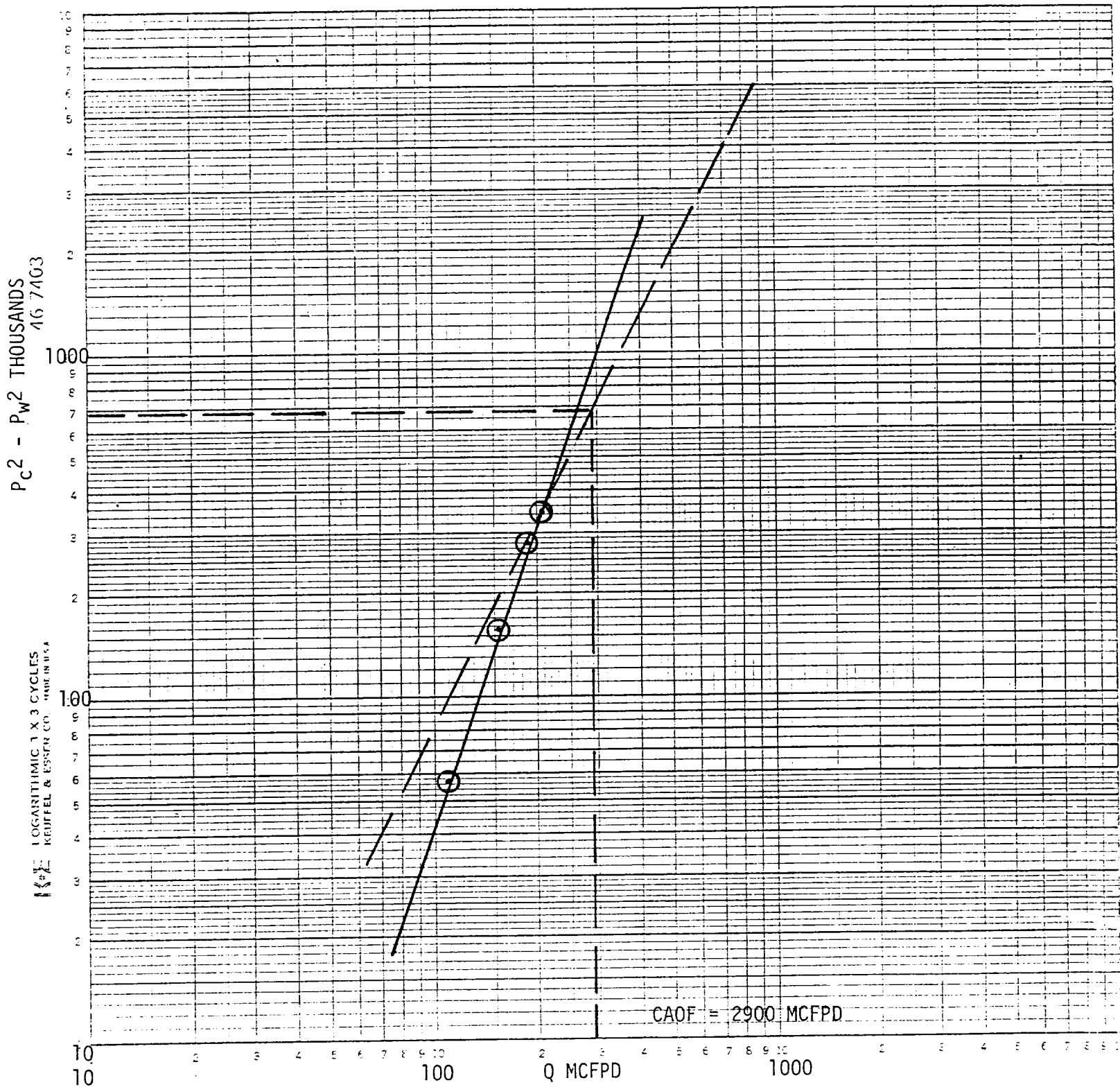
  

Remarks: Plot of P<sub>c</sub><sup>2</sup> - P<sub>w</sub><sup>2</sup> vs. Q yielded a straight line with a θ greater than 63.5°  
Drew 63.5° line through highest point.

|                         |                           |                                   |             |
|-------------------------|---------------------------|-----------------------------------|-------------|
| Approved By Commission: | Conducted By: JAMES CRATO | Calculated By: E. I. RUTTDROSS JR | Checked By: |
|-------------------------|---------------------------|-----------------------------------|-------------|

MES. PETROLEUM CO.  
 RIC NO. 2  
 SEC 29, T6S, R25E  
 CHAVES CO., NM  
 9-2-81



ASSUMED  $\theta = 63.5^\circ$  AND  $n = .5$ . ACTUAL  $\theta$  GREATER THAN  $63.5^\circ$