

## OIL CONSERVATION DIVISION

STATE OF NEW MEXICO  
ENERGY AND MINERALS DEPARTMENTP. O. BOX 2088  
SANTA FE, NEW MEXICO 87501RECEIVED BY-122  
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File

## MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL NOV 20 1985

|                                                                                                                           |             |                                    |                            |                                       |                                                                   |
|---------------------------------------------------------------------------------------------------------------------------|-------------|------------------------------------|----------------------------|---------------------------------------|-------------------------------------------------------------------|
| Type Test<br><input checked="" type="checkbox"/> Initial <input type="checkbox"/> Annual <input type="checkbox"/> Special |             | Test Date<br>11/13/85              |                            | O. C. D.<br>ARTESIA, OFFICE           |                                                                   |
| Company<br>H.N.G. OIL COMPANY ✓                                                                                           |             |                                    | Connection<br>NONE         |                                       |                                                                   |
| Pool<br>Und. Salt Draw <i>Atoka</i>                                                                                       |             |                                    | Formation<br>Atoka         |                                       | Unit                                                              |
| Completion Date<br>6/27/85                                                                                                |             | Total Depth<br>13,400              | Plug Back TD<br>12,450     | Elevation<br>2989.9' GR               | Farm or Lease Name<br>SALT DRAW 2 COM.                            |
| Ceq. Size<br>7                                                                                                            | Wl.<br>23   | d<br>6.366                         | Set At<br>10,815'          | Perforations:<br>From 12057 To 12079  | Well No.<br>1                                                     |
| Thg. Size<br>2 3/8                                                                                                        | Wl.<br>4.7  | d<br>1.995                         | Set At<br>10,472           | Perforations:<br>From OPEN To END     | Unit Sec. Twp. Rye.<br>E 2 25S 28E                                |
| Type Well - Single - Bradenhead - G.G. or G.O. Multiple<br>SINGLE                                                         |             |                                    |                            | Packer Set At<br>10,472               | County<br>EDDY                                                    |
| Producing Thru<br>Tbg.                                                                                                    |             | Reservoir Temp. °F<br>195 @ 12,068 | Mean Annual Temp. °F<br>60 | Baro. Press. - P <sub>a</sub><br>13.2 | State<br>N. MEX.                                                  |
| L<br>12,068                                                                                                               | H<br>12,068 | G <sub>g</sub><br>.580             | % CO <sub>2</sub><br>.585  | % N <sub>2</sub><br>.735              | % H <sub>2</sub> S<br>Prover<br>Meter Run<br>3.00<br>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        |                  |   |              |                 |                      |             | 1000            |             |                 |                  |          |
| 1.        | 3.068 x .875     |   |              | 590             | 3                    | 84          | 900             |             |                 |                  | 1 Hr.    |
| 2.        | 3.068 x .875     |   |              | 600             | 7                    | 104         | 860             |             |                 |                  | 1 Hr.    |
| 3.        | 3.068 x .875     |   |              | 590             | 15                   | 103         | 795             |             |                 |                  | 1 Hr.    |
| 4.        | 3.068 x .875     |   |              | 590             | 26                   | 98          | 690             |             |                 |                  | 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, Mc/d |
| 1                         | 3.650                 | 42.54            | 603.2                   | .9777                 | 1.313                         | 1.042                                   | 208                  |
| 2.                        | 3.650                 | 65.52            | 613.2                   | .9602                 | 1.313                         | 1.036                                   | 312                  |
| 3.                        | 3.650                 | 95.12            | 603.2                   | .9610                 | 1.313                         | 1.035                                   | 453                  |
| 4.                        | 3.650                 | 125.23           | 603.2                   | .9653                 | 1.313                         | 1.038                                   | 601                  |
| 5.                        |                       |                  |                         |                       |                               |                                         |                      |

| NO. | P <sub>r</sub> | Temp. °R | T <sub>r</sub> | Z    | Gas Liquid Hydrocarbon Ratio          | Mcf/bbl.     |
|-----|----------------|----------|----------------|------|---------------------------------------|--------------|
| 1.  | .90            | 544      | 1.55           | .921 | - DRY -                               |              |
| 2.  | .91            | 564      | 1.61           | .932 | A.P.I. Gravity of Liquid Hydrocarbons |              |
| 3.  | .90            | 563      | 1.61           | .933 | Specific Gravity Separator Gas .580   | XXXXXXXXXXXX |
| 4.  | .90            | 558      | 1.59           | .928 | Specific Gravity Flowing Fluid XXXXX  |              |
| 5.  |                |          |                |      | Critical Pressure 672 P.S.I.A.        | P.S.I.A.     |
|     |                |          |                |      | Critical Temperature 350 R            | R            |

| NO. | P <sub>i</sub> <sup>2</sup> | P <sub>w</sub> | P <sub>w</sub> <sup>2</sup> | P <sub>i</sub> <sup>2</sup> - P <sub>w</sub> <sup>2</sup> |
|-----|-----------------------------|----------------|-----------------------------|-----------------------------------------------------------|
| 1   | 1034.7                      | 932.5          | 869.6                       | 201.0                                                     |
| 2   | 1070.6                      | 890.3          | 792.6                       | 278.0                                                     |
| 3   |                             | 825.6          | 681.6                       | 389.0                                                     |
| 4   |                             | 752.0          | 565.5                       | 505.1                                                     |
| 5   |                             |                |                             |                                                           |

(1)  $\frac{P_i^2}{P_i^2 - P_w^2} = 2.1196$  (2)  $\left[ \frac{P_i^2}{P_i^2 - P_w^2} \right]^n = 2.1196$

AOF = Q  $\left[ \frac{P_i^2}{P_i^2 - P_w^2} \right]^n = 1.274$

|                    |       |                |                |     |          |      |
|--------------------|-------|----------------|----------------|-----|----------|------|
| Absolute Open Flow | 1,274 | Mcf/d @ 15.025 | Angle of Slope | 45° | Slope, n | 1.00 |
|--------------------|-------|----------------|----------------|-----|----------|------|

Remarks: P<sub>c</sub> and P<sub>w</sub> were calculated from known B.H.P. Well made no fluid during test.

|                      |                                      |                             |                                                                      |
|----------------------|--------------------------------------|-----------------------------|----------------------------------------------------------------------|
| Approved By Division | Conducted By:<br>DUKE SERVICES, INC. | Calculated By:<br>R. RESTON | Checked By:<br><i>Betty Sildon</i><br>H.N.G. Oil Company<br>11/19/85 |
|----------------------|--------------------------------------|-----------------------------|----------------------------------------------------------------------|