

N MEXICO OIL CONSERVATION COMM. ON  
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>8-26-69                  |                 |                                    |  |
| Company<br>Union Oil Co. of California                                                                                 |             |                                  |                           | Connection<br>None                   |                            |                                       |                 |                                    |  |
| Pool<br>Undesignated                                                                                                   |             |                                  |                           | Formation<br>San Andres              |                            |                                       |                 | Unit                               |  |
| Completion Date<br>8-26-69                                                                                             |             | Total Depth<br>4774'             |                           | Plug Back TD<br>4756'                |                            | Elevation<br>3976'                    |                 | Farm or Lease Name<br>Federal "18" |  |
| Csq. Size<br>4-1/2"                                                                                                    | Wt.<br>9.50 | d<br>4.090                       | Set At<br>4774'           | Perforations:<br>From 4718' To 4746' |                            | Well No.<br>2                         |                 |                                    |  |
| Tbg. Size<br>2-3/8"                                                                                                    | Wt.<br>4.7  | d<br>1.995                       | Set At<br>4624'           | Perforations:<br>From To             |                            | Unit Soc. Twp. Rge.<br>P 18 8-S 38-E  |                 |                                    |  |
| Type Well - Single - Bradenhead - G.G. or G.O. Multiple<br>Single                                                      |             |                                  |                           |                                      |                            | Packer Set At<br>4617'                |                 | County<br>Roosevelt                |  |
| Producing Thru<br>Tubing                                                                                               |             | Reservoir Temp. °F<br>108 @ 4732 |                           | Mean Annual Temp. °F<br>60           |                            | Baro. Press. - P <sub>g</sub><br>13.2 |                 | State<br>New Mexico                |  |
| L<br>4732                                                                                                              | H<br>4732   | G <sub>g</sub><br>0.802          | % CO <sub>2</sub><br>9.05 | % N <sub>2</sub><br>10.25            | % H <sub>2</sub> S<br>1.03 | 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        |                  |   |              |                 |                      |             | 1315.0          |             |                 |                  | 72 hr.   |
| 1.        | 4 x 2.500        |   |              | 292             | 4.1                  | 100         | 1247.0          | 78          | Pkr.            |                  | 1        |
| 2.        | 4 x 2.500        |   |              | 294             | 7.9                  | 104         | 1190.0          | 78          |                 |                  | 1        |
| 3.        | 4 x 2.500        |   |              | 293             | 26.1                 | 106         | 950.0           | 79          |                 |                  | 1        |
| 4.        | 4 x 2.500        |   |              | 295             | 36.0                 | 104         | 800.00          | 80          |                 |                  | 1        |
| 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                         | 32.64                 | 35.3             | 305.2                   | .9636                 | 1.1180                        | 1.027                                   | 1,270                |
| 2                         | 32.64                 | 49.2             | 307.2                   | .9602                 | 1.1180                        | 1.024                                   | 1,760                |
| 3                         | 32.64                 | 89.4             | 306.2                   | .9585                 | 1.1180                        | 1.024                                   | 3,210                |
| 4                         | 32.64                 | 107.0            | 318.2                   | .9602                 | 1.1180                        | 1.024                                   | 3,850                |
| 5                         |                       |                  |                         |                       |                               |                                         |                      |

|     |                |          |                |      |                                       |              |
|-----|----------------|----------|----------------|------|---------------------------------------|--------------|
| NO. | P <sub>r</sub> | Temp. °R | T <sub>r</sub> | Z    | Gas Liquid Hydrocarbon Ratio TSTM     | Mcf/bbl.     |
| 1   | .444           | 560      | 1.47           | .949 | A.P.I. Gravity of Liquid Hydrocarbons | Deg.         |
| 2   | .416           | 564      | 1.48           | .954 | Specific Gravity Separator Gas        | .802         |
| 3   | .446           | 566      | 1.49           | .954 | Specific Gravity Flowing Fluid        | X X X X X    |
| 4   | .448           | 564      | 1.48           | .954 | Critical Pressure                     | 687 P.S.I.A. |
| 5   |                |          |                |      | Critical Temperature                  | 380 R        |

|                                             |                             |                |                             |                                                           |  |                                                            |  |
|---------------------------------------------|-----------------------------|----------------|-----------------------------|-----------------------------------------------------------|--|------------------------------------------------------------|--|
| P <sub>c</sub> 1328.2 P <sub>w</sub> 1762.0 |                             |                |                             | (1) $\frac{P_c^2}{P_c^2 - P_w^2} = 2.75$                  |  | (2) $\left[ \frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 1.977$ |  |
| NO.                                         | P <sub>i</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                                           | 1587.6                      |                | 1614.9                      | 147.1                                                     |  |                                                            |  |
| 2                                           | 1447.7                      |                | 1500.5                      | 261.5                                                     |  |                                                            |  |
| 3                                           | 927.8                       |                | 1121.2                      | 640.8                                                     |  |                                                            |  |
| 4                                           | 661.3                       |                | 944.8                       | 817.2                                                     |  |                                                            |  |
| 5                                           |                             |                |                             |                                                           |  |                                                            |  |

|                                        |  |  |  |                  |  |                 |  |
|----------------------------------------|--|--|--|------------------|--|-----------------|--|
| Absolute Open Flow 6,340 Mcfd @ 15.025 |  |  |  | Angle of Slope θ |  | Slope, n .67466 |  |
|----------------------------------------|--|--|--|------------------|--|-----------------|--|

|          |  |  |  |
|----------|--|--|--|
| Remarks: |  |  |  |
|----------|--|--|--|

|                                               |                               |                                |             |
|-----------------------------------------------|-------------------------------|--------------------------------|-------------|
| Approved By Commission:<br><i>[Signature]</i> | Conducted By:<br>J. L. Pharis | Calculated By:<br>T. L. Burger | Checked By: |
|-----------------------------------------------|-------------------------------|--------------------------------|-------------|

C-1225  
Adopted 9-1-55

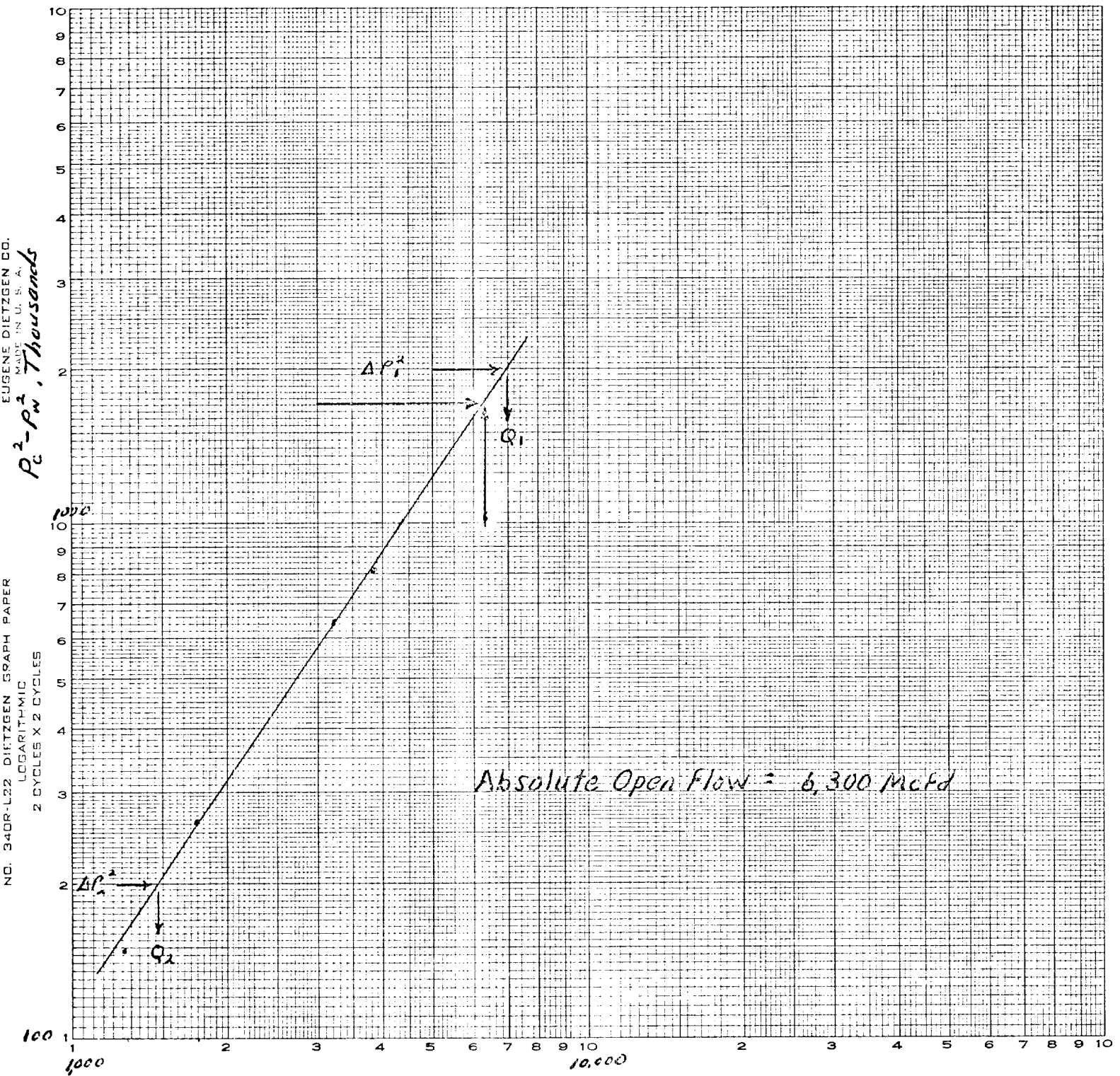
LOCATION: Unit \_\_\_\_\_ Section 18 Township 22 Range 2

|   |      |   |      |     |  |                   |       |                  |       |                    |      |
|---|------|---|------|-----|--|-------------------|-------|------------------|-------|--------------------|------|
| L | 4732 | H | 4732 | L/H |  | % CO <sub>2</sub> | 47.65 | % N <sub>2</sub> | 10.25 | % H <sub>2</sub> S | 65.9 |
|---|------|---|------|-----|--|-------------------|-------|------------------|-------|--------------------|------|

|              |              |                              |                |                           |                           |
|--------------|--------------|------------------------------|----------------|---------------------------|---------------------------|
| d            | <u>1.985</u> | <u>F<sub>r</sub> 0.00031</u> | <u>GH 3290</u> | <u>P<sub>cr</sub> 687</u> | <u>T<sub>cr</sub> 180</u> |
| TABLE IX & X |              |                              |                |                           |                           |
| TABLE IX & X |              |                              |                |                           |                           |

[illegible]

Union Oil Company of California  
 Federal 18-#2  
 Unit P, Sec. 18, T-8-S, R 38 E  
 Roosevelt County New Mexico  
 August 26 1969



$$\overline{\Delta P}_1^2, P_e^2 - P_w^2 = 2000$$

$$\overline{\Delta P}_2^2, P_e^2 - P_w^2 = 200$$

$$Q_1 = 6950$$

$$\log Q_1 = 3.87466$$

$$\log Q_2 = 3.16732$$

$$n = .67466 = 0.675$$