

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><input checked="" type="checkbox"/> Initial <input type="checkbox"/> Annual <input type="checkbox"/> Special |              |                                  |                            |                                  | Test Date<br>12-15-75       |                                       |
| Company<br>Charles W. Hicks                                                                                               |              |                                  |                            | Connection<br>To Air             |                             |                                       |
| Pool<br>Double L Queen Assoc.                                                                                             |              |                                  |                            | Formation<br>Queen               |                             | Unit                                  |
| Completion Date<br>12-15-75                                                                                               |              | Total Depth<br>2159'             |                            | Plug Back TD                     |                             | Elevation<br>3922                     |
| Farm or Lease Name<br>Amerada-Hess Federal                                                                                |              | Well No.<br>1                    |                            |                                  |                             |                                       |
| Csg. Size<br>4 1/2"                                                                                                       | Wt.<br>11.6# | d<br>4.000"                      | Set At<br>2124'            | open hole<br>From 2126' To 2153' |                             |                                       |
| Tbg. Size<br>2 3/8"                                                                                                       | Wt.<br>4.7"  | d<br>1.995"                      | Set At<br>2115'            | Perforations:<br>From Open Ended |                             | Unit Soc. Twp. Rge.<br>M 33 14S 30E   |
| Type Well - Single - Brdenhead - G.G. or G.O. Multiple<br>Single                                                          |              |                                  |                            | Packer Set At<br>2070'           |                             | County<br>Chaves                      |
| Producing Thru<br>Tubing                                                                                                  |              | Reservoir Temp. °F<br>79 @ 2140' |                            | Mean Annual Temp. °F<br>60       |                             | Baro. Press. - P <sub>a</sub><br>13.2 |
| State<br>New Mexico                                                                                                       |              |                                  |                            |                                  |                             |                                       |
| L<br>2115                                                                                                                 | H<br>2115    | G <sub>g</sub><br>0.8947         | % CO <sub>2</sub><br>0.337 | % N <sub>2</sub><br>61.798       | % H <sub>2</sub> S<br>----- | Prover<br>-----                       |
|                                                                                                                           |              |                                  |                            |                                  | Meter Run<br>Positive       | Taps<br>Chokes                        |

| 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        | Positive Chokes  |   |              |                 |                      |             | 550.0           |             | Packer          |                  | 72 Hrs.  |
| 1.        | 8/64             |   |              | 540.0           | -                    | 56          | 540.0           | 56          |                 |                  | 30 min   |
| 2.        | 10/64            |   |              | 531.0           | -                    | 58          | 531.0           | 58          |                 |                  | 30 min   |
| 3.        | 12/64            |   |              | 522.0           | -                    | 59          | 522.0           | 59          |                 |                  | 30 min   |
| 4.        | 14/64            |   |              | 510.0           | -                    | 60          | 510.0           | 60          |                 |                  | 30 min   |
| 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, Fpv | Rate of Flow Q, Mcfd |
| 1                         | .2618                 | -                | 553.2                   | 1.004                 | 1.057             | 1.023                        | 157.2                |
| 2                         | .4173                 | -                | 544.2                   | 1.002                 | 1.057             | 1.023                        | 246.1                |
| 3                         | .6101                 | -                | 535.2                   | 1.001                 | 1.057             | 1.022                        | 353.1                |
| 4                         | .8419                 | -                | 523.2                   | 1.000                 | 1.057             | 1.022                        | 475.8                |
| 5                         |                       |                  |                         |                       |                   |                              |                      |

|     |                |          |                |      | TSTM                         |                                       | Mcf/bbl.        |
|-----|----------------|----------|----------------|------|------------------------------|---------------------------------------|-----------------|
| NO. | P <sub>f</sub> | Temp. °R | T <sub>f</sub> | Z    | Gas Liquid Hydrocarbon Ratio | A.P.I. Gravity of Liquid Hydrocarbons | Deq.            |
| 1.  | 0.99           | 516      | 1.81           | .955 |                              | 0.8974                                | X X X X X X X X |
| 2.  | 0.98           | 518      | 1.82           | .956 |                              |                                       |                 |
| 3.  | 0.96           | 519      | 1.82           | .957 |                              |                                       |                 |
| 4.  | 0.94           | 520      | 1.82           | .957 |                              |                                       |                 |
| 5.  |                |          |                |      |                              |                                       |                 |

|     |         |       |         |                 | $P_f = 589.2$ $P_s^2 = 347.2$             |                                                            |
|-----|---------|-------|---------|-----------------|-------------------------------------------|------------------------------------------------------------|
| NO. | $P_f^2$ | $P_s$ | $P_s^2$ | $P_f^2 - P_s^2$ | (1) $\frac{P_f^2}{P_f^2 - P_s^2} = 9.460$ | (2) $\left[ \frac{P_f^2}{P_f^2 - P_s^2} \right]^n = 7.322$ |
| 1   | 580.2   | 336.6 | 10.6    |                 |                                           |                                                            |
| 2   | 574.2   | 329.7 | 17.5    |                 |                                           |                                                            |
| 3   | 568.2   | 322.9 | 24.3    |                 |                                           |                                                            |
| 4   | 557.2   | 310.5 | 36.7    |                 |                                           |                                                            |
| 5   |         |       |         |                 |                                           |                                                            |

|                         |  |  |  |  | $ACF = Q \left[ \frac{P_f^2}{P_f^2 - P_s^2} \right]^n = 3484$ |                |
|-------------------------|--|--|--|--|---------------------------------------------------------------|----------------|
| Absolute Open Flow      |  |  |  |  | 3484                                                          | Mcf/d @ 15.025 |
| Angle of Slope $\Theta$ |  |  |  |  | 48.5°                                                         | Slope, n 0.886 |

|                                                                         |  |
|-------------------------------------------------------------------------|--|
| Remarks: Bottom hole pressures measured with Amerada Gauge @ 2140 feet. |  |
| *N <sub>2</sub> factors exceed tables, therefore they are estimated.    |  |

|                                               |                         |                          |                       |
|-----------------------------------------------|-------------------------|--------------------------|-----------------------|
| Approved by Commission:<br><i>[Signature]</i> | Conducted By:<br>G.J.P. | Calculated By:<br>R.L.W. | Checked By:<br>J.W.W. |
|-----------------------------------------------|-------------------------|--------------------------|-----------------------|

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DEC 20 1975

U.S. CONSERVATION COMM.  
HERRING, M. M.

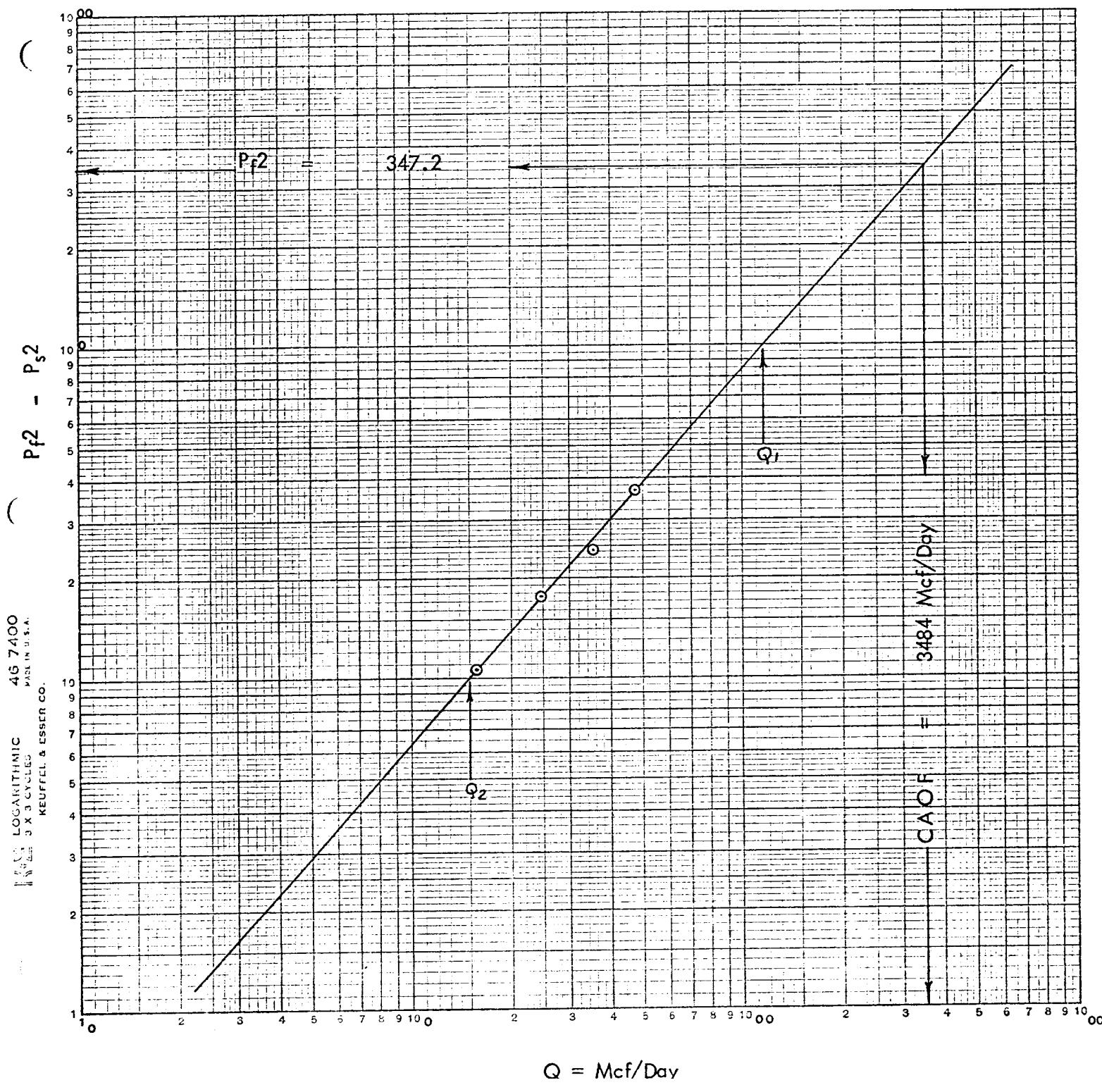
Charles W. Hicks

Amerada-Hess Federal No. 1

Dec. 15, 1975

Abs. Slope (n) =  $Q_1 = 1155 = 7.062582$   
 $Q_2 = 150 = 6.176091$   
 $(n) = 0.886491$

CAOF = 475.8  $\frac{347.2}{36.7}^{.866} = 3484 \text{ Mcf/Day}$



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FEV 22 1978

GE. CONSERVATION COMM.  
HONOLULU

## TIME

11:10 am

12:00 noon

## CUM. HRS./MIN.

00 Hrs.

00

00

00 Min.

15

30

576 Gauge reached 2140 feet

576 Open choke 8/64

567

567 End rate I

561 10/64 choke

561 End rate II

556 12/64 choke

555 End rate III

544 14/64 choke

544 End rate IV, shut-in

573 Gauge out, end test

576 Gauge reached 2140 feet

Test Date:

Test depth:

Element No.:

Range:

Clock No.:

Range:

December 15, 1975

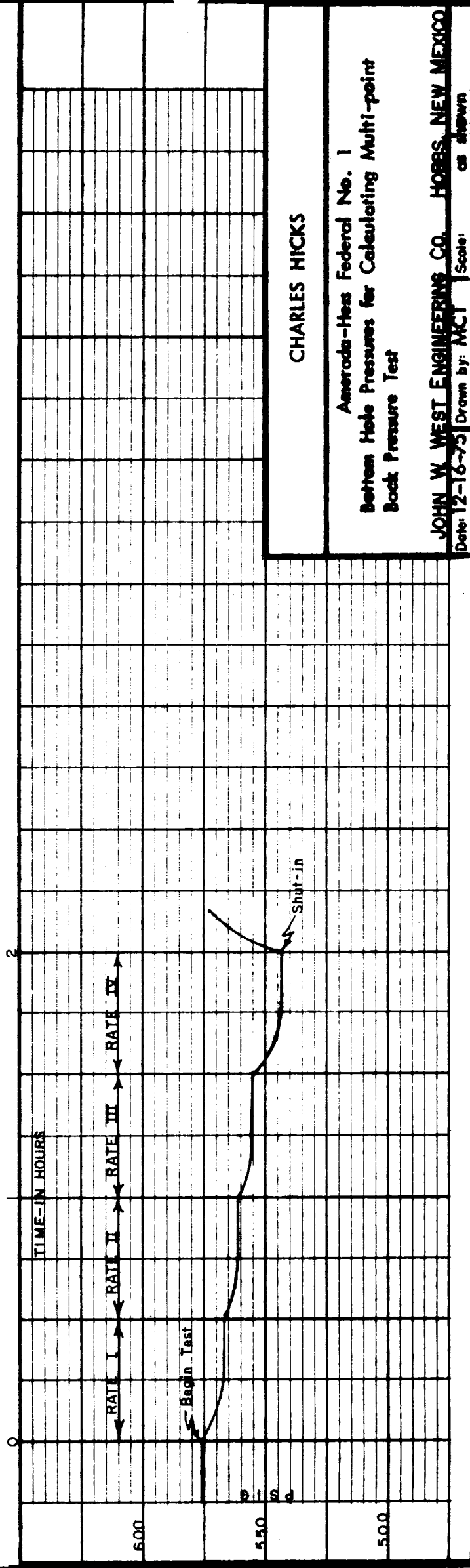
2140 Feet

25549-N

0-1500 psi

11782

0-24 Hour



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DEC 22 1975

OIL CONSERVATION COMM.  
HOURS: 11 A.M.