

## NEW MEXICO OIL CONSERVATION COMMISSION

Form C-122

Revised 12-1-55

## MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool Tubb Formation Tubb County Lea  
Initial X Annual \_\_\_\_\_ Special \_\_\_\_\_ Date of Test 7-21/7-25-58  
Company Continental Oil Company Lease Lockhart B-14 "A" Well No. 2  
Unit P Sec. 14 Twp. 21 Rge. 37 Purchaser El Paso Nat. Gas Company  
Casing 5 1/2" Wt. 17# I.D. 4.892 Set at 7446' Perf. 6163 To 6287'  
Tubing 2" Wt. 4.7# I.D. 1.995 Set at 6180' Perf. \_\_\_\_\_ To \_\_\_\_\_  
Gas Pay: From 6163 To 6287 L 6163 x Mix. 762 GL 4696 Bar. Press. 13.2  
Producing Thru: Casing X Tubing \_\_\_\_\_ Type Well G. O. Dual  
Single-Bradenhead-G. G. or G.O. Dual  
Date of Completion: 1-14-58 Packer 5855' Reservoir Temp. 110°

## OBSERVED DATA

| Flow Data |                                        |                                           |                |                         |              | Tubing Data    |              | Casing Data    |              | Duration<br>of Flow<br>Hr. |
|-----------|----------------------------------------|-------------------------------------------|----------------|-------------------------|--------------|----------------|--------------|----------------|--------------|----------------------------|
| No.       | ( <del>2.643</del> )<br>(Line)<br>Size | ( <del>1.120</del> )<br>(Orifice)<br>Size | Press.<br>psig | Diff.<br>h <sub>w</sub> | Temp.<br>°F. | Press.<br>psig | Temp.<br>°F. | Press.<br>psig | Temp.<br>°F. |                            |
| SI        |                                        |                                           |                |                         |              |                |              | 1783           | PM           | 72                         |
| 1.        | 4"                                     | 1.250                                     | 596            | 1.00                    |              |                |              | 1530           | 77           | 24                         |
| 2.        | 4"                                     | 1.250                                     | 601            | 5.76                    |              |                |              | 1325           | 62           | 24                         |
| 3.        | 4"                                     | 1.250                                     | 590            | 14.44                   |              |                |              | 1081           | 78           | 24                         |
| 4.        | 4"                                     | 1.250                                     | 599            | 19.36                   |              |                |              | 907            | 82           | 24                         |
| 5.        |                                        |                                           |                |                         |              |                |              |                |              |                            |

## FLOW CALCULATIONS

| No. | Coefficient<br>(Flange)<br>(24-Hour) | $\sqrt{h_{wpf}}$ | Pressure<br>psia | Flow Temp.<br>Factor<br>F <sub>t</sub> | Gravity<br>Factor<br>F <sub>g</sub> | Compress.<br>Factor<br>F <sub>pv</sub> | Rate of Flow<br>Q-MCFPD<br>@ 15.025 psia |
|-----|--------------------------------------|------------------|------------------|----------------------------------------|-------------------------------------|----------------------------------------|------------------------------------------|
| 1.  | 9.643 ✓                              | 24.68 ✓          | 609.2 ✓          | .9840 ✓                                | .9245 ✓                             | 1.068 ✓                                | 231 ✓                                    |
| 2.  | 9.643 ✓                              | 59.47 ✓          | 614.2 ✓          | .9981 ✓                                | .9245 ✓                             | 1.077 ✓                                | 570 ✓                                    |
| 3.  | 9.643 ✓                              | 93.31 ✓          | 603.2 ✓          | .9840 ✓                                | .9245 ✓                             | 1.068 ✓                                | 875 ✓                                    |
| 4.  | 9.643 ✓                              | 108.85 ✓         | 612.2 ✓          | .9795 ✓                                | .9245 ✓                             | 1.066 ✓                                | 1,013 ✓                                  |
| 5.  |                                      |                  |                  |                                        |                                     |                                        |                                          |

## PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio 41.6 cf/bbl.  
Gravity of Liquid Hydrocarbons 62.7 deg.  
F<sub>c</sub> 1.812 ✓ (1-e<sup>-s</sup>) 0.276 ✓

Specific Gravity Separator Gas .702  
Specific Gravity Flowing Fluid .7286  
P<sub>c</sub> 1796.2 P<sub>c</sub> 3226.3 ✓

| No. | P <sub>w</sub><br><del>XX</del> (psia) | P <sub>t</sub> <sup>2</sup> | F <sub>c</sub> Q | (F <sub>c</sub> Q) <sup>2</sup> | (F <sub>c</sub> Q) <sup>2</sup><br>(1-e <sup>-s</sup> ) | P <sub>w</sub> <sup>2</sup> | P <sub>c</sub> <sup>2</sup> -P <sub>w</sub> <sup>2</sup> | Cal.<br>P <sub>w</sub> | P <sub>w</sub><br>P <sub>c</sub> |
|-----|----------------------------------------|-----------------------------|------------------|---------------------------------|---------------------------------------------------------|-----------------------------|----------------------------------------------------------|------------------------|----------------------------------|
| 1.  | 1543.2                                 | 2381.5                      | .42 ✓            | .18 ✓                           | .05 ✓                                                   | 2381.6                      | 844.7 ✓                                                  | 1543.3 ✓               | .85.92 ✓                         |
| 2.  | 1338.2                                 | 1790.8                      | 1.03 ✓           | 1.06 ✓                          | .29 ✓                                                   | 1791.1                      | 1435.2 ✓                                                 | 1338.3 ✓               | .74.50 ✓                         |
| 3.  | 1094.2                                 | 1197.3                      | 1.59 ✓           | 2.53 ✓                          | .70 ✓                                                   | 1198.0                      | 2028.3 ✓                                                 | 1094.5 ✓               | .60.93 ✓                         |
| 4.  | 920.2                                  | 846.8                       | 1.84 ✓           | 3.39 ✓                          | .94 ✓                                                   | 847.7                       | 2378.6 ✓                                                 | 920.7 ✓                | .51.26 ✓                         |
| 5.  |                                        |                             |                  |                                 |                                                         |                             |                                                          |                        |                                  |

Absolute Potential: 1,360 MCFPD; n 1.000

COMPANY Continental Oil Company

ADDRESS Box 68, Eunice, New Mexico

AGENT and TITLE J. B. Baker

WITNESSED \_\_\_\_\_

COMPANY \_\_\_\_\_

## REMARKS

Slope on point alignment was greater than 1.0, therefore a slope/was drawn  
through highest rate of flow.

NMOCC-3

ENW HLJ RLA File-2

## INSTRUCTIONS

This form is to be used for reporting multi-point back pressure tests on gas wells in the State, except those on which special orders are applicable. Three copies of this form and the back pressure curve shall be filed with the Commission at Box 871, Santa Fe.

The log log paper used for plotting the back pressure curve shall be of at least three inch cycles.

## NOMENCLATURE

- $Q$  = Actual rate of flow at end of flow period at W. H. working pressure ( $P_w$ ).  
MCF/da. @ 15.025 psia and 60° F.
- $P_c$  = 72 hour wellhead shut-in casing (or tubing) pressure whichever is greater.  
psia
- $P_w$  = Static wellhead working pressure as determined at the end of flow period.  
(Casing if flowing thru tubing, tubing if flowing thru casing.) psia
- $P_t$  = Flowing wellhead pressure (tubing if flowing through tubing, casing if  
flowing through casing.) psia
- $P_f$  = Meter pressure, psia.
- $h_w$  = Differential meter pressure, inches water.
- $F_g$  = Gravity correction factor.
- $F_t$  = Flowing temperature correction factor.
- $F_{pv}$  = Supercompressability factor.
- $n$  = Slope of back pressure curve.

Note: If  $P_w$  cannot be taken because of manner of completion or condition of well, then  $P_w$  must be calculated by adding the pressure drop due to friction within the flow string to  $P_t$ .

Pc2-Pw2 (thsnds)

Company: Continental Oil Company  
Well: Lockhart B-14 "A" No. 2  
Location: Unit P. Sec. 14-21-37  
Pool: Tubb  
Date: 7-25-58

O. F. Potential = 1,360 MCFPD  
Q2 - 3000 Log = 3.477 1213  
Q1 - 300 Log = 2.477 1213  
Slope = 1.000

15 AUG 20 PM 3:58

LOGS OFFICE OCC

LOGS OFFICE 359-110  
NEWELL & ASSOCIATES, INC.  
DAVIDSON

100 1000

Q = MCFPD