

NEW MEXICO OIL CONSERVATION COMMISSION

MULTI-POINT BACK PRESSURE TEST FOR GAS

HOBBS OFFICE OCC Form C-122  
Revised 12-1-55

Pool Eumont Formation Queen Sand County Lea

Initial X Annual - Special - Date of Test 10-4-57

Company Neville G. Penrose, Inc. Lease Alves "B" Well No. 1

Unit F Sec. 8 Twp. 21S Rge. 37E Purchaser El Paso Natural Gas Co.

Casing 5 1/2" Wt. 14# I.D. 5.012 Set at 3595 Perf. - To -

Tubing 2 3/8" Wt. 4.70 I.D. 1.995 Set at 3651 Perf. - To -

Gas Pay: From 3603 To 3673 L 3651 xG .650 -GL 2373 Bar.Press. 13.2

Producing Thru: Casing - Tubing X Type Well single

Date of Completion: 9-10-57 Packer - Reservoir Temp. -

OBSERVED DATA

Tested Through (Prover) ~~XXXXXX~~ Type Taps -

| No. | Flow Data                       |                                  |             |                      |           | Tubing Data |           | Casing Data |           | Duration of Flow Hr. |
|-----|---------------------------------|----------------------------------|-------------|----------------------|-----------|-------------|-----------|-------------|-----------|----------------------|
|     | (Prover) <del>XXXXXX</del> Size | <del>XXXXXX</del> (Orifice) Size | Press. psig | Diff. h <sub>w</sub> | Temp. °F. | Press. psig | Temp. °F. | Press. psig | Temp. °F. |                      |
| SI  |                                 |                                  |             |                      |           | 541         |           | 547         |           | 72                   |
| 1.  | 2                               | .125                             | 537         |                      | 83        | 537         |           | 543         |           | 3                    |
| 2.  | 2                               | .187                             | 529         |                      | 78        | 529         |           | 537         |           | 3                    |
| 3.  | 2                               | .218                             | 522         |                      | 72        | 522         |           | 530         |           | 3                    |
| 4.  | 2                               | .250                             | 515         |                      | 71        | 515         |           | 523         |           | 3                    |
| 5.  | 2                               | .250                             | 509         |                      | 70        | 509         |           | 521         |           | 24                   |

FLOW CALCULATIONS

| No. | Coefficient (24-Hour) | $\sqrt{h_w P_f}$ | Pressure psia | Flow Temp. Factor F <sub>t</sub> | Gravity Factor F <sub>g</sub> | Compress. Factor F <sub>pv</sub> | Rate of Flow Q-MCFPD @ 15.025 psia |
|-----|-----------------------|------------------|---------------|----------------------------------|-------------------------------|----------------------------------|------------------------------------|
| 1.  | .3418                 |                  | 550.2         | .9786                            | .9608                         | 1.031                            | 182                                |
| 2.  | .7851                 |                  | 542.2         | .9831                            | .9608                         | 1.033                            | 416                                |
| 3.  | 1.0834                |                  | 535.2         | .9887                            | .9608                         | 1.033                            | 569                                |
| 4.  | 1.4030                |                  | 528.2         | .9896                            | .9608                         | 1.031                            | 726                                |
| 5.  | 1.4030                |                  | 522.2         | .9905                            | .9608                         | 1.031                            | 720                                |

PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio - cf/bbl.

Gravity of Liquid Hydrocarbons - deg.

F<sub>c</sub> - (1-e<sup>-s</sup>)

Specific Gravity Separator Gas -

Specific Gravity Flowing Fluid -

P<sub>c</sub> 560.2 P<sub>c</sub><sup>2</sup> 313.8

| No. | P <sub>w</sub> P <sub>t</sub> (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> (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. P <sub>w</sub> | P <sub>w</sub> P <sub>c</sub> |
|-----|--------------------------------------|-----------------------------|------------------|---------------------------------|--|-----------------------------|--|---------------------|-------------------------------|
| 1.  | 550.2                                | 302.7                       |                  |                                 |  | 309.4                       |  |                     | 4.4                           |
| 2.  | 542.2                                | 293.9                       |                  |                                 |  | 302.7                       |  |                     | 11.1                          |
| 3.  | 535.2                                | 286.4                       |                  |                                 |  | 295.1                       |  |                     | 18.7                          |
| 4.  | 528.2                                | 278.9                       |                  |                                 |  | 287.5                       |  |                     | 26.3                          |
| 5.  | 522.2                                | 272.6                       |                  |                                 |  | 285.4                       |  |                     | 28.4                          |

Absolute Potential: 4,900 MCFPD; n .787

COMPANY El Paso Natural Gas Co.

ADDRESS Jal, New Mexico

AGENT and TITLE Mikel

WITNESSED Glenn G. Neill

COMPANY Neville G. Penrose, Inc.

REMARKS

## 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.

$F_{pv}$  = Supercompressibility 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  $P_t$ .