

## NEW MEXICO OIL CONSERVATION COMMISSION

Form C-122

Revised 12-1-55

## MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool Blanco Formation Mesa Verde County San Juan

Initial X Annual \_\_\_\_\_ Special \_\_\_\_\_ Date of Test September 18, 1955

Company Southern Union Gas Company Lease Nordhaus Well No. 6

Unit N Sec. 1 Twp. 31N Rge. 9W Purchaser Southern Union Gas Company

Casing 7 5/8" Wt. 26.40 I.D. 6.969 Set at 0-3645 Perf. 6118 To 6041

Tubing 2 3/8" Wt. 4.7 I.D. 2.0 Set at 6049 Perf. 6019 To 6049

Gas Pay: From 5186 To 6041 L \_\_\_\_\_ xG 0.67 -GL \_\_\_\_\_ Bar.Press. 12.0

Producing Thru: Casing \_\_\_\_\_ Tubing X Type Well Single Gas

Date of Completion: July 25, 1957 Packer \_\_\_\_\_ Reservoir Temp. \_\_\_\_\_

## OBSERVED DATA

Tested Through (~~Prover~~) (Choke) (~~Meter~~) Type Taps \_\_\_\_\_

| No. | Flow Data                  |                              |                |                         |              | Tubing Data    |              | Casing Data    |              | Duration of Flow Hr. |
|-----|----------------------------|------------------------------|----------------|-------------------------|--------------|----------------|--------------|----------------|--------------|----------------------|
|     | (Prover)<br>(Line)<br>Size | (Choke)<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  |                            |                              |                |                         |              | 1030           |              | 1030           |              | 54 days              |
| 1.  |                            | 3/4"                         | 290            |                         | 690          | 290            | 690          | 761            |              | 3 hours              |
| 2.  |                            |                              |                |                         |              |                |              |                |              |                      |
| 3.  |                            |                              |                |                         |              |                |              |                |              |                      |
| 4.  |                            |                              |                |                         |              |                |              |                |              |                      |
| 5.  |                            |                              |                |                         |              |                |              |                |              |                      |

## FLOW CALCULATIONS

| No. | Coefficient<br>(24-Hour) | $\sqrt{h_w p_f}$ | 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.  | 12.3650                  |                  | 302              | 0.9915                                 | 0.9463                              | 1.032                                  | 3616                                     |
| 2.  |                          |                  |                  |  |                                     |  |  |
| 3.  |                          |                  |                  |  |                                     |  |  |
| 4.  |                          |                  |                  |  |                                     |  |  |
| 5.  |                          |                  |                  |  |                                     |  |  |

## 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> 1042 P<sub>c</sub> 1085.8

P<sub>w</sub> 773 P<sub>w</sub> 597.5

| No. | P <sub>w</sub><br>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><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.  |   |                             |                  |                                 |   | 597.5                       | 1486.3   |                        | 0.740                              |
| 2.  |   |                             |                  |                                 |   |                             |  |                        |                                    |
| 3.  |   |                             |                  |                                 |   |                             |  |                        |                                    |
| 4.  |   |                             |                  |                                 |   |                             |  |                        |                                    |
| 5.  |   |                             |                  |                                 |   |                             |  |                        |                                    |

Absolute Potential: 6,581 MCFPD; n 0.75

COMPANY Southern Union Gas Company

ADDRESS P. O. Box 815 Farmington, New Mexico

AGENT and TITLE Gilbert Noland, Jr. Assistant Drilling Superintendent

WITNESSED \_\_\_\_\_

COMPANY \_\_\_\_\_

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.

$F_{pv}$  - 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  $P_t$ .

|                             |            |
|-----------------------------|------------|
| OIL CONSERVATION COMMISSION |            |
| AZTEC DISTRICT OFFICE       |            |
| No. Copies                  | 3          |
| Date                        | 10/1/51    |
| Subject                     | 100-1145-1 |
| Reference                   |            |
| Disposition                 |            |
| Remarks                     |            |
| Transmitted                 |            |
| By                          |            |