

3-OCC  
1-WD  
1-EPNG-Bill Parrish  
1-D  
2-F

NEW MEXICO OIL CONSERVATION COMMISSION

Form 3-122

MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Rev. 12-1-55

Pool Vasin Dakota Formation Dakota Locality San Juan  
Initial x Annual \_\_\_\_\_ Special \_\_\_\_\_ Date of Test 9/19/61  
Company Southwest Production Company Lease Hancock Federal Well No. 1  
Unit K Sec. 22 Twp. 27 Rge. 11 Purchaser EPNG Co.  
Casing 4 1/2 Wt. 10.50 I.D. 40.40 Set at 6712 Perf. 6662-76 To 6579-6614  
Tubing 1 1/2 Wt. 2.7 I.D. 1.610 Set at 6663 Perf. - To 6663  
Gas Pay: From 6611 To 6676 L 6663 RI .67 -GL 4464 Bar.Press. 12.0  
Producing Thru: Casing \_\_\_\_\_ Tubing \_\_\_\_\_ Type Well Single gas  
Single-Bradenhead-G. G. or G.O. Dual  
Date of Completion: 9/10/61 Packer \_\_\_\_\_ Reservoir Temp. \_\_\_\_\_

OBSERVED DATA

Tested Through (XXXXXX) (Choke) (Meter) Type Steps \_\_\_\_\_

| No. | Flow Data                  |                              |                |                         |              | Tubing Data    |              | Casing Data    |              | Duration<br>of Flow<br>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  |                            |                              |                |                         |              | 2073           |              | 2073           |              | 7 days                     |
| 1.  |                            | 3/4"                         | 334            |                         |              | 334            | 72           | 1456           |              | 3 hrs.                     |
| 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 | 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                  |                  | 346              | .9887                      | .9463                               | 1.036                                  | 4.147                                    |
| 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> 2085 P<sub>c</sub> 4347.2

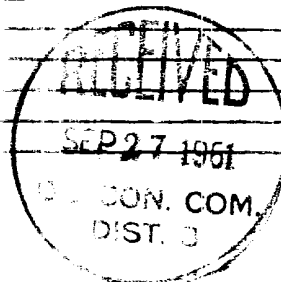
P<sub>w</sub> 1468 P<sub>2w</sub> 2155.0

| No. | P <sub>w</sub><br>P <sub>t</sub> (psia) | P <sub>c</sub> <sup>2</sup> | F <sub>c</sub> Q | (F <sub>c</sub> Q) <sup>2</sup> | $\left(\frac{P_c Q}{1-e^{-S}}\right)^2$ | 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.  |   |                             |                  |                                 |   | 4347.2                      | 2192.2  |                        | .704                             |
| 2.  |   |                             |                  |                                 |   |                             |   |                        |                                  |
| 3.  |   |                             |                  |                                 |   |                             |   |                        |                                  |
| 4.  |   |                             |                  |                                 |   |                             |   |                        |                                  |
| 5.  |   |                             |                  |                                 |   |                             |   |                        |                                  |

Absolute Potential: 5,847 MCFPD; n .75

COMPANY Southwest Production Company  
ADDRESS 207 Petr. Club Plaza - Farmington, N.M.  
AGENT and TITLE George L. Hoffman - Production Foreman  
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.

$F_{pv}$  = 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  $P_t$ .