

## NEW MEXICO OIL CONSERVATION COMMISSION

NOBBS OFFICE OCC

Form C-122

## MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Revised 12-1-55

1957 NOV 8 10:13 AM

Pool Jalmit Formation Seven Rivers County Lea  
Initial \_\_\_\_\_ Annual \_\_\_\_\_ Special XX Date of Test 12-31-56/1-4-57  
Company Skelly Oil Company Lease Toby Well No. 1  
Unit M Sec. 7 Twp 24 S Rge. 37 E Purchaser El Paso Natural Gas Company  
Casing 7" Wt. \_\_\_\_\_ I.D. \_\_\_\_\_ Set at 3355' Perf. \_\_\_\_\_ To \_\_\_\_\_  
Tubing 2 1/2" Wt. 6.54 I.D. 2.441" Set at 3636' Perf. \_\_\_\_\_ To \_\_\_\_\_  
Gas Pay: From 3355' To 3400' L 3355 xG 0.660 -GL 2214 Bar.Press. 13.2  
Producing Thru: Casing XX Tubing \_\_\_\_\_ Type Well G. O. Dual  
Date of Completion: 4-1-58 Packer 3440 Single-Bradenhead-G. G. or G.O. Dual  
Reservoir Temp. \_\_\_\_\_

## OBSERVED DATA

Tested Through (Bradenhead/G.O. Dual) (Meter)

Type Taps \_\_\_\_\_

| No. | Flow Data      |                   |                | Tubing Data             |              | Casing Data    |              | Duration<br>of Flow<br>Hr. |
|-----|----------------|-------------------|----------------|-------------------------|--------------|----------------|--------------|----------------------------|
|     | (Line)<br>Size | (Orifice)<br>Size | Press.<br>psig | Diff.<br>h <sub>w</sub> | Temp.<br>°F. | Press.<br>psig | Temp.<br>°F. |                            |
| SI  |                |                   |                |                         |              |                |              |                            |
| 1.  | 4              | 1.000             | 420            | 32.49                   | 83           | 453            |              | 72                         |
| 2.  | 4              | 1.000             | 411            | 46.92                   | 85           | 420            |              | 24                         |
| 3.  | 4              | 1.000             | 406            | 53.29                   | 88           | 412            |              | 24                         |
| 4.  | 4              | 1.000             | 389            | 87.42                   | 67           | 408            |              | 24                         |
| 5.  |                |                   |                |                         |              | 392 *          |              | 24                         |

\* Not enough draw down - orifice too small

## 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.  | 6.133                    | 118.61           |                  | 0.9786                                 | 0.9535                              | 1.040                                  | 706                                      |
| 2.  | 6.133                    | 141.05           |                  | 0.9768                                 | 0.9535                              | 1.037                                  | 836                                      |
| 3.  | 6.133                    | 149.42           |                  | 0.9741                                 | 0.9535                              | 1.036                                  | 882                                      |
| 4.  | 6.133                    | 187.47           |                  | 0.9933                                 | 0.9535                              | 1.039                                  | 1,131                                    |
| 5.  |                          |                  |                  |  |                                     |  |  |

## PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio \_\_\_\_\_ cf/bbl.  
Gravity of Liquid Hydrocarbons \_\_\_\_\_ deg.  
F<sub>c</sub> 0.865 (1-e<sup>-s</sup>) 0.141

Specific Gravity Separator Gas \_\_\_\_\_  
Specific Gravity Flowing Fluid \_\_\_\_\_  
P<sub>c</sub> 466.2 P<sub>c</sub> 217.3

| 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.  | 433.2                                   | 187.7                       | 0.61             | 0.37                            | 0.05  | 187.8                       | 29.5   |                        |                                  |
| 2.  | 425.2                                   | 180.8                       | 0.72             | 0.52                            | 0.07  | 180.9                       | 36.4   |                        |                                  |
| 3.  | 421.2                                   | 177.4                       | 0.76             | 0.58                            | 0.08  | 177.5                       | 39.8   |                        |                                  |
| 4.  | 405.2                                   | 164.2                       | 0.98             | 0.96                            | 0.14  | 164.3                       | 53.0   |                        |                                  |
| 5.  |   |                             |                  |                                 |   |                             |  |                        |                                  |

Absolute Potential: 3,520 MCFPD; n 0.816COMPANY Skelly Oil Company  
ADDRESS Box 98, Hobbs, New Mexico

AGENT and TITLE \_\_\_\_\_

WITNESSED \_\_\_\_\_

COMPANY \_\_\_\_\_

REMARKS \_\_\_\_\_

ALVIS A. UTE  
GAS ENGINEER

## 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  $P_t$ .