

NEW MEXICO OIL CONSERVATION COMMISSION

Oct 21 3 09 PM '63

Form C-122

MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Revised 12-1-55

Pool Tubb Formation Tubb County Lea  
Initial \_\_\_\_\_ Annual \_\_\_\_\_ Special X Date of Test 7-4/7-12-63  
Company Tidewater Oil Co. Lease Sarkeys Well No. 4  
Unit F Sec. 26 Twp. 21 Rge. 37 Purchaser El Paso Natural Gas Co.  
Casing 5 1/2" Wt. 15.5 I.D. \_\_\_\_\_ Set at 6515 Perf. 6135 To 6235  
Tubing 3" Wt. 4.7 I.D. \_\_\_\_\_ Set at 6567 Perf. \_\_\_\_\_ To \_\_\_\_\_  
Gas Pay: From 6135 To 6235 L 6138 xG Mix .733 -GL 4497 Bar.Press. 13.2  
Producing Thru: Casing X Tubing \_\_\_\_\_ Type Well G. O. Dual  
Date of Completion: April 26, 1953 Packer 6586 Single-Bradenhead-G. G. or G.O. Dual  
Reservoir Temp. \_\_\_\_\_

OBSERVED DATA

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

| No. | Flow Data            |                        |             |                      |           | Tubing Data |           | Casing Data |           | Duration of Flow Hr. |
|-----|----------------------|------------------------|-------------|----------------------|-----------|-------------|-----------|-------------|-----------|----------------------|
|     | (Prover) (Line) Size | (Choke) (Orifice) Size | Press. psig | Diff. h <sub>w</sub> | Temp. °F. | Press. psig | Temp. °F. | Press. psig | Temp. °F. |                      |
| SI  |                      |                        |             |                      |           |             |           |             |           |                      |
| 1.  | 4                    | 1.250                  | 224         | 5.76                 | 84        |             |           | 842         |           | 72                   |
| 2.  | 4                    | 1.250                  | 238         | 9.00                 | 98        |             |           | 774         |           | 24                   |
| 3.  | 4                    | 1.250                  | 246         | 12.25                | 102       |             |           | 625         |           | 24                   |
| 4.  | 4                    | 1.250                  | 252         | 16.00                | 100       |             |           | 404         |           | 24                   |
| 5.  |                      |                        |             |                      |           |             |           | 272         |           | 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.  | 9.643                 | 36.96            |               | .9777                            | .9258                         | 1.023                            | 329.9                              |
| 2.  | 9.643                 | 47.55            |               | .9653                            | .9258                         | 1.022                            | 413.7                              |
| 3.  | 9.643                 | 56.35            |               | .9618                            | .9258                         | 1.022                            | 494.4                              |
| 4.  | 9.643                 | 65.14            |               | .9636                            | .9258                         | 1.023                            | 573.2                              |
| 5.  |                       |                  |               |                                  |                               |                                  |                                    |

PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio 79.900 cf/bbl.  
Gravity of Liquid Hydrocarbons 56.3 deg.  
F<sub>c</sub> 1.758 (1-e<sup>-s</sup>) .266  
Specific Gravity Separator Gas .700  
Specific Gravity Flowing Fluid .7535  
P<sub>c</sub> 855.2 P<sub>c</sub><sup>2</sup> 731.4

| No. | 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.  | 737.2                 | 619.7                       |                  |                                 |                                                      | 619.7                       | 111.7                                                    |                     | 92.5                           |
| 2.  | 638.2                 | 407.3                       |                  |                                 |                                                      | 407.3                       | 324.1                                                    |                     | 79.1                           |
| 3.  | 417.2                 | 174.0                       |                  |                                 |                                                      | 174.0                       | 557.4                                                    |                     | 61.2                           |
| 4.  | 285.2                 | 81.3                        |                  |                                 |                                                      | 81.3                        | 650.1                                                    |                     | 52.5                           |
| 5.  |                       |                             |                  |                                 |                                                      |                             |                                                          |                     |                                |

Absolute Potential: 620 MCFPD; n .661 7  
COMPANY Tidewater Oil Co.  
ADDRESS Box 249, Hobbs, N. Mex.  
AGENT and TITLE C. L. Wade, Area Supt.  
WITNESSED Jack T. Littlefield  
COMPANY El Paso Natural Gas Co.

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  $P_t$ .

TIDEWATER OIL CO.  
 SARKEYS #4  
 UNIT F, SEC. 26-21-37, LEA CO., NM  
 TUSB POOL  
 7.12.1968

PE-2 PW<sup>2</sup> (THANDS)

KOE LOGARITHMIC 359-110  
 RECORDING RESERVOIR  
 2X20CLES

