

MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool Eumont Formation Queen County Lea
Initial X Annual _____ Special _____ Date of Test 8-24-56
Company The Texas Company Lease William Weir Well No. 2
Unit N Sec. 23 Twp. 19-S Rge. 36-E Purchaser Permian Basin Pipe Line Co.
Casing 7 Wt. 24.0 I.D. 6.336 Set at 3700 Perf. _____ To _____
Tubing 2 7/8 Wt. 6.5 I.D. 2.441 Set at 3717 Perf. Open end To _____
Gas Pay: From 3700 To 3925 L 3717 xG .690 -GL 2565 Bar.Press. 13.2
Producing Thru: Casing _____ Tubing X Type Well Single
Single-Bradenhead-G. G. or G.O. Dual
Date of Completion: 5-13-55 Packer _____ Reservoir Temp. _____

CO₂ = 2.08% H₂ = 2.13%

OBSERVED DATA

Tested Through (Proven) (Choke) (Meter)

Type Taps Pipe

| No. | Flow Data | | | | | Tubing Data | | Casing Data | | Duration of Flow Hr. |
|-----|-------------------------------------|---------------------------------------|----------------|-------------------------|--------------|----------------|--------------|----------------|--------------|----------------------|
| | (<u>Proven</u>) (Line) Size | (<u>Choke</u>) (Orifice) Size | Press. psig | Diff. h _w | Temp. °F. | Press. psig | Temp. °F. | Press. psig | Temp. °F. | |
| SI | | | | | | 904.7 | | | | 70 1/4 |
| 1. | 4 | 1.75 | 460.1 | 4.1 | 60 | 850.1 | | | | 24 |
| 2. | 4 | 1.75 | 462.0 | 19.1 | 62 | 728.8 | | | | 23 3/4 |
| 3. | 4 | 1.75 | 458.4 | 31.0 | 67 | 625.2 | | | | 23 3/4 |
| 4. | 4 | 1.75 | 449.7 | 41.5 | 70 | 542.9 | | | | 24 1/4 |
| 5. | | | | | | | | | | |

FLOW CALCULATIONS

| No. | Coefficient (24-Hour) | $\sqrt{h_{wpf}}$ | Pressure psia | Flow Temp. Factor F _t | Gravity Factor F _g | Compress. Factor F _{pv} | Rate of Flow Q-MCFPD @ 15.025 psia |
|-----|--------------------------|------------------|------------------|--|-------------------------------------|--|--|
| 1. | 21.69 | 44.06 | 473.3 | 1.000 | .9323 | 1.052 | 937 |
| 2. | 21.69 | 95.27 | 475.2 | .9981 | .9323 | 1.052 | 2,023 |
| 3. | 21.69 | 120.9 | 471.6 | .9933 | .9323 | 1.048 | 2,346 |
| 4. | 21.69 | 138.6 | 462.9 | .9905 | .9323 | 1.045 | 2,902 |
| 5. | | | | | | | |

PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio _____ cf/bbl.
Gravity of Liquid Hydrocarbons _____ deg.
F_c 5.866 (1-e^{-s}) 0.162

Specific Gravity Separator Gas _____
Specific Gravity Flowing Fluid _____
P_c 917.9 P_c² 842.5

| No. | P _w P _t (psia) | P _t ² | F _c Q | (F _c Q) ² | (F _c Q) ² (1-e ^{-s}) | P _w ² | P _c ² -P _w ² | Cal. P _w | P _w P _c |
|-----|---|-----------------------------|------------------|---------------------------------|---|-----------------------------|--|------------------------|----------------------------------|
| 1. | 861.3 | 744.3 | 5.496 | 30.21 | 4.894 | 750.2 | 92.3 | 866.1 | .94 |
| 2. | 742.0 | 550.6 | 11.27 | 126.8 | 23.81 | 573.4 | 269.0 | 757.2 | .81 |
| 3. | 638.4 | 407.6 | 14.93 | 222.9 | 36.11 | 443.7 | 398.8 | 666.1 | .70 |
| 4. | 556.1 | 309.2 | 17.02 | 289.7 | 46.93 | 356.1 | 486.4 | 596.7 | .61 |
| 5. | | | | | | | | | |

Absolute Potential: 4.295 MCFPD; n .69

COMPANY THE TEXAS COMPANY
ADDRESS BOX 1270, MIDLAND, TEXAS
AGENT and TITLE L. I. BAKER, DISTRICT GAS MAN
WITNESSED HAROLD E. BARRETT
COMPANY PERMIAN BASIN PIPE LINE COMPANY

REMARKS

This is a retest.

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 .