

NEW MEXICO OIL CONSERVATION COMMISSION

Form C-122

Revised 12-1-55

MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool Wildcat Formation Bend County Lea
Initial X Annual Special Date of Test 6-14-63
Company Jake L. Hamon Lease N. E. Lynch Unit Well No. 1
Unit H Sec. 17 Twp. 20S Rge. 35E Purchaser
6.276
Casing 7" Wt. 26# & 29# D. 6.184 Set at 14,151 Perf. 13,659 To 13,774
Tubing 2" EUE Wt. 4.70 I.D. 1.995 Set at 13,648 Perf. Open End To
Gas Pay: From 13,659 To 13,774 L 13,648 xG .974 -GL 13,293 Bar.Press. 13.2
Producing Thru: Casing Tubing X Type Well Single
Single-Bradenhead-G. G. or G.O. Dual
Date of Completion: Packer Baker Model D Reservoir Temp. 173°F

OBSERVED DATA

Tested Through ~~choke~~ (Meter) Type Taps Flange

| No. | Flow Data | | | | | Tubing Data | | Casing Data | | Duration of Flow Hr. |
|-----|--------------------------------------|---|----------------|-------------------------|--------------|----------------|--------------|----------------|--------------|----------------------|
| | (choke) (Line) Size | (choke) (Orifice) Size | Press. psig | Diff. h _w | Temp. °F. | Press. psig | Temp. °F. | Press. psig | Temp. °F. | |
| SI | | | | | | 4728 | 82 | Packer | | 74 Hr |
| 1. | 3 | 1 3/4 | 580 | 42 | 77 | 1847 | 85 | | | 3.5 |
| 2. | 3 | 1 3/4 | 580 | 33 | 71 | 2335 | 82 | | | 2.5 |
| 3. | 3 | 1 3/4 | 575 | 20 | 71 | 3135 | 82 | | | 1.5 |
| 4. | 3 | 1 3/4 | 585 | 13 | 71 | 3626 | 82 | | | 2.0 |
| 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. | 20.15 | 157.843 | 580 | .9840 | .942 | 1.066 | 3.136 |
| 2. | 20.15 | 139.913 | 580 | .9896 | .942 | 1.068 | 2.806 |
| 3. | 20.15 | 108.462 | 575 | .9896 | .942 | 1.068 | 2.222 |
| 4. | 20.15 | 88.185 | 585 | .9896 | .942 | 1.068 | 1.769 |
| 5. | | | | | | | |

PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio 7.961 cf/bbl.
Gravity of Liquid Hydrocarbons 55.5 deg.
P_c (1-e^{-s})

Specific Gravity Separator Gas .676
Specific Gravity Flowing Fluid .757
P_c 5379 P_c² 28,934

| 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. | | | | | | 6,922 | 22,012 | 2631 | |
| 2. | | | | | | 10,017 | 18,917 | 3165 | |
| 3. | | | | | | 15,062 | 13,872 | 3881 | |
| 4. | | | | | | 18,706 | 10,228 | 4325 | |
| 5. | | | | | | | | | |

Absolute Potential: 3,850 MCFPD; n .757
COMPANY West Texas Engineering Service, Inc.
ADDRESS P. O. Box 4456 - Midland, Texas
AGENT and TITLE R. W. Harrington - Field Petroleum Engineer
WITNESSED
COMPANY

REMARKS

P_c & P_w were calculated as shown on the attached sheets.

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 .