

NEW MEXICO OIL CONSERVATION COMMISSION

Form C-122

Revised 12-1-55

MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool Jalmat Formation 7 Rivers & Queens County Lea
Initial X Annual _____ Special _____ Date of Test 5/28/57
Company Sunray Mid-Continent Oil Co. Lease D. A. Henry Well No. 2
Unit SW/4 Sec. 26 Twp. 25S Rge. 37E Purchaser El Paso Natural Gas Company
Casing 7" Wt. 22# I.D. - Set at 3213 Perf. - To Open Hole
Tubing 2" Wt. 4.70 I.D. 1.995 Set at 3266 Perf. - To Open Hole
Gas Pay: From _____ To 3297 L _____ xG _____ -GL _____ Bar.Press. _____
Producing Thru: Casing _____ Tubing X Type Well Single
Date of Completion: 5/5/57 Packer None Single-Bradenhead-G. G. or G.O. Dual
Reservoir Temp. _____

OBSERVED DATA

Tested Through (Prover) (Choke) (Meter) Type Taps Flange

| No. | Flow Data | | | | | Tubing Data | | Casing Data | | Duration of Flow Hr. |
|-----|----------------------------|------------------------------|----------------|-------------------------|-------------|----------------|-------------|----------------|-------------|----------------------------|
| | (Prover) (Line) Size | (Choke) (Orifice) Size | Press. psig | Diff. h _w | Temp. °F | Press. psig | Temp. °F | Press. psig | Temp. °F | |
| SI | | | | | | 605 | | 610 | | |
| 1. | 4 x 1.500 | 13/64 | 24 | 27 | 88 | | | 585 | | 2.5 |
| 2. | 4 x 2.750 | 14/64 | 29 | 3.5 | 89 | | | 580 | | 2 |
| 3. | 4 x 2.750 | 24/64 | 27 | 22 | 100 | | | 550 | | 3 |
| 4. | 4 x 2.750 | 35/64 | 28 | 42 | 96 | | | 515 | | 3 |
| 5. | 4 x 2.750 | 35/64 | 28 | 41.5 | | | | 472 | | 18 |

FLOW CALCULATIONS

| No. | Coefficient (24-Hour) | $\sqrt{h_w p_f}$ | Pressure psia | Flow Temp. Factor F _t | Gravity Factor F _g | Compress. Factor F _{pv} | Rate of Flow Q-MCFPD @ 15.025 psia |
|-----|--------------------------|------------------|------------------|--|-------------------------------------|--|--|
| 1. | 13.99 | 31.68 | 37.2 | .9741 | .9161 | 1.0 | 395.8 |
| 2. | 53.05 | 12.16 | 42.2 | .9732 | .9161 | 1.0 | 573.7 |
| 3. | 53.05 | 29.74 | 40.2 | .9636 | .9161 | 1.0 | 1390.85 |
| 4. | 53.05 | 41.60 | 41.2 | .9671 | .9161 | 1.0 | 1955.2 |
| 5. | 53.05 | 41.35 | 41.2 | .9671 | .9161 | 1.0 | 1945.8 |

PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio 47.673 cf/bbl.
Gravity of Liquid Hydrocarbons 29 deg.
F_c (1-e^{-s})
Specific Gravity Separator Gas .715
Specific Gravity Flowing Fluid _____
P_c 623.2 P_c 388.4

| No. | P _w $\frac{P_w - P_c}{P_c}$ | $\frac{P_w^2 - P_c^2}{P_c^2}$ | F _c Q | (F _c Q) ² | $\frac{(F_c Q)^2}{(1-e^{-s})}$ | P _w ² | P _c ² - P _w ² | Cal. P _w | $\frac{P_w}{F_c}$ |
|-----|---|-------------------------------|------------------|---------------------------------|--------------------------------|-----------------------------|---|------------------------|-------------------|
| 1. | 598.2 | 357.8 | | | | 357.8 | 30.6 | | |
| 2. | 593.2 | 351.9 | | | | 351.9 | 36.5 | | |
| 3. | 563.2 | 317.2 | | | | 317.2 | 71.2 | | |
| 4. | 528.2 | 279.0 | | | | 279.0 | 109.4 | | |
| 5. | 485.2 | 235.4 | | | | 235.4 | 153.0 | | |

Absolute Potential: 4850 MCFPD; n 1.0
COMPANY Sunray Mid-Continent Oil Company
ADDRESS Box 1168, Snyder, Texas
AGENT and TITLE D. G. Bower, Gas Tester
WITNESSED _____
COMPANY El Paso Natural Gas Company

REMARKS

ELVIS A. UTZ
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 .