NEW MEXICO OIL CONSERVATION COMMISSION

HOBBS OFFICE OCC

Form C-122

Revised 12-1-55

MULTI-POINT BACK-PRESSURE TEST FOR GAS WELLS

1956 SEP 25 PM 2:43

Pool Eumont Formation Seven Rivers County Lea

Initial ____ Annual ____ Special X Date of Test 8-6 to 8-10-56

Company The Superior Oil Company Lease State Well No. 1-12

Unit L Sec. 12 Twp. 21S Rge. 35E Purchaser El Paso Natural Gas Company

Casing 7 Wt. 20 I.D. 6.456 Set at 4211 Perf. 3674 To 3690

Tubing 2 1/2 Wt. 6.5 I.D. 2.441 Set at 3973 Perf. ____ To ____

Gas Pay: From 3674 To 3690 L 3674 xG 0.680 -GL 2498 Bar.Press. 13.2

Producing Thru: Casing X Tubing ____ Type Well G. O. Dual
Single-Bradenhead-G. G. or G.O. Dual

Date of Completion: 7-6-56 Packer 3697 Reservoir Temp. ____

OBSERVED DATA

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

| No. | Flow Data (Prover) (Line) Size | Flow Data (Choke) (Orifice) Size | Flow Data Press. psig | Flow Data Diff. $h_w$ | Flow Data Temp. °F. | Tubing Data Press. psig | Tubing Data Temp. °F. | Casing Data Press. psig | Casing Data Temp. °F. | Duration of Flow Hr. |
|---|---|---|---|---|---|---|---|---|---|---|
| SI | | | | | | | | 887 | | 72 |
| 1. | 4 | 1.250 | 560 | 10.24 | 66 | | | 860 | | 24 |
| 2. | 4 | 1.250 | 559 | 20.25 | 65 | | | 839 | | 24 |
| 3. | 4 | 1.250 | 562 | 30.25 | 64 | | | 819 | | 24 |
| 4. | 4 | 1.250 | 585 | 49.00 | 66 | | | 785* | | 24 |
| 5. | | | | | | | | | | |

*Unable to get 30% drawdown because of small choke size.

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. | 9.643 | 76.60 | | .9943 | .9393 | 1.066 | 735 |
| 2. | 9.643 | 107.63 | | .9952 | .9393 | 1.066 | 1034 |
| 3. | 9.643 | 131.88 | | .9962 | .9393 | 1.066 | 1269 |
| 4. | 9.643 | 171.2 | | .9943 | .9393 | 1.066 | 1644 |
| 5. | | | | | | | |

PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio ____ cf/bbl. Specific Gravity Separator Gas ____

Gravity of Liquid Hydrocarbons ____ deg. Specific Gravity Flowing Fluid ____

$F_c$ Calculated 0.823 $(1-e^{-s})$ .158 $P_c$ 900 $P_c^2$ 810

| No. | $P_w$ $P_t$ (psia) | $P_t^2$ | $F_cQ$ | $(F_cQ)^2$ | $\frac{(F_cQ)^2}{(1-e^{-s})}$ | $P_w^2$ | $P_c^2-P_w^2$ | Cal. $P_w$ | $\frac{P_w}{P_c}$ |
|---|---|---|---|---|---|---|---|---|---|
| 1. | 873 | 762 | .605 | .366 | .058 | 762 | 48 | 872.95 | 97.0 |
| 2. | 852 | 726 | .851 | .724 | .114 | 726.1 | 83.9 | 852.12 | 94.7 |
| 3. | 832 | 692 | 1.044 | 1.090 | .172 | 692.2 | 117.8 | 831.96 | 92.4 |
| 4. | 798 | 637 | 1.353 | 1.831 | .289 | 637.3 | 172.7 | 798.93 | 88.8 |
| 5. | | | | | | | | | |

Absolute Potential: 4,350 MCFPD; n .626

COMPANY THE SUPERIOR OIL COMPANY

ADDRESS MIDLAND, TEXAS

AGENT and TITLE ____ (Gas Engineer)

WITNESSED ____

COMPANY ____

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.

$F_{pv}$ = 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 $P_t$.