

NEW MEXICO OIL CONSERVATION COMMISSION

ENGINEER
ELVIS A. WRIGHT
210 N. STATE

Form C-122

Revised 12-1-55

HOBBS OFFICE OCC
MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool Summit Formation Permian County Lea
Initial _____ Annual _____ Special X Date of Test 8-20 to 8-24-56
Company El Paso Natural Gas Company Lease Shell State Well No. 6
Unit I Sec. 32 Twp. 20 S Rge. 37 E Purchaser El Paso Natural Gas Company
Casing 5 1/2 Wt. 15.5 I.D. 4.950 Set at 3369 Perf. _____ To _____
Tubing 2 Wt. 4.7 I.D. 1.995 Set at 3486 Perf. _____ To _____
Gas Pay: From 3375 To 3490 L 3486 xG .670 -GL _____ Bar.Press. 13.2
Producing Thru: Casing _____ Tubing X Type Well Single
Single-Bradenhead-G. G. or G.O. Dual
Date of Completion: 7-10-56 Packer None Reservoir Temp. _____

OBSERVED DATA

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

| 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 | | | | | | 953 | | 953 | | 72 |
| 1. | 1" | 1.500 | 591 | 3.9 ² | 70 | 932 | | 944 | | 24 |
| 2. | 1" | 1.500 | 591 | 6.25 ² | 66 | 909 | | 937 | | 24 |
| 3. | 1" | 1.500 | 626 | 7.9 ² | 68 | 877 | | 930 | | 24 |
| 4. | 1" | 1.500 | 629 | 9.9 ² | 68 | 833 | | 922 | | 24 |
| 5. | | | | | | | | | | |

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 | 95.85 | | .9905 | .9463 | 1.064 | 1,337 |
| 2. | 13.99 | 153.60 | | .9943 | .9463 | 1.066 | 2,155 |
| 3. | 13.99 | 199.70 | | .9924 | .9463 | 1.069 | 2,805 |
| 4. | 13.99 | 250.85 | | .9924 | .9463 | 1.069 | 3,522 |
| 5. | | | | | | | |

PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio _____ cf/bbl.
Gravity of Liquid Hydrocarbons _____ deg.
F_c Measured (1-e^{-s})
Specific Gravity Separator Gas _____
Specific Gravity Flowing Fluid _____
P_c 966.2 P_c 933.5

| No. | P _w P _w (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. | 957.2 | | | | | 916.2 | 17.3 | | .9905 |
| 2. | 950.2 | | | | | 902.9 | 30.6 | | .9832 |
| 3. | 943.2 | | | | | 889.6 | 43.9 | | .9759 |
| 4. | 935.2 | | | | | 874.6 | 58.9 | | .9675 |
| 5. | | | | | | | | | |

Absolute Potential: 32,000 MCFPD; n .797

COMPANY El Paso Natural Gas Company
ADDRESS P. O. Box 1384, Jal, New Mexico
AGENT and TITLE R. T. Wright, Petroleum Engineer *R. T. Wright*
WITNESSED Earl G. Smith
COMPANY El Paso Natural Gas Company

REMARKS

Unable to get 30% draw down - maximum capacity of meter run.

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 .