

MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool South Blanco Formation Pictured Cliffs County Rio Arriba

Initial x Annual _____ Special _____ Date of Test 6-16-60

Company Pubco Petroleum Corporation Lease San Juan Unit 28-6 Well No. 89

Unit 0 Sec. 9 Twp. 27 N Rge. 6 W Purchaser El Paso Natural Gas

Casing 4 1/2 Wt. 9 1/2 I.D. _____ Set at 3285 Perf. 3132 To 3185

Tubing 1 Wt. 1.70 I.D. _____ Set at 3173 Perf. 3127 To 3169

Gas Pay: From 3132 To 3185 L 3127 xG 0.640 -GL _____ Bar.Press. 12

Producing Thru: Casing _____ Tubing x Type Well Single Gas

Date of Completion: 6-9-60 Packer None Single-Bradenhead-G. G. or G.O. Dual _____

* El Paso will be the operator

OBSERVED DATA

Tested Through (Choke) (Choke) (Choke) Type Taps _____

| 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 | | | | | | 1081 | | 1080 | | |
| 1. | Choke | 0.750 | 88 | | | 88 | 70 | 820 | | 3 hr. |
| 2. | | | | | | | | | | |
| 3. | | | | | | | | | | |
| 4. | | | | | | | | | | |
| 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. | | | | | | | |
| 2. | 12.3650 | | 100 | 0.9905 | 0.9682 | 1.007 | 1194 |
| 3. | | | | | | | |
| 4. | | | | | | | |
| 5. | | | | | | | |

PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio _____ cf/bbl.

Gravity of Liquid Hydrocarbons _____ deg.

F_c _____ (1-e^{-s})

Specific Gravity Separator Gas 0.640

Specific Gravity Flowing Fluid _____

P_c 1093 P_c 1,194.649

| 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 -832 | P _c ² -P _w ² | Cal. P _w | P _w P _c |
|-----|--------------------------------------|-----------------------------|------------------|---------------------------------|--|---|--|---------------------|-------------------------------|
| 1. | | | | | | 692,224 | 502,425 | | |
| 2. | | | | | | | | | |
| 3. | | | | | | | | | |
| 4. | | | | | | | | | |
| 5. | | | | | | | | | |

Absolute Potential: 2493 MCFPD; n 0.85

COMPANY Pubco Petroleum Corporation

ADDRESS 108 West Chuaca Artec, New Mexico

AGENT and TITLE B. H. Waychoff, Jr. Prod. Engr.

WITNESSED _____

COMPANY Pubco Petroleum Corporation

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 .

| | |
|-----------------------------|------------|
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