3-OCC
1-Bill Parrish
1-D
1-F

NEW MEXICO OIL CONSERVATION COMMISSION

Form C-122
Revised 12-1-55

# MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool **Basin Dakota** Formation **Dakota** County **San Juan**

Initial **X** Annual _____ Special _____ Date of Test **2/14/61**

Company **Southwest Production Company** Lease **Newberry Federal** Well No. **1**

Unit **M** Sec. **17** Twp. **31N** Rge. **12W** Purchaser **El Paso Natural Gas Company**

Casing **5½"** Wt. **17#** I.D. **4.892** Set at **7114 KB** Perf. **6906-28** To **6841-92**

Tubing **2 3/8"** Wt. **4.70#** I.D. **1.995** Set at **6924** Perf. _____ To **6924**

Gas Pay: From **6906** To **6892** L **6924** xG **.67** -GL **4638.8** Bar.Press. **12.0**

Producing Thru: Casing _____ Tubing **X** Type Well **Single-Gas**

Date of Completion: **1/8/61** Packer _____ Single-Bradenhead-G. G. or G.O. Dual Reservoir Temp. _____

## OBSERVED DATA

Tested Through ~~(Orifice)~~ (Choke) ~~(Meter)~~ Type Taps _____

| No. | Flow Data (Prover) (Line) Size | (Choke) (Orifice) Size | Press. psig | Diff. $h_w$ | Temp. °F. | Tubing Data Press. psig | Tubing Data Temp. °F. | Casing Data Press. psig | Casing Data Temp. °F. | Duration of Flow Hr. |
|---|---|---|---|---|---|---|---|---|---|---|
| SI | | | | | | 2000 | | 2000 | | 7-Days |
| 1. | | 3/4" | 304 | | 69 | 304 | 69 | 960 | | 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. | 12.3650 | | 316 | .9919 | .9463 | 1.033 | 3,787 |
| 2. | | | | | | | |
| 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 _____
Specific Gravity Flowing Fluid _____
$P_c$ **2012** $P_c^2$ **4048**
$P_w$ **972** $P_w^2$ **945**

| 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. | | | | | | 945 | 3103 | | .206 |
| 2. | | | | | | | | | |
| 3. | | | | | | | | | |
| 4. | | | | | | | | | |
| 5. | | | | | | | | | |

Absolute Potential: **4,620** MCFPD; n **.75**

COMPANY **Southwest Production Company**
ADDRESS **162 Petr. Center Bldg., Farmington, N. M.**
AGENT and TITLE **George L. Hoffman, Production Foreman**
WITNESSED _____
COMPANY _____

REMARKS

RECEIVED
FEB 20 1961
OIL CON. COM.
DIST. 3

## 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 $P_t$.