2-Southern Union
1-Redfern
1-Reese
1-Standard of Texas
1-E. B. Germany
1-File

NEW MEXICO OIL CONSERVATION COMMISSION

Form C-122
Revised 12-1-55

MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool Devils Fork Formation Gallup County Rio Arriba

Initial X Annual ____ Special ____ Date of Test 6-20-60

Company Redfern and Herd Lease Large Spur Well No. 3

Unit A Sec. 19 Twp. 24N Rge. 6W Purchaser ____

Casing 5½ Wt. 15.5 I.D. ____ Set at 6785 Perf. 5540 To 5676

Tubing 2 3/8 Wt. 4.7 I.D. ____ Set at 5685 Perf. 5683 To 5685

Gas Pay: From 5540 To 5676 L ____ xG 0.620 -GL ____ Bar.Press. ____

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

Date of Completion: 6-13-60 Packer ____ 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 | | | | | | 1561 | | 1573 | | |
| 1. | | | | | | | | | | |
| 2. | 2" | 3/4" | 185 | | 58 | | | 577 | | 3 Hrs |
| 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. | | | | | | | |
| 3. | 12.3650 | | 197 | 1.0019 | 0.9637 | 1.018 | 2443 |
| 4. | | | | | | | |
| 5. | | | | | | | |

PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio ____ cf/bbl. Specific Gravity Separator Gas ____
Gravity of Liquid Hydrocarbons ____ deg. Specific Gravity Flowing Fluid ____
$P_c$ ____ $(1-e^{-s})$ ____ $P_c$ 1585 $P_c^2$ 2512

| 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. | | | | | | | | | |
| 2. | 569 | | | | | 324 | 2188 | | 1.147 |
| 3. | | | | | | | | | |
| 4. | | | | | | | | | |
| 5. | | | | | | | | | |

Absolute Potential: 2707 MCFPD; n 0.75 1.1082

COMPANY Redfern and Herd Inc.
ADDRESS Box 1747, Midland, Texas
AGENT and TITLE T. A. Dugan, Consulting Engineer
WITNESSED ____
COMPANY ____

REMARKS

RECEIVED JUN 23 1960 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 $P_t$.