NEW MEXICO OIL CONSERVATION COMMISSION

Form C-122
Revised 12-1-55

MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool Undesignated Formation Pictured Cliffs County Rio Arriba

Initial X Annual Special Date of Test 10-22-60

Company August & Waggenseller Lease Jicarilla Apache Well No. 24-12 B-1

Unit A Sec. 12 Twp. 23N Rge. 3W Purchaser El Paso Natural Gas Co.

Casing 4 1/2 Wt. 9.5 I.D. 4.090 Set at 3097 Perf. 2998 To 3008

Tubing 2 3/8 Wt. 4.7 I.D. 1.995 Set at 3003 Perf. 3003 To

Gas Pay: From 2996 To 3008 L 3003 xG 0.65 -GL 1952 Bar.Press. 12.0

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

Date of Completion: 10-12-60 Packer Reservoir Temp. 125

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 | | | | | | 960 | | 961 | | SI |
| 1. | | | | | | | | | | |
| 2. | | | | | | | | | | |
| 3. | 2 | 3/4 | 73 | | 60 | | | 199 | | 3 hrs. |
| 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. | 12.365 | | 85 | 1.000 | 0.9608 | 1.000 | 1.020 |
| 4. | | | | | | | |
| 5. | | | | | | | |

PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio cf/bbl.
Gravity of Liquid Hydrocarbons deg.
$F_c$ 9.402 $(1-e^{-s})$ 0.132

Specific Gravity Separator Gas
Specific Gravity Flowing Fluid
$P_c$ 973 $P_c^2$ 946.729

| 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. | | | | | | | | | |
| 3. | | | | | | 44.521 | 902.208 | | 1.049 |
| 4. | | | | | | | | | |
| 5. | | | | | | | | | |

Absolute Potential: 1,062 MCFPD; n 0.85/1.0415

COMPANY ~~August & Waggenseller~~
ADDRESS ~~170 So. Beverly Drive, Beverly Hills, California~~
AGENT and TITLE ~~Morris B. Jones, Consulting Engineer~~ M. B. JONES
WITNESSED ~~John J. August~~
COMPANY ~~August & Waggenseller~~

REMARKS

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## 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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