Well file

NEW MEXICO OIL CONSERVATION COMMSSION

Form C-122
Revised 9-1-65

# MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

RECEIVED
FEB 6 1975
O. C. C.
ARTESIA, OFFICE

| | | | | | |
|---|---|---|---|---|---|
| Type Test: [X] Initial [ ] Annual [ ] Special | | | | Test Date: 01/30/75 | |
| Company: Atlantic Richfield Company | | Connection: None | | | Unit: |
| Pool: Avalon Morrow Gas | | Formation: Morrow | | | |
| Completion Date: 01/20/75 | Total Depth: 11,100 | | Plug Back TD: 10,996 | Elevation: 3280.6 G.L | Farm or Lease Name: BQ-2 Fed. Comm. |
| Csg. Size: 5.5 / Wt.: 17.0 / d: 4.892 / Set At: 11096 | | | Perforations: From 10867 To 10916 | | Well No.: 1 |
| Tbg. Size: 2 / Wt.: 4.7 / d: 1.995 / Set At: 10779 | | | Perforations: From Open Ended | | Unit: O / Sec.: 9 / Twp.: 21-S / Rge.: 26-E |
| Type Well – Single – Bradenhead – G.G. or G.O. Multiple: Single | | | Packer Set At: 10748 | | County: Eddy |
| Producing Thru: Tbg | Reservoir Temp. °F: 186 | Mean Annual Temp. °F: 60 | Baro. Press. – $P_a$: 13.2 | | State: New Mexico |

| L | H | Gg | % $CO_2$ | % $N_2$ | % $H_2S$ | Prover | Meter Run | Taps |
|---|---|---|---|---|---|---|---|---|
| 10779 | 10779 | 0.5898 | 0.609 | 1.191 | -0- | --- | 4" | Flg. |

| NO. | FLOW DATA: Prover Line Size | X | Orifice Size | Press. p.s.i.g. | Diff. $h_w$ | Temp. °F | TUBING DATA: Press. p.s.i.g. | Temp. °F | CASING DATA: Press. p.s.i.g. | Temp. °F | Duration of Flow |
|---|---|---|---|---|---|---|---|---|---|---|---|
| SI | | | | | | | 3483 | 55 | Pkr | | 116 hr. |
| 1. | 4 x 1.000 | | | 615 | 79.0 | 77 | 2412 | 59 | | | 1 hr. |
| 2. | 4 x 1.000 | | | 710 | 41.0 | 78 | 2700 | 59 | | | 1 hr. |
| 3. | 4 x 1.000 | | | 710 | 16.0 | 68 | 3048 | 59 | | | 1 hr. |
| 4. | 4 x 1.000 | | | 630 | 8.0 | 92 | 3291 | 57 | | | 0.8 hr. |
| 5. | | | | | | | | | | | |

## RATE OF FLOW CALCULATIONS

| NO. | Coefficient (24 Hour) | $\sqrt{h_w P_m}$ | Pressure $P_m$ | Flow Temp. Factor Ft. | Gravity Factor Fg | Super Compress. Factor, Fpv | Rate of Flow Q, Mcfd |
|---|---|---|---|---|---|---|---|
| 1 | 4.753 | 222.77 | 628.2 | .9840 | 1.302 | 1.043 | 1415.2 |
| 2 | 4.753 | 172.20 | 723.2 | .9831 | 1.302 | 1.049 | 1099.3 |
| 3 | 4.753 | 107.57 | 723.2 | .9924 | 1.302 | 1.053 | 695.8 |
| 4 | 4.753 | 71.73 | 643.2 | .9706 | 1.302 | 1.039 | 447.7 |
| 5 | | | | | | | |

| NO. | $P_r$ | Temp. °R | $T_r$ | Z |
|---|---|---|---|---|
| 1 | .93 | 537 | 1.55 | .919 |
| 2. | 1.08 | 538 | 1.56 | .908 |
| 3. | 1.08 | 528 | 1.53 | .901 |
| 4. | .96 | 552 | 1.60 | .926 |
| 5 | | | | |

Gas Liquid Hydrocarbon Ratio -0- Mcf/bbl.
A.P.I. Gravity of Liquid Hydrocarbons -0- Deg.
Specific Gravity Separator Gas 0.5898 XXXXXXXXX
Specific Gravity Flowing Fluid XXXXX 0.5898
Critical Pressure 672.6 P.S.I.A. 672.6 P.S.I.A.
Critical Temperature 345.6 R 345.6 R

$P_c$ 3496.2 $P_c^2$ 12223.4

| NO | $P_t^2$ | $P_w$ | $P_w^2$ | $P_c^2 - P_w^2$ |
|---|---|---|---|---|
| 1 | 5881.6 | 2457.1 | 6037.3 | 6186.1 |
| 2 | 7361.5 | 2745.9 | 7539.8 | 4683.6 |
| 3 | 9370.9 | 3091.8 | 9559.3 | 2664.2 |
| 4 | 10917.7 | 3335.8 | 11127.8 | 1095.6 |
| 5 | | | | |

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 1.976$ (2) $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 1.768$

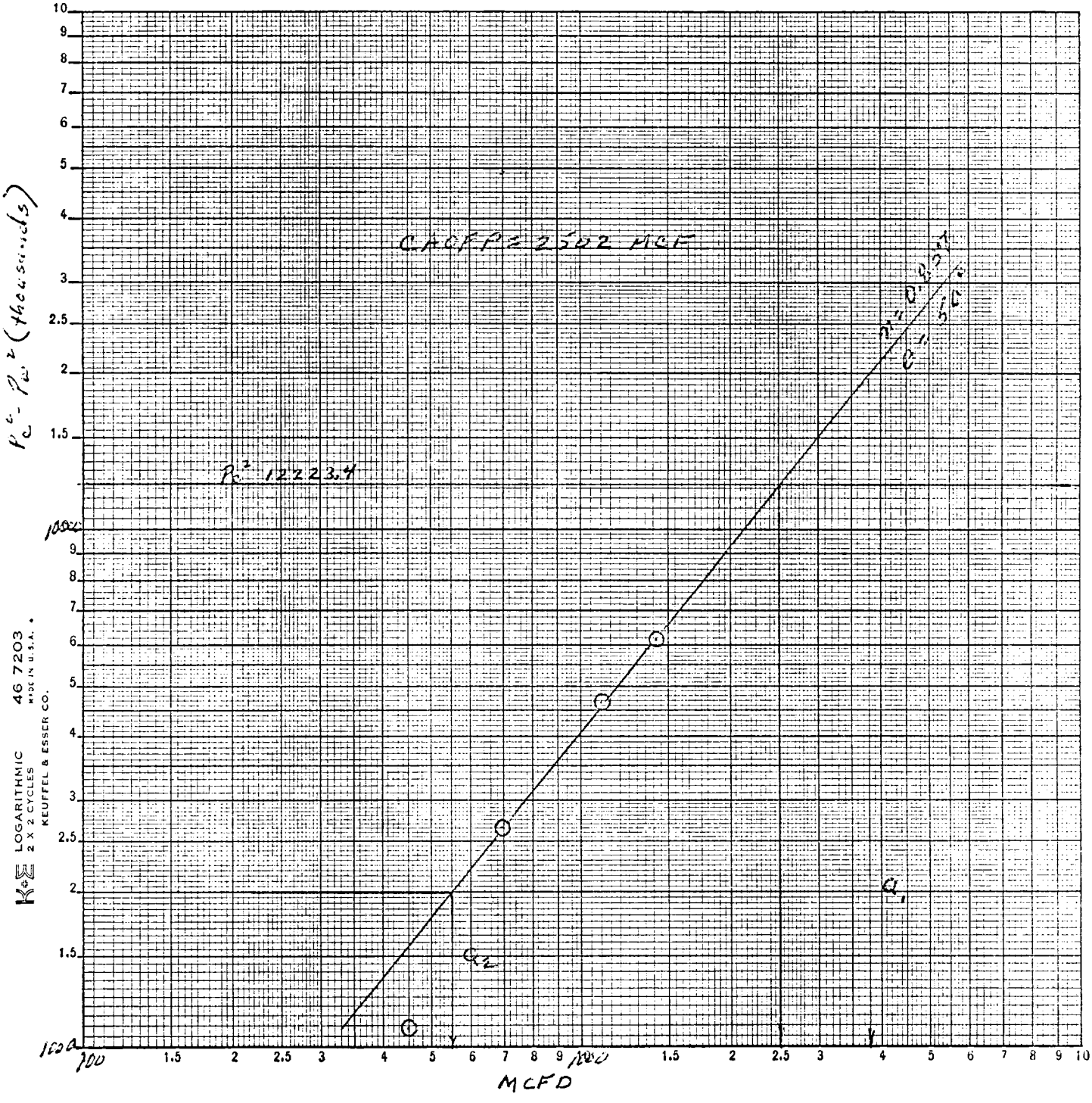
AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 2502$

Absolute Open Flow 2502 Mcfd @ 15.025 Angle of Slope θ 50 Slope, n 0.837

Remarks: Calculated by computer

| Approved By Commission: | Conducted By: | Calculated By: | Checked By: |
|---|---|---|---|
| | J. Coleman | J. Coleman | R. Huff |

ATLANTIC RICHFIELD COMPANY
BQ-2 Federal Com #1
Unit O, S-0, T-21-S, R-26-E
Eddy County, N.M.
01/30/75




ΔP 20000
ΔP 2000

3780 MCF Log $Q_1$ = 3.577492
550 MCF Log $Q_2$ = 2.740363

$n$ = 0.837129 = 0.837

# UNITED CHEMICAL CORPORATION

OF NEW MEXICO

KE-TONE

3492

2-1-75

## CERTIFICATE OF ANALYSIS

Atlantic Richfield Company BQ-2 Federal Comm. #1
Coleman Engineering

Avalon Morrow Gas

Eddy County, NM

FRACTIONAL ANALYSIS

| Percentage Composition | | | | |
|---|---|---|---|---|
| MOL % | LIQ. % | G.P.M. | | |
| | | | 0.5898 | |
| .609 | | | 17.08 | |
| 1.191 | | | | |
| | | | | .134 |
| | | | | .037 |
| | | | | .084 |
| 94.555 | | | | .756 |
| 2.835 | | .756 | | |
| .485 | | .134 | | |
| .049 | | .016 | | 1031 |
| .066 | | .021 | | 1013 |
| .034 | | .012 | | |
| .023 | | .008 | | |
| .040 | | .016 | | |
| .113 | | .048 | | |
| 100.000 | | 1.011 | | |

Deane Simpson

Additional Data and Remarks