NE MEXICO OIL CONSERVATION COMMISSION

# MULTIPOINT A ONE POINT BACK PRESSURE TEST OR GAS WELL

Form C-122
Revised 9-1-65

| | | | | | |
|---|---|---|---|---|---|
| Type Test: [X] Initial [ ] Annual [ ] Special | | | | Test Date: 9/27/76 | |
| Company: Atlantic Richfield Company | | | Connection: El Paso Natural Gas Company | | |
| Pool: Jalmat | | | Formation: Yates | | Unit: F |
| Completion Date: 7/1/76 | Total Depth: 3706 | | Plug Back TD: 3655 | Elevation: 3519 GL | Farm or Lease Name: McDonald WN State |
| Csg. Size: 4.5 / Wt.: 9.5 / d: 4.090 / Set At: 3706 | | | Perforations: From 3297 To 3483 | | Well No.: 28 |
| Tbg. Size: 2.375 / Wt.: 4.7 / d: 1.995 / Set At: 3390 | | | Perforations: From open To end | | Unit: F / Sec.: 14 / Twp.: 22 / Rge.: 36 |
| Type Well – Single – Bradenhead – G.G. or G.O. Multiple: Single | | | Packer Set At: | | County: Lea |
| Producing Thru: Tbg | Reservoir Temp. °F: 90 @ 3390 | | Mean Annual Temp. °F: | Baro. Press. – $P_a$: | State: New Mexico |

| L | H | Gg | % $CO_2$ | % $N_2$ | % $H_2S$ | Prover | Meter Run | Taps |
|---|---|---|---|---|---|---|---|---|
| | | 675 | | | | | 4" | Flg. |

| | FLOW DATA | | | | TUBING DATA | | CASING DATA | | |
|---|---|---|---|---|---|---|---|---|---|
| NO. | Prover Line Size x Orifice Size | Press. p.s.i.g. | Diff. $h_w$ | Temp. °F | Press. p.s.i.g. | Temp. °F | Press. p.s.i.g. | Temp. °F | Duration of Flow |
| SI | | | | | 264 | | 264 | | 72 hrs. |
| 1. | 4 x 1.500 | 58 | 7.29 | 68 | 228 | | 228 | | 1 hr. |
| 2. | 4 x 1.500 | 59 | 14.44 | 68 | 200 | | 205 | | 1 hr. |
| 3. | 4 x 1.500 | 60 | 22.09 | 69 | 178 | | 187 | | 1 hr. |
| 4. | 4 x 1.500 | 60 | 33.06 | 69 | 144 | | 163 | | 1 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 | 10.84 | 22.78 | 71.2 | .9924 | 1.217 | 1.025 | 306 |
| 2. | 10.84 | 32.29 | 72.2 | .9924 | 1.217 | 1.023 | 432 |
| 3. | 10.84 | 40.21 | 73.2 | .9915 | 1.217 | 1.021 | 537 |
| 4. | 10.84 | 49.19 | 73.2 | .9915 | 1.217 | 1.016 | 654 |
| 5. | | | | | | | |

| NO. | $P_t$ | Temp. °R | $T_r$ | Z |
|---|---|---|---|---|
| 1. | .36 | 528 | 1.37 | .951 |
| 2. | .32 | 528 | 1.37 | .956 |
| 3. | .29 | 529 | 1.37 | .960 |
| 4. | .23 | 529 | 1.37 | .968 |
| 5. | | | | |

Gas Liquid Hydrocarbon Ratio: Dry Mcf/bbl.
A.P.I. Gravity of Liquid Hydrocarbons: Dry Deg.
Specific Gravity Separator Gas: .675 XXXXXXXXX
Specific Gravity Flowing Fluid: XXXXX
Critical Pressure: 669 P.S.I.A. ____ P.S.I.A.
Critical Temperature: 385 R ____ R

$P_c$ 277.2 $P_c^2$ 76.84

| NO | $P_t^2$ | $P_w$ | $P_w^2$ | $P_c^2 - P_w^2$ |
|---|---|---|---|---|
| 1 | | 241.2 | 58.18 | 18.66 |
| 2 | | 218.2 | 47.61 | 29.23 |
| 3 | | 200.2 | 40.08 | 36.76 |
| 4 | | 176.2 | 31.05 | 45.79 |
| 5 | | | | |

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 1.678$ (2) $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 1.593$

AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 1.041$

Absolute Open Flow: 1.041 Mcfd @ 15.025 Angle of Slope θ: 48.0 Slope, n: .899

Remarks:

| Approved By Commission: | Conducted By: | Calculated By: | Checked By: |
|---|---|---|---|
| Leary Section Eng. Dist. 1 Sup. | Rick Pagan | Rick Pagan | James Cogburn |

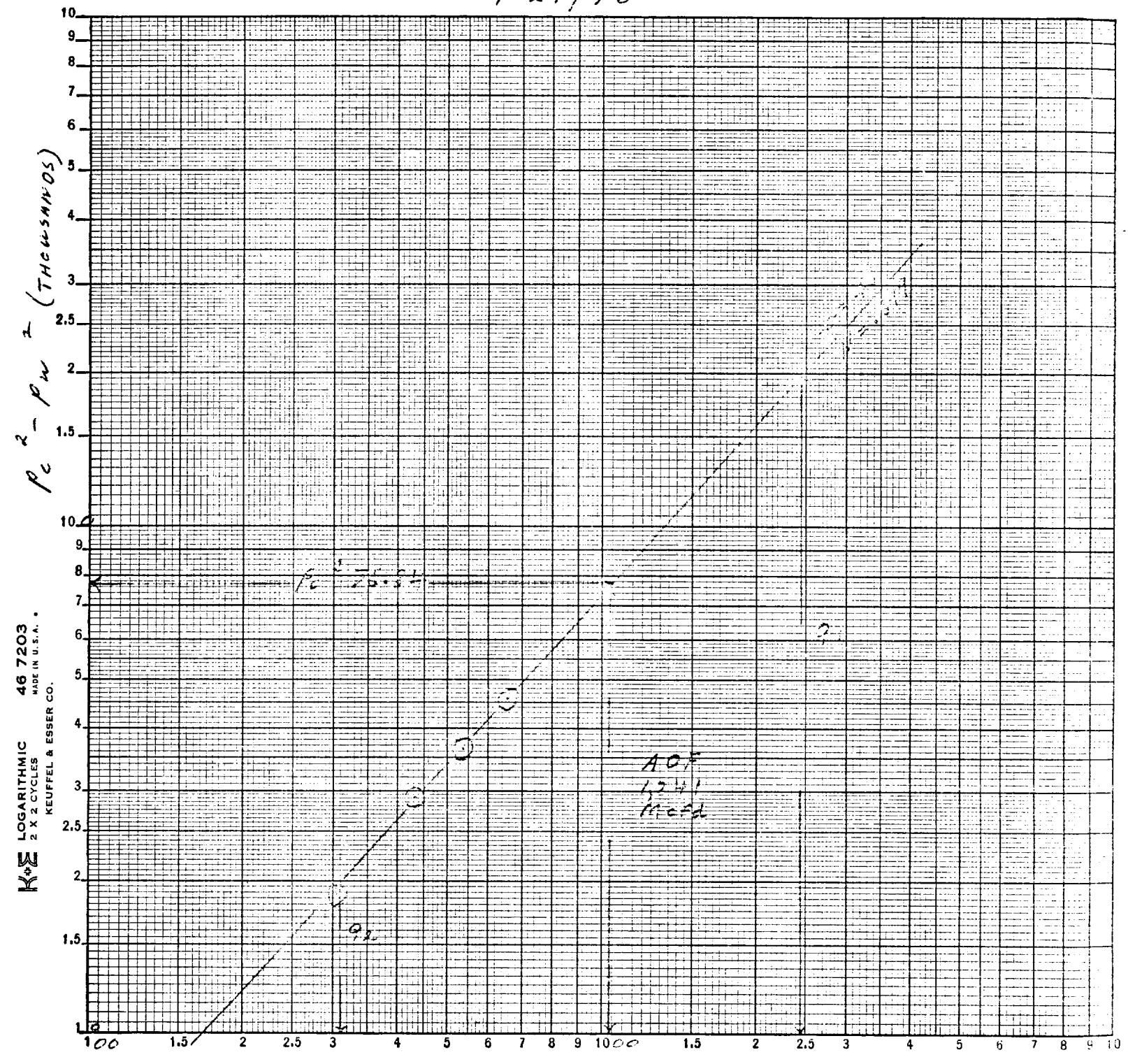
ATLANTIC RICHFIELD CO.

STA. McDONALD (WN) NO. 8

F 14 22 36

LEA COUNTY, NEW MEXICO

9-27, 76




$Q_2 = 2450$ mcfd  LOG $Q_2 = 3.389166$

$Q_1 = 309$ mcfd  LOG $Q_1 = 2.489458$

$n = .899708 = 0.899$

| NO. OF COPIES RECEIVED | | |
|---|---|---|
| DISTRIBUTION | | |
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| LAND OFFICE | | |
| OPERATOR | | |

Form C-105
Revised 1-1-65

# NEW MEXICO OIL CONSERVATION COMMISSION
# WELL COMPLETION OR RECOMPLETION REPORT AND LOG

5a. Indicate Type of Lease: State [X] Fee [ ]

5. State Oil & Gas Lease No.: A-2614

1a. TYPE OF WELL: OIL WELL [ ] GAS WELL [X] DRY [ ] OTHER

b. TYPE OF COMPLETION: NEW WELL [X] WORK OVER [ ] DEEPEN [ ] PLUG BACK [ ] DIFF. RESVR. [ ] OTHER

7. Unit Agreement Name:

8. Farm or Lease Name: McDonald WN State

9. Well No.: 28

2. Name of Operator: Atlantic Richfield Company

10. Field and Pool, or Wildcat: Jalmat Yates Gas

3. Address of Operator: P. O. Box 1710, Hobbs, New Mexico 88240

4. Location of Well: UNIT LETTER F LOCATED 2310 FEET FROM THE North LINE AND 2310 FEET FROM THE West LINE OF SEC. 14 TWP. 22S RGE. 36E NMPM

12. County: Lea

| 15. Date Spudded | 16. Date T.D. Reached | 17. Date Compl. (Ready to Prod.) | 18. Elevations (DF, RKB, RT, GR, etc.) | 19. Elev. Cashinghead |
|---|---|---|---|---|
| 6/21/76 | 6/26/76 | 7/1/76 | 3519' GR | |

| 20. Total Depth | 21. Plug Back T.D. | 22. If Multiple Compl., How Many | 23. Intervals Drilled By | Rotary Tools | Cable Tools |
|---|---|---|---|---|---|
| 3706' | 3655' | | → | 0-3706' | |

24. Producing Interval(s), of this completion — Top, Bottom, Name: 3297-3483' Yates Gas

25. Was Directional Survey Made: No

26. Type Electric and Other Logs Run: CNL/FDC, DLL, caliper & GR Collar logs

27. Was Well Cored: No

28. CASING RECORD (Report all strings set in well)

| CASING SIZE | WEIGHT LB./FT. | DEPTH SET | HOLE SIZE | CEMENTING RECORD | AMOUNT PULLED |
|---|---|---|---|---|---|
| 8-5/8" OD | 24# | 436' | 12¼" | 287 sx | |
| 7-7/8" OD | 9.5# | 3706' | 7-7/8" | 890 sx | |
| | | | | | |
| | | | | | |

29. LINER RECORD

| SIZE | TOP | BOTTOM | SACKS CEMENT | SCREEN |
|---|---|---|---|---|
| | | | | |
| | | | | |

30. TUBING RECORD

| SIZE | DEPTH SET | PACKER SET |
|---|---|---|
| 2-3/8" OD | 3390' | - |
| | | |

31. Perforation Record (Interval, size and number)

3297, 3301, 09, 10, 35, 37, 39, 41, 43, 51, 52, 53, 54, 55, 61, 65, 67, 3417, 20, 22, 32, 46, 48, 50, 81, 82' (26 - .40" holes)

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

| DEPTH INTERVAL | AMOUNT AND KIND MATERIAL USED |
|---|---|
| 3297-3483' | 7500 SCF $N_2$ pad, 4000 gal intensified acid (13½% HCL & 1½% HF) cont'g 1000 SCF $N_2$/bbl acid. Flushed w/12 bbls 2% KCL cont'g 1000 SCF $N_2$/bbl KCL. |

33. PRODUCTION

| Date First Production | Production Method (Flowing, gas lift, pumping — Size and type pump) | Well Status (Prod. or Shut-in) |
|---|---|---|
| 7/1/76 | Flowing | Shut in |

| Date of Test | Hours Tested | Choke Size | Prod'n. For Test Period → | Oil — Bbl. | Gas — MCF | Water — Bbl. | Gas — Oil Ratio |
|---|---|---|---|---|---|---|---|
| 7/8/76 | 8 | 3/4" | | - | 310 | - | - |

| Flow Tubing Press. | Casing Pressure | Calculated 24-Hour Rate → | Oil — Bbl. | Gas — MCF | Water — Bbl. | Oil Gravity — API (Corr.) |
|---|---|---|---|---|---|---|
| 55# | 160# | | - | 930 | - | - |

34. Disposition of Gas (Sold, used for fuel, vented, etc.): Sold - Well presently shut-in awaiting conn to purchaser

Test Witnessed By: Floyd Lowery

35. List of Attachments: Logs as listed in Item 26 above & Inclination Report

36. *I hereby certify that the information shown on both sides of this form is true and complete to the best of my knowledge and belief.*

SIGNED [signature] TITLE Dist. Drlg Supv. DATE 7/9/76

## INSTRUCTIONS

This form is to be filed with the appropriate District Office of the Commission not later than 20 days after the completion of any newly-drilled or deepened well. It shall be accompanied by one copy of all electrical and radio-activity logs run on the well and a summary of all special tests conducted, including drill stem tests. All depths reported shall be measured depths. In the case of directionally drilled wells, true vertical depths shall also be reported. For multiple completions, Items 30 through 34 shall be reported for each zone. The form is to be filed in quintuplicate except on state land, where six copies are required. See Rule 1105.

## INDICATE FORMATION TOPS IN CONFORMANCE WITH GEOGRAPHICAL SECTION OF STATE

| Southeastern New Mexico | | | | Northwestern New Mexico | | | |
|---|---|---|---|---|---|---|---|
| T. Anhy | | T. Canyon | | T. Ojo Alamo | | T. Penn. "B" | |
| T. Salt | | T. Strawn | | T. Kirtland-Fruitland | | T. Penn. "C" | |
| B. Salt | | T. Atoka | | T. Pictured Cliffs | | T. Penn. "D" | |
| T. Yates | 3218' | T. Miss | | T. Cliff House | | T. Leadville | |
| T. 7 Rivers | | T. Devonian | | T. Menefee | | T. Madison | |
| T. Queen | 3603' | T. Silurian | | T. Point Lookout | | T. Elbert | |
| T. Grayburg | | T. Montoya | | T. Mancos | | T. McCracken | |
| T. San Andres | | T. Simpson | | T. Gallup | | T. Ignacio Qtzte | |
| T. Glorieta | | T. McKee | | Base Greenhorn | | T. Granite | |
| T. Paddock | | T. Ellenburger | | T. Dakota | | T. | |
| T. Blinebry | | T. Gr. Wash | | T. Morrison | | T. | |
| T. Tubb | | T. Granite | | T. Todilto | | T. | |
| T. Drinkard | | T. Delaware Sand | | T. Entrada | | T. | |
| T. Abo | | T. Bone Springs | | T. Wingate | | T. | |
| T. Wolfcamp | | T. | | T. Chinle | | T. | |
| T. Penn. | | T. | | T. Permian | | T. | |
| T Cisco (Bough C) | | T. | | T. Penn. "A" | | T. | |

FORMATION RECORD (Attach additional sheets if necessary)

| From | To | Thickness in Feet | Formation | From | To | Thickness in Feet | Formation |
|---|---|---|---|---|---|---|---|
| 0 | 440 | 440 | Surface & Red Beds | | | | |
| 440 | 1105 | 665 | Red Bed | | | | |
| 1105 | 1540 | 435 | Red Bed & Anhydrite | | | | |
| 1540 | 1673 | 133 | Anhydrite | | | | |
| 1673 | 2150 | 477 | Salt & Anhydrite | | | | |
| 2150 | 3133 | 983 | Anhydrite | | | | |
| 3133 | 3285 | 152 | Anhydrite & Lime | | | | |
| 3285 | 3707 | 422 | Lime | | | | |
| | TD | | | | | | |