

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Type Test ☒ Initial ☐ Annual ☐ Special				Test Date 4/29/82		JUN 29 1982	
Company Yates Petroleum Company ✓				Connection Transwestern		O. C. D. ARTESIA, OFFICE	
Pool Pecos Slope				Formation Abo		Unit	
Completion Date 3/20/82		Total Depth 4250		Plug Back TD 4192		Elevation 3796.3	
Farm or Lease Name Dee OQ State							
Csq. Size 4 1/2	Wt. 9.5	d 4.090	Set At 4250	Perforations: From 3684 To 3858		Well No. 4	
Thg. Size 2 3/8	Wt. 4.7	d 1.995	Set At 3650	Perforations: From To		Unit Sec. Twp. Rge. C 32 5S 25E	
Type Well - Single - Bradenhead - G.C. or G.O. Multiple Single				Packer Set At		County Chaves	
Producing Thru Tubing		Reservoir Temp. °F 98 @ 3650		Mean Annual Temp. °F 62		Baro. Press. - P _a 13.2	
State New Mexico							
L 3650	H 3650	G _g .727	% CO ₂ 8.10	% N ₂ 6.14	% H ₂ S -	Prover -	Meter Run 2"
						Taps Flanged	

FLOW DATA						TUBING DATA		CASING DATA		Duration of Flow
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.	
SI							1005			
1.	2.067 x 1.250			500	13.1	60	910	72°		
2.	2.067 x 1.250			520	14.5	60	884	72°		
3.	2.067 x 1.250			520	20.7	62	865	72°		
4.	2.067 x 1.250			540	28	60	815	72°		
5.										

RATE OF FLOW CALCULATIONS							
NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P _m	Flow Temp. Factor F _t	Gravity Factor F _g	Super Compress. Factor, F _{pv}	Rate of Flow Q, Mcfd
1	8.120	82.1	513.2	1.000	1.173	1.049	820
2	8.120	87.9	533.2	1.000	1.173	1.051	880
3	8.120	105.1	533.2	.9981	1.173	1.051	1050
4	8.120	124.5	553.2	1.000	1.173	1.054	1250
5							

NO.	R ₁	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio _____ Mcf/bbl.
1	.80	520	1.41	.901	A.P.I. Gravity of Liquid Hydrocarbons _____ Deg.
2	.77	520	1.41	.905	Specific Gravity Separator Gas .727 XXXXXXXXXX
3	.77	522	1.41	.905	Specific Gravity Flowing Fluid XXXXXX
4	.74	520	1.41	.908	Critical Pressure 691 P.S.I.A. 691 P.S.I.A.
5					Critical Temperature 370 R 370 R

NO.	P _c	P _w	P _w ²	P _c ² - P _w ²
1	1018.2	1036.7		
1	852.2		801.1	175.6
2	805.2		815.9	220.8
3	771.1		786.7	250.0
4	685.6		707.7	329.0
5				

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 5.904$

AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 2718 \text{ mcfpd}$

(2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 3.315$

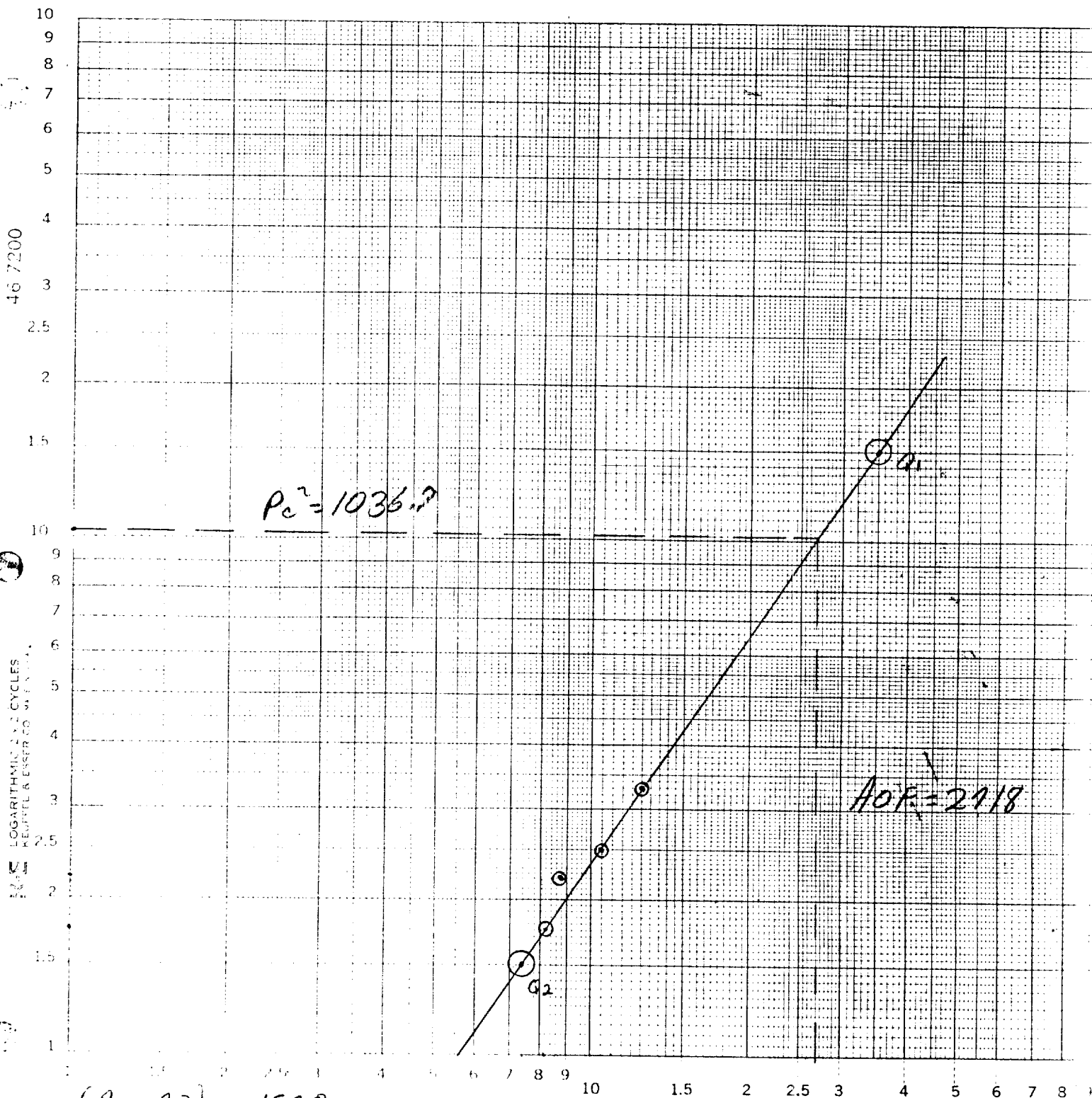
Absolute Open Flow 2718 mcf/d	Mcf @ 15.025	Angle of Slope °	Slope, n 675
Remarks:			
Approved By Division	Conducted By:	Calculated By: Brent Mulliniks	Checked By: Al Springer

LINE	4	3	2	1
1 Q _m	1,250	1,050	,890	,740
2 T ₁ (R.H. or)	520	520	520	520
3 T ₂ (B.H. or)	520	520	520	520
4 T ₃ (L.W. or)	526	526	527	526
5 T ₄ (L.W. or)	,849	,842	,834	,836
6 T ₅	446.6	442.9	442.15	439.70
7 G ₁ /T ₂	5,943	5,992	6,002	6,035
8 e ^s (Table XIV)	1,251	1,252	1,252	1,254
9 1-e ^s (Table XIV)	,201	,201	,201	,203
10 P ₁	828.2	878.2	897.2	923.2
11 P ₂ 2/1000	685.6	771.1	805.2	852.2
12 F ₁ (Table XV)	01823	01823	01823	01823
13 F ₂ = F ₁ T ₂	8,191	8,014	8,060	7,016
14 F ₂ Q _m	10,196	8,474	7,043	6,573
15 L/H (F ₂ Q _m) ²	10355	71,870	50,313	43,210
16 F ₂ = L/H (F ₂ Q _m) ² (1-e ^s)	20,815	14,446	10,113	8,792
17 P _w ² = P ₁ ² + F _w	706.4	785.5	815.1	861.1
18 P _s ² = e ^s P _w ²	883.7	983.5	1020.5	1094.9
19 P _s	940.1	991.9	1010.2	1034.1
20 P = (P ₁ + P _s)	884.0	934.9	953.7	981.2
21 P _r = (P/P _{cr})	1,28	1.35	1.38	1.42
22 T _r = (T/T _{cr})	1.42	1.42	1.42	1.42
23 Z (Table XI)	,849	,842	,834	,836

C-32-55-25E

Chaves, New Mexico

Yates Petr. Corp



$$(P_c^2 - P_w^2)_1 = 1500$$

$$(P_c^2 - P_w^2)_2 = 150$$

$$Q_1 = 3500$$

$$Q_2 = 740$$

$$\log Q_1 = 3.54407$$

$$\log Q_2 = 2.86923$$

$$N = .67484 \quad N = .675$$