

NEW MEXICO OIL CONSERVATION COMMISSION
MULTIPLE AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

File 122
Form C-122
Revised 9-1-65

RECEIVED

Type Test ☒ Initial ☐ Annual ☐ Special				Test Date 4-27-81		JUN 17 1981	
Company Yates Petroleum Corporation				Connection Transwestern Pipeline Co.		O. C. O. ARTESIA, OREGON	
Pool Boyd Morrow				Formation Morrow		Unit	
Completion Date 3-2-81		Total Depth 9900'		Plug Back TD 9366 KB		Elevation 3662 KB	
Casing Size 5 1/2"		WT. 17#		Set At 4.892		Perforations: From 8810 To 8878 KB	
Tubing Size 2 7/8"		WT. 6.5#		Set At 2.441		Perforations: From 8792 To 8794 KB	
Type Well - Single - Bradenhead - G.C. or G.O. Multiple Single				Packer Set At 8785 KB		Form or Lease Name Routh NU Deep Com	
Producing Thru Tubing		Reservoir Temp. °F 145 8830		Mean Annual Temp. °F 62		Baro. Press. - P _g 13.2	
L 8830		H 8830		C _g 0.593		% CO ₂ 1.20	
				% N ₂ 0.85		% H ₂ S Nil	
				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.		Temp. °F
1	2.016 X 1.000			550	6	82	1820				Days
2	2.016 X 1.000			550	13	81	1416				18 Hrs.
3	2.016 X 1.000			550	25	80	1175				24 Hrs.
4	2.016 X 1.000			575	39	80	854				24 Hrs.
5							601				24 Hrs.

RATE OF FLOW CALCULATIONS							
NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P _m	Flow Temp. Factor Ft.	Gravity Factor F _g	Super Compress. Factor, F _{pv}	Rate of Flow Q, Mcfd
1	4.946	58.13	563.2	.9795	1.299	1.0395	380
2	4.946	85.57	563.2	.9804	1.299	1.0398	560
3	4.946	118.66	563.2	.9813	1.299	1.0401	778
4	4.946	151.46	588.2	.9813	1.299	1.0419	995
5							

NO.	R _f	Temp. °R	T _f	Z	Gas Liquid Hydrocarbon Ratio	A.P.I. Gravity of Liquid Hydrocarbons	Specific Gravity Separator Gas	Specific Gravity Flowing Fluid	Critical Pressure	Critical Temperature
1	0.834	542	1.544	.9255			0.593	XXXXXX	675.5	351
2	0.834	541	1.541	.9250						
3	0.834	540	1.538	.9244						
4	0.871	540	1.538	.9211						
5										

$P_c = 2275.2$ $P_c^2 = 5176$				$(1) \frac{P_c^2}{R^2 - R_w^2} = 1.12156$		$(2) \left[\frac{R^2}{R^2 - R_w^2} \right]^n = 1.12156$	
NO.	P _i ²	P _w	R _w ²	P _c ² - R _w ²			
1			3094	2082			
2			2116	3060			
3			1115	4061			
4			561	4615			
5							

$ACF = Q \left[\frac{R^2}{P_c^2 - R_w^2} \right]^n = 1116$			
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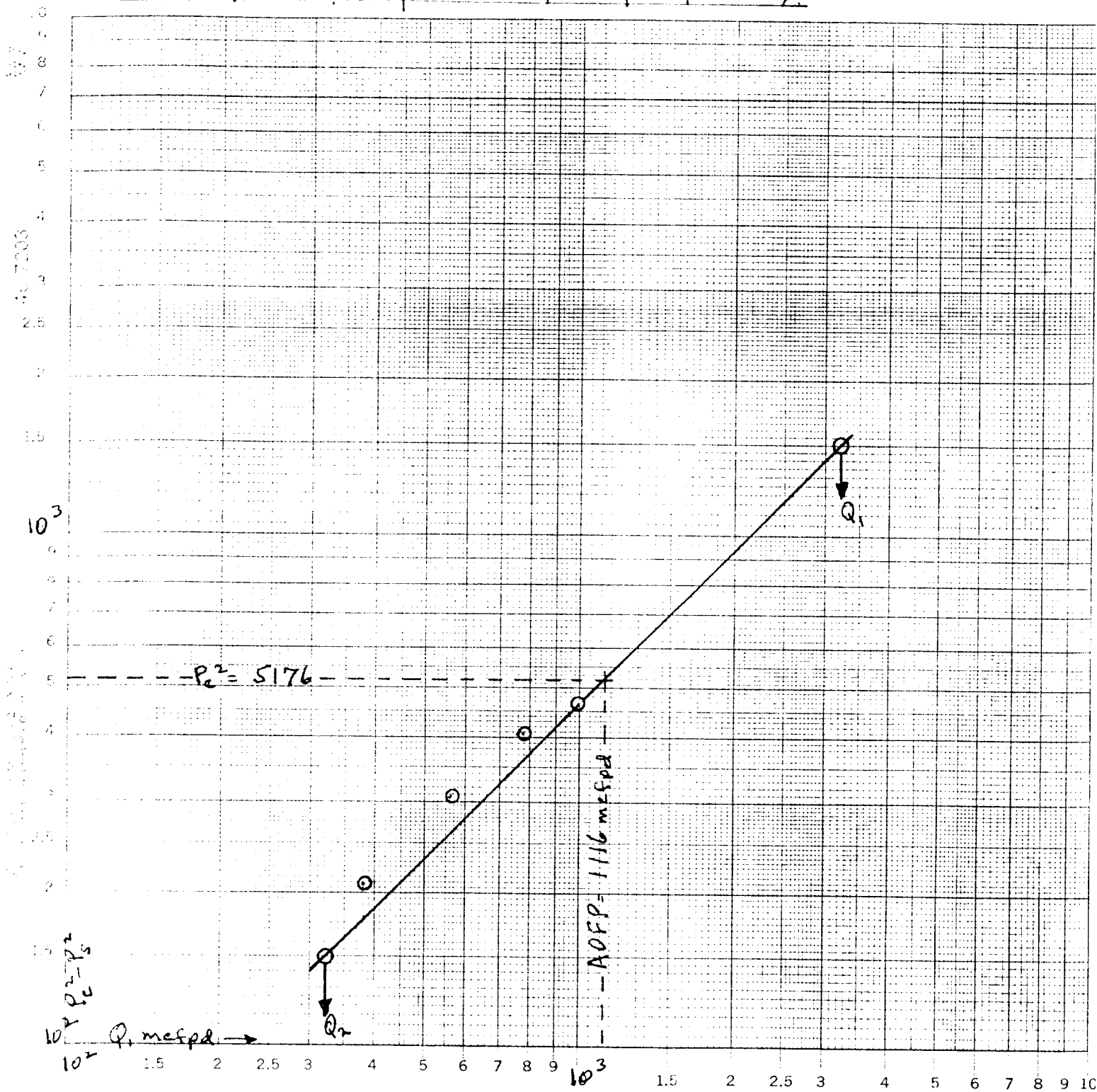
Absolute Open Flow 1116		Mold # 15.025		Angle of Slope 45 deg.		Slope, n 1.0000	
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Remarks: Static pressures by Bennett Wireline. Flowing pressures by DWT. Calculation worksheet C122D attached. (Well cleaned up very slow).

Approved By Commission:	Conducted By: Danny Matthews	Calculated By: Eddie Mahfood	Checked By:
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YPC- Routh NU Deep Com. No. 2

B-14-19s-24E. Boyd Morrow, Eddy Co., N. Mex.



$$Q_1 = 3210 \text{ mcfpd}$$

$$\log Q_1 = 3.5065$$

$$Q_2 = 321 \text{ mcfpd}$$

$$\log Q_2 = 2.5065$$

$$n = 1.0000$$

WORKSHEET FOR CALCULATION OF STIC COLUMN WELLHEAD PRESSURE (P_{stic})

G-1220
Adopted 9-1-65

COMPANY LEASE Well No. DATE

LOCATION: Unit Section Township Range

L H L/H G % CO₂ % N₂ % H₂S

d F_i CH P_{cr} T_{cr}

LINE#	ST	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	ST	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
2	T _W (W.H. °R)	0.320	0.560	0.772	0.945																			
3	T _g (B.H. °R)	533	530	533	537																			
4	T = $\frac{(T_W + T_g)}{2}$	509	505	503	502																			
5	P ₁ (Est.)	565	565	565	565																			
6	T ₁	3045	3045	3045	3045																			
7	CH	454	454	454	454																			
8	e ^s (Table XIV)	1.0704	1.0704	1.0704	1.0704																			
9	e ^s (Table XIV)	1.5765	1.5765	1.5765	1.5765																			
10	P ₁	0.5633	0.5633	0.5633	0.5633																			
11	P ₁ (Table XV)	1.4292	1.4292	1.4292	1.4292																			
12	F ₁ (Table XV)	0.45139	0.45139	0.45139	0.45139																			
13	F ₁ = F ₁ T ₂	4.6188	4.6188	4.6188	4.6188																			
14	F ₁ Q _m	1.755	2.666	3.8475	5.090																			
15	L/H (F ₁ Q _m) ²	3.080	7.106	14.863	25.90																			
16	F ₁ = L/H (F ₁ Q _m) ² (1-e ^s)	1.12	2.33	4.76	8.1																			
17	P _W ² = P ₁ ² + F _W	2043.73	1413.0	756.80	335.3																			
18	P _S ² = e ^s P _W ²	5170.43	3204.7	2115.6	1552																			
19	P _S	2275.2	1791.6	1454.5	1248.7																			
20	P = $\frac{(P_1 + P_S)}{2}$	2054.2	1616.4	1321.4	961.6																			
21	P ₁ = (P/P _{cr})	2.889	2.265	1.858	1.352																			
22	T ₁ = (T/T _{cr})	1.552	1.560	1.566	1.566																			
23	Z (Table XI)	0.8045	0.833	0.856	0.885																			