

NE MEXICO OIL CONSERVATION COMM DN
MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

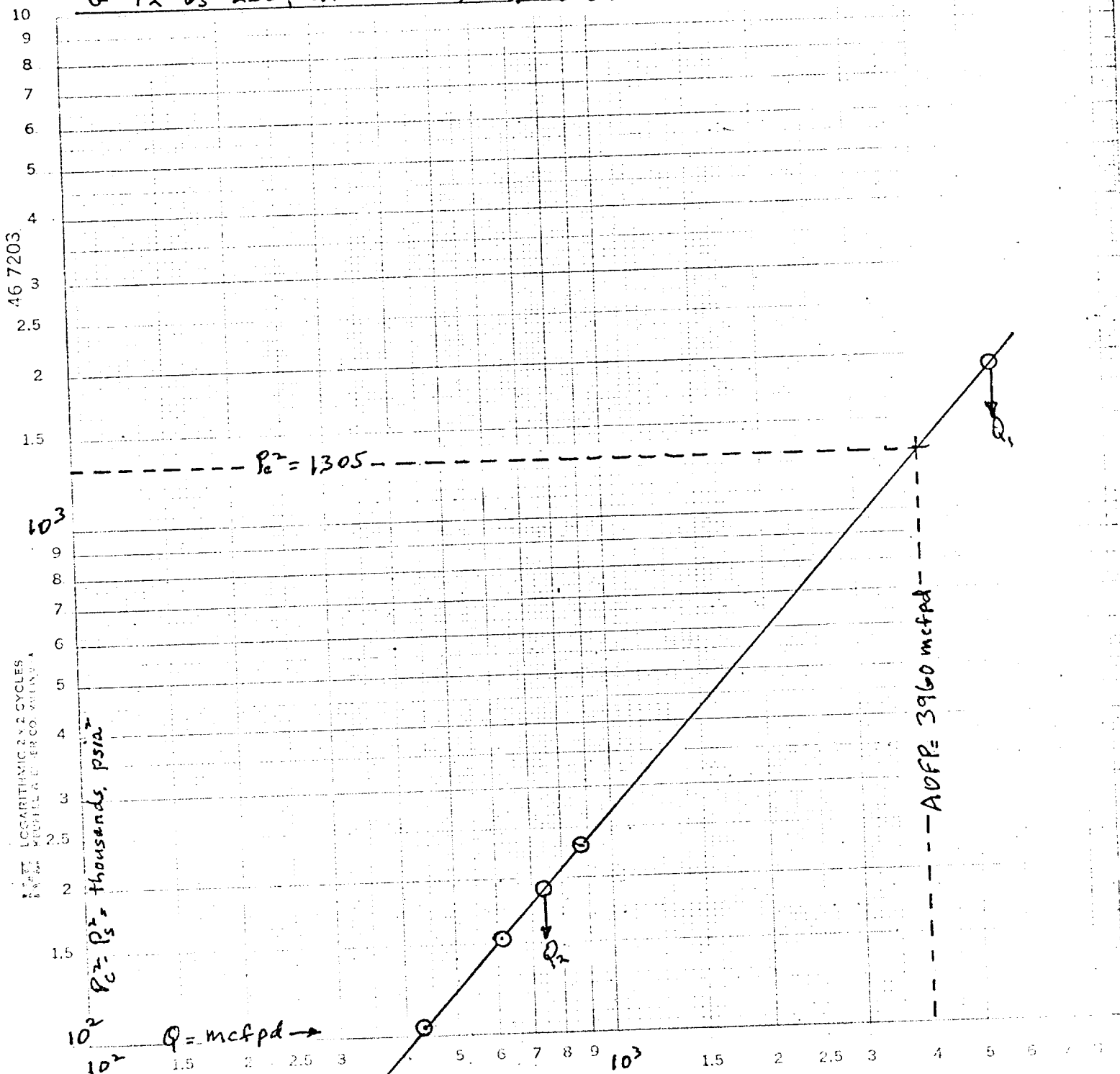
F Yates
Form C-122
Revised 9-1-65

RECEIVED

Type Test ☒ Initial ☐ Annual ☐ Special				Test Date 7-14-80		SEP 8 1980	
Company Yates Petroleum Corp.				Connection Transwestern Pipeline Co.		O.C.D. ARTESIA OFFICE	
Pool <i>Pecos Slope - Abo Gas</i> <i>Wildcat Abo</i>				Formation Abo		Unit NM 9813	
Completion Date 9-24-79		Total Depth 5442'		Plug Back TD 4065'		Elevation 3802' KB	
Farm or Lease Name So. Alkali "LK" Fed		Well No. 1		Unit G		Sec. Twp. Rge. 12 6S 25E	
Csg. Size 5-1/2"		Wt. 14#		d 5.012		Set At 5442	
Perforations: From 3714 To 3926'		Perforations: From To		Packer Set At 3680		County Chaves	
Type Well - Single - Bradenhead - G.G. or G.O. Multiple Single		Baro. Press. - P _a 13.2		State New Mexico			
Producing Thru Tubing		Reservoir Temp. °F 97 @ 3820		Mean Annual Temp. °F 62		Meter Run 2"	
L 3815		H 3815		G _g 0.653		Taps Flange	
% CO ₂ 0.97		% N ₂ 5.82		% H ₂ S Nil		Prover	
FLOW DATA				TUBING DATA		CASING DATA	
NO.	Prover Line Size	X	Orifice Size	Press. p.s.i.g.	Diff. hw	Temp. °F	Press. p.s.i.g.
1	2.067 x 0.750			700	10	75	990
2				700	21	75	976
3				700	42	75	955
4				700	85	75	923
5							
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	2.709	84.45	713.2	0.9859	1.237	1.068	298
2	2.709	122.38	713.2	0.9859	1.237	1.068	432
3	2.709	173.07	713.2	0.9859	1.237	1.068	611
4	2.709	246.22	713.2	0.9859	1.237	1.068	869
5							
NO.	P _r	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio _____ Mcf/bbl.		
1	1.005	535	1.408	.877	A.P.I. Gravity of Liquid Hydrocarbons _____ Deg.		
2	1.005	535	1.408	.877	Specific Gravity Separator Gas _____ 0.653		
3	1.005	535	1.408	.877	Specific Gravity Flowing Fluid _____ 0.653		
4	1.005	535	1.408	.877	Critical Pressure _____ 665 P.S.I.A.		
5					Critical Temperature _____ 363.5 °R		
P _c 1142.2 P _c ² 1305					(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 5.6739$		
					(2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 4.5553$		
NO.	P _i ²	P _w	P _w ²	P _c ² - P _w ²	AOG = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 3960$		
1			1236	69			
2			1201	104			
3			1151	154			
4			1075	230			
5							
Absolute Open Flow 3960 Mcfd @ 15.025					Angle of Slope 48.9 deg		Slope, n 0.8735
Remarks: Static pressures by Bennett Wireline; Flowing pressures by DWT. Calculations worksheet C-122D attached. NOTE: Orifice plate too small; Well performance exceeded anticipated potential.							
Approved By Commission:		Conducted By: David Weaver		Calculated By: Eddie Mahfood		Checked By:	

So. Alkali LK Fel #1

Q-12-6s-25E, Wildcat Abo, Charles Co. N. Mex



$$Q_1 = 5530 \text{ mcfpd}$$

$$\log Q_1 = 3.7427$$

$$Q_2 = 740 \text{ mcfpd}$$

$$\log Q_2 = 2.8692$$

$$n = 0.8735$$

WORKSHEET FOR CALCULATION OF S.I. C COLUMN WELLHEAD PRESSURE (P_w)

DATE 7-14-50

COMPANY PEC

LEASE GO. 09962 LK Rd WELL NO. 1

LOCATION: Unit G

Section 12 Township 6S

Range 25E

L 3815 H 3815 L/H 1.000 G 0.653 % CO₂ 0.92 % N₂ 582 % H₂S 1.19

2 7/8 2678 d 2.598 F₁ 0.008567 GH 2491 P_{CT} 741 T_{CT} 391

5/4 3815 2678 2.598 0.008567 2491 741 391

LINE	1	2	3	4					
1 Q _m	-	0.298	0.432	0.611	0.869				
2 T _w (W.H. °R)	555	542	544	547	549				
3 T _s (B.H. °R)	557	556	556	555	555				
4 T = (T _w + T _s)	544	548	550	551	552				
5 Z (Est.)	.817	.8325	0.830	.834	.841				
6 T _Z	444.21	456.21	456.50	459.53	464.23				
7 CH/TZ	5.6077	5.460	5.457	5.421	5.366				
8 e ^s (Table XIV)	1.2340	1.2272	1.2271	1.2254	1.2229				
9 1-e ^s (Table XIV)		0.1851	0.1850	0.1840	0.1823				
10 F ₁	1.225.2	1003.2	989.2	968.2	936.2				
11 P ₁ 2/1000	1057.2	1006.4	978.5	937.4	876.5				
12 F ₁ (Table XV)	0.21029	0.20475	0.20463	0.20328	0.20122				
13 F _c = F ₁ TZ		3.9084	3.9108	3.9368	3.977				
14 F _c Q _m		1.165	1.16895	2.405	3.456				
15 L/H (F _c Q _m) ²		1.356	2.1854	5.786	11.944				
16 F _w = L/H (F _c Q _m) ² (1-e ^s)		0.3	0.5	1.1	2.2				
17 P _w ² = P ₁ ² + F _w		1006.7	979.0	938.5	878.7				
18 P _s ² = e ^s P _w ²		1304.6	1235.4	1201.3	1150.0	1074.6			
19 P _s		1142.2	1111.5	1096.0	1072.4	1036.6			
20 P = (P ₁ ² + P _s ²)		1085.2	1059.4	1042.6	1020.3	986.4			
21 P _c = (P/P _{ct})		1.467	1.427	1.407	1.377	1.331			
22 T _c = (T/T _{ct})		1.391	1.4015	1.4065	1.409	1.4115			
23 Z (Table XI)		0.817	0.8325	0.830	0.834	0.841			