

RECEIVED

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Type Test ☒ Initial ☐ Annual ☐ Special						Test Date MAY 27 1982	
Company Yates Petroleum Corporation				Connection Transwestern Pipeline Company		O. C. D. ARTESIA, OFFICE	
Pool Pecos Slope Abo				Formation Abo		Unit Fee	
Completion Date 2-9-82		Total Depth 4225'		Plug Back TD 4182'		Elevation 3714.5' GL	
Ceq. Size 4 1/2"		WI. 9.5#		d 4.090"		Set At 4212'	
Perforations: From 3607'		To 3878'		Well No. 1			
Thq. Size 2 3/8"		WI. 4.7#		d 1.995"		Set At 3850'	
Perforations: From		To		Unit E		Sec. 35	
Twp. 6S		Rge. 25E					
Type Well - Single - Brodenhead - G.G. or G.O. Multiple Single				Packer Set At None		County Chaves	
Producing Thru Tubing		Reservoir Temp. °F 92° @ 3742		Mean Annual Temp. °F 60		Buro. Press. - P ₀ 13.2	
State New Mexico							
L 3850		H 3850		Gg 0.679		% CO ₂ 2.47	
% N ₂ 5.63		% H ₂ S 0		Prover -----		Meter Run 2"	
Taps Flange							

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
SI							991				Days
1.	2.067 X 1.000			150	6	60	615	64			24 hrs.
2.	2.067 X 1.000			150	8	62	508	64			24 hrs.
3.	2.067 X 1.000			160	12	62	395	64			24 hrs.
4.	2.067 X 1.000			150	19	70	140	64			24 hrs.
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	4.946	31.29	163.2	1.0000	1.214	1.015	191
2	4.946	36.13	163.2	0.9981	1.214	1.015	220
3	4.946	45.59	173.2	0.9981	1.214	1.015	277
4	4.946	55.68	163.2	0.9905	1.214	1.014	336
5							

NO.	P _t	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio _____ Mcf/bbl. A.P.I. Gravity of Liquid Hydrocarbons _____ Deg. Specific Gravity Separator Gas 0.679 _____ XXXXXXXXXX Specific Gravity Flowing Fluid _____ XXXXX Critical Pressure 669 _____ P.S.I.A. _____ P.S.I.A. Critical Temperature 366 _____ R _____ R	
1	0.2439	520	1.4208	0.971		
2	0.2439	522	1.4262	0.971		
3	0.2589	522	1.4262	0.971		
4	0.2439	530	1.4481	0.973		
5						

NO.	P _t ²	P _w ²	P _w ²	P _c ² - P _w ²	(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 1.2605$	(2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 1.3020$
1	394.6		395.1	613.3		
2	271.6		272.3	736.1		
3	166.6		167.7	840.7		
4	23.5		25.2	983.2		
5						

Absolute Open Flow 370 Mcfd @ 15.025 Angle of Slope θ _____ Slope, n 1.14

Remarks: Static pressures by Bennett Wireline, flowing pressures by DWT calculations.
 Worksheet C122D attached.

Approved By Division	Conducted By: David Weaver	Calculated By: Albert R. Stall	Checked By:
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WORKSHEET FOR CALCULATION OF STUB C COLUMN WELLHEAD PRESSURE (P_w)

C-122D
AS-101-65

COMPANY Yates Petroleum Corp LEASE Santa SA Comm WELL NO. 1 DATE 5-26-82

LOCATION: Unit E Section 35 Township 6S Range 25 E

L 3850 H 3850 L/H 1 G 0.679 % CO₂ 2.47 % N₂ 5.63 % H₂S 0

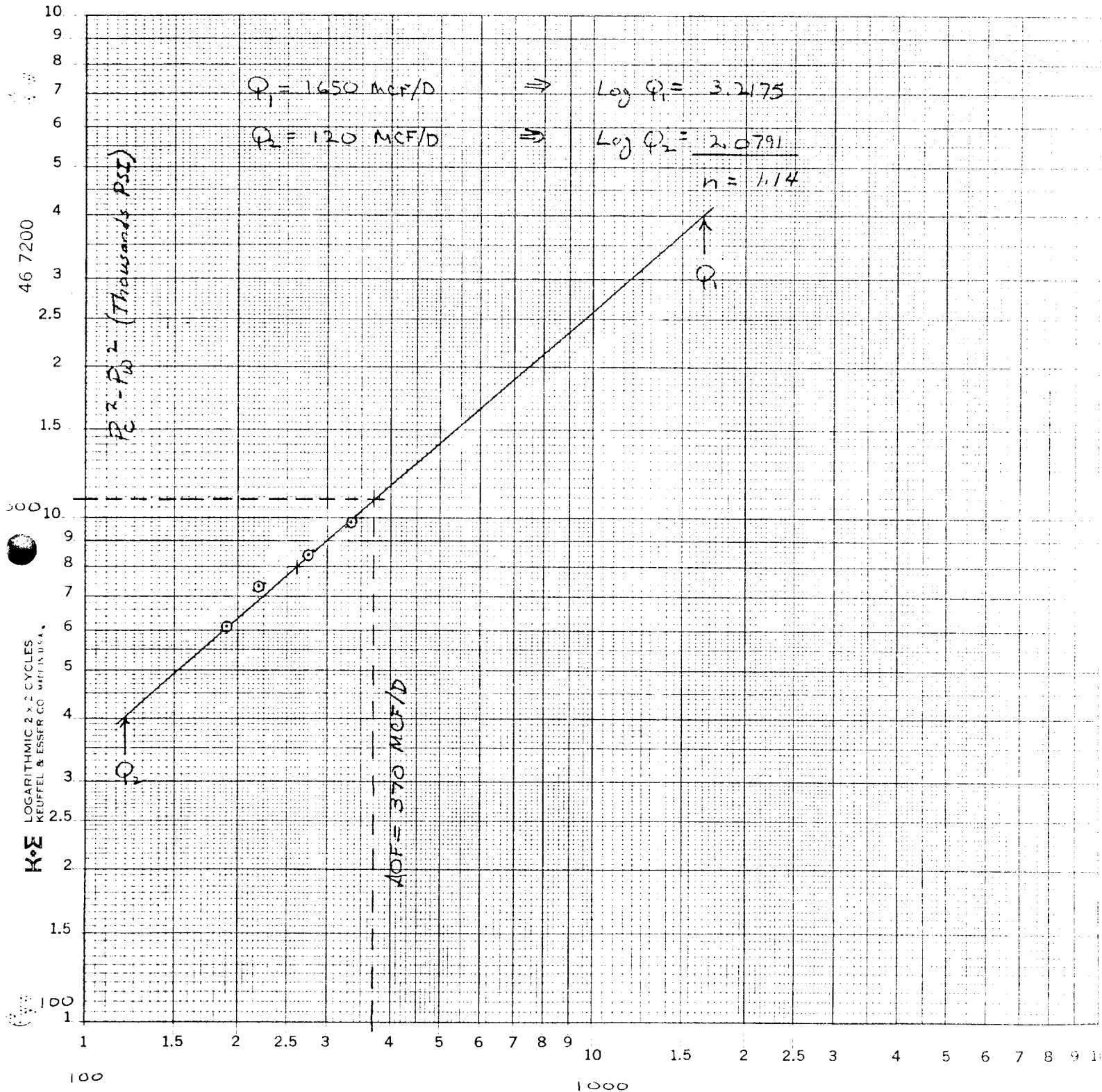
d 1.995 F_i 0.018231 GH 2.614 P_{cr} 669 T_{cr} 366

LINE	1 ST TRIAL	2 ND TRIAL	1 ST TRIAL	2 ND TRIAL	1 ST TRIAL	2 ND TRIAL	1 ST TRIAL	2 ND TRIAL	1 ST TRIAL	2 ND TRIAL	1 ST TRIAL	2 ND TRIAL
1 Q _m												
2 T _w (W.H. °R)	0.191	0.220	0.220	0.220	0.277	0.277	0.277	0.277	0.336	0.336	0.336	0.336
3 T _s (B.H. °R)	524	524	524	524	524	524	524	524	524	524	524	524
4 T = $\frac{(T_w + T_s)}{2}$	552	552	552	552	552	552	552	552	552	552	552	552
5 Z Est.	538	538	538	538	538	538	538	538	538	538	538	538
6 T _z	0.880	0.895	0.900	0.912	0.920	0.931	0.940	0.973				
7 GH/TZ	473.4	481.5	484.2	490.7	495.0	500.9	505.7	523.5				
8 e ^s (Table XIV)	5.521	5.429	5.399	5.328	5.281	5.229	5.169	4.994				
9 1-e ^s (Table XIV)	1.230	1.226	1.224	1.221	1.219	1.216	1.214	1.206				
10 P _t	0.187	0.184	0.183	0.181	0.180	0.178	0.176	0.171				
11 P _t 2/1000	628.2	628.2	521.2	521.2	468.2	408.2	353.2	303.2				
12 F _t (Table XV)	394.6	394.6	271.6	271.6	166.6	166.6	23.5	23.5				
13 F _c = F _t T _z	0.18231	0.18231	0.18231	0.18231	0.18231	0.18231	0.18231	0.18231				
14 F _c Q _m	8.631	8.778	8.827	8.946	9.024	9.132	9.219	9.544				
15 L/H (F _c Q _m) ²	1.648	1.677	1.942	1.968	2.500	2.530	3.098	3.207				
16 F _w = L/H (F _c Q _m) ² (1-e ^s)	2.717	2.811	3.772	3.873	6.249	6.399	9.596	10.293				
17 P _w ² = P _t ² + F _w	0.508	0.517	0.690	0.701	1.125	1.139	1.689	1.758				
18 P _s ² = e ^s P _w ²	395.1	395.1	272.3	272.3	167.7	167.7	25.2	25.2				
19 P _s	486.0	484.4	333.3	332.5	204.5	204.0	30.6	30.5				
20 P = $\frac{P_t + P_s}{2}$	697.1	696.0	577.3	576.6	452.2	451.6	174.9	174.5				
21 P _r = (P/P _{cr})	662.7	662.1	549.3	548.9	430.2	429.9	164.0	163.9				
22 T _r = (T/T _{cr})	0.9905	0.9897	0.8210	0.8205	0.6430	0.6426	0.2452	0.2449				
23 Z (Table XI)	1.4699	1.4699	1.4699	1.4699	1.4699	1.4699	1.4699	1.4699				
	0.895	0.895	0.912	0.912	0.931	0.931	0.973	0.973				

UNITES PETROLEUM CORPORATION

Saera SA Com No. 1

Unit E, Sec. 35, T6S, R 25 E



$Q \text{ (MCF/D)}$