

WORKSHEET FOR CALCULATION OF STATIC COLUMN WELLHEAD PRESSURE (P_w)

C-122D
Adopted 9-1-65

COMPANY Yates Petroleum Corp LEASE 21000 95 Final WELL NO. 1 DATE 5-23-77

LOCATION: Unit J Section 11 Township 21S Range 21E

L 6073 H 6073 L/H 1 G 0.623 % CO₂ 0.22 % N₂ 1.36 % H₂S 11.1
 2 1/2" 46g - 6073 (398) = 2397
 5 1/2" 2 3/8 - 53 (18.85) = 991
 5 1/2" 4 - 7 (4.25) = 30
 6073 24961
 d 8.02735 F_r 2.027326 GH 3844
 Ws (1951.2 - 19180) = 332.25 1102 psi
 670.5 369.2 670
 19.9 4.8
 730.6 36.5
 P_{cr} = 670
 T_{cr} = 365
 TABLE IX & X
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LINE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1 Q _m	51	0.272	0.394	0.532	0.713	51	0.772	0.394	0.532	0.713	51	0.772	0.394	0.532	0.713	51	0.772	0.394	0.532	0.713	51	0.772	0.394
2 T _w (W.H. °R)	527	520	532	533	534																		
3 T _s (B.H. °R)	577	575	574	573	572																		
4 T = (T _w + T _s)	552	552	552	553	552																		
5 Z (Est.)	.795	.816	.826	.826	.850																		
6 T _Z	438.248	450.84	456.728	462.308	470.05																		
7 GH/T _Z	8.740	8.5263	8.4155	8.3148	8.1728																		
8 e ^s (Table XIV)	1.3844	1.3768	1.3711	1.3659	1.3589																		
9 1-e ^s (Table XIV)		0.2737	0.2706	0.2679	0.2641																		
10 P _t	1627.2	1346.2	1259.2	1153.2	1024.2																		
11 P _t 2/1000	2647.78	1812.25	1580.55	1329.87	1048.99																		
12 F _t (Table XV) 5.0375 4.44	.32889	.31974	.31558	.31181	.30667																		
3 F _c = F _t T _Z		7.676	7.771	7.872	8.0031																		
14 F _c Q _m		2.0879	3.0642	4.1875	5.7062																		
15 L/H (F _c Q _m) 2		4.3592	9.3892	17.535	32.56																		
16 F _w = L/H (F _c Q _m) 2 (1-e ^s)		1.193	2.54	4.72	8.60																		
17 P _w 2 = P _t 2 + F _w 4W ₅		1814.55	1584.19	1335.67	1058.69																		
18 P _s 2 = e ^s P _w 2	3807.18	2498.27	2172.09	1824.39	1438.65																		
19 P _s	1751.2	1580.6	1473.8	1350.2	1199.4																		
20 P = (P _t + P _s)	1789.2	1463.4	1365.5	1252.0	1111.8																		
21 P _r = (P/P _{cr})	2.670	2.184	2.038	1.869	1.659																		
22 T _r = (T/T _{cr})	1.5123	1.5137	1.515	1.515	1.515																		
23 Z (Table XI)		.818	.8275	.837	.851																		

$$F_{12} = \frac{1,03240}{1,00000} = 1,017026$$