

WORKSHEET FOR CALCULATION OF STATIC COLUMN WELLHEAD PRESSURE (P_w)

C-122D
Adopted 9-1-65

COMPANY YFC LEASE North Williams Unit WELL NO. 3 DATE 12-11-81

LOCATION: Unit K Section 8 Township 19-S Range 28-E

L 10998 H 10998 L/H 1.000 G 0.916 % CO₂ 0.5 % N₂ 0.1 % H₂S Nil

F 2.00222 F_r 0.016523 GH 10074 P_{CT} 8658 T_{CT} 535.7

6.31% H₂O P_{CT} TABLE IX & X

LINE	S1	1	2	3	4	⑤	⑥	1	2	3	4
1 Q _m		0.968	1.352	1.787	2.399			.968	1.352	1.787	2.399
2 T _w (W.H. PR)	512	537	540	542	543						
3 T _a (B.H. PR)	628	625	624	623	622						
4 T _r = (T _a - T _w)	590	581	582	582.5	582.5			581	582	582.5	582.5
5 T _r (Table X)	5835	465	415	0.370	344			.474	1420	.369	
6 T _r	332.595	270.165	241.530	215.525	200.38			275.344	244.464	214.943	
7 GH/TZ	30.290	37.288	41.7091	46.7417	50.2745			36.5803	41.2125	46.8683	
8 e ^s (Table XIV)	3.1139	4.04835	4.7783	5.7708	6.58826			3.9422	4.6902	5.79824	
9 1 - e ^s (Table XIV)	-	0.7530	0.7907	0.8267	0.8482			0.7463	0.7868	0.8275	
10 P _r	2730.2	1943.2	1574.2	1188.2	803.2			1943.2	1574.2	1188.2	
11 P _r (Table X)	2399.5	3776.03	2478.10	1411.82	645.13			3776.03	2478.10	1411.82	
12 P _r (Table X)	1.135825	1.34231	1.5641	1.75281	1.88529			1.37176	1.54547	1.75756	
13 P _r = F _r T _r		4.464	3.9908	3.5611	3.3109			4.5503	4.039	3.5515	
14 F _r Q _m		4.321	5.3956	6.364	7.943			4.405	5.461	6.347	
15 L/H (F _r Q _m) ²		18.67	29.11	40.50	63.09			19.40	29.82	40.28	
16 F _w = L/H (F _r Q _m) ² (1 - e ^{-s})		14.06	22.302	33.48	53.51			14.48	23.46	33.33	
17 P _w ² = P _r ² + F _w		3790.09	2561.12	1445.30	698.64			3790.51	2501.56	1445.15	
18 P _s ² = e ^s P _w ²	23041.3	15313.6	11951.1	8340.5	4602.8			14942.9	11732.8	8379.4	
19 P _s	4800.2	3917.1	3457.0	2888.0	2145.4			3865.6	3425.3	2894.7	
20 P = (P _r + P _s)	3760.2	2930.2	2515.6	2038.1	1474.3			2904.4	2499.8	2041.5	
21 P _r = (P/P _{CT})	4343	3384	2905.5	2354	1703			3355	2887	2358	
22 T _r = (T/T _{CT})	1.064	1.085	1.086	1.087	1.087			1.085	1.086	1.087	
23 Z (Table XI)	0.5835	1.476	0.420	0.368	1.345			0.473	0.413	0.369	

$\frac{1}{2} - 10945(3.98) = 43561.1$
 $\frac{1}{2} - 49(10.36) = 5076$
 $\frac{1}{2} - 4(14.41) = 18.4$
 $\frac{1}{2} - 10988(4.026) = 44027.1$