

WORKSHEET FOR CALCULATION OF STATIC COLUMN WELLHEAD PRESSURE (P_w)

Form C-122D
Adopted 9-1-65

COMPANY Gulf Oil Corp. LEASE Grynberg A Fed. WELL NO. # 1 DATE 12/22/77

LOCATION: Unit R Section 5 Township 18 Range 25

L 8026 H 9026 L/H 1.000 G mix .662 % CO₂ % N₂ % H₂S

d 1.995 F_r .018231 GH 5313 P_{cr} 670 T_{cr} 378

LINE	1st Rate		2nd Rate		3rd Rate		4th Rate		5th Rate	
	1st trial	2nd trial	1st trial	2nd trial	1st trial	2nd trial	1st trial	2nd trial	1st trial	2nd trial
1 Q _m	1.202	1.202	1.689	1.689	2.567	2.567	3.630	3.630	5.320	5.320
2 T _w (W.H. °R)	534	534	534	534	534	534	534	534	534	534
3 T _s (B.H. °R)	614	614	614	614	614	614	614	614	614	614
4 T = (T _w + T _s) / 2	574	574	574	574	574	574	574	574	574	574
5 Z (Est.)	.787	.780	.787	.781	.789	.781	.796	.784	.808	.789
6 T _Z	447.7	447.7	451.7	448.3	452.9	448.3	456.9	450.0	463.8	452.9
7 GH/T _Z	11.761	11.867	11.761	11.852	11.731	11.852	11.628	11.806	11.456	11.731
8 e ^S (Table XIV)	1.554	1.560	1.554	1.560	1.553	1.560	1.547	1.557	1.537	1.553
9 1-e ^S (Table XIV)	.357	.359	.357	.359	.356	.359	.353	.358	.349	.356
10 P ₁	2015.2	2015.2	2003.2	2003.2	1953.2	1953.2	1818.2	1818.2	1618.2	1618.2
11 P ₁ / 21000	4061.0	4061.0	4012.8	4012.8	3815.0	3815.0	3305.9	3305.9	2618.6	2618.6
12 F _r (Table XV)	.018231	.018231	.018231	.018231	.018231	.018231	.018231	.018231	.018231	.018231
13 F _c = F _r T _Z	8.236	8.162	8.236	8.173	8.257	8.173	8.330	8.204	8.455	8.257
14 F _c Q _m	9.90	9.81	13.91	13.80	21.19	20.98	30.24	29.78	44.98	43.92
15 L/H (T _c Q _m) ²	98.0	96.3	193.5	190.5	449.2	440.1	914.3	886.9	2023.4	1929.4
16 F _w = L/H (F _c Q _m) ² (1-e ^S)	34.95	34.57	69.00	68.37	159.88	157.93	323.13	317.3	706.627	686.707
17 P _w ² = P ₁ ² + F _w	4026.0	4095.6	4081.8	4081.2	3974.9	3972.9	3629.0	3623.1	3325.2	3305.3
18 P _s ² = e ^S P _w ²	6366.5	6391.2	6344.5	6365.0	6171.4	6196.2	5612.6	5641.1	5109.6	5131.8
19 P _s	2523.2	2528.1	2518.8	2522.9	2484.2	2489.2	2369.1	2375.1	2260.4	2265.3
20 P = (P ₁ + P _s) / 2	2269.2	2271.6	2261.0	2263.1	2218.7	2221.2	2093.6	2096.6	1939.3	1941.8
21 P _r = (P / P _{cr})	3.39	3.39	3.37	3.38	3.31	3.32	3.12	3.13	2.89	2.90
22 T _r = (T / T _{cr})	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52
23 Z (Table XI)	.780	.780	.781	.781	.781	.781	.784	.783	.789	.789

This form to be filled in District Office (What state associated with)