

WORKSHEET FOR CALCULATION OF STATIC COLUMN WELLHEAD PRESSURE (P_w)

COMPANY MEWBORNE LEASE FEDERAL "N" WELL NO. 1 DATE _____

LOCATION: Unit M Section 6 Township 22S Range 26E

L 9709 H 9709 L/H 1.0 G 0.700 % CO₂ 0.37 % N₂ 1.19 % H₂S 0

d 1.995 F_r 0.0182 GH 6796 P_{Cr} 668 T_{Cr} 385

TABLE IX & X

LINE	1	1	2	3	4	4		
1 Q _m	1.175	1.175	1.453	1.717	1.790	1.790		
2 T _w (W.H. °R)	525	525	532	532	532	532		
3 T _s (B.H. °R)	623	623	623	623	623	623		
4 T = ($\frac{T_w + T_s}{2}$)	574	574	577	577	577	577		
5 Z (Est.)	0.9	0.871	0.88	0.89	0.90	0.895		
6 TZ	516.6	500	507.8	513.5	519.3	516.4		
7 GH/TZ	13.15	13.59	13.38	13.23	13.09	13.16		
8 e ^s (Table XIV)	1.637	1.665	1.652	1.642	1.634	1.638		
9 1-e ^s (Table XIV)	0.3893	0.3993	0.3946	0.3911	0.3879	0.3895		
10 P _t	783.2	783.2	683.2	613.2	583.2	583.2		
11 P _t ² /1000	613.4	613.4	466.8	376.0	340.1	340.1		
12 F _r (Table XV)	.018231	.018231	.018231	.018231	.018231	.018231		
13 F _c = F _r TZ	9.418	9.12	9.26	9.36	9.47	9.41		
14 F _c Q _m	11.07	10.71	13.45	16.07	16.95	16.85		
15 L/H (F _c Q _m) ²	122.5	114.7	180.94	258.37	287.2	284.0		
16 F _w = L/H (F _c Q _m) ² (1-e ^s)	47.7	45.81	71.40	101.0	111.40	110.61		
17 P _w ² = P _t ² + F _w	661.10	659.2	538.2	477.0	451.5	450.7		
18 P _s ² = e ^s P _w ²	1082.22	1097.6	889.11	783.31	737.7	738.3		
19 P _s	1040.3	1047.7	942.9	885.0	858.9	859.2		
20 P = ($\frac{P_t + P_s}{2}$)	911.75	915.42	813.1	749.1	721.1	721.2		
21 P _r = (P/P _{Cr})	1.36	1.370	1.217	1.12	1.08	1.08		
22 T _r = (T/T _{Cr})	1.49	1.490	1.500	1.50	1.50	1.50		
23 Z (Table XI)	0.871	0.870	0.882	0.891	0.895	0.895		