

WORKSHEET FOR CALCULATION OF STATIC COLUMN WELLHEAD PRESSURE (P_w)

COMPANY Pennzoil Co. LEASE Mescalero Fed. "29" WELL NO. 1 DATE 10/16/83

LOCATION: Unit 12999 Section 12999 Township 1000 Range 1075

L 12999 H 12999 L/H 1000 Gain 1.075 % CO₂ 6.56 % N₂ 1.526 % H₂S

d 1.995 F_r 0.018231 GH 13973 P_{cr} 654 T_{cr} 517

TABLE IX & X

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LINE	1st Rate	2nd Rate	1st Rate	2nd Rate	3rd Rate	1st Rate	2nd Rate	3rd Rate
1 Q _m	1.269	1.269	1.326	1.326	1.441	1.441	1.441	1.441
2 T _w (W.H. °R)	534	534	534	534	534	534	534	534
3 T _s (B.H. °R)	664	664	664	664	664	664	664	664
4 T = $(\frac{T_w + T_s}{2})$	599	599	599	599	599	599	599	599
5 Z (Est.)	585	1.610	1.553	1.563	1.492	1.488	1.539	1.522
6 TZ	350.4	365.4	331.2	337.2	294.7	292.3	322.9	312.7
7 GH/TZ	39.876	38.241	42.183	41.434	47.413	47.802	43.279	44.688
8 e ^s (Table XIV)	4.461	4.196	4.864	4.729	5.918	6.005	5.068	5.343
9 1 - e ^s (Table XIV)	1.776	1.762	1.794	1.789	1.831	1.833	1.803	1.813
10 P _t	1803.2	1803.2	1548.2	1548.2	1138.2	1138.2	673.2	673.2
11 P _t ² /1000	3251.5	3251.5	2396.9	2396.9	1295.5	1295.5	453.2	453.2
12 F _r (Table XV)	0.18231	0.18231	0.18231	0.18231	0.18231	0.18231	0.18231	0.18231
13 F _c = F _r TZ	6.388	6.661	6.039	6.148	5.373	5.329	5.886	5.700
14 F _c Q _m	1.718	1.792	1.969	2.004	2.369	2.350	2.472	2.394
15 L/H (F _c Q _m) ²	2.953	3.211	3.876	4.017	5.614	5.523	6.112	5.732
16 F _w = L/H (F _c Q _m) ² (1 - e ^{-s})	2.291	2.446	3.079	3.168	4.665	4.603	4.906	4.659
17 P _w ² = P _t ² + F _w	3253.8	3254.0	2400.0	2400.1	1300.2	1300.1	458.1	457.9
18 P _s ² = e ^s P _w ²	14514.7	13652.6	11673.6	11350.6	7694.3	7806.9	2321.7	2446.4
19 P _s	3809.8	3694.9	3446.7	3369.1	2773.9	2794.1	1523.7	1564.1
20 P = $(\frac{P_t + P_s}{2})$	2806.5	2749.1	2482.4	2458.6	1956.0	1966.1	1098.5	1118.6
21 P _r = (P/P _{cr})	4.29	4.20	3.80	3.76	2.99	3.01	1.68	1.71
22 T _r = (T/T _{cr})	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16
23 Z (Table XI)	1.610	1.601	1.563	1.559	1.488	1.490	1.522	1.515

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C.C.D.
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