

WORKSHEET FOR CALCULATION OF STATIC COLUMN WELLHEAD PRESSURE (P_w)

Form C-122D
Adopted 9-1-85

COMPANY MESA PETROLEUM CO. LEASE BERRY FEDERAL COM. WELL NO. # 1 DATE 1-9-79

LOCATION: Unit E Section 28 Township 17 Range 27

L 7750 H 7750 L/H 1.000 G .772 % CO₂ .87 % N₂ 2.79 % H₂S

d 1.995 F_r .018231 GH 5983 P_{cr} 666 T_{cr} 415

LINE	1 st			2 nd			3 rd			4 th		
	1 st	2 nd	1 st	2 nd	1 st	2 nd	1 st	2 nd	1 st	2 nd	1 st	2 nd
1 Q _m	.242	.242	.361	.361	.512	.512	.725	.725	.725	.725		
2 T _w (W.H. °R)	534	534	534	534	534	534	534	534	534	534		
3 T _s (B.H. °R)	612	612	612	612	612	612	612	612	612	612		
4 T = ($\frac{T_w + T_s}{2}$)	573	573	573	573	573	573	573	573	573	573		
5 Z (Est.)	.739	.714	.756	.729	.778	.753	.808	.784				
6 TZ	423.4	409.1	433.2	417.7	445.8	431.5	463.0	449.2				
7 GH/TZ	14.129	14.624	13.812	14.323	13.421	13.867	12.923	13.318				
8 e ^s (Table XIV)	1.699	1.730	1.679	1.711	1.654	1.682	1.624	1.648				
9 1-e ^s (Table XIV)	.411	.422	.404	.416	.395	.405	.384	.393				
10 P _t	1423.2	1423.2	1313.2	1313.2	1163.2	1163.2	993.2	993.2				
11 P _t ² /1000	2025.5	2025.5	1724.5	1724.5	1353.0	1353.0	986.4	986.4				
12 F _r (Table XV)	.018231	.018231	.018231	.018231	.018231	.018231	.018231	.018231				
13 F _c = F _r TZ	7.720	7.459	7.897	7.615	8.127	7.866	8.441	8.190				
14 F _c Q _m	1.87	1.81	2.85	2.75	4.16	4.03	6.12	5.94				
15 L/H (F _c Q _m) ²	3.5	3.3	8.1	7.6	17.3	16.2	37.4	35.3				
16 F _w = L/H (F _c Q _m) ² (1-e ^s)	1.44	1.38	3.29	3.14	6.85	6.58	14.38	13.86				
17 P _w ² = P _t ² + F _w	2026.9	2026.9	1727.8	1727.8	1359.9	1359.9	1000.8	1000.3				
18 P _s ² = e ^s P _w ²	3443.1	3507.5	2900.2	2956.1	2249.4	2286.9	1624.9	1648.3				
19 P _s	1855.6	1872.8	1703.0	1719.3	1499.8	1512.2	1274.7	1283.9				
20 P = ($\frac{P_t + P_s}{2}$)	1639.4	1648.0	1508.1	1516.3	1331.5	1337.7	1134.0	1138.5				
21 P _r = (P/P _{cr})	2.46	2.47	2.26	2.28	2.00	2.01	1.70	1.71				
22 T _r = (T/T _{cr})	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.38				
23 Z (Table XI)	.714	.714	.729	.728	.753	.752	.784	.783				