

WORKSHEET FOR CALCULATION OF STATIC COLUMN WELLHEAD PRESSURE (P_w)

COMPANY CONOCO, INC. LEASE WELLS B-1 WELL NO. 5 DATE 8-22-80

LOCATION: Unit A Section 1 Township 255 Range 36E

L 12,456' H 12,456' L/H 1.000 G .595 % CO₂ .78 % N₂ 1.04 % H₂S .484

d 1.995 F_r .018231 GH 7.411 P_{ct} 67/ T_{ct} 353

TABLE IX & X

LINE	1 ST TRIAL	2 ND TRIAL	1 ST TRIAL	2 ND TRIAL	1 ST TRIAL	2 ND TRIAL	1 ST TRIAL	2 ND TRIAL	1 ST TRIAL	2 ND TRIAL
1 Q _m	.932	1.610	1.610	2.262	2.262	2.308	2.308	2.308	2.308	2.308
2 T _w (W.H. °R)	534	534	534	534	534	534	534	534	534	534
3 T _s (B.H. °R)	659	659	659	659	659	659	659	659	659	659
4 T = $\frac{T_w + T_s}{2}$	597	597	597	597	597	597	597	597	597	597
5 Z (Est.)	.888	.876	.889	.877	.892	.879	.911	.896	.896	.896
6 TZ	530	523	531	524	533	525	544	535	535	535
7 GH/TZ	13.983	14.170	13.957	14.143	13.904	14.116	13.623	13.852	13.852	13.852
8 e ^S (Table XIV)	1.689	1.701	1.688	1.700	1.684	1.698	1.667	1.681	1.681	1.681
9 1 - e ^S (Table XIV)	.408	.412	.407	.412	.406	.411	.400	.405	.405	.405
10 P _t	1383.2	1383.2	1356.2	1356.2	1305.2	1305.2	1019.2	1019.2	1019.2	1019.2
11 P _t ² /1000	1913.2	1913.2	1839.3	1839.3	1703.5	1703.5	1038.8	1038.8	1038.8	1038.8
12 F _r (Table XV)	0.018231	0.018231	0.018231	0.018231	0.018231	0.018231	0.018231	0.018231	0.018231	0.018231
13 F _c = F _r TZ	9.662	9.535	9.681	9.553	9.717	9.571	9.918	9.754	9.754	9.754
14 F _c Q _m	9.005	8.887	15.586	15.380	21.980	21.650	22.891	22.512	22.512	22.512
15 L/H (F _c Q _m) ²	81.090	78.979	242.923	236.544	483.120	468.723	523.998	506.790	506.790	506.790
16 F _w = L/H (F _c Q _m) ² (1 - e ^{-S})	33.085	32.539	98.870	97.456	196.147	192.645	209.600	205.250	205.250	205.250
17 P _w ² = P _t ² + F _w	1946.3	1945.7	1938.2	1936.8	1899.6	1896.1	1248.4	1244.1	1244.1	1244.1
18 P _s ² = e ^S P _w ²	3287.3	3309.6	3271.7	3252.6	3198.9	3219.6	2081.1	2091.3	2091.3	2091.3
19 P _s	1813.1	1819.2	1808.8	1814.6	1788.5	1794.3	1442.6	1446.1	1446.1	1446.1
20 P = $\frac{P_t + P_s}{2}$	1598.2	1601.2	1582.5	1585.4	1546.9	1549.8	1230.9	1232.7	1232.7	1232.7
21 P _r = (P/P _{ct})	2.38	2.39	2.36	2.36	2.31	2.31	1.83	1.84	1.84	1.84
22 T _r = (T/T _{ct})	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69
23 Z (Table XI)	.876	.876	.877	.877	.879	.879	.896	.896	.896	.896