

WORKSHEET FOR CALCULATION OF ST. IC COLUMN WELLHEAD PRESSURE (P_w)

DATE 7-15-80

COMPANY

LEASE Globe MN Field

WELL NO. 55

Range 24E

N₁

LOCATION: Unit

Section 1

Township

H. 3760 L_H 1000 G 0.673 % CO₂ 2.99 % N₂ 5.82 % H₂S

F_i 1009302 GH 2530

TABLE 11 & 1

P_{CE} 771 T_{CE} 398

278-
5-
3705(5458)=22074
55(2512)=13828
3760(6,285)=23456

LINE	1	2	3	4		
1 Q _m	0.480	0.655	0.825	1.208		
2 T _w (W.H. °R)	5472	5473	5475	5466		
3 T _s (B.H. °R)	5555	5555	5554	5554		
4 T = $\frac{T_w + T_s}{2}$	5485	549	549.5	550		
5 Z (Est.)	1.829	1.835	1.844	1.879		
6 T _Z	454.71	458.415	463.78	483.45		
7 G _H /T _Z	5.5640	5.5190	5.4552	5.2332		
8 e ^s (Table XIV)	1.2320	1.2299	1.2270	1.2168		
9 1-e ^s (Table XIV)	0.1883	1.1869	0.11850	0.1782		
10 P _i	1015.2	954.2	867.2	784.2		
11 P _i 2/1000	1030.6	910.5	843.09	752.0	614.97	
12 F _i (Table XIV) 0.2757	0.21644	0.20865	0.20457	0.19625		
13 F _c = F _i T _Z	4.2297	4.264	4.2141	4.4971		
14 F _c Q _m	2.030	2.793	3.818	5.4324		
15 L/H (F _c Q _m) ²	0.8	1.46	2.7	5.26		
16 F _w = L/H (F _c Q _m) ² (1-e ⁻⁹)	911.3	844.55	754.7	620.23		
17 P _w ² = P _i ² + F _w	1122.7	1038.7	926.0	751.7		
18 P _s ² = e ^s P _w ²	1279.7	1019.2	962.3	868.7		
19 P _s	1131.2	1059.6	981.7	934.7	826.5	
20 P = $\frac{P_i + P_s}{2}$	1073.2	1006.4	968.7	914.7	826.5	
21 P _i = (P/P _{CE})	1.392	1.306	1.256	1.186	1.072	
22 T _i = (T/T _{CE})	1.3603	1.378	1.379	1.381	1.382	
	0.829	0.335	0.844	0.879		