

WORKSHEET FOR CALCULATION OF STATIC COLUMN WELLHEAD PRESSURE (P_w)

Form C-122D
Adopted 9-1-65

COMPANY Sinclair Oil & Gas Co. LEASE State 157 B WELL NO. 1 DATE 9/30/66

LOCATION: Unit C Section 7 Township 22 S Range 1 E

L 3385 H 3385 L/H 1.000 G .660 % CO₂ -- % N₂ -- % H₂S --

d 1.995 F_I .018231 GH 2235 P_{CI} 670 T_{CI} 378
TABLE IX & X TABLE IX & X

LINE	1st Rate		2nd Rate		3rd Rate		4th Rate		
	1st Trial	2nd Trial	1st T.	2nd T.	1st T.	2nd T.	1st T.	2nd T.	
1 Q _m	0.545	0.545	0.793	0.793	1.064	1.064	1.419	1.419	
2 T _w (W.H. °R)	540	540	540	540	540	540	540	540	
3 T _s (B.H. °R)	550	550	550	550	550	550	550	550	
4 T = ($\frac{T_w + T_s}{2}$)	545	545	545	545	545	545	545	545	
5 Z (Est.)	.908	.912	.903	.914	.914	.917	.917	.934	
6 TZ	494.9	497.0	492.1	498.1	498.1	499.8	499.8	509.0	
7 GH/TZ	4.516	4.497	4.542	4.487	4.487	4.472	4.472	4.391	
8 e ^s (Table XIV)	1.185	1.184	1.186	1.183	1.183	1.183	1.183	1.179	
9 1-e ^s (Table XIV)	0.156	0.155	0.157	0.155	0.155	0.155	0.155	0.152	
10 P _t	494.2	494.2	475.2	475.2	451.2	451.2	347.2	347.2	
11 P _t ² /1000	244.2	244.2	225.8	225.8	203.6	203.6	120.5	120.5	
12 F _t (Table XV)	.018231	.018231	.018231	.018231	.018231	.018231	.018231	.018231	
13 F _c = F _t TZ	9.023	9.061	8.971	9.081	9.081	9.112	9.112	9.280	
14 F _c Q _m	4.918	4.938	7.114	7.201	9.662	9.695	12.930	13.168	
15 L/H (F _c Q _m) ²	24.187	24.384	50.609	51.854	93.354	93.993	167.185	173.396	
16 F _w = L/H (F _c Q _m) ² (1-e ^{-s})	3.773	3.780	7.946	8.037	14.470	14.569	25.914	26.356	
17 P _w ² = P _t ² + F _w	248.0	248.0	233.7	233.8	218.1	218.2	146.4	146.9	
18 P _s ² = e ^s P _w ²	293.9	293.6	277.2	276.6	258.0	258.1	173.2	173.2	
19 P _s	542.1	541.8	526.5	525.9	507.9	508.0	416.2	416.2	
20 P = ($\frac{P_t + P_s}{2}$)	518.2	518.0	500.9	500.6	479.6	479.6	381.7	381.7	
21 P _r = (P/P _{cr})	0.77	.077	.075	.075	.072	.072	.057	.057	
22 T _r = (T/T _{cr})	1.44	1.44	1.44	1.44	1.44	1.44	1.44	1.44	
23 Z (Table XI)	.912	.912	.914	.914	.917	.917	.934	.934	