C-122D
Adopted 9-1-65

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

COMPANY Yates Petroleum Corp LEASE Rio Pecos GB Com WELL NO. 2 DATE 9-21-78

LOCATION: Unit L Section 20 Township 18S Range 27E

L 9277 H 9277 L/H 1.000 G 0.661 % CO_2 0.56 % N_2 0.58 % H_2S Nil

2 7/8 - 4222 (3.92) = 36727.4
2 7/8 - 28 (18.47) = 517.6
5-4 - 21 (7.93) = 166.5
5277 (6.92) = 37405.5

d 2.008 F_r 0.014668 GH 6132 P_{cr} 671.5 (TABLE IX & X) T_{cr} 377 (TABLE IX & X)

LINE	S1	1	2	3	4	S1	1	2	3	4
1 Q_m	—	3.695	5.359	7.673	10.208	—	3.695	5.359	7.673	10.208
T_w (W.H. °R)	609	602	608	607	607					
3 T_s (B.H. °R)	532	536	540	543	546					
4 $T = (\frac{T_w + T_s}{2})$	570.5	572	574	575	576.5		572	574	575	576.5
5 Z (Est.)	.0786	.783	.783	.783	.7855		.782	.7825		.7855
6 TZ	448.41	447.816	449.44	450.225	452.55		447.304	449.155		452.84
7 GH/TZ	13.675	13.691	13.644	13.620	13.550		13.709	13.652		13.541
8 e^s (Table XIV)	1.6700	1.6710	1.6680	1.6650	1.6622		1.6721	1.6686		1.6616
9 $1-e^{-s}$ (Table XIV)		0.4016	0.4005	0.4000	0.3924		0.4019	0.4007		0.3982
10 P_t	2467.2	2293.2	2196.2	2044.2	1699.2		2293.2	2196.2		1699.2
11 $P_t^2/1000$	6088.1	5258.8	4823.3	4178.8	2887.3		5258.8	4823.3		2887.3
12 F_r (Table XV) $S_{0.0575}$ $\frac{GH}{TZ}$	0.51281	.51342	.51163	0.51075	.50812		.51408	.51196		.50779
$F_c = F_r TZ$		6.5694	6.5924	6.6039	6.638		6.561	6.5882		6.6423
14 $F_c Q_m$		24.274	35.33	50.672	67.76		24.243	35.306		67.804
15 $L/H (F_c Q_m)^2$		589.2	1248.1	2567.6	4591.5		587.73	1246.53		4599.4
16 $F_w = L/H (F_c Q_m)^2 (1-e^{-s})$		236.6	499.9	1027.0	1829.3		236.2	499.5		1830.7
17 $P_w^2 = P_t^2 + F_w$		5495.4	5323.2	5205.8	4716.6		5495.0	5322.8		4718.0
18 $P_s^2 = e^s P_w^2$	10165	9182.8	8879.1	8675.5	7839.9		9188.2	8881.6		7849.4
19 P_s	3188.2	3030.3	2979.8	2945.4	2800.0		3031.2	2980.2		2799.9
20 $P = (\frac{P_t + P_s}{2})$	2827.7	2661.8	2588.0	2494.8	2249.6		2662.2	2555.2		2249.6
21 $P_r = (P/P_{cr})$	4.211	3.964	3.854	3.715	3.350		3.965	3.854		3.350
22 $T_r = (T/T_{cr})$	1.513	1.517	1.522	1.525	1.529		1.517	1.522	1.525	1.529
23 Z (Table XI)	0.786	0.782	.7825	0.783	.7855		0.782	.0.7825		0.7855

One copy to be filed in District Office (Work copy acceptable)