

WORKSHEET FOR CALCULATION OF STATIC COLUMN WELLHEAD PRESSURE (Pw) C-122D

Adopted 9-1-65

DATE 4/4/89

COMPANY Yates Petroleum Corporation LEASE Monaghan QY Federal WELL NO. 12

LOCATION: Unit 0 Section 28 Township 5S Range 24E

L 3610.0 H 3610.0 L/H 1.000 G .645 %CO₂ .01 %N₂ 5.40 %H₂S 0.00

d 1.995 Fr .017777 GH 2328.5 Pcr 661.4 Tcr 355.7

LINE	1st Rate	2nd Rate	3rd Rate	4th Rate	5th Rate
1 Qm	.284	.320	.422	.487	0.000
2 Tw(W.H.°R)	522.0	522.0	522.0	522.0	0.0
3 Ts(B.H.°R)	557.0	557.0	557.0	557.0	0.0
4 T=(Tw+Ts)/2	539.5	539.5	539.5	539.5	0.0
5 Z(Est.)	.895	.900	.904	.910	0.000
6 TZ	482.7	485.4	488.0	490.8	0.0
7 GH/TZ	4.824	4.797	4.772	4.744	0.000
8 e ^s (Table XIV)	1.198	1.197	1.196	1.195	0.000
9 1-e ^{-s} (Table XIV)	.165	.165	.164	.163	0.000
10 Pt	722.2	686.2	651.2	613.2	0.0
11 Pt ² /1000	521.6	470.9	424.1	376.0	0.0
12 Fr(Table XV)	.017777	.017777	.017777	.017777	0.000000
13 Fc=FrTZ	8.585	8.632	8.674	8.729	0.000
14 FcQm	2.436	2.763	3.657	4.255	0.000
15 L/H(FcQm) ²	5.936	7.631	13.375	18.103	0.000
16 Fw=L/H(FcQm) ² (1-e ^{-s})	.982	1.256	2.191	2.949	0.000
17 Pw ² =Pt ² +Fw	522.6	472.1	426.3	379.0	0.0
18 Ps ² =e ^s Pw ²	626.1	565.1	509.8	452.7	0.0
19 Ps	791.3	751.8	714.0	672.8	0.0
20 P=(Pt+Ps)/2	756.7	719.0	682.6	643.0	0.0
21 Pr=(P/Pcr)	1.14	1.09	1.03	.97	0.00
22 Tr=(T/Tcr)	1.52	1.52	1.52	1.52	0.00
23 Z(Table XI)	.895	.900	.904	.910	0.000