

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

Adopted 9-1-65

DATE 4/26/88

COMPANY Yates Petroleum Corporation LEASE Federal AB WELL NO. 7

LOCATION: Unit E Section 9 Township 18S Range 25E

L 8196.0 H 8196.0 L/H 1.000 G .675 %CO₂ 3.03 %N₂ .67 %H₂S 0.00

d 1.995 Fr .017777 GH 5530.4 Pcr 681.4 Tcr 373.7

LINE	1st Rate	2nd Rate	3rd Rate	4th Rate	5th Rate
1 Qm	.244	.308	.341	.401	0.000
2 Tw(W.H.°R)	522.0	522.0	522.0	522.0	0.0
3 Ts(B.H.°R)	637.0	637.0	637.0	637.0	0.0
4 T=(Tw+Ts)/2	579.5	579.5	579.5	579.5	0.0
5 Z(Est.)	.798	.800	.803	.805	0.000
6 TZ	462.7	463.5	465.4	466.8	0.0
7 GH/TZ	11.952	11.931	11.883	11.848	0.000
8 e ^s (Table XIV)	1.565	1.564	1.561	1.559	0.000
9 1-e ^{-s} (Table XIV)	.361	.361	.360	.359	0.000
10 Pt	2069.2	1957.2	1829.2	1763.2	0.0
11 Pt ² /1000	4281.6	3830.6	3346.0	3108.9	0.0
12 Fr(Table XV)	.017777	.017777	.017777	.017777	0.000000
13 Fc=FrTZ	8.226	8.240	8.273	8.298	0.000
14 FcQm	2.010	2.541	2.825	3.326	0.000
15 L/H(FcQm) ²	4.041	6.456	7.978	11.062	0.000
16 Fw=L/H(FcQm) ² (1-e ^{-s})	1.460	2.329	2.869	3.968	0.000
17 Pw ² =Pt ² +Fw	4283.0	3832.9	3348.8	3112.8	0.0
18 Ps ² =e ^s Pw ²	6705.0	5995.7	5229.0	4854.1	0.0
19 Ps	2589.4	2448.6	2286.7	2203.2	0.0
20 P=(Pt+Ps)/2	2329.3	2202.9	2058.0	1983.2	0.0
21 Pr=(P/Pcr)	3.42	3.23	3.02	2.91	0.00
22 Tr=(T/Tcr)	1.55	1.55	1.55	1.55	0.00
23 Z(Table XI)	.798	.800	.803	.805	0.000