

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

Adopted 9-1-65

DATE 5/6/91

COMPANY Yates Petroleum Corporation LEASE Friendly Frenchman WELL NO. HB #1

LOCATION: Unit P Section 32 Township 16S Range 26E

L 5267.0 H 5267.0 L/H 1.000 G .640 %CO₂ .66 %N₂ .88 %H₂S 0.00

d 1.995 Fr .017777 GH 3370.9 Pcr 672.0 Tcr 365.6

LINE	1st Rate	2nd Rate	3rd Rate	4th Rate	5th Rate
1 Qm	.023	.029	.035	.060	0.000
2 Tw(W.H.°R)	522.0	522.0	522.0	522.0	0.0
3 Ts(B.H.°R)	612.0	612.0	612.0	612.0	0.0
4 T=(Tw+Ts)/2	567.0	567.0	567.0	567.0	0.0
5 Z(Est.)	.857	.867	.872	.926	0.000
6 TZ	486.2	491.6	494.6	525.0	0.0
7 GH/TZ	6.934	6.856	6.816	6.420	0.000
8 e ^s (Table XIV)	1.297	1.293	1.291	1.272	0.000
9 1-e ^{-s} (Table XIV)	.229	.227	.226	.214	0.000
10 Pt	1113.2	1023.2	977.2	543.2	0.0
11 Pt ² /1000	1239.2	1046.9	954.9	295.1	0.0
12 Fr(Table XV)	.017777	.017777	.017777	.017777	0.000000
13 Fc=FrTZ	8.643	8.740	8.792	9.337	0.000
14 FcQm	.196	.253	.310	.558	0.000
15 L/H(FcQm) ²	.038	.064	.096	.311	0.000
16 Fw=L/H(FcQm) ² (1-e ^{-s})	.009	.015	.022	.067	0.000
17 Pw ² =Pt ² +Fw	1239.2	1047.0	954.9	295.1	0.0
18 Ps ² =e ^s Pw ²	1607.2	1353.9	1233.1	375.4	0.0
19 Ps	1267.8	1163.6	1110.4	612.7	0.0
20 P=(Pt+Ps)/2	1190.5	1093.4	1043.8	578.0	0.0
21 Pr=(P/Pcr)	1.77	1.63	1.55	.86	0.00
22 Tr=(T/Tcr)	1.55	1.55	1.55	1.55	0.00
23 Z(Table XI)	.857	.867	.872	.926	0.000