

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

Adopted 9-1-65

DATE 4/4/89

COMPANY Yates Petroleum Corporation LEASE DORIS RI FEDERAL WELL NO. 4

LOCATION: Unit E Section 15 Township 5S Range 04E

L 3647.0 H 3647.0 L/H 1.000 G .650 %CO2 .03 %N2 7.10 %H2S 0.00

d 1.995 Fr .017777 GH 2370.6 Pcr 658.5 Tcr 352.6

LINE	1st Rate	2nd Rate	3rd Rate	4th Rate	5th Rate
1 Qm	.141	.228	.281	.307	0.000
2 Tw(W.H.°R)	522.0	522.0	522.0	522.0	0.0
3 Ts(B.H.°R)	560.0	560.0	560.0	560.0	0.0
4 T=(Tw+Ts)/2	541.0	541.0	541.0	541.0	0.0
5 Z(Est.)	.895	.920	.936	.964	0.000
6 TZ	484.2	497.8	506.6	521.8	0.0
7 GH/TZ	4.895	4.762	4.679	4.543	0.000
8 e ^s (Table XIV)	1.202	1.195	1.192	1.186	0.000
9 1-e ^{-s} (Table XIV)	.168	.163	.161	.157	0.000
10 Pt	749.2	562.2	446.2	253.2	0.0
11 Pt ² /1000	561.3	316.1	199.1	64.1	0.0
12 Fr(Table XV)	.017777	.017777	.017777	.017777	0.000000
13 Fc=FrTZ	8.608	8.853	9.006	9.275	0.000
14 FcQm	1.214	2.014	2.533	2.843	0.000
15 L/H(FcQm) ²	1.474	4.057	6.416	8.085	0.000
16 Fw=L/H(FcQm) ² (1-e ^{-s})	.247	.663	1.033	1.267	0.000
17 Pw ² =Pt ² +Fw	561.5	316.7	200.1	65.4	0.0
18 Ps ² =e ^s Pw ²	674.7	378.6	238.5	77.5	0.0
19 Ps	821.4	615.3	488.4	278.4	0.0
20 P=(Pt+Ps)/2	785.3	588.8	467.3	265.8	0.0
21 Pr=(P/Pcr)	1.19	.89	.71	.40	0.00
22 Tr=(T/Tcr)	1.53	1.53	1.53	1.53	0.00
23 Z(Table XI)	.895	.920	.936	.964	0.000