

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

Adopted 9-1-65

DATE 4/4/89

COMPANY Yates Petroleum Corporation LEASE Federal CB Com WELL NO. 3

LOCATION: Unit N Section 15 Township 17S Range 25E

L 7674.0 H 7674.0 L/H 1.000 G .621 %O2 .34 %N2 .40 %H2S 0.00

d 1.995 Fr .017777 GH 4765.6 Pcr 672.1 Tcr 361.2

LINE	1st Rate	2nd Rate	3rd Rate	4th Rate	5th Rate
1 Qm	.080	.090	.103	.112	0.000
2 Tw(W.H.°R)	522.0	522.0	522.0	522.0	0.0
3 Ts(B.H.°R)	602.0	602.0	602.0	602.0	0.0
4 T=(Tw+Ts)/2	562.0	562.0	562.0	562.0	0.0
5 Z(Est.)	.888	.915	.929	.963	0.000
6 TZ	499.2	514.4	522.4	541.0	0.0
7 GH/TZ	9.546	9.265	9.123	8.809	0.000
8 e ^s (Table XIV)	1.430	1.415	1.408	1.391	0.000
9 1-e ^{-s} (Table XIV)	.301	.293	.290	.281	0.000
10 Pt	827.2	615.2	509.2	273.2	0.0
11 Pt ² /1000	684.3	378.5	259.3	74.6	0.0
12 Fr(Table XV)	.017777	.017777	.017777	.017777	0.000000
13 Fc=FrTZ	8.875	9.144	9.286	9.618	0.000
14 FcQm	.710	.821	.958	1.077	0.000
15 L/H(FcQm) ²	.504	.674	.918	1.159	0.000
16 Fw=L/H(FcQm) ² (1-e ^{-s})	.152	.198	.266	.326	0.000
17 Pw ² =Pt ² +Fw	684.4	378.7	259.6	75.0	0.0
18 Ps ² =e ^s Pw ²	979.0	536.0	365.4	104.3	0.0
19 Ps	989.4	732.1	604.5	323.0	0.0
20 P=(Pt+Ps)/2	908.3	673.7	556.9	298.1	0.0
21 Pr=(P/Pcr)	1.35	1.00	.83	.44	0.00
22 Tr=(T/Tcr)	1.56	1.56	1.56	1.56	0.00
23 Z(Table XI)	.888	.915	.929	.963	0.000