

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

Adopted 9-1-65

DATE 7/7/89

COMPANY Yates Petroleum Corporation LEASE Richard Knob AEX WELL NO. 2

LOCATION: Unit K Section 34 Township 17S Range 24E

L 4868.0 H 4868.0 L/H 1.000 G .650 %CO₂ 0.00 %N₂ 1.10 %H₂S 0.00

d 2.441 Fr .010495 GH 3164.2 Pcr 668.4 Tcr 369.4

LINE	1st Rate	2nd Rate	3rd Rate	4th Rate	5th Rate
1 Qm	.458	.501	.590	.596	0.000
2 Tw(W.H.°R)	522.0	522.0	522.0	522.0	0.0
3 Ts(B.H.°R)	573.0	573.0	573.0	573.0	0.0
4 T=(Tw+Ts)/2	547.5	547.5	547.5	547.5	0.0
5 Z(Est.)	.812	.818	.825	.842	0.000
6 TZ	444.3	447.9	451.6	461.0	0.0
7 GH/TZ	7.121	7.065	7.007	6.863	0.000
8 e ^s (Table XIV)	1.306	1.303	1.300	1.294	0.000
9 1-e ^{-s} (Table XIV)	.234	.233	.231	.227	0.000
10 Pt	1258.2	1203.2	1147.2	1015.2	0.0
11 Pt ² /1000	1583.1	1447.7	1316.1	1030.6	0.0
12 Fr(Table XV)	.010495	.010495	.010495	.010495	0.000000
13 Fc=FrTZ	4.663	4.700	4.740	4.839	0.000
14 FcQm	2.137	2.357	2.797	2.884	0.000
15 L/H(FcQm) ²	4.567	5.553	7.820	8.320	0.000
16 Fw=L/H(FcQm) ² (1-e ^{-s})	1.070	1.293	1.807	1.888	0.000
17 Pw ² =Pt ² +Fw	1584.1	1449.0	1317.9	1032.5	0.0
18 Ps ² =e ^s Pw ²	2069.0	1888.5	1713.9	1335.6	0.0
19 Ps	1438.4	1374.2	1309.2	1155.7	0.0
20 P=(Pt+Ps)/2	1348.3	1288.7	1228.2	1085.4	0.0
21 Pr=(P/Pcr)	2.02	1.93	1.84	1.62	0.00
22 Tr=(T/Tcr)	1.48	1.48	1.48	1.48	0.00
23 Z(Table XI)	.812	.818	.825	.842	0.000