

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

Adopted 9-1-65

DATE 2/16/83

COMPANY Yates Petroleum Corporation LEASE Grynberg "L2" State WELL NO. 3

LOCATION: Unit M Section 36 Township 55 Range 24E

L 3648.0 H 3648.0 L/H 1.000 G .642 %CO2 .07 %N2 5.14 %H2S 0.00

d 2.441 Fr .010495 GH 2342.0 Pcr 662.2 Tcr 355.4

LINE	1st Rate	2nd Rate	3rd Rate	4th Rate	5th Rate
1 Qm	1.426	1.612	1.875	2.255	0.000
2 Tw(W.H.°R)	522.0	522.0	522.0	522.0	0.0
3 Ts(B.H.°R)	556.0	556.0	556.0	556.0	0.0
4 T=(Tw+Ts)/2	539.0	539.0	539.0	539.0	0.0
5 Z(Est.)	.865	.867	.870	.872	0.000
6 TZ	466.3	467.2	469.0	470.3	0.0
7 GH/TZ	5.023	5.013	4.994	4.980	0.000
8 e ^s (Table XIV)	1.207	1.207	1.206	1.205	0.000
9 1-e ^{-s} (Table XIV)	.172	.171	.171	.170	0.000
10 Pt	945.2	931.2	903.2	883.2	0.0
11 Pt ² /1000	893.4	867.1	815.8	780.0	0.0
12 Fr(Table XV)	.010495	.010495	.010495	.010495	0.000000
13 Fc=FrTZ	4.893	4.907	4.922	4.935	0.000
14 FcQm	6.977	7.908	9.230	11.128	0.000
15 L/H(FcQm) ²	48.678	62.530	85.200	123.841	0.000
16 Fw=L/H(FcQm) ² (1-e ^{-s})	8.357	10.709	14.550	21.097	0.000
17 Pw ² =Pt ² +Fw	901.8	877.8	830.3	801.1	0.0
18 Ps ² =e ^s Pw ²	1088.7	1059.2	1001.3	965.6	0.0
19 Ps	1043.4	1029.2	1000.7	982.7	0.0
20 P=(Pt+Ps)/2	994.3	980.2	951.9	932.9	0.0
21 Pr=(P/Pcr)	1.50	1.48	1.44	1.41	0.00
22 Tr=(T/Tcr)	1.52	1.52	1.52	1.52	0.00
23 Z(Table XI)	.865	.867	.870	.872	0.000