

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

Adopted 9-1-65

DATE _____

COMPANY Yates Petroleum Corporation LEASE Grynberg "LZ" State WELL NO. 4

LOCATION: Unit E Section 36 Township 5S Range 24E

L 3595.0 H 3595.0 L/H 1.000 G .638 %O2 .02 %N2 5.12 %H2S 0.00

d 1.995 Fr .017777 GH 2293.6 Pcr 661.0 Tcr 358.0

LINE	1st Rate	2nd Rate	3rd Rate	4th Rate	5th Rate
1 Qm	.850	.937	1.028	1.078	0.000
2 Tw(W.H.°R)	522.0	522.0	522.0	522.0	0.0
3 Ts(B.H.°R)	563.0	563.0	563.0	563.0	0.0
4 T=(Tw+Ts)/2	542.5	542.5	542.5	542.5	0.0
5 Z(Est.)	.868	.869	.870	.872	0.000
6 TZ	471.1	471.6	472.1	472.8	0.0
7 GH/TZ	4.868	4.864	4.858	4.851	0.000
8 e ³ (Table XIV)	1.200	1.200	1.200	1.199	0.000
9 1-e ⁻³ (Table XIV)	.167	.167	.167	.166	0.000
10 Pt	914.2	907.2	899.2	888.2	0.0
11 Pt ² /1000	835.8	823.0	808.6	788.9	0.0
12 Fr(Table XV)	.017777	.017777	.017777	.017777	0.000000
13 Fc=FrTZ	8.375	8.383	8.392	8.411	0.000
14 FcQm	7.123	7.856	8.627	9.069	0.000
15 L/H(FcQm) ²	50.730	61.723	74.421	82.239	0.000
16 Fw=L/H(FcQm) ² (1-e ⁻³)	8.465	10.291	12.395	13.669	0.000
17 Pw ² =Pt ² +Fw	844.2	833.3	821.0	802.6	0.0
18 Ps ² =e ³ Pw ²	1013.3	1000.0	985.0	962.6	0.0
19 Ps	1006.6	1000.0	992.5	981.1	0.0
20 P=(Pt+Ps)/2	960.4	953.6	945.8	934.7	0.0
21 Pr=(P/Pcr)	1.45	1.44	1.43	1.41	0.00
22 Tr=(T/Tcr)	1.52	1.52	1.52	1.52	0.00
23 Z(Table XI)	.868	.869	.870	.872	0.000