

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

Adopted 9-1-65

DATE 6/20/88

COMPANY Yates Petroleum Corporation LEASE Estoril YZ Federal WELL NO. 1

LOCATION: Unit I Section 34 Township 4S Range 24E

L 3530.0 H 3530.0 L/H 1.000 G .655 %CO₂ .01 %N₂ 6.07 %H₂S 0.00

d 1.995 Fr .017777 GH 2312.2 Pcr 660.0 Tcr 357.1

LINE	1st Rate	2nd Rate	3rd Rate	4th Rate	5th Rate
1 Qm	.290	.311	.338	.356	0.000
2 Tw(W.H.°R)	522.0	522.0	522.0	522.0	0.0
3 Ts(B.H.°R)	567.0	567.0	567.0	567.0	0.0
4 T=(Tw+Ts)/2	544.5	544.5	544.5	544.5	0.0
5 Z(Est.)	.912	.925	.932	.943	0.000
6 TZ	496.6	503.5	507.3	513.4	0.0
7 GH/TZ	4.656	4.592	4.558	4.504	0.000
8 e ^s (Table XIV)	1.191	1.188	1.186	1.184	0.000
9 1-e ^{-s} (Table XIV)	.160	.158	.157	.155	0.000
10 Pt	609.2	519.2	470.2	393.2	0.0
11 Pt ² /1000	371.1	269.6	221.1	154.6	0.0
12 Fr(Table XV)	.017777	.017777	.017777	.017777	0.000000
13 Fc=FrTZ	8.831	8.953	9.020	9.128	0.000
14 FcQm	2.559	2.786	3.045	3.249	0.000
15 L/H(FcQm) ²	6.550	7.764	9.270	10.553	0.000
16 Fw=L/H(FcQm) ² (1-e ^{-s})	1.049	1.228	1.456	1.640	0.000
17 Pw ² =Pt ² +Fw	372.2	270.8	222.5	156.2	0.0
18 Ps ² =e ^s Pw ²	443.1	321.7	264.0	185.0	0.0
19 Ps	665.7	567.2	513.8	430.1	0.0
20 P=(Pt+Ps)/2	637.4	543.2	492.0	411.7	0.0
21 Pr=(P/Pcr)	.97	.82	.75	.62	0.00
22 Tr=(T/Tcr)	1.52	1.52	1.52	1.52	0.00
23 Z(Table XI)	.912	.925	.932	.943	0.000