

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

Adopted 9-1-65

DATE 7/18/88

COMPANY Yates Petroleum Corporation LEASE Bluffside WF Fed WELL NO. 1

LOCATION: Unit E Section 9 Township 19S Range 27E

L 10121.0 H 10121.0 L/H 1.000 G .620 %CO₂ .60 %N₂ .40 %H₂S 0.00

d 1.995 Fr .017777 GH 6275.0 Pcr 673.2 Tcr 360.5

LINE	1st Rate	2nd Rate	3rd Rate	4th Rate	5th Rate
1 Qm	.338	.386	.453	.584	0.000
2 Tw(W.H.°R)	522.0	522.0	522.0	522.0	0.0
3 Ts(B.H.°R)	670.0	670.0	670.0	670.0	0.0
4 T=(Tw+Ts)/2	596.0	596.0	596.0	596.0	0.0
5 Z(Est.)	.856	.852	.846	.847	0.000
6 TZ	510.5	507.9	504.4	504.6	0.0
7 GH/TZ	12.293	12.356	12.440	12.435	0.000
8 e ^s (Table XIV)	1.586	1.589	1.595	1.593	0.000
9 1-e ^{-s} (Table XIV)	.369	.371	.373	.372	0.000
10 Pt	2710.2	2586.2	2344.2	1876.2	0.0
11 Pt ² /1000	7361.5	6688.4	5495.3	3520.1	0.0
12 Fr(Table XV)	.017777	.017777	.017777	.017777	0.000000
13 Fc=FrTZ	9.074	9.028	8.960	8.978	0.000
14 FcQm	3.070	3.483	4.062	5.243	0.000
15 L/H(FcQm) ²	9.426	12.130	16.499	27.486	0.000
16 Fw=L/H(FcQm) ² (1-e ^{-s})	3.481	4.498	6.155	10.237	0.000
17 Pw ² =Pt ² +Fw	7364.9	6692.9	5501.4	3530.4	0.0
18 Ps ² =e ^s Pw ²	11673.0	10637.4	8774.9	5625.6	0.0
19 Ps	3417.3	3261.5	2962.2	2371.8	0.0
20 P=(Pt+Ps)/2	3065.3	2923.9	2653.2	2124.0	0.0
21 Pr=(P/Pcr)	4.55	4.34	3.94	3.15	0.00
22 Tr=(T/Tcr)	1.65	1.65	1.65	1.65	0.00
23 Z(Table XI)	.856	.852	.846	.847	0.000