

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

Adopted 9-1-65

DATE 10/24/90

COMPANY Yates Petroleum Corporation LEASE Laney AGJ Fed Com WELL NO. 1

LOCATION: Unit F Section 11 Township 18S Range 24E

L 4919.0 H 4919.0 L/H 1.000 G .680 %CO₂ .92 %N₂ 1.29 %H₂S 0.00

d 2.441 Fr .010495 GH 3344.9 Pcr 671.0 Tcr 377.3

LINE	1st Rate	2nd Rate	3rd Rate	4th Rate	5th Rate
1 Qm	.313	.363	.444	.544	0.000
2 Tw(W.H.°R)	522.0	522.0	522.0	522.0	0.0
3 Ts(B.H.°R)	603.0	603.0	603.0	603.0	0.0
4 T=(Tw+Ts)/2	562.5	562.5	562.5	562.5	0.0
5 Z(Est.)	.805	.807	.815	.824	0.000
6 TZ	453.0	453.9	458.3	463.6	0.0
7 GH/TZ	7.385	7.369	7.298	7.216	0.000
8 e ^s (Table XIV)	1.319	1.318	1.315	1.311	0.000
9 1-e ^{-s} (Table XIV)	.242	.241	.239	.237	0.000
10 Pt	1363.2	1347.2	1272.2	1190.2	0.0
11 Pt ² /1000	1858.3	1814.9	1618.5	1416.6	0.0
12 Fr(Table XV)	.010495	.010495	.010495	.010495	0.000000
13 Fc=FrTZ	4.754	4.764	4.810	4.865	0.000
14 FcQm	1.486	1.728	2.137	2.648	0.000
15 L/H(FcQm) ²	2.208	2.987	4.566	7.010	0.000
16 Fw=L/H(FcQm) ² (1-e ^{-s})	.534	.721	1.093	1.662	0.000
17 Pw ² =Pt ² +Fw	1858.9	1815.7	1619.6	1418.2	0.0
18 Ps ² =e ^s Pw ²	2451.9	2393.5	2129.4	1858.9	0.0
19 Ps	1565.9	1547.1	1459.3	1363.4	0.0
20 P=(Pt+Ps)/2	1464.5	1447.2	1365.7	1276.8	0.0
21 Pr=(P/Pcr)	2.18	2.16	2.04	1.90	0.00
22 Tr=(T/Tcr)	1.49	1.49	1.49	1.49	0.00
23 Z(Table XI)	.805	.807	.815	.824	0.000