

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

Adopted 9-1-65

DATE 4/5/89

COMPANY Yates Petroleum Corporation LEASE Williamson LC Fed. WELL NO. 5

LOCATION: Unit E Section 9 Township 8S Range 25E

L 3523.0 H 3523.0 L/H 1.000 G .668 %CO2 .04 %N2 10.16 %H2S 0.00

d 2.441 Fr .010495 GH 2353.4 Pcr 652.8 Tcr 349.9

LINE	1st Rate	2nd Rate	3rd Rate	4th Rate	5th Rate
1 Qm	.185	.204	.212	.242	0.000
2 Tw(W.H.°R)	522.0	522.0	522.0	522.0	0.0
3 Ts(B.H.°R)	562.0	562.0	562.0	562.0	0.0
4 T=(Tw+Ts)/2	542.0	542.0	542.0	542.0	0.0
5 Z(Est.)	.923	.927	.942	.978	0.000
6 TZ	500.4	502.5	510.7	530.2	0.0
7 GH/TZ	4.703	4.683	4.608	4.439	0.000
8 e ^s (Table XIV)	1.193	1.192	1.189	1.181	0.000
9 1-e ^{-s} (Table XIV)	.162	.161	.159	.153	0.000
10 Pt	554.2	526.2	415.2	153.2	0.0
11 Pt ² /1000	307.1	276.9	172.4	23.5	0.0
12 Fr(Table XV)	.010495	.010495	.010495	.010495	0.000000
13 Fc=FrTZ	5.252	5.275	5.361	5.564	0.000
14 FcQm	.973	1.074	1.136	1.346	0.000
15 L/H(FcQm) ²	.947	1.153	1.289	1.813	0.000
16 Fw=L/H(FcQm) ² (1-e ^{-s})	.153	.186	.205	.278	0.000
17 Pw ² =Pt ² +Fw	307.3	277.1	172.6	23.7	0.0
18 Ps ² =e ^s Pw ²	366.6	330.3	205.1	28.0	0.0
19 Ps	605.4	574.7	452.9	167.5	0.0
20 P=(Pt+Ps)/2	579.8	550.4	434.1	160.3	0.0
21 Pr=(P/Pcr)	.89	.84	.66	.25	0.00
22 Tr=(T/Tcr)	1.55	1.55	1.55	1.55	0.00
23 Z(Table XI)	.923	.927	.942	.978	0.000