

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

Adopted 9-1-65

DATE 5/13/91

COMPANY Yates Petroleum Corporation LEASE Gazelle AHG Fed WELL NO. 2

LOCATION: Unit P Section 16 Township 0S Range 29E

L 11365.0 H 11365.0 L/H 1.000 G .730 %CO₂ .45 %N₂ 1.76 %H₂S 0.00

d 2.441 Fr .010495 GH 8296.5 Pcr 666.5 Tcr 393.2

LINE	1st Rate	2nd Rate	3rd Rate	4th Rate	5th Rate
1 Qm	.116	.129	.162	.185	0.000
2 Tw(W.H.°R)	522.0	522.0	522.0	522.0	0.0
3 Ts(B.H.°R)	644.0	644.0	644.0	644.0	0.0
4 T=(Tw+Ts)/2	583.0	583.0	583.0	583.0	0.0
5 Z(Est.)	.763	.779	.822	.929	0.000
6 TZ	445.0	453.9	479.4	541.4	0.0
7 GH/TZ	18.645	18.278	17.306	15.325	0.000
8 e ^s (Table XIV)	2.012	1.984	1.913	1.776	0.000
9 1-e ^{-s} (Table XIV)	.503	.496	.477	.437	0.000
10 Pt	1729.2	1440.2	1048.2	403.2	0.0
11 Pt ² /1000	2990.1	2074.2	1098.7	162.6	0.0
12 Fr(Table XV)	.010495	.010495	.010495	.010495	0.000000
13 Fc=FrTZ	4.670	4.764	5.032	5.687	0.000
14 FcQm	.543	.616	.818	1.050	0.000
15 L/H(FcQm) ²	.295	.379	.668	1.103	0.000
16 Fw=L/H(FcQm) ² (1-e ^{-s})	.148	.188	.319	.482	0.000
17 Pw ² =Pt ² +Fw	2990.3	2074.4	1099.0	163.1	0.0
18 Ps ² =e ^s Pw ²	6016.5	4116.4	2102.9	289.5	0.0
19 Ps	2452.9	2028.9	1450.1	538.1	0.0
20 P=(Pt+Ps)/2	2091.0	1734.5	1249.2	470.6	0.0
21 Pr=(P/Pcr)	3.14	2.60	1.87	.71	0.00
22 Tr=(T/Tcr)	1.48	1.48	1.48	1.48	0.00
23 Z(Table XI)	.763	.779	.822	.929	0.000