

WORKSHEET FOR CALCULATION OF STATIC COLUMN WELLHEAD PRESSURE (P_w)

COMPANY Yates Petr. Corp LEASE Foster AN WELL NO. 1 DATE Feb. 1990

LOCATION: Unit D Section 1 Township 20 S Range 24 E

L 5740 H 5760 L/H 0.996528 G 0.650 % CO₂ 0.31 % N₂ 1.41 % H₂S 0.49

d 2.441 F_r 0.010763 GH 3708 P_{Cr} 672.4 T_{Cr} 367.7

TABLE IX & X

LINE	1	2	3	4	5	1	2	3	4	5
1 Q _m	2012	2051	2318	2562	2796	2012	2051	2318	2562	2796
2 T _w (W.H. °R)	528	525	525	528	528	528	525	525	528	528
3 T _s (B.H. °R)	560	560	559	559	558	560	560	559	559	558
4 T = ($\frac{T_w + T_s}{2}$)	544	542.5	542	543.5	543	544	542.5	542	543.5	543
5 Z (Est.)	0.798	0.811	0.817	0.831	0.856	0.802	0.817	0.824	0.839	0.861
6 TZ	435	441	443	449	462	436	444	446	456	468
7 GH/TZ	8.607	8.490	8.457	8.339	8.104	8.587	8.432	8.376	8.210	8.000
8 e ^s (Table XIV)	1.381	1.377	1.375	1.367	1.375	1.378	1.372	1.369	1.361	1.350
9 1-e ^s (Table XIV)	0.276	0.273	0.272	0.268	0.262	0.275	0.271	0.270	0.265	0.259
10 P _t	1363	1238	1173	1035	880	1363	1238	1173	1035	880
11 P _t ² /1000	1858	1533	1376	1071	774	1858	1533	1376	1071	774
12 F _r (Table XV)	0.010763	0.010763	0.010763	0.010763	0.010763	0.010763	0.010763	0.010763	0.010763	0.010763
13 F _c = F _r TZ	4.68	4.75	4.97	4.83	4.97	4.693	4.779	4.897	4.908	5.037
14 F _c Q _m	9.422	9.74	11.06	12.37	13.90	9.442	9.802	11.143	12.574	14.083
15 L/H (F _c Q _m) ²	88.43	94.54	121.90	152.49	192.54	88.84	95.72	123.74	157.56	197.64
16 F _w = L/H (F _c Q _m) ² (1-e ^s)	24.41	25.81	33.16	40.82	50.45	24.45	25.92	33.41	41.75	51.19
17 P _w ² = P _t ² + F _w	1892	1559	1409	1112	824	1882	1559	1409	1113	825
18 P _s ² = e ^s P _w ²	2599	2144	1937	1520	1117	2594	2139	1929	1515	1114
19 P _s	1612	1465	1392	1233	1059	1611	1462	1388	1230	1056
20 P = ($\frac{P_t + P_s}{2}$)	1478	1352	1283	1134	989					
21 P _r = (P/P _{Cr})	2.210	2.010	1.908	1.687	1.442					
22 T _r = (T/T _{Cr})	1.480	1.477	1.473	1.477	1.477					
23 Z (Table XI)	0.802	0.817	0.824	0.839	0.861					