

WORKSHEET FOR CALCULATION OF ST. C COLUMN WELLHEAD PRESSURE (P_w)

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COMPANY EPAG LEASE Rocky Mtn C WELL NO. 11 DATE 4/14/84

LOCATION: Unit E Section 8 Township 2S Range 4S

L 7320 H 7320 LM 1.000 G 6.637 %CO₂ 0 %N₂ 0 %H₂S 0

June { d 23 5 1/2 15# F_i 236.494 1st Rate 236.494 GH 4663 3rd Rate 4663 P_{cr} 670 T_{cr} 278

LINE	1st	2nd	1st	2nd	1st	2nd	1st	2nd		
1 Q _m	.069	.069	.098	.098	.131	.131	.151	.151		
w (W.H. °R)	534	534	534	534	534	534	534	534		
3 T _s (B.H. °R)	590	590	590	590	590	590	590	590		
4 T = (1/w + 1/s)	56.2	56.2	56.2	56.2	56.2	56.2	56.2	56.2		
5 Z (Est.)	.913	.905	.915	.908	.914	.911	.921	.914		
6 T _Z	513.1	508.6	514.2	510.3	515.9	512.0	512.6	513.7		
7 GH/T _Z	9.088	9.168	9.068	9.138	9.038	9.108	9.009	9.078		
8 e ^s (Table XIV)	1.406	1.410	1.405	1.409	1.403	1.407	1.402	1.405		
9 1-e ^s (Table XIV)	.289	.291	.287	.290	.287	.289	.287	.289		
10 P ₁	582.9	580.2	573.9	572.0	551.2	551.2	532.2	532.2		
11 P ₁ ² /1000	346.0	346.0	328.6	328.6	303.8	303.8	283.2	283.2		
12 F _r (Table XV)	.0032244	.0032244	.0032244	.0032244	.0032244	.0032244	.0032244	.0032244		
13 F _c = F _r T _Z	1.655	1.641	1.559	1.646	1.665	1.652	1.670	1.657		
14 F _c Q _m	.114	.113	.163	.161	.218	.216	.259	.250		
15 L/H (F _c Q _m) ²	.012	.012	.026	.026	.042	.042	.064	.063		
16 F _w = L/H (F _c Q _m) ² (1-e ^s)	.004	.004	.008	.008	.014	.014	.014	.018		
17 P _w ² = P ₁ ² + F _w	346.0	346.0	328.6	328.6	303.8	303.8	283.2	283.2		
18 P _s ² = e ^s P _w ²	486.5	483.9	461.6	462.0	426.4	426.5	397.1	398.1		
19 P _s	697.5	698.5	679.4	680.3	653.0	653.9	630.5	631.0		
20 P = (P ₁ + P _s)	643.8	643.4	626.3	626.8	602.1	602.5	581.9	581.6		
21 P _r = (P/P _{cr})	.96	.96	.93	.94	.90	.90	.87	.87		
22 T _r = (T/T _{cr})	1.51	1.51	1.51	1.51	1.51	1.51	1.51	1.51		
23 Z (Table XI)	.905	.905	.908	.907	.911	.911	.914	.914		