

WORK SHEET FOR STEPWISE CALCULATION

(SUBSURFACE) PRESSURE (F & P S)
 XXXXXXXXXXXXXXXXXXXXXXXXXX
 C W

RATE NO. 4

COMPANY Mewbourne Oil Company LEASE State E. Comm. WELL NO. 1 DATE 10-13-78
 LOCATION: UNIT H 12482 L/H 1.00G 0.815% CO₂ 0.00N₂ 0.00 %H₂S 0.00
 d F_r Q_m M²cfd (L/H) (F_rQ_m)² P_{cr} 665 T_{cr} 431

LINE	ITEM	SOURCE	1	2	3	4	5	6	7	8	9	10
1	H		12482	6241		0						
2	GH		10173	5086		0						
3	37.5GH		381481	190741		0						
4	P _c or P _n		2808.2	2282.6	2275.7	1744.0	1725.8	1728.6				
5	P _r		4.22	3.43	3.42	2.62	2.60	2.60				
6	T		649	591	591	532	532	532				
7	T _r		1.51	1.37	1.37	1.23	1.23	1.23				
8	Z		0.785	0.683	0.683	0.556	0.556	0.556				
9	P/Z P/Z	4 ÷ 8	3576.87	3341.01	3330.92	3136.62	3103.99	3109.05				
10	P/TZ	9 ÷ 6	5.5114	5.6579	5.6408	5.8959	5.8346	5.8441				
11	(P/TZ) ² /1000	(10 ² /1000)										
12	L/H(F _r Q _m) ²											
13		11 + 12										
14	I _n	10 ÷ 13	181.444	176.743	177.279	169.609	171.392	171.113				
15	M=P _n ^{-P_n}			526	533	532	550	547	547			
16	N=1 _n ⁺¹			358.186	358.722	346.888	348.671	348.392				
17	M x N	15 x 16			191199			190570				
18	Σ (M x N)	Σ 17			191199			381769				

$$\Delta P = \frac{3[381481]}{181.444 + 4[177.279] + 171.113} = \frac{1144443}{1061.673} = 1078.0 \quad P = 2808.2 - 1078.0 = 1730.2$$