

WORK SHEET FOR STEPWISE CALCULATION

Form C-122-E

(SUBSURFACE) PRESSURE (P_f & P_g)

PRESSURE (P_c & P_w)

ISOTHERMAL

RATE NO. 1

COMPANY MESA PETROLEUM CORP. LEASE NASH UNIT WELL NO. 3 DATE 10-25-76

LOCATION: UNIT F SECTION 12 TOWNSHIP 23S RANGE 29E

12445 H 12445 L/H 1.00 G 0.721 % CO₂ 0.00 % N₂ 0.00 % H₂ 0.00

d 2.441 F_r 0.010763 Q_m 7.575 M² cfd (L/H) (F_r Q_m)² 0.006647 P_{cr} 668 T_{cr} 398

LINE	ITEM	SOURCE	1	2	3	4	5	6	7	8	9	10
1	H		0	6223		12445						
2	GH		0	4486		8973						
3	37.5GH		0	168241		336482						
4	P _c or P _n		2313.2	2958.2	2954.2	3595.2	3588.2					
5	P _r		3.46	4.43	4.42	5.38	5.37					
6	T		529	585	585	640	640					
7	T _r		1.33	1.47	1.47	1.61	1.61					
8	Z		0.655	0.771	0.771	0.864	0.864					
9	P/2 P/Z	$\overline{4} \div \overline{8}$	3532.68	3835.84	3832.64	4160.63	4152.53					
10	P/TZ	$\overline{9} \div \overline{6}$	6.6780	6.5626	6.5571	6.5010	6.4883					
11	(P/TZ) ² /1000	$(10^2/1000)$	0.044596	0.043068	0.042996	0.042263	0.042098					
12	L/H(F _r Q _m) ²		0.006647	0.006647	0.006647	0.006647	0.006647					
13		$\overline{11} + \overline{12}$	0.051243	0.049715	0.049643	0.048910	0.048745					
14	I _n	$\overline{10} \div \overline{13}$	130.320	132.005	132.086	132.918	133.106					
15	$\frac{P_n - P_{n-1}}{n - n-1}$			645	641	641	634	634				
16	$\frac{P_n + 1}{n - n-1}$			262.325	262.406	265.003	265.192					
17	M x N	$\overline{15} \times \overline{16}$			168202		168132					
18	$\sum (M \times N)$	$\sum \overline{17}$			168202		336334					

Delta P = $\frac{3[336482]}{130.320 + 4[132.086]} + 133.106 = \frac{1009445}{791.770} = 1274.9$ P = 2313.2 + 1274.9 = 3588.1

9515084
1
615 1150
1150
1150 1150

1150