

WORK SHEET FOR STEPWISE CALCULATION

COMPANY GULF OIL CORP. LEASE WHITE CITY PEN GAS COM UNIT WELL NO. 3 DATE 1-18-77
LOCATION: UNIT SECTION TOWNSHIP RANGE
L 11157 H 11157 L/H 1.00 G 0.572 % CO₂ 0.01 % N₂ 0.00 % H₂ 0.00
d 1.995 F_r 0.018231 Q_m 1.959 M² cfd (L/H) (F_r Q_m)² 0.001276 P_{cr} 671 T_{cr} 358

LINE	ITEM	SOURCE	1	2	3	4	5	6	7	8	9	10
1	H		0	5579		11157						
2	GH		0	3230		6460						
3	37.5GH		0	121123		242246						
4	P _c or P _n		3785.2	4329.2	4305.2	4824.2	4790.2	4783.2				
5	P _r		5.64	6.45	6.42	7.19	7.14	7.13				
6	T		520	583	583	645	645	645				
7	T _r		1.45	1.63	1.63	1.80	1.80	1.80				
8	Z		0.823	0.922	0.920	0.974	0.994	0.993				
9	P/Z P/Z	$\overline{4} \div \overline{8}$	4599.27	4695.95	4678.55	4952.98	4819.11	4816.92				
10	P/TZ	$\overline{9} \div \overline{6}$	8.8448	8.0617	8.0318	7.6790	7.4715	7.4681				
11	(P/TZ ² /1000	$(10^2/1000)$	0.078230	0.064991	0.064510	0.058968	0.055823	0.055772				
12	L/H(F _r Q _m) ²		0.001276	0.001276	0.001276	0.001276	0.001276	0.001276				
13		$\overline{11} + \overline{12}$	0.079505	0.066267	0.065786	0.060243	0.057099	0.057048				
14	I _n	$\overline{10} \div \overline{13}$	111.248	121.655	122.090	127.467	130.852	130.909				
15	M=P _n -P _{n-1}			544	520	519	485	478	478			
16	N=1 _n +1 _{n-1}			232.903	233.338	249.558	252.943	253.000				
17	M x N	$\overline{15} \times \overline{16}$			121336			120934				
18	(M x N)	$\overline{17}$			121336			242270				

$$\text{Delta P} = \frac{3[242246]}{111.248 + 4[122.090]} + 130.909 = \frac{726739}{730.517} = 994.8 \quad \text{P} = 3785.2 + 994.8 = 4780.0$$