

WORK SHEET FOR STEPWISE CALCULATION

PRESSURE

(SURFACE)

(P_c & P_w)

RATE I.O. 4

COMPANY GULF OIL CORP. LEASE WHITE CITY PEN G-AS COM UNIT WELL NO. 3 DATE 1-18-77

LOCATION: UNIT 11157 H 11157 L/H 1.00 G 0.579 & CO₂ 0.01 %N₂ 0.00 %H₂ 0.00

TOWNSHIP SECTION RANGE

d F_r Q_m M² cfd (L/H) (F_r Q_m)² P_{cr} 671 T_{cr} 358

JNE	ITEM	SOURCE	1	2	3	4	5	6	7	8	9	10
1	H		11157	5579		0						
2	GH		6460	3230		0						
3	37.5GH		242246	121123		0						
4	P _c or P _n		4519.2	4084.4	4067.8	3616.9	3576.1					
5	P _r		6.74	6.09	6.06	5.39	5.33					
6	T		645	583	583	521	521					
7	T _r		1.80	1.63	1.63	1.46	1.46					
8	Z		0.976	0.904	0.903	0.812	0.809					
9	P/Z P/Z	$4 \div 8$	4630.33	4519.19	4507.21	4453.21	4419.27					
10	P/TZ	$9 \div 6$	7.1788	7.7516	7.7311	8.5474	8.4823					
11	(P/TZ ² /1000	$10^2/1000$										
12	L/H(F _r Q _m) ²											
13		$\overline{11 + 12}$										
14	I _n	$\overline{10 \div 13}$	139.299	129.006	129.348	116.994	117.893					
15	M=P _n ⁻¹			435	451	451	492	490				
16	N=1 _n ⁺¹			268.305	268.647	246.342	247.241					
17	M x N	$\overline{15 \times 16}$			121160		121643					
18	(M x N)	$\overline{17}$			121160		242802					

$$\text{Delta P} = \frac{3[242246]}{139.299 + 4[129.348] + 117.893} = \frac{726739}{774.584} = 938.2$$

$$P = 4519.2 - 938.2 = 3581.0$$