

WORK SHEET FOR STEPWISE CALCULATION

PRESSURE (SURFACE) (P_c & P_w)

Form C-122-E

RATE NO. 1

LOCATION: UNIT 0 9299 H 9299 L/H 1.00 SECTION 32 G 0.595 TOWNSHIP 19S WELL NO. 1 DATE 1-10-77

3 F_r Q_m M_{cfd}² (L/H) (F_r Q_m)² P_{cr} 672 T_{cr} 354

LINE	ITEM	SOURCE	1	2	3	4	5	6	7	8	9	10
1	H		9299	4650		0						
2	GH		5533	2766		0						
	37.5GH		207484	103742		0						
4	P _c or P _n		3354.2	3037.6	3031.6	2709.3	2696.9					
5	P _r		4.99	4.52	4.51	4.03	4.01					
6	T		616	573	573	530	530					
7	T _r		1.74	1.62	1.62	1.50	1.50					
8	Z		0.892	0.836	0.836	0.777	0.776					
9	P/Z P/Z		3759.47	3633.53	3626.28	3486.82	3475.43					
10	P/TZ		9 ÷ 6	6.3412	6.3286	6.5789	6.5574					
11	(P/TZ) ² /1000		10 ² /1000									
12	L/H (F _r Q _m) ²											
1			11 + 12									
14	I _n		10 ÷ 13	163.853	157.698	158.013	152.001	152.499				
15	N=P _n - P _{n-1}			317	323	322	335	334				
16	N=L _n + L _{n-1}			321.551	321.866	310.014	310.512					
17	M x N		15 x 16		103963		104021					
18	Σ (M x N)		Σ 17		103963		207984					

$$\Delta P = \frac{3[207484]}{163.853 + 4[158.013] + 152.499} = \frac{622452}{948.404} = 656.3$$

$$P = 3354.2 - 656.3 = 2697.9$$