

WORK SHEET FOR STEPWISE CALCULATION

XXXXXXXXXX
 (SURFACE)
 Rate #1
 PRESSURE
 (P_c & P_w)
 Form C-122-E

PANY Monsanto Company LEASE Rock Tank (Upper Morrow) WELL NO. 4 DATE 7-10-78

ACTION: UNIT J SECTION 1 TOWNSHIP 23S RANGE 24E

1891 H 9891 L/H 1.0 G .617 % CO₂ % N₂ % H₂S
d F r Q_m M cfd (L/H) (F_r Q_m)² P_{cr} 671 T_{cr} 365

ITEM	SOURCE	1	2	3	4	5	6	7	8	9	10
H		9891	4945.5		0						
		6102.7	3051.3		0						
37.5GH		228853	114427		0						
P _c or P _n		1135.4	1019.7	1021.8	910.0	912.1	914.0				
P _r		1.69	1.52	1.53	1.36	1.36	1.36				
T _r		620	586.5	586.5	553	553	553				
Z		1.70	1.61	1.61	1.52	1.52	1.52				
P/Z		.906	.891	.890	.876	.876	.876				
P/Z P/Z		4 ÷ 8	1253.20	1144.50	1148.09	1038.81	1041.21	1043.38			
P/TZ		9 ÷ 6	2.0213	1.9514	1.9575	1.8785	1.8828	1.8868			
(P/TZ) ² /1000		(10 ² /1000)									
H(F _r Q _m) ²											
		11 + 12									
T _n		10 ÷ 13	494.733	512.447	510.848	532.338	531.113	530.008			
M=P-P _n					115.6	113.6	111.8	109.7	107.6		
N=1 _n + 1 _{n-1}					989.466	1007.18	1023.29	1043.19	1063.45		
M x N		15 x 16			114416						
Σ (M x N)		Σ 17			114416						

$$\Delta P = \frac{3(228853)}{494.733 + 4(510.848) + 530.008} = \frac{686559}{3068.133} = 223.771 \quad P = 1135.4 - 223.7 = 911.7$$