WORK SHEET FOR STEPWISE CALCULATION ~~(SUBSURFACE)~~ PRESSURE (P_f & P_s) Form C-122-E

(SURFACE) (P_c & P_w)

RATE NO. 2

PANY Monsanto Company LEASE Cerf Federal WELL NO. 2 DATE 10-20-76

ATION: UNIT F SECTION 10 TOWNSHIP 21S RANGE 27E

11437 H 11437 L/H 1.00 G 0.596 % CO_2 0.00 % N_2 0.00 % H_2S 0.00

d F_r Q_m M^2cfd (L/H) $(F_rQ_M)^2$ P_{cr} 671 T_{cr} 358

NE	ITEM	SOURCE	1	2	3	4	5	6	7	8	9	10
1	H		11437	5719	0							
2	GH		6816	3408	0							
3	37.5GH		255617	127808	0							
	P_c or P_n		2660.3	2346.9	2543.3	2503.6	2505.9					
5	P_r		3.96	3.50	3.79	3.73	3.73					
6	T		624	577	530	530	530					
7	T_r		1.74	1.61	1.48	1.48	1.48					
8	Z		0.869	0.821	0.761	0.760	0.760					
9	P/Z P/Z	$\overline{4} \div \overline{8}$	3059.93	2858.28	3343.83	3295.97	3298.93					
10	P/TZ	$\overline{9} \div \overline{6}$	4.9037	4.9537	6.3091	6.2188	6.2244					
	$(P/TZ)^2/1000$	$(10^2/1000$										
	$/H(F_rQ_m)^2$											
		$\overline{11} + \overline{12}$										
	I_n	$\overline{10} \div \overline{13}$	203.926	201.870	158.501	160.802	160.658					
	$M=P_n - P_{n-1}$			313	315	355	352	353				
	$N=I_n + I_{n-1}$			405.796	360.371	362.672	362.528					
	M x N	$\overline{15} \times \overline{16}$		127014			127610					
	$\sum$ (M x N)	$\sum \overline{17}$		127014			254624					

$$\text{Delta P} = \frac{3[255617]}{203.926 + 4[201.870] + 160.658} = \frac{766851}{1172.064} = 654.3 \qquad P = 2660.3 - 654.3 = 2006.0$$