

WORK SHEET FOR STEPWISE CALCULATION

PRESSURE ~~XXXXXXXXXX~~

Form C-122-E

(SURFACE) (P_c & P_w)
RATE #2

COMPANY Grace Petroleum Company LEASE Whitten Federal WELL NO. 1 DATE 9-4-79
 LOCATION: UNIT I SECTION 14 TOWNSHIP 20 S RANGE 34 E
L 13090 H 13090 L/H 1.0 G .700 % CO₂ 0.23 % N₂ 0.60 % H₂S 0
 d 2.441 F_r .010763 Q_m 1.812 M² cfd (L/H) (F_r Q_m)² P_{cr} 668 T_{cr} 392

LINE	ITEM	SOURCE	1	2	3	4	5	6	7	8	9	10
1	H	13090	6545									
2	GH	9163	4581									
3	37.5GH	343613	171807									
4	P _c or P _n	3149.2	2658.4	2654.8	2651.5	2154.6	2145.6	2137.0				
5	P _r	4.71	3.98	3.97	3.97	3.23	3.21	3.20				
6	T	647	591	591	591	535	535	535				
7	T _r	1.65	1.51	1.51	1.51	1.36	1.36	1.36				
8	Z	.852	.776	.776	.776	.671	.671	.671				
9	P/Z P/Z	4 ÷ 8	3425.83	3421.22	3416.99	3211.04	3197.66	3184.91				
10	P/TZ	9 ÷ 6	5.7967	5.7888	5.7817	6.0019	5.9769	5.9530				
11	(P/TZ) ² / 1000	(10 ² / 1000)										
12	L/H (F _r Q _m) ²											
13		11 + 12										
14	I _n	10 ÷ 13	175.042	172.747	172.959	166.612	167.309	167.309				
15	M = P _n - P _{n-1}		491	494	498	497	506	514				
16	N = 1 + 1 _{n-1}		350.085	347.555	345.258	345.704	339.571	333.922				
17	M x N	15 x 16		171938				171636				
18	Σ (M x N)	Σ 17		171938				343574				

delta P = $\frac{3(343613)}{175.042 + 4(172.959) + 167.309} = \frac{1030837}{1034.187} = 996.7$ P = 3149.2 - 996.7 = 2152.4