

WORK SHEET FOR STEPWISE CALCULATION

XXXXXXXXXXXXX
PRESSURE

Form C-122-E

(SURFACE) (P_C & P_w)
RATE #3

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 % H₂ 0
d 2.441 F_r .010763 Q_m 2.864 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	0							
2	GH		9163	4581	0							
3	37.5GH		343613	171807	0							
4	P _C or P _n		2934.2	2472.6	2010.4	2001.6	1995.2					
5	P _r		4.39	3.70	3.01	2.99	2.99					
6	T		647	591.5	536	536	536					
7	T _r		1.65	1.51	1.37	1.37	1.37					
8	Z		.844	.776	.672	.675	.675					
9	P/Z P/Z	$\bar{4} \div \bar{8}$	3476.54	3186.359	2991.73	2965.41	2955.93					
10	P/TZ	$\bar{9} \div \bar{6}$	5.3733	5.3869	5.5816	5.5324	5.5148					
11	(P/TZ) ² /1000	$(10^2/1000)$										
12	L/H(F _r Q _m) ²											
13		$\bar{11} + \bar{12}$										
14	I _n	$\bar{10} \div \bar{13}$	186.104	185.635	179.160	180.751	181.329					
15	M=P _n -P _{n-1}			462	462	471	477					
16	N= $\bar{1}_n + \bar{1}_{n-1}$			372.209	371.739	364.795	359.911					
17	M x N	$\bar{15} \times \bar{16}$										
18	$\Sigma (M \times N)$	$\Sigma \bar{17}$										

delta P = $\frac{3(343613)}{186.104 + 4(185.635) + 181.329} = \frac{1030837}{1109.973} = 928.7$ P = 2934.2 - 928.7 = 2005.5