NEW MEXICO OIL CONSERVATION COMMISSION

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Form C-122
Revised 9-1-65

Type Test: [X] Initial [ ] Annual [ ] Special				Test Date: 5-12-71	
Company: Skelly Oil Company		Connection: Northern Natural Gas Company			
Pool: Tubb-Gas		Formation: Tubb		Unit: 240 acres	
Completion Date: 4-27-71	Total Depth: 6499'	Plug Back TD: 6333'	Elevation: 3394' DF	Farm or Lease Name: Baker "B"	
Csg. Size: 7" / Wt.: 23 / d: 6.366 / Set At: 6498'		Perforations: From 5942' To 6062'		Well No.: 7	
Tbg. Size: 2-3/8" / Wt.: 4.7 / d: 1.995 / Set At: 5855'		Perforations: From Open To Ended		Unit: J / Sec.: 10 / Twp.: 22S / Rge.: 37E	
Type Well – Single – Bradenhead – G.G. or G.O. Multiple: Single		Packer Set At: 5855'		County: Lea	
Producing Thru: Tubing	Reservoir Temp. °F: 100 @ 6000'	Mean Annual Temp. °F: 60	Baro. Press. – P_a: 13.2	State: New Mexico	

L	H	Gg	% CO_2	% N_2	% H_2S	Prover	Meter Run	Taps
6002	6002	0.690	0.08	2.17	0	—	4	Pipe

	FLOW DATA				TUBING DATA		CASING DATA		
NO.	Prover Line Size	X Orifice Size	Press. p.s.i.g.	Diff. h_w	Temp. °F	Press. p.s.i.g.	Temp. °F	Press. p.s.i.g.	Temp. °F	Duration of Flow
SI						1224.2	70	Pkr.	—	72 hrs.
1.	4 x 2.250		131.0	26	52	728.5	75	—	—	1.5 hrs.
2.	4 x 2.250		128.0	15	59	831.0	77	—	—	1.5 hrs.
3.	4 x 2.250		125.0	7.5	71	969.0	76	—	—	1.5 hrs.
4.	4 x 2.250		128.0	3.5	73	1026.5	78	—	—	1.5 hrs.
5.										

RATE OF FLOW CALCULATIONS

NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P_m	Flow Temp. Factor Ft.	Gravity Factor Fg	Super Compress. Factor, Fpv	Rate of Flow Q, Mcfd
1	31.40	61.23	144.2	1.008	1.204	1.017	2373
2.	31.40	46.02	141.2	1.001	1.204	1.015	1768
3.	31.40	32.19	138.2	.9896	1.204	1.014	1221
4.	31.40	22.23	141.2	.9877	1.204	1.014	842
5.							

NO.	P_t	Temp. °R	T_r	Z
1	.22	512	1.34	.967
2.	.21	519	1.36	.970
3.	.21	531	1.39	.972
4.	.21	533	1.40	.972
5.				

Gas Liquid Hydrocarbon Ratio 38.5 Mcf/bbl.
A.P.I. Gravity of Liquid Hydrocarbons 46.2 Deg.
Specific Gravity Separator Gas .690
Specific Gravity Flowing Fluid XXXXX XXXXXXXXXX .771
Critical Pressure 666 P.S.I.A. 663 P.S.I.A.
Critical Temperature 382 R 409 R

P_c 1237.4 P_c^2 1531.2

NO	P_t^2	P_w	P_w^2	$P_c^2 - P_w^2$
1	550.1		669.4	861.8
2	712.7		777.2	759.0
3	964.7		994.2	537.0
4	1081.0		1094.8	436.4
5				

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 1.777$ (2) $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 1.777$

AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 4.217$

Absolute Open Flow 4217 Mcfd @ 15.025 Angle of Slope θ 45° Slope, n 1.000

Remarks: Slope greater than 1.000, therefore slope = 1.000 drawn through highest rate of flow giving absolute open flow of 4,217 MCF/day.

Approved By Commission:	Conducted By:	Calculated By:	Checked By:

WORKSHEET FOR CALCULATION OF STATIC COLUMN WELLHEAD PRESSURE (P_w)

C-122D
Adopted 9-1-65

COMPANY Skelly Oil Company LEASE Baker "B" WELL NO. 7 DATE 5-12-71

LOCATION: Unit J Section 10 Township 22S Range 37E

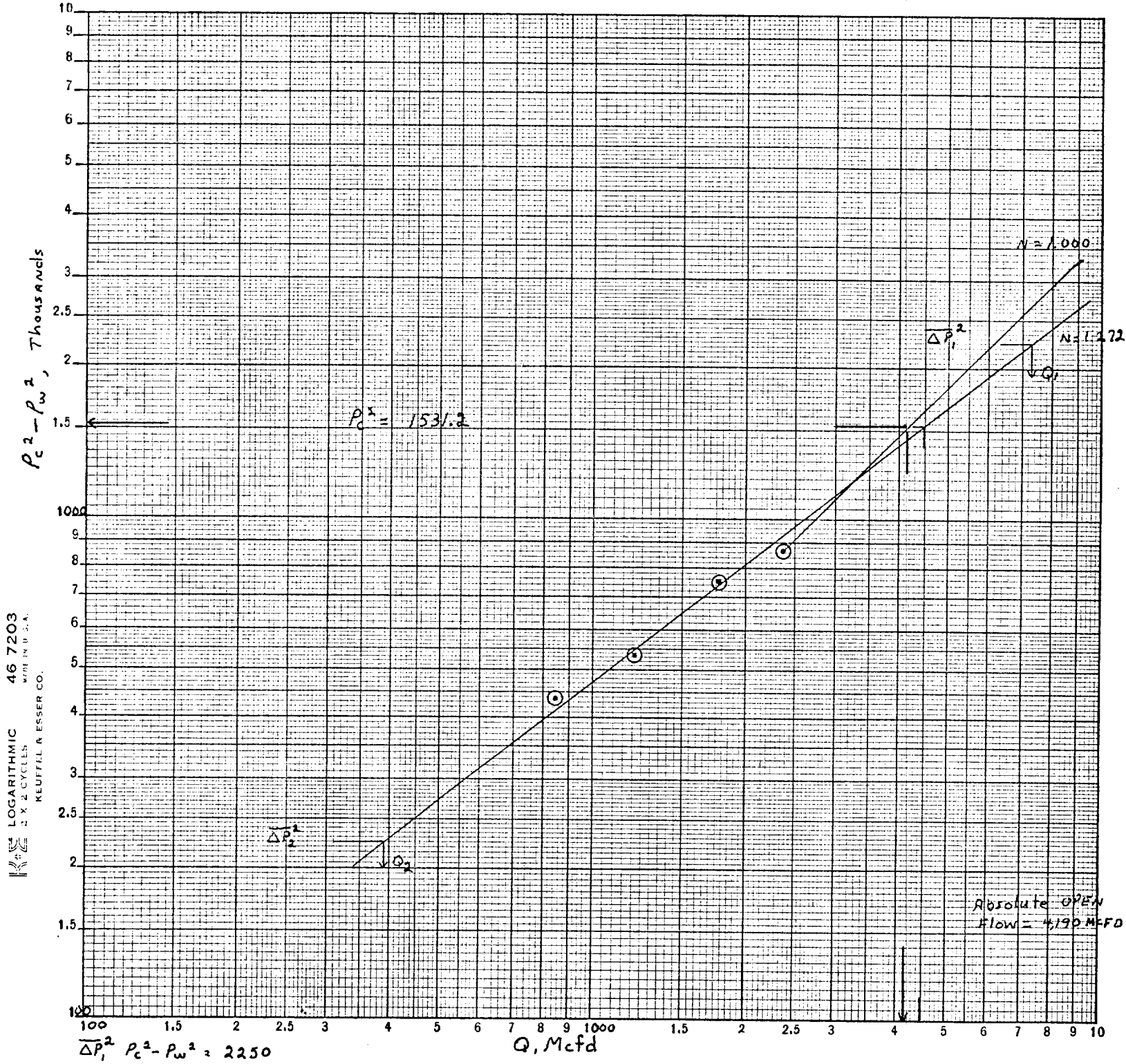
L 6002 H 6002 L/H 1.000 G .771 % CO_2 .08 % N_2 2.17 % H_2S 0

d 1.995 F_r .018231 GH 4628 P_{cr} 663 (TABLE IX & X) T_{cr} 409 (TABLE IX & X)

LINE	1st Flow Trial 1	1st Flow Trial 2	2nd Flow Trial 1	2nd Flow Trial 2	3rd Flow Trial 1	3rd Flow Trial 2	3rd Flow Trial 3	4th Flow Trial 1	4th Flow Trial 2	
1 Q_m	2.373	2.373	1.768	1.768	1.221	1.221	1.221	0.842	0.842	
2 T_w (W.H. °R)	535	535	537	537	536	536	536	538	538	
3 T_s (B.H. °R)	560	560	560	560	560	560	560	560	560	
4 $T = (\frac{T_w + T_s}{2})$	547.5	547.5	548.5	548.5	548	548	548	549	549	
5 Z (Est.)	.800	.810	.800	.791	.800	.764	.763	.750	.752	
6 TZ	438	443.5	438.8	433.9	438.4	418.7	418.1	411.8	412.8	
7 GH/TZ	10.5662	10.4352	10.5469	10.6661	10.5566	11.0533	11.0691	11.2385	11.2112	
8 e^s (Table XIV)	1.486	1.479	1.485	1.492	1.486	1.514	1.515	1.524	1.523	
9 $1-e^{-s}$ (Table XIV)	0.327	0.324	0.327	0.330	0.327	0.340	0.340	0.344	0.343	
10 P_t	741.7	741.7	844.2	844.2	982.2	982.2	982.2	1039.7	1039.7	
11 $P_t^2/1000$	550.1	550.1	712.7	712.7	964.7	964.7	964.7	1081.0	1081.0	
12 F_r (Table XV)	.018231	.018231	.018231	.018231	.018231	.018231	.018231	.018231	0.18231	
13 $F_c = F_r$ TZ	7.985	8.085	8.000	7.910	7.992	7.633	7.622	7.508	7.526	
14 $F_c Q_m$	18.95	19.19	14.14	13.98	9.76	9.32	9.31	6.32	6.34	
15 $L/H (F_c Q_m)^2$	359.10	368.26	199.94	195.44	95.26	86.86	86.68	39.94	40.20	
16 $F_w = L/H(F_c Q_m)^2(1-e^{-s})$	117.43	119.32	65.38	64.50	31.15	29.53	29.47	13.74	13.79	
17 $P_w^2 = P_t^2 + F_w$	667.53	669.42	778.08	777.20	995.85	994.23	994.17	1094.74	1094.79	
18 $P_s^2 = e^s P_w^2$	991.95	990.07	1155.45	1159.58	1479.83	1532.11	1506.17	1668.38	1667.37	
19 P_s	996.0	995.02	1074.92	1076.84	1216.48	1237.78	1227.26	1291.66	1291.27	
20 $P = (\frac{P_t + P_s}{2})$	868.9	868.4	959.6	960.5	1099.34	1109.99	1104.73	1165.68	1165.49	
21 $P_r = (P/P_{cr})$	1.31	1.31	1.45	1.45	1.66	1.67	1.67	1.76	1.76	
22 $T_r = (T/T_{cr})$	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	
23 Z (Table XI)	.810	.810	.791	.791	.764	.763	.763	.752	.752	

One copy to be filed in District Office (Work copy acceptable)

COMPANY	Skelly Oil Company
WELL	Baker "B" Well No.
LOCATION	J, 10-22S-37E
COUNTY	Lea
DATE	5-14-71



$\overline{\Delta P_1^2}$ $P_c^2 - P_w^2$ = 2250

$\overline{\Delta P_2^2}$ $P_c^2 - P_w^2$ = 225

Q_1 = 7300 Mcfd

Q_2 = 390 Mcfd

Log Q_1 = 3.86332

Log Q_2 = 2.59106

N = 1.27226 = 1.272