

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Type Test ☒ Initial ☐ Annual ☐ Special		Test Date 11/30/87	
Company Enron Oil & Gas Company		Connection Enron Oil & Gas Company	
Pool Pitchfork Ranch		Formation Atoka	
Completion Date 9/15/87		Total Depth 14000'	Plug Back TD 13945'
Elevation 3396' GL		Farm or Lease Name Madera 33 Federal Com	
Coq. Size 5 1/2"	Wt. 17#	d 4.892	Set At 13300
3 1/2"	12.52#	2.750	12972/14000
Perforations: From 13892 To 13904		Well No. 4	
Trq. Size 2 7/8"	Wt. 7.9#	d 2.323	Set At 13026
Perforations: From Open To Ended		Unit Sec. Twp. Rge. J 33 24s 34e	
Type Well - Single - Bradenhead - G.G. or G.O. Multiple Single		Packer Set At 12967'	County Lea
Producing Thru Tbg	Reservoir Temp. °F 206	Mean Annual Temp. °F 13892	Baro. Press. - P _a 60°
State New Mexico		Prover 3"	
L 13892	H 13892	G _g .6496	% CO ₂ .416
% N ₂ .692	% H ₂ S -0-	Meter Run 3"	Taps Flg

FLOW DATA							TUBING DATA		CASING DATA		Duration of Flow
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	
SI							3003		PACKER		2 Hr.
1.	3	X	1.000	930	2	62	2882				1 hr.
2.	3	X	1.000	930	4	66	2799				1 hr.
3.	3	X	1.000	930	8	65	2686				1 hr.
4.	3	X	1.000	930	16	65	2484				1 hr.
5.											

RATE OF FLOW CALCULATIONS							
NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P _m	Flow Temp. Factor Ft.	Gravity Factor F _g	Super Compress. Factor, F _{pv}	Rate of Flow Q, Mscf
1	4.789	43.43	943.2	.9981	1.250	1.099	285
2	4.789	61.42	943.2	.9943	1.250	1.099	402
3	4.789	86.87	943.2	.9952	1.250	1.099	569
4	4.789	122.85	943.2	.9952	1.250	1.099	804
5							

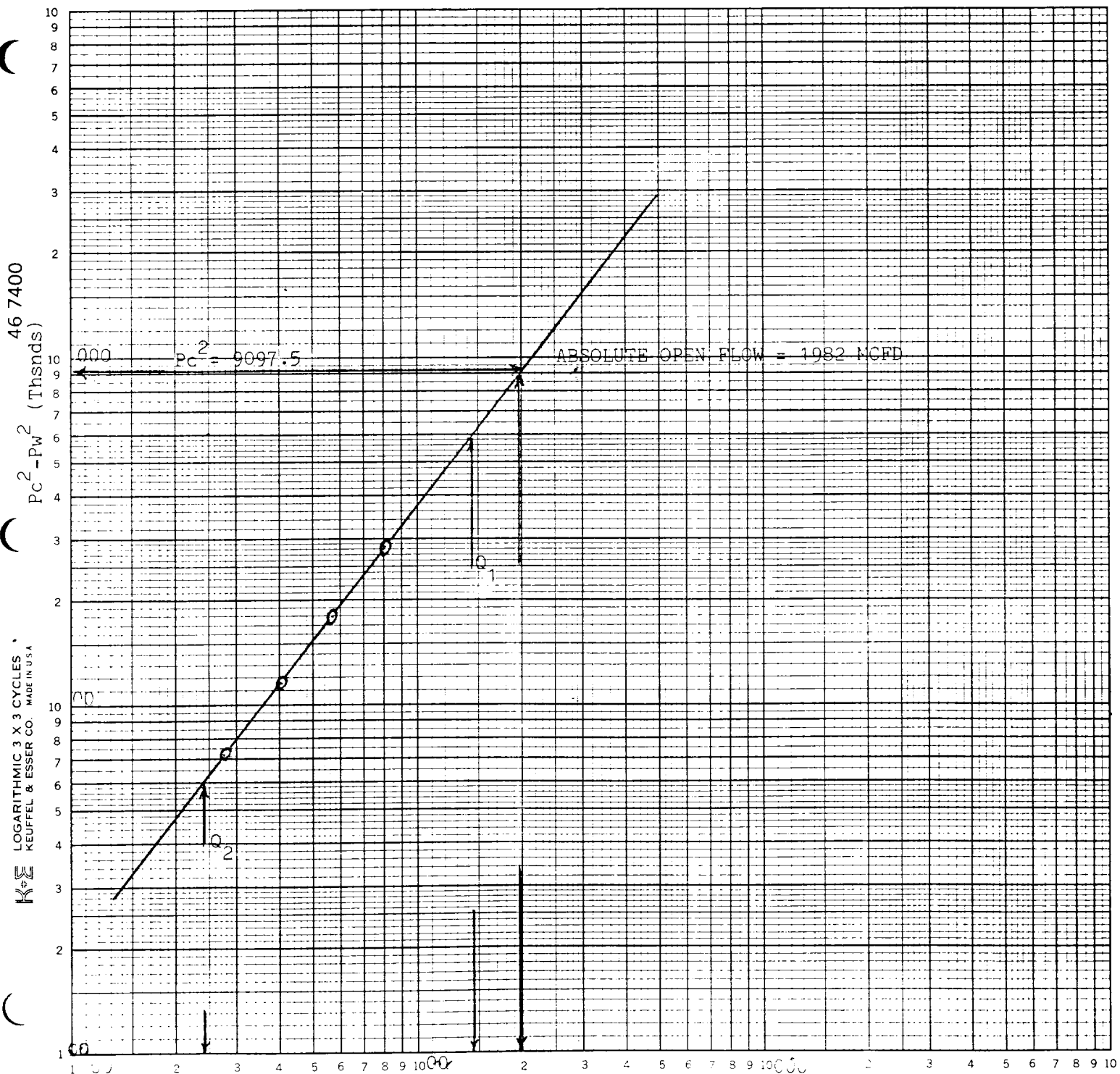
NO.	P _r	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio	No Fluid Produced	Mcf/bbl.
1	1.40	522	1.39	.828	A.P.I. Gravity of Liquid Hydrocarbons	--	Deq.
2	1.40	526	1.40	.828	Specific Gravity Separator Gas	.6496	X X X X X X X X
3	1.40	525	1.40	.828	Specific Gravity Flowing Fluid	X X X X X	
4	1.40	525	1.40	.828	Critical Pressure	673	P.S.I.A.
5					Critical Temperature	375	R

NO.	P _i ²	P _w	P _w ²	P _c ² - P _w ²	(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 3.198$	(2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 2.465$
1		2896.7	8390.9	706.6		
2		2814.2	7919.7	1177.8		
3		2701.4	7297.6	1799.9		
4		2500.6	6253.0	2844.5		
5						

Absolute Open Flow		1,982	Mcf @ 15.025	Angle of Slope θ	52	Slope, n	.776
Remarks:							
Approved By Division		Conducted By:		Calculated By:		Checked By:	
J.S.		Interrel Services, Inc.		Bob Murray		D. Dickerson	

DEC 1 1987

COMPANY: Enron Oil & Gas Company
 WELL: Madera 33 Federal Com, No. 4
 LOCATION: J 33 24s 34e
 COUNTY: Lea
 DATE: November 30, 1987



$$\begin{aligned}
 Q &= \text{MCF/DAY} \\
 Q_1 &= 1440 \text{ MCFD}; \text{Log } Q_1 = 3.158362 \\
 Q_2 &= 240 \text{ MCFD}; \text{Log } Q_2 = 2.380211 \\
 \hline
 N &= 0.775
 \end{aligned}$$