

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Type Test ☒ Initial ☐ Annual ☐ Special					Test Date 7-3-83				
Company Mesa Petroleum Co.				Connection Unconnected					
Pool West Pecos Slope ABO				Formation ABO				Unit	
Completion Date 6-28-83		Total Depth 3200'		Plug Back TD 3159'		Elevation 4103'		Farm or Lease Name Macho Fed	
Ceq. Size 4 1/2"	Wt. 10.5#	d	Set At 3200'	Perforations: From 2814' To 2947'				Well No. 13	
Thq. Size 2 3/8"	Wt. 4.7#	d	Set At 2950'	Perforations: From OPEN ENDED To				Unit Sec. Twp. Rye. E 6 7S 23E	
Type Well - Single - Brdenhead - G.G. or G.O. Multiple Single					Packer Set At None		County Chaves		
Producing Thru Tubing		Reservoir Temp. °F 91° @ 3200'		Mean Annual Temp. °F 60		Baro. Press. - P _a 13.2		State New Mexico	
L	H	G _g .65	% CO ₂ 1	% N ₂ 1	% H ₂ S	Prover 2" CRITICAL FLOW PROVER		Meter Run Taps	

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							760		760		72 hr SI
1.	2" X 1"			40		47	690	80	730		1 hr
2.	2" X 1"			70		46	605	80	695		1 hr
3.	2" X 1"			84		52	490	82	590		1 hr
4.	2" X 1"			99		56	380	83	480		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, Mcfd
1	17.09	FLOW PROVER	53	1.013	1.24		1137
2	17.09	FLOW PROVER	83	1.014	1.24		1783
3	17.09	FLOW PROVER	97	1.008	1.24		2072
4	17.09	FLOW PROVER	112	1.004	1.24		2382
5.							

NO.	P _r	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio _____ Mcf/bbl.
1					A.P.I. Gravity of Liquid Hydrocarbons _____ Deg.
2.					Specific Gravity Separator Gas _____ XXXXXX
3.					Specific Gravity Flowing Fluid _____ XXXXX
4.					Critical Pressure _____ P.S.I.A. _____ P.S.I.A.
5.					Critical Temperature _____ R _____ R

P _c 773	P _c ² 598		
NO.	P _t ²	P _w	P _w ²
1		743	552
2		708	501
3		603	364
4		493	243
5			

$$(1) \frac{P_c^2}{P_c^2 - P_w^2} = 1.6845$$

$$AOF = Q \left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 3,100$$

$$(2) \left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 1.2979$$

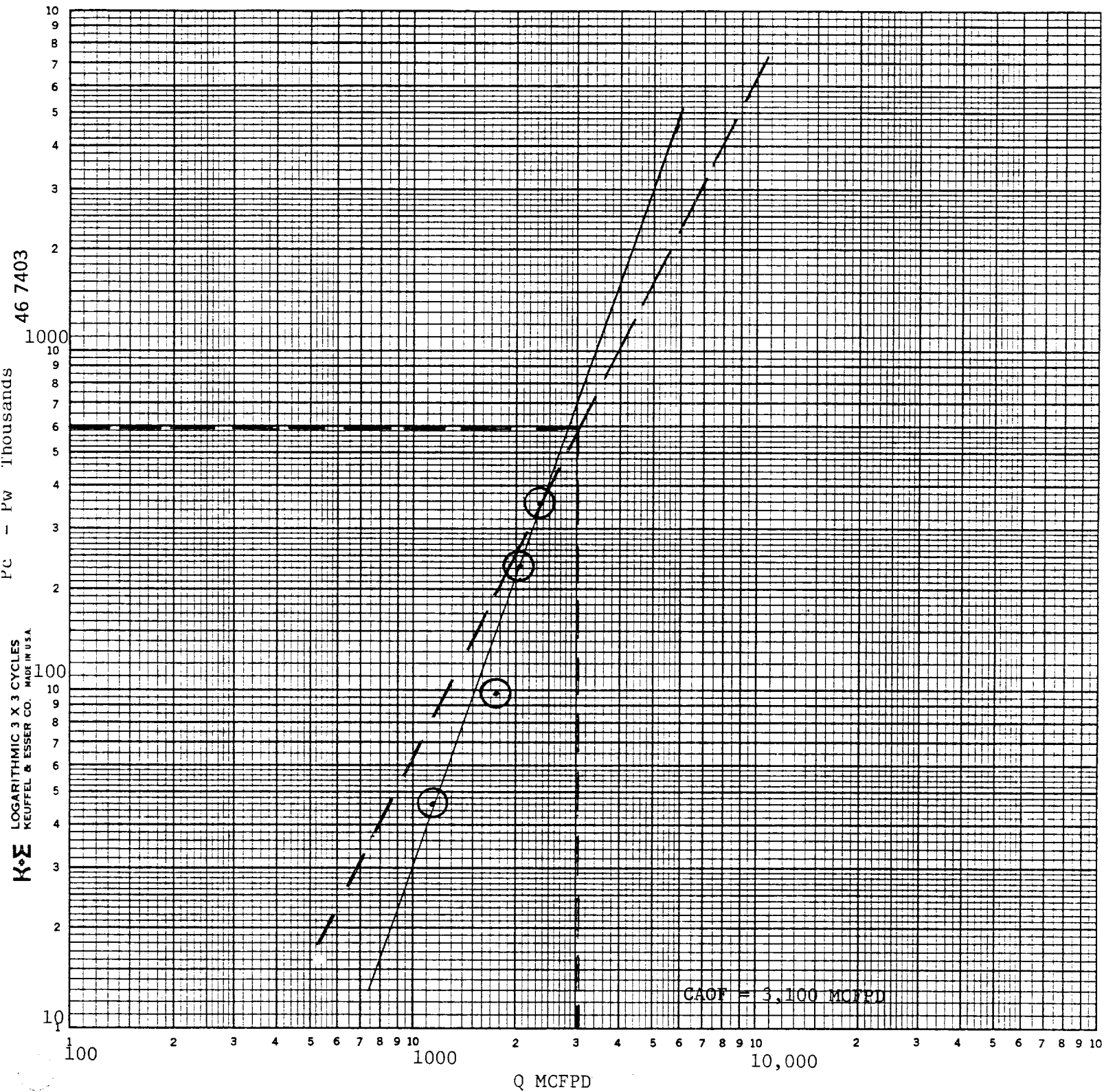
*Best ID 2
8-19-83
Camp & BK*

Absolute Open Flow 3,100	Mcfd @ 15.025	Angle of Slope θ 63.5°	Slope, n .5
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Remarks: Plot of P_c² - P_w² vs Q yielded a straight line with a θ greater than 63.5°
Drew 63.5° line through the highest point.

Approved By Division	Conducted By: James Craig	Calculated By: <i>ELB</i> 7-12-83 E. L. Buttross, Jr.	Checked By:
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Mesa Petroleum Co.
 Macho Fed #13
 Chaves Co., NM
 7-3-83



Assumed $N = .5$ and $\theta = 63.5^\circ$