

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

RECEIVED

Type Test ☒ Initial ☐ Annual ☐ Special				Test Date 3-11-83		MAR 17 1983	
Company MESA PETROLEUM CO.				Connection UNDETERMINED			
Pool DIAMOND MOUND, ATOKA-MORROW				Formation MORROW		Unit O. C. D. ARTESIA, OFFICE	
Completion Date 2-28-83		Total Depth 9370		Plug Back TD 9304		Elevation 3569'	
Csg. Size 4 1/2		Wt. 13.5		Set At 3.795		Perforations: From 9094 To 9122	
Thq. Size 2 3/8		Wt. 4.7		Set At 1.995"		Perforations: From OPEN ENDED To	
Type Well - Single - Bradenhead - G.C. or G.O. Multiple SINGLE				Packer Set At 8976		County CHAVES	
Producing Thru TUBING		Reservoir Temp. °F 168° 8996		Mean Annual Temp. °F 60		Baro. Press. - P _a 13.2	
L 8976		H 8976		Cg .686		% CO ₂ 1	
				% N ₂ 1		% H ₂ S	
				Prover		Meter Run 3"	
						Taps FLANGE	

FLOW DATA						TUBING DATA		CASING DATA		Duration of Flow	
NO.	Prover Line Size	X	Orifice Size	Press. p.s.i.g.	Diff. hw	Temp. °F	Press. p.s.i.g.	Temp. °F	Press. p.s.i.g.		Temp. °F
SI							2640				72 hr. SI
1.	3" X 1.75"			500	13	66	2320	63			1 hr.
2.	3" X 1.75"			515	26.5	56	2180	64			1 hr.
3.	3" X 1.75"			530	44	53	1995	65			1 hr.
4.	3" X 1.75"			525	67	54	1775	65			1 hr.
5.											

RATE OF FLOW CALCULATIONS							
NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P _m	Flow Temp. Factor F _t	Gravity Factor F _g	Super Compress. Factor, F _{pv}	Rate of Flow Q, Mcfd
1	15.61	81.663	513	.9943	1.207	1.054	1612
2	15.61	118.288	528	1.0040	1.207	1.061	2374
3	15.61	154.570	543	1.0070	1.207	1.067	3129
4	15.61	189.858	538	1.0060	1.207	1.067	3839
5							

NO.	R _t	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio _____ Mcf/bbl.
1	.760	526	1.369	.900	A.P.I. Gravity of Liquid Hydrocarbons _____ Deg.
2	.786	516	1.344	.889	Specific Gravity Separator Gas _____
3	.808	513	1.335	.878	Specific Gravity Flowing Fluid _____ X X X X X
4	.801	514	1.338	.879	Critical Pressure _____ 672 P.S.I.A.
5					Critical Temperature _____ 384 R

P _c 2653	P _c ² 7038		
NO.	P _t ²	P _w	P _w ²
1	2333	2372	5626
2	2193	2283	5212
3	2008	2175	4731
4	1788	2060	4244
5			

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 2.5189$

AOR = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 9,700$

(2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 2.5189$

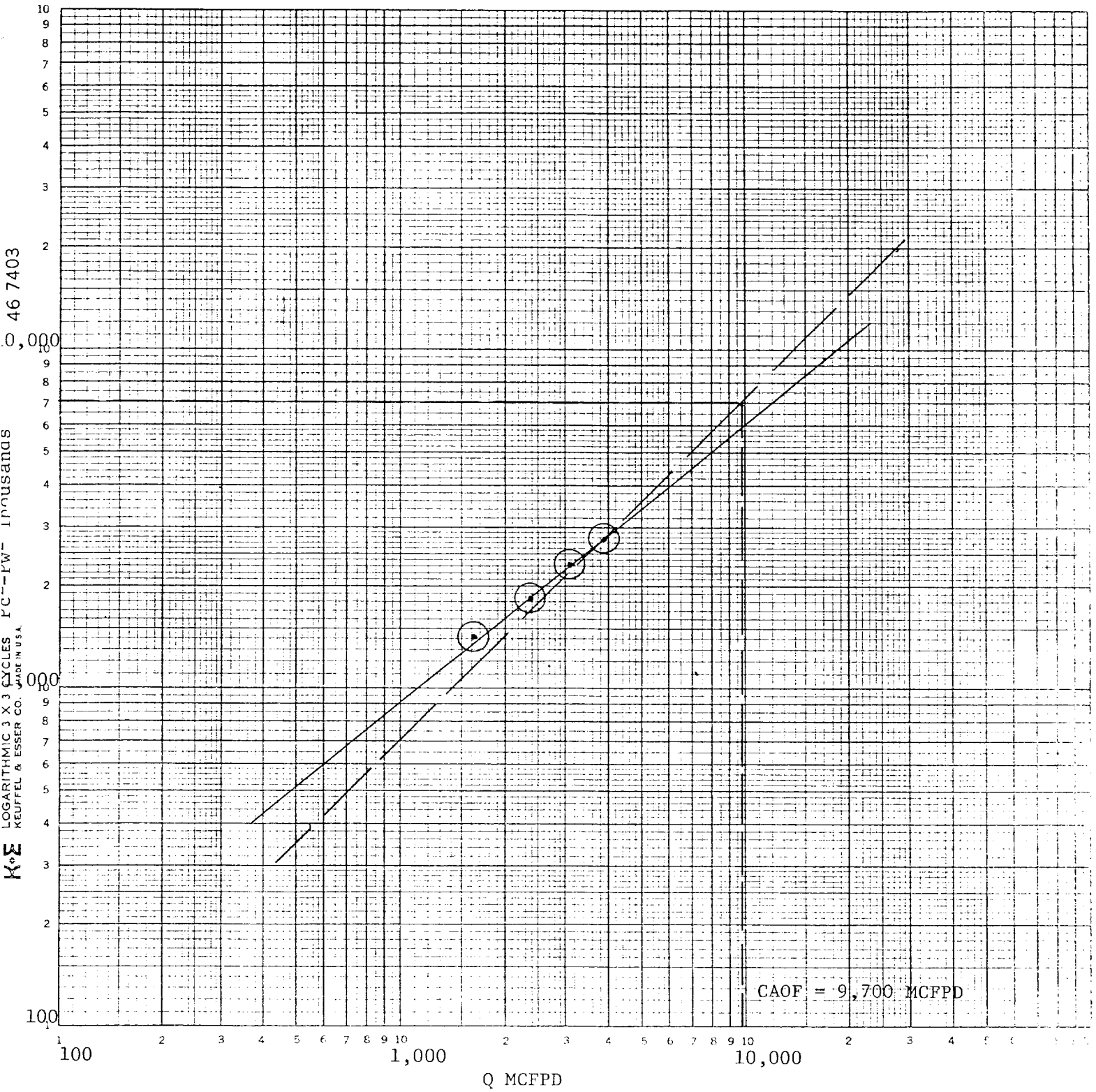
*Plot ID-2
3-25-83
Camp & BK*

Absolute Open Flow <u>9,700</u>	Mcfd @ 15.025	Angle of Slope θ <u>45°</u>	Slope, n <u>1</u>
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Remarks: Plot of P_c²-P_w² vs. Q yielded a straight line with a θ less than 45°. Drew 45° line through highest point.

Approved By Division	Conducted By: J. Craig	Calculated By: E. Buttross	Checked By:
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MESA PETROLEUM CO.
MESA STATE COM #2
CHAVES CO., NM
3-11-83



Assumed N=1 and $\theta = 45^\circ$