

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

JUN 07 1983

C/SF
F.12

Type Test ☒ Initial ☐ Annual ☐ Special		Test Date 6-1-83		O. G. D. ARTESIA, OFFICE	
Company Mesa Petroleum Co. ✓		Connection Unconnected			
Pool West Pecos Slope ABO		Formation ABO		Unit	
Completion Date 5-28-83		Total Depth 3200'		Plug Back TD 3141'	
Elevation 4082' GR		Form or Lease Name Debbie Federal		Well No. 3	
Csg. Size 4 1/2"		Wt. 10.5#		Set At 3200'	
Perforations: From 2838 To 2952		Perforations: From 2944 To		Unit A	
Type Well - Single - Broadhead - G.C. or G.O. Multiple Single		Factor Set At None		County Chaves	
Producing Thru Tubing		Reservoir Temp. °F 101° @ 3200'		Mean Annual Temp. °F 60°	
Baro. Press. - P ₀ 13.2		State New Mexico		Prover 2" CRITICAL FLOW PROVER	
L H Cg .65		% CO ₂ 1		% N ₂ 1	
% H ₂ S		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							850		845		72 hr. SI
1.	2" X 1"			43		40	730	64	770		1 hr.
2.	2" X 1"			66		48	580	68	650		1 hr.
3.	2" X 1"			81		52	420	71	500		1 hr.
4.	2" X 1"			83		62	295	72	370		1 hr.
5.											

RATE OF FLOW CALCULATIONS

NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P _m	Flow Temp. Factor F _L	Gravity Factor F _g	Super Compress. Factor, F _{pv}	Rate of Flow Q, Mcfd
1	17.09	Flow Prover	56	1.020	1.24		1210
2	17.09	Flow Prover	79	1.017	1.24		1702
3	17.09	Flow Prover	94	1.008	1.24		2007
4	17.09	Flow Prover	96	.9981	1.24		2031
5.							

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

P _c 853		P _c ² 728				
NO	P _i ²	P _w	P _w ²	P _c ² - P _w ²	(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 1.2530$	(2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 1.1194$
1		783	613	115		
2		663	440	288		
3		513	263	465		
4		383	147	581		
5						

LOG = Q

$\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 2,300$

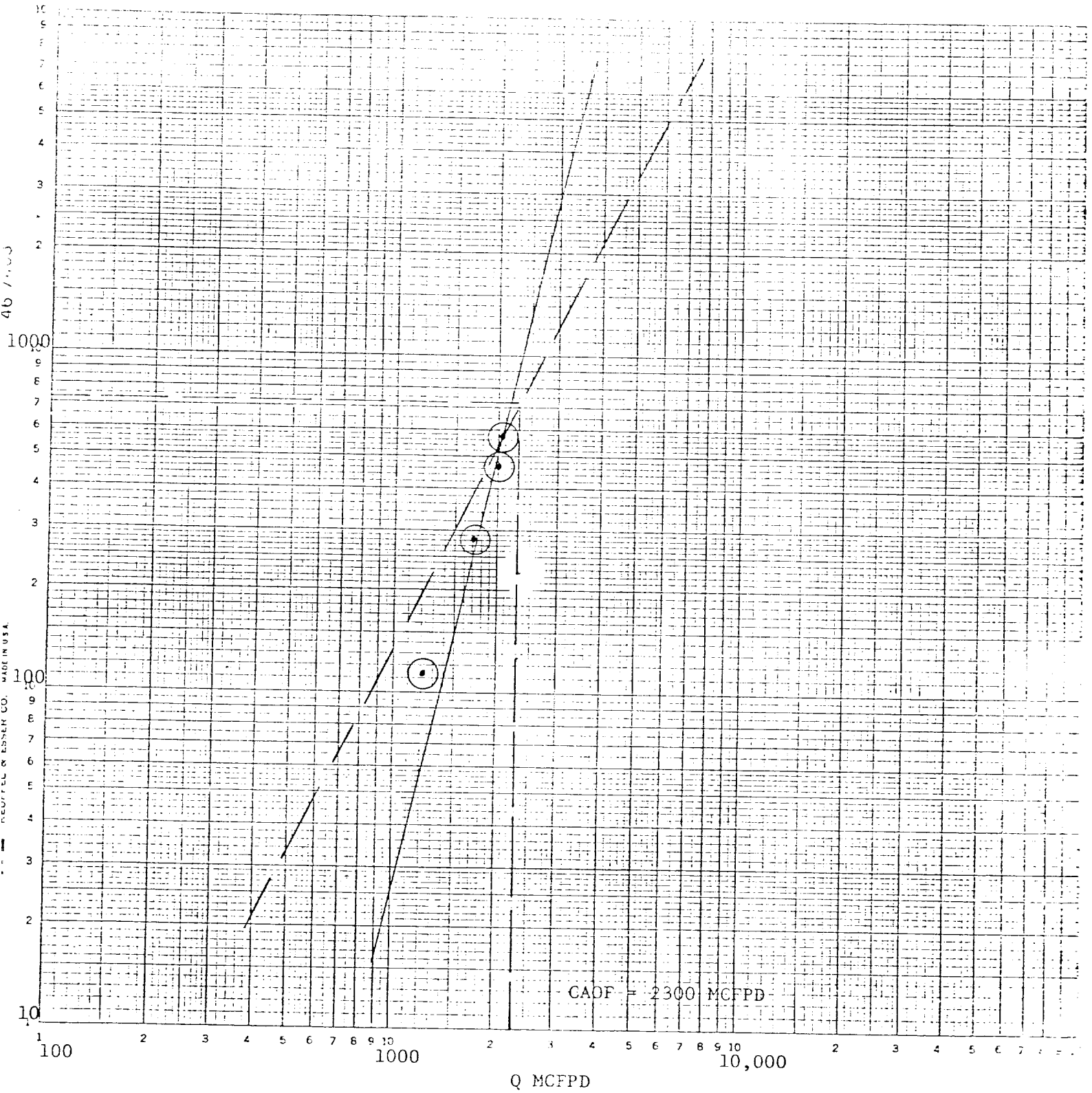
Post ID-2
6-17-83
Comp. + BK

$$AOR = Q \left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 2,300$$

Plot ID-2
6-17-83
Comp. + BIK

Absolute Open Flow 2,300		Mcf @ 15.025		Angle of Slope θ 63.5°		Slope, n .5	
Remarks: Plot of P _c ² - P _w ² 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: E. L. Buttross, Jr.		Checked By:	

MEX. PETROLEUM CO.
 DEBBIE FEDERAL NO. 3
 GRAVES COUNTY, NEW MEXICO
 6-1-83



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