

NEW MEXICO OIL CONSERVATION COMMISSION  
MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

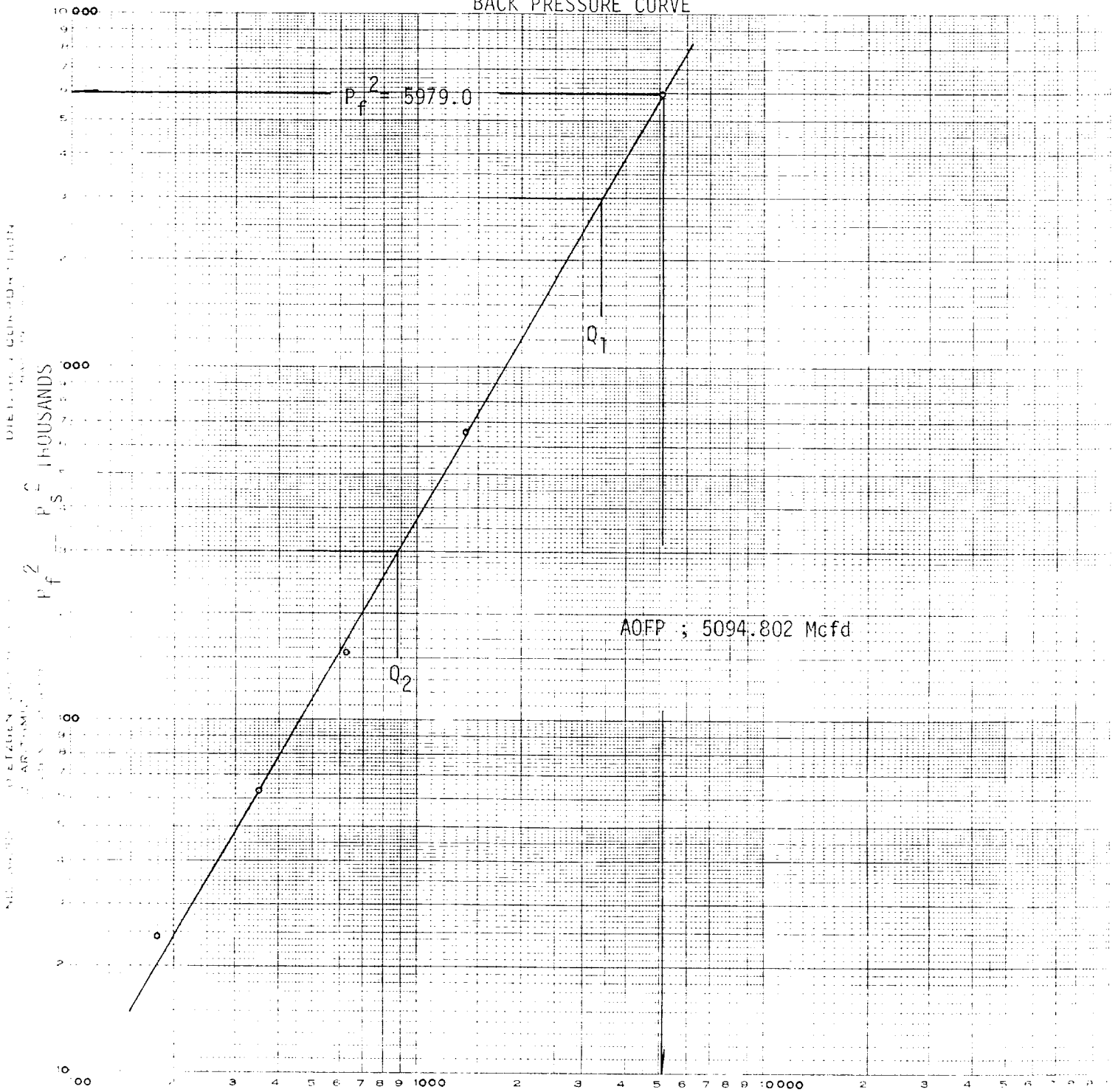
Form C-122  
Revised 9-1-77

RECEIVED

Type Test <input checked="" type="checkbox"/> Initial <input type="checkbox"/> Annual <input type="checkbox"/> Special				Test Date 8-20-81		AUG 26 1981					
Company Enserch Exploration, Inc.				Connection K. B. Kennedy Engr.				O. C. D.			
Pool So. Elkins				Formation Fusselman Gas				Unit ARTESIA, OFFICE M			
Completion Date 10-3-80		Total Depth 7175		Plug Back TD 7000		Elevation 3998.1		Para. or Lease Name J. G. O'Brien			
Req. Size 5 1/2	Wt. 15.5	d	Set At 7175	Perforations: From 6807 To 6808		Well No. 2					
Req. Size 2 3/8	Wt. 4.7	d	Set At 6717	Perforations: From 6820 To 6824		Unit M		Sec. 30	Twp. 7S	Rge. 29E	
Type Well - Single - Bradenhead - G.G. or G.O. Multiple Single						Packer Set At 6717		County Chaves			
Producing Thru Tubing		Reservoir Temp. °F 132 @ 6700		Mean Annual Temp. °F 70		Baro. Press. - P <sub>a</sub> 13.2		State New Mexico			
L 6816	H 6816	Gg 0.8068	% CO <sub>2</sub> 2.307	% N <sub>2</sub> 5.823	% H <sub>2</sub> S 0.0316	Prover	Meter Run X	Taps Flange			
FLOW DATA						TUBING DATA		CASING DATA		Duration of Flow	
NO.	Prover Line Size	X	Orifice Size	Press. p.s.i.g.	Diff. h <sub>w</sub>	Temp. °F	Press. p.s.i.g.	Temp. °F	Press. p.s.i.g.	Temp. °F	Duration of Flow
SI	27 hours						1857		Pkr.	-	
1.	2" X 1.5000"			87	1.7	114	1848	70	Pkr.	-	60 mir
2.	2" X 1.5000"			95	6.3	132	1832	70	Pkr.	-	60 mir
3.	2" X 1.5000"			106	18.0	132	1815	70	Pkr.	-	60 mir
4.	2" X 1.5000"			140	66.0	104	1737	70	Pkr.	-	60 mir
5.											
RATE OF FLOW CALCULATIONS											
NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P <sub>m</sub>	Flow Temp. Factor Ft.	Gravity Factor Fg	Super Compress. Factor, Fpv	Rate of Flow Q, Mcfd				
1	12.76	13.051	100.2	.9518	1.1133	1.012	178.6				
2	12.76	26.109	108.2	.9372	1.1133	1.012	351.8				
3	12.76	46.321	119.2	.9372	1.1133	1.012	624.1				
4	12.76	100.554	153.2	.9602	1.1133	1.012	1389.4				
5.											
NO.	P <sub>r</sub>	Temp. °R	T <sub>r</sub>	Z	Gas Liquid Hydrocarbon Ratio <u>71.43</u> Mcf/bbl.						
1					A.P.I. Gravity of Liquid Hydrocarbons <u>60.8</u> Deg.						
2.	USED SIMPLIFIED SUPERCOMPRESSIBILITY TABLES				Specific Gravity Separator Gas <u>0.8068</u> X X X X X X X X						
3.					Specific Gravity Flowing Fluid <u>X X X X X</u>						
4.					Critical Pressure <u>662</u> P.S.I.A. P.S.I.A.						
5.					Critical Temperature <u>404</u> R R						
P <sub>f</sub> 2445.2		P <sub>f</sub> 5979.0									
NO.	P <sub>r</sub> <sup>2</sup>	P <sub>s</sub> <sup>2</sup>	P <sub>s</sub> <sup>2</sup>	P <sub>f</sub> <sup>2</sup> - P <sub>s</sub> <sup>2</sup>	(1) $\frac{P_r^2}{P_r^2 - P_w^2} = 9.117109$ (2) $\left[ \frac{P_r^2}{P_r^2 - P_w^2} \right]^n = 3.666908$						
1		2440.2	5954.6	24.4	ACF = Q $\left[ \frac{P_r^2}{P_r^2 - P_w^2} \right]^n = 5094.802$						
2		2432.2	5915.6	63.4							
3		2413.2	5823.5	155.5							
4		2307.2	5323.2	655.8							
5											
Absolute Open Flow <u>5094.802</u> Mcfd @ 15.025		Angle of Slope $\theta$ <u>59.55°</u>		Slope, n <u>0.58790</u>							
Remarks: <u>BHP MEASURED WITH AMERADA RPG-3 GAUGE NO. 44534, 0-4000 RANGE</u>											
Approved By Commission:			Conducted By: Tefteller, Inc.			Calculated By: D. A. Warren, Jr.			Checked By:		

Company : Enserch Exploration, Inc.  
 Well : J. G. O'Brien No. 2  
 Field : South Elkins  
 County : Chaves  
 State : New Mexico  
 Date : August 20, 1981

BACK PRESSURE CURVE



$Q_1 = 3396.620$  ;  $\text{LOG } Q_1 = 3.531047$   
 $Q_2 = 877.298$  ;  $\text{LOG } Q_2 = 2.943147$   
 $r = 0.587900$   
 $\theta = 59.55^\circ$