

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL RECEIVED

Type Test ☒ Initial ☐ Annual ☐ Special				Test Date 8-3-82		AUG 18 1982	
Company Pogo Producing Company				Connection None		MIDLAND	
Well Undesignated <i>WLC Bone Springs</i>				Formation Bone Springs		Unit -	
Completion Date 8-3-82		Total Depth 7800'		Plug Back TD 7736'		Elevation 2945 GL	
Casing Size 5 1/2"		WT. 11.60		Set At 7782		Perforations: From 6480' To 6678'	
Tubing Size 2 3/8		WT. 4.70		Set At 6335		Perforations: Open Ended	
Type Well - Single - Broadhead - G.G. or G.O. Multiple Single				Packer Set At 6335		County Eddy	
Producing Thru Tubing		Reservoir Temp. °F -		Mean Annual Temp. °F 60		State New Mexico	
L 6579'		H -		G _g 0.8061		Prover 2.900	
				% CO ₂ 11.989		% N ₂ 3.333	
				% H ₂ S -		Meter Run 2.900	
						F F	

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. DWI	Temp. °F	Press. p.s.i.g.	Temp. °F	
1	2.90	5/64	0.750	610	10	83	2056	84	Packer		1 week
2	2.90	7/64	0.750	630	22	76	1960	83			1.0 hr.
3	2.90	9/64	0.750	600	40	74	1917	79			1.0 hr.
4	2.90	11/64	0.750	620	82	63	1857	75			1.0 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 _{sp}	Rate of Flow Q, Mscf/d
1	2.675	78.94	623.2	0.9786	1.114	1.062	244.48
2	2.675	118.96	643.2	0.9850	1.114	1.068	372.92
3	2.675	156.61	613.2	0.9868	1.114	1.067	491.39
4	2.675	227.86	633.2	0.9971	1.114	1.076	728.50
5							

NO.	P ₁	Temp. °R	T ₁	Z	Gas Liquid Hydrocarbon Ratio	Mcf/bbl.
1	0.88	543	1.39	0.886	A.P.I. Gravity of Liquid Hydrocarbons	70.0
2	0.90	536	1.37	0.877	Specific Gravity Separator Gas	0.8061
3	0.86	534	1.36	0.878	Specific Gravity Flowing Fluid	X X X X X
4	0.89	523	1.33	0.864	Critical Pressure	711 P.S.I.A.
5					Critical Temperature	392 °R

1. 2758.2 P ₁ ² 7607.7			
NO.	P ₁	P _w *	P ₁ ² - P _w ²
1	2734.2	7475.8	161.9
2	2709.2	7339.8	267.9
3	2679.2	7178.1	429.6
4	2611.2	6818.4	789.3
5			

$$(1) \frac{P_c^2}{P_c^2 - P_w^2} = 9.639$$

$$AOI = 0 \left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 2955$$

$$(2) \left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 4.056$$

Absolute Open Flow	2955	Mcf/d @ 15.025	Angle of Slope α	58° 16'	Slope, n	0.618
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Remarks: * BHP @ (-3634) 6579' used for pressure calculations
Well produced 2.0 BBLs Condensate in 4.0 hours = 12.0 BC/D

Approved By Division	Conducted By	Calculated By	Checked By
	Jarrel Well Testing, Inc.	Joe A. Coleman	Joe A. Coleman PE #2208