

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Type Test ☒ Initial ☐ Annual ☐ Special		Test Date 9-27-90	
Company Bettis, Boyle & Stovall		Connection El Paso	
Pool South Sand Dunes <i>L.P. Perm</i>		Formation Morrow	
Completion Date 9-24-90		Total Depth 14,997	
Plug Back TD 14,997		Elevation	
Farm or Lease Name Lotos B Federal		Well No. 1	
Coq. Size 5 1/2	Wt. 23#	Set At 14,952'	Perforations: From 14,950 To 14,997
Trq. Size 2 7/8	Wt. 6.5#	Set At 14,847'	
Type Well - Single - Brdenhead - G.G. or G.O. Multiple Single		Packer Set At 14,829	
Producing Thru Tubing		Baro. Press. - P _a 13.2	
L	H	C _g 0.572	% CO ₂ 1.15
		% N ₂ 0.21	% H ₂ S -
Prover -		Meter Run 4.026	
Taps FLG			

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
1.	4.026	5/64	1.250	700	2.5	87	2817				26.5 hrs
2.	4.026	6/64	1.250	700	5	90	2620				1.0 hr
3.	4.026	7/64	1.250	710	11	80	2540				1.0 hr
4.	4.026	10/64	1.250	720	21	72	2435				1.0 hr
5.							2230				1.0 hr

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 _{pr}	Rate of Flow Q, Mcf/d
1	7.469	42.23	713.2	0.9750	1.322	1.044	424
2	7.469	59.72	713.2	0.9723	1.322	1.044	599
3	7.469	89.19	723.2	0.9813	1.322	1.047	905
4	7.469	124.09	733.2	0.9887	1.322	1.052	1274
5							

NO.	R ₁	Temp. °R	T ₁	Z	Gas Liquid Hydrocarbon Ratio	DRY GAS
1	1.06	547	1.59	0.917	A.P.I. Gravity of Liquid Hydrocarbons	-
2	1.06	550	1.59	0.917	Specific Gravity Separator Gas	0.572
3	1.07	540	1.57	0.912	Specific Gravity Flowing Fluid	X X X X X
4	1.08	532	1.54	0.904	Critical Pressure	676
5					Critical Temperature	345

P _c 4127.2 * P _c ² 17033.8				
NO.	P ₁ ²	P _w	P _w ²	P _c ² - P _w ²
1		4013.2	16105.8	928.0
2		3948.2	15588.3	1445.5
3		3828.2	14655.1	2378.7
4		3592.2	12903.9	4129.9
5				

$$(1) \frac{P_c^2}{P_c^2 - P_w^2} = 7.161$$

$$(2) \left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 4.936$$

$$AOF = Q \left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 4467$$

Absolute Open Flow	4467	Mcf/d @ 15.025	Angle of Slope	50° 57'	Slope, n	0.811
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Remarks: * Bottom Hole Pressure @ 14,975' used for pressure calculations
Well produced 1.67 BBLS/H₂O during test

Approved By Division	Conducted By: Jarrel Services, Inc	Calculated By:	Checked By:
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