

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Type Test 4POINT ☒ Initial ☐ Annual ☐ Special						Test Date 2/2/87		RECEIVED BY FEB 18 1987 O. C. D. ARTESIA OFFICE			
Company SANTA FE ENERGY Co. <i>Per LP</i>				Connection TO AIR							
Pool WILDCAT <i>Solar Canyon Morrow</i>				Formation MORROW							
Completion Date 1/30/87		Total Depth 14030		Plug Back TD 13870		Elevation 3066.5					
Casing Size 5.00		Wt. 18.0		Set At 4.276		14030		Perforations: From 13449 To 13576		Well No. 1	
Tubing Size 2.375		Wt. 4.7		Set At 1.995		13322		Perforations: From OPEN To ENDED		Unit Sec. Twp. Rge. E 2 24S 29E	
Type Well - Single - Bradenhead - G.C. or G.O. Multiple SINGLE						Packer Set At 13329		County EDDY			
Producing Thru TUBING		Reservoir Temp. °F 210 @ 13512		Mean Annual Temp. °F 60		Baro. Press. - P _g 13.2		State NEW MEXICO			
L 13512		H 13512		G _g .576		% CO ₂ 1.16		% N ₂ 0.23		% H ₂ S 0	
								Prover 0		Meter Run 4.026	
										Taps FLG	

FLOW DATA						TUBING DATA		BHP 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							4830	60	6096	210	68HRS
1.	4.026	1.250	623	2.0	82	4510	62	5866	210	60MIN	
2.	4.026	1.250	630	6.25	70	3940	62	5334	210	60MIN	
3.	4.026	1.250	630	10.00	55	3492	63	4807	210	60MIN	
4.	4.026	1.250	645	19.75	65	2977	63	4135	210	60MIN	
5.											

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 _{pv}	Rate of Flow Q, Mcfd
1	7.469	35.67	636.2	0.9795	1.3176	1.0430	359
2	7.469	63.40	643.2	0.9905	1.3176	1.0475	647
3	7.469	80.20	643.2	1.0048	1.3176	1.0533	835
4	7.469	114.02	658.2	0.9952	1.3176	1.0504	1173
5							

NO.	P _r	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio	Mcf/hbl.
1	0.94	542	1.56	0.919	A.P.I. Gravity of Liquid Hydrocarbons	0
2	0.95	530	1.52	0.911	Specific Gravity Separator Gas	0.576
3	0.95	515	1.48	0.901	Specific Gravity Flowing Fluid	XXXXXX
4	0.97	525	1.51	0.906	Critical Pressure	678 P.S.I.A.
5					Critical Temperature	348 R

$P_r = 4794.4 P_c^2 = 22986$				
NO.	P _r ²	P _w	P _w ²	P _r ² - P _w ²
1		4594	21106	1881
2		4137	17114	5872
3		3693	13638	9348
4		3142	9871	13115
5				

$$(1) \frac{P_c^2}{P_r^2 - P_w^2} = 1.7526$$

$$AOI = Q \left[\frac{P_r^2}{P_r^2 - P_w^2} \right]^n = 1783.8$$

$$(2) \left[\frac{P_c^2}{P_r^2 - P_w^2} \right]^n = 1.5207$$

Post ID-2
1-27-87
Comp & BIK

Absolute Open Flow 1784 Mcfd @ 15.025		Angle of Slope @ 53.25		Slope, n. 0.747	
Remarks: BOTTOM HOLE PRESSURES FROM AMARADA PRESSURE TOOLS PRODUCED 1 1/2 BBLS H2O DURING TEST, 3 1/2 BBLS H2O ON EXTENDED FLOW					
Approved By Division		Conducted By: <i>Richard J. Cathey</i> BENNETT & CATHEY		Calculated By: <i>Richard J. Cathey</i> BENNETT & CATHEY	