

MULTIPOINT AND ONE POINT BACK PRESSURE TEST OR GAS WELL RECEIVED

Type Test ☒ Initial ☐ Annual ☐ Special		Test Date 3-31-81		APR 15 1981	
Company SOUTHLAND ROYALTY Co. ✓		Connection None (SI)		O.C.D.	
Well Undesignated		Formation Atoka		Unit ARTESIA, OFFICE	
Completion Date 2/4/81		Total Depth 11597		Plug Back TD 10920	
Elevation 3448.2		Farm or Lease Name Empire Fed. 22 C.m		Well No. 1	
Casing Size 4 1/2	Wt. 11.6#	d 3.795	Set At 11,585'	Perforations: From 10630 To 10640	Well No. 1
Tubing Size 2 3/8	Wt. 4.7	d 1.995	Set At 10497	Perforations: From To	Unit Sec. Twp. Rye. *N 22 18 29
Type Well - Single - Broadhead - G.G. or C.O. Multiple Single				Packer Set At 10497	
Producing Thru Tbg.				State New Mexico	
Reservoir Temp. °F 180 @ 10630		Mean Annual Temp. °F 60		Baro. Press. - P _a 13.2	
L 10497	H 10497	G _g .659	% CO ₂	% N ₂	% H ₂ S
Prover				Meter Run 2"	Taps Flg.

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							2525		PKR		
1.	2 X 1.000			240	16.00	87	1775		"		1 hr.
2.	2 X 1.000			230	28.00	86	1275		"		"
3.	2 X 1.000			230	30.00	91	800		"		"
4.	2 X 1.000			195	25.00	96	450		"		30 min.
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 _{pv}	Rate of Flow Q, Mcfd
1	4.946	63.65	253.2	.9750	1.232	1.023	387
2	4.946	82.52	243.2	.9759	1.232	1.022	502
3	4.946	85.42	243.2	.9715	1.232	1.022	517
4	4.946	72.15	208.2	.9671	1.232	1.016	432
5							

NO.	R _s	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio _____ Dry _____ Mcf/bbl.
1	.38	547	1.45	.955	A.P.I. Gravity of Liquid Hydrocarbons _____ Deg.
2	.36	546	1.45	.958	Specific Gravity Separator Gas, .659 _____ X X X X X X X X
3	.36	551	1.47	.958	Specific Gravity Flowing Fluid _____ X X X X X
4	.31	556	1.48	.968	Critical Pressure _____ 670 _____ P.S.I.A. _____ P.S.I.A.
5					Critical Temperature _____ 375 _____ R _____ R

P _c 2538.2		P _w 6442.5		(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 1.988$		(2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 1.410$	
NO.	P _w	P _w ²	P _c ² - P _w ²	AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = .546$			
1		3202.5	3240.0				
2		1667.9	4774.6				
3		670.9	5771.6				
4		221.6	6220.9				
5							

Absolute Open Flow _____ 546 _____ Mcfd @ 15.025	Angle of Slope _____ 63.5 _____	Slope, n _____ .500 _____
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Remarks: Test was discontinued on 4th rate after a 30 min. flow, due to excessive pressure drop on wellhead. No fluid was produced during this test.

Approved by Division _____	Conducted By: _____ Aubry Grubb _____	Calculated By: _____ Joe B. Murray _____	Checked By: _____ Ray Nokes _____
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SOUTHLAND ROYALTY

EMPIRE FED. 22 No. 1

K-22-18-29

EDDY COUNTY, NEW MEXICO

3-31-81

