

OIL CONSERVATION DIVISION

STATE OF NEW MEXICO

P. O. BOX 2088

Form C-122

ENERGY AND MINERALS DEPARTMENT

SANTA FE, NEW MEXICO 87501

Revised 10-1-78

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

RECEIVED

Type Test ☒ Initial FOUR POINT ☐ Annual ☐ Special		Test Date 12-19-81		1980 FSL							
Company SOUTHLAND ROYALTY		Connection AIR NEW WELL		JAN 22 1982							
Pool SAND RANCH morrow UNDESIGNATED		Formation morrow Alto		Unit K							
Completion Date 12-19-81		Total Depth 9810		Plug Back TD 9125							
Elevation 3969 KB		Farm or Lease Name SAND RANCH									
Coq. Size 4.500	Wt. 11.6	d 4.000	Set At 9810	Perforations: From 9009 To 9092							
Trq. Size 2.375	Wt. 4.7	d 1.995	Set At 60°	Perforations: From OPEN To ENDED							
Type Well - Single - Bradenhead - G.C. or G.O. Multiple SINGLE				Packer Set At 8949							
Producing Thru TUBING		Reservoir Temp. °F 168 9810		Mean Annual Temp. °F 60°							
Buro. Press. - P ₀ 13.2		State NEW MEXICO									
L 9050	H 9050	G _g .644	% CO ₂ .774	% N ₂ 2.979	% H ₂ S						
Prover		Meter Run 2"		Taps FLANGE							
FLOW DATA			TUBING DATA		CASING DATA						
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	Duration of Flow
51											48HRS
1.	2.000	X	1.250	330	4.5	57	2205	48			1
2.	2.000	X	1.250	335	8.0	68	2104	51			1
3.	2.000	X	1.250	335	14.0	68	1927	55			1
4.	2.000	X	1.250	335	24.0	68	1602	60			1
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 _{sp}	Rate of Flow Q, Mhd				
1	8.120	39.30	343.2	1.003	1.246	1.181	471				
2	8.120	52.78	348.2	.0024	1.246	1.159	614				
3	8.120	69.82	348.2	.9924	1.246	1.156	810				
4	8.120	91.41	345.2	.9924	1.246	1.140	1.046				
5											
NO.	P ₁	Temp. °R	T ₁	Z	Gas Liquid Hydrocarbon Ratio _____ Mcf/bbl.						
1	3.34	517	1.42	.717	A.P.I. Gravity of Liquid Hydrocarbons _____ Deg.						
2	3.18	528	1.45	.745	Specific Gravity Separator Gas .6440 XXXXX XXXX						
3	2.92	528	1.45	.748	Specific Gravity Flowing Fluid XXXXX .6440						
4	2.43	528	1.45	.769	Critical Pressure 665 P.S.I.A. P.S.I.A.						
5					Critical Temperature 363 R R						
$P_c = 2440.2$ $P_c^2 = 5954.6$											
NO.	P ₁	P _w	P _w ²	P _c ² - P _w ²	$(1) \frac{P_c^2}{P_c^2 - P_w^2} = 1.7961$						
1		70.19	4926.4	1028.2	$(2) \left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 1.4319$						
2		67.03	4492.8	1461.8							
3		58.16	3382.3	2172.3							
4		51.37	2639.4	3315.2							
5											
$AOG = Q \left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 1.497$											
Absolute Open Flow 1.497				Mhd @ 15.025				Angle of Slope 58.		Slope, n .613	
Remarks: BOTTOM HOLE PRESSURE MEASURED WITH AMERADA PRESSURE GUAGES											
Approved By Division											
Conducted By: RICHARD TOWNLEY				Calculated By: BENNETT & CATHEY				Checked By:			