

NEW MEXICO OIL CONSERVATION COMMISSION
MULTIPOINT AND ONE POINT BACK PRESSURE TEST - GAS WELL

Form C-122
Revised 9-1-65

Type Test: ☐ Initial ☐ Annual ☐ Special					Test Date: 11-19-80	
Company: Southland Royalty Company ✓			Connection: Northern Natural Gas Company			
Pool: Undesignated			Formation: Morrow		Unit:	
Completion Date: 11-8-80		Total Depth: 11,355'		Plug Back TD: 11,160'		
Elevation: 3529.6' GR		Form or Lease Name: EMPIRE FEDERAL 22				
Csg. Size: 4 1/2"	Wt.: 11.6#	d: 3.875	Set At: 11,335'	Perforations: From 11,093 To 11,116		
Tbg. Size: 2 3/8"	Wt.: 4.60	d: 1.995	Set At:	Perforations: From To		
Type Well - Single - Bradenhead - G.G. or G.O. Multiple Single				Packer Set At: 10,970'		
Producing Thru: Tubing		Reservoir Temp. °F: 186.0 11105.		Mean Annual Temp. °F: 60.0		
Baro. Press. - P _a : 13.2		State: NEW MEXICO				
L: 11105.	H: 11105.	Gg: 0.642	% CO ₂ : 0.01	% N ₂ : 0.00	% H ₂ S: 0.01	
Prover: 0.		Meter Run: 2.1		Taps: FLANGE		

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
1	2.07	X	1.250	405.	2.5	88.	1998.	59.	0.	0.	1.0
2	2.07	X	1.250	396.	5.0	66.	1828.	62.	0.	0.	1.0
3	2.07	X	1.250	400.	4.0	80.	1760.	64.	0.	0.	1.0
4	2.07	X	1.250	422.	30.0	64.	1635.	66.	0.	0.	1.0
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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	8.12	32.33	418.2	0.9741	1.2481	1.0355	331.
2	8.12	45.23	409.2	0.9943	1.2481	1.0399	474.
3	8.12	40.65	413.2	0.9813	1.2481	1.0372	419.
4	8.12	114.26	435.2	0.9962	1.2481	1.0429	1203.
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NO.	P _r	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio	A.P.I. Gravity of Liquid Hydrocarbons	Specific Gravity Separator Gas	Specific Gravity Flowing Fluid	Critical Pressure	Critical Temperature
1	0.62	548.	1.47	0.933	57.8	0.642	0.642	670.	372.	372.
2	0.61	526.	1.42	0.925						
3	0.62	540.	1.45	0.929						
4	0.65	524.	1.41	0.919						
5										

$P_c = 2384.8$	$P_w^2 = 5687.$	$P_c^2 = 5687.$	$P_w^2 = 5687.$	$P_c^2 - P_w^2 = 1627.$
1	4045.	2015.	4060.	1627.
2	3390.	1842.	3394.	2293.
3	3144.	1772.	3140.	2547.
4	2717.	1657.	2745.	2943.
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$$(1) \frac{P_c^2}{P_c^2 - P_w^2} = 1.9327$$

$$ACF = Q \left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 2325.$$

$$(2) \left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 1.9327$$

Absolute Open Flow: 2325 Mcfd @ 15.025	Angle of Slope: 45.0	Slope, n: 1.000
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Remarks:

Approved By Commission:	Conducted By: Northern Natural Gas Co.	Calculated By: Ray Nokes	Checked By: C. C. Parsons
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