

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL RECEIVED

Type Test ☒ Initial ☐ Annual ☐ Special		Test Date 1/15/81		FEB 03 1981							
Company HNG Oil Company			Connection El Paso Natural Gas Co.								
Pool West Malaga			Formation Morrow								
Completion Date 1/9/81		Total Depth 12750'		Plug Back TD 11603'							
Elevation 2997'		Form or Lease Name Woods Com									
Cas. Size 4 1/2"	Wt. 13.5	d 3.920	Set At 12,739	Perforations: From 11278' To 11379'							
Tub. Size 2 7/8"	Wt. 6.5	d 2.441	Set At 10165'	Perforations: From Open Ended To							
Type Well - Single - Bradenhead - G.G. or G.O. Multiple Single				Packer Set At 10165'							
Producing Thru Tubing		Reservoir Temp. °F 182 @ 10127'		Mean Annual Temp. °F 60°							
Bore Press. - P _g 13.2		County Eddy									
L 11329	H -	G _g 0.6399	% CO ₂ 0.338	% N ₂ 1.013	% H ₂ S -						
Prover 4.026				State New Mexico							
FLOW DATA											
NO.	Prover Line Size	X	Orifice Size	Press. p.s.i.g.	Diff. h _w	Temp. °F	TUBING DATA Press. p.s.i.g. DWT	Temp. °F	CASING DATA Press. p.s.i.g.	Temp. °F	Duration of Flow
1.	4 6/64	1.500	300	8.5	60	5062	60				
2.	4 7.5/64	1.500	328	16.0	68	4902	60		PACKER		1.0 hr
3.	4 8.5/64	1.500	344	27.5	74	4809	60				1.0 hr
4.	4 9.5/64	1.500	352	56.0	63	4685	60				1.0 hr
5.						4343	60				2.0 hrs
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. Comp. Factor, F _{sp}	Rate of Flow Q, bbl/d				
1	10.84	51.60	313.2	1.0000	1.250	1.030	720.16				
2	10.84	73.89	341.2	0.9924	1.250	1.031	1024.40				
3	10.84	99.11	357.2	0.9868	1.250	1.031	1366.30				
4	10.84	143.01	365.2	0.9971	1.250	1.034	1997.86				
5											
NO.	P ₁	Temp. °R	T ₁	Z	Gas Liquid Hydrocarbon Ratio _____ Dry Gas _____						
1	0.47	520	1.42	0.943	A.P.L. Gravity of Liquid Hydrocarbons _____						
2	0.51	528	1.45	0.941	Specific Gravity Separator Gas _____						
3	0.53	534	1.46	0.940	Specific Gravity Flowing Fluid _____						
4	0.54	523	1.43	0.935	Critical Pressure _____ P.S.I.A.						
5					Critical Temperature _____ °R						
P ₁ 6448.2		P ₂ 41579.3									
NO.	P ₁	P ₂ *	P ₂ ²	P ₂ ² - P ₁ ²	(1) $\frac{P_2^2}{P_2^2 - P_1^2} = 4.437$						
1		6262.2	39215.1	2364.2	(2) $\left[\frac{P_2^2}{P_2^2 - P_1^2} \right]^n = 2.967$						
2		6170.2	38071.4	3507.9							
3		5987.2	35846.6	5732.7							
4		5675.2	32207.9	9371.4	AOIF = Q $\left[\frac{P_2^2}{P_2^2 - P_1^2} \right]^n = 5928$						
5											
Absolute Open Flow 5928					Mold @ 15.025		Angle of Slope 53° 52'				
Remarks: * BOTTOM HOLE PRESSURE @ (-8332) 11329' USED FOR PRESSURE CALCULATIONS					Slope, n 0.750						
Approved By Division		Conducted By: JARREL SERVICES, INC.		Calculated By: Joe A. Coleman		Checked By: Joe A. Coleman PE #2208					