

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Type Test ☒ Initial ☐ Annual ☐ Special		Test Date 11/29/84							
Company HNG Oil Company		Connection Phillips Petroleum							
Pool South Shoebar		Formation Atoka							
Completion Date 6/26/84		Total Depth 12978'							
Casing Size 5 1/2"		Set At 12978'							
Perforations From 12151' To 12156'		Elevation 3939'GL							
Perforations Open Ended		Farm or Lease Name Shoebar 14 State Com							
Perforations From To		Well No. 1							
Type Well - Single - Bradenhead - G.C. or G.O. Multiple Single		Packer Set At 11474'							
Producing thru Tubing		Baro. Press. - P _g 13.2							
Reservoir Temp. °F 220 @ 12153'		Mean Annual Temp. °F 60							
L 12153'		H -							
Cg 0.6998		% CO ₂ 0.394							
% N ₂ 1.259		% H ₂ S -							
Prover -		Meter Run 3.068							
Taps Elg									
FLOW DATA									
NO.	Prover Line Size	X	Orifice Size	Press. p.s.i.g.	Diff. h _w	Temp. °F	TUBING DATA	CASING DATA	Duration of Flow
SI							Press. p.s.i.g.DWT	Temp. °F	
1.	3.068	**	1.000	280	4.5	74	3543	52	PACKER 48.0 hrs
2.	3.068		1.000	280	8	85	3000	56	1.0 hr
3.	3.068		1.000	280	17	86	2790	58	1.0 hr
4.	3.068		1.000	280	38	76	2550	58	1.0 hr
5.							2125	59	1.0 hr
RATE OF FLOW CALCULATIONS									
NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P _m	Flow Temp. Factor Ft.	Gravity Factor Fg	Super Compress. Factor, F _{pv}	Rate of Flow Q, Mscf/d		
1	4.789	36.32	293.2	0.9868	1.196	1.029	211.24		
2	4.789	48.43	293.2	0.9768	1.196	1.028	278.54		
3	4.789	70.60	293.2	0.9759	1.196	1.028	405.68		
4	4.789	105.55	293.2	0.9850	1.196	1.029	612.75		
5									
NO.	R ₁	Temp. °R	T ₁	Z	Gas Liquid Hydrocarbon Ratio 9.67 Mcf/bbl.				
1	0.44	534	1.40	0.944	A.P.I. Gravity of Liquid Hydrocarbons 56 @ 60 Deg.				
2	0.44	545	1.43	0.947	Specific Gravity Separator Gas 0.6998 XXXXXXXXXX				
3	0.44	546	1.43	0.947	Specific Gravity Flowing Fluid XXXXX				
4	0.44	536	1.41	0.945	Critical Pressure 670 P.S.I.A.				
5					Critical Temperature 381 °R				
P ₁ 5806.2 * P ₂ 33712.0									
NO.	P ₁ ²	P _w	P _w ²	P ₁ ² - P _w ²	(1) $\frac{P_1^2}{P_1^2 - P_w^2} = 1.605$ (2) $\left[\frac{P_1^2}{P_1^2 - P_w^2} \right]^n = 1.551$				
1		5294.2	28028.6	5683.4					
2		4953.2	24534.2	9177.8					
3		4515.2	20387.0	13325.0					
4		3565.2	12710.7	21001.3					
5									
Absolute Open Flow 950 Mcf/d @ 15.025					Angle of Slope 47°10'		Slope, n 0.927		
Remarks: * BOTTOM HOLE PRESSURE @ (-8214)12153' USED FOR PRESSURE CALCULATIONS									
WELL PRODUCED 6.5 BBL/COND. IN 4.0 HRS = 39.0 BC/D AND .7 BBL/H ₂ O IN 4.0 HRS = 4.2 BW/D									
** DIAPHRAGM ACTUATED CHOKE									
Approved By Division		Conducted By: DUKE SERVICE, INC.		Calculated By: D. Dickenson		Checked By: D. Dickenson			