

OIL CONSERVATION DIVISION

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENTP. O. BOX 2088
SANTA FE, NEW MEXICO 87501Form C-122
Revised 10-1-78

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Type Test ☒ Initial ☐ Annual ☐ Special				Test Date 1/28/86			
Company HNG Oil Co.			Connection Trans Western				
Pool Pitchfork Ranch			Formation Morrow		Unit		
Completion Date 8/27/85		Total Depth 15,300	Plug Back TD 14930		Elevation 3362 GL		
Csg. Size 4 1/2	Wt. 15.1	d 3.826	Set At 15300	Perforations: From 14782 To 14799			
Thg. Size 2 7/8	Wt. 4.7	d 2.441	Set At 12924	Perforations: From Open To End			
Type Well - Single - Bordenhead - G.G. or G.O. Multiple Single				Packer Set At 12,924			
Producing Thru TBG.		Reservoir Temp. °F 222 @ 14791	Mean Annual Temp. °F 60	Baro. Press. - P _a 13.2			
L 14791	H 14791	G _g .572	% CO ₂ .410	% N ₂ .313	% H ₂ S		
Prover				Meter Run 3"	Taps FLG		
FLOW DATA			TUBING DATA		CASING DATA		
NO.	Prover Line Size	X	Orifice Size	Press. p.s.i.g.	Diff. h _w	Temp. °F	
1.	3.068	x	2.00	945	11	80	
2.	3.068	x	2.00	915	22	78	
3.	3.068	x	2.00	960	43	78	
4.	3.068	x	2.00	990	82	79	
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, Mc/d
1.	21.32	102.67	958.2	.9813	1.322	1.065	3024
2.	21.32	142.90	928.2	.9831	1.322	1.064	4213
3.	21.32	204.57	973.2	.9831	1.322	1.067	6048
4.	21.32	286.81	1003.2	.9822	1.322	1.067	8472
5.							
NO.	P _t	Temp. °R	T _t	Z	Gas Liquid Hydrocarbon Ratio _____ Mcf/bbl.		
1.	1.43	540	1.56	.882	A.P.I. Gravity of Liquid Hydrocarbons _____ Deg.		
2.	1.38	538	1.55	.883	Specific Gravity Separator Gas .572 XXXXXXXXXX		
3.	1.45	538	1.55	.878	Specific Gravity Flowing Fluid XXXXX		
4.	1.49	539	1.56	.878	Critical Pressure 672 P.S.I.A. P.S.I.A.		
5.					Critical Temperature 346 R R		
P _f 9146.2 P _f ² 83653.0					(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 16.645$ (2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 13.786$		
NO.	P _i ²	P _s	P _s ²	P _f ² - P _s ²	AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 116,798$		
1.		9045.2	81815.6	1837.4			
2.		9009.2	81105.7	2487.3			
3.		8950.2	80106.1	3546.9			
4.		8867.2	78627.2	5025.8			
5.							
Absolute Open Flow 116,798 Mc/d @ 15.025					Angle of Slope 47		Slope, n .933
Remarks:							
Approved By Division		Conducted By: Duke Services, Inc.		Calculated By: R. Reston		Checked By:	

Betsy Seldon HNG oil company 1/31/86

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DATE: 1/28/86

$$\text{CAOF} = 8472 \left(\frac{83653.0}{5025.8} \right) \cdot 933 \text{ MCF/Day}$$

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