

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Type Test ☒ Initial ☐ Annual ☐ Special				Test Date 2/9/85	
Company HNG Oil Company				Connection Transwestern	
Pool Red Hills				Formation Atoka	
Completion Date 3 9/84		Total Depth 15948'		Plug Back TD 14595'	
				Elevation 3361'GL	
Farm or Lease Name VACA 13 Federal					
Well No. 1					
Csg. Size 3 1/2" 5 1/2"		Wt. 10.3 20		Perforations: From 14495' To 14509'	
Trq. Size 2 7/8"		Wt. 6.5		Perforations: Open Ended	
				Unit Sec. Twp. Rge. C 13 25s 33e	
Type Well - Single - Bradenhead - G.G. or G.O. Multiple Single				Packer Set At 13421'	
Producing Thru Tbg		Reservoir Temp. °F 231 @ 14502		Baro. Press. - P _a 13.2	
		Mean Annual Temp. °F 60		State New Mexico	
L 14502	H -	G _g 0.589	% CO ₂ 0.483	% N ₂ 0.725	% H ₂ S -
Proves -		Meter Run 2.067		Tups Flg	

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. DWT	Temp. °F	Press. p.s.i.g.	Temp. °F	
SI							7538		PACKER		72.0 hrs
1.	2.067	**	1.000	820	6"	79	6560	62			1.0 hr
2.	2.067		1.000	820	11"	74	6130	62			1.0 hr
3.	2.067		1.000	825	23"	73	5435	62			1.0 hr
4.	2.067		1.000	825	38"	72	4690	61			1.0 hr
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, Mcfd
1	4.946	70.71	833.2	0.9822	1.303	1.056	472.65
2	4.946	95.74	833.2	0.9868	1.303	1.059	644.79
3	4.946	138.85	838.2	0.9877	1.303	1.059	935.98
4	4.946	178.47	838.2	0.9887	1.303	1.059	1204.27
5							

NO.	P _t	Temp. °F	T _g	Z	Gas Liquid Hydrocarbon Ratio	Dry Gas	Mcf/bbl.
1	1.23	539	1.56	0.897	A.P.I. Gravity of Liquid Hydrocarbons	-	Deg.
2	1.23	534	1.54	0.892	Specific Gravity Separator Gas	0.5892	XXXXXXXXXX
3	1.24	533	1.54	0.891	Specific Gravity Flowing Fluid	XXXXXX	
4	1.24	532	1.54	0.891	Critical Pressure	675	P.S.I.A.
5					Critical Temperature	346	°R

P _c 9609.2* P _c ² 92336.7				
NO.	P _t ²	P _w	P _w ²	P _c ² - P _w ²
1		8912.2	79427.3	12909.4
2		8578.2	73585.5	18751.2
3		8106.2	65710.5	26626.2
4		7298.2	53263.7	39073.0
5				

$$(1) \frac{P_c^2}{P_c^2 - P_w^2} = 2.363$$

$$AOF = Q \left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 2479.592$$

$$(2) \left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 2.059$$

Absolute Open Flow	2480	Mcf @ 15.025	Angle of Slope @	49° 58'	Slope, n	0.840
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Remarks: * BOTTOM HOLE PRESSURE @ (-11141) 14502' USED FOR PRESSURE CALCULATIONS
** DIAPHRAGM ACTUATED CHOKE

Approved By Division	Conducted By: JARREL SERVICES, INC	Calculated By: D. Dickerson	Checked By: D. Dickerson
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RECEIVED

FEB 18 1985

O.C.D.
HONORARY OFFICE