

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL
B 25 1983

Type Test ☒ Initial ☐ Annual ☐ Special		Test Date 2/15/83		O. C. D.	
Company HNG Oil Company		Connection NGPL		ASIA OFFICE	
Pool White City		Formation Penn.		Unit	
Completion Date 10/17/82		Total Depth 11,710'		Plug Back TD 11614'	
Elevation 3305' GR		Farm or Lease Name Grynberg 11 Federal Com.		Well No. 2	
Cas. Size 4 1/2"	Wt. 13.5	d 3.958	Set At 11,710'	Perforations: From 11222' To 11506'	
Tub. Size 2 3/8"	Wt. 4.7	d 1.995	Set At 8960'	Perforations: From Open End To	
Type Well - Single - Bradenhead - G.G. or G.O. Multiple Single				Packer Set At 8961'	
Producing Thru Tubing		Reservoir Temp. °F 186 @ 11222'		Mean Annual Temp. °F 60	
Baro. Press. - P _a 13.2		County Eddy		State New Mexico	
L 11222'	H 11222'	G _g .5787	% CO ₂ 1.104	% N ₂ 0.445	% H ₂ S -
Prover -				Meter Run 3.068	Taps F

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	
1	3.068	X	1.250	410	4	82	3615	62	PACKER		72.0 hrs
2	3.068	X	1.250	410	10	76	3345	62			135 Min
3	3.068	X	1.250	450	36	92	3313	62			120 Min
4	3.068	X	1.250	480	74	88	3102	61			120 Min
5							2980	62			120 Min

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, Mcf/d
1	7.577	41.14	423.2	.9795	1.314	1.028	412
2	7.577	65.05	423.2	.9850	1.314	1.029	656
3	7.577	129.13	463.2	.9706	1.314	1.028	1283
4	7.577	191.04	493.2	.9741	1.314	1.030	1908
5							

NO.	P _r	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio	Dry Gas	Mcf/bbl.
1	.63	542	1.57	.946	A.P.I. Gravity of Liquid Hydrocarbons	-	Deg.
2	.63	536	1.55	.944	Specific Gravity Separator Gas	.579	X X X X X X X X
3	.69	552	1.60	.946	Specific Gravity Flowing Fluid	X X X X X	
4	.72	548	1.59	.942	Critical Pressure	676	P.S.I.A. - P.S.I.A.
5					Critical Temperature	345	R - R

P _c 3628.2 P _c ² 13163.8			
NO.	P ₁ ²	P _w	P _c ² - P _w ²
1	3359.2	11284.2	1879.6
2	3328.5	11078.9	2084.9
3	3122.5	9750.0	3413.8
4	2982.8	8897.1	4266.7
5			

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 3.085$

AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 5.887$

(2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 3085$

Absolute Open Flow	5887	Mcf/d @ 15.025	Angle of Slope	45°	Slope, n	1.00
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Remarks: * DIAPHRAM ACTUATED CHOKE
POINT ALIGNMENT TOO FLAT, A SLOPE OF 45° WAS DRAWN THROUGH HIGH RATE OF FLOW

Approved By Division	Conducted By: JARREL WELL TESTING, INC	Calculated By: R. Reston	Checked By: PE #2208 Joe A. Coleman
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