

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR

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Type Test ☒ Initial ☐ Annual ☐ Special				Test Date 5 30 90			
Company MARATHON OIL COMPANY				Connection FLARE			
Pool NORTH INDIAN BASIN u/PENN				Formation UPPER PENNSYLVANIAN		Unit	
Completion Date 5 30 90		Total Depth 9300		Plug Back TD 9247		Elevation 3970 G.L.	
Farm or Lease Name NORTH INDIAN BASIN							
Ceq. Size 5.500	Wt. 17.0	d 4.892	Set At 9300	Perforations: From 7400 To 7416		Well No. 8	
Thq. Size 2.875	Wt. 6.5	d 2.441	Set At 9414	Perforations: From To N		Unit Sec. Twp. Rge. S9 T 21S R 23E	
Type Well - Single - Bradenhead - G.G. or G.O. Multiple DUAL				Packer Set At 9414		County EDDY	
Producing Thru TBG		Reservoir Temp. °F 120 @ 7408		Mean Annual Temp. °F 60		Baro. Press. - P _a 13.2	
State NM							
L 7408	H 7408	G _g .640	% CO ₂ .64	% N ₂ .77	% H ₂ S .0	Prover 1 .0	Meter Run 4.0
						Taps FLANGE	

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.	Temp. °F	Press. p.s.i.g.		Temp. °F
SI							1147	60			72.0
1.	4.00 X 1.500			590	1.0	90	798	60			1.0
2.	4.00 X 1.500			600	12.0	84	1050	60			1.0
3.	4.00 X 1.500			600	36.0	82	980	60			1.0
4.	4.00 X 1.500			600	65.0	80	853	60			1.0
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 _{pv}	Rate of Flow Q, Mcfd
1	10.85	24.56	603.2	.9723	1.250	1.0481	339
2	10.85	85.78	613.2	.9777	1.250	1.9511	1195
3	10.85	148.58	613.2	.9795	1.250	1.0518	2075
4	10.85	199.64	613.2	.9813	1.250	1.0526	2796
5							

NO.	P _t	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio	A.P.I. Gravity of Liquid Hydrocarbons	Specific Gravity Separator Gas	Specific Gravity Flowing Fluid	Critical Pressure	Critical Temperature
1	.90	550	1.50	.910	0	54.6	.640	X X X X X X X X	672.	358.
2	.91	544	1.48	.905			X X X X X	.640		
3	.91	542	1.47	.904						
4	.91	540	1.47	.903						
5										

NO.	P _c	P _w	P _r	P _c ² - P _w ²
1	1160.2	812	659	687
2	1346	1070	1146	200
3		1018	1036	310
4		919	845	501
5				

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 2.6849$

(2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 2.4955$

AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 6977.$

Absolute Open Flow 6977 Mcfd @ 15.025

Angle of Slope @ 47.2

Slope, n .926

Remarks: 1ST RATE 10/64 2ND RATE 17/64 3RD RATE 19/64 4TH RATE 25/64

Approved By Division	Conducted By: BENNETT-CATHEY	Calculated By: JIM SMITH	Checked By: MONTY RANDOLPH
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