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See Rule 401 & Rule 1122

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-122
Revised 4-1-91

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Operator OXY USA, INC.				Lease or Unit Name PANTHER FEDERAL			
Type Test ☒ Initial ☐ Annual ☐ Special				Test Date 7 -DEC-1996		Well No. #1	
Completion Date 11-15-1996		Total Depth 11,940		Plug Back TD 11,872		Elevation 3743' G.L.	
Unit Ltr. - Sec. - TWP - Rge. 33-175-31E							
Csg. Size 5 1/2"	Wt. d 15.5	Set At 11,940	Perforations: From: 11,731' To: 11,751'			County EDDY	
Tbg. Size 2 3/8"	Wt. d 4.7	Set At 11,720	Perforations: From: To:			Pool E Cedar Lake Morrow	
Type Well - Single - Bradenhead - G.G. or G.O. Multiple SINGLE			Packer Set At			Formation MORROW	
Producing Thru	Reservoir Temp. °F 162.3	Mean Annual Temp. °F 60	Baro. Press - P _a 13.2			Connection	
L 11741	H 11741	Gg 0.669	% CO ₂ 0.57	% N ₂ 0.48	% H ₂ S 0.00	Prover 0.	Meter Run 4.0
						Taps FLANGE	

FLOW DATA							CASING DATA		
NO.	Prover Line Size	X	Onifice Size	Press. p.s.i.g.	Diff. h _w	Temp. °F	Press. p.s.i.g.	Temp. °F	Duration of Flow
SI									
1.	4.03	x	1.25	408	4.6	75	1192	163	1.4
2.	4.03	x	1.25	451	16.7	76	1170	163	0.8
3.	4.03	x	1.25	495	42.8	75	1137	163	0.8
4.	4.03	x	1.25	529	61.8	78	1056	163	0.8
5.							1002	163	0.8

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.	0	44.22	421.5	0.9859	1.2226	1.0410	424
2.	0	88.10	463.9	0.9854	1.2226	1.0451	849
3.	0	147.55	508.5	0.9859	1.2226	1.0499	1415
4.	0	183.12	542.5	0.9831	1.2226	1.0523	1758
5.							

NO.	P _r	Temp °R	T _r	Z	Gas Liquid Hydrocarbon Ratio	Mcf/bbl.
1.	0.63	535	1.42	0.923	A.P.I. Gravity of Liquid Hydrocarbons	----- Deg
2.	0.69	536	1.42	0.915	Specific Gravity Separator Gas	0.669 XXXXXXXXXX
3.	0.76	535	1.42	0.907	Specific Gravity Flowing Fluid	XXXXXX 0.669
4.	0.81	538	1.42	0.903	Critical Pressure	671 P.S.I.A. 671 P.S.I.A.
5.					Critical Temperature	378 R 378 R

P _c	890.6	P _c ²	793				
NO.	P _c ²	P _w	P _w ²	P _c ² - P _w ²	1) $\frac{P_c^2}{P_c^2 - P_w^2} = 3.5607$	(2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 2.3865$	
1.	1399	875	765	28			
2.	1323	852	725	68			
3.	1143	794	630	163			
4.	1030	755	570	223			
5.							
					AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 4195$		
Absolute Open Flow				4195 Mcfd @ 15.025	Angle of Slope θ	55.6	Slope, n 0.685

Remarks: Used bottom hole pressure data.

Approved By Division	Conducted By: <u>Chuck Cherry</u>	Calculated By: <u>Mark L. Lytle - Rockhamer</u>	Checked By:
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