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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 OXY KNIGHT FEDERAL			
Type Test ☒ Initial ☐ Annual ☐ Special				Test Date 25-AUG-1997		Well No. 1	
Completion Date 13-AUG-1997		Total Depth 9600		Plug Back TD		Elevation	
Csg. Size 4 1/2"		Wt. 11.6		d 4.0"		Set At 9500	
Perforations: From: 9288 To: 9299				County EDDY			
Tbg. Size 2 3/8"		Wt. 4.7		d 1.99"		Set At 9187	
Perforations: From: To:				Pool Logan Draw MORROW			
Type Well - Single - Bradenhead - G.G. or G.O. Multiple SINGLE				Packer Set At 9187		Formation MORROW	
Producing Thru TUBING		Reservoir Temp. °F 162F		Mean Annual Temp. °F 60		Baro. Press - P _a 13.2	
Connection NGPI		Meter Run 3.1		Taps FLANGE			
L 9294		H 9294		Gg 0.635		% CO ₂ 0.48	
				% N ₂ 0.58		% H ₂ S 0	
				Prover			

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									3713	162	95.5
1.	3.07	X	1.375	757	18.7	162			3533	162	0.75
2.	3.07	X	1.375	758	32.6	161			3447	162	0.75
3.	3.07	X	1.375	756	45.9	160			3367	162	0.75
4.	3.07	X	1.375	757	91.9	155			3259	162	0.75
5.											

RATE OF FLOW CALCULATIONS							
NO.	COEFFICIENT (24 HOUR)	$h_w P_m$	Pressure P _m	Flow Temp. Factor F _t	Gravity Factor F _g	Super Compress. Factor, F _{sp}	Rate of Flow Q, Mcfd
1.		120.01	770.2	0.9145	1.2553	1.0367	1345
2.		158.56	771.2	0.9153	1.2553	1.0371	1792
3.		187.94	769.5	0.9159	1.2553	1.0372	2140
4.		266.05	770.2	0.9198	1.2553	1.0386	3018
5.							

NO.	P _r	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.	1.15	622	1.69	0.930	0	0	0.535	XXXXXX	672	367
2.	1.15	621	1.69	0.930						
3.	1.15	620	1.69	0.930						
4.	1.15	615	1.68	0.927						
5.										

P _c <u>2942.7</u>		P _c ² <u>8659</u>	
NO.	P _i ²	P _w	P _w ²
1.	12578	2793	7802
2.	11972	2722	7409
3.	11422	2656	7055
4.	10709	2569	6599
5.			

$$1) \frac{P_c^2}{P_c^2 - P_w^2} = \frac{4.2020}{}$$

$$AOF = Q \left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = \frac{11.404}{}$$

$$(2) \left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = \frac{3.7781}{}$$

$$1) \frac{P_c^2}{P_c^2 - P_w^2} = \frac{4.2020}{1} \quad (2) \left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = \frac{3.7781}{1}$$

$$AOF = Q \left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 11.404$$

Absolute Open Flow **11,404** Mcfd @ 15.025 Angle of Slope **47.2** Slope, n **0.926**

Remarks: **BASED ON BOTTOM HOLE PRESSURES.**

Approved By Division

Conducted By:

Calculated By:

Checked By:

Larry Davis *Phyllis R. Hammer*