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State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-122
Revised 4-1-1991

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 Duchess State			
Test Type ☒ Initial ☐ Annual ☐ Special				Test Date December 18, 1998		Well No. 1	
Completion Date		Total Depth		Plug Back TD		Elevation	
Csg. Size		Wt.		d		Set At	
Tbg. Size		Wt.		d		Set At	
Type Well-Single-Bradenhead-G.G. or G.O. Multiple Single				Packer Set At		Formation Morrow	
Producing Thru TUB		Reservoir Temp. F		Mean Annual Temp. F 60		Baro. Pressure 14.40	
L 9295		H 9295		Gg .653		X CO ₂ .61	
				X N ₂ .70		X H ₂ S	
				Prover		Meter Run Flange	

FLOW DATA						TUBING DATA		CASING DATA		SIP/FLOW DURATION (HRS.)
NO.	(PROVER) LINE SIZE x ORIFICE SIZE	PRESS. PSIG	DIFF. h _w	TEMP. F	PRESS. PSIG	TEMP. F	PRESS. PSIG	TEMP. F		
SHUT-IN PRESSURE										
1.	3.07 x 1.75	729.30	10.03	76	2148	69	2858	158	2	
2.	3.07 x 1.75	731.00	17.95	63	2100	69	2838	159	1	
3.	3.07 x 1.75	747.80	54.68	83	2003	69	2827	159	1	
4.	3.07 x 1.75	766.00	95.00	74	1853	69	2775	158	1	
							2752	154	1	

RATE OF FLOW CALCULATIONS								RATE OF FLOW (Q) MCFD
NO.	COEFFICIENT (24 HOUR)	h _w P _m	PRESSURE P _n	FLOW TEMP. FACTOR F _t	GRAVITY FACTOR F _g	SUPER COMPRESS. FACTOR F _{sp}		
1.	16.010	86.367	743.7	.9850	1.2375	1.0671		1798.5
2.	16.010	115.672	745.4	.9971	1.2375	1.0743		2455.0
3.	16.010	204.150	762.2	.9786	1.2375	1.0653		4216.7
4.	16.010	272.283	780.4	.9868	1.2375	1.0717		5705.0

NO.	P _r	TEMP.	T _r	Z
1.	1.108	536	1.446	.8782
2.	1.111	523	1.411	.8664
3.	1.136	543	1.465	.8811
4.	1.163	534	1.441	.8707

Gas-Liquid Hydrocarbon Ratio	01.1	Mcf/bbl
API Gravity of Liquid Hydrocarbons	45.000	Deg.
Specific Gravity Separator Gas	.653	
Specific Gravity Flowing Fluid	.705	
Critical Pressure	670 PSIA	668 PSIA
Critical Temperature	370 R	387 R

P _C =	2872.4	P _C ² =	8250.7
NO.	P _w	P _w ²	P _C ² - P _w ²
1.	2852.4	8136	114.496
2.	2841.4	8073	177.128
3.	2789.4	7780	469.929
4.	2766.4	7652	597.713

$$(1) \frac{P_C^2}{P_C^2 - P_W^2} = \frac{13.804}{P_C^2 - P_W^2} \quad (2) \left[\frac{P_C^2}{P_C^2 - P_W^2} \right]^n = \frac{5.761}{P_C^2 - P_W^2}$$

$$AOF = Q \left[\frac{P_C^2}{P_C^2 - P_W^2} \right]^n = \frac{32865}{P_C^2 - P_W^2}$$

Absolute Open Flow		32865	Mcf/d @ 15.025	Angle of Slope	- 56.3	Slope, n	.667
Remarks							
Approved By Division:		Conducted By: Jeremy Cates		Calculated By: BPT System/SCHLUMBERGER		Checked By: D.Sykes-Bookhammer	