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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 Yates Drilling Company				Lease or Unit Name Mule Train 16 State, Com			
Type Test ☒ Initial ☐ Annual ☐ Special				Test Date 12-10-99			
Completion Date 12-3-99		Total Depth 10250		Plug Back TD 10,190'		Elevation 3540' GL	
Csg. Size 5 1/2		Wt. 17#		d 4.892		Set At 10250	
Tbg. Size 2 7/8		Wt. 6.5#		d 2.441		Set At 9700	
Type Well - Single - Bradenhead - G.G. or G.O. Multiple Single				Packer Set At 9700		Formation Empire Penn	
Producing Thru Tbg		Reservoir Temp. °F 151@9675		Mean Annual Temp. °F 60		Baro. Press - P. 13.2	
L 9700		H 9700		Gg 0.652		% CO ₂ 0.490	
				% N ₂ 0.511		% H ₂ S	
				Prover		Meter Run 4.026	
						Taps FLG	

FLOW DATA						TUBING DATA		CASING DATA		Duration of Flow
NO	Prover Line Size	Orifice X 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						2056		PACKER		72 Hrs.
1.	4.026	x 1.500	591	7.50	68	1901				1 Hr.
2.	4.026	x 1.500	604	17.00	70	1732				1 Hr.
3.	4.026	x 1.500	612	30.50	71	1583				1 Hr.
4.	4.026	x 1.500	620	49.10	72	1437				1 Hr.
5.										

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, Mcfd
1.	10.84	67.32	604.2	.9924	1.238	1.062	952
2.	10.84	102.43	617.2	.9905	1.238	1.062	1446
3.	10.84	138.09	625.2	.9896	1.238	1.064	1951
4.	10.84	176.32	633.2	.9887	1.238	1.064	2489
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.	.90	528	1.40	.887	162.810	59 @ 60	.652	XXXXXXX	670	375
2.	.92	530	1.41	.886				XXXXXXX		
3.	.93	531	1.41	.884				XXXXXXX		
4.	.94	532	1.41	.883				XXXXXXX		
5.										

P_c	2069.2	P_c^2	4281.6	
NO.	P_i^2	P_w	P_w^2	$P_c^2 - P_w^2$
1.		1916.4	3672.6	609.0
2.		1750.8	3065.3	1216.3
3.		1607.4	2583.8	1697.8
4.		1470.5	2162.5	2119.1
5.				

$$1) \frac{P_c^2}{P_c^2 - P_w^2} = \frac{2.020}{}$$

$$AOF = Q \left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = \frac{4.985}{}$$

$$(2) \left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = \frac{2.003}{}$$

$$1) \frac{P_c^2}{P_c^2 - P_w^2} = 2.020 \quad (2) \left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 2.003$$

$$AOF = Q \left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 4.985$$

Absolute Open Flow	4,985	Mcfd @ 15.025	Angle of Slope θ	45.34	Slope, n	.9881
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Remarks: Well produced 1.75 bbls/condensate during test

Approved By Division

Conducted By:

Jarrel Services, Inc.

Calculated By:

Bob Murray

Checked By:

Bob Murray