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See Rule 401 & Rule 1122

State of New Mexico
Energy, Minerals and Natural Resources Department

30-025-31848

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 <u>H.L. BROWN Jr.</u>				Lease or Unit Name <u>NORTH FEATHER STATE unit</u>			
Type Test ☒ Initial ☐ Annual ☐ Special				Test Date <u>5/19/93</u>		Well No. <u>1</u>	
Completion Date <u>4/04/93</u>		Total Depth <u>12,480'</u>		Plug Back TD <u>12,440'</u>		Elevation <u>4297.9 GL</u>	
Csg. Size <u>5 1/2"</u>		Wt. <u>17 &</u> <u>20 #</u>		Set At <u>4.653"</u>		Perforations: From: <u>12376</u> To: <u>12402</u>	
Tbg. Size <u>2 3/8"</u>		Wt. <u>4.7</u>		Set At <u>1.995</u>		Perforations: From: To:	
Type Well - Single - Bradenhead - G.G. or G.O. Multiple <u>Single</u>				Packer Set At <u>12,285'</u>		Formation <u>Morrow</u>	
Producing Thru <u>TBG</u>		Reservoir Temp. °F <u>197@12285</u>		Mean Annual Temp. °F <u>60</u>		Baro. Press - P _a <u>13.2</u>	
L <u>12285</u>		H <u>12285</u>		Gg <u>.784</u>		% CO ₂ <u>.53</u>	
				% N ₂ <u>1.52</u>		% H ₂ S	
				Prover		Meter Run <u>3.068</u>	
						Taps <u>FLG</u>	

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							1198		PKR		72 Hrs
1.	3	X	1.500	58	3.24	76	1083		"		1 HR
2.	3	X	1.500	58	8.41	76	831		"		"
3.	3	X	1.500	63	16.81	77	674		"		"
4.	3	X	1.500	68	27.04	77	528		"		"
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.	11.13	15.19	71.2	.9850	1.129	1.008	190
2.	11.13	24.47	71.2	.9850	1.129	1.008	305
3.	11.13	35.79	76.2	.9840	1.129	1.007	446
4.	11.13	46.86	81.2	.9840	1.129	1.007	583
5.							

NO.	P _r	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio <u>21.2</u> Mcf/bbl.		
1.	.10	536	1.29	.985	A.P. L Gravity of Liquid Hydrocarbons <u>58.5 @ 60°</u> Deg.		
2.	.10	536	1.29	.985	Specific Gravity Separator Gas <u>.784</u>		
3.	.11	537	1.29	.986	Specific Gravity Flowing Fluid <u>XXXXXX</u> GMIX = .911		
4.	.12	537	1.29	.986	Critical Pressure <u>*665</u> P.S.I.A. <u>*661</u> P.S.I.A.		
5.					Critical Temperature <u>*415</u> R <u>*458</u> R		

P_c <u>1211.2</u>		P_c^2 <u>1467.0</u>				
NO.	P_t^2	P_w	P_w^2	$P_c^2 - P_w^2$	1) $\frac{P_c^2}{P_c^2 - P_w^2} = \underline{1.266}$	(2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = \underline{1.266}$
1.		1096.7	1202.8	264.2		
2.		846.3	716.2	750.8		
3.		693.1	480.4	986.6		
4.		555.1	308.1	1158.9		
5.						

AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = \underline{.738}$

Absolute Open Flow <u>738</u> Mcfd @ 15.025	Angle of Slope Θ <u>45</u>	Slope, n <u>1.000</u>
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Remarks: * = CORRECTED TO 1.52% N2

WELL MADE 3.00 BBLS 58.5 API CONDENSATE DURING TEST

Approved By Division <u>ORIGINAL SIGNED BY JERRY SEXTON</u> DISTRICT I SUPERVISOR	Conducted By: <u>JOHN WEST ENGINEERING</u>	Calculated By: <u>BM</u>	Checked By: <u>BM</u>
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