

BEFORE EXAMINER STAMETS
OIL CONSERVATION COMMISSION

Dorchester EXHIBIT NO. 24

CASE NO. 5097

Submitted by

Hearing Date 31 OCT 73

NEW METHOD OF OIL CONSERVATION: BACK PRESSURE TEST FOR GAS WELL

Type Test: ☒ Initial ☐ Annual ☐ Special						Test Date: <u>8-30-73</u>	
Company: <u>Dorchester Exploration</u>				Connection: <u>None</u>			
Pool: <u>Wildcat</u>				Formation: <u>Wolfcamp</u>			
Completion Date: <u>8-30-73</u>		Total Depth: <u>11,400</u>		Plug Back TD: <u>9,250</u>		Elevation:	
Form or Lease Name: <u>DMU Fed.</u>							
Casing Size: <u>1 1/2"</u>	Wt.: <u>11.6</u>	d:	Set At: <u>9,300</u>	Perforations: <u>From 9063 To 9122</u>		Well No.:	
Tub. Size: <u>2 3/8"</u>	Wt.: <u>4.7</u>	d:	Set At: <u>8980</u>	Perforations: <u>From open To End</u>		Unit: <u>2</u> Sec. <u>35</u> Twp. <u>19-S</u> Rge. <u>28E</u>	
Type Well - Single - Broadhead - C.G. or G.O. Multiple: <u>Single</u>				Packer Set At: <u>8980</u>		County: <u>Bddy</u>	
Producing Thru: <u>Tbg.</u>		Reservoir Temp. °F: <u>170 @ 9080</u>		Mean Annual Temp. °F: <u>60°</u>		State: <u>New Mexico</u>	
L: <u>8980</u>	H: <u>8980</u>	G: <u>.670</u>	% CO ₂ :	% N ₂ :	% H ₂ S:	Prover:	Meter Run: <u>4'</u>
Tps: <u>Flr.</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							2952	74			72
1.	4"	X	1.500	825	3.55	68	2737	74			1 hr.
2.	4"	X	1.500	830	29.00	75	2467	76			1 hr.
3.	4"	X	1.500	830	51.00	68	2240	76			1 hr.
4.	4"	X	1.500	890	82.00	70	1945	78			1 hr.
5.											

RATE OF FLOW CALCULATIONS							
NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P _m	Flow Temp. Factor F _t	Gravity Factor F _g	Super. Compress. Factor, F _{sp}	Rate of Flow Q, Mcfd
1.	10.84	54.55	838.2	.9924	1.222	1.088	780
2.	10.84	156.37	843.2	.9850	1.222	1.089	2,222
3.	10.84	207.37	843.2	.9924	1.222	1.089	2,969
4.	10.84	272.14	903.2	.9905	1.222	1.095	3,910
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.	1.25	528	1.38	.845	6.074	58.5 @ 60°	.670	XXXXXXX	669	382
2.	1.26	535	1.40	.844				XXXXX		
3.	1.26	528	1.38	.844						
4.	1.35	530	1.39	.834						
5.										

NO.	P _r	P _w	R _w	P _r ² - R _w ²
1.	2805.9	7878.7	913.7	
2.	2514.8	6324.2	2468.2	
3.	2315.0	5359.2	3433.2	
4.	2055.0	4264.2	4528.2	
5.				

(1) $\frac{P_r^2}{P_r^2 - R_w^2} = 1.942$

ACF = 0 $\left[\frac{P_r^2}{P_r^2 - R_w^2} \right]^n = 7.592$

(2) $\left[\frac{P_r^2}{P_r^2 - R_w^2} \right]^n = 7.942$

Absolute Open Flow: <u>7,592</u> Mcfd @ 15.025	Angle of Slope: <u>45</u>	Slope, n: <u>1.000</u>
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Remarks: Made 68.00 Fbbls. condensate during test.

Approved by Commission:	Conducted By: <u>J. C. Roberts</u>	Calculated By: <u>J. B. Murray</u>	Checked By:
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