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State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-122
Revised 4-1-91

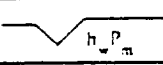
OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Operator <u>Louis Dreyfus</u>					Lease or Unit Name <u>Toro 33 St. Com</u>				
Type Test ☒ Initial ☐ Annual ☐ Special					Test Date <u>2/25/99</u>		Well No. <u>1</u>		
Completion Date <u>2-23-99</u>		Total Depth <u>13322</u>		Plug Back TD		Elevation		Unit Lin. - Sec. - TWP - Rge. <u>33 19-5 33-E</u>	
Csg. Size <u>5 1/2</u>		Wt. <u>17#</u>		d <u>4.892</u>		Set At <u>13322</u>		Perforations: From: <u>12864</u> To: <u>12878</u>	
Tbg. Size <u>2 3/8</u>		Wt. <u>4.7</u>		d <u>1.995</u>		Set At <u>12769</u>		Perforations: From: To:	
Type Well - Single - Bradenhead - G.G. ☒ Multiple <u>Single</u>					Packer Set At <u>12769'</u>		Formation <u>Morrow</u>		
Producing Thru <u>tbg</u>		Reservoir Temp. °F <u>201.7</u>		Mean Annual Temp. °F <u>600</u>		Baro. Press - P _a <u>13.2</u>		Connection <u>Air</u>	
L <u>12769</u>		H <u>12769</u>		Gg <u>.696</u>		% CO ₂ <u>.413</u>		% N ₂ <u>1.390</u>	
						% H ₂ S		Prover <u>0</u>	
								Meter Run <u>4.026</u>	
								Taps <u>flg</u>	

FLOW DATA					TUBING DATA		CASING DATA		Duration of Flow	
NO.	Prover Line Size	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
1.	4.026 X 1.500	400	2"	94°	3400					60 Min
2.	4.026 X 1.500	420	8"	78°	2665					60 Min
3.	4.026 X 1.500	420	15"	62°	2030					60 Min
4.	4.026 X 1.500	420	26"	64°	1470					60 Min
5.										

RATE OF FLOW CALCULATIONS							
NO.	COEFFICIENT (24 HOUR)		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	28.7	413.2	.9688	1.199	1.051	379
2.	10.84	58.8	433.2	.9831	1.199	1.055	792
3.	10.84	80.6	433.2	.9981	1.199	1.062	1110
4.	10.84	106.1	433.2	.9962	1.199	1.060	1456
5.							

NO.	P _r	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio <u>3.539</u> Mcf/bbl
1.	.82	554	1.44	.906	A.P.I. Gravity of Liquid Hydrocarbons <u>45.6</u> Deg.
2.	.80	538	1.40	.899	Specific Gravity Separator Gas <u>.696</u> XXXXXXXXXX
3.	.77	522	1.35	.887	Specific Gravity Flowing Fluid <u>N/A</u> XXXXXX
4.	.77	524	1.36	.890	Critical Pressure <u>672</u> P.S.I.A. P.S.I.A.
5.					Critical Temperature <u>384</u> R R

P_c 3909.2 P_c² 15281.8

NO.	P _i ²	P _w	P _w ²	P _c ² - P _w ²	1) $\frac{P_c^2}{P_c^2 - P_w^2} = \frac{1.175}{}$	2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = \frac{1.175}{}$
1.		3414.1	11656.0	3625.9		
2.		2682.7	7197.0	8084.8		
3.		2054.4	4220.4	11061.4		
4.		1510.0	2280.1	13001.7		
5.						

ΔOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = \frac{1.711}{}$

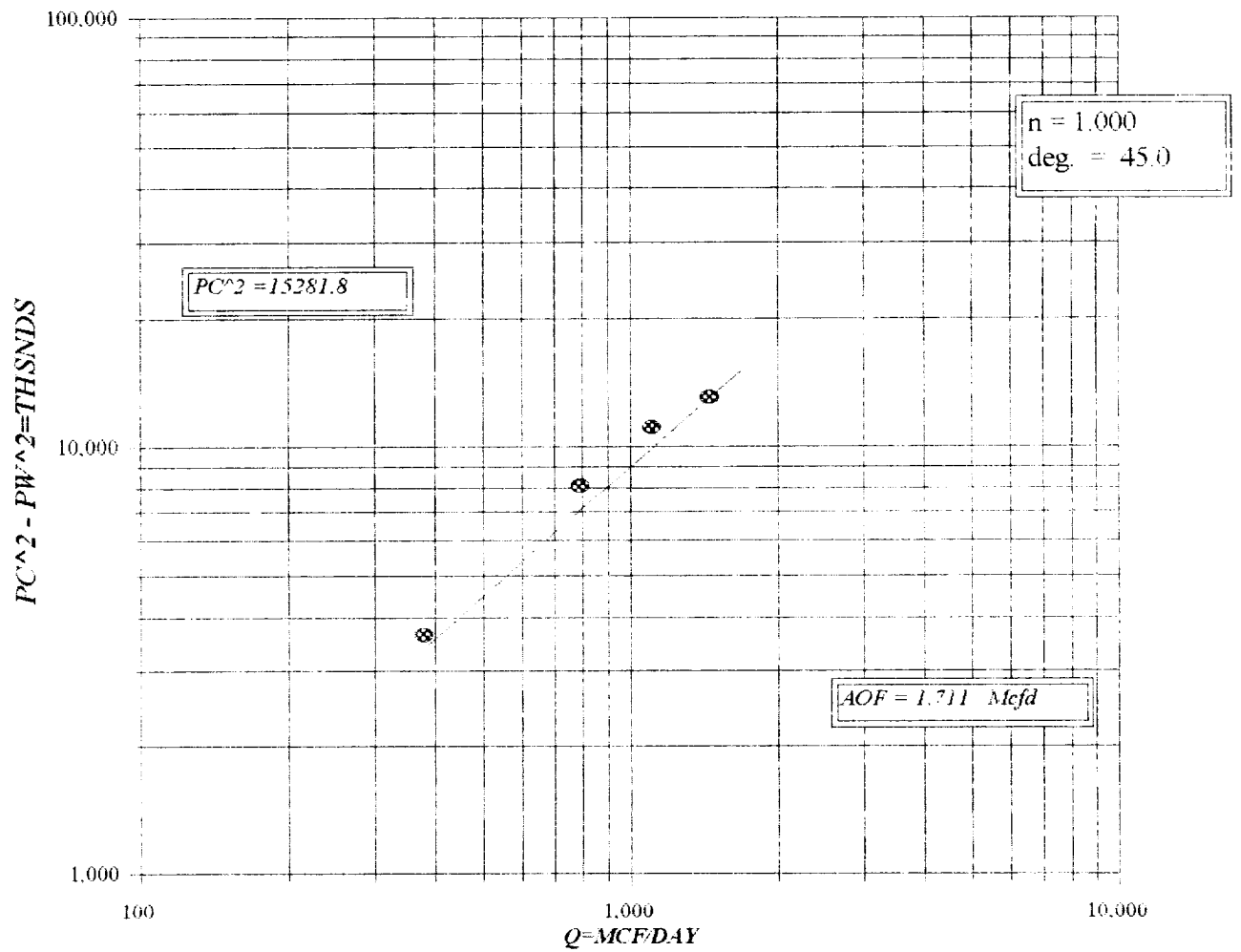
Absolute Open Flow <u>1.711</u> Mcfd @ 15.025	Angle of Slope θ <u>45°</u>	Slope, n <u>1.000</u>
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Remarks: *Well made 44 bbls of 45.6 api gravity condensate during test

Approved By Division	Conducted By: <u>Pro Well Testing</u>	Calculated By: <u>M.B.</u>	Checked By: <u>B.M.</u>
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JC CW

LOUIS DREYFUS
TORO "33" ST. COM. #1



0 COMPANY : LOUIS DREYFUS LEASE : TORO 33 ST OCM WELL NO. : 1 Pc = 3909.2 Pc2 = 15281.8
UNIT : SECTION : 33 TOWNSHIP : 19
L : 12769 H : 12769 L/H : 1 G/GMIX : 0.696 Ps2 = ***** PW = 3414.1
%O2 : 0.413 %H2 : 1.39 H2S : DATE : 2/25/99 7172.8 2682.7
d : 1.995 Fr : 0.018231 GH : 8887.2 RANGE : 33 4174.7 2054.4
2199.9 1510.0

VOL 1 : 379 PSIA 1 : 3413.2 RESV.TEMP 201.7 Pc2-PW2 = 3625.9 PW2 = 11656.0
VOL 2 : 792 PSIA 2 : 2678.2 8084.8 7197.0
VOL 3 : 1110 PSIA 3 : 2043.2 SHUT-IN PR = 3909.2 ***** 4220.4
VOL 4 : 1486 PSIA 4 : 1483.2 ***** 2280.1

PCR : 672
TCR : 384

n = 1000

Pc2/(Pc2-PW2) = 4.215

LINE	RATE 1		RATE 2		RATE 3		RATE 4		
	1ST	2ND	1ST	2ND	1ST	2ND	1ST	2ND	
1 GM	0.379	0.379	0.792	0.792	1.110	1.110	1.456	1.456	
2 FW	534	534	534	534	534	534	534	534	[Pc2/Pc2-PW2]n = 4.215
3 Ts	661.7	661.7	661.7	661.7	661.7	661.7	661.7	661.7	1.890
4 T	597.8	597.8	597.8	597.8	597.8	597.8	597.8	597.8	1.382
PR (est)	5.08		3.99		3.04		2.21		1.175
5 Z(est)	0.817	0.864	0.787	0.808	0.787	0.784	0.814	0.795	
6 TZ	488.6	516.6	470.3	483.3	470.3	468.4	486.5	475.2	AOF = Q 1.597
7 GH/TZ	18.189	17.203	18.896	18.388	18.899	18.972	18.268	18.702	1.497
8 eS	1.978	1.906	2.031	1.993	2.031	2.037	1.984	2.016	1.534
9 l-e-S	0.494	0.475	0.508	0.498	0.508	0.509	0.496	0.504	1.711
10 Pt	3413.2	3413.2	2678.2	2678.2	2043.2	2043.2	1483.2	1483.2	
11 Pt2 /1000	11649.9	11649.9	7172.8	7172.8	4174.7	4174.7	2199.9	2199.9	
12 Fr	0.018231	0.018231	0.018231	0.018231	0.018231	0.018231	0.018231	0.018231	
13 Fc=Fr/L	8.908	9.419	8.574	8.812	8.573	8.540	8.869	8.663	
14 FcQm	3.38	3.57	6.79	6.98	9.52	9.48	12.91	12.61	
15 L/t(FcQm)	11.4	12.7	46.1	48.7	90.6	89.9	166.8	159.1	
16 FW	5.635608	5.057592	23.41245	24.26335	45.97914	45.74627	82.70158	80.204184	
17 PW2	11655.6	11656.0	7196.2	7197.0	4220.6	4220.4	2282.8	2280.1	
18 Ps2	23054.6	22218.3	14616.5	14342.2	8573.7	8596.7	4528.4	4597.6	
19 Ps	4801.5	4713.6	3823.2	3787.1	2928.1	2932.0	2128.0	2144.2	
20 P	4107.4	4063.4	3250.7	3232.7	2485.6	2487.6	1805.6	1813.7	
21 Pr	6.11	6.05	4.81	4.81	3.70	3.70	2.69	2.70	
22 Tr	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56	
23 Z	0.864	0.861	0.808	0.808	0.784	0.784	0.795	0.794	FORM 0102-D