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appropriate district office.
See Rule 401 & Rule 1122

State of New Mexico
Energy Minerals and Natural Resources
Oil Conservation Division
2040 South Pacheco
Santa Fe, NM 87505

Form C-122
Revised October, 1999

30-025-37567

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Operator PATTERSON PETROLEUM LP				Lease or Unit Name BOUGAINVILLEA 33 State			
Type Test ☒ Initial ☐ Annual ☐ Special				Test Date 4/27/06		Well No. 1	
Completion Date 3/16/06		Total Depth 13350		Plug Back TD 13,060		Elevation 4047 GL	
Unit Ltr - Sec - TWP - Rge I 33 17 34		County LEA		Pool Vacuum;			
Csg. Size 5 1/2	Wt. 17 #	d 4.75	Set At 13325	Perforations: From: 13010 To: 13019			
Tbg. Size 2 3/8	Wt. 4.7	d 1.995	Set At 12964	Perforations: From: OPEN To: END			
Type Well-Single-Bradenhead-G.G. or G.O. Multiple SINGLE				Packer Set At 12964		Formation MORROW (GAS)	
Producing Thru TBG		Reservoir Temp. °F 203 @ 12964		Mean Annual Temp. °F 60		Baro. Press.-P _a 13.2	
Connection Targa Midstream Services							
L 12964	H 12964	Gg 0.705	%CO ₂ 0.34	%N ₂ 0.832	%H ₂ S	Prover N/A	Meter Run 3.064
Taps FLG							
FLOW DATA				TUBING DATA		CASING DATA	
No.	Prover Line Size	Orifice x Size	Press p.s.i.g.	Diff. h _w	Temp. °F	Press p.s.i.g.	Temp. °F
SI							
1	3 X	1.250			98	2900	
2	3 X	1.250			91	2625	
3	3 X	1.250			80	2360	
4	3 X	1.250			76	1959	
5							
RATE OF FLOW CALCULATIONS							
No.	COEFFICIENT (24 Hour)	$\sqrt{h_w P_m}$	Pressure P _m	Flow Temp. Factor Ft.	Gravity Factor	Super Compress Factor F _{pv}	Rate of Flow Q, Mcfd
1							525
2							740
3				TOTAL	FLOW	METER	896
4							998
5							
No.	P _r	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio 16.453 Mcf bbl.		
1					A.P. I. Gravity of Liquid Hydrocarbons 52 Deg.		
2					Specific Gravity Separator Gas 0.705 XXXXXXXX		
3			N/A		Specific Gravity Flowing Fluid XXXXXX Gmix = .881		
4					Critical Pressure 668 P.S.I.A. 663 P.S.I.A.		
5					Critical Temperature 392 R. 451 R		
P _c 3288.2		P _{c2} 10812.3					
No.	P _t ²	P _w	P _w ²	P _c ² - P _w ²	(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 2.824$ (2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 1.999$		
1		2915.4	8499.7	2312.6			
2		2642.7	6984.1	3828.2			
3		2380.1	5664.8	5147.4			
4		1981.4	3925.8	6886.5			
5							
Absolute Open Flow 1,479 Mcfd @ 15.025				Angle of Slope (°): 56.3		Slope n: 0.6672	
Remarks: Well produced 8.0 bbls 52.0 API gr condensate during test & no H2O							
Approved By Division:		Conducted By: Metering & Testing Services, Inc.		Calculated By: BM		Checked By: BM	

0 COMPANY : PATTERSON PETRO. LP LEASE : BOUG. "33" ST. WELL NO. : 1
 UNIT : P SECTION : 33 TOWNSHIP : 17
 L : 12964 H : 12964 L/H : 1 G/GMIX : 0.881
 %CO2 : 0.34 %N2 : 0.832 H2S : DATE : 4- 27-06
 d : 1.995 Fr : 0.018231 GH : 11421.3 RANGE : 34

Pc = 3288.2 Pc2 = 10812.3 *
 Pt2 = 8486.7 Pw = 2915.4 *
 6960.1 2642.7 *
 5632.1 2380.1 *
 3889.6 1981.4 *

VOL 1 : 525 PSIA 1 : 2913.2 RESV.TEMP 203.0
 VOL 2 : 740 PSIA 2 : 2638.2
 VOL 3 : 896 PSIA 3 : 2373.2 SHUT-IN PR= 3288.2
 VOL 4 : 998 PSIA 4 : 1972.2

PCR : 603
 TCR : 451

Pc2-Pw2= 2312.6 Pw2 = 8499.7 *
 3828.2 6984.1 *
 5147.4 5664.8 *
 6886.5 3925.8 *

n = 0.667 ✓

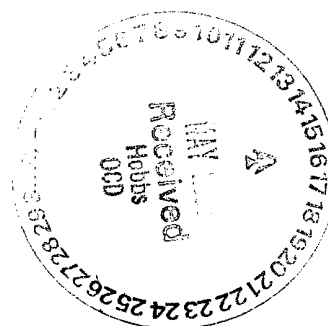
Pc2/(Pc2-Pw2) = 4.675
 2.824 ✓
 2.101
 1.570

[Pc2/Pc2-Pw2]n = 2.798
 1.999 ✓
 1.641
 1.351

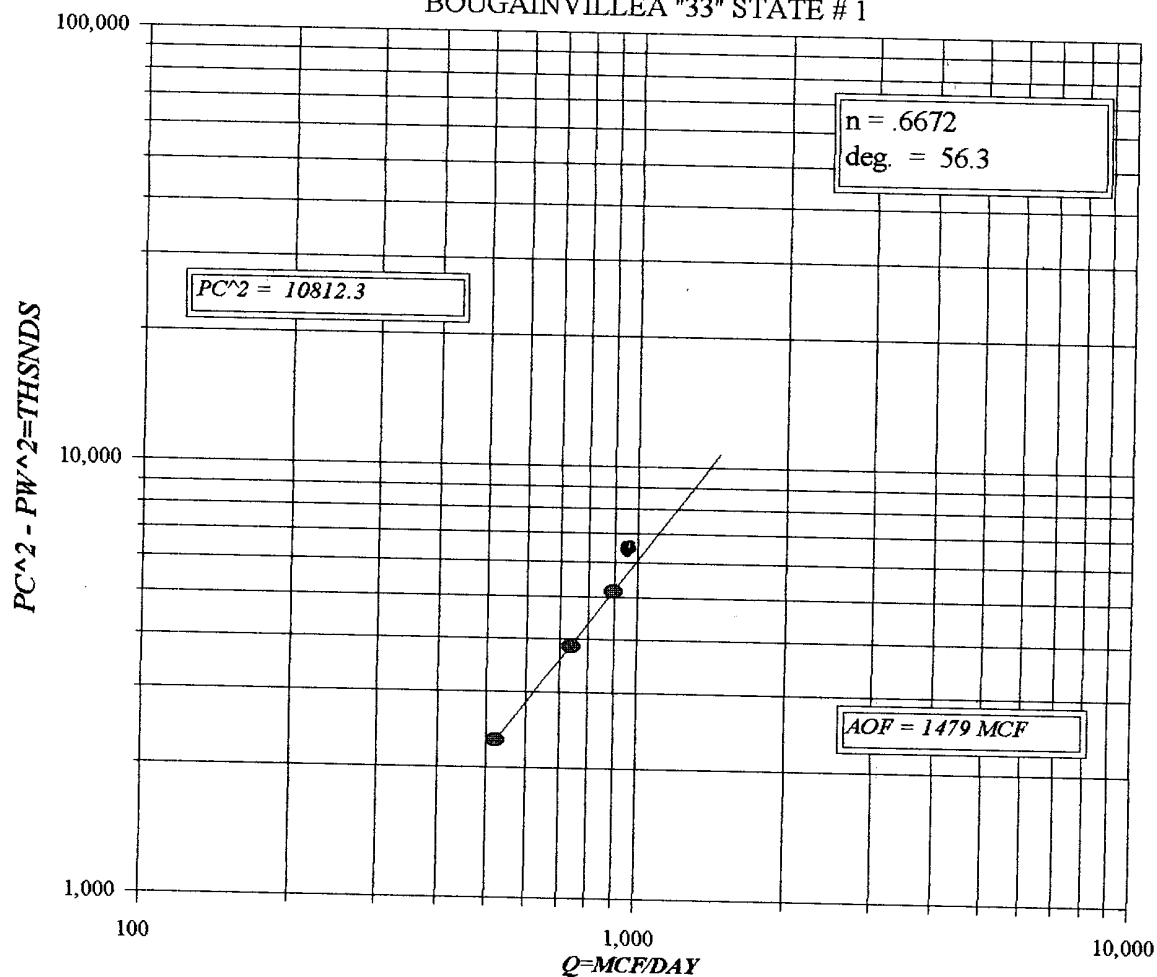
AOF= Q 1.469
 1.479 ✓
 1.470
 1.348

LINE		RATE 1		RATE 2		RATE 3		RATE 4	
		1ST	2ND	1ST	2ND	1ST	2ND	1ST	2ND
1	QM	0.525	0.525	0.740	0.740	0.896	0.896	0.998	0.998
2	TW	534	534	534	534	534	534	534	534
3	Ts	663.0	663.0	663.0	663.0	663.0	663.0	663.0	663.0
4	T	598.5	598.5	598.5	598.5	598.5	598.5	598.5	598.5
	PR (est)	4.83		4.38		3.94		3.27	
5	Z(est)	0.707	0.825	0.678	0.784	0.655	0.745	0.634	0.687
6	TZ	422.9	494.0	405.7	469.5	391.8	445.8	379.4	411.0
7	GH/TZ	27.007	23.118	28.152	24.326	29.148	25.620	30.106	27.788
8	eS	2.753	2.380	2.874	2.490	2.983	2.614	3.092	2.835
9	l-e-S	0.637	0.580	0.652	0.598	0.665	0.617	0.677	0.647
10	Pt	2913.2	2913.2	2638.2	2638.2	2373.2	2373.2	1972.2	1972.2
11	Pt2 /1000	8486.7	8486.7	6960.1	6960.1	5632.1	5632.1	3889.6	3889.6
12	Fr	0.018231	0.018231	0.018231	0.018231	0.018231	0.018231	0.018231	0.018231
13	Fc=FrTZ	7.710	9.007	7.396	8.560	7.144	8.128	6.916	7.493
14	FcQm	4.05	4.73	5.47	6.33	6.40	7.28	6.90	7.48
15	L/H(FcQm)	16.4	22.4	30.0	40.1	41.0	53.0	47.6	55.9
16	Fw	10.43343	12.96361	19.53367	24.00712	27.23717	32.74090	32.23833	36.199247
17	Pw2	8497.2	8499.7	6979.6	6984.1	5659.3	5664.8	3921.8	3925.8
18	Ps2	23394.0	20225.7	20059.4	17389.7	16883.5	14805.6	12128.1	11129.5
19	Ps	4836.7	4497.3	4478.8	4170.1	4109.0	3847.8	3482.5	3336.1
20	P	3875.0	3705.2	3558.5	3404.1	3241.1	3110.5	2727.4	2654.1
21	Pr	6.43	6.14	5.90	5.65	5.37	5.16	4.52	4.40
22	Tr	1.33	1.33	1.33	1.33	1.33	1.33	1.33	1.33
23	Z	0.825	0.803	0.784	0.765	0.745	0.729	0.687	0.679

FORM C122-D

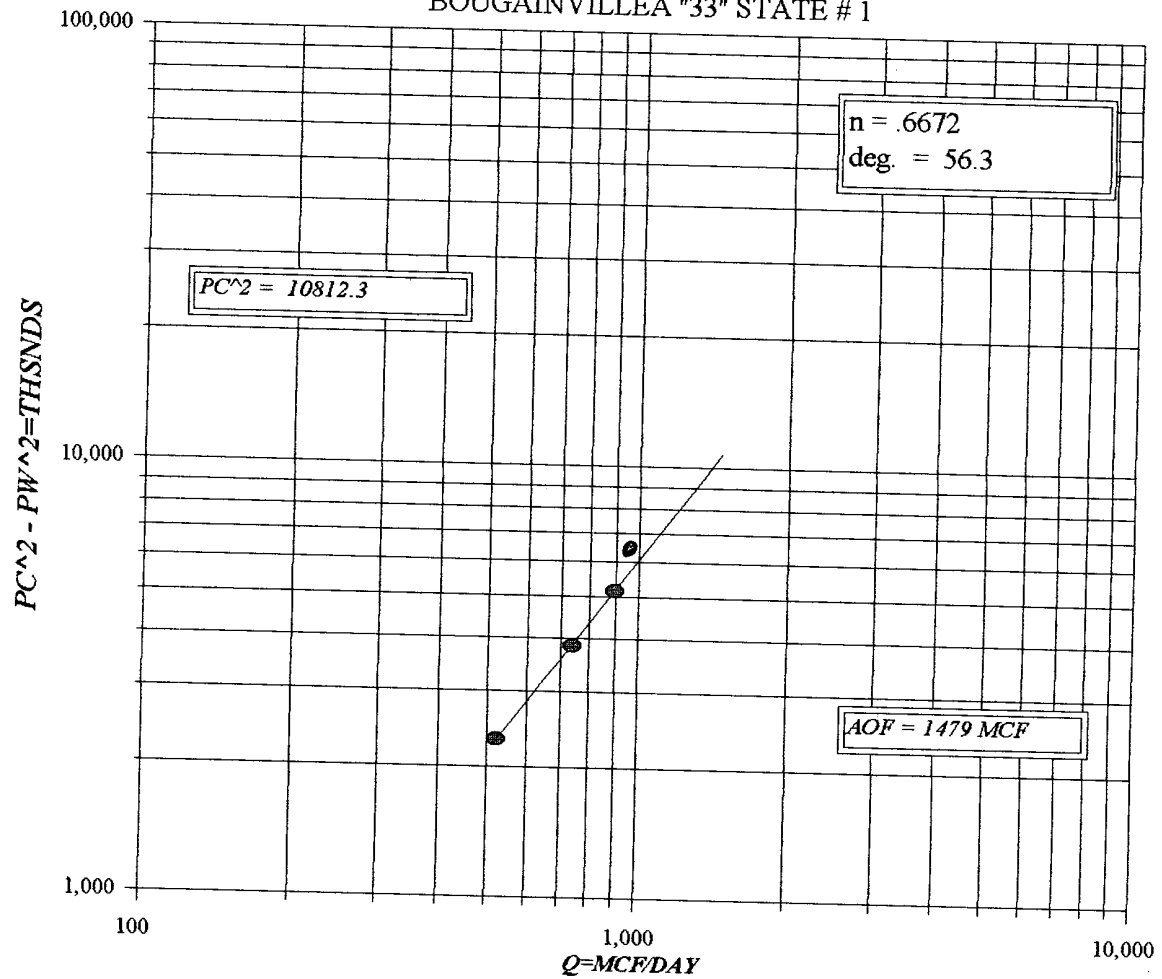


PATTERSON PETROLEUM L P
BOUGAINVILLEA "33" STATE # 1



PATTERSON PETROLEUM L P

BOUGAINVILLEA "33" STATE # 1



NEW MEXICO G.O.R./G. MIX

NO. OF BBLS PRODUCED = 8.0
API GRAVITY @ 60 DEG. = 52.0

.....
SPECIFIC GRAVITY OF GAS = 0.7050

XXX
TOTAL GAS PRODUCED = 132

G.O.R. = 16.453

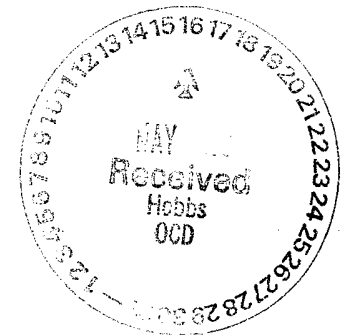
G.MIX = 0.881

Company: Patterson Petroleum
Well No: bougain villea 33 st #1
Test Date: 4/27/06
Formation: morrow
County: lea
State: n.m
Test Type: 4 point

Run Size: 3.068"
Orifice Range: 250x100
Tbg Size:
Csg Size:
Perfs:
Packer Depth:
TD/PBTD:
gas temp: 100.0

Tester: Floyd Davis
Cell Phone: (505) 390-3214

Oil Totals:	8
H2O Totals:	0

[illegible]

**Laboratory Services, Inc.**

2609 West Marland
Hobbs, New Mexico 88240

Telephone: (505) 397-3713

FOR: Metering & Testing Services Inc.
Attention: Mr. Tom Duncan
2807 West County Road
Hobbs, New Mexico 88240

SAMPLE:
IDENTIFICATION: Bougainvillea 33 St. #1
COMPANY: Patterson Petroleum
LEASE:
PLANT:

SAMPLE DATA: DATE SAMPLED 4/27/06 2:30 pm
ANALYSIS DATE: 4/28/06
PRESSURE - PSIG 42
SAMPLE TEMP. °F 80
ATMOS. TEMP. °F 75

GAS (XX) LIQUID ()
SAMPLED BY: Floyd Davis
ANALYSIS BY: Vickie Sullivan

REMARKS:

COMPONENT ANALYSIS

COMPONENT	MOL PERCENT	GPM
Hydrogen Sulfide (H2S)		
Nitrogen (N2)	0.832	
Carbon Dioxide (CO2)	0.340	
Methane (C1)	81.175	
Ethane (C2)	9.782	2.610
Propane (C3)	4.936	1.357
I-Butane (IC4)	0.764	0.249
N-Butane (NC4)	1.260	0.396
I-Pentane (IC5)	0.320	0.117
N-Pentane (NC5)	0.231	0.083
Hexane Plus (C6+)	0.360	0.156
	100.000	4.968

BTU/CU.FT - DRY 1222
AT 14.650 DRY 1219
AT 14.650 WET 1197
AT 14.73 DRY 1225
AT 14.73 WET 1204

MOLECULAR WT. 20.4282

SPECIFIC GRAVITY -
CALCULATED 0.705
MEASURED