Submit in duplicate to 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

30-025-36942

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Operator	PATTERSON Petroleum LP					Lease or Unit Name	DUNCAN 32 ST. COM.		
Type Test: ☑ Initial ☐ Annual ☐ Special						Test Date: 8-11-05	Well No.: 1		
Completion Date: 06/08/05	Total Depth: 13550			Plug Back TD: 13280		Elevation: 4078' GR	Unit Ltr - Sec - TWP - Rge: H, 32, 17S, 34E		
Csg. Size: 5 1/2	Wt.:	d:	Set At: 13550	Perforations: From: 13138	To: 13144		County: LEA		
Tbg. Size: 2 7/8	Wt.: 6.5	d: 2.441	Set At: 12908	Perforations: From:	To:		Pool: Vacuum; Morrow		
Type Well-Single-Bradenhead-G.G. or G.O. Multiple: SINGLE				Packer Set At: 12908			Formation: MORROW		
Producing Thru: TBG	Reservoir Temp.°F: 182.8 @ 12908		Mean Annual Temp. °F: 60	Baro. Press.-P_a: 13.2			Connection: SALES		
L: 12908	H: 12908	Gg: .660	%CO_2: 0.649	%N_2: 0.886	%H_2S:	Prover: N/A	Meter Run: 4.026		Taps: FLG

	FLOW DATA				TUBING DATA		CASING DATA		
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	Duration of Flow
SI					3075		PKR		48 HRS
1.	4 X 1.750	441	3.7	105	2900	73	"		1 HR
2	4 X 1.750	443	4.6	102	2750	73	"		1 HR
3	4 X 1.750	446	7.3	99	2675	73	"		1 HR
4	4 X 1.750	460	23.5	85	2385	73	"		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 F_g	Super Compress Factor F pv	Rate of Flow Q. Mcfd
1							699
2							807
3			TOTAL		FLOW	METER	1,063
4							2,044
5							

No.	P_r	Temp. °R	T_r	Z
1				
2				
3		N/A		
4				
5				

Gas Liquid Hydrocarbon Ratio: 9.61 Mcf bbl.
A.P. I. Gravity of Liquid Hydrocarbons: 63.4 @ 60 Deg.
Specific Gravity Separator Gas: 0.66 XXXXXXX
Specific Gravity Flowing Fluid: XXXXX GMIX = .926
Critical Pressure: 670 P.S.I.A. 662 P.S.I.A.
Critical Temperature: 378 R. 464 R

P_c 3088.2 P_c^2 9537

No.	P_t^2	P_w	P_w^2	$P_c^2 - P_w^2$
1		2914.5	8494.3	1042.6
2		2765	7645	1892
3		2691.3	7243	2294
4		2409	5807.7	3729.3
5				

(1) $\frac{P_c^2}{P_c^2 - P_w^2} =$ 2.557 (2) $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n =$ 2.557

AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n =$ 5.227

79825

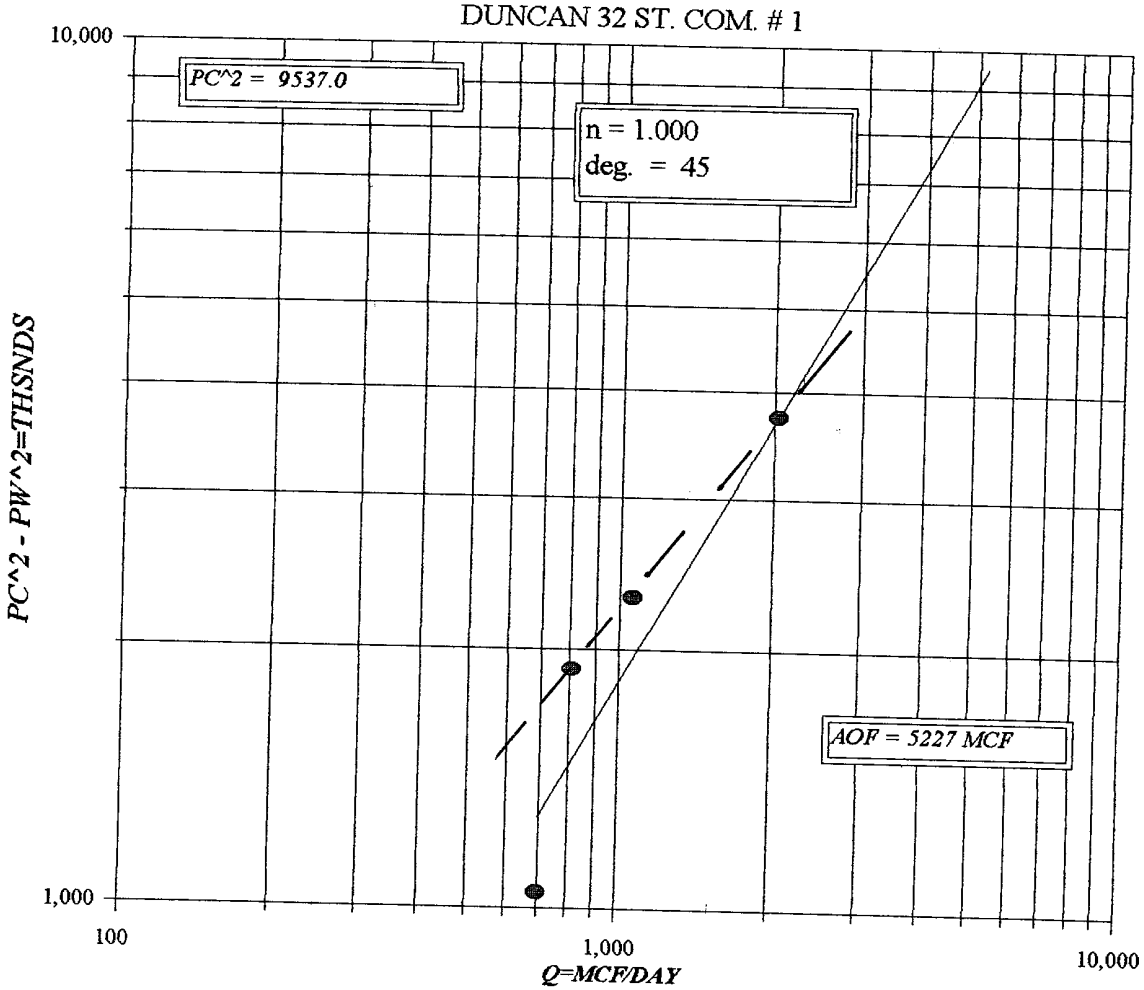
Absolute Open Flow 5,227 Mcfd @ 15.025 Angle of Slope (): 45 Slope n: 1

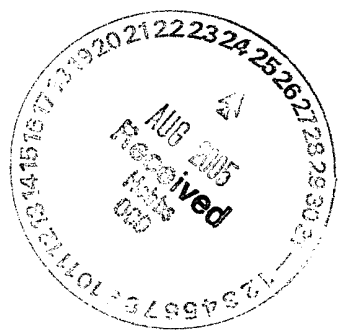
Remarks: Well produced 20.0 bbl's of 63.4 API gr. Condensate, during test.

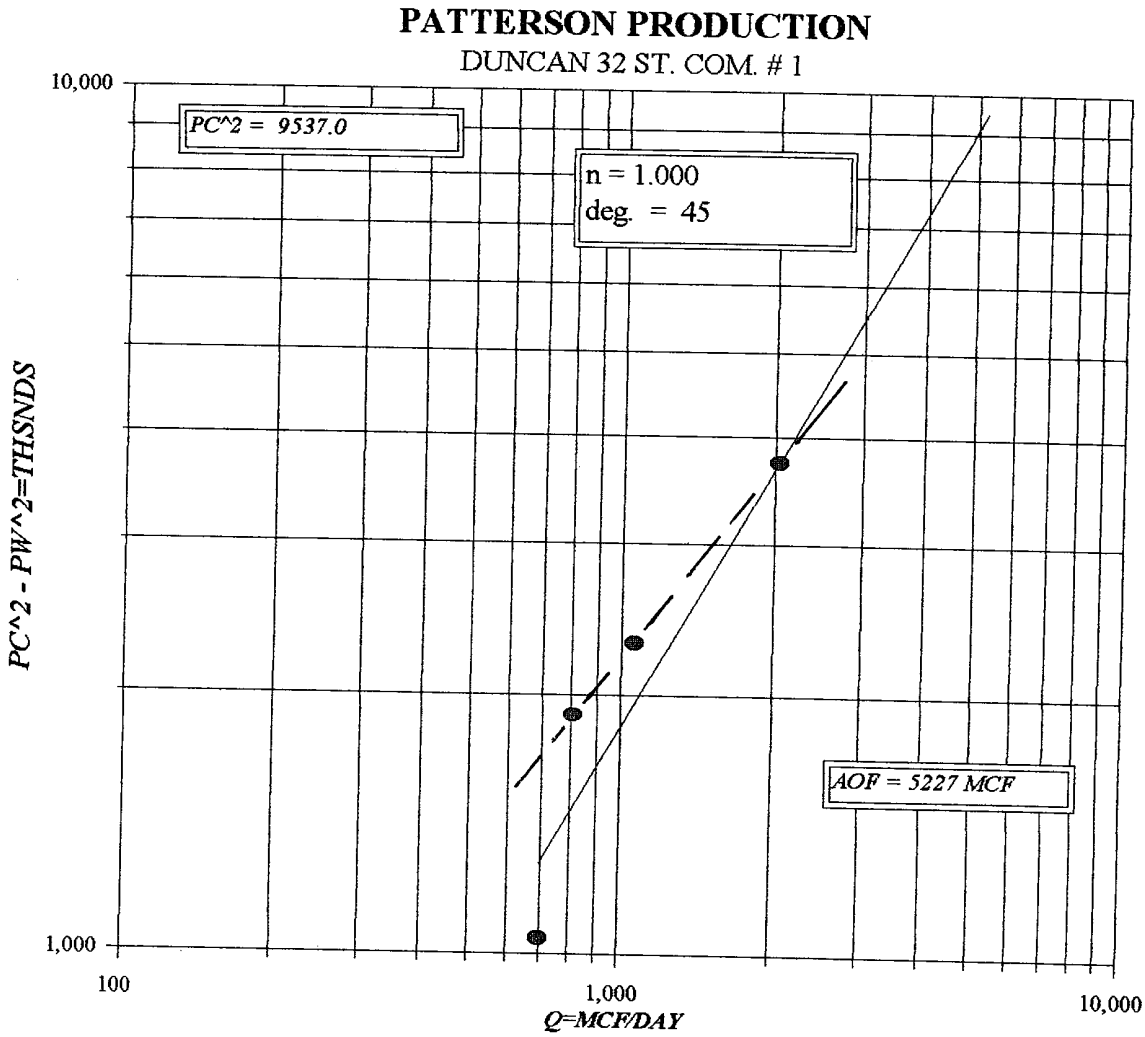
Approved By Division:	Conducted By:	Calculated By:	Checked By:
	Metering Testing Serv., Inc.	BM	BM

PATTERSON PRODUCTION

DUNCAN 32 ST. COM. # 1






PATTERSON PRODUCTION
DUNCAN 32 ST. COM. # 1
10,000
1,000
PC^2 = 9537.0
n = 1.000
deg. = 45
AOF = 5227 MCF
PC^2 - PW^2=THSNDS
100
1,000
10,000
Q=MCF/DAY

0

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

NO. OF BBLS PRODUCED	=	20.0
API GRAVITY @ 60 DEG.	=	63.4
SPECIFIC GRAVITY OF GAS	=	0.6600
TOTAL GAS PRODUCED	=	192
G.O.R.	=	9.610
G.MIX	=	0.926

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: Duncan 32 St. Com. #1
COMPANY: Patterson Production
LEASE:
PLANT:

SAMPLE DATA:

DATE SAMPLED:	8/11/05 5:00 pm
ANALYSIS DATE:	8/12/05
PRESSURE – PSIG	454
SAMPLE TEMP. °F	85
ATMOS. TEMP. °F	91

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

REMARKS:

COMPONENT ANALYSIS

COMPONENT		MOL PERCENT	GPM
Hydrogen Sulfide	(H2S)		
Nitrogen	(N2)	0.886	
Carbon Dioxide	(CO2)	0.649	
Methane	(C1)	85.675	
Ethane	(C2)	7.900	2.108
Propane	(C3)	3.353	0.922
I-Butane	(IC4)	0.410	0.134
N-Butane	(NC4)	0.699	0.220
I-Pentane	(IC5)	0.144	0.053
N-Pentane	(NC5)	0.106	0.038
Hexane Plus	(C6+)	0.178	0.077
		100.000	3.552

BTU/CU.FT. – DRY	1144
AT 14.650 DRY	1141
AT 14.650 WET	1121
AT 14.73 DRY	1147
AT 14.73 WET	1127

MOLECULAR WT. 19.1198

SPECIFIC GRAVITY – CALCULATED	0.660
MEASURED	

D.F 0-150
Static 0-1000
Plate 1.750

Metering & Testing Data Sheet:

Company : Patterson
Well No: Duncan 32 com 1
Test Date: 8-11-05
Formation: morrow
County" Lea
State: nm
Test Type: 4 point

Meter Run Size: 4.025
Orifice Meter Range: 150 x 1000
Tbg Size: 2 7/8"
Csg Size: 5 1/2
Perfs: 13138 – 13144
Packer Depth: 12908
TD / PBTD: 13550 13,280

Phone No: (505) - 397 - 1631
Fax No: (505) - 397 - 0990

Running Totals:
Oil:
Water:

Total Flow meter

Date	Time	Choke	TBG PX	CSG PX	~~Gas Oil Meter~~	~~Well Oil Per Hr~~	Total Oil	~~Water Meter~~	~~H2O Per Hr~~	Total Water	Diff Press	Static Px	Gas - MCF	Comments:
			3075											
	1:30	6/64	3075	0	Start Test									
	1:45	6/64	3010	0	106	72					3.8	441	690	
	2:00	6/64	2975	0	105	72					3.6	441	696	
	2:15	6/64	2925	0	105	73					3.7	441	698	
	2:30	6/64	2900	0	105	73					3.7	441	699	
	2:45	8/64	2790	0	102	73					6.3	443	985	
	3:00	8/64	2760	0	101	73					5.7	443	885	
	3:15	8/64	2750	0	101	73	making Fluid				5.1	443	822	
	3:30	8/64	2750	0	102	73	1 BBL oil				4.6	443	807	
	3:45	10/64	2675	0	96	73	making Fluid				7.9	446	1129	
	4:00	10/64	2675	0	93	73					6.3	446	1030	
	4:15	10/64	2675	0	99	73					7.7	446	1058	
	4:30	10/64	2675	0	99	73	9				7.8	446	1063	
	4:45	13/64	2510	0	86	73					17.4	445	1638	
	5:00	13/64	2490	0	85	73					18.2	445	1740	
	5:15	13/64	2420	0	85	73					22.1	455	1921	
	5:30	13/64	2385	0	85	73	10				23.5	460	2044	
							20 BBL	total						
														Oil gravity
														63.8 @ 62°

O COMPANY :PATTERSON PRODUCTION LEASE : DUNCAN ST. COM. WELL NO. : 1

UNIT : SECTION : TOWNSHIP :

L : 12908 H : 12908 L/H : 1 G/GMIX : 0.926

%CO2 : 0.649 %N2 : 0.886 H2S : DATE :8-11-05

d : 2.441 Fr :0.010763 GH : 11952.8 RANGE :

VOL 1 : 699 PSIA 1 : 2913.2

VOL 2 : 807 PSIA 2 : 2763.2

VOL 3 : 1063 PSIA 3 : 2688.2

VOL 4 : 2044 PSIA 4 : 2398.2

RESV.TEMP 182.5

SHUT-IN PR= 3088.2

PCR : 662

TCR : 464

LINE	RATE 1		RATE 2		RATE 3		RATE 4	
	`1ST	`2ND	`1ST	``2ND	`1ST	`2ND	`1ST	`2ND
1 QM	0.699	0.699	0.807	0.807	1.063	1.063	2.044	2.044
2 TW	534	534	534	534	534	534	534	534
3 Ts	642.5	642.5	642.5	642.5	642.5	642.5	642.5	642.5
4 T	588.3	588.3	588.3	588.3	588.3	588.3	588.3	588.3
PR (est)	4.40		4.17		4.06		3.62	
5 Z(est)	0.650	0.794	0.634	0.771	0.627	0.760	0.600	0.717
6 TZ	382.6	466.9	373.1	453.8	368.6	447.2	353.1	421.5
7 GH/TZ	31.239	25.602	32.036	26.341	32.429	26.728	33.848	28.358
8 eS	3.227	2.612	3.325	2.685	3.374	2.725	3.558	2.896
9 1-e-S	0.690	0.617	0.699	0.628	0.704	0.633	0.719	0.655
10 Pt	2913.2	2913.2	2763.2	2763.2	2688.2	2688.2	2398.2	2398.2
11 Pt2 /1000	8486.7	8486.7	7635.3	7635.3	7226.4	7226.4	5751.4	5751.4
12 Fr	0.010763	0.010763	0.010763	0.010763	0.010763	0.010763	0.010763	0.0107631
13 Fc=FrTZ	4.118	5.025	4.016	4.884	3.967	4.813	3.801	4.537
14 FcQm	2.88	3.51	3.24	3.94	4.22	5.12	7.77	9.27
15 L/H(FcQm)	8.3	12.3	10.5	15.5	17.8	26.2	60.4	86.0
16 Fw	5.718512	7.613825	7.343488	9.749507	12.51277	16.57056	43.39376	56.296167
17 Pw2	8492.5	8494.3	7642.6	7645.0	7238.9	7243.0	5794.8	5807.7
18 Ps2	27402.5	22186.4	25408.4	20529.1	24423.7	19733.6	20619.7	16820.8
19 Ps	5234.7	4710.2	5040.7	4530.9	4942.0	4442.3	4540.9	4101.3
20 P	4074.0	3811.7	3901.9	3647.1	3815.1	3565.2	3469.5	3249.8
21 Pr	6.15	5.76	5.89	5.51	5.76	5.39	5.24	4.91
22 Tr	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27
23 Z	0.794	0.760	0.771	0.739	0.760	0.728	0.717	0.690

Pc = 3088.2 Pc2 = 9537.0

Pt2 = 8486.7 Pw = 2914.5
7635.3 2765.0
7226.4 2691.3
5751.4 2409.9

Pc2-Pw2= 1042.6 Pw2 = 8494.3
1892.0 7645.0
2294.0 7243.0
3729.3 5807.7

n = 1.000

Pc2/(Pc2-Pw2) = 9.147
5.041
4.157
2.557

[Pc2/Pc2-Pw2]n = 9.147
5.041
4.157
2.557

AOF= Q 6.394
4.068
4.419
5.227

FORM C122-D