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

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Operator				Lease or Unit Name			
CONOCO PHILLIPS				GACH 31 STATE			
Type Test: ☑ Initial ☐ Annual ☐ Special				Test Date: 11/4/02		Well No.: 2	
Completion Date: 09/15/02	Total Depth: 13600		Plug Back TD: 13250		Elevation: 4119 KB	Unit Ltr - Sec - TWP - Rge: K 31 17 34	
Csg. Size: 5 1/2	Wt: 17	d: 4.892	Set At: 13588	Perforations: From: 13156 To: 13170		County: LEA	
Tbg. Size: 2 7/8	Wt: 6.5	d: 2.441	Set At: 13107	Perforations: From: OPEN To: ENDED		Pool: VACUUM	
Type Well-Single-Bradenhead-G.G. or G.O. Multiple: SINGLE				Packer Set At: 13085		Formation: MORROW	
Producing Thru: Tbg. Size	Reservoir Temp. °F: 184.6 @ 13107		Mean Annual Temp. °F: 60	Baro. Press.-P_a: 13.2		Connection: DUKE ENERGY	

L	H	Gg	%CO_2	%N_2	%H_2S	Prover	Meter Run	Taps
13107	13107	0.709	0.427	0.942	N/A	N/A	4.026	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						2465		PKR		72 HRS
1	4	X 2.375	613	9.7	57	1805		"		1 HR
2	4	X 2.375	635	17.9	67	1627		"		1 HR
3	4	X 2.375	662	25.4	76	1457		"		1 HR
4	4	X 2.375	697	34.6	82	1202		"		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							3017
2							4,046
3	MEASURED		BY	TOTAL	FLOW	METER	5,013
4							5,997
5							

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

Gas Liquid Hydrocarbon Ratio: 21.515 Mcf bbl.
A.P.I. Gravity of Liquid Hydrocarbons: 58.5 @ 60 Deg.
Specific Gravity Separator Gas: 0.709 XXXXXXX
Specific Gravity Flowing Fluid: XXXXX Gmix= .837
Critical Pressure: 668 P.S.I.A. 665 P.S.I.A.
Critical Temperature: 392 R. 434 R

P_c 2478.2 P_c^2 6141.5

No	P_t^2	P_w	P_w^2	$P_c^2 - P_w^2$
1		1845.6	3406.1	2735.3
2		1694.1	2870	3271.5
3		1562	2439.8	3701.7
4		1374.5	1889.1	4252.4
5				

(1) $\frac{P_c^2}{P_c^2 - P_w^2} =$ 1.444 (2) $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n =$ 1.444

AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n =$ 8.661

79825

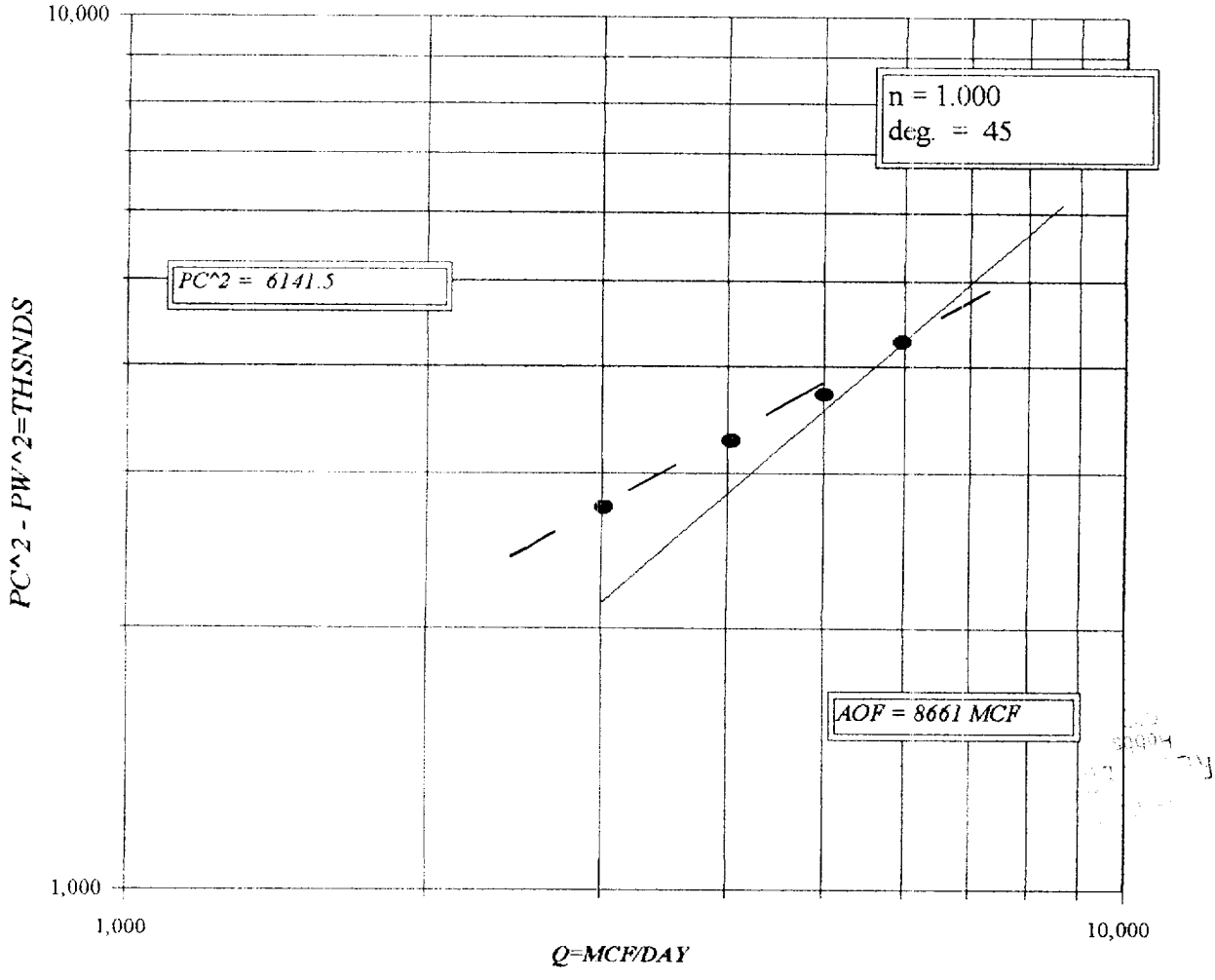
Absolute Open Flow: 8,661 Mcfd @ 15.025 Angle of Slope θ: 45 Slope n: 1

Remarks: WELL PRODUCED 35 BBLS CONDENSATE DURING TEST

Approved By Division	Conducted By:	Calculated By:	Checked By:
ORIGINAL SIGNED BY PAUL F. KAUTZ PETROLEUM ENGINEER NOV 14 2002	JARREL SERVICES INC.	BM	BM

CONOCO PHILLIPS

GACH 31 STATE # 2



COMPANY :CONOCO PHILLIPS LEASE :GMCU 31 31. WELL NO. : 2

UNIT : K SECTION : 31 TOWNSHIP : 17

L : 13107 H : 13107 L/H : 1 G/GMIX : 0.709

%CO2 : 0.427 %N2 : 0.942 H2S : DATE :11-04-02

d : 2.441 Fr :0.010763 GH : 9292.9 RANGE : 34

VOL 1 : 3017 PSIA 1 : 1818.2 RESV.TEMP 205.1

VOL 2 : 4046 PSIA 2 : 1640.2

VOL 3 : 5013 PSIA 3 : 1470.2 SHUT-IN PR= 2478.2

VOL 4 : 5997 PSIA 4 : 1215.2

PCR : 665

TCR : 434

LINE	RATE 1		RATE 2		RATE 3		RATE 4	
	`1ST	`2ND	`1ST	``2ND	`1ST	`2ND	`1ST	`2ND
1 QM	3.017	3.017	4.046	4.046	5.013	5.013	5.997	5.997
2 TW	534	534	534	534	534	534	534	534
3 Ts	665.1	665.1	665.1	665.1	665.1	665.1	665.1	665.1
4 T	599.5	599.5	599.5	599.5	599.5	599.5	599.5	599.5
PR (est)	2.73		2.47		2.21		1.83	
5 Z(est)	0.685	0.678	0.697	0.676	0.715	0.680	0.750	0.698
6 TZ	410.6	406.5	418.1	405.5	428.5	408.0	449.5	418.5
7 GH/TZ	22.634	22.863	22.228	22.920	21.688	22.778	20.676	22.204
8 eS	2.337	2.357	2.301	2.362	2.255	2.349	2.171	2.299
9 1-e-S	0.572	0.576	0.565	0.577	0.557	0.574	0.539	0.565
10 Pt	1818.2	1818.2	1640.2	1640.2	1470.2	1470.2	1215.2	1215.2
11 Pt2 /1000	3305.9	3305.9	2690.3	2690.3	2161.5	2161.5	1476.7	1476.7
12 Fr	0.010763	0.010763	0.010763	0.010763	0.010763	0.010763	0.010763	0.0107631
13 Fc=FrTZ	4.419	4.375	4.500	4.364	4.612	4.391	4.838	4.505
14 FcQm	13.33	13.20	18.21	17.66	23.12	22.01	29.01	27.01
15 L/H(FcQm)	177.7	174.2	331.5	311.8	534.5	484.6	841.6	729.8
16 Fw	101.6801	100.2913	187.4353	179.7639	297.4963	278.3127	454.0200	412.40444
17 Pw2	3407.5	3406.1	2877.7	2870.0	2459.0	2439.8	1930.7	1889.1
18 Ps2	7962.8	8028.1	6623.0	6778.8	5545.8	5732.1	4192.3	4343.8
19 Ps	2821.8	2833.4	2573.5	2603.6	2355.0	2394.2	2047.5	2084.2
20 P	2320.0	2325.8	2106.9	2121.9	1912.6	1932.2	1631.4	1649.7
21 Pr	3.49	3.50	3.17	3.19	2.88	2.91	2.45	2.48
22 Tr	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.38
23 Z	0.678	0.678	0.676	0.676	0.680	0.680	0.698	0.697

Pc = 2478.2 Pc2 = 6141.5

Pt2 =	3305.9	Pw =	1845.6
	2690.3		1694.1
	2161.5		1562.0
	1476.7		1374.5
Pc2-Pw2=	2735.3	Pw2 =	3406.1
	3271.5		2870.0
	3701.7		2439.8
	4252.4		1889.1
n =			1.000
Pc2/(Pc2-Pw2) =			2.245
			1.877
			1.659
			1.444
[Pc2/Pc2-Pw2]n =			2.245
			1.877
			1.659
			1.444
AOF= Q			6.774
			7.596
			8.317
			8.661

FORM C122-D

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

NO. OF BBLS PRODUCED	=	35.0
API GRAVITY @ 60 DEG.	=	58.5
SPECIFIC GRAVITY OF GAS	=	0.7090
TOTAL GAS PRODUCED	=	753
G.O.R.	=	21.515
G.MIX	=	0.837

Laboratory Services, Inc.

4016 Fiesta Drive
Hobbs, New Mexico 88240

Telephone: (505) 397-3713

FOR: Jarrel Services Inc.
Attetnion: Mr. Donnie Dickerson
P. O. Box 1230
Hobbs, New Mexico 88240

SAMPLE:
IDENTIFICATION: GACH 31 State #2
COMPANY: Conoco Phillips
LEASE:
PLANT:

SAMPLE DATA:
DATE SAMPLED: 11/4/02 3:15 pm
ANALYSIS DATE: 11/5/02
PRESSURE – PSIG 708
SAMPLE TEMP. °F 81
ATMOS. TEMP. °F

GAS (XX) LIQUID ( )
SAMPLED BY: Jarrel Services
ANALYSIS BY: Vickie Biggs

REMARKS:

COMPONENT ANALYSIS

COMPONENT		MOL PERCENT	GPM
Hydrogen Sulfide	(H2S)		
Nitrogen	(N2)	0.942	
Carbon Dioxide	(CO2)	0.427	
Methane	(C1)	83.633	
Ethane	(C2)	7.476	1.995
Propane	(C3)	3.576	0.983
I-Butane	(IC4)	0.555	0.181
N-Butane	(NC4)	1.020	0.321
I-Pentane	(IC5)	0.457	0.167
N-Pentane	(NC5)	0.477	0.172
Hexane Plus	(C6+)	1.437	0.624
		100.000	4.443

MOLECULAR WT. 20.6099

BTU/CU.FT. – DRY	1224
AT 14.650 DRY	1220
AT 14.650 WET	1199
AT 14.73 DRY	1227
AT 14.73 WET	1206

SPECIFIC GRAVITY –
CALCULATED 0.709
MEASURED