

State of New Mexico
Energy, Minerals and Natural Resources Department

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appropriate district office
See Rule 401 & Rule 1122

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>Conoco</u>					Lease or Unit Name <u>Lockhart B-1</u>				
Type Test ☒ Initial ☐ Annual ☐ Special					Test Date <u>12-23-97</u>		Well No. <u>10</u>		
Completion Date <u>12-6-97</u>		Total Depth <u>3700</u>		Plug Back TD		Elevation		Unit Ltr. Sec. - TWP - Rge. <u>12-5-33-E</u>	
Csg. Size <u>4 1/2</u>	Wt. <u>11.6</u>	d	Set At <u>3700</u>	Perforations: From: <u>2858</u> To: <u>3451</u>			Country <u>36</u>		
Tbg. Size <u>2 3/8</u>	Wt. <u>4.7</u>	d	Set At <u>3389</u>	Perforations: From: To:			Pool		
Type Well - Single - Bradenhead - G.G. or G.O. Multiple <u>Single</u>					Packer Set At <u>None</u>		Formation <u>Yates / Penrose</u>		
Producing Thru <u>Tbg</u>		Reservoir Temp. °F <u>107.9</u>		Mean Annual Temp. °F <u>60</u>		Baro. Press - P _a <u>13.2</u>		Connection <u>Sales</u>	
L <u>3389</u>	H <u>3389</u>	G _g <u>.709</u>	% CO ₂ <u>1.76</u>	% N ₂ <u>6.48</u>	% H ₂ S <u>0</u>	Prover <u>0</u>	Meter Run <u>2.067</u>	Taps <u>F/G</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	
SI										
1.	2.067 X 1.500		25	5.5	45°	240		245		24 Hrs
2.	2.067 X 1.500		30	37	45°	220		220		60 min
3.	2.067 X 1.500		40	52	42°	190		210		60 min
4.	2.067 X 1.500		43	72	38°	120		200		60 min
5.						90		200		60 min

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 _{pv}	Rate of Flow Q, Mcfd
1.	12.76	14.49	38.2	1.015	1.188	1.060	236
2.	12.76	39.97	43.2	1.015	1.188	1.060	651
3.	12.76	52.59	53.2	1.018	1.188	1.061	861
4.	12.76	63.61	56.2	1.022	1.188	1.062	1046
5.							

NO.	P _r	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio	N/A	Mcf/bbl
1.	.75	505	1.35	.890	A.P. I Gravity of Liquid Hydrocarbons	N/A	
2.	.75	505	1.35	.890	Specific Gravity Separator Gas	.709	XXXXXXXXXX
3.	.74	502	1.34	.889	Specific Gravity Flowing Fluid	N/A	XXXXXX
4.	.74	498	1.33	.886	Critical Pressure	671	PSIA
5.					Critical Temperature	372	PSIA

P_c 253.2 - P_w 64.1

NO.	P _c ²	P _w	P _w ²	P _c ² - P _w ²
1.	54.4	233.2	54.4	9.7
2.	41.3	203.2	41.3	22.8
3.	17.7	133.2	17.7	46.4
4.	10.7	103.2	10.7	53.5
5.				

$$1) \frac{P_c^2}{P_c^2 - P_w^2} = 1.199 \quad (2) \left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 1.168$$

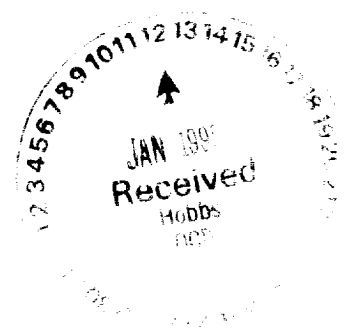
$$AOF = Q \left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 1.222$$

Absolute Open Flow 1.222 Mcfd @ 15.025 Angle of Slope θ 49.42 Slope, n .856

Remarks: * No Fluid Made 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



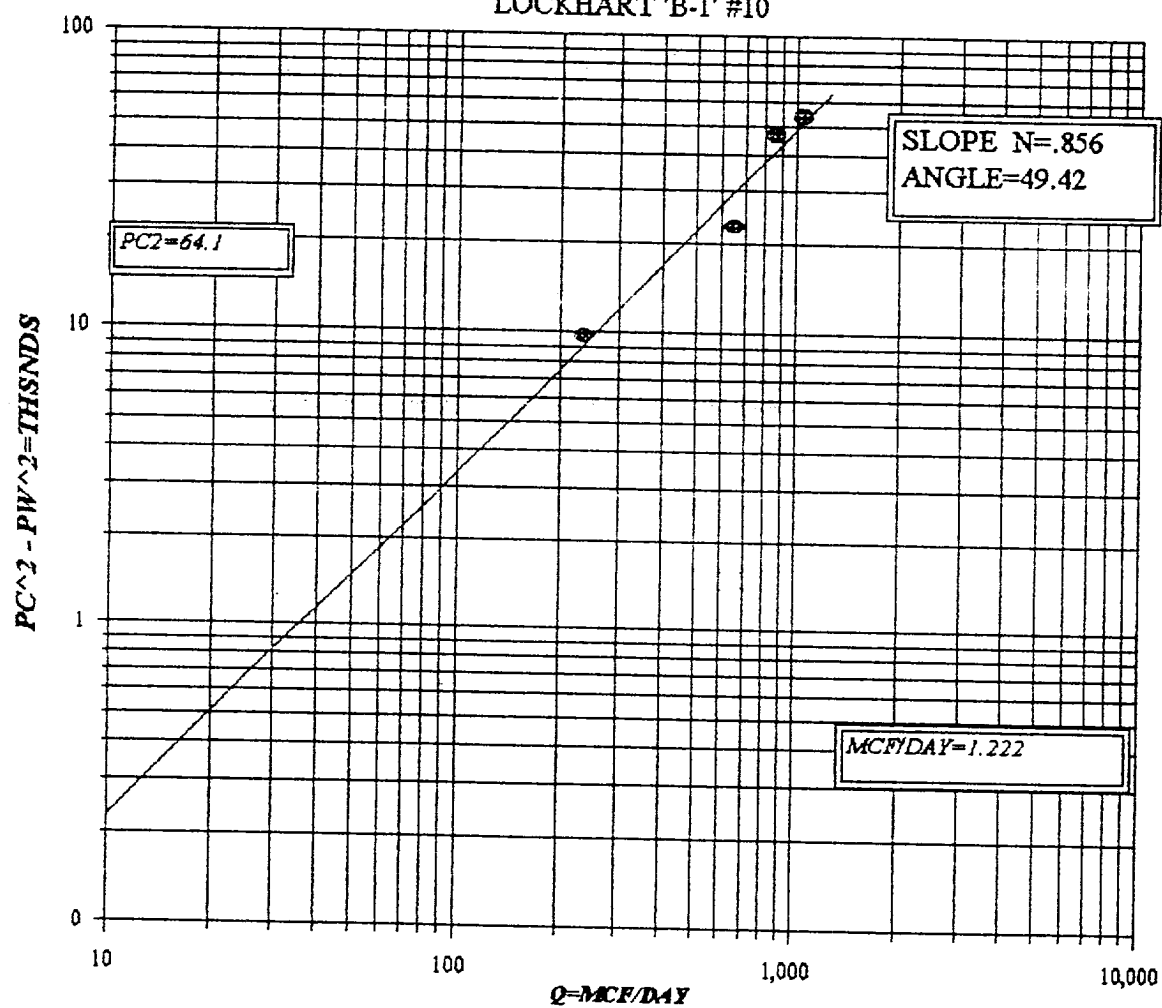
COMPANY : CONOCO LEASE : LOC. RT 8-1 WELL NO. : 10 Pc = 253.2 Pc2 = 64.1
 UNIT : SECTION : 1 TOWNSHIP : 22
 L : 3389 H : 3389 L/H : 0 G/GMIX : 0.709 Pt2 = 54.4 Pw = 233.2
 XC02 : 1.76 XN2 : 6.48 H2S : DATE : 12/23/97 41.3 203.2
 d : 1.995 Fr : 0.018231 GH : 2402.8 RANGE : 33 17.7 133.2
 10.7 103.2

VOL 1 : 236 PSIA 1 : 233.2 RESV.TEMP 107.9 Pc2-Pw2= 9.7 Pw2 = 54.4
 VOL 2 : 651 PSIA 2 : 203.2 22.8 41.3
 VOL 3 : 861 PSIA 3 : 133.2 SHUT-IN PR= 253.2 46.4 17.7
 VOL 4 : 1046 PSIA 4 : 103.2 53.5 10.7

PCR : 671 n = 0.856
 TCR : 372

LINE	RATE 1		RATE 2		RATE 3		RATE 4		
	1ST	2ND	1ST	2ND	1ST	2ND	1ST	2ND	
1 QM	0.236	0.236	0.651	0.651	0.861	0.861	1.046	1.046	
2 TW	534	534	534	534	534	534	534	534	[Pc2/Pc2-Pw2]n = 5.023
3 Ts	567.9	567.9	567.9	567.9	567.9	567.9	567.9	567.9	2.421
4 T	550.9	550.9	550.9	550.9	550.9	550.9	550.9	550.9	1.320
PR (est)	0.35		0.30		0.20		0.15		1.168
5 Z(est)	0.940	0.939	0.945	0.943	0.955	0.955	0.960	0.959	
6 TZ	518.1	517.2	520.6	519.8	526.4	525.9	528.9	528.5	AOF= Q 1.185
7 GH/TZ	4.638	4.646	4.616	4.622	4.565	4.569	4.543	4.547	1.576
8 eS	1.190	1.190	1.189	1.189	1.187	1.187	1.186	1.186	1.136
9 1-e-S	0.160	0.160	0.159	0.159	0.157	0.157	0.157	0.157	1.222
0 Pt	233.2	233.2	203.2	203.2	133.2	133.2	103.2	103.2	
1 Pt2 /1000	54.4	54.4	41.3	41.3	17.7	17.7	10.7	10.7	
2 Fr	0.018231	0.018231	0.018231	0.018231	0.018231	0.018231	0.018231	0.018231	
3 Fc=FrTZ	9.445	9.429	9.491	9.477	9.596	9.587	9.642	9.635	
4 FcQm	2.23	2.23	6.18	6.17	8.26	8.25	10.09	10.08	
5 L/H(FcQm)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
6 Fw	0	0	0	0	0	0	0	0	
7 Pw2	54.4	54.4	41.3	41.3	17.7	17.7	10.7	10.7	
8 Ps2	64.7	64.7	49.1	49.1	21.1	21.1	12.6	12.6	
9 Ps	254.4	254.4	221.6	221.6	145.1	145.1	112.4	112.4	
0 P	243.8	243.8	212.4	212.4	139.2	139.2	107.8	107.8	
1 Pr	0.36	0.36	0.32	0.32	0.21	0.21	0.16	0.16	
2 Tr	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48	
3 Z	0.939	0.939	0.943	0.943	0.955	0.955	0.959	0.959	FORM C122-D

CONOCO INC.
LOCKHART 'B-1' #10





Laboratory Services, Inc.

1331 Tasker Drive
Hobbs, New Mexico 88240
Telephone: (505) 397-3713

FOR: Pro Well Testing & Wireline
Attention: Mr. Merv Buecker
P. O. Box 791
Hobbs, New Mexico 88241

SAMPLE
IDENTIFICATION: Lockhart B-1 #10
COMPANY: Conoco, Inc.
LEASE:
PLANT:

SAMPLE DATA: DATE SAMPLED: 12/23/97 2:00 PM
ANALYSIS DATE: 12/24/97
PRESSURE - PSIG 50
SAMPLE TEMP. °F
ATMOS. TEMP. °F 40

GAS (XX) LIQUID ()
SAMPLED BY: Jim Rice
ANALYSIS BY: Vickie Walker

REMARKS:

COMPONENT ANALYSIS

COMPONENT	MOL PERCENT	GPM
Hydrogen Sulfide (H2S)		
Nitrogen (N2)	6.48	
Carbon Dioxide (CO2)	1.76	
Methane (C1)	78.54	
Ethane (C2)	7.41	1.978
Propane (C3)	3.30	0.907
I-Butane (IC4)	0.41	0.134
N-Butane (NC4)	1.02	0.321
I-Pentane (IC5)	0.32	0.116
N-Pentane (NC5)	0.32	0.115
Hexane Plus (C6+)	0.44	0.181
	100.00	3.752
BTU/CU.FT. - DRY	1101	
AT 14.650 DRY	1097	
AT 14.650 WET	1078	
AT 14.73 DRY	1103	
AT 14.73 WET	1084	
SPECIFIC GRAVITY -		
CALCULATED	0.709	
MEASURED		

MOLECULAR WT. 20.5419