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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 CONOCO INC.					Lease or Unit Name LOCKHART A-35				
Type Test ☒ Initial ☐ Annual ☐ Special					Test Date 1-20-97		Well No. 2		
Completion Date		Total Depth		Plug Back TD 6290		Elevation		Unit Ltr. - Sec. - TWP - Rge. 35 21 37	
Csg. Size 7"	Wt. 23#	d	Set At 6544	Perforations: From: 6102 To: 6176			Country LEA		
Tbg. Size 2-3/8	Wt. 4.7	d 1.995	Set At 6001	Perforations: From: To:			Pool		
Type Well - Single - Bradenhead - G.G. or G.O. Multiple single					Packer Set At 6001			Formation	
Producing Thru tbg		Reservoir Temp. °F 120		Mean Annual Temp. °F 60		Baro. Press - P _a 13.2		Connection SALES	
L 6001	H 6001	G _g .688	% CO ₂ .02	% N ₂ 2.16	% H ₂ S -0.2	Prover -0-	Meter Run 2.068	Taps flg.	

FLOW DATA						TUBING DATA		CASING DATA		Duration of Flow	
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
SI							455	46°	Prv.		60 min
1.	2.068	x	1.000	16	2"	44°	439	46°	"		60min
2.	2.068	x	1.000	19	9"	46°	412	46°	"		60 min
3.	2.068	x	1.000	29	24"	46°	352	50°	"		60 min
4.	2.068	x	1.000	29	24"	48°	205	52°	"		60 min
5.											

RATE OF FLOW CALCULATIONS							
NO.	COEFFICIENT (24 HOUR)	$\sqrt{h_w P_m}$	Pressure P _m	Flow Temp. Factor F _L	Gravity Factor F _g	Super Compress. Factor, F _{pv}	Rate of Flow Q, Mcfd
1.	4.946	7.64	29.2	1.016	1.026	1.002	39
2.	4.946	17.02	32.2	1.014	1.026	1.002	87
3.	4.946	31.82	42.2	1.014	1.026	1.003	164
4.	4.946	31.82	42.2	1.012	1.026	1.003	163
5.							

NO.	P _r	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio	Mcf/bbl
1.	.043	504	1.32	.997	N/A	N/A
2.	.048	506	1.33	.997	N/A	N/A
3.	.063	506	1.33	.994	.688	XXXXXXXXXX
4.	.063	508	1.34	.994	N/A	XXXXXX
5.						

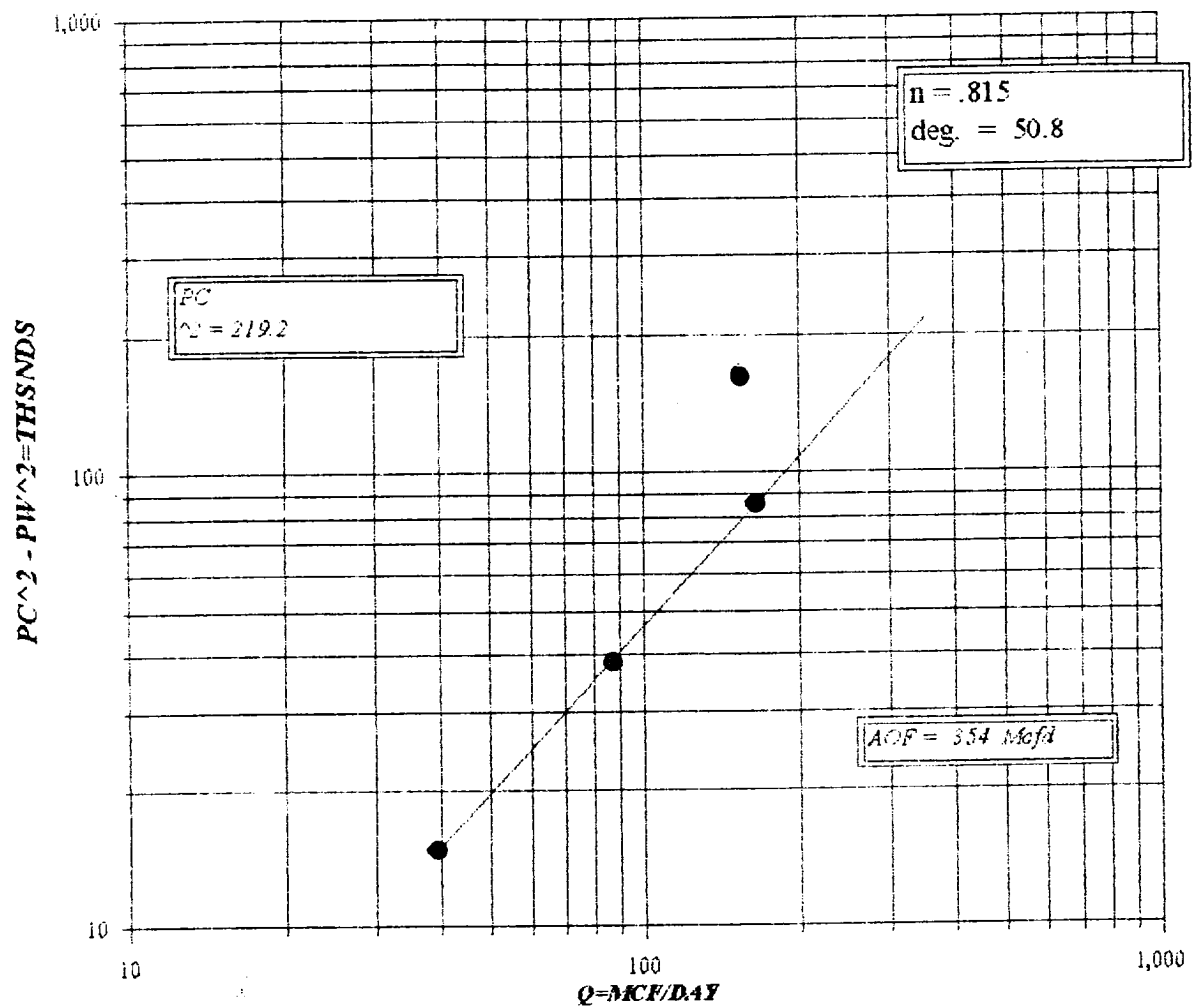
P _c 468.2 P _w 219.2					1) $\frac{P_c^2}{P_c^2 - P_w^2} = 2.572$	2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^2 = 2.159$
NO.	P _i ²	P _w	P _w ²	P _c ² - P _w ²	AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^2 = .354$	
1.	204.5	452.2	204.5	14.7		
2.	180.8	425.4	181.0	38.2		
3.	133.4	366.0	134.0	85.2		
4.	47.6	219.6	48.2	171.0		
5.						

Absolute Open Flow 354	Mcf/d @ 15.025	Angle of Slope Θ 50.82	Slope, n .815
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Remarks:

Approved By Division 	Conducted By: PRO WELL TESTER	Calculated By: MB	Checked By: BM
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CONOCO INC.
LOCKHART "A" 35 #2



0 COMPANY : CONOCO LEASE : LOCKHART A_35 WELL NO. : 2 Pc = 468.2 Pc2 = 219.2
 UNIT : SECTION : TOWNSHIP :
 L : 6001 H : 6001 L/H : 1 G/GMIX : 0.668 Ft2 = 204.5 Fw = 452.2
 XDD2 : 0.02 XN2 : 2.16 H2S : DATE : 1/20/97 180.8 425.4
 d : 1.955 Fr : 0.018231 GH : 4008.7 RANGE : 133.4 365.0
 ===== 47.5 219.6

VOL 1 : 39 PSIA 1 : 452.2 RESV.TEMP 134.0 [Pc2-Pw2= 14.7 Pw2 = 204.5
 VOL 2 : 87 PSIA 2 : 425.2 36.2 181.0
 VOL 3 : 164 PSIA 3 : 365.2 SHUT-IN PR= 468.2 85.2 134.0
 VOL 4 : 163 PSIA 4 : 218.2 171.0 48.2
 FOR : 559 n = 0.815
 FOR : 379
 [Pc2/(Pc2-Pw2)] = 14.920

LINE		RATE 1		RATE 2		RATE 3		RATE 4		
		1ST	2ND	1ST	2ND	1ST	2ND	1ST	2ND	
1	QM	0.039	0.039	0.087	0.087	0.154	0.154	0.163	0.163	
2	TA	534	534	534	534	534	534	534	534	
3	Te	594.0	594.0	594.0	594.0	594.0	594.0	594.0	594.0	
4	T	584.0	584.0	584.0	584.0	584.0	584.0	584.0	584.0	
	PR (est)	0.68		0.64		0.55		0.33		
5	Z(est)	0.909	0.907	0.913	0.908	0.921	0.917	0.943	0.940	
6	TZ	512.4	509.5	514.7	511.9	519.6	517.2	531.9	530.4	
7	GH/TZ	7.822	7.887	7.789	7.831	7.715	7.750	7.537	7.555	
8	es	1.341	1.347	1.339	1.341	1.335	1.337	1.327	1.328	
9	1-e-s	0.254	0.255	0.253	0.254	0.251	0.252	0.246	0.247	
10	Pt	452.2	452.2	425.2	425.2	365.2	365.2	219.2	219.2	
11	Pt2 /1000	204.5	204.5	180.8	180.8	133.4	133.4	47.5	47.5	
12	Fr	0.018231	0.018231	0.018231	0.018231	0.018231	0.018231	0.018231	0.018231	
13	Pc=FrTZ	9.343	9.289	9.383	9.333	9.473	9.430	9.696	9.670	
14	PcQm	0.35	0.35	0.82	0.81	1.55	1.55	1.58	1.56	
15	L/H*PcQm	0.1	0.1	0.7	0.7	2.4	2.4	2.5	2.5	
16	Pw	0.033751	0.033532	0.166767	0.167759	0.406348	0.603178	0.615030	0.6131249	
17	Pw2	204.5	204.5	181.0	181.0	134.0	134.0	48.2	48.2	
18	Pe2	274.2	274.7	242.0	242.7	179.9	179.2	64.0	64.0	
19	Pe	520.7	524.1	492.0	492.7	423.0	423.3	252.9	253.0	
20	P	427.9	433.2	458.7	458.9	394.1	394.2	235.6	235.6	
21	Pr	0.77	0.73	0.67	0.69	0.59	0.59	0.35	0.35	
22	Tr	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	
23	i	0.903	0.903	0.908	0.908	0.917	0.917	0.940	0.940	



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

FOR: Pro Well Testing & Wireline
Attention: Mr. Ray Gallagher
P. O. Box 791
Hobbs, New Mexico 88240

SAMPLE
IDENTIFICATION: Lockhart A-35 #2
COMPANY: Conoco, Inc.
LEASE:
PLANT:

SAMPLE DATA: DATE SAMPLED: 1/20/97 1:30 PM
ANALYSIS DATE: 1/20/97
PRESSURE - PSIG 20
SAMPLE TEMP. °F 46
ATMOS. TEMP. °F

GAS (XX) LIQUID ()
SAMPLED BY: Ray Gallagher
ANALYSIS BY: Vickie Walker

REMARKS: Taken @ the meter run.

COMPONENT ANALYSIS

COMPONENT	MOL PERCENT	GPM
Hydrogen Sulfide (H2S)		
Nitrogen (N2)	2.16	
Carbon Dioxide (CO2)	0.02	
Methane (C1)	81.94	
Ethane (C2)	9.20	2.455
Propane (C3)	4.29	1.179
I-Butane (IC4)	0.44	0.143
N-Butane (NC4)	1.21	0.380
I-Pentane (IC5)	0.26	0.094
N-Pentane (NC5)	0.30	0.108
Hexane Plus (C6+)	0.18	0.074
	100.00	4.433

BTU/CU.FT. - DRY 1183
AT 14.650 DRY 1179
AT 14.650 WET 1159
AT 14.73 DRY 1186
AT 14.73 WET 1165

MOLECULAR WT. 19.9293

SPECIFIC GRAVITY -
CALCULATED 0.688
MEASURED