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

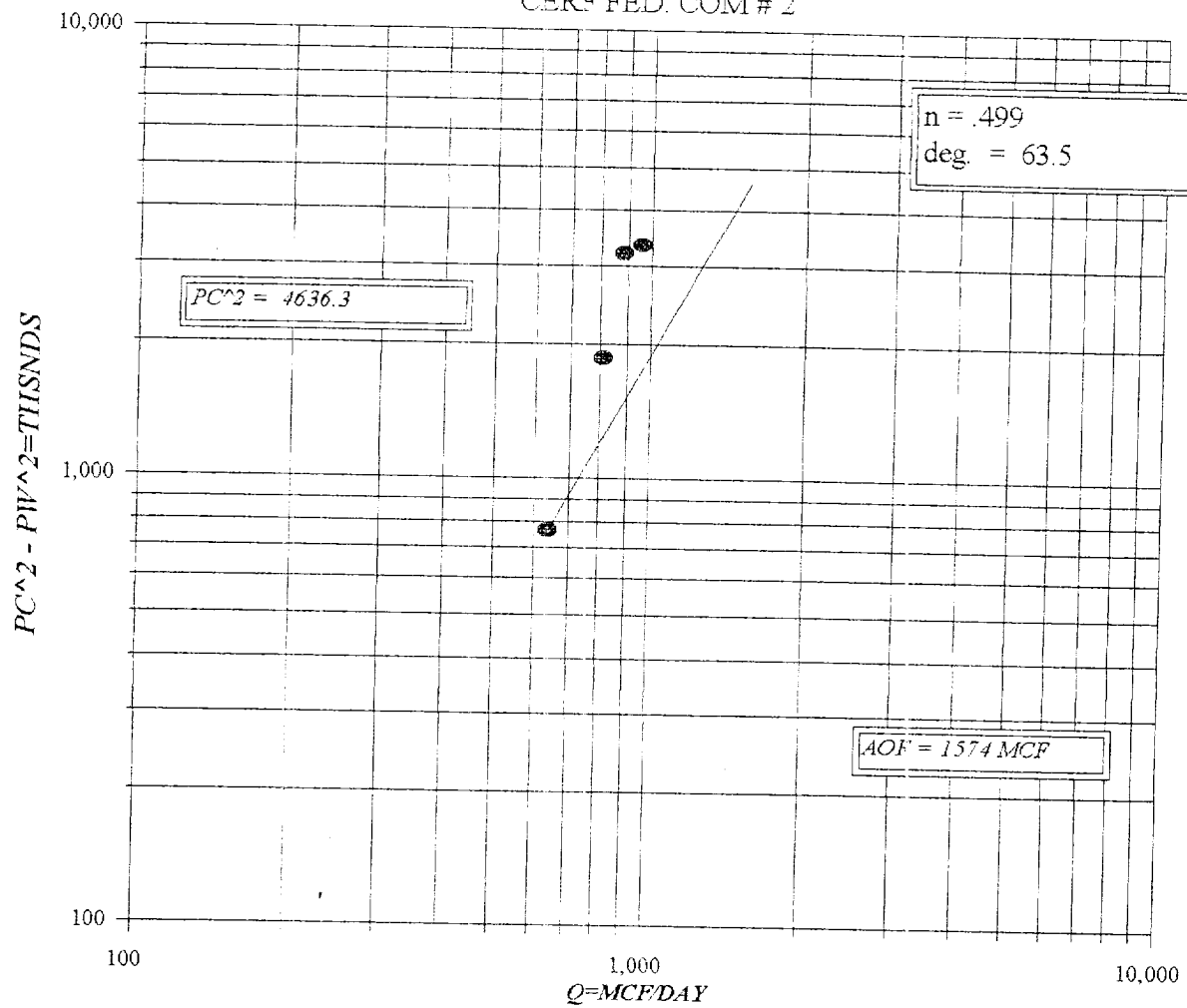
Form C-122
Revised October, 1999

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Operator OCEAN ENERGY (169355)				Lease or Unit Name CERF FED. COM			
Type Test ☒ Initial ☐ Annual ☐ Special				Test Date 5/9/02		Well No. 2	
Completion Date 4/20/02		Total Depth 11572		Plug Back TD 8550		Elevation 10 21 27	
Csg. Size 7"	Wt. 26	d 6.276	Set At 11572	Perforations: From: 8367 To: 8492		County EDDY	
Tbg. Size 2 7/8	Wt. 6.5	d 2.441	Set At 8306	Perforations: From: To:		Pool	
Type Well-Single-Bradenhead-G.G. or G.O. Multiple SINGLE				Packer Set At 8300		Formation STRAWN	
Producing Thru Tbg. Size		Reservoir Temp. °F 157.1 @ 8306		Mean Annual Temp. °F 60		Baro. Press. - P _a 13.2	
L 8306		H 8306		Gg 0.773	%CO ₂	%N ₂	%H ₂ S
				Prover N/A	Meter Run 3.072	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
1	3 X	1.250	38.6		89.4	1953	PKR
2	3 X	1.250	40		95.6	1615	"
3	3 X	1.250	41		86.1	1182	"
4	3 X	1.250	42		84.7	1121	"
5							
RATE OF FLOW CALCULATIONS							
No.	COEFFICIENT (24 Hour)		$\sqrt{h_w P_{in}}$	Pressure P _m	Flow Temp. Factor Ft.	Gravity Factor F _g	Super Compress Factor F _{pv}
1							
2							
3			MEASURED		BY	TOTAL	FLOW
4							
5							
No.	P _r	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio		
1					4.159 Mcf bbl.		
2					A.P. I. Gravity of Liquid Hydrocarbons 46.8 @ 60 Deg.		
3					Specific Gravity Separator Gas 0.773 XXXXXXXX		
4					Specific Gravity Flowing Fluid XXXXX Gmix = 1.415		
5					Critical Pressure N/A P.S.I.A. 666 P.S.I.A.		
					Critical Temperature N/A R. 415 R		
P _c	2153.2		P _w	4636.3			
No.	P _i ²	P _w	P _w ²	P _c ² - P _w ²	(1) $\frac{P_c^2}{P_c^2 - P_w^2} = \frac{6.059}{\quad} (2) \left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = \frac{2.457}{\quad}$		
1		1967.5	3871	765.2			
2		1666.6	2777.4	1858.8			
3		1199.3	1438.4	3197.9			
4		1139.4	1298.3	3338			
5							
Absolute Open Flow				1.574 Mcfd @ 15.625			
Angle of Slope				63.5			
Slope n:				0.499			
Remarks: WELL PRODUCES 33 BBLs 46.8 API GR. FLUID DURING TEST							
Approved By Division:		Conducted By:		Calculated By:		Checked By:	
		O.S.C. US L. W & T.		BM		BM	

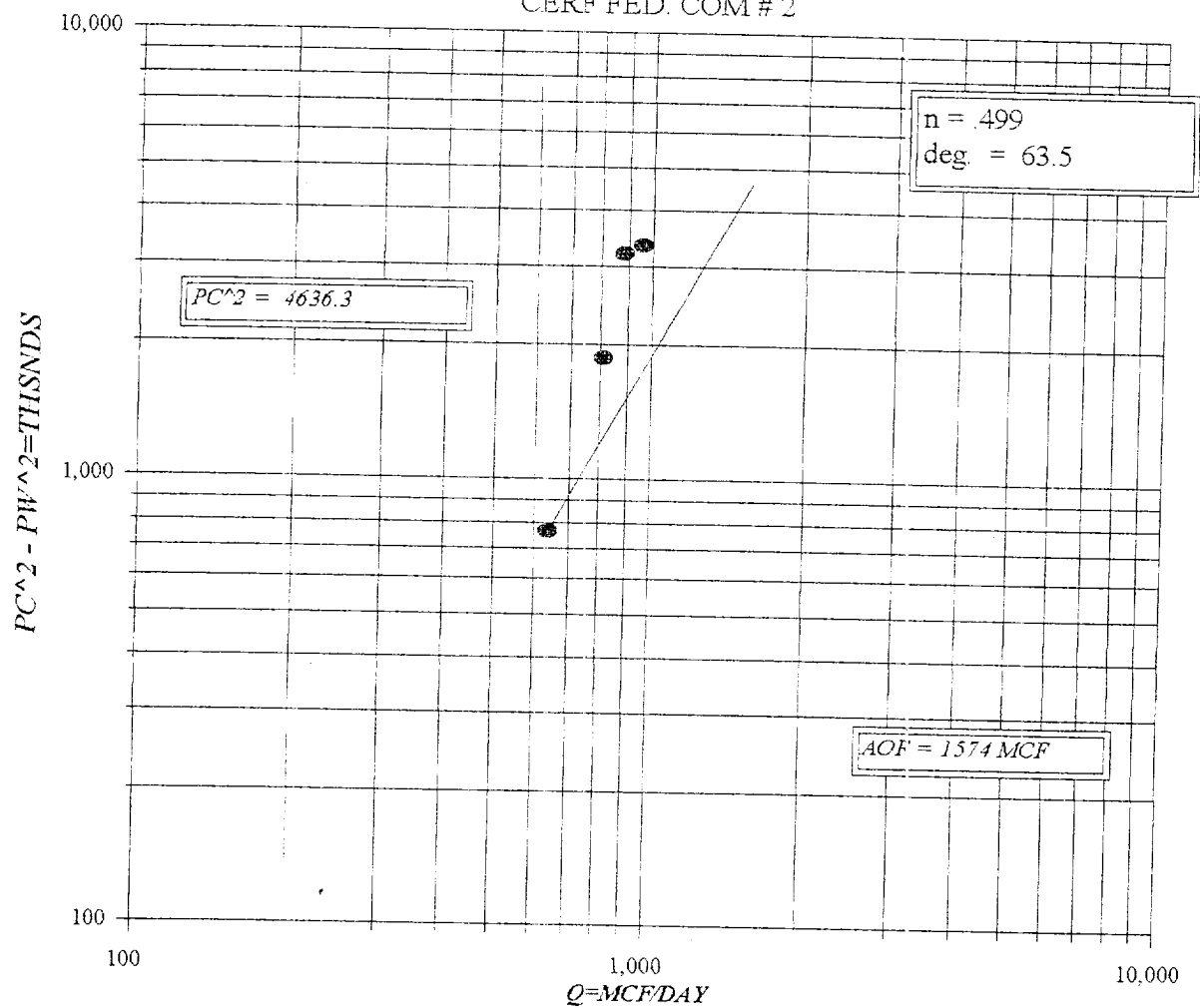
OCEAN ENERGY RESC., INC

CERF FED. COM # 2



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CERF FED. COM # 2



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

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NO. OF BBLS PRODUCED = 33.0

API GRAVITY @ 60 DEG. = 46.8

.....
SPECIFIC GRAVITY OF GAS = 0.7730

XX
TOTAL GAS PRODUCED = 137

G.O.R. = 4.159

G.MIX = 1.415

UNIT : SECTION 10 TCWNSHIP : 21
 L : 8306 H : 8306 L/H : 1 G/GMIX : 1.415
 %CO2 : %N2 : H2S : DATE : 5-09-02
 d : 2.441 Fr : 0.010763 GH : 11753.0 RANGE : 27

PC = 4153.2 PC2 = 4636.3 *

Pt2 = 3865.9 Pw = 1967.5 *
 2769.6 1666.6 *
 1428.5 1199.3 *
 1286.4 1139.4 *

VOL 1 : 641 PSIA 1 : 1966.2 RESV.TEMP 157.1
 VOL 2 : 809 PSIA 2 : 1664.2
 VOL 3 : 884 PSIA 3 : 1195.2 SHUT-IN PR= 2153.2
 VOL 4 : 960 PSIA 4 : 1134.2

PC2-Pw2= 765.2 Pw2 = 3871.0 *
 1858.8 2777.4 *
 3197.9 1438.4 *
 3338.0 1298.3 *

PCR : 666
 TCR : 415

n = 0.499 ✓

PC2/(PC2-Pw2) = 6.059 ✓
 2.494
 1.450
 1.389

LINE	RATE 1		RATE 2		RATE 3		RATE 4	
	1ST	2ND	1ST	2ND	1ST	2ND	1ST	2ND
1 QM	0.641	0.641	0.809	0.809	0.884	0.884	0.960	0.960
2 TW	534	534	534	534	534	534	534	534
3 Ts	617.1	617.1	617.1	617.1	617.1	617.1	617.1	617.1
4 T	575.5	575.5	575.5	575.5	575.5	575.5	575.5	575.5
PR (est)	2.95		2.50		1.79		1.70	
5 Z(est)	0.683	0.697	0.700	0.681	0.757	0.706	0.766	0.715
6 TZ	393.1	401.0	402.7	391.9	435.4	406.4	441.0	411.4
7 GH/TZ	29.899	29.313	29.183	29.992	26.993	28.922	26.654	28.566
8 eS	3.069	3.002	2.987	3.079	2.752	2.958	2.717	2.919
9 l-e-S	0.674	0.667	0.665	0.675	0.637	0.662	0.632	0.657
10 Pt	1966.2	1966.2	1664.2	1664.2	1195.2	1195.2	1134.2	1134.2
11 Pt2 /1000	3865.9	3865.9	2769.6	2769.6	1428.5	1428.5	1286.4	1286.4
12 Fr	0.010763	0.010763	0.010763	0.010763	0.010763	0.010763	0.010763	0.0107631
13 Fc=FrTZ	4.231	4.315	4.335	4.218	4.686	4.374	4.746	4.428
14 FcQm	2.71	2.77	3.51	3.41	4.14	3.87	4.56	4.25
15 L/H(FcQm)	7.4	7.7	12.3	11.6	17.2	14.9	20.8	18.1
16 Fw	4.958164	5.102931	8.180572	7.861851	10.92526	9.895749	13.11837	11.881315
17 Pw2	3870.9	3871.0	2777.7	2777.4	1439.4	1438.4	1299.5	1298.3
18 Ps2	11877.9	11620.3	8298.0	8552.5	3961.0	4255.1	3530.8	3789.6
19 Ps	3446.4	3408.9	2880.6	2924.5	1990.2	2062.8	1879.0	1946.7
20 P	2706.3	2687.5	2272.4	2294.3	1592.7	1629.0	1506.6	1540.4
21 Pr	4.06	4.04	3.41	3.44	2.39	2.45	2.26	2.31
22 Tr	1.39	1.39	1.39	1.39	1.39	1.39	1.39	1.39
23 Z	0.697	0.696	0.681	0.681	0.706	0.703	0.715	0.711

[PC2/PC2-Pw2]n = 2.457 ✓
 1.578
 1.204
 1.178

ADF= Q 1.574 ✓
 1.276
 1.064
 1.131

FORM C122-D