



C/S 12

OPERATIONS LOG

CONFIDENTIAL

COMPANY: POGO PRODUCING CO.
LEASE: STATE "W" # 2
FIELD (FORMATION): SOUTH CARLSBAD MORROW (MORROW)
COUNTY: EDDY
STATE: NM

TEST TYPE: FOUR POINT

ENGINEER: REX JASPER
FIELD REP: CLAY OSBORNE
JOB RUN BY: TERRY M. & KEITH A.
DATA PREPARED BY: ROD DODSON
INSTRUMENT:

DATE	TIME	DWG	OPERATIONS LOG - JOB NUMBER: 24807
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2/24/01 12:30:00 PM	3523	START 1ST RATE OF FOUR POINT @ 4/64" CHOKE *
2/24/01 01:30:00 PM	3501	END 1ST RATE, START 2ND RATE @ 6/64" CHOKE
2/24/01 02:30:00 PM	3413	END 2ND RATE, START 3RD RATE @ 10/64" CHOKE
2/24/01 02:45:00 PM	2891	CUT 3RD RATE BACK TO 9/64" CHOKE
2/24/01 03:30:00 PM	3118	END 3RD RATE, START 4TH RATE @ 16/64" CHOKE
2/24/01 04:30:00 PM	2656	END 4TH RATE

* Four-point test conducted from surface, no downhole gauges used for bottomhole pressure measurement.

4
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OCD - ARTESIA

NEW MEXICO OIL CONSERVATION COMMISSION
MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Form C-122
Revised 9-1-65

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OCD - ARTESIA

Type Test ☒ Initial ☐ Annual ☐ Special						Test Date 2/24/01			
Company POGO PRODUCING CO.				Connection					
Pool S Carlsted Morrow				Formation MORROW				Unit	
Completion Date		Total Depth		Plug Back TD 11900		Elevation		Farm or Lease Name STATE "W"	
Csg. Size 5.0	Wt. 18	d 4.276	Set At 12000	Perforations: From 11648 To 11678		Well No. 2			
Tbg. Size 2.375*	Wt. 4.7	d 1.995	Set At 11629	Perforations: From To		Unit Sec. Twp Rge m 3 23 26			
Type Well - Single - Bradenhead - G.G. or G.O. Multiple SINGLE						Packer Set At 11606		County EDDY	
Producing Thru TUBING		Reservoir Temp. °F 170 @ 11663		Mean Annual Temp. °F 60		Baro. Press. - P _a 13.2		State NM	
L 11663	H 11663	G _g 0.5855	% CO ₂	% N ₂	% H ₂ S	Prover	Meter Run 4.026	Taps FLANGE	

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							3523	64			1.5
1	4.026		2.250	367	0.5	110	3501	66			1.0
2	4.026		2.250	372	2.6	132	3413	68			1.0
3	4.026		2.250	429	10.8	85	3118	68			1.0
4	4.026		2.250	478	20.1	67	2656	64			1.0
5											

RATE OF FLOW CALCULATIONS							
NO	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P _m	Flow Temp. Factor Ft	Gravity Factor Fg	Super. Compress. Factor, Fpv	Rate of Flow Q, Mcfd
1	25.64	13.78	380	0.9551	1.3069	1.0232	451.4
2	25.64	31.64	385	0.9372	1.3069	1.0196	1013.1
3	25.64	69.09	442	0.9768	1.3069	1.0311	2321.2
4	25.64	99.34	491	0.9933	1.3069	1.0398	3438.2
5							

NO	P _r	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio <u>0.0</u> Mcf/bbl A.P.I. Gravity of Liquid Hydrocarbons <u>N/A</u> Deg Specific Gravity Separator Gas <u>0.5855</u> XXXXXXXXXX Specific Gravity Flowing Fluid <u>XXXX</u> 0.5855 Critical Pressure <u>673</u> PSIA 673 PSIA Critical Temperature <u>354</u> R 354 R
1	0.56	570	1.61	0.956	
2	0.57	592	1.67	0.962	
3	0.66	545	1.54	0.940	
4	0.73	527	1.49	0.925	

P _c 3533.8	P _c ² 12488		
NO	P _r ²	P _w ²	P _c ² - P _w ²
1		3511	12328
2		3429	11758
3		3184	10136
4		2812	7906
5			

$$(1) \frac{P_c^2}{P_c^2 - P_w^2} = 2.7252$$

$$AOF = Q \left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 6313$$

$$(2) \left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 1.8360$$

Absolute Open Flow <u>6313</u> Mcfd @ 15.025	Angle of Slope θ <u>58.8</u>	Slope, n <u>0.606</u>
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Remarks <u>* 2.875", 6.5#, 2.441" ID tubing set at 9300'</u>
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Approved By Commission	Conducted By:	Calculated By: Rod Dodson	Checked By:
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Operator: TERRY M. & KEITH A.
Job #: 24807
Ticket #:

Company: POGO PRODUCING CO.
Lease: STATE "W"
Well #: 2

[illegible]

Company	POCO PRODUCING CO	Lease:	STATE "W"	Well #	2	Operator:	TERRY M. & KEITH A	Job #	24807
METER INFORMATION		FLUID PROPERTIES							
		Test Dates							
		2/24/01							
		Ticket #							

H ₂ O Tank, bbl/in:	
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GAS WELL BACK-PRESSURE CURVE

POGO PRODUCING CO.
STATE "W" #2
EDDY COUNTY, NM
2/24/01

$n = 0.606$

$\theta = 58.8^\circ$

AOF = 6313 Mcf/day

