

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

RECEIVED BY

Form C-122
Revised 1-1-65

MAY 13 1985

O. C. D.
ARTESIA, OFFICE

Type Test ☒ Initial ☐ Annual ☐ Special				Test Date 5-28-85	
Company TRANSWESTERN ✓				Connection PIPELINE	
Pool UD Und. Abo				Formation ABO	
Completion Date 1-24-85		Total Depth 3450		Plug Back TD 3191	
				Elevation 4475 GR	
Csg. Size 4.5	Wt. 10.5	d 	Set At 3228	Perforations: From 3044 To 3068	
Trq. Size 2.375	Wt. 4.7	d 1.995	Set At 3026	Perforations: From OPEN To	
Type Well - Single - Prodenhead - G.G. or G.O. Multiple SINGLE				Packer Set At	
Producing Thru TUBING				Baro. Press. - P _a 13.2	
Reservoir Temp. °F 		Mean Annual Temp. °F 60		State NEW MEXICO	
L 3056	H 3056	Gg .619	% CO ₂ .029	% N ₂ 5.754	% H ₂ S 0
Prover 0		Meter Run 2.067		Flange 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.	
5!							330	80	330	
1.	2.07	X	1.000	50	4.0	80	313	80	313	6/64
2.	2.07	X	1.000	55	6.5	80	287	80	287	8/64
3.	2.07	X	1.000	60	10.0	80	254	80	254	10/64
4.	2.07	X	1.000	65	11.5	80	219	80	219	11/64
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, M/d
1	4.95	15.90	63.2	0.9813	1.2710	1.0044	99
2	4.95	21.05	68.2	0.9813	1.2710	1.0047	131
3	4.95	27.06	73.2	0.9813	1.2710	1.0051	168
4	4.95	29.99	78.2	0.9813	1.2710	1.0054	186
5.							

NO.	P _t	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio	Mcf/bbl.
1.	0.10	540	1.55	0.991	0	
2.	0.10	540	1.55	0.991	0	
3.	0.11	540	1.55	0.990	0.619	XXXXXX
4.	0.12	540	1.55	0.989	0.619	XXXXXX
5.						

$P_c = 342.7$ $P_c^2 = 117$				A.P.I. Gravity of Liquid Hydrocarbons _____ Deg.
Specific Gravity Separator Gas _____				Specific Gravity Flowing Fluid _____
Critical Pressure _____ P.S.I.A.				Critical Temperature _____ °R
(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 2.5435$				(2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 2.4252$
NO.	P _t ²	P _w ²	P _w ² - P _t ²	$ADP = Q \left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 407$
1		326	106	
2		300	90	
3		267	71	
4		232	54	
5				

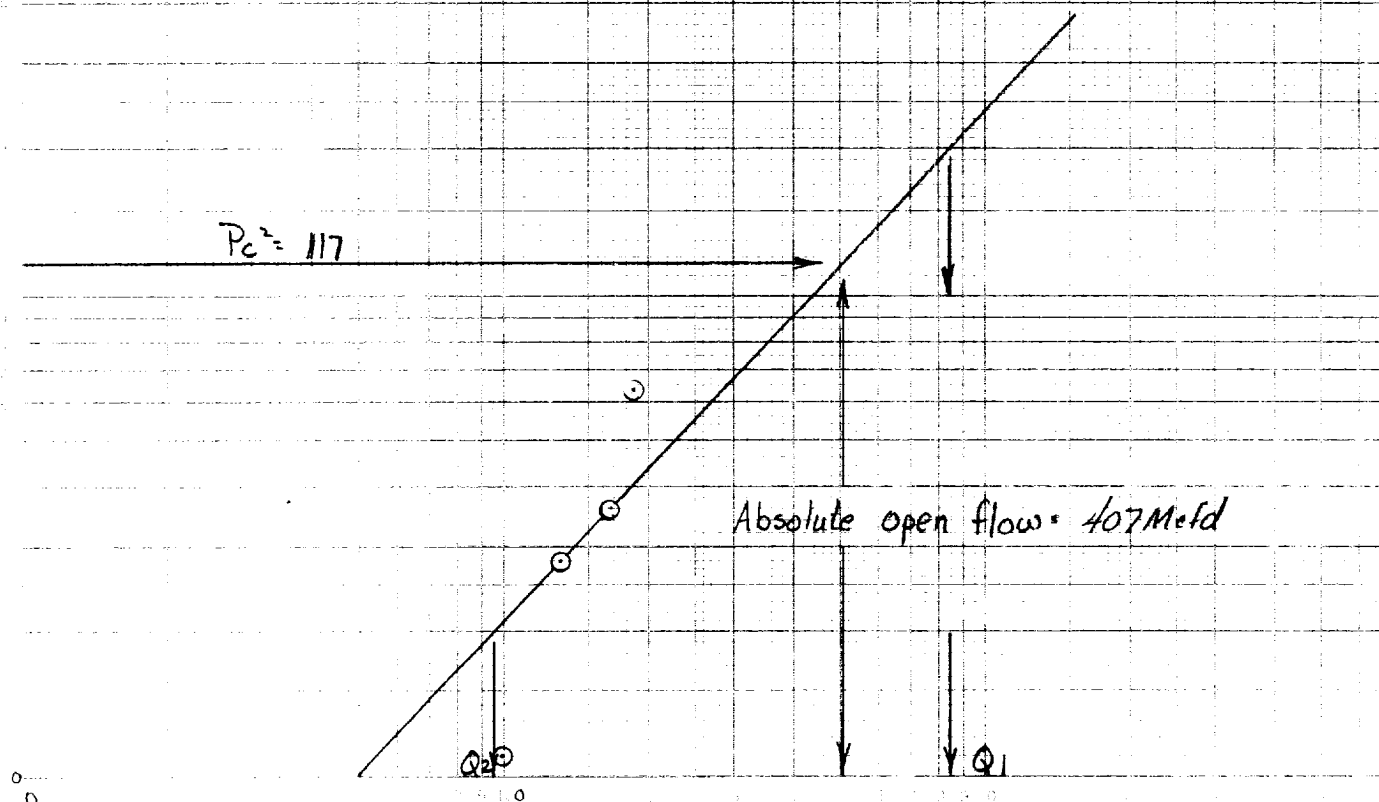
Absolute Open Flow	407	Mcf/d @ 15.025	Angle of Slope θ	46.5	Slope, n	.949
Remarks:						
Approved By Commission: _____ Conducted By: BENNETT & CATHEY Calculated By: RICHARD TOWNLEY Checked By: _____						

BENNETT & CATHEY PRODUCTION TESTING BACK PRESSURE CUR

Operator Transwestern Gas Supply Lease Pronghorn Well No. 1
 County Chaves Field Pecos Slope Location 30 45 22E
 Date of Test 5-28-85 Slope "n" .949 Angle of Slope 46.5
 Calc. Abs. Potential 407 MCF/D

(Pc - P_w)² & (Pc - P_w) in Thousands
 46 7400

LOG LOGARITHMIC 3 X 3 CYCLES
 PLOT OF P_w vs. Q_w

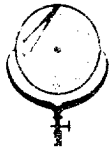


$$\begin{aligned} \overline{\Delta P_1^2} \quad P_c^2 - P_{w1}^2 &= \underline{200} \\ \overline{\Delta P_2^2} \quad P_c^2 - P_{w2}^2 &= \underline{20} \\ Q_1 &= \underline{849} \\ Q_2 &= \underline{95.5} \end{aligned}$$

Q in MCF/Day

$$\begin{aligned} \text{LOG } Q_1 &= \underline{2.9290} \\ \text{LOG } Q_2 &= \underline{1.9800} \\ n &= \underline{0.949} \end{aligned}$$

"Let Your Interest in Measurement be our Concern"



PRECISION SERVICE INC.

Flow Measurement Engineers
Analysis Results Summary
Casper, WY 82601

Run No. 131-2
Date Run 01/31/85
Date Sampled 01/30/85

Analysis of TRANSWESTERN GAS SUPPLY
Lease Frachorn Federal #1 Producer Transwestern Gas Supply
Location Antelope Ridge County Chaves State New Mexico
Purpose New Well Sampled By J. Dougherty
Sampling Temp. 60 °F Atmos Temp 38 °F
Volume/day _____ Formation Abc
Pressure on Bomb 70 PSIG; Line Pressure 83.2 PSIA PSIG _____

Gas Component Analysis Press. Base: 14.73

Gas Component	Mol %	Liq. %	GPM Per MCF	
Carbon Dioxide CO ₂	0.29			BTU Dry <u>10</u>
Carbon Monoxide CO	0.58			BTU Wet <u>99</u>
Nitrogen N ₂	5.754			Calc. Specific Gravity <u>0.1</u>
Hydrogen Sulfide H ₂ S				
				@ Std. Press. 14.696
Methane CH ₄	90.052		15.262	BTU Dry <u>100</u>
Ethane C ₂ H ₆	1.941		519	BTU Wet <u>99</u>
Propane C ₃ H ₈	1.049		289	
Isobutane iC ₄ H ₁₀	1.64		054	Calc. Vap. Press. #/Sq.in. _____
n-Butane nC ₄ H ₁₀	5.10		161	Reid Vap. Press. #/Sq.in. _____
Isopentane iC ₅ H ₁₂	1.17		043	Z Factor <u>0.997</u>
Normal Pentane nC ₅ H ₁₂	1.92		070	N Value <u>1.306</u>
Hexanes C ₆ H ₁₄	1.35		062	Ave Mol Wt <u>17.885</u>
Heptanes C ₇ H ₁₆				Ave Cu Ft/Gal _____
Heptanes Plus C ₇ +				Run by <u>Jeffrey A. Propp</u>
Total	100.000		16.460	Calculated By <u>Jeffrey A. Propp</u>
Butane + GPM			1.174	
Propane + GPM			0.678	Ethane + GPM <u>1.197</u>
14.73 Sat. Line			0.682	

Overall FIELD GRAV.: 0.620

Distribution