

## MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool Astec-Fruitland Formation Fruitland County San Juan  
(Deal with Astec-Piedra Cliffs)  
Initial I Annual \_\_\_\_\_ Special \_\_\_\_\_ Date of Test November 2, 1959  
Company Pan American Petroleum Corp. Lease Abrams Gas Unit "D" Well No. 1  
Unit I Sec. 29 Twp. 29N Rge. 16W Purchaser El Paso Natural Gas Company  
Casing 5-1/2 Wt. 14 I.D. 5.012 Set at 1075 Perf. 1616 To 1666  
Tubing 1-1/4 Wt. 2.3 I.D. 1.300 Set at 1650 Perf. 1640 To 1650  
Gas Pay: From 1616 To 1666 L 1616 xG 0.65 (est.) GL 1090 Bar.Press. 12  
Producing Thru: Casing X Tubing I Type Well Gas-Gas Dual  
Single-Bradenhead-G. G. or G.O. Dual  
Date of Completion: 10-22-59 Packer 1700 Reservoir Temp. 90° F

## OBSERVED DATA

Tested Through (1616) (Choke) (1640) Type Taps \_\_\_\_\_

No.	Flow Data					Tubing Data		Casing Data		Duration of Flow Hr.
	(Line) Size	(Choke) Size	Press. psig	Diff. h <sub>w</sub>	Temp. °F.	Press. psig	Temp. °F.	Press. psig	Temp. °F.	
SI	Shut in 11 days									
1.	2"	3/8"	27		60° (est.)	653		653		3 hours
2.										
3.										
4.										
5.										

## FLOW CALCULATIONS

No.	Coefficient (24-Hour)	$\sqrt{h_w P_f}$	Pressure psia	Flow Temp. Factor F <sub>t</sub>	Gravity Factor F <sub>g</sub>	Compress. Factor F <sub>pv</sub>	Rate of Flow Q-MCFPD @ 15.025 psia
1.	12.345		39	1.000	0.9838	1.000	143
2.							
3.							
4.							
5.							

## PRESSURE CALCULATIONS

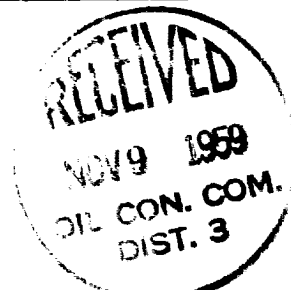
Gas Liquid Hydrocarbon Ratio \_\_\_\_\_ cf/bbl.  
Gravity of Liquid Hydrocarbons \_\_\_\_\_ deg.  
F<sub>c</sub> \_\_\_\_\_ (1-e<sup>-s</sup>)

Specific Gravity Separator Gas \_\_\_\_\_  
Specific Gravity Flowing Fluid \_\_\_\_\_  
P<sub>c</sub> 665 P<sub>c</sub> 442,225

No.	P <sub>w</sub> P <sub>t</sub> (psia)	P <sub>t</sub> <sup>2</sup>	F <sub>c</sub> Q	(F <sub>c</sub> Q) <sup>2</sup>	(F <sub>c</sub> Q) <sup>2</sup> (1-e <sup>-s</sup> )	P <sub>w</sub> <sup>2</sup>	P <sub>c</sub> <sup>2</sup> -P <sub>w</sub> <sup>2</sup>	Cal. P <sub>w</sub>	P <sub>w</sub> P <sub>c</sub>
1.						3,844	432,321		
2.									
3.									
4.									
5.									

Absolute Potential: 447 MCFPD; n 0.85  
COMPANY Pan American Petroleum Corporation  
ADDRESS Box 487, Farmington, New Mexico  
AGENT and TITLE H. H. Bauer, Jr., Area Engineer *H. H. Bauer, Jr.*  
WITNESSED \_\_\_\_\_  
COMPANY \_\_\_\_\_

REMARKS



## INSTRUCTIONS

This form is to be used for reporting multi-point back pressure tests on gas wells in the State, except those on which special orders are applicable. Three copies of this form and the back pressure curve shall be filed with the Commission at Box 871, Santa Fe.

The log log paper used for plotting the back pressure curve shall be of at least three inch cycles.

## NOMENCLATURE

$Q$  = Actual rate of flow at end of flow period at W. H. working pressure ( $P_w$ ).  
MCF/da. @ 15.025 psia and 60° F.

$P_c$  = 72 hour wellhead shut-in casing (or tubing) pressure whichever is greater.  
psia

$P_w$  = Static wellhead working pressure as determined at the end of flow period.  
(Casing if flowing thru tubing, tubing if flowing thru casing.) psia

$P_t$  = Flowing wellhead pressure (tubing if flowing through tubing, casing if flowing through casing.) psia

$P_f$  = Meter pressure, psia.

$h_w$  = Differential meter pressure, inches water.

$F_g$  = Gravity correction factor.

$F_t$  = Flowing temperature correction factor.

$F_{pv}$  = Supercompressability factor.

$n$  = Slope of back pressure curve.

Note: If  $P_w$  cannot be taken because of manner of completion or condition of well, then  $P_w$  must be calculated by adding the pressure drop due to friction within the flow string to  $P_t$ .

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