

## MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool Atoka Formation Pennsylvania County Eddy  
Initial \_\_\_\_\_ Annual \_\_\_\_\_ Special X Date of Test 8-27-61  
Company Yates Petroleum Company Lease B. Gushwa Well No. 1  
Unit 6 Sec. 21 Twp. 18S Rge. 26E Purchaser Trans-Western Pipeline Company  
Casing 5 1/2 Wt. 17.00 I.D. 4.892 Set at 9178 Perf. 9052 To 9129  
Tubing 2 Wt. 4.70 I.D. 1.995 Set at 9045 Perf. \_\_\_\_\_ To \_\_\_\_\_  
Gas Pay: From 9052 To 9129 L 9090 xG .653 -GL 5935.8 Bar.Press. 13.2  
Producing Thru: Casing \_\_\_\_\_ Tubing X Type Well Single  
Date of Completion: 3-15-61 Packer None Reservoir Temp. \_\_\_\_\_  
Single-Bradenhead-G. G. or G.O. Dual

## OBSERVED DATA

Tested Through (Prover) (Choke) (Meter)Type Taps Flange

No.	Flow Data			Tubing Data		Casing Data		Duration of Flow Hr.
	(Prover) (Line) Size	(Choke) (Orifice) Size	Press. psig	Diff. h <sub>w</sub>	Temp. °F.	Press. psig	Temp. °F.	
SI	4.000	1.875				2723	72	76
1.	4.000	1.875	660	7	76	2634	68	3
2.	"	"	660	17	72	2593	71	3
3.	"	"	675	40	74	2518	75	3
4.	"	"	770	59.5	86	2443	78	24
5.								

## FLOW CALCULATIONS

No.	Coefficient (24-Hour)	$\sqrt{h_{wpf}}$	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.	22.28	68.65	673.2	.9850	.9759	1.059	1,556 1554.6
2.	"	106.95	673.2	.9887	.9759	1.061	2,440 2435.6
3.	"	165.90	688.2	.9868	.9759	1.059	3,769 3770.9
4.	" 215.87	218.62	805.2	.9759	.9759	1.064	4,936 4861.6
5.			783.2				

## PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio 133.245 cf/bbl.  
Gravity of Liquid Hydrocarbons 53.8 deg.  
C. measured (1-e<sup>-s</sup>)

Specific Gravity Separator Gas .632  
Specific Gravity Flowing Fluid .636  
P<sub>c</sub> 2736.2 P<sub>c</sub> 7486.4

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.	2662.2					7087.3	399.5	97.3	
2.	2662.2					6986.4	600.4	95.9	
3.	25166.2					6395.3	901.5	93.8	
4.	25107.2					6286.1	1200.7	91.6	
5.									

Absolute Potential: 30,000 MCFPD; n 1.0000COMPANY Yates Petroleum CompanyADDRESS Carper Bldg. Artesia, New MexicoAGENT and TITLE Agent

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  $P_t$ .