

## NEW MEXICO OIL CONSERVATION COMMISSION

ELVIS A. UTZ  
GAS ENGINEER

Form C-122

Revised 12-1-55

## MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool Rumont Formation Queen County LeaInitial \_\_\_\_\_ Annual \_\_\_\_\_ Special X Date of Test 9-12-56Company Phillips Petroleum Co. Lease Mexico Well No. 3Unit A Sec. 18 Twp. 20S Rge. 37E Purchaser Permian Basin PipelineCasing 7" Wt. 24.4 I.D. 6.37" Set at 3752' Perf. 3305' To 3450'Tubing 2-1/2" Wt. 6.5 I.D. 2.441" Set at 3847.5' Perf. 3839' To 3844'Gas Pay: From 3305' To 3480 L 3305 xG .670 -GL 2214 Bar.Press. 13.2Producing Thru: Casing X Tubing \_\_\_\_\_ Type Well gas-oil dualDate of Completion: 2-4-55 Packer 3475' Single-Bradenhead-G. G. or G.O. DualCO<sub>2</sub> - 2.46%N<sub>2</sub> - 0.96%

OBSERVED DATA

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

Flow Data						Tubing Data		Casing Data		Duration of Flow Hr.
No.	(Prover) (Line) Size	(Choke) (Orifice) Size	Press. psig	Diff. h <sub>w</sub>	Temp. °F.	Press. psig	Temp. °F.	Press. psig	Temp. °F.	
SI										
1.	4	1.5	457.1	4.6	102			953.9		73-1/4
2.	4	1.5	460.0	10.7	96			815.0		23-3/4
3.	4	1.5	464.6	25.2	99			758.0		24
4.	4	1.5	456.7	43.0	63			664.4		24
5.								580.7		24

## 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.	15.26	46.51		.9618	0.9463	1.040	678
2.		71.15		1.0039		1.036	1089
3.		109.7		1.0010		1.035	1655
4.		142.2		0.9962		1.032	2152
5.							

## PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio 153,400 cf/bbl.  
Gravity of Liquid Hydrocarbons \_\_\_\_\_ deg.  
F<sub>c</sub> .865 (1-e<sup>-S</sup>) .141Specific Gravity Separator Gas -  
Specific Gravity Flowing Fluid .67  
P<sub>c</sub> 967.1 P<sub>c</sub><sup>2</sup> 935.3

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.	828.2	685.9	0.5013	0.2513	0.0677	685.9	249.4	828.2	.86
2.	763.2	582.3	0.9420	0.8874	0.1251	582.6	352.7	763.3	.79
3.	677.6	459.1	1.4316	2.047	0.2886	459.4	475.9	677.8	.70
4.	593.6	352.7	1.8615	3.460	0.4879	353.3	582.1	594.3	.61
5.									

Absolute Potential: 3,456 MCFPD; n 1.0 limitedCOMPANY Phillips Petroleum Co.ADDRESS Box 2105, Hobbs, N.M.AGENT and TITLE W. A. Roberts, District Production Supt.

WITNESSED

COMPANY

retest

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  $P_t$ .