

## NEW MEXICO OIL CONSERVATION COMMISSION

Form C-122

Revised 12-1-55

HOBBS OFFICE OCC  
MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool Elmest 1956 OCT 8 PM 2:22 Location Queen County Lee  
Initial \_\_\_\_\_ Annual \_\_\_\_\_ Special X Date of Test 9-24 to 9-28-56  
Company El Paso Natural Gas Company Lease Shell State Well No. 9  
Unit 1 Sec. 6 Twp. 21 S Rge. 36 E Purchaser El Paso Natural Gas Company  
Casing 5 1/2 Wt. 15.5 I.D. 4.976 Set at 3368 Perf. \_\_\_\_\_ To \_\_\_\_\_  
Tubing 2 Wt. 4.7 I.D. 1.995 Set at 3505 Perf. \_\_\_\_\_ To \_\_\_\_\_  
Gas Pay: From 3387 To 3480 L 3505 xG .675 -GL 2366 Bar.Press. 13.2  
Producing Thru: Casing \_\_\_\_\_ Tubing X Type Well Single  
Single-Bradenhead-G. G. or G.O. Dual  
Date of Completion: 11-6-56 Packer None Reservoir Temp. \_\_\_\_\_

## OBSERVED DATA

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

No.	Flow Data					Tubing Data		Casing Data		Duration of Flow Hr.
	(Pressure) (Line) Size	(Choke) (Orifice) Size	Press. psig	Diff. h <sub>w</sub>	Temp. °F.	Press. psig	Temp. °F.	Press. psig	Temp. °F.	
SI						871				72
1.	4"	1.500	597	16.8	86	847				24
2.	4"	1.500	616	13.6	80	812				24
3.	4"	1.500	607	64.0	66	783				24
4.	4"	1.500	609	78.3	66	753 *				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.	13.99	101.26		.9759	.9427	1.057	1.378
2.	13.99	165.53		.9813	.9427	1.062	2.276
3.	13.99	199.20		.9943	.9427	1.066	2.784
4.	13.99	220.72		.9943	.9427	1.066	3.085
5.							

## PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio Dry cf/bbl.  
Gravity of Liquid Hydrocarbons \_\_\_\_\_ deg.  
F<sub>c</sub> 9.936 (1-e<sup>-s</sup>) 0.150

Specific Gravity Separator Gas .675  
Specific Gravity Flowing Fluid \_\_\_\_\_  
P<sub>c</sub> 884.2 P<sub>c</sub> 781.8

No.	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.	860.2	739.9	13.7	187.7	28.2	768.1	13.7	768.1	.97
2.	825.2	681.0	22.6	510.8	76.6	757.6	24.2	757.6	.91
3.	796.2	633.9	27.7	767.3	115.1	749.0	32.8	749.0	.90
4.	766.2	587.1	30.7	942.5	141.4	728.5	53.3	728.5	.86
5.									

Absolute Potential: 34,000 MCFPD; n .798COMPANY El Paso Natural Gas CompanyADDRESS P. O. Box 1384, Jol., New MexicoAGENT and TITLE R. T. Wright - Petroleum EngineerWITNESSED Karl G. SmithCOMPANY El Paso Natural Gas CompanyREMARKS 3rd run

\* Unable to obtain 30% draw down due to size of chokes in meter run.

## 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  $P_t$ .