

## NEW MEXICO OIL CONSERVATION COMMISSION

Form C-122

Revised 12-1-55

## MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool Undesignated Formation Queen Gas County Chaves  
Initial x Annual \_\_\_\_\_ Special \_\_\_\_\_ Date of Test 11-13-63  
Company Shell Oil Company Lease Federal 15 Well No. 1  
Unit D Sec. 15 Twp. 15-S Rge. 29-E Purchaser None  
Casing 324 Wt. 8 5/8" I.D. \_\_\_\_\_ Set at 4073' Perf. 1844' To 1860'  
Tubing \_\_\_\_\_ Wt. 2 1/2" I.D. \_\_\_\_\_ Set at 2007' Perf. 2000' To 1996'  
Gas Pay: From 1844' To 1860' L 1996 xG .920 -GL 1836 3907' Bar.Press. 1302  
Producing Thru: Casing \_\_\_\_\_ Tubing x Type Well Single  
Single-Bradenhead-G. G. or G.O. Dual 3  
Date of Completion: 11-13-63 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.
	(Line) Size	(Orifice) Size	Press. psig	Diff. h <sub>w</sub>	Temp. °F.	Press. psig	Temp. °F.	Press. psig	Temp. °F.	
SI						578		588		72
1.	4	1.500	44	9.0	60	402		509		3
2.	4	1.500	50	24.0	60	363		493		3
3.	4	1.500	50	40.0	60	303		377		3
4.	4	1.500	50	64.0	60	238		290		3
5.	4	1.500	50	20.0	60	368		434		24

## 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	22.69	57.2	1.000	.8076		256.3
2.	13.99	38.95	63.2	1.000	.8076		440.1
3.	13.99	50.28	63.2	1.000	.8076		568.1
4.	13.99	63.60	63.2	1.000	.8076		718.6
5.	13.99	35.55	63.2	1.000	.8076		401.6

## PRESSURE CALCULATIONS

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

Specific Gravity Separator Gas .320  
Specific Gravity Flowing Fluid \_\_\_\_\_  
P<sub>c</sub> 601.2 P<sub>c</sub> 361.4

No.	P <sub>w</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.	522.2					272.7	88.7		86.8
2.	466.2					217.3	144.1		77.5
3.	390.2					152.2	209.2		64.9
4.	303.2					91.9	269.5		50.4
5.	467.2					218.3	143.1		77.7

Absolute Potential: 940 MCFPD; n .921

COMPANY Shell Oil Company  
ADDRESS P. O. Box 1858, Roswell, New Mexico  
AGENT and TITLE A. L. Ellard - Gas Tester  
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  $P_t$ .