

## NEW MEXICO OIL CONSERVATION COMMISSION

Form C-122

Revised 12-1-55

## MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool Antelope Ridge Formation Atoka County Lea

Initial X Annual \_\_\_\_\_ Special \_\_\_\_\_ Date of Test 2-5-65

Company Shell Oil Company Lease Antelope Ridge Unit Well No. 4-2

Unit B Sec. 4 Twp. 24-N Rge. 34-E Purchaser Shell Oil Company

Casing 5 1/2" Wt. 17.0 I.D. 4.892 Set at 12,375 Perf. 12,212 To 12,341

Tubing 2 1/2" Wt. 6.5 I.D. 2.441 Set at 11,869 Perf. \_\_\_\_\_ To \_\_\_\_\_

Gas Pay: From 12,212 To 12,341 L 11,869 xG Mix. 710 -GL 6427 Bar.Press. 13.2

Producing Thru: Casing \_\_\_\_\_ Tubing X Type Well Single  
Single-Bradenhead-G. G. or G.O. Dual

Date of Completion: 2-5-65 Packer 11,865 Reservoir Temp. 174° F.

## OBSERVED DATA

Tested Through (~~Flange~~) (~~Stroke~~) (Meter) Type Taps Flange

No.	Flow Data					Tubing Data		Casing Data		Duration of Flow Hr.
	( <del>Flange</del> ) (Line) Size	( <del>Stroke</del> ) (Orifice) Size	Press. psig	Diff. h <sub>w</sub>	Temp. °F.	Press. psig	Temp. °F.	Press. psig	Temp. °F.	
SI						4375	Packer			31
1.	4	2.250	775	23.0	82	4155				2
2.	4	2.250	775	34.0	76	4090				2
3.	4	2.250	785	51.0	80	3974				2
4.	4	2.250	775	96.0	65	3717				2
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.	33.10	134.6	788.2	.9795	.9682	1.069	4,516
2.	33.10	163.7	788.2	.9850	.9682	1.072	5,539
3.	33.10	201.7	798.2	.9813	.9682	1.069	6,781
4.	33.10	275.1	788.2	.9971	.9682	1.077	9,468
5.							

## PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio 37.774 cf/bbl.

Gravity of Liquid Hydrocarbons 57.3 deg.

F<sub>c</sub> 5.866 (1-e<sup>-s</sup>) .440

Specific Gravity Separator Gas .640

Specific Gravity Flowing Fluid .7495

P<sub>f</sub> 5912.2 P<sub>g</sub> 34,954

No.	P <sub>w</sub> P <sub>c</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> P <sub>c</sub> <sup>2</sup> P <sub>f</sub> <sup>2</sup> - P <sub>c</sub> <sup>2</sup>	Cal. P <sub>w</sub>	P <sub>w</sub> P <sub>c</sub>
1.	5738.2	B.H.P.	measured with B.H.P. Bomb			32,927	2027		97.1
2.	5686.2					32,333	2621		96.2
3.	5578.2					31,116	3838		94.4
4.	5369.2					28,828	6126		90.8
5.									

Absolute Potential: 30,000 MCFPD; n .668

COMPANY Shell Oil Company

ADDRESS P. O. Box 1858, Roswell, New Mexico

AGENT and TITLE A. L. Ellerd - 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  $P_t$ .