

## MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool Basin Dakota Formation Dakota County San Juan  
Initial x Annual \_\_\_\_\_ Special \_\_\_\_\_ Date of Test 11-25-60  
Company Sunray Mid-Continent Lease N. M. Federal "N" Well No. 4  
Unit A Sec. 7 Twp. 30N Rge. 12W Purchaser So. Union  
Casing 1 1/2" Wt. 11.6# I.D. 4.000 Set at 6961 Perf. 6706 To 6860  
Tubing 2-3/8" Wt. 4.7 I.D. 1.995 Set at 6695 Perf. OE To \_\_\_\_\_  
Gas Pay: From 6706 To 6860 L 6695 xG 0.65 -GL \_\_\_\_\_ Bar.Press. 13  
Producing Thru: Casing \_\_\_\_\_ Tubing x Type Well single  
Single-Bradenhead-G. G. or G.O. Dual \_\_\_\_\_  
Date of Completion: 10-31-60 Packer no Reservoir Temp. 165°F

## OBSERVED DATA

Tested Through (~~Bradenhead~~) (Choke) (~~Midpoint~~) Type Taps \_\_\_\_\_

No.	Flow Data					Tubing Data		Casing Data		Duration of Flow Hr.
	(Prover) (Line) Size	(Choke) ( <del>Orifice</del> ) Size	Press. psig	Diff. h <sub>w</sub>	Temp. °F.	Press. psig	Temp. °F.	Press. psig	Temp. °F.	
SI						<u>2117</u>		<u>2120</u>		
1.		<u>0.750</u>	<u>264</u>		<u>80°F</u>	<u>325</u>	<u>80°F</u>	<u>738</u>		<u>3 hrs.</u>
2.										
3.										
4.										
5.										

## FLOW CALCULATIONS

No.	Coefficient (24-Hour)	$\sqrt{r_{wpf}}$	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.	<u>12.3650</u>		<u>277</u>	<u>0.9813</u>	<u>0.9608</u>	<u>1.029</u>	<u>3323</u>
2.							
3.							
4.							
5.							

## PRESSURE CALCULATIONS

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

Specific Gravity Separator Gas \_\_\_\_\_  
Specific Gravity Flowing Fluid \_\_\_\_\_  
P<sub>c</sub> 2133 P<sub>c</sub> 1519.7

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.						<u>564</u>	<u>3985.7</u>		<u>0.316</u>
2.									
3.									
4.									
5.									

Absolute Potential: 3800 MCFPD; n 0.75  
COMPANY Sunray Mid-Continent Oil Company  
ADDRESS 166 Petroleum Center Building, Farmington, New Mexico  
AGENT and TITLE William B. Stewart Engineer  
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  $P_t$ .