

## MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool Eumont Formation Tates PH 2 County Lea  
Initial Annual Special X Date of Test 6-11-56/6-15-56  
Company Sunray Mid-Continent Oil Co. Lease Alaska Cooper Well No. 4  
Unit H Sec. 12 Twp. 20S Rge. 36E Purchaser EPNO  
Casing 7 Wt. 24 I.D. 6.336 Set at 3790 Perf. 3235 To 3276  
Tubing 2 Wt. 4.7 I.D. 1.995 Set at 2802 Perf.          To           
Gas Pay. 3235 To 3276 L 2802 xG .670 -GL 1877 Bar.Press. 13.2  
Producing Thru: Casing          Tubing X Type Well Single  
Single-Bradenhead-G. G. or G.O. Dual  
Date of Completion: 5-7-54 Packer          Reservoir Temp.         

## OBSERVED DATA

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

No.	Flow Data					Tubing Data		Casing Data		Duration of Flow Hr.
	(Prover) (Line) Size	(Choke) (Orifice) Size	Press. psig	Diff. h <sub>w</sub>	Temp. °F.	Press. psig	Temp. °F.	Press. psig	Temp. °F.	
SI						916				72
1.	1	1.500	560	6.76	58	855				24
2.	1	1.500	560	16.0	59	797				24
3.	1	1.500	554	23.0	62	752				24
4.	1	1.500	595	34.8	66	694				24
5.										

## FLOW CALCULATIONS

No.	Coefficient Flg. (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	62.24		1.0019	.9463	1.068	882
2.	13.99	95.75		1.0019	.9463	1.068	1355
3.	13.99	114.30		.9981	.9463	1.064	1607
4.	13.99	145.50		.9943	.9463	1.066	2041
5.							

## PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio          cf/bbl.  
Gravity of Liquid Hydrocarbons          deg.  
F<sub>c</sub> 9.936 (1-e<sup>-s</sup>) 0.121  
Specific Gravity Separator Gas           
Specific Gravity Flowing Fluid           
P<sub>c</sub> 929.2 P<sub>c</sub><sup>2</sup> 863.4

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.	868.2	753.8	8.76	76.7	9.3	763.1	100.3		
2.	810.2	656.4	13.46	181.2	21.9	678.3	185.1		
3.	765.2	585.5	15.97	255.0	30.9	616.4	247.0		
4.	677.2	458.6	20.28	411.3	49.8	508.4	355.0		
5.									

Absolute Potential: 3700 MCFPD; n 0.66  
COMPANY Sunray Mid-Continent Oil Co.  
ADDRESS 201 Midland Nat'l Bk Bldg., Midland, Texas  
AGENT and TITLE Robert E. Statton, Staff Engineer  
WITNESSED           
COMPANY         

## REMARKS

Test was conducted by Mr. Smith, El Paso Natural Gas Company,  
Jal, N.M., and witnessed by Mr. Blumer

## 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  $P_t$ .