NEW MEXICO OIL CONSERVATION COMMISSION

Form C-122

Revised 12-1-55

MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool **Eumont** Formation **Queen** County **Lea**

Initial **X** Annual _____ Special _____ Date of Test **5-30, 6-4-56**

Company **Nolan & Lane** Lease **Sinclair-Williams** Well No. **1**

Unit **O** Sec. **34** Twp. **19 S** Rge. **37 E** Purchaser **Southern Union Gas Company**

Casing **5½"** Wt. **20#** I.D. **4.778** Set at **3522** Perf. **Open Hole** To _____

Tubing **None** Wt. _____ I.D. _____ Set at _____ Perf. _____ To _____

Gas Pay: From **3545** To **3576** L **3522** xG **.668** -GL **2353** Bar.Press. **13.2**

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

Date of Completion: _____ Packer _____ Reservoir Temp. _____

OBSERVED DATA

Tested Through (Prover) (~~Choke~~) (Meter) **4th Rate 1, 2, 3 Rates** Type Taps **Flange**

No.	Flow Data (Prover) (Line) Size	Flow Data (~~Choke~~) (Orifice) Size	Flow Data Press. psig	Flow Data Diff. h_w	Flow Data Temp. °F.	Tubing Data Press. psig	Tubing Data Temp. °F.	Casing Data Press. psig	Casing Data Temp. °F.	Duration of Flow Hr.
SI								759		72
1.	4"	1.000	520	10	88			704		24
2.	4"	1.000	515	55	90			661		24
3.	4"	1.000	525	58	70			617		24
4.	2" Prover	.500	514	-	74			514		24
5.										

FLOW CALCULATIONS

No.	Coefficient (24-Hour)	$\sqrt{h_w p_f}$	Pressure psia	Flow Temp. Factor F_t	Gravity Factor F_g	Compress. Factor F_{pv}	Rate of Flow Q-MCFPD @ 15.025 psia
1.	5.135	75.0	533.2	.9741	.9477	1.068	441
2.	5.135	132.0	528.2	.9813	.9477	1.066	803
3.	5.135	176.6	538.2	.9908	.9477	1.067	1085
4.	5.5235		527.2	.9868	.9477	1.067	2879
5.							

PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio _____ cf/bbl. Specific Gravity Separator Gas _____

Gravity of Liquid Hydrocarbons _____ deg. Specific Gravity Flowing Fluid _____

F_c **1.018** $(1-e^{-s})$ **0.149** P_c **772.2** P_c^2 **596.3**

No.	P_w / P_t (psia)	P_t^2	F_cQ	$(F_cQ)^2$	$\frac{(F_cQ)^2}{(1-e^{-s})}$	P_w^2	$P_c^2-P_w^2$	Cal. P_w	$\frac{P_w}{P_c}$
1.	717.2	514.4	.45	.20	.03	514.4	81.9	717.2	.93
2.	674.2	454.5	.82	.67	.10	454.6	141.7	674.2	.87
3.	630.2	397.2	1.10	1.21	.18	397.4	198.9	630.3	.82
4.	527.2	277.9	2.93	8.58	1.28	279.2	317.1	528.5	.68
5.									

Absolute Potential: **5370** MCFPD; n **1.00**

COMPANY **Nolan & Lane**

ADDRESS **Box 326, Hobbs, New Mexico**

AGENT and TITLE D. G. Lewis

WITNESSED X

COMPANY X **Southern Union Gas Company**

REMARKS

Prover used on 4th rate because of high line pressure.

GAS ENGINEER

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.