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 **N** Annual **X** Special ______ Date of Test **5/31/56**

Company **Skelly Oil Co.** Lease **Monstate** Well No. **4**

Unit **N** Sec. **13** Twp. **19S** Rge. **36E** Purchaser **Northern Natural**

Casing **5½"** Wt. **17#** I.D. **4.892** Set at **3580** Perf. ______ To ______

Tubing **2-3/8"** Wt. **4.7** I.D. **1.995** Set at **3731** Perf. **3731** To **3735**

Gas Pay: From **3580** To **3750** L **3731** (3580) xG **0.681** -GL **2541** (2438) Bar.Press. **13.2**

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

Date of Completion: **9/11/53** Packer ______ Reservoir Temp. ______

OBSERVED DATA

Tested Through [redacted] [redacted] (Meter) Type Taps **Pipe**

No.	Flow Data (Prover) (Line) Size	(Choke) (Orifice) Size	Press. psig	Diff. h_w	Temp. °F.	Tubing Data Press. psig	Temp. °F.	Casing Data Press. psig	Temp. °F.	Duration of Flow Hr.
SI						1016.0				72-1/4
1.	4"	2.25	462.0	6.5	55	929.3				24:05
2.	"	"	467.0	15.0	100	857.4				23:30
3.	"	"	479.3	24.3	89	790.6				24:05
4.	"	"	475.0	39.3	78	679.8				23:10
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.	40.53	55.58	475.2	1.0048	0.9386	1.058	2248
2.	"	84.87	480.2	0.9636	0.9386	1.041	3239
3.	"	109.40	492.5	0.9732	0.9386	1.048	4245
4.	"	138.51	488.2	0.9831	0.9386	1.052	5449
5.							

PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio N[illegible] cf/bbl. Specific Gravity Separator Gas ______
Gravity of Liquid Hydrocarbons ______ deg. Specific Gravity Flowing Fluid ______
F_c **9.936** (1.812) $(1-e^{-s})$ **0.160** (.154) P_c **1029.2** P_c^2 **1059.3**

No.	P_w P_t (psia)	P_t^2	F_cQ	$(F_cQ)^2$	$(F_cQ)^2 (1-e^{-s})$	P_w^2	$P_c^2-P_w^2$	Cal. P_w	$\frac{P_w}{P_c}$
1.	942.5	888.3	22.34	499.08	79.85	968.2	91.1	984.0	0.96
2.	870.6	757.9	32.18	1035.55	165.69	923.6	135.7	961.0	0.93
3.	803.8	646.1	42.18	1779.15	284.66	930.8	128.5	964.8	0.94
4.	693.0	480.2	54.14	2931.14	468.98	949.2	110.1	974.3	0.95
5.									

Absolute Potential: **5300** MCFPD; n **1.0000**
COMPANY **Skelly Oil Company**
ADDRESS **Box 38, Hobbs, N. M.**
AGENT and TITLE [signature] **Dist. Supt.**
WITNESSED **None** this well has been [illegible] Also
COMPANY [illegible] Requested [illegible] Aug '58

REMARKS

Poor point alignment so a slope of 1.0 was drawn through point corresponding to highest flow rate.

1	4.073	16.589	2.555	890.8	168.5	943.8	.917
2	5.869	34.445	5.304	763.2	296.1	873.6	.849
3	7.692	59.167	9.112	655.2	404.1	809.4	.786
4	9.774	97.416	15.014	445.2	564.1	703.7	.684

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.