NEW MEXICO OIL CONSERVATION COMMISSION

Form C-122
Revised 12-1-55

MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool **South Vacuum** Formation **McKee** County **Lea**

Initial ____ Annual ____ Special **X** Date of Test **March 1, 1959**

Company **The Pure Oil Company** Lease **South Vacuum** Well No. **2-35 (McKee)**

Unit **1** Sec. **35** Twp. **18-S** Rge. **35-E** Purchaser **Phillips Petroleum Company**

Liner 5" Wt. **17.93** I.D. **4.276** Set at **13881** Perf. **13,620** To **13,823**

Tubing **2"** Wt. **4.70** I.D. **1.995** Set at **13,622** Perf. **Open ended** To ____

Gas Pay: From **13,620** To **13,823** L **13,622** xG **.7515** -GL **10,225** Bar.Press. **13.2 psi**

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

Date of Completion: **9-28-58** Packer **Guiberson Hook-wall** Reservoir Temp. **165°F**

OBSERVED DATA

Tested Through (Prover) (Choke) (Meter) 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						3495				
1.	4.026	1.75	18	38	82	543	75	-	-	24 hrs.
2.	4.026	1.75	18	32	65	393	63	-	-	22
3.	4.026	1.75	18	29	33	272	47	-	-	21
4.	4.026	1.75	18	28	38	201	62	-	-	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.	19.27	34.4	31.2	.9795	.9345	-	606
2.	19.27	31.60	31.2	.9952	.9345	-	567
3.	19.27	30.05	31.2	1.0270	.9345	-	556
4.	19.27	[illegible]	31.2	1.0219	.9345	-	544
5.							

PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio 40,900 cf/bbl. Specific Gravity Separator Gas .687
Gravity of Liquid Hydrocarbons 58 @ 60°F deg. Specific Gravity Flowing Fluid .7515
P_c 9.936 $(1-e^{-s})$ .505 P_c 3508.2 P_c^2 12,300

No.	P_w / P_t (psia)	P_t^2	F_cQ 9.936	$(F_cQ)^2$	$(F_cQ)^2$ $(1-e^{-s})$	P_w^2	$P_c^2-P_w^2$	Cal. P_w	$\frac{P_w}{P_c}$
1.	556.2	309	6.01	36.15	18.25	369.41	11939.59	607	17.30
2.	406.2	165	5.61	31.50	15.90	218.01	12081.99	469	13.35
3.	285.2	81.3	5.52	30.40	15.35	132.57	12167.43	366	10.42
4.	214.2	45.8	5.40	29.15	14.73	95.08	12204.92	310	8.84
5.									

Absolute Potential: 530 MCFPD; n -1.249

COMPANY The Pure Oil Company
ADDRESS Box 2107 - Fort Worth 1, Texas
AGENT and TITLE D. K. Spradlin, Prod. Engr. D. K. Spradlin
WITNESSED N. J. Littlejohn
COMPANY The Pure Oil Company

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.