NEW MEXICO OIL CONSERVATION COMMISSION

Form C-122
Revised 12-1-55

MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool Bough San Andres Formation San Andres County Lea

Initial [illegible] Annual X Special Date of Test 12-8-64

Company Pan American Pet. Corp Lease Federal B Well No. 1

Unit B Sec. 24 Twp. 9S Rge. 35E Purchaser Sinclair Oil & Gas Co.

Casing 7 5/8 Wt. 26.4 I.D. 6.969 Set at 4188 Perf. 4768 4815 To 4790 4830

Tubing 2 3/8 Wt. 4.7 I.D. 1.995 Set at 4729 Perf. open To

Gas Pay: From 4768 To 4830 L 4729 xG .830 -GL 3925 Bar.Press. 13.2

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

Date of Completion: 5-5-64 Packer yes Reservoir Temp.

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	4	.750				1086				72 SI
1.	4	.750	435.7	1.2	58	459				24
2.	"	.500	462.9	2.0	48	422				24
3.	"	"	422.4	1.4	52	448				24
4.	"	"	420.0	1.0	59	465				25
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.	3.435	23.21	448.9	1.0019	.8502	1.089	73.96
2.	1.525	30.86	476.1	1.0117	"	1.106	44.77
3.	"	24.70	435.6	1.0078	"	1.091	35.21
4.	"	20.81	433.0	1.0010	"	1.087	29.36
5.							

PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio neg. cf/bbl.
Gravity of Liquid Hydrocarbons deg.
P_c 9.936 $(1-e^{-s})$ .237

Specific Gravity Separator Gas .830
Specific Gravity Flowing Fluid
P_c ~~1086~~ 1099.2 P_c^2 ~~1179~~ 1208.2

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.	472.2					223.0	956.0	472.2	
2.	435.2		NEGLIGIBLE			189.4	989.6	435.2	
3.	461.2					212.7	966.3	461.2	
4.	478.2					228.7	950.3	478.2	
5.									

Absolute Potential: 91.8 MCFPD; n 1.000

COMPANY Sinclair Oil & Gas Co.
ADDRESS Box 306; Tatum, N. Mex.
AGENT and TITLE R. Fawcett, Inst. Tech
WITNESSED
COMPANY

985.2
1018.2
993.5
971.5

REMARKS

n 1.000 assigned due to flat slope of curve
absolute potential calculated from following formula A.P. = Q [illegible] $\left[\frac{P_c^2}{P_c^2-P_w^2}\right]^n$

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.