NEW MEXICO OIL CONSERVATION COMMISSION

Form C-122
Revised 12-1-55

MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

1962 DEC 20 AM 9 45

Pool Sawyer Formation San Andres County Lea

Initial ____ Annual X Special ____ Date of Test 10/26-11/2-62

Company Southwestern Hydrocarbon Lease Sinclair Federal Well No. 2

Unit B Sec. 5 Twp. 9S Rge. 38E Purchaser Sinclair Oil & Gas Company

Casing 4 1/2 Wt. 9.5# I.D. ____ Set at 5005 Perf. 4932-4988 To 4945-4950

Tubing 2 3/8 Wt. 4.7# I.D. 1.995 Set at ____ Perf. 4939 To 4943

Gas Pay: From 4939 To 4943 L 4939 xG .805 =GL 3976 Bar.Press. 13.2

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

Date of Completion: ____ Packer ____ Reservoir Temp. 90°

OBSERVED DATA

Tested Through ~~(Prover)(Choke)~~(Meter) Type Taps Flange

No.	Flow Data (Prover) (Line) Size	(Choke) (Orifice) Size	Press. psig	Diff. h_w	Temp. °F.	Tubing Data Press. psig	Tubing Data Temp. °F.	Casing Data Press. psig	Casing Data Temp. °F.	Duration of Flow Hr.
SI						1007		996		72
1.	4	1.500	382	5.5	53	877		948		3
2.	4	1.500	402	9.0	52	833		926		3
3.	4	1.500	415	15.0	53	768		899		3
4.	4	1.500	410	22.5	52	692		873		3
5.	4	1.500	410	26.0	78	667		847		24

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.	13.99	46.62	395.2	1.0068	.8635	1.074	609.0
2.	13.99	61.13	415.2	1.0078	.8635	1.078	802.3
3.	13.99	80.14	428.2	1.0068	.8635	1.080	1053
4.	13.99	97.58	423.2	1.0078	.8635	1.080	1283
5.	13.99	104.90	423.2	.9831	.8635	1.066	~~1536~~ 1328

PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio ____ cf/bbl. Specific Gravity Separator Gas .805
Gravity of Liquid Hydrocarbons ____ deg. Specific Gravity Flowing Fluid ____
P_c ____ $(1-e^{-s})$ ____ P_c 1020.2 P_c^2 1040.8

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.	961.2					923.9	116.9	961.2	94.22
2.	939.2					882.1	158.7	939.2	92.06
3.	912.2					832.1	208.7	912.2	89.41
4.	886.2					785.4	255.4	886.2	86.86
5.	860.2					740.0	300.8	860.2	84.32

Absolute Potential: ~~5,247~~ 4600 MCFPD; n .9876261

COMPANY Southwestern Hydrocarbon

ADDRESS Midland, Texas

AGENT and TITLE Ray Lord, Gas Analyst, Sinclair Oil & Gas Company

WITNESSED W. K. Lord

COMPANY

REMARKS

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.