NEW MEXICO OIL CONSERVATION COMMISSION

Form C-122
Revised 12-1-55

MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool Sawyer Formation San Andres County Lea

Initial ____ Annual X Special ____ Date of Test 2/1-2/5/63

Company Sinclair Oil & Gas Co. Lease Federal Kelly 'A' Well No. 1

Unit P Sec. 19 Twp. 9S Rge. 38E Purchaser Sinclair O&G Plant #29

Casing 5½ Wt. 17# I.D. ____ Set at 5039 Perf. 4916 4955 To 4947 4989 4 shts/ft.

Tubing 2 3/8 Wt. 4.7# I.D. 1.995 Set at 4916 Perf. ____ To ____

Gas Pay: From 4916 To 4989 L 4916 xG .800 -GL 3933 Bar.Press. 13.2

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

Date of Completion: 2-4-61 Packer set @ 4839 Reservoir Temp. 112 deg.

OBSERVED DATA

Tested Through ~~(Prover)~~ ~~(Choke)~~ (Meter) Type Taps Flg.

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						1193				72
1.	3	1.000	460	28.5	61	755				2½
2.	3	1.000	460	46.0	64	709				3
3.	3	1.000	459	19.5	52	749				3
4.	3	1.000	440	11.0	48	719				3
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.	6.182	116.13	473.2	.9990	.8660	1.083	672.7
2.	6.182	147.54	473.2	.9962	.8660	1.083	852.2
3.	6.182	95.04	463.2	1.0078	.8660	1.087	557.4
4.	6.182	70.60	453.2	1.0117	.8660	1.091	417.2
5.							

PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio See Notes cf/bbl.
Gravity of Liquid Hydrocarbons See Notes deg.
F_c 9.936 $(1-e^{-s})$ 0.237

Specific Gravity Separator Gas .800
Specific Gravity Flowing Fluid ____
P_c 1206.2 P_c^2 1454.9

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.	768.2	590.13	6.684	44.676	10.588	660.72	854.18	775.06	64.26
2.	722.2	521.57	8.467	71.690	16.991	538.56	916.34	733.87	60.84
3.	762.2	580.95	5.538	30.667	7.269	588.22	866.68	767.00	63.59
4.	732.2	536.12	4.145	17.181	4.071	540.19	914.71	735.00	60.94
5.									

Absolute Potential: 1,144 MCFPD; n Used 1.0000

COMPANY Sinclair Oil & Gas Co.

ADDRESS Mr. Fred Rogers Box 1470 Midland Texas

AGENT and TITLE Inter. Eng. W.R. Lord Box 2431 Hobbs New Mexico

WITNESSED W.R. Lord

COMPANY ____

REMARKS

Liquid Hydrocarbon Ratio not calculated due to Total Fluid being produced being 95% Water also n slope of 1.000 used due to large amount of water had a tendency to kill the well, see volumes and working pressures on flows 3 and 4. WRL

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.

12-185

Unit P Sec. 19-9S-38E
Lea County New Mexico
2/1-2/5/63