

NEW MEXICO OIL CONSERVATION COMMISSION

Form C-122
HOBBS OFFICE OCC
Revised 12-1-55

MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool Undesignated Formation Pennsylvanian County 1961 JUN 22 AM 8:14
 Initial X Annual _____ Special _____ Date of Test June 7, 1961
 Company United States Smelting Refining and Mining Company Lease Federal 11-20-34 Well No. 1
 Unit 7 Sec. 11 Twp. -20-S Rge. -1-34-S Purchaser Not connected
 Casing 7" Wt. 294 I.D. _____ Set at 14,360 Perf. 13034' To 13034'
 Tubing 2-3/8" Wt. 4.70 I.D. 1.995 Set at 12,875 Perf. _____ To _____
 Gas Pay: From 13034 To 13060' L 12875 xG .857 -GL 11,012 Bar. Press. 13.2
 Producing Thru: Casing _____ Tubing X Type Well Gas - Oil Dual
 Date of Completion: June 13, 1961 Packer 12,850 Reservoir Temp. 160° F

OBSERVED DATA

Tested Through (Blower) (Minutes) (Meter) Type Taps Flange

No.	Flow Data					Tubing Data		Casing Data		Duration of Flow Hr.
	(Prover) (Line) Size	(Choke) (Orifice) Size	Press. psig	Diff. h _w	Temp. °F.	Press. psig	Temp. °F.	Press. psig	Temp. °F.	
SI						4551	74	Packer		
1.	4"	1.50"	600	14	102	2049	80	Packer		4-3/4
2.	4"	1.50"	600	26	102	1171	81	Packer		2-1/4
3.	4"	1.50"	600	30	106	761	81	Packer		2-1/2
4.	4"	1.50"	600	32	106	674	77	Packer		2-1/2
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.	13.99	92.65	613.2	.9618	.9600	1.048	1255
2.	13.99	126.27	613.2	.9618	.9600	1.048	1711
3.	13.99	135.63	613.2	.9585	.9600	1.048	1831
4.	13.99 140.08	137.87	613.2	.9585	.9600	1.048	1891
5.							

PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio 12,400 cf/bbl.
 Gravity of Liquid Hydrocarbons 52 deg.
 P_c 9.936 (1-e⁻⁵) .584
 Specific Gravity Separator Gas .650
 Specific Gravity Flowing Fluid .857
 P_c 4564.2 P_c 20,832

No.	P _w P _t (psia)	P _t ²	F _c Q	(F _c Q) ²	(F _c Q) ² (1-e ⁻⁵)	P _w ²	P _c ² -P _w ²	Cal. P _w	P _w /P _c
1.	2042.2	4252	12.470	155.5	78	4330	16502	2081	.456
2.	1104.2	1402	17.00	289.0	146	1548	19204	1944	.373
3.	774.2	599	18.193	330.9	167	766	20066	875	.192
4.	687.2	472	18.50	342.3	173	645	20107	903	.176
5.			18.79	353.1	178.0	630	20152	806.2	.176

Absolute Potential: 1922 MCFPD; n 1
 COMPANY United States Smelting Refining and Mining Company
 ADDRESS Post Office Box 1877, Midland, Texas
 AGENT and TITLE H. C. Dougherty, Manager of Production
 WITNESSED Bill Kerley
 COMPANY Meter Service and Supply Company, Inc., Odessa, Texas

REMARKS

Actual slope of curve = 2.04
 On retest of well, used slope of 1 to calculate Absolute potential

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} = Supercompressibility 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 .