

STATE OF KANSAS - CORPORATION COMMISSION

FORM C-3
8-7-53

ONE POINT STABILIZED OPEN FLOW OR DELIVERABILITY TEST

TYPE TEST: Deliverability Open Flow TEST DATE: 3/09/90

COMPANY: GOODLAND GAS COMPANY LEASE: Schwendener WELL NO.: 2-36

COUNTY: Sherman LOCATION: SW 1/4, SW 1/4 SECTION: 36 TWP: 7S RMO: 39W ACRS:

FIELD: Goodland RESERVOIR: Niobrara PIPELINE CONNECTION: KNEnergy

COMPLETION DATE: 1-26-83 PLUG BACK TOTAL DEPTH: 1081 PACKER SET AT: None

CASING SIZE: 4 1/2" WT: 9.5#/ft. I.D.: 1081 SET AT: 962 PERF.: 982 TO:

TUBING SIZE: None WT: I.D.: SET AT: PERF.: TO:

TYPE COMPLETION (Describe): Frac w/100,000# SD 40 tons CO2 800 Bbls H2O TYPE FLUID PRODUCTION: Gas

PRODUCING THRU: Casing RESERVOIR TEMPERATURE: BAR. PRESS - Psia

GAS GRAVITY - G: 0.5860 % CARBON DIOXIDE: 1.98 % NITROGEN: 2.790 API GRAVITY OF LIQUID: --

VERTICAL DEPTH (H): TYPE METER CONN.: Orifice-Flange (METER RUN) (PROVER) SIZE: 2.067

SHUT-IN PRESSURE: SHUT IN 2/9 19 90 AT 9:15 (AM)(PM) TAKEN 2/12 19 90 AT 10:25 (AM)(PM) X
FLOW TEST: STARTED 2/22 19 90 AT 8:00 (AM)(PM) TAKEN 2/23 19 90 AT 8:00 (AM)(PM) X

OBSERVED DATA

DURATION OF SHUT-IN 72 HR.

SHUT-IN OR FLOW	ORIFICE SIZE In.	(METER) (PROVER) PRESSURE psig	DIFF. In. (h _w)	FLOWING TEMP. t	WELL-HEAD TEMP. t	CASING WELLHEAD PRESS		TUBING WELLHEAD PRESS		DURATION HOURS	LIQUID PROD. Boils.
						psig	(P _w)(P _i)(P _c) psia	psig	(P _w)(P _i)(P _c) psia		
SHUT-IN	--	--	--	--	--	28	42.2	--	--	72	--
FLOW	0.75	11.7	2.7	28	--	13	27.4	--	--	24	--

RATE OF FLOW CALCULATIONS

COEFFICIENT (F _s) (56) Mcfd	(METER) (PROVER) PRESSURE psia	EXTENSION √P _m h _w	GRAVITY FACTOR P _g	FLOWING TEMP. P _t	DEVIATION FACTOR P _{pv}	RATE OF FLOW R Mcfd	GOR	G _m
2.779	26.1	8.45	1.3063	1.032	1.0011	32	--	--

(OPEN FLOW) (DELIVERABILITY) CALCULATIONS

(P_c)² = 1.798 ; (P_w)² = 0.751 ; P_d = -- % (P_c - 14.4) + 14.4 = -- ; (P_d)² = 0.207 ; (P_d)² = --

(P _c) ² - (P _d) ²	(P _c) ² - (P _w) ²	$\frac{P_c^2 - P_d^2}{P_c^2 - P_w^2}$	LOG []	"n"	n x LOG []	ANTILOG	OPEN FLOW DELIVERABILITY EQUALS R x ANTILOG M _{sd}
1.591	1.047	1.591	0.182	0.85	0.154	1.43	45

OPEN FLOW Mcfd @ 14.65 psia DELIVERABILITY Mcfd @ 14.65 psia

The undersigned authority, on behalf of the Company, states that he is duly authorized to make the above report and that he has knowledge of the facts stated therein, and that said report is true and correct.

Executed this the 31st day of Dec, 1990

John P. Sanders
For Company

Witness (if any)

For Commission

Checked by