

STATE OF KANSAS - CORPORATION COMMISSION
ONE POINT STABILIZED OPEN FLOW OR DELIVERABILITY TEST

FORM O-2
8-7-58

09
12-2-86

TYPE TEST: Deliverability Open Flow TEST DATE: 6-2-86 15-181-20233-00-00

COMPANY: GOODLAND GAS CO. LEASE: Nemechek WELL NO.: 1-4

COUNTY: Sherman LOCATION: NE 1/4, NE 1/4 SECTION: 4 TWP: 8S RNO: 39W ACRES: .

FIELD: Goodland RESERVOIR: Niobrara PIPELINE CONNECTION: KN Energy

COMPLETION DATE: 1-23-83 PLUG BACK TOTAL DEPTH: 1077 PACKER SET AT: --

CASINO SIZE: 4 1/2" WT.: 9.5 I.D.: 1105 SET AT: 1006 PERF.: 1026 TO: 1026

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

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

PRODUCING THRU: Casing RESERVOIR TEMPERATURE, F: 13.2 BAR. PRESS - P_a: 13.2 XXXX psia

GAS GRAVITY - G_s: 0.5837 % CARBON DIOXIDE: 1.98 % NITROGEN: 2.79 API GRAVITY OF LIQUID:

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

SHUT-IN PRESSURE: SHUT IN 5-25 19 86 AT (AM)(PM) TAKEN 5-30 19 86 AT (AM)(PM)
 FLOW TEST: STARTED 5-30 19 86 AT (AM)(PM) TAKEN 6-2 19 86 AT (AM)(PM)

OBSERVED DATA

DURATION OF SHUT-IN _____ HR.

SHUT-IN OR FLOW	ORIFICE SIZE in.	(METER) (PROVER) PRESSURE psig	DIFF. in. (h _w)(h _d)	FLOWING TEMP. t	WELL-HEAD TEMP. t	CASINO WELLHEAD PRESS.		TUBING WELLHEAD PRESS.		DURATION HOURS	LIQUID PROD. Bbls.
						psig	(P _w)(P _t)(P _c) psia	psig	(P _w)(P _t)(P _c) psia		
SHUT-IN	--	--	--	--	--	27.5	40.7	--	--	72+	--
FLOW	0.875					17.8	31	--	--	72	--

RATE OF FLOW CALCULATIONS

COEFFICIENT (F ₁)(F ₂) / Mcfd	(METER) (PROVER) PRESSURE psia	EXTENSION $\sqrt{P_m h_w}$	GRAVITY FACTOR F _g	FLOWING TEMP. FACTOR F _L	DEVIATION FACTOR F _{pv}	RATE OF FLOW R Mcfd	GOR	G _m
158.5	--	--	1.3089	.9905	1.0010	120	--	--

(OPEN FLOW) (DELIVERABILITY) CALCULATIONS

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

$\frac{(P_c)^2 - (P_a)^2}{(P_c)^2 - (P_d)^2}$	$(P_c)^2 - (P_w)^2$	$\frac{P_c^2 - P_a^2}{P_c^2 - P_w^2}$	LOG []	"n"	n x LOG []	ANTILOG	OPEN FLOW DELIVERABILITY EQUALS R x ANTILOG Mcfd
1.482	0.695	2.131	0.329	0.748	0.246	1.761	211

OPEN FLOW 211 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 25th day of NOV, 1986

Robert M. Richardson
For Company

Witness (if any)

For Commission

DEC 5 1986

Checked by DEC 1 1986