

15-181-20233-00 00
STATE OF KANSAS - CORPORATION COMMISSION
ONE POINT STABILIZED OPEN FLOW OR DELIVERABILITY TEST

FORM O-3
 8-7-58

TYPE TEST: Deliverability Open Flow **TEST DATE:** Flow Test 6-2-87

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

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

FIELD: Goodland **RESERVOIR:** Niobrara **PIPELINE CONNECTION:** KNEnergy

COMPLETION DATE: 1-23-83 **PLUG BACK TOTAL DEPTH:** 1,077 **PACKER SET AT:**

CASINO SIZE: 4 1/2" **WT.:** 9.5 **I.D.:** **SET AT:** 1,105 **PERF.:** 1,006 **TO:** 1,026

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

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

PRODUCING THRU: Casing **RESERVOIR TEMPERATURE, F:** **BAR. PRESS - P_a:** 14.4 Psia

GAS GRAVITY - G_g: 0.5827 **% CARBON DIOXIDE:** 1.28 **% NITROGEN:** 2.635 **API GRAVITY OF LIQUID:** --

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

SHUT-IN PRESSURE; SHUT IN: 5-29 19 87 AT 10:50 (AM)(PM) TAKEN 6-1 19 87 AT 10:47 (AM)(PM) TAKEN

FLOW TEST; STARTED: 6-1 19 87 AT 10:49 (AM)(PM) TAKEN 6-2 19 87 AT 10:31 (AM)(PM) TAKEN

OBSERVED DATA

DURATION OF SHUT-IN: 72 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	--	--	--	--	--	25.0	39.4	--	--	72	--
FLOW	0.875	19.4	10.0	60	--	20.3	34.7	--	--	24	--

RATE OF FLOW CALCULATIONS

COEFFICIENT (P _b)(P _d) / Mcfd	(METER) (PROVER) PRESSURE psia	EXTENSION √P _m h _w	GRAVITY FACTOR F _g	FLOWING TEMP. FACTOR F _t	DEVIATION FACTOR F _{pv}	RATE OF FLOW R / Mcfd	GOR	G _{sc}
158.50	33.80	18.38	1.31	1.00	1.0000	92	--	--

(OPEN FLOW) (DELIVERABILITY) CALCULATIONS

(P_c)² = 1552.36 ; (P_w)² = 1204.09 ; P_d² = _____ % (P_c - 14.4) + 14.4 = _____ ; (P_w)² = 0.207 ; (P_d)² = _____

(P _c) ² - (P _w) ² or (P _c) ² - (P _d) ²	(P _c) ² - (P _w) ²	$\frac{P_c^2 - P_w^2}{P_c^2 - P_w^2}$	LOG []	"n"	n x LOG []	ANTILOG	OPEN FLOW DELIVERABILITY EQUALS R x ANTILOG Mcfd
1345.00	348.27	3.86	0.59	0.748	0.44	2.75	253

OPEN FLOW 253 Mcfd @ 14.65 psia **DELIVERABILITY** 253 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 4 day of June, 1987.

STATE CORPORATION COMMISSION
 JUN 12 1987
 [Signature]
 For Company
 Wichita, Kansas

Witness (if any)

For Commission

Checked by