

15-181-20264-00-00
 STATE OF KANSAS - CORPORATION COMMISSION
 ONE POINT STABILIZED OPEN FLOW OR DELIVERABILITY TEST

FORM O-2
 8-7-58

TYPE TEST: Deliverability Open Flow TEST DATE: 6-2-86

COMPANY: GOODLAND GAS COMPANY LEASE: Hendrich WELL NO.: 1-1

COUNTY: Sherman LOCATION: SW_{1/4}, SW_{1/4} SECTION: 1 TWP: 8S RNG: 40W ACRES: .

FIELD: Goodland RESERVOIR: Niobrara PIPELINE CONNECTION: KN Energy

COMPLETION DATE: 11-17-83 PLUG BACK TOTAL DEPTH: Packer Set At: None

CASINO SIZE: 4 1/2" WT. 9.5#/ft. I.D. 1303 SET AT 1132 PERF. 1168 TO

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

TYPE COMPLETION (Describe): Frac 82,600# Sd, 40 tons CO₂, 627 Bbls H₂O TYPE FLUID PRODUCTION: Gas

PRODUCING THRU: Casing RESERVOIR TEMPERATURE: 13.2 BAR. PRESS - P_a: XXXX Psia

GAS GRAVITY - G_r: 0.5837 % CARBON DIOXIDE: 1.98 % NITROGEN: 2.79 API GRAVITY OF LIQUID: (METER RUN) (PROVER) SIZE: 2.067

VERTICAL DEPTH (H): TYPE METER CONN.: Orifice

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

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 _i)(P _c) psia	psig	(P _w)(P _i)(P _c) psia		
SHUT-IN	--	--	--	--	--	24.5	37.7	--	--	72+	--
FLOW	0.500	--	--	71	--	13.8	27	--	--	72	--

RATE OF FLOW CALCULATIONS

COEFFICIENT (F ₁)(F ₂) Mcfd	(METER) (PROVER) PRESSURE psia	EXTENSION $\sqrt{P_m \times h_w}$	GRAVITY FACTOR F _g	FLOWING TEMP. FACTOR F _L	DEVIATION FACTOR F _{pv}	RATE OF FLOW R Mcfd	GOR	G _m
50.5	--	--	1.3089	0.9896	1.0007	39	--	--

(OPEN FLOW) (DELIVERABILITY) CALCULATIONS

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

$\frac{(P_c)^2 - (P_w)^2}{(P_c)^2 - (P_d)^2}$	$(P_c)^2 - (P_w)^2$	$\frac{P_c^2 - P_a^2}{P_c^2 - P_w^2}$	LOG []	"n"	n x LOG []	ANTILOG	OPEN FLOW DELIVERABILITY EQUALS R x ANTILOG Mcfd
1.247	0.692	1.801	0.256	0.869	0.222	1.668	65

OPEN FLOW 65 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 W. Richardson
 For Company

Witness (if any)
 For Commission

DEC 5 1986

12-1-86
 Checked by DEC 1 1986