

15-103-20670-00-00
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:** April 21, 1990

COMPANY: Fairway Petroleum, Inc. **LEASE:** Ryan **WELL NO.:** 3

COUNTY: Leavenworth **LOCATION:** NE **SECTION:** 33 **TWP:** 8S **RNG:** 22E **ACRES:** 27

FIELD: McLouth **RESERVOIR:** McLouth **PIPELINE CONNECTION:** LAGGS, INC.

COMPLETION DATE: 7/7/86 **PLUG BACK TOTAL DEPTH:** 1261 **PACKER SET AT:**

CASINO SIZE: **WT.:** **I.D.:** 4 1/2" **SET AT:** 1255 **PERF.:** 1208 **TO:** 1216

TUBING SIZE: **WT.:** **I.D.:** **SET AT:** **PERF.:** **TO:**

TYPE COMPLETION (Describe): Perforation **TYPE FLUID PRODUCTION:** Water

PRODUCING THRU: 4 1/2" Casing **RESERVOIR TEMPERATURE F:** 76° **BAR. PRESS - P_a:** 14.4 Psia

GAS GRAVITY - G_g: 0.5869 **% CARBON DIOXIDE:** N.A. **% NITROGEN:** N.A. **API GRAVITY OF LIQUID:**

VERTICAL DEPTH (H): 1261 **TYPE WTR. CONN.:** Flange **(METER RUN)(PROVER) SIZE:** 2"

SHUT-IN PRESSURE: SHUT IN April 14, 1990 19 AT (AM)(PM) TAKEN 19 AT (AM)(PM)

FLOW TEST: STARTED April 15, 1990 19 AT (AM)(PM) TAKEN 19 AT (AM)(PM)

OBSERVED DATA

DURATION OF SHUT-IN 24 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 _i)(X P _c) psia | psig | (P _w)(P _i)(X P _c) psia | | |
| SHUT-IN | | | | | | 91 | 105.4 | | | 24 | |
| FLOW | .75 | 26 | 12 | 76 | 76 | 62 | 76.4 | | | 24 | |

RATE OF FLOW CALCULATIONS

| COEFFICIENT (F _b)(F _d) / Mcfd | (METER) (PROVER) PRESSURE psia | EXTENSION √ P _{wh} h _w | GRAVITY FACTOR F _g | FLOWING TEMP. FACTOR F _L | DEVIATION FACTOR F _{pv} | RATE OF FLOW R / Mcfd | GOR | G _m |
|---|--------------------------------|--|-------------------------------|-------------------------------------|----------------------------------|-----------------------|-----|----------------|
| 2.779 | 40.4 | 22.0 | 1.2985 | 0.9843 | 1.0045 | 78.5 | | |

(OPEN FLOW) (DELIVERABILITY) CALCULATIONS

(P_c)² = 11.1 (P_w)² = 5.8 P_d = _____ % (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 | $\left[\frac{P_c^2 \cdot P_w^2}{P_c^2 \cdot P_d^2} \right]$ | LOG [] | "n" | n x LOG [] | ANTILOG | OPEN FLOW DELIVERABILITY EQUALS R x ANTILOG Mcfd |
|--|---|--|---------|------|-------------|---------|--|
| | 5.3 | | | 0.85 | | | 161.1 |

OPEN FLOW 161.1 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 this report is true and correct.

Executed this the 12 day of May, 1990

Joseph M. Hebert

 Company
 Checked by _____

Witness (if any)

CONSERVATION DIVISION
 Wichita, Kansas