

15-103-20677-00-00  
 STATE OF KANSAS - CORPORATION COMMISSION

FORM G-2  
 8-7-58

ONE POINT STABILIZED OPEN FLOW OR DELIVERABILITY TEST

TYPE TEST:  Deliverability  Open Flow TEST DATE: April 21, 1990

COMPANY: Fairway Petroleum, Inc. LEASE: Ryan WELL NO.: 4

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

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

COMPLETION DATE: 7/12/86 PLUG BACK TOTAL DEPTH: 1250 PACKER SET AT:

CASING SIZE: WT. L.D. SET AT PERF. TO  
 4 1/2" 4 1/2" 1250 1195 1202

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<sub>s</sub>: 14.4 Psia

GAS GRAVITY - G<sub>g</sub>: 0.5843 % CARBON DIOXIDE: N.A. % NITROGEN: N.A. API GRAVITY OF LIQUID:

VERTICAL DEPTH (H): TYPE WTRR 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 <sub>w</sub> )(h <sub>d</sub> ) | FLOWING TEMP. t | WELL-HEAD TEMP. t | CASING WELLHEAD PRESS |  | TUBING WELLHEAD PRESS |  | DURATION HOURS | LIQUID PROD. Bbls. |
|-----------------|------------------|--------------------------------|--|-----------------|-------------------|-----------------------|--|-----------------------|--|----------------|--------------------|
|                 |                  |                                |  |                 |                   | psig                  | (P <sub>w</sub> )(P <sub>t</sub> )(P <sub>c</sub> ) psia | psig                  | (P <sub>w</sub> )(P <sub>t</sub> )(P <sub>c</sub> ) psia |                |                    |
| SHUT-IN         |                  |                                |  |                 |                   | 96                    | 110.4  |                       |  | 24             |                    |
| FLOW            | .75              | 38                             | 14   | 76              | 76                | 68                    | 82.4   |                       |  | 24             |                    |

RATE OF FLOW CALCULATIONS

| COEFFICIENT (F <sub>b</sub> )(F <sub>d</sub> ) / Mcfd | (METER) (PROVER) PRESSURE psia | EXTENSION √P <sub>m</sub> h <sub>w</sub> | GRAVITY FACTOR F <sub>g</sub> | FLOWING TEMP. FACTOR F <sub>L</sub> | DEVIATION FACTOR F <sub>pv</sub> | RATE OF FLOW R Mcfd | GOR | G <sub>m</sub> |
|---|--------------------------------|--|-------------------------------|-------------------------------------|----------------------------------|---------------------|-----|----------------|
| 2.779   | 52.4                           | 27.1                                     | 1.2982                        | 0.9843                              | 1.005                            | 96.7                |     |                |

(OPEN FLOW) (DELIVERABILITY) CALCULATIONS

(P<sub>c</sub>)<sup>2</sup> = 12.2, (P<sub>w</sub>)<sup>2</sup> = 6.8, P<sub>d</sub> = \_\_\_\_\_ % (P<sub>c</sub> - 14.4) + 14.4 = \_\_\_\_\_ (P<sub>s</sub>)<sup>2</sup> = 0.207 (P<sub>d</sub>)<sup>2</sup> = \_\_\_\_\_

| (P <sub>c</sub> ) <sup>2</sup> - (P <sub>s</sub> ) <sup>2</sup> / (P <sub>c</sub> ) <sup>2</sup> - (P <sub>d</sub> ) <sup>2</sup> | (P <sub>c</sub> ) <sup>2</sup> - (P <sub>w</sub> ) <sup>2</sup> | [P <sub>c</sub> <sup>2</sup> - P <sub>s</sub> <sup>2</sup> ] / [P <sub>c</sub> <sup>2</sup> - P <sub>d</sub> <sup>2</sup> ] / [P <sub>c</sub> <sup>2</sup> - P <sub>w</sub> <sup>2</sup> ] | LOG [ ] | "n"  | n x LOG [ ] | ANTILOG | OPEN FLOW DELIVERABILITY EQUALS R x ANTILOG Mcfd |
|---|---|--|---------|------|-------------|---------|--|
|   | 5.4   |  |         | 0.85 |             |         | 214.1  |

OPEN FLOW 214.1 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 said report is true and correct.

Executed this the STATE 12 day of May, 1990

*[Signature]*  
 For Company

Witness (if any)

CONSERVATION DIVISION  
 Topeka, Kansas

Checked by