FORM G-2
8-7-58

STATE OF KANSAS – CORPORATION COMMISSION

ONE POINT STABILIZED OPEN FLOW OR DELIVERABILITY TEST

TYPE TEST: ☐ Deliverability ☒ Open Flow TEST DATE: 12-5-67

COMPANY	LEASE	WELL NO.
Ferguson Oil Company	Friesen "C"	1

COUNTY	LOCATION	SECTION	TWP	RNG	ACRES
Meade	C NE SW NE	22	33S	28W	640

FIELD	RESERVOIR	PIPELINE CONNECTION
Borchers	Morrow	Panhandle Eastern Pipe Line Company

COMPLETION DATE	PLUG BACK TOTAL DEPTH	PACKER SET AT
1-20-67	5970	None

CASING SIZE	WT.	I.D.	SET AT	PERF.	TO
4½"O.D.	11.60#	4.000"	5969	5748	5750

TUBING SIZE	WT.	I.D.	SET AT	PERF.	TO
2 3/8"O.D.	4.70#	1.995"	5748	Open	

TYPE COMPLETION (Describe)	TYPE FLUID PRODUCTION
Single	Condensate & Water

PRODUCING THRU	RESERVOIR TEMPERATURE F	BAR. PRESS – P_a
Tubing	130°	14.4 Psia

GAS GRAVITY – G_g	% CARBON DIOXIDE	% NITROGEN	API GRAVITY OF LIQUID
.663	0.11	3.67	70.1 @ 60°

VERTICAL DEPTH (H)	TYPE METER CONN.	(METER) (RECOVERY) SIZE
5748	Pipe	4"

SHUT-IN PRESSURE: SHUT IN 12-1 19 67 AT 8:30 (AM)(PM) TAKEN 12-4 19 67 AT 9:30 (AM)(PM)

FLOW TEST: STARTED 12-4 19 67 AT 9:30 (AM)(PM) TAKEN 12-5 19 67 AT 9:30 (AM)(PM)

OBSERVED DATA

DURATION OF SHUT-IN 73 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	CASING WELLHEAD PRESS. psig	CASING WELLHEAD PRESS. $(P_w)(P_t)(P_c)$ psia	TUBING WELLHEAD PRESS. psig	TUBING WELLHEAD PRESS. $(P_w)(P_t)(P_c)$ psia	DURATION HOURS	LIQUID PROD. Bbls.
SHUT-IN						1609.0	1623.4	1597.0	1611.4	73	
FLOW	1.250	682.0	33.5	59		1522.0	1536.4	1457.0	1471.4	24	18.5

RATE OF FLOW CALCULATIONS

COEFFICIENT $(F_b)(F_p)$ Mcfd	(METER) (PROVER) PRESSURE psia	EXTENSION $\sqrt{P_m x h_w}$	GRAVITY FACTOR F_g	FLOWING TEMP. FACTOR F_t	DEVIATION FACTOR F_{pv}	RATE OF FLOW R Mcfd	GOR	Q_m
8.134	696.4	152.7	1.228	1.001	1.070	1634	88324	

(OPEN FLOW) (DELIVERABILITY) CALCULATIONS

$(P_c)^2$= 2635.4 ; $(P_w)^2$= 2360.5 ; P_d= ____ % $(P_c - 14.4) + 14.4$ = ____ ; $(P_d)^2$=0.207 $(P_d)^2$= ____

$(P_c)^2-(P_a)^2$ or $(P_c)^2-(P_d)^2$	$(P_c)^2-(P_w)^2$	$\left[\frac{P_c^2-P_a^2}{P_c^2-P_d^2}\right]$	LOG [ ]	"n"	n x LOG [ ]	ANTILOG	OPEN FLOW DELIVERABILITY EQUALS R x ANTILOG Mcfd
2635.2	274.9	9.586	.9817	.764	.7500	5.624	9,190

OPEN FLOW 9,190 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 10th day of Janauary, 1968.

Andy Oberle
Witness (if any)

W. Ferguson
For Company

K A Seaberg
For Commission

Checked by

STATE OF KANSAS – CORPORATION COMMISSION

FORM C-1
8-7-58

MULTIPOINT BACK PRESSURE TEST

TYPE TEST: [X] Initial [ ] Annual [ ] Special TEST DATE: 1-9-68

COMPANY: Ferguson Oil Company
LEASE: Friesen "C"
WELL NO.: 1
COUNTY: Meade
LOCATION: C NE SW NE
SECTION: 22
TWP: 33S
RNG: 28W
ACRES: 640
FIELD: Borchers
RESERVOIR: Morrow
PIPELINE CONNECTION: Panhandle Eastern Pipe Line Company
COMPLETION DATE: 1-20-67
PLUG BACK TOTAL DEPTH: 5970
PACKER SET AT: None
CASING SIZE: 4½"O.D. WT.: 11.60# ID: 4.000" SET AT: 5969 PERF.: 5748 TO: 5750
TUBING SIZE: 2 3/8"O.D. WT.: 4.70# ID.: 1.995" SET AT: 5748 PERF.: Open TO:
TYPE COMPLETION (Describe): Single
TYPE FLUID PRODUCTION: Condensate & Water
PRODUCING THRU: Tubing
RESERVOIR TEMPERATURE F: 130°
BAR PRESS – P_a: 14.4 Psia
GAS GRAVITY – G_g: .663
% CARBON DIOXIDE: 0.11
% NITROGEN: 3.67
API GRAVITY OF LIQUID: 701 @ 60°
VERTICAL DEPTH (H): 5748
TYPE METER CONN.:
(METER-RUN) (PROVER) SIZE: 2"
REMARKS:

OBSERVED DATA

DURATION OF SHUT-IN ____ HR.

RATE No.	ORIFICE SIZE in.	(METER) (PROVER) PRESSURE psig	DIFF. (h_w) (h_d)	FLOWING TEMP. t	WELL-HEAD TEMP. t	CASING WELLHEAD PRESS. psig	CASING WELLHEAD PRESS. $(P_w)(P_t)(P_c)$ psia	TUBING WELLHEAD PRESS. psig	TUBING WELLHEAD PRESS. $(P_w)(P_t)(P_c)$ psia	DURATION HOURS	LIQUID PROD. Bbls.
SHUT IN						1609.0	1623.4	1605.0	1619.4	792	
1	3/8	361.2		42		1569.0	1583.4	1511.0	1525.4	1	
2	3/8	444.7		48		1555.0	1569.4	1493.0	1507.4	1	
3	3/8	497.0		38		1542.0	1556.4	1481.0	1495.4	1	
4	3/8	654.0		38		1516.0	1530.4	1448.0	1462.4	1	4.2 Total Condensate
5											

RATE OF FLOW CALCULATIONS

RATE NO.	COEFFICIENT $(F_b)(F_p)$ Mcfd	(PROVER) PRESSURE psia	EXTENSION $\sqrt{P_m x h_w}$	GRAVITY FACTOR F_g	FLOWING TEMP FACTOR F_t	DEVIATION FACTOR F_{pv}	RATE OF FLOW Q Mcfd	GOR	Q_m
1	2.439	375.6		1.228	1.018	1.043	1194		
2	2.439	459.1		1.228	1.012	1.049	1460		
3	2.439	511.4		1.228	1.022	1.061	1661		
4	2.439	668.4		1.228	1.022	1.081	2212	259008	
5									

PRESSURE CALCULATIONS

RATE NO.	P_t psia	P_c psia	P_w psia	$(P_c)^2$ THOUSANDS	$(P_w)^2$ THOUSANDS	PLOTTING POINTS $(P_c)^2-(P_w)^2$ THOUSANDS	PLOTTING POINTS Q Mcfd	% SHUT-IN $100\left[\frac{P_w-P_a}{P_c-P_a}\right]$
1	1525.4	1623.4	1583.4	2635.4	2507.2	128.2	1194	98
2	1507.4	1623.4	1569.4	2635.4	2463.0	172.4	1460	97
3	1495.4	1623.4	1556.4	2635.4	2422.4	213.0	1661	96
4	1462.4	1623.4	1530.4	2635.4	2342.1	293.3	2212	94
5								

INDICATED WELLHEAD OPEN FLOW 12,000 Mcfd @ 14.65 psia "n" = .764

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 10th day of January, 19 68.

Andy Oberle
Witness (if any)

W. Dorsey
For Company

K A Beaber
For Commission

Checked by