

STATE OF KANSAS - CORPORATION COMMISSION

FORM O-2  
8-7-58

18  
P3  
3-27-90

ONE POINT STABILIZED OPEN FLOW OR DELIVERABILITY TEST 15-023-20053-0000

TYPE TEST:  Deliverability  Open Flow TEST DATE:

COMPANY Lobo Production Inc LEASE O'Brien B WELL NO. 1-35

COUNTY Cheyenne LOCATION: SECTION 35 TWP 4S RNO 42W ACRES

FIELD Benkelman RESERVOIR Niobrara PIPELINE CONNECTION KNE

COMPLETION DATE Completion 11-16-77 PLUG BACK TOTAL DEPTH T.O. 2125 Packer Set At

First Production 1-19-80 CSQ, T.O. 1417

CASING SIZE 4 1/2" WT. 10.5 I.D. SET AT 1281 PERF. TO 1309

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

TYPE COMPLETION (Describe) Single TYPE FLUID PRODUCTION State Dry Gas

PRODUCING THRU CSQ RESERVOIR TEMPERATURE F BAR. PRESS - P<sub>s</sub> 14.4 Psia

GAS GRAVITY - G<sub>r</sub> 0.593 % CARBON DIOXIDE % NITROGEN API GRAVITY OF LIQUID

VERTICAL DEPTH (H) Same TYPE METER CONN. Flange (METER RUN) (PROVER) SIZE 2" Flange

SHUT-IN PRESSURE: SHUT IN 1-4-90 1990 AT (AM)(PM) TAKEN 1-8 1990 AT 1:50 (AM)(PM)

FLOW TEST: STARTED Jan 8 1990 AT (AM)(PM) TAKEN 2-7 1990 AT (AM)(PM)

OBSERVED DATA

DURATION OF SHUT-IN 96 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>i</sub> )(P <sub>c</sub> ) psia	psig	(P <sub>w</sub> )(P <sub>i</sub> )(P <sub>c</sub> ) psia		
SHUT-IN		<u>218</u>				<u>218</u>	<u>232.4</u>			<u>96</u>	
FLOW	<u>0.1875</u>	<u>95</u>	<u>2"</u>			<u>105</u>	<u>119.4</u>			<u>24</u>	

RATE OF FLOW CALCULATIONS

COEFFICIENT (F <sub>p</sub> )(F <sub>d</sub> ) Mcfd	(METER) (PROVER) PRESSURE psia	EXTENSION $\sqrt{P_m h_w}$	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	Q <sub>m</sub>
<u>.1728</u>	<u>109.4</u>	$\frac{14.79}{\sqrt{109.4 \times 2}}$	<u>1.2986</u>	<u>1.00</u>	<u>1.00</u>	<u>3.3</u>		

(OPEN FLOW) (DELIVERABILITY) CALCULATIONS

(P<sub>c</sub>)<sup>2</sup> = 54.01, (P<sub>w</sub>)<sup>2</sup> = 14.26, P<sub>d</sub><sup>2</sup> = \_\_\_\_\_ % (P<sub>c</sub> - 14.4) + 14.4 = \_\_\_\_\_ (P<sub>w</sub>)<sup>2</sup> = 0.207 (P<sub>d</sub>)<sup>2</sup> = \_\_\_\_\_

$\frac{(P_c)^2 - (P_w)^2}{(P_c)^2 - (P_d)^2}$	(P <sub>c</sub> ) <sup>2</sup> - (P <sub>w</sub> ) <sup>2</sup>	$\frac{P_c^2 - P_w^2}{P_c^2 - P_d^2}$	LOG [ ]	"n"	n x LOG [ ]	ANTILOG	OPEN FLOW DELIVERABILITY EQUALS R x ANTILOG Mcfd
<u>53.8</u>	<u>39.75</u>	<u>1.3535</u>	<u>0.13445</u>	<u>0.95</u>	<u>0.111728</u>	<u>1.2934</u>	<u>4.3</u>

OPEN FLOW 4 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 20 day of March, 1990.

*John P. Sanders*  
For Company

Witness (if any)

For Commission

Checked by