

15-087-20457-0000

STATE OF KANSAS - CORPORATION COMMISSION  
ONE POINT STABILIZED OPEN FLOW OR DELIVERABILITY TEST

FORM O-2  
8-7-58

P2  
9-12-90

TYPE TEST:  Deliverability  Open Flow TEST DATE: 8-23-90

COMPANY: Columbian Services Corporation LEASE: A. Noll WELL NO.: 1-89

COUNTY: Jefferson LOCATION: C W/2 NW/4 SECTION: 19 TWP: 8S RNO: 20E ACRES: 20

FIELD: Unknown RESERVOIR: McLouth PIPELINE CONNECTION: Vanguard

COMPLETION DATE: 6-28-90 PLUG BACK TOTAL DEPTH: 1,703' PACKER SET AT: N/A

CASING SIZE: 4 1/2" WT.: 9.5 I.D.: SET AT: 1,711' PERF.: 1,653'-56' TO:

TUBING SIZE: 2 3/8" WT.: 4.7 I.D.: SET AT: 1,693' PERF.: N/A TO:

TYPE COMPLETION (Describe): Perforated TYPE FLUID PRODUCTION: Water

PRODUCING THRU: Tubing RESERVOIR TEMPERATURE: 90° BAR. PRESS - P<sub>a</sub>: 14.4 Psia

GAS GRAVITY - G<sub>g</sub>: 0.654 % CARBON DIOXIDE: Unknown % NITROGEN: Unknown API GRAVITY OF LIQUID: 1.005

VERTICAL DEPTH (H): 1,710' TYPE METER CONN.: (METER RUN)(PROVER) SIZE:

SHUT-IN PRESSURE: SHUT IN 6-28-90 19 AT (AM)(PM) TAKEN 6-28-90 19 AT (AM)(PM)

FLOW TEST: STARTED 8-23-90 19 AT (AM)(PM) TAKEN 8-24-90 19 AT (AM)(PM)

OBSERVED DATA DURATION OF SHUT-IN 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>c</sub> )(P <sub>e</sub> ) psia	psig	(P <sub>w</sub> )(P <sub>c</sub> )(P <sub>e</sub> ) psia		
SHUT-IN						420	434.4	420	434.4	2	
FLOW	0.5	83	24	90		180	194.4	85	99.4	24	0

RATE OF FLOW CALCULATIONS

COEFFICIENT (F <sub>1</sub> )(F <sub>2</sub> ) Mcfd	(METER) (PROVER) PRESSURE psia	EXTENSION $\sqrt{P_m h_w}$	GRAVITY FACTOR F <sub>g</sub>	FLOWING TEMP. FACTOR F <sub>t</sub>	DEVIATION FACTOR F <sub>pv</sub>	RATE OF FLOW R Mcfd	GOR	G <sub>m</sub>
1.219	97.4	48.348	1.237	0.9723	1.00585	71		

(OPEN FLOW) (DELIVERABILITY) CALCULATIONS

(P<sub>c</sub>)<sup>2</sup> = 188,703 ; (P<sub>w</sub>)<sup>2</sup> = 37,791 ; P<sub>d</sub> = 22 % (P<sub>c</sub> - 14.4) + 14.4 = 14.4 ; (P<sub>w</sub>)<sup>2</sup> = 0.207 .2074

$\frac{(P_c)^2 - (P_w)^2}{(P_c)^2 - (P_d)^2}$	$(P_c)^2 - (P_w)^2$	$\frac{P_c^2 - P_d^2}{P_c^2 - P_w^2}$	LOG [ ]	"n"	n x LOG [ ]	ANTILOG	OPEN FLOW DELIVERABILITY EQUALS R x ANTILOG Mcfd
188,496	150,912	1.249	0.0965	0.85	0.08209	1.208	86 Mcfd

OPEN FLOW 86 Mcfd @ 14.65 psia DELIVERABILITY 86 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 5 day of Sept., 1990

CONSERVATION DIVISION  
Wichita, Kansas

*St. Brady*  
For Company

Witness (if any)

For Commission

Checked by