

# KANSAS CORPORATION COMMISSION ONE POINT STABILIZED OPEN FLOW OR DELIVERABILITY TEST

(See Instructions on Reverse Side)

Type Test:

- Open Flow  
 Deliverability

Test Date:  
12-27-13

API No. 15  
095-20571-0000

Company Rakestraw Bros., LLC		Lease Vorand D		Well Number 4	
County Kingman	Location 1980FSL3300FEL	Section 23	TWP 29a	RNG (E/W) 7w	Acres Attributed
Field Basil		Reservoir Miss.		Gas Gathering Connection Trenton	
Completion Date 7-27-1977		Plug Back Total Depth 4198		Packer Set at none	
Casing Size 8 5/8	Weight 24 #	Internal Diameter	Set at 317	Perforations 2680	To 2690
Tubing Size 2.375	Weight 4.7 #	Internal Diameter 1.995	Set at 4150	Perforations 4115	To 4145
Type Completion (Describe) dual oil/gas		Type Fluid Production		Pump Unit or Traveling Plunger? Yes / No pumping yes	
Producing Thru (Annulus / Tubing) both		% Carbon Dioxide		% Nitrogen Gas Gravity - G <sub>g</sub>	
Vertical Depth(H)		Pressure Taps		(Meter Run) (Prover) Size	

Pressure Buildup: Shut in 12-26 20 13 at 10:00 a.m. (AM) (PM) Taken 12-27 20 13 at 10:00a.m. (AM) (PM)  
Well on Line: Started \_\_\_\_\_ 20 \_\_\_\_\_ at \_\_\_\_\_ (AM) (PM) Taken \_\_\_\_\_ 20 \_\_\_\_\_ at \_\_\_\_\_ (AM) (PM)

### OBSERVED SURFACE DATA

Duration of Shut-in 24 Hours

Static / Dynamic Property	Orifice Size (inches)	Circle one: Meter Prover Pressure psig (Pm)	Pressure Differential in Inches H <sub>2</sub> O	Flowing Temperature t	Well Head Temperature t	Casing Wellhead Pressure (P <sub>w</sub> ) or (P <sub>i</sub> ) or (P <sub>c</sub> )		Tubing Wellhead Pressure (P <sub>w</sub> ) or (P <sub>i</sub> ) or (P <sub>c</sub> )		Duration (Hours)	Liquid Produced (Barrels)
						psig	psia	psig	psia		
Shut-In						22	24				
Flow											

### FLOW STREAM ATTRIBUTES

Plate Coefficient (F <sub>a</sub> ) (F <sub>p</sub> ) Mcfd	Circle one: Meter or Prover Pressure psia	Press Extension $\sqrt{P_m \times h}$	Gravity Factor F <sub>g</sub>	Flowing Temperature Factor F <sub>tt</sub>	Deviation Factor F <sub>pv</sub>	Metered Flow R (Mcf/d)	GOR (Cubic Feet/ Barrel)	Flowing Fluid Gravity G <sub>m</sub>

### (OPEN FLOW) (DELIVERABILITY) CALCULATIONS

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

(P <sub>c</sub> ) <sup>2</sup> - (P <sub>a</sub> ) <sup>2</sup> or (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>	Choose formula 1 or 2: 1. P <sub>c</sub> <sup>2</sup> - P <sub>a</sub> <sup>2</sup> 2. P <sub>c</sub> <sup>2</sup> - P <sub>d</sub> <sup>2</sup> divided by: P <sub>c</sub> <sup>2</sup> - P <sub>w</sub> <sup>2</sup>	LOG of formula 1. or 2. and divide by: $\left[ \frac{P_c^2 - P_w^2}{P_c^2 - P_a^2} \right]$	Backpressure Curve Slope = "n" or Assigned Standard Slope	n x LOG $\left[ \frac{P_c^2 - P_w^2}{P_c^2 - P_a^2} \right]$	Antilog	Open Flow Deliverability Equals R x Antilog (Mcf/d)

Open Flow 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 27th day of December, 20 13

\_\_\_\_\_  
Witness (if any)  
\_\_\_\_\_  
For Commission

*See attached*

\_\_\_\_\_  
For Company **KCC WICHITA**

Checked by

**JAN 03 2014**

**RECEIVED**

I declare under penalty of perjury under the laws of the state of Kansas that I am authorized to request exempt status under Rule K.A.R. 82-3-304 on behalf of the operator Rakestraw Bros., LLC and that the foregoing pressure information and statements contained on this application form are true and correct to the best of my knowledge and belief based upon available production summaries and lease records of equipment installation and/or upon type of completion or upon use being made of the gas well herein named.

I hereby request a one-year exemption from open flow testing for the Voran D #4 gas well on the grounds that said well:

(Check one)

- is a coalbed methane producer
- is cycled on plunger lift due to water
- is a source of natural gas for injection into an oil reservoir undergoing ER
- is on vacuum at the present time; KCC approval Docket No. \_\_\_\_\_
- is not capable of producing at a daily rate in excess of 250 mcf/D

I further agree to supply to the best of my ability any and all supporting documents deemed by Commission staff as necessary to corroborate this claim for exemption from testing.

Date: 12-27-2013

Signature:   
Title: Managing Partner

**Instructions:** If a gas well meets one of the eligibility criteria set out in KCC regulation K.A.R. 82-3-304, the operator may complete the statement provided above in order to claim exempt status for the gas well.

At some point during the current calendar year, wellhead shut-in pressure shall have been measured after a minimum of 24 hours shut-in/buildup time and shall be reported on the front side of this form under **OBSERVED SURFACE DATA**. Shut-in pressure shall thereafter be reported yearly in the same manner for so long as the gas well continues to meet the eligibility criterion or until the claim of eligibility for exemption **IS** denied.

The G-2 form conveying the newest shut-in pressure reading shall be filed with the Wichita office no later than December 31 of the year for which it's intended to acquire exempt status for the subject well. The form must be signed and dated on the front side as though it was a verified report of annual test results.

KCC WICHITA

JAN 03 2014

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Producing Thru (Annulus / Tubing) both		% Carbon Dioxide		% Nitrogen	
Vertical Depth(H)		Pressure Taps		(Meter Run) (Prover) Size	

Pressure Buildup: Shut In 12-26-2013 at 10:00 (AM) Taken 12-27-2013 at 10:00 (AM) (PM)

Well on Line: Started 20 at (AM) (PM) Taken 20 at (AM) (PM)

### OBSERVED SURFACE DATA

Duration of Shut-In 24 Hours

Static / Dynamic Property	Orifice Size (inches)	Casing or Meter Prover Pressure psig (Pm)	Pressure Differential in Inches H <sub>2</sub> O	Flowing Temperature t	Well Head Temperature t	Casing Wellhead Pressure (P <sub>c</sub> ) or (P <sub>w</sub> ) or (P <sub>o</sub> )		Tubing Wellhead Pressure (P <sub>w</sub> ) or (P <sub>t</sub> ) or (P <sub>o</sub> )		Duration (Hours)	Liquid Produced (Barrels)
						psig	psia	psig	psia		
Shut-In						22	46	0			0
Flow											

### FLOW STREAM ATTRIBUTES

Plate Coefficient (F <sub>p</sub> ) (F <sub>o</sub> ) Mod	Casing or Meter or Prover Pressure psia	Press Extension $\sqrt{P_m \times h}$	Gravity Factor F <sub>g</sub>	Flowing Temperature Factor F <sub>T</sub>	Deviation Factor F <sub>ps</sub>	Metered Flow R (Mold)	GOR (Cubic Foot/ Barrel)	Flowing Fluid Gravity G <sub>o</sub>

### (OPEN FLOW) (DELIVERABILITY) CALCULATIONS

(P<sub>c</sub>)<sup>2</sup> = \_\_\_\_\_ (P<sub>w</sub>)<sup>2</sup> = \_\_\_\_\_ P<sub>o</sub> = \_\_\_\_\_ % (P<sub>o</sub> - 14.4) + 14.4 = \_\_\_\_\_ (P<sub>o</sub>)<sup>2</sup> = 0.207 (P<sub>o</sub>)<sup>2</sup> = \_\_\_\_\_

(P <sub>c</sub> ) <sup>2</sup> - (P <sub>w</sub> ) <sup>2</sup> or (P <sub>w</sub> ) <sup>2</sup> - (P <sub>o</sub> ) <sup>2</sup>	(P <sub>w</sub> ) <sup>2</sup> - (P <sub>o</sub> ) <sup>2</sup>	Choose formula 1 or 2 1. $P_c^2 - P_o^2$ 2. $P_w^2 - P_o^2$ divided by: $P_c^2 - P_w^2$	LOG of formula 1, or 2 and divide by: $P_o^2 - P_w^2$	Backpressure Curve Slope = "n" or Assigned Standard Slope	n x LOG	Antilog	Open Flow Deliverability Equals R x Antilog (Mold)

Open Flow Mold @ 14.65 psia Deliverability Mold @ 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 27 day of December, 2013.

Witness (if any) \_\_\_\_\_  
For Commission \_\_\_\_\_  
Eman Elias Sanchez  
For Company \_\_\_\_\_  
Checked by \_\_\_\_\_

KCC WICHITA

JAN 03 2014

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