

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

Type Test:

- Open Flow  **SI**  
 Deliverability

(See Instructions on Reverse Side)

Test Date:  
7/22/2008

API No. 15  
181-20488-01 - 00

Company Rosewood Resources, Inc.		Lease Crouch		Well Number 21-02H	
County Sherman	Location NENW	Section 2	TWP 7S	RNG (E/W) 39W	Acres Attributed 80
Field Goodland		Reservoir Niobrara		Gas Gathering Connection Branch Systems Inc.	
Completion Date 2/28/2007		Plug Back Total Depth 2846'		Packer Set at <b>MEASURED DISTANCE FROM SURFACE TO END OF LATERAL</b> 2779'	
Casing Size 4 1/2"	Weight 11.6	Internal Diameter 4.000	Set at 2846'	Perforations 2779'	To 2794'
Tubing Size NONE	Weight	Internal Diameter	Set at	Perforations	To
Type Completion (Describe) Single (Horizontal)		Type Fluid Production Dry Gas		Pump Unit or Traveling Plunger? Yes / <input checked="" type="radio"/> No	
Producing Thru (Annulus / Tubing) Annulus		% Carbon Dioxide		% Nitrogen	Gas Gravity - G <sub>g</sub> .6
Vertical Depth(H) 2859'		Pressure Taps Flange		(Meter Run) (Prover) Size 2"	
Pressure Buildup: Shut in 7-22 20 08 at 9:00 (AM) (PM) Taken 7-23 20 08 at 9:20 (AM) (PM)		Well on Line: Started 7-23 20 08 at 9:20 (AM) (PM) Taken 7-24 20 08 at 9:05 (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>1</sub> ) or (P <sub>c</sub> )		Tubing Wellhead Pressure (P <sub>w</sub> ) or (P <sub>1</sub> ) or (P <sub>c</sub> )		Duration (Hours)	Liquid Produced (Barrels)
						psig	psia	psig	psia		
Shut-In						28.6	42.4				
Flow						29	43.4			24	0

### FLOW STREAM ATTRIBUTES

Plate Coefficient (F <sub>s</sub> ) (F <sub>o</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>t</sub>	Deviation Factor F <sub>pv</sub>	Metered Flow R (Mcfd)	GOR (Cubic Feet/ Barrel)	Flowing Fluid Gravity G <sub>m</sub>
						6		

### (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: $\frac{P_c^2 - P_a^2}{P_c^2 - P_w^2}$	Backpressure Curve Slope = "n" ----- or ----- Assigned Standard Slope	n x LOG [ ]	Antilog	Open Flow Deliverability Equals R x Antilog (Mcfd)

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 23 day of October, 20 08

Witness (if any)

For Commission

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JAN 29 2009

CONSERVATION DIVISION  
WICHITA, KS

*Tom W. Roelfs*  
For Company

Checked by

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 Rosewood Resources, Inc.

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 Crouch 21-02H 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: 10/23/08

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Signature: *Tom W. Roelfs* CONSERVATION DIVISION

Title: Production Foreman WICHITA, KS

**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.

W2420  
 Crouch 21-02H  
 North Goodland  
 Goodland  
 None  
 July-08

DATE	Casing		MCF	HRS		REMARKS (Maximum length 110 characters)
	PSI	STATIC		DOWN		
7/1/2008	14	27		7	0	
7/2/2008	14	27		7	0	
7/3/2008	14	27		7	0	
7/4/2008	14	27		7	0	
7/5/2008	14	27		7	0	
7/6/2008	14	27		7	0	
7/7/2008	14	27		7	0	
7/8/2008	14	27		7	0	
7/9/2008	14	27		7	0	
7/10/2008	14	27		7	0	
7/11/2008	14	27		7	1	
7/12/2008	14	27		5	2	
7/13/2008	14	27		6	0	
7/14/2008	14	27		7	0	
7/15/2008	14	27		7	0	
7/16/2008	14	27		7	0	
7/17/2008	14	27		7	0	
7/18/2008	14	27		7	0	
7/19/2008	14	27		7	6	
7/20/2008	14	27		7	4	
7/21/2008	15	28		6	4	
7/22/2008	15	28		6	0	shut in 9am
7/23/2008	18	31		0	24	
7/24/2008	16	29		3	0	opened 9:10am
7/25/2008	16	29		7	0	
7/26/2008	16	29		7	0	
7/27/2008	16	29		7	0	
7/28/2008	16	29		7	0	
7/29/2008	16	29		7	10	
7/30/2008	16	29		4	0	
7/31/2008	16	29		5	0	

Total

196

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W2420  
 Crouch 21-02H  
 North Goodland  
 Goodland  
 None  
 August-08

DATE	Casing			HRS		REMARKS (Maximum length 110 characters)
	PSI	STATIC	MCF	DOWN		
8/1/2008	16	29	6	2		
8/2/2008	16	29	6	0		
8/3/2008	16	29	6	0		
8/4/2008	16	29	6	0		
8/5/2008	16	29	6	0		
8/6/2008	16	29	6	0		
8/7/2008	16	29	6	5.5		
8/8/2008	23	36	2	5		
8/9/2008	25	38	0	24		
8/10/2008	25	38	0	0		
8/11/2008	18	31	3	0		
8/12/2008	19	32	4	0		
8/13/2008	22	35	5	0		
8/14/2008	21	34	5	0		
8/15/2008	21	34	6	0		
8/16/2008	17	30	6	0		
8/17/2008	17	30	5	0		
8/18/2008	17	30	4	0		
8/19/2008	17	30	5	0		
8/20/2008	17	30	5	0		
8/21/2008	19	32	2	7		
8/22/2008	19	32	4	0		
8/23/2008	17	30	6	0		
8/24/2008	17	30	6	0		
8/25/2008	17	30	6	0		
8/26/2008	17	30	6	0		
8/27/2008	17	30	6	0		
8/28/2008	17	30	6	0		
8/29/2008	17	30	6	0		
8/30/2008	17	30	6	0		
8/31/2008	17	30	6	0		

Total

152

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W2420  
 Crouch 21-02H  
 North Goodland  
 Goodland  
 None  
 September-08

DATE	Casing			HRS		REMARKS (Maximum length 110 characters)
	PSI	STATIC	MCF	DOWN		
9/1/2008	16	29		6	0	
9/2/2008	16	29		6	0	
9/3/2008	16	29		6	0	
9/4/2008	18	31		3	0	
9/5/2008	18	31		3	0	
9/6/2008	15	28		6	0	
9/7/2008	15	28		6	0	
9/8/2008	15	28		6	0	
9/9/2008	15	28		6	0	
9/10/2008	15	28		6	8	
9/11/2008	17	30		3	0	
9/12/2008	16	29		6	0	
9/13/2008	16	29		6	0	
9/14/2008	16	29		6	0	
9/15/2008	16	29		6	0	
9/16/2008	16	29		6	0	
9/17/2008	16	29		6	0	
9/18/2008	16	29		6	0	
9/19/2008	16	29		6	0	
9/20/2008	16	29		6	0	
9/21/2008	16	29		6	0	
9/22/2008	16	29		6	0	
9/23/2008	16	29		6	0	
9/24/2008	16	29		6	0	
9/25/2008	16	29		6	0	
9/26/2008	16	29		6	0	
9/27/2008	16	29		6	0	
9/28/2008	16	29		6	0	
9/29/2008	16	29		6	0	
9/30/2008	16	29		6	0	
10/1/2008					0	

Total

171

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