

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

(See Instructions on Reverse Side)

Type Test:

- Open Flow **AST**  
 Deliverability

Test Date:  
7/29/2009

API No. 15  
15-023-20587-00-00

Company Rosewood Resources		Lease Isernhagen		Well Number 2-23	
County Cheyenne	Location NWSE	Section 23	TWP 3S	RNG (E/W) 41W	Acres Attributed 80
Field St. Francis		Reservoir Niobrara		Gas Gathering Connection Branch Systems Inc.	
Completion Date 9/10/2004		Plug Back Total Depth 1508'		Packer Set at	
Casing Size 4 1/2"	Weight 10.5#	Internal Diameter 4.052	Set at 1514'	Perforations 1316'	To 1352'
Tubing Size none	Weight	Internal Diameter	Set at	Perforations	To
Type Completion (Describe) Single (Conventional)		Type Fluid Production Dry Gas		Pump Unit or Traveling Plunger? <input checked="" type="radio"/> Yes <input type="radio"/> No Pumping Unit	
Producing Thru (Annulus / Tubing) Annulus		% Carbon Dioxide		% Nitrogen	
Vertical Depth(H) 1352'		Pressure Taps Flange		(Meter Run) (Prover) Size 2"	
Pressure Buildup: Shut in 7-29 20 09 at 8:25 (AM) (PM) Taken 7-30 20 09 at 8:40 (AM) (PM)		Well on Line: Started 7-30 20 09 at 8:40 (AM) (PM) Taken 7-31 20 09 at 9:25 (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						60	74.4				
Flow						150	164.4			24	0

### FLOW STREAM ATTRIBUTES

Plate Coefficient (F <sub>s</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 (Mcfd)	GOR (Cubic Feet/ Barrel)	Flowing Fluid Gravity G <sub>m</sub>
						50		

### (OPEN FLOW) (DELIVERABILITY) CALCULATIONS

(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>w</sub> ) <sup>2</sup> = _____	P <sub>d</sub> = _____ %	(P <sub>c</sub> - 14.4) + 14.4 = _____				
(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: $\frac{P_c^2 - P_w^2}{P_c^2 - P_a^2}$	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 18 day of November 2009.

\_\_\_\_\_  
Witness (if any)

*Tom W. Neel*  
\_\_\_\_\_  
For Company

\_\_\_\_\_  
For Commission

\_\_\_\_\_  
Checked by

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**KCC WICHITA**

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.

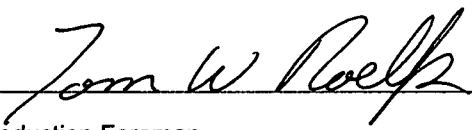
I hereby request a one-year exemption from open flow testing for the Isernhagen 2-23 gas well on the grounds that said well:

(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: 11/18/09

Signature:   
Title: Production Foreman

**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.

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W353  
 Isernhagen 02-23  
 St. Francis  
 St. Francis  
 None  
 July-09

DATE	Tubing Casing		STATIC MCF	SPM	CYCLE	HRS DOWN	Water BBLs	REMARKS (Maximum length 110 characters)
	PSI	PSI						
7/1/2009			69	75	6.5	18	0	32
7/2/2009			69	75	6.5	18	0	31
7/3/2009			70	75	6.5	18	0	32
7/4/2009			69	75	6.5	18	0	33
7/5/2009			70	75	6.5	18	0	32
7/6/2009			70	75	6.5	18	0	31
7/7/2009			69	75	0	0	0	32
7/8/2009			168	60	0	0	6	0
7/9/2009			89	30	0	0	3	0
7/10/2009			70	67	0	0	0	0
7/11/2009			69	75	0	0	0	0
7/12/2009			62	58	6.5	18	0	18 restart p u
7/13/2009			69	75	6.5	18	0	31
7/14/2009			70	75	6.5	18	0	32
7/15/2009			78	70	6.5	18	0	33
7/16/2009			78	70	6.5	18	0	32 bucket test 4 min
7/17/2009			71	70	6.5	18	0	32
7/18/2009			71	72	6.5	18	0	31
7/19/2009			67	73	6.5	18	0	32
7/20/2009			70	70	6.5	18	7	33
7/21/2009			68	72	6.5	18	0	32
7/22/2009			61	72	6.5	18	0	33
7/23/2009			65	72	6.5	18	0	34
7/24/2009			61	72	6.5	18	0	33
7/25/2009			70	72	6.5	18	0	32 bucket test 4 min
7/26/2009			68	70	6.5	18	0	31
7/27/2009			68	66	6.5	18	4	32
7/28/2009			69	73	6.5	18	0	34
7/29/2009			69	73	6.5	18	0	33
7/30/2009		60	75	72	0	0	0	32 shut in for test
7/31/2009		150	67	7	6.5	18	0	0 open

Total

2111

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W353  
 Isernhagen 02-23  
 St. Francis  
 St. Francis  
 None  
 August-09

DATE	Tubing PSI	Casing PSI	STATIC	MCF	SPM	CYCLE	HRS DOWN	Water BBLs	REMARKS (Maximum length 110 characters)
8/1/2009			71	89	6.5	18	0	32	
8/2/2009			71	73	6.5	18	0	31	
8/3/2009			77	75	6.5	18	0	32	
8/4/2009			77	75	6.5	18	0	33	
8/5/2009			146	75	6.5	18	0	32	
8/6/2009			67	76	6.5	18	0	31	
8/7/2009			71	73	6.5	18	0	32	
8/8/2009			71	74	6.5	18	0	33	
8/9/2009			71	73	6.5	18	0	32	
8/10/2009			71	72	0	0	0	32	PU OFF
8/11/2009			71	63	0	0	0	0	
8/12/2009			71	63	0	0	0	0	
8/13/2009			60	59	0	0	0	0	
8/14/2009			65	62	0	0	0	0	
8/15/2009			67	68	0	0	0	0	
8/16/2009			138	48	0	0	0	0	
8/17/2009			136	48	0	0	0	0	
8/18/2009			137	51	0	0	0	0	
8/19/2009			137	51	0	0	0	0	
8/20/2009			64	63	6.5	18	0	0	started pump
8/21/2009			67	73	6.5	18	0	32	
8/22/2009			64	72	6.5	18	4	33	
8/23/2009			123	65	6.5	18	0	32	
8/24/2009			150	66	6.5	18	0	31	
8/25/2009			96	60	6.5	18	4	32	
8/26/2009			66	72	6.5	18	0	33	
8/27/2009			67	70	6.5	18	0	32	
8/28/2009			67	70	6.5	18	0	31	
8/29/2009			123	70	6.5	18	0	32	
8/30/2009			67	70	6.5	18	0	33	
8/31/2009			67	72	6.5	18	0	31	

Total

2091

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W353  
 Isernhagen 02-23  
 St. Francis  
 St. Francis  
 None  
 September-09

DATE	Tubing PSI	Casing PSI	STATIC	MCF	SPM	CYCLE	HRS DOWN	Water BBLs
9/1/2009		0	67	72	6.5	18	0	32
9/2/2009		0	67	72	6.5	18	0	33
9/3/2009		0	70	72	6.5	18	0	31
9/4/2009		0	91	63	6.5	18	6	30
9/5/2009		0	71	74	6.5	18	0	31
9/6/2009		0	69	72	6.5	18	0	32
9/7/2009		0	69	72	6.5	18	0	31
9/8/2009		0	69	72	0	0	0	32
9/9/2009		0	71	67	0	0	0	0
9/10/2009		0	66	60	0	0	0	0
9/11/2009		0	64	57	0	0	0	0
9/12/2009		0	63	54	0	0	0	0
9/13/2009		0	69	52	0	0	1.5	0
9/14/2009		0	62	49	0	0	0	0
9/15/2009		0	64	49	0	0	0	0
9/16/2009		0	61	48	0	0	0	0
9/17/2009		0	60	47	0	0	0	0
9/18/2009		0	60	46	0	0	0	0
9/19/2009		0	59	46	0	0	0	0
9/20/2009		0	59	45	0	0	0	0
9/21/2009		0	60	45	0	0	0	0
9/22/2009		0	59	44	0	0	0	0
9/23/2009		0	59	44	0	0	0	0
9/24/2009		0	58	43	0	0	0	0
9/25/2009		0	77	34	0	0	6	0
9/26/2009		0	114	45	0	0	0	0
9/27/2009		0	96	40	0	0	0	0
9/28/2009		0	88	39	0	0	0	0
9/29/2009		0	65	39	0	0	0	0
9/30/2009		0	72	28	0	0	8	0
10/1/2009		0	0	0	0	0	0	0

Total

1590

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