

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

Type Test:

- Open Flow **AST**  
 Deliverability

(See Instructions on Reverse Side)

Test Date:  
6/22/14

API No. 15  
023-20635-0000

Company Rosewood Resources, Inc.		Lease Ella Mae		Well Number 14-3	
County Cheyenne	Location SWSW	Section 3	TWP 3S	RNG (E/W) 42W	Acres Attributed 80
Field Cherry Creek		Reservoir Niobrara		Gas Gathering Connection Branch Systems Inc.	
Completion Date 10-21-2005		Plug Back Total Depth 1715'		Packer Set at	
Casing Size 2 7/8"	Weight 6.5#	Internal Diameter 2.441	Set at 1715'	Perforations 1575'	To 1607'
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? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Producing Thru (Annulus / Tubing) Annulus		% Carbon Dioxide		% Nitrogen	
Vertical Depth(H) 1573'		Pressure Taps Flange		Gas Gravity - G <sub>g</sub> .6	
Pressure Buildup: Shut in 6-7 20 14 at 1:15 (AM) (PM) Taken 6-18 20 14 at 1:30 (AM) (PM)		Well on Line: Started 6-22 20 14 at 1:30 (AM) (PM) Taken 6-23 20 14 at 3:00 (AM) (PM)			

### OBSERVED SURFACE DATA

Duration of Shut-in 360 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						190	204.4				
Flow						44	58.4			360	0

### FLOW STREAM ATTRIBUTES

Plate Coefficient (F <sub>p</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>t</sub>	Deviation Factor F <sub>pv</sub>	Metered Flow R (Mcf/d)	GOR (Cubic Feet/ Barrel)	Flowing Fluid Gravity G <sub>m</sub>
						2		

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

Open Flow Mcf/d @ 14.65 psia Deliverability Mcf/d @ 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 10 day of December, 20 14.

Received Jannell Martiney  
 Witness (if any) \_\_\_\_\_ KANSAS CORPORATION COMMISSION For Company  
 For Commission \_\_\_\_\_ FEB 25 2015 \_\_\_\_\_ 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 Ella Mae 14-03 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: 12/10/14

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FEB 25 2015

CONSERVATION DIVISION  
WICHITA, KS

Signature: Jannell Mattney  
Title: Production Assistant

**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.

W435  
 Ella Mae 14-03  
 West St. Francis  
 St. Francis  
 None  
 June-14

DATE	Casing		MCF	HRS		REMARKS (Maximum length 110 characters)
	PSI	STATIC		DOWN		
6/1/2014	47	61		2	0	
6/2/2014	66	79		2	0	
6/3/2014	60	74		3	0	
6/4/2014	40	54		3	0	
6/5/2014	29	53		3	0	
6/6/2014	43	56		2	0	
6/7/2014	162	175		1	9	
6/8/2014	164	177		0	24	
6/9/2014	167	180		0	24	
6/10/2014	170	183		0	24	
6/11/2014	175	188		0	24	
6/12/2014	182	195		0	24	
6/13/2014	186	199		0	24	
6/14/2014	187	200		0	24	
6/15/2014	187	200		0	24	
6/16/2014	189	202		0	24	
6/17/2014	190	203		0	24	
6/18/2014	190	203		0	24	
6/19/2014	190	203		0	24	
6/20/2014	190	203		0	24	
6/21/2014	190	203		0	24	
6/22/2014	190	203		0	24	
6/23/2014	113	126		7	5	
6/24/2014	107	120		8	0	
6/25/2014	93	107		3	0	
6/26/2014	85	99		3	0	
6/27/2014	76	90		3	0	
6/28/2014	46	60		3	0	
6/29/2014	45	59		3	0	
6/30/2014	44	58		3	0	
7/1/2014					0	

Total 49

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W435  
 Ella Mae 14-03  
 West St. Francis  
 St. Francis  
 None  
 July-14

DATE	Casing		HRS		REMARKS (Maximum length 110 characters)
	PSI	STATIC MCF	DOWN		
7/1/2014	43	57	2	0	
7/2/2014	44	58	2	0	
7/3/2014	44	58	2	0	
7/4/2014	44	58	2	0	
7/5/2014	48	61	1	0	
7/6/2014	48	61	1	0	
7/7/2014	62	75	1	0	
7/8/2014	50	63	1	0	
7/9/2014	50	63	1	0	
7/10/2014	51	64	0	0	
7/11/2014	52	65	1	0	
7/12/2014	53	66	0	0	
7/13/2014	54	67	0	0	
7/14/2014	83	96	0	0	
7/15/2014	43	56	1	0	
7/16/2014	43	56	0	0	
7/17/2014	44	57	0	0	
7/18/2014	44	57	0	0	
7/19/2014	44	57	0	0	
7/20/2014	42	55	0	0	
7/21/2014	116	129	1	0	
7/22/2014	74	87	0	22	
7/23/2014	62	75	2	7	
7/24/2014	55	69	2	3	
7/25/2014	49	62	2	4	
7/26/2014	41	54	1	0	
7/27/2014	42	55	0	0	
7/28/2014	37	50	0	0	
7/29/2014	34	47	1	0	
7/30/2014	28	42	1	0	
7/31/2014	28	42	1	0	

Total

26

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CONSERVATION DIVISION  
 WICHITA, KS

W435  
 Ella Mae 14-03  
 West St. Francis  
 St. Francis  
 None  
 August-14

DATE	Casing		MCF	HRS		REMARKS (Maximum length 110 characters)
	PSI	STATIC		DOWN		
8/1/2014	28	41		2	0	
8/2/2014	28	41		2	0	
8/3/2014	27	40		2	0	
8/4/2014	45	58		2	0	
8/5/2014	45	58		2	0	
8/6/2014	46	59		2	0	
8/7/2014	47	60		2	0	
8/8/2014	48	61		2	0	
8/9/2014	48	61		2	0	
8/10/2014	50	63		2	0	
8/11/2014	53	66		2	0	
8/12/2014	44	57		2	0	
8/13/2014	26	40		2	0	
8/14/2014	26	40		2	0	
8/15/2014	51	64		2	3	
8/16/2014	26	39		2	0	
8/17/2014	26	39		2	0	
8/18/2014	26	39		2	0	
8/19/2014	57	70		2	2	
8/20/2014	52	66		2	0	
8/21/2014	29	43		2	0	
8/22/2014	58	72		2	0	
8/23/2014	41	55		2	0	
8/24/2014	43	57		2	0	
8/25/2014	64	77		1	0	
8/26/2014	49	63		1	0	
8/27/2014	49	63		2	0	
8/28/2014	50	64		2	0	
8/29/2014	42	55		2	5	
8/30/2014	42	55		2	0	
8/31/2014	54	68		2	0	

Total

60

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**FEB 25 2015**

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