

# 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  
023-21244-0000

Company Rosewood Resources, Inc.		Lease Neitzel		Well Number 21-20	
County Cheyenne	Location NENW	Section 20	TWP 3S	RNG (E/W) 40W	Acres Attributed 80
Field Cherry Creek		Reservoir Niobrara		Gas Gathering Connection Branch Systems Inc.	
Completion Date 9/30/2010		Plug Back Total Depth 1444'		Packer Set at	
Casing Size 4 1/2"	Weight 10.5#	Internal Diameter 6.366	Set at 1481'	Perforations 1224'	To 1304'
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) 1495'		Pressure Taps Flange		(Meter Run) (Prover) Size 2"	
Pressure Buildup: Shut in 6-7 20 14 at 2:40 (AM) (PM) Taken 6-16 20 14 at 3:55 (AM) (PM)		Well on Line: Started 6-22 20 14 at 3:55 (AM) (PM) Taken 6-23 20 14 at 4:00 (AM) (PM)			

### OBSERVED SURFACE DATA

Duration of Shut-in **360** Hours

Static / Dynamic Property	Orifice Size (Inches)	Circle one: Meter or 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						231	245.4				
Flow						67	81.4			360	

### FLOW STREAM ATTRIBUTES

Plate Coefficient (F <sub>b</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>
						13		

### (OPEN FLOW) (DELIVERABILITY) CALCULATIONS


(P<sub>o</sub>)<sup>2</sup> = 0.207  
(P<sub>d</sub>)<sup>2</sup> = \_\_\_\_\_

(P<sub>o</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>o</sub> ) <sup>2</sup> - (P <sub>a</sub> ) <sup>2</sup> or (P <sub>o</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>o</sub> <sup>2</sup> - P <sub>a</sub> <sup>2</sup> 2. P <sub>o</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: $\frac{P_c^2 - P_w^2}{P_o^2 - P_a^2}$	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 12 day of December, 20 14.

Received   
KANSAS CORPORATION COMMISSION For Company

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

FEB 25 2015

CONSERVATION DIVISION  
WICHITA, KS

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 Neitzel 21-20 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: 12/12/14

Received  
KANSAS CORPORATION COMMISSION Signature: Jannell Martiney

FEB 25 2015

Title: Production Assistant

CONSERVATION DIVISION  
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.

W2746

Neitzel 21-20

St. Francis

St. Francis

Flow

June-12<sup>4</sup>

FloBoss

DATE	Casing PSI	STATIC	MCF	HRS DOWN	REMARKS (Maximum length 110 characters)
6/1/2013	68	81		13	0
6/2/2013	72	85		13	0
6/3/2013	85	98		13	0
6/4/2013	81	94		13	0
6/5/2013	64	77		13	0
6/6/2013	65	78		13	0
6/7/2013	176	189		8	9
6/8/2013	189	202		0	24
6/9/2013	201	214		0	24
6/10/2013	213	226		0	24
6/11/2013	222	235		0	24
6/12/2013	227	240		0	24
6/13/2013	228	241		0	24
6/14/2013	230	243		0	24
6/15/2013	230	243		0	24
6/16/2013	231	244		0	24
6/17/2013	231	244		0	24
6/18/2013	231	244		0	24
6/19/2013	226	239		0	24
6/20/2013	221	234		0	24
6/21/2013	203	216		0	24
6/22/2013	203	216		0	24
6/23/2013	136	149		24	5
6/24/2013	123	136		24	0
6/25/2013	116	129		19	0
6/26/2013	105	118		17	0
6/27/2013	98	111		17	0
6/28/2013	72	85		16	0
6/29/2013	70	83		16	0
6/30/2013	71	84		15	0
7/1/2013					0

Total

234

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CONSERVATION DIVISION  
WICHITA, KS

W2746  
 Neitzel 21-20  
 St. Francis  
 St. Francis  
 Flow  
 July-14  
 FloBoss

DATE	Casing PSI	STATIC	MCF	HRS DOWN	REMARKS (Maximum length 110 characters)
7/1/2014	71	84		15	0
7/2/2014	70	83		15	0
7/3/2014	70	83		14	0
7/4/2014	70	83		14	0
7/5/2014	71	84		14	0
7/6/2014	71	84		14	0
7/7/2014	79	92		14	0
7/8/2014	71	84		14	0
7/9/2014	72	85		14	0
7/10/2014	72	85		14	0
7/11/2014	75	88		13	0
7/12/2014	74	87		13	0
7/13/2014	74	87		13	0
7/14/2014	92	105		13	0
7/15/2014	66	79		13	0
7/16/2014	68	81		13	0
7/17/2014	69	82		13	0
7/18/2014	70	83		13	0
7/19/2014	66	79		13	0
7/20/2014	67	80		13	0
7/21/2014	138	151		13	0
7/22/2014	158	171		4	22
7/23/2014	90	103		15	7
7/24/2014	76	89		13	3
7/25/2014	65	78		13	4
7/26/2014	64	77		13	0
7/27/2014	65	78		13	0
7/28/2014	66	79		13	0
7/29/2014	65	78		13	0
7/30/2014	66	79		13	0
7/31/2014	68	81		13	0

Total

408

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CONSERVATION DIVISION  
 WICHITA, KS

W2746  
 Neitzel 21-20  
 St. Francis  
 St. Francis  
 Flow  
 August-14  
 FloBoss

DATE	Casing PSI	STATIC	MCF	HRS DOWN	REMARKS (Maximum length 110 characters)
8/1/2014	66	79		13	0
8/2/2014	67	80		13	0
8/3/2014	68	81		13	0
8/4/2014	67	80		13	0
8/5/2014	66	79		13	0
8/6/2014	67	80		13	0
8/7/2014	67	80		12	0
8/8/2014	69	82		12	0
8/9/2014	69	72		12	0
8/10/2014	70	83		12	0
8/11/2014	78	91		12	0
8/12/2014	65	78		12	0
8/13/2014	66	79		12	0
8/14/2014	65	78		12	0
8/15/2014	71	84		12	3
8/16/2014	69	82		12	0
8/17/2014	70	83		12	0
8/18/2014	69	82		12	0
8/19/2014	76	89		12	2
8/20/2014	68	81		12	0
8/21/2014	67	80		12	0
8/22/2014	72	85		12	0
8/23/2014	64	77		12	0
8/24/2014	66	79		12	0
8/25/2014	88	101		12	0
8/26/2014	67	80		11	0
8/27/2014	71	84		11	0
8/28/2014	116	129		12	0
8/29/2014	64	77		10	5
8/30/2014	64	77		12	0
8/31/2014	75	88		12	0

Total

374

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**FEB 25 2015**

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 WICHITA, KS