

KANSAS CORPORATION COMMISSION ONE POINT STABILIZED OPEN FLOW OR DELIVERABILITY TEST

Type Test:

- Open Flow **BSI**
 Deliverability

(See Instructions on Reverse Side)

Test Date:
6/22/14

API No. 15
15-023-20587 - 0000

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 / No Pumping Unit	
Producing Thru (Annulus / Tubing) Annulus		% Carbon Dioxide		% Nitrogen	
Vertical Depth(H) 1352'		Pressure Taps Flange		Gas Gravity - G _g .6 (Meter Run) (Prover) Size 2"	
Pressure Buildup: Shut in 6-7		20 14 at 8:25		<input checked="" type="radio"/> (AM) (PM) Taken 6-17	
Well on Line: Started 6-22		20 14 at 8:40		<input checked="" type="radio"/> (AM) (PM) Taken 6-23	
		20 14 at 8:40		<input checked="" type="radio"/> (AM) (PM)	
		20 14 at 9:25		<input checked="" type="radio"/> (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 ₂ O	Flowing Temperature t	Well Head Temperature t	Casing Wellhead Pressure (P _w) or (P _t) or (P _c)		Tubing Wellhead Pressure (P _w) or (P _t) or (P _c)		Duration (Hours)	Liquid Produced (Barrels)
						psig	psia	psig	psia		
Shut-In						230	244.4				
Flow						53	67.4			360	0

FLOW STREAM ATTRIBUTES

Plate Coefficient (F _b) (F _p) Mcfd	Circle one: Meter or Prover Pressure psia	Press Extension $\sqrt{P_m \times h}$	Gravity Factor F _g	Flowing Temperature Factor F _t	Deviation Factor F _{pv}	Metered Flow R (Mcfd)	GOR (Cubic Feet/ Barrel)	Flowing Fluid Gravity G _m
						46		

(OPEN FLOW) (DELIVERABILITY) CALCULATIONS

(P_o)² = 0.207
(P_d)² =

(P_o)² = _____ : (P_w)² = _____ : P_d = _____ % (P_c - 14.4) + 14.4 = _____ :

(P _o) ² - (P _a) ² or (P _o) ² - (P _d) ²	(P _o) ² - (P _w) ²	Choose formula 1 or 2: 1. P _c ² - P _a ² 2. P _c ² - P _d ² divided by: P _c ² - P _w ²	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 (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 
 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 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: 12/12/14

Received
KANSAS CORPORATION COMMISSION

FEB 25 2015

CONSERVATION DIVISION
WICHITA, KS

Signature: *Janell Martney*

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.

W353

Isernhagen 02-23

St. Francis

St. Francis

None

June-18~~4~~

DATE	Casing PSI	STATIC	MCF	HRS DOWN	REMARKS (Maximum length 110 characters)
6/1/2013	54	67		53	0
6/2/2013	60	73		57	0
6/3/2013	59	72		60	0 turn on pumping unit
6/4/2013	72	85		54	0
6/5/2013	48	61		56	0
6/6/2013	50	63		53	0 turn off pumping unit
6/7/2013	170	183		33	9
6/8/2013	187	200		33	24
6/9/2013	190	203		0	24
6/10/2013	195	208		0	24
6/11/2013	195	208		0	24
6/12/2013	200	213		0	24
6/13/2013	228	241		0	24
6/14/2013	220	242		0	24
6/15/2013	210	223		0	24
6/16/2013	230	243		0	24
6/17/2013	230	243		0	24
6/18/2013	231	244		0	24
6/19/2013	227	240		0	24
6/20/2013	228	421		0	24
6/21/2013	227	240		0	24
6/22/2013	227	240		0	24
6/23/2013	119	132		0	5
6/24/2013	111	124		19	0
6/25/2013	103	116		76	0
6/26/2013	89	102		64	0
6/27/2013	81	94		53	0
6/28/2013	65	78		50	0
6/29/2013	63	76		49	0 started pumping unit
6/30/2013	53	66		48	0
7/1/2013					0

Total

758

Received
KANSAS CORPORATION COMMISSION

FEB 25 2015

CONSERVATION DIVISION
WICHITA, KS

W353

Isernhagen 02-23

St. Francis

St. Francis

None

July-14

DATE	Casing PSI	STATIC	MCF	HRS DOWN	Water BBLs	REMARKS (Maximum length 110 characters)
7/1/2014	53	66	49	49	0	19
7/2/2014	53	66	22	22	0	20
7/3/2014	53	66	50	50	0	21
7/4/2014	53	66	50	50	0	20
7/5/2014	56	69	50	50	0	19
7/6/2014	56	69	50	50	0	21
7/7/2014	71	84	50	50	0	20
7/8/2014	56	69	50	50	0	19
7/9/2014	57	70	50	50	0	21
7/10/2014	57	70	50	50	0	21
7/11/2014	72	85	50	50	0	20
7/12/2014	60	73	50	50	0	19
7/13/2014	61	74	50	50	0	20
7/14/2014	69	82	47	47	0	21
7/15/2014	50	63	48	48	0	20
7/16/2014	51	64	33	33	0	21
7/17/2014	53	66	48	48	0	19
7/18/2014	53	66	48	48	0	20
7/19/2014	53	66	48	48	0	21
7/20/2014	52	65	48	48	0	20
7/21/2014	102	115	48	48	0	19
7/22/2014	176	189	4	4	22	20
7/23/2014	81	94	39	39	7	21
7/24/2014	59	72	49	49	3	0
7/25/2014	51	64	44	44	4	6 started pumping unit
7/26/2014	49	62	44	44	0	20
7/27/2014	50	63	45	45	0	21
7/28/2014	53	66	46	46	0	20
7/29/2014	57	70	46	46	0	19
7/30/2014	52	65	46	46	0	20
7/31/2014	53	66	46	46	0	21

Total

1398

589

Received
KANSAS CORPORATION COMMISSION

FEB 25 2015

CONSERVATION DIVISION
WICHITA, KS

W353
 Isernhagen 02-23
 St. Francis
 St. Francis
 None
 August-14

DATE	Casing PSI	STATIC	MCF	SPM	CYCLE	HRS DOWN	Water BBLs
8/1/2014	52	65	46	46	6.5	10	0
8/2/2014	52	65	46	46	6.5	10	0
8/3/2014	52	65	47	47	6.5	10	0
8/4/2014	52	65	22	22	6.5	10	0
8/5/2014	52	65	47	47	6.5	10	0
8/6/2014	52	65	47	47	6.5	10	0
8/7/2014	53	66	47	47	6.5	10	0
8/8/2014	55	68	41	41	6.5	10	0
8/9/2014	56	69	42	42	6.5	10	0
8/10/2014	57	70	45	45	6.5	10	0
8/11/2014	54	67	45	45	6.5	10	0
8/12/2014	52	65	47	47	6.5	10	0
8/13/2014	52	65	38	38	6.5	10	0
8/14/2014	52	65	47	47	6.5	10	0
8/15/2014	58	71	47	47	6.5	10	3
8/16/2014	56	69	47	47	6.5	10	0
8/17/2014	56	69	47	47	6.5	10	0
8/18/2014	57	70	23	23	6.5	10	0
8/19/2014	62	75	46	46	6.5	10	2
8/20/2014	62	75	46	46	6.5	10	0
8/21/2014	56	69	42	42	6.5	10	0
8/22/2014	59	72	46	46	6.5	10	0
8/23/2014	51	64	45	45	6.5	10	0
8/24/2014	51	64	46	46	6.5	10	0
8/25/2014	68	81	41	41	6.5	10	0
8/26/2014	53	66	42	42	6.5	10	0
8/27/2014	58	71	41	41	6.5	10	0
8/28/2014	63	76	47	47	6.5	10	7.5
8/29/2014	51	64	40	40	6.5	10	5
8/30/2014	51	64	40	40	6.5	10	0
8/31/2014	65	78	46	46	6.5	10	0

Total

1339

450

Received
 KANSAS CORPORATION COMMISSION

FEB 25 2015

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 WICHITA, KS