

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

Type Test:

(See Instructions on Reverse Side)

- Open Flow  
 Deliverability

Test Date:  
8/5/2013

API No. 15  
15-187-21229-00-00

Company <b>Linn Operating, Inc.</b>		Lease <b>Molz</b>		Well Number <b>B-4 ATU-73</b>	
County <b>Stanton</b>	Location <b>NW NW NW NW</b>	Section <b>25</b>	TWP <b>27</b>	RNG (E/W) <b>39W</b>	Acres Attributed <b>640</b>
Field <b>Hugoton-Panoma</b>		Reservoir <b>Chase</b>		Gas Gathering Connection <b>Jayhawk Gas Plant</b>	
Completion Date <b>7/10/2013</b>		Plug Back Total Depth <b>2585</b>		Packer Set at <b>NA</b>	
Casing Size <b>5.5</b>	Weight <b>15.5</b>	Internal Diameter <b>4.95</b>	Set at <b>3110</b>	Perforations <b>2326</b>	To <b>2501</b>
Tubing Size <b>NA</b>	Weight <b>NA</b>	Internal Diameter <b>NA</b>	Set at <b>NA</b>	Perforations <b>NA</b>	To <b>NA</b>
Type Completion (Describe) <b>Single</b>		Type Fluid Production <b>Dry Gas</b>		Pump Unit or Traveling Plunger? Yes / No <b>NO</b>	
Producing Thru (Annulus / Tubing) <b>Annulus</b>		% Carbon Dioxide <b>0.0750</b>		% Nitrogen <b>15.8149</b>	
Vertical Depth(H)		Pressure Taps <b>Flange</b>		(Meter Run) (Prover) Size <b>3.068</b>	
Pressure Buildup: Shut in <b>8/5</b> _____ 20 <b>13</b> at <b>11:00 AM</b> (AM) (PM) Taken <b>8/8</b> _____ 20 <b>13</b> at <b>11:00 AM</b> (AM) (PM)		Well on Line: Started <b>8/8</b> _____ 20 <b>13</b> at <b>11:00 AM</b> (AM) (PM) Taken <b>8/9</b> _____ 20 <b>13</b> at <b>11:00 AM</b> (AM) (PM)			

**OBSERVED SURFACE DATA**

Duration of Shut-in **72** 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>t</sub> ) or (P <sub>c</sub> )		Tubing Wellhead Pressure (P <sub>w</sub> ) or (P <sub>t</sub> ) or (P <sub>c</sub> )		Duration (Hours)	Liquid Produced (Barrels)
						psig	psia	psig	psia		
Shut-In	1.5	52	0	65	65	52	66.4	NA	NA	72	0
Flow	1.5	44.6	7.5	65	65	44.6	59	NA	NA	24	0

**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>
11.41	59	21.036	1.175	.9952	1	280.734	0	0

**(OPEN FLOW) (DELIVERABILITY) CALCULATIONS**

(P<sub>c</sub>)<sup>2</sup> = **4.4090** ; (P<sub>w</sub>)<sup>2</sup> = **3.4810** ; P<sub>d</sub> = \_\_\_\_\_ % (P<sub>c</sub> - 14.4) + 14.4 = \_\_\_\_\_ ; (P<sub>a</sub>)<sup>2</sup> = **0.207**  
(P<sub>a</sub>)<sup>2</sup> = **.207**

(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)
4.202	.9280	4.528	.656	.85	.5575	3.6102	1013.5129

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 **19TH** day of **August**, 20 **13**.

RECEIVED **Shawn Hildreth**  
KANSAS CORPORATION COMMISSION *Shawn Hildreth*

Witness (if any)

For Company

For Commission

Checked by

**AUG 27 2013**

CONSERVATION DIVISION  
WICHITA, KS