

KANSAS CORPORATION COMMISSION

ONE POINT STABILIZED OPEN FLOW OR DELIVERABILITY TEST

(See Instructions on Reverse Side)

Type Test:

- Open Flow
 Deliverability

Test Date:
11/15/2013

API No. 15
15-187-21246-00-00

Company LINN Operating, Inc.		Lease Citizens State Bank			Well Number 5 ATU-116
County Stanton	Location NE NE NE NE	Section 26	TWP 30S	RNG (E/W) 39W	Acres Attributed 640
Field Hugoton-Panoma		Reservoir Chase	Gas Gathering Connection Jayhawk Gas Plant		
Completion Date 10/24/2013		Plug Back Total Depth 3063	Packer Set at NA		
Casing Size 5.5	Weight 15.5	Internal Diameter 4.95	Set at 3110	Perforations 2389	To 2615
Tubing Size NA	Weight NA	Internal Diameter NA	Set at NA	Perforations NA	To NA
Type Completion (Describe) Single		Type Fluid Production Dry Gas	Pump Unit or Traveling Plunger? Yes / No NO		
Producing Thru (Annulus / Tubing) Annulus		% Carbon Dioxide 0.086	% Nitrogen 15.567	Gas Gravity - G _g 0.735	
Vertical Depth(H)		Pressure Taps Flange		(Meter Run) (Prover) Size 3.068	
Pressure Buildup: Shut in		11/15	20 13	at 11:00 AM	(AM) (PM) Taken 11/18
Well on Line: Started		11/18	20 13	at 11:00 AM	(AM) (PM) Taken 11/19

OBSERVED SURFACE DATA

Duration of Shut-in 72 Hours

Static / Dynamic Property	Orifice Size (Inches)	Circle one: Meter Prover Pressure psig (P _m)	Pressure Differential in Inches H ₂ O	Flowing Temperature t	Well Head Temperature t	Casing Wellhead Pressure (P _w) or (P _c) or (P _s)		Tubing Wellhead Pressure (P _w) or (P _c) or (P _s)		Duration (Hours)	Liquid Produced (Barrels)
						psig	psia	psig	psia		
Shut-in	1.25	33.4	0	57	57	33.4	47.8	NA	NA	72	0
Flow	1.25	28.7	12.6	57	57	28.7	43.1	NA	NA	24	0

FLOW STREAM ATTRIBUTES

Plate Coefficient (F _p) (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 _{tt}	Deviation Factor F _{pv}	Metered Flow R (Mcfd)	GOR (Cubic Feet/ Barrel)	Flowing Fluid Gravity G _m
7.771	43.1	23.304	1.166	1.0027	1	211.802	0	0

(OPEN FLOW) (DELIVERABILITY) CALCULATIONS

(P_c)² = 2.2848 ; (P_w)² = 1.8576 ; P_d = _____ % (P_c - 14.4) + 14.4 = _____ ; (P_s)² = 0.207
(P_c)² = _____

(P _c) ² - (P _s) ² or (P _c) ² - (P _w) ²	(P _c) ² - (P _w) ²	Choose formula 1 or 2: 1. P _c ² - P _s ² 2. P _c ² - P _w ² divided by: P _c ² - P _w ²	LOG of formula 1, or 2 and divide by: $\frac{P_c^2 - P_w^2}{P_c^2 - P_w^2}$	Backpressure Curve Slope = "n" ----- Assigned Standard Slope	n x LOG []	Antilog	Open Flow Deliverability Equals R x Antilog (Mcfd)
2.0778	0.4272	4.8635	0.6870	.850	0.5839	3.8363	812.5262

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 2nd day of December, 20 13.

Shawn Hildreth *Shawn Hildreth*
For Company

Witness (if any)

For Commission

For Company

Checked by