

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

Type Test:

(See Instructions on Reverse Side)

- Open Flow  
 Deliverability

Test Date:  
7-20-11

API No. 15  
15-025-20,591 - ○○○○

Company C. H. Todd, Inc.			Lease Harper		Well Number 1-13	
County Clark	Location NE NE	Section 13	TWP 34S	RNG (E/W) 21W	Acres Attributed 160	
Field Snake Creek		Reservoir Morrow	Gas Gathering Connection DCP			
Completion Date 7-1982		Plug Back Total Depth 5470	Packer Set at None			
Casing Size 5.5"	Weight 15.5	Internal Diameter 4.95	Set at 5600	Perforations 5482	To 5488	
Tubing Size 2.375"	Weight 4.7	Internal Diameter 1.95	Set at 5495	Perforations	To	
Type Completion (Describe) Casing		Type Fluid Production water	Pump Unit or Traveling Plunger? Yes / No Pumping Unit			
Producing Thru (Annulus / Tubing) Annulus		% Carbon Dioxide .311	% Nitrogen 2.150		Gas Gravity - G <sub>g</sub> .884	
Vertical Depth(H) 5456		Pressure Taps Flange			(Meter Run) (Prover) Size 3"	
Pressure Buildup: Shut in		7-17	20 11	at 9:00	(AM) (PM) Taken	7-20 20 11 at 9:00 (AM) (PM)
Well on Line: Started		7-20	20 11	at 9:00	(AM) (PM) Taken	7-21 20 11 at 9:00 (AM) (PM)

### OBSERVED SURFACE DATA

Duration of Shut-in \_\_\_\_\_ Hours

Static / Dynamic Property	Orifice Size (inches)	Circle one: Meter Prover Pressure psig (P <sub>m</sub> )	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						142	156			72	
Flow	.50	60	4.00	60	60	25	39			24	

### FLOW STREAM ATTRIBUTES

Plate Coefficient (F <sub>c</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>
1.214	74.4	17.25	1.0636	1.00	1.0124	22		.884

### (OPEN FLOW) (DELIVERABILITY) CALCULATIONS

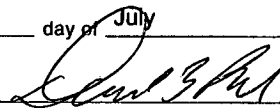
(P<sub>c</sub>)<sup>2</sup> = 24.5 : (P<sub>w</sub>)<sup>2</sup> = 1.6 : P<sub>o</sub> = 3.2 % (P<sub>c</sub> - 14.4) + 14.4 = \_\_\_\_\_ : (P<sub>a</sub>)<sup>2</sup> = 0.207  
(P<sub>o</sub>)<sup>2</sup> = .03

(P <sub>c</sub> ) <sup>2</sup> - (P <sub>a</sub> ) <sup>2</sup> or (P <sub>c</sub> ) <sup>2</sup> - (P <sub>o</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>o</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: $\frac{P_c^2 - P_w^2}{P_c^2 - P_a^2}$	Backpressure Curve Slope = "n" ----- or Assigned Standard Slope	n x LOG [ ]	Antilog	Open Flow Deliverability Equals R x Antilog (Mcfd)
24.44	22.91	1.067	.0280	.85	.0238	1.056	23

Open Flow \_\_\_\_\_ Mcfd @ 14.65 psia      Deliverability 23      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 31 th. day of July, 20 11.

\_\_\_\_\_  
Witness (if any)

  
For Company

RECEIVED

\_\_\_\_\_  
For Commission

\_\_\_\_\_  
Checked by

AUG 01 2011

KCC WICHITA

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 C. H. Todd, 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 Harper 1-13 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: 7-31-2011

Signature: 

Title: V. President

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KCC WICHITA

**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.