

15-181-20544-0000

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

Type Test:

- Open Flow
- Deliverability

Test Date:

API No. 15  
15-181-20544-00-00  
20,544

Company Noble Energy Inc		Lease Billinger		Well Number 13-1	
County Sherman	Location E2-NW-SW	Section 1	TWP 6S	RNG (E/W) 40W	Acres Attributed
Field Prairie Star		Reservoir Niobrara		Gas Gathering Connection Kinder Morgan	
Completion Date 5/17/2011		Plug Back Total Depth 1547'		Packer Set at	
Casing Size 7", 4 1/2"	Weight 17#, 9.5#	Internal Diameter 9 7/8", 6 1/4"	Set at 417', 1590'	Perforations 1368	To 1396
Tubing Size 2 3/8"	Weight 4.7#	Internal Diameter 1.995	Set at	Perforations	To
Type Completion (Describe) Single (gas)		Type Fluid Production Saltwater		Pump Unit or Traveling Plunger? Yes / No yes	
Producing Thru (Annulus / Tubing) Tubing		% Carbon Dioxide		% Nitrogen	
Vertical Depth(H)		Pressure Taps		(Meter Run) (Prover) Size	

Pressure Buildup: Shut in 5/22 20 11 at 12:30 (AM) (PM) Taken \_\_\_\_\_ 20 \_\_\_\_ at \_\_\_\_\_ (AM) (PM)

Well on Line: Started 6/3 20 11 at 12:35 (AM) (PM) Taken \_\_\_\_\_ 20 \_\_\_\_ at \_\_\_\_\_ (AM) (PM)

**OBSERVED SURFACE DATA**

Duration of Shut-in 936 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						225					
Flow											

**FLOW STREAM ATTRIBUTES**

Plate Coefficient (F <sub>a</sub> ) (F <sub>v</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>t</sub>	Deviation Factor F <sub>pv</sub>	Metered Flow R (Mcfd)	GOR (Cubic Feet/ Barrel)	Flowing Fluid Gravity G <sub>m</sub>

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

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

(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: $\frac{P_c^2 - P_w^2}{P_c^2 - P_a^2}$	Backpressure Curve Slope = "n" ----- or ----- Assigned Standard Slope	n x LOG [ ]	Antilog	Open Flow Deliverability Equals R x Antilog (Mcfd)

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 4 day of November, 20 11.

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

*Cheyl Johnson* RECEIVED  
For Company

Checked by \_\_\_\_\_ DEC 02 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 Noble Energy 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 Billinger 13-1 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: 11/4/2011

Signature: *Cheryl Johnson*  
Title: Regulatory Analyst II

**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.

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KCC WICHITA



**NATURAL GAS ANALYSIS**

PROJECT NO. :	<b>201106109</b>	ANALYSIS NO. :	<b>04</b>
COMPANY NAME :	<b>NOBLE ENERGY</b>	ANALYSIS DATE :	<b>JUNE 26, 2011</b>
ACCOUNT NO. :	<b>YUMA</b>	SAMPLE DATE :	<b>JUNE 16, 2011</b>
PRODUCER :		TO :	
LEASE NO. :	<b>E1518120544</b>	EFFECTIVE DATE :	<b>JULY 1, 2011</b>
NAME/DESCRIP. :	<b>BILLINGER 13-1</b>		

**\*\*\*FIELD DATA\*\*\***

SAMPLED BY :	<b>S. KENNEDY</b>	CYLINDER NO. :	<b>938</b>
SAMPLE PRES. :	<b>129</b>	AMBIENT TEMP. :	
SAMPLE TEMP. :	<b>85</b>	GRAVITY :	
SAMPLE TYPE :	<b>SPOT</b>	VAPOR PRES. :	
FIELD COMMENTS :	<b>NO PROBE</b>		
LAB COMMENTS :			

<u>COMPONENTS</u>	<u>NORM. MOLE%</u>	<u>GPM @ 14.65</u>	<u>GPM @ 14.73</u>
HELIUM	0.14	-	-
HYDROGEN	0.01	-	-
OXYGEN/ARGON	0.05	-	-
NITROGEN	5.49	-	-
CO2	0.57	-	-
METHANE	91.53	-	-
ETHANE	1.57	0.418	0.420
PROPANE	0.44	0.121	0.121
ISOBUTANE	0.07	0.023	0.023
N-BUTANE	0.07	0.022	0.022
ISOPENTANE	0.02	0.007	0.007
N-PENTANE	0.02	0.007	0.007
HEXANES+	0.02	0.009	0.009
<b>TOTAL</b>	<b>100.00</b>	<b>0.607</b>	<b>0.609</b>
BTU @ 60 DEG F		<b>14.65</b>	<b>14.73</b>
NET DRY REAL =		873.3	878.1
NET WET REAL =		858.0	862.8
GROSS DRY REAL =		969.4	974.7
GROSS WET REAL =		952.5	957.8

RELATIVE DENSITY REAL (AIR=1 @ 14.696 PSIA 60F) : 0.5978

*NOTE: REFERENCE GPA 2261(ASTM D1945), 2145, & 2172 CURRENT PUBLICATIONS  
THIS DATA HAS BEEN ACQUIRED THROUGH APPLICATION OF CURRENT STATE-OF-THE-ART ANALYTICAL TECHNIQUES.  
THE USE OF THIS INFORMATION IS THE RESPONSIBILITY OF THE USER. EMPACT ANALYTICAL SYSTEMS, ASSUMES NO  
RESPONSIBILITY FOR ACCURACY OF THE REPORTED INFORMATION NOR ANY CONSEQUENCES OF ITS APPLICATION.*

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**DEC 2 2011**  
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