

KANSAS CORPORATION COMMISSION

ONE POINT STABILIZED OPEN FLOW OR DELIVERABILITY TEST

Type Test:

(See Instructions on Reverse Side)

- Open Flow
 Deliverability

Test Date:

API No. 15
007-24000-0006

Company M&M Exploration, Inc.		Lease Z Bar		Well Number 8-11	
County Barber	Location 1855 FSL 1930 FWL	Section 8	TWP 34	RNG (E/W) 14W	Acres Attributed 160
Field Aetna Gas Area		Reservoir Mississippian		Gas Gathering Connection ONEOK	
Completion Date 5/14/2013		Plug Back Total Depth 5125'		Packer Set at None	
Casing Size 4.5	Weight 10.5	Internal Diameter 4.052	Set at 5237'	Perforations 4764'	To 4835'
Tubing Size 2.375	Weight 4.7	Internal Diameter 1.995	Set at 4770'	Perforations	To
Type Completion (Describe) Single (Gas)		Type Fluid Production Saltwater/Crude		Pump Unit or Traveling Plunger? Yes / No None	
Producing Thru (Annulus / Tubing) Tubing		% Carbon Dioxide 0.1149		% Nitrogen 1.4077	
Vertical Depth(H)		Pressure Taps		(Meter Run) (Prover) Size	

Pressure Buildup: Shut in August 27 2013 at 12:00 (AM) (PM) Taken August 28 2013 at 12:00 (AM) (PM)
Well on Line: Started _____ 20____ at _____ (AM) (PM) Taken _____ 20____ at _____ (AM) (PM)

OBSERVED SURFACE DATA

Duration of Shut-in _____ 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						600	614.4	600	614.4		
Flow											

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 _{dv}	Metered Flow R (Mcfd)	GOR (Cubic Feet/ Barrel)	Flowing Fluid Gravity G _m

(OPEN FLOW) (DELIVERABILITY) CALCULATIONS:

(P_c)² = _____ : (P_w)² = _____ : P_d = _____ % (P_c - 14.4) + 14.4 = _____ : (P_a)² = 0.207
(P_d)² = _____

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

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 6th day of September, 2013.

Witness (if any)

For Company

For Commission

Checked by

RECEIVED
KANSAS CORPORATION COMMISSION

SEP 11 2013

CONSERVATION DIVISION
WICHITA, KS

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 M&M Exploration, 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 Z Bar 8-11 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: September 6, 2013

Signature: 

Title: President

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.

RECEIVED
KANSAS CORPORATION COMMISSION
SEP 11 2013

Z-Bar 8-11		API # 15-007-24000		Sec 8 Twp 34S R 14W			250#x100"x 1.125					
DATE	Wtr Line Press	TBG	CSG	LP	DIFF	MCF	WKLY GAS	TOTAL GAS MO.	HRS. ON	REMARKS		
Jun-1		1040	1040	57	42	413.94			24	turned to sales		
Jun-2		355	802	52	35	360.92			24	17/64"		
Jun-3	32	350	760	53	30	337.34			24	16/64"		
Jun-4	31	340	738	50	28	316.54			24			
Jun-5	31	320	715	53	28	325.90			24			
Jun-6	31	310	685	53	31	342.92			24			
Jun-7	28	300	670	50	33	343.65			24			
Jun-8	23	290	650	65	26	347.79	2788.99	2788.99	24			
DATE	Wtr Line Press	TBG	CSG	LP	DIFF	MCF	WKLY GAS	TOTAL GAS MO.	HRS. ON	REMARKS		
Jun-9	27	275	640	55	28	331.99			24			
Jun-10	29	255	625	53	27	320.03			24			
Jun-11	31	250	618	53	26	314.05			24			
Jun-12	30	250	610	50	26	305.03			24			
Jun-13	21	250	600	50	25	299.11			24			
Jun-14	26	250	580	50	24	293.06			24			
Jun-15	29	250	595	53	22	288.88			24			
Jun-16	29	240	580	55	22	294.28	2446.43	5235.42	24			
DATE	Wtr Line Press	TBG	CSG	LP	DIFF	MCF	WKLY GAS	TOTAL GAS MO.	HRS. ON	REMARKS		
Jun-17	28	250	580	55	22	294.28			24			
Jun-18	30	240	562	53	19	268.46			24			
Jun-19	24	250	560	55	20	280.59			24			
Jun-20	26	240	560	55	19	273.48			24			
Jun-21	14	225	550	50	20	267.53			24			
Jun-22	26	215	545	43	21	254.22			24			
Jun-23	28	220	540	43	20	248.10			24			
Jun-24	14	210	540	42	20	245.19	2131.85	7367.28	24			
DATE	Wtr Line Press	TBG	CSG	LP	DIFF	MCF	WKLY GAS	TOTAL GAS MO.	HRS. ON	REMARKS		
Jun-25	25	210	535	42	20	245.19			24			
Jun-26	24	210	530	45	20	253.80			24			
Jun-27	28	215	525	44	19	244.61			24			
Jun-28	13	210	520	44	18	238.09			24			
Jun-29	25	200	520	44	18	238.09			24			
Jun-30	28	210	520	45	16	227.01			24			
							1446.78	8814.06				
TOTAL GAS PRODUCED			8814.06		MCF avg	293.80						
Fluid goes to 16-4 SWD												

RECEIVED
KANSAS CORPORATION COMMISSION

SEP 11 2013

CONSERVATION DIVISION
WICHITA, KS

Z-Bar 8-11		API # 15-007-24000		Sec 8 Twp 34S R 14W			205#x100"x1.125							
DATE	Wtr Line Press	TBG	CSG	LP	DIFF	MCF	WKLY GAS	TOTAL GAS MO.	HRS. ON	REMARKS	Separator			
Jul-1	13	200	518	45	12	196.59			24					
Jul-2	26	200	510	45	14	212.34			24		68			
Jul-3	26	200	510	45	13	204.62			24		68			
Jul-4	28	210	505	45	15	219.80			24		65			
Jul-5	24	200	510	45	13	204.62			24		68			
Jul-6	28	200	505	45	13	204.62			24		68			
Jul-7	27	190	500	45	13	204.62			24		68			
Jul-8	20	200	500	45	14	212.34	1659.56	1659.56	24		68		blew wtr line vent 8-15	
DATE	Wtr Line Press	TBG	CSG	LP	DIFF	MCF	WKLY GAS	TOTAL GAS MO.	HRS. ON	REMARKS	Separator			
Jul-9	26	180	520	45	13	204.62			24		62			
Jul-10	26	200	495	45	13	204.62			24		55			
Jul-11	29	195	500	45	13	204.62			24		58			
Jul-12	28	170	485	45	13	204.62			24		58			
Jul-13	26	200	485	45	12	196.59			24		55			
Jul-14	28	190	485	45	12	196.59			24		56			
Jul-15	28	200	480	45	12	196.59			24		54			
Jul-16	27	170	480	45	12	196.59	1604.85	3264.41	24		50			
DATE	Wtr Line Press	TBG	CSG	LP	DIFF	MCF	WKLY GAS	TOTAL GAS MO.	HRS. ON	REMARKS	Separator			
Jul-17	25	180	480	48	10	185.35			24		50			
Jul-18	25	170	480	45	12	196.59			24		44			
Jul-19	26	170	480	45	12	196.59			24		50			
Jul-20	27	175	480	45	10	179.46			24		45			
Jul-21	28	160	475	45	10	179.46			24		47			
Jul-22	28	170	470	45	10	179.46			24		48			
Jul-23	28	170	470	50	9	179.46			24		45			
Jul-24	26	170	470	45	9	170.25	1466.64	4731.05	24		48			
DATE	Wtr Line Press	TBG	CSG	LP	DIFF	MCF	WKLY GAS	TOTAL GAS MO.	HRS. ON	REMARKS	Separator			
Jul-25	25	170	470	45	9	170.25			24		50			
Jul-26	26	195	465	45	9	170.25			24		50			
Jul-27	28	170	470	45	9	170.25			24		50			
Jul-28	25	160	460	45	9	170.25			24		50			
Jul-29	28	170	460	45	9	170.25			24		48			
Jul-30	25	165	460	45	9	170.25			24		48			
Jul-31	26	185	460	45	8	160.52	1182.04	5913.10	24		48			
TOTAL GAS PRODUCED			5913.10		MCF avg	190.75								
Fluid goes to 16-4 SWD														

RECEIVED
KANSAS CORPORATION COMMISSION

SEP 11 2013

CONSERVATION DIVISION
WICHITA, KS

Z-Bar 8-11		API # 15-007-24000		Sec 8 Twp 34S R 14W			250#x100'x1.125					
DATE	Wtr Line Press	TBG	CSG	LP	DIFF	MCF	WKLY GAS	TOTAL GAS MO.	HRS. ON	REMARKS	Separator	
Aug-1	26	160	460	42	9	164.48			24		48	
Aug-2	25	160	460	43	8	156.91			24		48	
Aug-3	28	150	460	45	8	160.52			24		45	
Aug-4	28	170	460	42	8	155.07			24		50	
Aug-5	27	170	460	45	7	150.15			24		50	
Aug-6	26	160	460	44	7	148.47			24		45	
Aug-7	25	155	460	44	7	148.47			24		50	
Aug-8	26	160	460	44	6	137.46	1221.54	1221.54	24		50	
DATE	Wtr Line Press	TBG	CSG	LP	DIFF	MCF	WKLY GAS	TOTAL GAS MO.	HRS. ON	REMARKS	Separator	
Aug-9	24	170	460	44	6	137.46			24		48	
Aug-10	20	510	530	40	6	131.06			24		90	
Aug-11	24	150	460	45	7	150.15			24		50	
Aug-12	27	180	450	45	8	160.52			24		50	
Aug-13	27	160	455	45	8	160.52			24		50	
Aug-14	28	155	455	45	8	160.52			24		50	
Aug-15	26	145	435	45	8	160.52			24		48	
Aug-16	28	150	450	45	8	160.52	1221.26	2442.79	24		50	
DATE	Wtr Line Press	TBG	CSG	LP	DIFF	MCF	WKLY GAS	TOTAL GAS MO.	HRS. ON	REMARKS	Separator	
Aug-17	26	165	450	45	8	160.52			24		60	
Aug-18	26	170	445	45	8	160.52			24		55	
Aug-19	26	150	440	43	8	156.91			24		50	
Aug-20	26	160	440	40	8	151.34			24		50	
Aug-21	29	150	440	40	8	151.34			24		50	
Aug-22	26	140	440	40	8	151.34			24		50	
Aug-23	28	150	440	40	7	141.56			24		50	
Aug-24	26	150	440	40	7	141.56	1215.08	3657.87	24		50	
DATE	Wtr Line Press	TBG	CSG	LP	DIFF	MCF	WKLY GAS	TOTAL GAS MO.	HRS. ON	REMARKS	Separator	
Aug-25	26	160	440	40	7	141.56			24		50	
Aug-26	26	150	440	40	7	141.56			24		50	
Aug-27	28	150	440	40	7	70.78			12	24 hr SI	50	
Aug-28	24	600	600	48	30	160.52			12		30	
Aug-29	28	150	450	45	14	212.34			24		55	
Aug-30	30	150	450	40	12	185.35			24		55	
Aug-31	27	150	450	42	12	189.93	1102.04	4759.92	24		55	
TOTAL GAS PRODUCED			4759.92		MCF avg	153.55						
Fluid goes to 16-4 SWD												

RECEIVED
KANSAS CORPORATION COMMISSION

SEP 11 2013

CONSERVATION DIVISION
WICHITA, KS

MEASUREMENT SOLUTIONS INC.

6705 East 81st Street Suite 155 Tulsa, OK 74133
Telephone 918-493-2700 Fax 918-493-2704

Page 16

6/9/2013

GAS ANALYSIS REPORT

METER NUMBER :	999999	SAMPLE TYPE :	SPOT
METER NAME :	Z BAR 8 -11	SAMPLE DATE :	06/01/2013
METER ID :	M & M EXPLORATION	SAMPLE PRES / TEMP :	52 / 75
PRODUCER :		SAMPLED BY :	GM
COMPANY	M & M EXPLORATION	EFFECTIVE DATE :	05/01/2013

<u>COMPONENT</u>		<u>PERCENT</u>	<u>BTU VALUES @ 14.65</u>		<u>BTU VALUES @ 14.73</u>	
Helium	He	0.0803	REAL DRY	1083.09	REAL DRY	1089.00
Oxygen	O2	0.0000	REAL WET	1064.13	REAL WET	1069.95
Hydrogen Sulfide	H2S	0.0000				
Carbon Dioxide	CO2	0.1149				
Nitrogen	N2	1.4077				
Methane	C1	91.1990	<u>GPM VALUES @ 14.65</u>		<u>GPM VALUES @ 14.73</u>	
Ethane	C2	4.4007	C2	1.1699	C2	1.1763
Propane	C3	1.6260	C3	0.4453	C3	0.4477
I-Butane	iC4	0.2129	iC4	0.0693	iC4	0.0696
N-Butane	nC4	0.4835	nC4	0.1516	nC4	0.1524
I-Pentane	iC5	0.1232	iC5	0.0449	iC5	0.0451
N-Pentane	nC5	0.1485	nC5	0.0535	nC5	0.0538
Hexane Plus	C6+	0.2033	C6+	0.0882	C6+	0.0887
TOTALS		100.0000		2.0227		2.0336

SPECIFIC GRAVITY

REAL DRY 0.6198
REAL WET 0.6199

COMPRESSIBILITY FACTOR

Z FACTOR DRY 0.9976
Z FACTOR WET 0.9976

GALLONS PER THOUSAND

GPM TOTALS @ 14.65

C2 + GPM 2.0227
C3 + PGM 0.8528
C4 + GPM 0.4075
C5 + GPM 0.1866

GPM TOTALS @ 14.73

C2 + GPM 2.0336
C3 + PGM 0.8573
C4 + GPM 0.4096
C5 + GPM 0.1876

COMMENTS :

0.9975 RECEIVED
0.9976 OWSA CORPORATION COMMISSION

SEP 11 2013

CONSERVATION DIVISION
WICHITA, KS