

# KANSAS CORPORATION COMMISSION

## ONE POINT STABILIZED OPEN FLOW OR DELIVERABILITY TEST

Type Test:

- Open Flow  
 Deliverability

(See Instructions on Reverse Side)

Test Date:

API No. 15  
007-24150 - 00 - 00

Company M&M Exploration, Inc.		Lease Z Bar		Well Number 5-9	
County Barber	Location 1515 FSL 735 FEL	Section 5	TWP 34	RNG (E/W) 14W	Acres Attributed 160
Field Aetna Gas Area		Reservoir Mississippian	Gas Gathering Connection ONEOK		
Completion Date 06/03/2014		Plug Back Total Depth 5138	Packer Set at None		KCC WICHITA REC 08 2014 RECEIVED
Casing Size 4.5	Weight 10.5	Internal Diameter 4.052	Set at 5185	Perforations 4744	To 4803
Tubing Size 2.375	Weight 4.7	Internal Diameter 1.995	Set at 4830	Perforations	To
Type Completion (Describe) Single (Gas)		Type Fluid Production Saltwater/Crude		Pump Unit or Traveling Plunger? Yes / No Pump Unit	
Producing Thru (Annulus / Tubing) Annulus		% Carbon Dioxide 0.0508	% Nitrogen 0.8274	Gas Gravity - G <sub>v</sub> 0.6188	
Vertical Depth(H)		Pressure Taps		(Meter Run) (Prover) Size	
Pressure Buildup: Shut in <u>Nov 25</u> 20 <u>14</u> at <u>9:00</u> (AM) (PM) Taken <u>Nov 26</u> 20 <u>14</u> at <u>9:00</u> (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 (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>1</sub> ) or (P <sub>c</sub> )		Tubing Wellhead Pressure (P <sub>w</sub> ) or (P <sub>1</sub> ) or (P <sub>c</sub> )		Duration (Hours)	Liquid Produced (Barrels)
						psig	psia	psig	psia		
Shut-In						280	294.4				
Flow											

### FLOW STREAM ATTRIBUTES

Plate Coefficient (F <sub>s</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>

### (OPEN FLOW) (DELIVERABILITY) CALCULATIONS

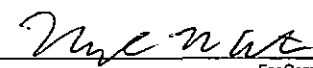
(P<sub>c</sub>)<sup>2</sup> = \_\_\_\_\_ : (P<sub>w</sub>)<sup>2</sup> = \_\_\_\_\_ : P<sub>d</sub> = \_\_\_\_\_ % (P<sub>c</sub> - 14.4) + 14.4 = \_\_\_\_\_ : (P<sub>a</sub>)<sup>2</sup> = 0.207  
(P<sub>d</sub>)<sup>2</sup> = \_\_\_\_\_

(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: $\left[ \frac{P_c^2 - P_w^2}{P_c^2 - P_a^2} \right]$	Backpressure Curve Slope = "n" ----- Assigned Standard Slope	n x LOG $\left[ \frac{P_c^2 - P_w^2}{P_c^2 - P_a^2} \right]$	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 3rd day of December, 20 14.

\_\_\_\_\_  
Witness (If any)

  
\_\_\_\_\_  
For Company

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

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

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 5-9 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

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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: December 3, 2014

Signature: *Mark W. S. Jr.*

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.

Z-Bar 5-9		API # 15-007-24150			Sec 5 Twp 34S R 14W			250#x100"x.750				
DATE	Wtr Line Press	Separator	TBG	CSG	LP	DIFF	MCF	WKLY GAS	TOTAL GAS MO.	HRS. ON	REMARKS	
Jul-1							0.00					
Jul-2							0.00					
Jul-3							0.00					
Jul-4							0.00					
Jul-5							0.00					
Jul-6							0.00					
Jul-7							0.00					
Jul-8							0.00	0.00	0.00			
DATE	Wtr Line Press	Separator	TBG	CSG	LP	DIFF	MCF	WKLY GAS	TOTAL GAS MO.	HRS. ON	REMARKS	
Jul-9							0.00					
Jul-10							0.00					
Jul-11				460			0.00				turned to sales	
Jul-12	28	90		305	55	50	188.79			24		
Jul-13	37	88		300	55	46	181.08			24		
Jul-14	45	90		255	55	47	183.03			24		
Jul-15	53	88		235	57	40	171.90			24		
Jul-16	58	86		230	52	40	164.19	888.98	888.98	24		
DATE	Wtr Line Press	Separator	TBG	CSG	LP	DIFF	MCF	WKLY GAS	TOTAL GAS MO.	HRS. ON	REMARKS	
Jul-17	65	88		230	55	40	168.85			24	12.5/64" choke	
Jul-18	50	90		225	54	36	158.73			24		
Jul-19	60	88		208	54	35	156.51			24		
Jul-20	63	90		205	53	35	155.05			24	open choke 14/64"	
Jul-21	55	80		165	53	34	152.82			24	15/64"	
Jul-22	62	88		160	53	33	150.56			24		
Jul-23	55	90		140	52	32	146.85			24	16/64"	
Jul-24	60	88		140	52	31	144.54	1233.91	2122.89	24	17/64"	
DATE	Wtr Line Press	Separator	TBG	CSG	LP	DIFF	MCF	WKLY GAS	TOTAL GAS MO.	HRS. ON	REMARKS	
Jul-25	63	88		138	52	30	142.19			24	18/64"	
Jul-26				130	52	28	137.37			24		
Jul-27				125	102	8	102.84			24		
Jul-28				120	53	26	133.64			24		
Jul-29				120	52	26	132.37			24		
Jul-30				120	53	25	131.04			24		
Jul-31				120	51	25	128.55	907.99	3030.87	24	3/8"	
<b>TOTAL GAS PRODUCED</b>				<b>3030.87</b>		<b>MCF avg</b>	<b>97.77</b>					

Fluid goes to 16-4 SWD

Vrtil Production Services Inc.  
509 N. Cedar  
Medicine Lodge, KS 67104  
tvrtil@cyberlodg.com

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Z-Bar 5-9		API # 15-007-24150		Sec 5 Twp 34S R 14W				250#x100"x.750				
DATE	Wtr Line Press	Separator	TBG	CSG	LP	DIFF	MCF	WKLY GAS	TOTAL GAS MO.	HRS. ON	REMARKS	
Aug-1	60	90		120	51	22	120.59			24		
Aug-2	64	88		122	53	23	125.69			24		
Aug-3	56	88		122	52	22	121.76			24		
Aug-4	62	90		122	52	23	124.50			24		
Aug-5	67	88		122	52	22	121.76			24		
Aug-6	56	83		110	53	21	120.10			24		
Aug-7	60	77		78	53	20	117.21			24	new csg gauge	
Aug-8	63	70		70	55	20	119.40	971.01	971.01	24		
DATE	Wtr Line Press	Separator	TBG	CSG	LP	DIFF	MCF	WKLY GAS	TOTAL GAS MO.	HRS. ON	REMARKS	
Aug-9	65	61		60	54	20	118.31			24		
Aug-10	65	61		60	54	20	118.31			24		
Aug-11	60	50		50	53	19	114.24			24		
Aug-12	65	45		45	51	19	112.06			24		
Aug-13	55	45		45	52	19	113.16			24		
Aug-14	58	42		42	50	17	104.96			24		
Aug-15	60	42		42	50	17	104.96			24		
Aug-16	65	43		43	52	17	107.04	893.03	1864.04	24		
DATE	Wtr Line Press	Separator	TBG	CSG	LP	DIFF	MCF	WKLY GAS	TOTAL GAS MO.	HRS. ON	REMARKS	
Aug-17	65	42		42	51	17	106.00			24		
Aug-18	55	42		42	50	17	104.96			24		
Aug-19	60	42		42	50	16	101.82			24		
Aug-20	6	40		40	50	17	104.96			24		
Aug-21	65	40		40	47	17	101.76			24		
Aug-22	58	40		40	48	16	99.77			24		
Aug-23	62	40		40	48	16	99.77			24		
Aug-24	60	40		40	48	16	99.77	818.80	2682.83	24		
DATE	Wtr Line Press	Separator	TBG	CSG	LP	DIFF	MCF	WKLY GAS	TOTAL GAS MO.	HRS. ON	REMARKS	
Aug-25	67	40		40	47	16	98.72			24		
Aug-26	57	40		40	47	15	95.59			24		
Aug-27	62	39		39	47	15	95.59			24		
Aug-28	62	40		40	48	14	93.32			24		
Aug-29	62	40		40	47	14	92.35			24		
Aug-30	58	40		40	47	14	92.35			24		
Aug-31	55	40		40	47	14	92.35	660.25	3343.09	24		
<b>TOTAL GAS PRODUCED</b>				<b>3343.09</b>	<b>MCF avg</b>		<b>107.84</b>					
Fluid goes to 16-4 SWD												

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Z-Bar 5-9		API # 15-007-24150		Sec 5 Twp 34S R 14W				250#x100"x.750				
DATE	Wtr Line Press	Separator	TBG	CSG	LP	DIFF	MCF	WKLY GAS	TOTAL GAS MO.	HRS. ON	REMARKS	
Sep-1	61	41		41	47	14	92.35			24		
Sep-2	62	40		40	47	14	92.35			24		
Sep-3	47	40		40	48	14	93.32			24		
Sep-4	45	40		40	47	13	88.99			24		
Sep-5	60	40		40	48	13	89.93			24		
Sep-6	45	40		40	48	12	86.40			24		
Sep-7	60	38		38	47	12	85.50			24		
Sep-8	46	40		40	47	13	88.99	717.81	717.81	24		
Sep-9	59	38		38	45	12	83.66			24		
Sep-10	65	38		38	48	12	86.40			24		
Sep-11	60	38		38	47	12	85.50			24		
Sep-12	58	38		38	40	13	82.09			24		
Sep-13	55	40		422	45	5	54.00			24	SI press	
Sep-14	55	40		158	47	13	88.99			24		
Sep-15	59	38		50	45	12	83.66			24		
Sep-16	52	38		46	46	12	84.58	648.87	1366.68	24		
Sep-17	60	37		37	47	12	85.50			24		
Sep-18	60	37		37	47	11	81.86			24		
Sep-19	68	37		37	47	11	81.86			24		
Sep-20	68	36		36	48	11	82.72			24		
Sep-21	65	36		36	46	11	80.98			24		
Sep-22	55	37		37	46	11	80.98			24		
Sep-23	58	36		36	46	10	77.21			24		
Sep-24	55	36		36	46	10	77.21	648.31	2014.99	24		
Sep-25	62	35		35	46	10	77.21			24		
Sep-26	60	35		35	45	10	76.37			24		
Sep-27	60	35		35	45	10	76.37			24		
Sep-28	70	35		35	45	10	76.37			24		
Sep-29	60	34		34	45	10	76.37			24		
Sep-30	65	35		35	42	10	73.78			24		
								456.46	2471.45			
<b>TOTAL GAS PRODUCED</b>					<b>2471.45</b>	<b>MCF avg</b>	<b>82.38</b>					

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Fluid goes to 16-4 SWD  
API# 15-007-24150  
Sec 5 Twp 34S Rge 14W  
1515' FSL 735' FEL  
SE SW NE SE

Vratil Production Services Inc.  
509 N. Cedar  
Medicine Lodge, KS 67104  
tvratil@cyberlodg.com

Z-Bar 5-9		API # 15-007-24150		Sec 5 Twp 34S R 14W				250#x100"x.750					
DATE	Wtr Line Press	Separator	TBG	CSG	LP	DIFF	MCF	WKLY GAS	TOTAL GAS MO.	HRS. ON	REMARKS		
Oct-1	55	40		55	50	10	80.50			24	(Meter readings from Steve on report)		
Oct-2	60	38		38	47	10	78.05			24			
Oct-3	65	35		35	46	10	77.21			24			
Oct-4	64	34		34	45	10	76.37			24			
Oct-5	62	35		35	45	9.5	74.43			24			
Oct-6	65	35		35	45	9.5	74.43			24			
Oct-7	60	35		35	45	9.5	74.43			24			
Oct-8					43	10	74.65	610.08	610.08	24	pulling well, adjust diff pen off 4"		
DATE	Wtr Line Press	Separator	TBG	CSG	LP	DIFF	MCF	WKLY GAS	TOTAL GAS MO.	HRS. ON	REMARKS		
Oct-9					42	8	65.99			24	meter readings are Steve's		
Oct-10	55	28		28	38	5	49.62			24			
Oct-11	55	28		28	38	5	49.62			24			
Oct-12	60	28		28	38	5	49.62			24			
Oct-13	55	28		28	38	5	49.62			24			
Oct-14	50	28		28	37	5	48.97			24			
Oct-15	55	36		36	37	5	48.97			24			
Oct-16	35	29		29	40	5	50.91	413.32	1023.40	24			
DATE	Wtr Line Press	Separator	TBG	CSG	LP	DIFF	MCF	WKLY GAS	TOTAL GAS MO.	HRS. ON	REMARKS		
Oct-17	45	29		29	40	4	45.54			24			
Oct-18	50	28		28	38	4	44.38			24			
Oct-19	55	26		26	38	4	44.38			24			
Oct-20	53	28		28	38	4	44.38			24			
Oct-21	40	30		30	38	10	70.18			24	start pumping		
Oct-22	55	35	150	62	40	25	113.84			24			
Oct-23	66	40	150	90	44	50	168.85			24			
Oct-24	70	90	130	110	45	65	194.70	726.26	1749.66	24			
DATE	Wtr Line Press	Separator	TBG	CSG	LP	DIFF	MCF	WKLY GAS	TOTAL GAS MO.	HRS. ON	REMARKS		
Oct-25	70	87	150	110	45	70	202.05			24	show of oil		
Oct-26	80	85	200	118	53	62	206.37			24			
Oct-27	80	86	200	100	55	60	206.80			24			
Oct-28	72	88	180	115	95	35	207.59			24			
Oct-29	75	90	200	118	97	35	209.76			24			
Oct-30	78	90	220	118	97	34	206.74			24			
Oct-31	74	90	160	112	97	34	206.74	1446.05	3195.71	24			
<b>TOTAL GAS PRODUCED</b>				<b>3195.71</b>		<b>MCF avg</b>	<b>103.09</b>						

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Fluid goes to 16-4 SWD  
 API# 15-007-24150  
 Sec 5 Twp 34S Rge 14W  
 1515' FSL 735' FEL  
 SE SW NE SE

Vratil Production Services Inc.  
 509 N. Cedar  
 Medicine Lodge, KS 67104  
 tvratil@cyberodg.com

Z-Bar 5-9		API # 15-007-24150		Sec 5 Twp 34S R 14W				250#x100"x.750					
DATE	Wtr Line Press	Separator	TBG	CSG	LP	DIFF	MCF	WKLY GAS	TOTAL GAS MO.	HRS. ON	REMARKS		
Nov-1	70	85	150	112	58	58	208.80			24			
Nov-2	75	85	200	112	58	58	208.80			24			
Nov-3	75	85	200	112	60	58	212.37			24			
Nov-4	70	85	200	115	61	56	210.41			24			
Nov-5	72	85	200	118	62	55	210.22			24	18/64"		
Nov-6	70	85	200	118	61	55	208.52			24			
Nov-7	76	85	180	115	60	59	214.19			24			
Nov-8	78	85	200	115	60	55	206.80	1680.12	1680.12	24			
Nov-9	73	85	200	115	60	54	204.92			24			
Nov-10	80	85	200	100	60	54	204.92			24			
Nov-11	80	85	180	105	60	53	203.01			24			
Nov-12	80	85	200	110	60	50	197.18			24			
Nov-13	85	85	220	105	60	52	201.09			24			
Nov-14	75	85	130	110	60	51	199.14			24			
Nov-15	78	85	130	115	61	51	200.79			24			
Nov-16	77	87	130	112	60	50	197.18	1608.22	3288.34	24			
Nov-17	76	86	130	115	60	52	201.09			24			
Nov-18	70	85	130	115	61	51	200.79			24			
Nov-19	72	86	160	108	62	52	204.41			24			
Nov-20	85	86	150	118	62	52	204.41			24			
Nov-21	73	83	100	118	57	52	195.99			24			
Nov-22	83	86	140	118	63	53	208.02			24			
Nov-23	80	86	130	105	62	53	206.37			24			
Nov-24	73	86	150	105	62	53	206.37	1627.44	4915.78	24			
Nov-25	70	86	130	105	61	54	206.62			24			
Nov-26	80	86	150	105	61	54	103.31			12	24 hr shut in 280#		
Nov-27					50	40	80.50			12	14/64"		
Nov-28	70	86	130	105	54	20	118.31			24			
Nov-29	83	86	130	100	62	46	192.25			24			
Nov-30	70	86	120	100	61	46	190.70			24			
								891.68	5807.47				
<b>TOTAL GAS PRODUCED</b>				<b>5807.47</b>		<b>MCF avg</b>	<b>193.58</b>						

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Fluid goes to 16-4 SWD  
API# 15-007-24150  
Sec 5 Twp 34S Rge 14W  
1515' FSL 735' FEL  
SE SW NE SE

Vratil Production Services Inc.  
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Medicine Lodge, KS 67104  
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