

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

Type Test:

(See Instructions on Reverse Side)

- Open Flow
- Deliverability

Test Date:  
8/22 to 8/23/13

API No. 15  
007-21,450-00-00

Company Rains & Williamson Oil Company, Inc.			Lease Hagan		Well Number 1
County Barber	Location 800'FSL&510'FWL	Section 23	TWP 32S	RNG (E/W) 10W	Acres Attributed
Field McGuire-Goemann		Reservoir Miss Chert	Gas Gathering Connection Lumen/WWGG		
Completion Date 7/02/82		Plug Back Total Depth 4408	Packer Set at none		
Casing Size 5.5	Weight	Internal Diameter	Set at 4424	Perforations 4370	To 4380
Tubing Size 2.875	Weight	Internal Diameter	Set at 4390	Perforations	To
Type Completion (Describe) single		Type Fluid Production Oil/SW	Pump Unit or Traveling Plunger? Yes / No Yes - pump unit		
Producing Thru (Annulus / Tubing) annulus		% Carbon Dioxide .204	% Nitrogen 1.097	Gas Gravity - G <sub>g</sub> .735	
Vertical Depth(H)		Pressure Taps flange		(Meter Run) (Prover) Size 3"	
Pressure Buildup: Shut in 8/19 20 13 at 8:30 am (AM) (PM) Taken 8/22 20 13 at 8:30 am (AM) (PM)					
Well on Line: Started 8/22 20 13 at 8:45 am (AM) (PM) Taken 8/23 20 13 at 8:45 am (AM) (PM)					

### OBSERVED SURFACE DATA

Duration of Shut-in 72 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>t</sub> ) or (P <sub>c</sub> )		Tubing Wellhead Pressure (P <sub>w</sub> ) or (P <sub>t</sub> ) or (P <sub>c</sub> )		Duration (Hours)	Liquid Produced (Barrels)
						psig	psia	psig	psia		
Shut-In						182	196.4			72	
Flow	.375	32	27.8	79		163	177.4			24	

### FLOW STREAM ATTRIBUTES

Plate Coefficient (F <sub>b</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>
.6848	46.4	35.91	1.166	.9822	-----	28		.735

### (OPEN FLOW) (DELIVERABILITY) CALCULATIONS

(P<sub>c</sub>)<sup>2</sup> = 38.572 : (P<sub>w</sub>)<sup>2</sup> = 31.470 : 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>d</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>d</sub> <sup>2</sup> 2. P <sub>c</sub> <sup>2</sup> - P <sub>w</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: $P_c^2 - P_w^2$	Backpressure Curve Slope = "n" ----- Assigned Standard Slope	n x LOG [ ]	Antilog	Open Flow Deliverability Equals R x Antilog (Mcfd)
38.365	7.102	5.402	.7325	.850	.6226	4.19	117
				assigned			

Open Flow **117** Mcfd @ 14.65 psia X .50 = Deliverability **58.5** 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 28th day of August, 20 13.

*[Signature]*  
B.C.M. INC For Company

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Witness (if any)

SEP 03 2013

CONSERVATION DIVISION  
WICHITA, KS

# MEASUREMENT SOLUTIONS INC.

876056

HAGAN #1

RAINS WILLIAMSON OIL COMPANY

WEST WICHITA GAS GATHERING LLC

6705 East 81st Street Suite 155 Tulsa, OK 74133

Telephone 918-493-2700 Fax 918-493-2704

## Gas Volume Statement

PRODUCTION MONTH : JULY 2013

<b>Line Size</b>	3.068	<b>Static Range</b>	500	<b>Type Connect</b>	FLANGE	<b>Cont Atmo Base</b>	13.960
<b>Orifice Size</b>	0.375	<b>Diffrl Range</b>	250	<b>Type Locn</b>	UP	<b>Cont Pres Base</b>	14.650
<b>Clock</b>	24	<b>Temp Range</b>	420	<b>Type Meter</b>	EFR	<b>Cont Temp Base</b>	60.000
				<b>Type Static:</b>	A		

Date On	Ave Diff	PSIA	Temp	Gravity	Orifice	INTG	C' Prime	Flow Hrs	VOLUME	BTU	MMBTU	
07/01	07/02	160.81	47.52	77.00	0.7347	0.375	0	0.03160	24.00	65	1242.000	80
07/02	07/03	159.75	46.57	78.64	0.7347	0.375	0	0.03150	24.00	63	1242.000	79
07/03	07/04	164.64	43.11	79.57	0.7347	0.375	0	0.03130	24.00	62	1242.000	78
07/04	07/05	157.28	42.52	82.44	0.7347	0.375	0	0.03140	24.00	62	1242.000	76
07/05	07/06	159.73	41.10	83.56	0.7347	0.375	0	0.03130	24.00	61	1242.000	75
07/06	07/07	157.96	40.99	84.31	0.7347	0.375	0	0.03120	24.00	60	1242.000	75
07/07	07/08	134.33	46.77	86.36	0.7347	0.375	0	0.03150	24.00	60	1242.000	74
07/08	07/09	146.33	41.37	87.71	0.7347	0.375	0	0.03130	24.00	58	1242.000	72
07/09	07/10	143.39	45.07	89.27	0.7347	0.375	0	0.03120	24.00	57	1242.000	71
07/10	07/11	133.72	49.46	87.02	0.7347	0.375	0	0.03150	24.00	58	1242.000	72
07/11	07/12	155.91	38.73	85.17	0.7347	0.375	0	0.03120	24.00	58	1242.000	72
07/12	07/13	140.59	42.99	91.20	0.7347	0.375	0	0.03120	24.00	57	1242.000	71
07/13	07/14	152.95	37.70	89.46	0.7347	0.375	0	0.03100	24.00	57	1242.000	70
07/14	07/15	147.01	36.88	76.02	0.7347	0.375	0	0.03140	24.00	56	1242.000	69
07/15	07/16	139.26	37.28	76.45	0.7347	0.375	0	0.03150	24.00	54	1242.000	68
07/16	07/17	134.23	37.63	82.48	0.7347	0.375	0	0.03140	24.00	54	1242.000	66
07/17	07/18	134.93	37.07	81.12	0.7347	0.375	0	0.03140	24.00	53	1242.000	66
07/18	07/19	134.84	36.61	83.32	0.7347	0.375	0	0.03130	24.00	53	1242.000	66
07/19	07/20	135.35	36.18	85.20	0.7347	0.375	0	0.03130	23.83	52	1242.000	65
07/20	07/21	131.11	35.48	81.87	0.7347	0.375	0	0.03140	24.00	51	1242.000	64
07/21	07/22	124.83	35.86	82.34	0.7347	0.375	0	0.03140	24.00	50	1242.000	63
07/22	07/23	122.82	36.16	85.33	0.7347	0.375	0	0.03140	24.00	50	1242.000	62
07/23	07/24	114.63	41.26	87.44	0.7347	0.375	0	0.03150	24.00	51	1242.000	63
07/24	07/25	97.96	48.41	84.26	0.7347	0.375	0	0.03190	24.00	51	1242.000	64
07/25	07/26	112.84	39.24	82.47	0.7347	0.375	0	0.03160	24.00	50	1242.000	62
07/26	07/27	120.03	35.86	80.31	0.7347	0.375	0	0.03150	24.00	50	1242.000	62
07/27	07/28	122.92	35.38	79.66	0.7347	0.375	0	0.03150	24.00	50	1242.000	62
07/28	07/29	123.66	35.00	76.60	0.7347	0.375	0	0.03160	24.00	50	1242.000	62
07/29	07/30	124.43	34.61	79.81	0.7347	0.375	0	0.03150	24.00	50	1242.000	62
07/30	07/31	120.80	34.70	78.04	0.7347	0.375	0	0.03160	24.00	49	1242.000	61
07/31	08/01	112.71	35.83	80.59	0.7347	0.375	0	0.03160	24.00	48	1242.000	60

Average/Totals	136.18	39.78	82.74					743.83	1,700	2,112
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CO2	N2	C1	C2	C3	iC4	nC4	iC5	nC5	C6	He	O2	H2S	Sp Grav	Wet BTU	Dry BTU
0.204	1.097	79.309	9.648	5.562	0.784	1.853	0.396	0.481	0.600	0.065	0.000	0.000	0.7347	1242.000	1264.120

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