



DRILL STEM TEST REPORT

Prepared For: **RJM COMPANY**

P.O. BOX 256
CLAFLIN, KANSAS 67525

ATTN: WYATT URBAN

BARTON COUNTY 1

12-19S-12W BARTON

Start Date: 2015.11.09 @ 15:48:00

End Date: 2015.11.09 @ 21:45:00

Job Ticket #: 01249 DST #: 4

Eagle Testers
1309 Patton Road Great Bend, Kansas 67530
620-791-7394

Printed: 2015.11.09 @ 22:18:29

RJM COMPANY
12-19S-12W BARTON
BARTON COUNTY 1
DST # 4
ARBUCKLE
2015.11.09



DRILL STEM TEST REPORT

RJM COMPANY
 P.O. BOX 256
 CLAFLIN, KANSAS 67525
 ATTN: WYATT URBAN

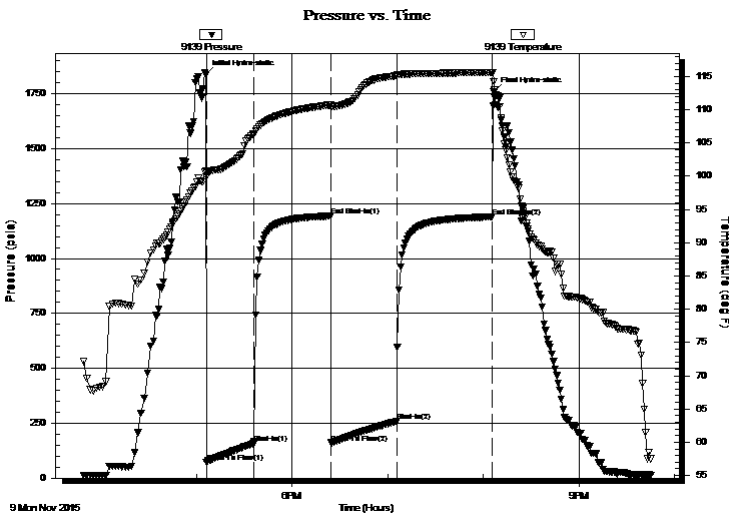
12-19S-12W BARTON
BARTON COUNTY 1
 Job Ticket: 01249 **DST#: 4**
 Test Start: 2015.11.09 @ 15:48:00

GENERAL INFORMATION:

Formation: **ARBUCKLE**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Initial)
 Time Tool Opened: 17:06:00 Tester: GENE BUDIG
 Time Test Ended: 21:45:00 Unit No: 1-19
 Interval: **3406.00 ft (KB) To 3479.00 ft (KB) (TVD)** Reference Elevations: 1877.00 ft (KB)
 Total Depth: 3479.00 ft (KB) (TVD) 1872.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 5.00 ft

Serial #: 9139 Outside
 Press@RunDepth: 1189.04 psia @ 3473.78 ft (KB) Capacity: 5000.00 psia
 Start Date: 2015.11.09 End Date: 2015.11.09 Last Calib.: 2015.11.09
 Start Time: 15:49:00 End Time: 21:45:00 Time On Btm: 2015.11.09 @ 17:05:30
 Time Off Btm: 2015.11.09 @ 20:06:30

TEST COMMENT: 1ST OPENING 30 MINUTES-WEAK BUILDING BLOW BUILT TO THE BOTTOM THE BUCKET IN 14 MINUTES
 1ST SHUT-IN 45 MINUTES-NO BLOW BACK
 2ND OPENING 45 MINUTES-WEAK BUILDING BLOW BUILT TO THE BOTTOM THE BUCKET IN 16 MINUTES
 2ND SHUT-IN 60 MINUTES-NO BLOW BACK



PRESSURE SUMMARY

Time (Min.)	Pressure (psia)	Temp (deg F)	Annotation
0	1835.59	100.81	Initial Hydro-static
1	73.05	99.96	Open To Flow (1)
30	156.96	106.30	Shut-In(1)
79	1193.08	110.73	End Shut-In(1)
79	160.76	110.39	Open To Flow (2)
120	258.69	115.11	Shut-In(2)
180	1189.04	115.61	End Shut-In(2)
181	1757.97	114.19	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
60.00	OIL CUT MUDDY WATER	0.84
0.00	10 GAS 18 OIL 40 MUD 32 WATER	0.00
60.00	OIL CUT MUDDY WATER	0.84
0.00	5 GAS 15 OIL 60 MUD 20 WATER	0.00
120.00	OIL CUT MUDDY WATER	1.68
0.00	15 GAS 25 OIL 30 MUD 30 WATER	0.00

Gas Rates

Choke (inches)	Pressure (psia)	Gas Rate (Mcf/d)



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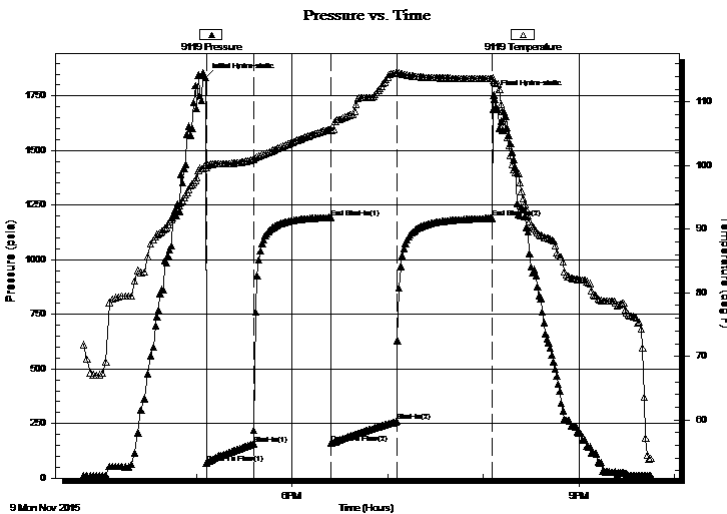
12-19S-12W BARTON
BARTON COUNTY 1
 Job Ticket: 01249 **DST#: 4**
 Test Start: 2015.11.09 @ 15:48:00

GENERAL INFORMATION:

Formation: **ARBUCKLE**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 17:06:00
 Time Test Ended: 21:45:00
 Interval: **3406.00 ft (KB) To 3479.00 ft (KB) (TVD)**
 Total Depth: 3479.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Initial)
 Tester: GENE BUDIG
 Unit No: 1-19
 Reference Elevations: 1877.00 ft (KB)
 1872.00 ft (CF)
 KB to GR/CF: 5.00 ft

Serial #: 9119 Inside
 Press@RunDepth: 1189.59 psia @ 3473.78 ft (KB) Capacity: 5000.00 psia
 Start Date: 2015.11.09 End Date: 2015.11.09 Last Calib.: 2015.11.09
 Start Time: 15:49:00 End Time: 21:45:00 Time On Btm: 2015.11.09 @ 17:05:30
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 1ST SHUT-IN 45 MINUTES-NO BLOW BACK
 2ND OPENING 45 MINUTES-WEAK BUILDING BLOW BUILT TO THE BOTTOM THE BUCKET IN 16 MINUTES
 2ND SHUT-IN 60 MINUTES-NO BLOW BACK



PRESSURE SUMMARY

Time (Min.)	Pressure (psia)	Temp (deg F)	Annotation
0	1834.93	100.17	Initial Hydro-static
1	69.64	99.64	Open To Flow (1)
30	157.08	100.93	Shut-In(1)
79	1193.65	105.72	End Shut-In(1)
79	159.30	105.45	Open To Flow (2)
120	259.16	114.51	Shut-In(2)
180	1189.59	113.65	End Shut-In(2)
181	1754.37	113.41	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
60.00	OIL CUT MUDDY WATER	0.84
0.00	10 GAS 18 OIL 40 MUD 32 WATER	0.00
60.00	OIL CUT MUDDY WATER	0.84
0.00	5 GAS 15 OIL 60 MUD 20 WATER	0.00
120.00	OIL CUT MUDDY WATER	1.68
0.00	15 GAS 25 OIL 30 MUD 30 WATER	0.00

Gas Rates

Choke (inches)	Pressure (psia)	Gas Rate (Mcf/d)



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TOOL DIAGRAM

RJM COMPANY
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 ATTN: WYATT URBAN

12-19S-12W BARTON
BARTON COUNTY 1
 Job Ticket: 01249 **DST#: 4**
 Test Start: 2015.11.09 @ 15:48:00

Tool Information

Drill Pipe:	Length: 3392.00 ft	Diameter: 3.80 inches	Volume: 47.58 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	20000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose:	56000.00 lb
			<u>Total Volume: 47.58 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	6.00 ft			String Weight: Initial	42000.00 lb
Depth to Top Packer:	3406.00 ft			Final	42000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	72.78 ft				
Tool Length:	92.78 ft				
Number of Packers:	1	Diameter: 6.75 inches			

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			3391.00	
Hydraulic tool	5.00			3396.00	
Top Packer	5.00			3401.00	
Packer	5.00			3406.00	20.00 Bottom Of Top Packer
Anchor	10.00			3416.00	
Change Over Sub	0.75			3416.75	
Drill Pipe	31.28			3448.03	
Change Over Sub	0.75			3448.78	
Anchor	25.00			3473.78	
Recorder	0.00	9119	Inside	3473.78	
Recorder	0.00	9139	Outside	3473.78	
Bullnose	5.00			3478.78	72.78 Anchor Tool

Total Tool Length: 92.78



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FLUID SUMMARY

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Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API:	deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	ppm
Viscosity: 48.00 sec/qt	Cushion Volume: bbl		
Water Loss: 10.39 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psia		
Salinity: 76000.00 ppm			
Filter Cake: 1.00 inches			

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
60.00	OIL CUT MUDDY WATER	0.842
0.00	10 GAS 18 OIL 40 MUD 32 WATER	0.000
60.00	OIL CUT MUDDY WATER	0.842
0.00	5 GAS 15 OIL 60 MUD 20 WATER	0.000
120.00	OIL CUT MUDDY WATER	1.683
0.00	15 GAS 25 OIL 30 MUD 30 WATER	0.000
120.00	OIL CUT MUDDY WATER	1.683
0.00	7 GAS 13 WATER 40 MUD 40 WATER	0.000
60.00	OIL CUT MUDDY WATER	0.842
0.00	0 GAS 5 OIL 45 MUD 50 WATER	0.000
0.00	CHLORIDES 16,000	0.000

Total Length: 420.00 ft Total Volume: 5.892 bbl
 Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
 Laboratory Name: Laboratory Location:
 Recovery Comments:

Pressure vs. Time

