



DRILL STEM TEST REPORT

Prepared For: **F G Holl Company LLC**

9431 East Central suite 100
Wichita, Kansas 67206-2563

ATTN: Renee Hustain

Calcara #4-19

19-19s-14w Barton

Start Date: 2019.07.13 @ 08:52:00

End Date: 2019.07.13 @ 03:22:00

Job Ticket #: 01367 DST #: 4

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

Printed: 2019.07.13 @ 15:48:40



DRILL STEM TEST REPORT

F G Holl Company LLC

19-19s-14w Barton

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Job Ticket: 01367

DST#: 4

ATTN: Renee Hustean

Test Start: 2019.07.13 @ 08:52:00

GENERAL INFORMATION:

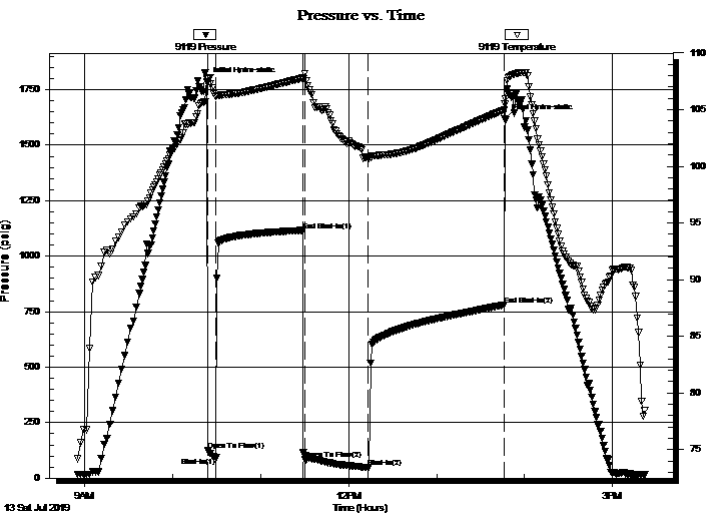
Formation: **Arbuckle**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Initial)
 Time Tool Opened: 10:24:00
 Tester: Gene Budig
 Time Test Ended: 03:22:00
 Unit No: 1
 Interval: **3537.00 ft (KB) To 3545.00 ft (KB) (TVD)**
 Reference Elevations: 1911.00 ft (KB)
 Total Depth: 3545.00 ft (KB) (TVD)
 1903.00 ft (CF)
 Hole Diameter: 7.88 inches
 Hole Condition: Fair
 KB to GR/CF: 8.00 ft

Serial #: 9119

Inside

Press@RunDepth: 780.00 psig @ 3540.00 ft (KB) Capacity: 5000.00 psig
 Start Date: 2019.07.13 End Date: 2019.07.13 Last Calib.: 2019.07.13
 Start Time: 08:52:00 End Time: 15:22:00 Time On Btm: 2019.07.13 @ 10:23:00
 Time Off Btm: 2019.07.13 @ 13:46:30

TEST COMMENT: 1st Opening 5 Minutes strong blow gas to surface
 1st Shut-In 60 Minutes no blow back
 2nd Opening 45 Minutes Strong blow see gas flow report
 2nd Shuy-In 90 Minutes no blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1784.26	107.70	Initial Hydro-static
1	126.79	107.69	Open To Flow (1)
7	91.82	106.16	Shut-In(1)
66	1116.09	107.79	End Shut-In(1)
67	84.89	108.19	Open To Flow (2)
111	48.24	100.72	Shut-In(2)
203	780.00	104.97	End Shut-In(2)
204	1620.10	105.48	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
35.00	Heavy Oil Cut Mud	0.49
0.00	80%Oil 20%Mud	0.00

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
First Gas Rate	0.38	65.00	290.86
Last Gas Rate	0.38	21.75	132.43
Max. Gas Rate	0.38	65.00	290.86



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ATTN: Renee Hustean

Test Start: 2019.07.13 @ 08:52:00

GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 10:24:00

Time Test Ended: 03:22:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Gene Budig

Unit No: 1

Interval: 3537.00 ft (KB) To 3545.00 ft (KB) (TVD)

Reference Elevations: 1911.00 ft (KB)

Total Depth: 3545.00 ft (KB) (TVD)

1903.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 1939 Outside

Press@RunDepth: 778.00 psig @ 3540.00 ft (KB)

Capacity: 5000.00 psig

Start Date: 2019.07.13

End Date: 2019.07.13

Last Calib.: 2019.07.13

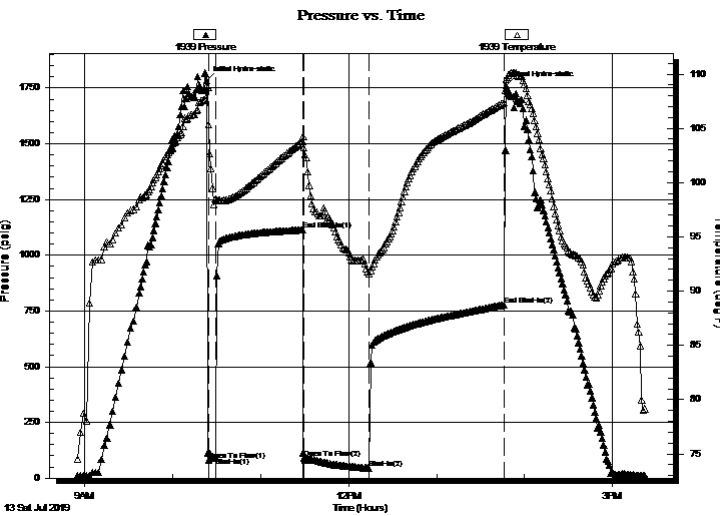
Start Time: 08:52:00

End Time: 15:22:00

Time On Btm: 2019.07.13 @ 10:23:00

Time Off Btm: 2019.07.13 @ 13:47:30

TEST COMMENT: 1st Opening 5 Minutes strong blow gas to surface
1st Shut-In 60 Minutes no blow back
2nd Opening 45 Minutes Strong blow see gas flow report
2nd Shuy-In 90 Minutes no blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1782.60	108.91	Initial Hydro-static
2	81.90	105.34	Open To Flow (1)
6	91.51	98.48	Shut-In(1)
66	1113.77	103.80	End Shut-In(1)
67	88.38	103.20	Open To Flow (2)
111	45.19	91.63	Shut-In(2)
203	778.00	107.34	End Shut-In(2)
205	1762.38	109.47	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
35.00	Heavy Oil Cut Mud	0.49
0.00	80%Oil 20%Mud	0.00

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
First Gas Rate	0.38	65.00	290.86
Last Gas Rate	0.38	21.75	132.43
Max. Gas Rate	0.38	65.00	290.86



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TOOL DIAGRAM

F G Holl Company LLC

19-19s-14w Barton

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DST#: 4

ATTN: Renee Hustean

Test Start: 2019.07.13 @ 08:52:00

Tool Information

Drill Pipe:	Length: 3532.00 ft	Diameter: 3.80 inches	Volume: 49.54 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: 74000.00 lb
			<u>Total Volume: 49.54 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	25.00 ft			String Weight: Initial 49000.00 lb
Depth to Top Packer:	3537.00 ft			Final 50000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	8.00 ft			
Tool Length:	38.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			3512.00	
Hydraulic tool	5.00			3517.00	
Jars	5.00			3522.00	
Safety Joint	5.00			3527.00	
Packer	5.00			3532.00	30.00 Bottom Of Top Packer
Packer	5.00		Fluid	3537.00	
Anchor	3.00			3540.00	
Recorder	0.00	9119	Inside	3540.00	
Recorder	0.00	1939	Outside	3540.00	
Bullnose	5.00			3545.00	8.00 Bottom Packers & Anchor
Total Tool Length:	38.00				



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FLUID SUMMARY

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DST#: 4

ATTN: Renee Hustean

Test Start: 2019.07.13 @ 08:52:00

Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 9.00 lb/gal

Viscosity: 48.00 sec/qt

Water Loss: 9.20 in³

Resistivity: 6000.00 ohm.m

Salinity: 0.00 ppm

Filter Cake: 1.00 inches

Cushion Type:

Cushion Length: ft

Cushion Volume: bbl

Gas Cushion Type:

Gas Cushion Pressure: psig

Oil API:

Water Salinity: deg API

ppm

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
35.00	Heavy Oil Cut Mud	0.491
0.00	80%Oil 20%Mud	0.000

Total Length: 35.00 ft Total Volume: 0.491 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



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GAS RATES

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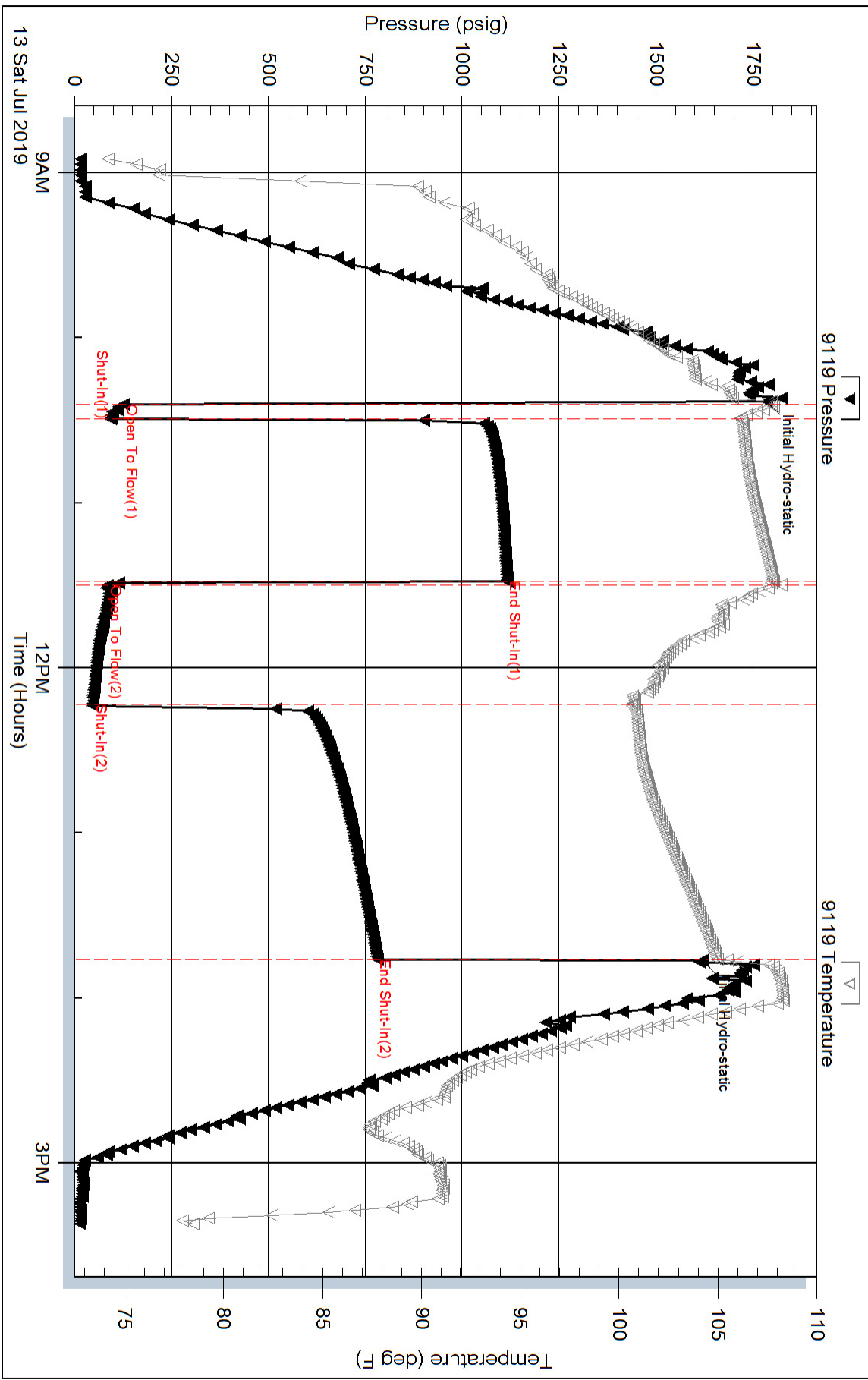
Gas Rates Information

Temperature: 59 (deg F)
Relative Density: 0.65
Z Factor: 0.8

Gas Rates Table

Flow Period	Elapsed Time	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
2	5	0.38	65.00	290.86
2	15	0.38	55.50	256.06
2	25	0.38	38.00	191.95
2	35	0.38	28.40	156.79
2	45	0.38	21.75	132.43

Pressure vs. Time



Pressure vs. Time

