



## DRILL STEM TEST REPORT

Prepared For: **Shelby Resources LLC**

621 17th Street SUITE 1155  
Denver Colorado 80293

ATTN: Keith Revis

**FRANCIS 1-36**

**36-321s-17w PAWNEE**

Start Date: 2016.03.22 @ 03:39:00

End Date: 2016.03.22 @ 22:31:00

Job Ticket #: 01220                      DST #: 4

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

Printed: 2016.03.22 @ 23:08:28



# DRILL STEM TEST REPORT

Shelby Resources LLC

36-321s-17w PAWNEE

621 17th Street SUITE 1155  
Denver Colorado 80293

FRANCIS 1-36

Job Ticket: 01220

DST#: 4

ATTN: Keith Revis

Test Start: 2016.03.22 @ 03:39:00

## GENERAL INFORMATION:

Formation: **ARBUCKLE**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 05:13:00

Time Test Ended: 22:31:00

Test Type: Conventional Bottom Hole (Initial)

Tester: GENE BUDIG

Unit No: 1

Interval: **3902.00 ft (KB) To 3908.00 ft (KB) (TVD)**

Reference Elevations: 1982.00 ft (KB)

Total Depth: 3908.00 ft (KB) (TVD)

1971.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 11.00 ft

Serial #: 9139

Outside

Press@RunDepth: 1340.83 psia @ 3903.00 ft (KB)

Capacity: 5000.00 psia

Start Date: 2016.03.22

End Date:

2016.03.22

Last Calib.:

2016.03.22

Start Time: 15:39:00

End Time:

22:36:00

Time On Btm:

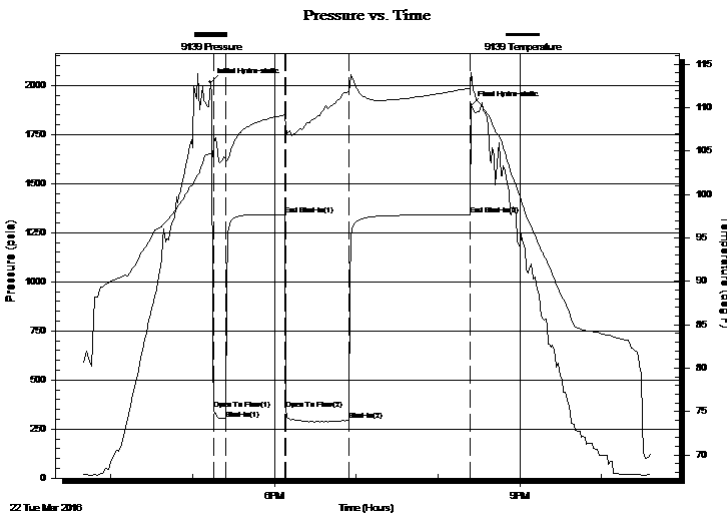
2016.03.22 @ 17:13:00

Time Off Btm:

2016.03.22 @ 20:24:30

TEST COMMENT: 1st OPENING 10 MINUTES STRONG BLOW GAS TO SURFACE IN 3 MINUTES  
1st SHUT-IN 45 MINUTES GOOD BLOW BACK  
2nd OPENING 45 MINUTES STRONG BLOW -SEE GAS FLOW REPORT  
2nd SHUT-IN 90 MINUTES-GOOD BLOW BACK

## PRESSURE SUMMARY



Time (Min.)	Pressure (psia)	Temp (deg F)	Annotation
0	2016.26	104.76	Initial Hydro-static
3	353.13	105.82	Open To Flow (1)
12	299.42	103.74	Shut-In(1)
55	1342.76	109.17	End Shut-In(1)
55	353.96	107.84	Open To Flow (2)
102	296.79	111.98	Shut-In(2)
191	1340.83	112.23	End Shut-In(2)
192	1898.24	114.07	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
60.00	slightly oil cut gassy w water	0.30
0.00	12 gas 3 oil 80 w ater 5 mud	0.00
30.00	oil cut muddy w ater chlor ides 32000	0.15
0.00	10 gas 10 oil 50 w ater 30 mud	0.00
330.00	clean gassy oil	3.47
0.00	20 gas 80 oil gravity 36 corrected	0.00

## Gas Rates

	Choke (inches)	Pressure (psia)	Gas Rate (Mcf/d)
First Gas Rate	1.00	37.60	1080.95
Last Gas Rate	1.00	31.60	908.46
Max. Gas Rate	1.00	37.60	1080.95



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FRANCIS 1-36

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Reference Elevations: 1982.00 ft (KB)

Total Depth: 3908.00 ft (KB) (TVD)

1971.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 11.00 ft

Serial #: 9119

Inside

Press@RunDepth: 1339.33 psia @ 3903.00 ft (KB)

Capacity: 5000.00 psia

Start Date: 2016.03.22

End Date:

2016.03.22

Last Calib.:

2016.03.22

Start Time: 15:39:00

End Time:

22:36:00

Time On Btm:

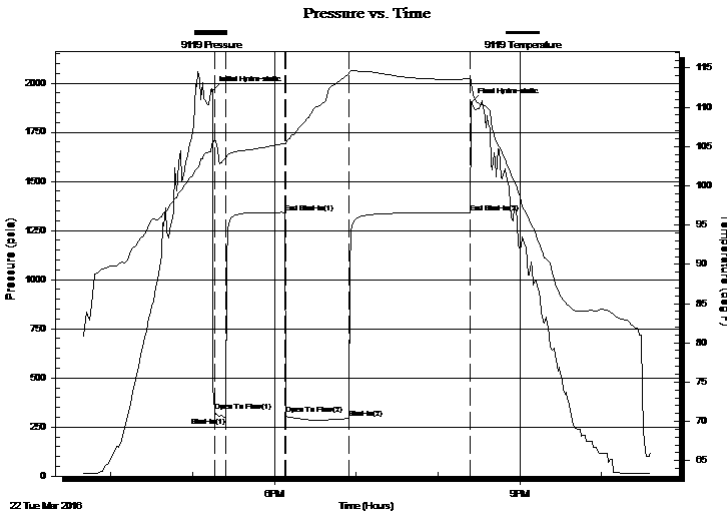
2016.03.22 @ 17:14:30

Time Off Btm:

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1st SHUT-IN 45 MINUTES GOOD BLOW BACK  
2nd OPENING 45 MINUTES STRONG BLOW -SEE GAS FLOW REPORT  
2nd SHUT-IN 90 MINUTES-GOOD BLOW BACK

## PRESSURE SUMMARY



Time (Min.)	Pressure (psia)	Temp (deg F)	Annotation
0	1961.72	105.56	Initial Hydro-static
2	331.14	105.98	Open To Flow (1)
10	300.64	103.43	Shut-In(1)
53	1342.10	105.41	End Shut-In(1)
54	312.60	105.48	Open To Flow (2)
100	294.57	114.23	Shut-In(2)
189	1339.33	113.61	End Shut-In(2)
190	1899.61	112.93	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
60.00	slightly oil cut gassy w ater	0.30
0.00	12 gas 3 oil 80 w ater 5 mud	0.00
30.00	oil cut muddy w ater chlor ides 32000	0.15
0.00	10 gas 10 oil 50 w ater 30 mud	0.00
330.00	clean gassy oil	3.47
0.00	20 gas 80 oil gravity 36 corrected	0.00

## Gas Rates

	Choke (inches)	Pressure (psia)	Gas Rate (Mcf/d)
First Gas Rate	1.00	37.60	1080.95
Last Gas Rate	1.00	31.60	908.46
Max. Gas Rate	1.00	37.60	1080.95



# DRILL STEM TEST REPORT

TOOL DIAGRAM

Shelby Resources LLC  
 621 17th Street SUITE 1155  
 Denver Colorado 80293  
 ATTN: Keith Revis

**36-321s-17w PAWNEE**  
**FRANCIS 1-36**  
 Job Ticket: 01220 **DST#: 4**  
 Test Start: 2016.03.22 @ 03:39:00

## Tool Information

Drill Pipe:	Length: 3666.00 ft	Diameter: 3.80 inches	Volume: 51.42 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: 217.00 ft	Diameter: 2.25 inches	Volume: 1.07 bbl	Weight to Pull Loose: 68000.00 lb
			<u>Total Volume: 52.49 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	10.00 ft			String Weight: Initial 640000.0 lb
Depth to Top Packer:	3902.00 ft			Final 66000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	6.00 ft			
Tool Length:	35.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Shut In Tool	5.00			3878.00	
Hydraulic tool	5.00			3883.00	
Jars	7.00			3890.00	
Safety Joint	2.00		Fluid	3892.00	
Top Packer	5.00			3897.00	
Packer	5.00			3902.00	29.00 Bottom Of Top Packer
Anchor	1.00			3903.00	
Recorder	0.00	9119	Inside	3903.00	
Recorder	0.00	9139	Outside	3903.00	
Bullnose	5.00			3908.00	6.00 Anchor Tool
<b>Total Tool Length:</b>	<b>35.00</b>				



# DRILL STEM TEST REPORT

## FLUID SUMMARY

Shelby Resources LLC

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**FRANCIS 1-36**

Job Ticket: 01220

**DST#: 4**

ATTN: Keith Revis

Test Start: 2016.03.22 @ 03:39:00

### Mud and Cushion Information

Mud Type: KCl	Cushion Type:	Oil API: 36 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity: 32000 ppm
Viscosity: 63.00 sec/qt	Cushion Volume: bbl	
Water Loss: 7.50 in <sup>3</sup>	Gas Cushion Type:	
Resistivity: ohm.m	Gas Cushion Pressure: psia	
Salinity: 5700.00 ppm		
Filter Cake: 1.00 inches		

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
60.00	slightly oil cut gassy w ater	0.295
0.00	12 gas 3 oil 80 w ater 5 mud	0.000
30.00	oil cut muddy w ater chlor ides 32000	0.148
0.00	10 gas 10 oil 50 w ater 30 mud	0.000
330.00	clean gassy oil	3.472
0.00	20 gas 80 oil gravity 36 corrected	0.000

Total Length: 420.00 ft      Total Volume: 3.915 bbl

Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:

Laboratory Name:      Laboratory Location:

Recovery Comments: gas sample w as caught



# DRILL STEM TEST REPORT

**GAS RATES**

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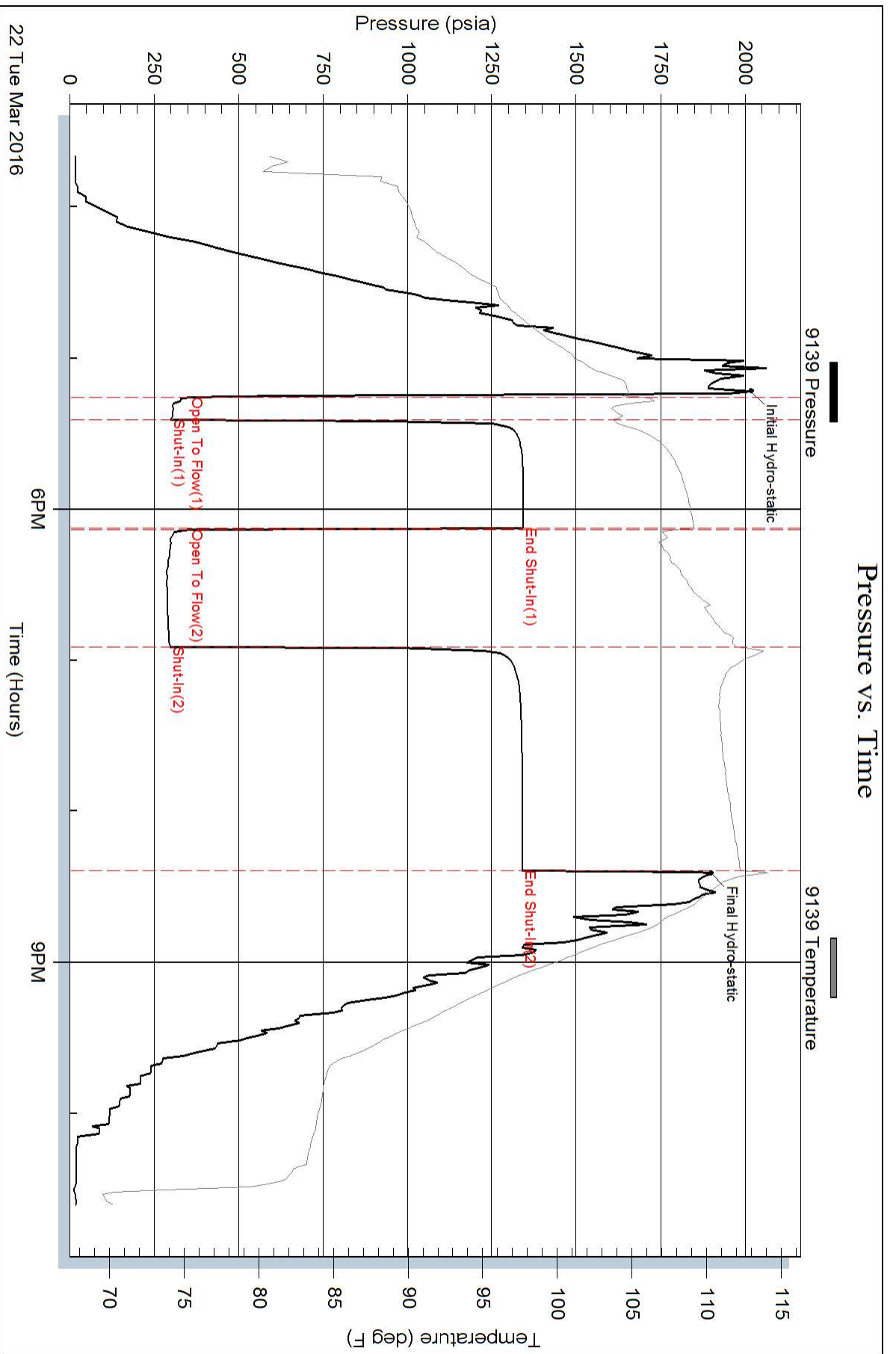
## Gas Rates Information

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

Gas Rates Table

Flow Period	Elapsed Time	Choke (inches)	Pressure (psia)	Gas Rate (Mcf/d)
2	10	1.00	37.60	1080.95
2	20	1.00	36.05	1036.39
2	30	1.00	33.15	953.02
2	40	1.00	31.60	908.46

### Pressure vs. Time



### Pressure vs. Time

