



## DRILL STEM TEST REPORT

Prepared For: **CARRIE EXPLOATION LLC**

1611 COPPER CREEK C-2  
HAYS, KANSAS 67601-2667

ATTN: HERB DEINES

**BOB THOMAS C-2**

**35-19S-11W BARTON**

Start Date: 2016.10.25 @ 12:15:00

End Date:

Job Ticket #: 01137

DST #: 3

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

Printed: 2016.10.26 @ 07:34:21

CARRIE EXPLOATION LLC

35-19S-11W BARTON

BOB THOMAS C-2

DST # 3

KANSAS CITY F

2016.10.25



# DRILL STEM TEST REPORT

CARRIE EXPLOATION LLC

35-19S-11W BARTON

1611 COPPER CREEK C-2  
HAYS, KANSAS 67601-2667

BOB THOMAS C-2

Job Ticket: 01137

DST#: 3

ATTN: HERB DEINES

Test Start: 2016.10.25 @ 12:15:00

## GENERAL INFORMATION:

Formation: **KANSAS CITY F**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 01:26:00

Time Test Ended:

Test Type: Conventional Bottom Hole (Initial)

Tester: GENE BUDIG

Unit No: 1

Interval: **3076.00 ft (KB) To 3098.00 ft (KB) (TVD)**

Reference Elevations: 1778.00 ft (KB)

Total Depth: 3098.00 ft (KB) (TVD)

1770.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 9139

Inside

Press@RunDepth: 809.69 psia @ 3093.00 ft (KB)

Capacity: 5000.00 psia

Start Date: 2016.10.25

End Date:

2016.10.25

Last Calib.:

2016.10.25

Start Time: 12:16:00

End Time:

17:26:30

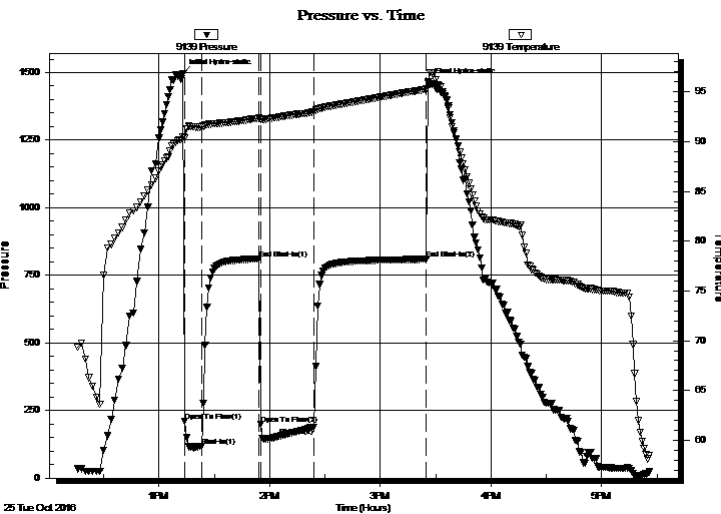
Time On Btm:

2016.10.25 @ 13:13:00

Time Off Btm:

2016.10.25 @ 15:26:00

TEST COMMENT: 1ST OPENING 10 MINUTES STRONG BLOW GAS TO SURFACE IN 6 MINUTES  
1ST SHUT-IN 30 MINUTES -STRONG BLOW BACK  
2ND OPENING 30 MINUTES STRONG BLOW SEE GAS FLOW REPORT  
2ND SHUT-IN 60 MINUTES STRONG BLOW BACK



## PRESSURE SUMMARY

Time (Min.)	Pressure (psia)	Temp (deg F)	Annotation
0	1497.35	90.44	Initial Hydro-static
1	209.33	90.33	Open To Flow (1)
10	118.96	91.46	Shut-In(1)
42	811.12	92.36	End Shut-In(1)
42	198.25	92.21	Open To Flow (2)
71	188.90	93.02	Shut-In(2)
132	809.69	95.27	End Shut-In(2)
133	1461.50	96.03	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
425.00	CLEAN GASSY OIL 50 GAS 50 OIL	5.96
0.00	GRAVITY 43 CORRECTED	0.00
60.00	HEAVY OIL AND GAS CUT MUD	0.84
0.00	35 GAS 30 OIL 35 MUD	0.00
30.00	HEAVY OIL AND GAS CUT MUD	0.42
0.00	50 GAS 20 OIL 30 MUD	0.00

## Gas Rates

	Choke (inches)	Pressure (psia)	Gas Rate (Mcf/d)
First Gas Rate	1.00	4.25	122.18
Last Gas Rate	1.00	5.45	156.68
Max. Gas Rate	1.00	5.70	163.87



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HAYS, KANSAS 67601-2667

BOB THOMAS C-2

Job Ticket: 01137

DST#: 3

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Deviated: No Whipstock: ft (KB)

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Time Test Ended:

Test Type: Conventional Bottom Hole (Initial)

Tester: GENE BUDIG

Unit No: 1

Interval: **3076.00 ft (KB) To 3098.00 ft (KB) (TVD)**

Reference Elevations: 1778.00 ft (KB)

Total Depth: 3098.00 ft (KB) (TVD)

1770.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: **91716** Outside

Press@RunDepth: 798.18 psia @ 3093.00 ft (KB)

Capacity: 5000.00 psia

Start Date: 2016.10.25

End Date: 2016.10.25

Last Calib.: 2016.10.25

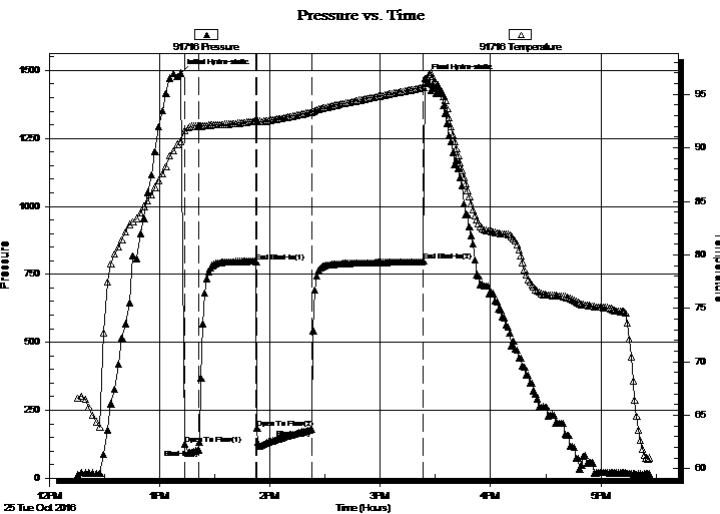
Start Time: 12:15:30

End Time: 17:27:00

Time On Btm: 2016.10.25 @ 13:11:30

Time Off Btm: 2016.10.25 @ 15:24:30

TEST COMMENT: 1ST OPENING 10 MINUTES STRONG BLOW GAS TO SURFACE IN 6 MINUTES  
1ST SHUT-IN 30 MINUTES -STRONG BLOW BACK  
2ND OPENING 30 MINUTES STRONG BLOW SEE GAS FLOW REPORT  
2ND SHUT-IN 60 MINUTES STRONG BLOW BACK



## PRESSURE SUMMARY

Time (Min.)	Pressure (psia)	Temp (deg F)	Annotation
0	1490.05	90.64	Initial Hydro-static
2	126.13	91.66	Open To Flow (1)
10	104.17	92.03	Shut-In(1)
41	796.62	92.52	End Shut-In(1)
42	184.17	92.51	Open To Flow (2)
71	179.45	93.33	Shut-In(2)
132	798.18	95.66	End Shut-In(2)
133	1469.02	96.04	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
425.00	CLEAN GASSY OIL 50 GAS 50 OIL	5.96
0.00	GRAVITY 43 CORRECTED	0.00
60.00	HEAVY OIL AND GAS CUT MUD	0.84
0.00	35 GAS 30 OIL 35 MUD	0.00
30.00	HEAVY OIL AND GAS CUT MUD	0.42
0.00	50 GAS 20 OIL 30 MUD	0.00

## Gas Rates

	Choke (inches)	Pressure (psia)	Gas Rate (Mcf/d)
First Gas Rate	1.00	4.25	122.18
Last Gas Rate	1.00	5.45	156.68
Max. Gas Rate	1.00	5.70	163.87



# DRILL STEM TEST REPORT

TOOL DIAGRAM

CARRIE EXPLOATION LLC

35-19S-11W BARTON

1611 COPPER CREEK C-2  
HAYS, KANSAS 67601-2667

BOB THOMAS C-2

Job Ticket: 01137

DST#: 3

ATTN: HERB DEINES

Test Start: 2016.10.25 @ 12:15:00

## Tool Information

Drill Pipe:	Length: 3079.00 ft	Diameter: 3.80 inches	Volume: 43.19 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.76 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose: 63000.00 lb
			<u>Total Volume: 43.19 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	23.00 ft			String Weight: Initial 36000.00 lb
Depth to Top Packer:	3076.00 ft			Final 42000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	22.00 ft			
Tool Length:	42.00 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			3061.00	
Hydraulic tool	5.00			3066.00	
Top Packer	5.00			3071.00	
Packer	5.00			3076.00	20.00 Bottom Of Top Packer
Anchor	17.00			3093.00	
Recorder	0.00	9139	Inside	3093.00	
Recorder	0.00	91716	Outside	3093.00	
Bullnose	5.00			3098.00	22.00 Anchor Tool

**Total Tool Length: 42.00**



# DRILL STEM TEST REPORT

**FLUID SUMMARY**

CARRIE EXPLOATION LLC

**35-19S-11W BARTON**

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Job Ticket: 01137

**DST#: 3**

ATTN: HERB DEINES

Test Start: 2016.10.25 @ 12:15:00

## Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 9.00 lb/gal

Viscosity: 41.00 sec/qt

Water Loss: in<sup>3</sup>

Resistivity: ohm.m

Salinity: ppm

Filter Cake: inches

Cushion Type:

Cushion Length: ft

Cushion Volume: bbl

Gas Cushion Type:

Gas Cushion Pressure: psia

Oil API:

Water Salinity: deg API

ppm

## Recovery Information

Recovery Table

Length ft	Description	Volume bbl
425.00	CLEAN GASSY OIL 50 GAS 50 OIL	5.962
0.00	GRAVITY 43 CORRECTED	0.000
60.00	HEAVY OIL AND GAS CUT MUD	0.842
0.00	35 GAS 30 OIL 35 MUD	0.000
30.00	HEAVY OIL AND GAS CUT MUD	0.421
0.00	50 GAS 20 OIL 30 MUD	0.000

Total Length: 515.00 ft      Total Volume: 7.225 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



# DRILL STEM TEST REPORT

**GAS RATES**

CARRIE EXPLOATION LLC

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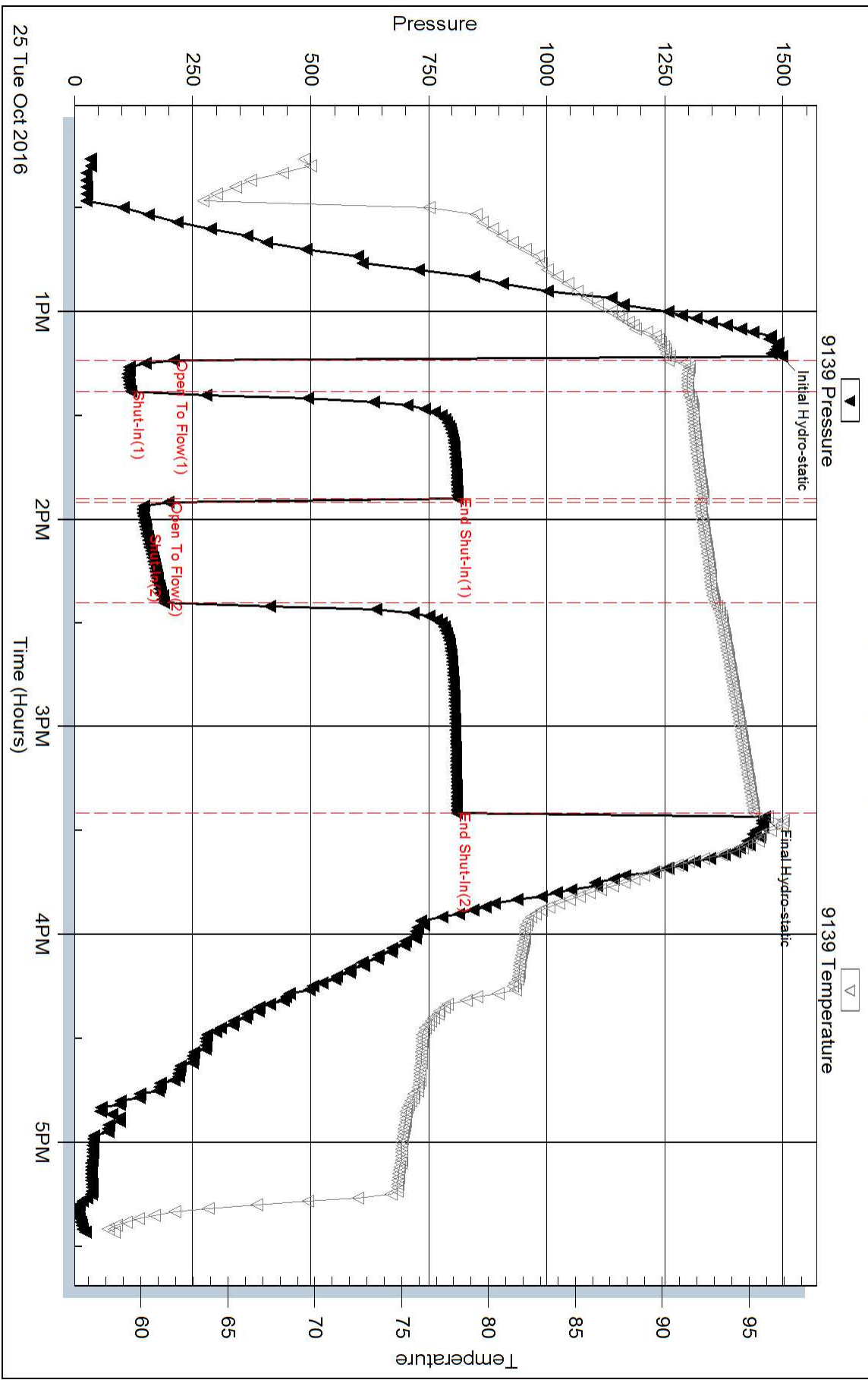
## Gas Rates Information

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	5	1.00	4.25	122.18
2	15	1.00	5.70	163.87
2	25	1.00	5.45	156.68

### Pressure vs. Time



### Pressure vs. Time

