



## DRILL STEM TEST REPORT

Prepared For: **Southwind Petroleum**

1400 West 14th Street  
Wichita KS 67203

ATTN: Bob Williams

**George #34-1**

**34-19s-16w Rush,KS**

Start Date: 2014.10.10 @ 02:58:00

End Date: 2014.10.10 @ 08:39:00

Job Ticket #: 60325                      DST #: 1

Trilobite Testing, Inc  
1515 Commerce Parkway Hays, KS 67601  
ph: 785-625-4778 fax: 785-625-5620

Printed: 2014.10.15 @ 11:14:08



**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

Southwind Petroleum  
 1400 West 14th Street  
 Wichita KS 67203  
 ATTN: Bob Williams

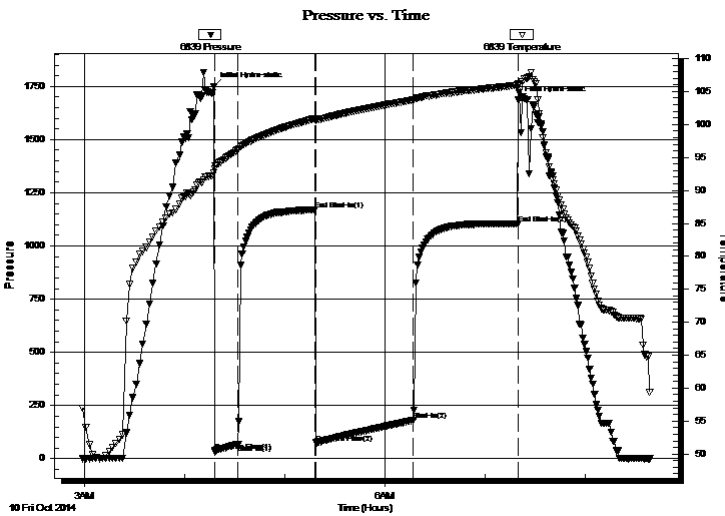
**34-19s-16w Rush, KS**  
**George #34-1**  
 Job Ticket: 60325 **DST#: 1**  
 Test Start: 2014.10.10 @ 02:58:00

## GENERAL INFORMATION:

Formation: **LKC H**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 04:18:00  
 Time Test Ended: 08:39:00  
 Interval: **3583.00 ft (KB) To 3605.00 ft (KB) (TVD)**  
 Total Depth: 3605.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Initial)  
 Tester: Dustin Ellis  
 Unit No: S2  
 Reference Elevations: 2011.00 ft (KB)  
 2005.00 ft (CF)  
 KB to GR/CF: 6.00 ft

**Serial #: 6839 Inside**  
 Press@RunDepth: 180.59 psig @ 3600.00 ft (KB) Capacity: 5000.00 psig  
 Start Date: 2014.10.10 End Date: 2014.10.10 Last Calib.: 2014.10.10  
 Start Time: 02:59:00 End Time: 08:39:00 Time On Btm: 2014.10.10 @ 04:17:30  
 Time Off Btm: 2014.10.10 @ 07:20:00

**TEST COMMENT:** 1st Open 15 minutes Weak building blow built to 7 inches.  
 1st Shut in 45 minutes No blow back  
 2nd Open 60 minutes Fair building blow built to the bottom of a 5 gallon bucket of water in 24 minutes.  
 2nd Shut in 60 minutes Yes blow back



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1746.54	92.64	Initial Hydro-static
1	34.18	93.25	Open To Flow (1)
15	67.76	96.16	Shut-In(1)
61	1170.36	100.89	End Shut-In(1)
61	74.22	100.59	Open To Flow (2)
120	180.59	103.70	Shut-In(2)
182	1103.61	105.95	End Shut-In(2)
183	1684.70	106.19	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
257.00	Water 100%	3.35
63.00	Muddy water 5%Mud 95%Water	0.88

## Gas Rates

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



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Southw ind Petroleum

**34-19s-16w Rush,KS**

1400 West 14th Street  
Wichita KS 67203

**George #34-1**

Job Ticket: 60325

**DST#: 1**

ATTN: Bob Williams

Test Start: 2014.10.10 @ 02:58:00

## Tool Information

Drill Pipe:	Length: 3544.00 ft	Diameter: 3.80 inches	Volume: 49.71 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: 28.42 ft	Diameter: 2.25 inches	Volume: 0.14 bbl	Weight to Pull Loose: 80000.00 lb
			<u>Total Volume: 49.85 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	17.42 ft			String Weight: Initial 52000.00 lb
Depth to Top Packer:	3583.00 ft			Final 53000.00 lb
Depth to Bottom Packer:	ft			
Interval betw een Packers:	22.00 ft			
Tool Length:	50.00 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			3560.00	
Hydraulic tool	5.00			3565.00	
Jars	6.00			3571.00	
Safety Joint	2.00			3573.00	
Top Packer	5.00			3578.00	
Packer	5.00			3583.00	28.00 Bottom Of Top Packer
Perforations	17.00			3600.00	
Recorder	0.00	6839	Inside	3600.00	
Recorder	0.00	6999	Outside	3600.00	
Bull Plug	5.00			3605.00	22.00 Anchor Tool
<b>Total Tool Length:</b>	<b>50.00</b>				



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Southw ind Petroleum

**34-19s-16w Rush,KS**

1400 West 14th Street  
Wichita KS 67203

**George #34-1**

Job Ticket: 60325

**DST#: 1**

ATTN: Bob Williams

Test Start: 2014.10.10 @ 02:58:00

### 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: 55.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.79 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 5000.00 ppm

Filter Cake: 1.00 inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
257.00	Water 100%	3.346
63.00	Muddy w ater 5%Mud 95%Water	0.884

Total Length: 320.00 ft      Total Volume: 4.230 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

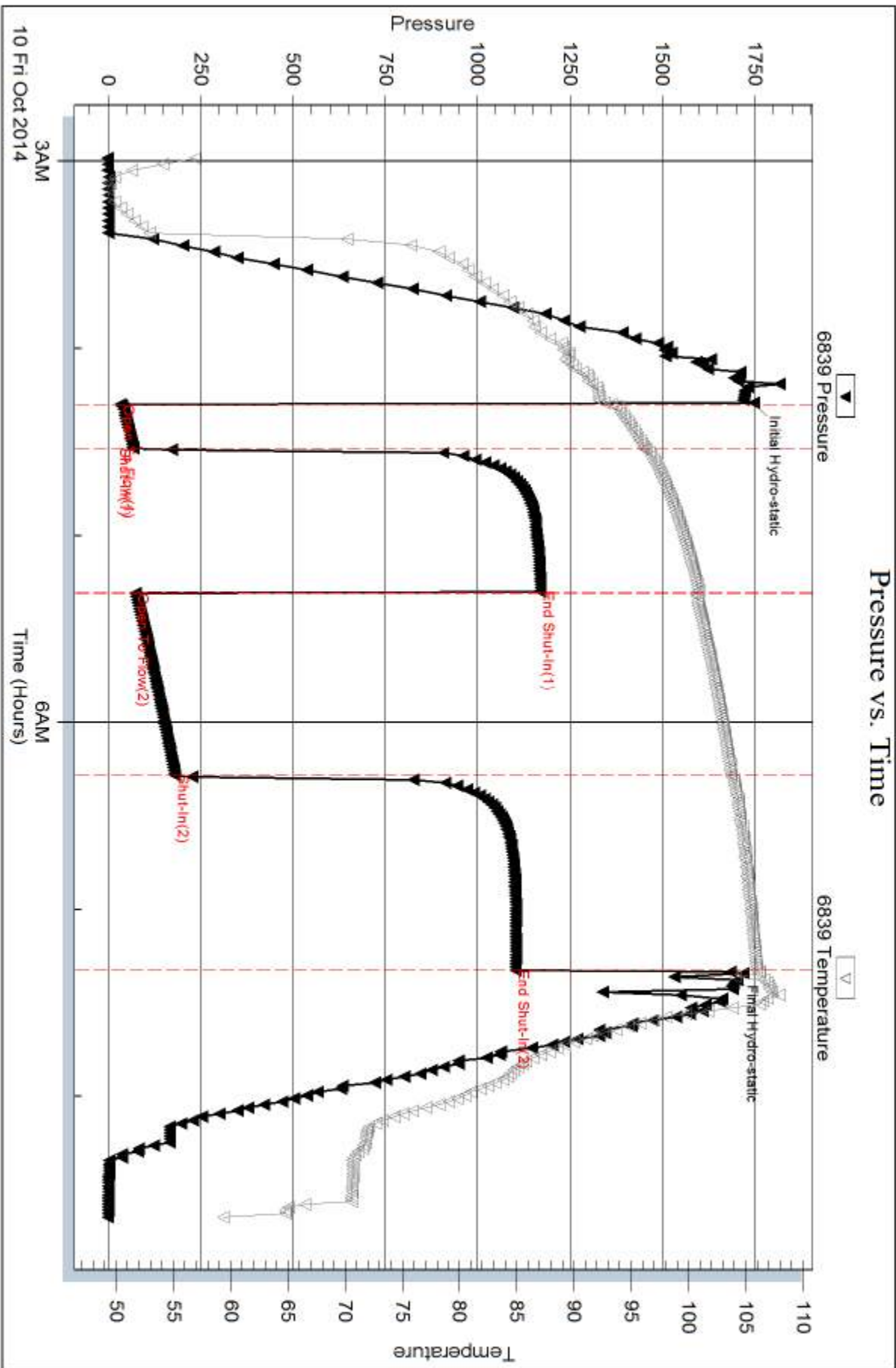
Serial #: 6839

Inside

Southwind Petroleum

George #34-1

DST Test Number: 1





## DRILL STEM TEST REPORT

Prepared For: **Southwind Petroleum**

1400 West 14th Street  
Wichita KS 67203

ATTN: Bob Williams

**George #34-1**

**34-19s-16w Rush,KS**

Start Date: 2014.10.11 @ 05:30:00

End Date: 2014.10.11 @ 11:41:30

Job Ticket #: 60276                      DST #: 2

Trilobite Testing, Inc  
1515 Commerce Parkway Hays, KS 67601  
ph: 785-625-4778 fax: 785-625-5620

Printed: 2014.10.15 @ 11:11:43

Southwind Petroleum  
34-19s-16w Rush,KS  
George #34-1  
DST # 2  
Arbuckle  
2014.10.11



**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

Southwind Petroleum  
 1400 West 14th Street  
 Wichita KS 67203  
 ATTN: Bob Williams

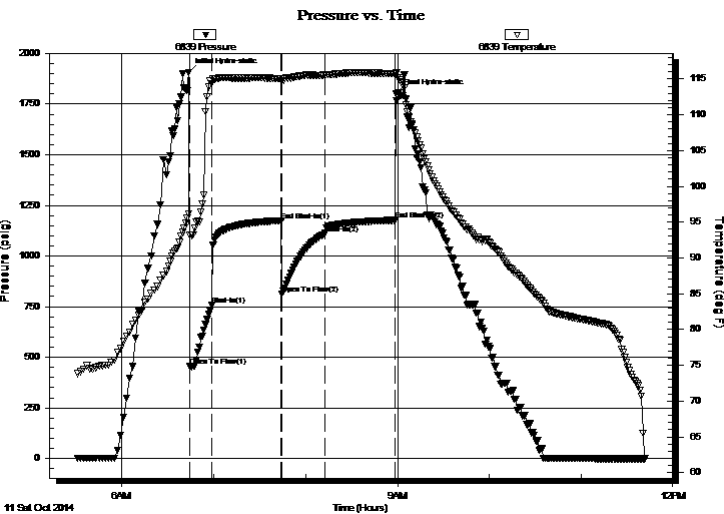
**34-19s-16w Rush, KS**  
**George #34-1**  
 Job Ticket: 60276 **DST#: 2**  
 Test Start: 2014.10.11 @ 05:30:00

## GENERAL INFORMATION:

Formation: **Arbuckle**  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 06:44:30  
 Time Test Ended: 11:41:30  
 Interval: **3720.00 ft (KB) To 3740.00 ft (KB) (TVD)**  
 Total Depth: 3900.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches Hole Condition: Fair  
 Test Type: Conventional Straddle (Initial)  
 Tester: Dustin Ellis  
 Unit No: S2  
 Reference Elevations: 2011.00 ft (KB)  
 2005.00 ft (CF)  
 KB to GR/CF: 6.00 ft

**Serial #: 6839 Outside**  
 Press@RunDepth: 1110.86 psig @ 3722.16 ft (KB) Capacity: 5000.00 psig  
 Start Date: 2014.10.11 End Date: 2014.10.11 Last Calib.: 2014.10.12  
 Start Time: 05:31:00 End Time: 11:41:30 Time On Btm: 2014.10.11 @ 06:43:30  
 Time Off Btm: 2014.10.11 @ 08:59:00

**TEST COMMENT:** 1st Open 15 minutes Strong building blow built to the bottom of a 5 gallon bucket of water in 1 minute.  
 1st Shut in 45 minutes Yes blow back.  
 2nd Open 30 minutes Strong building blow built to the bottom of a 5 gallon bucket of water instantly.  
 2nd Shut in 45 minutes Yes blow back



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1906.36	96.13	Initial Hydro-static
1	455.67	93.21	Open To Flow (1)
15	756.52	114.34	Shut-In(1)
61	1175.08	115.00	End Shut-In(1)
61	812.50	114.82	Open To Flow (2)
89	1110.86	115.56	Shut-In(2)
135	1176.82	115.74	End Shut-In(2)
136	1801.50	115.92	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
441.00	Muddy Water Water 50% Mud 50%	5.92
977.00	Gassy water cut muddy oil	13.70
0.00	Water 74% Gas 20% Mud 5% Oil 1%	0.00
882.00	Water 100%	12.37
0.00	440 Gas in pipe.	0.00

## Gas Rates

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



**TRILOBITE TESTING, INC**

# DRILL STEM TEST REPORT

Southwind Petroleum  
 1400 West 14th Street  
 Wichita KS 67203  
 ATTN: Bob Williams

**34-19s-16w Rush, KS**  
**George #34-1**  
 Job Ticket: 60276 **DST#: 2**  
 Test Start: 2014.10.11 @ 05:30:00

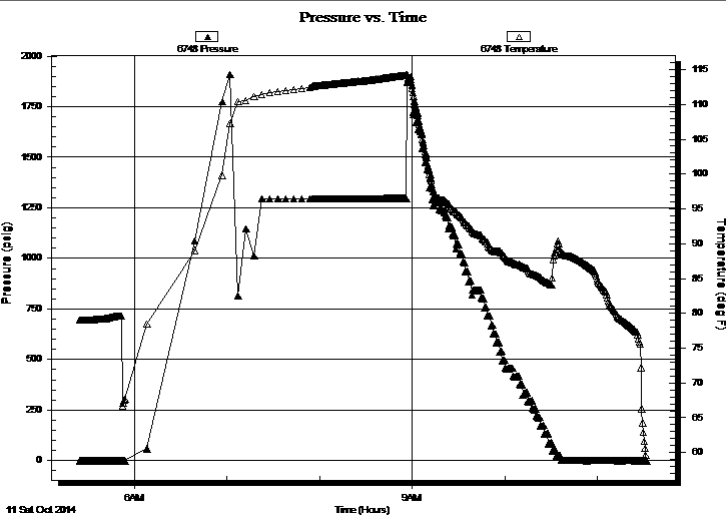
## GENERAL INFORMATION:

Formation: **Arbuckle**  
 Deviated: No Whipstock: ft (KB) Test Type: Conventional Straddle (Initial)  
 Time Tool Opened: 06:44:30 Tester: Dustin Ellis  
 Time Test Ended: 11:41:30 Unit No: S2  
**Interval: 3720.00 ft (KB) To 3740.00 ft (KB) (TVD)** Reference Elevations: 2011.00 ft (KB)  
 Total Depth: 3900.00 ft (KB) (TVD) 2005.00 ft (CF)  
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 6.00 ft

## Serial #: 6748 Below (Straddle)

Press@RunDepth: psig @ 3743.89 ft (KB) Capacity: 5000.00 psig  
 Start Date: 2014.10.11 End Date: 2014.10.11 Last Calib.: 2014.10.12  
 Start Time: 05:24:44 End Time: 11:31:54 Time On Btm:  
 Time Off Btm:

TEST COMMENT: 1st Open 15 minutes Strong building blow built to the bottom of a 5 gallon bucket of water in 1 minute.  
 1st Shut in 45 minutes Yes blow back.  
 2nd Open 30 minutes Strong building blow built to the bottom of a 5 gallon bucket of water instantly.  
 2nd Shut in 45 minutes Yes blow back



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation

## Recovery

Length (ft)	Description	Volume (bbl)
441.00	Muddy Water Water 50% Mud 50%	5.92
977.00	Gassy water cut muddy oil	13.70
0.00	Water 74% Gas 20% Mud 5% Oil 1%	0.00
882.00	Water 100%	12.37
0.00	440 Gas in pipe.	0.00

## Gas Rates

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





**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

**TOOL DIAGRAM**

Southw ind Petroleum

**34-19s-16w Rush,KS**

1400 West 14th Street  
Wichita KS 67203

**George #34-1**

Job Ticket: 60276

**DST#: 2**

ATTN: Bob Williams

Test Start: 2014.10.11 @ 05:30:00

## Tool Information

Drill Pipe:	Length: 3688.00 ft	Diameter: 3.80 inches	Volume: 51.73 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: 28.76 ft	Diameter: 2.25 inches	Volume: 0.14 bbl	Weight to Pull Loose:	83000.00 lb
			<u>Total Volume: 51.87 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	19.37 ft			String Weight: Initial	53000.00 lb
Depth to Top Packer:	3720.00 ft			Final	63000.00 lb
Depth to Bottom Packer:	3740.37 ft				
Interval betw een Packers:	20.37 ft				
Tool Length:	47.28 ft				
Number of Packers:	3	Diameter:	6.75 inches		
Tool Comments:					

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
P.O. Sub	0.31			3697.70	
C.O. Sub	0.31			3698.01	
P.O. Sub	0.31			3698.32	
Recorder	1.80		Fluid	3700.12	
Conv. S.I. Tool	1.52			3701.64	
Sampler	1.10			3702.74	
HMV	2.10			3704.84	
Recorder	1.80		Inside	3706.64	
Telemetry Tool	7.01			3713.65	
Jars	2.05			3715.70	
Bypass Hanger	0.32			3716.02	
Safety Joint	0.78			3716.80	
Packer	1.78			3718.58	22.61 Bottom Of Top Packer
Packer	1.42			3720.00	
Stubb	0.36			3720.36	
Recorder Carrier	1.80			3722.16	
Recorder	0.00	6839	Outside	3722.16	
Recorder	0.00		Outside	3722.16	
Perforations	17.00			3739.16	
Bypass Receiver	0.85			3740.01	
Blank Spacing	0.00			3740.01	
Stubb	0.36			3740.37	20.37 Tool Interval
Packer	1.42			3741.79	
Bypass Hanger	0.30			3742.09	
Recorder	1.80	6748	Below	3743.89	
Collar	0.00			3743.89	



**TRILOBITE  
TESTING, INC**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Southw ind Petroleum

**34-19s-16w Rush,KS**

1400 West 14th Street  
Wichita KS 67203

**George #34-1**

Job Ticket: 60276

**DST#: 2**

ATTN: Bob Williams

Test Start: 2014.10.11 @ 05:30:00

### 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: 54.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.99 in<sup>3</sup>

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 6000.00 ppm

Filter Cake: 8.00 inches

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
441.00	Muddy Water Water 50% Mud 50%	5.924
977.00	Gassy w ater cut muddy oil	13.705
0.00	Water 74% Gas 20% Mud 5% Oil 1%	0.000
882.00	Water 100%	12.372
0.00	440 Gas in pipe.	0.000

Total Length: 2300.00 ft

Total Volume: 32.001 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

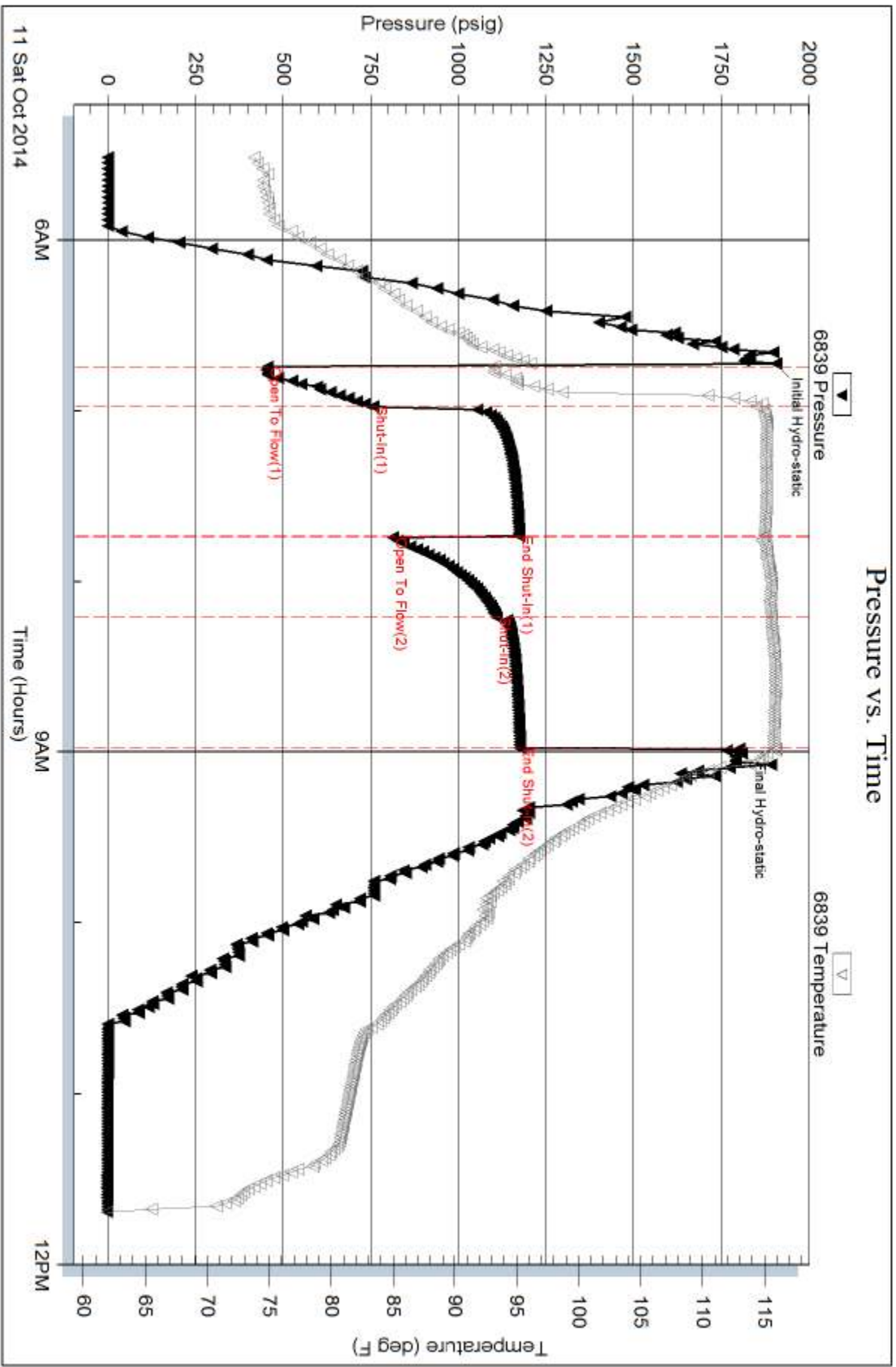
Recovery Comments:

Serial #: 6839

Outside Southwind Petroleum

George #34-1

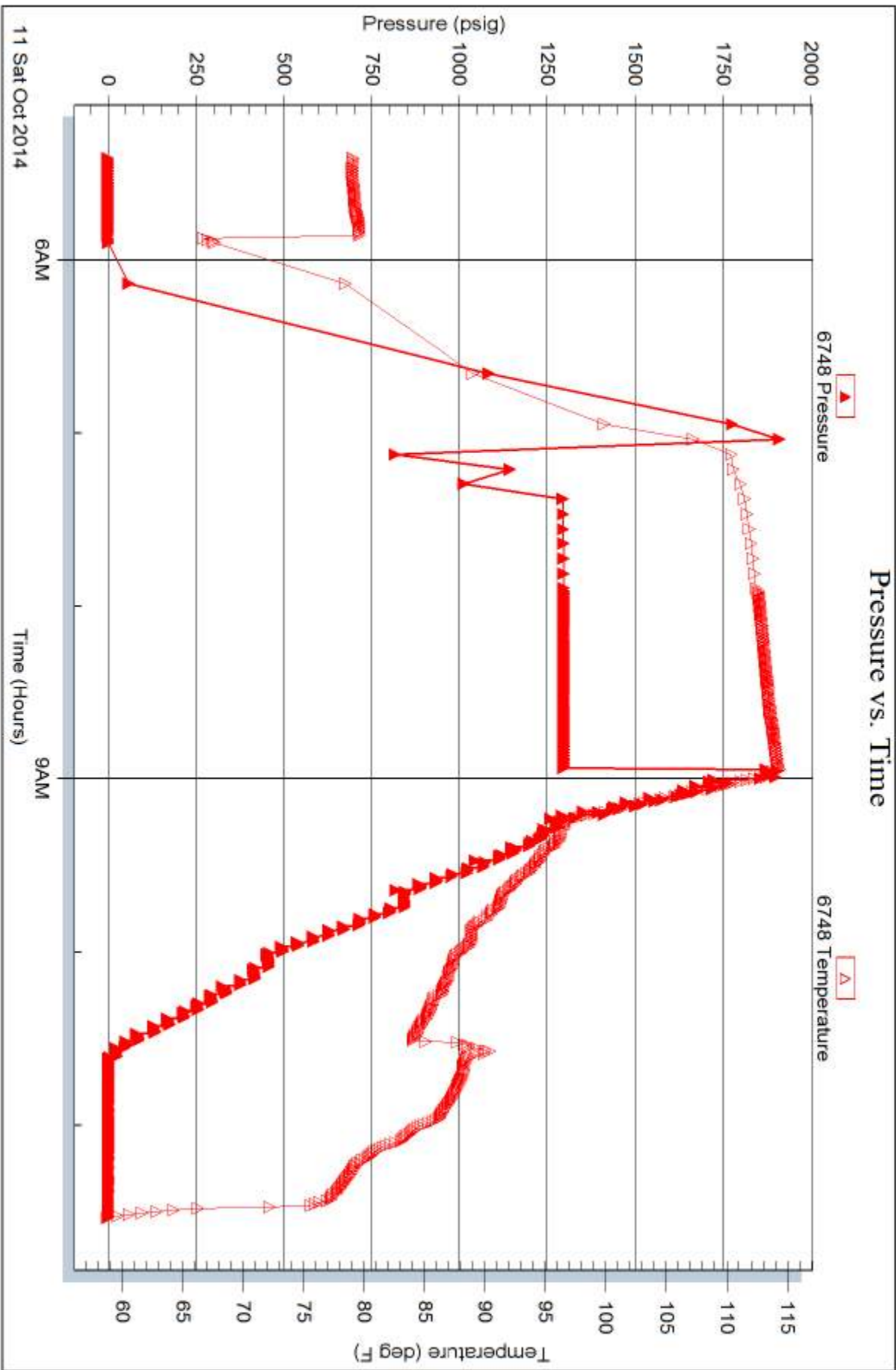
DST Test Number: 2



Trilobite Testing, Inc

Ref. No: 60276

Printed: 2014.10.15 @ 11:11:44





# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 60325

4/10

Well Name & No. George 34-1 Test No. 1 Date 10-10-14  
 Company Southern Petroleum Elevation 2005 KB 2011 GL  
 Address 1400 West 14th Street Wichita Kansas 67203  
 Co. Rep / Geo. BOB Williams Rig Muffin Drilling #14  
 Location: Sec. 34 Twp. 19S Rge. 16W Co. Rush State KS

Interval Tested 3583-3605 Zone Tested Kansing H  
 Anchor Length 22 Drill Pipe Run 3544 Mud Wt. 8.8  
 Top Packer Depth 3578 Drill Collars Run 28.42 Vis 55  
 Bottom Packer Depth 3583 Wt. Pipe Run 20000 WL 8.8  
 Total Depth 3605 Chlorides 5000 ppm System LCM 1

Blow Description 1st open - weak building blow built to 7 inches.  
1st shut in - No blow back.  
2nd open - fair building blow built to bottom bucket in 24 minutes.  
2nd shut in - Res blow back.

Rec	Feet of	%gas	%oil	%water	%mud
<u>257</u>	<u>water</u>			<u>100</u>	
<u>63</u>	<u>muddy water</u>			<u>95</u>	<u>5</u>
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 320 BHT \_\_\_\_\_ Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic 1746  Test 1150 T-On Location 12:45pm  
 (B) First Initial Flow 34  Jars 250 T-Started 2:58pm  
 (C) First Final Flow 67  Safety Joint 75 T-Open 4:17pm  
 (D) Initial Shut-In 1170  Circ Sub \_\_\_\_\_ T-Pulled 7:17pm  
 (E) Second Initial Flow 74  Hourly Standby \_\_\_\_\_ T-Out 8:55pm  
 (F) Second Final Flow 180  Mileage 80 62 Comments \_\_\_\_\_  
 (G) Final Shut-In 1103  Sampler \_\_\_\_\_  
 (H) Final Hydrostatic 1684  Straddle \_\_\_\_\_  Ruined Shale Packer \_\_\_\_\_  
 Shale Packer \_\_\_\_\_  Ruined Packer 320  
 Extra Packer \_\_\_\_\_  Extra Copies \_\_\_\_\_  
 Extra Recorder \_\_\_\_\_ Sub Total 320  
 Day Standby \_\_\_\_\_ Total 1857  
 Accessibility \_\_\_\_\_ MP/DST Disc't \_\_\_\_\_  
 Sub Total 1537

Initial Open 15  
 Initial Shut-In 45  
 Final Flow 60  
 Final Shut-In 60

Approved By \_\_\_\_\_ Our Representative Dustin Ellis

Trilobite Testing Inc. shall not be liable for damaged of any kind of the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.



# TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

## Test Ticket

NO. 60276

Well Name & No. George 34-1 Test No. 2 Date 10-11-14  
 Company Southwind Petroleum Elevation 2005 KB 2011 GL  
 Address 1400 West 14th Street W. Topeka Kansas 67203  
 Co. Rep / Geo. Bob Williams Rig Murkin Rig 16  
 Location: Sec. 34 Twp. 19S Rge. 16W Co. Rush State KS

Interval Tested 3720 - 3740 Zone Tested Arbuckle  
 Anchor Length 20 Drill Pipe Run 3688 Mud Wt. 9.2  
 Top Packer Depth 3720 Drill Collars Run 28.26 Vis 54  
 Bottom Packer Depth 3740 Wt. Pipe Run 20,000 WL 8.0  
 Total Depth 3900 Chlorides 6000 ppm System LCM 8

Blow Description 1st open - strong blow blew off bottom bucket 1 minute.  
1st shut-in - 45s blow back  
2nd open - strong blow blew off bottom bucket instantly.  
2nd shut-in - 45s blow back.

Rec	Feet of	%gas	%oil	%water	%mud
<u>441</u>	<u>muddy water</u>		<u>50</u>	<u>50</u>	
<u>977</u>	<u>Gassy water cut muddy with</u>	<u>20</u>	<u>1</u>	<u>74</u>	<u>5</u>
<u>882</u>	<u>water</u>		<u>100</u>		

Rec Total 2300 BHT \_\_\_\_\_ Gravity \_\_\_\_\_ API RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm

(A) Initial Hydrostatic <u>1900</u>	<input type="checkbox"/> Test <u>1150</u>	T-On Location _____
(B) First Initial Flow <u>455</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>6:57 5:30pm</u>
(C) First Final Flow <u>756</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>6:57pm</u>
(D) Initial Shut-In <u>1175</u>	<input type="checkbox"/> Circ Sub _____	T-Pulled <u>9:12pm</u>
(E) Second Initial Flow <u>812</u>	<input type="checkbox"/> Hourly Standby _____	T-Out <u>12:00pm</u>
(F) Second Final Flow <u>1110</u>	<input type="checkbox"/> Mileage <u>40</u> 62	Comments <u>440 gas in pipe</u>
(G) Final Shut-In <u>1176</u>	<input type="checkbox"/> Sampler _____	
(H) Final Hydrostatic <u>1801</u>	<input checked="" type="checkbox"/> Straddle <u>600</u>	<input type="checkbox"/> Ruined Shale Packer _____
	<input type="checkbox"/> Shale Packer _____	<input type="checkbox"/> Ruined Packer _____
Initial Open <u>15</u>	<input checked="" type="checkbox"/> Extra Packer <u>200</u>	<input type="checkbox"/> Extra Copies _____
Initial Shut-In <u>45</u>	<input checked="" type="checkbox"/> Extra Recorder <u>200</u>	Sub Total <u>0</u>
Final Flow <u>30</u>	<input type="checkbox"/> Day Standby _____	Total <u>2537</u>
Final Shut-In <u>45</u>	<input type="checkbox"/> Accessibility _____	MP/DST Disc't _____
	Sub Total <u>2537</u>	

Approved By \_\_\_\_\_ Our Representative \_\_\_\_\_  
 Trilobite Testing Inc. shall not be liable for damaged of any kind of the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.