



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Company, Inc.**

250 N. Water STE 300
Wichita, KS 67202

ATTN: Kent Matson

Waters #1-32

32-1s-38w Cheyenne,KS

Start Date: 2014.11.11 @ 21:07:00

End Date: 2014.11.12 @ 05:32:30

Job Ticket #: 60863 DST #: 1

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

Printed: 2014.11.22 @ 12:47:46



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Company, Inc.

32-1s-38w Cheyenne,KS

250 N. Water STE 300
Wichita, KS 67202

Waters #1-32

Job Ticket: 60863

DST#: 1

ATTN: Kent Matson

Test Start: 2014.11.11 @ 21:07:00

GENERAL INFORMATION:

Formation: **Stotler**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 23:57:15

Time Test Ended: 05:32:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Donovan Baumann

Unit No: 54

Interval: 3795.00 ft (KB) To 3861.00 ft (KB) (TVD)

Reference Elevations: 3184.00 ft (KB)

Total Depth: 3861.00 ft (KB) (TVD)

3173.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 11.00 ft

Serial #: 6753 Outside

Press@RunDepth: 21.87 psig @ 3796.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.11.11

End Date:

2014.11.12

Last Calib.:

2014.11.12

Start Time: 21:07:05

End Time:

05:32:29

Time On Btm:

2014.11.11 @ 23:57:00

Time Off Btm:

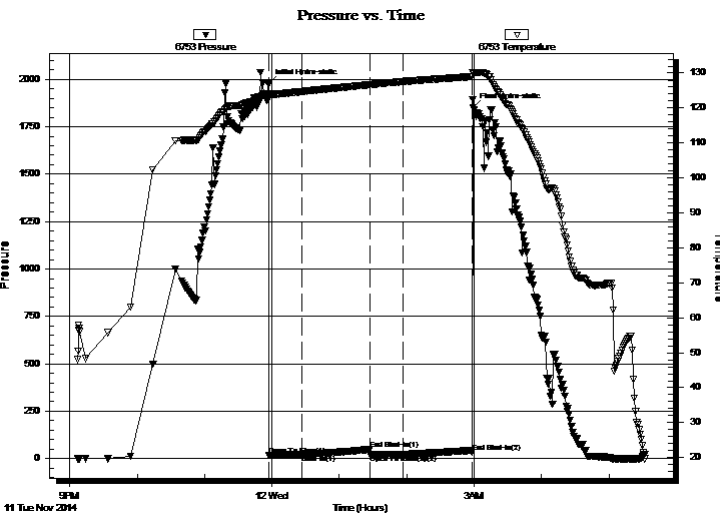
2014.11.12 @ 02:59:00

TEST COMMENT: 30 - IF - Surface blow started 15 min. in at a weak surface blow and stayed there for the rest of the time

60 - ISI - No return

30 - FF - No surface blow

60 - FSI - No return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1975.48	124.06	Initial Hydro-static
1	17.86	123.47	Open To Flow (1)
30	20.46	124.73	Shut-In(1)
90	48.91	126.65	End Shut-In(1)
91	20.04	126.65	Open To Flow (2)
120	21.87	127.57	Shut-In(2)
182	34.55	128.99	End Shut-In(2)
182	1852.61	130.14	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	Mud - 100M	0.02

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Company, Inc.

32-1s-38w Cheyenne,KS

250 N. Water STE 300
Wichita, KS 67202

Waters #1-32

Job Ticket: 60863

DST#: 1

ATTN: Kent Matson

Test Start: 2014.11.11 @ 21:07:00

Tool Information

Drill Pipe:	Length: 3641.00 ft	Diameter: 3.80 inches	Volume: 51.07 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 155.00 ft	Diameter: 2.25 inches	Volume: 0.76 bbl	Weight to Pull Loose: 90000.00 lb
			<u>Total Volume: 51.83 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	28.00 ft			String Weight: Initial 74000.00 lb
Depth to Top Packer:	3795.00 ft			Final 78000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	66.00 ft			
Tool Length:	93.00 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			3773.00	
Hydraulic tool	5.00			3778.00	
Jars	5.00			3783.00	
Safety Joint	3.00			3786.00	
Packer	4.00			3790.00	27.00 Bottom Of Top Packer
Packer	5.00			3795.00	
Stubb	1.00			3796.00	
Recorder	0.00	8368	Inside	3796.00	
Recorder	0.00	6753	Outside	3796.00	
Perforations	28.00			3824.00	
Change Over Sub	1.00			3825.00	
Drill Pipe	31.00			3856.00	
Change Over Sub	1.00			3857.00	
Bullnose	4.00			3861.00	66.00 Bottom Packers & Anchor

Total Tool Length: 93.00



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Company, Inc.

32-1s-38w Cheyenne,KS

250 N. Water STE 300
Wichita, KS 67202

Waters #1-32

Job Ticket: 60863

DST#: 1

ATTN: Kent Matson

Test Start: 2014.11.11 @ 21:07:00

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: 58.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.96 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 500.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	Mud - 100M	0.025

Total Length: 5.00 ft Total Volume: 0.025 bbl

Num Fluid Samples: 0

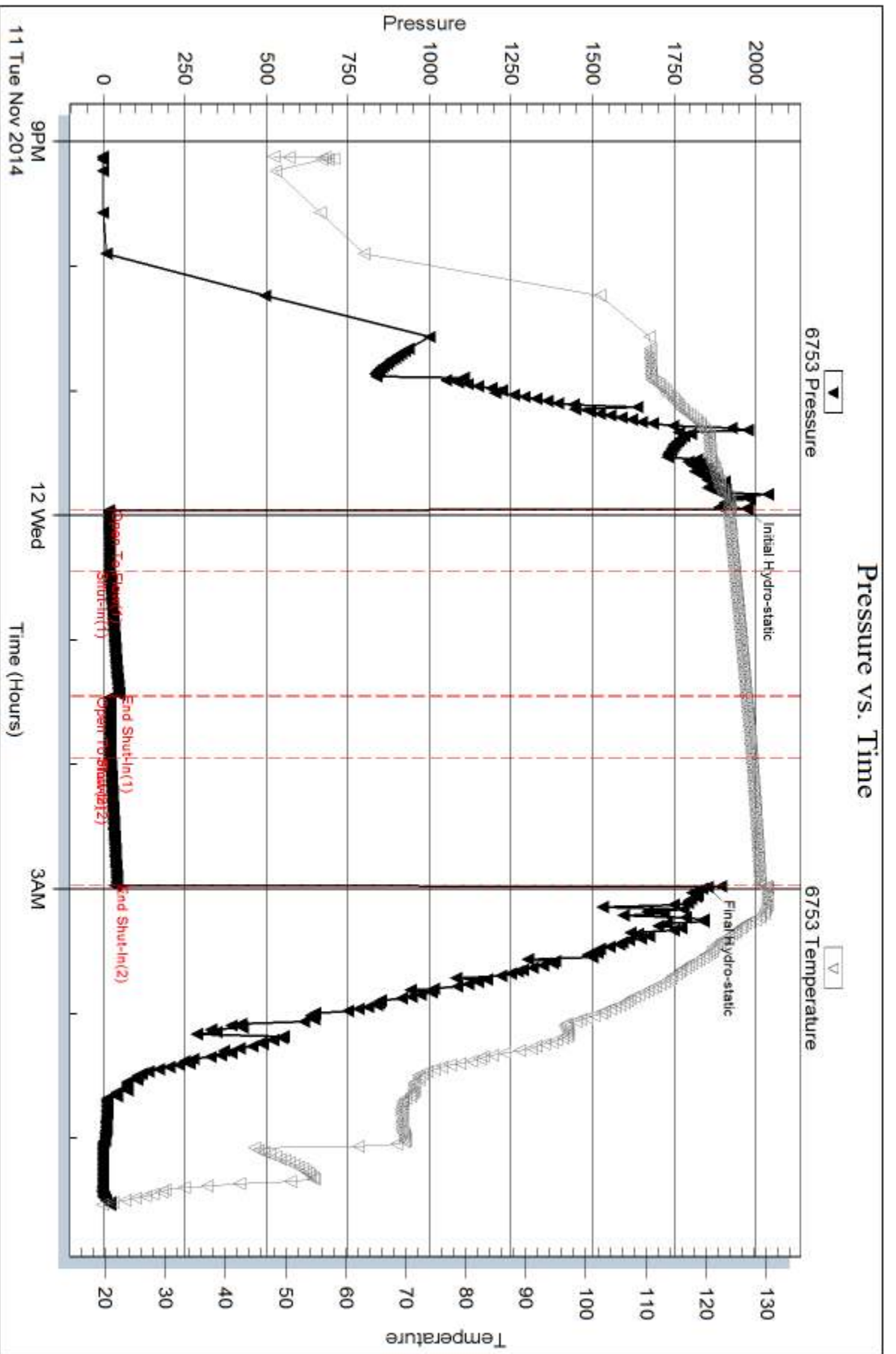
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



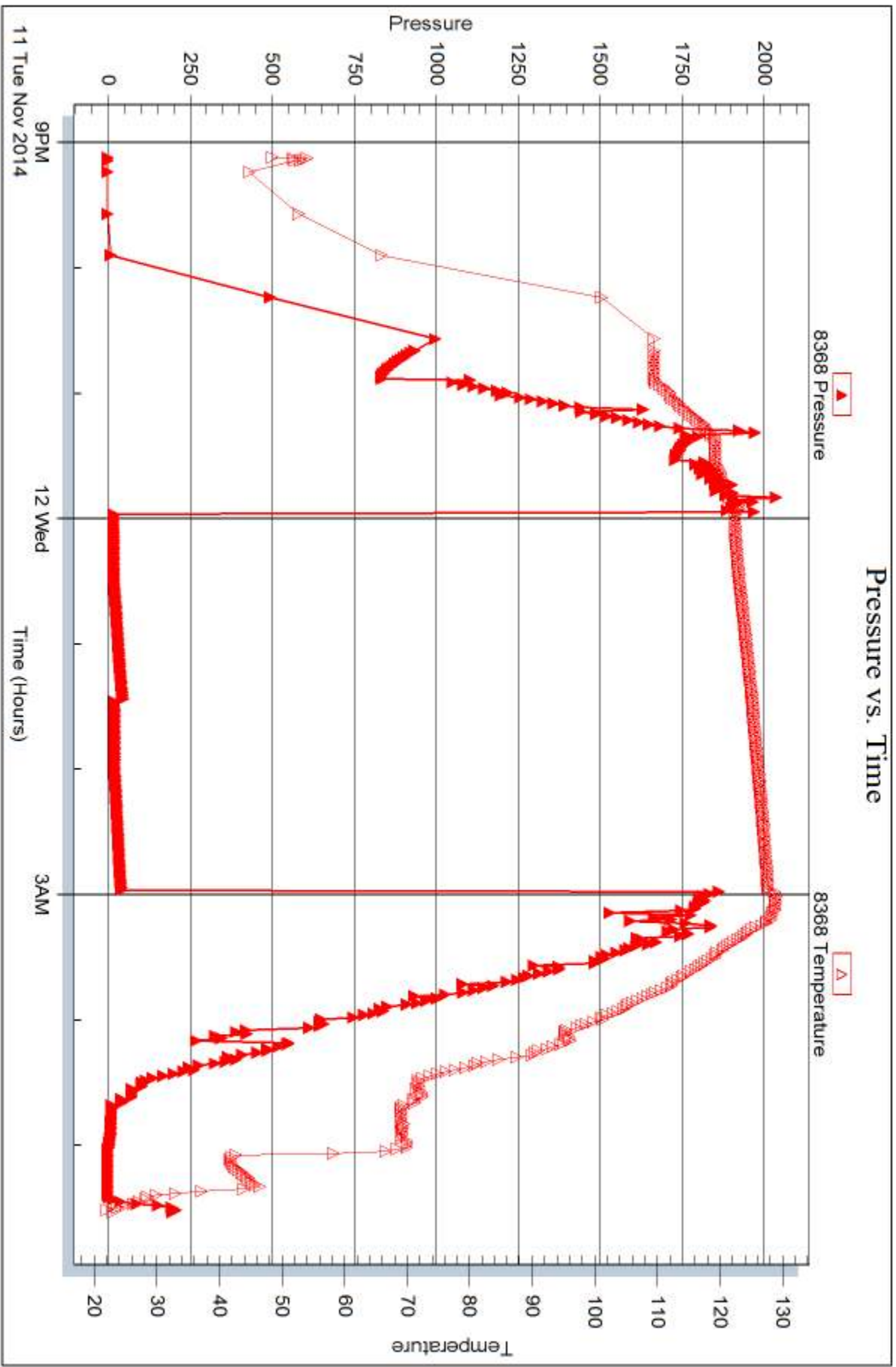
Serial #: 8368

Inside

Murfin Drilling Company, Inc.

Waters #1-32

DST Test Number: 1



Trilobite Testing, Inc

Ref. No: 60863

Printed: 2014.11.22 @ 12:47:47



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Company, Inc.**

250 N. Water STE 300
Wichita, KS 67202

ATTN: Kent Matson

Waters #1-32

32-1s-38w Cheyenne,KS

Start Date: 2014.11.13 @ 22:16:00

End Date: 2014.11.14 @ 06:02:45

Job Ticket #: 61002 DST #: 2

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

Printed: 2014.11.22 @ 12:47:12



**TRILOBITE
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DRILL STEM TEST REPORT

Murfin Drilling Company, Inc.

32-1s-38w Cheyenne,KS

250 N. Water STE 300
Wichita, KS 67202

Waters #1-32

Job Ticket: 61002

DST#: 2

ATTN: Kent Matson

Test Start: 2014.11.13 @ 22:16:00

GENERAL INFORMATION:

Formation: **LKC 'A'**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 00:47:15

Time Test Ended: 06:02:45

Test Type: Conventional Bottom Hole (Initial)

Tester: Royal Fisher

Unit No: 54

Interval: 4094.00 ft (KB) To 4130.00 ft (KB) (TVD)

Reference Elevations: 3184.00 ft (KB)

Total Depth: 4130.00 ft (KB) (TVD)

3173.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 11.00 ft

Serial #: 8368 Outside

Press@RunDepth: 31.86 psig @ 4095.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.11.13

End Date:

2014.11.14

Last Calib.:

2014.11.13

Start Time: 22:16:05

End Time:

06:02:44

Time On Btm:

2014.11.14 @ 00:46:45

Time Off Btm:

2014.11.14 @ 03:50:15

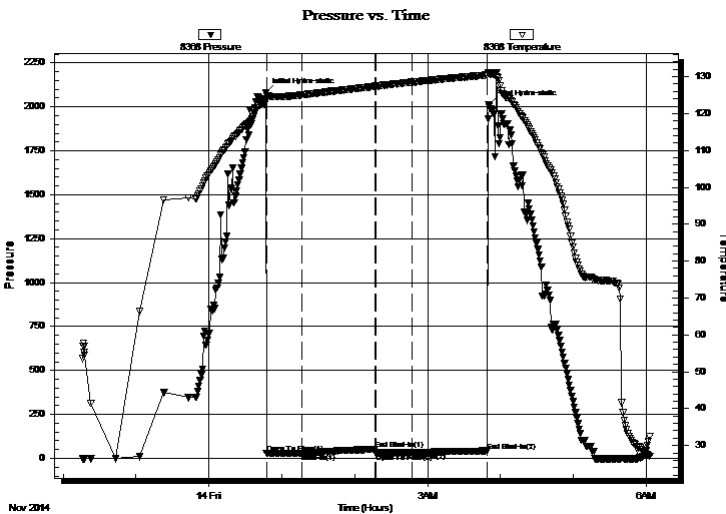
TEST COMMENT: 30 - IF - Surface blow started w with a weak blow and built to 1 3/4"

60 - ISI - No Return

30 - FF - No Surface blow

60 - FSI - No Return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2078.98	123.27	Initial Hydro-static
1	28.24	123.95	Open To Flow (1)
30	30.04	125.05	Shut-In(1)
90	51.54	127.36	End Shut-In(1)
91	30.92	127.47	Open To Flow (2)
120	31.86	128.52	Shut-In(2)
183	42.46	130.42	End Shut-In(2)
184	2010.47	131.13	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
10.00	Mud - 100M	0.05

Gas Rates

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



**TRILOBITE
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DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Company, Inc.

32-1s-38w Cheyenne,KS

250 N. Water STE 300
Wichita, KS 67202

Waters #1-32

Job Ticket: 61002

DST#: 2

ATTN: Kent Matson

Test Start: 2014.11.13 @ 22:16:00

Tool Information

Drill Pipe:	Length: 3894.52 ft	Diameter: 3.80 inches	Volume: 54.63 bbl	Tool Weight:	2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 186.48 ft	Diameter: 2.25 inches	Volume: 0.92 bbl	Weight to Pull Loose:	102000.0 lb
			<u>Total Volume: 55.55 bbl</u>	Tool Chased	4.00 ft
Drill Pipe Above KB:	14.00 ft			String Weight: Initial	82000.00 lb
Depth to Top Packer:	4094.00 ft			Final	82000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	36.00 ft				
Tool Length:	63.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			4072.00	
Hydraulic tool	5.00			4077.00	
Jars	5.00			4082.00	
Safety Joint	3.00			4085.00	
Packer	4.00			4089.00	27.00 Bottom Of Top Packer
Packer	5.00			4094.00	
Stubb	1.00			4095.00	
Recorder	0.00	6753	Inside	4095.00	
Recorder	0.00	8368	Outside	4095.00	
Perforations	31.00			4126.00	
Bullnose	4.00			4130.00	36.00 Bottom Packers & Anchor

Total Tool Length: 63.00



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Company, Inc.

32-1s-38w Cheyenne,KS

250 N. Water STE 300
Wichita, KS 67202

Waters #1-32

Job Ticket: 61002

DST#: 2

ATTN: Kent Matson

Test Start: 2014.11.13 @ 22:16:00

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: 68.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.97 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 600.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
10.00	Mud - 100M	0.049

Total Length: 10.00 ft Total Volume: 0.049 bbl

Num Fluid Samples: 0

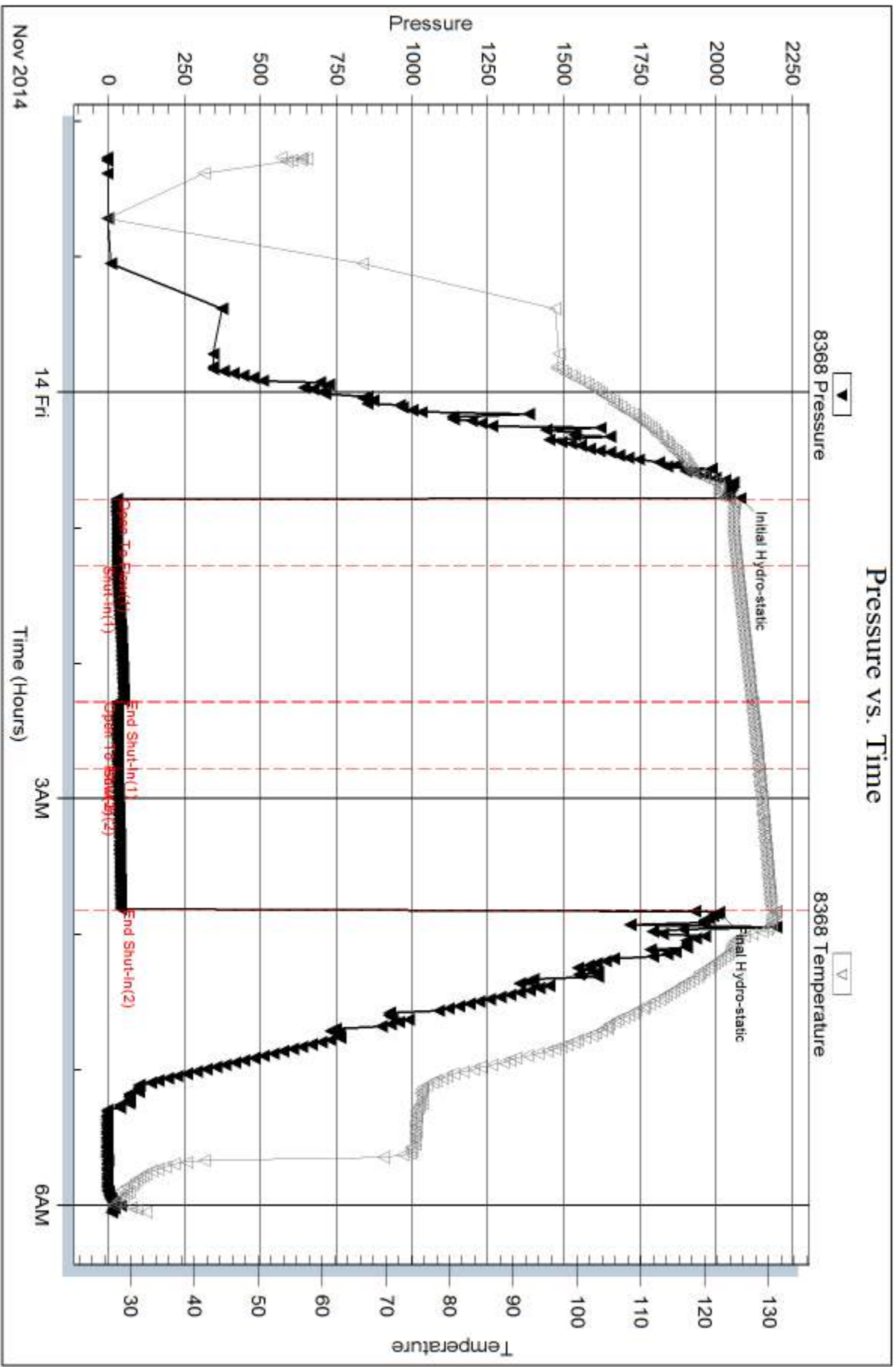
Num Gas Bombs: 0

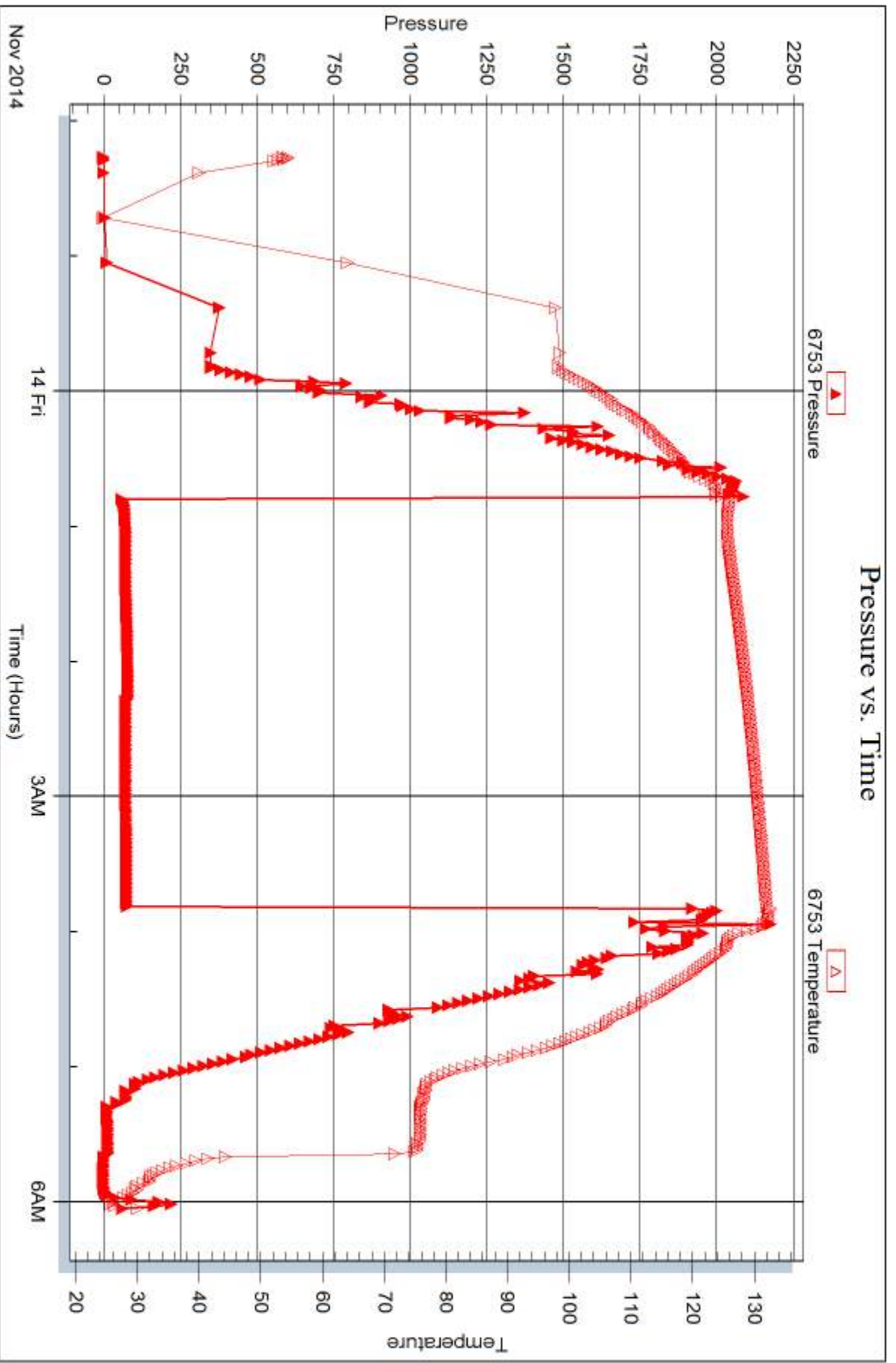
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Company, Inc.**

250 N. Water STE 300
Wichita, KS 67202

ATTN: Kent Matson

Waters #1-32

32-1s-38w Cheyenne,KS

Start Date: 2014.11.14 @ 09:33:00

End Date: 2014.11.14 @ 16:35:45

Job Ticket #: 61003 DST #: 3

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

Printed: 2014.11.22 @ 12:40:29



**TRILOBITE
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DRILL STEM TEST REPORT

Murfin Drilling Company, Inc.

32-1s-38w Cheyenne,KS

250 N. Water STE 300
Wichita, KS 67202

Waters #1-32

Job Ticket: 61003

DST#: 3

ATTN: Kent Matson

Test Start: 2014.11.14 @ 09:33:00

GENERAL INFORMATION:

Formation: **LKC 'D'**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 11:23:15

Time Test Ended: 16:35:45

Test Type: Conventional Bottom Hole (Initial)

Tester: Royal Fisher

Unit No: 54

Interval: 4160.00 ft (KB) To 4220.00 ft (KB) (TVD)

Reference Elevations: 3184.00 ft (KB)

Total Depth: 4220.00 ft (KB) (TVD)

3173.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 11.00 ft

Serial #: 6753 Outside

Press@RunDepth: 55.29 psig @ 4161.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.11.14

End Date:

2014.11.14

Last Calib.:

2014.11.14

Start Time:

09:33:05

End Time:

16:35:44

Time On Btm:

2014.11.14 @ 11:23:00

Time Off Btm:

2014.11.14 @ 14:24:15

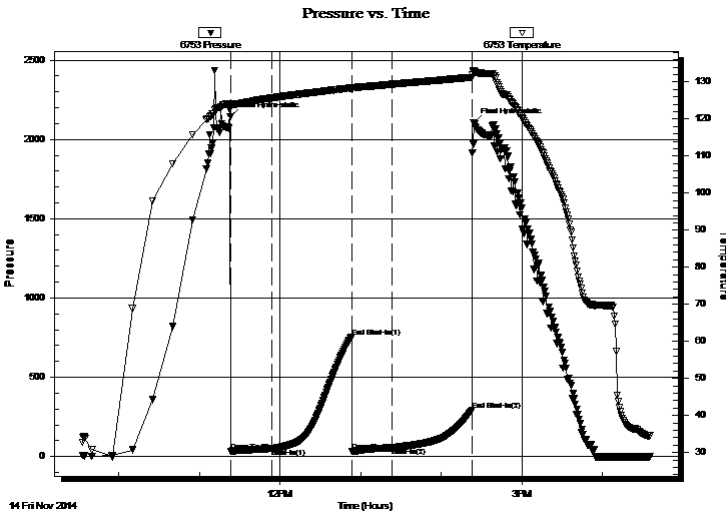
TEST COMMENT: 30 - IF - Surface blow slowly built to 1 1/4" in 20 mins., then stayed there

60 - ISI - No Return

30 - FF - Had a very faint surface blow through the w hole open

60 - FSI - No Return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2141.62	123.95	Initial Hydro-static
1	34.30	123.31	Open To Flow (1)
31	50.41	125.70	Shut-In(1)
91	752.50	128.36	End Shut-In(1)
91	32.52	128.07	Open To Flow (2)
121	55.29	129.38	Shut-In(2)
180	291.29	131.26	End Shut-In(2)
182	2107.20	133.13	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
10.00	OSM - 100M - Oil Spots	0.05

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Company, Inc.

32-1s-38w Cheyenne,KS

250 N. Water STE 300
Wichita, KS 67202

Waters #1-32

Job Ticket: 61003

DST#: 3

ATTN: Kent Matson

Test Start: 2014.11.14 @ 09:33:00

Tool Information

Drill Pipe:	Length: 3958.16 ft	Diameter: 3.80 inches	Volume: 55.52 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 186.48 ft	Diameter: 2.25 inches	Volume: 0.92 bbl	Weight to Pull Loose: 90000.00 lb
			<u>Total Volume: 56.44 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	11.64 ft			String Weight: Initial 82000.00 lb
Depth to Top Packer:	4160.00 ft			Final 82000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	60.00 ft			
Tool Length:	87.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			4138.00	
Hydraulic tool	5.00			4143.00	
Jars	5.00			4148.00	
Safety Joint	3.00			4151.00	
Packer	4.00			4155.00	27.00 Bottom Of Top Packer
Packer	5.00			4160.00	
Stubb	1.00			4161.00	
Recorder	0.00	8368	Inside	4161.00	
Recorder	0.00	6753	Outside	4161.00	
Perforations	22.00			4183.00	
Change Over Sub	1.00			4184.00	
Drill Pipe	31.00			4215.00	
Change Over Sub	1.00			4216.00	
Bullnose	4.00			4220.00	60.00 Bottom Packers & Anchor

Total Tool Length: 87.00



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Company, Inc.

32-1s-38w Cheyenne,KS

250 N. Water STE 300
Wichita, KS 67202

Waters #1-32

Job Ticket: 61003

DST#: 3

ATTN: Kent Matson

Test Start: 2014.11.14 @ 09:33:00

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: 50.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.78 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 500.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
10.00	OSM - 100M - Oil Spots	0.049

Total Length: 10.00 ft Total Volume: 0.049 bbl

Num Fluid Samples: 0

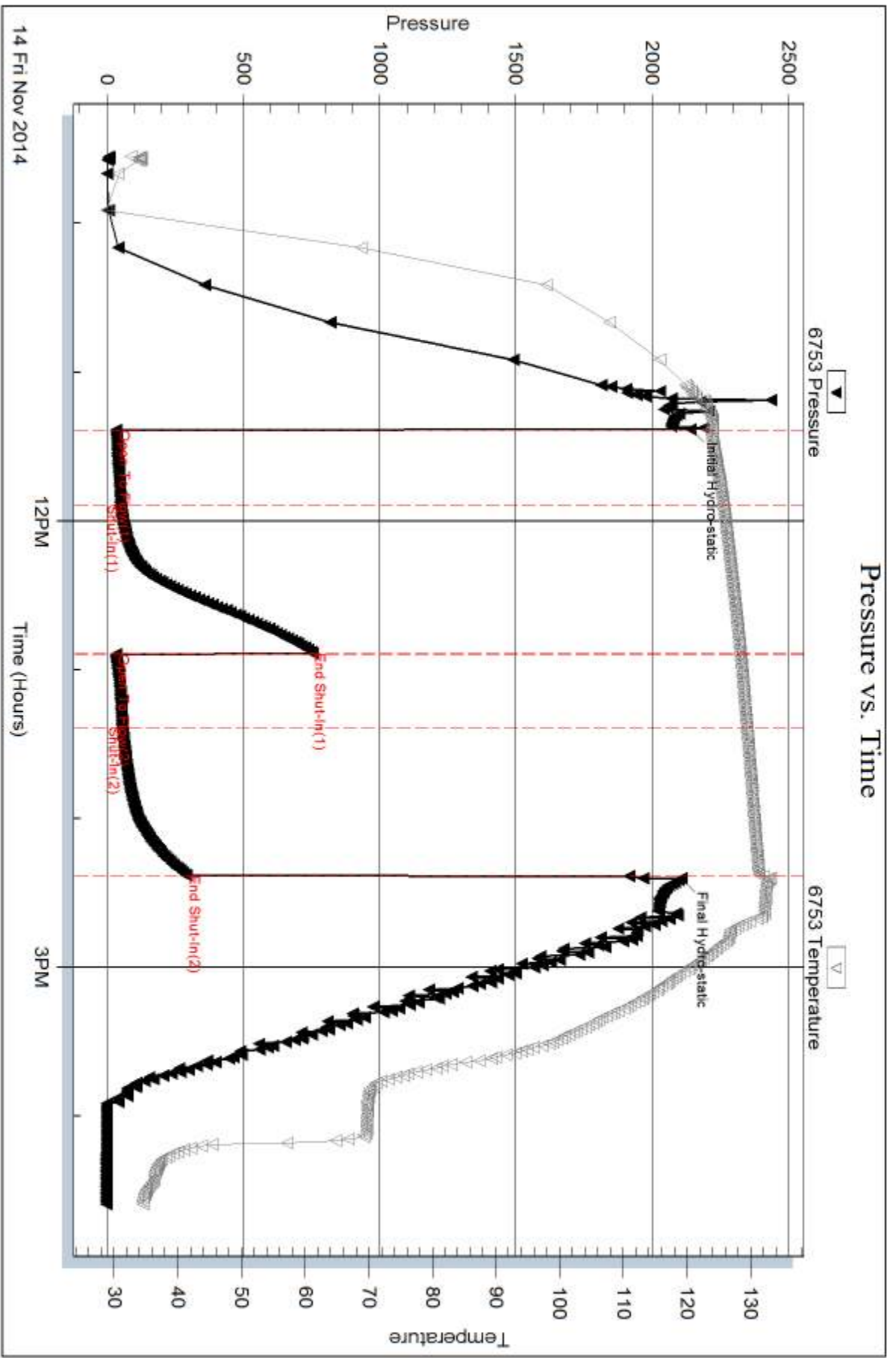
Num Gas Bombs: 0

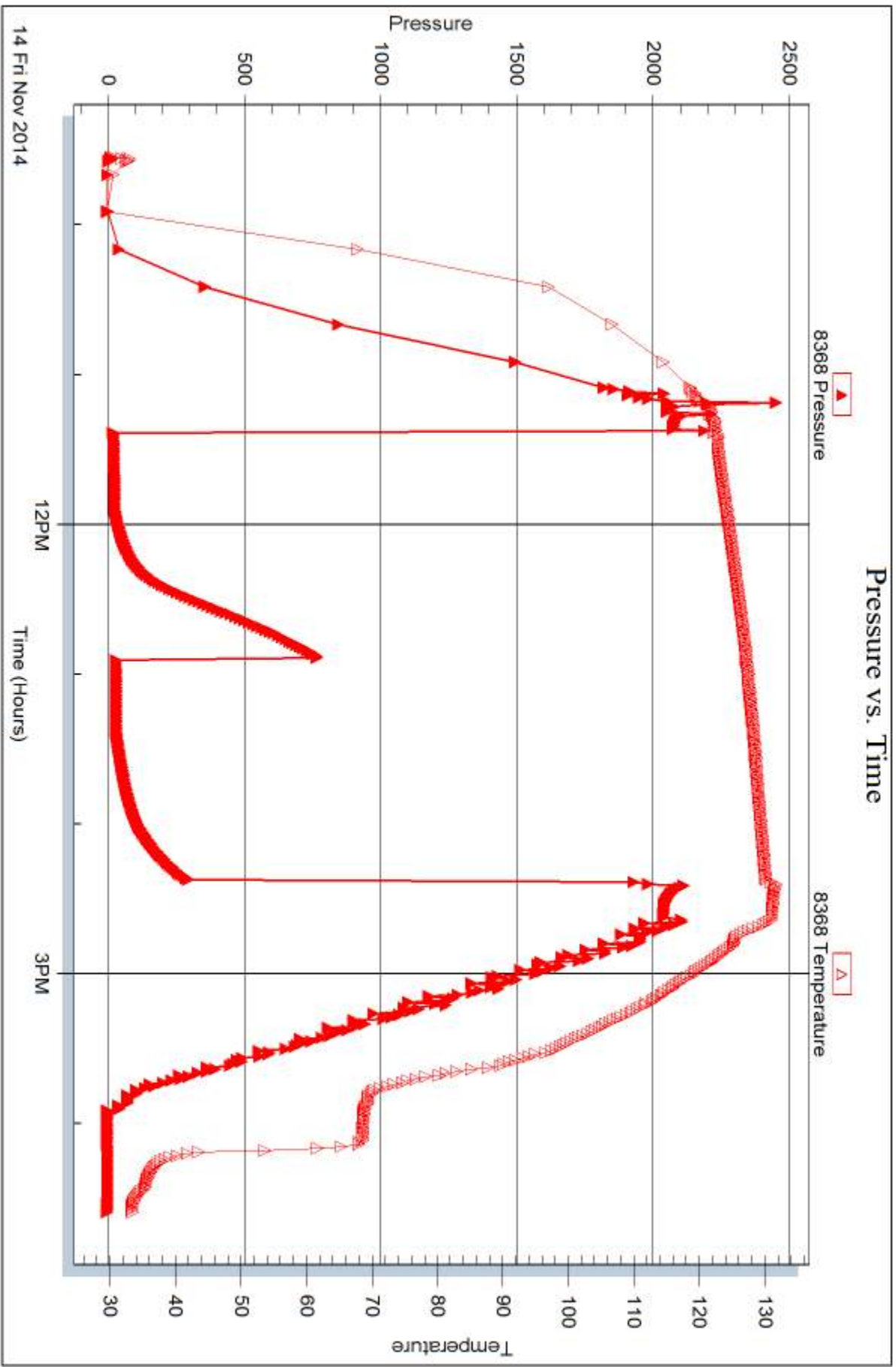
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Company, Inc.**

250 N. Water STE 300
Wichita, KS 67202

ATTN: Kent Matson

Waters #1-32

32-1s-38w Cheyenne,KS

Start Date: 2014.11.15 @ 03:03:00

End Date: 2014.11.15 @ 09:51:15

Job Ticket #: 61004 DST #: 4

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

Printed: 2014.11.22 @ 12:40:01



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Murfin Drilling Company, Inc.

32-1s-38w Cheyenne,KS

250 N. Water STE 300
Wichita, KS 67202

Waters #1-32

Job Ticket: 61004

DST#: 4

ATTN: Kent Matson

Test Start: 2014.11.15 @ 03:03:00

GENERAL INFORMATION:

Formation: **LKC 'G'**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 04:52:45

Time Test Ended: 09:51:15

Test Type: Conventional Bottom Hole (Initial)

Tester: Royal Fisher

Unit No: #54

Interval: 4202.00 ft (KB) To 4260.00 ft (KB) (TVD)

Reference Elevations: 3184.00 ft (KB)

Total Depth: 4260.00 ft (KB) (TVD)

3173.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 11.00 ft

Serial #: 6753

Outside

Press@RunDepth: 73.56 psig @ 4203.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.11.15

End Date:

2014.11.15

Last Calib.:

2014.11.15

Start Time: 03:03:05

End Time:

09:51:14

Time On Btm:

2014.11.15 @ 04:52:30

Time Off Btm:

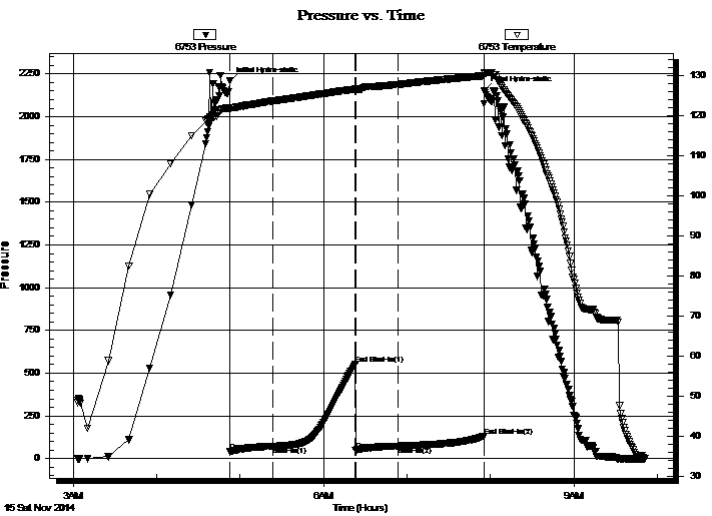
2014.11.15 @ 07:55:45

TEST COMMENT: 30 - IF - Surface blow slowly built to 3/4"

60 - ISI - No Return

30 - FF - No Surface blow

60 - FSI - No Return



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2208.42	121.93	Initial Hydro-static
1	40.44	121.42	Open To Flow (1)
31	71.69	123.54	Shut-In(1)
91	553.12	126.52	End Shut-In(1)
91	49.55	126.26	Open To Flow (2)
121	73.56	127.67	Shut-In(2)
183	128.92	129.84	End Shut-In(2)
184	2152.09	130.42	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
6.00	OSM - 100M - Oil Spots	0.03

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Company, Inc.

32-1s-38w Cheyenne,KS

250 N. Water STE 300
Wichita, KS 67202

Waters #1-32

Job Ticket: 61004

DST#: 4

ATTN: Kent Matson

Test Start: 2014.11.15 @ 03:03:00

Tool Information

Drill Pipe:	Length: 4020.37 ft	Diameter: 3.80 inches	Volume: 56.40 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 186.48 ft	Diameter: 2.25 inches	Volume: 0.92 bbl	Weight to Pull Loose: 88000.00 lb
			<u>Total Volume: 57.32 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	31.85 ft			String Weight: Initial 82000.00 lb
Depth to Top Packer:	4202.00 ft			Final 82000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	58.00 ft			
Tool Length:	85.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			4180.00	
Hydraulic tool	5.00			4185.00	
Jars	5.00			4190.00	
Safety Joint	3.00			4193.00	
Packer	4.00			4197.00	27.00 Bottom Of Top Packer
Packer	5.00			4202.00	
Stubb	1.00			4203.00	
Recorder	0.00	8368	Inside	4203.00	
Recorder	0.00	6753	Outside	4203.00	
Perforations	20.00			4223.00	
Change Over Sub	1.00			4224.00	
Drill Pipe	31.00			4255.00	
Change Over Sub	1.00			4256.00	
Bullnose	4.00			4260.00	58.00 Bottom Packers & Anchor

Total Tool Length: 85.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Company, Inc.

32-1s-38w Cheyenne,KS

250 N. Water STE 300
Wichita, KS 67202

Waters #1-32

Job Ticket: 61004

DST#: 4

ATTN: Kent Matson

Test Start: 2014.11.15 @ 03:03:00

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: 56.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.58 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 600.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
6.00	OSM - 100M - Oil Spots	0.030

Total Length: 6.00 ft Total Volume: 0.030 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

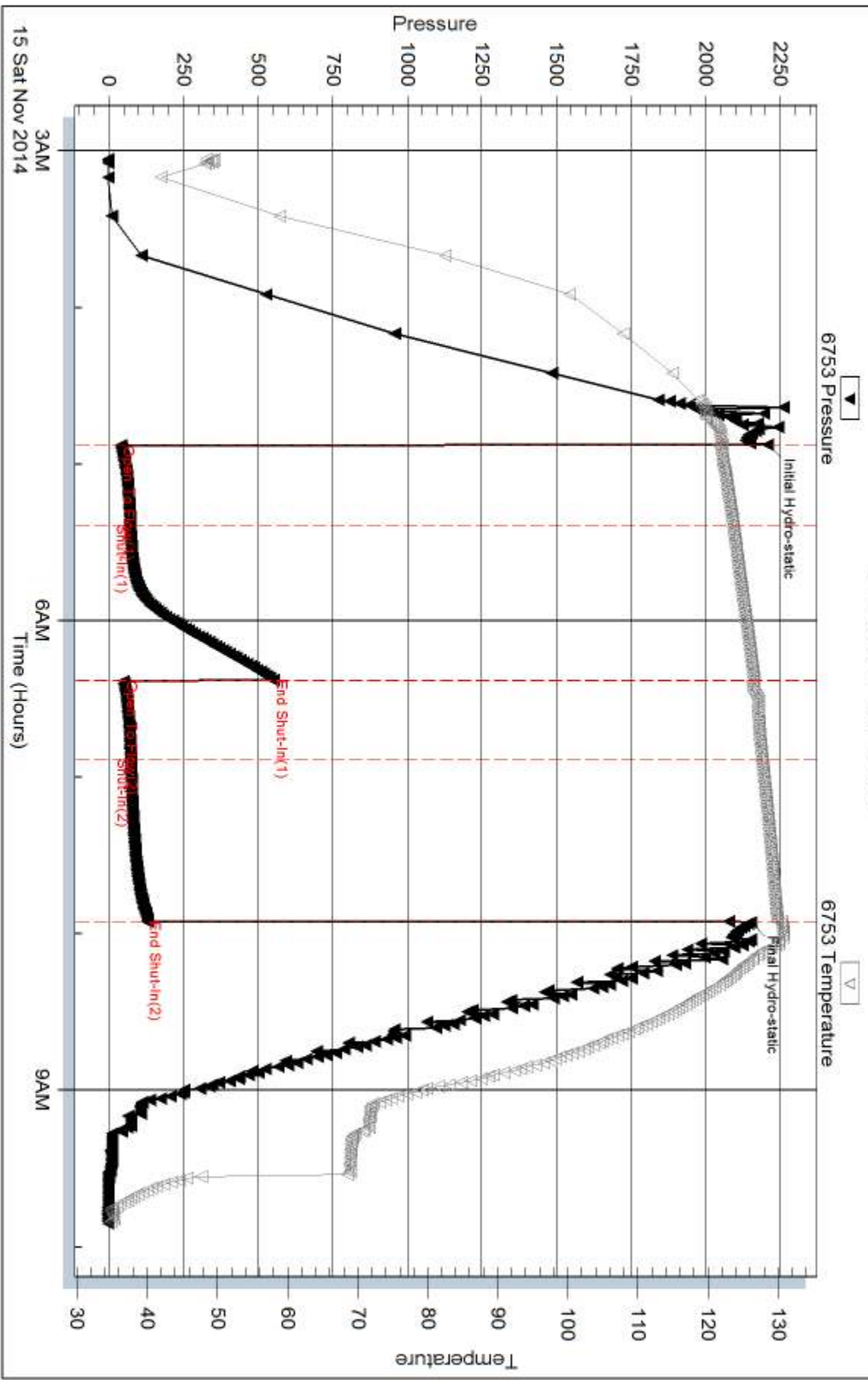
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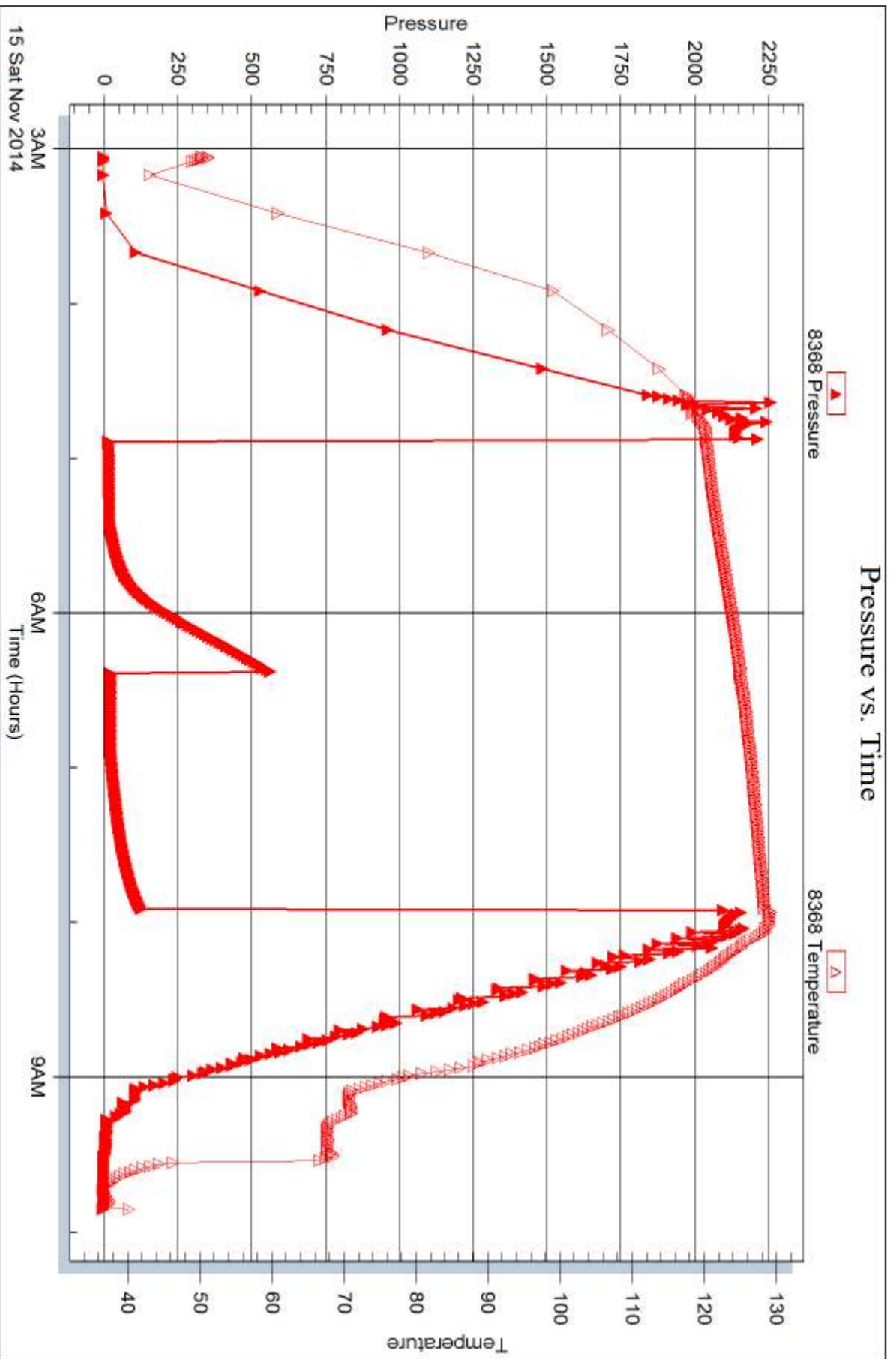
Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time







DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Company, Inc.**

250 N. Water STE 300
Wichita, KS 67202

ATTN: Kent Matson

Waters #1-32

32-1s-38w Cheyenne,KS

Start Date: 2014.11.16 @ 14:56:00

End Date: 2014.11.16 @ 22:30:45

Job Ticket #: 61005 DST #: 5

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

Printed: 2014.11.22 @ 12:39:14

Murfin Drilling Company, Inc. 32-1s-38w Cheyenne,KS Waters #1-32 DST # 5 LKC 'H - J' 2014.11.16



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Murfin Drilling Company, Inc.

32-1s-38w Cheyenne,KS

250 N. Water STE 300
Wichita, KS 67202

Waters #1-32

Job Ticket: 61005

DST#: 5

ATTN: Kent Matson

Test Start: 2014.11.16 @ 14:56:00

GENERAL INFORMATION:

Formation: **LKC 'H - J'**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Initial)
 Time Tool Opened: 17:14:00
 Tester: Royal Fisher
 Time Test Ended: 22:30:45
 Unit No: #54
 Interval: **4260.00 ft (KB) To 4350.00 ft (KB) (TVD)**
 Reference Elevations: 3184.00 ft (KB)
 Total Depth: 4350.00 ft (KB) (TVD)
 3173.00 ft (CF)
 Hole Diameter: 7.88 inches
 Hole Condition: Good
 KB to GR/CF: 11.00 ft

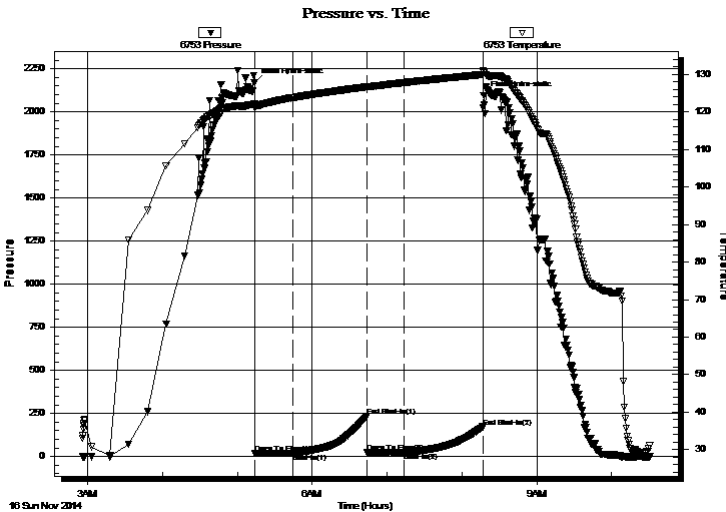
Serial #: 6753

Outside

Press@RunDepth: 23.33 psig @ 4261.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.11.16 End Date: 2014.11.16 Last Calib.: 2014.11.16
 Start Time: 02:56:05 End Time: 10:30:44 Time On Btm: 2014.11.16 @ 05:13:45
 Time Off Btm: 2014.11.16 @ 08:17:30

TEST COMMENT: 30 - IF - Surface blow slowly built to 3/4"
 60 - ISI - No Return
 30 - FF - No Surface blow
 60 - FSI - No Return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2171.46	122.04	Initial Hydro-static
1	18.09	120.99	Open To Flow (1)
31	20.70	123.79	Shut-In(1)
91	235.89	126.69	End Shut-In(1)
91	22.17	126.56	Open To Flow (2)
121	23.33	127.81	Shut-In(2)
183	172.54	129.97	End Shut-In(2)
184	2096.64	130.47	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	OSM - 100M - Oil Spots	0.02

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Company, Inc.

32-1s-38w Cheyenne,KS

250 N. Water STE 300
Wichita, KS 67202

Waters #1-32

Job Ticket: 61005

DST#: 5

ATTN: Kent Matson

Test Start: 2014.11.16 @ 14:56:00

Tool Information

Drill Pipe:	Length: 4078.52 ft	Diameter: 3.80 inches	Volume: 57.21 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 186.48 ft	Diameter: 2.25 inches	Volume: 0.92 bbl	Weight to Pull Loose: 102000.0 lb
			<u>Total Volume: 58.13 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	32.00 ft			String Weight: Initial 82000.00 lb
Depth to Top Packer:	4260.00 ft			Final 82000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	90.00 ft			
Tool Length:	117.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			4238.00	
Hydraulic tool	5.00			4243.00	
Jars	5.00			4248.00	
Safety Joint	3.00			4251.00	
Packer	4.00			4255.00	27.00 Bottom Of Top Packer
Packer	5.00			4260.00	
Stubb	1.00			4261.00	
Recorder	0.00	8368	Inside	4261.00	
Recorder	0.00	6753	Outside	4261.00	
Perforations	20.00			4281.00	
Change Over Sub	1.00			4282.00	
Drill Pipe	63.00			4345.00	
Change Over Sub	1.00			4346.00	
Bullnose	4.00			4350.00	90.00 Bottom Packers & Anchor

Total Tool Length: 117.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Company, Inc.

32-1s-38w Cheyenne,KS

250 N. Water STE 300
Wichita, KS 67202

Waters #1-32

Job Ticket: 61005

DST#: 5

ATTN: Kent Matson

Test Start: 2014.11.16 @ 14:56:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 10.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 85.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.58 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 500.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	OSM - 100M - Oil Spots	0.025

Total Length: 5.00 ft Total Volume: 0.025 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

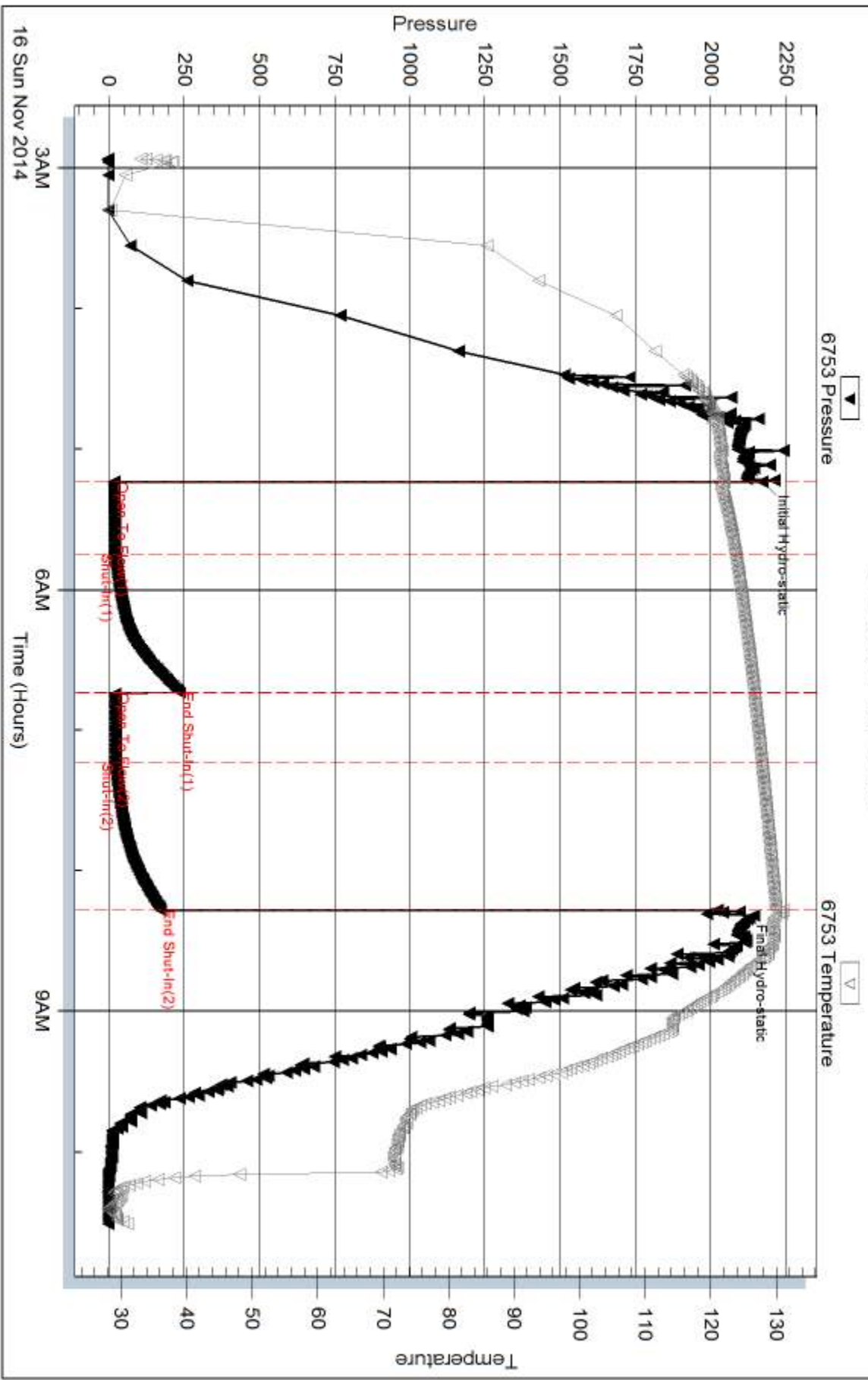
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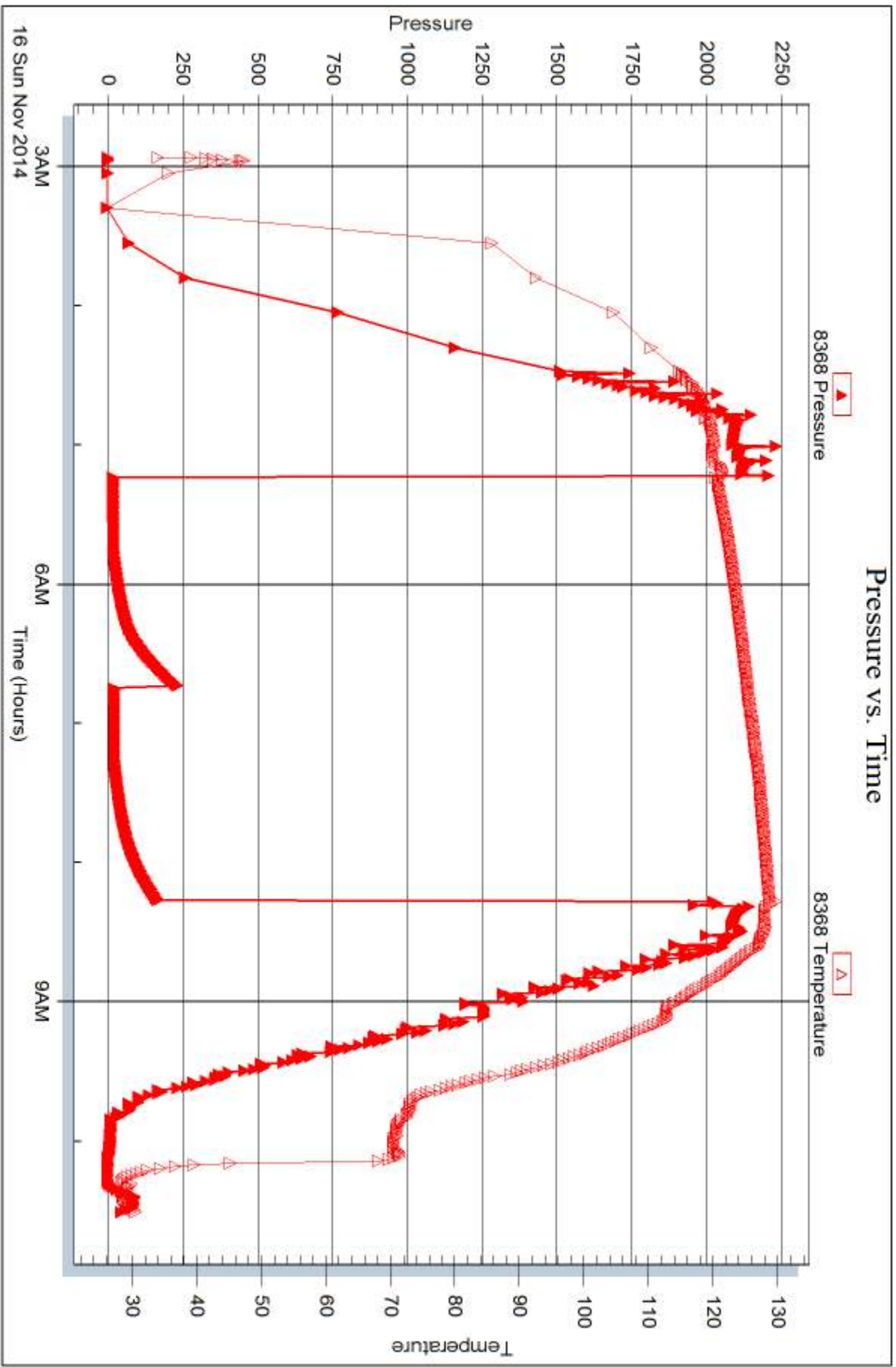
Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time







DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Company, Inc.**

250 N. Water STE 300
Wichita, KS 67202

ATTN: Kent Matson

Waters #1-32

32-1s-38w Cheyenne,KS

Start Date: 2014.11.17 @ 12:17:00

End Date: 2014.11.17 @ 20:31:45

Job Ticket #: 61006 DST #: 6

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

Printed: 2014.11.22 @ 12:38:01



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Company, Inc.

32-1s-38w Cheyenne,KS

250 N. Water STE 300
Wichita, KS 67202

Waters #1-32

Job Ticket: 61006

DST#: 6

ATTN: Kent Matson

Test Start: 2014.11.17 @ 12:17:00

GENERAL INFORMATION:

Formation: **Pawnee**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 15:16:15

Time Test Ended: 20:31:45

Test Type: Conventional Bottom Hole (Initial)

Tester: Royal Fisher

Unit No: 54

Interval: 4502.00 ft (KB) To 4560.00 ft (KB) (TVD)

Reference Elevations: 3184.00 ft (KB)

Total Depth: 4560.00 ft (KB) (TVD)

3173.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 11.00 ft

Serial #: 8368

Inside

Press@RunDepth: 19.05 psig @ 4503.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.11.17

End Date:

2014.11.17

Last Calib.:

2014.11.17

Start Time: 12:17:05

End Time:

20:31:44

Time On Btm:

2014.11.17 @ 15:16:00

Time Off Btm:

2014.11.17 @ 18:21:00

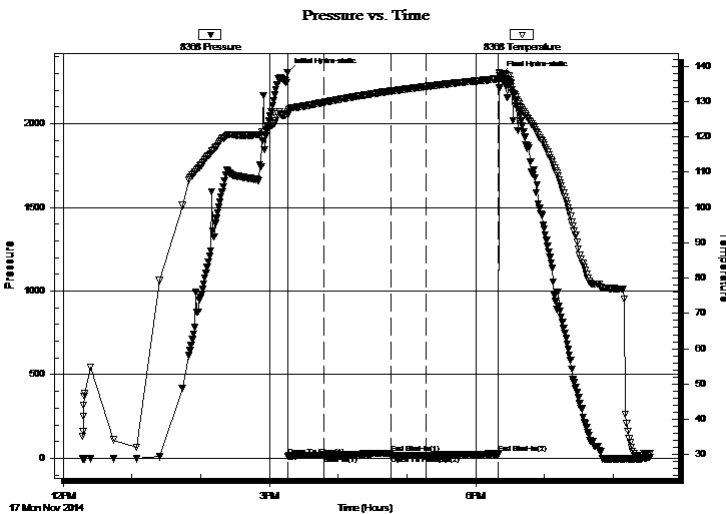
TEST COMMENT: 30 - IF - Surface blow built to 3/4" and then died off to 1/4"

60 - ISI - No Return

30 - FF - No Surface blow

60 - FSI - No Return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2306.16	127.01	Initial Hydro-static
1	13.73	126.16	Open To Flow (1)
32	17.01	129.76	Shut-In(1)
90	30.87	132.98	End Shut-In(1)
91	17.31	132.98	Open To Flow (2)
121	19.05	134.25	Shut-In(2)
184	27.24	136.42	End Shut-In(2)
185	2287.58	138.19	Final Hydro-static

Recovery

Gas Rates

Length (ft)	Description	Volume (bbl)
5.00	Mud - 100M	0.02

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Company, Inc.

32-1s-38w Cheyenne,KS

250 N. Water STE 300
Wichita, KS 67202

Waters #1-32

Job Ticket: 61006

DST#: 6

ATTN: Kent Matson

Test Start: 2014.11.17 @ 12:17:00

Tool Information

Drill Pipe:	Length: 4303.49 ft	Diameter: 3.80 inches	Volume: 60.37 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 186.48 ft	Diameter: 2.25 inches	Volume: 0.92 bbl	Weight to Pull Loose: 96000.00 lb
			<u>Total Volume: 61.29 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	14.97 ft			String Weight: Initial 90000.00 lb
Depth to Top Packer:	4502.00 ft			Final 92000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	58.00 ft			
Tool Length:	85.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			4480.00	
Hydraulic tool	5.00			4485.00	
Jars	5.00			4490.00	
Safety Joint	3.00			4493.00	
Packer	4.00			4497.00	27.00 Bottom Of Top Packer
Packer	5.00			4502.00	
Stubb	1.00			4503.00	
Recorder	0.00	8368	Inside	4503.00	
Recorder	0.00	6753	Outside	4503.00	
Perforations	20.00			4523.00	
Change Over Sub	1.00			4524.00	
Drill Pipe	31.00			4555.00	
Change Over Sub	1.00			4556.00	
Bullnose	4.00			4560.00	58.00 Bottom Packers & Anchor

Total Tool Length: 85.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Company, Inc.

32-1s-38w Cheyenne,KS

250 N. Water STE 300
Wichita, KS 67202

Waters #1-32

Job Ticket: 61006

DST#: 6

ATTN: Kent Matson

Test Start: 2014.11.17 @ 12:17:00

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: 57.00 sec/qt

Cushion Volume:

bbf

Water Loss: 6.79 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 600.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbf
5.00	Mud - 100M	0.025

Total Length: 5.00 ft Total Volume: 0.025 bbf

Num Fluid Samples: 0

Num Gas Bombs: 0

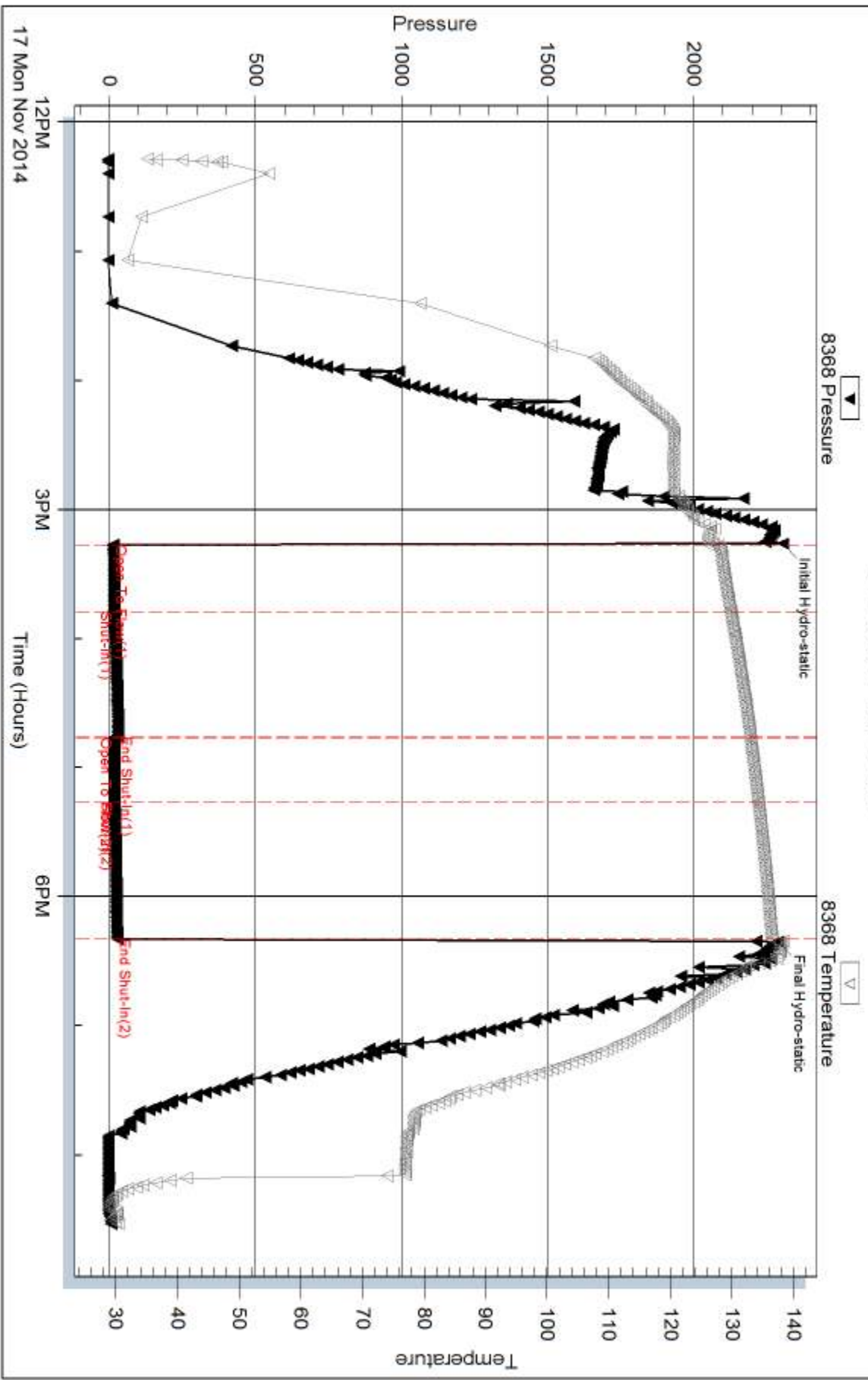
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time





DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Company, Inc.**

250 N. Water STE 300
Wichita, KS 67202

ATTN: Kent Matson

Waters #1-32

32-1s-38w Cheyenne,KS

Start Date: 2014.11.19 @ 14:10:00

End Date: 2014.11.19 @ 23:06:45

Job Ticket #: 61007 DST #: 7

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

Printed: 2014.11.22 @ 12:34:05



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Company, Inc.

32-1s-38w Cheyenne,KS

250 N. Water STE 300
Wichita, KS 67202

Waters #1-32

Job Ticket: 61007

DST#: 7

ATTN: Kent Matson

Test Start: 2014.11.19 @ 14:10:00

GENERAL INFORMATION:

Formation: **LKC 'K'**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 16:32:45

Time Test Ended: 23:06:45

Test Type: Conventional Straddle (Initial)

Tester: Royal Fisher

Unit No: #54

Interval: 4356.00 ft (KB) To 4446.00 ft (KB) (TVD)

Reference Elevations: 3184.00 ft (KB)

Total Depth: 4720.00 ft (KB) (TVD)

3173.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Good

KB to GR/CF: 11.00 ft

Serial #: 6753

Inside

Press@RunDepth: 212.12 psig @ 4357.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2014.11.19

End Date:

2014.11.19

Last Calib.:

2014.11.19

Start Time: 14:10:05

End Time:

23:06:45

Time On Btm:

2014.11.19 @ 16:32:30

Time Off Btm:

2014.11.19 @ 20:35:15

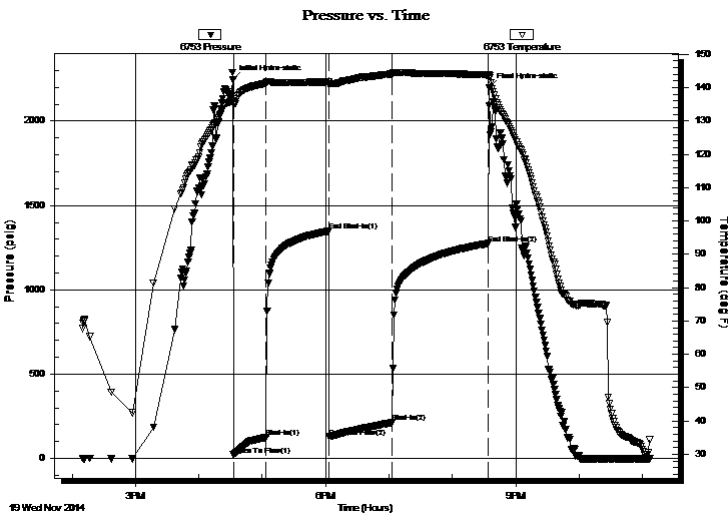
TEST COMMENT: 30 - IF - Surface blow built to 10 3/4"

60 - ISI - No Return

60 - FF - Surface blow built to 10"

90 - FSI - No Return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2246.70	136.16	Initial Hydro-static
1	22.01	134.95	Open To Flow (1)
32	125.27	141.36	Shut-In(1)
91	1348.06	141.70	End Shut-In(1)
91	128.23	140.82	Open To Flow (2)
151	212.12	144.09	Shut-In(2)
242	1275.00	143.77	End Shut-In(2)
243	2197.90	143.46	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
217.00	WM - 85M - 15W	1.35
217.00	MW - 40M - 60W	3.04

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Company, Inc.

32-1s-38w Cheyenne,KS

250 N. Water STE 300
Wichita, KS 67202

Waters #1-32

Job Ticket: 61007

DST#: 7

ATTN: Kent Matson

Test Start: 2014.11.19 @ 14:10:00

Tool Information

Drill Pipe:	Length: 4159.12 ft	Diameter: 3.80 inches	Volume: 58.34 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 186.48 ft	Diameter: 2.25 inches	Volume: 0.92 bbl	Weight to Pull Loose: 110000.0 lb
			<u>Total Volume: 59.26 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	8.60 ft			String Weight: Initial 88000.00 lb
Depth to Top Packer:	4356.00 ft			Final 95000.00 lb
Depth to Bottom Packer:	4446.00 ft			
Interval between Packers:	90.00 ft			
Tool Length:	394.00 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			4342.00	
Hydraulic tool	5.00			4347.00	
Packer	4.00			4351.00	19.00 Bottom Of Top Packer
Packer	5.00			4356.00	
Stubb	1.00			4357.00	
Recorder	0.00	6753	Inside	4357.00	
Recorder	0.00	8368	Outside	4357.00	
Perforations	20.00			4377.00	
Change Over Sub	1.00			4378.00	
Drill Pipe	63.00			4441.00	
Change Over Sub	1.00			4442.00	
Blank Off Sub	1.00			4443.00	
Stubb	3.00			4446.00	90.00 Tool Interval
Packer	5.00			4451.00	
Stubb	1.00			4452.00	
Perforations	21.00			4473.00	
Change Over Sub	1.00			4474.00	
Recorder	0.00	6755	Below	4474.00	
Drill Pipe	252.00			4726.00	
Change Over Sub	1.00			4727.00	
Bullnose	4.00			4731.00	285.00 Bottom Packers & Anchor

Total Tool Length: 394.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Company, Inc.

32-1s-38w Cheyenne,KS

250 N. Water STE 300
Wichita, KS 67202

Waters #1-32

Job Ticket: 61007

DST#: 7

ATTN: Kent Matson

Test Start: 2014.11.19 @ 14:10:00

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:

34000 ppm

Viscosity: 53.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.79 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 900.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
217.00	WM - 85M - 15W	1.345
217.00	MW - 40M - 60W	3.044

Total Length: 434.00 ft

Total Volume: 4.389 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Serial #: 6753

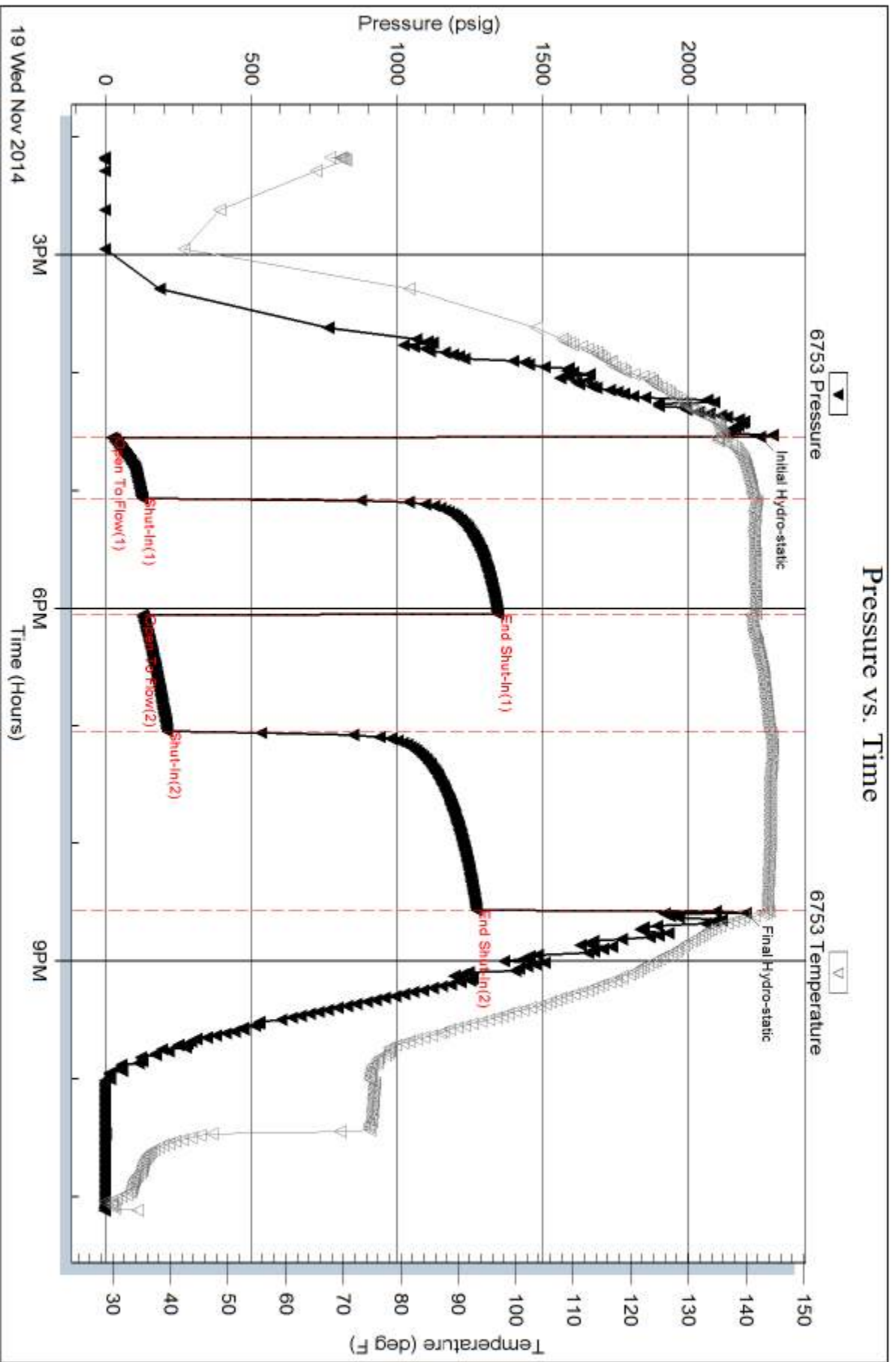
Inside

Murfin Drilling Company, Inc.

Waters #1-32

DST Test Number: 7

Pressure vs. Time



Trilobite Testing, Inc

Ref. No: 61007

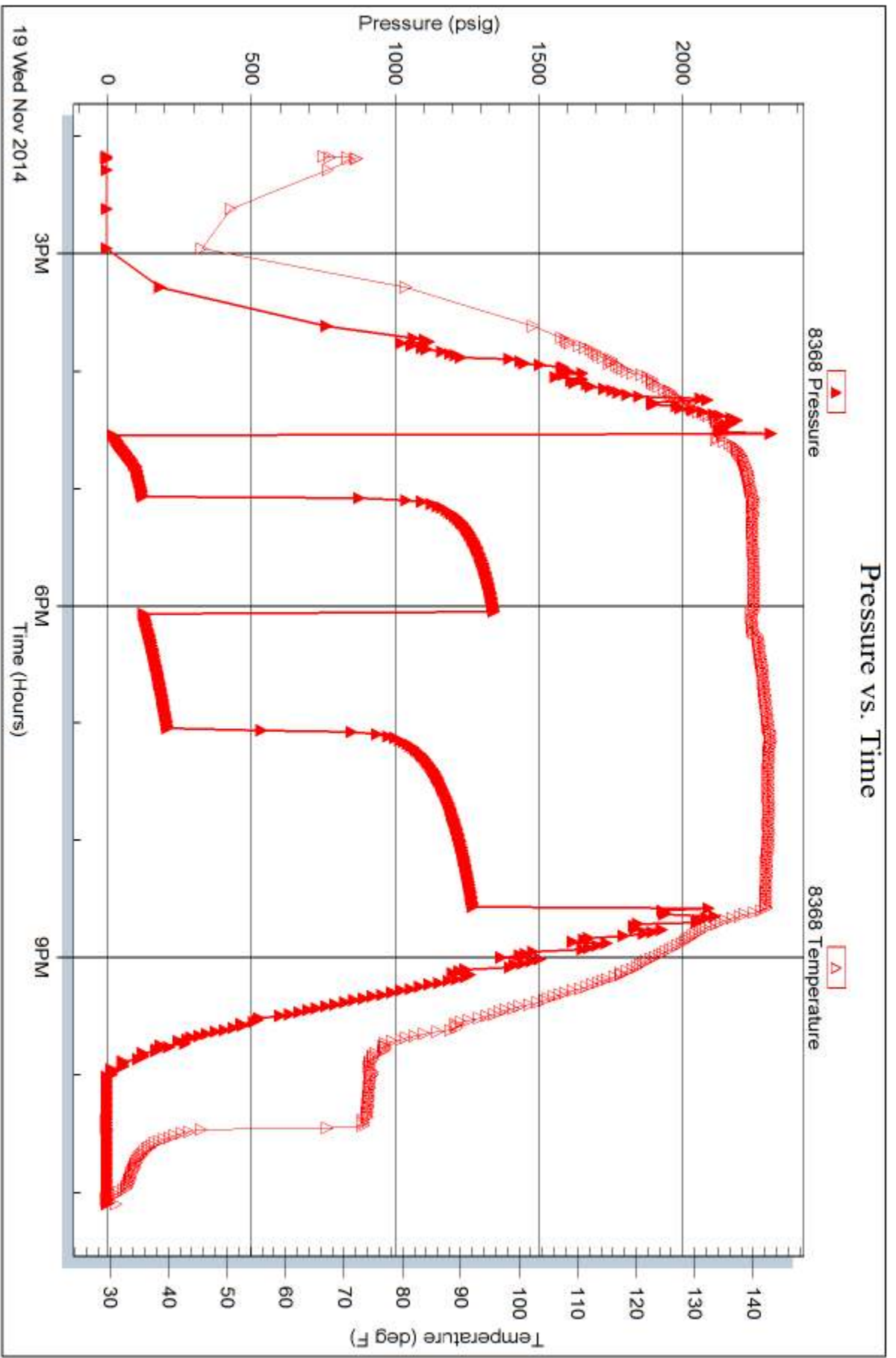
Printed: 2014.11.22 @ 12:34:06

Serial #: 8368

Outside Murfin Drilling Company, Inc.

Waters #1-32

DST Test Number: 7



Trilobite Testing, Inc

Ref. No: 61007

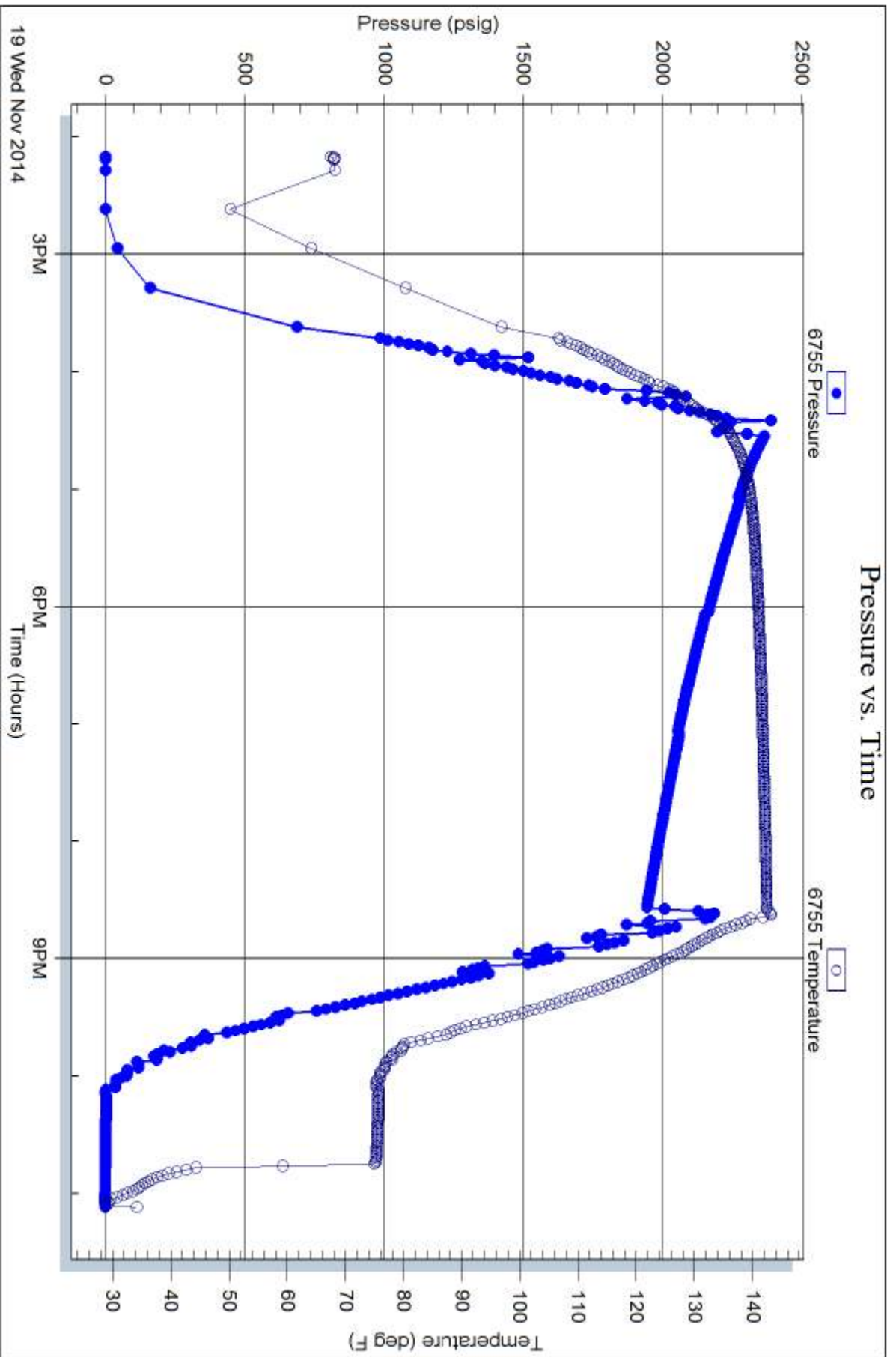
Printed: 2014.11.22 @ 12:34:06

Serial #: 6755

Below (Straddler) Drilling Company, Inc.

Waters #1-32

DST Test Number: 7



Trilobite Testing, Inc

Ref. No: 61007

Printed: 2014.11.22 @ 12:34:06



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **60863**

4/10

Well Name & No. Waters # 1-32 Test No. 1 Date 11-11-14
 Company Murfin Drilling Company, Inc. Elevation 3184 KB 3173 GL
 Address 250 N. Water STE 300, Wichita, KS, 67202
 Co. Rep / Geo. Kent Matson Rig Murfin #20
 Location: Sec. 32 Twp. 1S Rge. 38w Co. Cheyenne State KS

Interval Tested 3795' - 3861' Zone Tested Statler
 Anchor Length 66' Drill Pipe Run 3641 Mud Wt. 9.2
 Top Packer Depth 3790' Drill Collars Run 153.36 Vis 58
 Bottom Packer Depth 3795' Wt. Pipe Run 0 WL 8
 Total Depth 3861' Chlorides 500 ppm System LCM #6

Blow Description IF - Surface blow started 15 min. in at a weak surface & stayed there
FSI - for first 1/2 of the time - NO return
FF - NO surface blow
FSI - NO return

Rec	Feet of	%gas	%oil	%water	%mud
<u>5</u>	<u>mud</u>			<u>100</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 5 BHT 129 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 1976 Test 1150 T-On Location 8:10 pm
 (B) First Initial Flow 18 Jars 250 T-Started 9:07 pm
 (C) First Final Flow 21 Safety Joint 75 T-Open 11:57 pm
 (D) Initial Shut-In 49 Circ Sub n/c T-Pulled 2:57 am 11-12
 (E) Second Initial Flow 20 Hourly Standby _____ T-Out 5:32 am 11-12
 (F) Second Final Flow 22 Mileage 150 R/T 232.50 Comments _____
 (G) Final Shut-In 35 Sampler _____
 (H) Final Hydrostatic 1853 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Extra Recorder _____

Initial Open 30
 Initial Shut-In 60
 Final Flow 30
 Final Shut-In 60
 Sub Total 1707.50
 Total 1707.50
 MP/DST Disc't _____

Approved By _____ Our Representative Poncrum Newman

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

61002

NO.

Well Name & No. Waters #1-32 Test No. 2 Date 11-13-14
 Company Murfin Drilling Co., Inc. Elevation 3184 KB 3173 GL
 Address 250 N. Water, Ste 300 Wichita KS 67202
 Co. Rep / Geo. Kent Matson Rig Murfin #20
 Location: Sec. 32 Twp. 1S Rge. 38W Co. Cheyenne State KS

Interval Tested 4094-4130 Zone Tested Lans - 'A'
 Anchor Length 36' Drill Pipe Run 3894.52' Mud Wt. 9.3
 Top Packer Depth 4089 Drill Collars Run ~~158.134~~ 186.48' Vis 68
 Bottom Packer Depth 4094 Wt. Pipe Run 0 WL 8.0
 Total Depth 4130 Chlorides 600 ppm System LCM 6#

Blow Description IF - Surface blow started with a weak blow & built to 1 3/4"
ISI - No Return
FF - No Surface blow
FSI - No Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>10'</u>	<u>Mud</u>			<u>100</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 10' BHT 130°F Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic <u>2078</u>	<input checked="" type="checkbox"/> Test <u>1250</u>	T-On Location <u>9:40 am</u>
(B) First Initial Flow <u>28</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>10:16 am</u>
(C) First Final Flow <u>30</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>12:47 pm</u>
(D) Initial Shut-In <u>51</u>	<input checked="" type="checkbox"/> Circ Sub <u>N/C</u>	T-Pulled <u>3:47 pm</u>
(E) Second Initial Flow <u>30</u>	<input type="checkbox"/> Hourly Standby _____	T-Out <u>6:03 6:03 pm</u>
(F) Second Final Flow <u>31</u>	<input checked="" type="checkbox"/> Mileage <u>150 R/T</u> <u>232.50</u>	Comments <u>Chased tool 4'</u>
(G) Final Shut-In <u>42</u>	<input type="checkbox"/> Sampler _____	<u>to bottom</u>
(H) Final Hydrostatic <u>2010</u>	<input type="checkbox"/> Straddle _____	

Initial Open <u>30</u>	<input type="checkbox"/> Shale Packer _____	<input type="checkbox"/> Ruined Shale Packer _____
Initial Shut-In <u>60</u>	<input type="checkbox"/> Extra Packer _____	<input type="checkbox"/> Ruined Packer _____
Final Flow <u>30</u>	<input type="checkbox"/> Extra Recorder _____	Sub Total <u>0</u>
Final Shut-In <u>60</u>	<input type="checkbox"/> Day Standby _____	Total <u>1807.50</u>
	<input type="checkbox"/> Accessibility _____	MP/DST Disc't _____
Sub Total <u>1807.50</u>		

Approved By _____ Our Representative [Signature]

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. 61003

Well Name & No. Waters #1-32 Test No. 3 Date 11-14-14
 Company Murfin Drilling Co., Inc Elevation 3184 KB 3173 GL
 Address 250 N. Water, Ste 300 Wichita KS 67202
 Co. Rep / Geo. Kent Matson Rig Murfin #20
 Location: Sec. 32 Twp. 1S Rge. 38W Co. Cheyenne State Ks

Interval Tested 4160-4220 Zone Tested Lans. - 'D'
 Anchor Length 60' Drill Pipe Run 3958.16' Mud Wt. 9.1
 Top Packer Depth 4155 Drill Collars Run 186.48' Vis 50
 Bottom Packer Depth 4160 Wt. Pipe Run 0 WL 6.8
 Total Depth 4220 Chlorides 500 ppm System LCM 6#

Blow Description IF - Surface blow slowly built to 1/4" in 20 mins., then stayed there
ISI - No Return
FF - Had a very faint surface blow through the whole open
FSI - No Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>10'</u>	<u>asm</u>	<u>spots</u>		<u>100</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 10' BHT 131°F Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 2141 Test 1250 T-On Location 8:45am
 (B) First Initial Flow 34 Jars 250 T-Started 9:33am
 (C) First Final Flow 50 Safety Joint 75 T-Open 11:23am
 (D) Initial Shut-In 752 Circ Sub N/C T-Pulled 2:23pm
 (E) Second Initial Flow 32 Hourly Standby _____ T-Out 4:36pm
 (F) Second Final Flow 55 Mileage 150 R/T 232.50 Comments _____
 (G) Final Shut-In 291 Sampler _____
 (H) Final Hydrostatic 2107 Straddle _____
 Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____

Initial Open 30 Ruined Shale Packer _____
 Initial Shut-In 60 Ruined Packer _____
 Final Flow 30 Extra Copies _____
 Final Shut-In 60 Sub Total 0
 Sub Total 1807.50 Total 1807.50
 MP/DST Disc't _____

Approved By _____ Our Representative [Signature]

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 61004

Well Name & No. Waters #1-32 Test No. 4 Date 11-15-14
 Company Murfin Drilling Co., Inc. Elevation 3184 KB 3173 GL
 Address 250 N. Water, Ste 300 Wichita Ks 67202
 Co. Rep / Geo. Kent Matson Rig Murfin #20
 Location: Sec. 32 Twp. 1S Rge. 38 W Co. Cheyenne State KS

Interval Tested 4202-4260 Zone Tested Lans. - 'G'
 Anchor Length 58' Drill Pipe Run 4020.37' Mud Wt. 9.4
 Top Packer Depth 4197 Drill Collars Run 186.48' Vis 56
 Bottom Packer Depth 4202 Wt. Pipe Run 0 WL 7.6
 Total Depth 4260 Chlorides 600 ppm System LCM 4#

Blow Description IF - Surface blow slowly built to 3/4"
ISI - No Return
FF - No Surface blow
FST - No Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>6'</u>	<u>asm</u>	<u>spots</u>		<u>100</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 6' BHT 129°F Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic <u>2208</u>	<input checked="" type="checkbox"/> Test <u>1250</u>	T-On Location <u>2:36am</u>
(B) First Initial Flow <u>40</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>3:03am</u>
(C) First Final Flow <u>71</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>4:53am</u>
(D) Initial Shut-In <u>553</u>	<input checked="" type="checkbox"/> Circ Sub <u>N/C</u>	T-Pulled <u>7:55am</u>
(E) Second Initial Flow <u>49</u>	<input type="checkbox"/> Hourly Standby _____	T-Out <u>9:51am</u>
(F) Second Final Flow <u>73</u>	<input checked="" type="checkbox"/> Mileage <u>150 R/T</u> 232.50	Comments _____
(G) Final Shut-In <u>128</u>	<input type="checkbox"/> Sampler _____	
(H) Final Hydrostatic <u>2152</u>	<input type="checkbox"/> Straddle _____	<input type="checkbox"/> Ruined Shale Packer _____

Initial Open 30
 Initial Shut-In 60
 Final Flow 30
 Final Shut-In 60

Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____

Sub Total 1807.50

Total 1807.50
 MP/DST Disc't _____

Approved By _____ Our Representative [Signature]

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 61005

Well Name & No. Waters #1-32 Test No. 5 Date 11-16-14
 Company Murfin Drilling Co., Inc. Elevation 3184 KB 3173 GL
 Address 250 N. Water, Ste 300 Wichita Ks 67202
 Co. Rep / Geo. Kent Matson Rig Murfin #22
 Location: Sec. 32 Twp. 1S Rge. 38 W Co. Cheyenne State Ks

Interval Tested 4260 - 4350 Zone Tested Lans. - 'H-J'
 Anchor Length 90' Drill Pipe Run 4078.52' Mud Wt. 9.5
 Top Packer Depth 4255 Drill Collars Run 186.48' Vis 85
 Bottom Packer Depth 4260 Wt. Pipe Run 0 WL 7.6
 Total Depth 4350 Chlorides 500 ppm System LCM 60#

Blow Description IF - Surface blow slowly built to 3/4"
ISI - No Return
FF - No surface blow
FSI - No Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>5'</u>	<u>OSM</u>		<u>Spots</u>	<u>100</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 5' BHT 130°F Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 2171 Test 1250 T-On Location 2:41am
 (B) First Initial Flow 18 Jars 250 T-Started 2:56am
 (C) First Final Flow 20 Safety Joint 75 T-Open 5:14am
 (D) Initial Shut-In 235 Circ Sub N/C T-Pulled 8:14am
 (E) Second Initial Flow 22 Hourly Standby _____ T-Out 10:31am
 (F) Second Final Flow 23 Mileage 150 R/T 232.50 Comments _____
 (G) Final Shut-In 172 Sampler _____
 (H) Final Hydrostatic 2096 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____

Initial Open 30
 Initial Shut-In 60
 Final Flow 30
 Final Shut-In 60
 Sub Total 0
 Total 1807.50
 MP/DST Disc't _____
 Sub Total 1807.50

Approved By _____ Our Representative [Signature]

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **61006**

Well Name & No. Waters #1-32 Test No. 6 Date 11-17-14
 Company Martin Drilling Co., Inc. Elevation 3184 KB 3173 GL
 Address 250 N. Water, Ste 300 Wichita Ks 67202
 Co. Rep / Geo. Bert Matson Rig Martin #20
 Location: Sec. 32 Twp. 1S Rge. 38W Co. Cheyenne State Ks

Interval Tested 4502 - 4560 Zone Tested Pawnee
 Anchor Length 58' Drill Pipe Run 4303.49' Mud Wt. 9.4
 Top Packer Depth 4497 Drill Collars Run 186.48' Vis 57
 Bottom Packer Depth 4502 Wt. Pipe Run 0 WL 6.8
 Total Depth 4560 Chlorides 600 ppm System LCM 6#

Blow Description IF - Surface blow built to 3/4" then died off to 1/4"
ISI - No return
FF - No surface blow
FSI - No return

Rec	Feet of	%gas	%oil	%water	%mud
<u>5'</u>	<u>mud</u>			<u>100</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

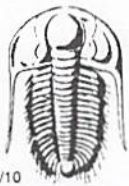
Rec Total 5' BHT 136°F Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 2306 Test 1250 T-On Location 11:54am
 (B) First Initial Flow 13 Jars 250 T-Started 12:17pm
 (C) First Final Flow 17 Safety Joint 75 T-Open 3:16pm
 (D) Initial Shut-In 30 Circ Sub _____ T-Pulled 6:16pm
 (E) Second Initial Flow 17 Hourly Standby _____ T-Out 8:31pm
 (F) Second Final Flow 19 Mileage 150 R/T 232.50 Comments Computer shut down
 (G) Final Shut-In 27 Sampler _____ when I was trying to
 (H) Final Hydrostatic 2287 Straddle _____ download recorder 6753
 Ruined Shale Packer _____
 Ruined Packer _____

Initial Open 30 Extra Packer _____
 Initial Shut-In 60 Extra Recorder _____
 Final Flow 30 Extra Recorder _____
 Final Shut-In 60 Day Standby _____
 Accessibility _____
 Sub Total 1807.50 Total 1807.50
 MP/DST Disc't _____

Approved By _____ Our Representative [Signature]

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 61007

Well Name & No. Waters #132 Test No. 7 Date 11-19-14
 Company Murfin Drilling Co., Inc. Elevation 3184 KB 3173 GL
 Address 250 N. Water, Ste. 300 Wichita KS 67202
 Co. Rep / Geo. Kent Matson Rig Murfin #20
 Location: Sec. 32 Twp. 1S Rge. 38W Co. Cheyenne State KS

Interval Tested 4356-4446 Zone Tested Lans. - K
 Anchor Length 90' Drill Pipe Run 4159.12' Mud Wt. 9.3
 Top Packer Depth 4351 Drill Collars Run 186.48' Vis 53
 Bottom Packer Depth 4356 Wt. Pipe Run 0 WL 6.8
 Total Depth 4720 Chlorides 900 ppm System LCM 4#

Blow Description IF - Surface blow built to 10 3/4"
ISI - No Return
FF - Surface blow built to 10"
FST - No Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>217</u>	<u>Wm</u>		<u>15</u>	<u>85</u>	
<u>217</u>	<u>mW</u>		<u>60</u>	<u>40</u>	

Rec Total 4134' BHT 143°F Gravity _____ API RW .495 @ 28 °F Chlorides 34,000 ppm

(A) Initial Hydrostatic 2246 Test 1250 T-On Location 9:50 am
 (B) First Initial Flow 22 Jars 250 T-Started 2:10 pm
 (C) First Final Flow 125 Safety Joint 75 T-Open 4:33 pm
 (D) Initial Shut-In 1348 Circ Sub N/C T-Pulled 8:33 pm
 (E) Second Initial Flow 128 Hourly Standby _____ T-Out 11:07 pm
 (F) Second Final Flow 212 Mileage 150 R/T 232.50 Comments Had to go get
 (G) Final Shut-In 1275 Sampler _____ 232.50 a two foot perf from bubble
 (H) Final Hydrostatic 2197 Straddle 600 back @ 1:17 pm, loaded tool

Ruined Shale Packer _____
 Ruined Packer _____
 Extra Copies _____
 Initial Open 30
 Initial Shut-In 60 Extra Recorder 200
 Final Flow 60 Day Standby _____
 Final Shut-In 90 Accessibility _____
 Sub Total 0
 Total 2840
 MP/DST Disc't _____
 Sub Total 2840

Approved By _____ Our Representative _____

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