



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co**

250 N. Water, Ste 300
Wichita KS 67202

ATTN: Robert Hendrix

Michael #1-4

4-1s-35w Rawlins,KS

Start Date: 2014.04.15 @ 17:13:00

End Date: 2014.04.16 @ 00:10:00

Job Ticket #: 55210 DST #: 1

Trilobite Testing, Inc
PO Box 362 Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2014.04.24 @ 08:47:34



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drilling Co
250 N. Water, Ste 300
Wichita KS 67202
ATTN: Robert Hendrix

4-1s-35w Rawlins,KS
Michael #1-4
Job Ticket: 55210 **DST#: 1**
Test Start: 2014.04.15 @ 17:13:00

GENERAL INFORMATION:

Formation: **Stotler**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 19:10:30
Time Test Ended: 00:10:00
Interval: **3754.00 ft (KB) To 3804.00 ft (KB) (TVD)**
Total Depth: 3804.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good
Test Type: Conventional Bottom Hole (Initial)
Tester: Royal Fisher
Unit No: #54
Reference Elevations: 3119.00 ft (KB)
3108.00 ft (CF)
KB to GR/CF: 11.00 ft

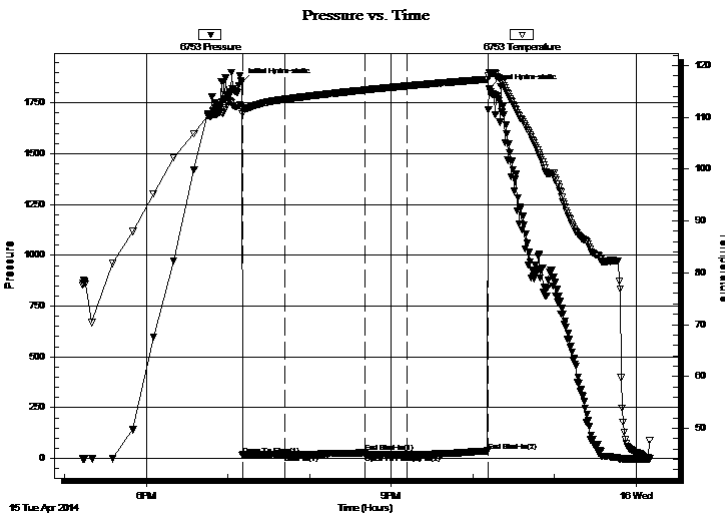
Serial #: 6753

Inside

Press@RunDepth: 19.50 psig @ 3755.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2014.04.15 End Date: 2014.04.16 Last Calib.: 2014.04.15
Start Time: 17:13:05 End Time: 00:09:59 Time On Btm: 2014.04.15 @ 19:10:15
Time Off Btm: 2014.04.15 @ 22:12:00

TEST COMMENT: 30 - IF - Surface blow stayed at a weak blow
60 - ISI - No Return
30 - FF - No Surface blow
60 - FSI - No Return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1849.02	111.92	Initial Hydro-static
1	16.08	110.71	Open To Flow (1)
32	20.55	113.48	Shut-In(1)
91	29.98	115.25	End Shut-In(1)
91	19.20	115.27	Open To Flow (2)
122	19.50	116.07	Shut-In(2)
181	35.80	117.35	End Shut-In(2)
182	1818.74	118.67	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
2.00	Mud - 100M	0.01

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co

4-1s-35w Rawlins,KS

250 N. Water, Ste 300
Wichita KS 67202

Michael #1-4

Job Ticket: 55210

DST#: 1

ATTN: Robert Hendrix

Test Start: 2014.04.15 @ 17:13:00

Tool Information

Drill Pipe:	Length: 3533.54 ft	Diameter: 3.80 inches	Volume: 49.57 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: 207.34 ft	Diameter: 2.25 inches	Volume: 1.02 bbl	Weight to Pull Loose:	102000.0 lb
			<u>Total Volume: 50.59 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	13.88 ft			String Weight: Initial	90000.00 lb
Depth to Top Packer:	3754.00 ft			Final	90000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	50.00 ft				
Tool Length:	77.00 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			3732.00	
Hydraulic tool	5.00			3737.00	
Jars	5.00			3742.00	
Safety Joint	3.00			3745.00	
Packer	4.00			3749.00	27.00 Bottom Of Top Packer
Packer	5.00			3754.00	
Stubb	1.00			3755.00	
Recorder	0.00	8368	Inside	3755.00	
Recorder	0.00	6753	Inside	3755.00	
Perforations	12.00			3767.00	
Change Over Sub	1.00			3768.00	
Drill Pipe	31.00			3799.00	
Change Over Sub	1.00			3800.00	
Bullnose	4.00			3804.00	50.00 Bottom Packers & Anchor

Total Tool Length: 77.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co

4-1s-35w Rawlins,KS

250 N. Water, Ste 300
Wichita KS 67202

Michael #1-4

Job Ticket: 55210

DST#: 1

ATTN: Robert Hendrix

Test Start: 2014.04.15 @ 17:13:00

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: 5.98 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
2.00	Mud - 100M	0.010

Total Length: 2.00 ft Total Volume: 0.010 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Serial #: 6753

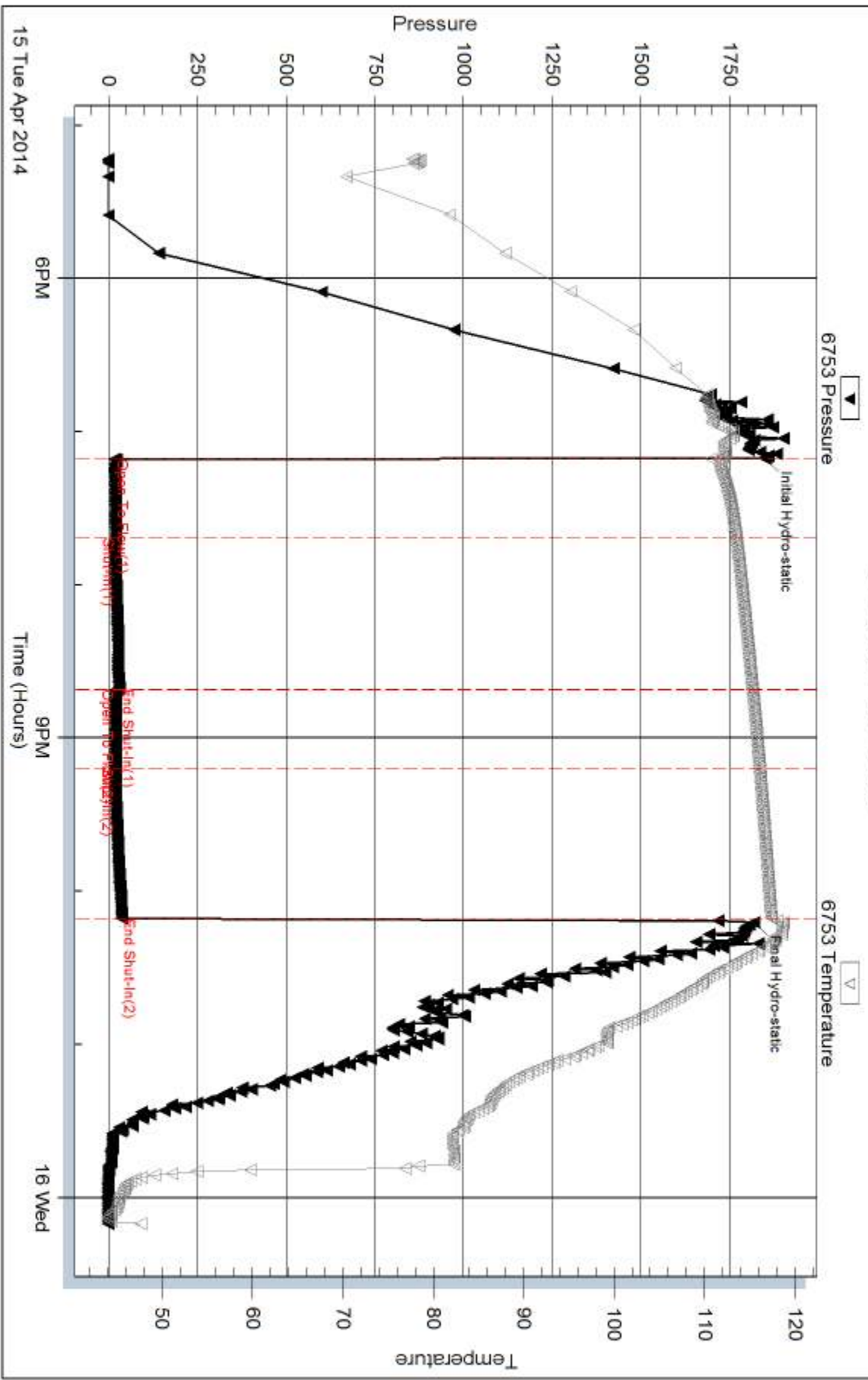
Inside

Murfin Drilling Co

Michael #1-4

DST Test Number: 1

Pressure vs. Time



Trilobite Testing, Inc

Ref. No: 55210

Printed: 2014.04.24 @ 08:47:35

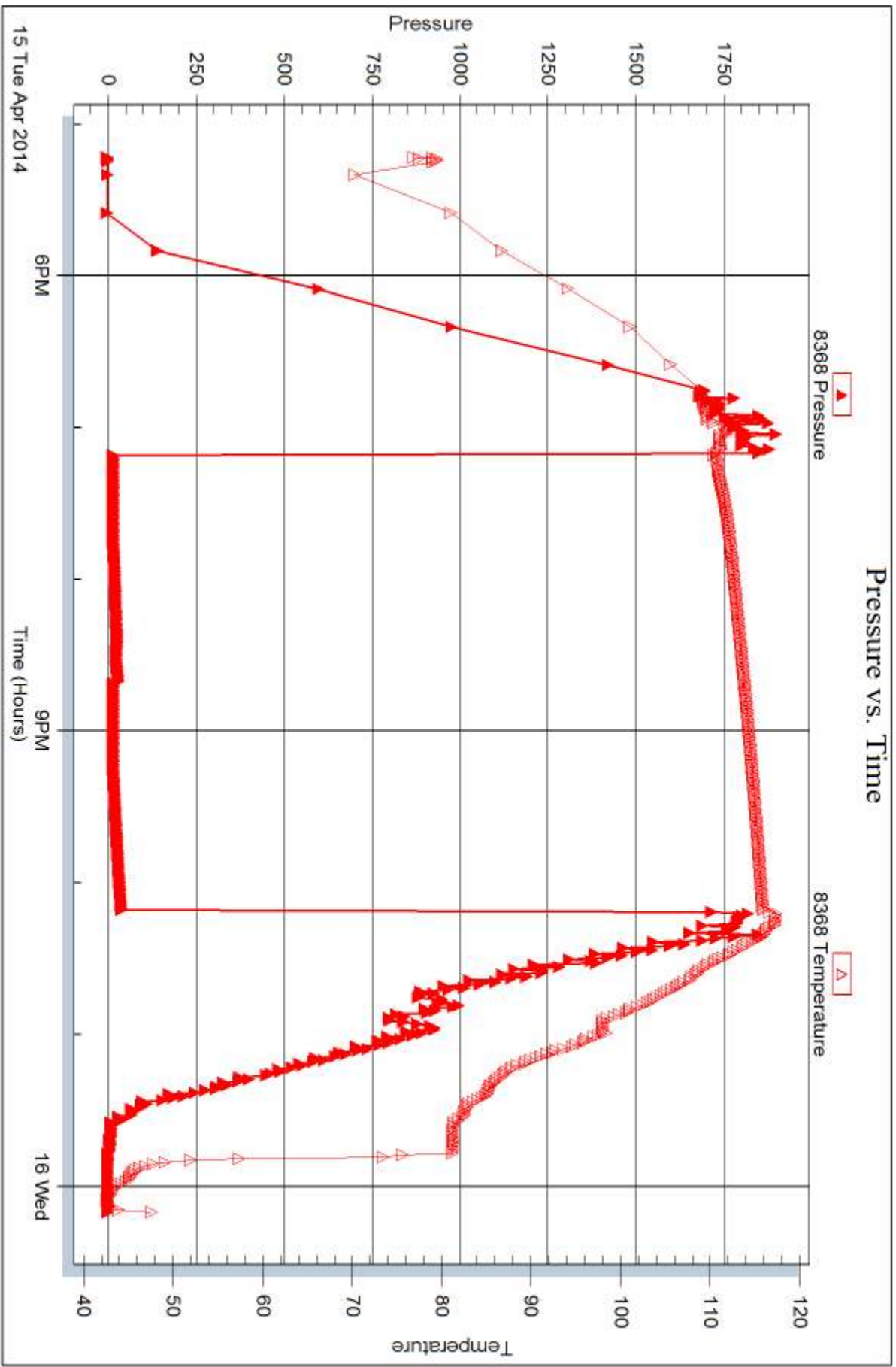
Serial #: 8368

Inside

Murfin Drilling Co

Michael #1-4

DST Test Number: 1



Tribble Testing, Inc

Ref. No: 55210

Printed: 2014.04.24 @ 08:47:35



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co**

250 N. Water, Ste 300
Wichita KS 67202

ATTN: Robert Hendrix

Michael #1-4

4-1s-35w Rawlins,KS

Start Date: 2014.04.17 @ 03:11:00

End Date: 2014.04.17 @ 11:48:45

Job Ticket #: 55211 DST #: 2

Trilobite Testing, Inc
PO Box 362 Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2014.04.24 @ 08:46:25



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drilling Co
250 N. Water, Ste 300
Wichita KS 67202
ATTN: Robert Hendrix

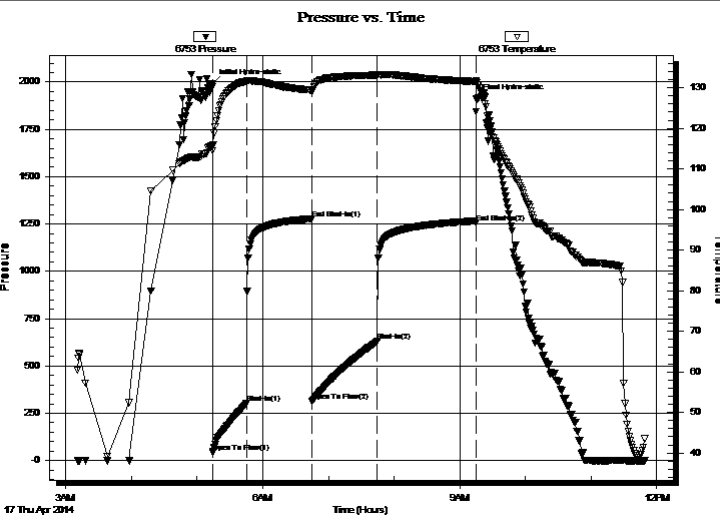
4-1s-35w Rawlins,KS
Michael #1-4
Job Ticket: 55211 **DST#: 2**
Test Start: 2014.04.17 @ 03:11:00

GENERAL INFORMATION:

Formation: **LKC A**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 05:14:15
Time Test Ended: 11:48:45
Interval: **4017.00 ft (KB) To 4069.00 ft (KB) (TVD)**
Total Depth: 4069.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good
Test Type: Conventional Bottom Hole (Initial)
Tester: Royal Fisher
Unit No: #54
Reference Elevations: 3119.00 ft (KB)
3108.00 ft (CF)
KB to GR/CF: 11.00 ft

Serial #: 6753 Inside
Press@RunDepth: 629.42 psig @ 4018.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2014.04.17 End Date: 2014.04.17 Last Calib.: 2014.04.17
Start Time: 03:11:05 End Time: 11:48:45 Time On Btm: 2014.04.17 @ 05:14:00
Time Off Btm: 2014.04.17 @ 09:15:15

TEST COMMENT: 30 - IF - Surface blow built to bottom of bucket in 6 mins.
60 - ISI - Weak Return started 20 mins. into and built to 1/4"
60 - FF - Surface blow built to bottom of bucket in 8 mins.
90 - FSI - Weak Return started 15 mins. into and built to 1"



PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1992.98	115.65	Initial Hydro-static
1	45.00	114.49	Open To Flow (1)
32	302.34	131.53	Shut-In(1)
91	1277.51	129.40	End Shut-In(1)
91	311.21	128.93	Open To Flow (2)
151	629.42	133.04	Shut-In(2)
241	1255.11	131.52	End Shut-In(2)
242	1910.26	131.24	Final Hydro-static

Recovery		
Length (ft)	Description	Volume (bbl)
636.00	OCMW - 93W - 5M - 2o	7.03
635.00	OCMW - 90W - 5M - 5o	8.91
20.00	Free oil	0.28

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co

4-1s-35w Rawlins,KS

250 N. Water, Ste 300
Wichita KS 67202

Michael #1-4

Job Ticket: 55211

DST#: 2

ATTN: Robert Hendrix

Test Start: 2014.04.17 @ 03:11:00

Tool Information

Drill Pipe:	Length: 3813.85 ft	Diameter: 3.80 inches	Volume: 53.50 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: 207.34 ft	Diameter: 2.25 inches	Volume: 1.02 bbl	Weight to Pull Loose: 110000.0 lb
			<u>Total Volume: 54.52 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	31.19 ft			String Weight: Initial 96000.00 lb
Depth to Top Packer:	4017.00 ft			Final 106000.0 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	52.00 ft			
Tool Length:	79.00 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			3995.00	
Hydraulic tool	5.00			4000.00	
Jars	5.00			4005.00	
Safety Joint	3.00			4008.00	
Packer	4.00			4012.00	27.00 Bottom Of Top Packer
Packer	5.00			4017.00	
Stubb	1.00			4018.00	
Recorder	0.00	8368	Inside	4018.00	
Recorder	0.00	6753	Inside	4018.00	
Perforations	14.00			4032.00	
Change Over Sub	1.00			4033.00	
Drill Pipe	31.00			4064.00	
Change Over Sub	1.00			4065.00	
Bullnose	4.00			4069.00	52.00 Bottom Packers & Anchor

Total Tool Length: 79.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co

4-1s-35w Rawlins,KS

250 N. Water, Ste 300
Wichita KS 67202

Michael #1-4

Job Ticket: 55211

DST#: 2

ATTN: Robert Hendrix

Test Start: 2014.04.17 @ 03:11:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

30 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

100000 ppm

Viscosity: 62.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.78 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
636.00	OCMW - 93W - 5M - 2o	7.033
635.00	OCMW - 90W - 5M - 5o	8.907
20.00	Free oil	0.281

Total Length: 1291.00 ft Total Volume: 16.221 bbl

Num Fluid Samples: 0

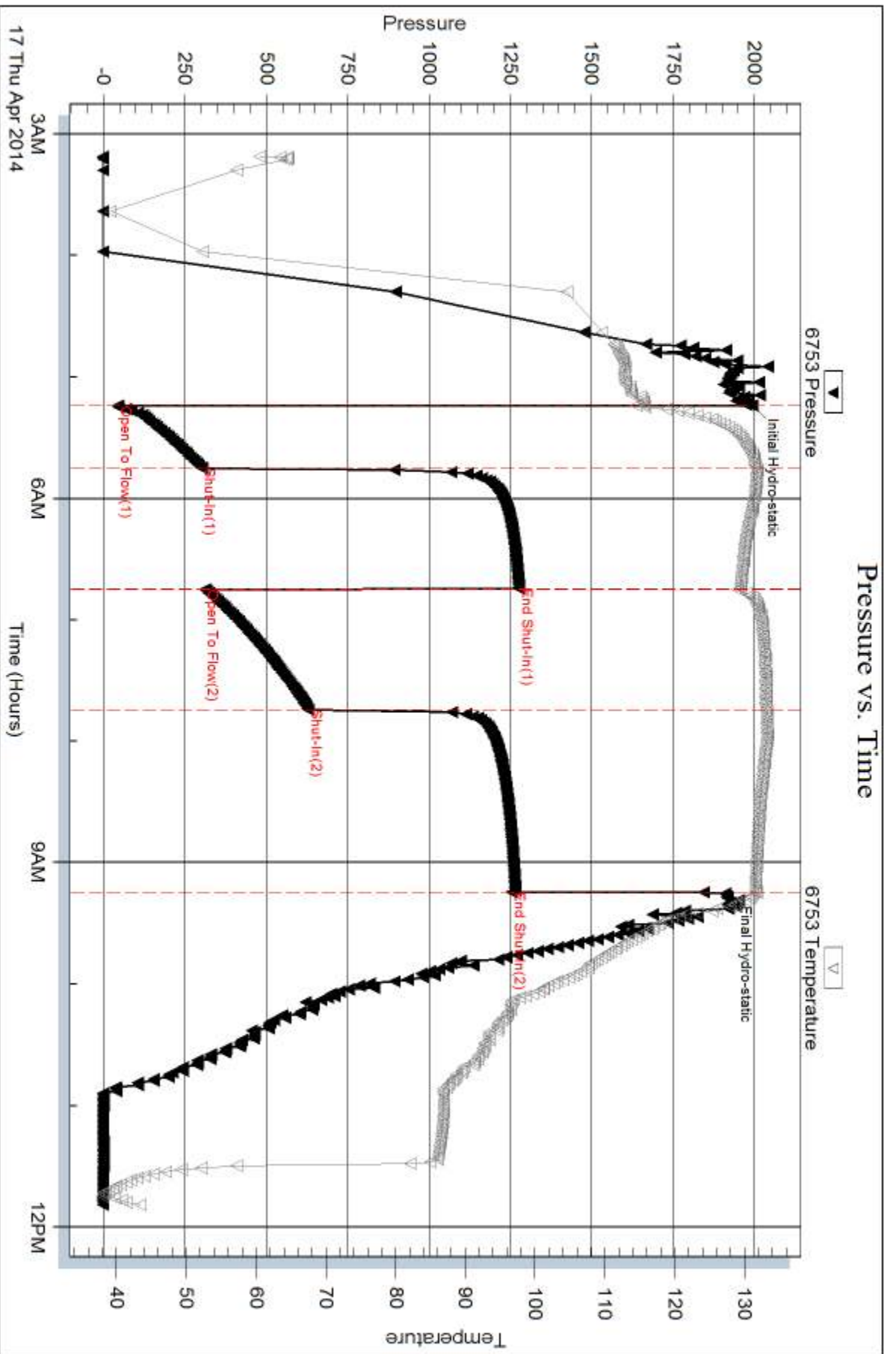
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



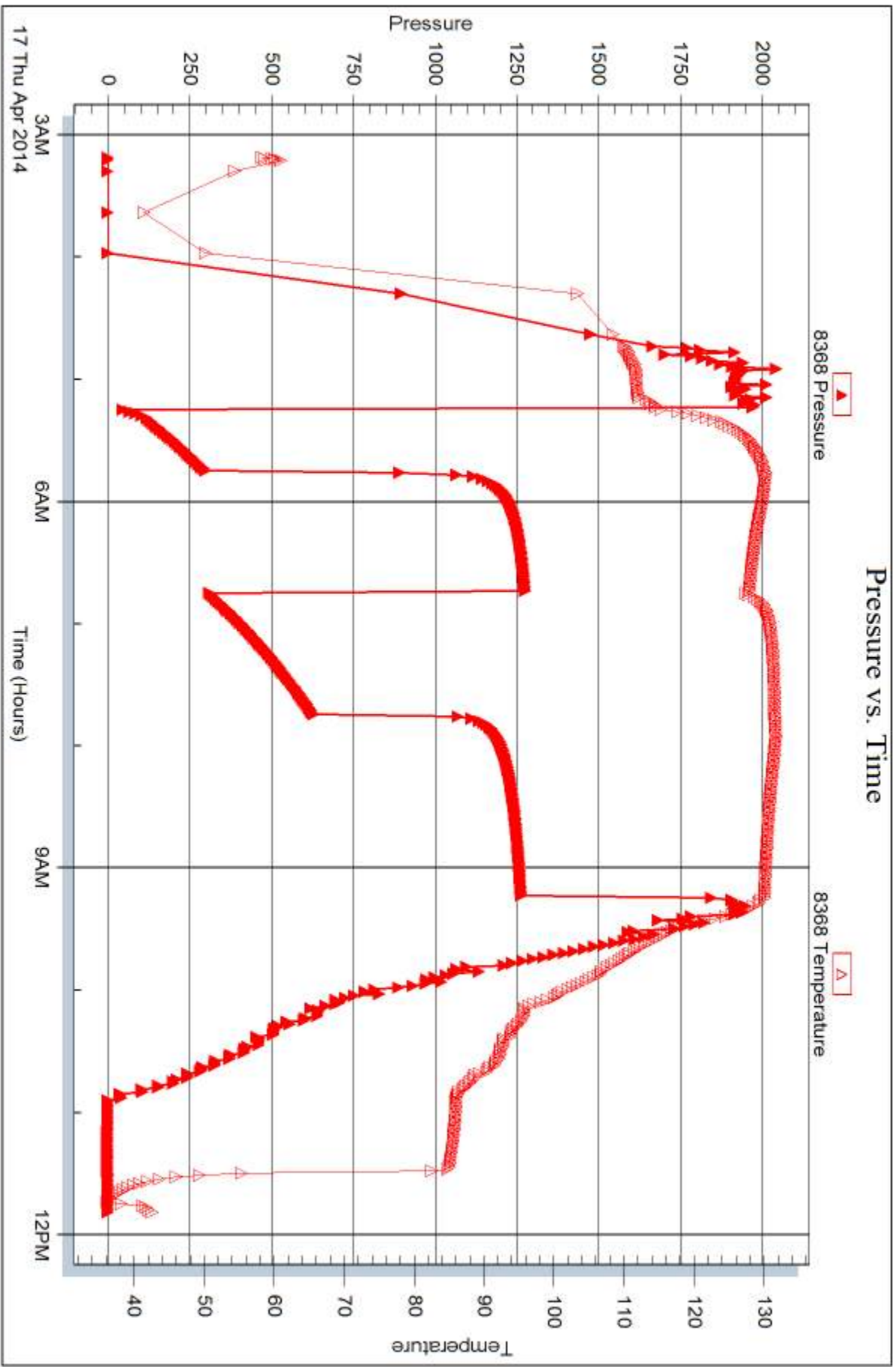
Serial #: 8368

Inside

Murfin Drilling Co

Michael #1-4

DST Test Number: 2



Tribble Testing, Inc

Ref. No: 55211

Printed: 2014.04.24 @ 08:46:26



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co**

250 N. Water, Ste 300
Wichita KS 67202

ATTN: Robert Hendrix

Michael #1-4

4-1s-35w Rawlins,KS

Start Date: 2014.04.18 @ 02:37:00

End Date: 2014.04.18 @ 09:57:30

Job Ticket #: 55212 DST #: 3

Trilobite Testing, Inc
PO Box 362 Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2014.04.24 @ 08:45:32



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drilling Co
250 N. Water, Ste 300
Wichita KS 67202
ATTN: Robert Hendrix

4-1s-35w Rawlins,KS
Michael #1-4
Job Ticket: 55212 **DST#: 3**
Test Start: 2014.04.18 @ 02:37:00

GENERAL INFORMATION:

Formation: **LKC 'D-G'**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 04:10:15
Time Test Ended: 09:57:30
Interval: **4073.00 ft (KB) To 4172.00 ft (KB) (TVD)**
Total Depth: 4172.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good
Test Type: Conventional Bottom Hole (Initial)
Tester: Royal Fisher
Unit No: #54
Reference Elevations: 3119.00 ft (KB)
3108.00 ft (CF)
KB to GR/CF: 11.00 ft

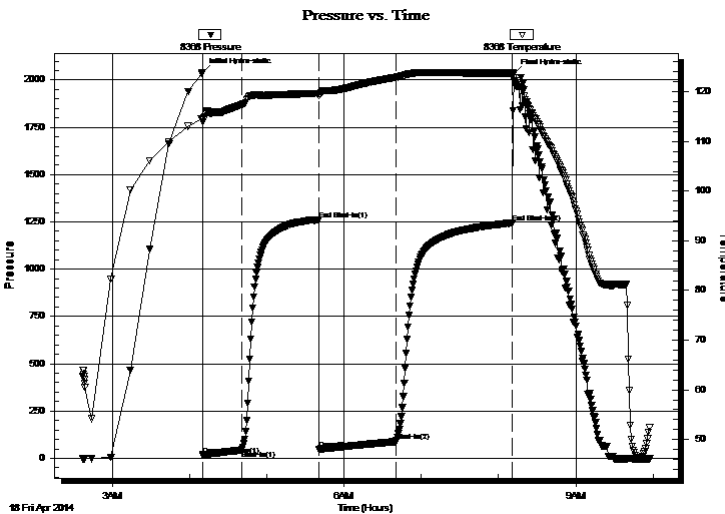
Serial #: 8368

Inside

Press@RunDepth: 91.02 psig @ 4074.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2014.04.18 End Date: 2014.04.18 Last Calib.: 2014.04.18
Start Time: 02:37:05 End Time: 09:57:29 Time On Btm: 2014.04.18 @ 04:10:00
Time Off Btm: 2014.04.18 @ 08:11:45

TEST COMMENT: 30 - IF - Surface blow built to 3 1/4"
60 - ISI - No Return
60 - FF - Surface blow built to 3/4"
90 - FSI - No Return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2040.27	114.64	Initial Hydro-static
1	17.71	114.03	Open To Flow (1)
31	42.86	117.39	Shut-In(1)
91	1260.35	119.69	End Shut-In(1)
91	49.34	119.20	Open To Flow (2)
151	91.02	122.92	Shut-In(2)
241	1244.63	123.76	End Shut-In(2)
242	2035.53	122.87	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
133.00	OCWM - 65M - 25W - 10o	0.65
3.00	Free Oil - 100o	0.01

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co
 250 N. Water, Ste 300
 Wichita KS 67202
 ATTN: Robert Hendrix

4-1s-35w Rawlins,KS
Michael #1-4
 Job Ticket: 55212 **DST#: 3**
 Test Start: 2014.04.18 @ 02:37:00

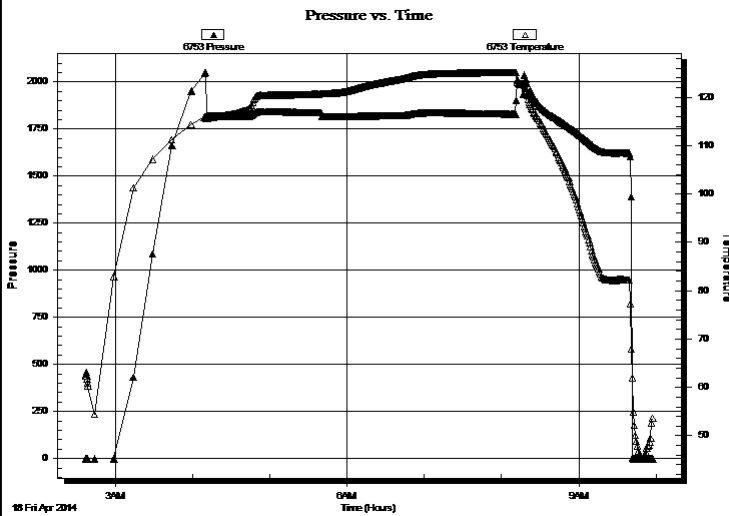
GENERAL INFORMATION:

Formation: **LKC 'D-G'**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 04:10:15
 Time Test Ended: 09:57:30
 Interval: **4073.00 ft (KB) To 4172.00 ft (KB) (TVD)**
 Total Depth: 4172.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Good
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Royal Fisher
 Unit No: #54
 Reference Elevations: 3119.00 ft (KB)
 3108.00 ft (CF)
 KB to GR/CF: 11.00 ft

Serial #: 6753

Press@RunDepth: psig @ ft (KB) Capacity: 8000.00 psig
 Start Date: 2014.04.18 End Date: 2014.04.18 Last Calib.: 2014.04.18
 Start Time: 02:37:05 End Time: 09:57:29 Time On Btm:
 Time Off Btm:

TEST COMMENT: 30 - IF - Surface blow built to 3 1/4"
 60 - ISI - No Return
 60 - FF - Surface blow built to 3/4"
 90 - FSI - No Return



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
133.00	OCWM - 65M - 25W - 10o	0.65
3.00	Free Oil - 100o	0.01

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co

4-1s-35w Rawlins,KS

250 N. Water, Ste 300
Wichita KS 67202

Michael #1-4

Job Ticket: 55212

DST#: 3

ATTN: Robert Hendrix

Test Start: 2014.04.18 @ 02:37:00

Tool Information

Drill Pipe:	Length: 3846.24 ft	Diameter: 3.80 inches	Volume: 53.95 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: 207.34 ft	Diameter: 2.25 inches	Volume: 1.02 bbl	Weight to Pull Loose: 105000.0 lb
			<u>Total Volume: 54.97 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	7.58 ft			String Weight: Initial 100000.0 lb
Depth to Top Packer:	4073.00 ft			Final 100000.0 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	99.00 ft			
Tool Length:	126.00 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			4051.00	
Hydraulic tool	5.00			4056.00	
Jars	5.00			4061.00	
Safety Joint	3.00			4064.00	
Packer	4.00			4068.00	27.00 Bottom Of Top Packer
Packer	5.00			4073.00	
Stubb	1.00			4074.00	
Recorder	0.00	8368	Inside	4074.00	
Recorder	0.00	6753	Inside	4074.00	
Perforations	29.00			4103.00	
Change Over Sub	1.00			4104.00	
Drill Pipe	63.00			4167.00	
Change Over Sub	1.00			4168.00	
Bullnose	4.00			4172.00	99.00 Bottom Packers & Anchor

Total Tool Length: 126.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co

4-1s-35w Rawlins,KS

250 N. Water, Ste 300
Wichita KS 67202

Michael #1-4

Job Ticket: 55212

DST#: 3

ATTN: Robert Hendrix

Test Start: 2014.04.18 @ 02:37:00

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: 63.00 sec/qt

Cushion Volume: bbl

Water Loss: 5.59 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure: psig

Salinity: 700.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
133.00	OCWM - 65M - 25W - 10o	0.654
3.00	Free Oil - 100o	0.015

Total Length: 136.00 ft Total Volume: 0.669 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

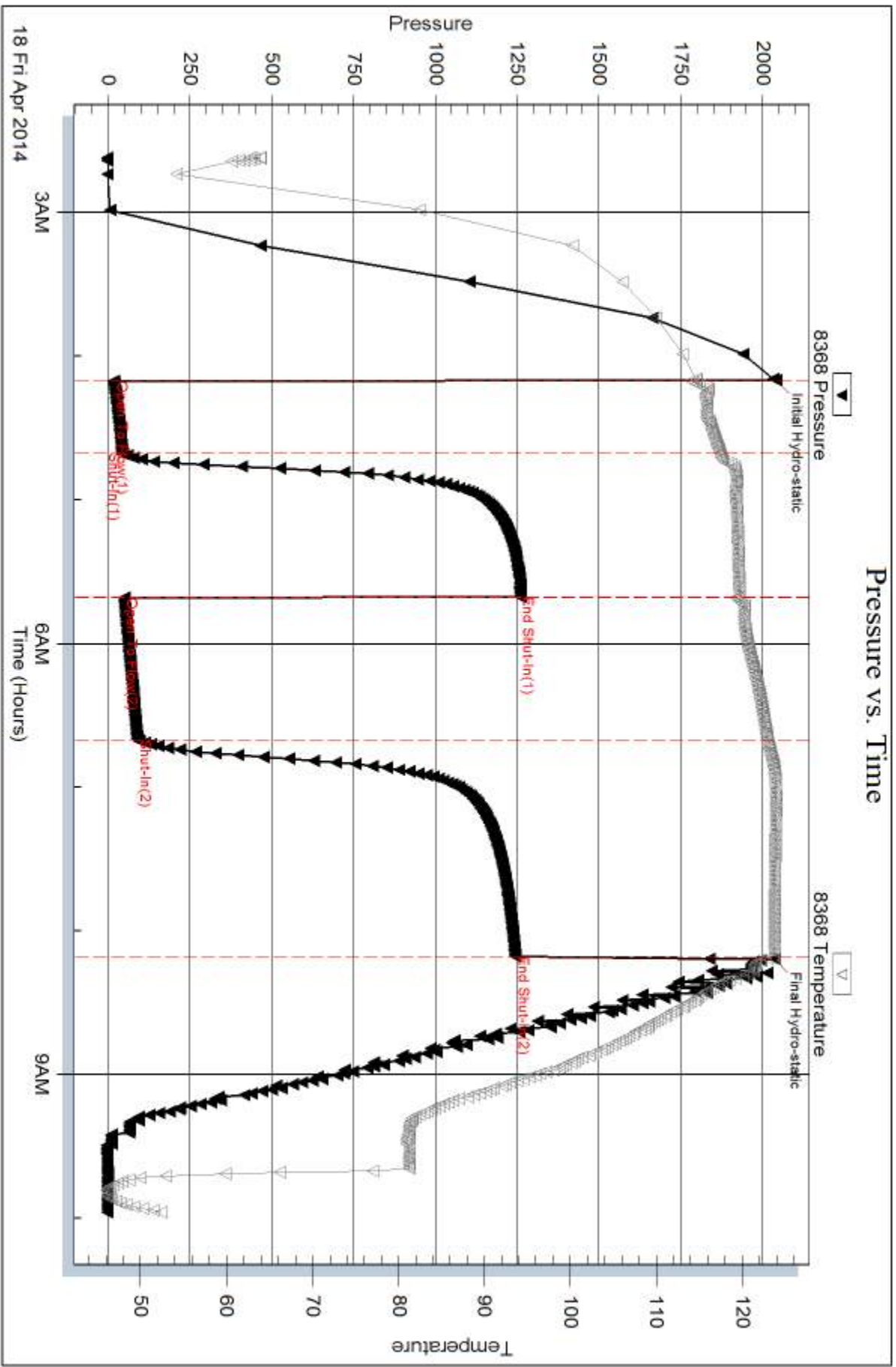
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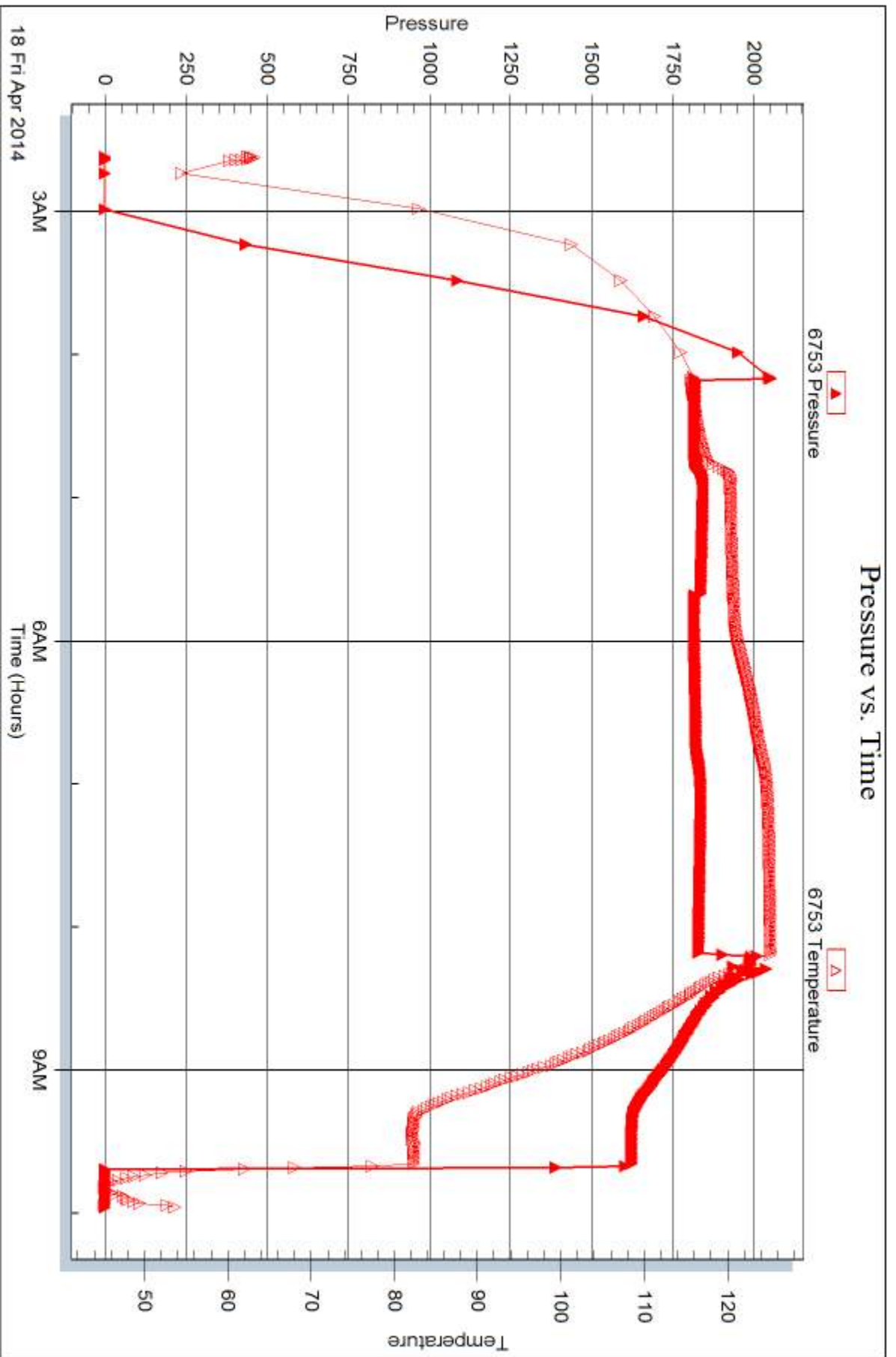
Inside

Murfin Drilling Co

Michael #1-4

DST Test Number: 3







DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co**

250 N. Water, Ste 300
Wichita KS 67202

ATTN: Robert Hendrix

Michael #1-4

4-1s-35w Rawlins,KS

Start Date: 2014.04.18 @ 23:59:00

End Date: 2014.04.19 @ 07:19:45

Job Ticket #: 55213 DST #: 4

Trilobite Testing, Inc
PO Box 362 Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2014.04.24 @ 08:44:54



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Murfin Drilling Co
250 N. Water, Ste 300
Wichita KS 67202
ATTN: Robert Hendrix

4-1s-35w Rawlins,KS
Michael #1-4
Job Ticket: 55213 **DST#: 4**
Test Start: 2014.04.18 @ 23:59:00

GENERAL INFORMATION:

Formation: **LKC H-J**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 02:18:00
Time Test Ended: 07:19:45
Interval: **4176.00 ft (KB) To 4270.00 ft (KB) (TVD)**
Total Depth: 4270.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Good
Test Type: Conventional Bottom Hole (Initial)
Tester: Royal Fisher
Unit No: #54
Reference Elevations: 3119.00 ft (KB)
3108.00 ft (CF)
KB to GR/CF: 11.00 ft

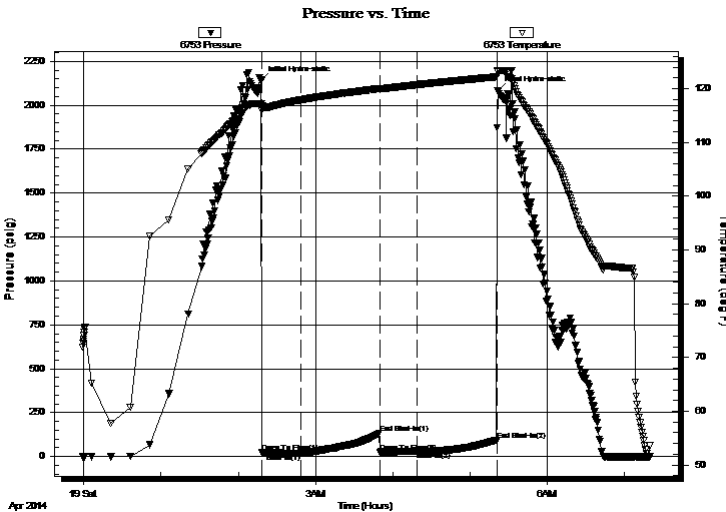
Serial #: 6753

Inside

Press@RunDepth: 29.05 psig @ 4177.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2014.04.18 End Date: 2014.04.19 Last Calib.: 2014.04.19
Start Time: 23:59:05 End Time: 07:19:44 Time On Btm: 2014.04.19 @ 02:17:45
Time Off Btm: 2014.04.19 @ 05:21:15

TEST COMMENT: 30 - IF - Surface blow stayed at a weak blow
60 - ISI - No Return
30 - FF - No Surface blow
60 - FSI - No Return

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2140.28	117.27	Initial Hydro-static
1	21.71	115.90	Open To Flow (1)
31	20.19	117.94	Shut-In(1)
92	132.13	120.03	End Shut-In(1)
92	25.05	119.98	Open To Flow (2)
121	29.05	120.74	Shut-In(2)
183	94.20	122.21	End Shut-In(2)
184	2083.91	123.11	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
2.00	OCM - 90M - 10o	0.01

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co

4-1s-35w Rawlins,KS

250 N. Water, Ste 300
Wichita KS 67202

Michael #1-4

Job Ticket: 55213

DST#: 4

ATTN: Robert Hendrix

Test Start: 2014.04.18 @ 23:59:00

Tool Information

Drill Pipe:	Length: 3972.66 ft	Diameter: 3.80 inches	Volume: 55.73 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: 207.34 ft	Diameter: 2.25 inches	Volume: 1.02 bbl	Weight to Pull Loose:	104000.0 lb
			<u>Total Volume: 56.75 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	31.00 ft			String Weight: Initial	98000.00 lb
Depth to Top Packer:	4176.00 ft			Final	98000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	94.00 ft				
Tool Length:	121.00 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			4154.00	
Hydraulic tool	5.00			4159.00	
Jars	5.00			4164.00	
Safety Joint	3.00			4167.00	
Packer	4.00			4171.00	27.00 Bottom Of Top Packer
Packer	5.00			4176.00	
Stubb	1.00			4177.00	
Recorder	0.00	8368	Inside	4177.00	
Recorder	0.00	6753	Inside	4177.00	
Perforations	24.00			4201.00	
Change Over Sub	1.00			4202.00	
Drill Pipe	63.00			4265.00	
Change Over Sub	1.00			4266.00	
Bullnose	4.00			4270.00	94.00 Bottom Packers & Anchor

Total Tool Length: 121.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co

4-1s-35w Rawlins,KS

250 N. Water, Ste 300
Wichita KS 67202

Michael #1-4

Job Ticket: 55213

DST#: 4

ATTN: Robert Hendrix

Test Start: 2014.04.18 @ 23:59:00

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: 60.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.59 in³

Gas Cushion Type:

Resistivity: 0.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 700.00 ppm

Filter Cake: 2.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
2.00	OCM - 90M - 10o	0.010

Total Length: 2.00 ft Total Volume: 0.010 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

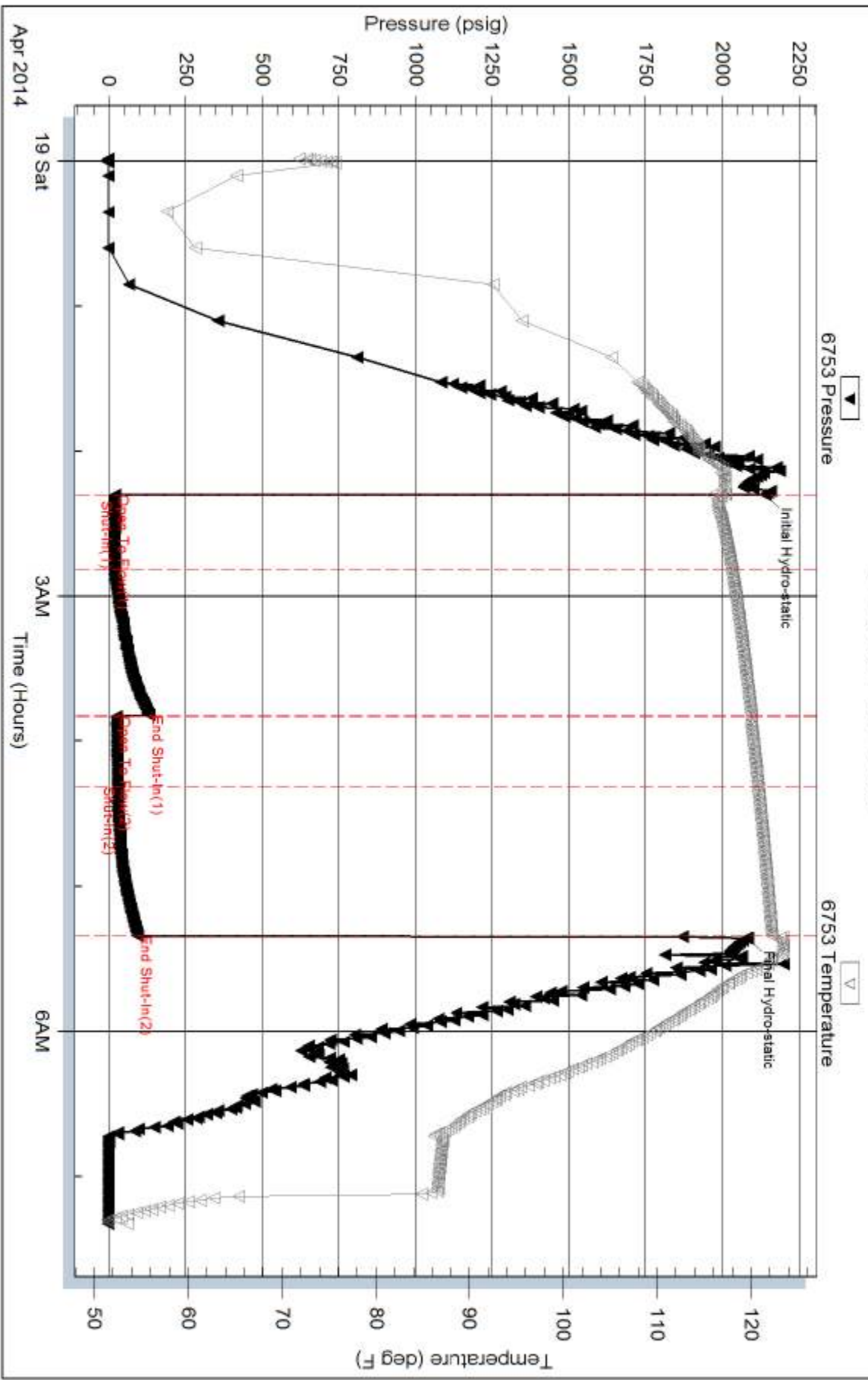
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time



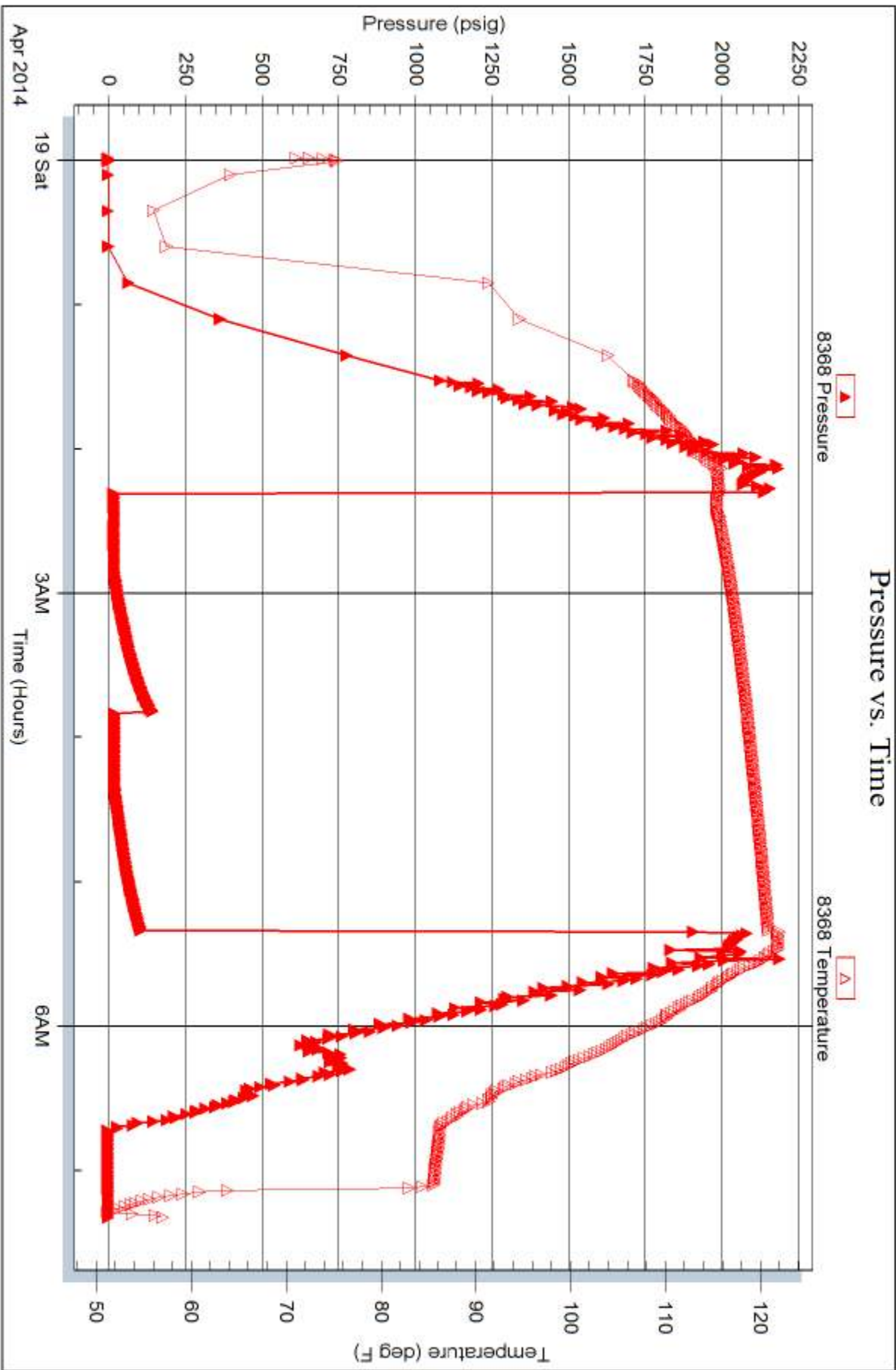
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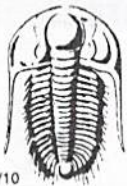
Inside

Murfin Drilling Co

Michael #1-4

DST Test Number: 4





TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 55210

Well Name & No. Micheal #1-4 Test No. 1 Date 4-15-14
 Company Murfin Drilling Co., Inc. Elevation 3119 KB 3108 GL
 Address 250 N. Water, Ste 300 Wichita KS 67202
 Co. Rep / Geo. Robert Hendrix Rig Murfin #2
 Location: Sec. 4 Twp. 15 Rge. 35 W Co. Rawlins State KS

Interval Tested 3754 - 3804 Zone Tested Stotler
 Anchor Length 50' Drill Pipe Run 3533.54' Mud Wt. 9.2
 Top Packer Depth 3749' Drill Collars Run 207.34' Vis 58
 Bottom Packer Depth 3754' Wt. Pipe Run 0 WL 6.0
 Total Depth 3804 Chlorides 500 ppm System LCM 4#

Blow Description IF - Surface blow stayed at a weak blow
ISI - No Return
FF - No Surface blow
FZI - No Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>2'</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 2' BHT 1179F Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 1849 Test 1150 T-On Location 4:30pm
 (B) First Initial Flow 16 Jars 250 T-Started 5:13pm
 (C) First Final Flow 20 Safety Joint 75 T-Open 7:11pm
 (D) Initial Shut-In 29 Circ Sub N/C T-Pulled 10:11pm
 (E) Second Initial Flow 19 Hourly Standby _____ T-Out 12:10am
 (F) Second Final Flow 19 Mileage 106 RT 164.30 Comments _____
 (G) Final Shut-In 35 Sampler _____
 (H) Final Hydrostatic 1818 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Initial Open 30 Extra Recorder _____ Sub Total 0
 Initial Shut-In 60 Day Standby _____ Total 1639.30
 Final Flow 30 Accessibility _____ MP/DST Disc't _____
 Final Shut-In 60 Sub Total 1639.30

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. 55211

Well Name & No. Michael #1-4 Test No. 2 Date 4-17-14
 Company Murfin Drilling Co., Inc. Elevation 3119 KB 3108 GL
 Address 250 N. Water, Ste 300 Wichita KS 67202
 Co. Rep / Geo. Robert Hendrix Rig Murfin #2
 Location: Sec. 4 Twp. 1S Rge. 35W Co. Lawlins State KS

Interval Tested 4017-4069 Zone Tested Lansing-A
 Anchor Length 52' Drill Pipe Run 3813.85 Mud Wt. 9.1
 Top Packer Depth 4012 Drill Collars Run 207.34 Vis 62
 Bottom Packer Depth 4017 Wt. Pipe Run 0 WL 6.8
 Total Depth 4069 Chlorides 600 ppm System LCM 3#

Blow Description IF - ~~Surface~~ Surface blow built to bottom of bucket in 6 mins.
ISI - Weak return started 20 mins. into and built to 1/4"
FF - Surface blow built to bottom of bucket in 8 mins.
FZI - Weak ~~return~~ return started 15 mins. into and built to 1"

Rec	Feet of	%gas	%oil	%water	%mud
<u>20'</u>	<u>Free Oil</u>	<u>100</u>			
<u>635'</u>	<u>OCMW</u>	<u>5</u>	<u>90</u>	<u>5</u>	
<u>636'</u>	<u>OCMW</u>	<u>2</u>	<u>93</u>	<u>5</u>	
<u>94'</u>	<u>of Gas in pipe</u>				

Rec Total 1291' BHT 131°F Gravity 30 API RW .152 @ 38 °F Chlorides 100,000 ppm

(A) Initial Hydrostatic 1992 Test 1250 T-On Location 3:00am
 (B) First Initial Flow 45 Jars 250 T-Started 3:11am
 (C) First Final Flow 302 Safety Joint 75 T-Open 5:14am
 (D) Initial Shut-In 1277 Circ Sub N/C T-Pulled 9:14am
 (E) Second Initial Flow 311 Hourly Standby _____ T-Out 11:49am
 (F) Second Final Flow 629 Mileage 106 R/T 164.30
 (G) Final Shut-In 1255 Sampler _____
 (H) Final Hydrostatic 1910 Straddle _____

Initial Open 30 Shale Packer _____ Ruined Shale Packer _____
 Initial Shut-In 60 Extra Packer _____ Ruined Packer _____
 Final Flow 60 Extra Recorder _____ Sub Total 0
 Final Shut-In 90 Day Standby _____ Total 1739.30
 Accessibility _____ MP/DST Disc't _____
 Sub Total 1739.30

Approved By _____ Our Representative [Signature]

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 55212

Well Name & No. Michael #1-4 Test No. 3 Date 4-18-14
 Company Murfin Drilling Co., Inc. Elevation 3119 KB 3108 GL
 Address 250 N. Water, Ste 300 Wichita KS 67202
 Co. Rep / Geo. Robert Hendrix Rig Murfin #2
 Location: Sec. 4 Twp. 1S Rge. 35W Co. Rawlins State KS

Interval Tested 4073 - 4172 Zone Tested Lans 'D'-'G'
 Anchor Length 99' Drill Pipe Run 3846.24 Mud Wt. 9.0
 Top Packer Depth 4068 Drill Collars Run 207.34 Vis 63
 Bottom Packer Depth 4073 Wt. Pipe Run 0 WL 5.6
 Total Depth 4172 Chlorides 700 ppm System LCM 8#
 Blow Description IF-Surface blow built to 3/4"
ISI-No return
FF-Surface blow built to 3/4"
FSI-No return

Rec	Feet of	%gas	%oil	%water	%mud
<u>133'</u>	<u>acwm</u>	<u>10</u>	<u>0</u>	<u>25</u>	<u>65</u>
<u>3'</u>	<u>Free Oil</u>	<u>100</u>			

Rec Total 136' BHT 123°F Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 2040 Test 1250 T-On Location 2:10am
 (B) First Initial Flow 17 Jars 250 T-Started 2:37am
 (C) First Final Flow 42 Safety Joint 75 T-Open 4:10am
 (D) Initial Shut-In 1260 Circ Sub n/c T-Pulled 8:10am
 (E) Second Initial Flow 49 Hourly Standby _____ T-Out 9:57am
 (F) Second Final Flow 91 Mileage 106 R/T 164.30
 (G) Final Shut-In 1244 Sampler _____
 (H) Final Hydrostatic 2035 Straddle _____
 Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____

Initial Open 30
 Initial Shut-In 60
 Final Flow 60
 Final Shut-In 90

Sub Total 1739.30

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. **55213**

4/10

Well Name & No. Micheal #1-4 Test No. 4 Date 4-18-14
 Company Murfin Drilling Co., Inc. Elevation 3119 KB 3108 GL
 Address 250 N. Water, Ste 300 Wichita KS 67202
 Co. Rep / Geo. Robert Hendrix Rig Murfin #2
 Location: Sec. 4 Twp. 1S Rge. 35W Co. Rawlins State KS

Interval Tested 4176 - 4270 Zone Tested Lans - H & J
 Anchor Length 94' Drill Pipe Run 3972.66' Mud Wt. 9.1
 Top Packer Depth 4171 Drill Collars Run 207.34' Vis 60
 Bottom Packer Depth 4176 Wt. Pipe Run 0 WL 5.6
 Total Depth 4270 Chlorides 700 ppm System LCM 6#

Blow Description IF - Surface blow stayed at a weak blow
ISI - No Return
FF - No Surface blow
FSI - No Return

Rec	Feet of	%gas	%oil	%water	%mud
<u>2'</u>	<u>0cm</u>		<u>10</u>	<u>90</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 2' BHT 122°F Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 2140 Test 1250 T-On Location 11:30pm
 (B) First Initial Flow 21 Jars 250 T-Started 11:59pm
 (C) First Final Flow 20 Safety Joint 75 T-Open 2:18am
 (D) Initial Shut-In 132 Circ Sub n/c T-Pulled 5:18am
 (E) Second Initial Flow 25 Hourly Standby _____ T-Out 7:20am
 (F) Second Final Flow 29 Mileage 106 RIT 328.60 Comments Picked up tool on
 (G) Final Shut-In 94 Sampler _____ 4-20-14
 (H) Final Hydrostatic 2083 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Extra Recorder _____ Sub Total 0
 Day Standby _____ Total 1903.60
 Accessibility _____ MP/DST Disc't _____
 Sub Total 1903.60

Approved By _____ Our Representative [Signature]

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